



V1
Document
Management

Purchase Invoice Automation for Sage X3

with OCR Data Capture

Solution Overview

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Contact Details

Please address any queries regarding this document to:

V1 Limited

No 4, Booths Park
Chelford Road
Knutsford
WA16 8GS
United Kingdom

Telephone: +44 1625 856505

Email: hello@WeAreV1.com



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Introduction

Purpose of the Document

The purpose of this document is to detail the Purchase Invoice Automation (PIA) solution with OCR (DbCapture) for Sage X3.

The document describes the 'Standard' V1 solution for Sage X3.

The purpose of the standard solution is to provide a comprehensive solution suitable for the majority of small to medium-sized Sage X3 users in a minimal timeframe.

A greater degree of customisation is possible with a bespoke project, but that would entail additional scoping and specification and is beyond the scope of this document.

Site-specific configuration details will be captured in the Pre-implementation Questionnaire and the PIA Data Requirements document to provide a complete 'Handover' to the Professional Services team for implementation.

Overview

This document is based on Release DM4.1 of the V1 Document Management suite of applications.

This solution is specifically for the standard 'On Premise' edition of Sage X3 rather than the Cloud solution. The standard is suitable for Sage X3 version PU9 and V11.

For the latest compatibility, please refer the V1 portal:

<http://support.wearev1.com/software/x3/R13>

The details within the document set out the approach to providing a solution to capture and validate details from supplier invoices, to integrate with Sage X3, to reduce the amount of time required to check, match, approve, input, analyse, file and retrieve supplier invoices.

In most respects, throughout the document, the term 'invoice' can be taken to mean 'invoice or credit note'. It should be noted of course that there will be some differences in how credits are processed from invoices.

Solution Description

Introduction

The focus of this document is the capture, processing and secure archiving of purchase invoices and credit notes. The Purchase Invoice Automation (PIA) solution is based on the EDM for Sage X3 solution which handles many other types of documents in addition to purchase invoices. The EDM for Sage X3 solution is covered in more detail in a separate document.

This solution covers processes for dealing with two types of invoice:

- **Purchasing Invoices** being invoices relating to Purchase Orders, Receipts or Purchase Orders relating to Receipts within Sage X3
- **Supplier BP Invoices** being invoices processed for payment without an order or receipt having been raised in Sage X3

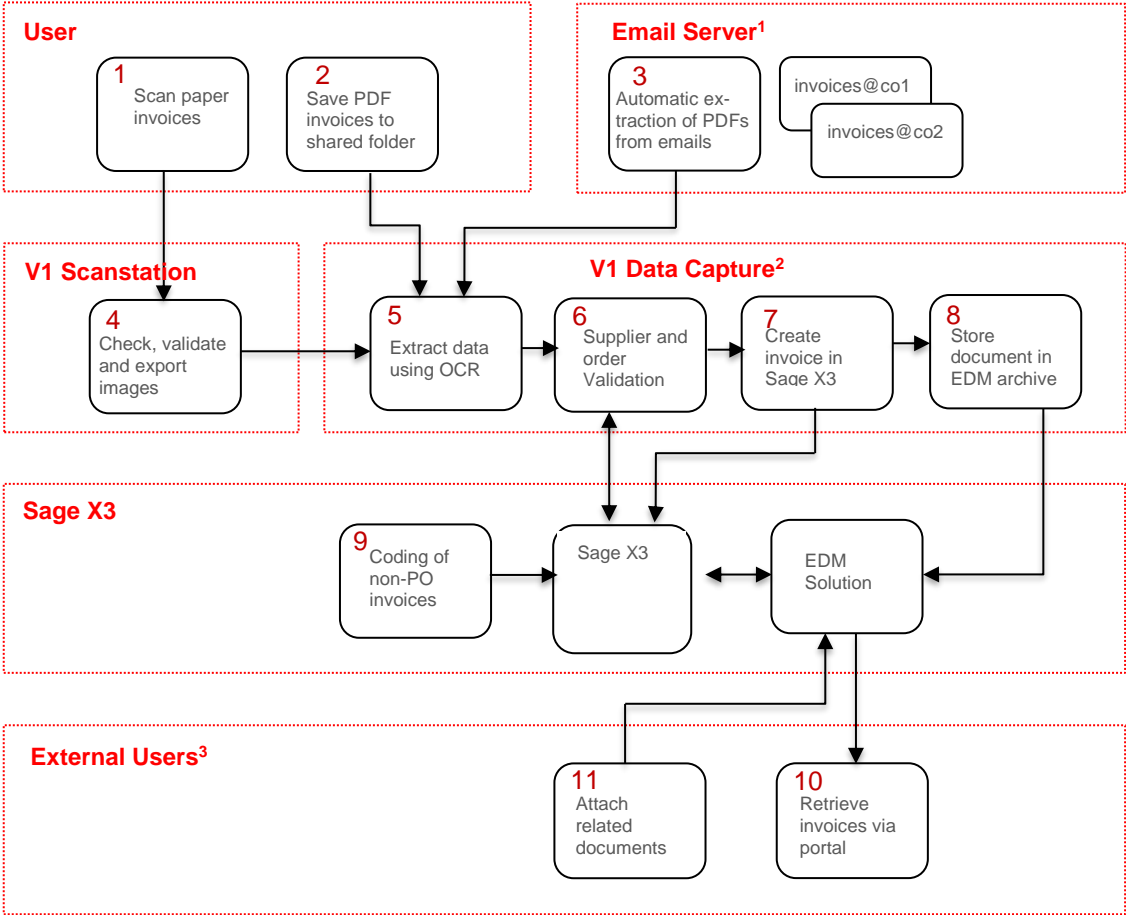
The features within the scope of this standard solution are:

- ▶ **Batch Scanning of Paper Invoices** using the V1 Scan-station software either with a dedicated scanner or images from a multi-function copier
- ▶ **Automated Import of PDF Invoices** from emails and shared folders
- ▶ **Invoice Data Capture using Optical Character Recognition (OCR)** with manual correction/completion where necessary
- ▶ **Matching of Purchasing Invoices** to receipts or order lines in Sage X3
- ▶ **Secure storage of invoices** using the EDM solution
- ▶ **Viewing of archived invoices** and related documents from Sage X3
- ▶ **Search and retrieval of invoices** and related documents outside of Sage X3 via the EDM portal (requires external user licences)

Related functionality provided by the EDM solution:

- ▶ **Automated storage and emailing of Purchase Order documents**
- ▶ **Scanning and archiving of supplier delivery notes / GRNs**
- ▶ **Scanning or manual depositing of related documents** using the V1 Scan-station or Deposit client
- ▶ **Automated emailing and archiving of Remittance Advices**

Solution Overview



Notes

1 Invoices are picked up from mailboxes using POP3 or POP3 over SSL. The solution supports local email servers such as Microsoft Exchange, Postfix, Domino, etc and hosted providers such as Google Mail and Microsoft Office365.

2 To retrieve invoices and attach related documents outside of Sage X3, External User licences for the EDM Solution are required.



Purchase Invoice Automation - Step by Step

1. Invoices received on paper will be scanned on receipt. For optimum OCR results and most efficient storage, it is recommended that the scanning be done using a dedicated workgroup scanner attached to a PC running the V1 Scan-station with VRS technology.

Batches containing multi-page invoices or invoices with supporting documents can be scanned with separator sheets or barcode labels to avoid manual collation of pages in the Scan-station software. Where the majority of invoices consist only of a single page, the user may prefer to separate single-page and multi-page invoices into separate batches for scanning to save time inserting separators.

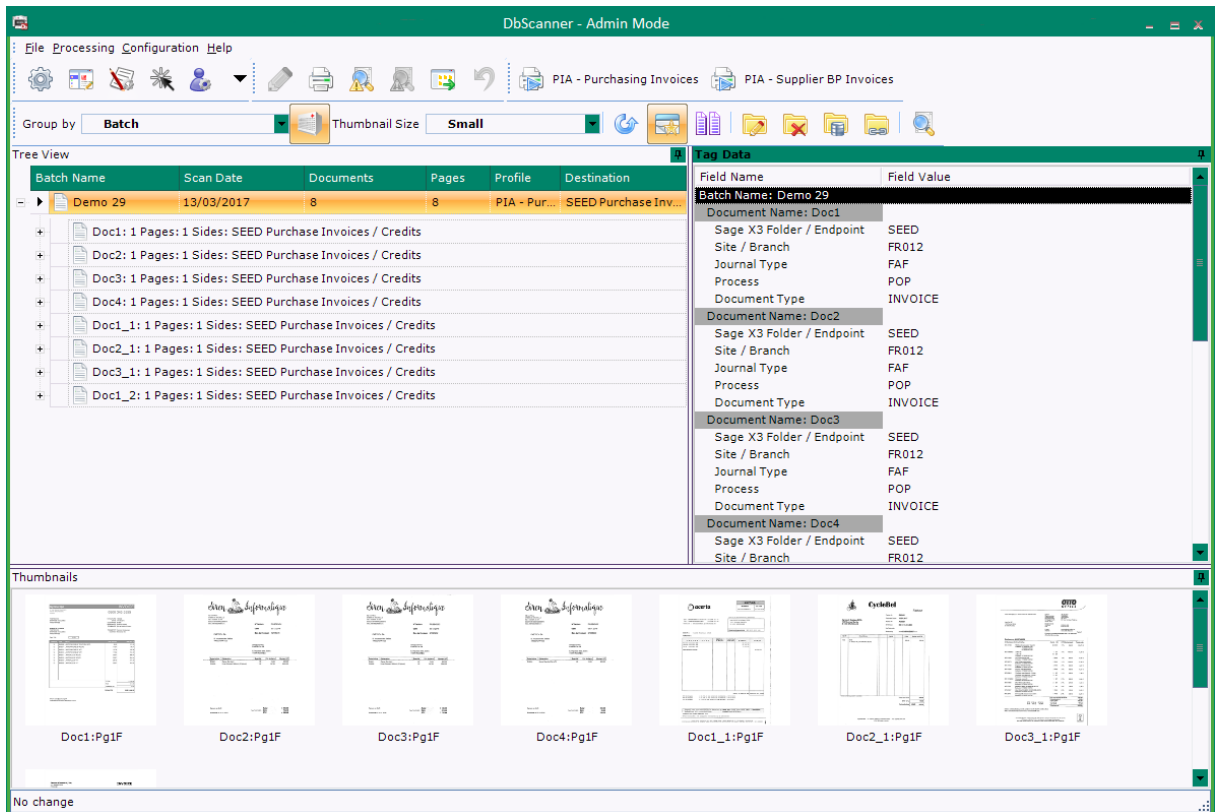
2. Invoices received via email as PDF files can be dropped into a shared folder for automated processing. A series of folders will be created automatically for each site defined in Sage X3.

While the system only handles PDF invoice attachments, other formats such as Word .doc/.docx files and Excel files can be converted to PDF format using a printer driver. Care should be taken to use a consistent process for converting invoices so that the page size, etc does not vary from document to document. Ideally, you should ask your suppliers to supply invoices in PDF format as PDF is a well-established international standard for long-term document storage.

Please note: The standard solution requires PDFs which contain only a single invoice. Each invoice may contain multiple pages and any number of invoices can be attached to a single email. PDFs should not require a password to view.

3. If you have an email server that supports the POP3 protocol, PDF attachments can be automatically extracted from incoming emails and placed into one of the shared folders for automated processing. Suppliers should be given a dedicated email address to use just for PDF invoices. The mailbox polling software will automatically import all PDF attachments received in the nominated mailbox. Statements and copy invoices can be rejected during the data validation. Emails without PDF attachments will be left in the mailbox for manual checking.
4. The V1 Scan-station software is designed to control a dedicated scanner with an Automatic Document Feeder (ADF) ensuring optimal image quality and allowing automated image clean-up, auto-rotation, de-skew, auto-crop, etc using the full capabilities of the scanner and 'Virtual Re-Scan' (VRS) technology.

Images from networked scanners and multi-function copiers can be imported into the scan-station, but a reduced level of functionality will be available. This may mean images which take more space and less accurate OCR processing. Networked scanners and multi-function copiers will need to be configured to scan to a supported file format by the supplier or a trained administrator.



The scan-station allows images to be reviewed for quality prior to submission to the Data Capture system. If batches containing multi-page invoices or invoices with supporting documents, such as timesheets, receipts, certificates, PODs or copy orders, have been scanned, the user will need to ensure the pages are correctly collated.

5. Once the scanned images have been checked, they will be uploaded to the Data Capture server along with any PDF invoices. From this point the process will be the same for both paper and PDF invoices.

The Data Capture system uses Optical Character Recognition (OCR) to extract the data from the invoice. This means it works with almost all PDF invoices as well as scanned paper documents. The first time a new invoice layout is received a user will highlight with the mouse the data that should be extracted and the system will retain this as a 'template' in order to extract the data automatically in future. The system learns on-the-fly, so there is no need to create templates before starting to use the system. For invoices where references or totals are not always in the same place, the user can create an 'anchor' so that the location of the data is associated with key text on the document rather than fixed position. For example, the invoice total might be anchored to the words 'Total Payable' or the PO number might be anchored to the words 'Your Ref'.

- The system can normally recognise VAT registration numbers from the UK and several EU countries without the need for a template, so if you have VAT numbers entered in the Intracommunity VAT No field (EECNUM) in Sage X3, the correct account can usually be identified automatically. Australian suppliers will normally be recognised from their ABN number if that is entered in the Company Registration No field (CRN). For other suppliers the system will learn to associate other text such as trading names, telephone numbers, postcodes, etc with particular accounts in Sage X3, so it's not essential to have VAT numbers in the database or even to have the supplier name entered with the same spelling.

<p>Country</p> <input type="text" value="GB"/> <small>United Kingdom</small>	<p>Country</p> <input type="text" value="AU"/> <small>Australia</small>
<p>Co. Reg. No.</p> <input type="text"/>	<p>Co. Reg. No.</p> <input type="text" value="15 003 292 466"/>
<p>Intracommunity VAT no</p> <input type="text" value="GB777123789"/>	<p>Intracommunity VAT no</p> <input type="text"/>
<p>Currency *</p> <input type="text" value="GBP"/> <small>British Pound</small>	<p>Currency *</p> <input type="text" value="AUD"/> <small>Australian Dollar</small>
<p>EU Supplier</p>	<p>Australian Supplier</p>

The data extracted from the invoices is validated and checked against Sage X3. Supplier details, orders, receipts, currencies, exchange rates, General Ledger codes, etc are all taken from the Sage X3 database. Among many other checks, the system will check for duplicate invoices in both Sage X3 and the EDM archive. It will equally only match to order lines have not already been invoiced.

Invoices for new suppliers and for goods not yet received can be placed 'on hold' pending the entry of supplier details or the receipting of the orders in Sage X3. If necessary, invoices can be rejected and deleted from the system at this stage.

Once the details of the invoice are 'accepted' by the operator, the invoice will be created in Sage X3. While the invoice entry is created, it is not posted. Invoices may be subject to on-line approval through the Workflow system before they are posted.

- The image or PDF will be permanently archived in the EDM solution and accessible from the transaction screen in Sage X3 by selecting the 'View Invoice' button on the right-hand side of the screen.
- Invoices which don't relate to Purchase Orders raised in Sage X3 will need to be coded. This can be done in Sage X3 before they are posted. Non-PO or Direct invoices will normally be processed using the Supplier BP Invoices profile and appear under A/P-A/R Accounting. Alternatively with the Purchasing Invoices profile, you can change the Process from POP to Direct and create a Purchasing Invoice without an order. In this case a single line will be created with a Source of 'Miscellaneous'.

Supplier BP Invoices are normally created with the Pay Approval field set to 'Not Approved'. Workflow can be used to prompt relevant staff to check, code and approve invoices.

9. Outside of Sage X3 it is possible to search for invoices in the EDM portal. The query screen allows users to search for invoices using any of the stored metadata including supplier name, account code, supplier's invoice number, invoice date and value.

Smart Deposit client can be used to archive miscellaneous documents and to associate them with suppliers, orders or individual transactions without needing to access Sage X3. Documents which relate to specific invoices can be viewed within Sage X3 using an optional link which can be enabled on the invoices screen.

Data Capture Profiles

PIA – Header-Level Data

No	Description	Acquired	Data Type	Validation
	Primary ID	OCR	String	Primary identifier used to recognise template. Typically this will be a VAT registration number or ABN number.
	Secondary ID	OCR	String	Additional identifier used where multiple AP accounts or invoice layouts are used by a single supplier company.
F1	Sage Endpoint	Derived from the permissions based on the user logging in	String	Identifies the Sage Endpoint the invoice relates to (eg PILOT, PROD, TEST, etc). Can be hidden when only one endpoint is used.
F2	Validate User	Derived from logged in user	String	The last user to have the document open
F3	Search Type	Lookup to Sage	String	Allows searches to retrieve supplier details when supplier is not recognised from the ID fields above. Data returned may be stored with the template if VAT numbers, etc are not held in Sage X3.
F4	Supplier Lookup	Lookup to Sage	String	The results of a successful VAT search or Search Type
F5	Supplier Code	Derived from the results of F4	String	Read only
F6	Supplier Name	Derived from the results of F4	String	Read only
F7	Supplier Currency	Derived from the results of F4	String	Read only
F8	Supplier Country	Derived from the results of F4	String	Read only, this is the first line of the default address for the Supplier
F9	Supplier Payment Terms	Derived from the results of F4	String	Read only

No	Description	Acquired	Data Type	Validation
F10	Purchase Order Number	OCR or selected from Dropdown based on partially or un-invoiced Orders for Supplier	String	When the supplier is identified, all partially or un-invoiced Orders are returned in this cell as a dropdown. If selected, it returns those lines that are partially or invoiced If a value is extracted via OCR from the document and valid for the supplier, it returns those lines that are partially or invoiced.
F11	Purchase Receipt Number	OCR or selected from Dropdown based on partially or un-invoiced Receipts for Supplier	String	When the supplier is identified, all partially or un-invoiced Receipts are returned in this cell as a dropdown. If selected, it returns those lines that are partially or invoiced.
F12	Packing Slip Number	OCR or selected from Dropdown based on partially or un-invoiced Receipts for Supplier	String	A supplier's delivery number – if available and if entered during receipting - may be an easier way to identify the receipts to match to. If valid, the receipt lines will be imported into the grid.
F13	Captured Document Identification	OCR	String	Used to check that the document is an Invoice or a Credit note. The system will show a warning if the text is not equivalent to F14 or an error if it is the opposite of F14.
F14	Captured Document Identification	Derived from scanstation or PDF Pickup directory or selected from Drop Down List.	String	Optional, used to check that the document is an Invoice or a Credit note. The system will show a warning if the text is not equivalent to F13 or an error if it is the opposite of F13.
F15	Site Code Identifier	OCR	String	Optional, if a value is extracted an attempt it made to find the Site code based on the first line of its address



No	Description	Acquired	Data Type	Validation
F16	Site Code	Derived from scanstation or import folder or Order Number or Receipt number or Site code identifier or site code ident EDM table or selected from Drop Down List.	String	Can be entered and passed from the scanstation, if copied in to the appropriate PDF Pickup dir, if an order number is valid a lookup in to Sage is done to assume the orders Site Code, if a receipt number is valid a lookup in to Sage is done to assume the receipts Site Code, a successful site code identifier lookup, a lookup from a previous document for this supplier found in the Site Code Ident EDM table or as a last resort, manually from the drop down. If the last option is selected and valid, this value is committed to the Site Code Ident EDM table.
F17	Invoice Type	Derived from the Imported Document Identification + Site Code's legislation	String	Using the Invoice Category, a lookup is done into Sage to find the company for the Site Code. The combination gives only Invoice or Credit category types in respect to the Imported Document Identification. I.e. if that is INVOICE, only Invoice Types with a category of Invoice will be returned. In addition, a drop down of all other valid Types added to the same cell.
F18	Control Account	Lookup to Sage	String	A lookup is done based on the company legislation to find the default for the Supplier
F19	Accounting Date	Defaults to today's date	Date	May be manually changed. Validation is done against the supplier's Company to check it falls within an open period. An error is generated if it does not.
F20	Document Source	Derived from DbScanner, passed from PDF Pickup or from V1 Smart Mail	String	An indication from where and when the document originated, a scan, PDF import or email.
F21	Email From Address	Derived from a tag file as part of the email attachment extraction	String	If applicable, the from address of the email with the document attached
F22	Email Subject	Derived from a tag file as part of the email attachment extraction	String	If applicable, the subject of the email with the document attached
F23	Email Received	Derived from a tag file as part of the email attachment extraction		If applicable, when the email with the document attached was received
F24	Supplier Document Reference	OCR	String	Checked against Sage database, EDM solution and OnHold queue for duplicate entries Each can be configured to be off, generate a warning or error if found or a combination
F25	Supplier Document Date	OCR	Date	If in the future, a recommendation is made to put on Hold. When date is met, document moved to To be checked automatically.
F26	Total Goods Value	OCR or entered manually	Floating Point	The total goods amount as found on the Invoice / Credit



No	Description	Acquired	Data Type	Validation
F27	Transport Charge	OCR	Floating Point	Used when Transport Charge is not included as a line item. Creates an invoicing element in Sage X3 if > 0
F28	Discount	OCR	Floating Point	Used as part of the calculation – Total Net Value
F30	Total Net Value	Derived from a calculation	Floating Point	Read Only. Total Goods Value + Transport Charge – Discount.
F31	Total Tax Value	OCR	Floating Point	Extracted from document
F32	Total Gross Value	OCR	Floating Point	Extracted from document. If blank and other monetary values populated, calculated.
F33	Pay Approval	Drop down selection	String	Defaults to Not Approved, attempts to set the PAZ field
F34	Comment	Enter manually	String	With a maximum of 20 characters, if populated, is added to the first line of the Comments on the created Invoice / Credit. In addition, added as an annotation on the Subsequently created Invoice / Credit in the EDM database visible via Smart Retrieve.
F35 Hidden	IMPORT_USER	Scan user	String	Read only
F36 Hidden	IMPORT_DATE	Scan date	Date	Read only date document was imported
F37 Hidden	IMPORT_TIME	Scan time	Time	Read only time document was imported
F38 Hidden	DocGuid	On import	String	Read only, unique document identifier, only needed should V1 Dashboard be implemented

PIA – Line-Level Data

No	Description	Acquired	Data Type	Validation
L1	Line Source	Derived from the source of the lines which is a lookup into Sage, whether from an Order, Receipt or Receipt lines for Order	String	
L2	Source Number	Derived from L1	String	PO or Goods Receipt Number – Read Only
L3	Line Number	Derived from L1	String	The line number based on the Source – Read Only
L4	Product Code	Derived from L1	String	Product Code – Read Only
L5	Product Description	Derived from L1		Product Description – Read Only
L6	Unit of Measure	Derived from L1		Unit of Measure – Read Only
L5	Quantity to Invoice	Derived from L1	Numeric	Quantity to be Invoiced. Defaults to un-invoiced quantity on Order or Receipt and can be changed
L6	Unit Price	Derived from L1	Floating Point	Unit Price of Product Defaults to Unit Price on Order or Receipt and can be changed
L7	Line Amount – Tax	Derived from L1	Numeric	Defaults to L5 x L6 and is calculated
L8	Tax Code	Derived from L1	Floating Point	Tax Code based on the Source – Read Only

Pre-requisites

Technical Pre-requisites

General

The standard V1 Purchase Invoice Automation (PIA) solution for Sage X3 only supports the Sage X3 'on premise' solution not the 'Cloud' solution, although it may be hosted by a third-party in a 'private cloud' scenario.

The solution is compatible with Sage X3 version PU9, V11 and V12. For the latest compatibility, please refer the V1 portal at <http://support.wearev1.com/software/x3/R13>. The V1 Electronic Document Management (EDM) solution for Sage X3 is a pre-requisite. Please refer the Platform Requirements for the EDM solution.

Application Server

While the PIA solution is normally installed with the EDM solution on the Sage X3 Application Server, for large users the PIA solution can be installed on a separate Windows server. In this case the minimum requirements for the server would be Windows Server 2008 R2 or later with at least two cores, 16GB RAM and at least 5GB of free disk space. For a company processing 100,000 invoices per annum four cores and 24GB RAM would be recommended. The Microsoft .NET Framework 3.5.1 must be installed. A SQL Server database is required, but does not need to be hosted on the same server.

Email Server

To import PDF-format invoices directly from mailboxes, POP3 will need to be enabled on the email server. POP3 can be used over SSL to support hosted email servers including Microsoft Office365 and Google Mail. Note: that the email server used for this purpose does not necessarily need to be the end-user's normal email server.

Workstations

Users validating or coding invoices will need a Windows desktop in order to run Windows client applications. Windows Terminal Services, Citrix and XenApp may be used as an alternative to installing client software on local desktops. Where invoices are checked and validated over a Wide Area Network (WAN), a thin client environment should always be used. Local Area Network (LAN) connections should be 100MB minimum.

Windows versions supported for V1 client applications are:

- ▶ Windows 7 (32 & 64 bit)
- ▶ Windows 8.x
- ▶ Windows 10

Note: The Microsoft .NET Framework 3.5.1 is required for all V1 applications.

Windows PCs should have at least 8GB RAM, a 2 GHz processor and 5GB of free disk space. 16GB RAM and a 3 GHz processor would be preferable.

Database Server

The PIA solution will typically use the same Microsoft SQL Server database server as Sage X3. If Sage X3 and the EDM solution are using an Oracle database, a separate Microsoft SQL Server will be required for the PIA solution. Please note that the documents themselves are stored in the database, so storage requirements on the database server should reflect the expected document volume. Allow at least 20GB of storage per 10,000 invoices per annum.

Database versions supported are:

- ▶ SQL Server 2008
- ▶ SQL Server 2012
- ▶ SQL Server 2014

Software Requirements

This solution is based on release DM4.X of the V1 Document Management suite.

The following V1 modules are provided for the PIA solution:

V1 Data Capture Server
V1 Data Capture Client
V1 Data Capture Admin Client
V1 Mail Extractor

The EDM solution for Sage X3 is required to support the PIA solution along with at least one scan-station.

Smart Deposit and external user licences are required to store supporting documents with the invoices.