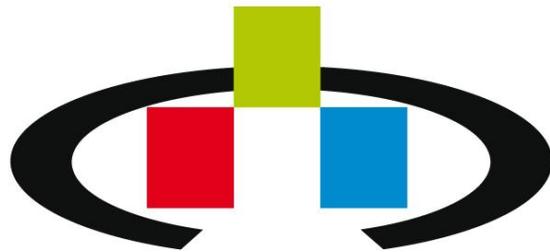


newdynamicsolutions
part of the NDS Group



SCANNERVISION
DOCUMENTSOLUTION

Processing Engine



User Guide & Manual

NewFormat®

Appointed Reseller Nordic and Baltic Region
www.newformat.se

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Foreword



Scope

This publication describes using the ScannerVision™ Processing Engine application in an enterprise environment. This document provides users of the Processing Engine with the knowledge to configure the application best suited for their needs.

Intended Audience

The intended audience of this document are for all ScannerVision™ Processing Engine users. This document may be used by NDS partners, their dealers, sales representatives and end users.

Product Information

For current documentation, release notes, software updates, as well as information about NDS and ScannerVision™, visit the NDS website at <http://newdynamicsolutions.com> or email us at partners@newdynamicsolutions.com.

newdynamicsolutions
part of the NDS Group



1 Welcome

Thank you for choosing ScannerVision as your document capture solution.



ScannerVision is an advanced, user-friendly document capture solution which enables users to scan, digitize, route, store and optimize their business critical information. Created with the philosophy of manageability, reliability and flexibility, but above all simplicity, ScannerVision can operate from the panel of many popular multifunctional devices, or from the PC desktop.

With a touch of a button, even inexperienced users can start to utilize document workflows, formatting and correctly tagging critical information and ensuring it reaches the right destination: automation promotes efficiency, reduces errors, and saves money.

To familiarize you with your new ScannerVision application, we suggest that you read this entire operation manual, before attempting to operate it.

2 Overview

ScannerVision Overview

ScannerVision is an advanced document capture middleware solution which is easy, affordable and secure to implement streamlined document workflow and business process management. With ScannerVision, users will be able to file, retrieve and use information with far more ease than before and dispense with time consuming searches for important documents or information.



ScannerVision can save, store, and share your documents in a very structured, easy, and customized manner. ScannerVision also allows the addition of extra meta data to your documents. All this is accomplished in three basic steps being capture, process and store.

ScannerVision specifically supports users who deal with a multitude of documents, daily. The user interface is very intuitive, and easy to navigate and configure. ScannerVision Processing Engine allows users to create bespoke templates, to deal with documents in a manner specific to the user's daily business processes. Templates are used to build a set of rules, which will be applied to each type of document. These templates can be configured to support multiple input methods, bespoke image enhancements and output in various formats to multiple output destinations including Windows file systems, email, ftp and various document management systems.

Output integration to most business systems can be achieved by a feature-rich export module allowing meta data to be exported with associated images by various methods including xml, text files and HTML. Input integration allows ScannerVision to use data from business systems by presenting structured data for indexing and classification purposes.

3 ScannerVision Support

New Dynamic Solutions BVBA offers tier 3 support to our global network of resellers. Users seeking technical support for ScannerVision™ should contact their point of purchase.

In the event that you are no longer able to contact your reseller, feel free to email us at partners@newdynamicsolutions.com so that we may introduce you to another partner in your region who is able to support you.

Alternatively, contact our Live Support system. Available via the front page of the NDS website, the Live Support system offers a direct line of communication to our support team and customer service department.



Resellers and partners may use the system to request technical support or information for pre-sales enquiries. Existing end users will be assisted in contacting the technical teams of the sales partner, whilst prospective customers will be directed to regional partners.

The objective of this system is to offer support for those situations where an immediate response is required.

4 Getting Started

The following section have been designed to familiarize users with the core concepts and methodology of the ScannerVision Processing Engine Application. In this section, you will find an overview on the following topics:

- [ScannerVision Overview](#)
- [Key Concepts](#)
- [Processing Engine User Interface](#)
- [Licensing ScannerVision](#)
- [Settings](#)
- [Templates](#)
- [Clients](#)
- [Users](#)
- [Log](#)

4.1 Quick Reference

Quick Reference Guide

Before using ScannerVision please review the following quick reference guide:

Icon	Concept	Description
	Service Buttons	Service buttons allow the user to start, stop, pause and resume the services
	Template Buttons	Template buttons represent a set of rules/instructions to be applied for a specific document process
	Client Button	Client buttons are used to configure scan clients to be used to capture documents. Template availability can be restricted per scan client
	Client Groups	Scan clients can be grouped for easy group configuration
	User Button	Users can be managed as to which scan clients they are allowed to use, and for various authentication methods, including Windows Authentication and Equitrac authentication.
	User Group Buttons	Users can be grouped based on functions or logical structures within an organization.

Icon	Concept	Description
	Log	Detailed logs can be accessed for performance or troubleshooting.

4.2 Licensing ScannerVision

ScannerVision Licensing Portal

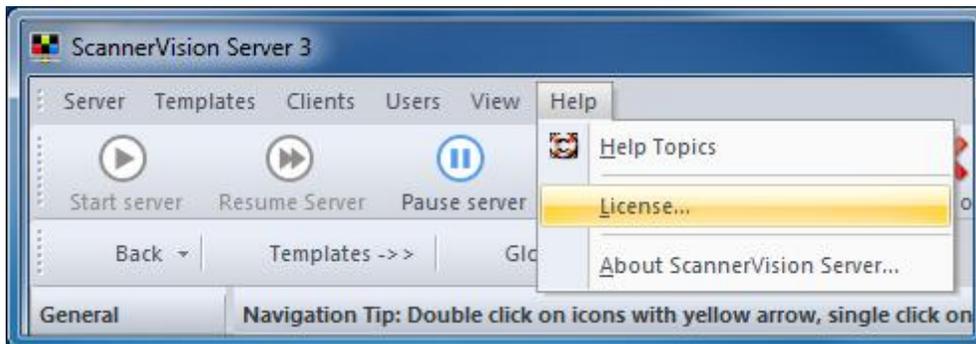
The ScannerVision modular licensing model is build on the principle that you only buy and the modules needed in for the specific task at hand. This in fact means that the standard Processing Engine license must always be activated, and then additional process modules and storage connectors can be purchased to compliment the business process(s) ScannerVision will bring autonomy to.

To activate licenses, an active internet connection is required. To access the ScannerVision licensing tool, navigate to the main Toolbar Help window, where you'll first find the license information. This window displays the information about the ScannerVision Processing Engine license installed on your computer.

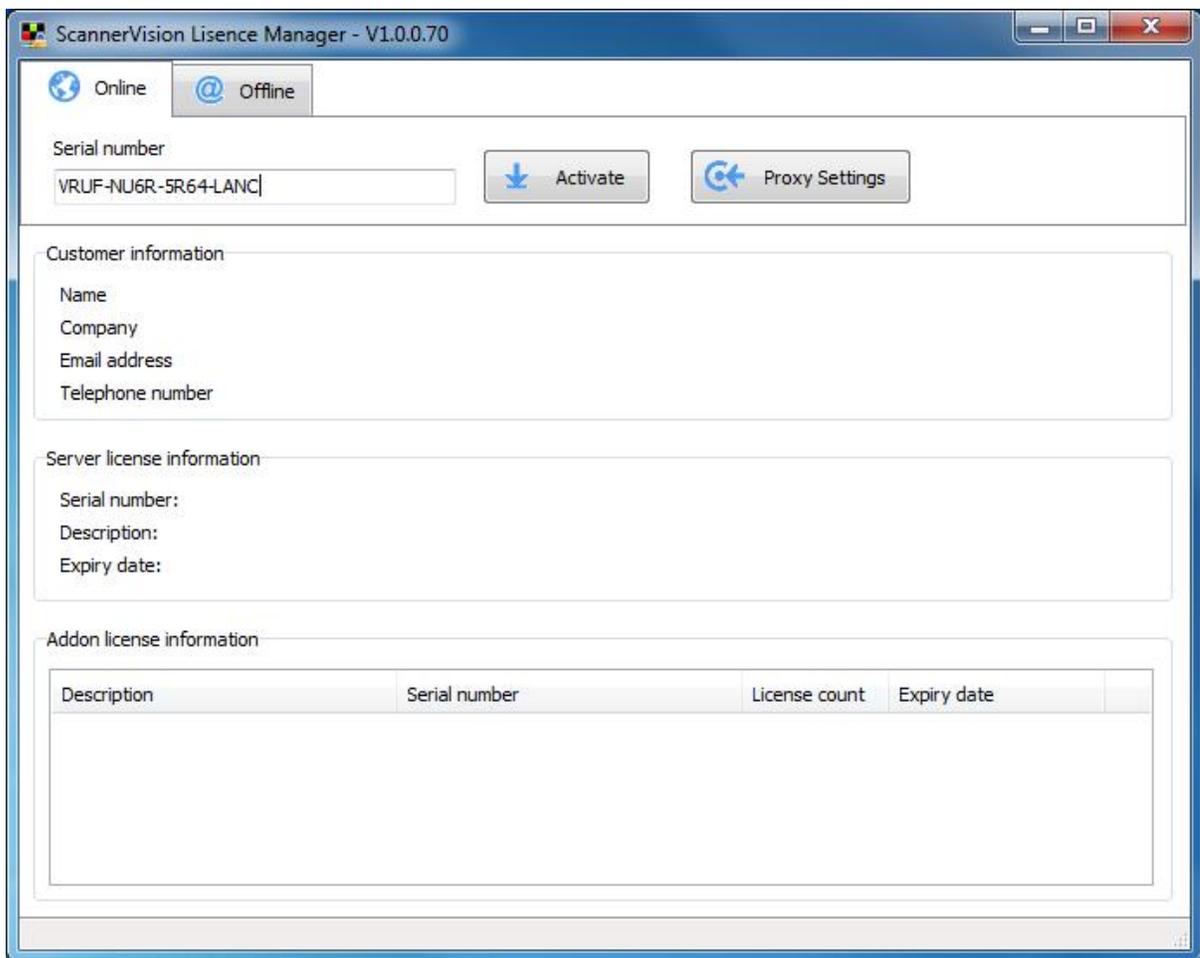
Important: License can only be used when connected with the same source of connection at the time of registration and activation. I.e. if a license is registered with a WI-FI connection, ScannerVision will only work if connected via WI-FI.

Online Activation

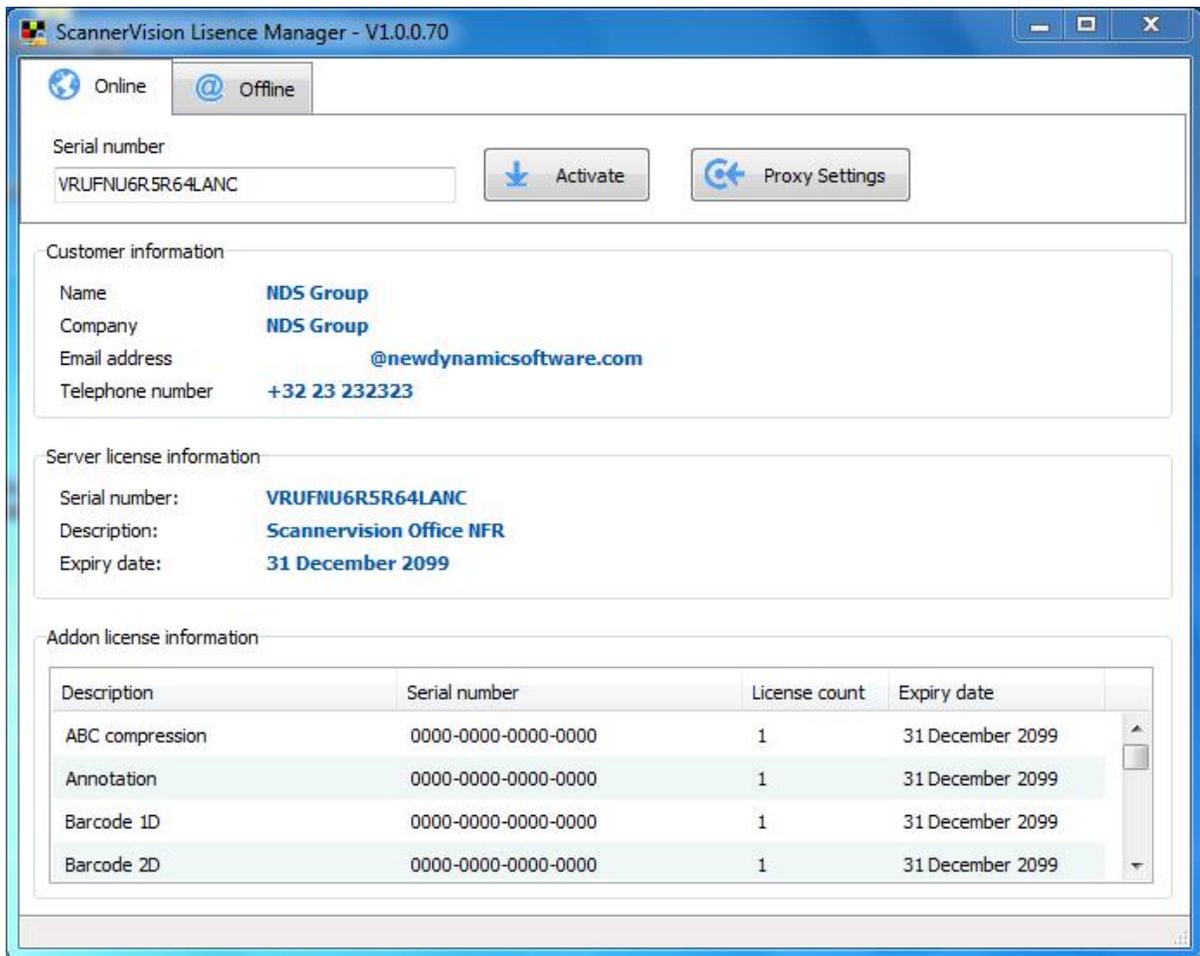
Because ScannerVision is all about simplifying tasks, activating a new license has never been easier. Once a main license key is received and you have completed your installation, click on Help from the menu bar of your ScannerVision Processing Engine, then select license as shown in the image below.



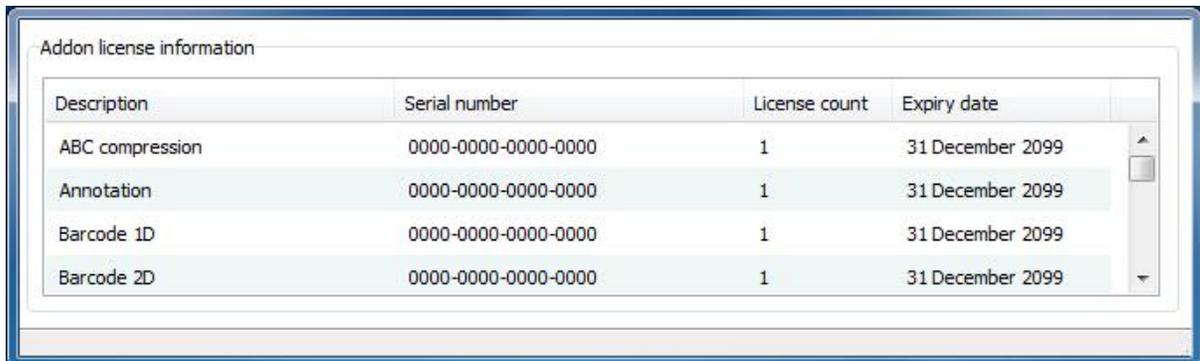
The following window will appear where a simple copy, paste (of the main license key) and click (on Activate) command will activate your license key.



Once your license activation was successful, the window will display all your and your license information as seen in the image below.



Now the magic about this procedure is that you will now no longer receive a new key for each addon. Once an addon has been created in any of the various available options, simply repeat the above steps using your main license key and your addon license will be added to the Addon license information window as seen in the image below.



Offline Activation

If you wish to do an offline activation, the following steps needs to be followed.

Once you have inserted your serial number, select the Offline tab and hit the generate key as seen in the image below.

ScannerVision Liscence Manager - V1.0.0.73

Online Offline

Generate Activate

Customer information

Name: **NDS Group**
Company: **NDS Group**
Email address: **@newdynamicsoftware.com**
Telephone number: **+32 23 232323**

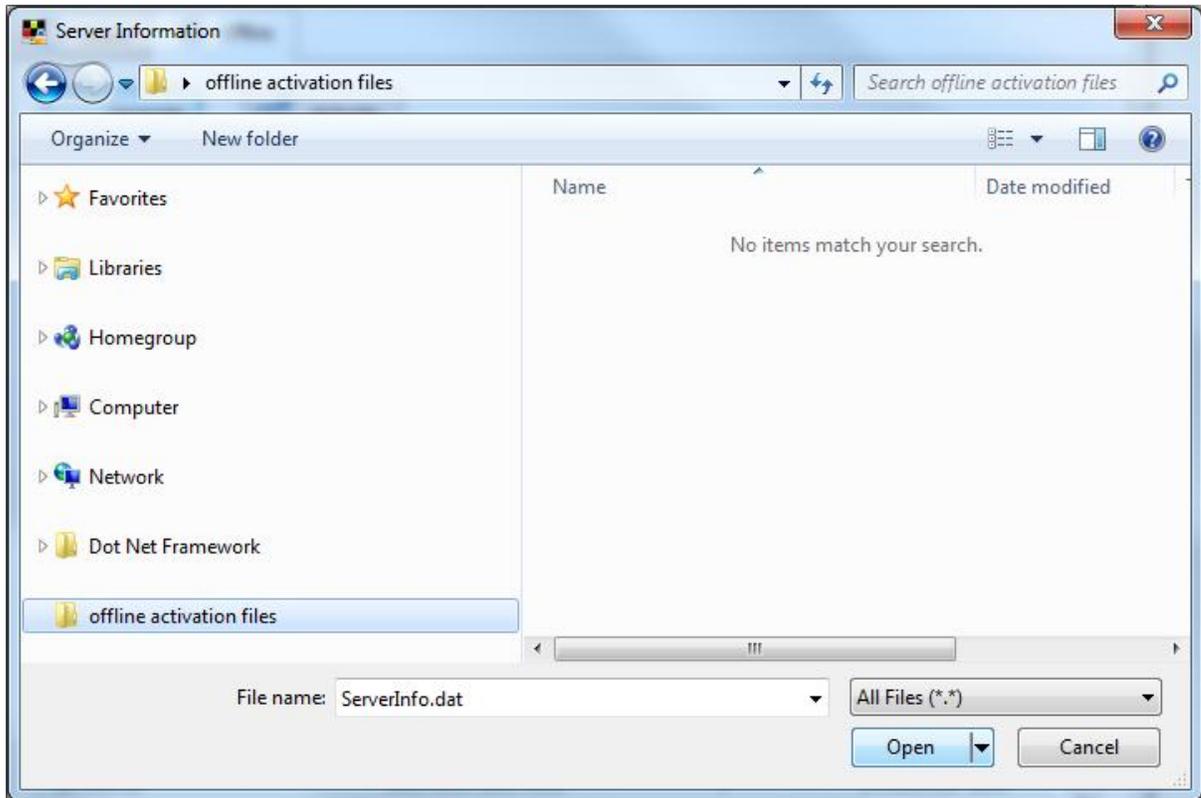
Server license information

Serial number: **XQTFWK53R3ZP56HV**
Description: **Scannervision Office NFR**
Expiry date: **31 December 2099**

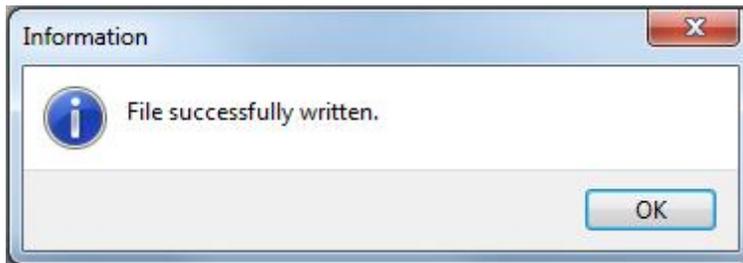
Addon license information

Description	Serial number	License count	Expiry date
ABC compression	0000-0000-0000-0000	1	31 December 2099
Annotation	0000-0000-0000-0000	1	31 December 2099
Barcode 1D	0000-0000-0000-0000	1	31 December 2099
Barcode 2D	0000-0000-0000-0000	1	31 December 2099

The following window will appear where you can select where you would like to save the file. Click Open once you are done.



The below information box will be displayed stating that your file has been successfully written.



You will now go to the New Dynamic Solutions BVBA License portal and click on the serial number of the license you are activating to display the below window. Click on .

Serial:	XQTW-FK53-R3ZP-56HV	Created:	2011/05/25	Registered:	not set
Expiration:	not set	Registered by name:	Aisha Joseph	Created by name:	Aisha Joseph
Dealer name:		Paymethod:	credits	Servicecontracts:	0
Server hostname:		Server IP:			
Reference:	Aisha	Replacement:	<input type="checkbox"/>		
Description:	Test offline activation	Comments:			

You will then be requested to browse for your generated file as seen in the image below.

Activate license

Please select the file you generated in scannervision.

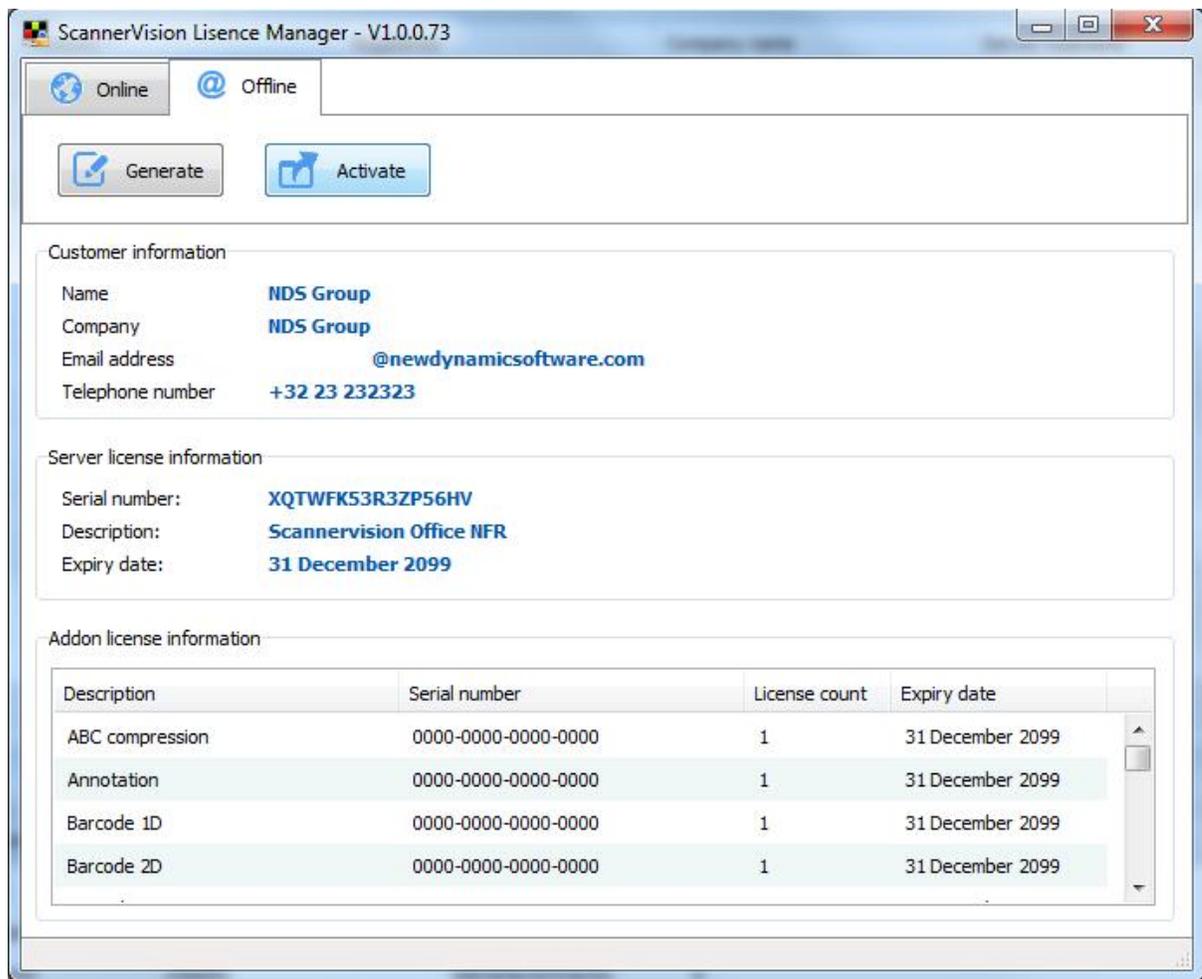
Select activation file:

Once you have selected the file, click OK on the following box for your license file to download.

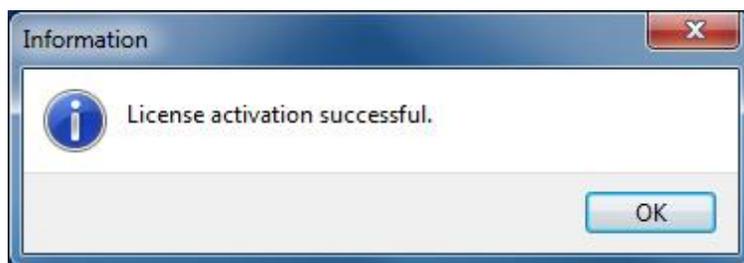
License activated

The license file download will start when you click OK. In case you would have any problems downloading the file, you will also find a copy in your mailbox.

You will now need to return to the ScannerVision License Manager window, this time click on Activate and browse for the activation license file which was downloaded from the licensing portal.



Once the license file is selected and opened, your activation is complete and the following window will be displayed stating that your activation was successful.



Note: License can only be used when connected with the same source of connection at the time of registration and activation. I.e. if a license is registered with a WI-FI connection, ScannerVision will only work if connected via WI-FI.

4.3 Installation Instructions

ScannerVision has been developed to ensure rapid implementation and configuration. To ensure a smooth and trouble free installation, please follow the steps in this section carefully. Please familiarize yourself with the minimum system requirements, and ensure that your system complies to these specifications.

[System Requirements](#)

The following steps are required to install ScannerVision:

- [Installing the Processing Engine application](#)
- [Installing the desktop clients](#)
- [Installing the MFP clients](#)
- [Configuring your network settings](#)
- [Configuring your firewall settings](#)

To uninstall ScannerVision Processing Engine please see:

[Uninstall the Processing Engine application](#)

4.3.1 System Requirements

System Requirements

Minimum Requirements:

Operating System:	Windows Server 2003
Processor:	Single Core 1.5 GHz, 32-bit processor
Available Memory:	2GB RAM
Hard Drive Space:	At least 5GB hard disk space

Recommended:

Operating System:	Windows Server 2008
Processor:	Quad Core 2.8 GHz (or higher), 64-bit processor
Available Memory:	4GB RAM
Hard Drive Space:	At least 25GB free hard disk space

4.3.2 Installing Processing Engine

Installing ScannerVision Processing Engine

To install ScannerVision Processing Engine, please follow the instructions below:

The following tasks will be performed by ScannerVision installation program:

- Searches the server for desired framework and cancels the installation process if not available.
- Searches for previous versions of the ScannerVision application. Should an earlier version of ScannerVision Processing Engine be found an upgrade will commence to upgrade the old version to the later version available.
- Install ScannerVision 2008 software on the system along with the security drivers needed.

ScannerVision Processing Engine Installation:

Step 1: Log in to the Processing Engine with an account which has administrator privileges.

Step 2: Start the installation by double-clicking on the ScannerVision Processing Engine executable file.

Step 3: A delay might be experienced while the installer checks for the required prerequisites and attempts to install any missing prerequisites.

Step 4: Once the installer has verified that all required prerequisites are met, the installation will commence.

Step 5: The ScannerVision Processing Engine installation will now commence, please click "Next" to proceed Processing Engine Installation



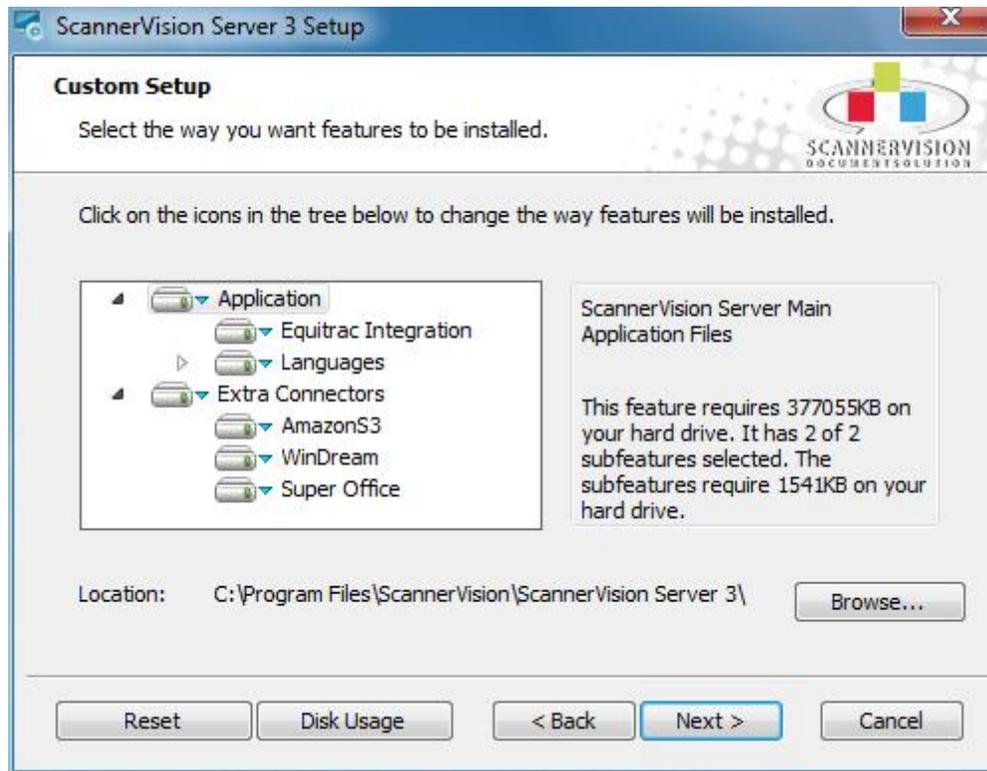
Step 6: Read the End-User License Agreement, and should you accept the License Agreement, click on "Next"



Step 7: Select either Complete or Custom installation by clicking on the desired icon.



The Custom installation allows you to configure which optional connectors are installed into the system as seen in the image below.



You only need to install a connector if you have licensed and wish to use one.

Step 8: You can then click on "Next" to start installation

Step 9: The application Processing Engine installation is now copying the files necessary to complete the installation

Step 10: Once all necessary files have been copied, click on "Finish" to Complete Installation



ScannerVision Processing Engine 3 is now installed and a shortcut has been created on the desktop. You can start the ScannerVision Processing Engine application by using the desktop shortcut or by navigating to:

Start → All Programs → ScannerVision → ScannerVision Processing Engine 3.

4.3.3 Installing Desktop Clients

Installation of Desktop Client

Step 1: Double Click on Desktop Client Setup

Step 2: Click Next

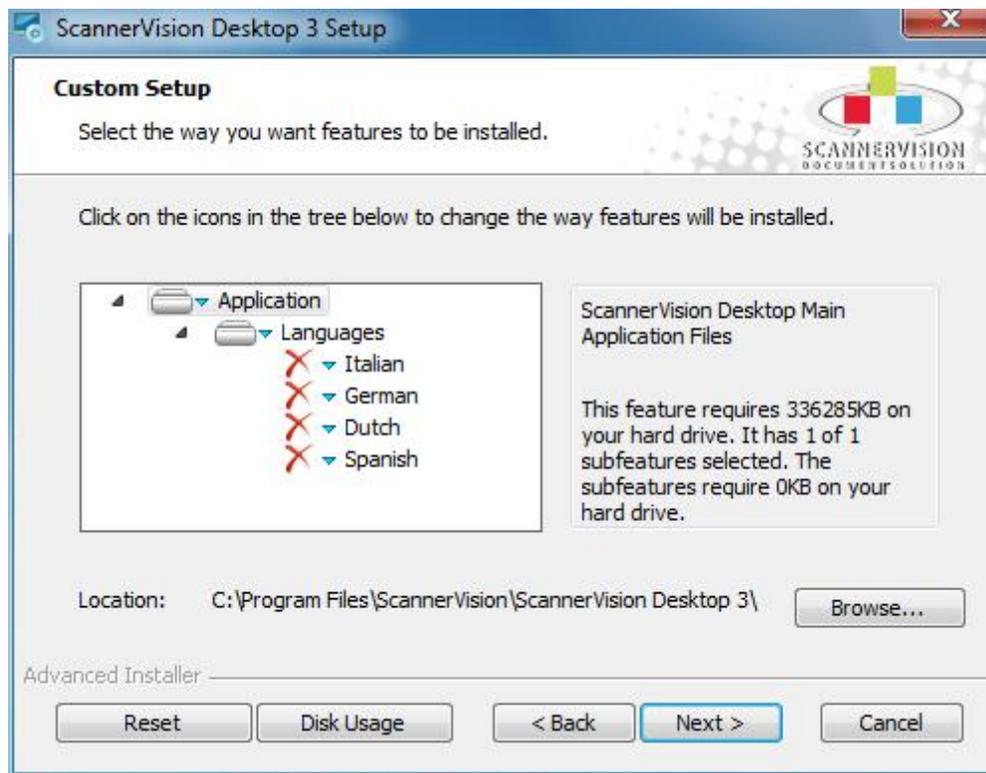
Step 3: Select License Agreement and click next



Step 4: Select the type of installation you require by clicking on the icon.



Selecting **Custom** setup type allows you to choose which language options you would like installed with the application as seen in the screen below.



Step 5: Click **Next**

Desktop Client is now installing

Step 6: Click Finish to complete the installation



4.3.4 Installing MFP Clients

Installing MFP Clients

ScannerVision

Install of ScannerVision™ MFP Client

Step 1: Power off your MFP Device prior to installation

Step 2: Insert your Java card into the according correct slot

Step 3: Power up your MFP

Step 4: Now wait approximately 2 minutes for your device to start up

Step 5: Select User tools on your device

Step 6: Select Extended Features

Step 7: Select Extended Features Settings

Step 7: Please note that on Type C & F Devices Java will be installed automatically

Step 8: Select install

Step 9: Select SD Card

Step 10: Select "ScannerVision"

Step 11: Now define the path you want to install – HARD DRIVE; ScannerVision™ will now install onto your Device

Step 12: After the installation is completed, you must reboot your device

Step 13: After the reboot you must wait approximately 2 minutes for Java to load before the application is available to use

ScannerVision™ is now installed on your MFP. You can change the default settings by entering the **password : "0000"**

4.3.5 Network Configuration

Network Configuration

ScannerVision's architecture requires the use of network technology. All communication will be achieved using the TCP/IP network protocol. Please ensure that your network is properly configured and that you have the following information on hand:

- Server IP Address
- Client(s) IP Address(es)
- Gateway Address
- Any addresses/network paths needed for document storage/routing
- SMTP details for sending ScannerVision notifications, including port details and authentication detail (if notifications are required)
- POP3 details for capturing images from a POP3 mail account, including authentication detail (if POP3 capture is required)
- Proxy Settings to ensure WAN communication and licensing of your ScannerVision product.

4.3.6 Firewall Configuration

Firewall Configuration

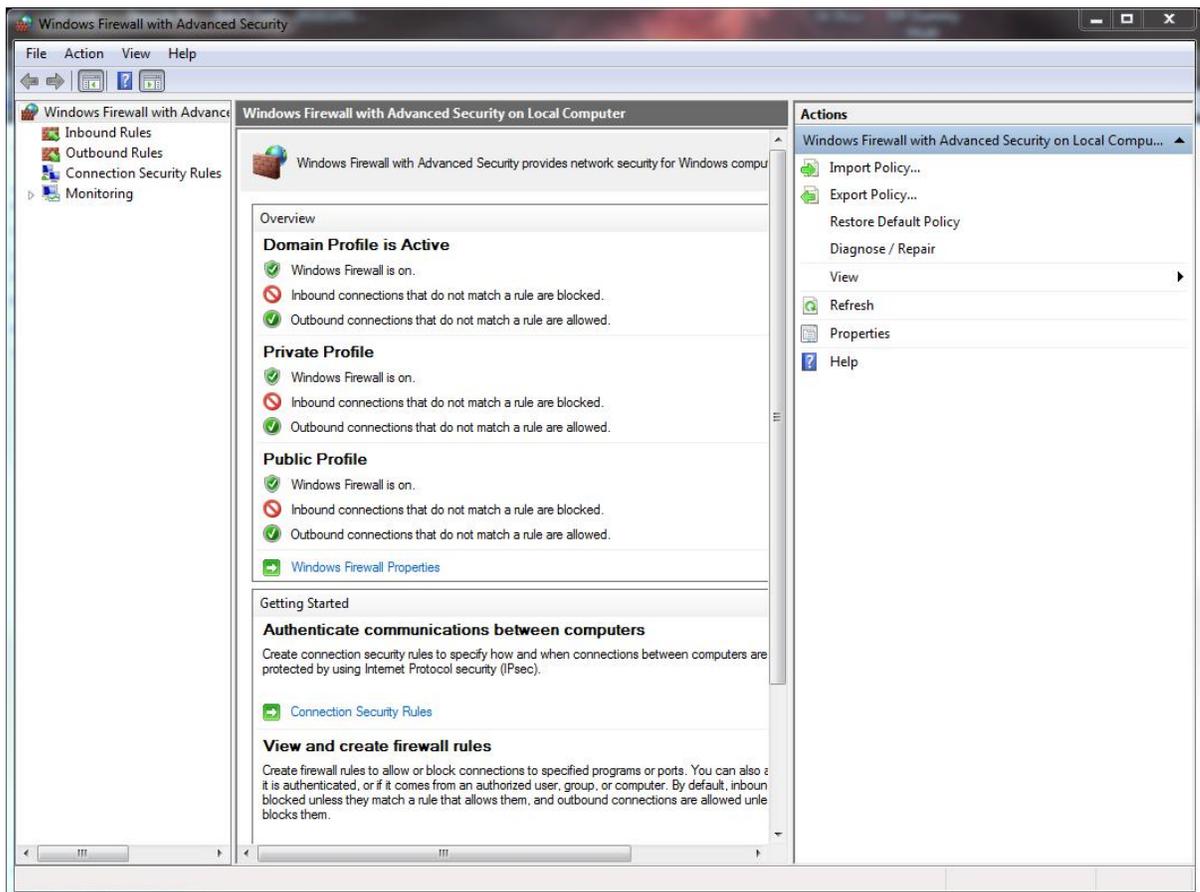
The following steps must be completed if a firewall is in place.

ScannerVision uses port 1983 by default for file transfer and template management, this port can be changed if required, please refer to [General Processing Engine Settings](#).

NOTE: The following sample procedure is based on the Windows XP Firewall. For other firewalls, individual steps may be required, please refer to the specific firewall product documentation for detail.

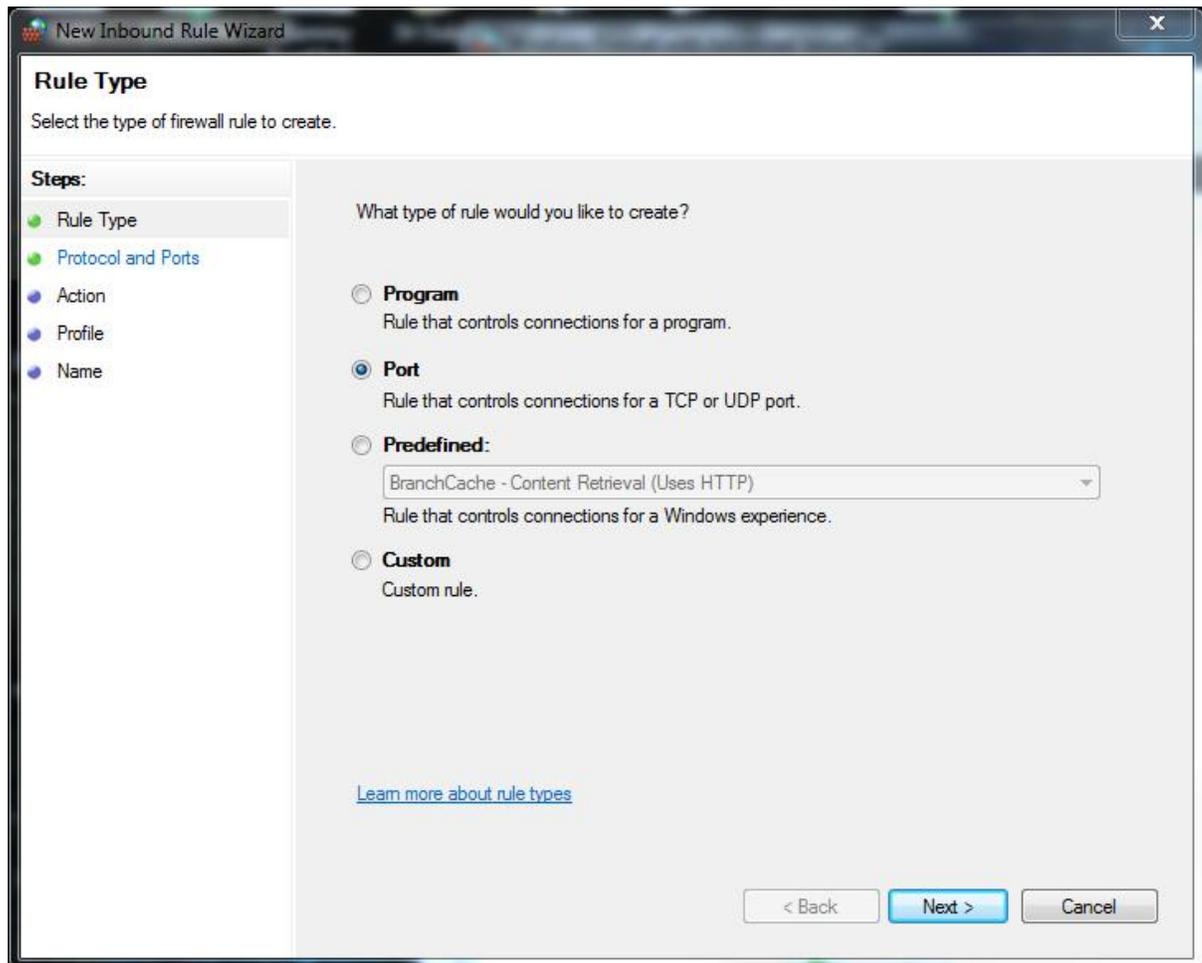
To open a port on the firewall:

1. Open Start → Control Panel → Windows Firewall
2. Click on Connections Security Rules

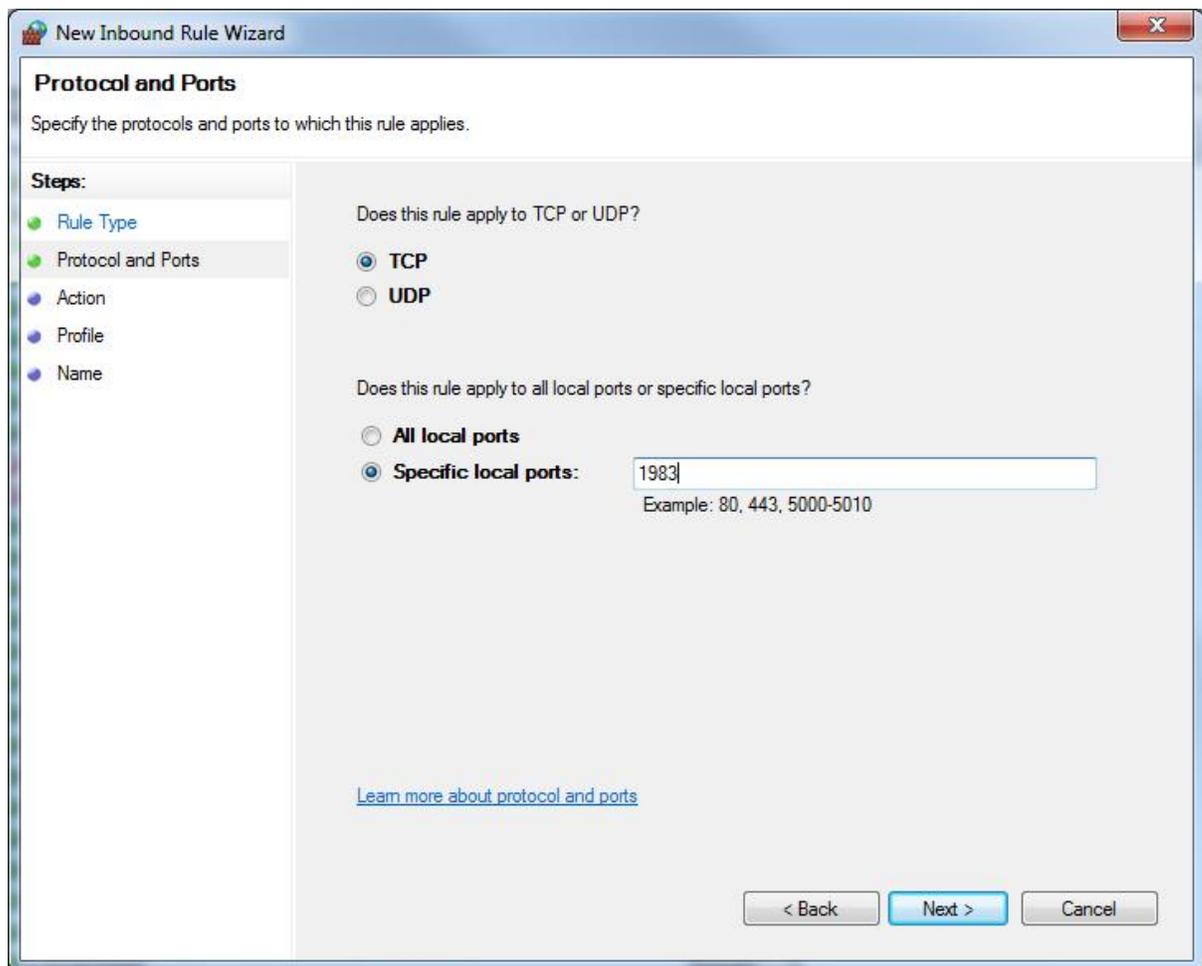


The following windows will guide you in creating configuration rules.

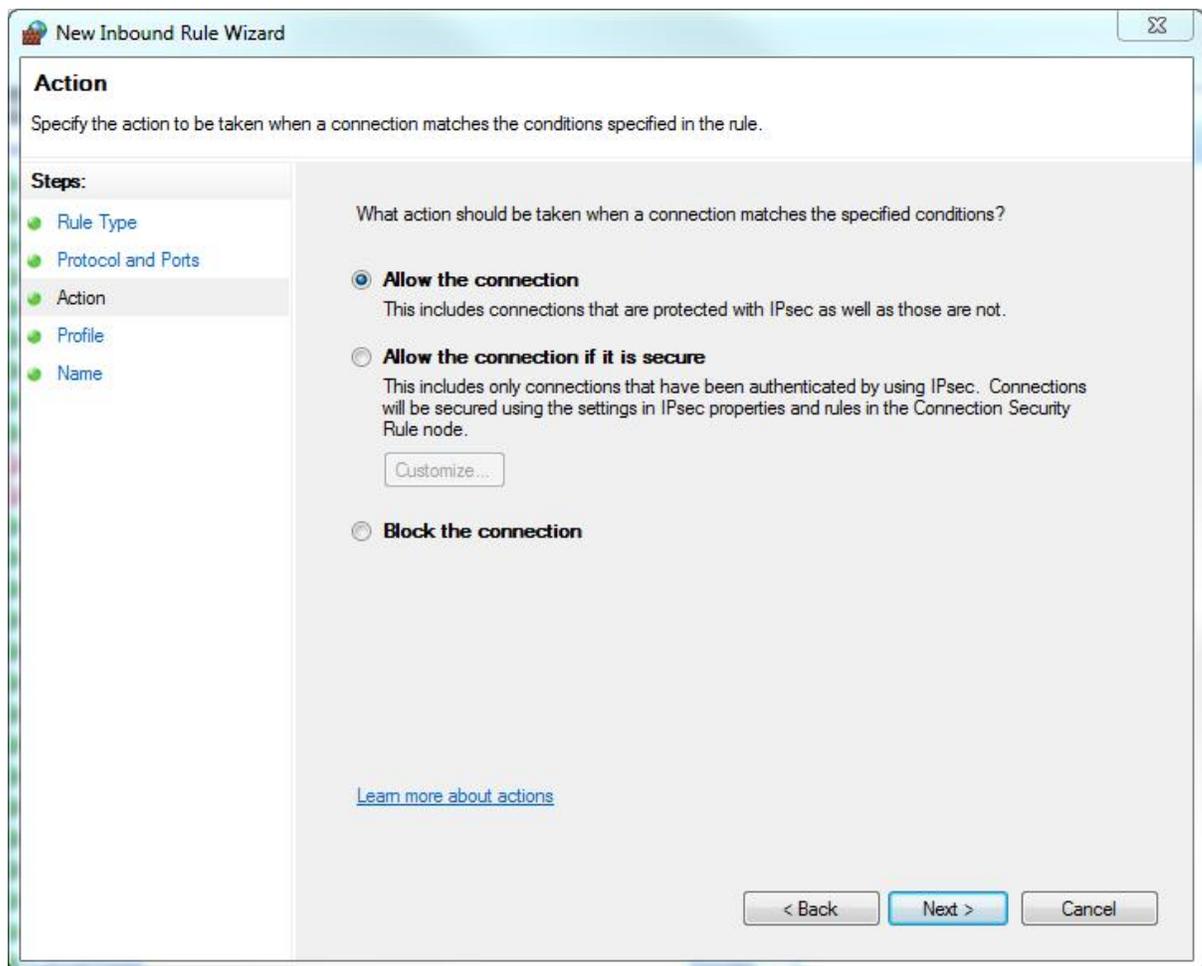
3. Ensure **Port** is selected in the **Rule Type** tab then click Next.



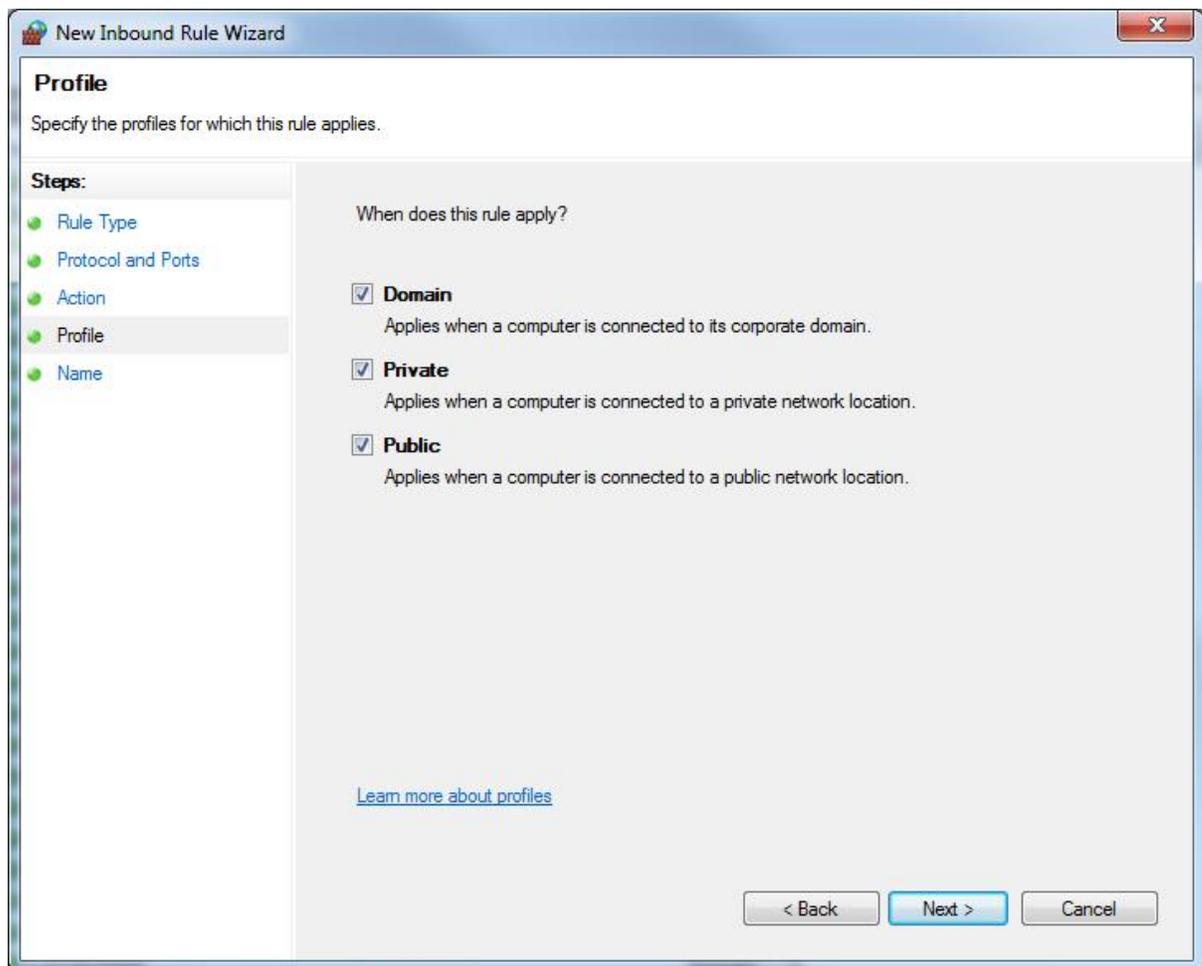
4. Select the fields as shown below, with the specific local ports set as 1983 in the **Protocol and Ports** tab. Then click on Next.



5. In the **Action tab**, select Allow the Connection before clicking on Next.



6. In the **Profile** tab, select when you would like the rules to be applied, as seen in the image below. Then click Next.



7. In the **Name** tab, all one needs to do is specify the name and description of the rule.

New Inbound Rule Wizard

Name
Specify the name and description of this rule.

Steps:

- Rule Type
- Protocol and Ports
- Action
- Profile
- **Name**

Name:
ScannerVision 3 Services

Description (optional):
To allow

< Back Finish Cancel

Click on finish to complete the Configuration settings.

4.3.7 Uninstall ScannerVision

Uninstall Procedures

The ScannerVision uninstall program removes the application from the system on which it is installed. This uninstall procedure will not remove any Microsoft Frameworks from the system.

To uninstall ScannerVision Processing Engine, please follow the following instructions:

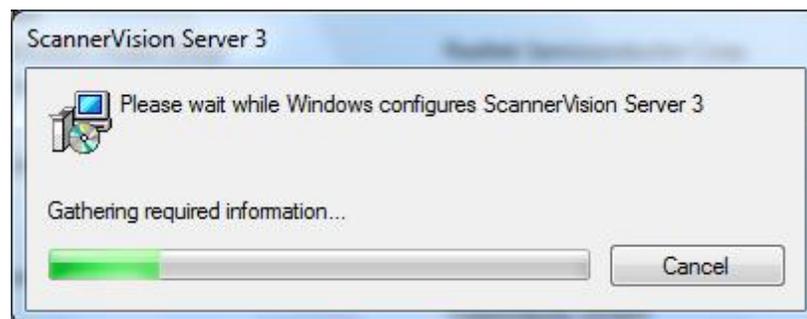
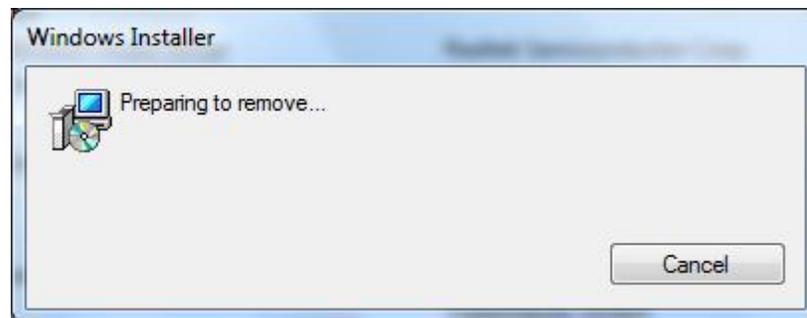
1. Start the uninstall program by clicking:

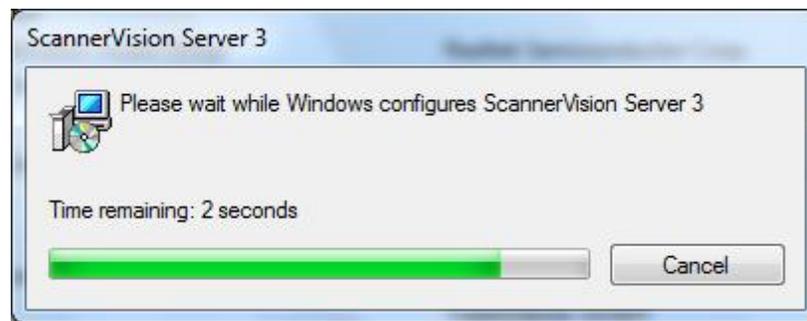
Start → All Programs → ScannerVision Processing Engine 3 → Uninstall ScannerVision

Alternatively:

Start → Control Panel → Program and Features

2. Find the line item called "ScannerVision Processing Engine 3" in the "Currently Installed Program List:
3. Click Uninstall
4. The uninstall program will commence and the following screens will follow in the respective order.





The application is now uninstalled.

NOTE: The configuration files can be found in the "Config" folder in the ScannerVision Processing Engine 3 installation folder.

This is typically C:\Program Files\ScannerVision Processing Engine 3\ScannerVision Processing Engine 3\config

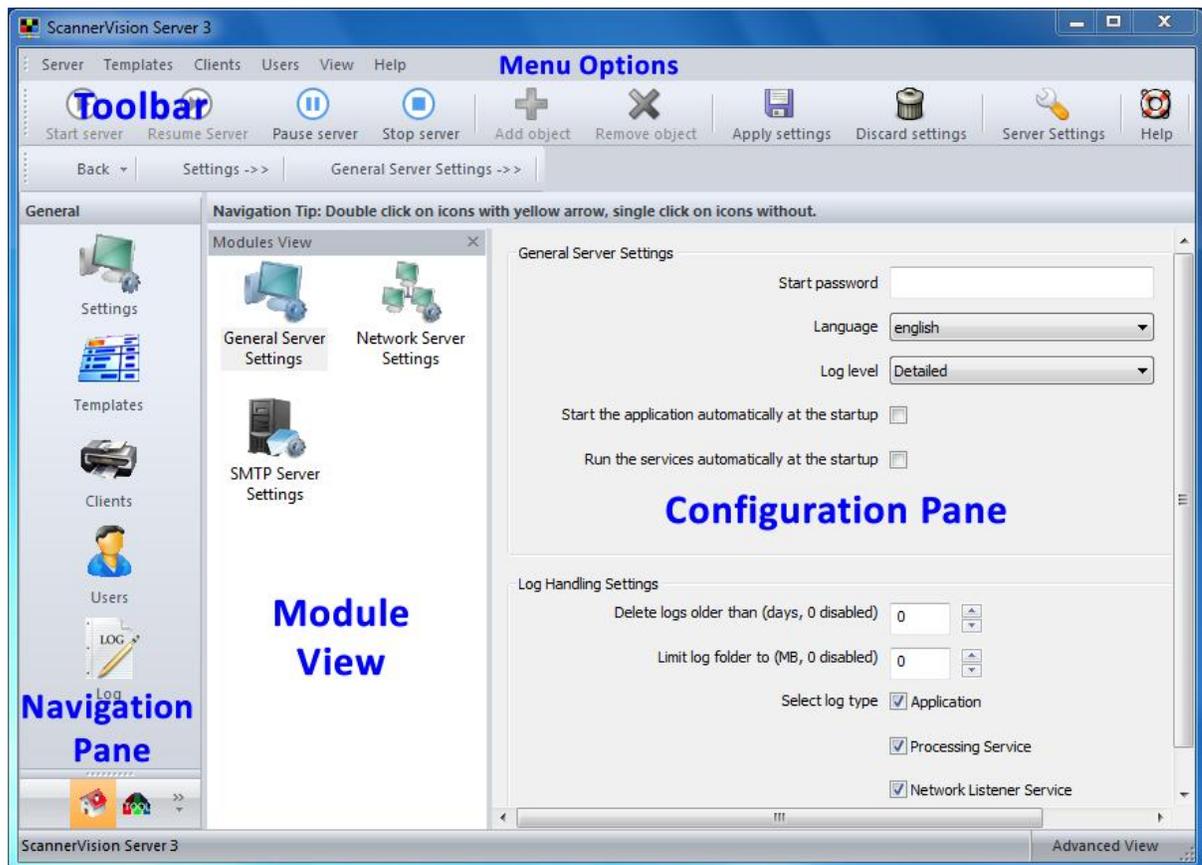
4.4 Processing Engine User Interface

Processing Engine User Interface

All the sections described in this manual are in “Advanced View” mode. Certain features are not visible when in “Simple View” mode.

The ScannerVision Processing Engine User Interface is divided into the following sections:

- [The Toolbar](#)
- [Menu Options](#)
- [Navigation Pane](#)
- [Module View](#)
- [Configuration Pane](#)



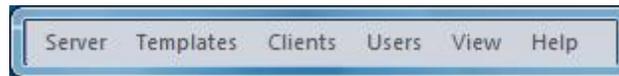
The view the Processing Engine application interface can be changed between **Simple View** and **Advanced View** by clicking on the toggle in the lower right of the screen:

Many of the advanced configuration options in ScannerVision can only be viewed in **Advanced View**.

4.4.1 Menu Options

Menu Options

The Menu Option contains the following options, and can be used for quick navigation whilst using ScannerVision Processing Engine. The Menu Options is always visible irrespective in what pane the user navigates.



Processing Engine:

Start Processing Engine: Click on this option to start the ScannerVision Processing Engine services.

Resume Processing Engine: This tab allows user to resume the processing's after "Pause".

Pause Processing Engine: Pause Processing Engine will cause the processing of templates to be paused. The pause Processing Engine function will allow for template processing to be changed/alterd without stopping the scan clients.

Stop Processing Engine: This option will stop all ScannerVision Processing Engine Services. No scan client can connect to the Processing Engine whilst in "Stop Processing Engine" mode.

Templates :

Used to View, Add, Delete and Duplicate ScannerVision Templates and Freeform Templates

Clients:

To Show, Add MFP Clients, Add Desktop Clients, Remove Clients , Duplicate Clients, Add Client Groups and Remove Client Groups

Users:

To Show, Add Users, Remove Users, Duplicate Users, Add User Groups and Remove User Groups

View:

Allows to show or hide the various toolbars in the Processing Engine User Interface

Help:

Opens this Help File

License: Used to license Main License, Module Licenses, Connector Licenses and Client Licenses.

Check Updates: Using this option will check via an internet connection for any updates of the ScannerVision Processing Engine Application.

About ScannerVision:

This section contains detailed information concerning the version, licensing and the licensed modules of ScannerVision Processing Engine.

4.4.2 The Toolbar

The Toolbar

The ScannerVision Processing Engine have 4 distinct modes of operation, which is linked to the ScannerVision Processing Engine Services. These modes of operation can be found in the Toolbar.

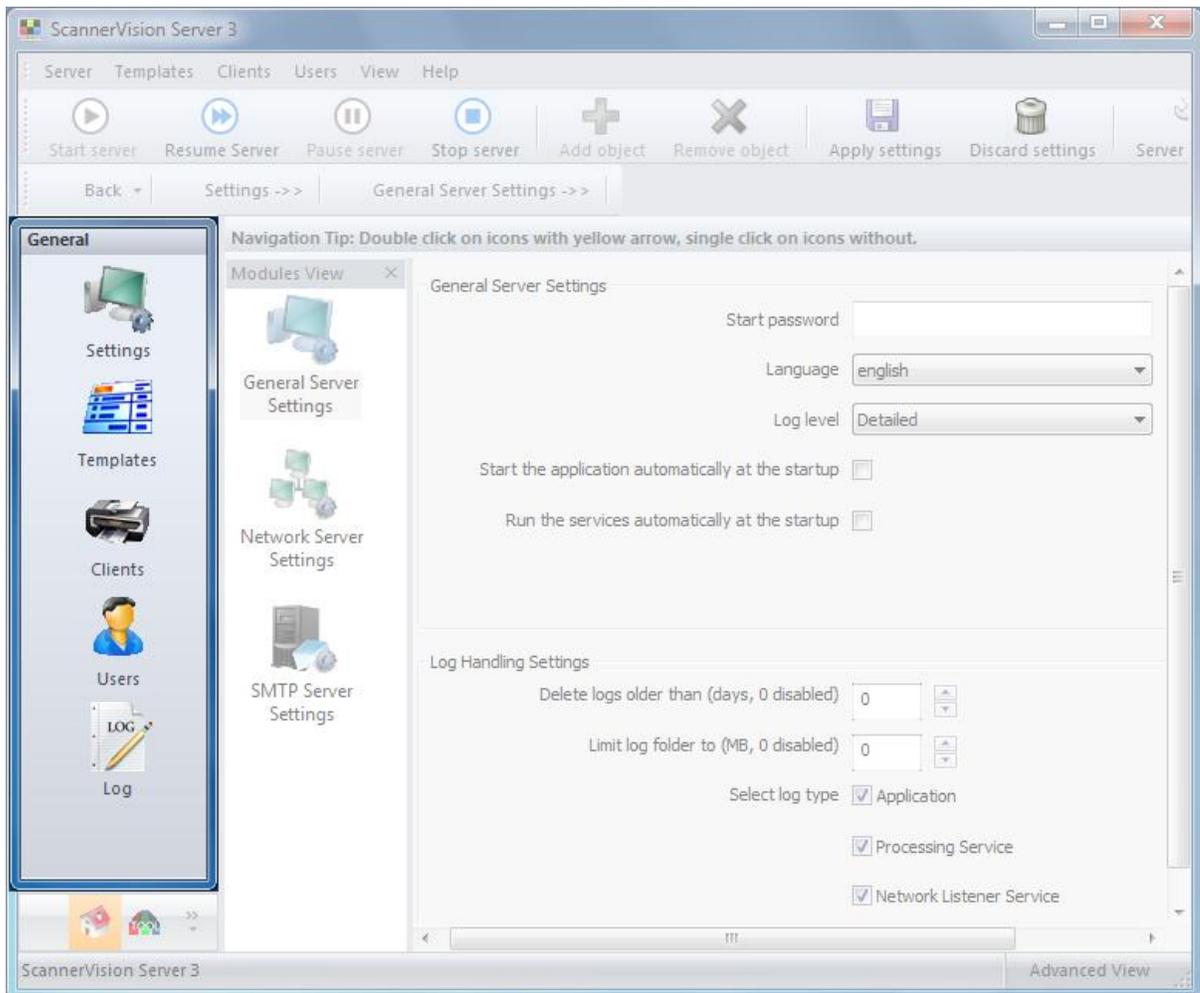


 Start server	Click on this option to start the ScannerVision Processing Engine services
 Pause server	Pause Processing Engine will cause the processing of templates to be paused. The pause Processing Engine function will allow for template processing to be changed/alterd without stopping the scan clients
 Stop server	This option will stop all ScannerVision Processing Engine Services. No scan client can connect to the Processing Engine whilst in "Stop Processing Engine" mode
 Add object	Used at anytime during various action, some examples would be adding a template, adding a user, adding a group etc
 Remove object	Used at anytime during various action, some examples would be removing a template, removing a user, removing a group etc
 Apply settings	This button will save any configuration changes, irrespective of which operation are changed. Ensure clicking this option whenever any change is made before navigating to any other options or panes
 Discard settings	This button will discard any configuration changes, irrespective of which operation are changed. Ensure clicking this option whenever any change needs to be discarded before navigating to any other options or panes
 Server Settings	Processing Engine Settings button will take you to the Settings pane
 Help	Opens this Help File

4.4.3 Navigation Pane

Navigation Pane

The Navigation Pane can be used to quickly navigate to any of the following configuration options:



Operation Description

 Settings	This option will open the Settings menu where General Processing Engine Settings, Network Server Settings and SMTP Server Settings can be configured
 Templates	Template button will allow addition, deletion and editing of ScannerVision templates
 Clients	Client and Client Groups can be added, deleted or configured using this option

 Users	Users and User Groups can be added, deleted or configured using this option
 Log	Detailed logs can be accessed for performance or troubleshooting

Settings: For more information about the application Settings visit [Settings](#).

Template definition: For more information about the Template definition visit [Template Settings](#)

Client definition: For more information about the Client definition visit [Client Settings](#).

User definition: For more information about the User definition visit [User Settings](#).

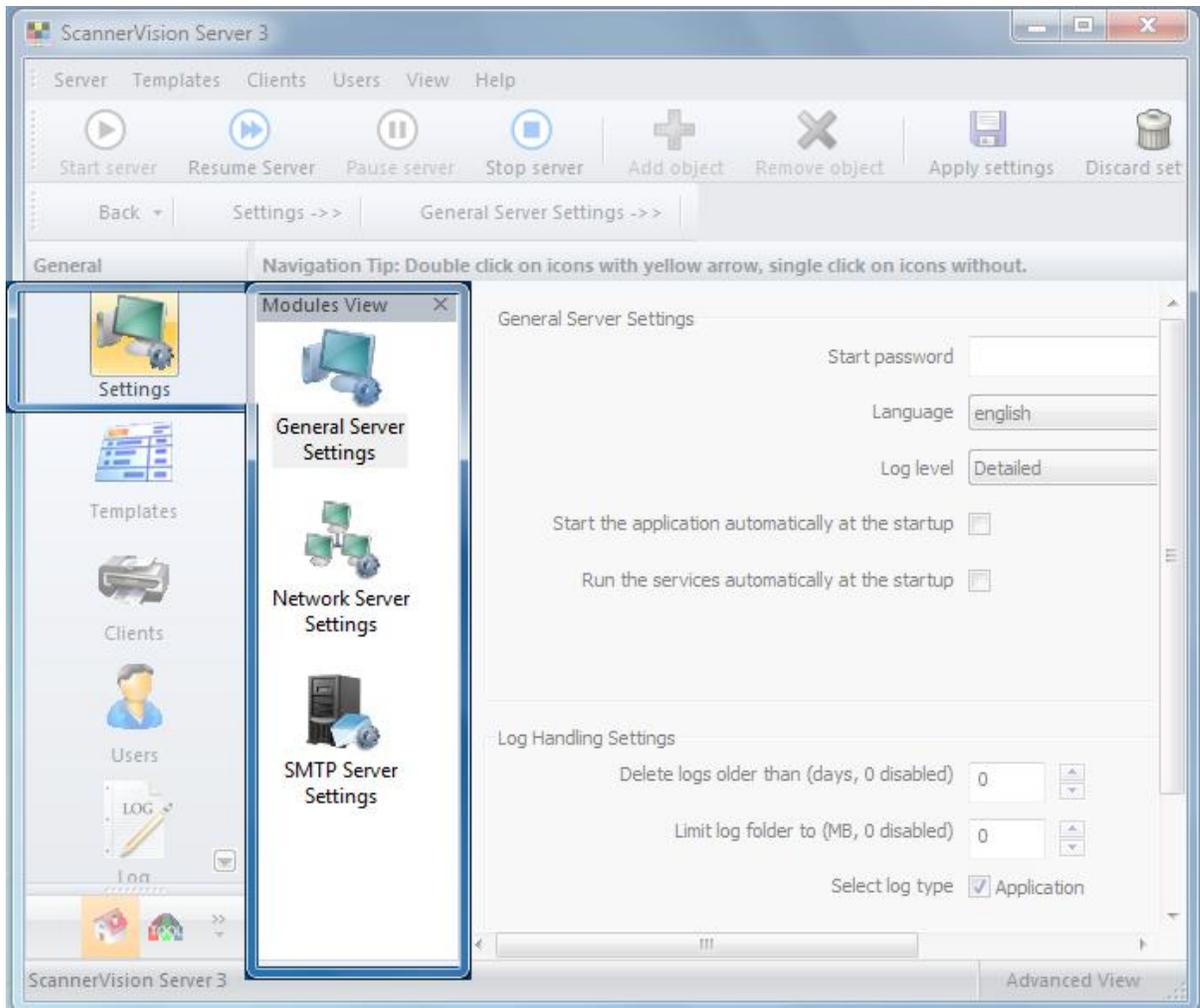
Log definition: For more information about the Log definition visit [Log](#)

4.4.4 Module View

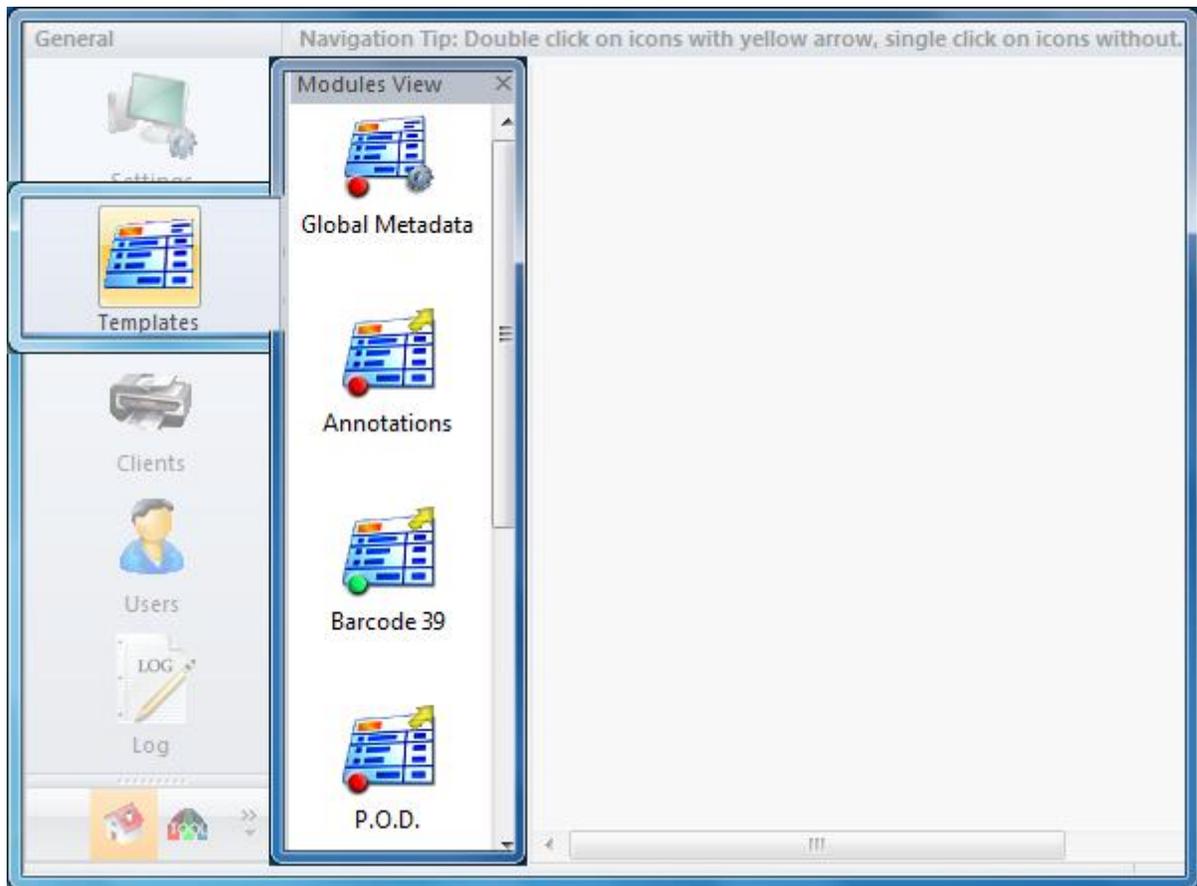
Module View

The Modules View will change depending on the option selected from the Navigation Pane.

In the example below, selecting the Settings option will display the various available options to the settings section.



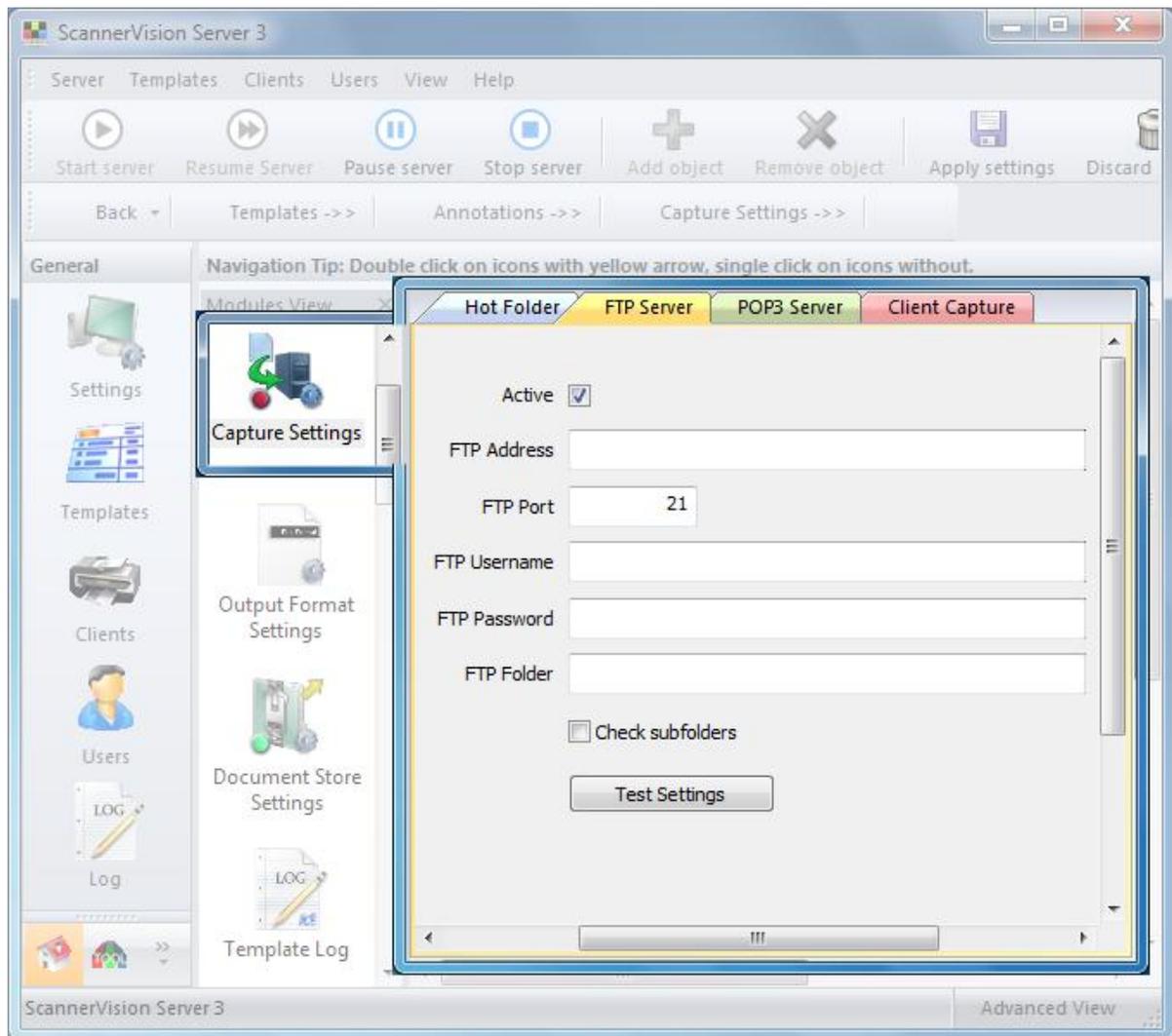
Clicking on the Templates option in the Navigation pane, will display existing templates in the module view window:



4.4.5 Configuration Pane

Configuration Pane

The Configuration Pane will show details of modules selected in the Modules view:



4.5 Settings

Settings

In the Settings window, the user will be able to configure parameters required to operate ScannerVision, according to their system and application requirements.



The following settings will be found in this section:

- [General Processing Engine Settings](#)
- [Network Server Settings](#)
- [SMTP Server Settings](#)

4.5.1 General Server Settings

General Processing Engine Settings

General Processing Engine Settings must be used to setup general option according to the environment in which ScannerVision Processing Engine will operate.



Start Password:

Used to set the password to start ScannerVision Processing Engine application (default is "SV2008").

Log level:

Through this feature user selects the logging level for the [Log](#) function. There are four different log levels available:

Info:

All actions, warnings and errors are recorded in the [Log file](#).

Errors:

All errors are captured in the [Log file](#).

Warnings:

All warnings are captured in the [Log file](#).

Details:

All available information from all action, including errors and warnings and debug information are captured in the [Log file](#).

Start Processing Engine automatically at the startup:

When selected, the ScannerVision application will automatically initiate at system startup.

Run Processing Engine automatically at the startup:

When selected, the ScannerVision Processing Engine Service will automatically start at system startup.

NOTE:

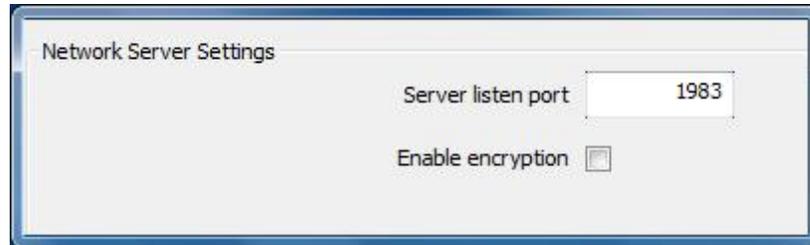
Language is auto-selected according to the Windows local settings. If a local language is not available, English language will be used as default.

4.5.2 Network Server Settings

Network Server Settings

The default network port for communications can be configured in this section. The default port value is "1983", but the port used by ScannerVision can be changed if required.

Also see: [Network Configuration](#)



What's a TCP/IP Port Number?

TCP uses the notion of port numbers to identify sending and receiving application end-points on a host or Internet sockets. Each side of a TCP connection has an associated 16-bit unsigned port number (1-65535) reserved by the sending or receiving application.

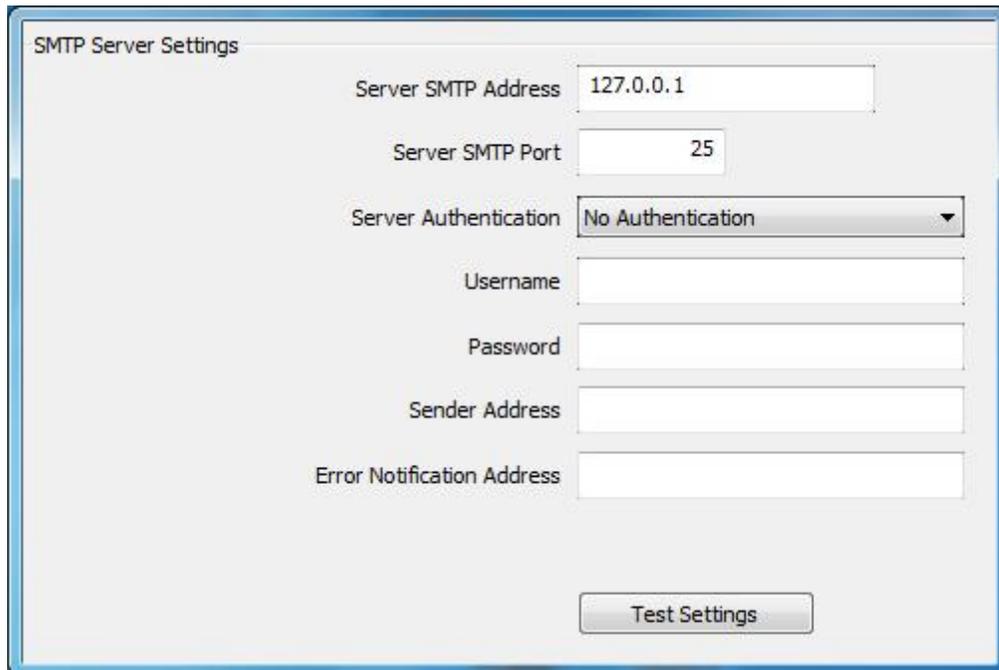
Arriving TCP data packets are identified as belonging to a specific TCP connection by its sockets, that is, the combination of source host address, source port, destination host address, and destination port.

This means that a server computer can provide several clients with several services simultaneously, as long as a client takes care of initiating any simultaneous connections to one destination port from different source ports.

4.5.3 SMTP Server Settings

SMTP Server Settings

SMTP Server Settings are used to configure the email settings used to send notifications regarding general operation of the ScannerVision Processing Engine.



Server SMTP Address:

Enter the IP Address of the mail server. In order to send an e-mail a valid SMTP server needs to be specified.

Server SMTP Port:

Enter the Port number of the SMTP server, the default port used is port 25.

Server Authentication:

This specifies the authentication method of the SMTP server to be used, only if the server requires an authentication. Options available include; No Authentication, CRAM MD5, SMTP Authentication, SMTP Clear Authentication and MS NTLM Authentication.

Username:

If the specified SMTP server requires authentication, enter the Username in this section.

Password:

If the specified SMTP server requires authentication, enter the Password in this section.

Sender Address:

The address that will be showed as "From" in an email.

Error Notification Address:

This is the email address where the error notifications will be send to. To send error notification mails to more than one recipient, separate e-mail addresses with " ; ".

Test Settings:

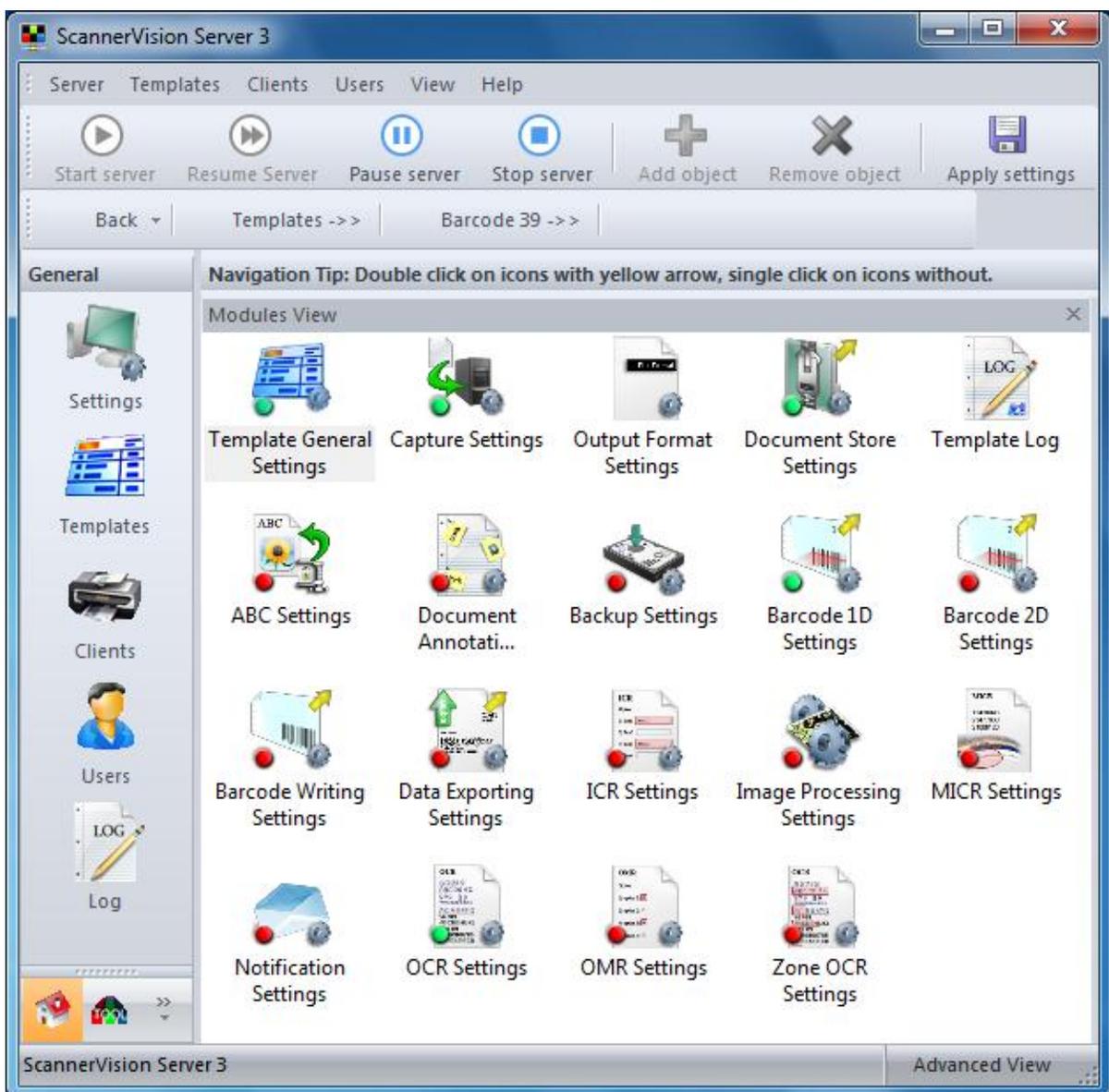
Click this option to verify the operation of the SMTP settings. ScannerVision Processing Engine will send an e-mail to the "Error Notification Address" specified for testing purposes.

4.6 Templates

Templates

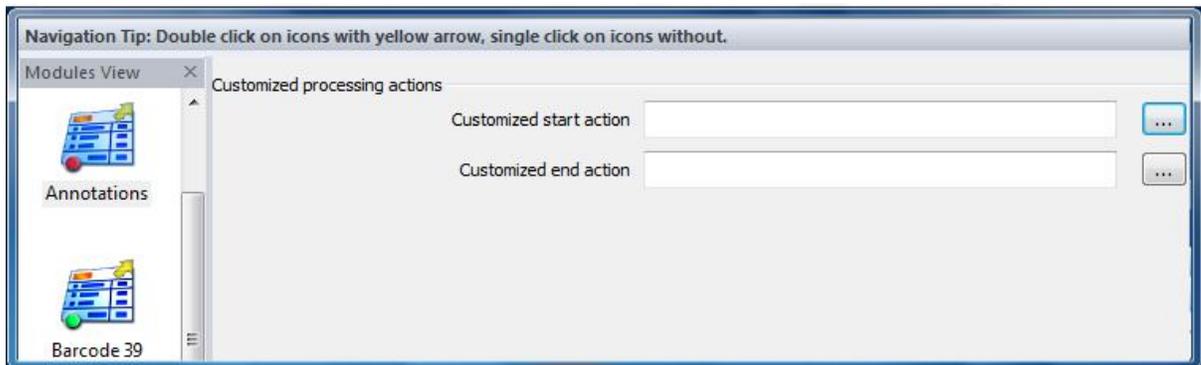
ScannerVision Templates are used to group rules specific to a process together, ensuring that the specific documents are always processed in a manner conducive to the business process requirements.

Various options can be configured in each template, however the methodology will always follow the "Capture, Process, Store" method. For each template, a capture option can be configured, multiple processing options can be configured and multiple store destinations can be specified, in any one of the file types allowed.



Custom scripts can be defined using VBScripts to be called either when a template is started, or after a

template has successfully completed its process.



Please see [General Template Settings](#) and [Creating a Template](#) for more details on creating a template.

4.6.1 General Template Settings

General Template Settings

General Template Settings are used to set global variables for the selected template.

Template General Settings

Active

Template ID {72AAD842-9AB4-4165-A3BD-3838D56F6CEC}

Template Name Annotations

Template Description Inserting annotations on invoices.

Move to the reject folder after (0: disabled) 0

Template Button Icon Share Point.bmp

Processing Time (hh:mm:ss) 00:00:10

Use fixed time (no interval)

Active:

Toggle the selected template active/inactive.

Template ID:

This is an internal ScannerVision unique reference for the template.

Template Name:

A user friendly name must be added to associate the template with the process to be created. In the example above, the template have been named "Invoices" referring to the type of documents to be scanned using this template.

Template Description:

A short description for the template created can be added for future reference. This is optional.

Move to the reject folder after (0: disabled):

Should any error occur, the ScannerVision Processing Engine will re-try to process the document until successful. The number of re-tries can be limited using this option, after which the document will be stored in the rejected folder. Setting this option to 0, ScannerVision will continue to attempt to process this document, which might leave other documents unprocessed.

Template Button Icon:

Bitmap images can be used for visual association of the template to a specific process. Custom images can be created, using any 24-bit Bitmap images, sized to 96x96 pixels. Custom images must be saved in C:\Documents and Settings\All Users\Application Data\ScannerVision\Buttons. (Assuming C: is the installation drive, please substitute using the relevant drive letter)

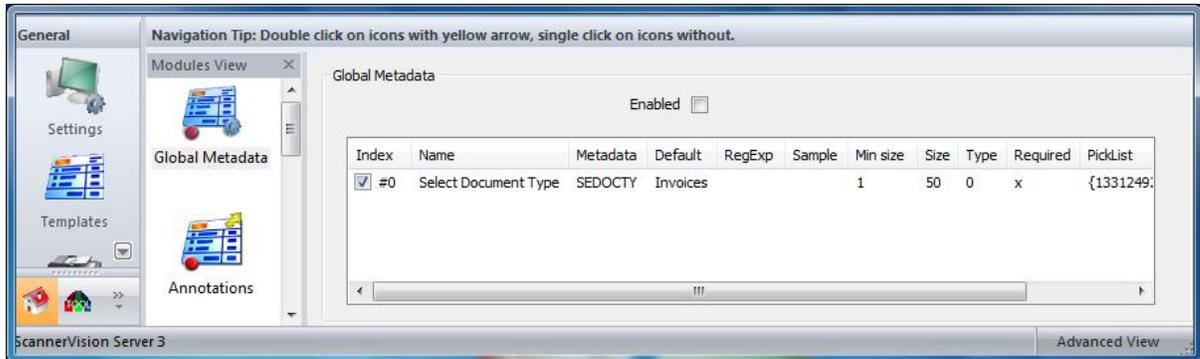
Processing Time (hh:mm:ss):

The processing time is the interval after which the Processing Engine will check for new document to be processed after startup or the last processed document. Default is 30 seconds. Selecting the option "Used Fixed time", the Processing Engine will check for new documents at a set time, for example every day at 22:00:00 ScannerVision will process any documents. This feature is often used for scheduled processing after office hours to minimize any bandwidth impact.

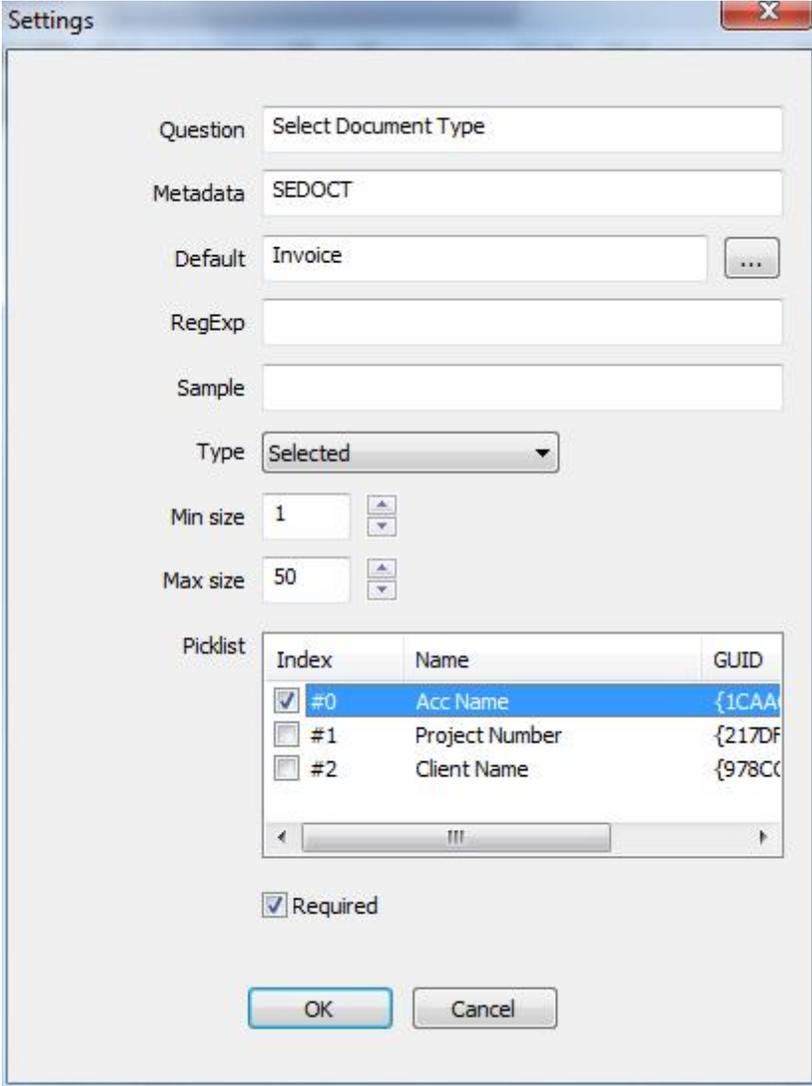
4.6.2 Global Metadata

Global Metadata

Global Metadata can be used for metadata questions which might be common throughout several different templates. Any Global Metadata questions configured, can be selected within any template, without re-creating a metadata question. For example if "document title" was required in every template, then it may be entered once in the Global Metadata screen where it will subsequently appear in every active template.



Global metadata questions can be added, edited or deleted by right clicking in the Global Metadata pane and selecting the required action. When adding a metadata question, the following screen will appear, from where custom metadata questions can be configured.



The screenshot shows a 'Settings' dialog box with the following fields and controls:

- Question:** Select Document Type
- Metadata:** SEDOCT
- Default:** Invoice (with a browse button '...')
- RegExp:** (empty text box)
- Sample:** (empty text box)
- Type:** Selected (dropdown menu)
- Min size:** 1 (with up/down arrows)
- Max size:** 50 (with up/down arrows)
- Picklist:** A table with columns Index, Name, and GUID.

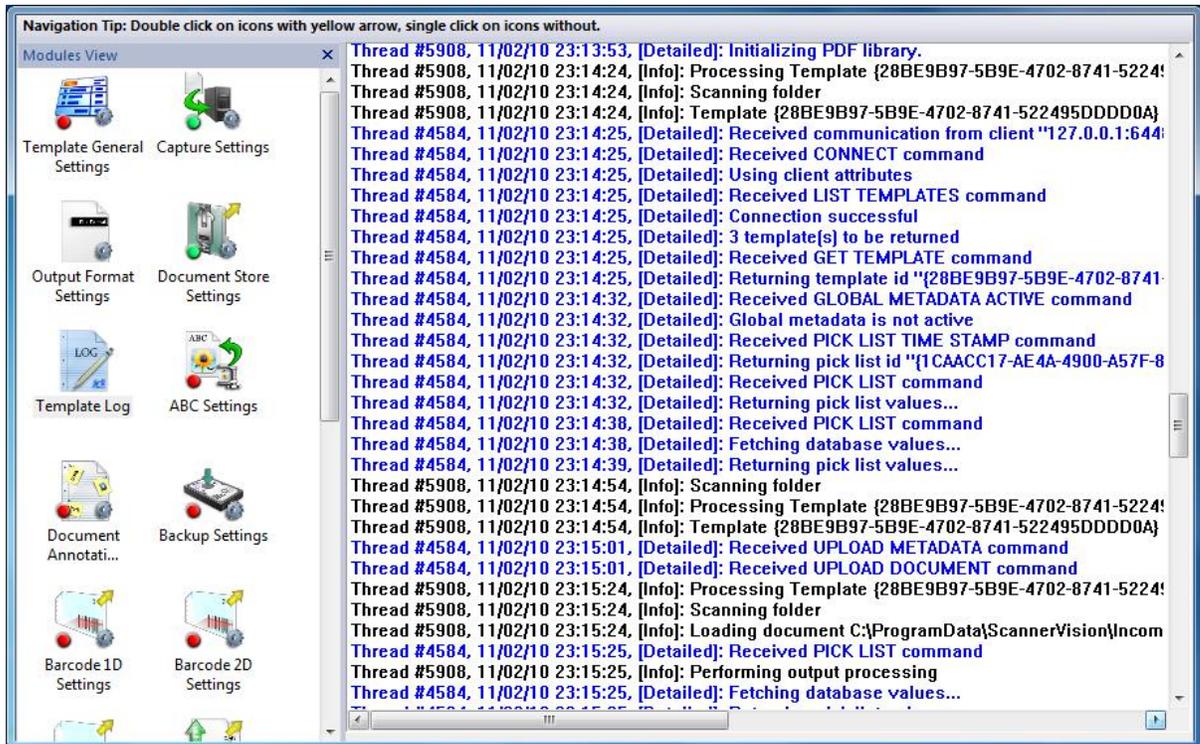
Index	Name	GUID
<input checked="" type="checkbox"/> #0	Acc Name	{1CAA...
<input type="checkbox"/> #1	Project Number	{217DF...
<input type="checkbox"/> #2	Client Name	{978CC...
- Required:** Required
- Buttons:** OK and Cancel

For more information on metadata questions, please see [Adding Metadata Questions](#)

4.6.3 Template Log

Template Log

The Template Log will log all activities pertaining to the specific template. This information can be used for debugging when an error occurs. To increase or decrease the information logged here, select the desired level of logging from the [General Processing Engine Settings](#) screen.



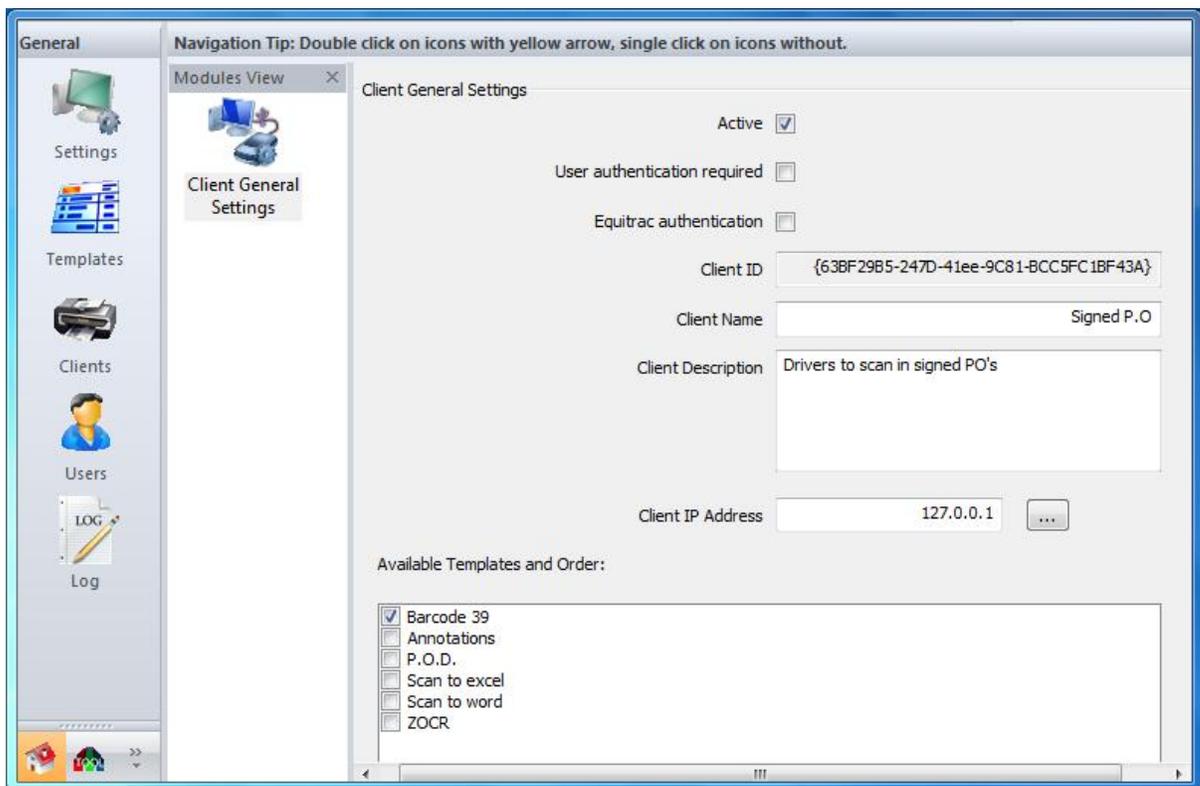
4.7 Clients

Clients

Scan Clients are clients used to index and/or send documents to the ScannerVision Processing Engine for processing. These clients are typically used when manual indexing and classification of documents are required. Templates must be assigned to every scan client which is required to use the said template. Scan Clients can include both ScannerVision Desktop Clients or Multi Functional Device Embedded Scan Clients. Scan Client must be specified within [Client Groups](#). Adding a Client to a Client Group requires a user to use the Add Object Button in the [Toolbar](#) and selecting if the scan client is a ScannerVision Desktop Client or a MFP Client.



Once a Client object have been added, the following needs to be configured for the said client.



Client General Settings have the following options available:

Active:

Toggle a client active/inactive

User Authentication Required:

Specifies if the scan client requires users to authenticate, the authentication specified in [User Settings](#)

will be enforced.

Equitrac Authentication:

Allows for Equitrac Authentication to be enforced on the Scan Client.

Client ID:

This is an internal ScannerVision unique reference for the Scan Client.

Client Name:

A user friendly name must be added to associate the Scan Client with a scan station.

Client Description:

A short description for the Scan Client can be added for future reference. This is optional. (Example: Accounts Scanner)

Client IP Address:

The address of the scan client, this will either be the IP address of the Multi Functional Device with the embedded scan client, or the IP address of the computer on which ScannerVision Desktop have been installed onto.

Available Templates and Order:

This is a list of all active templates and orders.

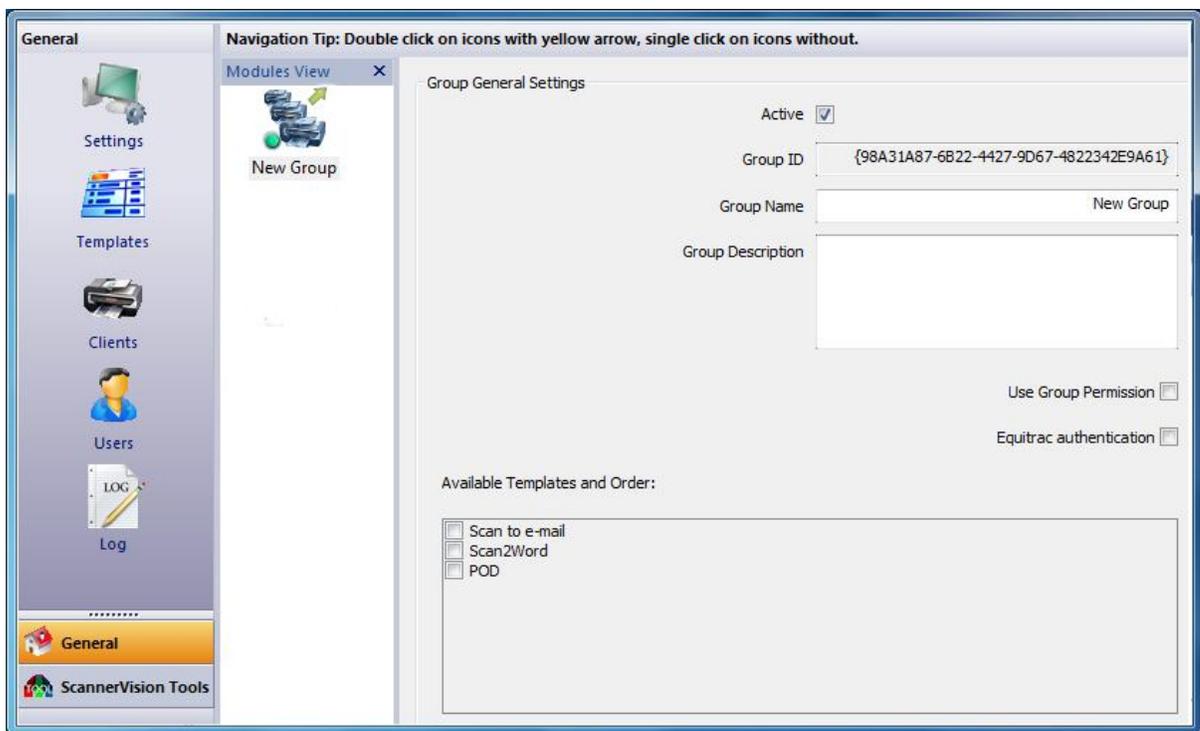
4.7.1 Client Groups

Client Group

Scan Groups must be created to which the Scan Clients will be associated. Adding a Client to a Client Group requires a user to use the Add Object Button in the [Toolbar](#) and selecting if the scan client is a ScannerVision Desktop Client or a MFP Client.



Once a Client Group object have been added, the following needs to be configured for the said client.



Client Group General Settings have the following options available:

Active:

Toggle a client group active/inactive

Group ID:

This is an internal ScannerVision unique reference for the Scan Client Group.

Group Name:

A user friendly name must be added to associate the Scan Client group with Scan Clients.

Group Description:

A short description for the Scan Client Group can be added for future reference. This is optional.

(Example: Accounts Department)

Use Group Permissions:

Enabling this option will force all scan clients in the group to have access to the same templates.

Equitrac Authentication:

Allows for Equitrac Authentication to be enforced on the entire Scan Client Group.

Available Templates and Order:

This is a list of all active templates. The Templates can be associated to a scan client group by selecting the required template name in this box, before that specific client will be available on the scan client group. Use Group Permission must be enabled to use this feature.

4.8 Users

Users

Users are added for authentication purposes. This also allows for assuring that users only see templates pertaining to their specific job functions. Templates must be assigned to every user which is required to use the said template. Users can authenticate on either ScannerVision Desktop Clients or Multi Functional Device Embedded Scan Clients, to which they have been given access in the [Client](#) section of ScannerVision Processing Engine. Users must be specified within [User Groups](#). Adding a User to a User Group requires a user to use the Add Object Button in the [Toolbar](#).



Add object

Once a User object have been added, the following needs to be configured for the said user.

The screenshot shows the 'User General Settings' dialog box for a user named 'Natasha Jones'. The dialog is divided into several sections:

- Navigation Tip:** Double click on icons with yellow arrow, single click on icons without.
- Modules View:** A list of modules with a yellow arrow pointing to 'Natasha Jones'.
- User General Settings:**
 - Active:** A checked checkbox.
 - User ID:** A text field containing the GUID: {D8328F58-3873-4765-B64D-75E9A36B3FD4}.
 - Name / Username:** A text field containing 'Natasha Jones'.
 - User Description:** An empty text area.
 - User E-Mail:** An empty text field.
 - Home Folder:** An empty text field with a browse button (three dots).
 - Authentication:** A dropdown menu set to 'ScannerVision'.
 - Authentication Server:** An empty text field.
 - Password:** An empty text field.
 - Available Templates and Order:** A list of templates with checkboxes:
 - Annotations
 - Barcode 39
 - P.O.D.

User General Settings have the following options available:

Active:

Toggle a client active/inactive

User ID:

This is an internal ScannerVision unique reference for the user object.

Name / Username:

The name this user will use to authenticate on ScannerVision.

User Description:

A short description of the user can be added for future reference. This is optional. (Example: Accounts Clerk)

User E-Mail:

The E-Mail address of the user. This data can be used when creating processes which requires documents to be routed to a user's email account.

Home Folder:

The folder to be used whenever the user scan to it's own folder.

Authentication:

ScannerVision can be configured to integrate into various authentication mechanisms. Authentication methods supported include ScannerVision Authentication, Windows Authentication, LDAP, Active Directory and Equitrac Authentication.

Authentication Server:

The IP address of the authentication server must be added to this section.

Password:

The password to access the authentication server.

Available Templates and Order:

This is a list of all active templates. Templates must be associated to a user by selecting the required template name in this box, before that specific user will be available to the user.

4.8.1 User Groups

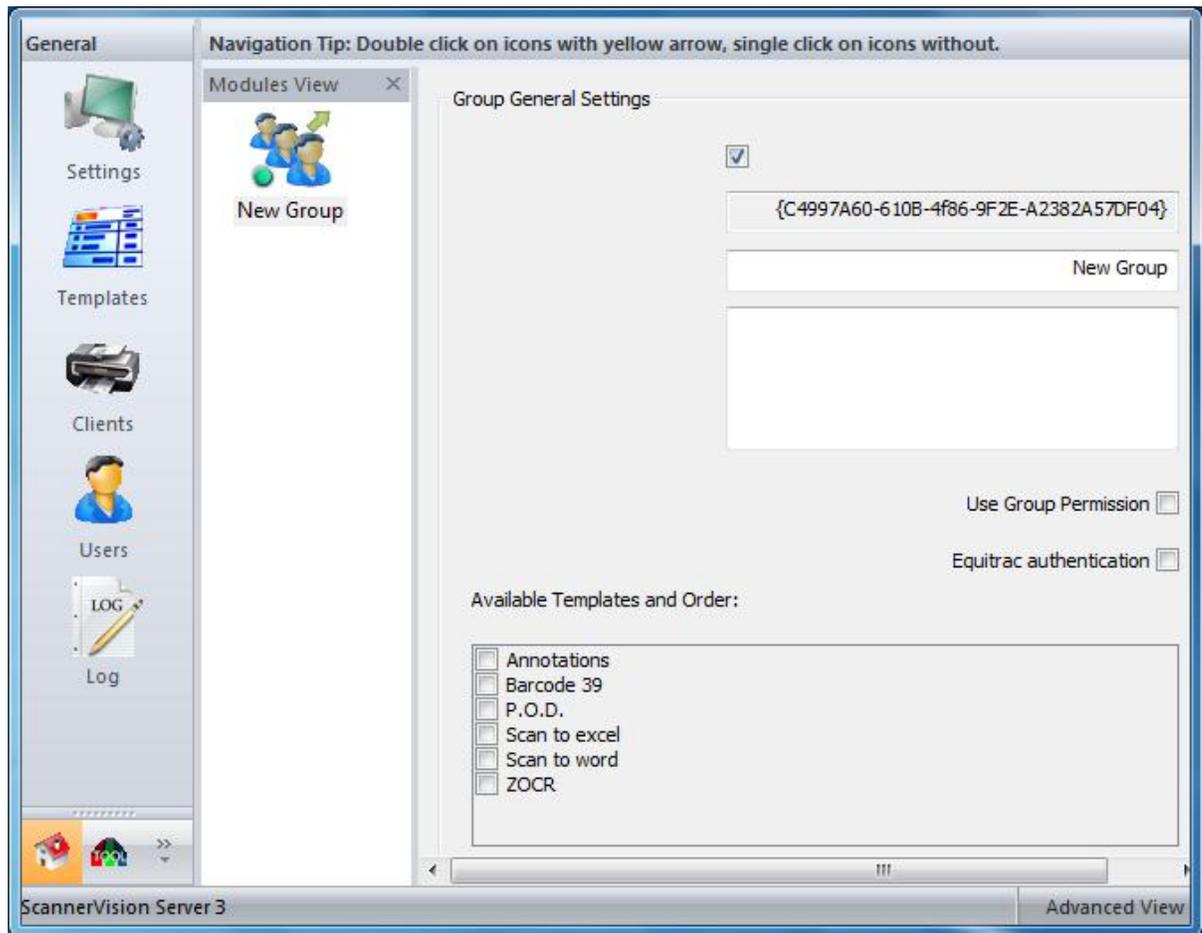
User Group

User Groups must be created to which the users will be associated. Adding a user to a User Group requires a user to use the Add Object Button in the [Toolbar](#).



Add object

Once a User Group object have been added, the following needs to be configured for the said user.



User Group General Settings have the following options available:

Active:

Toggle a user group active/inactive

Group ID:

This is an internal ScannerVision unique reference for the User Group.

Group Name:

A user friendly name must be added to associate the User Group with Users.

Group Description:

A short description for the User Client Group can be added for future reference. This is optional.

Use Group Permissions:

Enabling this option will force all users in the group to have access to the same templates.

Equitrac Authentication:

Allows for Equitrac Authentication to be enforced on the entire User Group.

Available Templates and Order:

This is a list of all active templates. The Templates can be associated to a user group by selecting the required template name in this box, before that specific user will be available on the user group. Use Group Permission must be enabled to use this feature.

4.8.2 Import Users

Import Users

In the Import Users dialog you can import users from Windows server, LDAP Directory or Active Directory.

Import Users

Import from: Windows Server

\Server\Search base: BAREBONE Refresh

Search subtree

Use SSL

Use Authentication

Startup Auto Synchronization

Only selected users

Username:

Password:

Available Users List

- Administrator
- ASPNET
- Francesco
- Guest
- HelpAssistant
- SUPPORT_398945a0

Sel. Selected

Select All

Deselect All

Available Templates List

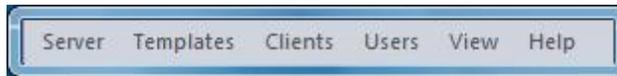
- Send to FTP
- Form Recognition
- PODs Out
- PODs In
- Send to Home Folder
- Send by E-Mail
- SV_100707

Select All

Deselect All

Available Users Groups: Solutions

OK Cancel



From the **Menu Bar** select *Users*, then select *Import*.

Import from: Select the import mode choosing from the following ones:

- Windows Server
- LDAP Directory
- Active Directory

\Server\Search Base:

Depending on the import mode one selects, check one of the following boxes.

- **Search subtree:**
- **Use SSL:**
- **Use Authentication:**
- **Startup Auto Synchronization:**

User: Type here the user name. Used only if **Use Authentication** is selected.

Password: Type here the user's password. Used only if **Use Authentication** is selected.

Available Users List: In this panel you find the list of all available users, according to the source information previously selected. Click on the user check-box to select the user. You can also use the commands on the right of the panel: Refresh, Select All, Deselect All.

Templates to enable for imported Users: In this panel you find the list of all available templates: select the templates to be available for the imported users by checking the check-box on the left of each template description.

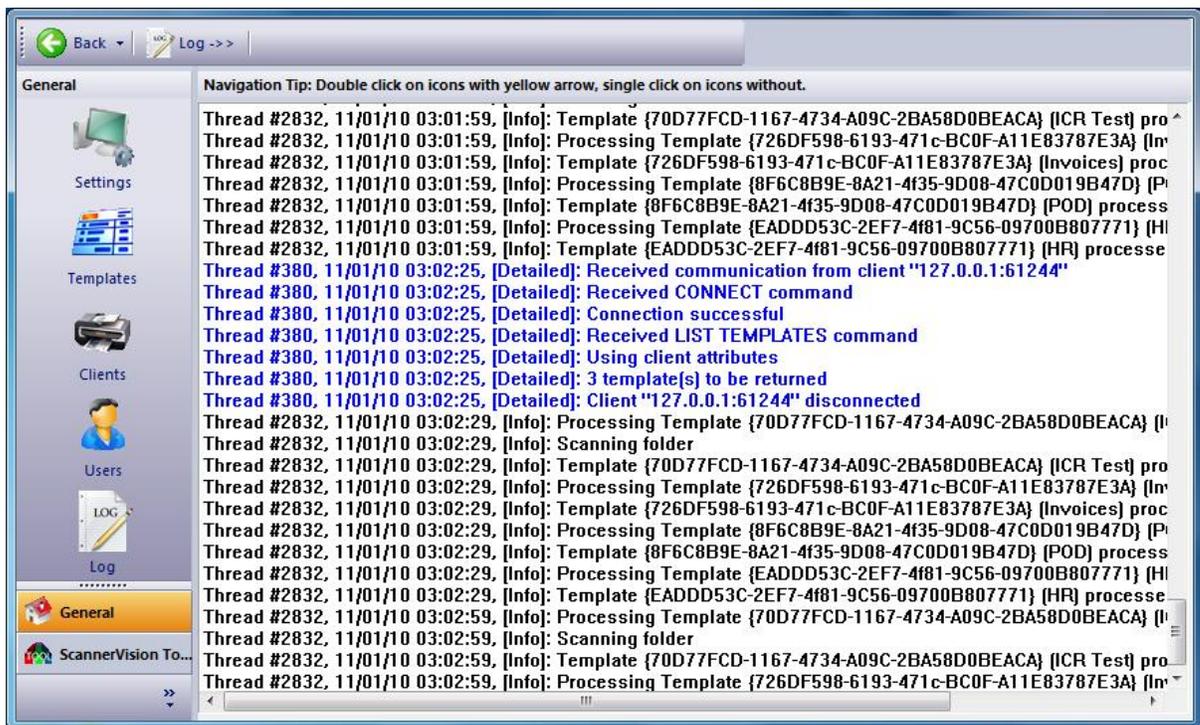
Available User Groups: Select from the drop down list, which available group one would like to import to.

4.9 Log

Log

ScannerVision Processing Engine Log

The Log option will record details of all the processes, templates and changes applied to the ScannerVision Processing Engine. This information can be used for debugging and error finding. The Log menu allows to show, export or clear the log.



In the Log Window the user will find the systemized registration of event of all templates. The Log menu allows to show, export or clear the log.

A "log" is a file (or several files) automatically created and maintained by a Processing Engine of activity performed by it. In computerized data logging, a computer program may automatically record events in a certain scope in order to provide an audit trail that can be used to diagnose problems or to make statistics analysis.

4.9.1 Error Codes

Error Codes

General:

0	Function not successful
2	Successfully aborting
3	Function successful. Delete file before quitting
4	Function successful. Retry doing the failed op
8	Function called recursively. A least one call was successful, but some failed
-13	Invalid parameter passed
-789	The structure size is invalid
-27	Invalid bits/pixel
-11	Invalid width/height
-2	Invalid bitmap handle
-814	A NULL pointer was passed
-1360	Signed image data not supported
-290	The buffer size is too small
-149	An unspecified exception occurred - could be memory access violations
-351	There is nothing to do. No items was found
-144	Image is empty
-21	Invalid QFactor specified
-261	Invalid handle
-1364	32-bit Grayscale bitmaps not supported
-1486	The LUT length is invalid. LUTLength should be $1 \ll (\text{HighBit} - \text{LowBit} + 1)$
-1491	The DIB is invalid
-100	User has aborted operation
-29	Escape key pressed - or user aborted operation
-1	Not enough memory available
-3	Not enough memory available (too low)
-16	Feature not supported
-143	Document capability is required
-804	Extended grayscale support is required
-315	JBIG capability is required
-10	File not found

-14	Not able to open file
-5	Error writing file
-6	File not present - abort
-7	Error reading file
-4	Error seeking to position
-295	not enough disk space
-805	File is read-only. Cannot open file with write access
-9	Invalid file format
-8	Invalid filename specified
-1490	Error creating file
-309	The DXF filter is required
-319	The JBIG filter is required
-349	WMF filter is required
-355	CMW filter is required
-356	CMP filter is required
-357	FAX filter is required
-358	PDF filter is required
-359	TIF filter is required
-819	DCR filter is required
-820	KDC filter is required
-821	DCS filter is required
-822	ABC filter is required
-823	ABI (ABIC) filter is required
-824	JB2 (JBIG2) filter is required
-541	J2K filter is required
-825	PNG filter is required
-807	LTCLR.DLL is missing
-353	LVKRN.DLL is required
-818	LTSGM.DLL is missing
-1479	LTANN.DLL is missing
-1480	LTIMG.DLL is missing
-1482	LTKRN.DLL is missing
-1483	LVFIL.DLL is missing
-1484	LTDIS.DLL is missing
-1485	LTDIC.DLL is missing

-815	The overlay does not exist
-816	Something is wrong with the overlay index

File Handling:

-28	Invalid window size
-1353	Invalid filter name
-310	Page not found
-311	You cannot delete a page from a file containing only one page
-12	Image format recognized, but sub-type not supported
-77	Premature end-of-line code
-800	The PSD Layer is missing
-23	Invalid compression format
-78	Bad version number
-520	Thumbnail not found
-1492	The PSD Channel is missing
-530	Error in JP2 Box values
-531	The header does not match the JP2 signature - not a JP2 file
-532	JP2 file has a feature that is unsupported
-533	Invalid save options were specified to the encoder
-534	File header does not contain SOC marker
-535	File contains complete header but no compressed image data
-536	Invalid save options were specified or file includes invalid encoded values
-537	Compression ratio, target file size, or tile size was too small for encoder
-538	Specified Wavelet decomposition level was too high
-539	Decoder could not translate J2K marker - file is corrupt or invalid
-540	J2K file has image with more than 30 bits per component
-65	stamp not found
-141	Stamp size is too big or invalid bits/pixel, etc
-142	Stamp is present but data is corrupted
-801	Bad JPEG marker
-806	Bad JPEG Resync marker
-808	The size of the JPEG marker cannot exceed 64K
-809	The required JPEG marker is missing

-811	The marker index is invalid (too big)
-810	This file does not contain Exif extensions

Color Profiles

-918	Invalid colorspace
-785	Invalid format
-786	Method not supported
-787	Error opening profile
-788	Invalid color profile
-791	U and V not multiples
-792	No non planar vertical sub sampling supported
-793	Planar alignment not supported
-794	Unsupported conversion
-795	Truncate height
-796	Truncate width
-797	Truncate width and height
-1150	Unknown ICC profile Tag
-1151	Unknown ICC profile Type
-1152	Unknown ICC profile Tag and Type
-1153	Invalid ICC profile
-1154	Invalid ICC profile
-812	The ICC profile was not found
-817	The ICC profile was invalid
-813	An error has occurred while decoding the profile

Pdf

-721	The Pdf file is encrypted but no password has been specified.
-722	Invalid password specified
-723	FAX is required for this function
-724	CMP is required for this function
-725	Invalid Document Structuring comments (Ps and EPS)
-726	Could not find Fonts directory
-727	Cannot insert, delete, append or replace pages
-728	File is corrupted

-729	Either the files required for initializing the PDF engine were not found or they were found but they incorrect
------	----------------------------------------------------------------------------------------------------------------

Dialogs

-150	An error occurred during creation of the common dialog
-151	You have already initialized the dialogs
-152	You did not initialize the dialogs
-153	You did not initialize the dialogs
-154	The dialogs could not load the LTCLR.dll
-155	The dialogs could not load the LTDLGRES.dll
-900	LTCLR.DLL is not loaded
-901	LDLGRES.DLL is not loaded
-902	Dialogs not correctly initialized

Annotation

-202	Annotation DLL not loaded
-200	LTDIS.dll not loaded
-201	LTFIL.dll not loaded
-148	One or more annotation objects are still locked

TIFF

-15	Unknown compression format
-917	The compact function was finished without copying all the pages
-140	Bad TIFF tag
-404	Tag not found
-1365	Cannot add tags to a IFD selected

Document

-1200	DLLs are not loaded
-1201	Specified index is not corrected
-1202	invalid fill method
-1203	Invalid recognition module
-1204	invalid character filter
-1205	invalid zone type
-1206	invalid language Id
-1207	invalid spell language
-1208	invalid enumeration section

-1209	invalid page count
-1210	Illegal internal code as a parameter
-1211	Set parameter is not acceptable
-1212	End of list of the available Code Pages
-1213	Error while loading the Code Page Definition file
-1214	The length of the exported code exceeds the buffer size
-1215	Character conversion is not available for the given character
-1216	Conflict: The selected Code Page does not support some characters in the selected languages. There is no exact code in the Code Page for them
-1217	Character Set and Code Pages module initialization error
-1218	OCR engine initialization error
-1219	OCR engine termination error
-1220	Module initialization warning
-1221	Application has aborted the current process
-1222	Application has terminated the current recognition process without losing the recognized text
-1223	Module is not present
-1224	OS could not load a module
-1225	Missing entry in a module
-1226	Invalid module
-1227	Module initialization error
-1228	The requested function is not available, or there is no appropriate license
-1229	General error in the engine
-1230	General Protection Fault in the engine
-1231	Not supported operational system
-1232	Syntax error in the specified engine Settings file
-1233	Invalid setting
-1234	The engine is busy
-1235	Recognition process Time Out
-1236	Internal error in image module
-1237	Not enough memory during image processing
-1238	Invalid rectangle dimensions
-1239	Non-supported resolution
-1240	Cannot process compressed image

-1241	Invalid bitmap address
-1242	Unsupported BitsPerPixel value
-1243	Internal error in image module
-1244	Invalid image handle
-1245	Buffer overflow during processing the image
-1246	Image operation denied
-1247	No more lines in defined image area
-1248	Non-supported image size
-1249	Engine manager module error
-1250	No recognized text available, either because the zone is empty or the required recognition module has not been initialized properly
-1251	There is no selected recognition module
-1252	There is no zone in the zone list
-1253	Invalid zone index
-1254	Invalid zone coordinates
-1255	MOR recognition module initialization error
-1256	MOR recognition module's knowledge base file not found
-1257	MOR recognition module's knowledge base file corrupted
-1258	Incorrect knowledge base file version
-1259	Size of image is too large
-1260	File is corrupted
-1261	Internal error in the MOR recognition module
-1262	General Protection Fault in the MOR recognition module
-1263	Dot-matrix recognition error
-1264	Checkmark recognition error
-1265	HNR module's knowledge base file is corrupted
-1266	Parameter is out of valid range
-1267	Internal error in the RER module
-1268	RER module's knowledge base file not found
-1269	Character Set is empty for the RER module
-1270	The specified Character Set not fully supported by the RER recognition module
-1271	RER specific file not found
-1272	Not enough memory for the SPL module
-1273	Uninitialized spell object
-1274	Spell file open error

-1275	Spell file read error
-1276	User dictionary write error
-1277	Invalid file format
-1278	Module initialization error
-1279	User dictionary close error
-1280	Illegal language setting
-1281	No more suggestions/items available
-1282	Internal checking error
-1283	Item already exists in the User dictionary
-1284	Item doesn't exist in the User dictionary
-1285	Item wasn't inserted into the User dictionary
-1286	Section does not exist in the User dictionary
-1287	Regular expression syntax error
-1288	Output format conversion subsystem was not initialized
-1289	No more converters available
-1290	There is no converter DLL file
-1291	Wrong parameter or parameter not found
-1292	TMP file is corrupted
-1293	TMP file not found
-1294	Cannot create TMP file
-1295	Cannot seek in TMP file
-1296	TMP file read error
-1297	TMP file write error
-1298	Cannot close TMP file
-1299	Cannot load the DLL file
-1300	Internal error in ATMTXT module. (End-Of-File detected)
-1301	Not enough memory for ATMTXT/TMP module
-1302	Image is not available for inserting into the output
-1303	Not enough memory to register an info item
-1304	Output file open error
-1305	Output file read error
-1306	Output file not found
-1307	Output file write error
-1308	Invalid command sequence in the ICF file
-1309	Cannot create the output file

-1310	Not enough memory for ATMTXT/TXT module
-1311	Invalid document type
-1312	File too large
-1313	There was a WARNING during the output file conversion
-1314	Operation cancelled
-1315	Illegal option specified
-1316	Encrypted source
-1317	Output file seek error
-1318	Braille recognition module initialization error
-1319	Matrix matching recognition module initialization error
-1320	M/TEXT recognition module initialization error
-1321	Non-implemented feature
-1322	couldn't find specific zone
-1323	No available selected zone
-1324	can't export the specified page
-1325	can't lock the specified page
-1326	can't set the specified page to be activated.
-1332	Too many regions result when layout analysis
-1333	Top or bottom horizontal line not found
-1334	The slope of line too large
-1335	Frame has not been detected, so can not add virtualline
-1336	Too many lines
-1337	Too many pages in batch processing list
-1338	This region is not a table region
-1339	This region is a table region but contains no data
-1340	This line is not valid (neither horizontal nor vertical or type is not match)
-1341	Angle is too large, can not rotate image
-1342	Unable to determine orientation
-1343	Invalid RDF file name
-1344	PDF DLLs are not loaded
-1346	ICR Module is missing
-1347	OMR Module is missing
-1348	Languages files are missing
-1349	OCR engine initialization error

-1350	ICR Module is missing
-1351	OMR Module is missing
-1352	Languages files are missing

TWAIN:

-80	TWAIN Failure due to unknown causes
-81	TWAIN Not enough memory to perform operation
-82	TWAIN No Data Source
-83	TWAIN DS is connected to max possible apps
-84	TWAIN DS or DSM reported error
-86	TWAIN Unrecognized MSG DG DAT combination
-90	TWAIN Operation was cancelled
-560	No TWAIN Library
-561	Invalid DLL
-562	TWAIN is not initialized
-564	Check status
-565	End of list
-566	Cap is not supported
-567	Source is not open
-568	Bad value
-569	Invalid state
-570	Caps neg not ended
-571	Open file
-572	Invalid handle
-573	Write to file
-574	Invalid version number
-575	Read from file
-576	File is not valid
-577	Invalid access right
-578	Custom base
-579	Denied
-580	File exists
-581	File not found

-582	Not empty
-583	Paper jam
-584	Paper double feed
-585	File write error
-586	Check device on line
-587	Stop scan

Barcode

-410	Invalid error check digit
-411	Invalid bar code type
-412	Invalid bar code text out option
-413	Invalid bar code width
-414	Invalid bar code height
-415	Bar code string is too small
-416	Invalid bar code string for a specified bar code type
-417	No bar code recognition
-418	Invalid bar code measurement unit
-419	Invalid multiple max count
-420	Invalid bar code group
-421	Invalid bar code data structure
-422	No duplicated bar code
-423	Reached the last duplicated bar code
-424	Invalid bar code data string length
-425	Invalid bar code area location
-431	Barcode PDF417 symbol is found but cannot read successfully
-1382	Bar Code Engine DLL not found
-1481	Incorrect module value it should be ≥ 0

Automation

-690	Invalid handle
-691	Invalid state

Container

-630	Invalid state/handle
-631	Invalid operation
-632	No resources available

5 Creating a New Template

Creating a New Template

This section will give the user an overview of the three main steps to build a ScannerVision process. When [creating a template](#) in ScannerVision, the user has to add a new template, configure the [General Template Settings](#) and save the new template before the template is configured. It will be assumed that the user has already added a template object in the Templates section. The following topics will be covered in detail, including all options/functions available in each of these steps of the process:

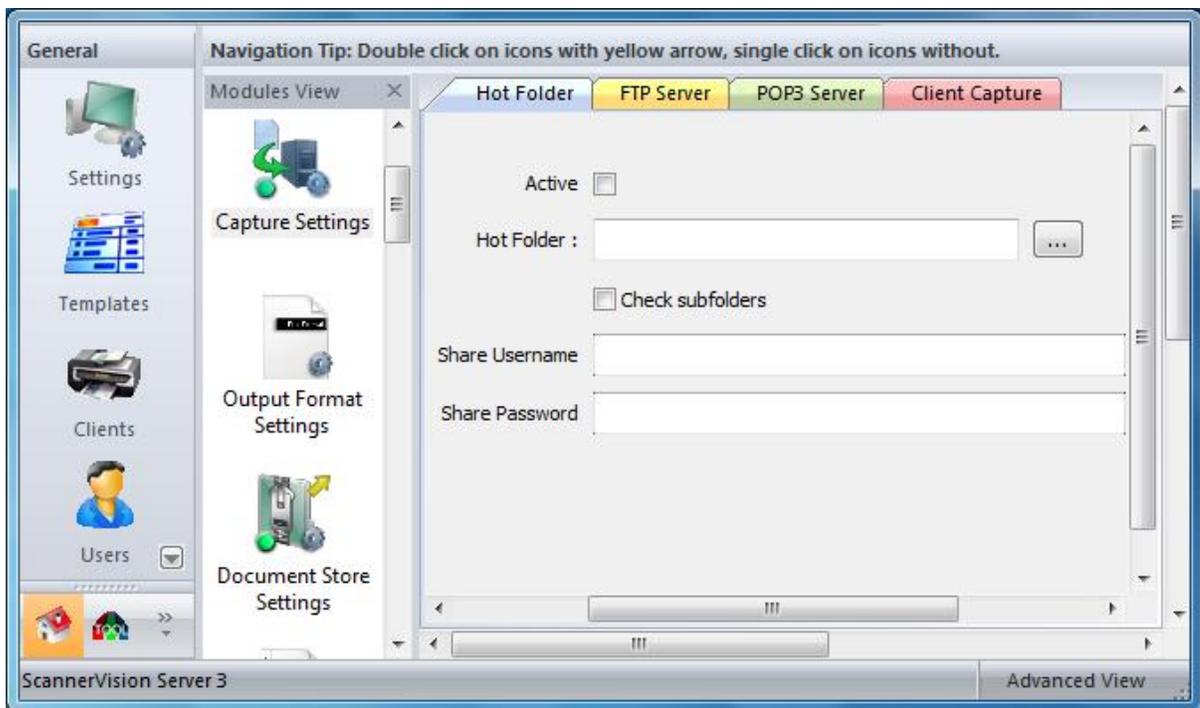
- [Capture](#)
- [Process](#)
- [Store](#)

5.1 Capture

Capture

Any template needs a starting point, and this is the acquisition of the document to be processed. ScannerVision supports four document capture methods:

- [Hot Folder](#)
- [FTP Server](#)
- [POP3 Server](#)
- [Client Capture](#)



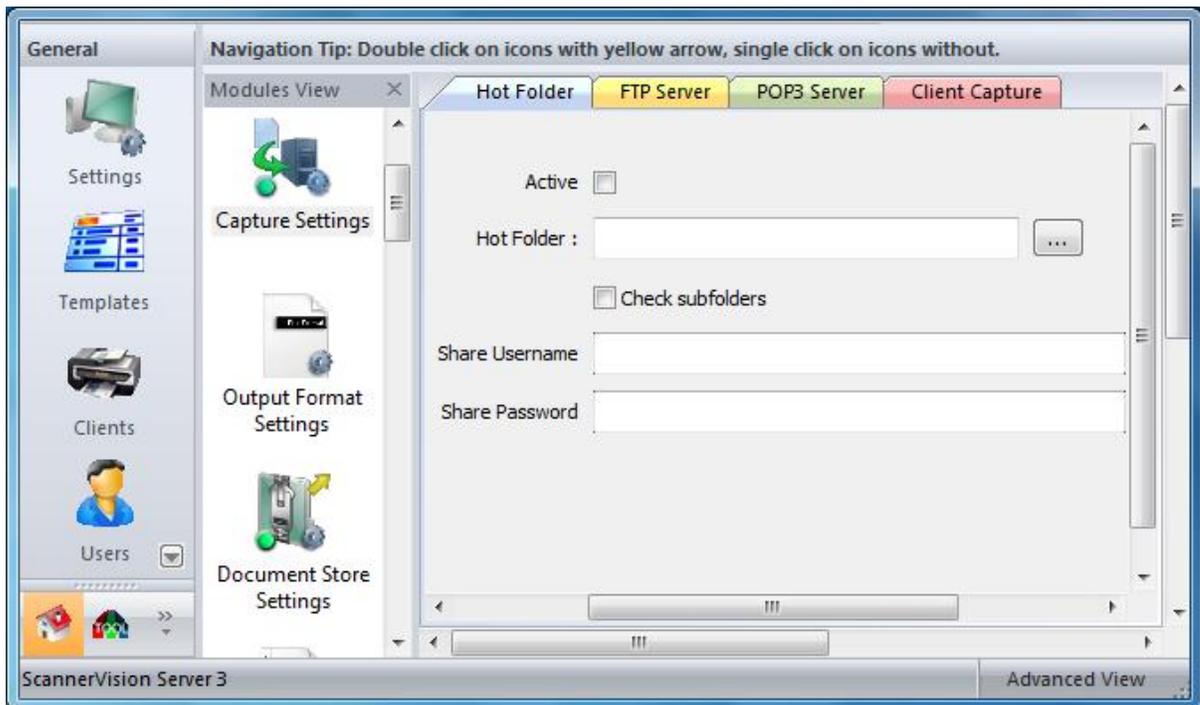
The following file types can be captured into a ScannerVision process:

- TIFF Images (All, including multi page TIFF)
- JPEG Images
- PDF Files
- Bitmap Files (BMP)

5.1.1 Hot Folder

Hot Folder

Hot Folder capture allows images which have been scanned to a Windows folder to be processed through a ScannerVision process. This method is typical where the scan device is not associated to any scan clients, and no manual indexing is required. Any files scanned and/or saved to the Hot Folder will be processed through the associated template without allowing any manual indexing. It is commonly used in instances where like documents are being scanned, and automated processes like Zone OCR is used to find metadata on the image, and automatically index the particular document.



- **Active:**

Toggle the Hot Folder capture module active/inactive

- **Hot Folder:**

Indicates the Windows folder path which ScannerVision will monitor for any documents to be processed. You can set more than one hot folder by separating folder paths with a " ; ".

- **Check subfolders:**

Select this option to monitor any subfolders within the Hot Folder parent folder path for any documents to be processed.

- **Share Username:**

Should the Hot Folder reside on a shared network drive, the authentication username can be specified to access the Hot Folder.

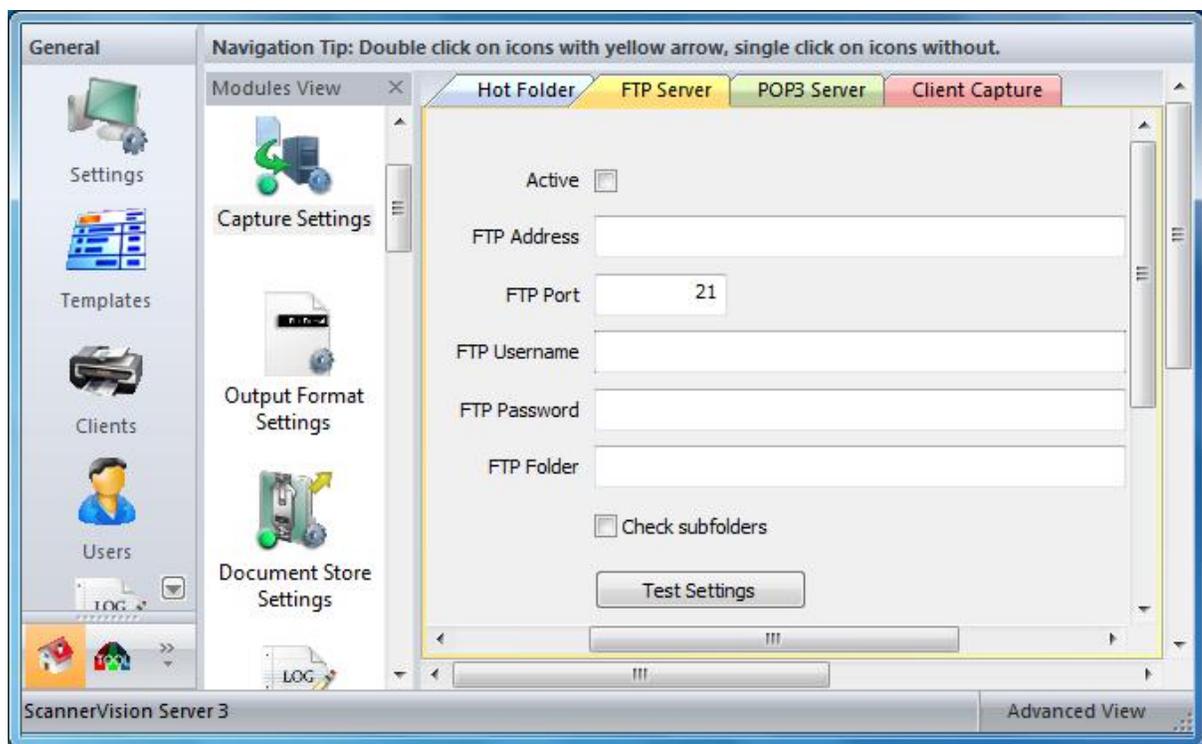
- **Share Password:**

Should the Hot Folder reside on a shared network drive, the authentication password can be specified to access the Hot Folder.

5.1.2 FTP Server

FTP Server

FTP Server capture allows images which have been scanned to an internet FTP site folder to be processed through a ScannerVision process. This method is typical where the scan device is not associated to any scan clients, and no manual indexing is required. Any files scanned and/or saved to the FTP Site will be processed through the associated template without allowing any manual indexing. It is commonly used in instances where like documents are being scanned, and automated processes like Zone OCR is used to find metadata on the image, and automatically index the particular document. FTP server is furthermore widely used in a distributed scan environment where images are sent from scan devices to a FTP Site, hosted on the internet.



- **Active:**
Toggle the FTP Server capture module active/inactive
- **FTP Address:**
Enter the FTP Site address from where ScannerVision should capture the images.
- **FTP Port:**
Specify the port used on the FTP site from where ScannerVision should capture the images.
- **FTP User:**
Enter the authentication username which should be used to authenticate on the FTP Site.
- **FTP Password:**

Enter the authentication password which should be used to authenticate on the FTP Site.

- **FTP Folder:**

Specify the folder path on the FTP Site site from where ScannerVision should capture the images.

- **Check subfolders:**

Select this option to monitor any subfolders within the FTP parent folder path for any documents to be processed.

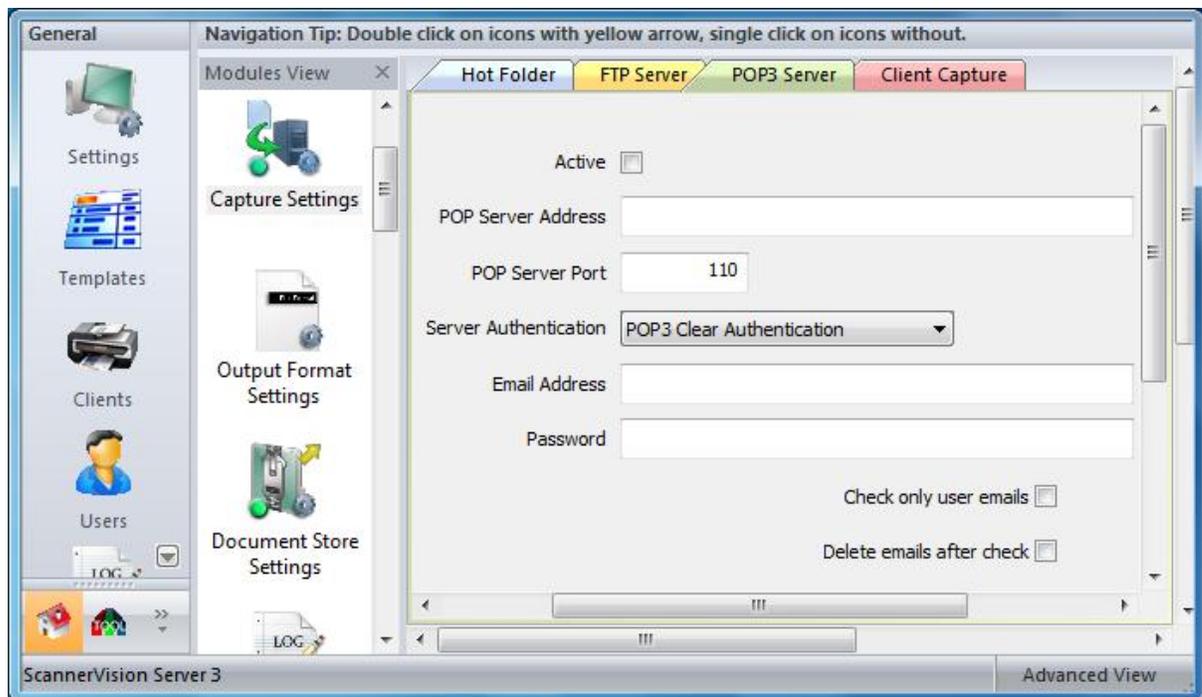
- **Test Settings:**

Click this option to verify the operation and authentication to the FTP Site and folder path.

5.1.3 POP3 Server

POP3 Server

POP3 Server capture allows images which have been scanned to an email address to be processed through a ScannerVision process. This method is typical where the scan device is not associated to any scan clients, and no manual indexing is required. Any files scanned to the specified email account will be processed through the associated template without allowing any manual indexing. It is commonly used in instances where like documents are being scanned, and automated processes like Zone OCR is used to find metadata on the image, and automatically index the particular document. Email properties, like the detail in the To, From, CC and Subject line will be available as metadata. POP3 Server capture is commonly used with scan devices which have the "Scan to Email" function, or where mails containing images to be processed are received via email from anywhere in the world.



- **Active:**
Toggle the POP3 Server capture module active/inactive
- **POP server Address:**
Specify the POP3 server address which should be monitored by ScannerVision.
- **POP Server Port:**
Specify the port used on the POP3 Server from where ScannerVision should capture the images
- **Server authentication:**
ScannerVision supports both POP3 Clear Authentication and APOP Authentication. Users need to select the authentication level supported on the POP3 Server.
- **E mail address:**

Specify the email account which should be monitored by ScannerVision.

- **Password:**

Enter the authentication password which should be used to authenticate on the POP3 Server account.

- **Check e-mail only from users:**

Enabling this option will cause only mails received from users specified in the [Users](#), to be processed. Any mails received from any other mail addresses will be ignored.

- **Delete e-mails after check:**

Enable this option if you wish to delete these messages in the mailbox after capture, i.e. if you wish to delete all mails captured from the mail server. Leaving this option unchecked, will leave a copy of the mail on the POP3 Server.

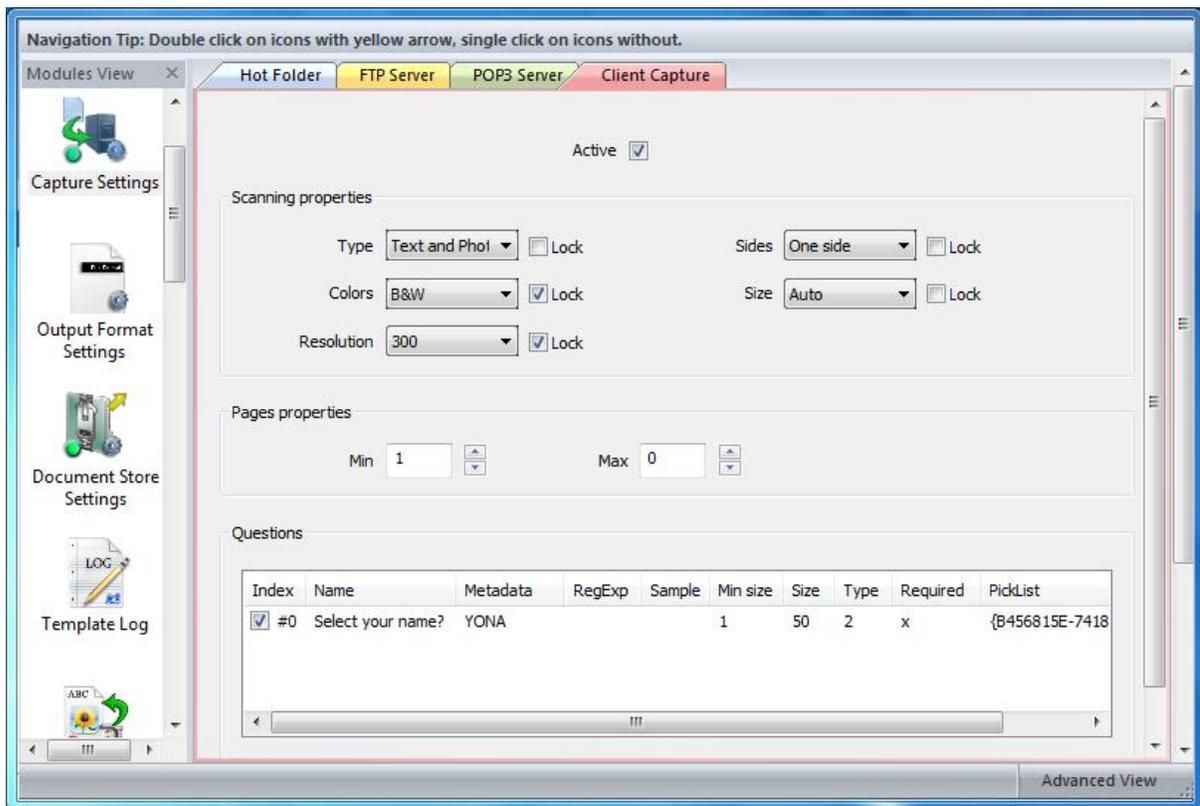
- **Test Settings:**

Click this option to verify the operation and authentication to the POP3 Server.

5.1.4 Client Capture

Client Capture

Client capture allows images which have been scanned via either a ScannerVision Desktop Client or a Multi Function Device Embedded Client to be processed through a ScannerVision process. This method is typical where the scan device is associated to a scan client, and manual indexing is required. Custom meta data questions can be pushed to the scan client in various forms, including meta data questions to be manually typed in, meta data questions to be answered from a pick list or an option to either type in a question, or select from a list. This is the most common capture method, as it allows for manual capturing/indexing of meta data.



- **Active:**

Toggle the Client capture module active/inactive

Scanning Properties

- **Type:**

Select mode to scan from the scanner (text, photo, text and photo)

- **Color:**

Select the scanning mode to be used (Black&White, Grey Scale or True Color)

- **Resolution:**

Set the scanning resolution (100dpi, 200dpi, 300dpi, 400dpi, 600dpi)

- **Sides:**

Select if images are scanned in Simplex (One Sided) or Duplex (Both Sided) mode

- **Size:**

Select the size of the image to be scanned, options are Auto, A3, A4, A5, B4, B5, Letter, Legal, Executive or Folio.

- The 'Lock' checkbox will help to prevent users to change settings. If the box is selected, users can see which setting is set for the process, but cannot change the scan setting.

Pages Properties

The minimum and the maximum number of pages per document can be set. If any value other than 0 is entered, the document will not be submitted to the ScannerVision Processing Engine if the number of pages does not fall within the criteria set in this option. If Min Pages and Max Pages have the same value, the document MUST have exactly that number of pages. If the Max value = 0, it will allow any number of pages to be sent into the ScannerVision process.

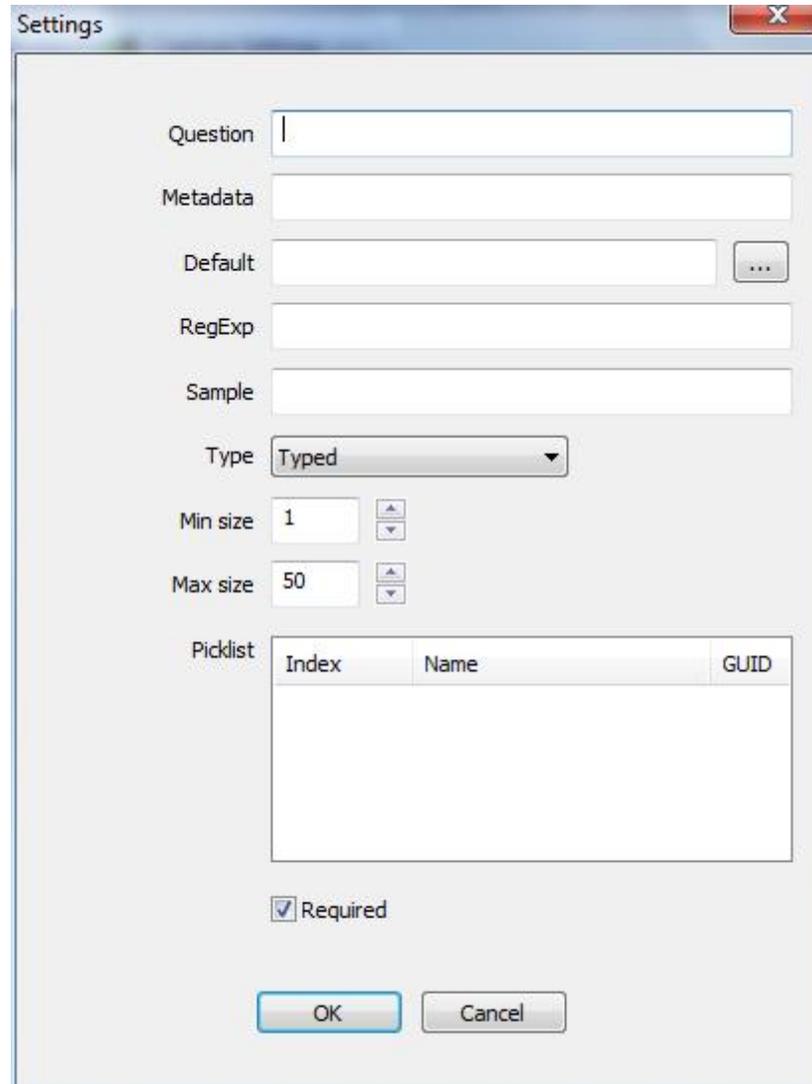
5.1.4.1 Adding Metadata Questions

Adding Meta data Questions

Meta data questions can be configured to ask a scan/index user very specific questions related to the document to be scanned and indexed. The returned values are then referred to as meta data. Meta data can be used for dynamic folder navigation/creation, file naming and data export options.

Meta Data Questions

Users can add, edit, or delete questions.



The screenshot shows a 'Settings' dialog box with the following fields and options:

- Question: Text input field.
- Metadata: Text input field.
- Default: Text input field with a browse button (...).
- RegExp: Text input field.
- Sample: Text input field.
- Type: Dropdown menu set to 'Typed'.
- Min size: Spin box set to 1.
- Max size: Spin box set to 50.
- Picklist: Table with columns Index, Name, and GUID.
- Required
- OK and Cancel buttons.

The following options can be configured for each question added:

- **Question:** (Required)

This is the actual prompt to be displayed to the scan/index user.

- **Meta data** (Required)

This will be the reference name to the answer provided by the scan/index user to the question prompted

to the user. To use this "answer" later in the process, the meta data name must be specified.

- **Default** (Optional)

A default value can be specified to be shown as the default question to the user.

- **RegExp** (Optional)

A regular expression can be applied to the meta data value. See [Appendix A - Regular Expressions](#)

- **Sample** (Optional)

The scan/index user can be provided with a sample of what format the meta data should be answered.

- **Type** (Required)

The type of meta data answer required must be specified. The options available are:

- Typed**

The scan/index user is required to manually type in the value of the meta data question.

- Selected**

The scan/index user is required to select a predefined value from a pick list.

- Typed & Selected**

The scan/index user have an option to either manually enter the meta data value, or to select the meta data value from a pick list.

- **Max Size** (Required)

The maximum number of characters allowed to be passed as meta data.

- **Picklist** (Optional)

The pick list to be made available for the specific meta data question. See [Creating Pick Lists](#)

- **Required** (Optional)

Flags whether the meta data question must be answered or not. Meta data questions not flagged as "Required" can be left blank by the scan/index user. Meta data questions flagged as "Required" must be filled in, to allow the document to be processed by ScannerVision.

5.1.4.1.1 Creating Pick Lists

Creating Pick Lists

Pick Lists are used to provide scan/index users to use drop-down pick lists, instead of manually typing in answers to meta data questions. These pick lists can be configured by using explicit values added to the Explicit item list. More advanced types of pick lists allows for bespoke integration into line of business systems where realtime data can be made available directly from the line of business system into the ScannerVision drop-down pick list.

- To add a new pick list, click in the Item list and select Add Pick list. The Pick list Settings Dialog will be appear.
- To edit an existing pick list, select the pick list to be edited and click and select Edit Pick list. The Pick list Settings Dialog will be appear.
- To delete a pick list, and select Delete Pick list.

The screenshot shows a 'Settings' dialog box with the following fields and controls:

- Name:** New Picklist #0
- GUID:** {A 160ABFF-5D28-4da8-8027-34DE8231F598}
- Type:** Explicit (dropdown menu)
- Items list:** Includes 'Import items' and 'Sort' buttons.
- Table:** A table with one column labeled 'Item' and one empty row.
- Dynamic retrieve:** A checkbox that is currently unchecked.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

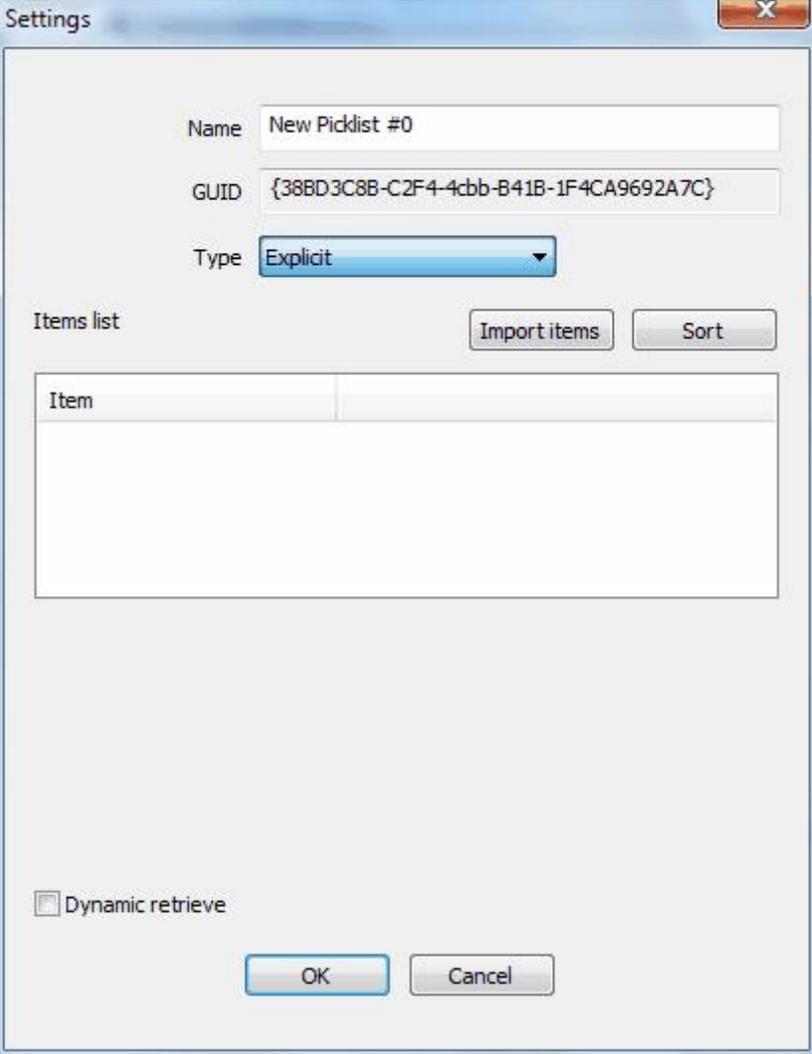
There are 4 types of pick lists: Explicit Values, SQL Query Based Values, VBScript Based Values and XML Source.

5.1.4.1.1.1 Explicit Lists

Explicit Lists

This list can be build by manually adding items to the list or import the values from a .txt file.

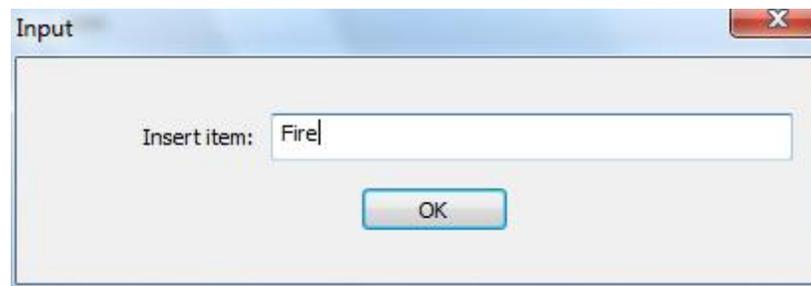
To add a new item, right click on the item window and select Add New Pick List.



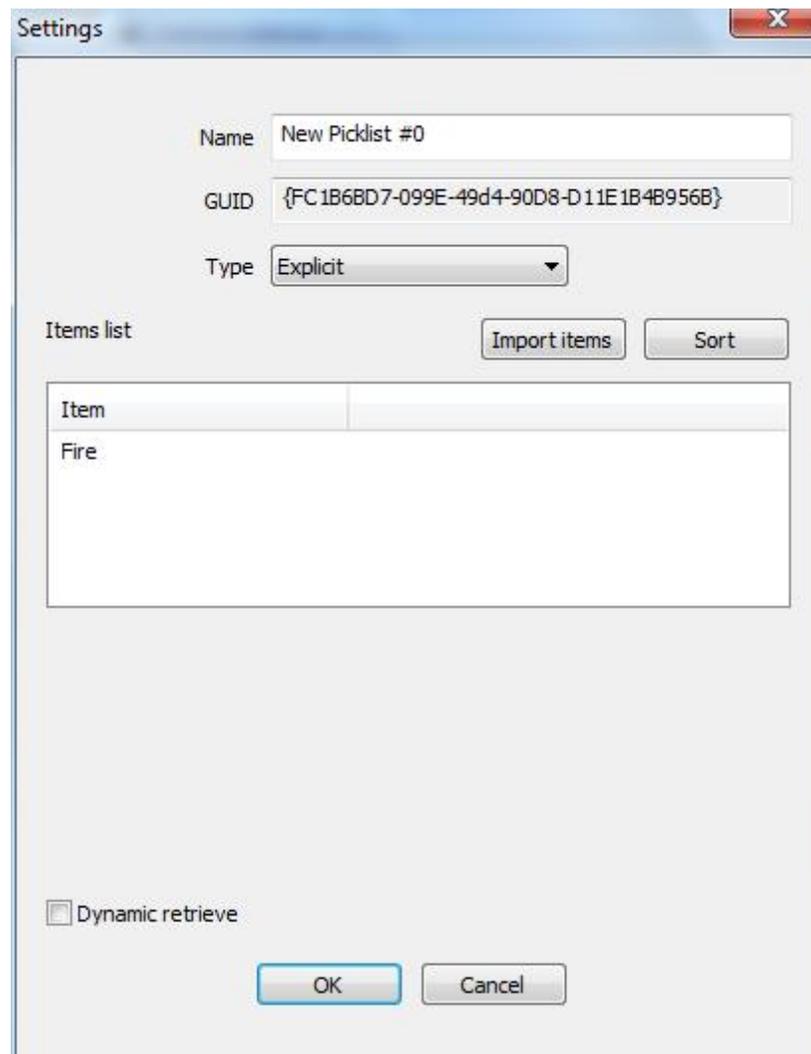
The screenshot shows a 'Settings' dialog box with the following fields and controls:

- Name:** Text input field containing 'New Picklist #0'.
- GUID:** Text input field containing '{38BD3C8B-C2F4-4cbb-B41B-1F4CA9692A7C}'.
- Type:** Dropdown menu set to 'Explicit'.
- Items list:** A section containing two buttons: 'Import items' and 'Sort'.
- Item:** A table with one header row labeled 'Item' and an empty body.
- Dynamic retrieve:** A checkbox that is currently unchecked.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

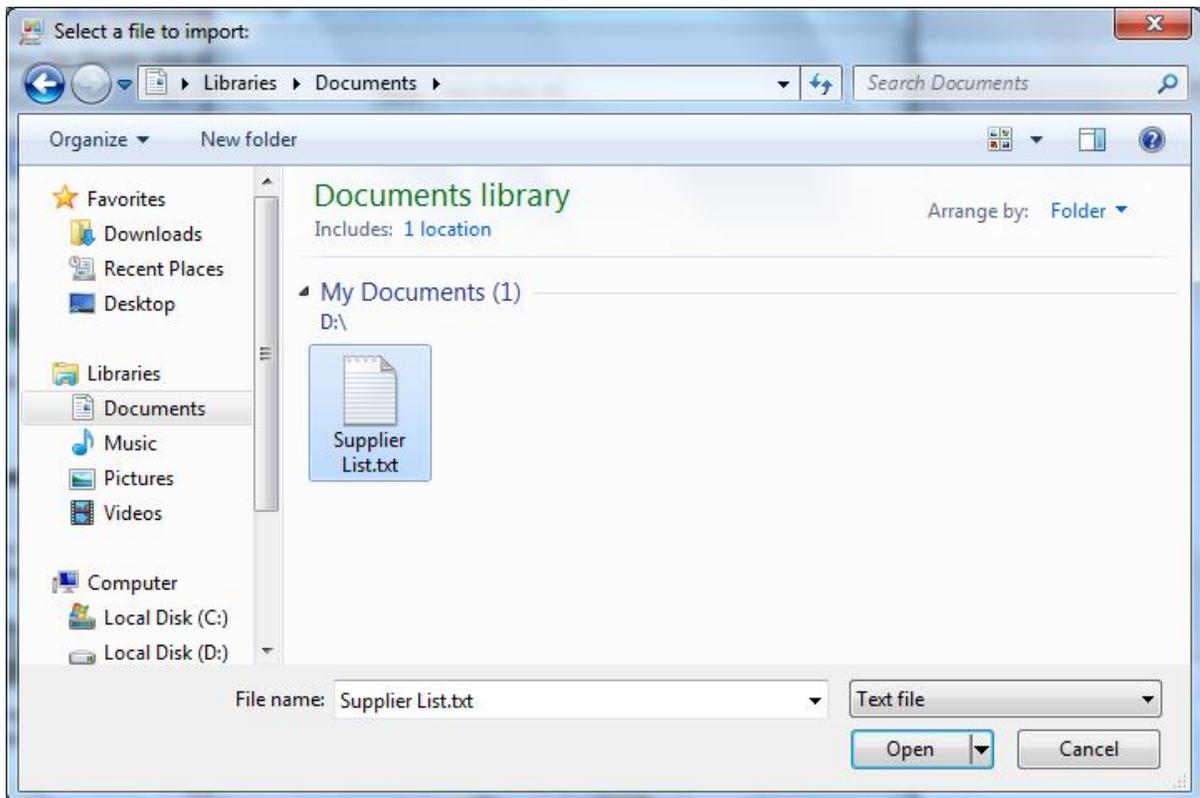
A unique name can be added to reference the pick list for future use in the template, or other templates which might require the use of the same pick list.



This exercise can be repeated to manually add selectable options to the pick list.



Pick lists can also be created using a text file (*.txt). This can be done by click on the **Import items** on the lower right side of the Pick List Dialog and select the .txt file containing the values to be imported.

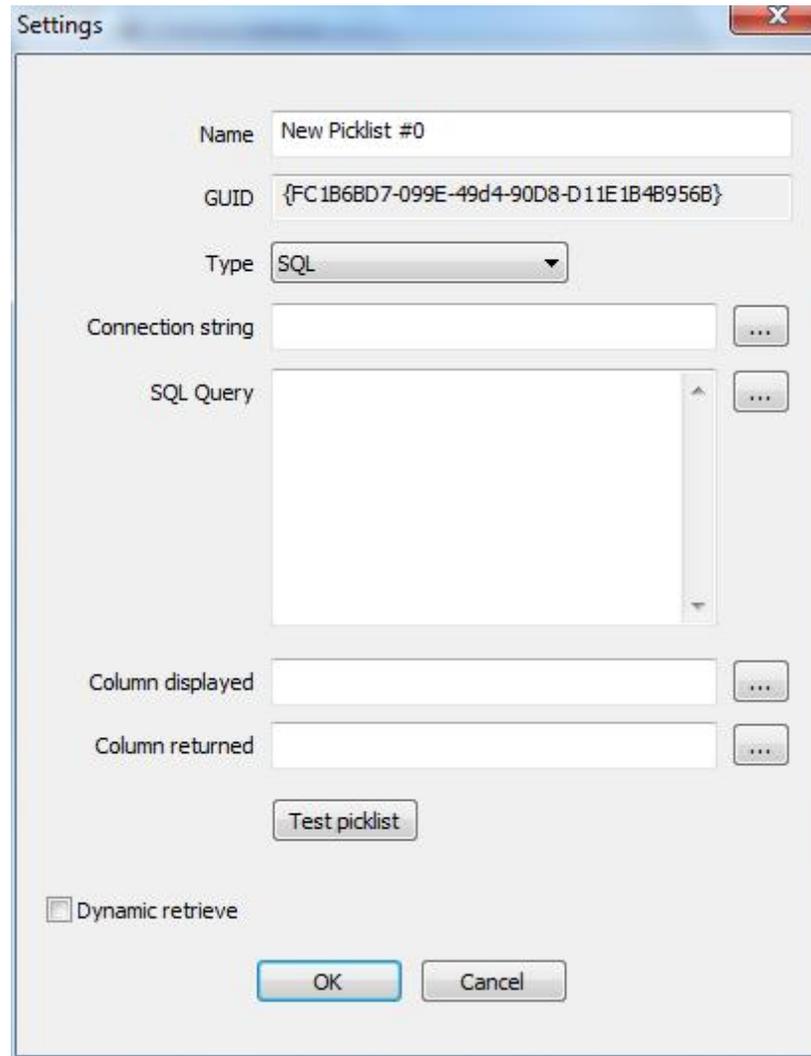


All the values contained in the text file will be imported to be used as a ScannerVision pick list.

5.1.4.1.1.2 SQL Queries

SQL Queries

The SQL Query Based Values Dialog allows selecting the admitted values using a sql query from an existing database in a few simple steps. Once a connection string has been built using the Connection String Building Dialog, the required parameters can be set to automatically create a query based pick list.



Click on the  at the right of the connection string field to build the connection string that has to be used. The Connection String Building Dialog will be displayed. Refer to [Appendix D - Database Connection Strings](#)

Column to display/ return:

Once the connection string have been configured, and the required database table have been selected, a column to be displayed and the column to be returned can be selected. This feature allows for a user friendly value to be presented to a user, but an associated column value can be returned to ScannerVision as meta data. A typical example will be where a user selects a company name from the pick list, but the value passed to ScannerVision as metadata from the SQL connected database, is the

supplier code.

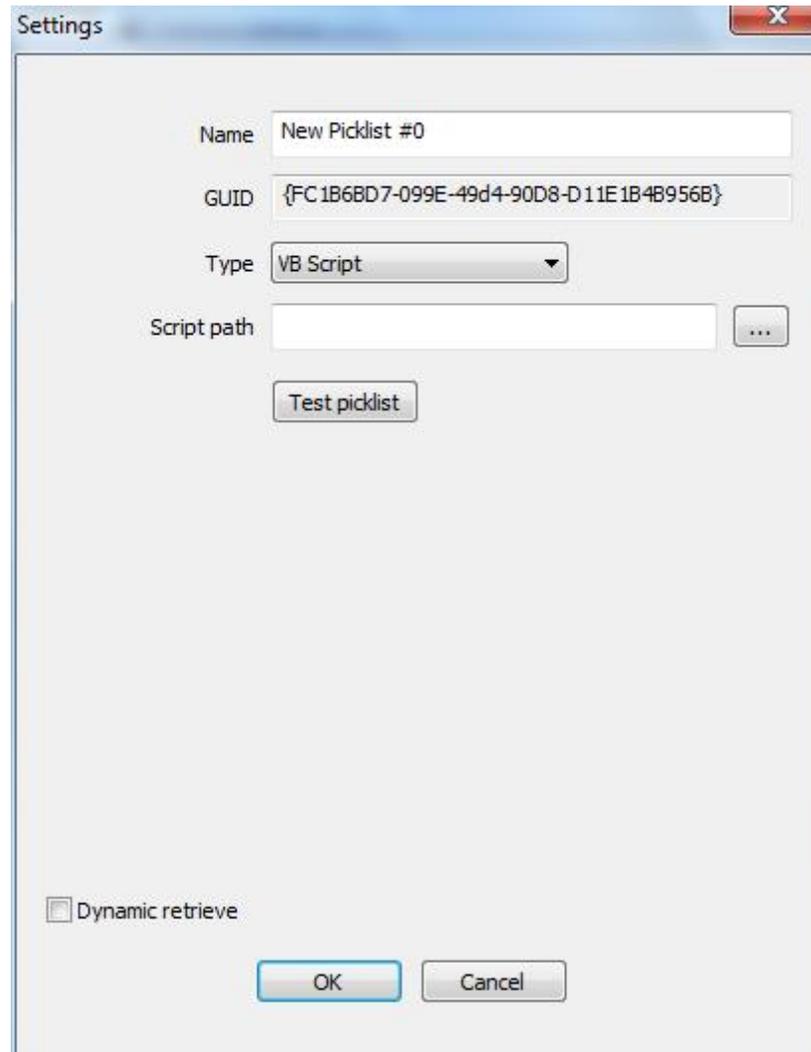
Dynamic retrieve:

This unique feature allows for values only to be displayed, filtered by the user input to a previous meta data question. The SQL query can be customized to refer to a meta data value as a filter to only show options from the data source where the records contained the referenced meta data value. An example would be where a meta data question is prompted to a user to select the department in which the user is associated to. The user selects "Technical Services" as his/her department. The second meta data question provides the user with a list of options from the database where only users belonging to the "Technical Services" department are provided as selectable options, omitting any other users not associated to the "Technical Services" department.

5.1.4.1.1.3 VBScript

VBScript

The VBScript Based Values Dialog allows custom VBScripts to be written to interrogate a data source or generate a result from a VBScript, using those values as selectable options returned by the VBScript.



Simply point to the file path where the custom VBScript will be found.

VBScripts can be used to create dynamic lists. For example, you could create a list of the sub-directories sited in a specific folder:

```
StartingFolder="C:\Storage\"

Set fso = CreateObject("Scripting.FileSystemObject")
Set Folder = fso.GetFolder(StartingFolder)
Set SubFolders = Folder.SubFolders

RESULT=""
For each folderIdx In SubFolders
```

```
RESULT=RESULT & folderIdx.Name & vbCR & vbLF  
Next
```

Dynamic retrieve:

This unique feature allows for values only to be displayed, filtered by the user input to a previous meta data question. The SQL query can be customized to refer to a meta data value as a filter to only show options from the data source where the records contained the referenced meta data value.

An example would be where a meta data question is prompted to a user to select the department in which the user is associated to. The user selects "Technical Services" as his/her department. The second meta data question provides the user with a list of options from the database where only users belonging to the "Technical Services" department are provided as selectable options, omitting any other users not associated to the "Technical Services" department.

For more information on VBScript, also see [Appendix F - Scripting](#)

5.1.4.1.1.4 XML Source

XML Source

XML Data sources allows even more flexibility to integrate to any system able to generate an XML file containing values to be presented to a user as selectable options.

The screenshot shows a 'Settings' dialog box with the following fields and controls:

- Name:** New Picklist #0
- GUID:** {FC1B6BD7-099E-49d4-90D8-D11E1B4B956B}
- Type:** XML (dropdown menu)
- XML path:** [Empty text box] with a browse button (...)
- XPath expression (displayed):** [Empty text box]
- XPath expression (returned):** [Empty text box]
- Test picklist:** [Button]
- Dynamic retrieve:** Dynamic retrieve
- OK** and **Cancel** buttons at the bottom.

Simply point to the file path where the XML file will be found.

Xpath expression to display/ return:

Once the connection to the XML file have been configured, and the required path have been entered, an Xpath Expression column to be displayed and the Xpath Expression column to be returned can be defined. This feature allows for a user friendly value to be presented to a user, but an associated column value can be returned to ScannerVision as meta data. A typical example will be where a user selects a company name from the pick list, but the value passed to ScannerVision as metadata from the XML file, is the supplier code.

Dynamic retrieve:

This unique feature allows for values only to be displayed, filtered by the user input to a previous meta

data question. The XML query can be customized to refer to a meta data value as a filter to only show options from the data source where the records contained the referenced meta data value. An example would be where a meta data question is prompted to a user to select the department in which the user is associated to.

The user selects "Technical Services" as his/her department. The second meta data question provides the user with a list of options from the database where only users belonging to the "Technical Services" department are provided as selectable options, omitting any other users not associated to the "Technical Services" department.

5.2 Process

Process

Once an electronic document have successfully been captured, the image can be processed in various ways. Processing of images can be separated into 3 different categories:

- **Image Enhancements:**

Image Enhancements modules include the following:

- [Image Binarization](#)
- [Delete Borders](#)
- [Delete Empty Pages](#)
- [Delete White Spaces](#)
- [Rotate](#)
- [Deskew](#)
- [Despeckle](#)
- [Smoothing](#)
- [Dot Removal](#)
- [Hole Punch Removal](#)
- [Invert Text](#)
- [Line Removal](#)
- [Change Brightness](#)
- [Change Contrast](#)
- [Balancing of Colors](#)

- **Data Extraction:**

Data can be read from an image and be used as meta data associated to the image for storage and work flow purposes.

Data Extraction Modules includes the following:

- [Barcode 1D](#)
- [Barcode 2D](#)
- [MICR](#)
- [OCR](#)
- [OMR](#)
- [Zone OCR](#)

- **Annotations:**

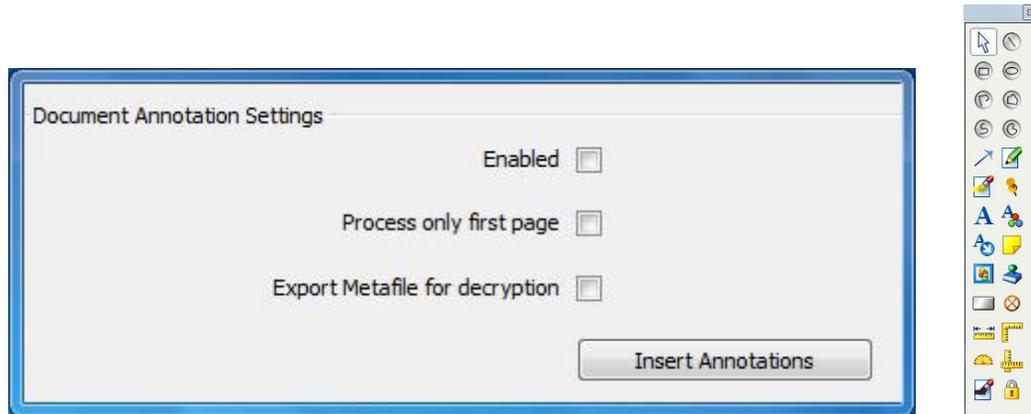
Various annotations can be added to an image during the image processing stage:

- [Document Annotations](#)
- [Barcode Writing](#)

5.2.1 Document Annotation Settings

Document Annotations Settings

Annotations can be embedded onto an image either on the first page only, or onto all pages of a document.



Each annotation have various options which can be set and adjusted. Annotation options can be accessed by right-click on the added annotation.

The following image annotations are available:

Icon	Description
	Select tool - Used to select any predefined image annotations
	Line Tool
	Rectangles
	Ellipse
	Poly line
	Polygon
	Curve
	Closed Curve
	Pointer
	Freehand
	Highlight

Icon	Description
	Pushpin
	Text
	Rich Text
	Note
	Stamp
	Rubber Stamp
	Button
	Point
	Ruler
	Poly ruler
	Protractor
	Cross product
	Redact
	Encrypt / Decrypt

5.2.2 Barcode 1D Settings

Barcode 1D Settings

A **barcode** is an optical machine-readable representation of data. Barcodes represent data in the widths (lines) and the spacings of parallel lines, and may be referred to as linear or 1D (1 dimensional) barcodes or symbologies.

One dimensional barcodes can be read from images which contains 1D Barcodes. The barcodes can be read by ScannerVision, and the contents of the barcode can be used as meta data for the image from which the barcode have been read. Barcodes can be used split documents based on the barcode presence or barcode contents. 1D Barcodes types can be automatically identified (slower) or the type can be specified (see [Defining 1D Barcodes](#)). Multiple types of barcodes can be read from an image.

Also see [Appendix E - Barcodes Best Practices](#)

5.2.2.1 Advanced Settings

Advanced Settings

Advanced Settings can be used so set specific criteria for the 1D Barcode to be read.

The screenshot shows the 'Advanced Settings' dialog box with the following configuration:

- Use Zone Recognition
 - L: 0
 - T: 0
 - R: 0
 - B: 0
- Direction
 - Left to Right
 - Right to Left
 - Top to Bottom
 - Bottom to Top
 - Skew
 - Horizontal
 - Vertical
 - Diagonal
- Max Barcodes: 100
- Speed: Fast
- Granularity: 9
- Min Length: 1
- Max Length: 50
- While Lines: 3
- Use Colors
 - Bar Color: ...
 - Space Color: ...
- Return Check Digit
- Error Check Digit
- Block Search
- Partial Read

Buttons: OK, Cancel

The following options are available:

- **Use Zone Recognition:**

A Specific Zone on the image can be specified where the barcode must be read from.

- **Direction:**

Indicates in which direction the barcode will be found. The more options selected, the more directions will be "tested" until a successful read is achieved. More direction options will result in slower processing

per barcode read.

- **Max Barcodes:**

Specifies the maximum number of barcodes to be recognized per document.

- **Speed:**

Speed options available are:

- **Normal:**

More accurate, but slower. To be used when barcode quality is not constantly of good quality

- **Fast:**

More speed, but lower accuracy. To be used when barcode quality is guaranteed to be good

- **Granularity:**

The concept of search granularity when the system first analyses the provided image in order to assess where potential barcodes might live. If you deal with large and high-resolution images, you can get away with a coarser granularity (i.e. larger number), which will subsequently speed up the process.

- **Min Length:**

The minimum number of characters contained within a barcode. This feature is used to single out barcodes of specific lengths to be identified and read.

- **Max Length:**

The maximum number of characters contained with a barcode. This feature is used to single out barcodes of specific lengths to be identified and read.

- **White Lines:**

Specify the wide/narrow ratio of the barcode to be read

- **Use Colors:**

Barcodes printed in color can be read, the Bar Color and Space Color must be specified

- **Bar Color:**

The color to be detected when solid bar colors are read (The color replacing the normally BLACK lines)

- **Space Color:**

The color to be detected when space colors are read (The color replacing the normally WHITE spaces)

- **Return Check Digit :**

Specifies if the Check Digit from a barcode should be returned with the value of the barcode

- **Error Check Digit:**

Specifies if the barcode value should be returned if the Check Digit is not matching the barcode value.

- **Block Search:**

Allows for block searches on barcodes allowing this function

- **Partial Read:**

This option allows for the barcode to be read, even if the entire barcode is not readable. The system will return ANY and ALL information which it finds within what it believes to be a barcode.

5.2.3 Barcode 2D Settings

Barcode 2D Settings

2D means 'two dimensional'. 2D barcodes contain more information than conventional one dimensional linear barcodes. 1D barcodes get wider as more data is encoded. 2D barcodes make use of the vertical dimension to pack in more data.

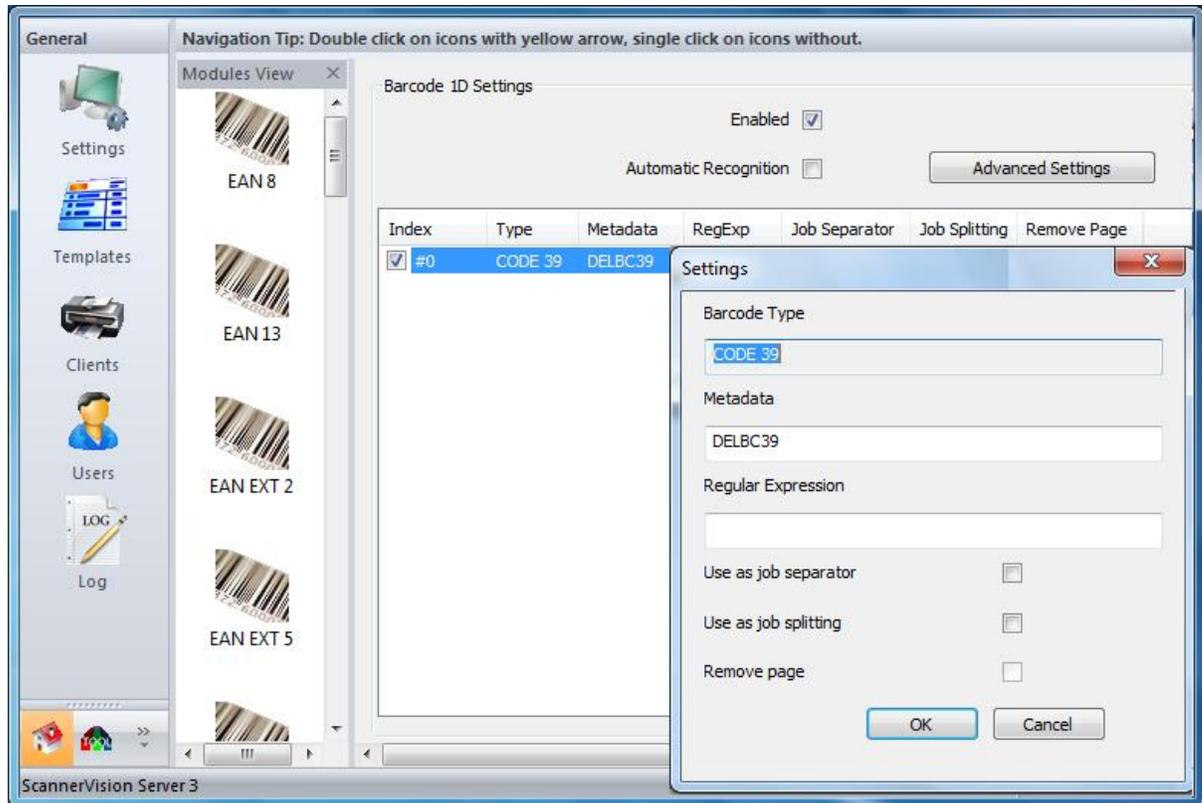
Two dimensional barcodes can be read from images which contains 2D Barcodes. The barcodes can be read by ScannerVision, and the contents of the barcode can be used as meta data for the image from which the barcode have been read. Barcodes can be used split documents based on the barcode presence or barcode contents. 2D Barcodes types can be automatically identified (slower) or the type can be specified (see [Defining 2D Barcodes](#)). Multiple types of barcodes can be read from an image.

Also see [Appendix E - Barcodes Best Practices](#)

5.2.3.1 Defining 1D Barcodes

Defining 1D Barcode

To manually add 1D barcode types, simply click on desired barcode type in the Modules View pane, and drag the barcode type into the Barcode 1D Settings pane.



The following Settings can be set for each 1D Barcode type added for processing:

- **Barcode Type:**

This field will automatically be populated based on the 1D Barcode Type selected in the Modules View

- **Metadata:**

A unique reference must be added to identify the 1D Barcode value to be read. This metadata name will be used to reference the 1D Barcode value as required during Store processes, File naming processes, Data Export Processes and Notification Processes.

- **Regular Expression:**

A [regular expression](#) can be specified to ensure that the correct barcode value is read. This is especially useful in situations where more than one barcode of a specific type could be found on the same document. An example would be where two Type 3 of 9 barcodes are found on an image, one containing an invoice number and the other an order number. The invoice number could start for example with "INV" and the Order number barcode value could start with "ORD". In this example, two

barcode modules of Code 3 of 9 can be added where regular expression are used on each 1D Barcode module specifying which barcode value must be read for each 1D Barcode module.

The following 1D Barcode Types can be read:

- [EAN 8](#)
- [EAN 13](#)
- [EAN Ext2](#)
- [EAN Ext5](#)
- [UPC A](#)
- [UPC E](#)
- [UPC Ext2](#)
- [UPC Ext5](#)
- [Code128](#)
- [Code39](#)
- [Code93](#)
- [Interleaved 2of 5](#)
- [2of 5 Industrial](#)
- [2 of 5 IATA](#)
- [2 of 5 Matrix](#)
- [2 of 5 Datalogic](#)
- [Code 11](#)
- [MSI](#)
- [PostNet](#)
- [Planet](#)
- [Australian Post C, Australian Post N and Australian Post Bar State](#)
- [Codabar](#)

Job Separator:

This option allows the document to be split into separate documents as soon as a barcode is detected. Pages with barcodes will be indexed separate from documents without barcodes.

Job Splitting:

Every time a barcode is read, it indicates the start of a new document. All subsequent pages will be handled as part of the first page where the 1D barcode was found. As soon as another 1D barcode which fits the criteria set for this process is found, a new document will be created and the system will process subsequent pages as part of the next document, thereby splitting the document into various documents using 1D Barcodes.

Remove Page:

Selecting this page, the page containing the 1D Barcode used for job separation will be removed. Please note this option can be used only when the Job Separator check-box is flagged.

5.2.3.1.1 EAN 8

EAN 8

EAN-8 is a smaller and shortened version of the EAN code. Again the numbers are assigned by the country's GS1 organization.



EAN-8 requires 8 digits (7 if the check digit is calculated automatically), and support 2 and 5 digit supplementaries. Recommended sizes: The recommended size for EAN-8 barcodes is for an X value of 13 Mils and a bar height of 18 mm (0.7 inch). The permitted range of sizes is from 80% (X = 11 Mils, bar height = 14.5 mm (0.56 inch)) to 200% (X = 36 Mils, bar height = 50 mm (1.4 inch)).

5.2.3.1.2 EAN 13

EAN 13

EAN-13 is the main scheme used throughout world-wide for retail article numbering. It is a numeric only coding scheme. The > symbol in the right margin is a light margin indicator. In the left margin the first code digit is used as the margin indicator. No other marking should appear in the light margins.



EAN-13 codes require 13 digits (12 if the check digit is calculated automatically). Numbers used for EAN article numbering are known as GTIN (Global Traded Item Numbers) assigned by the country's GS1 organization. All EAN/UCC 13 barcodes use a checkdigit based on a Mod 10 calculation.

Recommended sizes: The recommended size for EAN-13 barcodes is for an X value of 13 Mils and a bar height of 25 mm (1 inch). The permitted range of sizes is from 80% (X = 11 Mils, bar height = 20 mm (0.8 inch)) to 200% (X = 26 Mils, bar height = 50 mm (2 inch)). The ratio of height to width should be constant. Symbols with a smaller height than calculated from these figures are known as Truncated symbols and such symbols may not be acceptable for omni-directional scanning.

EAN codes may contain 2 or 5 digit supplementaries:





The ISBN coding scheme is EAN13, with the first three digits being 978 or 979, and until recently the 9 digits the ISBN number of the book (without the ISBN check digit). The final digit is the EAN calculated check digit. Since 2007 13-digit ISBN numbers have been issued and these contain the EAN check digit. The ISSN coding scheme is EAN13, with the first three digits being 977, 7 digits showing the ISSN number of the periodical (without check digit), and 2 spare digits (used in the UK to indicate price code changes, but which are otherwise 00). The final digit is the EAN calculated check digit. The ISMN coding scheme is EAN13, with the first three digits being 979, followed by 0 and the first 8 digits of the ISMN number. The final digit is the EAN calculated check digit. The JAN coding scheme is EAN13 with the first two digits being 49. Note that there is not a one to one correspondence between bars and the code numbers.

5.2.3.1.3 EAN Ext2

EAN Ext2

Please see [EAN 13](#)

5.2.3.1.4 EAN Ext5

EAN Ext5

Please see [EAN 13](#)

5.2.3.1.5 UPC A

UPC A

The UPC (Universal Product Code) is widely used in the USA as a retail code. However, it has wider application and this can result in some confusion. The actual UPC code is a 10 digit code. The 10 digit number is preceded by a "number system" digit, which is 0 for the retail version, and followed by a check digit. In many retail systems only the 10 digits of the UPC code need to be entered in the event of a mis-scan, so there have been times when the leading 0 has not been included in the human readable form. However, other values of the number system digit are used for specific purposes (eg. 6 or 7 are used for manufacturing identification numbering, 3 for drug products, etc.). The UPC-A code is one variant of a number of 12 digit codes widely used in the USA. Retail codes are usually thought of as those with 10 digits (or 11 if the checkdigit is being entered explicitly), and in fact are 12 digit codes made up of a leading 0, followed by 10 product digits and 1 checkdigit. The library generates the barcode images for UPC-A if the leading 0 is provided, followed by the 10 digit product code. The check digit may either be entered explicitly or calculated by the library. This technique allows alternative leading digits to be used for their intended purposes. Users of such alternative codes will know what those leading digits may be, or may obtain the information from the authorised code provider. The UCC has produced more than one specification of the UPC codes. The current (and GS1) specification suggests that the country code (always 0 in the USA) and the codes checkdigit should be printed aligned with the coded digits, but in the light margins. Earlier specifications suggested that these digits should be printed in different positions or not at all. The library offers the choice of not printing the digits or of printing them in the light margins (using the Margin Indicators ON option) for both UPC-A and UPC-E codes.



Recommended sizes: The recommended size for UPC-A barcodes is for an X value of 13 Mils and a bar height of 25 mm (1 inch). The permitted range of sizes is from 80% (X = 11 Mils, bar height = 20 mm (0.8 inch)) to 200% (X = 26 Mils, bar height = 50 mm (2 inch)). The ratio of height to width should be constant. Symbols with a smaller height than calculated from these figures are known as Truncated symbols and such symbols may not be acceptable for omni-directional scanning. UPC-E codes are shortened versions of UPC-A symbols designed for use in restricted spaces. By default the dLSOFT libraries generate UPC-E symbols using the number system 0 from 6 digit data (and a check digit). The symbol may be forced to number system 1 by setting the Extra 1 flag.



UPC-A and UPC-E codes support 2 and 5 digit supplementaries. The libraries also offer the option of creating UPC-E0 (number system 0) or UPC-E1 (number system 1) symbols from a suitable UPC-A number. These options should not be used unless the user has been assigned UPC-A number suitable for this reduction. Supplementaries are not supported for these modes.

5.2.3.1.6 Code 128

Code 128

Code 128 and GS1-128 are modern very high density coding schemes. They have three coding schemes each and permit the inclusion of special characters not present on the keyboard. If no coding scheme is specified the dLSoft libraries automatically select the most suitable type. For GS1-128 scheme C is used for any code which has numbers in the first four digits (as recommended by the GS1). A specific subtype scheme may be selected by making the first character one of the start characters specified below or, in most dLSoft products, by selecting the Code 128A or Code 128B subtypes. GS1-128 barcodes are distinguished from Code 128 by the presence of a Function 1 (FNC1) character as the first character encoded.



Special characters may be entered as <ALT>0XYZ, where XYZ is the 3 digit ASCII code (+128 for values <32) Code C codes only the digit pairs 00-99. Note that EAN/UCC-128 codes have parentheses removed before coding, so (and) may appear in the human readable form but will be omitted from the barcode. Parentheses may not be used as part of the code data. Spaces may be stripped from the text provided for input by checking the EXTRA1 checkbox in applications, or setting the flags parameter bit DL_FLAG_EXTRA1 (bit 4 of the flags variable) or BarCode.Extra1 in the OCX. This allows spaces to appear in the text under the symbol while not being included in the symbol itself. dLSoft barcode products normally provide the control codes for switching between subtypes automatically, but this facility can be turned off by checking the EXTRA2 checkbox in applications, or setting the flags parameter bit DL_FLAG_EXTRA2 (bit 5 of the flags variable) or BarCode.Extra2 in the OCX. When dBarcode is to provide control codes no additional control codes should be provided by the user, although an initial Start A or Start B code may be given if it is desired to force the symbol to start in a particular code type. Users should note that if this option is chosen then the barcode produced may not appear identical to a sample obtained from another source - although it will scan to produce the same characters. Many dLSoft products also include the option to select Code 128A or Code 128B code types and these attempt to encode the data using subtype A or subtype B respectively without requiring the user to insert start characters. The dLSoft libraries always calculate the Mod 103 check digit required in 128 barcodes, and this check digit is never produced in human readable form. The majority of support calls result from

users not using the correct 128 code variants (ie. A, B or C) or not being aware of which code variant a customer is expecting. Some customers expect only Code C, while others start in Code A and then switch to Code C, etc. It is important to be aware that the three code variants exist and will commonly be encountered within the same barcode. For this reason it is essential to ascertain which type the customer wants and if and where the code variant should change along the barcode. Users of Code 128/EAN 128 should note that while there is a nominal size for these symbols (31.8 mm high and $11*n+2$ mm long, where n is the number of characters including control codes), many applications of these codes use recommended sizes of between 50% and 84% of nominal.

5.2.3.1.7 Code 39

Code 39

Code 39 is by far the most common barcode scheme outside the retail area and is read by most scanners, although it is not as compact as Code 93 or Code 128. The normal Code 39 scheme encodes both numbers and upper case letters, and was the first alphanumeric symbology:



Code 39 has an optional Mod 43 check digit. The Extended Code 39 scheme also includes the lower case letters and much punctuation.



It should be noted that Extended Code 39 represents most of the additional characters by using two characters from the standard Code 39 character set. Consequently Extended Code 39 symbols are about twice as long as standard Code 39 symbols. Code 39 is a discrete symbology - so the gap between ciphers may be larger than a unit space. Some users mistake that inter-cipher gap for a space and become concerned because it is not the same size as in another barcode representing the same characters. There is no substitute for testing the barcode with a scanner! Also the start and stop characters are the same, and sometimes may be represented in the human readable form by an asterisk. If iExtra1 is set the start and stop characters are shown as an asterisk in the human-readable form. If iExtra1 is not set then the start and stop characters are not represented in human-readable form. If iExtra2 is set an inter-cipher gap of 1 unit is used. If iExtra2 is not set there is no inter-cipher gap.

5.2.3.1.8 Code 93

Code 93

Code 93 was designed to complement Code 39 and is a more compact code than the latter. The library supports both the standard Code 93 (numbers and upper-case letters) and the Extended (full ASCII) Code 93.



Code 93 symbols allow for two optional Mod 47 check characters, which are not normally included in the human readable form.

5.2.3.1.9 Interleaved 2 of 5

Interleaved 2 of 5

One of the most common codes outside the retail area is Interleaved 2 of 5, a high density, continuous numeric symbology that codes digit pairs. Because of this I-2 of 5 can only be used for even numbers of digits. If an odd number of digits is provided the dLSoft library automatically adds a leading 0 to the front of the data.



Interleaved 2 of 5 symbols may include an optional Mod 10 check digit.

5.2.3.1.10 2 of 5 Industrial

2 of 5 Industrial

2 of 5 is a numeric only coding scheme, which is not very efficient and not recommended for new applications. 2 of 5 symbols do not use a check digit.



2 of 5 is also known as Standard 2 of 5 or Industrial 2 of 5.

5.2.3.1.11 2 of 5 IATA

2 of 5 IATA

IATA 2 of 5 is still a widely used barcode type, essentially the same as Standard/Industrial 2 of 5 but with different start and stop bars.



Most dLSoft products generate IATA 2 of 5 when Standard 2 of 5 is selected and the Extra 1 flag is set. Checking the EXTRA1 checkbox in applications, or setting the flags parameter bit DL_FLAG_EXTRA1 (bit 4 of the flags variable) in libraries sets this flag. IATA 2 of 5 symbols do not use a check digit.

5.2.3.1.12 2 of 5 Matrix

2 of 5 Matrix

Matrix 2/5 is an older numeric-only code, with an optional modulo 10 check digit. Not recommended for new applications.



1234565

5.2.3.1.13 2 of 5 Datalogic

2 of 5 Datalogic

Also known as China Postal Code is a variant with modified start and stop characters.



5.2.3.1.14 Code 11

Code 11

Code 11 is an older numeric code that is used by a number of large organizations, but is rarely found on retail scanners.



Code 11 symbols may optionally include one or two Mod 11 checkdigits. The dLSoft libraries use a single checkdigit for data lengths of 11 characters or less, and two checkdigits for data lengths of 11 characters or more.

5.2.3.1.15 MSI

MSI

MSI, also known as the Modified Plessey Code, is a relatively weak code that is inefficient in use of space.

**MSI with Single Check Digit**

Normally this code has a single Modulo 10 check digit. However, there are two variations of a double check digit form in common use. One uses a Mod 11 check digit before the normal Mod 10 check digit, the other uses two Mod 10 check digits.

**MSI with extra Mod 10 checkdigit****MSI with extra Mod 11 checkdigit**

These two-checkdigit forms are accessible through the use of the Extra1 or Extra2 parameters - ie by either checking the Extra1 or Extra2 check boxes in applications, or setting the DL_FLAG_EXTRA1 (bit 4) or DL_FLAG_EXTRA2 (bit 5) flags in the DLL, or by setting the BarCode1.Extra1 or BarCode1.Extra2 parameters in the OCX. The effects are as shown below. Note that BOTH options also require the autocheckdigit calculation to be enabled. If Extra1 is set then a Modulo 10 check digit is calculated and inserted before the normal checkdigit. If Extra2 is set then a Modulo 11 check digit is calculated and inserted before the normal checkdigit. Some scanning equipment cannot read both forms. (In fact some scanning equipment cannot read either of the two checkdigit forms). Check your scanners documentation to ensure that you choose an appropriate combination. DO NOT SET BOTH Extra1 and Extra2.

5.2.3.1.16 Codabar

Codabar

Codabar is a discrete system developed by Monarch Marking Inc in 1972. It is known as NW-7 in Japan, as it has Narrow and Wide bars and 7 elements per character. It is also known as USD-4 and 2 of 7 code. The Codabar coding scheme is a self-checking system which has 16 characters in its character set; the digits 0-9, and the characters \$: / . + -. It has a choice of four start & stop characters, although some versions allow a choice of eight!. By default dLSoft barcode products use A and C for start and stop respectively. However, by prefixing the barcode with a caret (^) and two symbols, any of the allowed Codabar characters may be used for start and stop; ie. ^AT causes A to be used as the start character and T to be used for the stop character

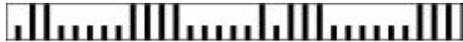


The allowed Codabar start and stop characters are: A B C D E N T * The start and stop characters are not displayed in text form. Codabar does not define a check digit, and being a self-checking code a check digit is somewhat pointless. However, two check digit types are in common use. Mod 10 check digits are often used in Codabar symbols, and by default dLSoft products will generate a Mod 10 check digit if required. The alternative check digit type is the AIM (Mod 16) check digit. Setting the Extra 1 flag causes dLSoft products to use the Mod 16 algorithm for check digits in Codabar symbols. Codabar barcodes are also known as Monarch barcodes, 2 of 7, NW-7 and USD-4 barcodes.

5.2.3.1.17 PostNet

PostNet

PostNet codes are the clocked codes used in the US mail system. There are three types of PostNet code (identified as A, C and C'), which differ in the number of characters encoded. These codes are based on the US ZIP code system plus a Mod 10 checkdigit.



5.2.3.1.18 Planet

Planet

Planet codes are clocked codes used within the US Postal Service for the confirmation of incoming or outgoing mail.



Planet codes consist of 9 or 11 digits prefixed by a code to indicate which Origin Confirm or Destination Confirm service is required, and postfixed by a mandatory Mod 10 check digit. The dLSoft library automatically provides the check digit. There is no text content associated with these codes.

5.2.3.1.19 Australian Post

Australian Post

The Australian Postal Service uses a variant of the 4 State code with Reed-Solomon Error Correction.

Australia Post barcodes are made up of a two digit Format Control Field (FCC), an 8 digit Delivery Point Identifier (DPID), and (for Customer 2 & 3 formats) a variable length Customer Information Field.

For convenience some of the formats may be created automatically:

Standard Customer code (FCC=11): by unchecking both the EXTRA1 and IEXTRA2 checkbox's in applications, or clearing the flags parameter bits DL_FLAG_EXTRA1 (bit 4 of the flags variable) and DL_FLAG_EXTRA2 (bit 5 of the flags variable).

Customer 2 (FCC=59): by checking the EXTRA1 checkbox in applications, or setting the flags parameter bit DL_FLAG_EXTRA1 (bit 4 of the flags variable).

Customer 3 (FCC=62): by checking the EXTRA2 checkbox in applications, or setting the flags parameter bit DL_FLAG_EXTRA2 (bit 5 of the flags variable).

If both EXTRA1 and EXTRA2 flags are checked (or both flags parameter bits DL_FLAG_EXTRA1 (bit 4 of the flags variable) and DL_FLAG_EXTRA2 (bit 5 of the flags variable) are set, then the barcode type is determined by the first two digits of the data.

If the 8 digit DPID is 00000000 then the FCC field is set to 00. This FCC is used on mail where customers DO NOT include the DPID of a customer, but do want to take advantage of imbedding their own data in the barcode.

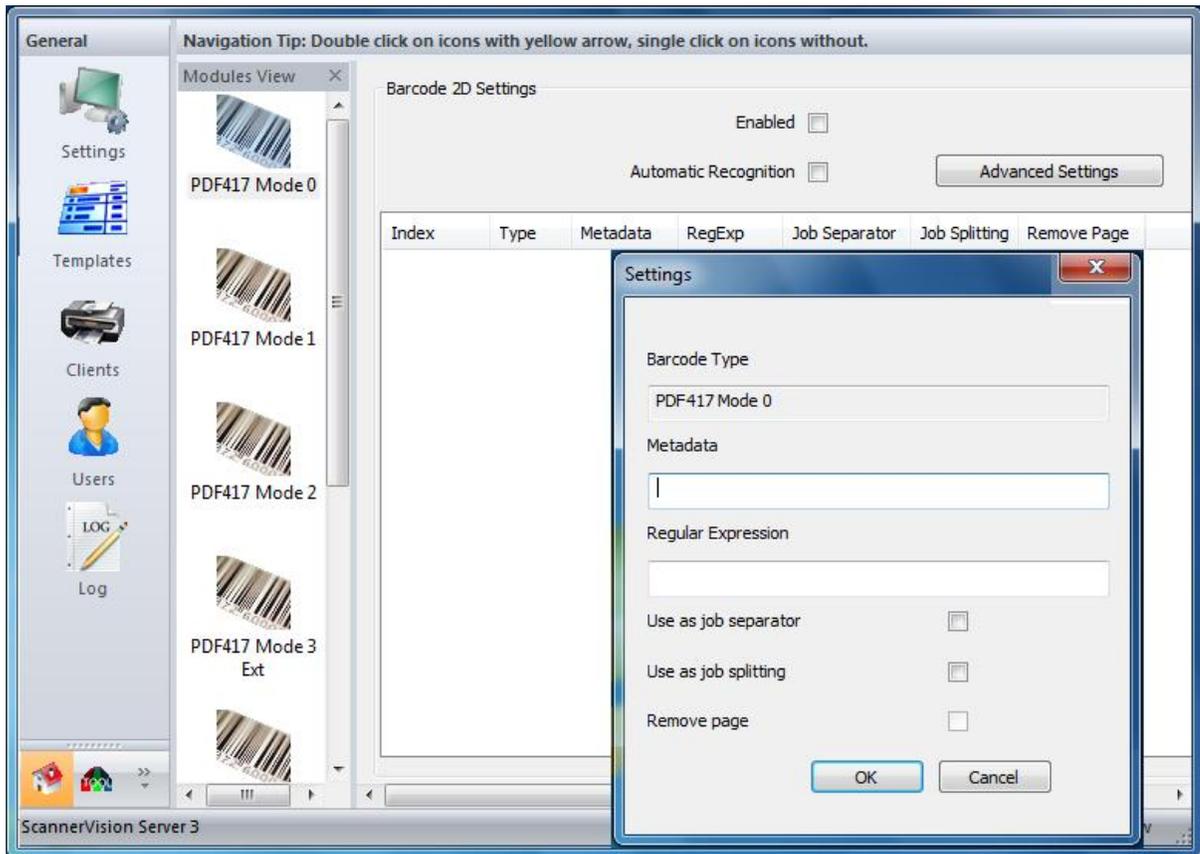


The barcode will typically be printed with a height of 5 mm, and an overall length reflecting the number of bars at approximately 22 - 25 bars per inch

5.2.3.2 Defining 2D Barcodes

Defining 2D Barcodes

To manually add 2D barcode types, simply click on desired barcode type in the Modules View pane, and drag the barcode type into the Barcode 2D Settings pane.



The following Settings can be set for each 2D Barcode type added for processing:

- **Barcode Type:**

This field will automatically be populated based on the 2D Barcode Type selected in the Modules View

- **Metadata:**

A unique reference must be added to identify the 2D Barcode value to be read. This metadata name will be used to reference the 2D Barcode value as required during Store processes, File naming processes, Data Export Processes and Notification Processes.

- **Regular Expression:**

A [regular expression](#) can be specified to ensure that the correct barcode value is read. This is especially useful in situations where more than one barcode of a specific type could be found on the same document.

The following 2D Barcode Types can be read:

- [PDF 417 Mode 0](#)
- [PDF 417 Mode 1](#)
- [PDF 417 Mode 2](#)
- [PDF 417 Mode 3 Ext](#)
- [Micro PDF 417](#)
- [Datamatrix Square](#)
- [Datamatrix Rectangle](#)
- [Datamatrix Small](#)

Job Separator:

This option allows the document to be split into separate documents as soon as a barcode is detected. Pages with barcodes will be indexed separate from documents without barcodes.

Job Splitting:

Every time a barcode is read, it indicates the start of a new document. All subsequent pages will be handled as part of the first page where the 2D barcode was found. As soon as another 2D barcode which fits the criteria set for this process is found, a new document will be created and the system will process subsequent pages as part of the next document, thereby splitting the document into various documents using 2D Barcodes.

Remove Page:

Selecting this page, the page containing the 2D Barcode used for job separation will be removed. Please note this option can be used only when the Job Separator check-box is flagged.

5.2.3.2.1 PDF 417

PDF417

PDF417 (Portable Data File 417) is a stacked barcode symbology capable of encoding over a kilobyte of data in a symbol.



PDF417 symbols may include extensive error-correction enabling data to be recovered from a symbol which has been damaged or corrupted.

There are 900 different patterns (codewords) which may be incorporated into a PDF417 symbol, and several modes available for encoding.

Encoding Modes

EXC (Extended Alphanumeric Compaction mode) - allows encoding of all printable ASCII characters into about 2 characters per codeword. Within the EXC mode there are several submodes:

- EXC Alpha - starts in upper case
- EXC Lower - starts in lower case
- EXC Mixed - numeric and other punctuation
- EXC Punctuation - punctuation & bracket characters.

Binary/ASCII Plus mode - allows encoding of 256 international characters including the full ASCII set plus any 8-bit value in the range 0 - 255. This mode allows encoding approximately 1.2 bytes per codeword and so is considerable less efficient than EXC mode.

Numeric mode - allows encoding of a string of digits with a density of approximately 2.95 digits per codeword. Recommended where more than 13 digits are to be encoded. Numeric mode symbols may not contain non-numeric characters.

The maximum capacity of PDF417 symbols is approximately as follows:

- Numeric mode – maximum capacity 2700 digits*
- Alphanumeric text – maximum capacity 1800 characters*
- Byte values – maximum capacity 1100 bytes

*Note that capital letters, punctuation, mode shifts and new lines/paragraphs reduce these value.

Security level

One of PDF417's most valuable features is its ability to allow correction of errors. This ability is provided by the inclusion of additional codewords within the symbol, so that the data codewords may be reconstructed even if some are defaced or misread.

The number of damaged codewords (Nmax) which may be recovered depends on the security level (which in turn determines the number of additional characters included in the symbol)

Aspect ratio

PDF417 symbols may be reproduced with different number of codewords per row, and therefore in several different height to width ratios.

The user may select the target number of codewords per row. In general tall, thin barcodes read more reliable than short, wide symbols, although there may be restrictions applied by the type of barcode scanner employed.

The dBarcode library will attempt to form a symbol which meets a target number of codewords per row, but users should note that some things are just not possible!

Truncated PDF417

PDF417 symbols that are missing one data codeword and the stop bars from each row are known as Truncated PDF417 symbols. Most scanners will read such symbols, but some will not!

Truncated PDF417 symbols have the advantage of being smaller than full PDF417, but the disadvantage of being less able to tolerate damage without becoming unreadable.



5.2.3.2.2 Datamatrix

DataMatrix

DataMatrix is a two dimensional matrix symbology which is made up of square modules arranged within a finder pattern. DataMatrix symbols may be square or rectangular.

**Security**

DataMatrix symbols can include a user-selected amount of error-correction data.

For Square symbols the Security Level setting may be in the range 0 – 24, while for Rectangular symbols the allowed range is 0 – 6. See below for details.

DataMatrix symbols can encode the entire ASCII character set and uses multiple encoding modes which are, in order of efficiency:

- Double digits – maximum capacity 3100 digits
- Alphanumeric text – maximum capacity 2300 characters*
- Byte values – maximum capacity 1550 bytes

*Note that capital letters, punctuation and new lines/paragraphs reduce this value.

dLSoft 2D barcode products support only ECC200 symbols – the older ECC140 and below are not supported. Also at this time ECI and Appended symbols are not supported.

If the GS1 flag is set then the first data character is made FNC1 (ASCII 232) and the remaining data is treated as EAN/UCC data; i.e. brackets are removed from the data. Any AIs included in the data that are NOT fixed length should be terminated with a FNC1 character. (The FNC1 character may be entered from the keyboard by holding down the <Alt> key and typing 0232 on the numeric keypad.)

The industry standard Macro sequences []><RS>05<GS> and []><RS>06<GS> are supported (where <RS> represents ASCII 30 and <GS> is ASCII 29).

5.2.3.2.3 Micro PDF 417

Micro PDF 417

MicroPDF417 is a multi-row symbology based on PDF417 designed for applications requiring a greater area efficiency but lower data capacity than PDF417. A specific and limited set of symbol sizes is available, each size including a fixed level of error correction.



MicroPDF417 provides for three encoding modes: Text, Byte and Numeric compaction. Text is for general text, Numeric for encoding data consisting only of digits, and Byte to allow for the first 127 ASCII characters but with a reduced level of efficiency. Four symbol widths are permitted, each specifying the number of data columns (1 – 4). Within each symbol width a variable number of rows provide for a maximum data capacity of:

Text compaction mode 0: 250 characters (2 data characters per codeword)

Byte compaction mode 1: 150 characters (1.2 data characters per codeword)

Numeric compaction mode 2: 366 characters (2.93 data characters per codeword)

The following additional parameters are allowed for each symbol:

Level/Columns:

Number of data columns in the symbol. (1 – 4)

X-unit:

Thickness of thinnest bar in mils (4 – 200)

Y-multiplier:

Height of each bar in X-units (2 – 5)

The industry standard Macro sequences `[]><RS>05<GS>` and `[]><RS>06<GS>` are supported (where `<RS>` represents ASCII 30 and `<GS>` is ASCII 29).

5.2.3.3 Advanced Settings

Advanced Settings

Advanced Settings can be used so set specific criteria for the 2D Barcode to be read.

The screenshot shows the 'Advanced Settings' dialog box with the following configuration:

- Use Zone Recognition
 - L: 0
 - T: 0
 - R: 0
 - B: 0
- Direction**
 - Left to Right
 - Right to Left
 - Top to Bottom
 - Bottom to Top
 - Skew
 - Horizontal
 - Vertical
 - Diagonal
- Max Barcodes: 100
- Speed: Fast
- Granularity: 9
- Min Length: 1
- Max Length: 50
- While Lines: 3
- Use Colors
 - Bar Color: ...
 - Space Color: ...
- Return Check Digit
- Error Check Digit
- Block Search
- Partial Read

Buttons: OK, Cancel

The following options are available:

- **Use Zone Recognition:**

A Specific Zone on the image can be specified where the barcode must be read from.

- **Direction:**

Indicates in which direction the barcode will be found. The more options selected, the more directions will be "tested" until a successful read is achieved. More direction options will result in slower

processing per barcode read.

- **Max Barcodes:**
Specifies the maximum number of barcodes to be recognized per document.
- **Speed:**
Speed options available are:
 - **Normal:**
More accurate, but slower. To be used when barcode quality is not constantly of good quality
 - **Fast:**
More speed, but lower accuracy. To be used when barcode quality is guaranteed to be good
- **Granularity:**
The concept of search granularity when the system first analyses the provided image in order to assess where potential barcodes might live. If you deal with large and high-resolution images, you can get away with a coarser granularity (i.e. larger number), which will subsequently speed up the process.
- **Min Length:**
The minimum number of characters contained within a barcode. This feature is used to single out barcodes of specific lengths to be identified and read.
- **Max Length:**
The maximum number of characters contained with a barcode. This feature is used to single out barcodes of specific lengths to be identified and read.
- **White Lines:**
Specify the wide/narrow ratio of the barcode to be read
- **Use Colors:**
Barcodes printed in color can be read, the Bar Color and Space Color must be specified
 - **Bar Color:**
The color to be detected when solid bar colors are read (The color replacing the normally BLACK lines)
 - **Space Color:**
The color to be detected when space colors are read (The color replacing the normally WHITE spaces)
- **Return Check Digit:**
Specifies if the Check Digit from a barcode should be returned with the value of the barcode
- **Error Check Digit:**
Specifies if the barcode value should be returned if the Check Digit is not matching the barcode value.
- **Block Search:**
Allows for block searches on barcodes allowing this function
- **Partial Read:**
This option allows for the barcode to be read, even if the entire barcode is not readable. The system

will return ANY and ALL information which it finds within what it believes to be a barcode.

5.2.4 Barcode Writing Settings

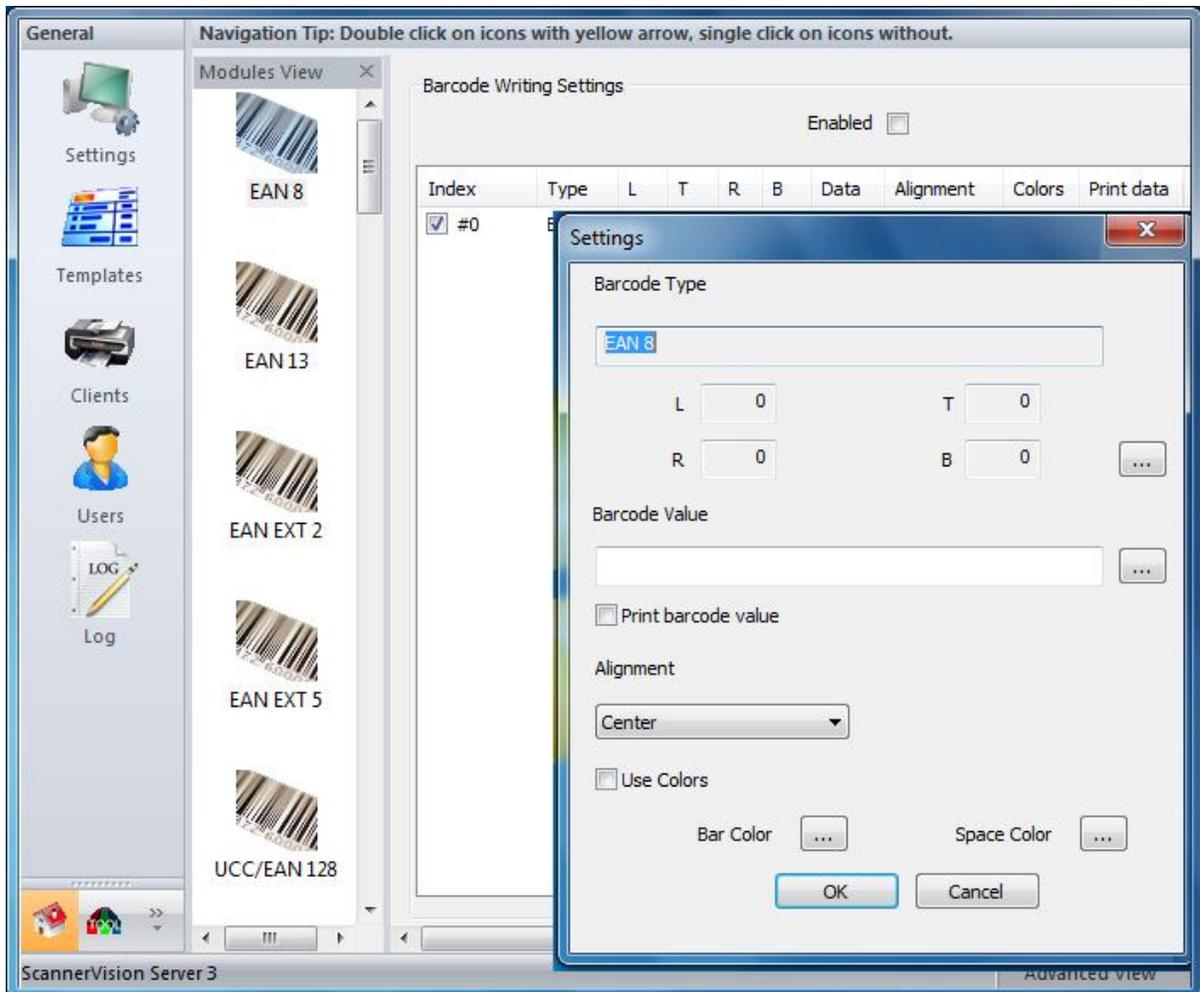
Barcode Writing Settings

Barcode Writing allows for Barcodes to be annotated onto images. This feature allows for rich meta data to be added to a document, which can be used in business process flow (workflows) and/or auditing purposes. Barcode writing will "stamp" a barcode of choice onto the image, on a pre-defined area, and the barcode data could include most meta data available at the time of processing. Please consider barcode type limitations when applying this feature.

5.2.4.1 Defining Barcode Writing

Defining Barcode Writing

To annotate a barcode on an image, simply click on desired barcode type in the Modules View pane, and drag the barcode type into the Barcode Writing Settings pane.



Barcode Type:

Firstly, the area on the image can be set with off-set values, or be specified using the preview button on a sample image. The following types of barcode can be written onto the image, choosing among the available barcode writing standards:

- [EAN 8](#), [EAN 13](#), [EAN Ext2](#), [EAN Ext5](#), [UPC A](#), [UPC E](#), [UPC Ext2](#), [UPC Ext5](#), [Code128](#), [Code39](#), [Code93](#), [Interleaved 2of 5](#), [2of 5 Industrial](#), [2 of 5 IATA](#), [2 of 5 Matrix](#), [2 of 5 Datalogic](#), [Code 11](#), [MSI](#), [PostNet](#), [Planet](#), [Australian Post C](#), [Australian Post N](#), [Australian Post Bar State](#), [Codabar](#), [PDF 417 Mode 0](#), [PDF](#)

[417 Mode 1](#), [PDF 417 Mode 2](#), [PDF 417 Mode 3 Ext](#), [Micro PDF 417](#), [Datamatrix Square](#), [Datamatrix Rectangle](#) and [Datamatrix Small](#)

Barcode Value:

This is the data which will be embedded in the barcode during barcode writing

Print Barcode Value:

A Human Readable annotation will be placed below the barcode if this option is selected.

Alignment:

The barcode can be aligned within the region specified above by selecting Left, Center or Right.

• **Use Colors:**

Barcodes can be printed in color. Bar Color and Space Color must be specified

○ **Bar Color:**

The color to be used when solid bar colors are written (Normally the BLACK areas of a barcode)

○ **Space Color:**

The color to be used when white spaces should be written (Normally the WHITE areas of a barcode)

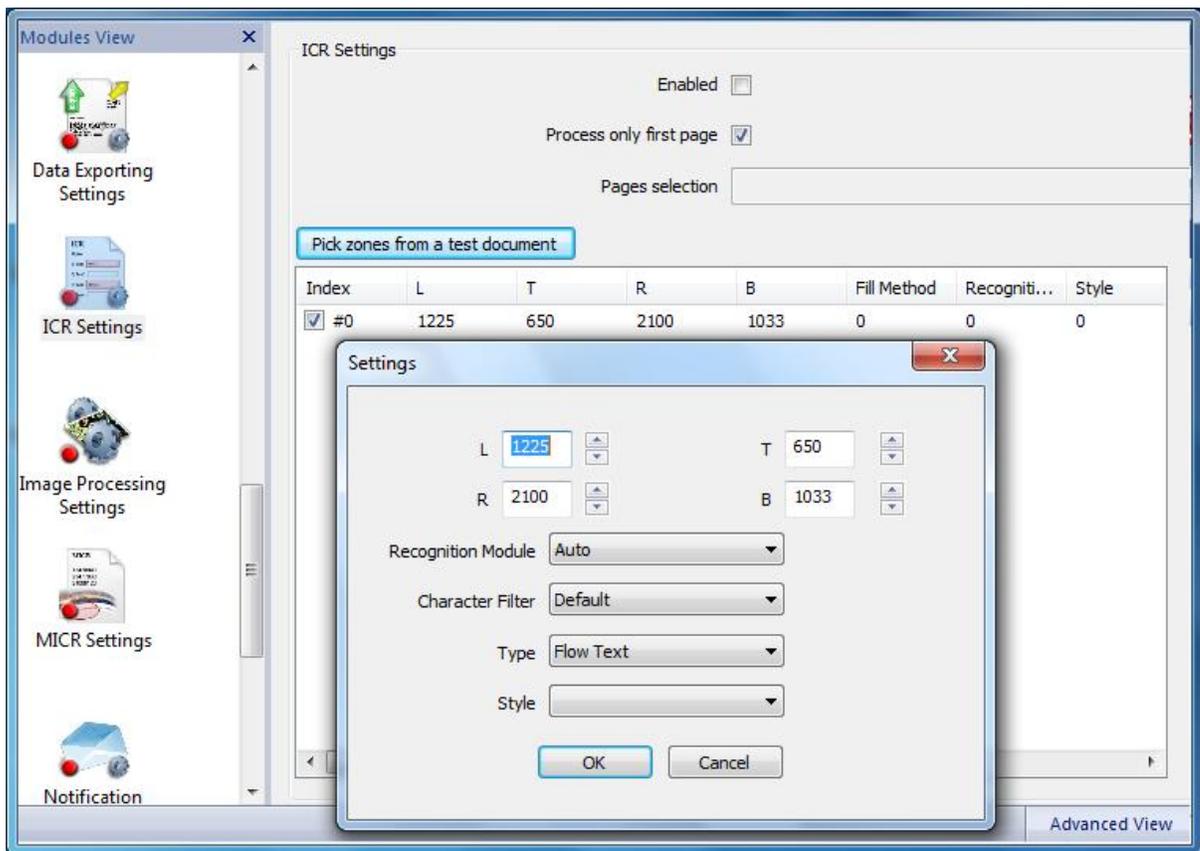
5.2.5 ICR Settings

ICR Settings

The ScannerVision ICR module can convert handwritten text and numbers into machine readable strings.

This is an advanced feature which requires very specific configuration and tweaking, as human handwriting differs in many ways. To add an ICR process to the template, simply add a zone, or pick zones from a test document from where the hand written text should be read. Advanced Settings can be configured by right-clicking on an existing zone, and selecting "Configure Zone".

Note that some of these options **Advanced View** by clicking on the toggle in the lower right of the screen:



The following options can be set in the ICR Settings Window:

- **Enable:**
This option must be selected to enable the ICR module.
- **Process Only First Page:**
Only the first page of the document will be processed with ICR.

- **Pages Selection:**

Specific multiple pages can be entered, separated by ' , ' to be processed in the ICR module

- **Pick Zones From a Test Document:**

Zones can be added by selecting a sample image from where the zones can be selected. Note that the recognition regions are calculated in pixels; your test document should be scanned at the same resolution as your final document.

- **L (Left), T (Top), R (Right), B (Bottom):**

Once the zone area has been selecting for ICR processing, the details will then be displayed in the configuration pane. This is measured in **pixels** so you will need to convert the zones into inches or mm. By right clicking on the displayed details and selecting **Configure Zone**, one will be able to access the Advanced Setting Window.

The following options can be set in the Advanced Settings Window:

- **Recognition Module:**

Used to set the typeset of characters to be recognized

- **Auto:**

ScannerVision will attempt to automatically recognize the typeset. This option will result in slower and more intense processing.

- **MText Omni Font:**

The module recognizes machine printed text from printed publications, laser or ink-jet printers, and electric typewriters. Output from mechanical typewriters in good condition, and from draft-quality, letter-quality, or near-letter quality dot-matrix printers is also acceptable.

- **Multi Lingual Omni Font:**

This set recognizes machine printed text from printed publications, laser or ink-jet printers, and electric typewriters. Output from mechanical typewriters in good condition, and from letter- or near-letter quality (LQ, NLQ) dot-matrix printers is also acceptable.

- **Dot Matrix:**

The Dot Matrix module is designed for ONLY draft-quality 9-pin dot-matrix texts.

- **RER Printed:**

This recognition module can be used for recognition of hand-printed alphanumerical characters, i.e. upper and lower case letters, the digits and some others. Although it can be used to read flowing text, its main application area is in form-like situations, where the form designer has great control over the content and maybe length of hand-printed information given in each zone.

- **Matrix:**

The Matrix module is designed to read certain groups of fixed-font characters specially designed for OCR or imaging applications, in which no two characters have similar shapes. Each character group has its own filling method. Application areas are in banking, check or waybill handling, product distribution and document validation, where high accuracy can be vital. It also handles some non-fixed print styles.

- **Omni Font PLUS2W :**

The PLUS modules recognize machine printed text from printed publications, laser or ink-jet printers and electric typewriters. Output from mechanical typewriters in good condition may also be

acceptable. The PLUS2W module use voting technology to provide improved recognition results. The PLUS2W module combines the results from the MOR and MTX modules.

- **Omni Font FRX:**

The FRX module recognizes machine printed text from printed publications, laser or ink-jet printers, and electric typewriters. Output from mechanical typewriters in good condition, and from letter- or near-letter quality (LQ, NLQ) dot-matrix printers is also acceptable. Supports Latin, Greek and Cyrillic alphabets with enough accented letters to recognize the 54 languages (Languages and modules).

- **Omni Font PLUS3W:**

The PLUS modules recognize machine printed text from printed publications, laser or ink-jet printers and electric typewriters. Output from mechanical typewriters in good condition may also be acceptable. The PLUS3W module use voting technology to provide improved recognition results. The PLUS3W module combines the results from the MOR, MTX and FRX modules.

- **Character Filter:**

Specifies which types of characters could be encountered and be read by the ICR Module

- **Default:**

Misc Characters

- **Digit:**

The system will look for digit characters

- **Uppercase:**

Will only match characters in uppercase

- **Lowercase:**

Will only match characters in lowercase

- **Punctuation:**

Only punctuation characters will be read

- **Misc:**

Misc will return any character which the system might think the character might belong to.

- **All:**

All will return any character which the system might think the character might be.

- **Alpha:**

Only Alpha characters will be returned

- **Number:**

Only numeric characters will be returned

- **Type:**

The type of form from which the ICR process should read the characters

- **Flow Text:**

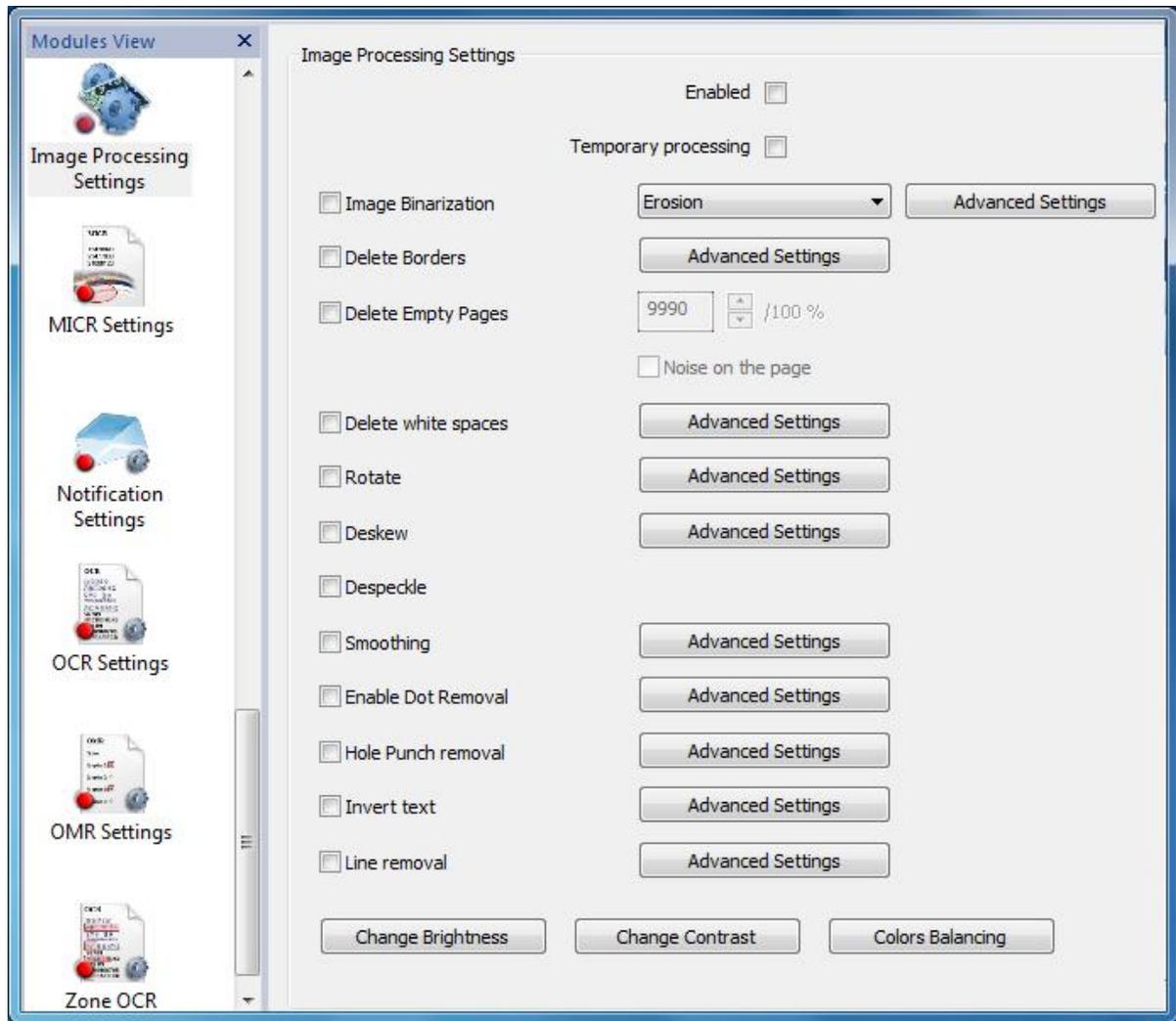
A free flow text pages, not containing any specific structure

- **Table:**
The data to be read is contained within a table or form
- **Graphic:**
The data is within a graphic on the page where the ICR module must be processed.
- **Auto:**
ScannerVision will attempt to automatically determine the type of form used.
- **Style:**
The dictionary style to be used
 - **European Style:**
An European dictionary style will be applied to recognize words
 - **North-American Style:**
A North-American dictionary style will be applied to recognize words

5.2.6 Image Processing Settings

Image Processing Settings

These are visual enhancements to optimize the appearance of an image, and to improve the quality of the image for data extraction, classification and identification. Common scanning defects can be fixed using this module.

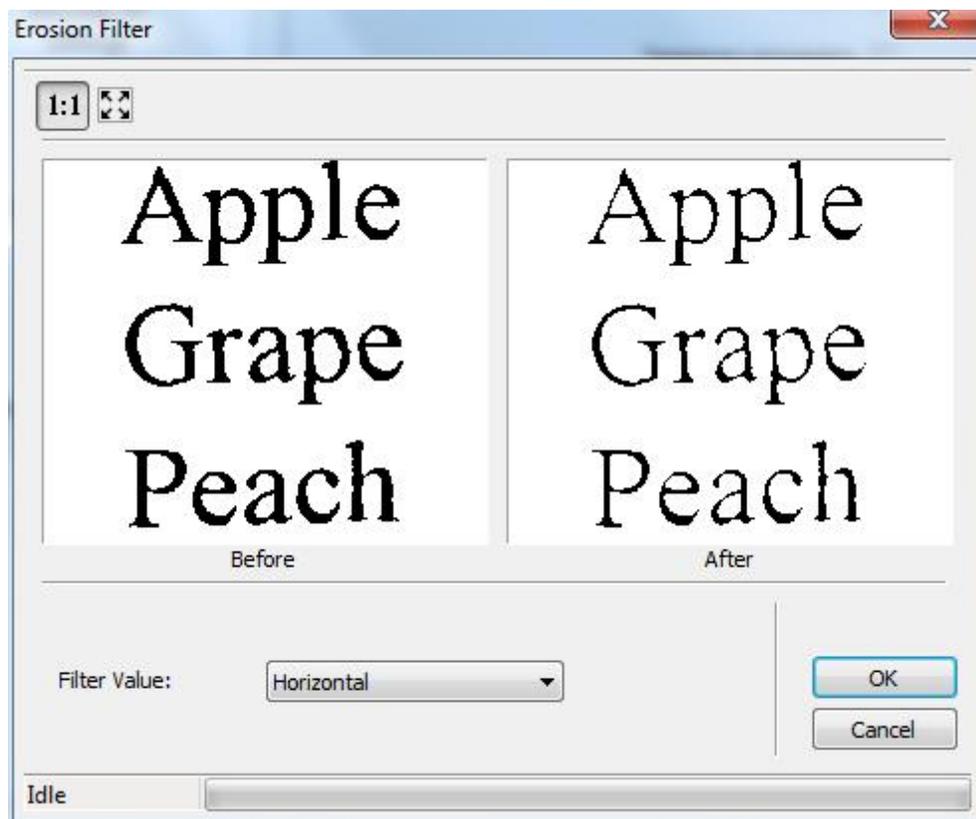


The following image enhancements can be set:

- Temporary Processing:**
 By checking this option, the changes in the Image Processing Settings dialog are only temporarily used whilst processing a document. For example, if Hole Punch removal and Line removal are enabled to improve the performance of the OCR engine, these corrections are discarded when the processing is complete, if the Temporary Processing options is enabled.
- Image Binarization:**

The Image binarization feature can be used to convert 256 gray-levels images into monochrome levels. This means that the threshold value for the binary image is not fixed, but rather dynamic. This is calculated irrespective from changes both in foreground darkness and in background lightness and overall illumination levels. By adjusting contrast levels Image binarization increases the accuracy of low-contrast documents containing hand-written or typed characters with variable lines thickness and darkness automatically.

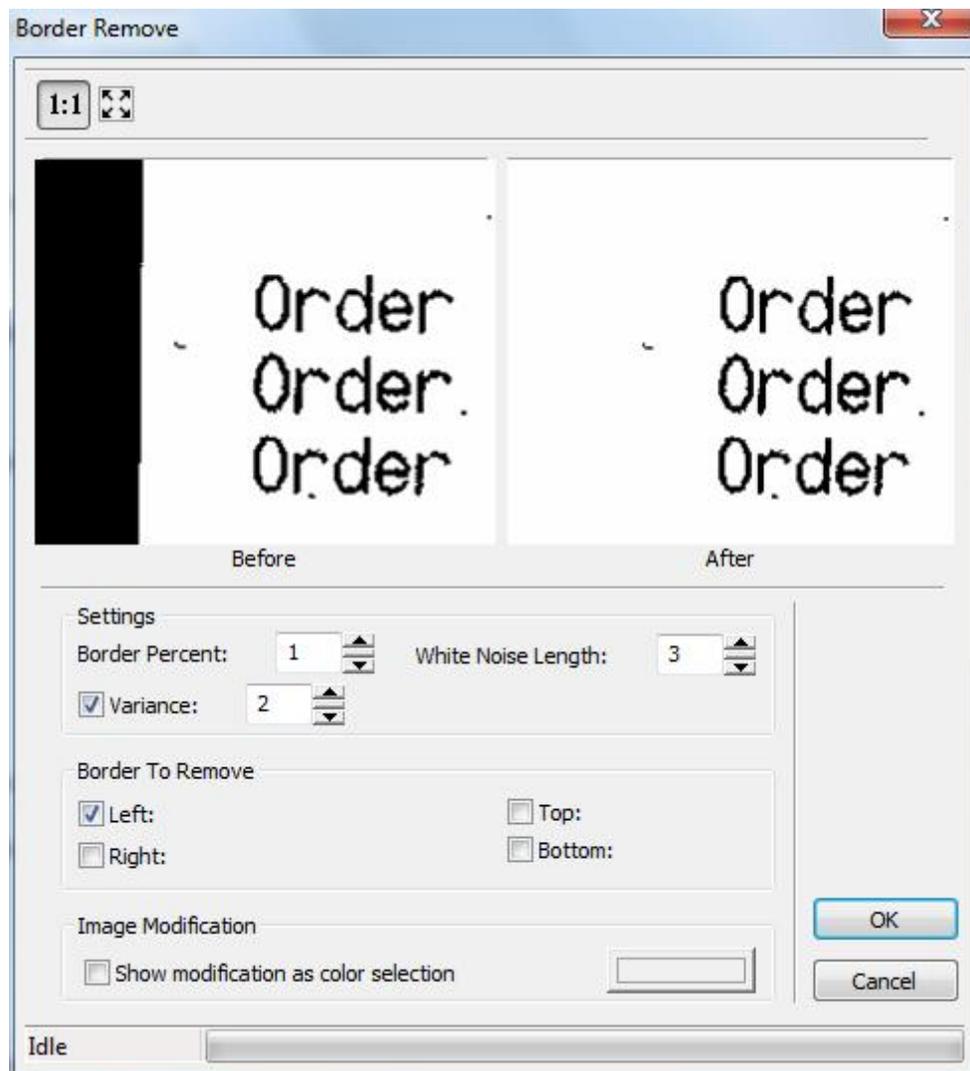
Using the Advanced Settings, binarization can be applied Horizontally, Vertically, Omnidirectional or diagonally.



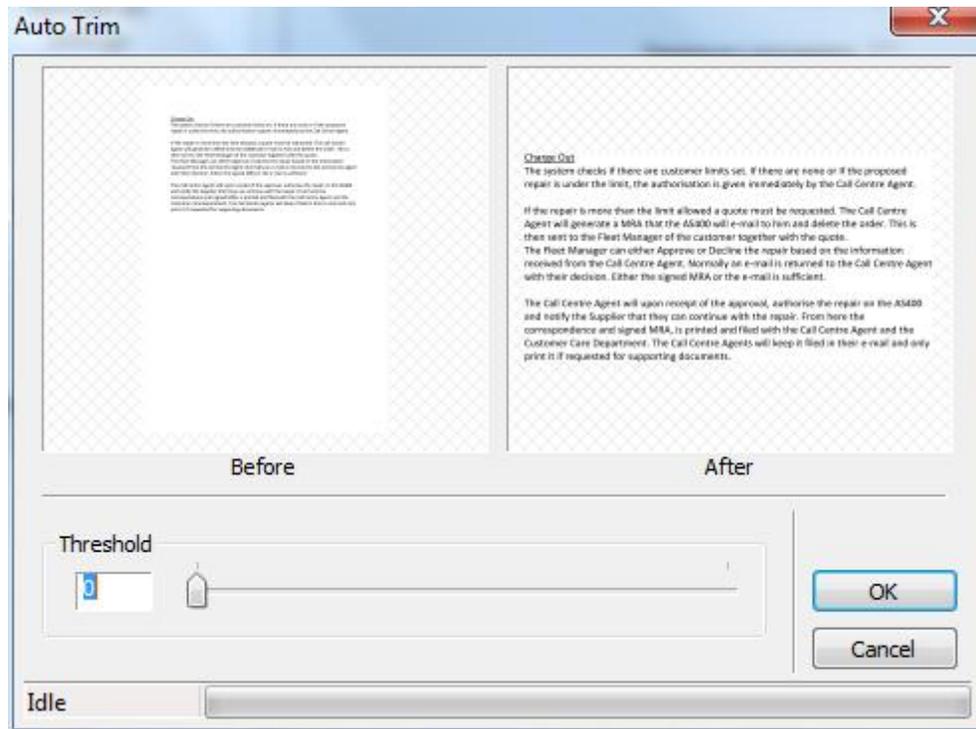
- **Border Removal:**

The border removal feature allows the automatic black border detection and removal in monochrome or grayscale images. The black border is produced in the images acquired by scanners when paper size is smaller than scanning area or in images acquired from microfilm, microfiches and aperture-cards. Removing the border from the images is a very important pre-processing step that improves the compression rate, reducing file size, and the visualization aspect.

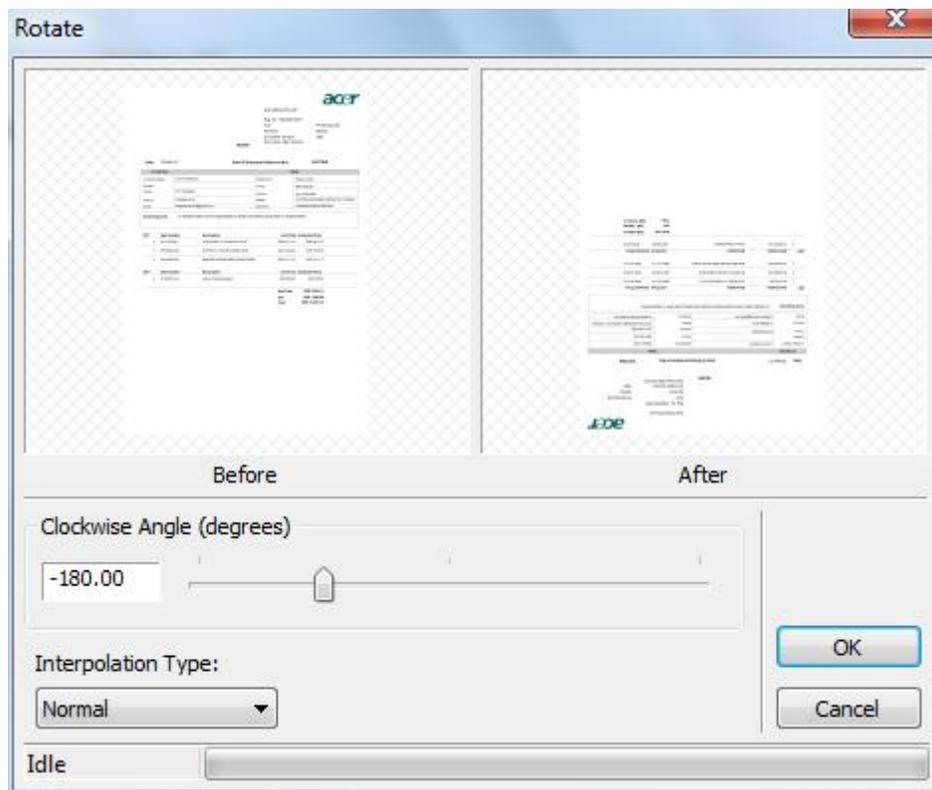
Using the Advanced Settings, Border removal can be configured by applying Border Percentage, White Noise Length, and Variance.



- **Delete empty pages:**
The Empty pages deletion feature allows user to remove pages which does not contain any data. This is done by analyzing the percentage of black dots on the entire page
- **Delete White Spaces:**
White spaces caused by odd paper sizes scanned, can be removed with this feature. Optimize using the threshold bar.

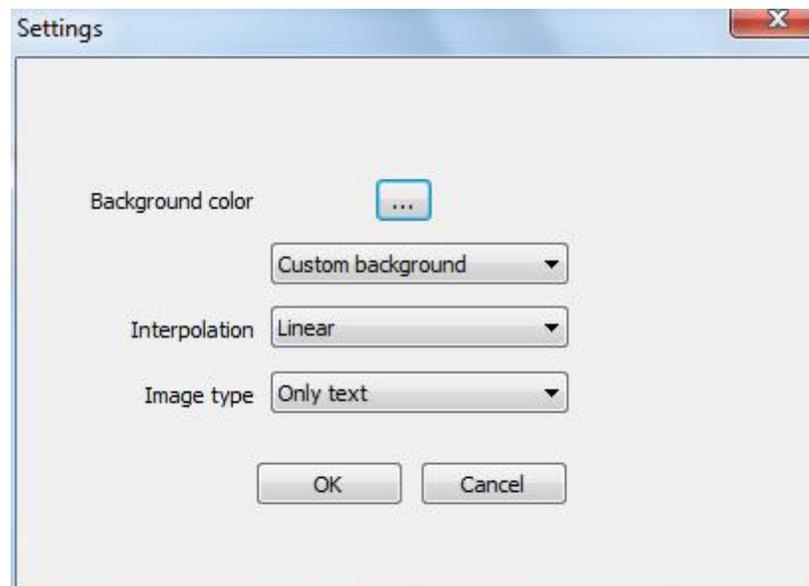


- **Rotate:**
The *Page* rotation feature allows pages to be rotated from 0 - 360 degrees.



- **Deskew:**

The Deskew feature allows straightening of any image which were scanned skew. Using high-volume scanners with automatic document feeders inevitably skews paper. Users can fix this problem and obtain straighten images without rescan, correcting skew automatically at high speed. However this feature can handle a maximum of 45 degrees of skew.



The following options can be configured:

Background Color:

Options are Automatic or Custom. With the custom option, the background color can be picked.

Interpolation:

Options are Linear, Resample and Bicubic. Interpolation is a method of constructing new data points within the range of a discrete set of known data points.

Image Type:

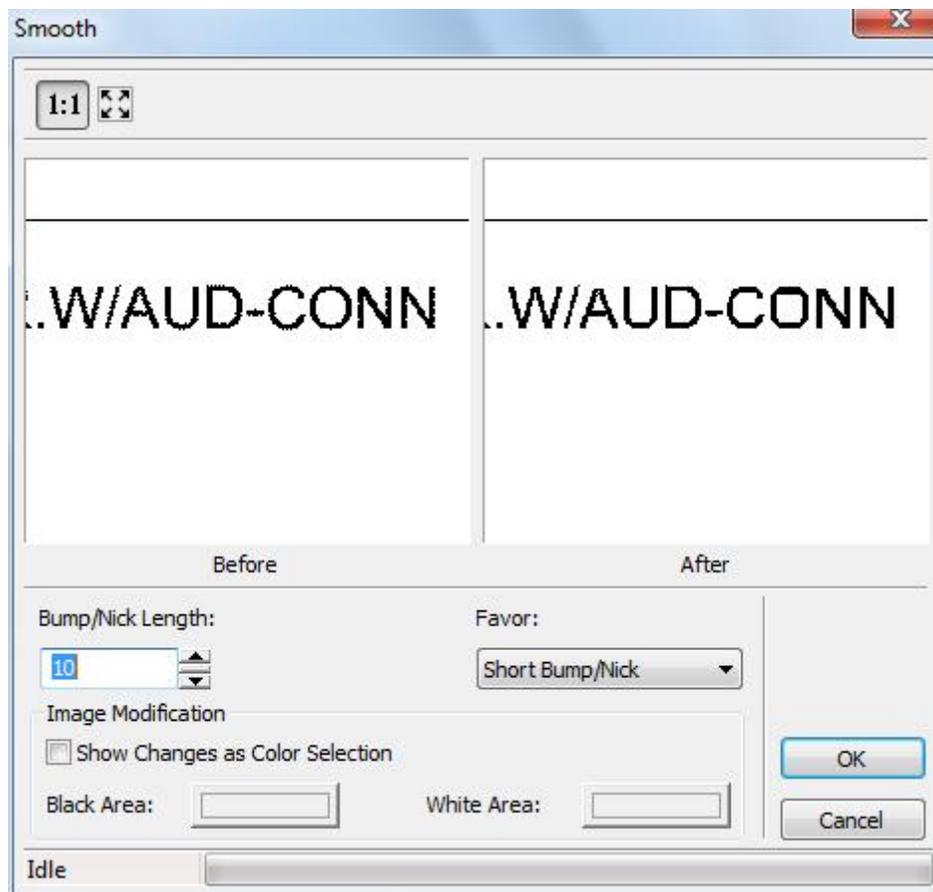
Setting if the image deskew operation should be based on Text only, Text and Pictures, Normal Speed (using optimum quality settings) or High Speed (using optimum speed settings)

Despeckle:

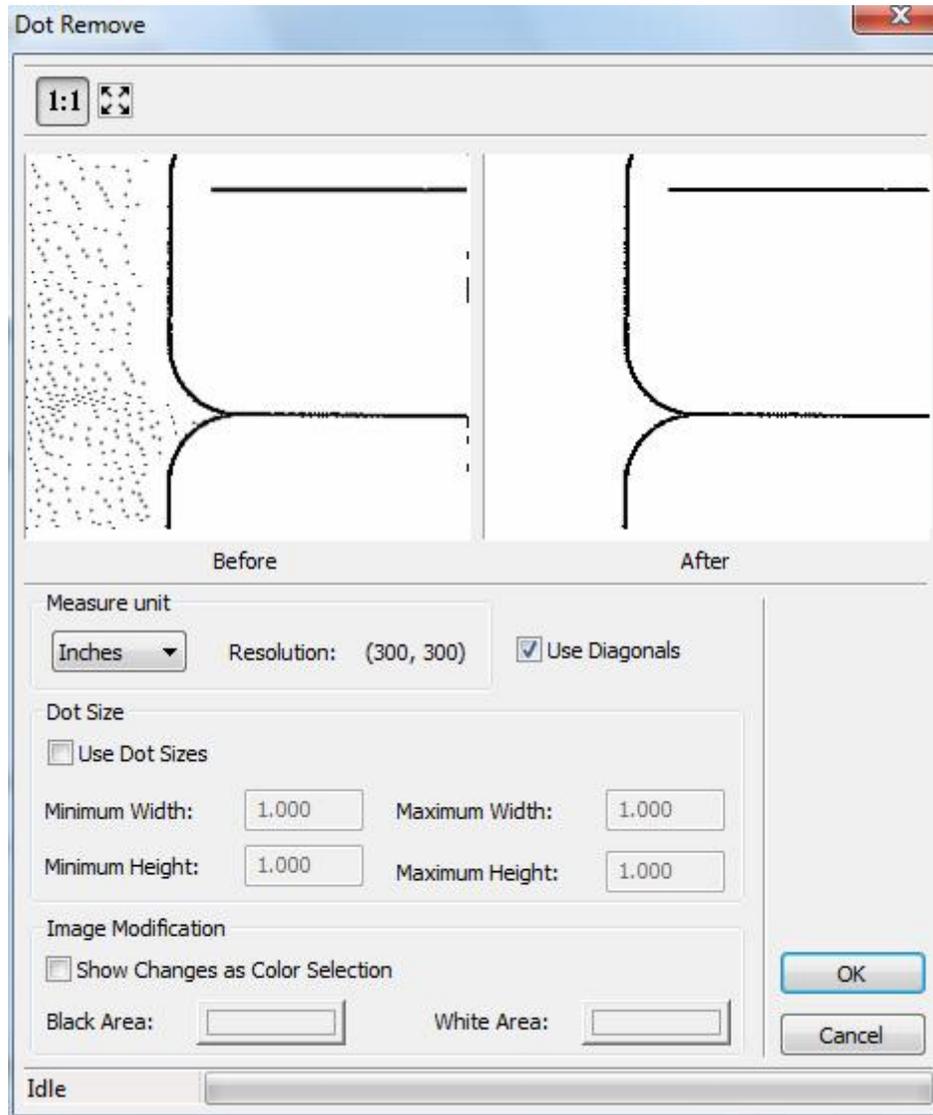
The Despeckle filter removes noise from images without blurring edges. Scanning paper documents, dot shading, or just dust and dirt can generate tainted images.

Smoothing:

Characters' edges will be smoothed by applying Bump/Nick Lengths and selecting a short or long Bump/Nick.

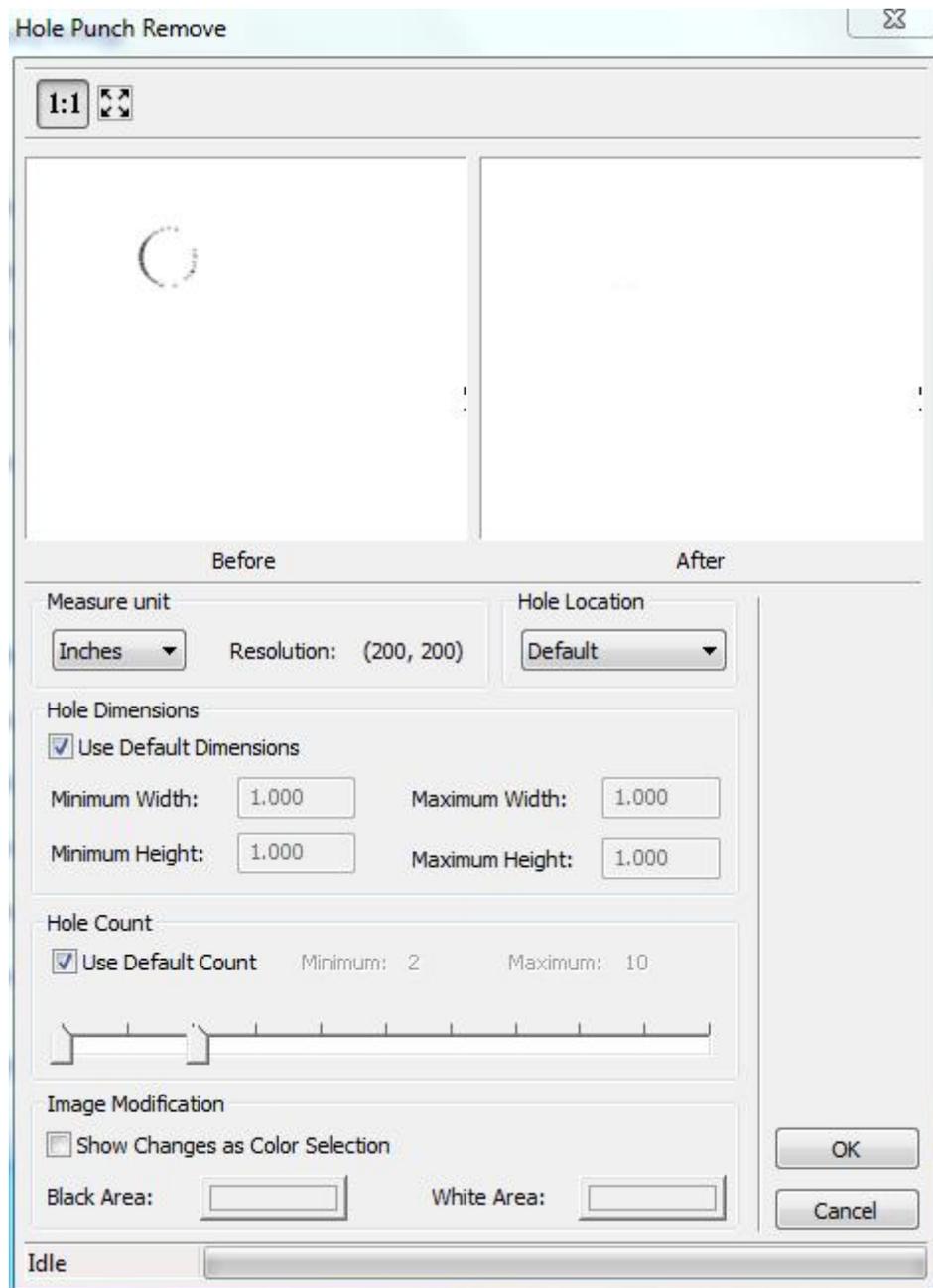
**Dot removal:**

The *Dot Removal* feature enables the user to remove dot from the scanned images. User can specify the size range of dots that needs to be removed.

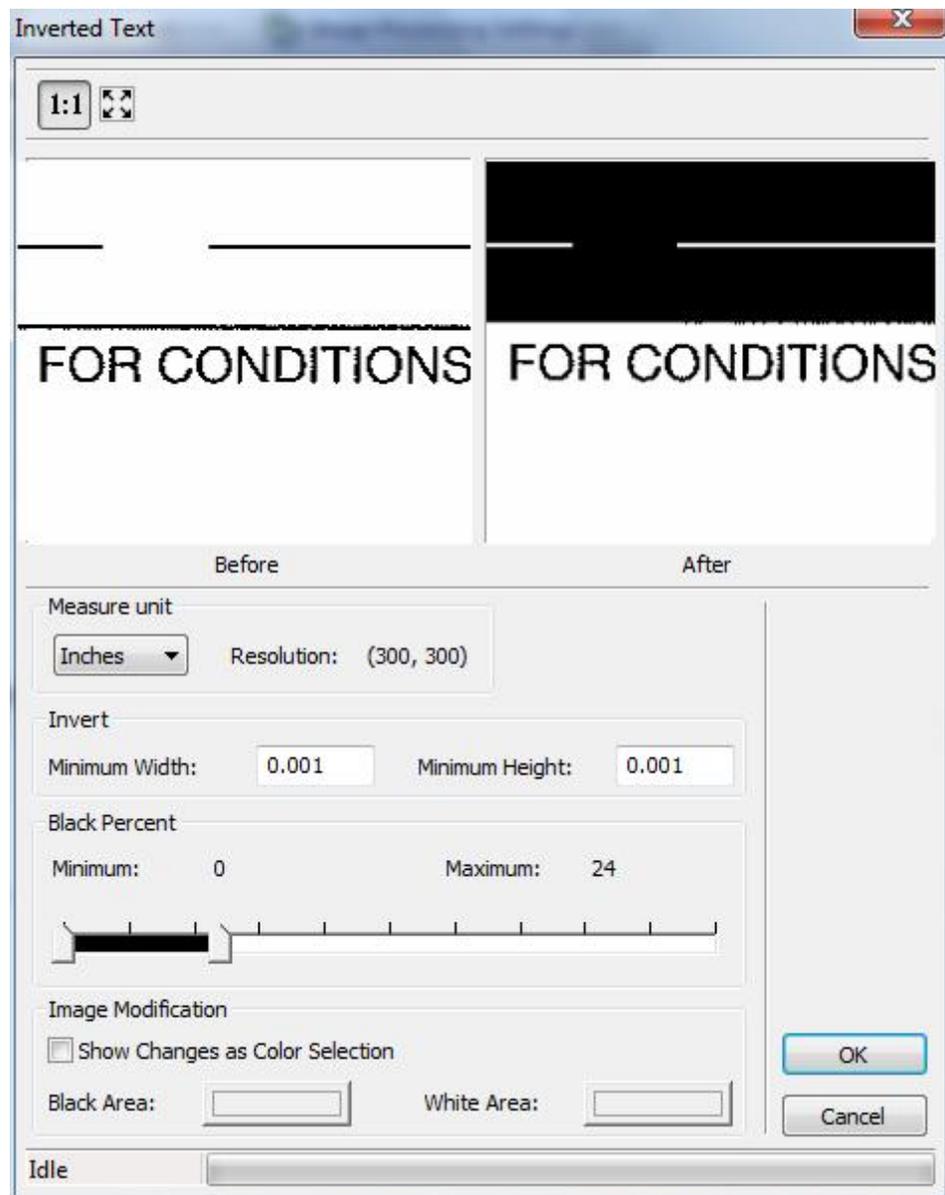


- **Hole Punch Removal:**

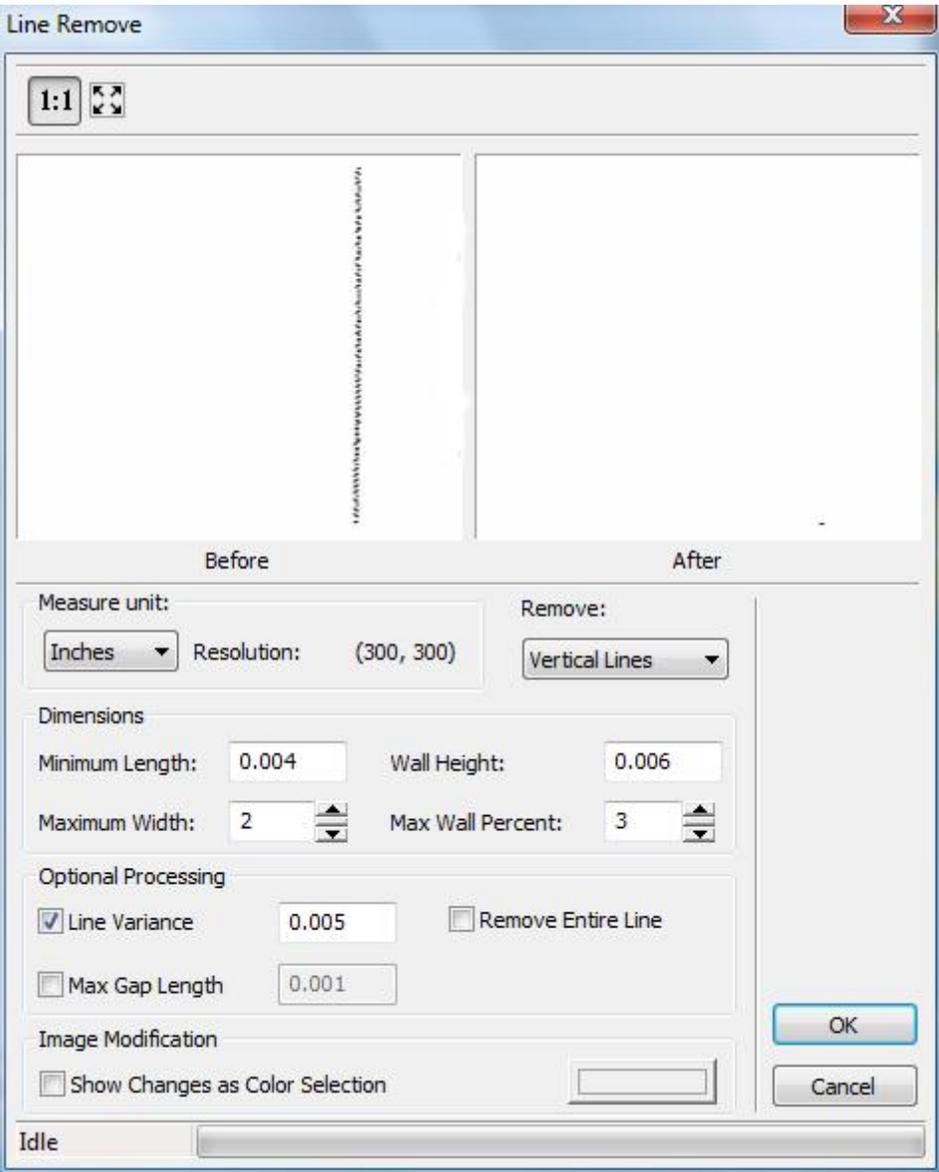
The Punch removal feature allows removal of punch hole marks from the scanned documents. Punch Hole locations, Punch Hole Dimensions and the number of punch holes to be removed can be set.



- **Invert text:**
Allows the inverting of colors.



- **Line removal:**
The Line Removal feature allows the removal of lines that appears in scanned process. This is done by analyzing the percentage of black ink of total pixels.

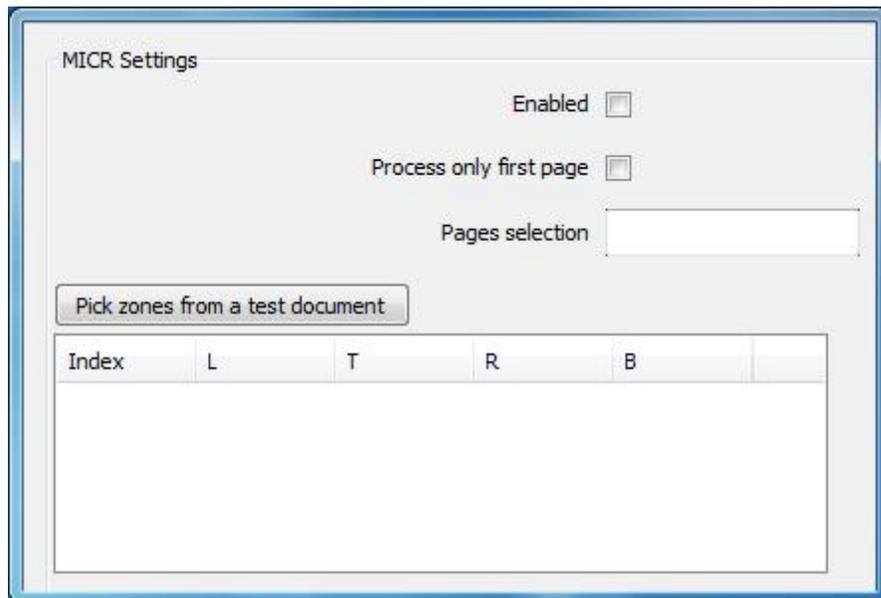
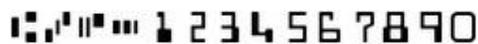


5.2.7 MICR Settings

MICR Settings

Magnetic Ink Character Recognition, or **MICR**, is a character recognition technology adopted mainly by the banking industry to facilitate the processing of cheques.

Note that some of these options **Advanced View** by clicking on the toggle in the lower right of the screen:



The following settings can be set:

- **Process only first page:**
Only the first page of the document will be processed with MICR
- **Pages Selection:**
Specific multiple pages can be entered, separated by ' , ' to be processed in the MICR module
- **Pick Zones From a Test Document:**
Zones can be added by selecting a sample image from where the zones can be selected. Note that the recognition regions are calculated in pixels; your test document should be scanned at the same resolution as your final document.

- **L (Left), T (Top), R (Right), B (Bottom):**

Specifies the exact area where the MICR process is taking place; this is measured in **pixels**.

5.2.8 OCR Settings

OCR Settings

Optical character recognition, usually abbreviated to **OCR**, is the mechanical or electronic translation of images of typewritten or printed text (usually captured by a scanner) into machine-editable text. OCR allows for word/phrase searching within a scanned image. OCR needs to be enabled for some of the other modules to work properly. ScannerVision uses many dictionaries in more than 130 languages to compare words recognized during the OCR process to word in the language dictionary specified. Multiple languages can be selected.

OCR Settings

Enabled

AutoOrient

Perform spell checking

Perform Correction

Enable Fax Image Mode

Languages Auto

Output Format Level

Available languages

Selected languages

AFRIKAANS SWEDISH
CATALAN
CZECH
DANISH
DUTCH
FINNISH
FRENCH
GERMAN
HUNGARIAN
ITALIAN
NORWEGIAN
POLISH
PORTUGUESE
SLOVENIAN
SPANISH

ENGLISH

The following options can be set:

- **AutoOrient:**

This feature will automatically orientate the document based on the natural reading of the recognized text

- **Perform Checking:**
Assist in spell checking using the dictionary selected.
- **Perform Correction:**
This feature user can utilize a correction mode for doubt recognition results (checking subsystem)
- **Enable Fax Image Mode:**
Used to recognize and correct low resolution documents like fax images (doubles the pixels in the image's vertical direction)
- **Languages Auto:**
Automatically tries to match the word to a dictionary
- **Available Languages:**
Languages supported and available for selection
- **Selected Languages:**
Languages which are selected and which dictionaries will be used to match words.

5.2.9 OMR Settings

OMR Settings

Optical Mark Recognition (also called Optical Mark Reading and OMR) is the process of capturing human-marked data from document forms such as surveys and tests. OMR allows detection of the presence or absence of a mark in a predetermined position.

Note that some of these options **Advanced View** by clicking on the toggle in the lower right of the screen:

Advanced View

Sample OMR Form

Baseline Questionnaire
Page 2

Subject ID

<input type="text"/>				
Centre#	Subject #	Subject Initials		F M L

2.1 Presenting features: Status at the enrollment visit

a) Symptoms (please mark all that apply)

<input type="checkbox"/> Asymptomatic	<input type="checkbox"/> Chest Pain	<input type="checkbox"/> Routine clinic visit
<input type="checkbox"/> Dyspnea	<input type="checkbox"/> Fever	
<input type="checkbox"/> Syncope	<input type="checkbox"/> Fatigue	
<input type="checkbox"/> Palpitations	<input type="checkbox"/> Other, please specify _____	

b) NYHA class → (please refer to facing page for codes)

I II III IV

Part Medical History: (as taken from Doctors notes and patients recollection)

	No	Yes	Unclear	Source documentation attached
a) Congestive Heart Failure/Pulmonary edema	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Rheumatic fever in the past	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approx. date and detail: _____				
e) Stroke/TIA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approx. date and detail: _____				
f) Peripheral embolism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approx. date and detail: _____				
g) Major Bleeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approx. date and detail: _____				
h) Infective endocarditis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approx. date and detail: _____				
i) Percutaneous valvuloplasty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approx. date, Hospital and valve(s) Involved: _____				
j) Previous heart valve surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, approx. date, Hospital and valve(s) Involved: _____				
k) Diabetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Coronary artery disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Hypertension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) Co-existing Morbidities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Details: _____				
o) Date of first referral to Cardiology:				
Approx. date and detail: _____				

OMR can also be used to determine if a document was stamped or signed before the document was scanned. The following options can be set in the OMR module:

Index	L	T	R	B

- **Process only first page:**
Only the first page of the document will be processed with OMR
- **Pages Selection:**
Specific multiple pages can be entered, separated by ' , ' to be processed in the OMR module
- **Pick Zones From a Test Document:**
Zones can be added by selecting a sample image from where the zones can be selected. Note that the recognition regions are calculated in pixels; your test document should be scanned at the same resolution as your final document.
- **L (Left), T (Top), R (Right), B (Bottom):**
Specifies the exact area where the OMR process will take place; this is measured in **pixels**.

5.2.10 Zone OCR Settings

Zone OCR Settings

Zone OCR is used to read document indexes or meta data from text on the page. Zone OCR is a great way to automate the data entry associated with scanning documents.

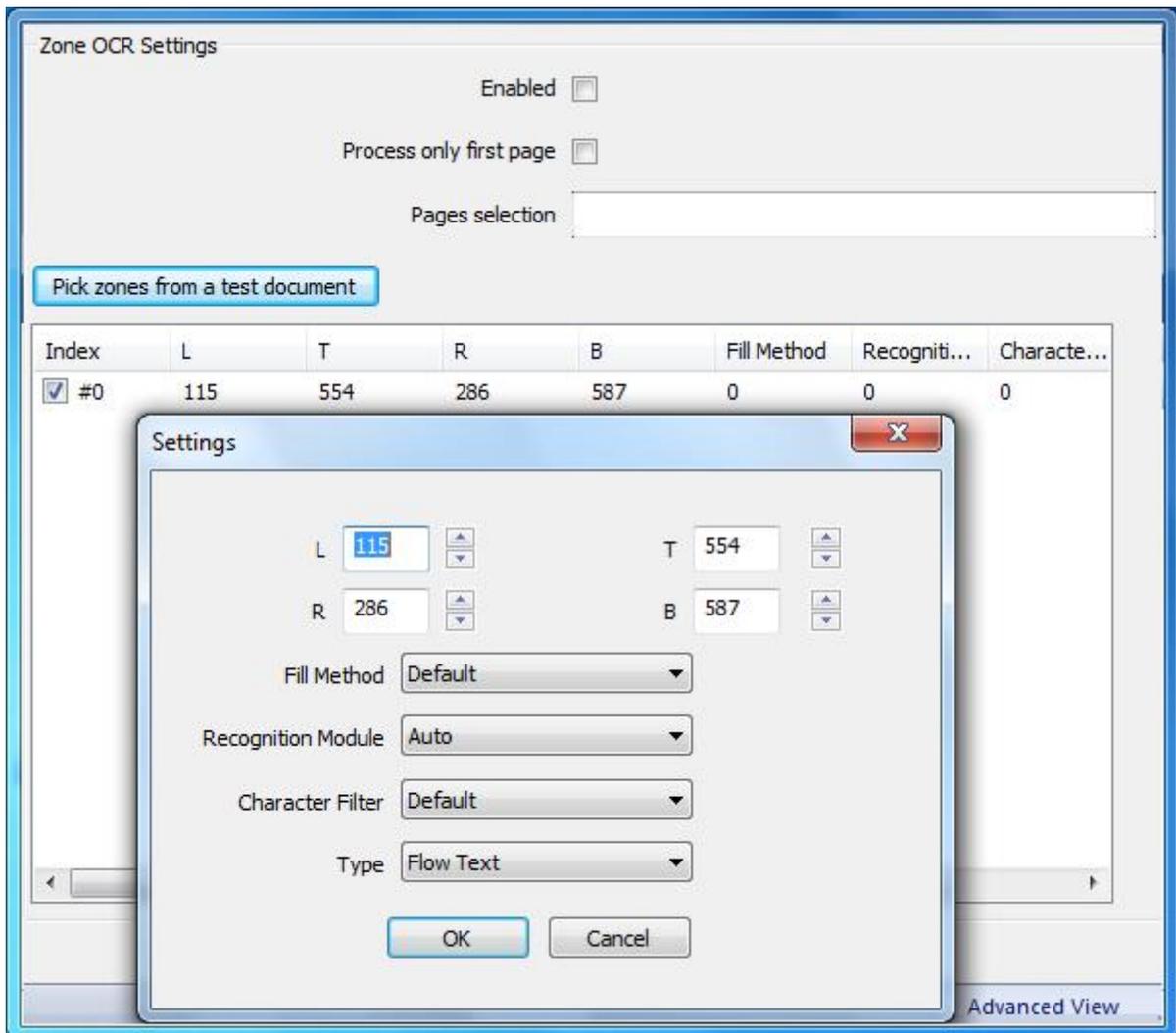
However, there are several limitations to zone OCR that must be considered.

- Index information must be in the exact same place on every page
- Documents shift and skew during scanning, causing the zones to not line up
- If surrounding lines or text on the document are too close, they can encroach on the zone

Multiple Zones can be added, and the data read for each zone can be used as meta data.

Note that some of these options **Advanced View** by clicking on the toggle in the lower right of the screen:





The following options can be set in the Zone OCR Settings Window:

- **Enable:**
This option must be selected to enable the Zone OCR modules
- **Process Only First Page:**
Only the first page of the document will be processed with Zone OCR
- **Pages Selection:**
Specific multiple pages can be entered, separated by ' , ' to be processed in the Zone OCR module
- **Pick Zones From a Test Document:**
Zones can be added by selecting a sample image from where the zones can be selected. Note that the recognition regions are calculated in pixels; your test document should be scanned at the same resolution as your final document.
- **L (Left), T (Top), R (Right), B (Bottom):**
Specifies the exact area where the Zone OCR process is taking place; this is measured in **pixels**.

Right click on the selected zone in the viewing table and select Configure Zone to access the Advance Setting Window.

The following options can be set in the Advanced Settings Window

- **Recognition Module:**

Used to set the typeset of characters to be recognized

- **Auto:**

ScannerVision will attempt to automatically recognize the typeset. This option will result in slower and more intense processing.

- **MText Omni Font:**

The module recognizes machine printed text from printed publications, laser or ink-jet printers, and electric typewriters. Output from mechanical typewriters in good condition, and from draft-quality, letter-quality, or near-letter quality dot-matrix printers is also acceptable.

- **Multi Lingual Omni Font:**

This set recognizes machine printed text from printed publications, laser or ink-jet printers, and electric typewriters. Output from mechanical typewriters in good condition, and from letter- or near-letter quality (LQ, NLQ) dot-matrix printers is also acceptable.

- **Dot Matrix:**

The Dot Matrix module is designed for ONLY draft-quality 9-pin dot-matrix texts.

- **RER Printed:**

This recognition module can be used for recognition of hand-printed alphanumerical characters, i.e. upper and lower case letters, the digits and some others. Although it can be used to read flowing text, its main application area is in form-like situations, where the form designer has great control over the content and maybe length of hand-printed information given in each zone.

- **Matrix:**

The Matrix module is designed to read certain groups of fixed-font characters specially designed for OCR or imaging applications, in which no two characters have similar shapes. Each character group has its own filling method. Application areas are in banking, check or waybill handling, product distribution and document validation, where high accuracy can be vital. It also handles some non-fixed print styles.

- **Omni Font PLUS2W:**

The PLUS modules recognize machine printed text from printed publications, laser or ink-jet printers and electric typewriters. Output from mechanical typewriters in good condition may also be acceptable. The PLUS2W module use voting technology to provide improved recognition results. The PLUS2W module combines the results from the MOR and MTX modules.

- **Omni Font FRX:**

The FRX module recognizes machine printed text from printed publications, laser or ink-jet printers, and electric typewriters. Output from mechanical typewriters in good condition, and from letter- or near-letter quality (LQ, NLQ) dot-matrix printers is also acceptable. Supports Latin, Greek and Cyrillic alphabets with enough accented letters to recognize the 54 languages (Languages and modules).

- **Omni Font PLUS3W:**

The PLUS modules recognize machine printed text from printed publications, laser or ink-jet printers and electric typewriters. Output from mechanical typewriters in good condition may also be acceptable. The PLUS3W module use voting technology to provide improved recognition results. The PLUS3W module combines the results from the MOR, MTX and FRX modules.

- **Character Filter:**

Specifies which types of characters could be encountered and be read by the Zone OCR Module

- **Default:**

Misc Characters

- **Digit:**

The system will look for digit characters

- **Uppercase:**

Will only match characters in uppercase

- **Lowercase:**

Will only match characters in lowercase

- **Punctuation:**

Only punctuation characters will be read

- **Misc:**

Misc will return any character which the system might think the character might belong to.

- **All:**

All will return any character which the system might think the character might be.

- **Alpha:**

Only Alpha characters will be returned

- **Number:**

Only numeric characters will be returned

- **Type:**

The type of form from which the Zone OCR process should read the characters

- **Flow Text:**

A free flow text pages, not containing any specific structure

- **Table:**

The data to be read is contained within a table or form

- **Graphic:**

The data is within a graphic on the page where the Zone OCR module must be processed.

- **Auto:**

ScannerVision will attempt to automatically determine the type of form used.

The results for [ZONEOCR0] , et al, are retrieved from the last page in the selected range. If only page 1

is specified, it is both the first page and the last page in the selected range. Furthermore, all three methods for specifying a range namely **Process only first page** and both the empty and specified **Pages selection** will return their results from the last page in the selected range. The behaviour is therefore consistent and as designed. Please use [ZONEOCR0-0] , [ZONEOCR1-0] etc. to always get values from the first page.

5.3 Store

Store

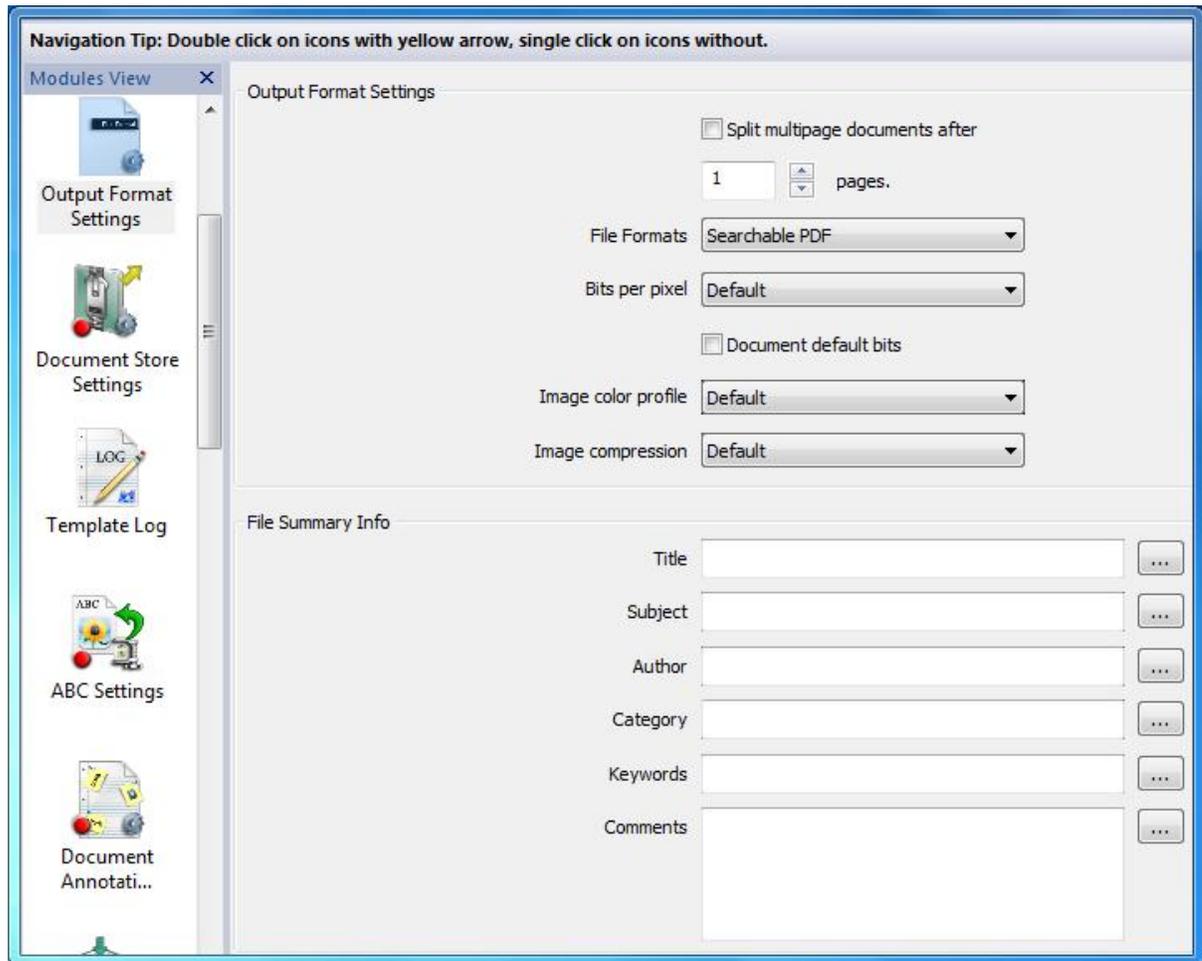
The final stage in the ScannerVision process is defining the store destination(s) of the processed document file. Store operations could include configuration of the following modules:

- [Output Format Settings](#)
- [ABC Settings](#)
- [Document Store Settings \(Store Connectors\)](#)
- [Backup Settings](#)
- [Data Export Settings](#)
- [Notifications Settings](#)

5.3.1 Output Format Settings

Output Format Settings

Various file formats are available in which the document can be stored. Every template can however only have one output file format associated to it.



The following options can be configured in the Output Format Settings section:

- **Split Multiple documents after:**

This option allows the setting of a specific number of page counts, before a new document will be created.

- **File Formats:**

ScannerVision can save captured documents into the following file types: BMP, GIF, JPEG, JPEG 2000, PCX, PDF, PNG, PS, TIFF, WMF, Microsoft Word 2000, Microsoft Excel 2000, Word ML, RTF, Searchable PDF (OCR must be enabled), PDF/A and XPS.

- **Bits per Pixel:**

The bits per pixel can be set. Please note that more pixels result in bigger file sizes

- **Image Color Profile:**

The following color profiles are available: 4:1:1:, 4:2:2:, RGB and CMYK. File type dependent.

- **Image Compression:**

The following compression modes are available: No Compression, RLE, LZW, ZIPLib, CCITT, G4, JPEG 4:4:4, JPEG 4:2:2 and JPEG 4:1:1 File type dependent.

In the file summary Info section, electronic file properties can be set. Meta data can be used to dynamically complete the required fields, or static text can be used.

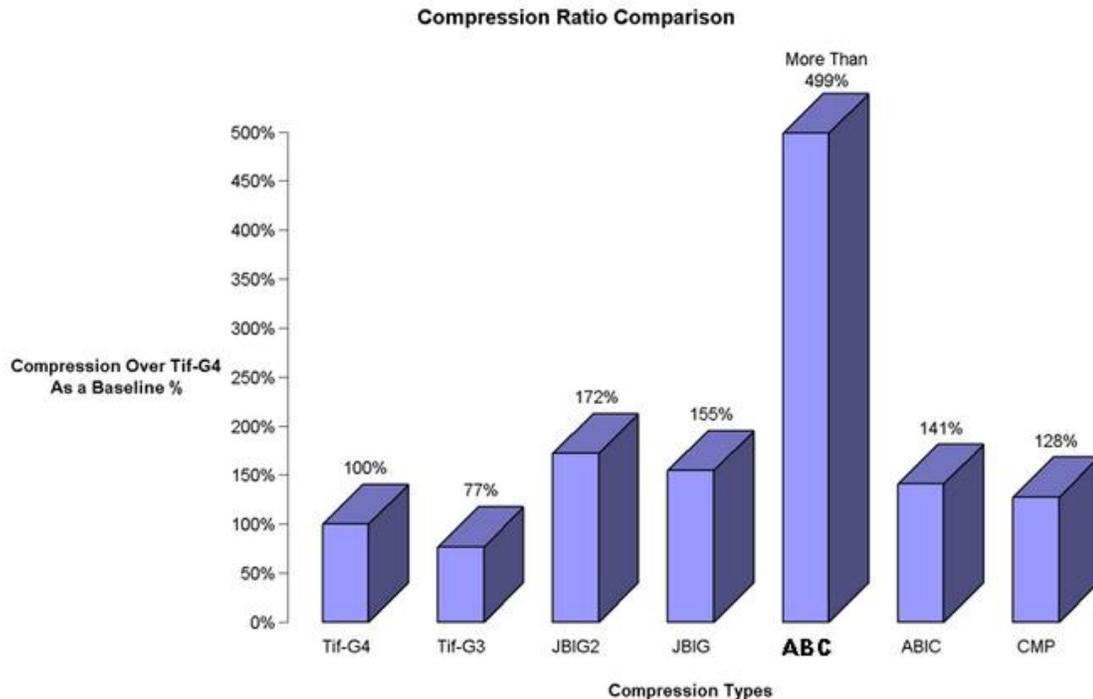
5.3.2 ABC Settings

ABC Settings

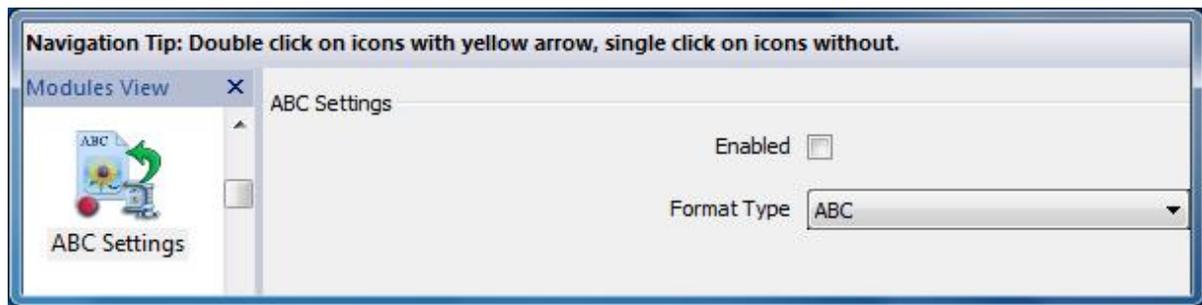
ABC (Advanced Bitonal Compression), a proprietary 1 bit compression, is a major breakthrough in document compression technology. This set of advanced compression algorithms out performs all industry standard compression types. With ABC, customers realize file sizes 4 to 5 times smaller than the files sizes generated by standard 1 bit compression types such as CCITT Group 4. ABC was specifically designed for efficient network transmission of scanned manuals, books, check images and other document types.

The power behind ABC technology is ScannerVision new lossless black and white image compression. ScannerVision has been an early leader in turning the latest advancements in image compression into productive, functional implementations for commercial use. In addition, ScannerVision supports ABC compressed data stored in a single page or multi-page TIFF.

ABC helps companies optimize scanned documents to save transmission / bandwidth usage and Processing Engine space, which in turn, results in savings of time and money. Many financial institutions such as banks and insurance companies back up their important documents by scanning and archiving the resulting images to servers as TIFF files or other common bitonal file formats. Using ABC compression, server space can be significantly reduced, therefore eliminating the need for additional storage. In addition, if the images are being transmitted over the Internet, the smaller file sizes save transmission costs and time since smaller file sizes transfer much faster using less bandwidth. Refer to the chart below to compare how ABC compares to the industry standard 1 bit compression formats.



You need the ABC Decompressor utility to decompress an image which was compressed using this method. ABC and ABC+TIFF files are acceptable file input formats for ScannerVision Processing Engine. Files compressed with ABC and ABC+TIFF can be automatically decompressed through a ScannerVision process without the need for ABC module on the decompressing ScannerVision Processing Engine.



The following options can be configured:

Enabled:

Select this option should you wish to apply ABC compression to your images.

Format Type:

ABC - for single page files only (highest compression ratio). ABC+TIFF for multi page files (Lower compression ratio).

Note that enabling ABC compression

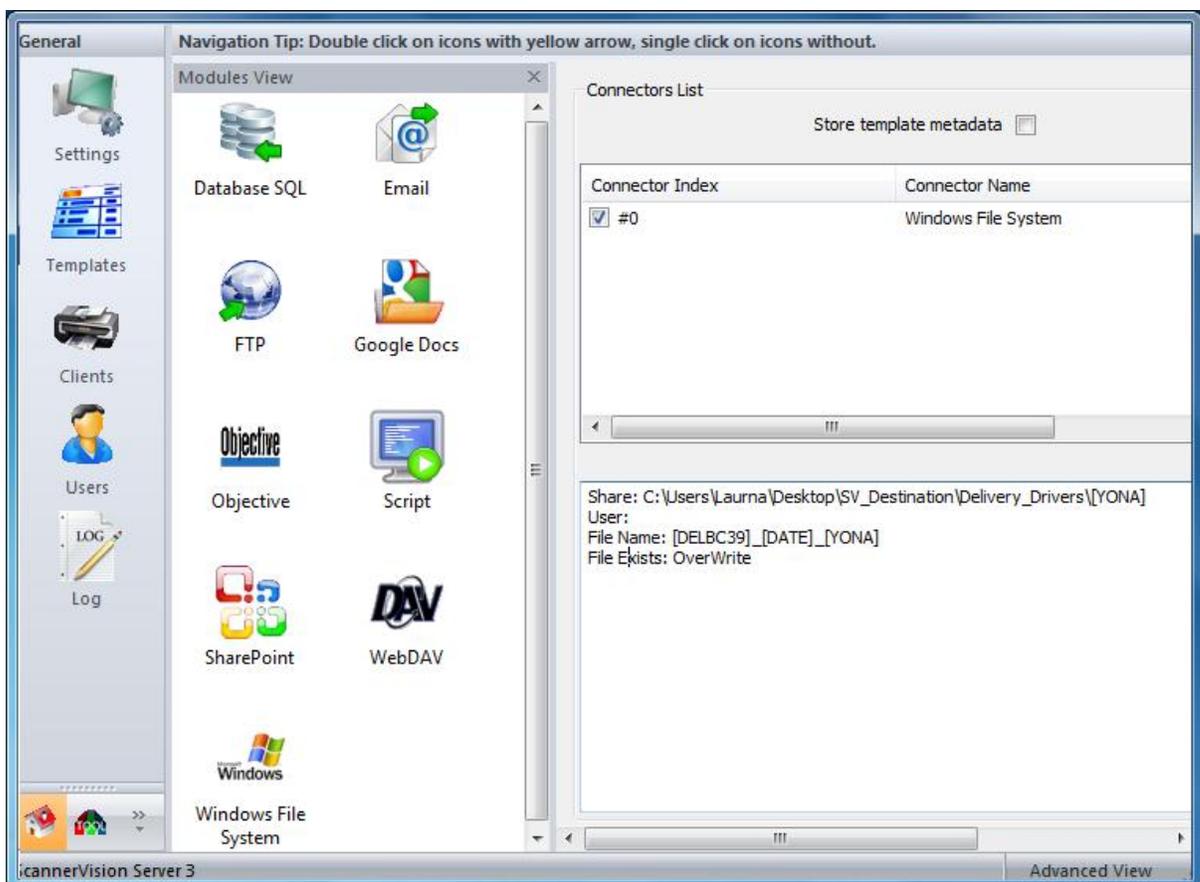
5.3.3 Document Store Settings

Document Store Settings

Storage connectors link ScannerVision into various file, database and document management systems, ensuring full integration and rich meta data population into these file storage platforms. Various store connectors can be added to a template, allowing the document to be routed to various destinations at the same time. This can be used to realize true business process routing and data distribution within a single process (template). No more repeat manual processes are achieved via this single process.

For a complete and up-to-date list of supported connectors, please contact your local reseller.

Store modules can be added to a template by dragging the desired store module from the "Modules View" and dropping the store module(s) into the "Connectors List":



A summary of each connector's configuration can be viewed at a glance in the window section below the Connectors List.

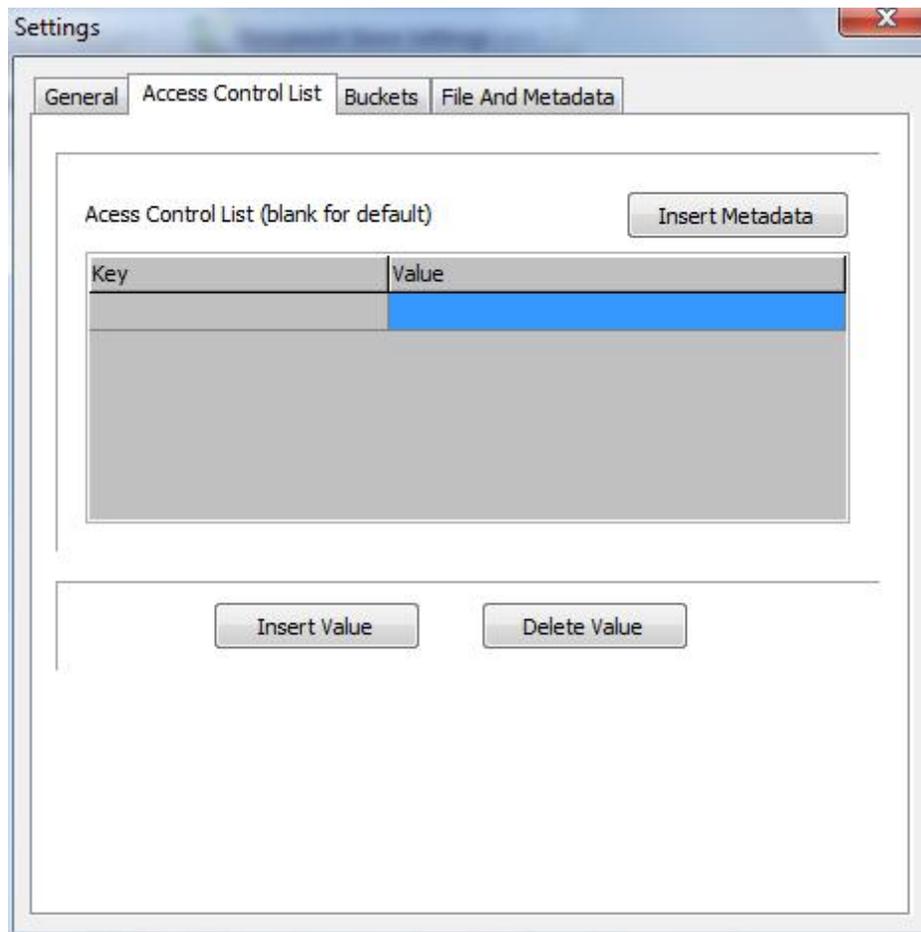
5.3.3.1 Amazon S3

Amazon S3

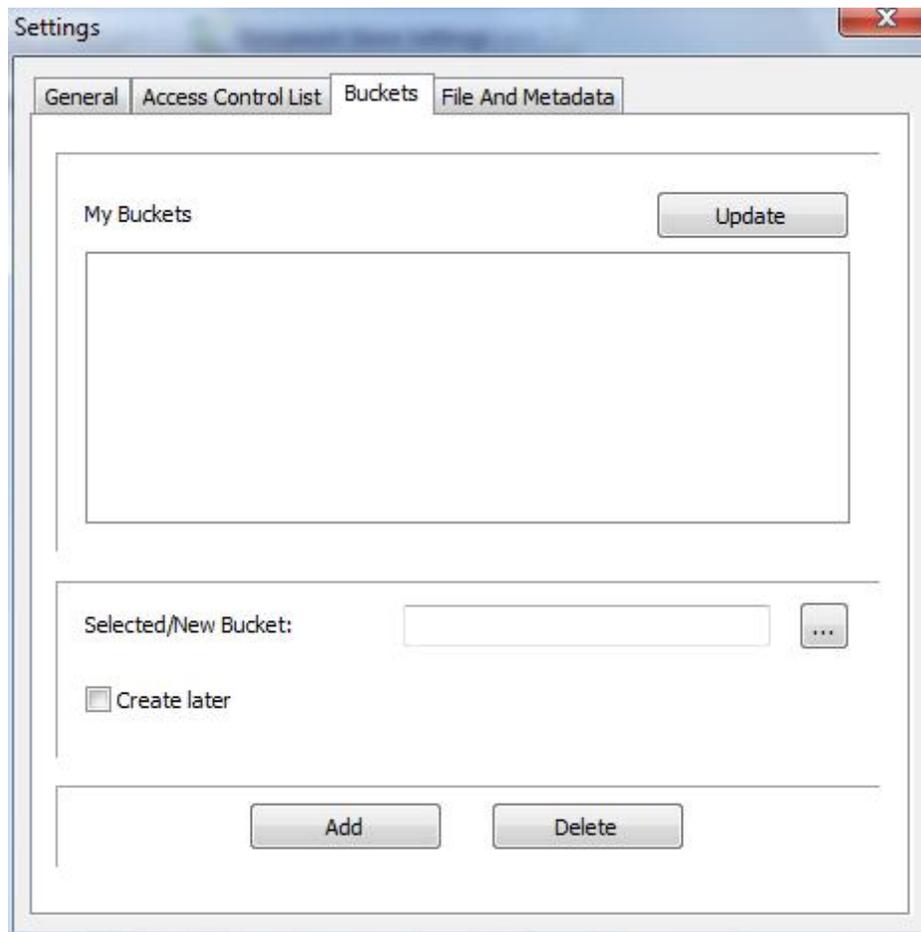
Amazon S3 (Simple Storage Service) is an online storage web service offered by Amazon Web Services. Amazon S3 provides unlimited storage through a simple web services interface.

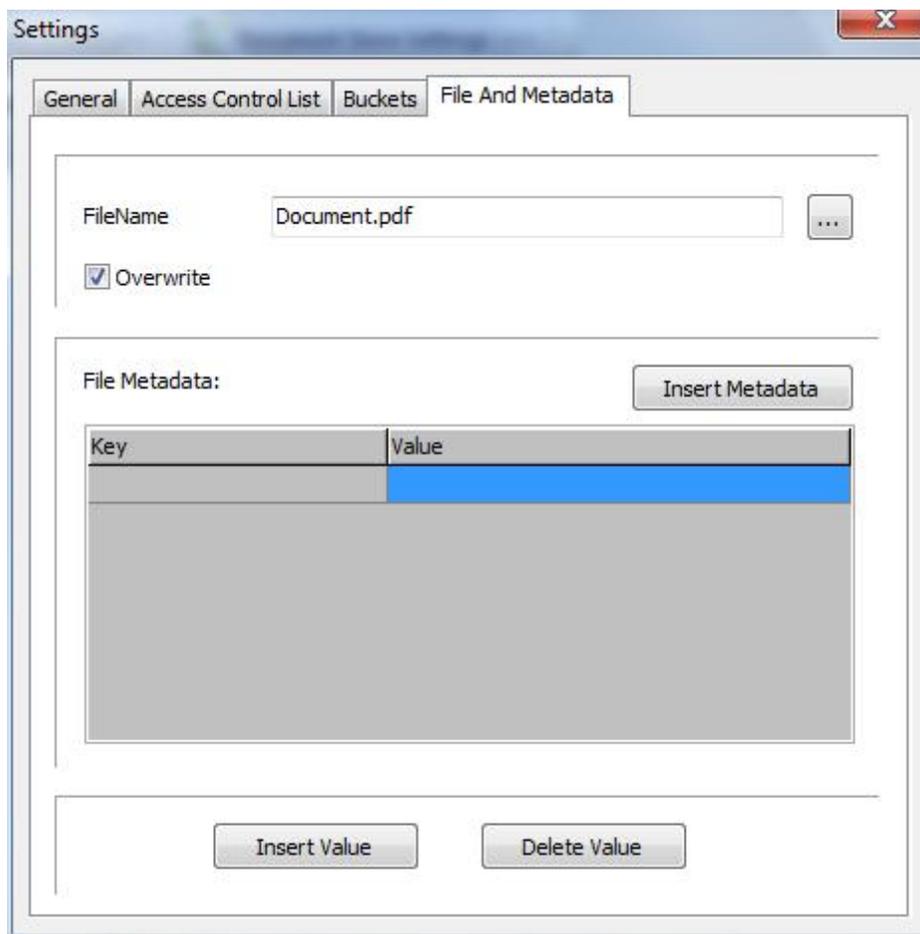


This feature of ScannerVision allows storing of files in the internet. The user can write, read, and delete objects with accompanying metadata. User is free to store any number of objects.



The objects can be stored and retrieved from the 'bucket' using a unique user defined key.

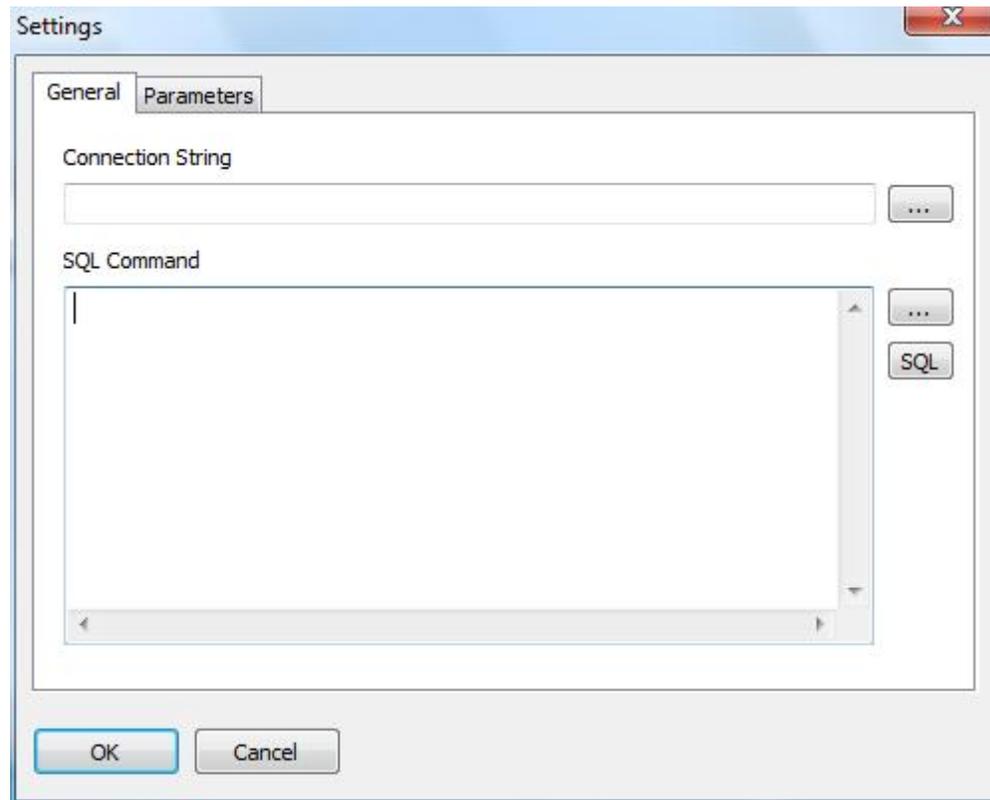




5.3.3.2 Database SQL

Database SQL

The Database SQL connector allows ScannerVisionto store data on a SQL database based on pre-defined settings.



Connection String:

The connection string that connects to the SQL database. Click on the  to open the Connection String Dialogue Box.

The **Connection String Building Dialog** will be displayed. Please refer to [Appendix D - Database Connection Strings](#)

SQL Command:

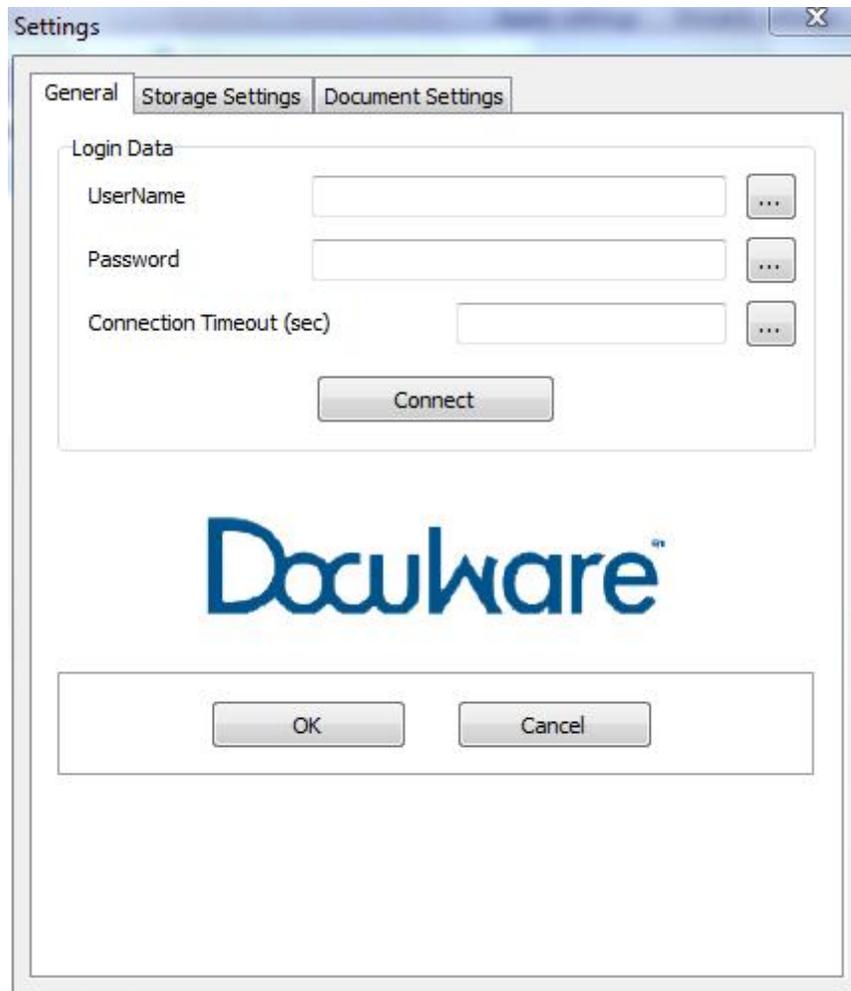
The SQL command to be used to store the image and meta data into the SQL database.

5.3.3.3 DocuWare

DocuWare

The DocuWare document management system is state-of-the-art software for integrated document management. It can automatically process any type of document regardless of its source, with internal control procedures that help you meet audit and compliance requirements. DocuWare imports them, classifies them, adds a full text index and makes them available for onward processing.

Additional Records Management functions ensure that all access is secure, controlled, and logged. Enhanced with workflow functionalities, Web Content Management and universal integration functions, DocuWare provides powerful Enterprise Content Management (ECM) functionality for enabling expansion throughout an organization.



This store module allows easy and smooth document management that classifies them, adds a full text index and makes them available for onward processing. Users can securely archive all types of documents from a variety of sources in one central document pool for future retrieval.

Username:

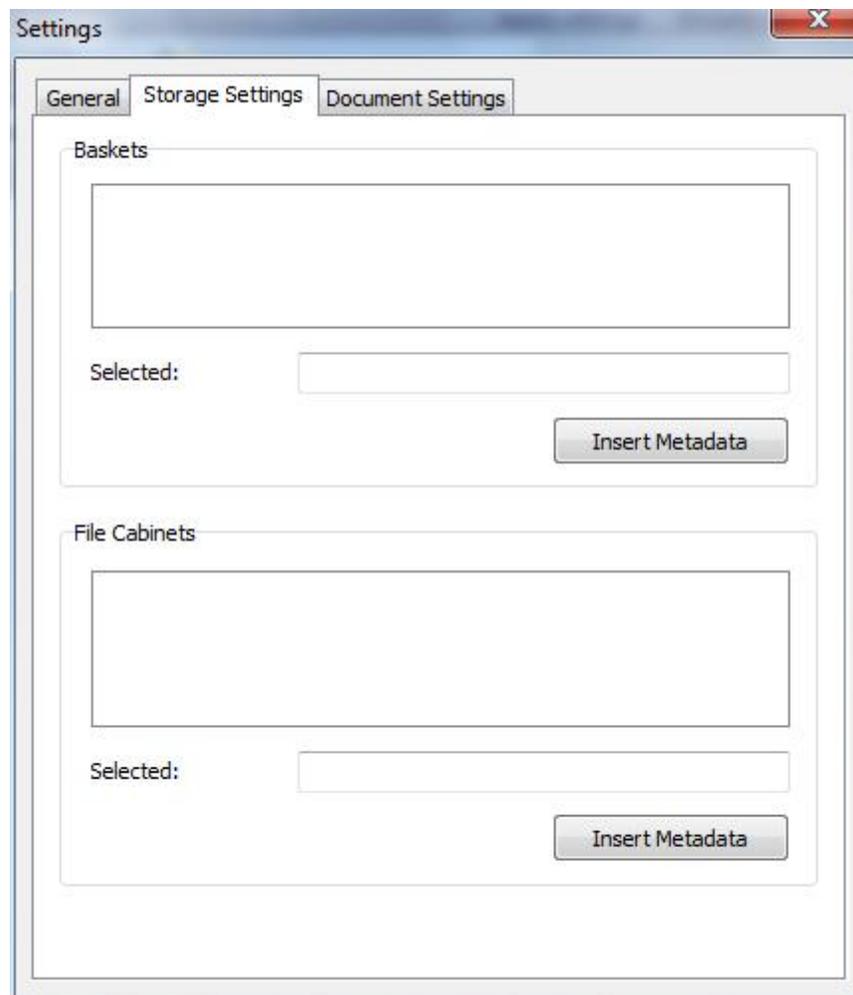
The unique username to be used to log-in into the DocuWare system. Usernames can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

Password:

Set the unique password for the username specified above. Passwords can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

Connection timeout:

Define the maximum time-out for the respective connection.

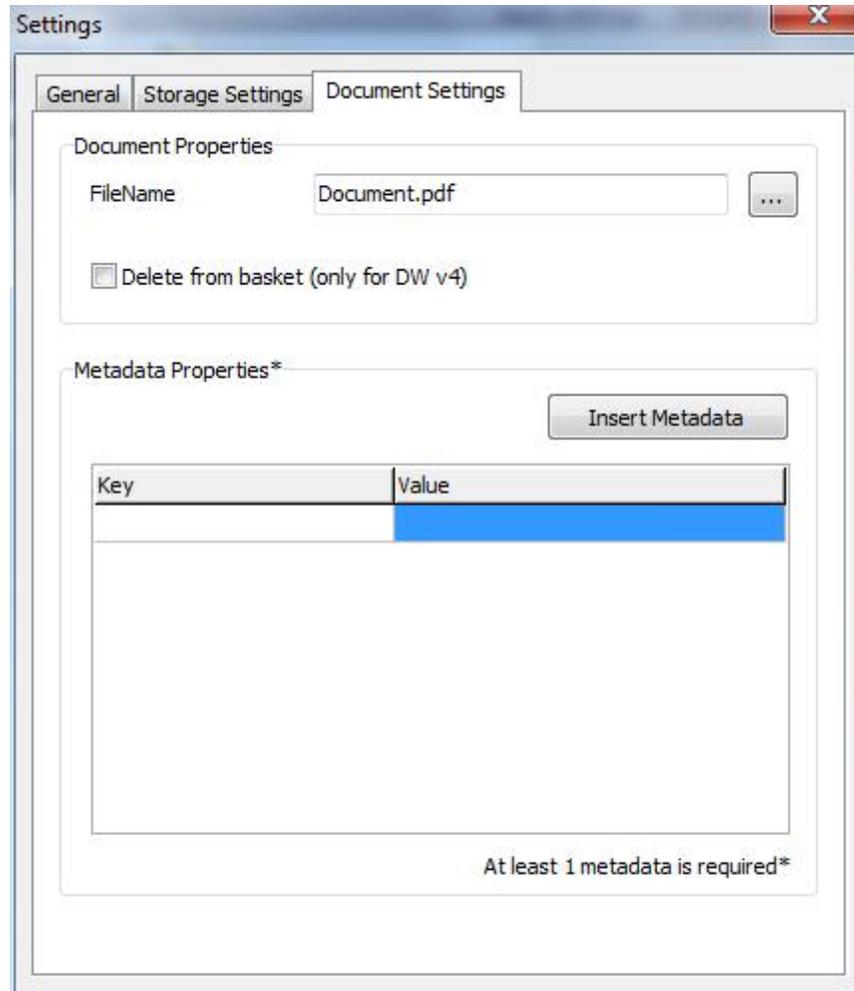


This window allows to set storage settings. The scanned documents are stored in baskets.

File cabinet:

Specify the file cabinet where the scanned images are to be kept. The filing cabinets represent the

document pool that contains all the information needed for accessing and controlling the workflow. The name of File Cabinet can be manually specified, or dynamically added using meta data through the Meta data Selection Dialogue box.



Document properties:

Specifies the format for storing scanned files. All common file formats are available.

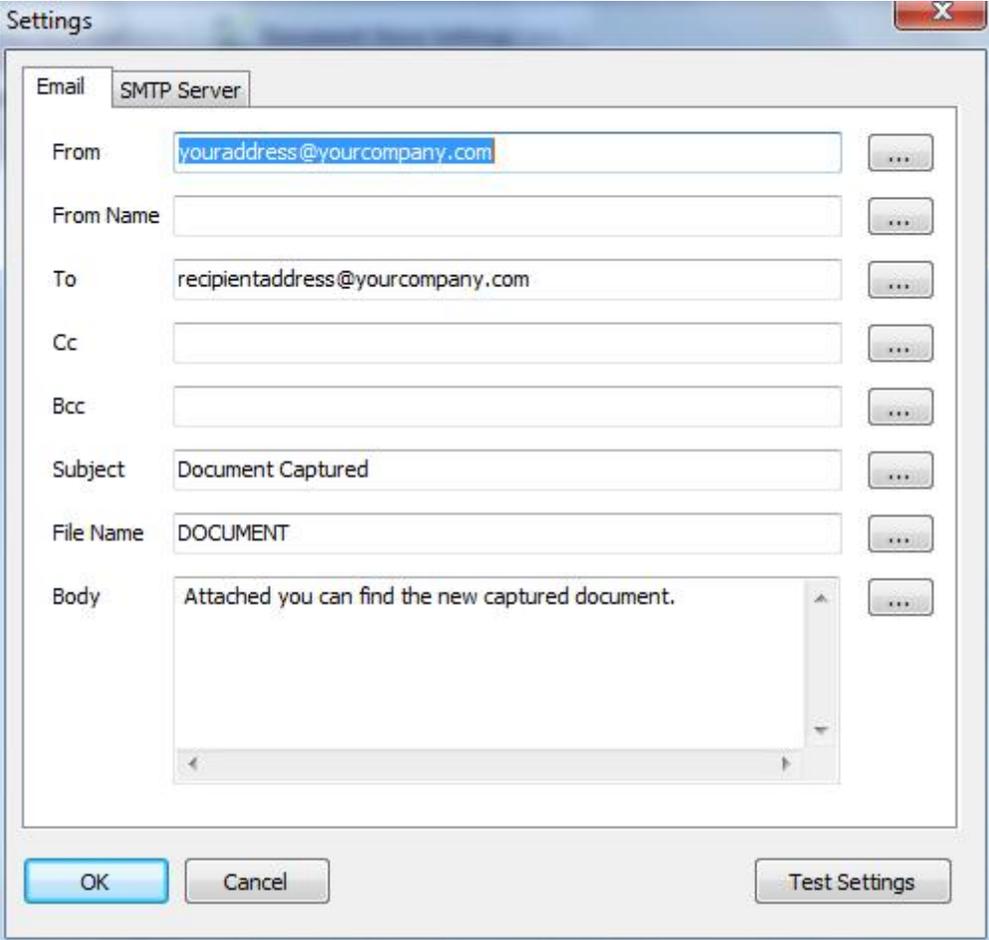
Metadata Properties:

Metadata from ScannerVision can be mapped to DocuWare meta data fields in this section

5.3.3.4 Email

Email

Documents can be sent to email locations. Using meta data in this module, creates a truly automated document routing process via email as meta data can be used not only to populate destination and subject lines, but also dynamically create standard mail messages.



The screenshot shows a 'Settings' dialog box with a tabbed interface. The 'Email' tab is selected, and the 'SMTP Server' sub-tab is active. The dialog contains several input fields, each with a three-dot menu button to its right:

- From:** youraddress@yourcompany.com
- From Name:** (empty)
- To:** recipientaddress@yourcompany.com
- Cc:** (empty)
- Bcc:** (empty)
- Subject:** Document Captured
- File Name:** DOCUMENT
- Body:** Attached you can find the new captured document.

At the bottom of the dialog, there are three buttons: 'OK', 'Cancel', and 'Test Settings'.

Setting available are:

From:

The sender's e-mail address. This field can be entered manually or automatically be constructed using meta data. Click to select which meta data to be used in the email.

To:

The recipient's e-mail address. This field can be entered manually or automatically be constructed using

meta data. Click  to select which meta data to be used in the email.

Cc:

The CC recipient's e-mail address. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the email.

Subject:

In this field the Subject field can be configured. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the email.

File Name:

The attached document's file name can be specified in this field. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the email.

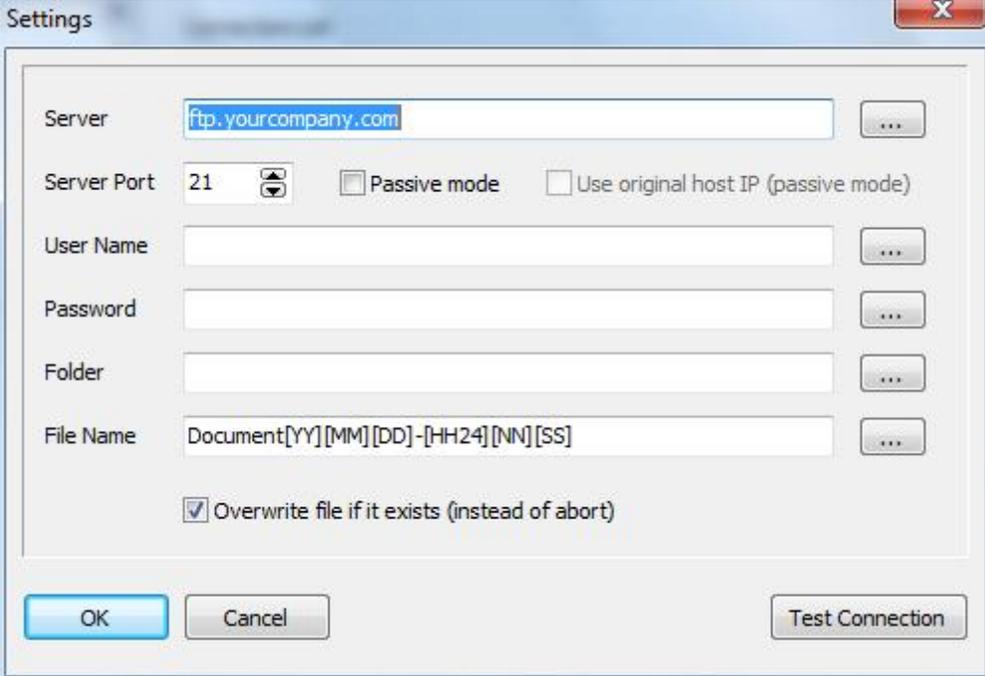
Body:

The body of the message can also be build using a combination of manually entered text, and/or dynamic ScannerVisionmeta data. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the email.

5.3.3.5 FTP

FTP

Documents can be sent to FTP folder via the internet/intranet. This feature is very use full to send documents from one ScannerVisionProcessing Engine to another, or to a Document Management System located remotely.



The screenshot shows a 'Settings' dialog box with the following fields and options:

- Server:** A text box containing 'ftp.yourcompany.com' with a browse button (...).
- Server Port:** A spin box set to '21', with checkboxes for 'Passive mode' and 'Use original host IP (passive mode)'.
- User Name:** A text box with a browse button (...).
- Password:** A text box with a browse button (...).
- Folder:** A text box with a browse button (...).
- File Name:** A text box containing the template 'Document[YY][MM][DD]-[HH24][NN][SS]' with a browse button (...).
- Overwrite file if it exists (instead of abort):** A checked checkbox.
- Buttons:** 'OK', 'Cancel', and 'Test Connection'.

Server:

This field contains the FTP server address where the document needs to be stored onto. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the email.

Server Port:

The port number used on the destination FTP site.

Passive Mode: This is typically used if the user/application/ScannerVision is behind a firewall while the FTP server is on the other side of the firewall.

User Name:

The username required to log-on and store the document in the FTP folder. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the user name on the FTP Site.

Password:

Specify the password for the username above. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the password section.

Folder:

The folder name on the FTP site in which the document needs to be stored. Depending on the user profile rights on the FTP server location, folders can be dynamically created using meta data. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the folder name.

File Name:

The file name of the document stored on the FTP site can be specified here. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the file name.

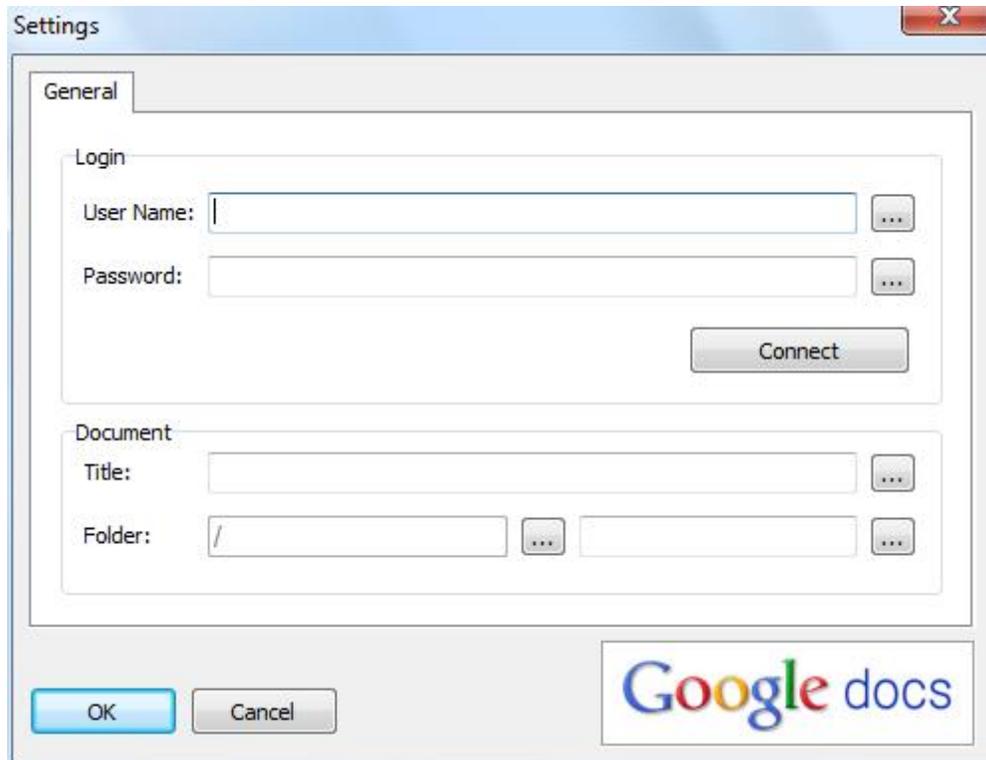
Overwrite file if it exist:

Enabling this option will replace a file on the destination FTP site if such a file have exactly the same file name as the document to be stored.

5.3.3.6 Google Docs

Google Docs

Google® Docs is installed as default and allows the user to directly store documents that have been captured using ScannerVision on their allocated file space in their Google docs account. The simple setting that needs to be configured for this connector are as follows;



Login:

- **User name:** One enters the user name to log into the Google® Docs account.
- **Password:** One enters the user password to log into the Google® Docs account and click on connect.

Once connected, the following fields should be configured.

Document:

- **Title:** The user fills in the job title.
- **Folder:** Here one enters the folder location.

Metadata may be used for any of these fields.

5.3.3.7 LF-Link (Laserfiche)

LF-Link (Laserfiche)

LF-Link is a “connector” designed to act as an interface between ScannerVision and Laserfiche.

As such, it facilitates the transfer of documents and metadata from ScannerVision clients, via the ScannerVision Processing Engine, to a Laserfiche repository.

LF-Link provides an easy way to:

- a. o Populate Laserfiche template fields with ScannerVision metadata
- b. o Transfer documents from ScannerVision clients into Laserfiche repositories
- c. o Perform metadata-based database lookups and store these in Laserfiche
- d. o Automatically establish document links in Laserfiche
- e. o Specify OCR options for documents when they arrive in Laserfiche
- f. o Apply security tags, optionally based on expected conditions
- g. o Specify Laserfiche storage options for documents
- h. o Use database lookup results to name documents or folders in Laserfiche
- i. o Log failed document posts, and identify the reasons for the failures
- j. o Resolve conditions causing documents not to post correctly, and re-submit them

To install LF-Link, simply run the LF-Link SETUP exe. During installation, you will be asked to provide the name of the ScannerVision Processing Engine’s CONNECTOR folder, as well as where you would like other components of LF-Link to be installed (such as the Reconciliation Console).

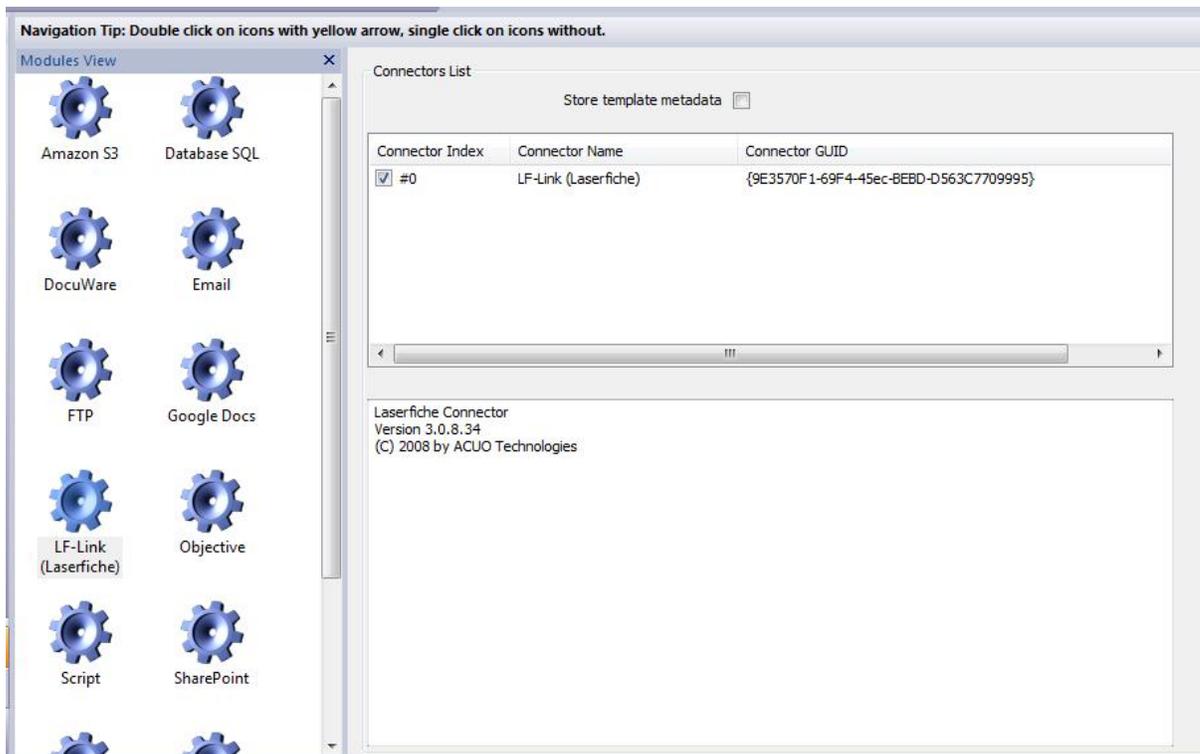
When you install LF-Link, it is important to have administrator rights.

Once LF-Link is installed, it will be detected by ScannerVision Processing Engine on startup, and you will be able to configure it for use.

To see how one configures the LF-Link connector, please refer to Appendix G - Lf-Link

We’ll look at how to load and configure LF-Link within a ScannerVision template next.

When you select “Document Store Settings” in a ScannerVision template, the LF-Link connector will appear as one of the connectors in the list, as seen below:

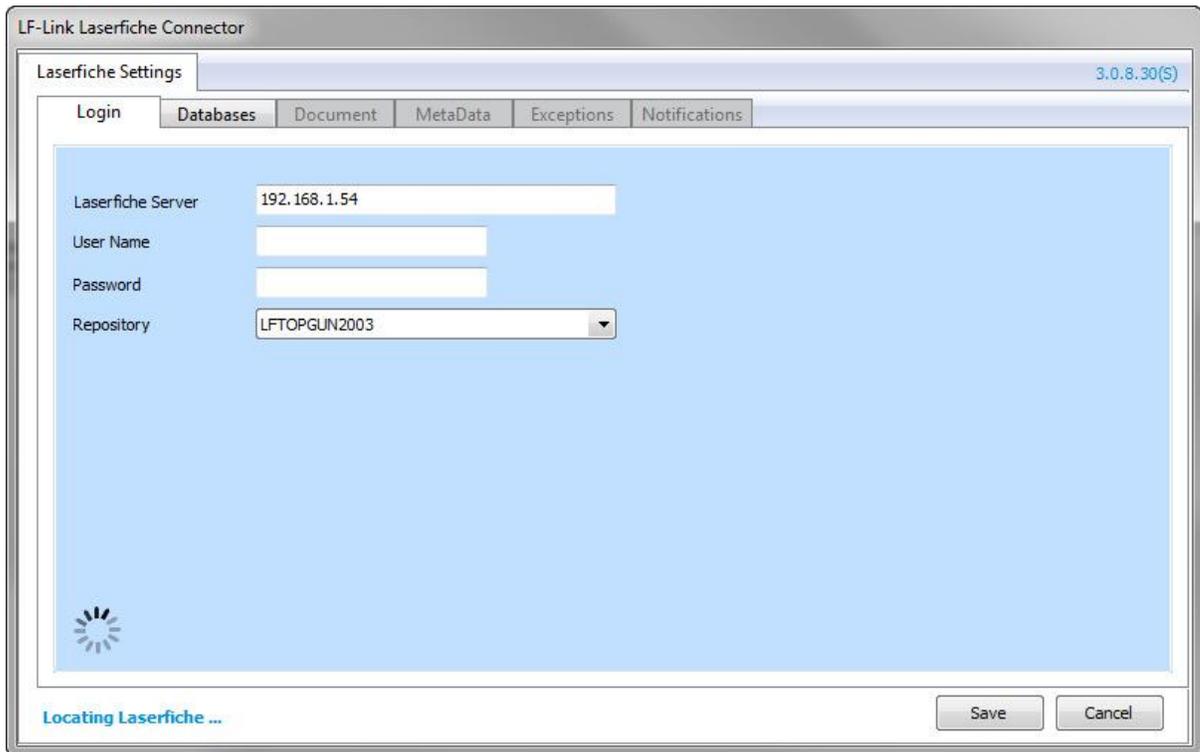


Dragging LF-Link from the “Modules View” onto the “Connectors List” for the template will make it available for use by the template.

To configure LF-Link, right-click on it in the Connectors List, and select “Configure Connector” from the menu that appears.

The LF-Link configuration screen will then open. We will cover configuration next.

When you first open the connector, the screen will look like this:



Notice the animated icon on the lower-left of the screen, and the message “Locating Laserfiche”. At this time, LF-Link is attempting to locate Laserfiche server, as well as verify that it is able to communicate with it.

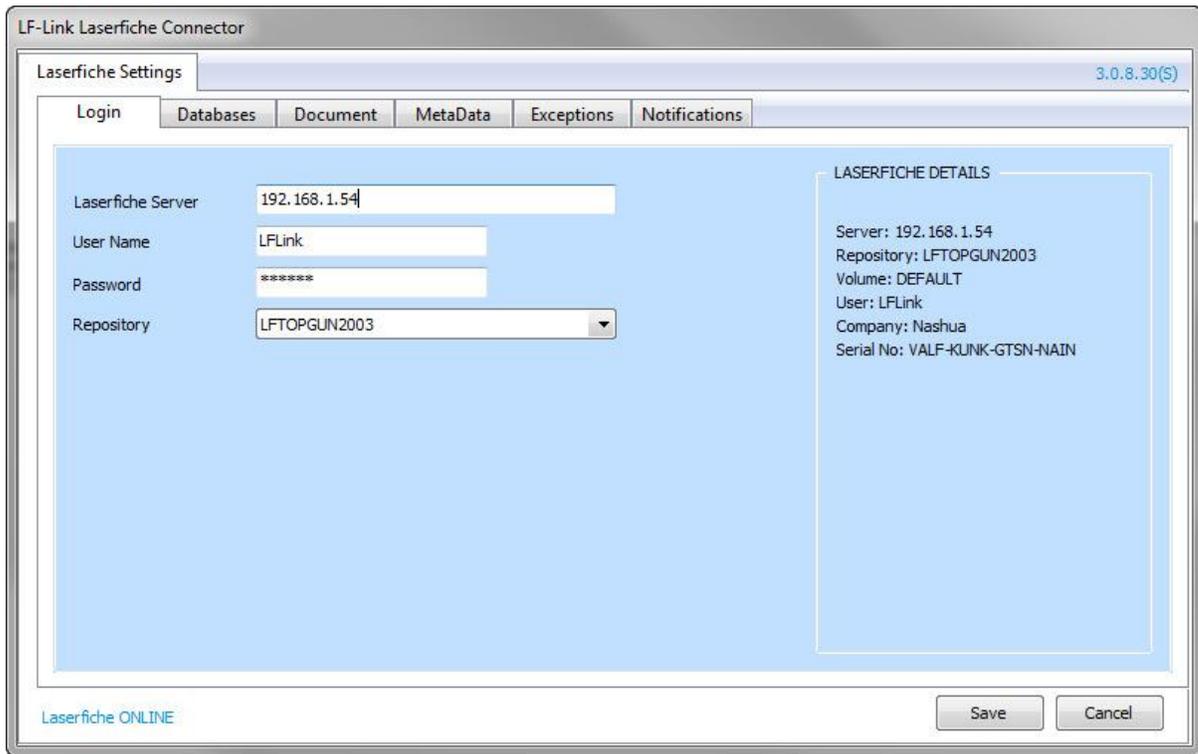
If it has done so before, and has login credentials, it will also attempt to establish repository and volume details from the default Laserfiche server.

Should LF-Link be unable to locate Laserfiche, the message on the lower left will change to:

Laserfiche OFFLINE

NOTE: While Laserfiche is offline (or not found), LF-Link will not allow you to modify its configuration in any way, in order to protect you from making changes that are invalid or inconsistent with the Laserfiche installation.

In the event that Laserfiche was found, the message at the bottom of the screen will change, and Laserfiche details will appear in a box on the right, as seen below:

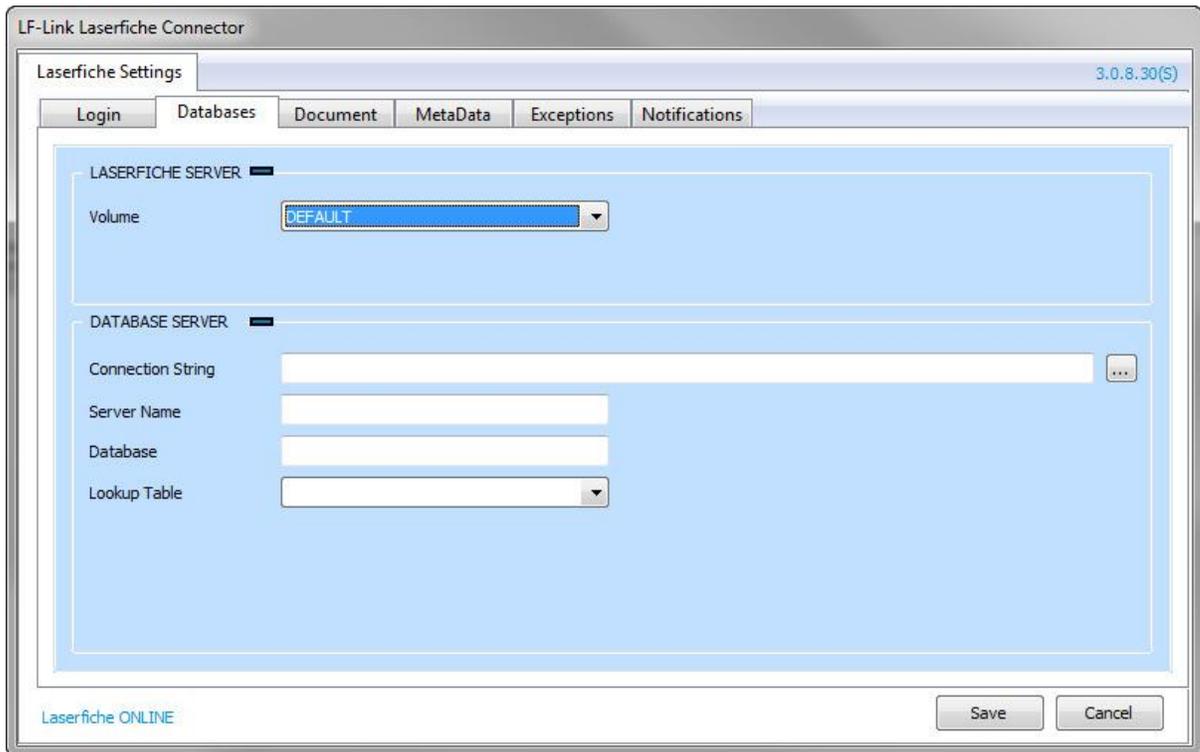


The Laserfiche information reflected to the right is:

Laserfiche COM	: The version of COM being used to communicate with the server
Server Version	: The Laserfiche server version installed
Server	: The name of the Laserfiche server
Repository	: The currently selected Laserfiche repository
Volume	: The currently selected Laserfiche volume
User	: The user name being used to connect to Laserfiche
Company	: The company name Laserfiche has been registered to
Serial No	: The Laserfiche server serial number

To LOGIN, select a Laserfiche Server from the drop-down list (or type in the name of an existing server), specify a user name and password for the server, and click on the “DATABASES” tab.

Once you have provided login credentials on the LOGIN tab, and you click on the DATABASES tab, LF-Link attempts to login to the specified Laserfiche server’s default repository (unless you have specified otherwise), and presents you with a screen that looks like this:



Once again, notice the message on the lower left. In this case it indicates a successful connection to Laserfiche. If LF-Link was unable to connect using the login credentials you provided, the message on the lower left would be:

Unable to connect to Test Repository!

Where in our example, Test Repository is the name of our Laserfiche repository.

NOTE: The DATABASES screen is divided into two sections, namely "LASER FICHE SERVER", and "DATABASE SERVER". The former refers to Laserfiche database details, the latter to the database server we are going to use to perform lookups based on metadata acquired by ScannerVision. The DATABASE SERVER section has nothing to do with Laserfiche itself.

This section contains just one fields, namely: Volume : The Laserfiche volume being used.

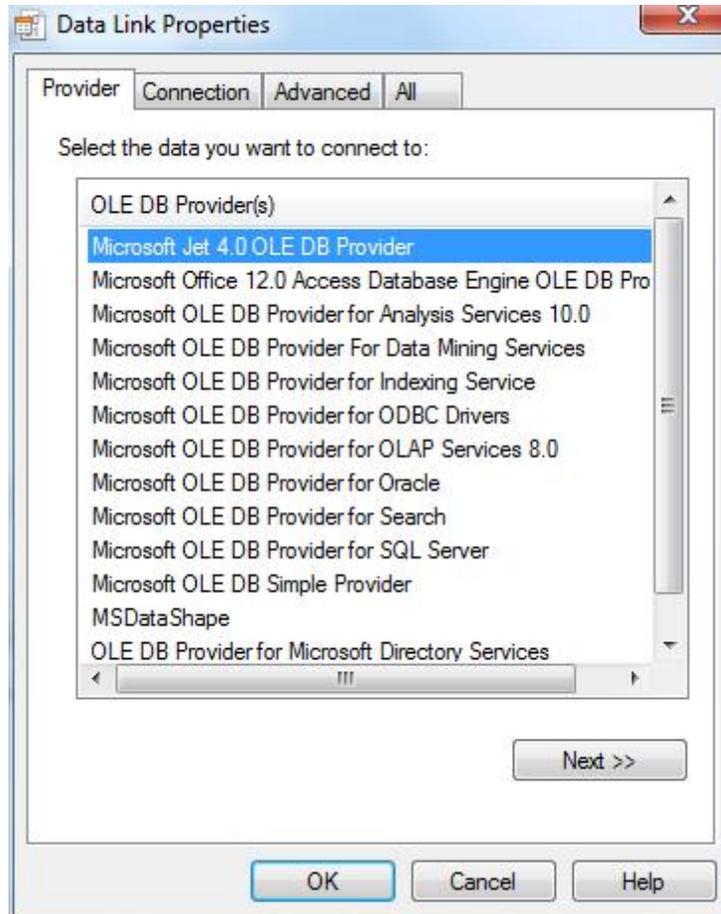
DATABASE SERVER

This section contains four fields:

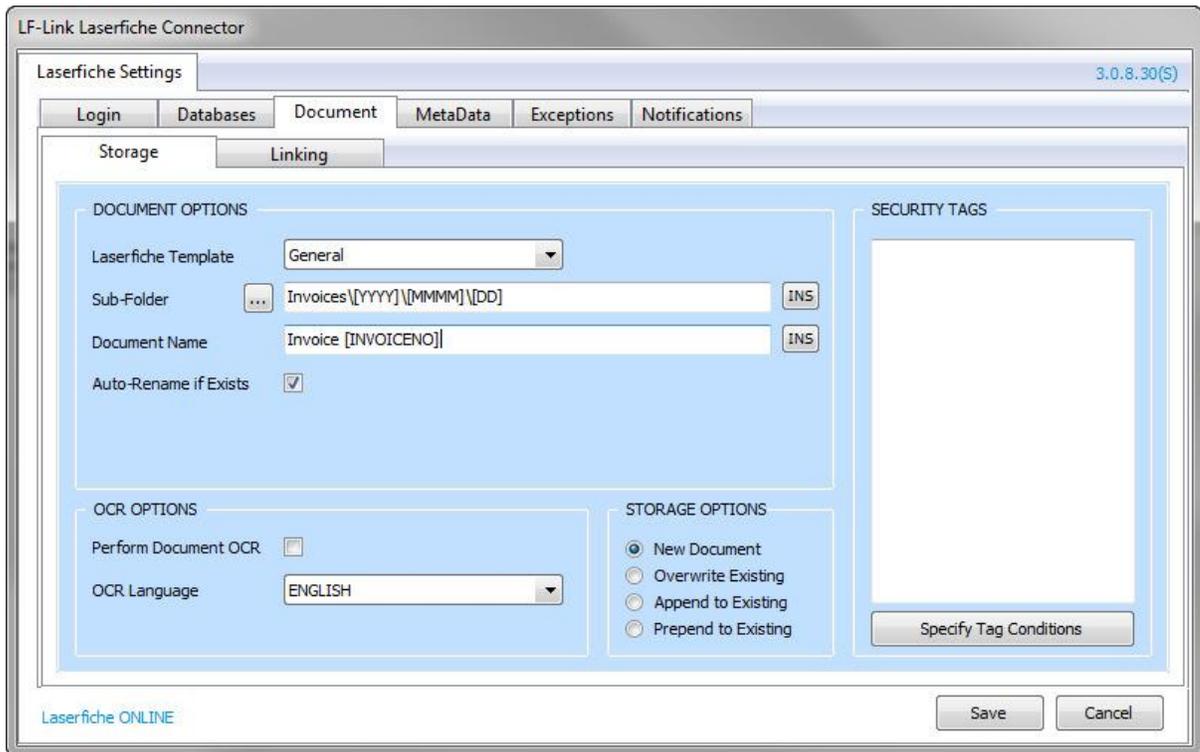
Connection String	: The ADO connection string required to connect to the database.
Server Name	: The name of the database server.
Database	: The name of the database on the server.
Lookup Table	: The name of the table in the database we are going to use for basic lookups.

You will notice a button to the right of the "Connection String" field. This is used to invoke the database

connection wizard (as seen below), which you can use to configure a connection to the database server. Once the wizard closes, select the table you intend to perform basic lookups from, and you are done.



As you can see below, the DOCUMENTS tab is composed of two other tabs, namely "STORAGE" and "LINKING". We'll take a look at the STORAGE tab first.



The STORAGE tab contains four sections, namely “DOCUMENT OPTIONS”, “OCR OPTIONS”, “STORAGE OPTIONS” and “SECURITY TAGS”. We’ll now examine each in turn.

DOCUMENT OPTIONS

Here you will find the following:

Laserfiche Template : This is the name of the Laserfiche template you want to link to
Sub-Folder : This is the sub-folder (under the repository root) you want to store the

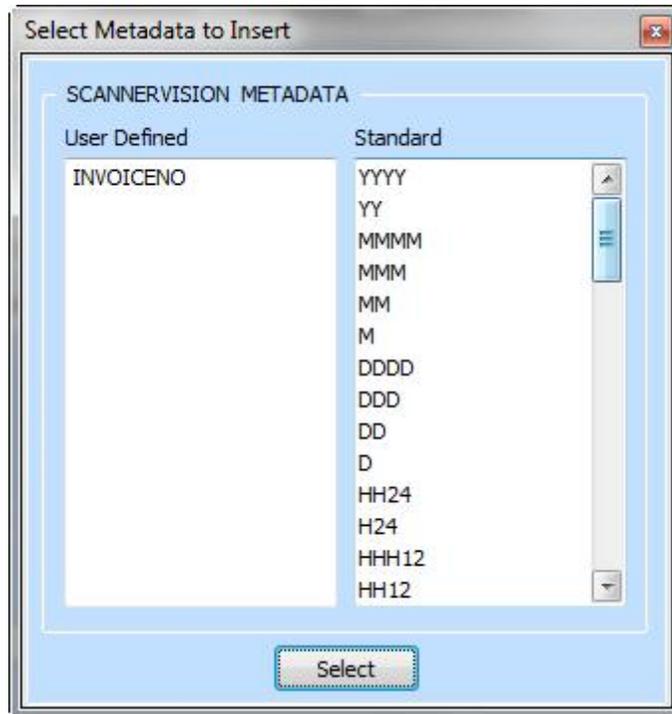
document in. The button to the left of the Sub-Folder field is used to open a folder selection dialog, which will allow you to navigate through the folders in the repository and select the one you want to use.

Document Name	: This is the name of the document in Laserfiche
Auto-Rename	: If a document with an identical name already exists, and you have specified
	“New Document” as your storage option, checking this will cause Laserfiche
	to auto-rename the document when it is stored.

USE OF METADATA IN FOLDER AND DOCUMENT NAMES: As you can see from the example screen above, you are able to use ScannerVision metadata in document or folder names, exactly as you would in any ScannerVision regular expression. Metadata fields must, as always, be enclosed in [] brackets, and all the normal ScannerVision expression operators are available for your use (eg. [YYYY(1-2)] would result in 20, being the first two characters of 2008, being returned in the example above).

NOTE: The buttons to the right of both the Sub-Folder and Document Name fields can be used to “insert” a ScannerVision metadata field, instead of you having to type it in. When you press either of these buttons, a dialog that looks like the one on the right will appear, allowing you to select from either user-defined metadata fields, or standard (internal) ScannerVision metadata fields.

Database lookup fields can also be used in folder or document names. To do this, simply place the “DB.” Identifier before the field name, and use it in exactly the same way as you would use an ordinary metadata field name. So for example, if there was a column name called “COMPANY_NAME” that you wanted to use in a document name, you could do so like this:



Document Name: [DB.COMPANY_NAME]

LF-Link would then use the looked-up company name as the document name. And as before, all the usual expression operators are available, as in the example [DB.COMPANY_NAME(1-5)], which would take the first 5 letters of the company name and use that.

Should you want Laserfiche to OCR the document when it arrives, check the “Perform Document OCR” checkbox, and select the OCR language from the drop-down language selection list.

STORAGE OPTIONS

You are able to specify how you would like Laserfiche to store the document sent through from ScannerVision. The options available to you are:

New Document	: Save the document as a completely new document.
Overwrite Existing	: If the document already exists, overwrite it.
Append to Existing	: If the document already exists, append to the existing document.

Prepend to Existing : If the document already exists, prepend to the existing document.

NOTE: Keep in mind the “Auto-Rename” option mentioned before, under “Document Options”, specifically when using “New Document”. Failing to use “Auto Rename” together

with “New Document” could lead to a situation where you try to post a document with the same name as an existing document, and Laserfiche will fail in its post because it cannot save two documents with an identical name.

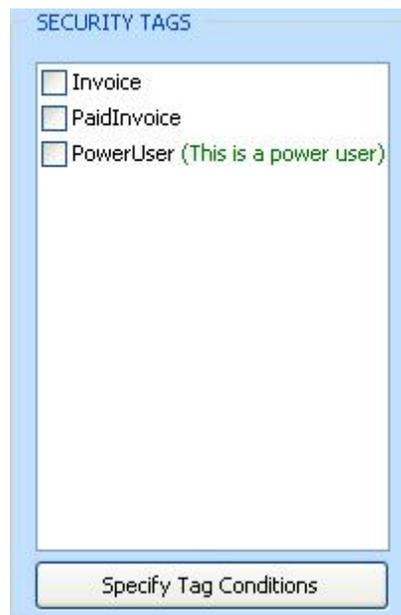
SECURITY TAGS

LF-Link allows you to apply security tags to documents, simply by checking the relevant tags in the security tags list, as seen on the right of the screen.

In addition, you are able to conditionally apply a tag.

What this means is that you are able to have a tag applied if a ScannerVision metadata expression results in an expected value that you specify. And if it does not, the tag will not be applied to the document.

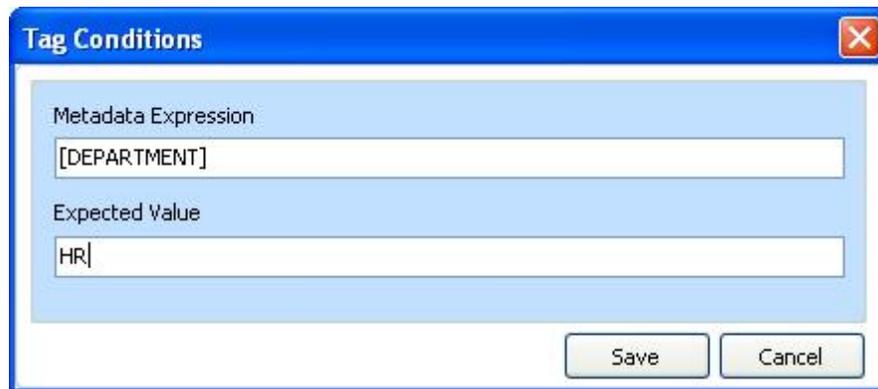
To see how this works, check a tag in the list, and then click on the “Specify Tag Conditions” button.



SECURITY TAGS

- Invoice
- PaidInvoice
- PowerUser (This is a power user)

Specify Tag Conditions



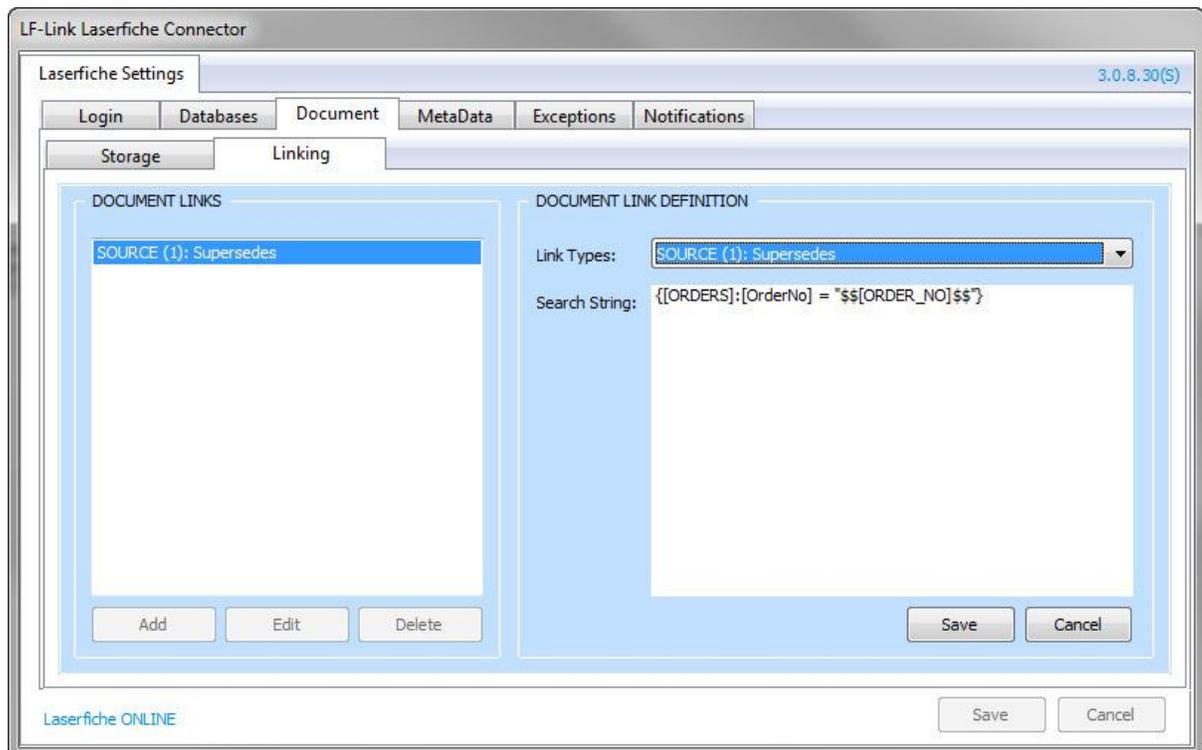
The 'Tag Conditions' dialog box is shown with a blue title bar and a close button. It contains two text input fields: 'Metadata Expression' with the value '[DEPARTMENT]' and 'Expected Value' with the value 'HR'. At the bottom right, there are 'Save' and 'Cancel' buttons.

If, when a document is processed by LF-Link, the ScannerVision metadata tag [DEPARTMENT] contains the value "HR", the tag will be applied. If not, it will be skipped.

Note that you can use any ScannerVision expression that results in a single value.

The next tab on the DOCUMENTS tab is called "LINKING". It's here that you specify Laserfiche document links for the document you are processing, and the search criteria for the links themselves.

You can create as many links as you like, and they will automatically be processed when LF-Link receives a document from ScannerVision.



The 'LF-Link Laserfiche Connector' window is shown with the 'Linking' tab selected. The 'DOCUMENT LINKS' list on the left contains one entry: 'SOURCE (1): Supersedes'. Below the list are 'Add', 'Edit', and 'Delete' buttons. The 'DOCUMENT LINK DEFINITION' panel on the right shows 'Link Types' set to 'SOURCE (1): Supersedes' and a 'Search String' of '{{[ORDERS]:[OrderNo] = "\${ORDER_NO}\$}}'. At the bottom right of the definition panel are 'Save' and 'Cancel' buttons. The bottom of the window has 'Save' and 'Cancel' buttons and the text 'Laserfiche ONLINE'.

On the left is the list of links you have defined. You can ADD, EDIT or DELETE a link from the list. If you click on ADD for example, an editing panel opens up (as seen in the example above) for you to add the details of your link.

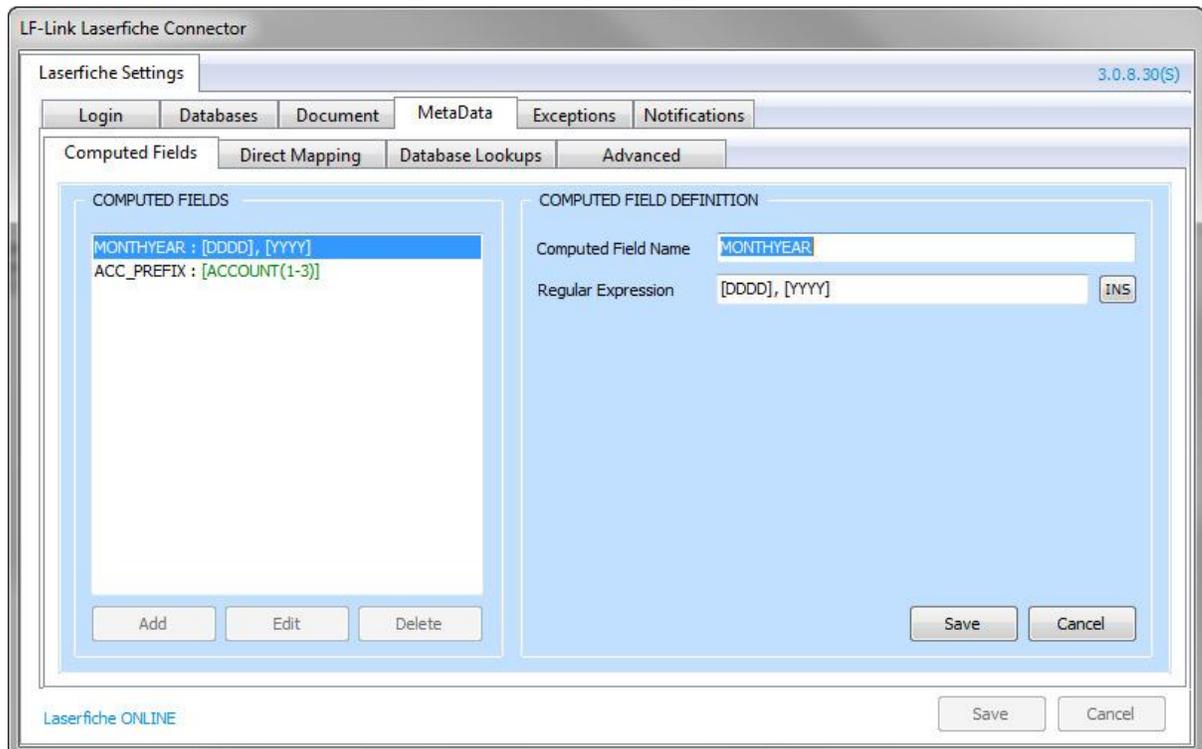
The DOCUMENT LINK DEFINITION section contains two fields, namely: At runtime, prior to passing the search string on to Laserfiche, LF-Link will replace any ScannerVision expressions contained between pairs of \$\$ characters. In our example above, the string then reads like this:

Link Type	: The link, as defined in Laserfiche, you have selected to apply
Search String	: This is the Laserfiche search string that specifies which documents to link to
	this one. The search string syntax follows the Laserfiche rules for search
	strings, with one small difference. Anywhere in the search string where you

“... Search for all documents in the ORDERS template, linking this one to any where the Laserfiche field called “OrderNo” has the value contained in the ScannerVision metadata field called “ORDER_NO”... “

Of course, reverse links from matching documents are automatically created by Laserfiche to the document being processed.

As you can see below, the METADATA tab is composed of four other tabs, namely “COMPUTED FIELDS”, “DIRECT MAPPING”, “DATABASE LOOKUPS” and “ADVANCED”. We’ll take a look at the COMPUTED FIELDS tab first.



The COMPUTED FIELDS tab allows you to create your own, LF-Link fields, for use in document or folder names, or even in database lookups.

On the left of the screen is a list of computed fields you have defined. You can ADD, EDIT or DELETE computed fields. If you click ADD a panel appears allowing you to define your computed field, as in our

example above.

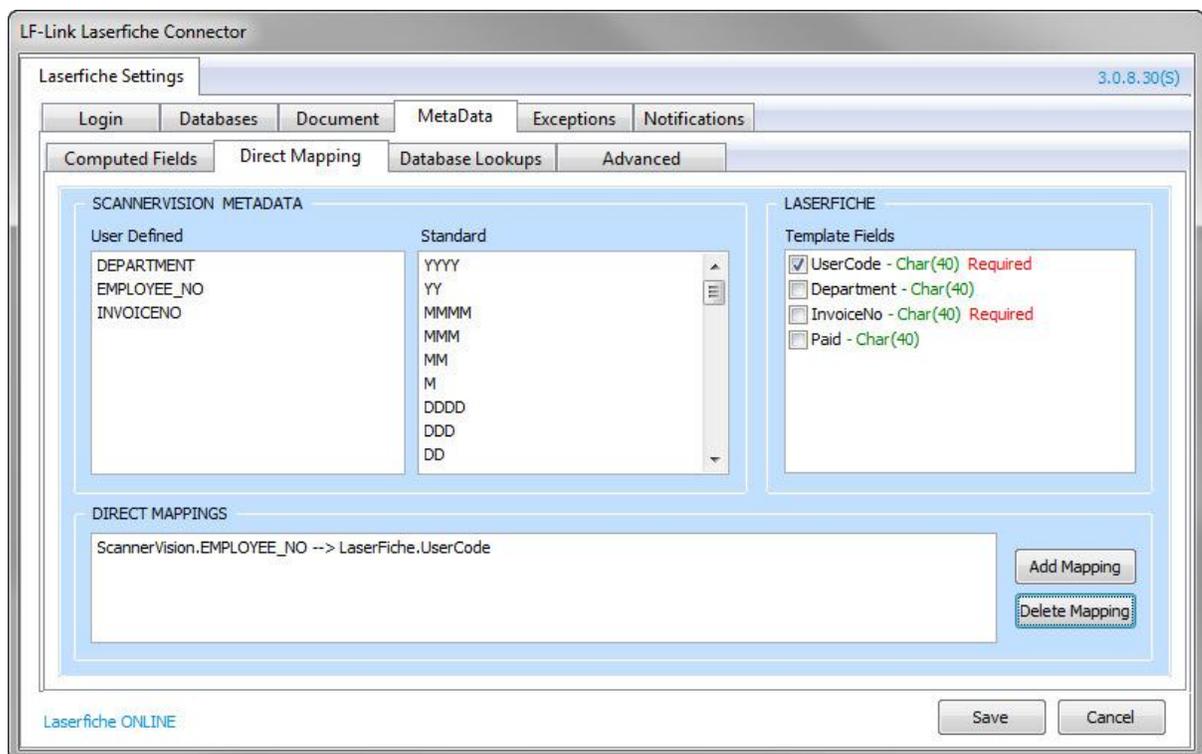
In the example above, we have decided to create a new computed field, and call it "MONTH_OF_YEAR".

So anywhere where you can use a ScannerVision metadata field in LF-Link, you can now also use [MONTH_OF_YEAR], and LF-Link will replace it with the relevant value.

The next tab on the METADATA tab is called "DIRECT MAPPING". In this section, you specify which ScannerVision metadata fields you want mapped directly to corresponding Laserfiche fields.

At runtime, the fields you have chosen from the ScannerVision side will be used to populate Laserfiche fields as is, without any manipulation at all.

You can see this below:



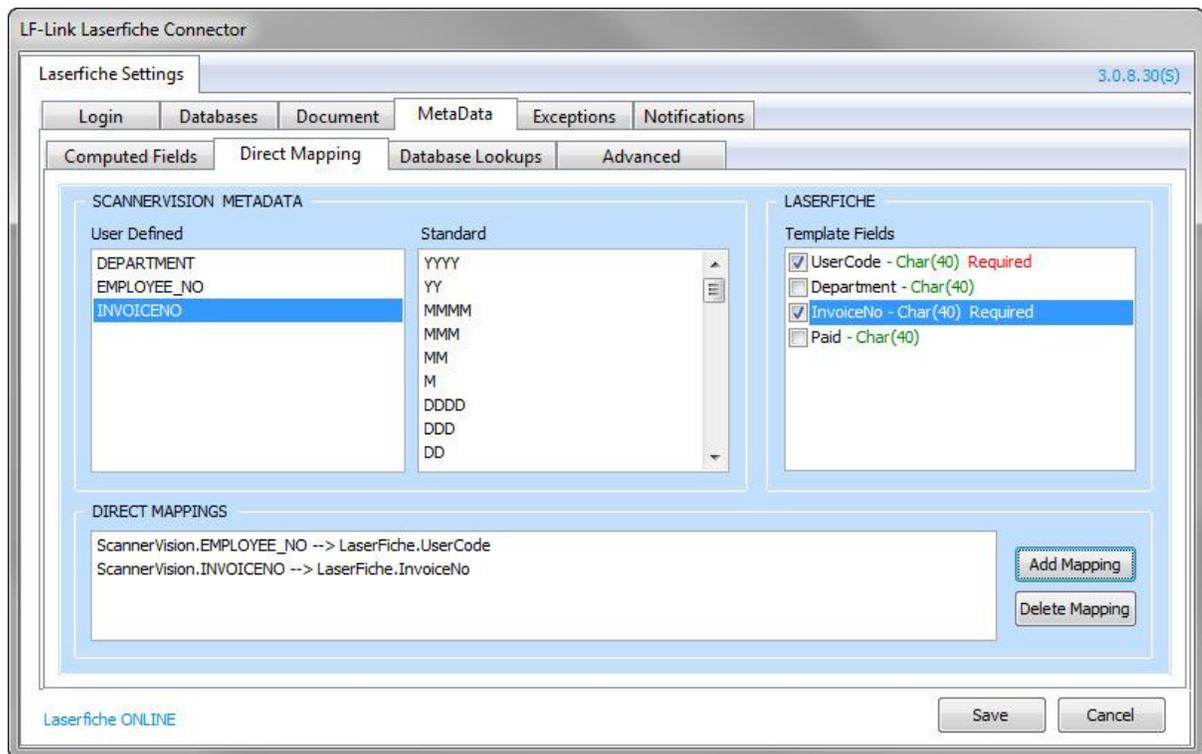
In our example, we have selected the "EMPLOYEE_NO" metadata from ScannerVision, selected the "UserCode" field from Laserfiche, and clicked the "Add Mapping" button. LF-Link responded by linking the two fields, and placing a reference to this link in the section at the bottom of the screen, titled "DIRECT MAPPINGS". To add more direct mappings, simply select the ScannerVision field you want to link, select the corresponding Laserfiche field, and again click "Add Mapping".

In order to delete a mapping, simply select it in the "DIRECT MAPPINGS" list, and click on the "Delete Mapping" button.

Once you have mapped a Laserfiche field, a tick appears in the check-box next to the field name. Deleting a mapping un-checks the relevant check-box.

NOTE: You will notice that the ScannerVision MetaData area contains not one list of metadata, but two. The one on the left, headed “User Defined”, contains a list of metadata fields that are available at either a global template level, or have been defined for the specific ScannerVision template being worked with. It also contains any LF-Link computed fields you have defined. The list on the right, headed “Standard”, contains all the standard, internal metadata field names ScannerVision usually ships with, such as YYYY or DD.

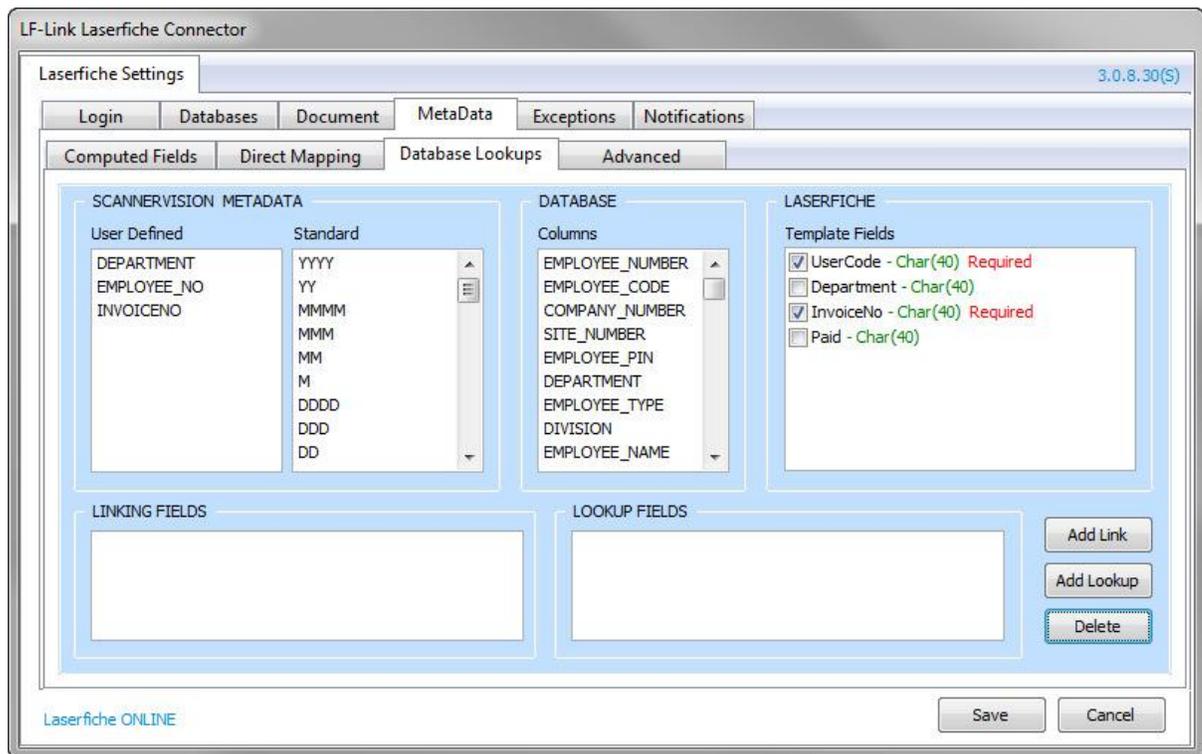
For the purposes of providing an example of the various aspects of the LF-Link connector, we’re going to map two more fields. I’ve done this below, as you can see:



We now have 3 fields mapped from ScannerVision direct into Laserfiche, as you can see from the “Direct Mappings” list. The only Laserfiche field that is not populated at this point is the “Department” field. We’ll see how to handle that next.

The next tab on the METADATA tab is called “DATABASE LOOKUPS”. It is here that we can do simple database lookups, and populate Laserfiche with one or more columns from a table in our database.

Remember, the connection to the database we are using was defined on the “DATABASES” tab, and the table we are going to use for our lookups was chosen there too. With that done, we are ready to declare a database lookup.



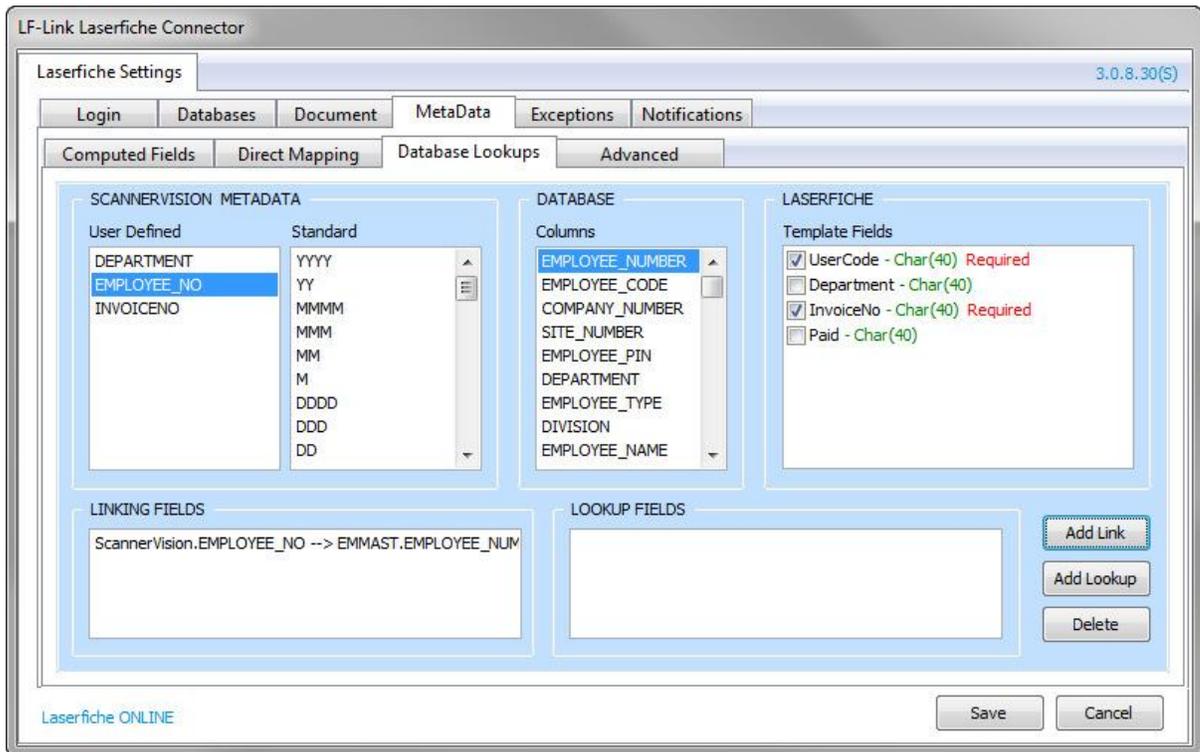
As before, notice the “SCANNER VISION METADATA” section, with its two columns of fields. These are what we refer to as “Linking Fields” in the database lookup. The values they contain will be used to populate the database columns we use for a lookup.

Notice also, there is a new section entitled “DATABASE”, which contains a list of all the columns of the table we specified before (on the “DATABASES” tab).

And as before, there is a “LASER FICHE” section containing a list of all the available Laserfiche fields. Note that from our selections in Direct Mapping before, three of the fields are checked, and the only one which has no data populating it at this point is the “Department” field. We’re going to use the Database Lookups section to lookup data for the Department field.

We’re going to select “EMPLOYEE_NO” from the ScannerVision side, select “EMPLOYEE_NUMBER” on the database side, and add this pair as a linking field pair.

You can see this in the example below:

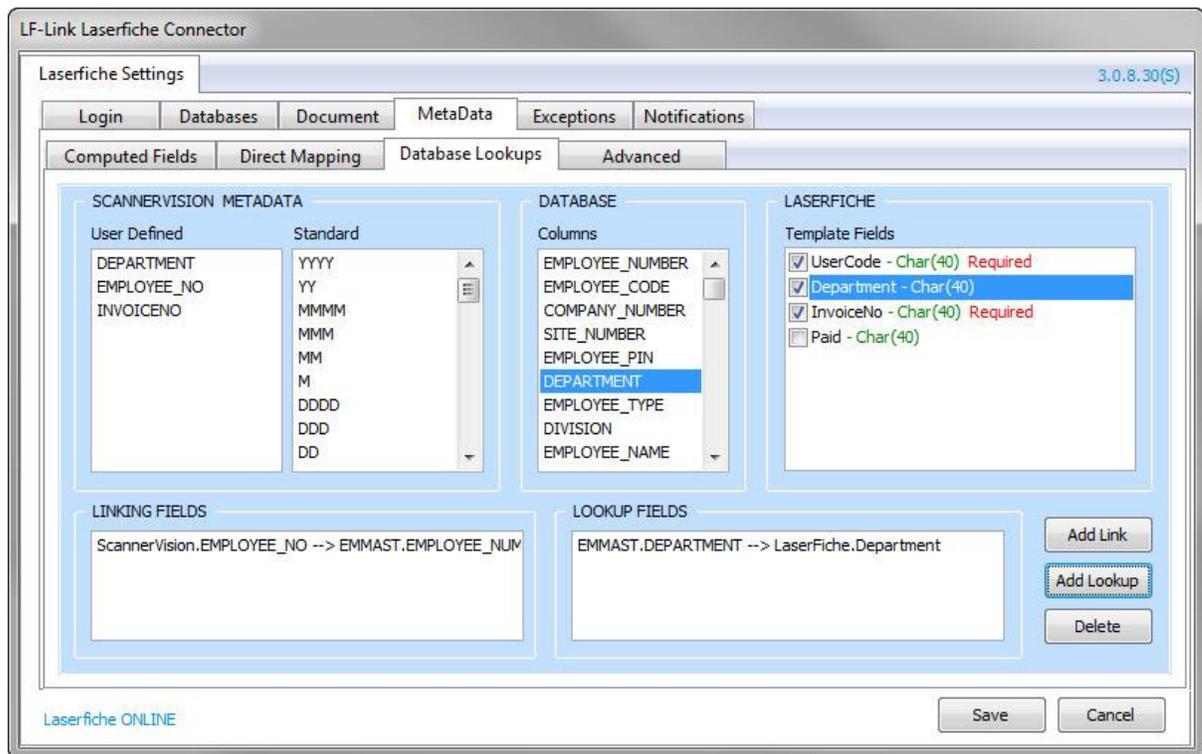


A reference to our newly-added linking field pair is added to the “LINKING FIELDS” list, on the lower left of the screen. You are free to add as many linking fields as you like.

As before, if you want to delete a linking field pair, simply select it, and click on the “Delete” button.

NOTE: There are cases where you want to perform a lookup from a database table, but there are no linking fields. For example in the case where a table contains a single row, with a list of system-wide constants or flags. In this case, you simply do not define any fields as linking fields, and LF-Link will perform the lookup from the first (and in this case only) row in the table, allowing you to perform a lookup without using any ScannerVision field as a linking field.

To do this, select the “DEPARTMENT” field from the DATABASE section, select the “Department” field from the Laserfiche section, and click on the “Add Lookup” button, as seen below:



As before, a reference to our newly-added lookup is added, this time to the “LOOKUP FIELDS” list at the bottom right of the screen.

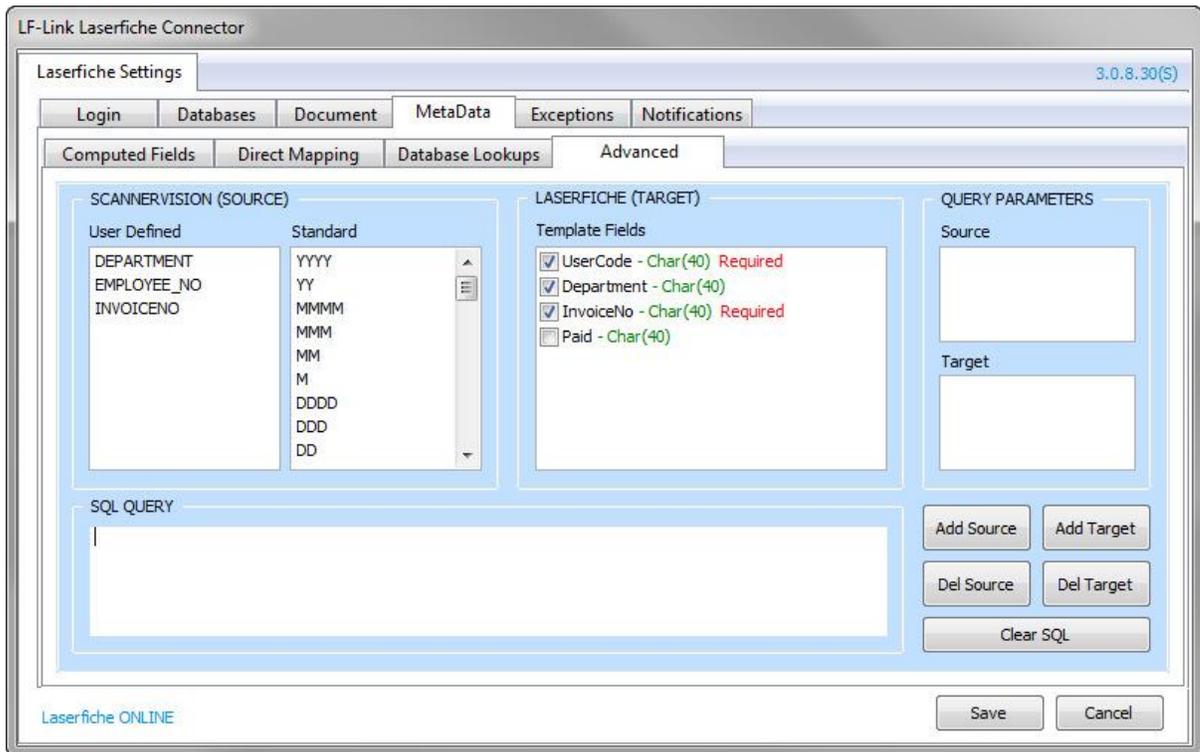
Notice too, that the Laserfiche “Department” field is now checked, indicating it will be receiving data via LF-Link.

So in our example, LF-Link will use the value contained in the ScannerVision EMPLOYEE_NO metadata field to populate the database’s EMPLOYEE_NUMBER column, use that for a lookup, and return the DEPARTMENT column, which it will use to populate the Department field in Laserfiche.

We will cover advanced database lookups next, where we can perform complex lookups from a variety of tables, and return results from any of those tables into Laserfiche.

The ADVANCED tab on the METADATA tab covers the case where we want to populate Laserfiche fields with database fields that may originate from one or more tables, and in complex ways.

In the advanced case, basically any field results you could get from a SQL query are supported. The ADVANCED tab is shown below:



There are three primary differences between this screen and the “Database Lookups” screen, namely:

SOURCE List	: This is the list of “source”, or input fields, to be used in the SQL query. It is comprised of ScannerVision metadata fields.
TARGET List	: This is the list of “target”, or output fields to be used in the SQL query. It is comprised of Laserfiche fields.
SQL Query	: This is the SQL query that you want executed on the database, which contains references to both the source and target fields.

You add a ScannerVision metadata field to the Source list by selecting it, and then clicking on the “Add Source” button. You delete a field from the Source list by selecting it in the list, and then clicking on the “Del Source” button.

Once you have your list of Source (ScannerVision) and Target (Laserfiche) fields in place, it's time to write your SQL statement.

Here is an example SQL statement, (not related to anything we have done before):

```
SELECT EMPLOYEE_NAME, EMPLOYEE_MOBILE, CONTRACT_START_DATE FROM
EMPLOYEES, DEPARTMENTS WHERE EMPLOYEE_NO = :EMPLOYEE_NO AND
DEPARTMENT_CODE = :DEPARTMENT
```

What is important here is the sequence of the column names, and the parameter values, not their names. The first result column in our example (EMPLOYEE_NAME) will be used to populate the first

Laserfiche field in the target list. The second result column (EMPLOYEE_MOBILE) will be used to populate the second Laserfiche field in the target list. And so on.

Likewise, the value of the first parameter (:EMPLOYEE_NO) will be populated from the first ScannerVision field in the source list, and the second parameter (:DEPARTMENT) will be populated from the second ScannerVision field in the source list.

You are free to use any SQL statement you like, combining tables and results in any way you like, so long as you remember to keep the sequence of the column names and parameter values in the same sequence as they appear in the target and source lists respectively.

In order for LF-Link to work, you will need the following environment:

One of the following Operating Systems:

Windows XP, Service Pack 3 Windows Server 2003 Windows Vista

ALL of the following products must be installed:

ScannerVision Processing Engine version 3 Laserfiche 7.2.1 Client (installed on same machine as LF-Link) Laserfiche Server 7.2.1 or Laserfiche Server 8.0

[APPENDIX B: Known Issues](#)

Use of the following characters in ScannerVision metadata is not advised, and may crash the system:

& > <

[APPENDIX C: Troubleshooting and Q&A](#)

Q: I receive a "CATASTROPHIC FAILURE" message when trying to configure the connector

A: Check your Laserfiche installation and licensing. This is a Laserfiche message.

Q: I get an "XML Parsing Error" message.

A: Check that your ScannerVision metadata does not contain illegal characters (eg. &)

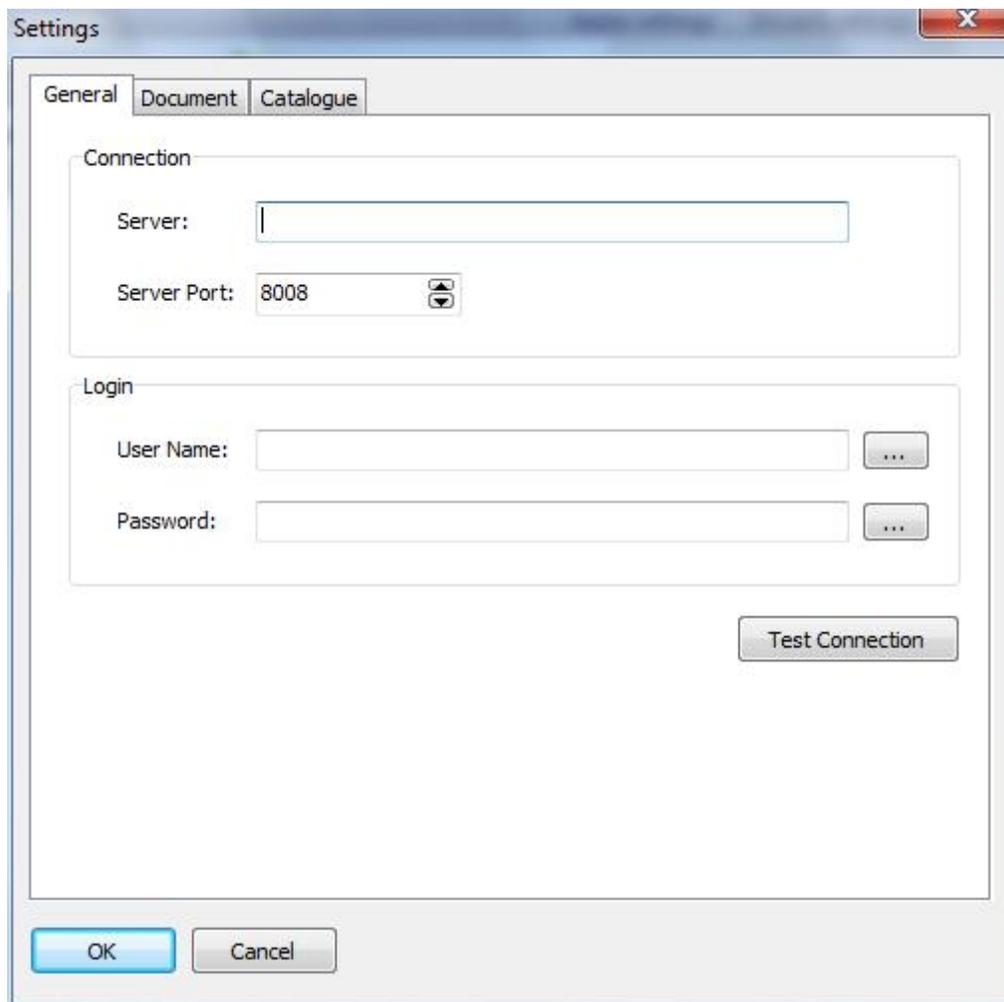
5.3.3.8 Objective

Objective

The Objective Solution has been meticulously engineered to meet the complex and stringent requirements of Government organizations and large Corporations with high volumes of unstructured information, often complex business requirements and flexible deployment characteristics.

Objective is a comprehensive integrated suite of Enterprise Content Management modules that have been designed to address the broadest requirements of:

- Document Life Cycle Management
- Electronic and Physical Record Management
- Process Automation / Work flow
- Web Content Life cycle Management
- Team Collaboration
- Enterprise Knowledge Discovery
- Reporting



The screenshot shows a 'Settings' dialog box with three tabs: 'General', 'Document', and 'Catalogue'. The 'General' tab is selected. It contains two main sections: 'Connection' and 'Login'. The 'Connection' section has a 'Server:' text box and a 'Server Port:' spinner box set to '8008'. The 'Login' section has 'User Name:' and 'Password:' text boxes, each with a browse button (three dots). A 'Test Connection' button is located at the bottom right of the dialog. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

General Tab:

Connection settings and login information to the Objective server can be set in this section

Document Tab:

Specific document attributes can be configured using either static values, or dynamically populated values using ScannerVisionmetadata.

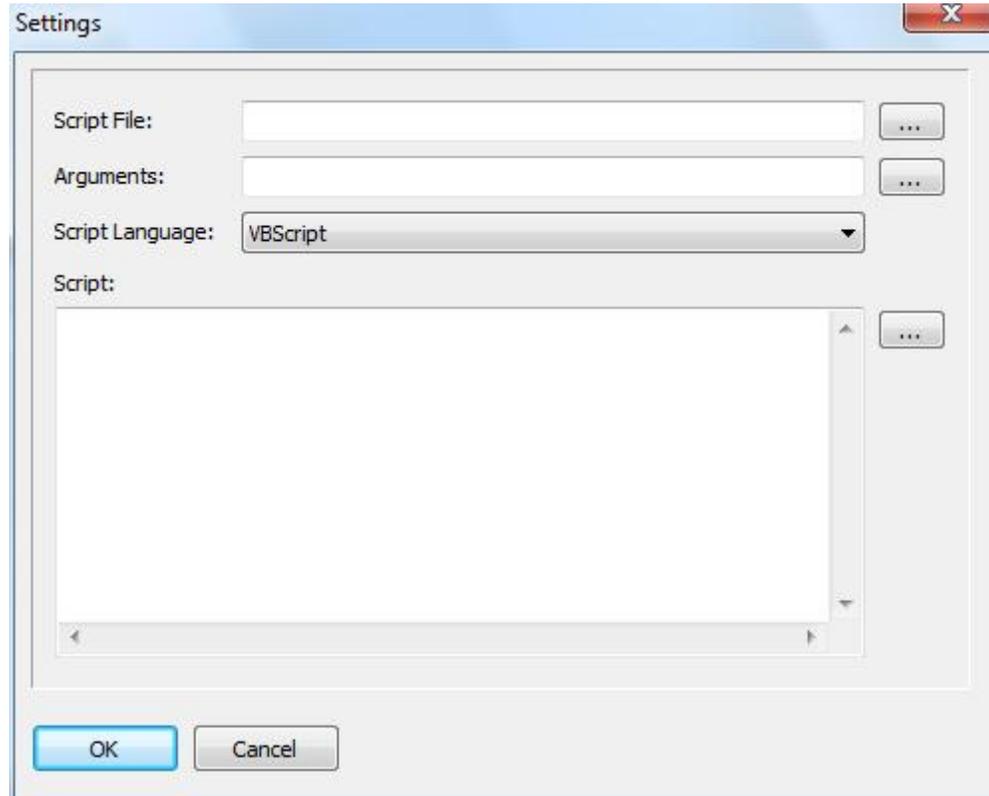
Catalogue:

Catalogue parameters can be set using either static values, or dynamically populated values using ScannerVision meta data.

5.3.3.9 Script

Script

The Script Store Module allows for bespoke integration into virtually ANY backend system. Custom scripts can be developed to integrate into many systems using either Jscript or VBScript languages.

**Script File Name:**

Script file names can be customized using either static text and/or meta data from ScannerVision

Arguments:

Script arguments can be defined using either static text and/or meta data from ScannerVision

Script language:

Select either VBScript or Jscript.

Script:

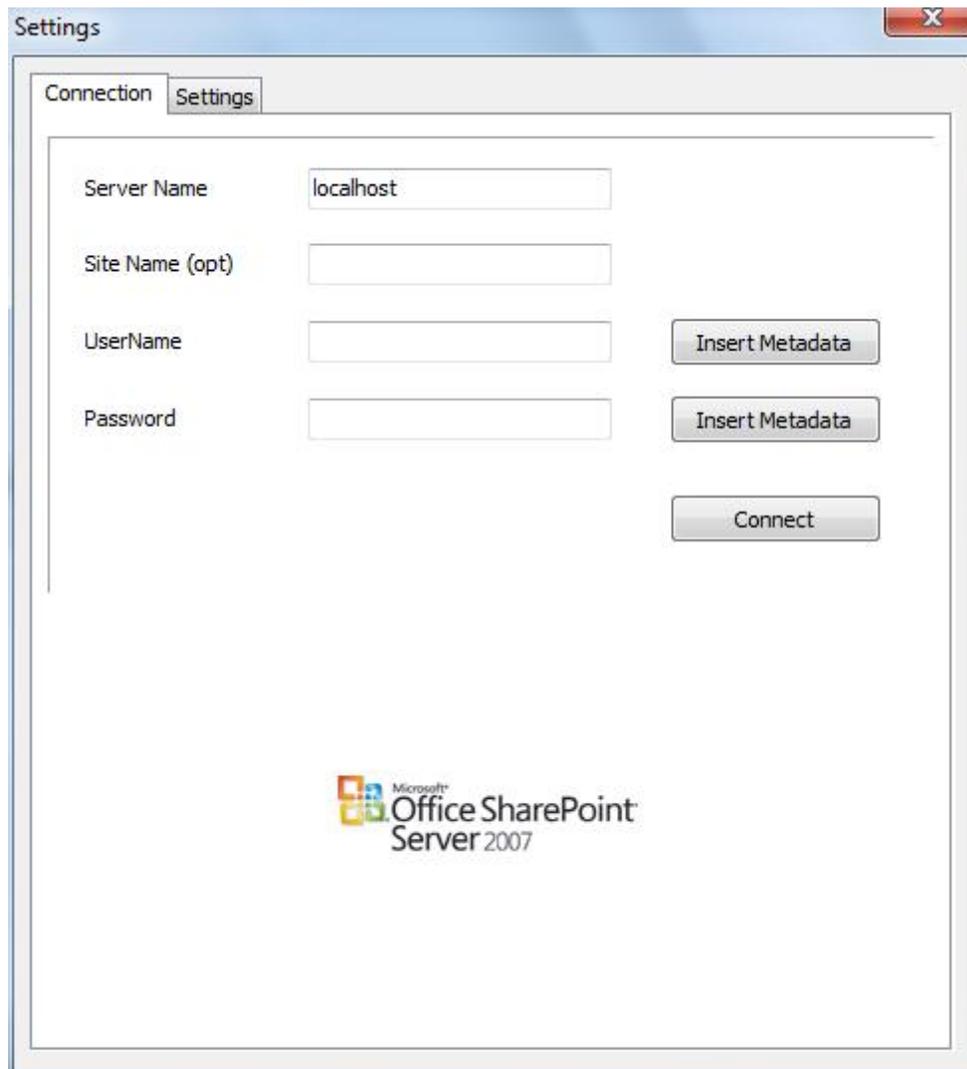
In this section, the VBScript or Jscript can be written, using dynamic ScannerVisionmeta data to populate variable strings as needed.

For more detail on VBScript, also see [Appendix F - Scripting](#)

5.3.3.10 Sharepoint

SharePoint

Microsoft SharePoint products and technologies is a collection of products and software elements that include, amongst a growing selection of components, Internet Explorer based collaboration functions, process management modules, search modules and a document-management platform. SharePoint can be used to host web sites that access shared workspaces, information stores and documents, as well as host defined applications such as wikis and blogs. All users can manipulate proprietary controls called "web parts" or interact with pieces of content such as lists and document libraries.



The screenshot shows a 'Settings' dialog box with two tabs: 'Connection' and 'Settings'. The 'Settings' tab is active. It contains four input fields: 'Server Name' (with 'localhost' entered), 'Site Name (opt)', 'UserName', and 'Password'. To the right of the 'UserName' and 'Password' fields are two 'Insert Metadata' buttons. Below these is a 'Connect' button. At the bottom center of the dialog is the Microsoft Office SharePoint Server 2007 logo.

The connection tab are used to specify the SharePoint Server Name, the Site Name (Optional) the username and password. The username and password sections can be populated using static text, or dynamic ScannerVisionmeta data.

The screenshot shows a 'Settings' dialog box with two tabs: 'Connection' and 'Settings'. The 'Settings' tab is selected. The dialog contains the following elements:

- Sites:** A dropdown menu with a downward arrow and an 'Update' button to its right.
- Library:** A dropdown menu with a downward arrow and an 'Insert Metadata' button to its right.
- Library Type:** A text input field.
- File Name:** A text input field containing the text 'Document.pdf' and an 'Insert Metadata' button to its right.
- Overwrite existing file:** A checked checkbox.
- Buttons:** 'OK' and 'Cancel' buttons are located below the 'Overwrite existing file' checkbox.
- Library Fields:** A section with the label 'Library Fields:' and an 'Insert Metadata' button to its right. Below this is a table with two columns: 'Key' and 'Value'. The 'Value' column has a blue highlight on its first row.

The settings tab allows the selection of the required Site Name, Library to be used, the Library Type and File Name. Library names can be dynamically selected using ScannerVision metadata. File names can be customized using either static text, or metadata from ScannerVision.

5.3.3.11 WebDAV

WebDAV

WebDAV, is a set of extensions to the Hypertext Transfer Protocol (HTTP) that allows users to edit and manage files collaboratively on remote World Wide Web servers. The WebDAV connector allows the integration into any backend system which supports the WebDAV protocol.

The screenshot shows a 'Settings' dialog box with two tabs: 'Settings' and 'File Properties'. The 'Settings' tab is active. It contains the following fields and controls:

- URL:** A dropdown menu showing 'http://' and a text input field containing 'localhost'. To the right is a 'Connect/Update' button.
- Username:** A text input field with an 'Insert Metadata' button to its right.
- Password:** A text input field with an 'Insert Metadata' button to its right.
- Folders View:** A large empty rectangular area with the instruction 'Folders View (click to browse, dbl click to create a new folder):' above it.
- Folder:** A text input field with an empty space and a '...' button to its right.
- FileName:** A text input field containing 'Document.pdf' with a '...' button to its right.
- Options:** Two checkboxes: 'Create Folders' (unchecked) and 'Overwrite' (checked).
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

The following settings can be configured within the ScannerVisionWebDAV connector:

URL:

The URL where the web folders are located

Username:

The unique username to be used to log-in into the WebDAV system. Usernames can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box

appears.

Password:

Set the unique password for the username specified above. Passwords can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

Folders View:

The Web Folders can be browsed from this view.

Folder:

The folder name on the WebDav server in which the document needs to be stored. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the folder name.

File Name:

The file name of the document stored on the WebDAV site can be specified here. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the file name.

5.3.3.12 WinDream

WinDream

WinDream is the first full integration of an enterprise content management system with the Microsoft Windows operating system. This feature from ScannerVision allows the capturing of files or documents in user-friendly manner. Using this feature, documents can be moved, copied or deleted via drag and drop functions and easy command menu.



Domain:

The Domain to be used when connecting to the WinDream Server

Server name:

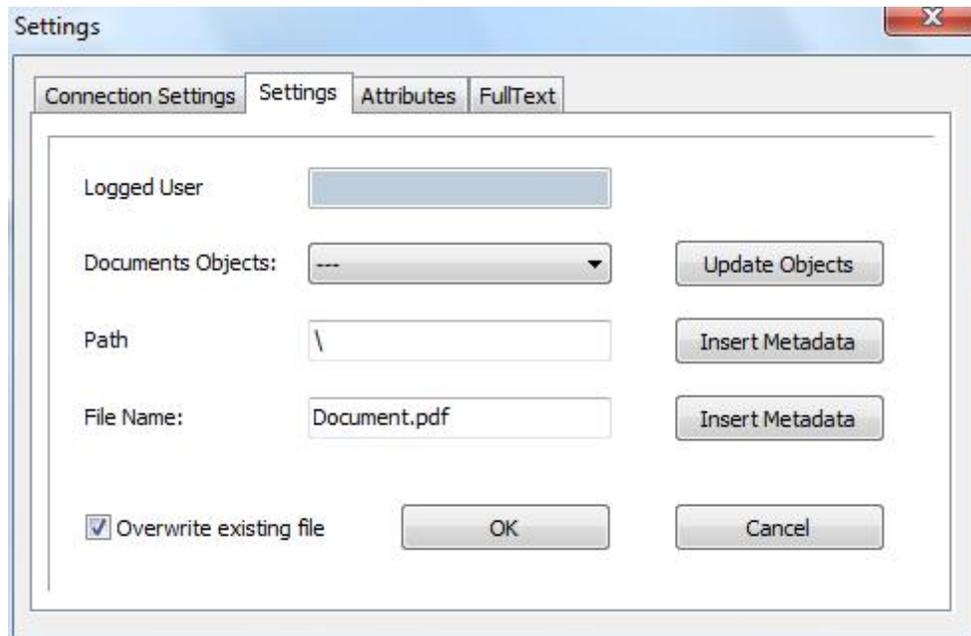
The Server Name of the WinDream Server

Username:

The unique username to be used to log-in into the WinDream system. Usernames can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

Password:

Set the unique password for the username specified above. Passwords can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

**Logged User:**

Displays the name of logged user.

Document Objects:

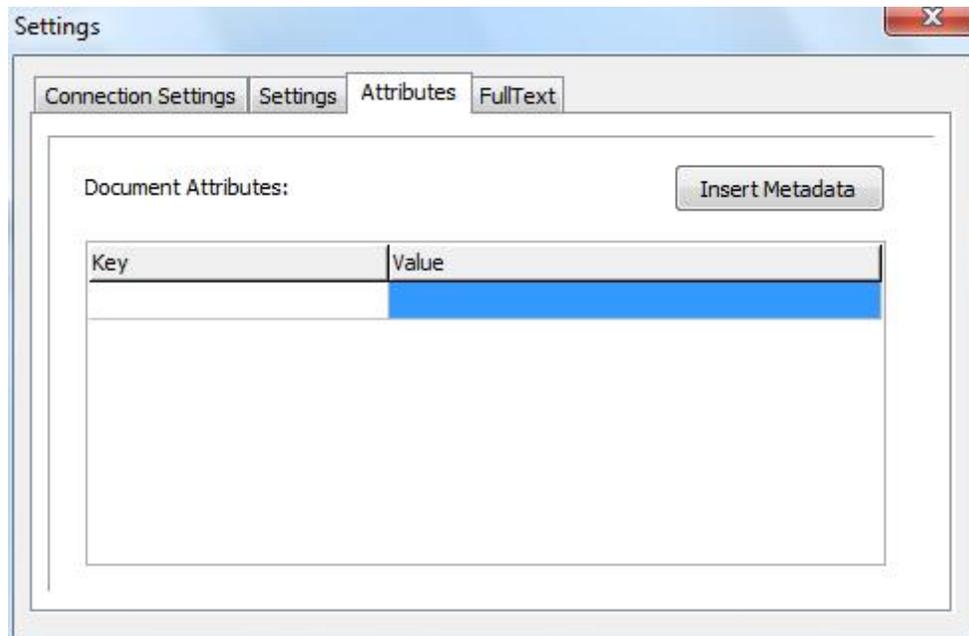
Select the Document Objects pertaining to the image to be stored in WinDream.

Path:

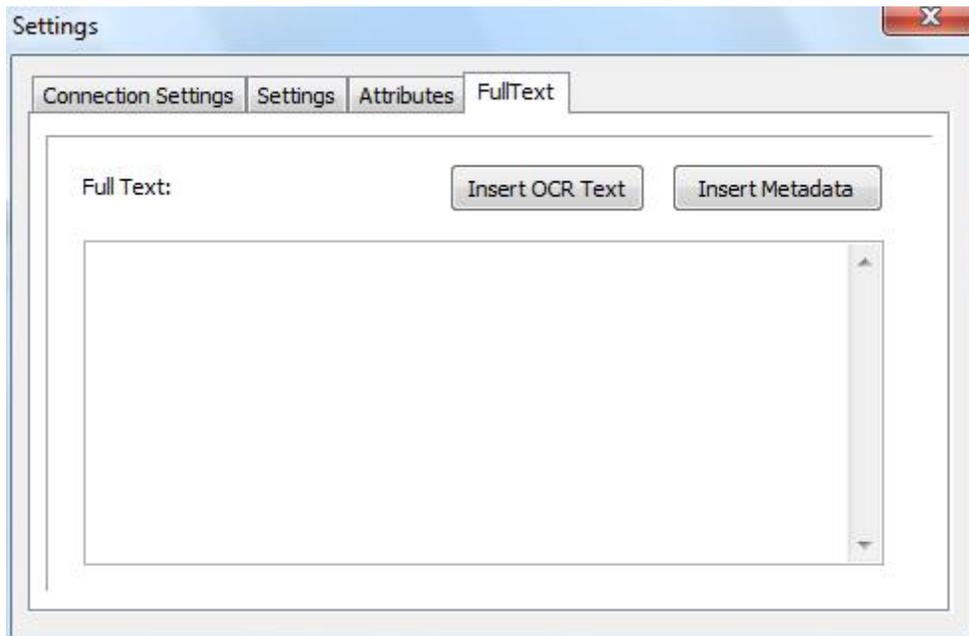
Specify the path within WinDream where the image must be store. The path can either be manually entered, or dynamically build using rich dynamic ScannerVision meta data.

File Name:

The file name of the document stored on the WebDAV site can be specified here. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the file name.



This window allows user to assign document properties. Click on the button  and the Metadata Selection Dialog box appears.



This window allows user to insert text from the ScannerVision OCR module.

5.3.3.13 Windows File System

Windows File System

Most probably the most commonly used connector, the Windows File System allows documents to be stored in a Microsoft folder location, or a shared location on the local network.

Share/Drive and Folder Name:

The path to the shared drive or folder name can be specified in this section. Static text can be used, or rich dynamic ScannerVision meta data can be used to navigate to the folder, or dynamically create folders.

File Name:

The file name of the document stored on the Windows File System can be specified here. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the file name.

Share Login (optional):

The unique username to be used to log-in into the Windows File system. Usernames can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

Share Password (optional):

Set the unique password for the username specified above. Passwords can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

If the destination file exists

- Overwrite
- Append
- Abort operation

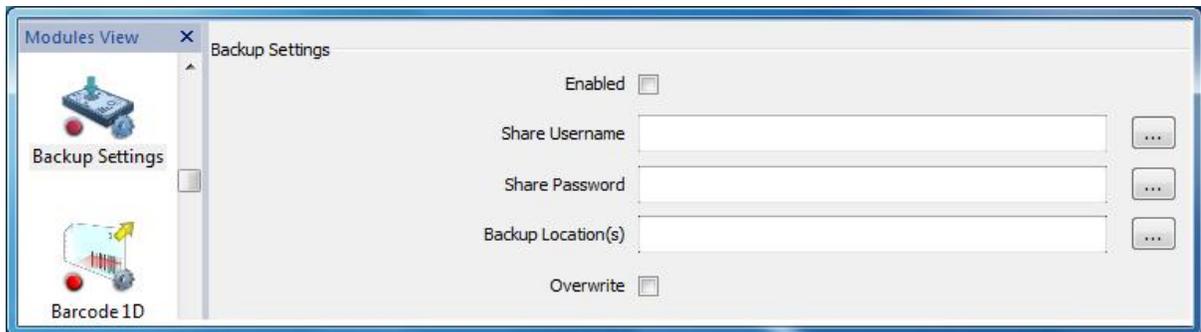
PDF Append Resolution

This option is only available when the "Append" option is selected. It determines the resolution of the resulting PDF document which has a direct relationship to the size of the resulting PDF. User options are 100, 200, 300, 400, 600 and <default> (300) DPI. Other properties of the resultant PDF can be controlled with the template's "Output Format Settings".

5.3.4 Backup Settings

Backup Settings

The Backup Settings option allows for a copy of all scanned/processed documents to be stored within a separate location.



Share Username:

The unique username to be used to log-in into the Windows File system where the backup should take place. Usernames can be manually added, or selected from the meta data list. Click on the button



and the Meta data Selection Dialog box appears.

Share Password:

Set the unique password for the username specified above. Passwords can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

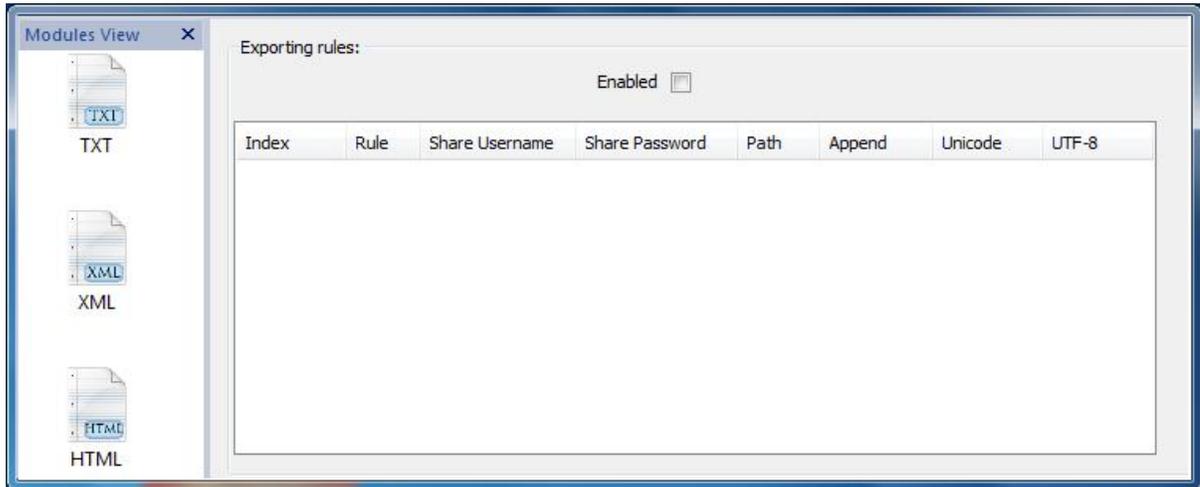
Backup Location (s):

The path to the shared drive or folder name can be specified in this section. Static text can be used, or rich dynamic ScannerVision meta data can be used to navigate to the folder, or dynamically create folders.

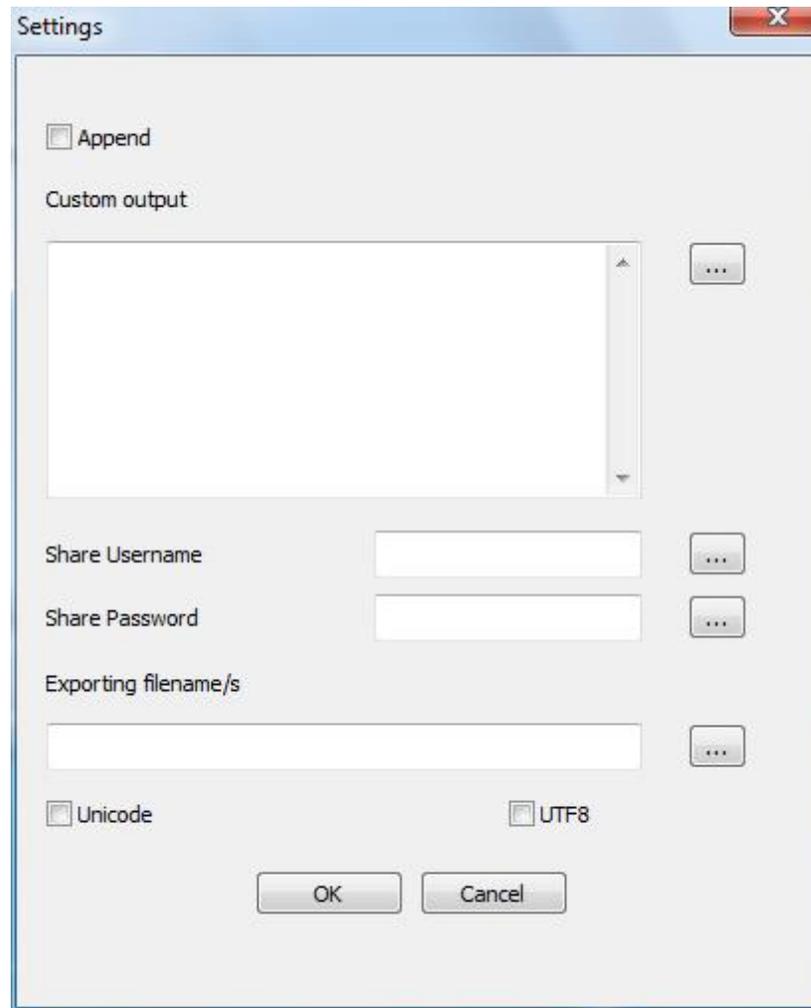
5.3.5 Data Export Settings

Data Export Settings

As a vital tool for custom integration, Data Export Settings are hugely valuable in exporting meta data into backend systems.



Add a data export rule by right-clicking in the Exporting Rules window to add a new rule.

**Append:**

Use this option to append meta data to the export file with every document processed by ScannerVision. Instances where the same export file name is used, will benefit if this option is selected. New meta data will be appended to the export list, rather than discarded.

Custom Output:

The custom export list can be build in this section. Static text and/or rich dynamic ScannerVision meta data can be used to populate the list.

Share Username:

The unique username to be used to log-in into the Windows File system where the export file needs to be created. Usernames can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

Share Password:

Set the unique password for the username specified above. Passwords can be manually added, or selected from the meta data list. Click on the button  and the Meta data Selection Dialog box appears.

Exporting Filename:

The file name and path of the export file on the Windows File System can be specified here. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the file name.

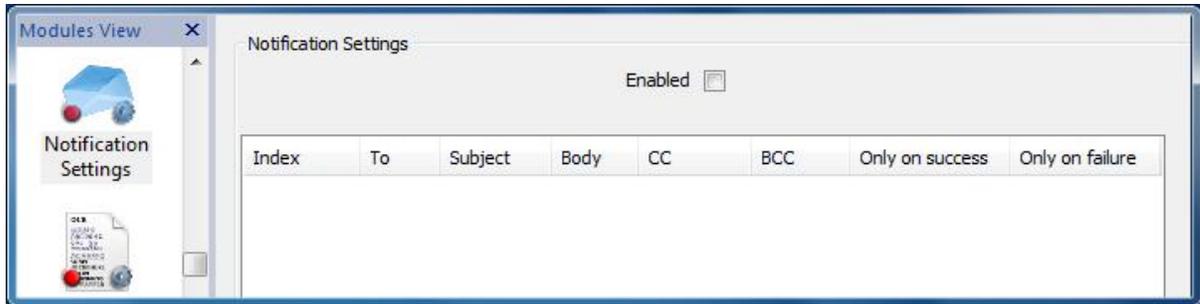
Unicode and UTF8:

These are character encoding systems. Select an encoding methodology and the set of standard character encodings. These encoding systems keep count of character properties such as upper and lower case, rules for normalization, decomposition, collation, rendering and bidirectional display order (for the correct display of text containing both right-to-left and left-to-right scripts). Users flag "Unicode" and UTF8" to enable this feature.

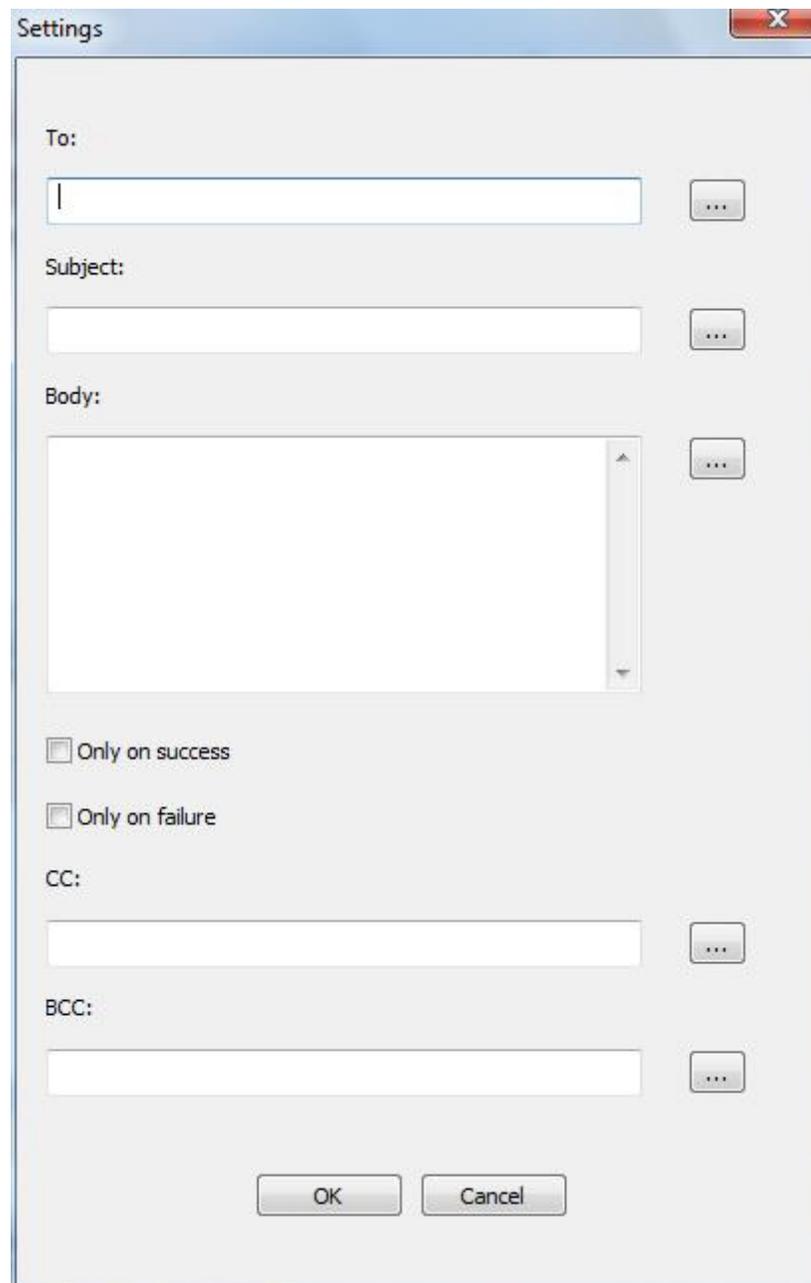
5.3.6 Notification Settings

Notification Settings

The Notification Settings option can be configured to notify email accounts of activities within the ScannerVision template. Users or groups of users can be notified that a document have been scanned and processed. To add a notification rule, Right-Click in the Notifications Settings window, and add a new notification rule.



Addresses can be added, edited, or deleted in this section. Adding a notification rule, the following screen will be presented.



The screenshot shows a 'Settings' dialog box with the following fields and options:

- To:** A text input field with a '...' button to its right.
- Subject:** A text input field with a '...' button to its right.
- Body:** A large text area with a vertical scrollbar and a '...' button to its right.
- Only on success
- Only on failure
- CC:** A text input field with a '...' button to its right.
- BCC:** A text input field with a '...' button to its right.
- OK** and **Cancel** buttons at the bottom.

User needs to fill-in the fields with emails and can also design the body of text that will automatically accompany with the email notification. User can include more e-mail addresses simply separating the addresses with a semicolon (";").

To:

The recipient's e-mail address. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the email.

Subject:

In this field the Subject field can be configured. This field can be entered manually or automatically be

constructed using meta data. Click  to select which meta data to be used in the email notification

Body:

The body of the message can also be build using a combination of manually entered text, and/or dynamic ScannerVision meta data. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the email notification.

Only on success:

If one wishes to be notified only of the successful processed and scanned templates.

Only on failure:

If one wishes to only be notified of the processed and scanned templates that has failed.

CC:

The CC notification recipient's e-mail address. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the notification email.

BCC:

The BCC notification recipient's e-mail address. This field can be entered manually or automatically be constructed using meta data. Click  to select which meta data to be used in the notification email.

6 Tools

ScannerVision Tools

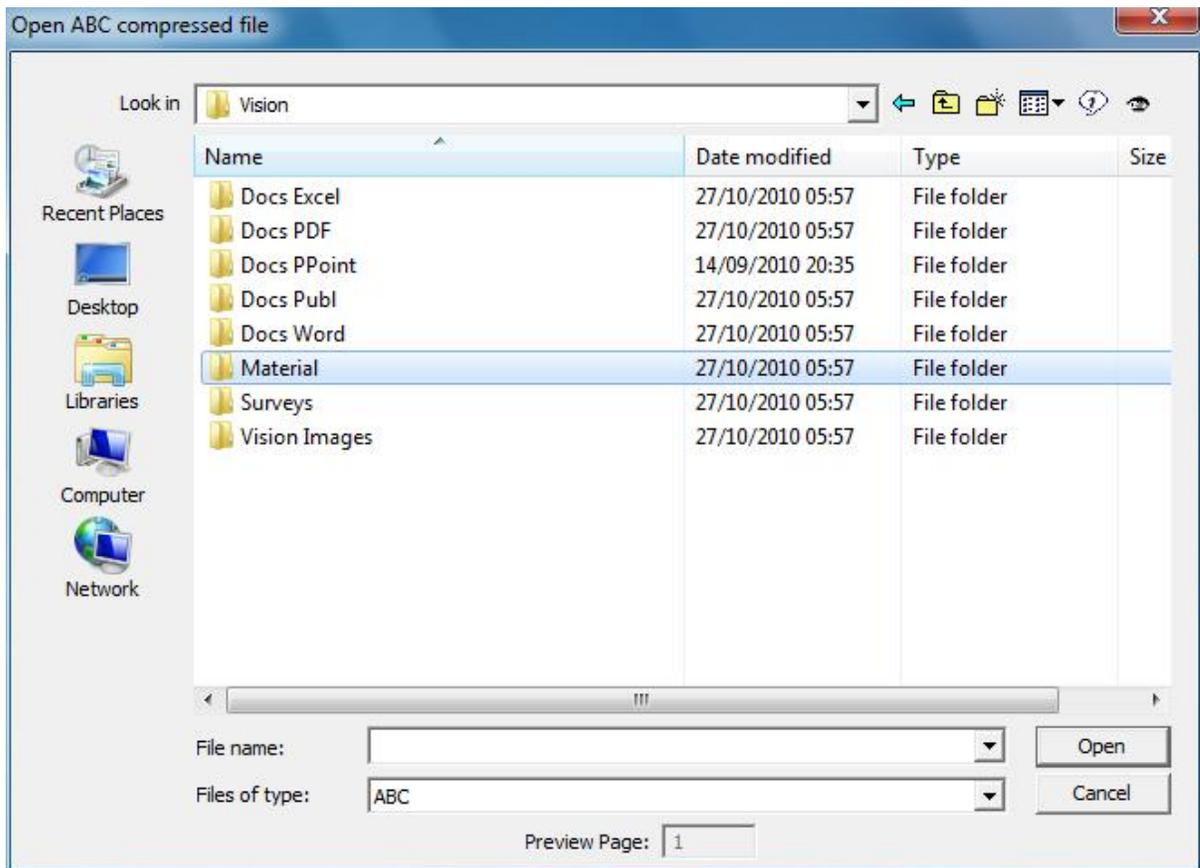
ScannerVision includes several tools to assist with specific tasks. These tools include:

- [ABC Manual Decompressor](#)
- [Image Decryptor](#)

6.1 ABC Manual Decompressor

ABC Manual Decompressor

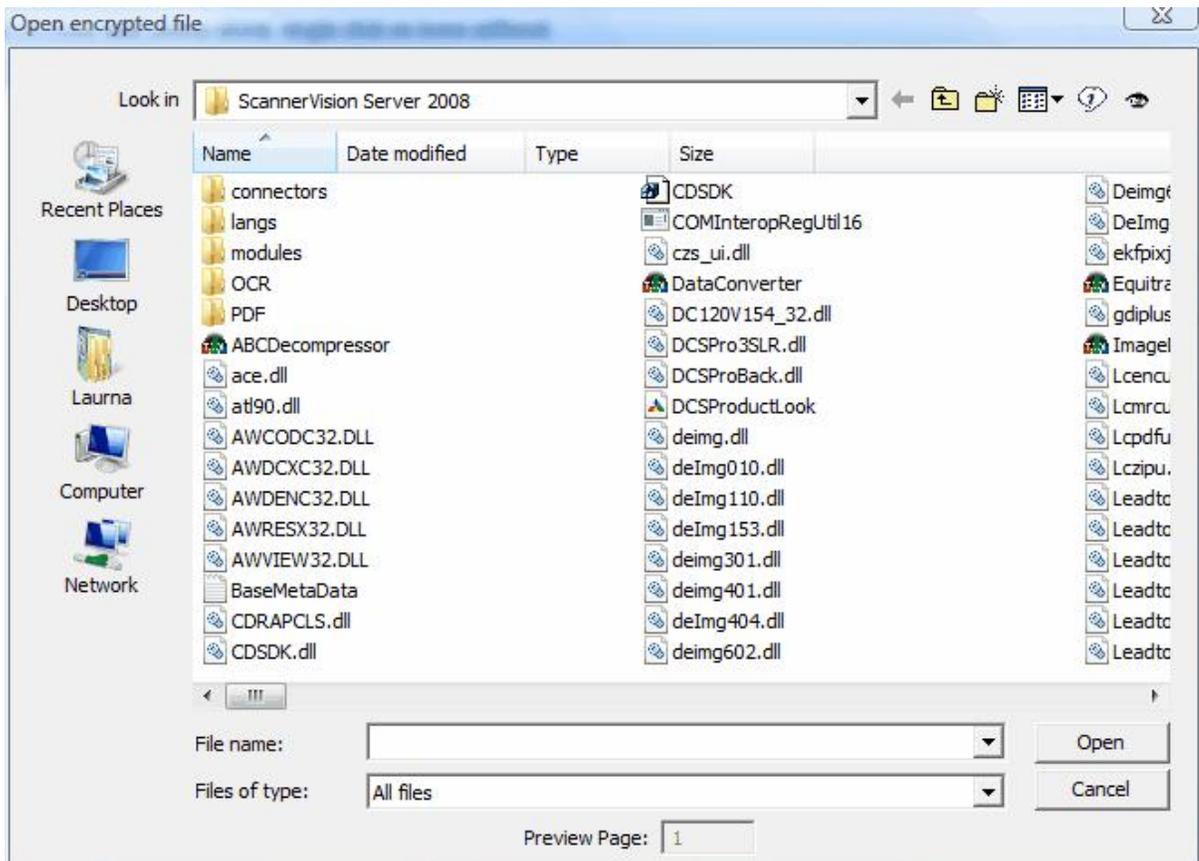
Scanned images which were compressed using ScannerVision's [ABC Compression](#) can manually be decompressed using this tool. Simply navigate to the location of the file compressed using ScannerVision ABC Compression, and select the document to be decompressed.



6.2 Image Decryptor

Image Decryptor

Images encrypted using ScannerVision's ABC Compression, can be manually decrypted using Image Decryptor. Simply navigate to the location of the file encrypted using ScannerVision ABC Compression, and select the document to be decrypted.



7 Troubleshooting

Troubleshooting

If you encounter and issues whilst using ScannerVision, you may wish to take a note of the following tips to help you resolve the problem.

Problem Definition:

Define the problem accurately. Investigate the problem, taking note of when, where, and how the problem occurs?

Repeatability:

Try to reproduce the problem. Look if the problem can be reproduced consistently or is it an intermittent problem?

Reboot: IMPORTANT!

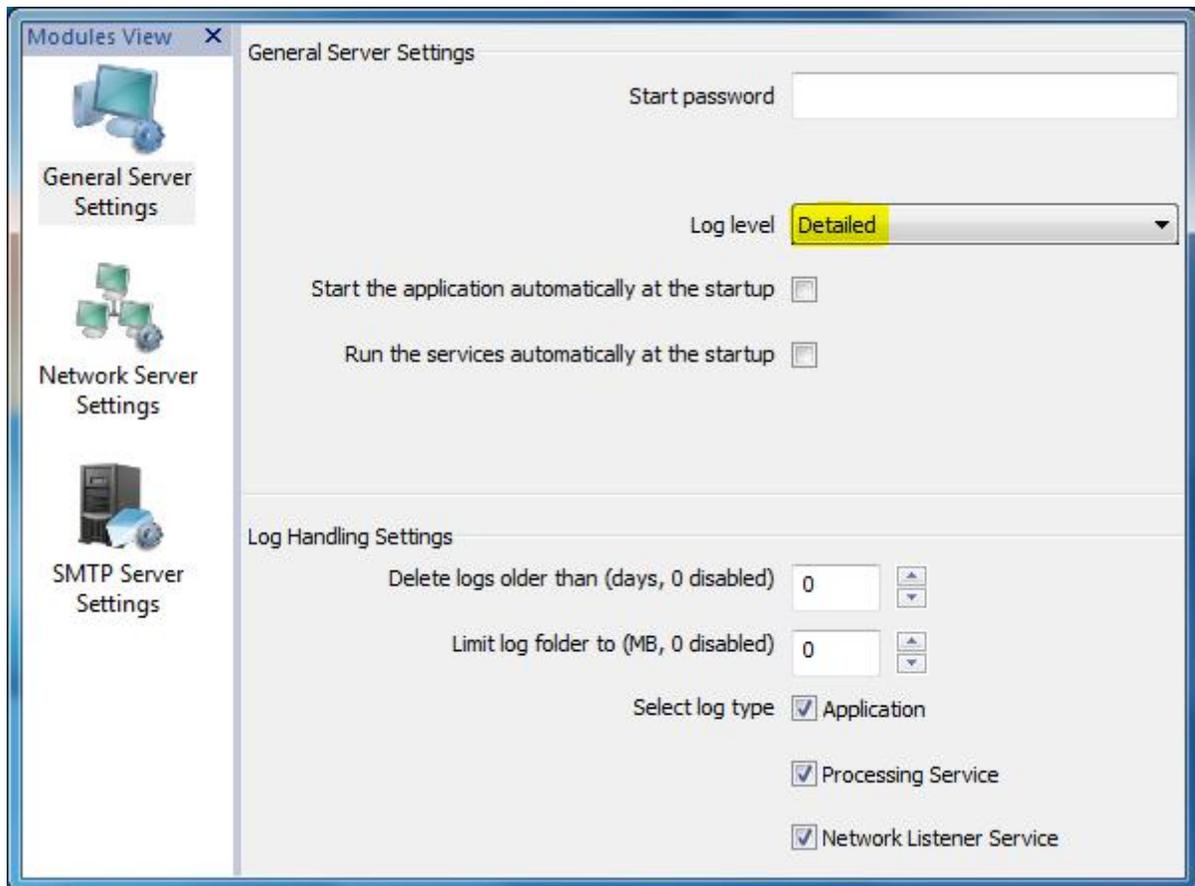
Sometimes issues are not problems with the software, but issues with the operating system on which it is hosted. It's always useful to try to reboot the system to try and resolve any operating system problems which may be affecting ScannerVision.

Examine:

Examine the data for trends and the common attributes that may be related to the problem. For example, does the problem occur only with a specific multifunction device or network configuration? Is it related to a specific file or type of document?

Review:

Users are requested to make sure that all the details are logged in the event view and set the logging level to **Detailed**.



It is also worth checking the operating system Event Viewer to see if the operating system has logged any errors which could impact on the operation of the software. For additional information regarding the Event Viewer please refer to your operating system's Help and Support center.

Customer support:

If the cause and solution to the problem cannot be identified, contact your ScannerVision point of purchase to report the error information. Provide the support representative with the documentation that you have gathered to define the problem.

Keep your product serial number and support contract number handy at the time you place the call.

8 Appendix

Appendix

The following appendixes have been added as supplemental information sources:

- [Appendix A - Regular Expressions](#)
- [Appendix B - Working with Meta Data](#)
- [Appendix C - Xpath Expressions](#)
- [Appendix D - Database Connections](#)
- [Appendix E - Barcodes Best Practices](#)
- [Appendix F - Script](#)
- [Appendix G - Equitrac](#)

8.1 Appendix A - Regular Expressions

Regular Expressions

Regular Expression is a methodology used to manipulate returned metadata into a usable format. Regular Expressions can be used to extract certain parts of metadata, spit metadata characters or match returned characters to predefined patterns or construction.

Regular Expressions within ScannerVision metadata is defined by using rounded brackets "(and)" ScannerVision metadata is contained within square brackets, e.g. [METADATA]. To apply a regular expression within a ScannerVision metadata field, the expression within the metadata will appear as follow: [METADATA(/d/d)] where (/d/d) indicates two consecutive digits to be expected.

Regular Expressions are used in two main instances within ScannerVision:

Example Tel Number: 0315389123

- To define a pattern to be satisfied when metadata is obtained, for example where a user is required to enter a telephone number and the telephone number should contain specifically 10 digits. A pattern match can be applied to the metadata question, which will only allow 10 digits to be entered, nothing less and nothing more and only digits. This method is used to ensure the integrity of the metadata obtained.
- To manipulate obtained metadata according to a specific pattern, for example the metadata obtained contain 10 characters but the regular expression splits out only the first 3 characters to use for indexing etc. As per the example above, the first three digits might indicate an area code and the area code should be used for a folder name, and the rest of the number for the filename. Even though only one metadata contains both the area code and the actual telephone number, regular expressions can be applied to "strip" only certain parts of the metadata out to be used.

It is also very common to use Regular Expressions in the export module of ScannerVision where metadata is exported to a file in a specific structure, and metadata needs to be manipulated in a specific manner to match a required standard.

Examples:

```
cooler          matchs string 'cooler'  
\^CooLerPtr    matchs '^CooLerPtr'
```

Escape sequences

Escape sequence syntax can be used for example where (\n) matches a new line, (\t) a tab, etc. More generally, (\xnn), where nn is a string of hexadecimal digits, matches the character whose ASCII value is nn. If you need wide Unicode character code, you can use (\x{nnnn}), where 'nnnn' - one or more hexadecimal digits.

(\xnn) char with hex code nn
(\x{nnnn}) char with hex code nnnn (one byte for plain text and two bytes for Unicode)
(\t) tab
(\n) newline
(\r) character return

(\f) form feed
 (\e) escape

Examples:

```
coo\x20ler  matches 'coo ler' (note space in the middle)
\tcooler   matches 'cooler' predefined by tab
```

Character classes

You can specify a character class, by enclosing a list of characters in [], which will match any one character from the list. If the first character after the "[" is "^", the class matches any character not in the list.

Examples:

```
cool[aeiou]r  finds strings 'cooler', 'cooler' etc. but not 'coolbr', 'coolcr' etc.
cool[^aeiou]r find strings 'coolbr', 'coolcr' etc. but not 'coolar', 'cooler' etc.
```

Within a list, the "-" character is used to specify a range, so that a-z represents all characters between "a" and "z", inclusive. If You want "-" itself to be a member of a class, put it at the start or end of the list, or escape it with a backslash. If You want "]" you may place it at the start of list or escape it with a backslash.

Examples:

```
[-az]      matches 'a', 'z' and '-'
[az-]      matches 'a', 'z' and '-'
[a\z]      matches 'a', 'z' and '-'
[a-z]      matches all twenty six small characters from 'a' to 'z'
[\n-\x0D]  matches any of #10,#11,#12,#13.
[\d-t]     matches any digit, '-' or 't'.
[]-a]     matches any char from ']'..'a'.
```

Metacharacters

Metacharacters are special characters, which are the essence of Regular Expressions. There are different types of metacharacters, described below.

Metacharacters - line separators

```
^      start of line
$      end of line
\A     start of text
\Z     end of text
.      any character in line
```

Examples:

<code>^cooler</code>	matches string 'cooler' only if it's at the beginning of line
<code>cooler\$</code>	matches string 'cooler' only if it's at the end of line
<code>^cooler\$</code>	matches string 'cooler' only if it's the only string in line
<code>cool.r</code>	matches strings like 'cooler', 'coolbr', 'cool1r' and so on.

The "^" metacharacter by default is only guaranteed to match at the beginning of the input string/text, the "\$" metacharacter only at the end. Embedded line separators will not be matched by "^" or "\$".

You may, however, wish to treat a string as a multi-line buffer, such that the "^" will match after any line separator within the string, and "\$" will match before any line separator. You can do this by switching On the modifier /m. The \A and \Z are just like "^" and "\$", except that they won't match multiple times when the modifier /m is used, while "^" and "\$" will match at every internal line separator.

The "." metacharacter by default matches any character, but if you switch Off the modifier /s, then '.' won't match embedded line separators. This implementation works with line separators as recommended at www.unicode.org (<http://www.unicode.org/unicode/reports/tr18/>):

"^" is at the beginning of a input string, and, if modifier /m is On, also immediately following any occurrence of \x0D\x0A or \x0A or \x0D (if You are using Unicode, then also \x2028 or \x2029 or \x0B or \x0C or \x85). Note that there is no empty line within the sequence \x0D\x0A.

"\$" is at the end of a input string, and, if modifier /m is On, also immediately preceding any occurrence of \x0D\x0A or \x0A or \x0D (if You are using Unicode, then also \x2028 or \x2029 or \x0B or \x0C or \x85). Note that there is no empty line within the sequence \x0D\x0A.

"." matches any character, but if You switch Off modifier /s then "." doesn't match \x0D\x0A and \x0A and \x0D (if You are using Unicode, then also \x2028 and \x2029 and \x0B and \x0C and \x85).

Note that "^.*\$" (an empty line pattern) doesn't match the empty string within the sequence \x0D\x0A, but matches the empty string within the sequence \x0A\x0D.

Metacharacters - predefined classes

<code>\w</code>	an alphanumeric character (including "_")
<code>\W</code>	a non alphanumeric
<code>\d</code>	a numeric character
<code>\D</code>	a non-numeric
<code>\s</code>	any space (same as [\t\n\r\f])
<code>\S</code>	a non space

You may use \w, \d and \s within custom character classes.

Examples:

`cool\dr` matches strings like 'cool1r', 'foob6r' and so on but not 'cooler', 'coolbr' and so on.

`cool[\w\s]r` matches strings like 'cooler', 'cool r', 'coolbr' and so on but not 'cool1r', 'cool=r' and so on

Metacharacters - word boundaries

<code>\b</code>	Match a word boundary
<code>\B</code>	Match a non-(word boundary)

A word boundary (`\b`) is a spot between two characters that has a `\w` on one side of it and a `\W` on the other side of it (in either order), counting the imaginary characters off the beginning and end of the string as matching a `\W`.

Metacharacters - iterators

Any item of a regular expression may be followed by another type of metacharacters - iterators. Using this metacharacters You can specify number of occurrences of previous character, metacharacter or sub expression.

<code>*</code>	zero or more ("greedy"), similar to <code>{0,}</code>
<code>+</code>	one or more ("greedy"), similar to <code>{1,}</code>
<code>?</code>	zero or one ("greedy"), similar to <code>{0,1}</code>
<code>{n}</code>	exactly n times ("greedy")
<code>{n,}</code>	at least n times ("greedy")
<code>{n,m}</code>	at least n but not more than m times ("greedy")
<code>*?</code>	zero or more ("non-greedy"), similar to <code>{0,}?</code>
<code>+?</code>	one or more ("non-greedy"), similar to <code>{1,}?</code>
<code>??</code>	zero or one ("non-greedy"), similar to <code>{0,1}?</code>
<code>{n}?</code>	exactly n times ("non-greedy")
<code>{n,}?</code>	at least n times ("non-greedy")
<code>{n,m}?</code>	at least n but not more than m times ("non-greedy")

So, digits in curly brackets of the form `{n,m}`, specify the minimum number of times to match the item n and the maximum m. The form `{n}` is equivalent to `{n,n}` and matches exactly n times. The form `{n,}` matches n or more times. There is no limit to the size of n or m, but large numbers will chew up more memory and slow down r.e. execution. If a curly bracket occurs in any other context, it is treated as a regular character.

Examples:

```
cool.*r matches strings like 'cooler', 'coolalkjdfk9r' and 'coolr'
cool.+r matches strings like 'cooler', 'coolalkjdfk9r' but not 'coolr'
cool.?r matches strings like 'cooler', 'foobbr' and 'foobr' but not 'foobalkj9r'
coole{2}r matches the string 'cooleer'
coole{2,}r matches strings like 'cooleer', 'cooleeer', 'cooleeeer' etc.
coole{2,3}r matches strings like 'cooleer', or 'cooleeer' but not 'cooleeeer'
```

A little explanation about "greediness". "Greedy" takes as many as possible, "non-greedy" takes as few as possible. For example, `'b+'` and `'b*'` applied to string `'abbbbc'` return `'bbbb'`, `'b+?'` returns `'b'`, `'b*?'` returns empty string, `'b{2,3}?'` returns `'bb'`, `'b{2,3}'` returns `'bbb'`.

You can switch all iterators into "non-greedy" mode (see the modifier

Metacharacters - *alternatives*

You can specify a series of alternatives for a pattern using "|" to separate them, so that `fee|fie|foe` will match any of "fee", "fie", or "foe" in the target string (as would `f(e|i|o)e`). The first alternative includes everything from the last pattern delimiter ("(", "[", or the beginning of the pattern) up to the first "|", and the last alternative contains everything from the last "|" to the next pattern delimiter. For this reason, it's common practice to include alternatives in parentheses, to minimize confusion about where they start and end.

Alternatives are tried from left to right, so the first alternative found for which the entire expression matches, is the one that is chosen. This means that alternatives are not necessarily greedy. For example: when matching `foo|foot` against "barefoot", only the "foo" part will match, as that is the first alternative tried, and it successfully matches the target string. (This might not seem important, but it is important when you are capturing matched text using parentheses.)

Also remember that "|" is interpreted as a literal within square brackets, so if You write `[fee|fie|foe]` You're really only matching `[feio]`.

Example:

`coo(ler|coo)` matches strings 'cooler' or 'coocoo'.

Metacharacters - *sub expressions*

Sub expressions are numbered based on the left to right order of their opening parenthesis. First sub expression has number '1' (whole r.e. match has number '0').

Examples:

`(cooler){8,10}` matches strings which contain 8, 9 or 10 instances of the 'cooler'
`cool([0-9]|a+)` matches 'cool0r', 'cool1r', 'cooler', 'cooleer', 'cooleer' etc.

Metacharacters - *backreferences*

Metacharacters `\1` through `\9` are interpreted as backreferences. `\<n>` matches previously matched sub expression `#<n>`.

Examples:

`(.)\1+` matches 'aaaa' and 'cc'.
`(.+)\1+` also match 'abab' and '123123'
`(['"]?) (\d+)\1` matches "'13" (in double quotes), or '4' (in single quotes) or 77 (without quotes) etc

Modifiers

Modifiers are for changing behaviour. There are many ways to set up modifiers. Any of these modifiers

may be embedded within the regular expression itself using the (?...) construct.

i : Do case-insensitive pattern matching (using installed in you system locale settings), see also InvertCase.

m: Treat string as multiple lines. That is, change "^" and "\$" from matching at only the very start or end of the string to the start or end of any line anywhere within the string, (see also Line separators).

s: Treat string as single line. That is, change "." to match any character whatsoever, even a line separators (see also Line separators), which it normally would not match.

g: Non standard modifier. Switching it Off You'll switch all following operators into non-greedy mode (by default this modifier is On). So, if modifier /g is Off then '+' works as '+?', '*' as '*?' and so on.

x: Extend your pattern's legibility by permitting whitespace and comments (see explanation below).

r: Non-standard modifier. If is set then range à-ÿ additional include Russian letter '҃', À-ß additional include '҃', and à-ß include all Russian symbols. Sorry for foreign users, but it's set by default. If you want switch if off by default - set false to global variable RegExprModifierR.

The modifier /x itself needs a little more explanation. It tells to ignore whitespace that is neither backslashed nor within a character class. You can use this to break up your regular expression into (slightly) more readable parts. The # character is also treated as a metacharacter introducing a comment, for example:

```
(
(abc) # comment 1
| # You can use spaces to format
(efg) # comment 2
)
```

This also means that if you want real whitespace or #characters in the pattern (outside a character class, where they are unaffected by /x), that you will have either to escape them or encode them using octal or hex escapes. Taken together, these features go a long way towards making regular expressions text more readable.

Perl extensions

```
(?imsxr-imsxr)
```

You may use it into r.e. for modifying modifiers by the fly. If this construction is lined into sub expression, then it effects only into this sub expression

Examples:

```
(?i)Saint-Petersburg matches 'Saint-petersburg' and 'Saint-Petersburg'
(?i)Saint-(?-i)Petersburg matches 'Saint-Petersburg' but not 'Saint-petersburg'
(?i)(Saint-)?Petersburg matches 'Saint-petersburg' and 'saint-petersburg'
((?i)Saint-)?Petersburg matches 'saint-Petersburg', but not 'saint-petersburg'
(?#text)
```

A comment, the text is ignored. Note that we close the comment as soon as it sees a ")", so there is no way to put a literal ")" in the comment.

Examples:

Matches exactly one numeric digit (0-9): `\d`

Matches one or more numeric digits: `\d+`

Matches exactly one non-numeric digit: `\D`

Matches one or more non-numeric digits: `\D+`

Matches exactly one alphabetic letter, uppercase or lowercase: `[a-zA-Z]`

Matches one or more alphabetic letters, uppercase or lowercase: `[a-zA-Z]+`

Matches 5 numeric digits, like zip code: `\d{5}`

Matches 1 to 5 numeric digits, followed (or not) by "/" and exactly one letter (Example: 115D, 115/D): `\d{1,5}/?\D`

Matches a phone number, with code (min 2, max 4 digits) + number (min 5, max 8 digits): `\d{2,4}-?/\d{5,8}`

Matches VAT number, made of 2 letters, followed (or not) by "-" and minimum 6 maximum 11 digits (Example: IT-12345678900): `\D{2}\-?\d{6,11}`

Matches an e-mail address: `[_a-zA-Z\d\-\.\.]+@[(_a-zA-Z\d\-\.\.)(\.[_a-zA-Z\d\-\.\.]+)+)`

Matches a Roman number: `^(?)M*(D?C{0,3}|C[DM])(L?X{0,3}|X[LC])(V?I{0,3}|I[VX])$`

8.2 Appendix B - Working with Metadata

Working with Metadata

The Metadata Selection Dialog allows inserting metadata automatically, choosing from a drop down list containing the following metadata:

- **YYYY**:
Current year, 4 digits
- **YY**:
Current year, 2 digits
- **MMMM**:
Month name, complete letters
- **MMM**:
Month name, short letters
- **MM**:
Month name, 2 digits
- **M**:
Current month, 1 or 2 digits
- **DDDD**:
Current day name, complete letters
- **DDD**:
Current day name, short letters
- **DD**:
Current day, 2 digits
- **D**:
Current day, 1 or 2 digits
- **HH**:
Current hour, 2 digits
- **H**:
Current hour, 1 or 2 digits
- **NN**:
Current minute, 2 digits
- **N**:
Current minute, 1 or 2 digits
- **SS**:
Current second, 2 digits
- **S**:

Current second, 1 or 2 digits

- **ZZ:**
Current second thousand, 3 digits
- **Z:**
Current second thousand, 1 to 3 digits
- **TIME:**
Current time, formatted as local settings
- **DATE:**
Current date, formatted as local settings
- **DATETIME:**
yyyy-MM-dd HH:mm:ss' e.g. '2010-10-10 11:30:55'.
- **FILENAME:**
Current document Filename (temporary)
- **MAINCOUNTER:**
Global counter of processed documents
- **TEMPLATECOUNTER:**
Template processed documents counter
- **PAGESCOUNTER:**
Number of pages into document

If the capture input device is a MFP or a desktop client the following metadata are also available:

- **CLIENTADDRESS:**
Client's TCP/IP address
- **CLIENTDESCRIPTION:**
Client's description
- **USERNAME:**
User name (available only if the input device requires authentication)
- **USERPASSWORD:**
User Password (available only if the input device requires authentication)
- **USEREMAIL:**
User's e-mail address (available only if the input device requires authentication)
- **USERFOLDER:**
User's folder (available only if the input device requires authentication)
- **CAPTURETIME:**
Reports the classification and acquisition time retrieved by MFP or Windows client

- **Custom Metadata:**
Metadata defined by user in the **Question Settings Dialog Box**.

If the capture input device is a watching folder or a FTP or E-mail server the following metadata are also available:

- **ORIGINALFILENAME:**
Original Filename

If the capture input device is an E-Mail server the following metadata are also available:

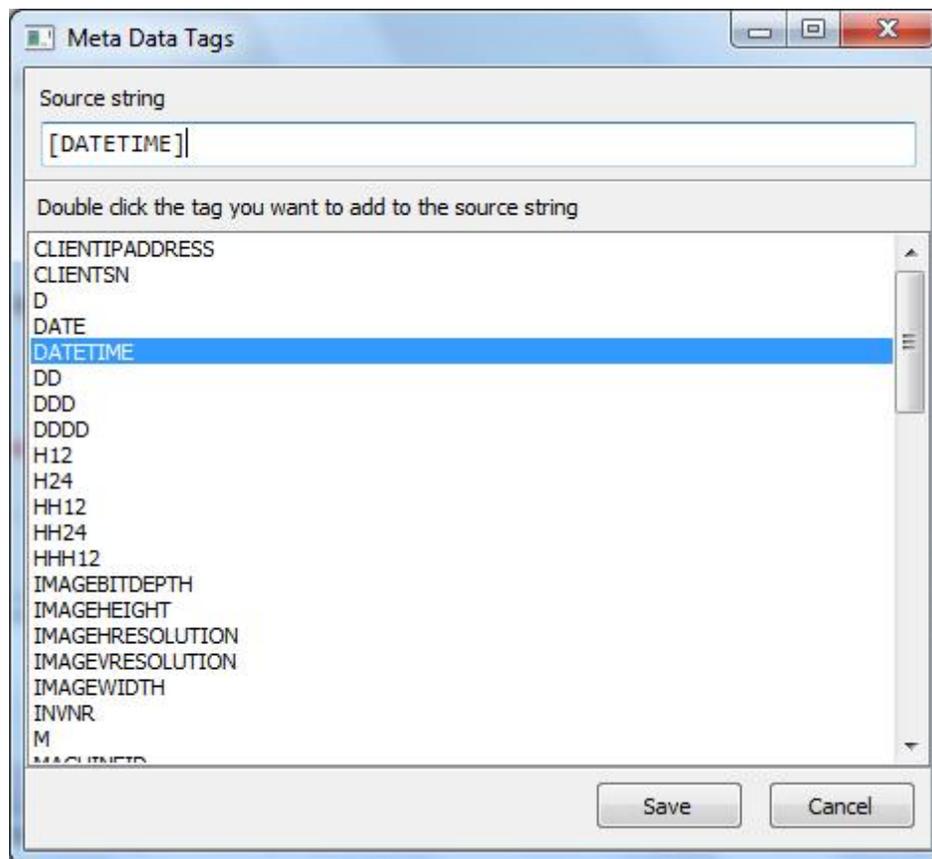
- **EMAILFROM:**
Sender e-mail address(es)
- **EMAILTO:**
Recipient e-mail address(es)
- **EMAILSUBJECT:**
e-mail subject
- **EMAILBODY:**
e-mail body

If the OCR process is enabled, the following metadata are also available:

- **OCRTEXT:**
Document text from OCR
- **OCRTEXTXML:**
XML document text from OCR
- **ZONEOCR0/ZONEOMR0:**
The contents of a Zone OCR or an OMR Zone. For Zone OCR the contents will be the discovered text in the zone; for Zone OMR the contents of the metadata will be an integer boolean (0 or 1) depending if there is a mark in the document or not. The '0' in the metadata tag pertains to which zone the tag is referring to. For documents with multiple zones this should be incremented to 1,2 etc., as required.

If the selected connector is Windows File System, the following metadata are also available:

- **UNIQUESUFFIX:**
adds an unique suffix to metadata
- **UNIQUESUFFIX1, UNIQUESUFFIX2, UNIQUESUFFIX3,..UNIQUESUFFIX8:**
adds an unique suffix of X characters to the metadata (Example using UNIQUESUFFIX4: INVOICE0001, INVOICE0002, INVOICE0003)
- **WFSFILENAME:**
references the filename as output via the Windows File System connector, but does not include the path

**NOTE:**

To use special or not printable characters as CR or LF or TAB you can simply enclose in brackets, as any other metadata, the # symbol followed by the character ASCII decimal numeric code, as [#13], [#10] and [#8].

If you need only a portion of the metadata, you can use the metadata parsing syntax allowing to extract just the portion you need. It's enough to enclose in round brackets the parsing directives just after the metadata name, before closing the square bracket. The parsing directives are comma separated and can include multiple options.

Single character extraction: Just specify the position of the character to extract.

Range extraction: Just specify the first and last position, separated by a minus symbol.

Section extraction by separator: Just indicate the sections separator character(s) followed by the index of section to return.

Examples:

[MYMETADATA]= 123*ABCDE*45678

[MYMETADATA(1,4,6)] = 1*B

In the example above we got only the first, the fourth and the sixth character, as indicated in the round brackets (1,4,6)

[MYMETADATA(2-7)] = 23*ABC

In the example above we got all characters from second to seventh position (included)

[MYMETADATA((1-3),8,(13-))] = 123D678

In the example above we get the first three characters, followed by the 8th and the all characters from 13th to the end.

[MYMETADATA(16)] = null value

In the example above we get the 16th character, but in the sample metadata value it doesn't exist so we get a null value.

[MYMETADATA(-5)] = 123*A

In the example above, we get the first 5 characters.

[MYMETADATA('*',1)] = 123

In the example above we get the first section of the metadata, considering the asterisk as sections separators.

[MYMETADATA('*',2)] = ABCDE

In the example above we get the second section of the metadata, considering the asterisk as sections separators.

[MYMETADATA('*',3)] = 45678

In the example above we get the third section of the metadata, considering the asterisk as sections separators.

[MYMETADATA('*',4)] = null value

In the example above we should get the fourth section of the metadata, considering the asterisk as sections separators, but in the sample metadata value it doesn't exist so we get a null value.

8.3 Appendix C - XPath Expressions

Xpath Expressions

Xpath is a language that is used for finding information in an XML document. In other words, Xpath helps easy navigation through elements and attributes in an XML document.

Xpath includes:

- syntax for defining parts of an XML document
- It uses path expressions to navigate in XML documents
- It contains a library of standard functions
- It is a major element in XSLT

In a standard XML document, we have nodes or node-sets. Xpath uses path expressions to select these nodes or node-sets in an XML document. These path expressions are much similar to the expressions that one sees while working with a traditional computer file system. Xpath includes over 100 built-in functions. There are functions for string values, numeric values, date and time comparison, node and QName manipulation, sequence manipulation, Boolean values, and more.

Xpath expressions are easy to construction to access data nodes from XML documents. Consider this example snippets from an XML document:

```
<document>
  <name>Invoice 89363</name>
  <company>ABC Ltd</company>
  <id>473276256</id>
  <ref>BOL8817</ref>
  <date>2010/04/26</date>
</document>
```

To access the ID node, you could use an Xpath expression such as this:

```
/document/id
```

The list of ID values would be returned to the client via the picklist, for selection at scan time.

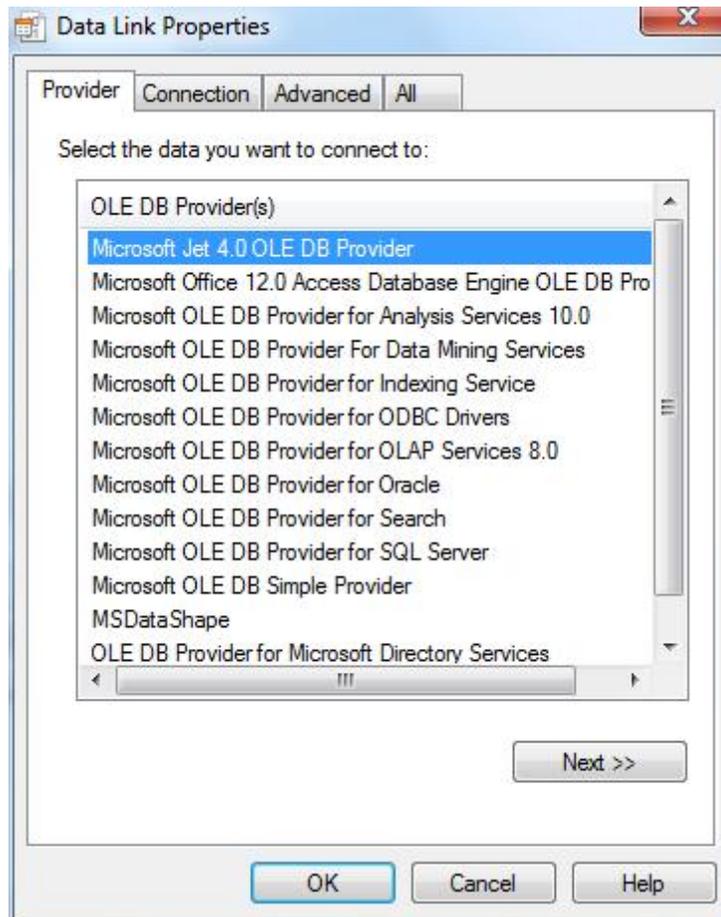
8.4 Appendix D - Database Connection Strings

Database Connection Strings

The Connection String Building Dialog allows to create a connection string in a few easy steps:

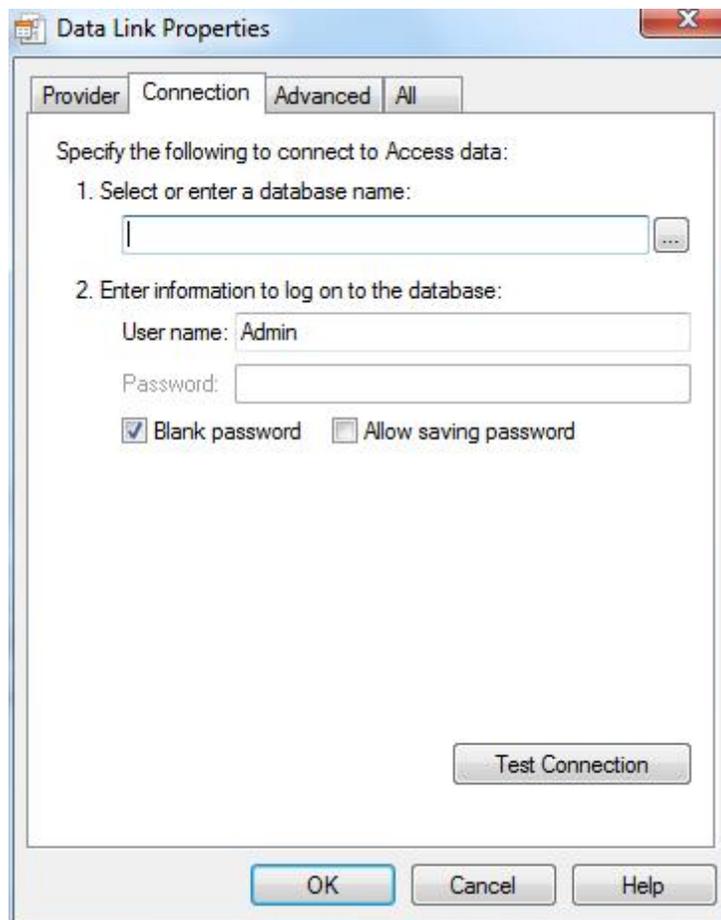
Step 1:

Choose the data link properties from the dropdown list.... ..then click on the Next button.

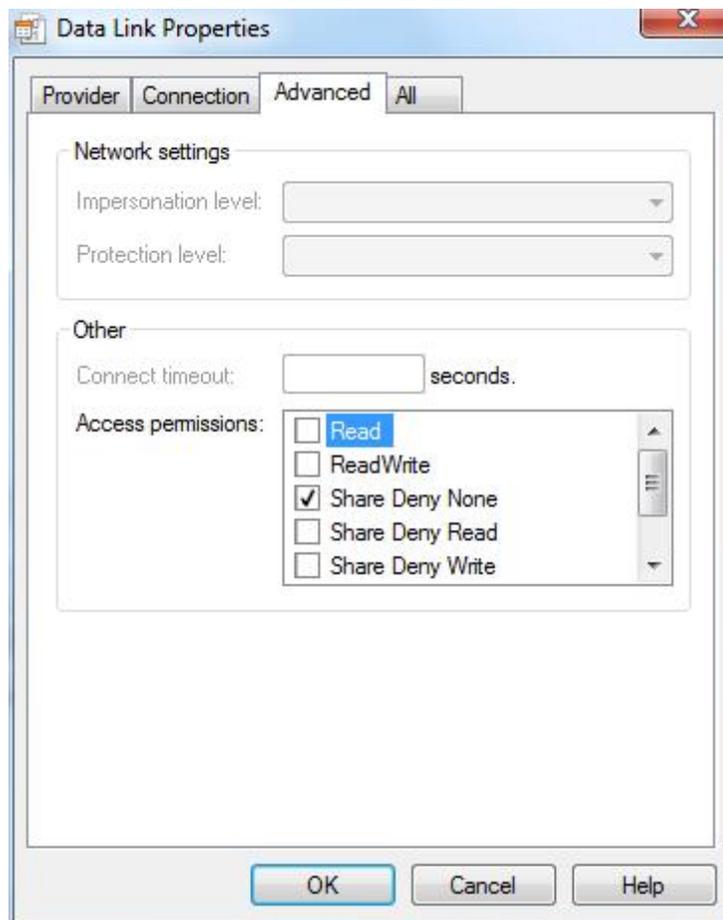


Step 2:

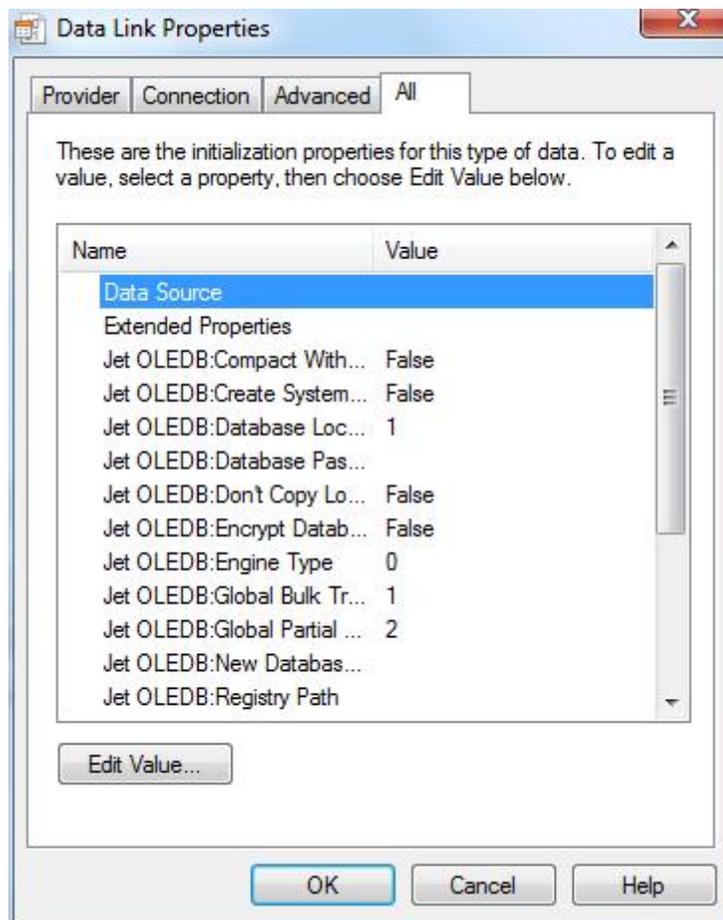
Enter the connection parameters as requested from the Connection dialog and press OK.

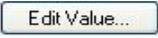
**Step 3:**

The 'Advanced' tab allows user to set advanced options. User can define the 'Network Settings', Connection timeout, and the Access permission. Flag the type of access given to users.

**Step4 :**

Under the "All" tab you will find an entry for timeout. (Along with all the other properties that the selected provider supports.)



You can edit value using  . Click 'OK' to save the settings made.

8.5 Appendix E - Barcodes Best Practices

Barcodes — Best Practices

Barcode Basics

A basic understanding of barcode recognition algorithms can help you to make implementation choices that optimize your success. Basic one-dimensional (1D) barcodes, such as Code 3 of 9, Code 128, and other codes that consist of bars of varying widths, are detected using quite different methods than the more complicated, two-dimensional (2D) barcodes such as PDF417 and Data Matrix. There are two basic steps for either: finding any barcode(s) on the page image, often called "**location**," and then determining what information each barcode contains, or "**decoding**."

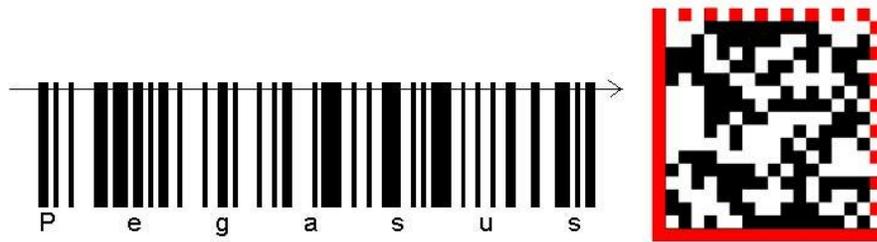
To locate 1D barcodes on a page, the software essentially scans the entire width, over the full height, of the document image, searching for black/white patterns of pixels that are typical of barcodes. In the example below, the more consecutive horizontal scans that turn up with a specific repeated pattern, the more likely you are to have located vertical bars that could represent a barcode. These areas containing bars in the image, called **regions of interest**, are marked for later decoding.

Index	Name	GUID
-------	------	------

The 1D decoding process consists of counting and comparing groups of image pixels in each region of interest to determine the relative width and location of the bars, and the white spaces between them. Predefined patterns at the start and end of each barcode generally identify its type.

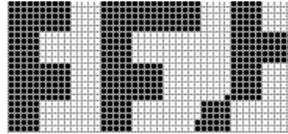
ScannerVision's Barcode Module can distinguish between various different 1D barcode types. The pattern between the start and end identifiers can then be interpreted, based on that code type's specifications, to decode each numeral or character that the barcode contains, along with any special "check" characters that some barcodes use to confirm that the decoded results are valid.

Locating and decoding 2D barcodes is significantly more complex. Here, the location process entails finding "markers" that uniquely identify the barcode type. The PDF417 start and end patterns include several vertical bars that appear much like those in a typical 1D barcode. Data Matrix codes are located by their distinct pattern of solid lines on the left and bottom edges, along with alternating filled and empty boxes (called **modules**) along the top and right edges. These identifying features are shown in red in the illustration to the right. The inside portion of the barcode also consists of black or white modules. These features of the 2D barcodes also outline the complete region of interest that surrounds the content encoded within.

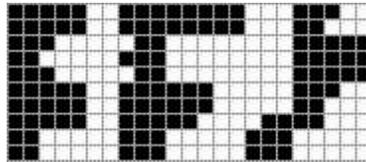


Once the distinguishing features of a 2D bar-code are found, the presence of black or white pixels in each module can be used to decode the contents of the barcode according to its specified design. The 2D barcodes can be created with varying amounts of redundant data, allowing the barcodes to be accurately decoded even when up to 30% of the modules are damaged or missing. The higher the redundancy, which results in a physically larger barcode, the more tolerant of this "noise" the decoded barcode will be.

How Size Affects Accuracy



Now that we have an idea how barcodes are seen by the software, we can begin to understand how size will affect our recognition accuracy. The software will scan across (or down) a 2D barcode such as the small piece of a Data-Matrix code shown here:



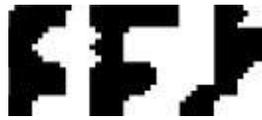
If the scan pixels were to align perfectly with the image it wouldn't take very many of them to accurately identify the contents of each module, which is within a 2 x 2 pixel box in this example.



But let's take a look at what happens when an actual image is read by a scanner, FAX machine, or multi-function printer (MFP). The Data Matrix code shown here is approximately three-quarters of an inch square. It contains 50 characters, plus error detection and correction characters that were automatically added. This image was printed on a typical laser printer at 600 dpi with enhancement, then placed on a flatbed scanner and scanned at 200 dpi to a black-and-white TIFF file. Zooming in on a portion the resulting image, with grid lines inserted to show the pixel locations, we can see edges of the individual modules quite well. Each module is about 5 x 5 pixels but there is, of course, no guarantee that the pixels will always align with the grid. At 200 dpi, ScannerVision is able to decode this barcode with 100% confidence. This is because there is enough accuracy in a majority of the pixels in each of the modules to reliably determine whether each module is actually filled or unfilled. If we were to scan the exact same barcode at only 100 dpi, however, you can see that there is not enough reliable data to properly determine the state of each module. Instead of 5 x 5 pixels per module, now we only have an average of 2.5 x 2.5 pixels to consider. When pixels are added or dropped at the edge of each module, a necessary result of the fact that the scanner is not lock-synchronized to the modules, many of them can no longer be discerned. Even though there are error-correction characters included in the barcode, most likely not enough of **those** can be identified to help us, either. As a result, the barcode can no longer be decoded. Even with the limited amount of information available, it's actually still possible to make modifications to this image after scanning to recover the data contained in this barcode.

Choosing Your Barcode Size

The key factor in barcode decoding is the number of pixels per line (1D) or per module (2D) that are available to be evaluated in the final image. Any barcode can be printed in almost any size. A very large barcode could be easily decoded even if it was scanned at a very low resolution. The trick is to choose a barcode that doesn't take up the whole page, yet still does not need to be scanned at a high resolution that will rapidly consume storage space. Each time you double the scanning resolution, the resulting file typically **quadruples** in size. Unnecessary overkill can thus result in a great waste of image storage and transmission resources.



To allow for adequate averaging, at least **three pixels** are needed for each minimum-width bar (and each minimum gap) in a scanned 1D bar-code. You can gain a rough idea of the minimum required width in inches for a typical 1D barcode from the following table. Note that these sizes actually vary for every individual 1D barcode type, with the following widths being rough averages.

Characters in typical 1D code	Scan resolution (dpi)	Minimum Width (inches)
5	100	2.5
	200	1.25
	300	.83
10	100	4.0
	200	2.0
	300	1.3
15	100	6.0
	200	3.0
	300	2.0

The sample 50-character Data Matrix barcode we looked at above is about $\frac{3}{4}$ -inch square, and contains 26 modules across by 26 modules down. That is 32.5 modules per inch, or about 6 pixels per module at 200 dpi. Since finding modules within a field is a more difficult than locating vertical bars, a minimum of 4 or 5 pixels per module is the recommended size for high-accuracy 2D barcodes. Using this guideline, calculations can be performed for a barcode containing any number of modules. Some sample minimum Data Matrix barcodes sizes for 5 pixels per module, and PDF417 barcode sizes for 4 pixels per module, are shown below.

Note that the use of the word **columns** in PDF417 is different than it is for Data Matrix. A PDF417 column is actually a group of 17 horizontal modules, each containing the specified number of rows of modules. The height of each individual module in a properly constructed PDF417 barcode should be 3 to 5 times its width. PDF417 is also not usually a square 2D barcode, so that the width shown is based on default settings for the number of columns required. The PDF417 sizes include the default error characters (two full columns) and the width of the start and end bars.

DataMatrix matrix size (rows x cols)	Scan resolution (dpi)	Minimum Height and Width (inches)
16 x 16 (about 16 characters)	100	.80
	200	.40
	300	.27
16 x 48 (about 70 characters)	100	0.8h x 2.4w
	200	0.4h x 1.2w
	300	.27h x .72w
32 x 32 (about 90 characters)	100	1.6
	200	.80
	300	.53

64 x 64 (about 400 characters)	100	3.2
	200	1.6
	300	1.1

PDF417 matrix size (rows x cols)	Scan resolution (dpi)	Minimum Width (inches)
5 x 3 (7 to 10 characters)	100	4.8
	200	2.4
	300	1.6
10 x 5 (about 50 characters)	100	6.2
	200	3.1
	300	2.1
14 x 8 (about 150 characters)	100	8.2
	200	4.1
	300	2.7
20 x 11 (about 300 characters)	100	10.3
	200	5.2
	300	3.5

Some quick calculations will also reveal that a Data Matrix barcode typically requires only about **one fourth of the total area** as a PDF417 barcode containing the same amount of data. Data Matrix bar codes can also be created in a rectangular format (see 16 x 48 size above) which can be more convenient for positioning on a form, as well as the more common square form.

Just the FAX, Ma'am

While the above guidelines will help you to optimize your success with scanners and MFPs, FAXes can be quite a different animal. The **standard** mode for FAX transmission, which was designed to transmit page-sized images as quickly as possible over once-expensive telephone lines, scans documents at 203 dpi horizontally, but only 98 dpi vertically. This means that, while the resulting image may contain adequate resolution horizontally, the vertical resolution may be only half as good. As illustrated above, a resolution of around 100 dpi is barely adequate for many barcodes. This loss in vertical resolution does not occur when the sender chooses **fine** resolution, which specifies 203 x 196 dpi vertical resolution, or **superfine** resolution, for which the vertical dimension is actually scanned at double the horizontal resolution (typically 391 x 203 dpi). Note that the appearance of a standard-mode FAX when it is displayed usually will not reveal the lost resolution. It won't appear "squashed" because the vertical pixels are normally doubled by any FAX viewing product. But detail within your barcode may still be lost. Since this loss is in the vertical direction only, you may wish to use only 1D bar-codes in FAXed documents. The loss of vertical resolution will have little effect on the vertical bars unless the document is significantly skewed. PDF417 barcodes can also be created with higher module dimensions, which will reduce their sensitivity to low vertical resolution. You can also **resample** the image to double the vertical resolution while keeping the horizontal resolution the same. This will restore the number of vertical pixels available, but does not replace any information that was dropped by scanning the image at half the resolution. In conclusion, if you require advanced features of 2D barcodes, be certain that your testing includes FAXes that have been sent in both the fine and standard resolution modes.

Where on the Page?



If you are designing the form, you may have a choice as to how you can place a barcode on the page. Since sheet-fed scanners are most likely to pull the pages through from the short end, you should orient any 1D barcodes horizontally. That way, if there is a small amount of slippage, instead of the bars being moved together or apart, or repeated, they will be stretched or compressed, which may not affect readability. In the sample shown below, a section of the same 3 of 9 barcode was placed on a page in both horizontal and vertical orientations, with slippage created during scanning. The horizontal barcode (vertical bars) was readable with 100% confidence, while the vertical barcode caused recognition errors because a few of the bars were actually scanned twice when the document slipped. This is also an excellent argument for using a barcode type that includes at least one checksum character, such as Code 93 or Code 128. Then you are much more likely to know that the barcode has been damaged. As far as location on the page is concerned, there are a few things to consider. First, you don't want to position the barcode where it is likely to be damaged with a staple or punch hole. You also need to be certain to establish a **quiet zone**, a clear area without any text or other marks, around every barcode. This ensures that the recognition software can tell where the edges of the barcode are. The required quiet zone varies by barcode, but more is generally safer. Providing 1/4-inch on all sides would be ideal, but at least 1/8-inch of empty space is essential for most barcodes.

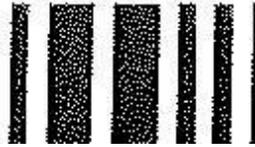


With ScannerVision you can specify the maximum number of barcodes to be located on an image. If you reach that maximum before searching the entire page, for example, you can stop searching the page. Since barcode scanning proceeds from the top of the page to the bottom, you can potentially speed up the location phase by placing all barcodes toward the top edge of the page.

Using Cleanup to Improve Recognition Accuracy

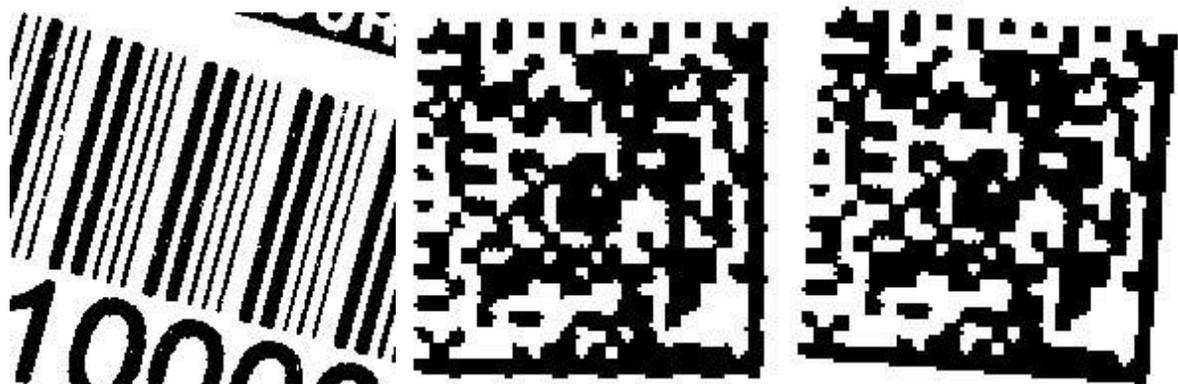
ScannerVision's Image Enhancement module can be used to reduce the effects of damage that often occur to document images en route, through operations such as copying, FAXing, etc. For example, a small portion of a document containing many "specks" is shown here:

It contains numerous small dots, typically caused by dust on the scanning platform or noise during transmission. They can cause significant errors during both OCR and barcode recognition functions. ScannerVision Image Enhancement includes a **de-speckle** function that can effectively remove these unwanted specks from most documents.



A different problem can occur when a scanner, copier, or FAX machine scans a barcode whose lines are not dark enough, as it converts it to black and white. This "binarizing" function is often done during scanning, as it greatly reduces the size of the resulting files. The resulting barcodes will then have **white** specks on the, as shown here: Although the despeckle function does not directly re-move white specks, the image can be negated (reversing the black and white pixels), then despeckled, and negated again to return the original image without specks. This barcode went from unreadable to 100% confidence after that simple series of cleanup steps. Because ScannerVision is so fast, it is often practical to perform a variety of cleanup sequences, checking for the presence of barcodes and their confidence after each attempt. This may be especially helpful when documents arrive from a wide variety of sources, with various types of damage along the way.

The deskew function **can** be very helpful. However, it cannot always be assumed that deskew will improve recognition. The sample Code 39 barcode to the right was scanned with a 15 degree skew angle. Although there is a stair-step effect along the diagonal lines, the width of the bars and spaces appears quite uniform across the image. Even with this relatively high skew angle, it was recognized with 100% confidence. But notice what happens when we deskew this image. Because each pixel had to be forced into a new orientation, the pre-iously stair-stepped bars now appear to be much more jagged, and the spaces between them are much more variable. This image is still decoded, but the confidence level has dropped to 97%. Clearly, deskew can sometimes cause more problems than it solves. When the entire page on which a barcode appears is deskewed, there is also no guarantee that the barcode itself will end up deskewed, unless it was perfectly positioned when scanned on the page.



Damage to 2D barcodes can be even more severe, since we now rely on both horizontal and vertical fidelity. The Data Matrix code here is recognized at 100% confidence, even with about 4 degrees of skew. After deskewing, you can see that there has been significant damage to many of the modules, and the resulting image has become completely undecodable. These examples lead to two suggestions for applying image cleanup for barcodes. First, allow the decoding software to do its best at finding the information in a skewed barcode, whether 1D or 2D. Second, if you are unable to predict the kinds of

damage that may occur in your workflow, it's ideal if you can selectively apply several different cleanup sequences retaining the original image each time so that you can go back to it while checking the confidence level of the recognized barcodes after each cleanup option is tried. When applying cleanup operations, it can pay to find opportunities to "learn" from the document. Certainly, a check of the image resolution could be used to direct you through two or more different image processing paths. Or if a despeckle operation reveals that hundreds of specks were found, you might send that image through a wider variety of cleanup options than a known clean document. The presence of one particular barcode or its content may be also used to trigger different kinds of follow-up processing. The possibilities are endless, limited only by the re-turn on investment resulting from fewer errors and a reduction in costly manual intervention.

Optimizing Recognition Speed

The primarily method to optimize barcode reading speeds consists of reducing the number of activities performed based upon the predictability of your arriving images.

The rapid spread of multicore processors has greatly increased interest in multi-threading as an optimization strategy. The optimal application of multi-threading will require experimentation with your particular workflow, based on which operations depend upon others, and must therefore be serialized, and which can be performed in parallel. You may, for example, be able to process two or more separate batches of images simultaneously. The 1D and 2D barcodes are each processed differently and separately. To avoid having to process every page with all four types of recognition, it is helpful to know which types of barcodes are expected. Within the standard 1D barcodes types however, there is no significant speed improvement gained by limiting recognition to the expected barcode types, except that you can avoid the work of discarding any results of barcode types that may turn up that are not of interest to your application.

If the maximum number of 1D barcodes searched on that same page is set to 1 instead of 100, the first barcode is recognized in under 3 msec. A sample page image with only one barcode near the bottom of the page shaved recognition time from about 35 msec to 9 msec, just by changing the maximum number of barcodes searched from 2 to 1. Further, moving the one barcode from the bottom of the page to the top of the page reduced the recognition time from 9 msec to about 4 msec. This also brings an important fact to light searching a page image for a barcode when none is present always means searching the **entire** page. That 35 msec time is indicative of the time that will be consumed for every non-barcode page that is searched for a barcode. If you know, for ex-ample, that only page one of each multi-page document can possibly include a barcode, you can eliminate time wasted searching every page of every document. If you know the approximate location where a barcode can be expected on a page image, you can also greatly increase processing speed by specifying the zone for only that particular region of interest. For example, if you know that a barcode is always printed in the top, right 1-inch by 3-inch corner of a specific document, you can search only in that area. If you're concerned that the document may be inverted, you should also search the same area in the bottom, left corner.

8.6 Appendix F - Scripting

Scripting Basics

ScannerVision supports user-definable input parameters and output actions via scripting. Via its own internal scripting engine, supporting VBScript and JScript, users can define custom values for selection during scanning from the capture client, or create unlimited possibilities for file manipulation and transformation, post-processing.

Multiple connector scripts can be defined in a workflow template, ensuring that even the most bespoke delivery and storage requirements may be fulfilled.

Scripting Limitation

- The script handling module inside ScannerVision limits access to certain objects. Access to the WScript object (and thus shell access) is not permitted, due to reasons of security.

Picklists

A VBScript can be selected to provide input parameters for picklists, in client metadata questions. To enable this feature simply select the 'VB Script' type from the drop down list for your desired picklist:

Typical uses for a VBScript driven picklist are:

- Read and concatenate data from multiple sources
- Use automation to extract picklist data from documents, such as Microsoft Office files
- Display directories and subdirectories from the operating system, to determine file location
- To integrate with corporate address books from email servers, such as Microsoft Exchange
- Filtering information from datasources to make it easier for users to select values

To create a picklist script, simply assign the values you wish to display to the user into a variable named RESULT; each line is delimited by a semi-colon (;). The following example simply illustrates how to return a list of items:

```
Dim RESULT, i, DocType

DocTypes = array("Invoices", "Estimates", "Receipts")
```

```

RESULT = ""

FOR i = LBOUND(DocTypes) TO UBOUND(DocTypes)
    RESULT = RESULT & DocTypes(i) & ";"
NEXT

```

Data in the RESULT variant is split into individual items and displayed to users in the scanning client.

One very useful aspect of scripting for picklists is to substitute the data the user is presented with and selects, with the data utilised during the capture process. This is accomplished using the "double value" feature of the scripting module.

Consider a data structure for storing a company's customer list: customers may be referred to using a unique customer reference number, but during the capture process you may wish to display the actual customer name to the operator. Or the situation of an organisation with a particularly long domain name; to distribute documents via email they may wish to display just the user name at scan time, but return the email address, which would not comfortably fit on the display of a multifunctional device.

The double value feature enables the script author to display one value but return another for use in the process and storage phases of the document capture.

Consider the following simulated example:

```

DIM RESULT, j, names(5, 2)

'Create sample double value array
SUB CreateDemoArray()

    names(0, 1) = "Dave"
    names(1, 1) = "Jim"
    names(2, 1) = "Mike"
    names(3, 1) = "Henry"
    names(4, 1) = "Chris"

    FOR j = lbound(names) TO ubound(names)-1
        names(j, 2) = names(j, 1) & "@averylongcompanyname.com"
    NEXT

END SUB

RESULT = ""

CreateDemoArray()

FOR j = lbound(names) TO ubound(names)-1
    RESULT = RESULT & names(j, 1) & chr(30) & names(j, 2) & ";"
NEXT

```

In this example the user name is concatenated to a very long email address. Both the name and the complete email address are delimited with the 'chr(30)' character. This special character is the double value delimiter: items to the left of the delimiter will be displayed to the user, whilst items to the right of the delimiter will be utilised during the scanning process.

Note that ScannerVision 3 makes use of the new 'chr(30)' delimiter, as opposed to the '##' delimiter

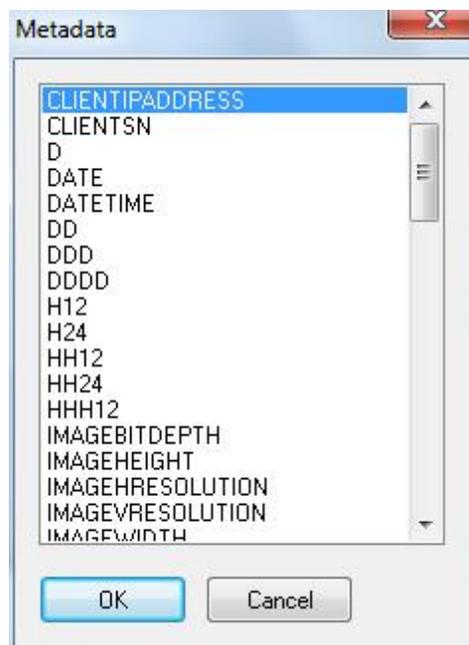
from previous versions. Is is to avoid potential conflict with the content of values for the user selection.

Connector Scripts

The Script connector may utilise VBScript or JScript scripts to perform custom post-processing actions. Typical uses for connector scripts are:

- Perform custom processing actions, such as encryption
- Connect to non-supported document systems
- Instantiate and utilise functions available from COM servers and .NET assemblies
- Customise file output and delivery requirements

Multiple output scripts may be defined by any particular workflow template. Connector scripts have read access to all tags defined in the metadata libraries; scripts simply have to refer to metadata object in the format: `Metadata.Values("METADATA_TAG_NAME")`.



Scripts may be authored outside of the Processing Engine application, or written directly into the Script text box of the script connector dialog. Users may define the specific script language via the Script Language drop down list.

A common use of post-processing scripts is to perform an action on a document output with the Windows File System connector. This can be accomplished by referring to the `Metadata.Values("WFSFILENAME")` value, which refers to the file as written to the output location specified in the Windows File System connector (note that this doesn't not include the path).

8.7 Appendix G - Equitrac

ScannerVision and Equitrac Authentication

Software Versions

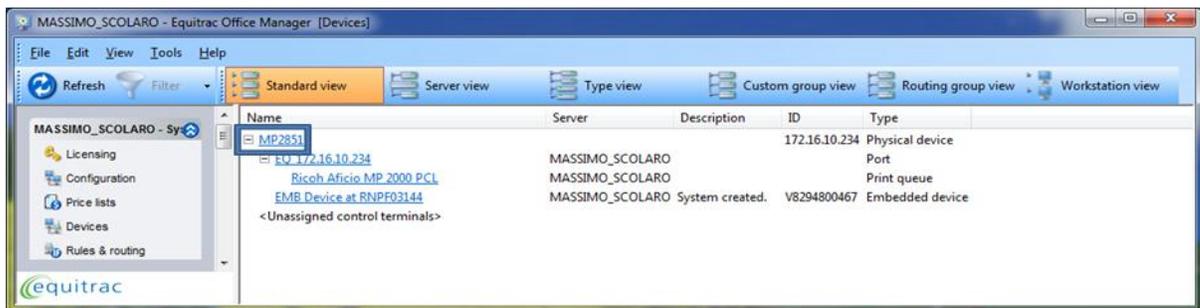
1. Software versions that have been tested:-

- **Equitrac version** :- 4.2.1.4339
- **Equitrac PCC** :- 4
- **ScannerVision Server** :- 3.1.0.10
- **ScannerVision MFP client** :- 2.3.3

Equitrac Setup

The name of the Physical device e.g. “MP2851” for the device in Equitrac must be the same as the client settings device name in ScannerVision.

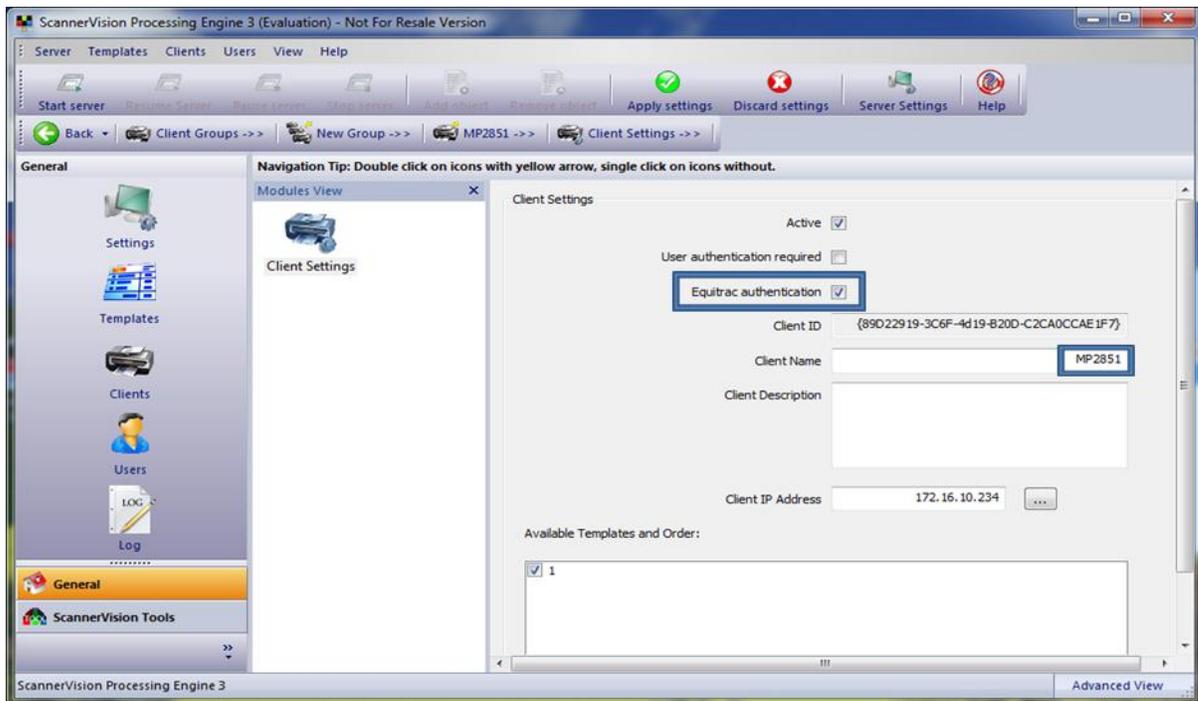
Below is a screenshot showing the device that has been configure in Equitrac.



ScannerVision Setup

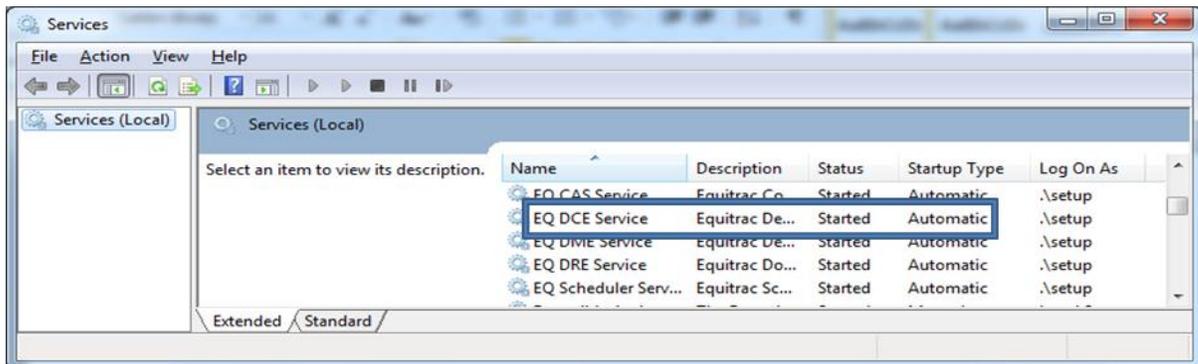
Make sure that the device is name is the same as in Equitrac e.g. “MP2851”. Enable the “Equitrac Authentication” check box.

Below is a screenshot showing the “Client” configuration for the MFP.



Make sure that the Equitrac DCE service is installed on the Server that has been configured with ScannerVision.

Below is a screenshot showing the Equitrac DCE installed.



ScannerVision MFD client

Install the ScannerVision MFD client v 2.3.3 onto a JAVA supported MFD.

Equitrac PCC 4 Setup

Install PCC version 4 on your supported MFD. Make sure that the Equitrac server and PCC can successfully communicate with each other.

2. Under the General TAB

- External Application setting
 - Add a descriptive name “SV”
 - Add the ScannerVision Java Product ID “ 320000091”

Below is a screenshot showing the General TAB in PCC.



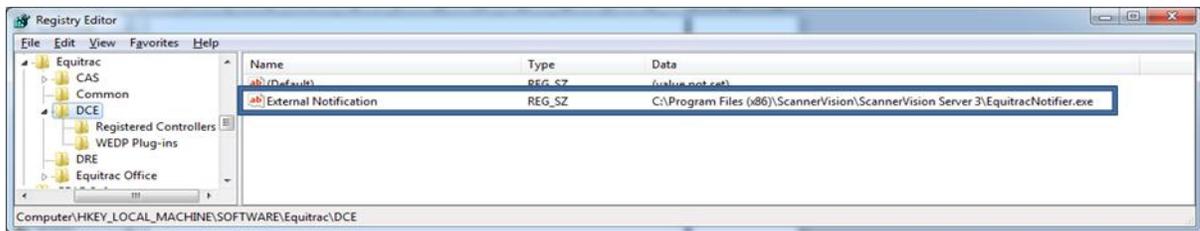
Registry Setup

If ScannerVision has been installed on a 64 Bit Server OS then add the following “Registry” entry:-

[HKEY_LOCAL_MACHINE\SOFTWARE\Equitrac\DCE]

External Notification=C:\Program Files (x86)\ScannerVision\ScannerVision Server 3\EquitracNotifier.exe

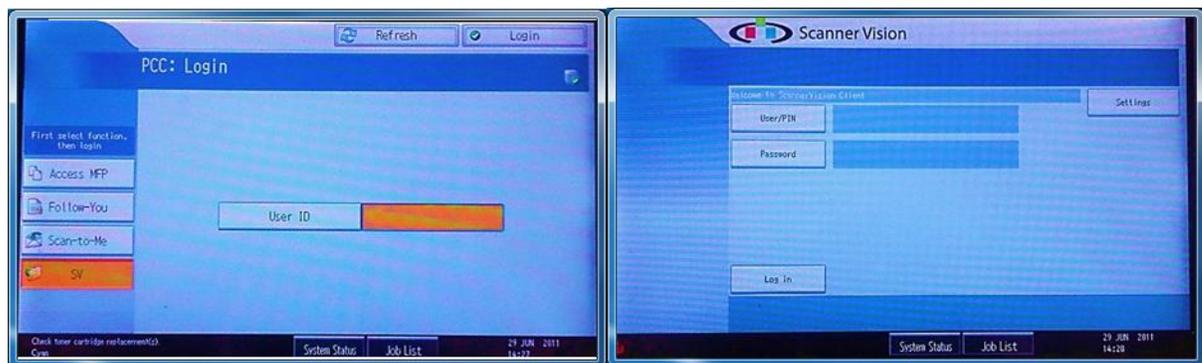
Below is a screenshot showing the Registry setting change.



How It Works

1. Select the new button that was added “SV”
2. Log into the PCC screen on the MFP using the primary that has been allocated to the Equitrac user e.g. PIN # “1234”.
3. This will launch the ScannerVision application on the MFP
4. Once the ScannerVision screen that displays the options to log in using “Username” and “Password” appears, ONLY click the “Log In” button.
 - o This will automatically log you onto ScannerVision with the user credentials that were used to log into PCC.

Below is a screenshot showing the PCC login in screen and the ScannerVision log in screen.





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