HIVE BDC FOR MICROSOFT DYNAMICS AX 2012

E-invoice setup guide

Document

Setup guide, version 2.3
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Content

Data Flow setup, automatic and manual sending, Hive BDC settings, SharePoint upload and e-mail delivery

Product

Hive BDC 1.13.0, by Balsoft
Microsoft Dynamics AX 2012 with the Balsoft Data Flow module

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Contents

1 What Hive BDC does 3

2 Before you start 3

3 The way of an invoice at a glance 4

4 Setting up Dynamics AX 2012 4

4.1 The Data Flow area page 4
4.2 Flow Table: creating the e-invoice flow 5
4.3 Flow Table: the export folder 8
4.4 Document management parameters 9
4.5 Document types 14
4.6 Customer Invoice Mapping 18
4.7 Customer master data: e-invoice type and e-mail address 21
4.8 Print management: Lasernet e-mail recipients 21

5 Sending invoices 23

5.1 Automatic trigger: sending on posting 23
5.2 Manual trigger: Send Hive Docflow 23
5.3 Step 1: The invoice arrives in the Data Export Table 24
5.4 Step 2: Run the Data Flow Import/Export Batch 25
5.5 Step 3: Check the message in Outbound Flow 26
5.6 Step 4: Run the Data Flow Send/Receive Batch 27
5.7 Step 5: The PDF and JSON file in the export folder 28
5.8 Step 6: Hive BDC processes the files 29

6 Hive BDC settings 31

6.1 The dashboard and its settings pages 31
6.2 Outbound: the document type 33
6.3 Companies and folders 35
6.4 Where the documents go: mail and SharePoint 38
6.5 SharePoint columns 43
6.6 Smaller PDFs: Compress PDF 50
6.7 Connections 51
6.8 Service and licence 55

7 When an invoice is not processed 57

8 Glossary 58

1 What Hive BDC does

Hive BDC (Balsoft Data Connector) takes documents posted in Microsoft Dynamics AX 2012 and delivers them to the right place. For sales invoices it turns the posted invoice into a German electronic invoice. For other documents, such as order confirmations, quotations or purchase orders, it delivers the PDF as it is.

Two e-invoice formats are supported, both based on the European standard EN 16931.

Format	What it is	When it is used
XRechnung	A pure data file in XML. There is no printed page inside it; the invoice is the data.	Public authorities in Germany, and customers who ask for XRechnung explicitly.
ZUGFeRD	A normal PDF invoice that carries the same invoice data inside it. A person can read the PDF, a system can read the data.	Business customers, and as the default where nothing else is agreed.

The product has two parts. The service runs in the background on a server and does the work: it watches the folders, converts the invoices, sends them by e-mail, uploads them to SharePoint and writes the log. The dashboard is the window you open to see whether everything is running, to look at the last documents and to change a setting. In the Start menu it is called Hive BDC Dashboard.

Everything runs on your own server and in your own Microsoft 365 tenant. Invoice data is not sent to Balsoft or to any other outside service. AX 2012 itself only writes files into a folder.

2 Before you start

Please make sure the following points are in place. They are set up once during installation.

- The Data Flow module is visible in your AX menu.
- The export folder is a network share that both the AX server and the Hive BDC service can reach with write permission.
- The Hive BDC service is installed on a server that is always running, and its licence is valid.
- Your customers' master data contains what the e-invoice format requires, for example address, VAT registration number, payment terms and an e-mail address for invoices.
- For e-mail delivery and SharePoint upload, the two app registrations in your Microsoft 365 tenant exist.

Your IT department creates the two app registrations in Microsoft Entra ID before Hive BDC is set up: "Hive BDC SharePoint" with the permission Sites.Selected and write access on the SharePoint sites the documents go to, and "Hive BDC Mail" with the application permission Mail.Send in Exchange Online, limited to the one mailbox the documents are sent from. You only need the ones for the features you use. Balsoft provides scripts that create both with exactly these permissions, and a guide for your IT department:

- Scripts and instructions: https://balsoft.de/en/products/hive-bdc#microsoft-365-setup
- Guide as PDF: https://balsoft.de/downloads/hive-bdc/Hive-BDC-Azure-Setup-EN.pdf

For each app registration your IT department hands over three values: the Directory (tenant) ID, the Application (client) ID and a client secret. For the mail app it also names the mailbox the documents are sent from. Chapter 6.7 shows where they are entered.

3 The way of an invoice at a glance

AX and Hive BDC exchange their information through a folder: AX writes into it and Hive BDC reads from it. Neither side calls the other directly, which is why nothing is lost when one of them is restarted.

Step	Where	What happens
1	AX: posting or Send Hive Docflow	The invoice is put in the queue, the Data Export Table (chapters 5.1 and 5.2).
2	AX: Data Flow Import/Export Batch	The invoice data is collected and stored as one message in Outbound Flow.
3	AX: Data Flow Send/Receive Batch	The message is written as a JSON file, together with the invoice PDF, into the export folder.
4	Hive BDC service	Reads the pair of files, creates the XRechnung or ZUGFeRD file, mails it to the customer and uploads it to SharePoint if this is set up.

Chapter 4 describes the setup in AX, chapter 5 follows one invoice from posting to the finished e-invoice, and chapter 6 explains the Hive BDC settings.

4 Setting up Dynamics AX 2012

The setup is done once. After that every posted sales invoice follows the steps in chapter 5 without further changes.

4.1 The Data Flow area page

All AX forms in this chapter are on the Data Flow area page. Open it from the navigation path at the top of the AX window. The Setup group holds the four setup forms: Parameters, Flow Table, Document types and Customer Invoice Mapping. Data Export Table is under Common, the two batch jobs are under Periodic, and Inbound Flow, Outbound Flow and the log forms are under Inquiries.

4.2 Flow Table: creating the e-invoice flow

A flow describes one kind of data that leaves or enters AX. The e-invoice needs one outbound flow. Choose Flow Table in the Setup group.

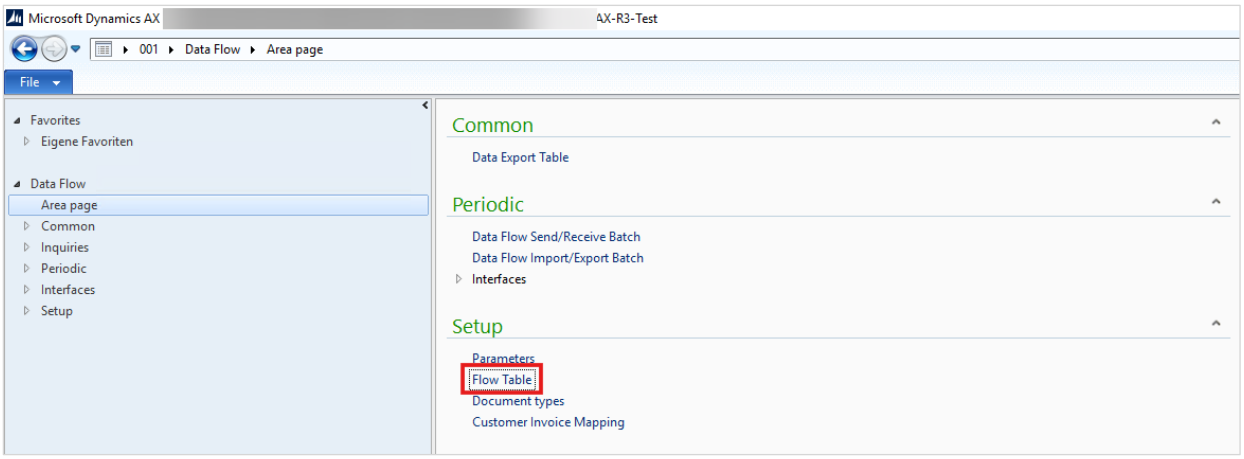

Figure 1: Data Flow area page, Flow Table in the Setup group

Create a new line and enter the Flow Id, for example E-Invoice.

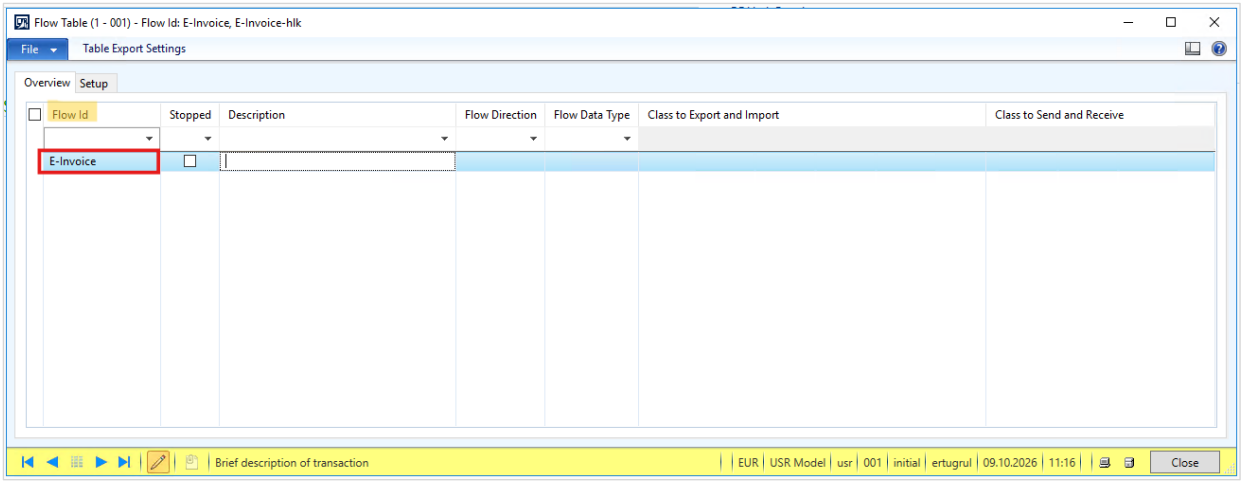

Figure 2: New flow with the Flow Id E-Invoice

Leave Stopped empty. As long as this check box is set, the flow takes no new invoices.

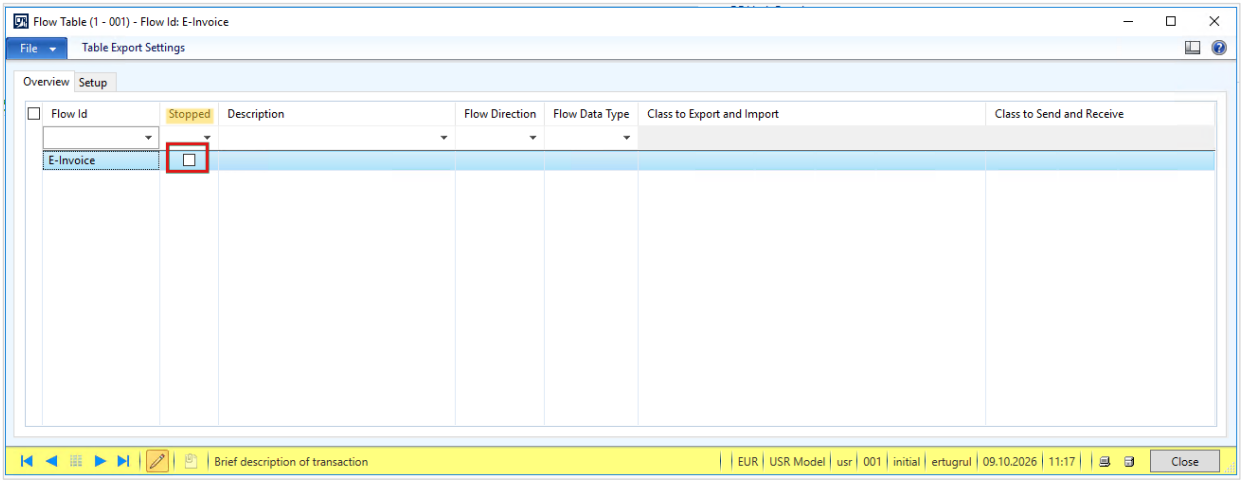

Figure 3: Stopped stays empty

Enter a Description. It is shown later in every list where you select the flow.

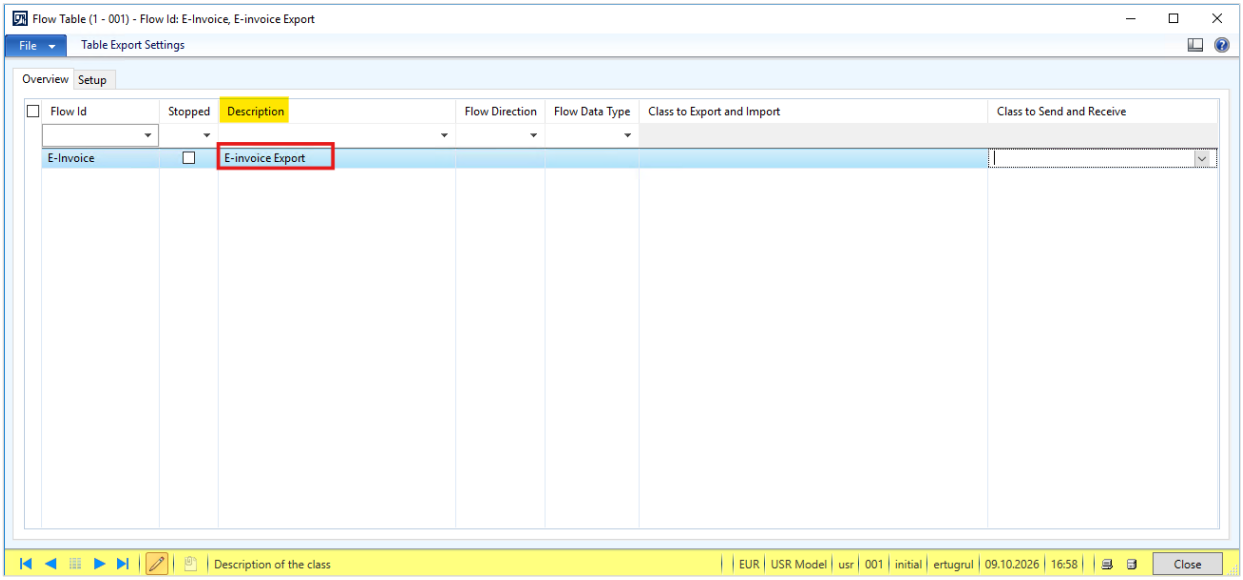

Figure 4: Description of the flow

Set Flow Direction to Outbound, because the invoices leave AX.

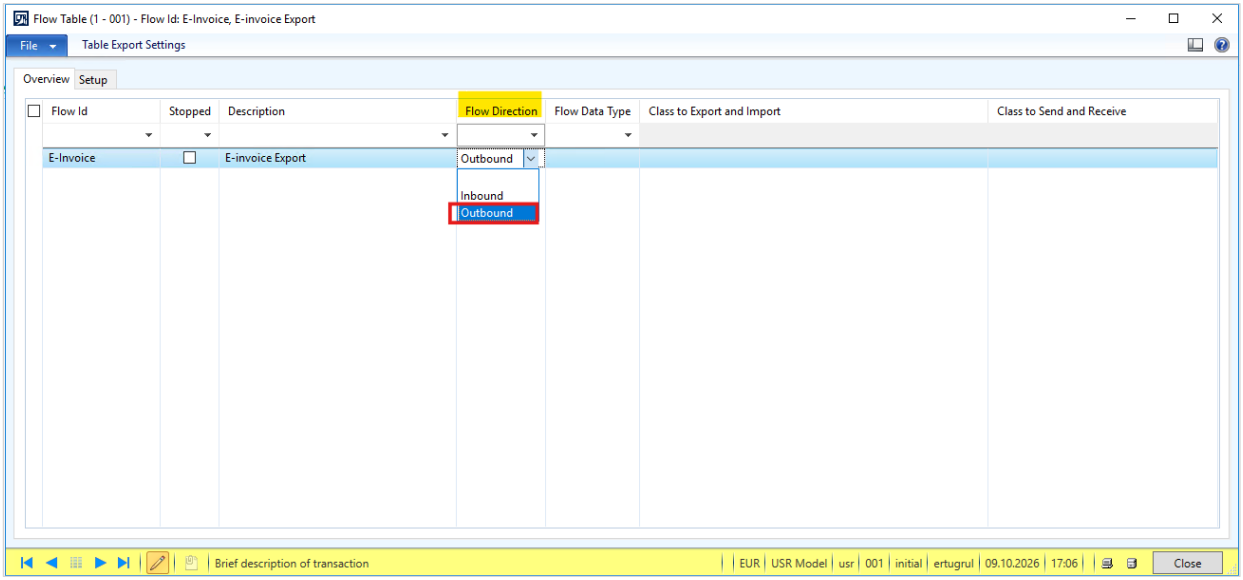

Figure 5: Flow Direction Outbound

Set Flow Data Type to JSON. Hive BDC reads the invoice data in this format.

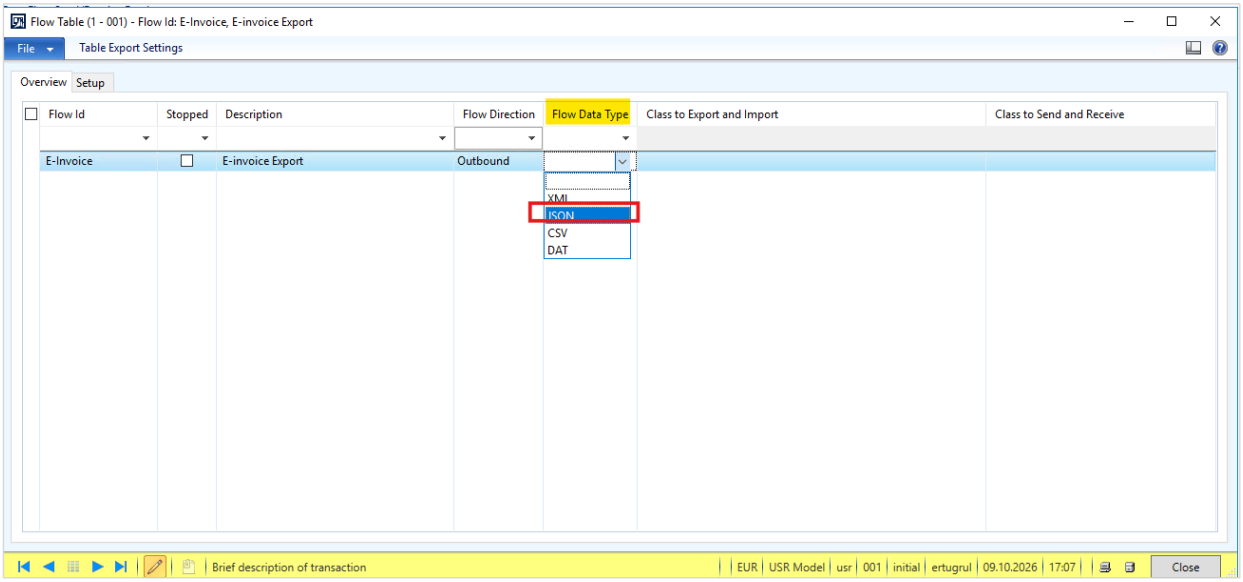

Figure 6: Flow Data Type JSON

In Class to Export and Import select BDC E-Invoice JSON Export. This class collects the invoice data.

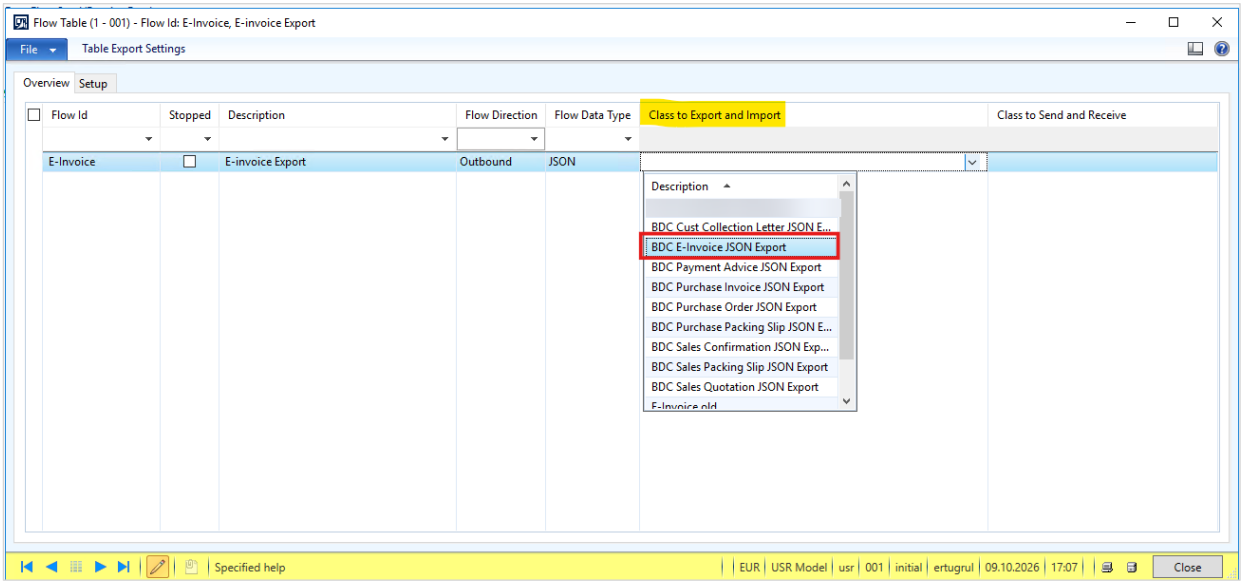

Figure 7: Class to Export and Import

In Class to Send and Receive select BDC Send File. This class writes the files into the export folder.

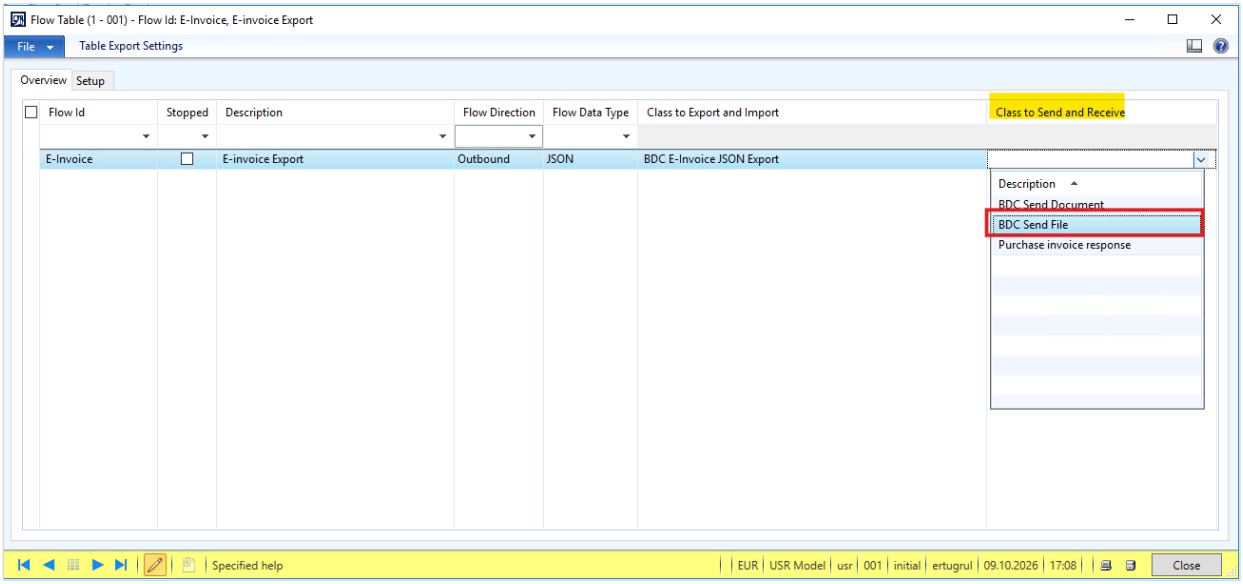

Figure 8: Class to Send and Receive

Field	Value for the e-invoice	Meaning
Flow Id	E-Invoice	Name of the flow. It is selected in the document types and in both batch jobs.
Stopped	Empty	A stopped flow takes no new invoices.
Description	Free text	Shown next to the Flow Id in all selection lists.
Flow Direction	Outbound	Data leaves AX.
Flow Data Type	JSON	Format of the invoice data file.
Class to Export and Import	BDC E-Invoice JSON Export	Builds the invoice message.
Class to Send and Receive	BDC Send File	Writes PDF and JSON into the export folder.

4.3 Flow Table: the export folder

Switch to the Setup tab. The Rest Api Settings are not used for the e-invoice. Under File Settings enter the export folder in File Path to Export/Import for Pending. Use a network path, not a local drive letter, so that the Hive BDC service can read it as well.

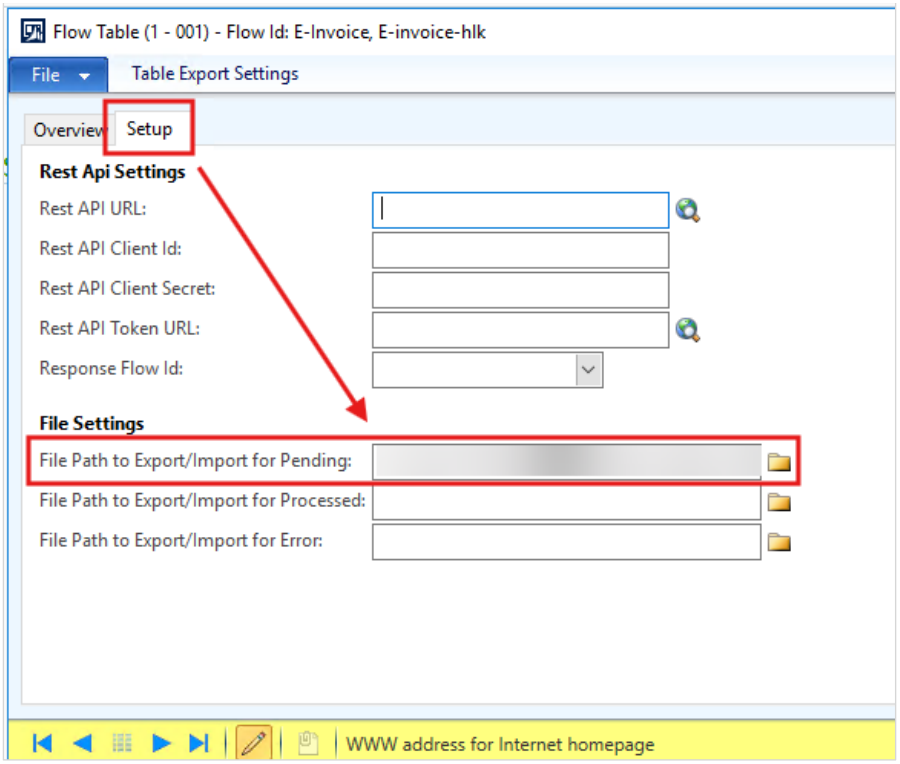

Figure 9: Export folder in File Path to Export/Import for Pending

Note: This path must be exactly the same folder that Hive BDC reads as its input folder, see chapter 6.3. If the two paths differ, the files are written but never converted.

4.4 Document management parameters

Choose Parameters in the Setup group. The form Document management parameters opens on the General tab. The section E-Invoice holds the settings that apply to every e-invoice of the company.

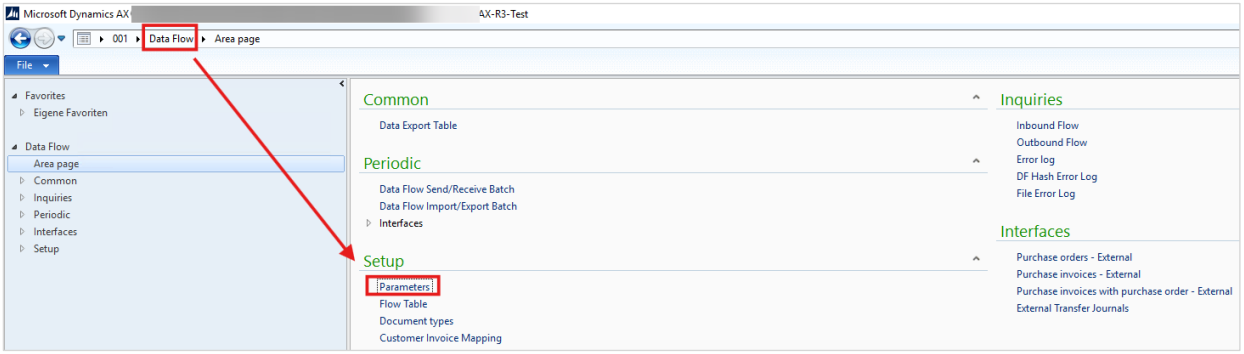

Figure 10: Parameters in the Setup group

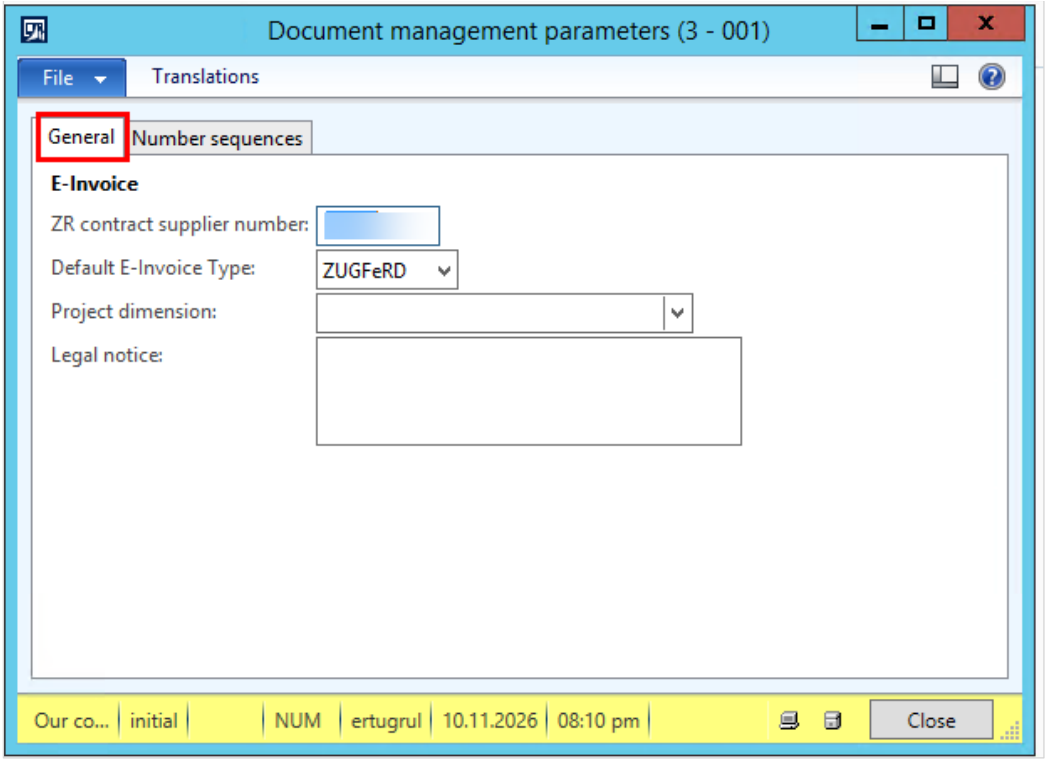

Figure 11: Document management parameters, General tab

ZR contract supplier number

Enter the supplier number your company has at the central settlement (ZR) provider. For customers that settle through a ZR provider, this number is passed on with each invoice so that the provider can assign it to you. If you do not work with a ZR provider, leave the field empty.

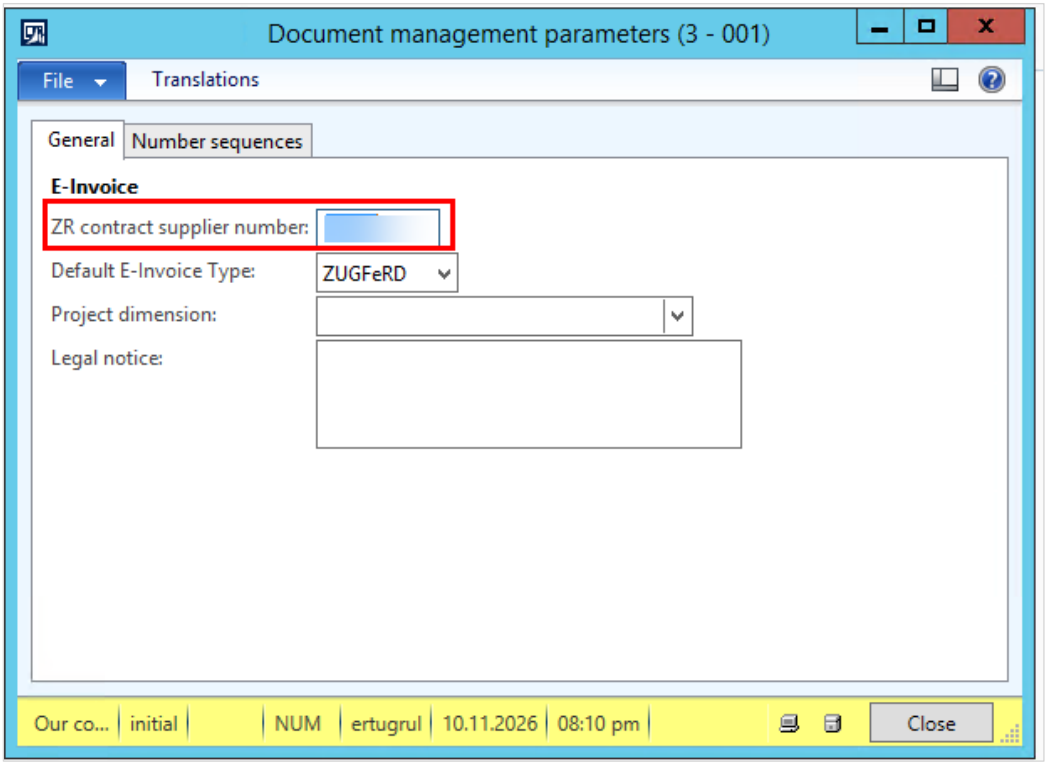

Figure 12: ZR contract supplier number

Default E-Invoice Type

This is the format used for every customer that has no format of its own. None means no e-invoice is created, XRechnung creates a pure XML file, ZUGFeRD creates a PDF with embedded invoice data. If a customer has its own E-Invoice Type in the customer master data (chapter 4.7), that type is used instead of the default.

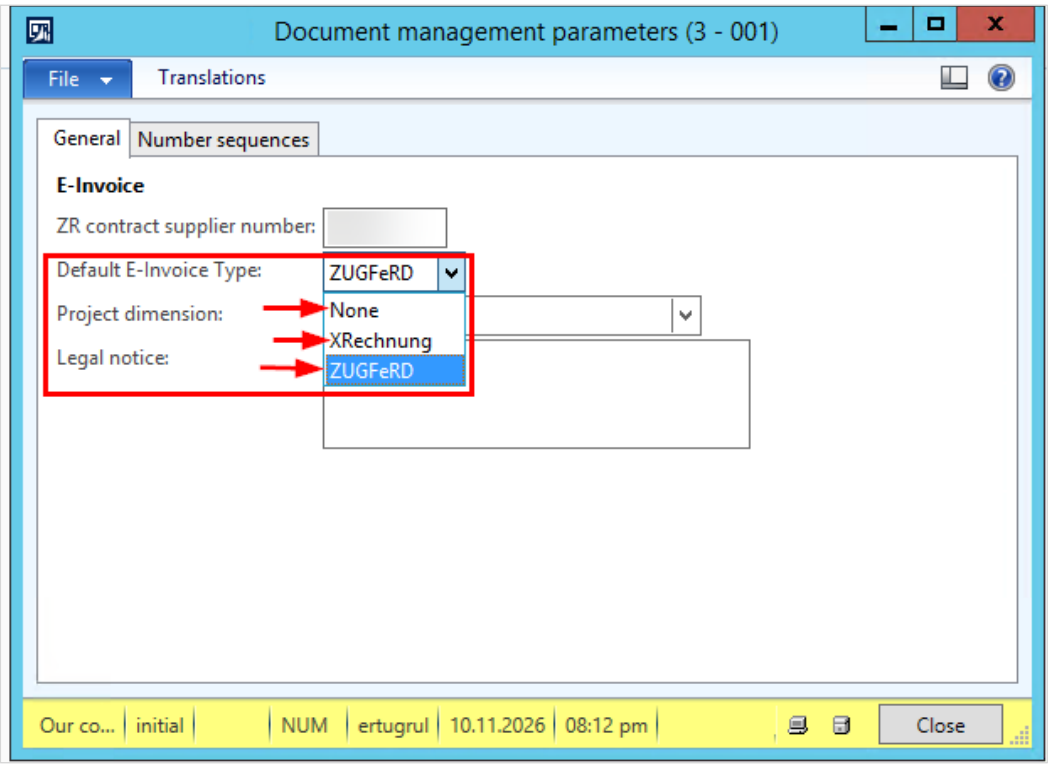

Figure 13: The three values of Default E-Invoice Type

Project dimension

Select the financial dimension that holds your project number. When an invoice carries a value in this dimension, the project number and the project name are written into the invoice data, so that they appear on the e-invoice. Leave the field empty if you do not invoice by project.

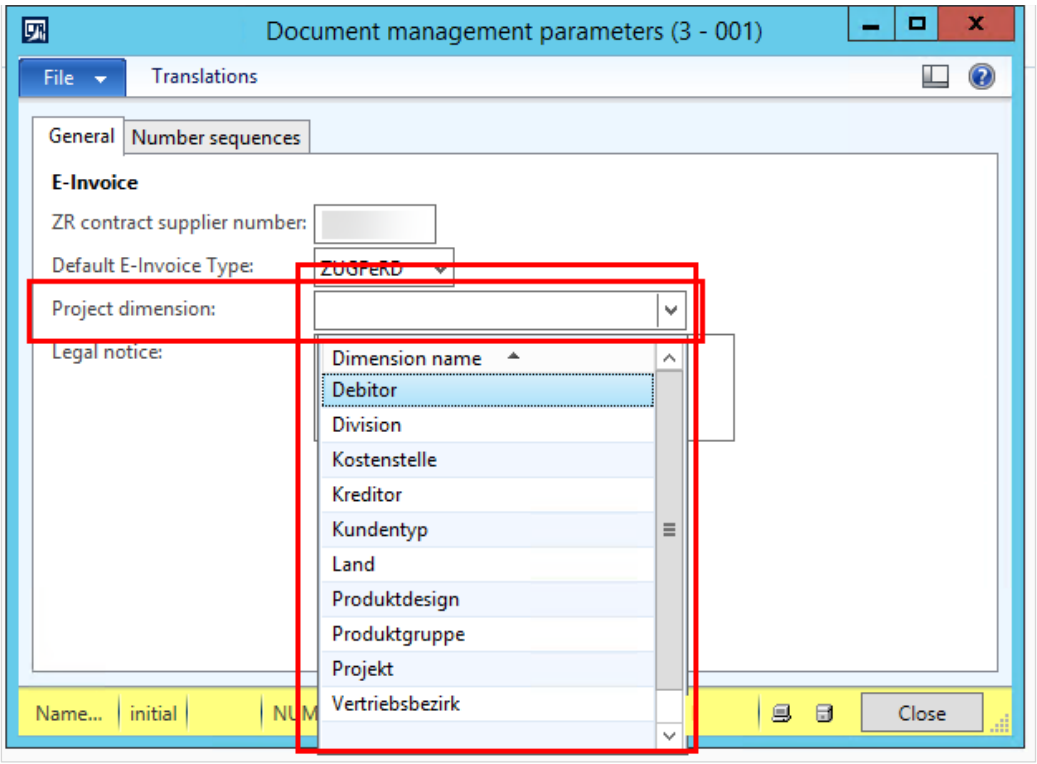

Figure 14: Project dimension with the list of financial dimensions

Legal notice

The text in Legal notice is added to every e-invoice, for example a note on the registered office or the managing directors. It is the default text for all languages.

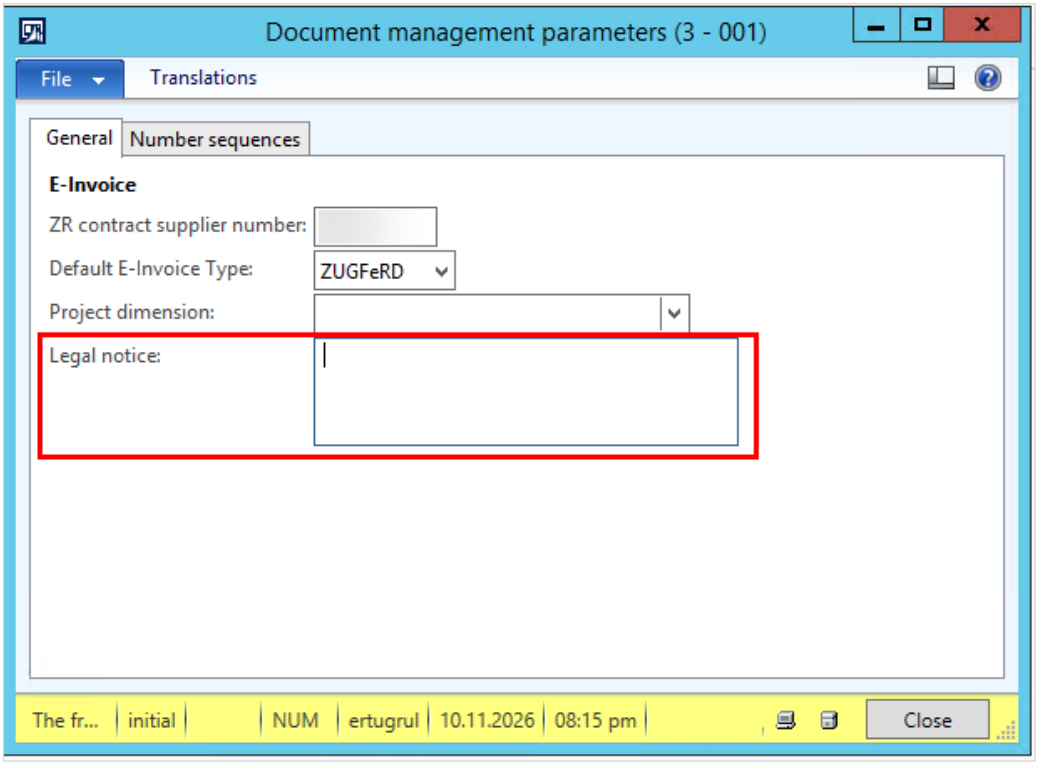

Figure 15: Legal notice

If your customers need the notice in their own language, choose Translations in the action bar (1). In the Translations form choose New (2) and select the Language (3).

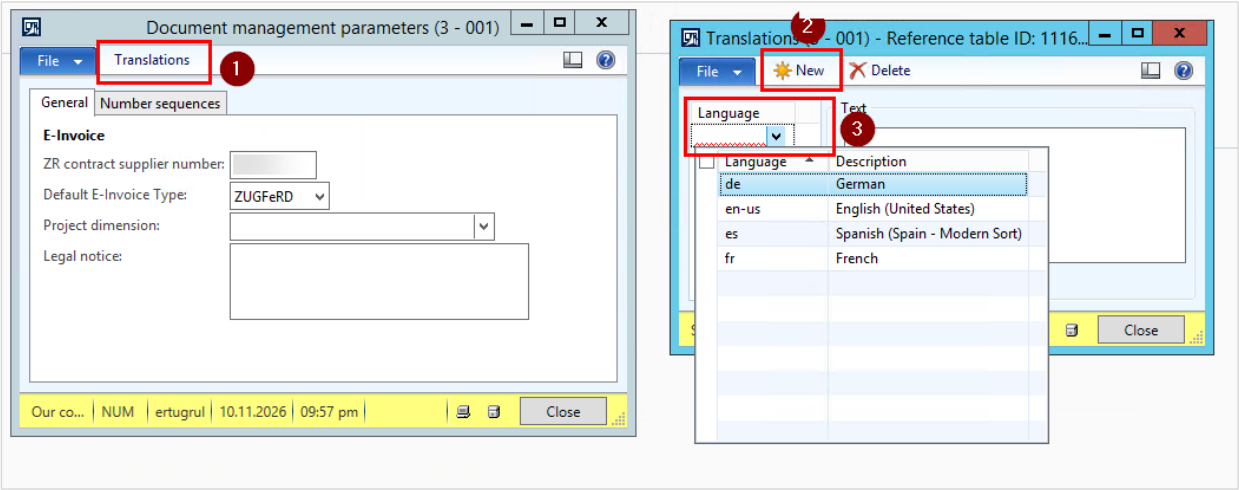

Figure 16: Translations: new line and language

Enter the translated notice in Text and close the form. For each invoice the text in the invoice language is used; if there is no translation for that language, the default text from the Legal notice field is used.

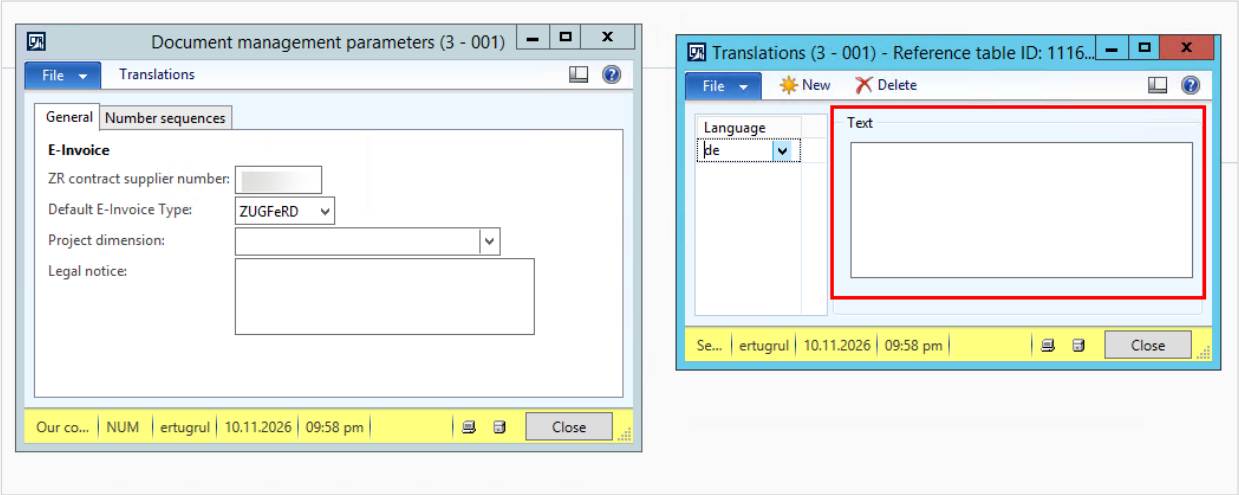

Figure 17: Translated text of the legal notice

Number sequences

Switch to the Number sequences tab. Every message that the Data Flow creates gets its own number from a number sequence. Assign a Number sequence code to both references, here MQ_In and MQ_Out.

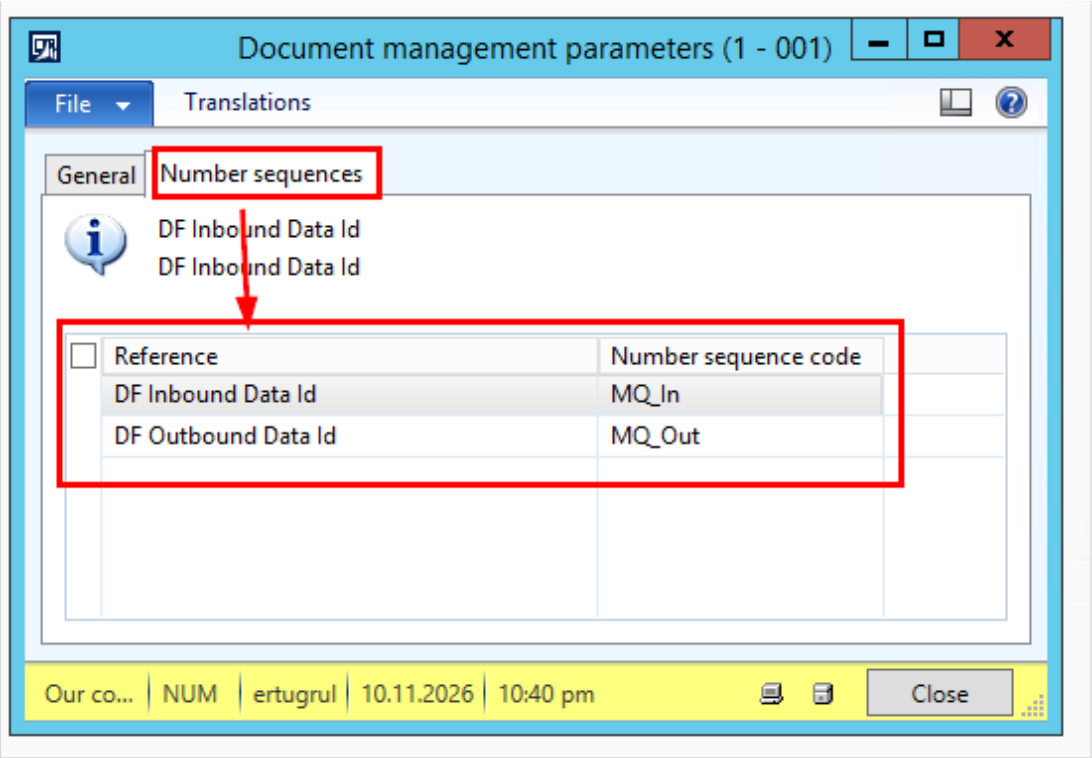

Figure 18: Number sequences tab with the two references

Reference	Used for
DF Outbound Data Id	The number of every message in Outbound Flow, for example 001-000000289. Required for sending e-invoices. Without it the Data Flow Import/Export Batch cannot create the message.
DF Inbound Data Id	The number of every message in Inbound Flow. Needed when documents are received into AX.

Note: Both number sequences are set up per company, with automatic numbering. If the codes do not exist yet, create them in Organization administration > Number sequences.

4.5 Document types

The document types connect a kind of document to its flow. Only document types that are listed here and set to Active are sent. Choose Document types in the Setup group.

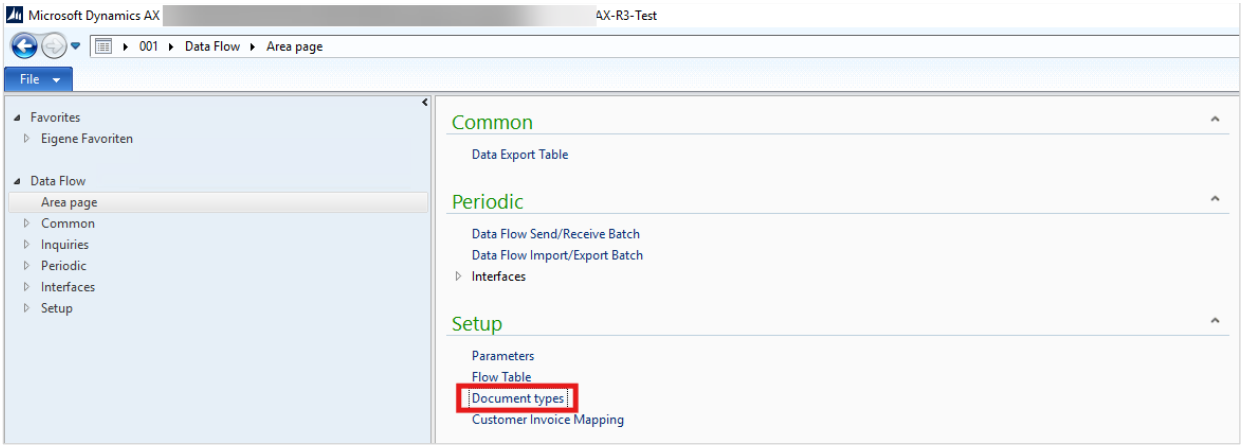

Figure 19: Document types in the Setup group

Choose New and select Sales invoice in the Document type column. Each document type can be listed once.

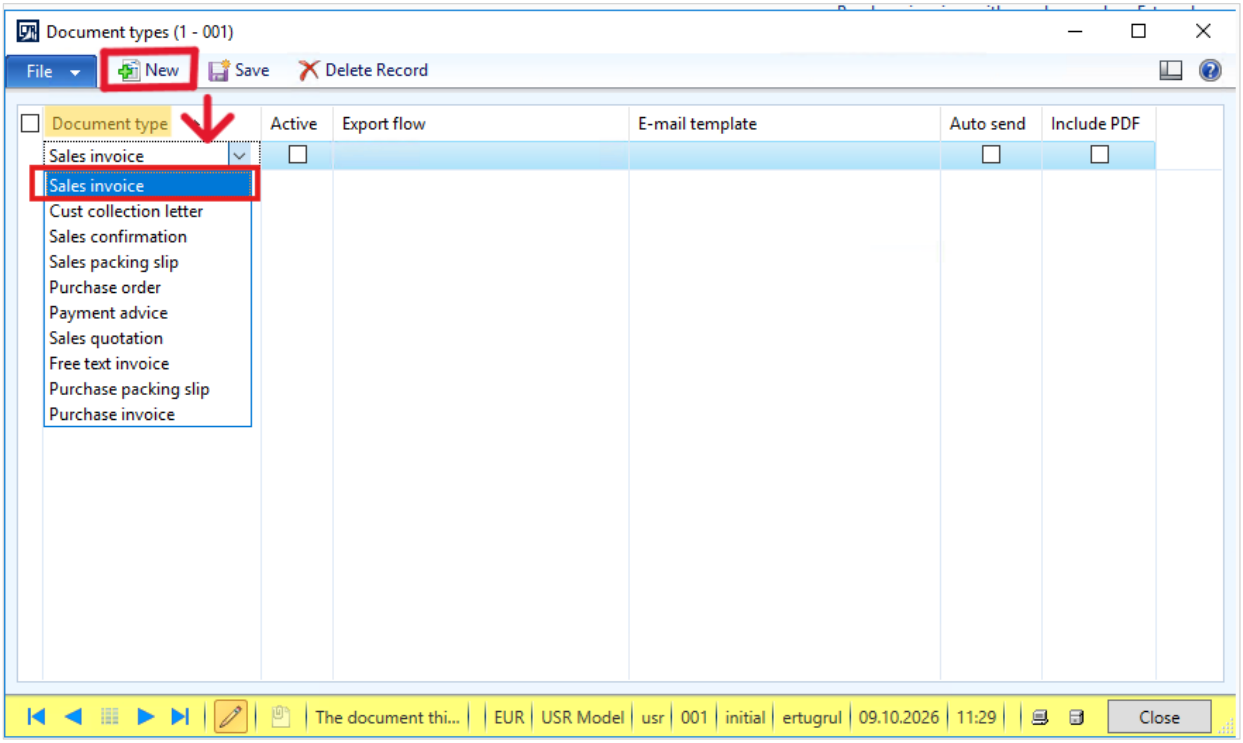

Figure 20: New line with the document type Sales invoice

Set Active. A document type that is not active is never sent, neither automatically nor by hand.

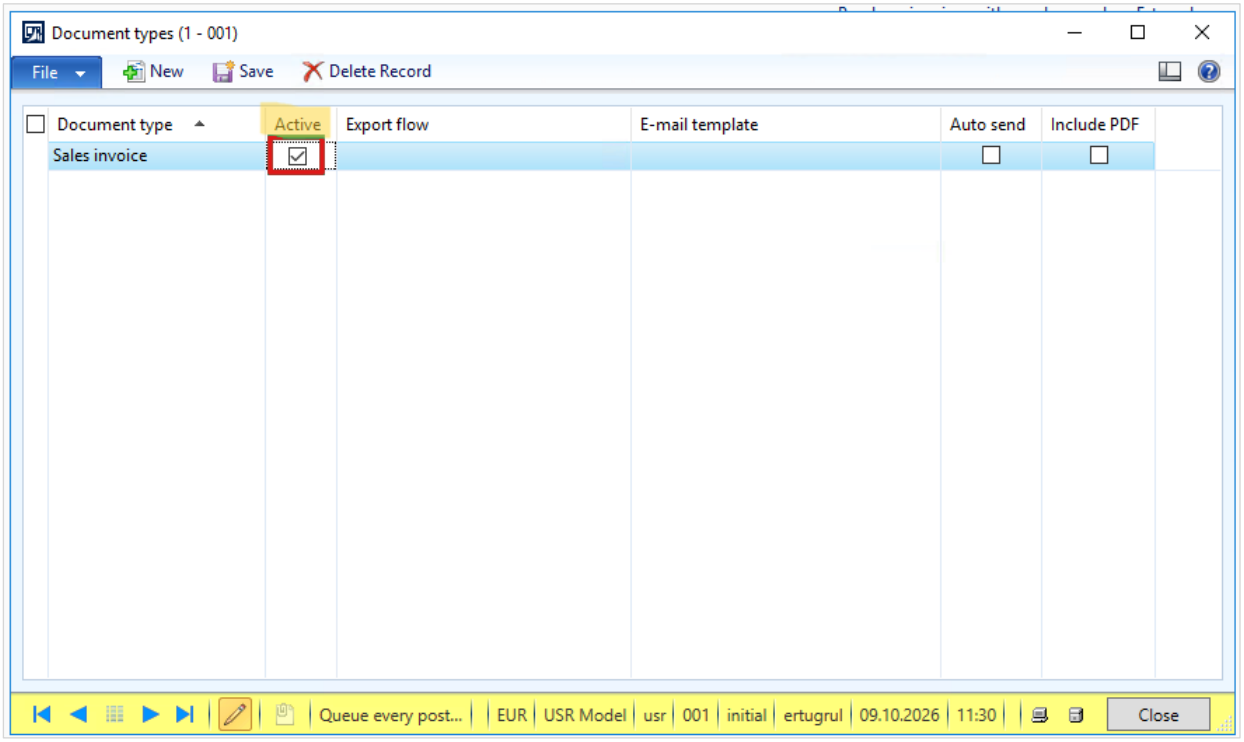

Figure 21: Active is set

In Export flow select the flow you created in chapter 4.2.

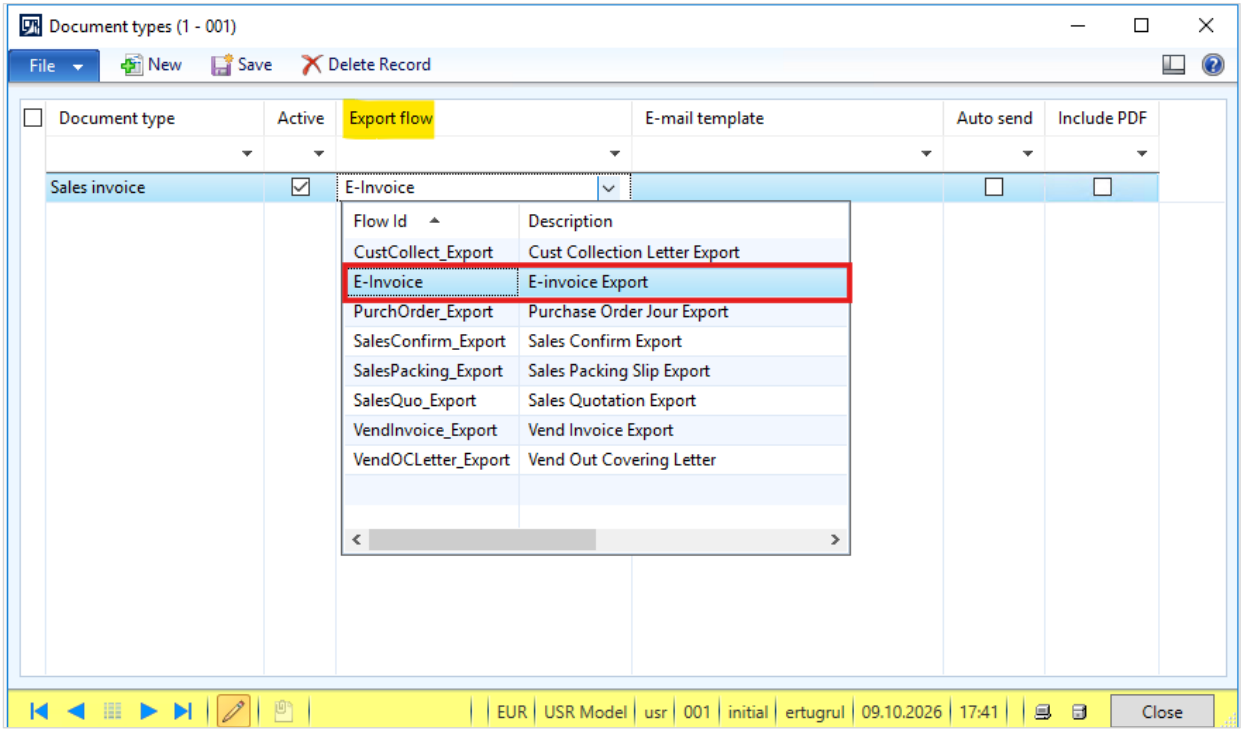

Figure 22: Export flow E-Invoice

In E-mail template select the AX e-mail template whose subject and text are used for the mail to the customer, here SalesInv. The text is taken in the customer's language if the template has one. Subject and text from Lasernet print management take priority, see chapter 4.8.

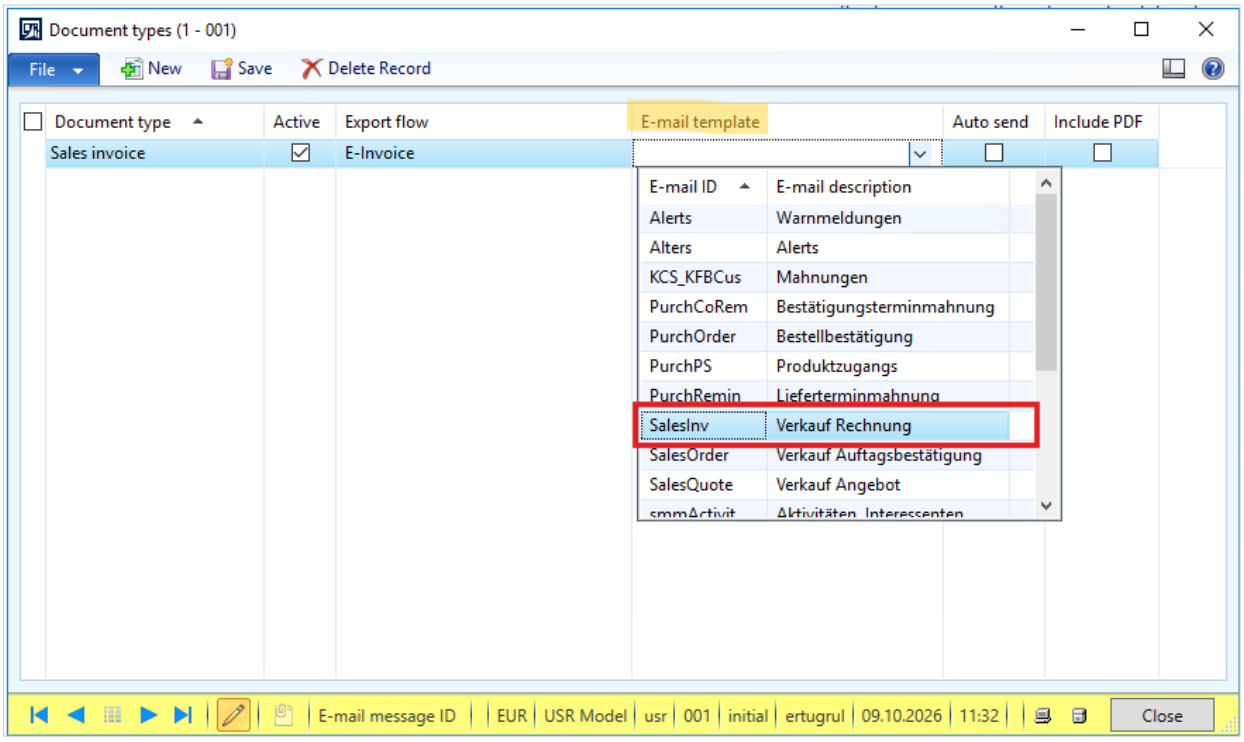

Figure 23: E-mail template SalesInv

Set Auto send if every invoice is to be queued automatically when it is posted (chapter 5.1). Without Auto send, posting does not queue the invoice; it can still be sent by hand with Send Hive Docflow (chapter 5.2).

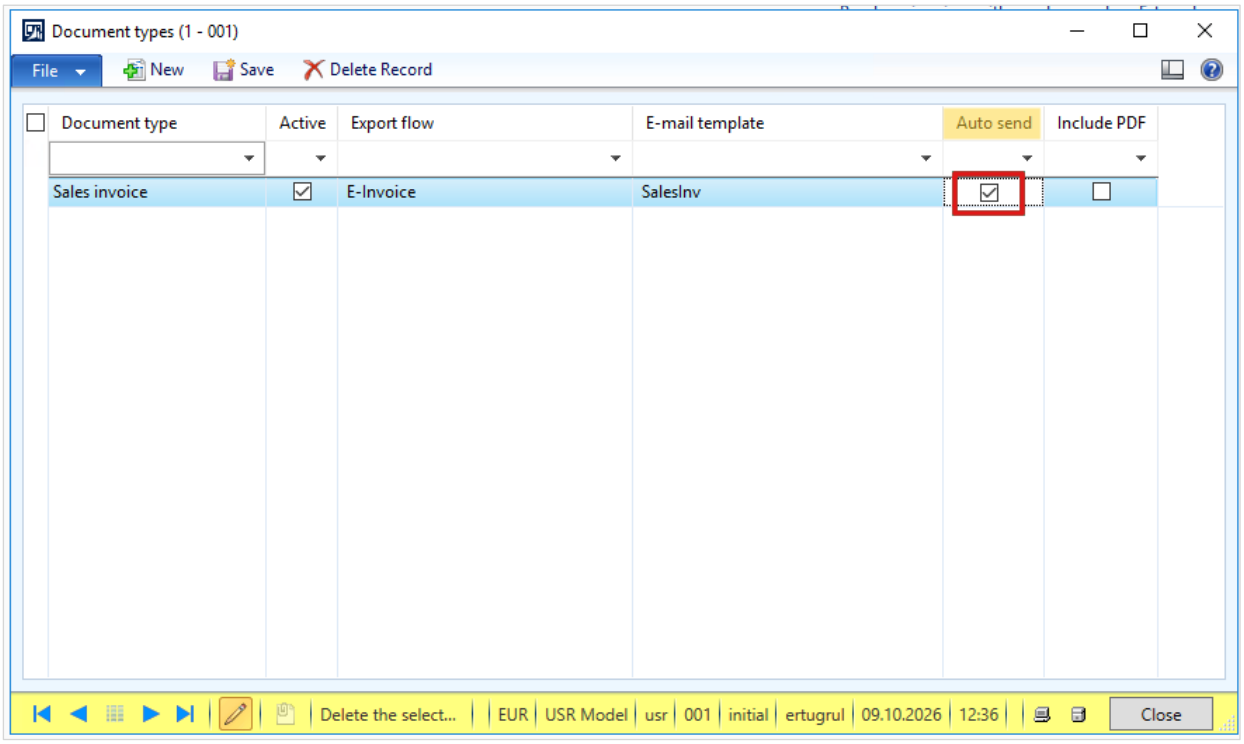

Figure 24: Auto send is set

Set Include PDF so that the invoice PDF is written next to the invoice data. For ZUGFeRD the PDF is the basis of the e-invoice.

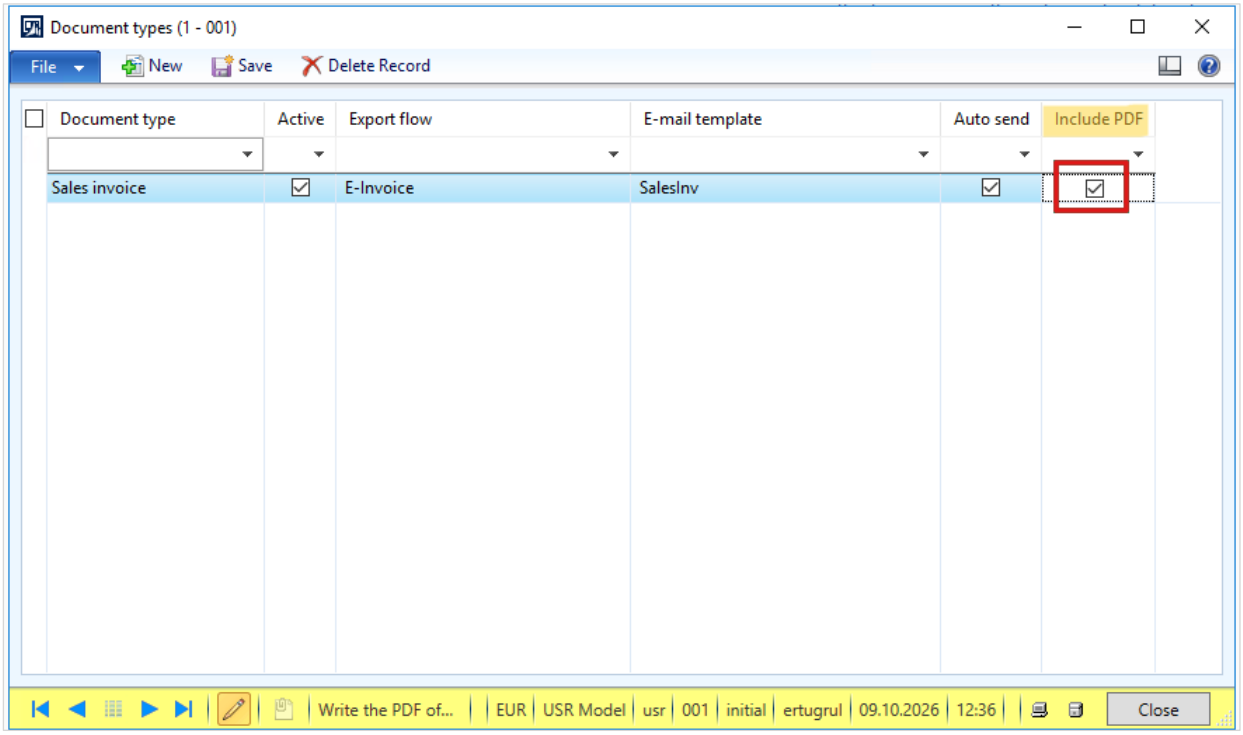

Figure 25: Include PDF is set

Column	Meaning
Document type	The kind of document, for example Sales invoice, Free text invoice or Purchase order. Each type can be listed once.
Active	Switches sending for this type on and off.
Export flow	The flow from chapter 4.2 that carries this type.
E-mail template	Subject and text of the e-mail to the recipient.
Auto send	Queues every posted document of this type automatically.
Include PDF	Writes the document PDF together with the data file.

4.6 Customer Invoice Mapping

The invoice data that AX hands to Hive BDC contains a fixed set of fields, for example invoice number, dates, amounts, tax, bank details and recipient. With Customer Invoice Mapping you add further fields of the posted invoice to this data, without any development. A typical use is a field that a SharePoint column should show (chapter 6.5). Choose Customer Invoice Mapping in the Setup group.

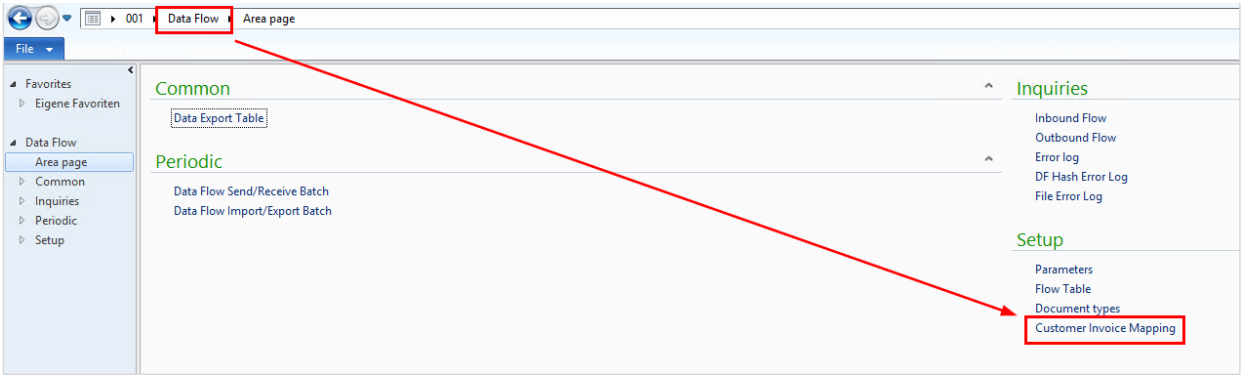

Figure 26: Customer Invoice Mapping in the Setup group

The form has two grids. Header Mapping (1) adds fields of the invoice header (table CustInvoiceJour), which appear once per invoice. Line Mapping (2) adds fields of the invoice lines (table CustInvoiceTrans), which appear on every line.

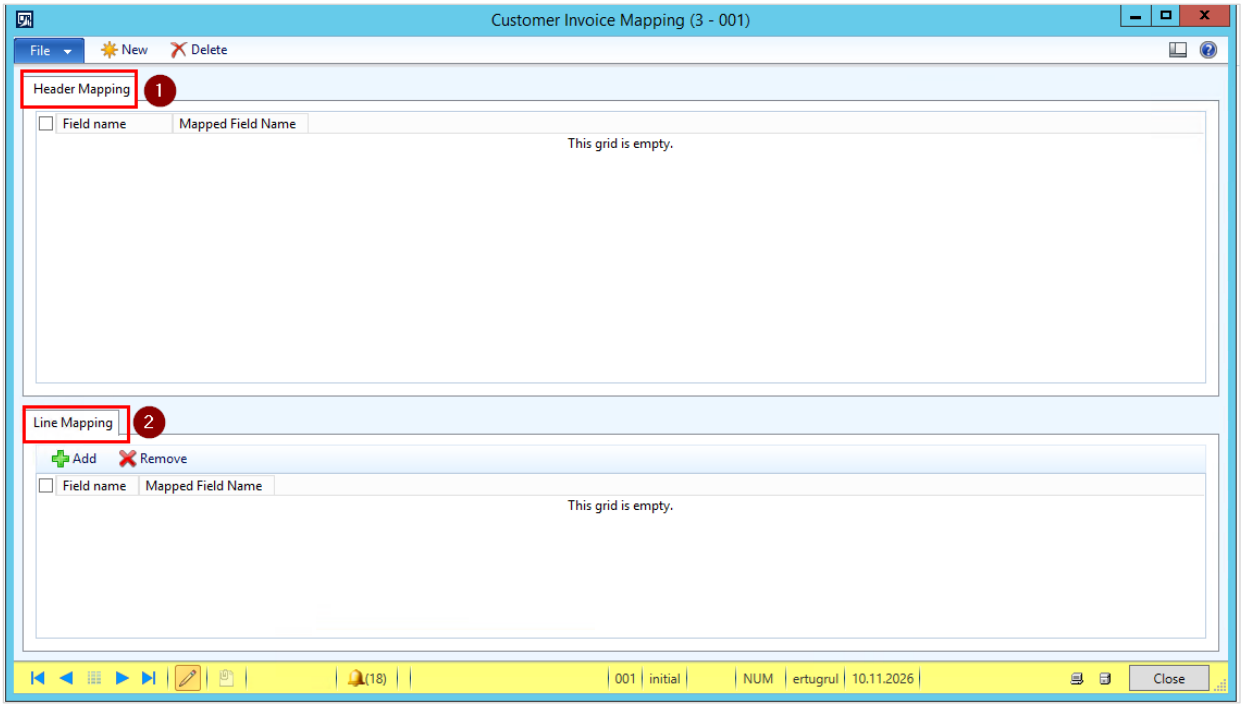

Figure 27: Header Mapping and Line Mapping

Adding a header field

Choose New and select the AX field in Field name. The lookup shows the technical name and the caption of every field of the invoice header.

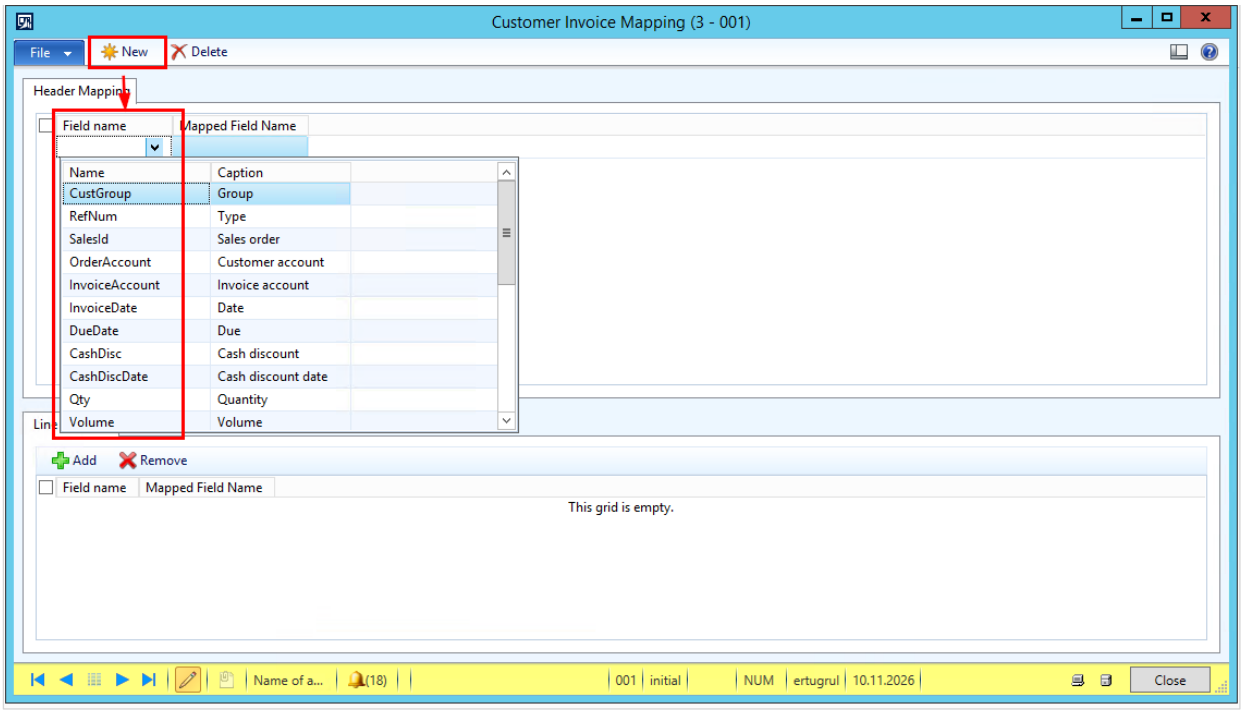

Figure 28: New header mapping: selecting the AX field

In Mapped Field Name enter the name under which the value appears in the invoice data. Hive BDC and the SharePoint column templates use exactly this name, so keep it short and without spaces, for example customerGroup.

Adding a line field

In the Line Mapping grid choose Add and select the field of the invoice line, here LineNum. Enter the Mapped Field Name in the same way as for the header.

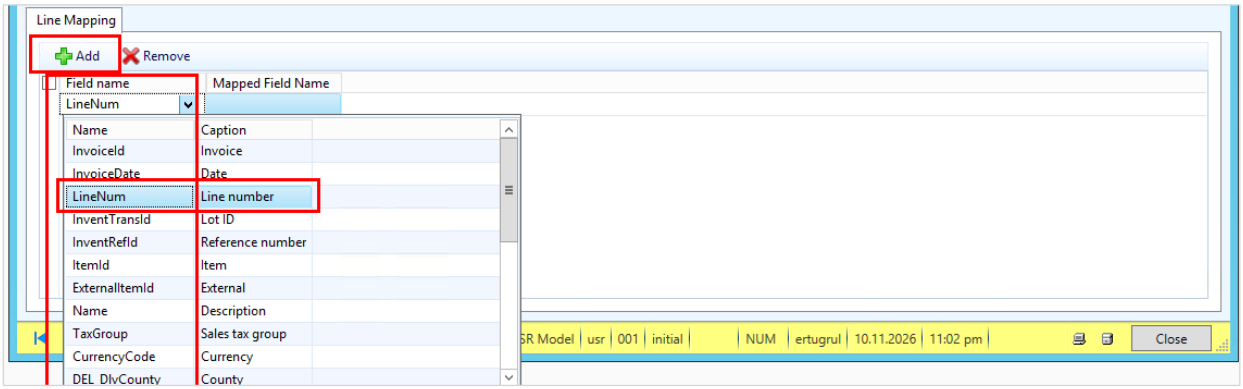

Figure 29: Line mapping: selecting the AX field, here LineNum

Note: Names that the invoice data already uses, for example invoiceNumber, dueDate or recipientEmail, are reserved. A mapping with such a name is ignored, so that a mapping can never overwrite the standard e-invoice content.

4.7 Customer master data: e-invoice type and e-mail address

Each customer can have its own e-invoice format. Open the customer in Accounts receivable > Common > Customers > All customers and choose Edit. In the section E-Invoice select the E-Invoice Type. With None the default from the parameters (chapter 4.4) is used.

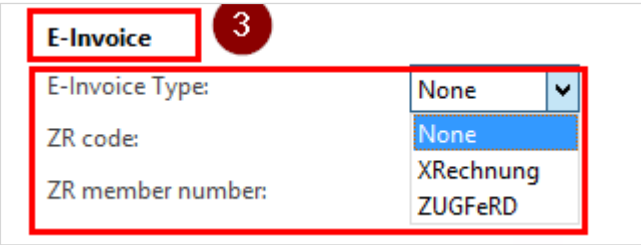

Figure 30: Customer master data, E-Invoice section

Field	Meaning
E-Invoice Type	None = use the Default E-Invoice Type from the parameters; XRechnung or ZUGFeRD = always this format for this customer.
ZR code / ZR member number	Only for customers that settle through a central settlement (ZR) provider. Passed on with the invoice.

If no recipient is set in print management (chapter 4.8), the invoice is mailed to the e-mail address of the customer. Add it on the Contact information FastTab with the Type E-mail address. If the customer has more than one e-mail address, mark the invoice address as Primary.

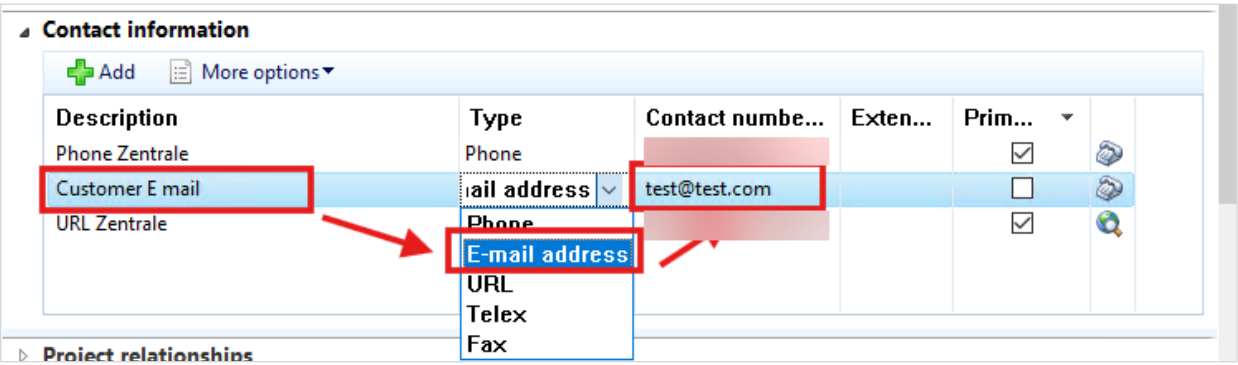

Figure 31: E-mail address in the contact information of the customer

4.8 Print management: Lasernet e-mail recipients

If the invoices of a customer go to a special mailbox, or a copy must go to a second address, set the recipients in the customer's print management. Hive BDC reads them from there. On the customer choose General > Print management, open Customer invoice > Original, set Destination to Lasernet and open the Printer setup.

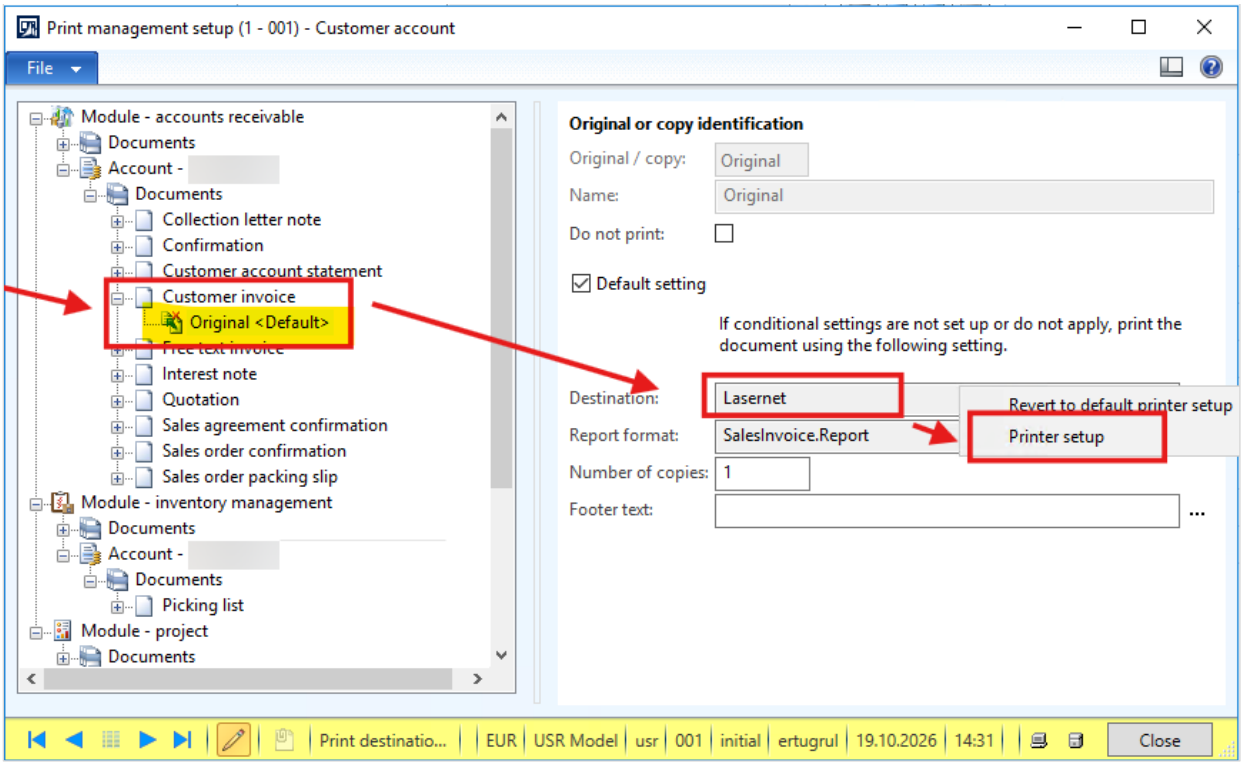

Figure 32: Print management of the customer, Customer invoice with destination Lasernet

In Print destination settings select Lasernet, set Destination type to Email and enter the recipient in To and, if needed, a copy recipient in Cc. Subject and body entered here are used for the mail as well.

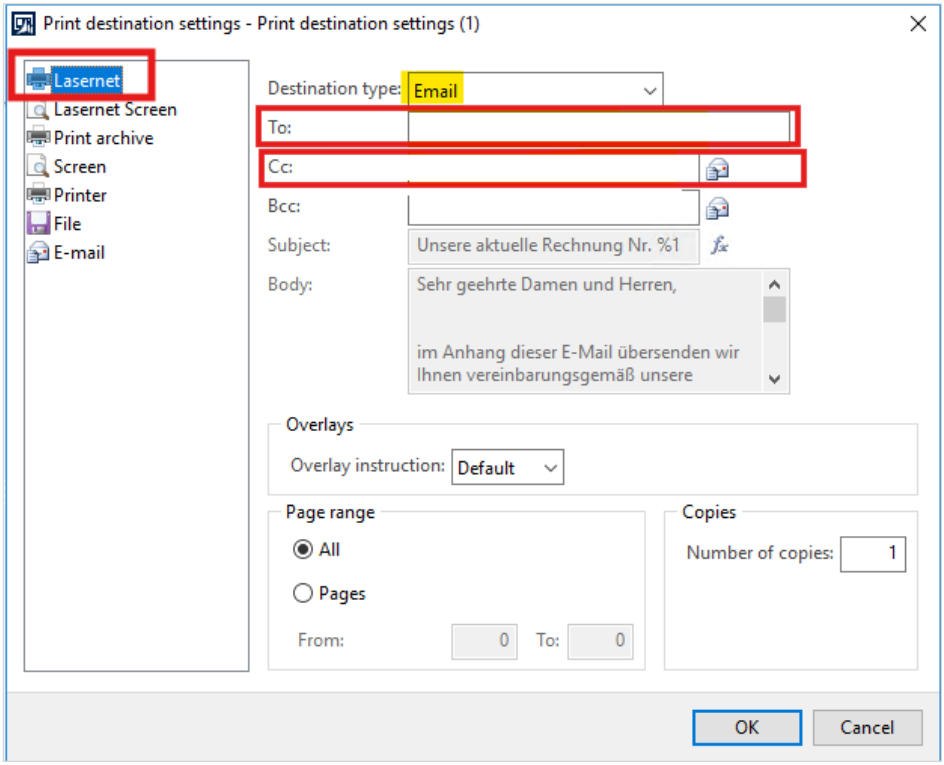

Figure 33: Lasernet print destination with To and Cc

The recipient of an invoice mail is found in this order:

1. To, Cc, subject and body from the Lasernet print destination of the customer's invoice.
2. If there is no To address: the e-mail address of the customer (chapter 4.7).
3. If there is no subject or body: the e-mail template of the document type (chapter 4.5), in the customer's language.

Note: Mails are only sent when Mail is On for the company in Hive BDC (chapter 6.4) and Send document mails is set under Connections > Document mail (chapter 6.7). From a test or development AX the mail goes to the test recipients instead.

5 Sending invoices

An invoice gets into the queue in one of two ways: automatically when it is posted (chapter 5.1), or by hand with the Send Hive Docflow button (chapter 5.2). From the queue on, both ways follow the same steps 1 to 6.

5.1 Automatic trigger: sending on posting

With the automatic trigger you do not have to do anything. Whenever a document is posted, AX checks whether it has to be sent and, if so, writes one line into the Data Export Table. A posted sales invoice is queued when all of these points are true:

- The document type Sales invoice is Active and Auto send is set (chapter 4.5).
- The Export flow of the document type exists, is Outbound and is not Stopped (chapter 4.2).
- The invoice is a real posted invoice. Pro forma invoices are never sent.
- The invoice is not already waiting in the queue. Each posted document is queued once per flow.

Sales invoices and free text invoices are separate document types, so each can have its own flow and its own Auto send setting. The same automatic trigger works for the other document types in the list, for example sales confirmation, packing slip, quotation, collection letter, purchase order, project invoice or payment advice, as soon as they are set up in Document types.

Note: The trigger runs inside the posting. If something is not set up, nothing is queued and the posting itself is never stopped. If an expected invoice does not appear in the Data Export Table, check the points above, or send it by hand as described in chapter 5.2.

5.2 Manual trigger: Send Hive Docflow

Use the manual trigger to send an invoice that was posted before the setup was complete, to send an invoice again, or when Auto send is switched off. Open the invoice journal, for example from the sales order:

1. Go to Accounts receivable > Common > Sales orders > All sales orders.
2. Select the sales order and open the Invoice tab of the action pane.
3. In the group Journals choose Invoice.
4. The form Invoice journal opens with the posted invoices of the order.

5. Select the invoice you want to send. You can select several lines at once.
6. Choose Send Hive Docflow in the action bar.

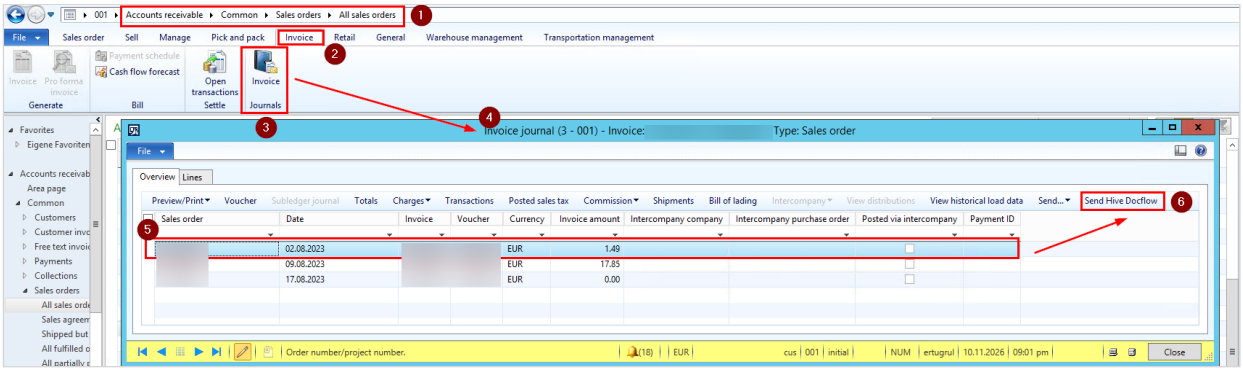

Figure 34: Manual sending from the Invoice journal with Send Hive Docflow

AX asks you to confirm. If the invoice was already sent before, the question tells you so. After you confirm, AX writes a line into the Data Export Table for every selected invoice and shows how many were queued and how many were skipped.

Situation	Result
Document type is not Active or has no Export flow	An error message; nothing is queued.
Invoice is still waiting in the queue	The invoice is skipped with a message, so that it is not sent twice.
Invoice was sent before	It is queued again after your confirmation and sent once more.
Selected lines of another document type	They are ignored and counted in a warning.

The button is available on the journal forms of all supported documents, for example the customer invoice journal, free text invoices, open customer invoices, sales confirmations, packing slips, quotations, collection letters, purchase orders, vendor invoices, project invoices and vendor payment journals.

Note: The manual trigger ignores Auto send. Active and Export flow of the document type are still required.

5.3 Step 1: The invoice arrives in the Data Export Table

Open Data Export Table from the Data Flow area page, group Common.

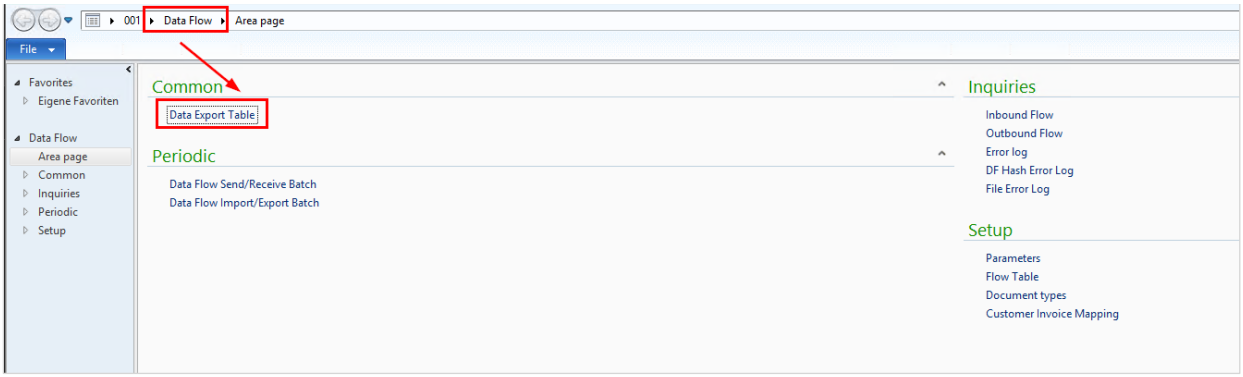

Figure 35: Data Export Table in the Common group

The new line has the status Created. This means the invoice is registered for export but has not been processed yet. The lines below have already been processed and show the status Exported.

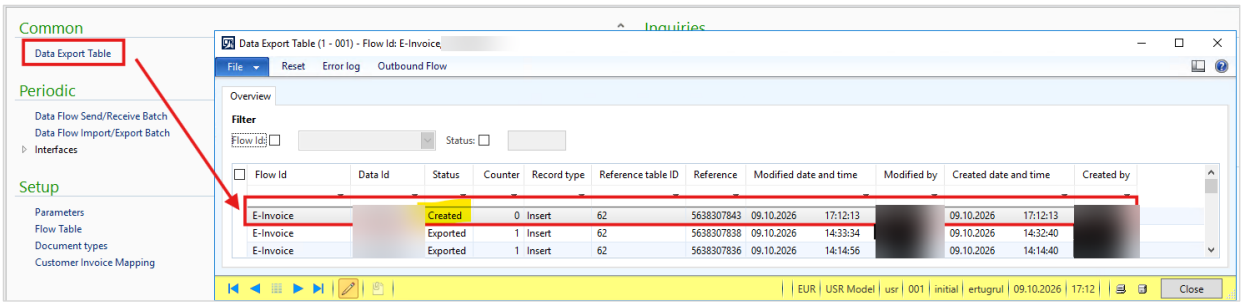

Figure 36: Data Export Table with a new line in status Created

Column	Meaning
Flow Id	The flow this line belongs to, here E-Invoice.
Data Id	The invoice number of the posted invoice.
Status	Created = waiting, Exported = already processed.
Counter	How often the line was processed.
Record type	Insert for a new invoice.
Reference table ID / Reference	Technical link to the posted invoice record in AX.
Modified / Created date and time, by	When the line was written and changed, and by which user.

5.4 Step 2: Run the Data Flow Import/Export Batch

This job takes the waiting lines and builds the invoice message from them. Open Data Flow Import/Export Batch in the Periodic group, select the flow E-Invoice in the Flow Id field and confirm with OK.

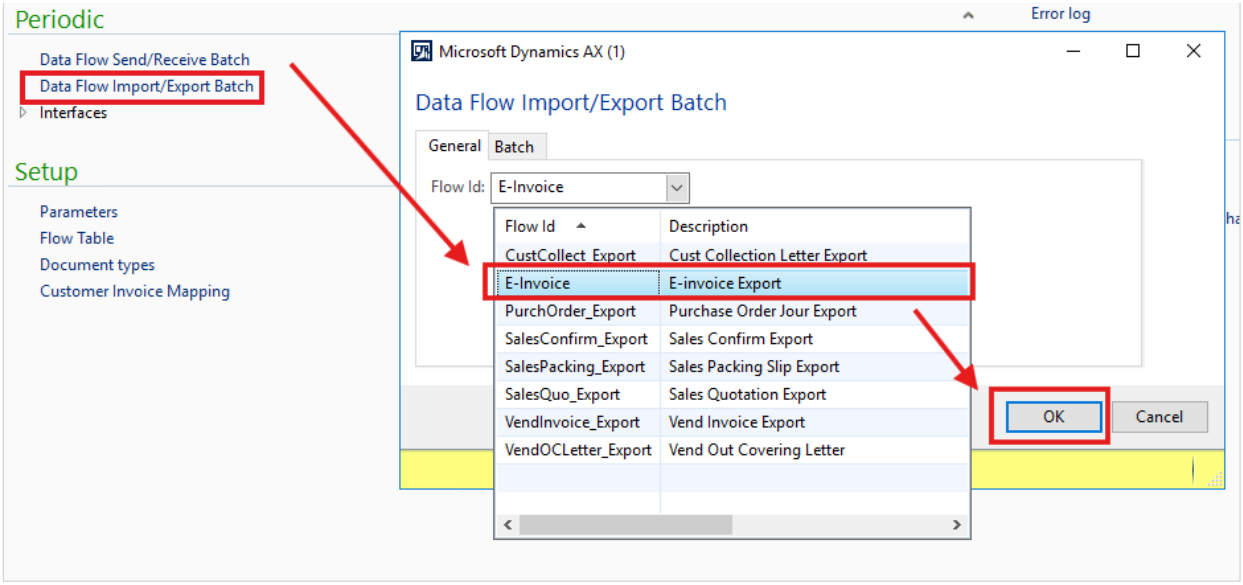

Figure 37: Data Flow Import/Export Batch with the flow E-Invoice

The job reads all data that belongs to the invoice, for example customer address, amounts, tax, payment and bank details, the recipient's e-mail address, the e-mail text and the fields from the Customer Invoice Mapping, and stores it as one message. The line in the Data Export Table changes to Exported.

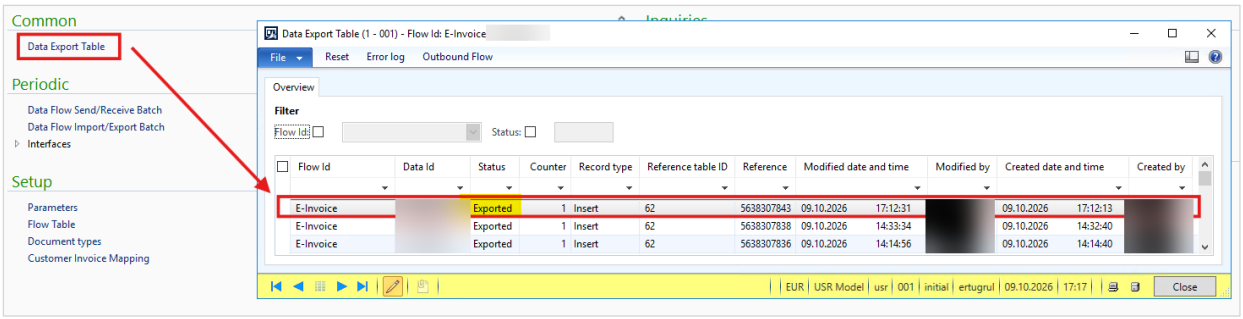

Figure 38: The line after the Import/Export Batch, status Exported

5.5 Step 3: Check the message in Outbound Flow

Outbound Flow shows every message that was created for sending. Open it from the Inquiries group. The newest message is at the top and has the status Created: it is prepared but not sent yet. The Outbound Data Id is the number you use when you talk to Balsoft support about a single invoice.

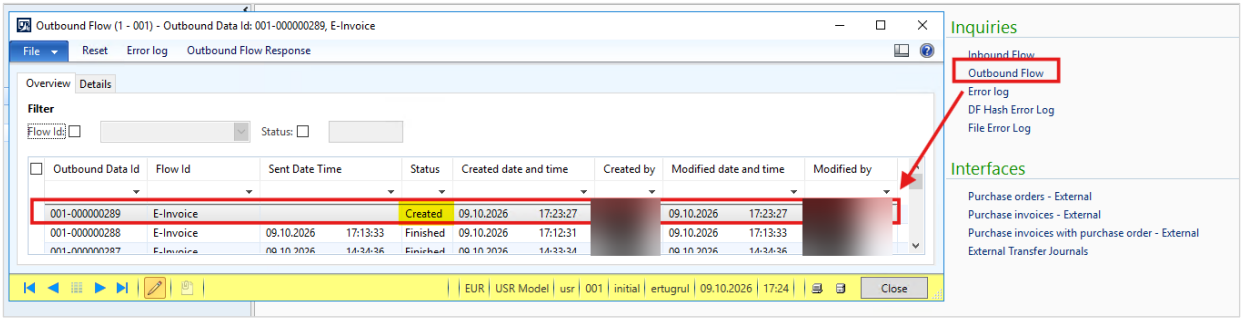

Figure 39: Outbound Flow with the new message in status Created

To see what will be sent, mark the line and switch to the Details tab, then to the sub-tab Formatted. Raw shows the same content as one long line; Formatted shows it in a readable form.

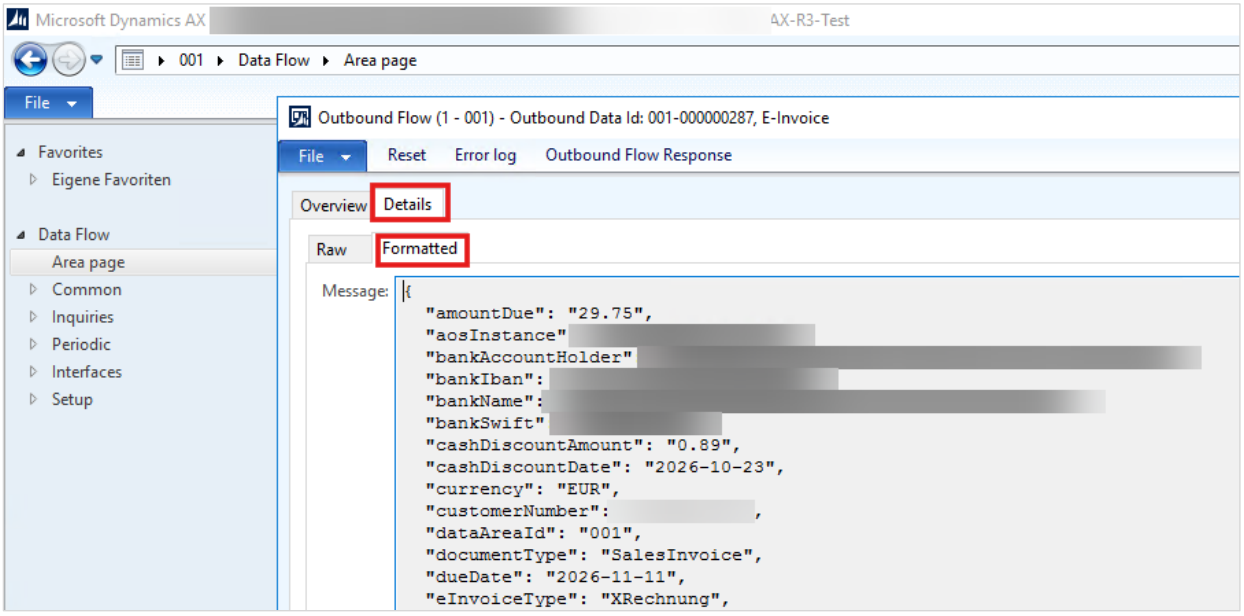

Figure 40: The invoice data of the selected message

5.6 Step 4: Run the Data Flow Send/Receive Batch

The second job writes the prepared message and the invoice PDF into the export folder. Open Data Flow Send/Receive Batch in the Periodic group, select the flow E-Invoice and confirm with OK.

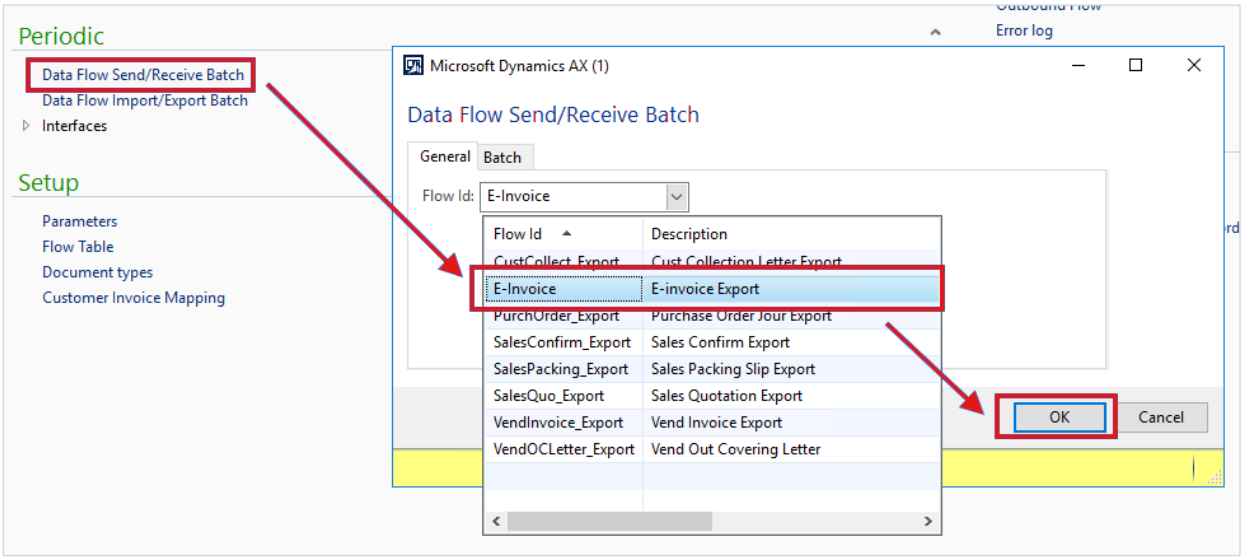

Figure 41: Data Flow Send/Receive Batch with the flow E-Invoice

After the job has finished, the message in Outbound Flow changes from Created to Finished and the Sent Date Time column is filled.

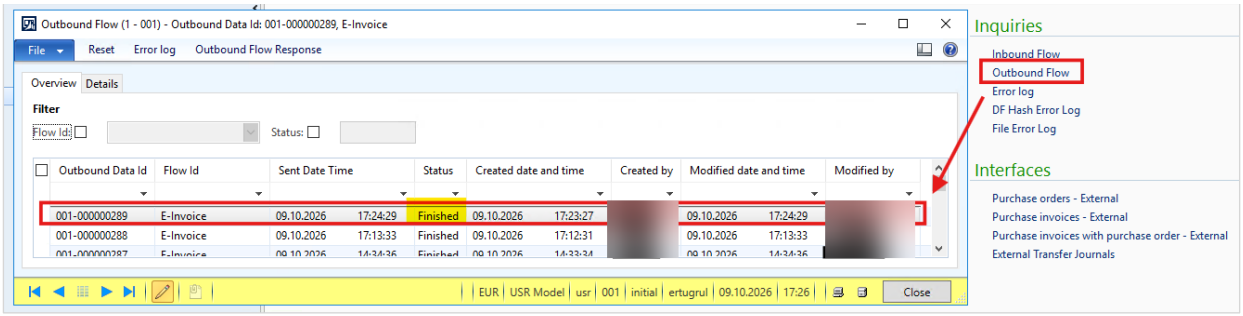

Figure 42: The message in status Finished

Tip: In daily use both batch jobs run on a schedule, set on the Batch tab of each dialog, so that posted invoices leave AX without anybody starting a job by hand.

5.7 Step 5: The PDF and JSON file in the export folder

Open the folder you entered in the Flow Table. For every exported invoice you find two files with the same name, one PDF and one JSON file. The file name is built from the invoice number and the customer number, for example RE-260045_K-10010. This is how the service recognises which two files belong together.

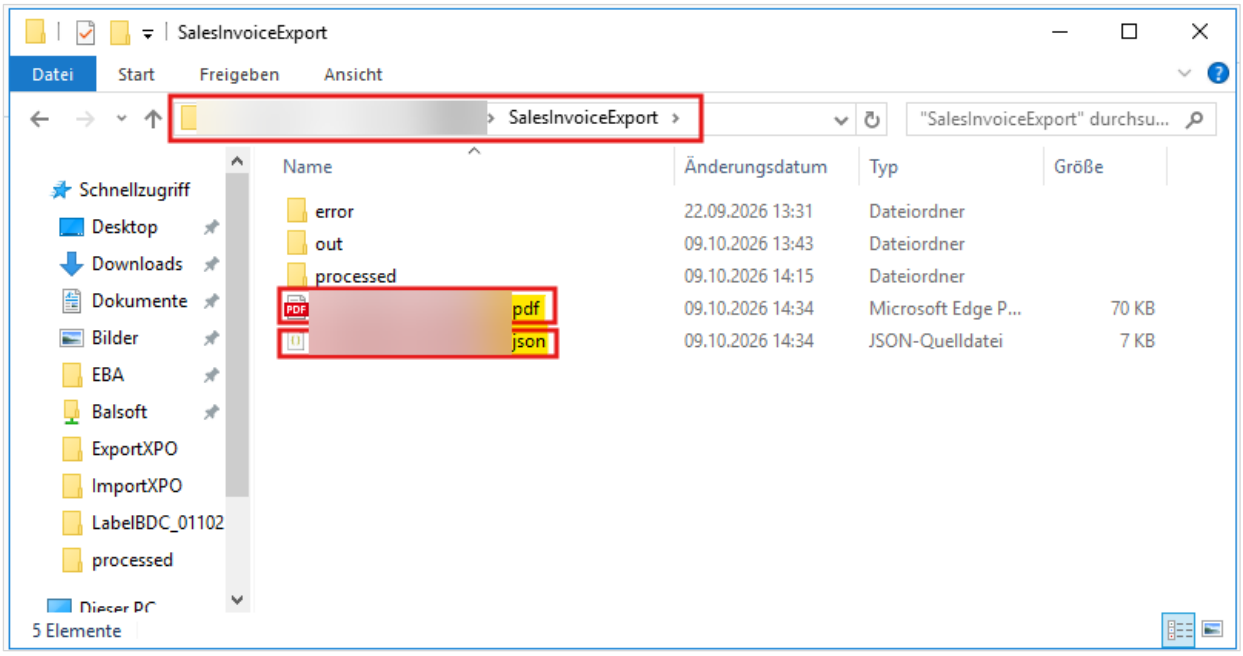

Figure 43: The export folder with the two files of one invoice

Item	Content
.json	The invoice data as text, the same content you saw in Outbound Flow.
.pdf	The printed invoice document.
out folder	The finished electronic invoices that Hive BDC created.
processed folder	The original PDF and JSON files after they were converted successfully.
error folder	Files that could not be converted. Every file here needs to be looked at.

Note: Do not delete, rename or move files in this folder by hand while the service is running. The service moves them itself as soon as it has finished with them.

5.8 Step 6: Hive BDC processes the files

Hive BDC runs as a Windows service on the server. It checks the export folder at a fixed interval, reads each new pair of files, creates the electronic invoice in the configured format, mails it to the customer and uploads it to SharePoint where this is set up.

Open Hive BDC Dashboard from the Start menu of the server. The page Overview shows the exports of today (1), whether the service is running (2) and until when the licence is valid (3). Recent exports (4) lists the last documents with type, format, time and size. All documents (5) opens the full list.

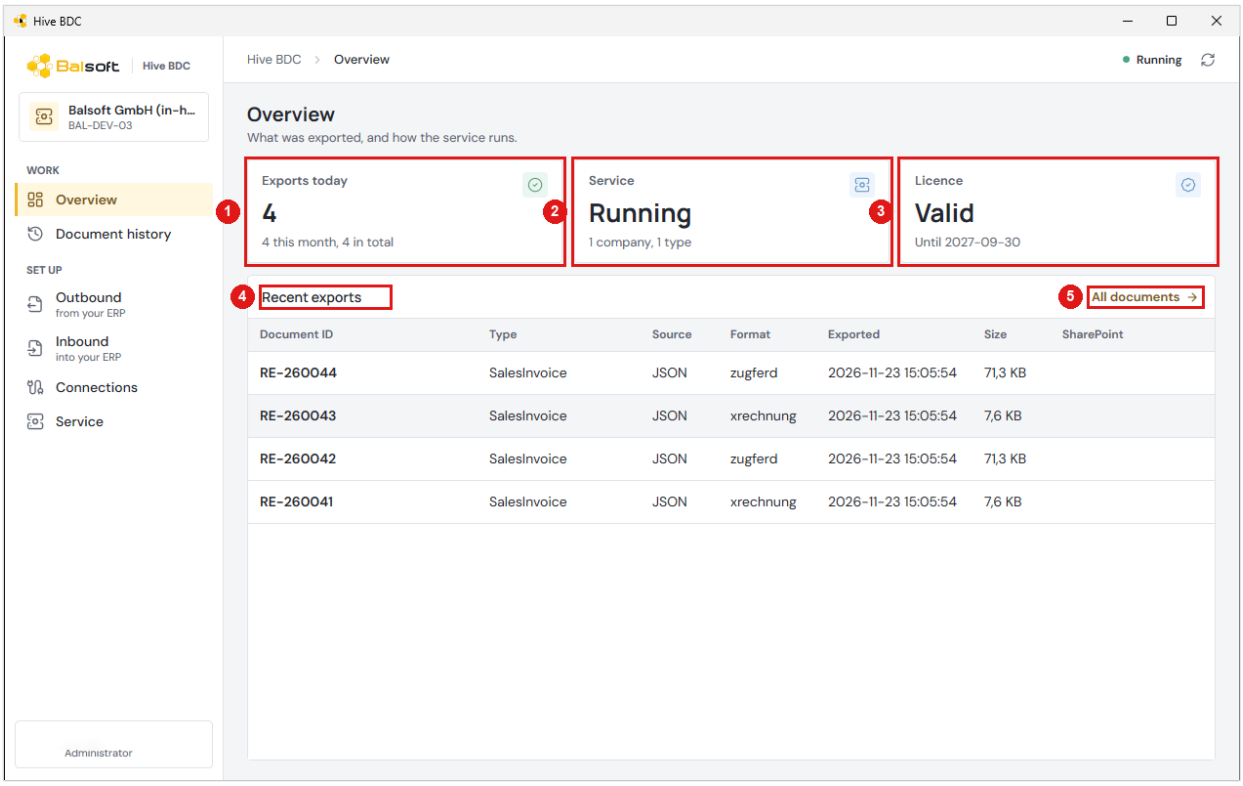

Figure 44: Overview in the Hive BDC dashboard

An invoice marked as XRechnung becomes one XML file, an invoice marked as ZUGFeRD becomes one PDF that carries the invoice data inside it. The two files that came from AX 2012 move to the processed folder afterwards. If an invoice cannot be converted, both files are moved to the error folder instead.

Document history shows every step Hive BDC took for a document: read, converted, mailed, uploaded. Search for the document number (1). Needs attention only (2) shows the documents that stopped, with the reason in What happened (3).

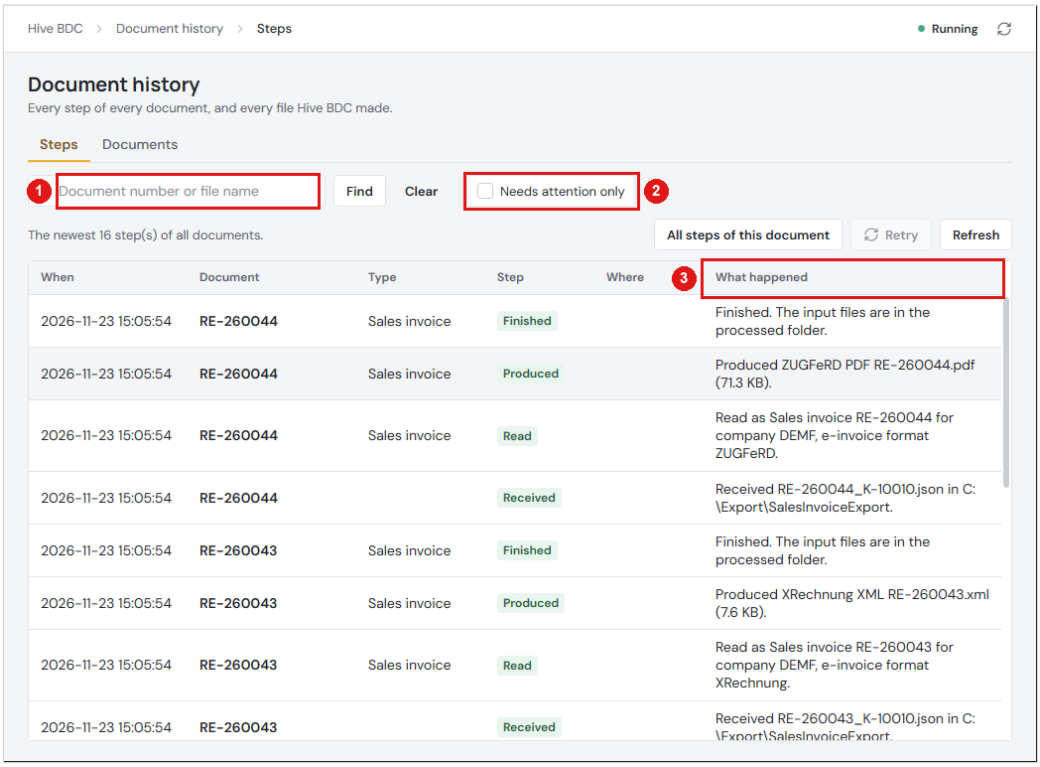

Figure 45: Document history with the steps of a document

6 Hive BDC settings

6.1 The dashboard and its settings pages

All settings are pages of the dashboard window. In the sidebar, the group SET UP holds Outbound, Inbound, Connections and Service (1). A change on these pages is kept when you choose Save changes in the bar at the bottom (2). It takes effect at once; the service does not have to be restarted.

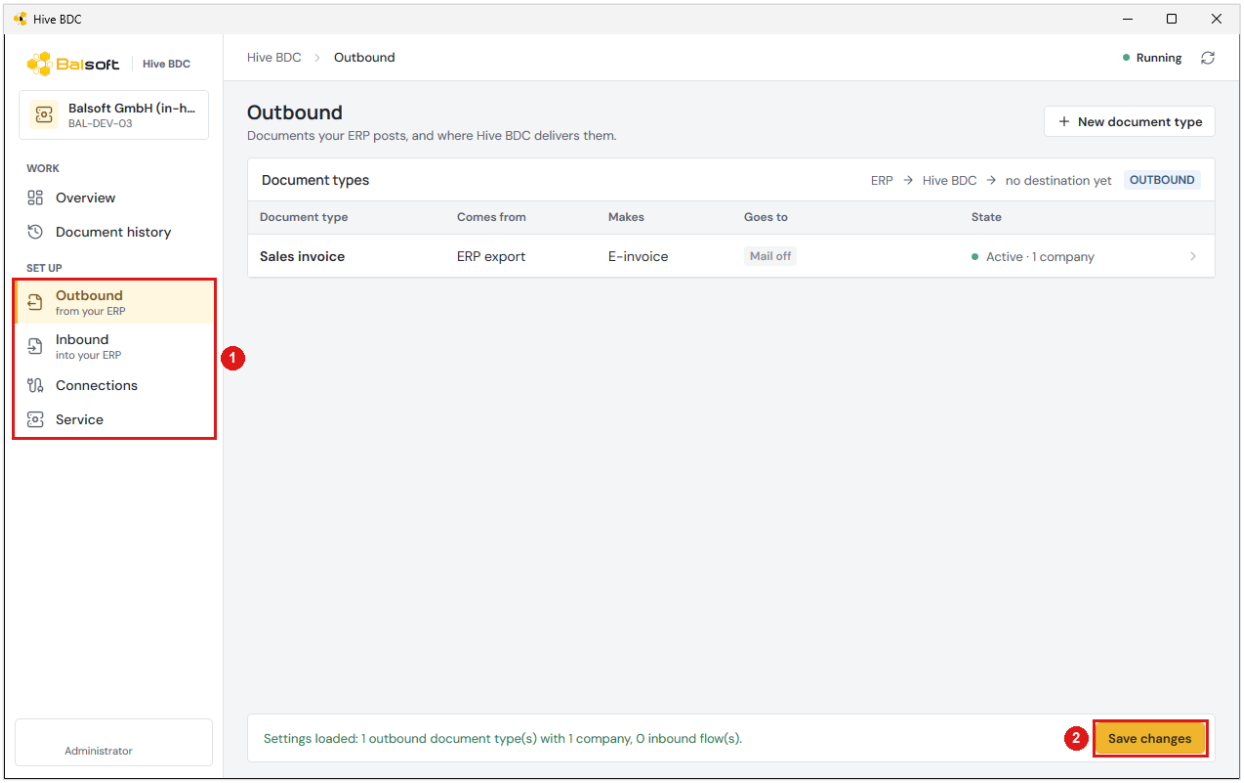

Figure 46: The settings pages under SET UP and the Save changes bar

If you leave the settings, for example for Overview, while changes are not saved yet, the dashboard asks first. Keep editing (1) returns to the page, Leave without saving (2) drops the changes.

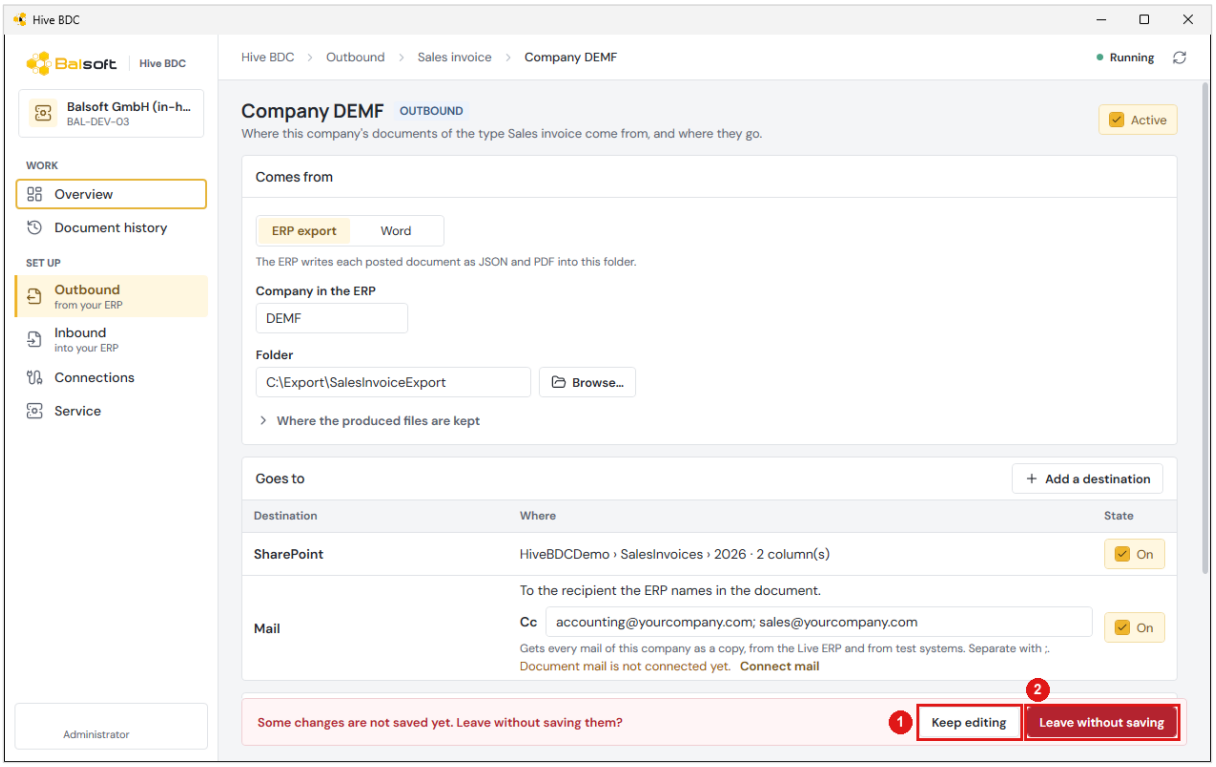

Figure 47: The question before unsaved changes are dropped

This guide uses Outbound, Connections and Service. Inbound brings documents into the ERP, for example supplier invoices, and is not needed to send invoices.

6.2 Outbound: the document type

Choose Outbound in the sidebar (1). The list shows every document type Hive BDC handles: where it comes from, what Hive BDC makes of it, where it goes and whether it is active. Select Sales invoice (2). If the list is empty, New document type (3) creates it.

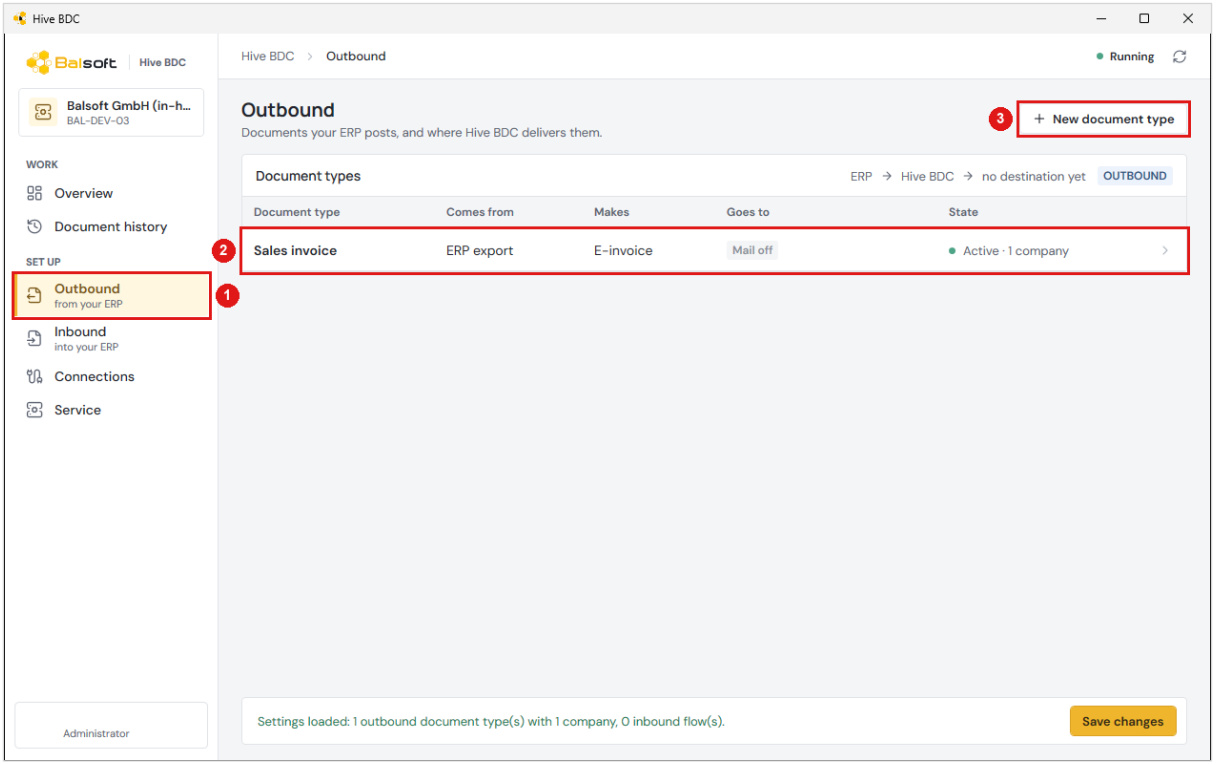

Figure 48: Outbound with the document type Sales invoice

The section Document type shows how this type is processed. Name (1) is the name in the dashboard. ID the ERP writes as documentType (2) must be SalesInvoice. Set Sent to (3) to Customers and Hive BDC makes (4) to E-invoice.

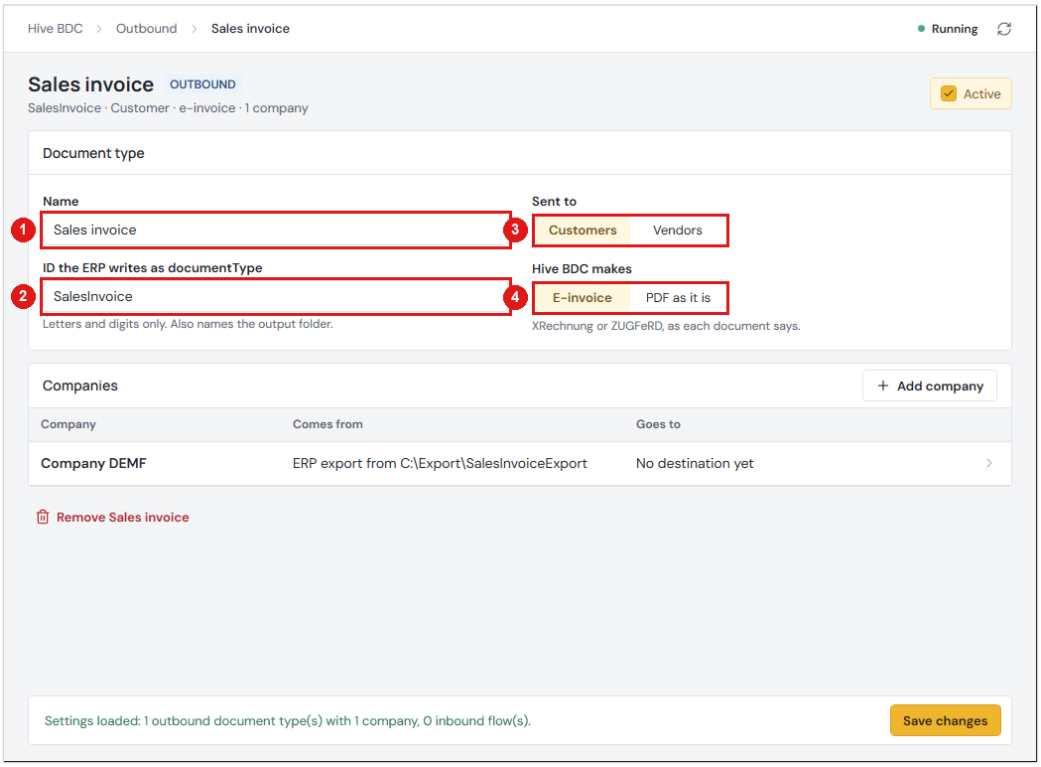

Figure 49: Section Document type

Set Active (1) at the top right so that the type is processed.

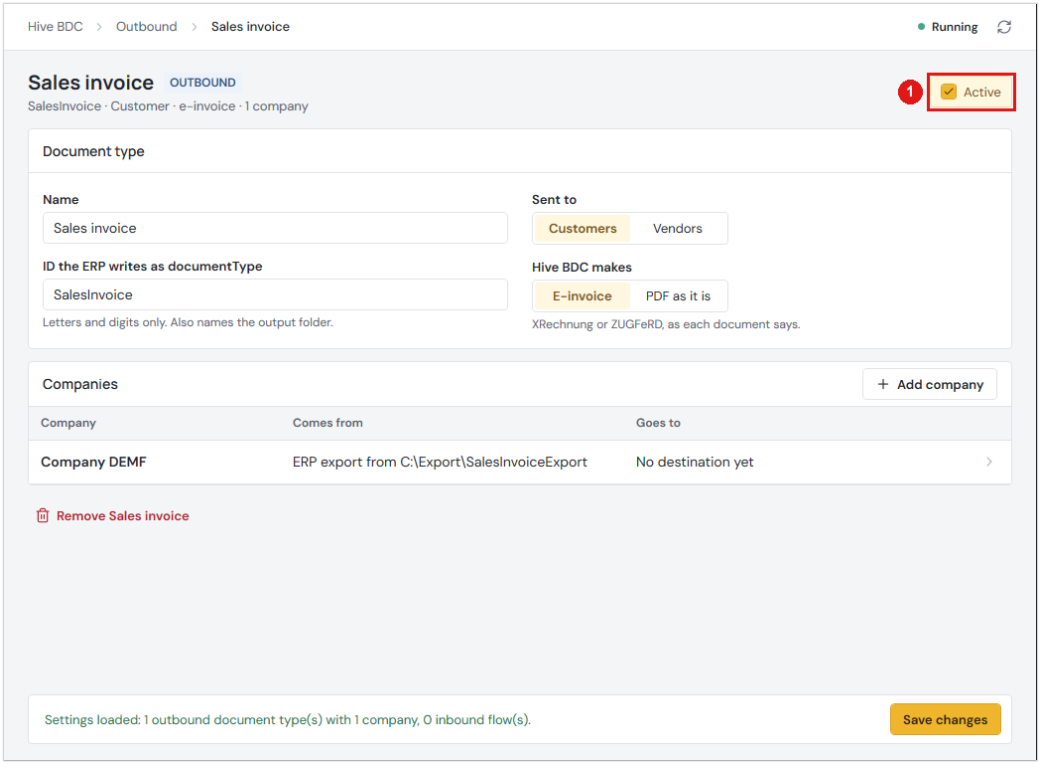

Figure 50: Active for the document type

Setting	Meaning
Name	The name shown in the dashboard.
ID the ERP writes as documentType	The document type as AX 2012 writes it into the JSON file, here SalesInvoice. It also names the output sub-folder.
Sent to	Customers or Vendors.
Hive BDC makes	E-invoice turns the JSON into XRechnung or ZUGFeRD, as each document says. PDF as it is delivers the PDF from AX 2012 unchanged.
Active	Switches processing for this type on. Files of a type that is not active are not processed.

A document type that AX 2012 sends but that is not in the list yet is added by the service when its first file arrives.

6.3 Companies and folders

Below the document type, Companies has one row per AX 2012 company the type is picked up for. Choose Add company (1) for a new one, or select the row of an existing company (2).

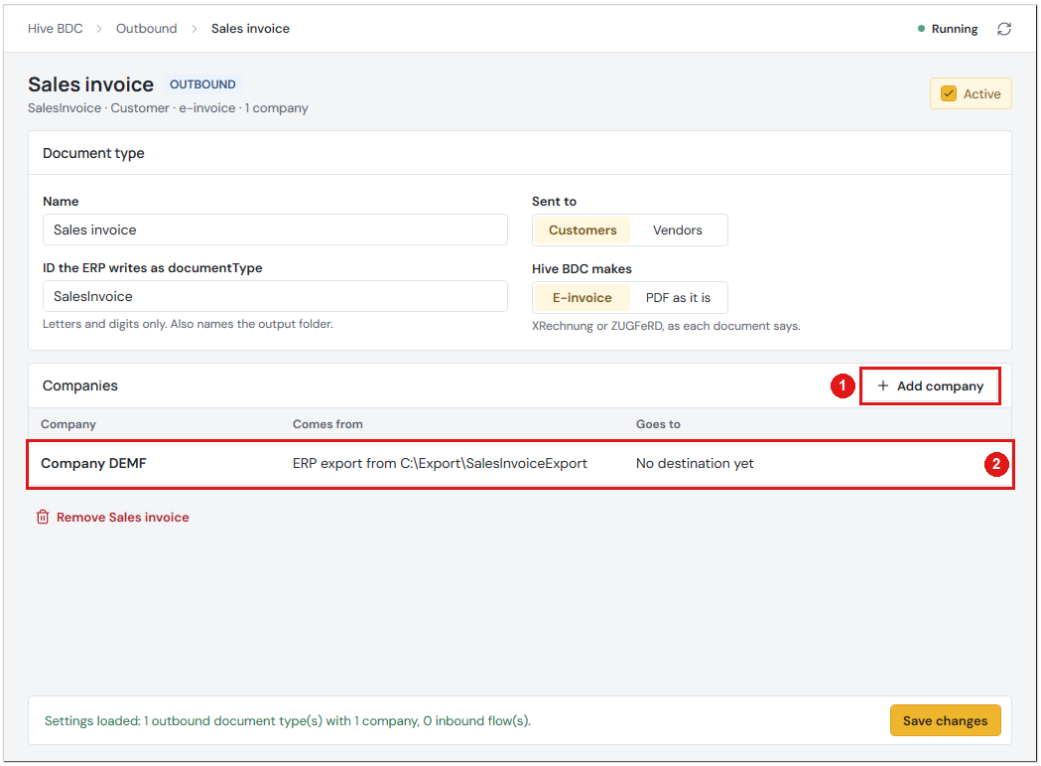

Figure 51: Companies of the document type

Under Comes from choose ERP export (1). Enter the AX 2012 company in Company in the ERP (2), here DEMF, and the export folder in Folder (3). It must be the same folder as File Path to Export/Import for Pending in the Flow Table (chapter 4.3).

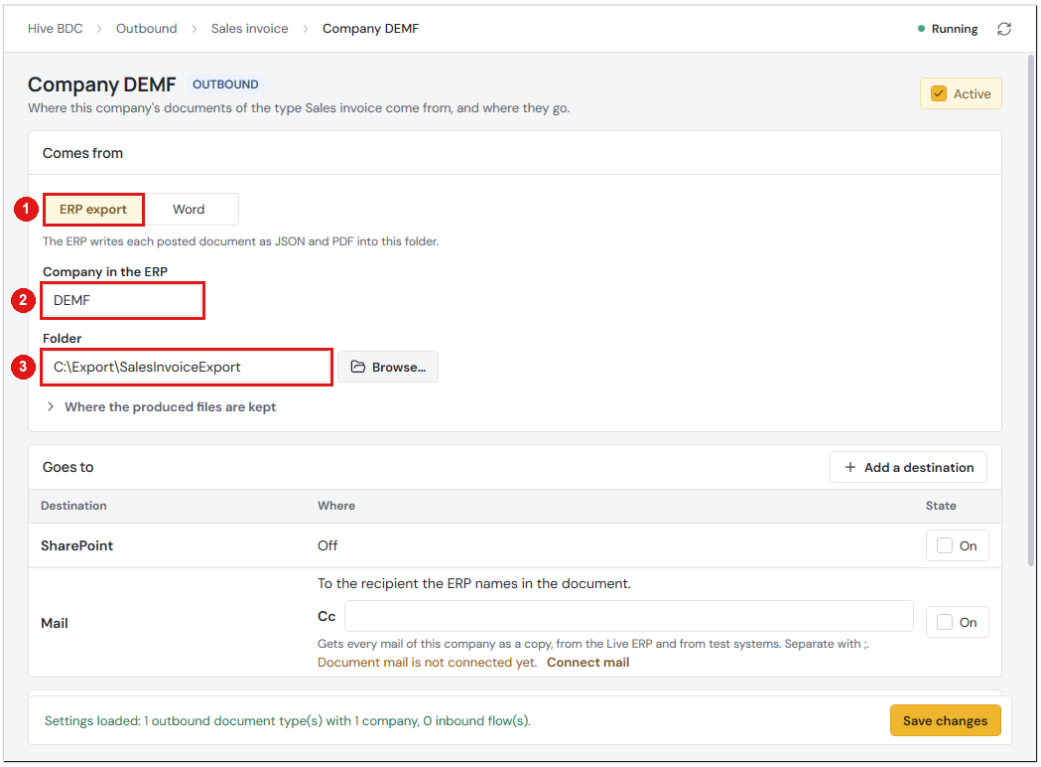

Figure 52: Company with Comes from, Company in the ERP and Folder

Where the produced files are kept (1) is optional. If it stays empty, the finished e-invoices are written to out\SalesInvoice in the folder above.

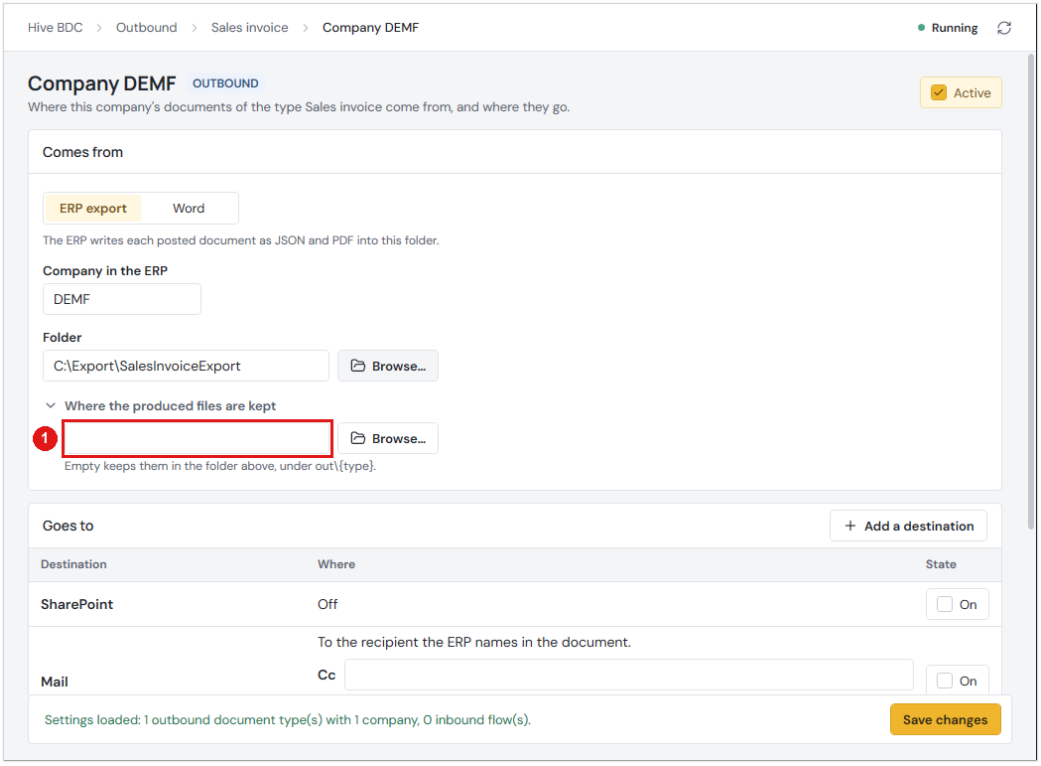

Figure 53: Optional folder for the produced files

Set Active (1) at the top right so that the documents of this company are processed.

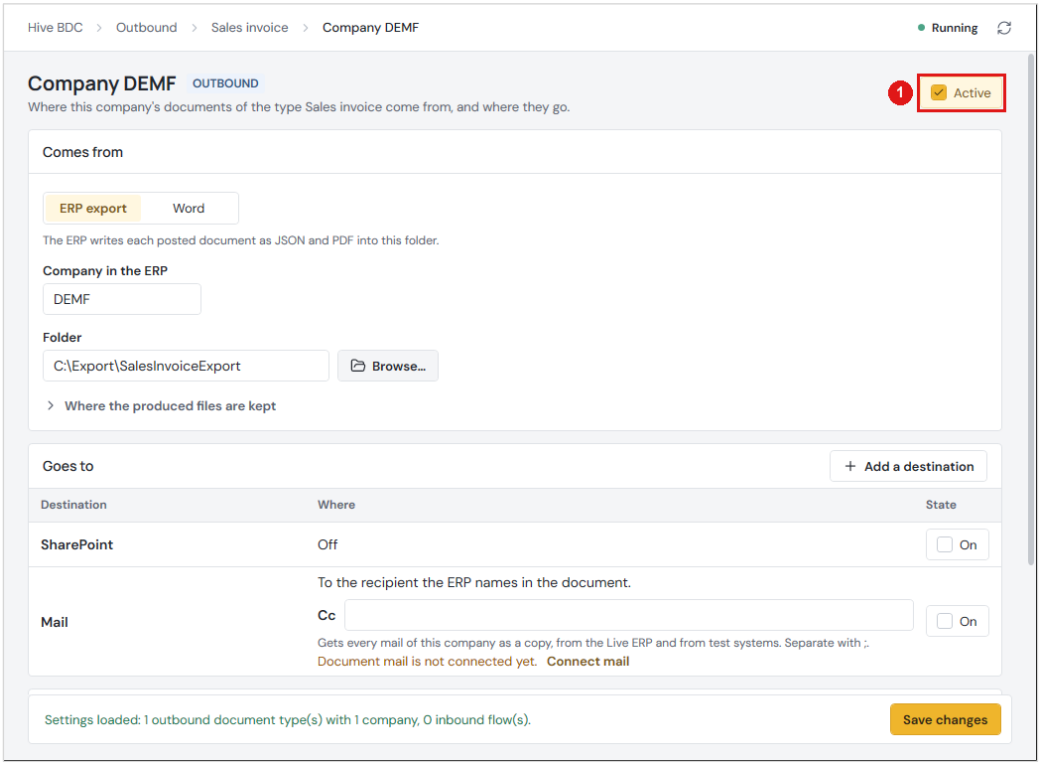

Figure 54: Active for the company

Setting	Meaning
Comes from	ERP export reads the pairs of JSON and PDF files that AX 2012 writes. Word reads invoices written in Word from the Hive BDC template instead.
Company in the ERP	The AX 2012 company (dataAreaId) whose documents this entry handles.
Folder	Where AX 2012 drops the JSON and PDF files. The same folder as File Path to Export/Import for Pending in the Flow Table (chapter 4.3).
Where the produced files are kept	Where the finished e-invoices are written. Empty means out\SalesInvoice in the folder above.
Active	Switches processing for this company on.

6.4 Where the documents go: mail and SharePoint

Goes to lists where the documents of this company are delivered. Set On for Mail (1) so that every produced e-invoice is mailed to the customer. Recipient, subject and text come from the invoice data, see chapter 4.8. As long as Document mail is not connected, the row says so, and Connect mail (2) opens the page where it is set up (chapter 6.7). Cc (3) takes addresses of your company that get every mail of this company as a copy, from the live system and from test systems, for example the accounting team; separate them with ;. An address that is also the recipient gets the mail once.

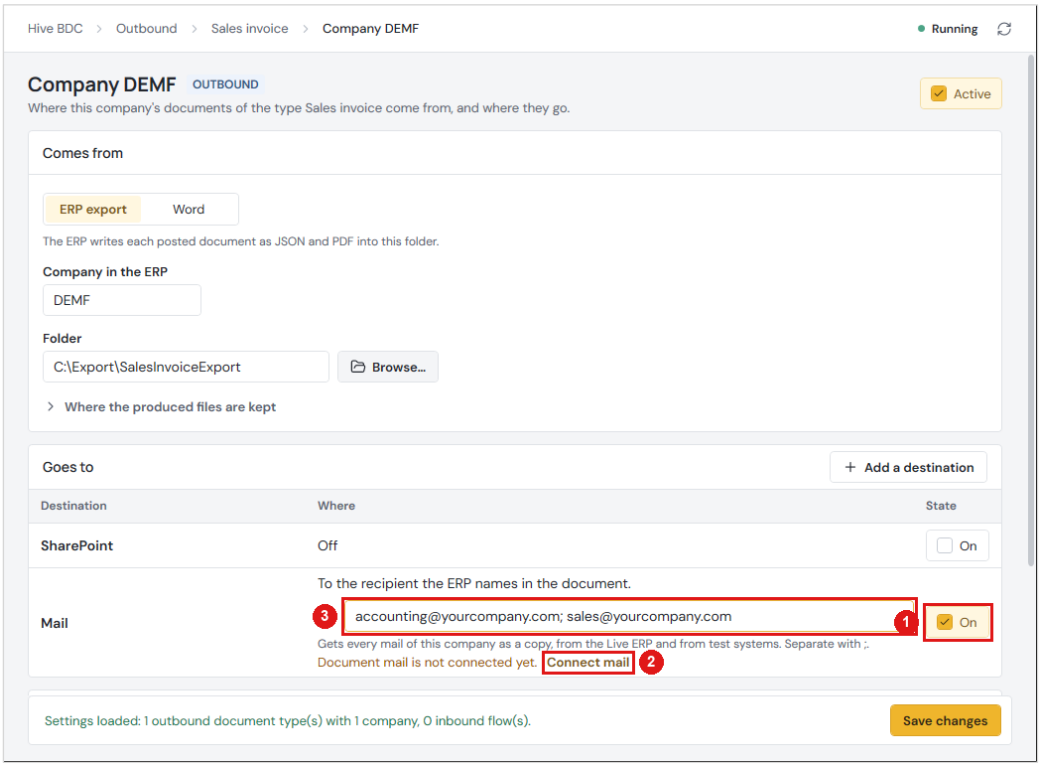

Figure 55: Goes to with Mail and SharePoint

Each company can also upload the produced documents to a SharePoint document library. Choose SharePoint in Goes to and set Upload to SharePoint (1) on the page that opens.

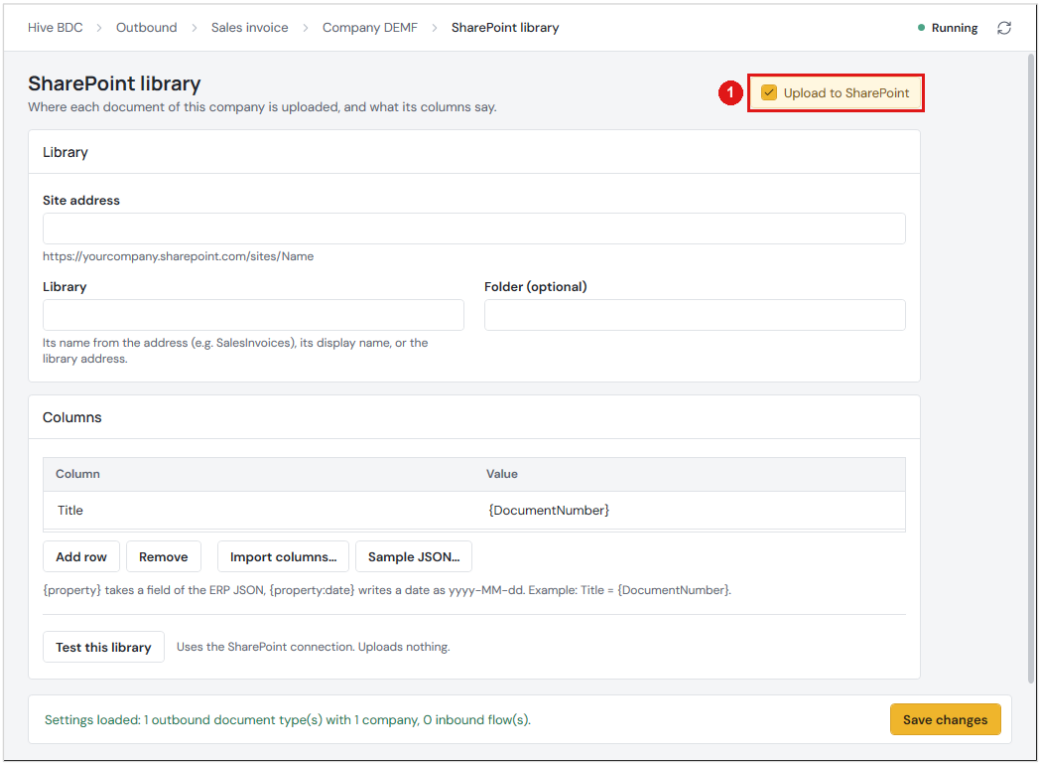

Figure 56: SharePoint library page with Upload to SharePoint

Site address

Open the target library in your browser. The part of the address up to and including the site name is the site address, in the form https://tenant.sharepoint.com/sites/Name.

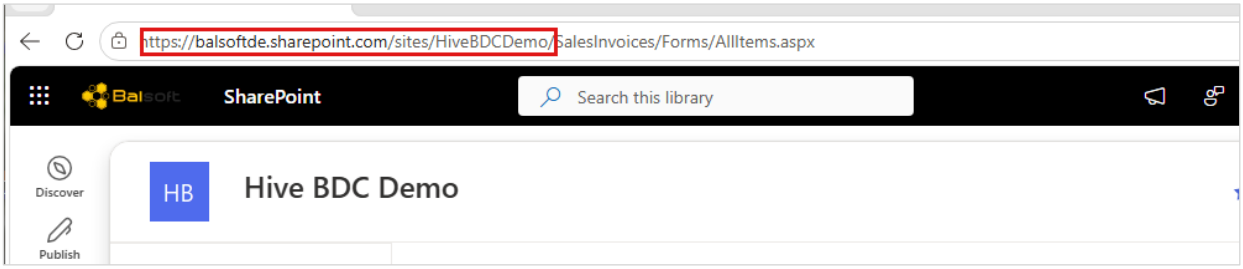

Figure 57: The site part of the SharePoint address

Paste it into Site address (1).

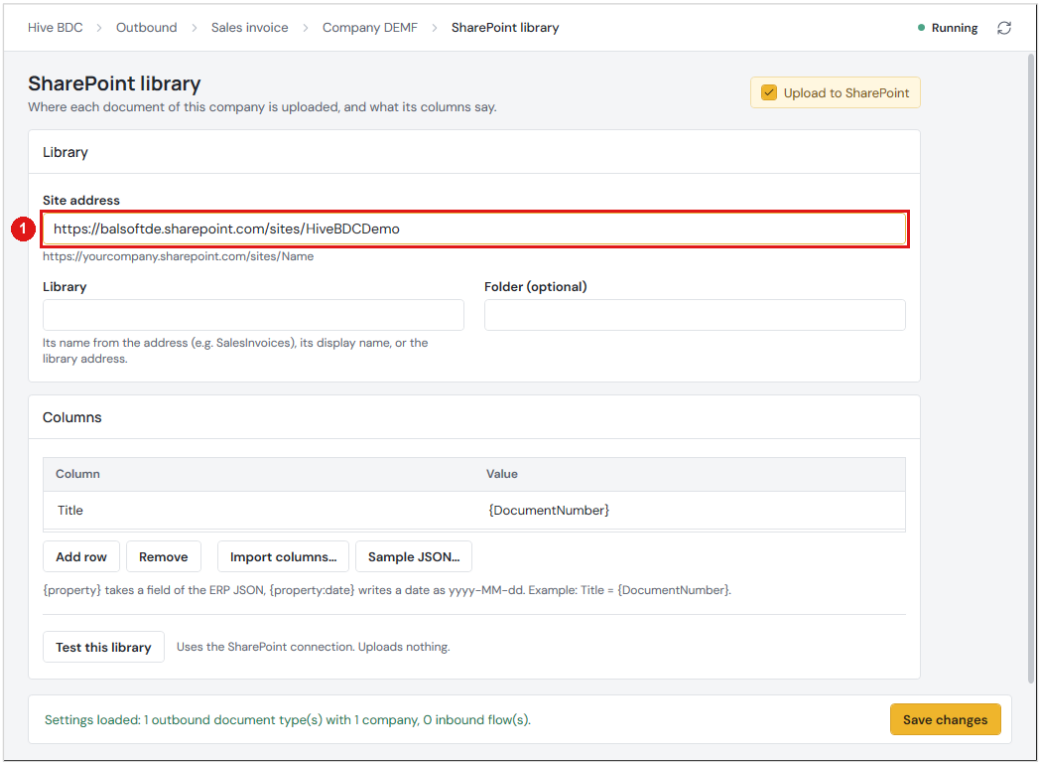

Figure 58: Site address entered

Library

The part of the address right after the site name is the name of the library.

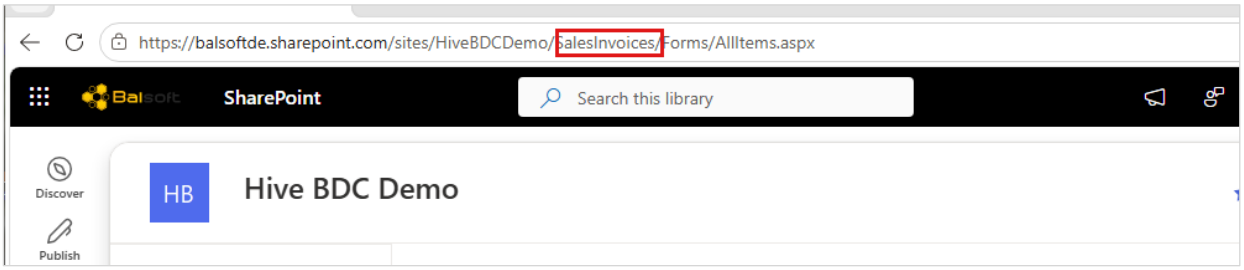

Figure 59: The library part of the SharePoint address

Enter it in Library (1). The display name of the library or the full library address work as well.

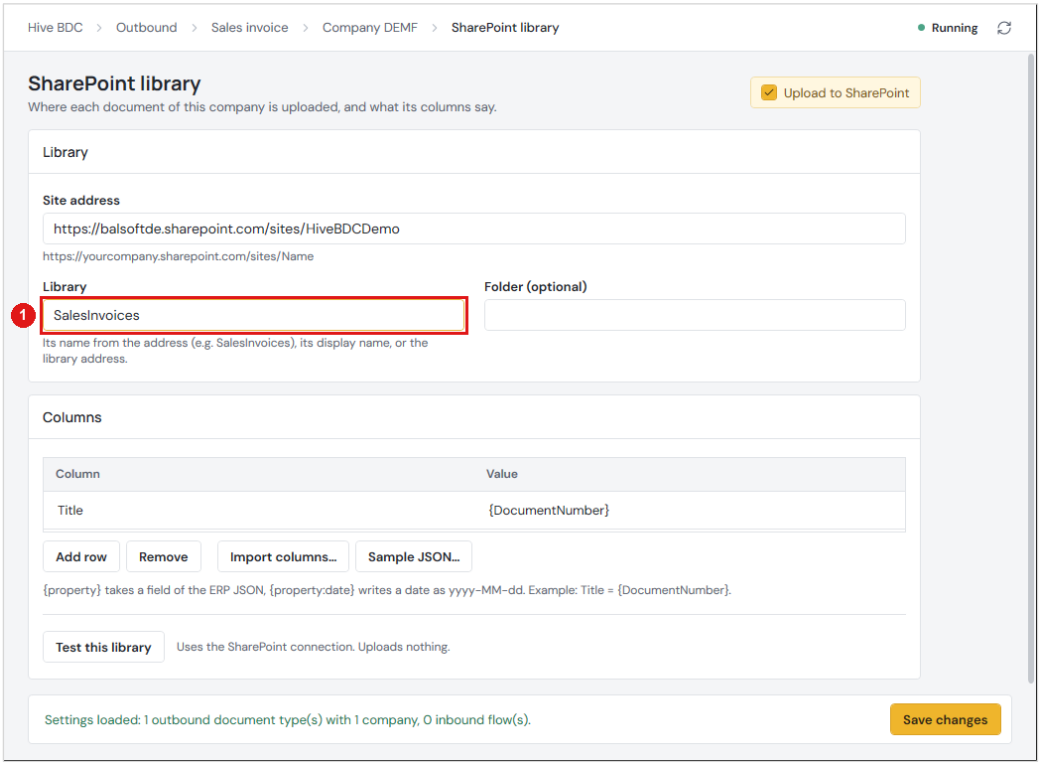

Figure 60: Library entered

Folder (optional)

If the documents are to go into a folder inside the library, enter it in Folder (optional) (1). Leave the field empty to upload into the top level of the library.

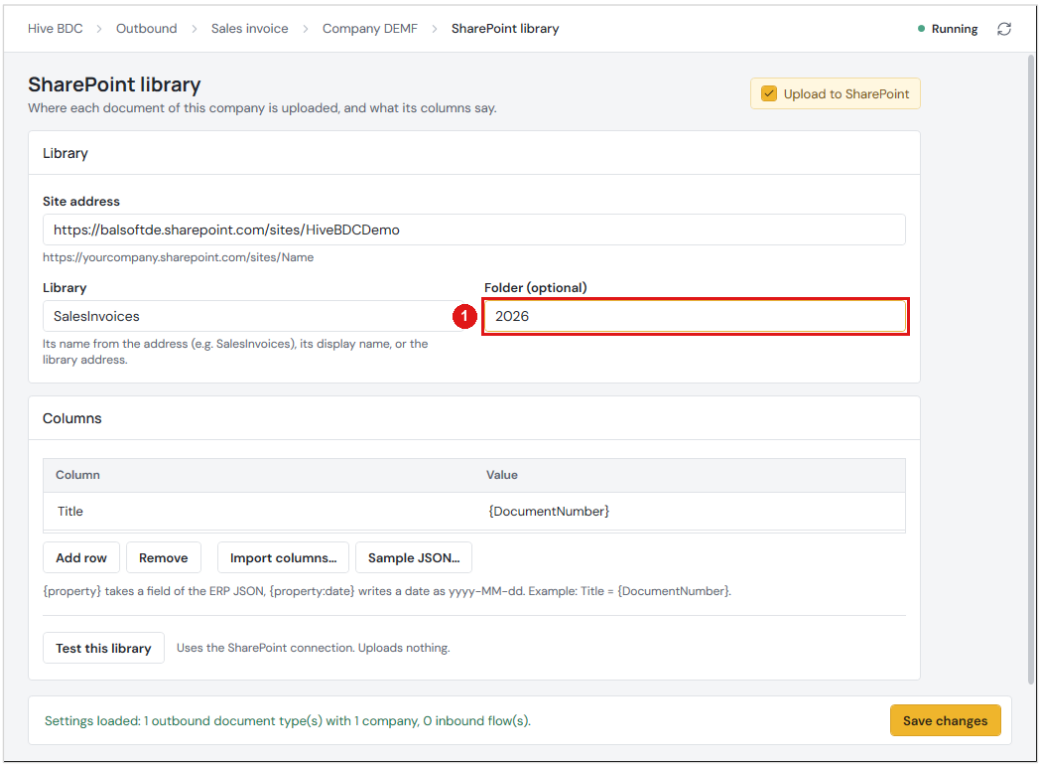

Figure 61: Optional folder inside the library

Test this library (1) checks the SharePoint connection and the library. It uploads nothing.

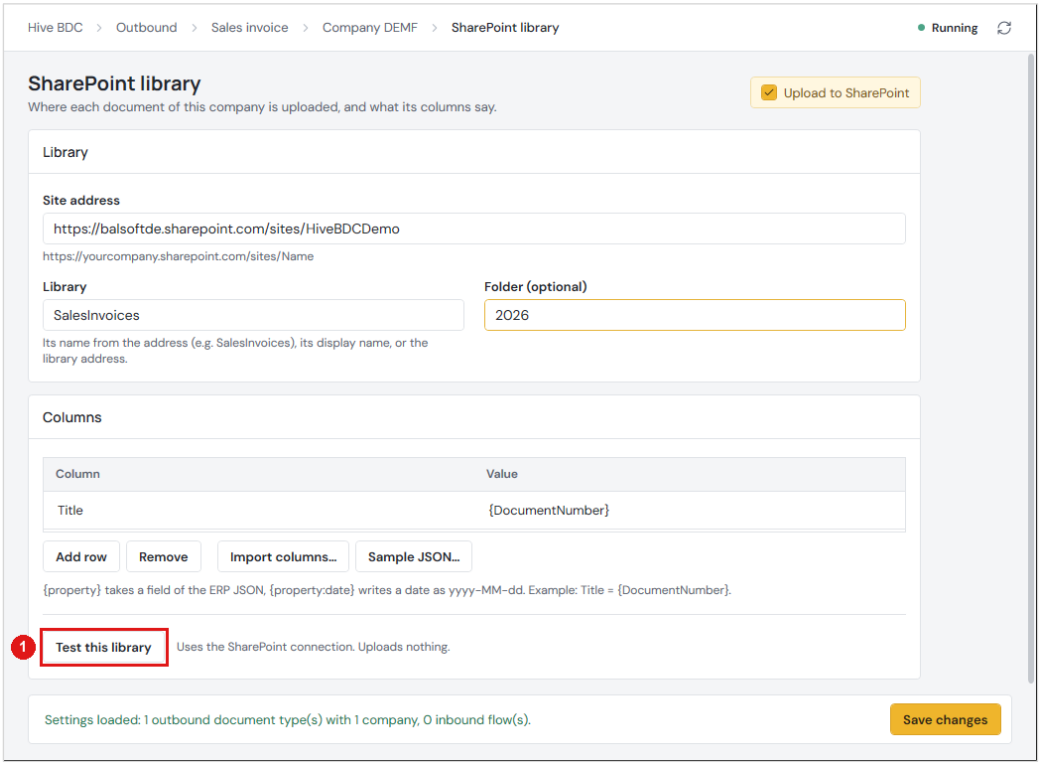

Figure 62: Test this library

Add a destination on the company page offers further destinations (1): a DocuWare file cabinet, an Azure Blob container, an HTTPS endpoint or Azure Service Bus. Each needs its connection on the page Connections first.

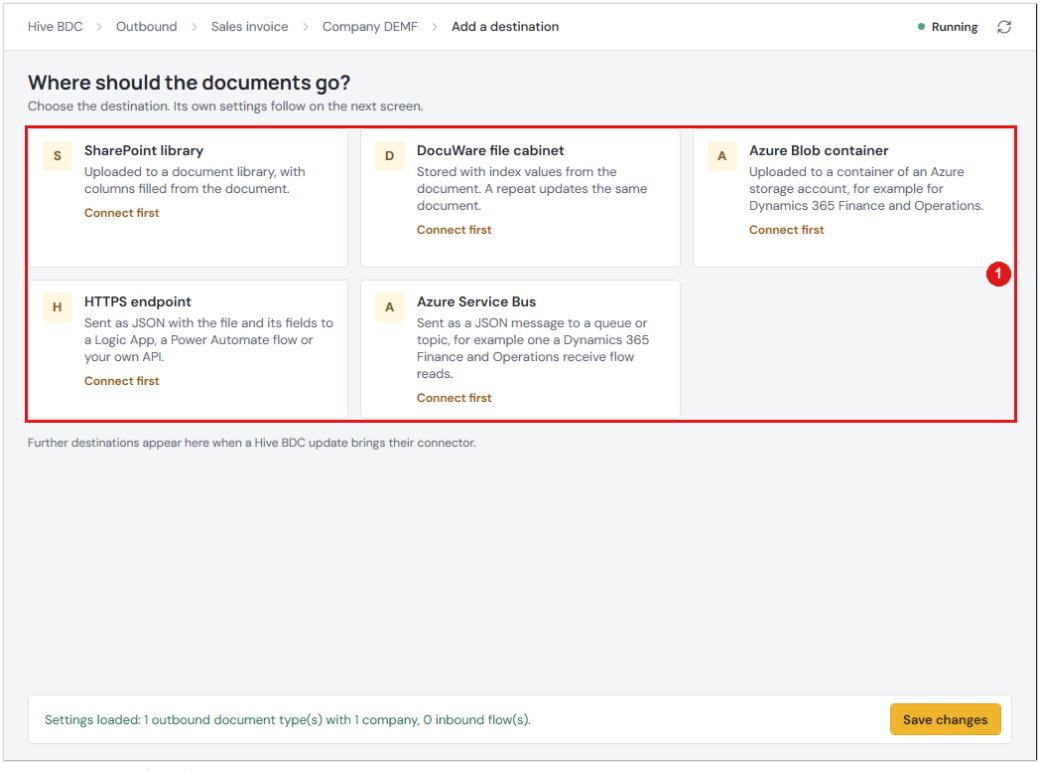

Figure 63: Further destinations

6.5 SharePoint columns

Under Columns on the SharePoint library page you fill the columns of the library from the invoice data. Every row connects one SharePoint column (Column) with a value from the JSON file (Value) (1).

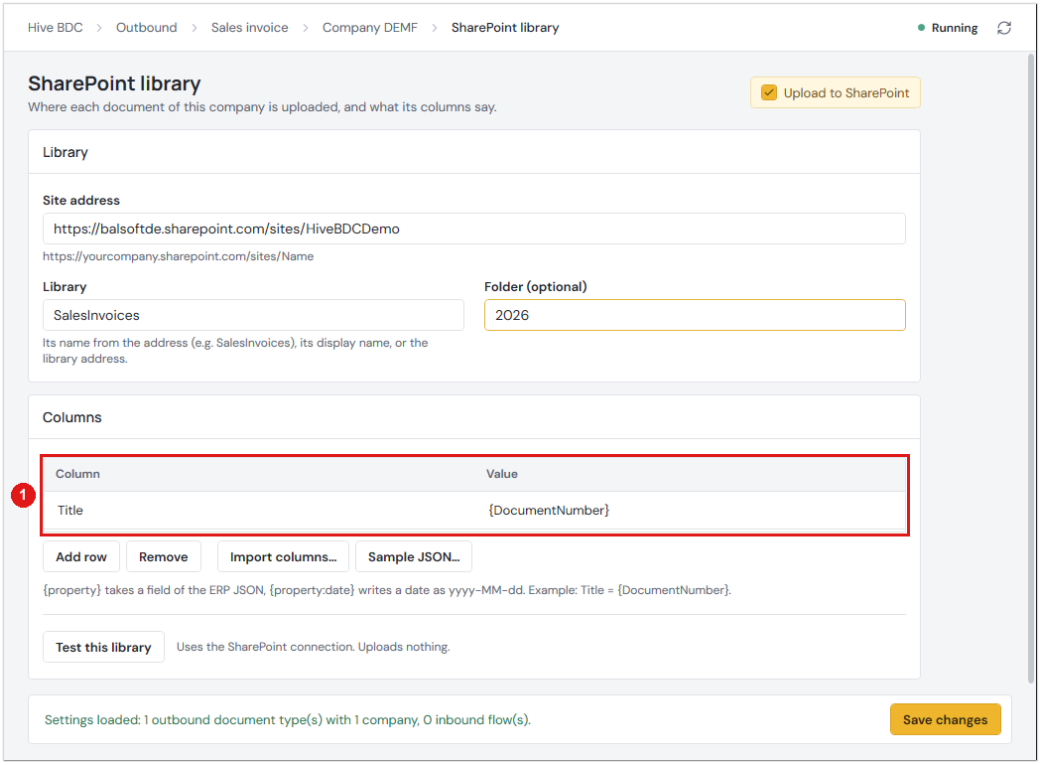

Figure 64: Columns of the SharePoint library

Choose Add row (1). The new row has two cells: Column for the internal name of the SharePoint column and Value for the value.

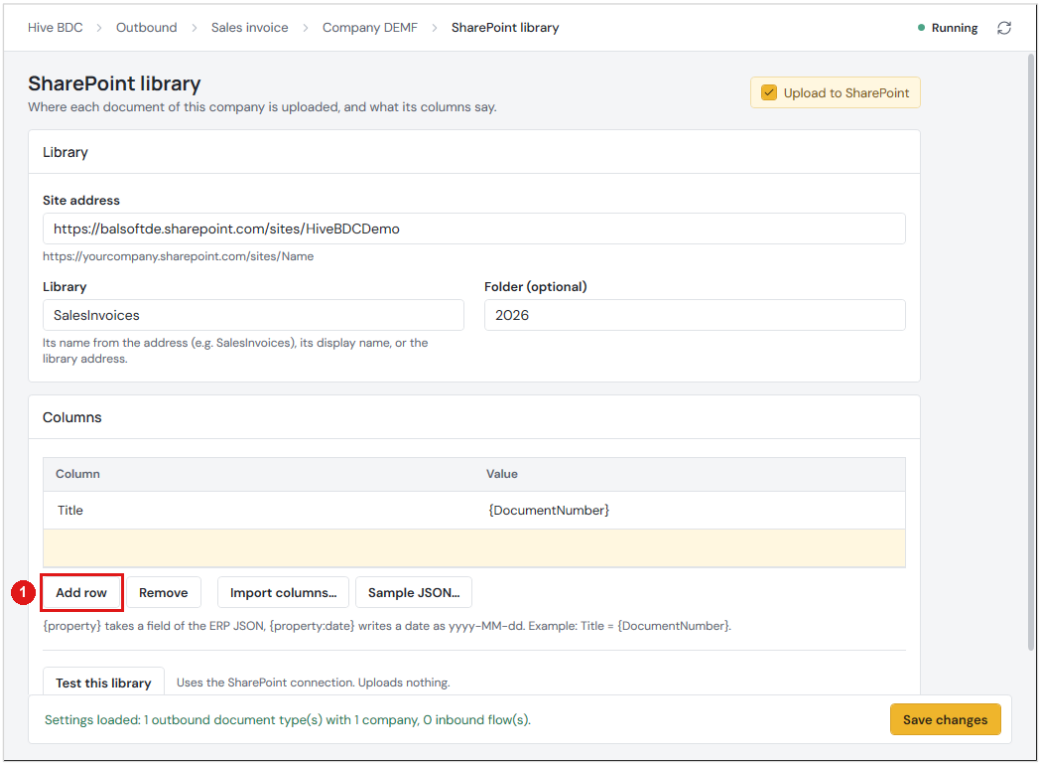

Figure 65: Add row

Finding the internal column name in SharePoint

SharePoint needs the internal name of a column, which can differ from the name you see in the library. In SharePoint open Site contents (1), open the menu of the library (2) and choose Settings (3).

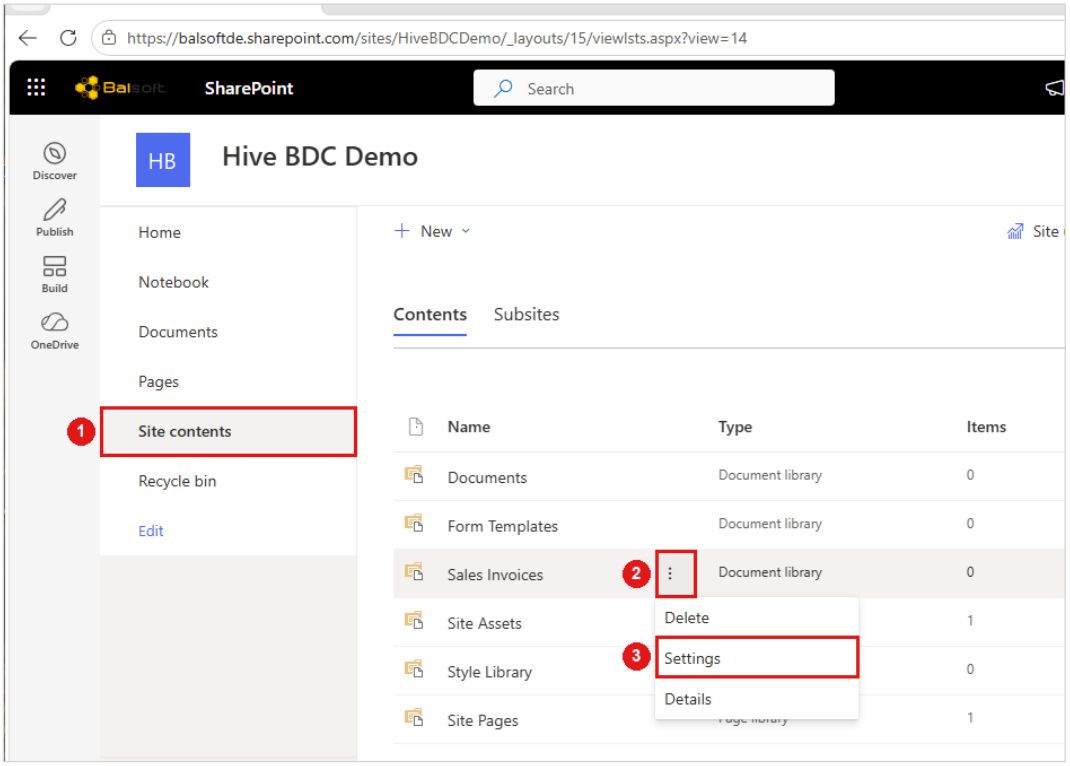

Figure 66: Site contents: Settings of the library

Scroll down to the section Columns.

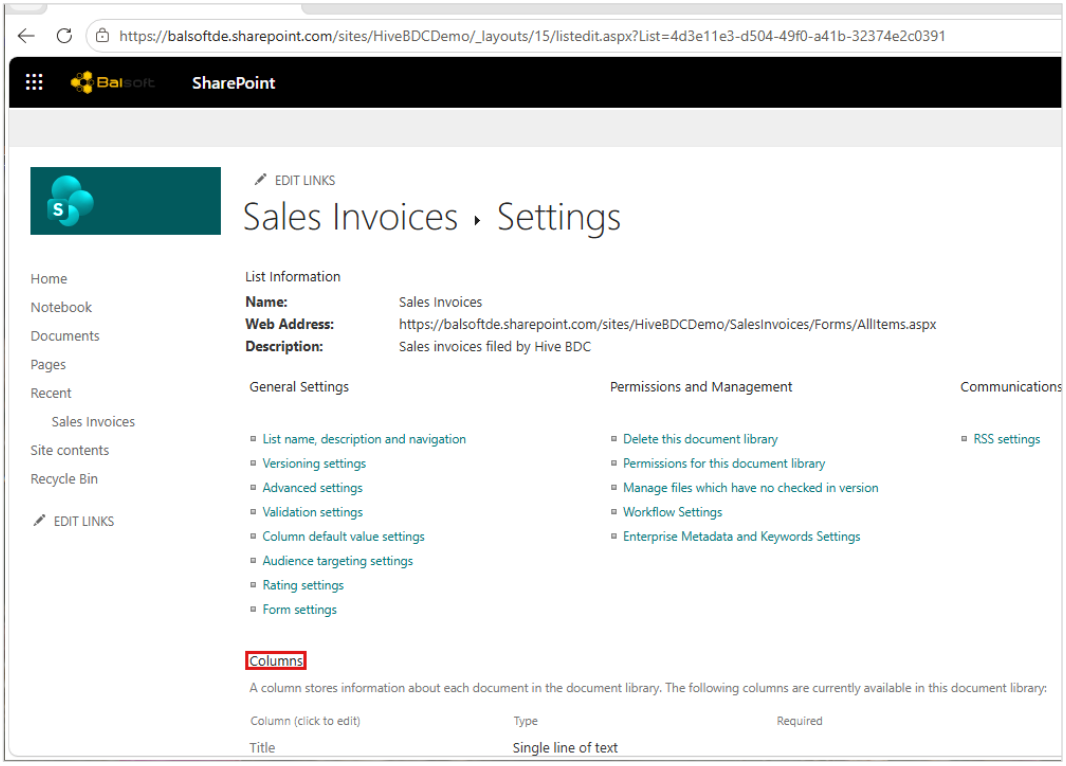

Figure 67: Library settings: section Columns

Click the column you want to fill, here Address.

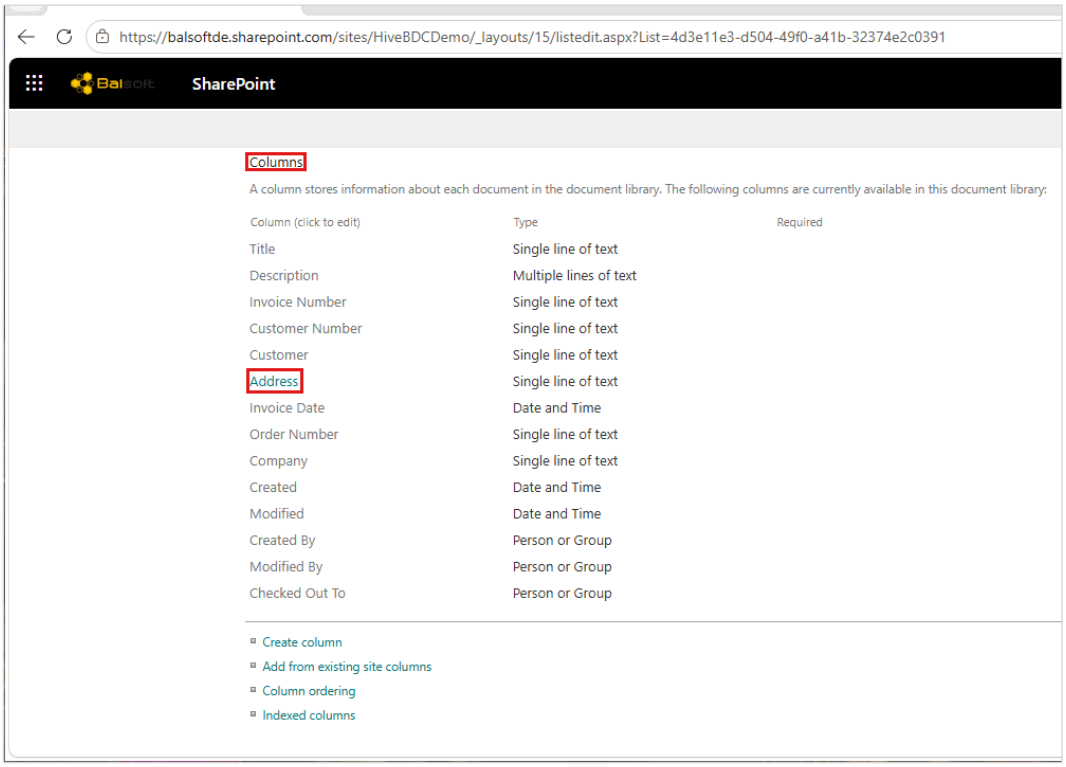

Figure 68: Selecting the column

The address bar now ends with Field= followed by the internal name, here CustomerStreet. Copy only this part.

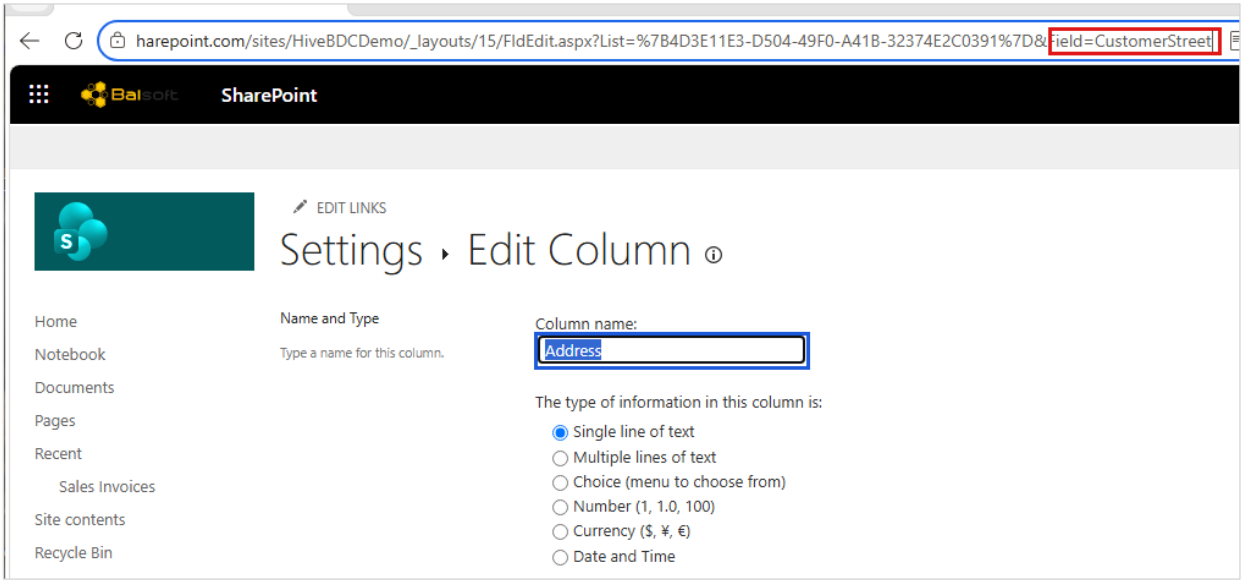

Figure 69: Internal column name at the end of the address

Paste it into the Column cell of the new row (1).

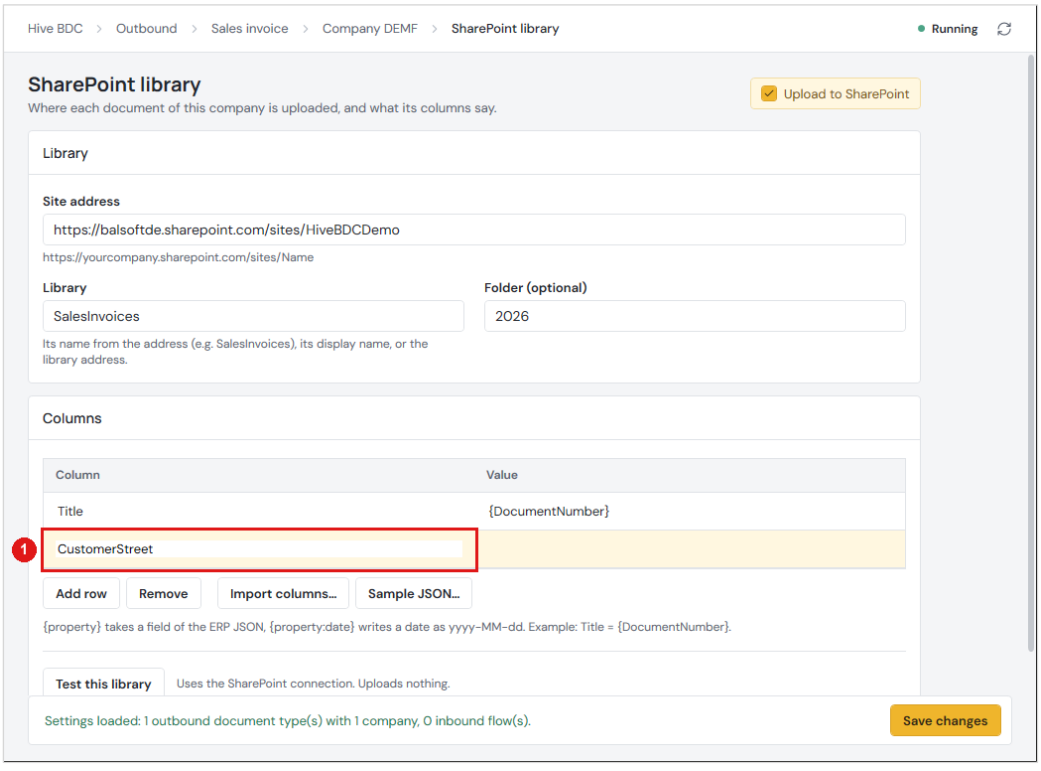

Figure 70: Internal name in the Column cell

Choosing the value from the invoice data

Open a JSON file of the same document type, for example in the processed folder, and look for the key that holds the value you need. Here the street of the recipient is in recipientStreet. Fields you added in chapter 4.6 appear here under the name you gave them.

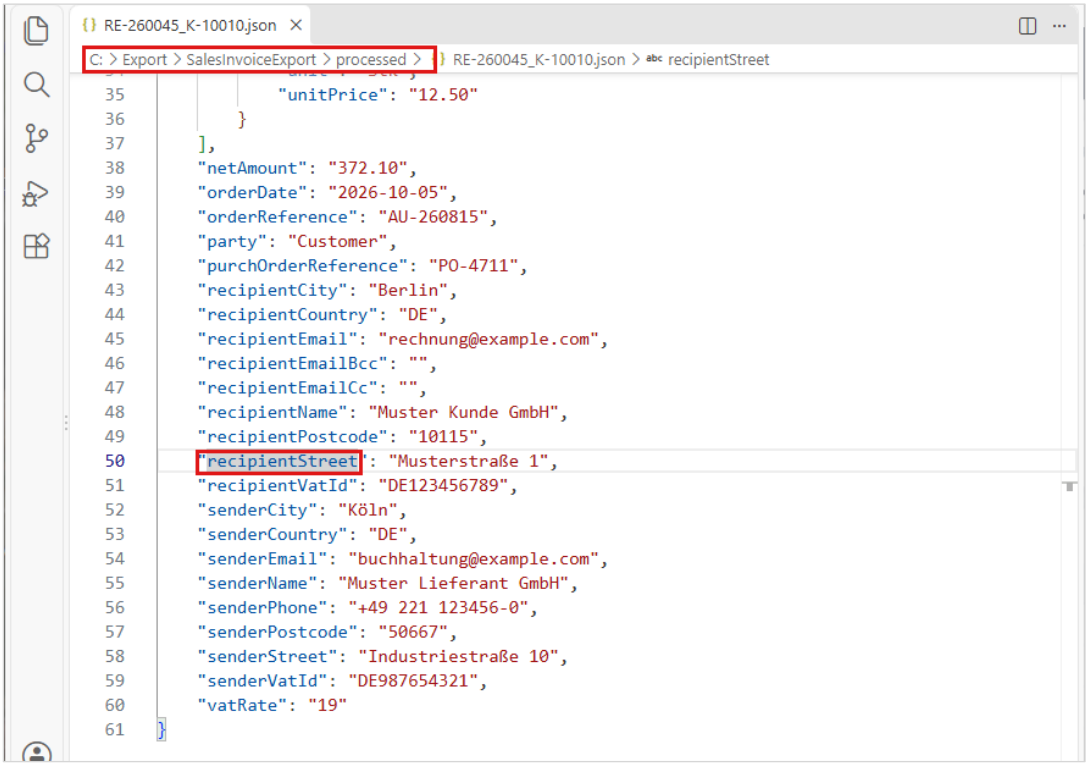

Figure 71: The key recipientStreet in the JSON file

Write the key into the Value cell between two curly brackets, here {recipientStreet} (1). A value can also combine fixed text and several keys. {key:date} writes a date in the form yyyy-MM-dd.

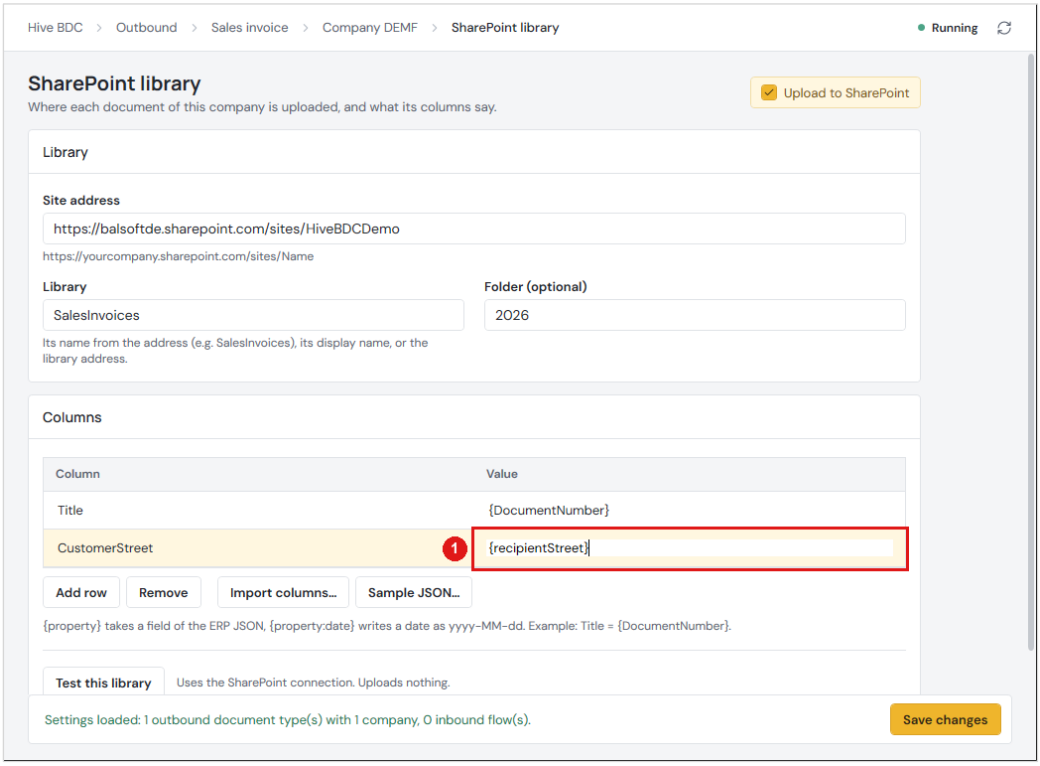

Figure 72: Value {recipientStreet}

Choose Save changes (1). The next uploaded document fills the column.

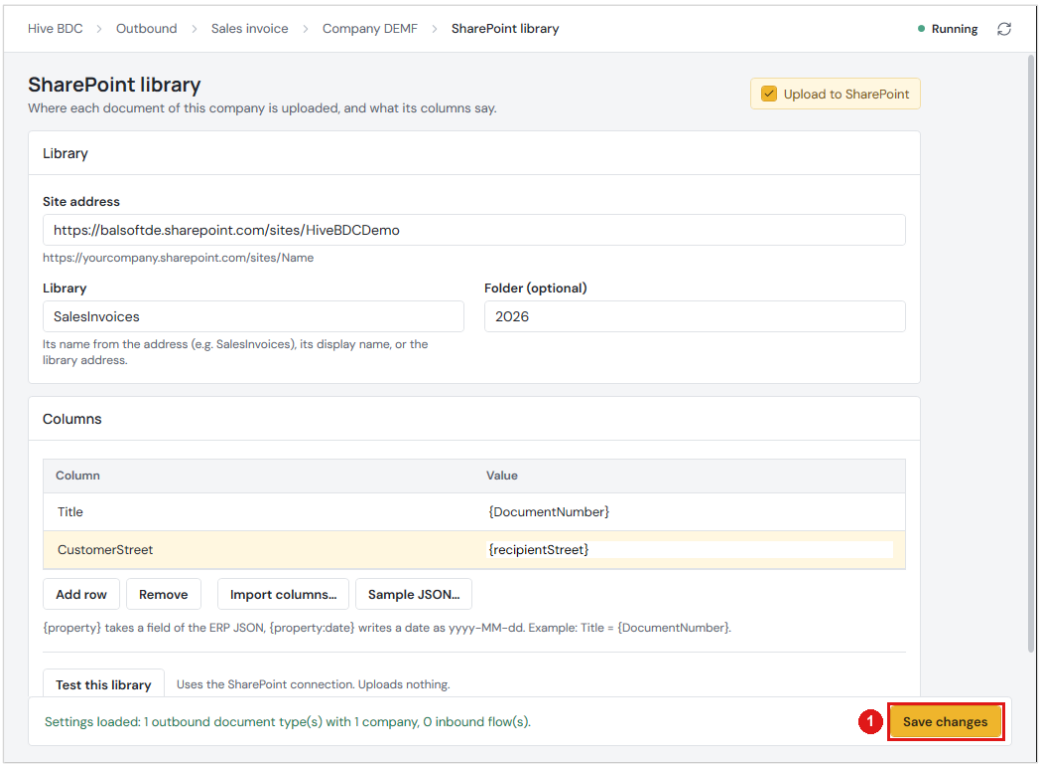

Figure 73: Save the settings

Import columns… fills the rows from a column file that Balsoft prepares for your library. Sample JSON… saves such a file with the current rows, as a starting point.

6.6 Smaller PDFs: Compress PDF

Before delivery on the company page has Compress PDF (1). With it on, Hive BDC makes each PDF of this company smaller once, before it goes to any destination, so the mail, SharePoint and the output folder get the same file. Fonts keep only the letters the document shows, and lossless images placed above 300 ppi are scaled to 200 ppi. JPEG pictures, text and lines are not changed, so the pages look the same. The PDF from the ERP stays as it was in the folder processed.

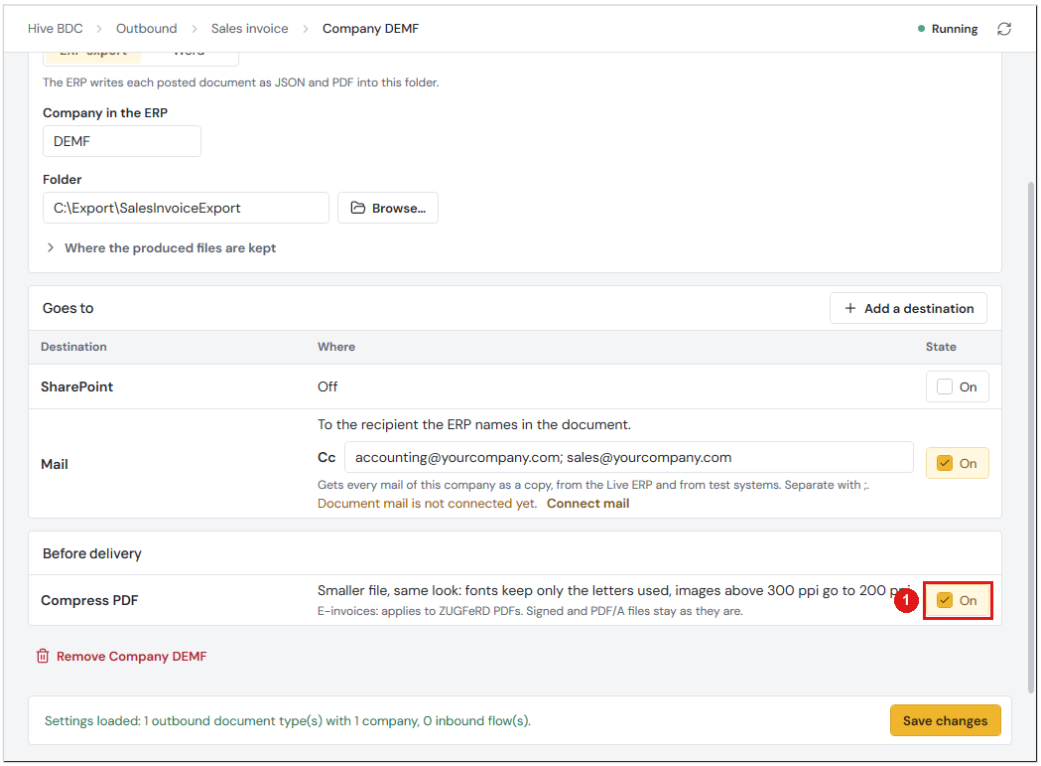

Figure 74: Compress PDF under Before delivery

For e-invoices it applies to ZUGFeRD: the fonts Hive BDC embeds for PDF/A then carry only the letters used. An invoice whose ERP PDF only names Arial becomes several hundred KB smaller; in a test, 945 KB became 138 KB. XRechnung is XML and is not changed. Signed, encrypted and PDF/A documents, and PDFs that would not get smaller, are delivered as they are. Document history shows the result for each document, for example "Compressed 945 KB to 138 KB (85% smaller)" or "Not compressed: signed PDF".

6.7 Connections

Choose Connections in the sidebar (1). The page lists every sign-in Hive BDC can use. This guide needs SharePoint (2) and Document mail (3). Your IT department creates the two app registrations and hands over their values (chapter 2). The figures show placeholder values.

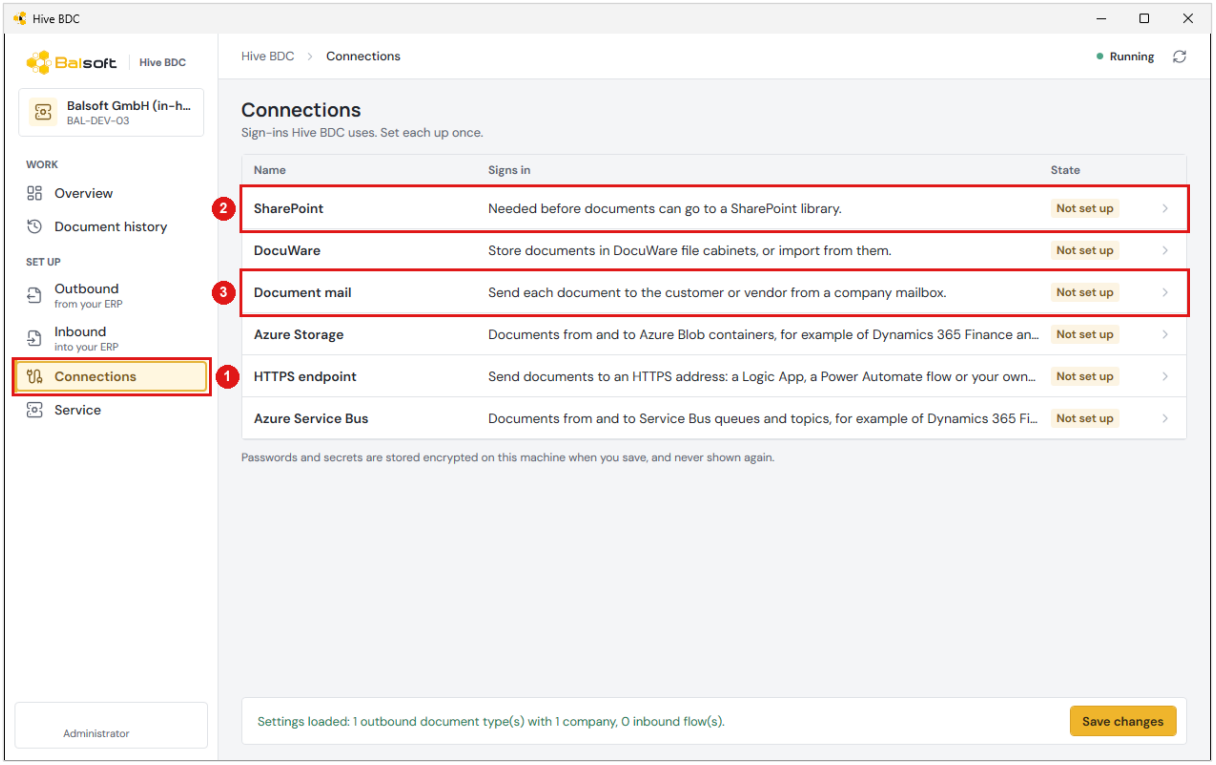

Figure 75: Connections

Choose SharePoint and enter the values of the app registration "Hive BDC SharePoint": the Tenant ID of your Microsoft 365 tenant (1), the Client ID of the app (2) and its Client secret (3). The Tenant ID must be the tenant the licence was issued for.

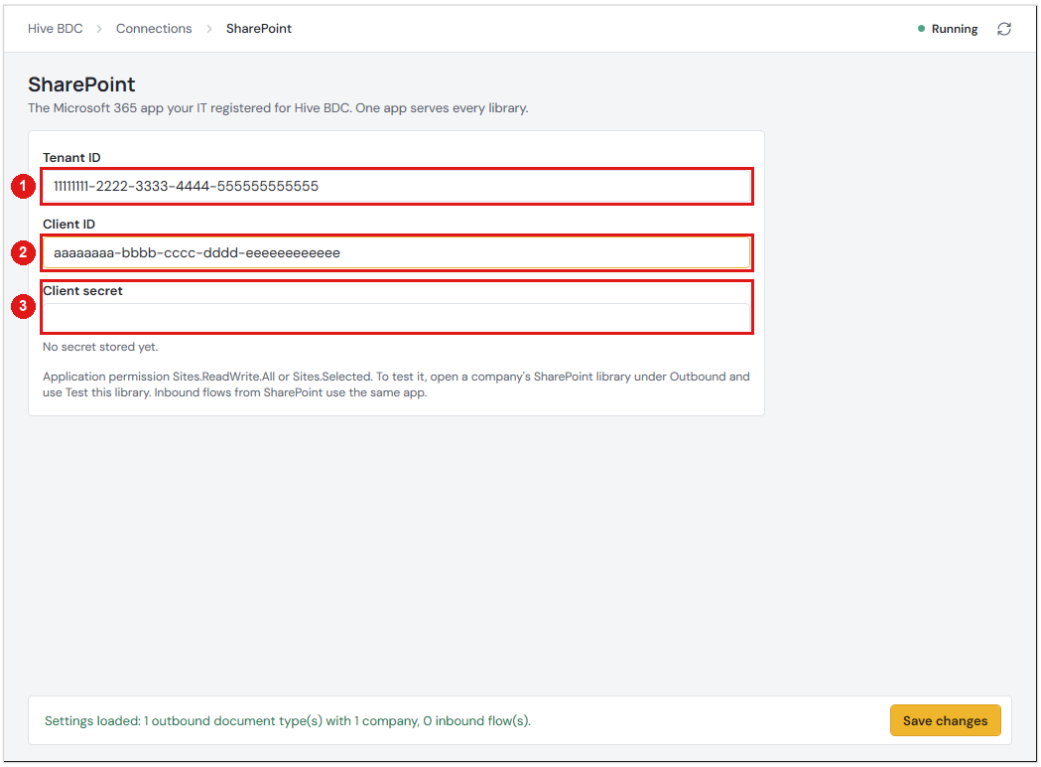

Figure 76: SharePoint: Tenant ID, Client ID and Client secret

Choose Document mail. Set Send document mails (1) to switch e-mail delivery on for the whole service. In Send from (2) enter the mailbox the documents are sent from, for example finance@yourcompany.com. Enter the Client ID (3) and the Client secret (4) of the app registration "Hive BDC Mail". Tenant ID (5) can stay empty if the mail app is in the same tenant as the SharePoint app. Test recipients (6) receive every document that comes from a test or development AX 2012 instead of the real customer, for all document types; the Cc addresses of a company get these mails as well. Set Keep a copy in the sender's Sent Items (7) to keep every sent mail in the sender mailbox.

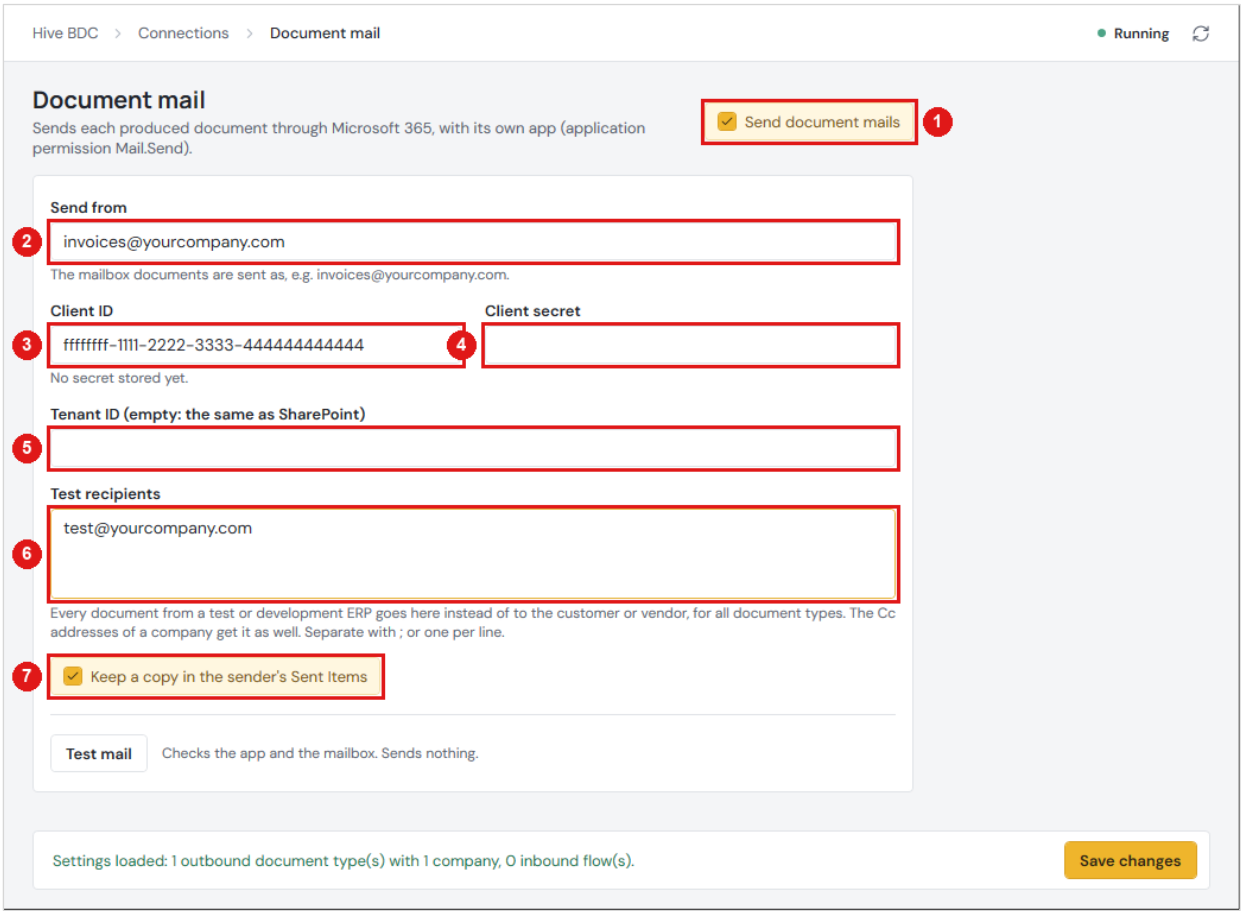

Figure 77: Document mail

Test mail (1) checks the app and the mailbox and sends nothing. Then choose Save changes (2).

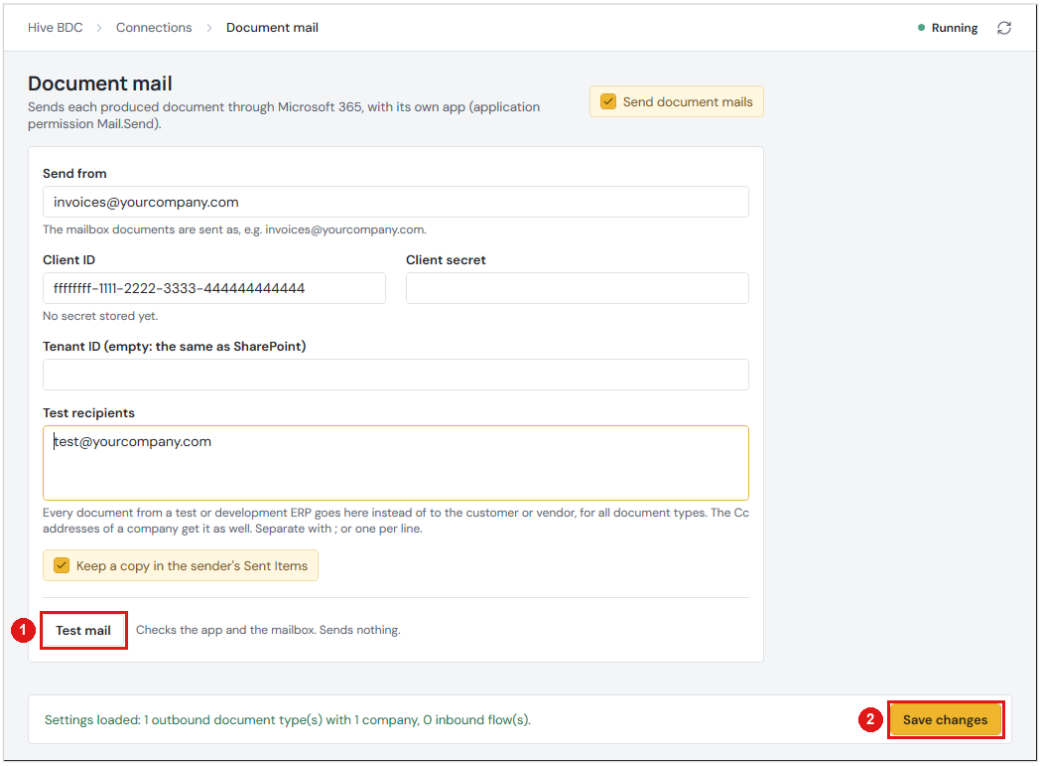

Figure 78: Test mail and Save changes

Setting	Meaning
SharePoint	Tenant ID, Client ID and Client secret of the app that uploads to SharePoint. One app serves all libraries.
Send document mails	Switches e-mail delivery on for the whole service.
Send from	The mailbox the documents are sent from.
Client ID, Client secret	The app that sends the mails. If Tenant ID stays empty, the SharePoint tenant is used.
Test recipients	Documents from a test or development AX 2012 go to these addresses instead of the real customer, for all document types. The Cc addresses of a company get them as well.
Keep a copy in the sender's Sent Items	Stores every sent mail in the sender's Sent Items.

Note: Secrets are stored encrypted on the server and never shown again. A secret field left empty keeps the stored secret.

6.8 Service and licence

Choose Service in the sidebar. The tab Status shows whether the Hive BDC service is running; Start and Stop (1) pause the processing, for example during maintenance. Check for new documents every (2) sets how often every folder is checked: 30 seconds is the normal value, 5 the minimum. Log folder (3) can stay empty; the logs are then kept in %ProgramData%\HiveBDC\logs, one file per day.

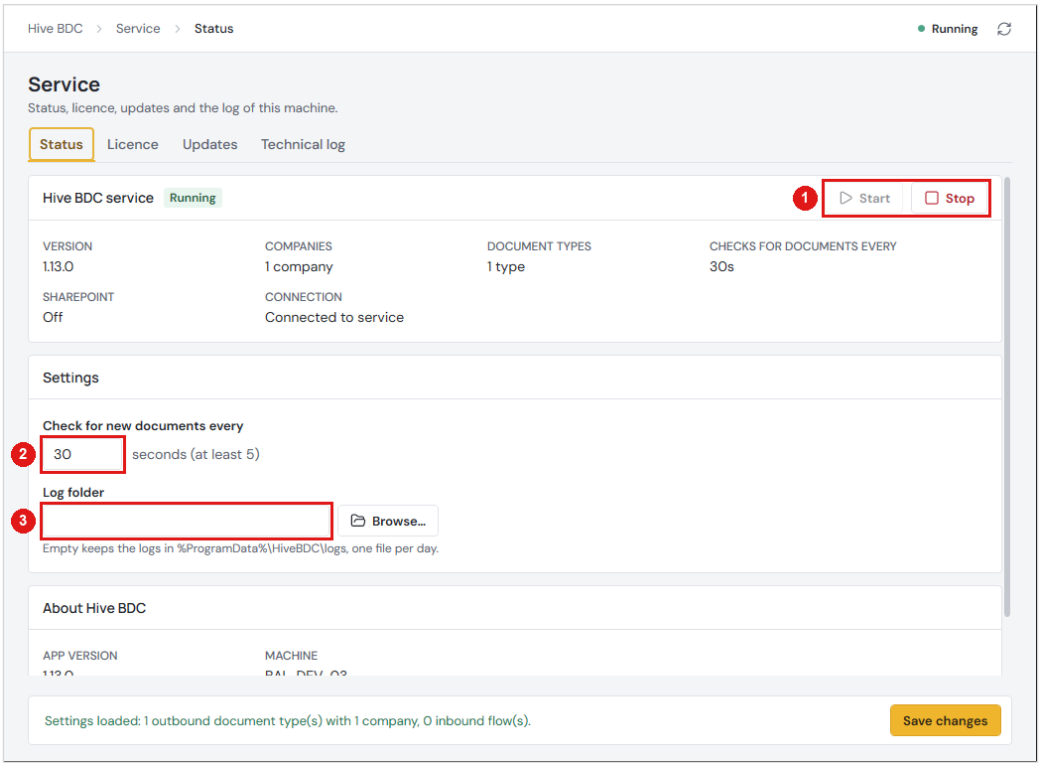

Figure 79: Service, tab Status

The tab Licence shows the licensed customer and the expiry date (1). Renew licence… (2) imports the new .lic file from Balsoft. Without a valid licence, or seven days after it has expired, processing stops.

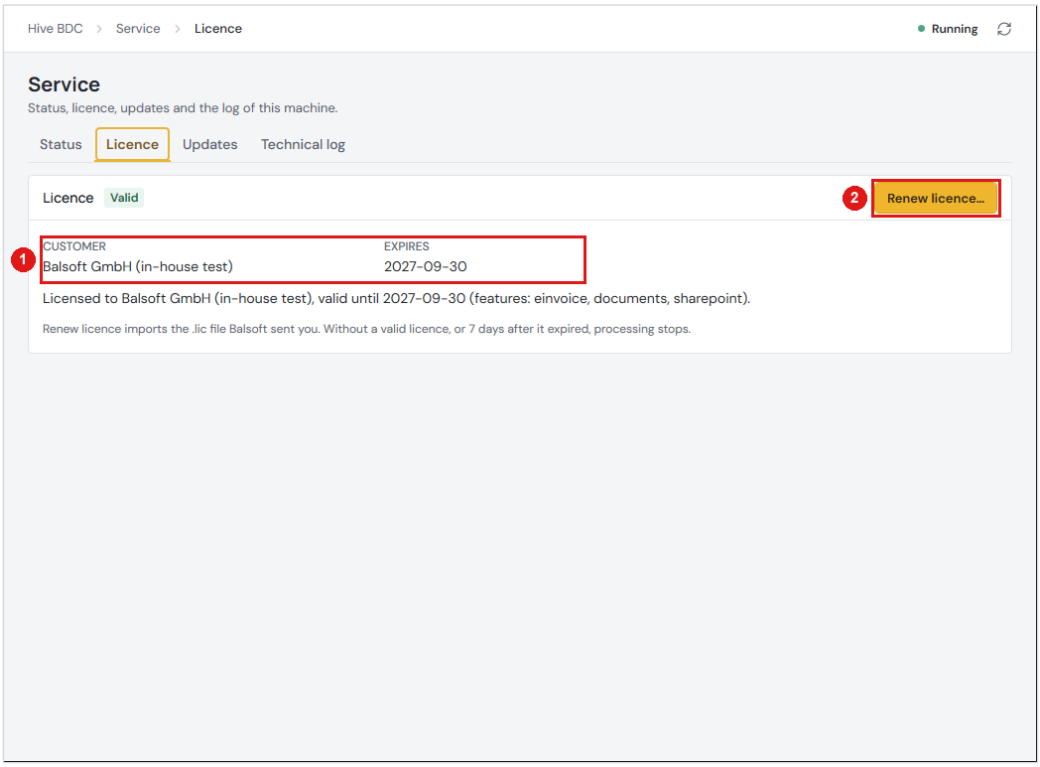

Figure 80: Service, tab Licence

The tab Updates shows this version. Check for updates (1) looks for a newer version of Hive BDC, Release notes (2) shows what changed.

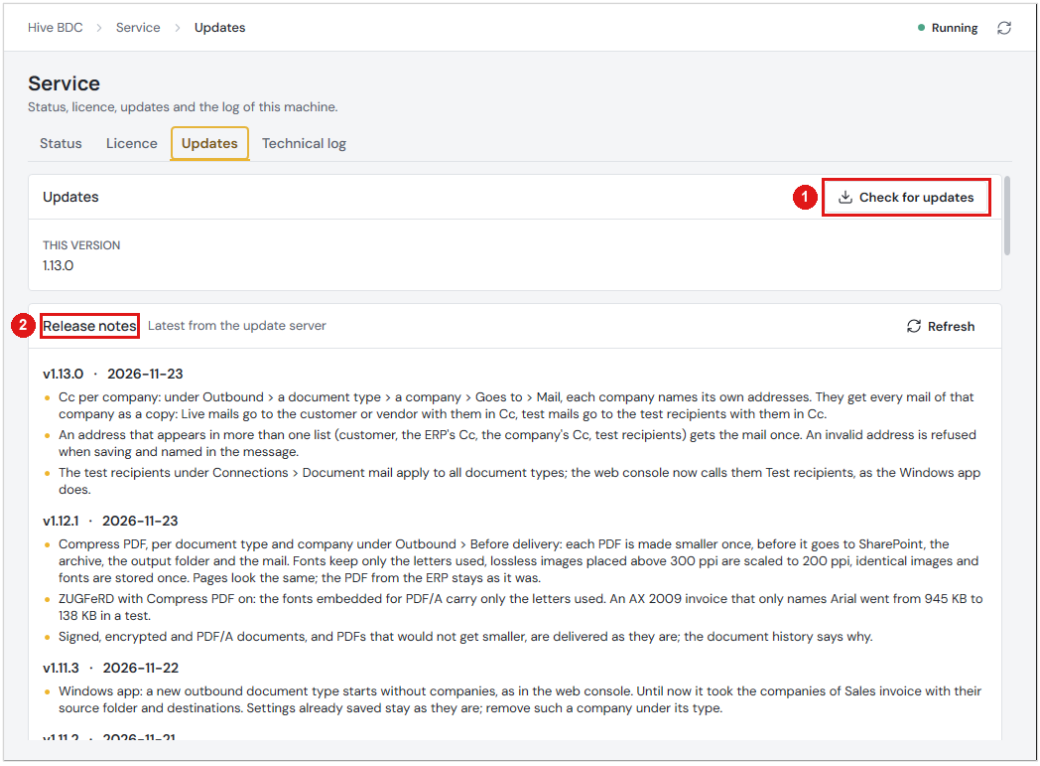

Figure 81: Service, tab Updates

The tab Technical log shows what the service did, line by line, newest first; the colour of a line shows its level (1). Open log folder (2) opens the folder with the log files.

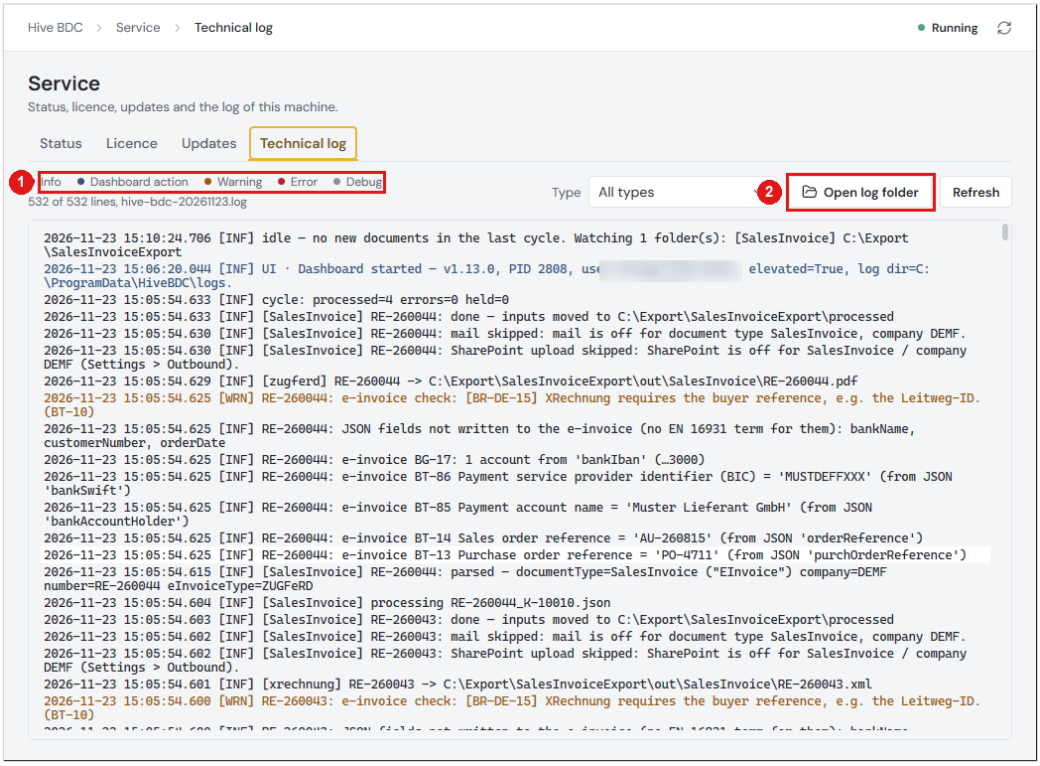

Figure 82: Service, tab Technical log

7 When an invoice is not processed

Nothing is thrown away. An invoice that cannot be processed stays as a line in AX or as a file in the export or error folder, and the reason is in the log.

What you see	What to check
No line appears in the Data Export Table after posting.	Is Sales invoice Active with Auto send in Document types, and is its Export flow not Stopped? Was it a pro forma invoice? If needed, send it with Send Hive Docflow (chapter 5.2).
Send Hive Docflow shows an error.	Is the document type Active and does it have an Export flow? Is the invoice still waiting in the Data Export Table?
The invoice does not appear in the export folder.	Have both batch jobs run for the flow E-Invoice? Is the message in Outbound Flow still in status Created, or in status Error?
A mapped field is missing in the JSON.	Is the Mapped Field Name a reserved name (chapter 4.6)? Was the invoice exported after the mapping was created?
The files are in the export folder but nothing is converted.	Are File Path to Export/Import for Pending in the Flow Table and Folder of the company in Hive BDC exactly the same folder? Does the dashboard show Running at the top right? Are the document type and the company Active?

What you see	What to check
The files went to the error folder.	Search for the invoice number in Document history or look in Service > Technical log. The reason usually names one missing piece of data, for example a missing VAT registration number.
The customer did not receive a mail.	Is Mail On for the company and Send document mails set under Connections > Document mail? Is there a To address in the Lasernet print management or an e-mail address on the customer? From a test AX 2012 the mail goes to the test recipients.
A SharePoint column stays empty.	Is the internal column name used (chapter 6.5)? Does the key in Value exist in the JSON file, written between curly brackets?
The dashboard says the licence has expired.	Ask Balsoft for a new licence file and install it under Service > Licence with Renew licence…. Invoices keep waiting in the folder until then.

When you contact Balsoft, the invoice number and the Outbound Data Id are enough to find the case in the log.

8 Glossary

Term	Meaning
EN 16931	The European standard that describes what an electronic invoice has to contain. XRechnung and ZUGFeRD are both built on it.
XRechnung	A pure data invoice in XML, without a printed page.
ZUGFeRD	A PDF invoice that carries the same invoice data inside the file.
ZR	Zentralregulierung, central settlement. A provider settles invoices on behalf of its member customers.
Data Flow	The AX module that moves data in and out of AX.
Flow Id	The name of one data flow, for example E-Invoice.
Document type	The kind of document, for example Sales invoice. Links the document to its flow.
Auto send	Automatic trigger: a posted document is queued without user action.
Send Hive Docflow	Manual trigger: a button on the journal forms that queues the selected documents.
Customer Invoice Mapping	Adds further invoice fields to the invoice data.
Data Export Table	The AX table that collects the posted documents waiting to be exported.
Outbound Flow	The AX form that lists the messages prepared for sending.
Data area ID	The AX company a document belongs to.
Column and Value	One row under Columns that fills a SharePoint column from the invoice data.

Term	Meaning
Check interval	How often the service looks into the folders, in seconds.
Licence file	The .lic file from Balsoft that allows the processing to run.

Balsoft GmbH, Herler Str. 109, 51067 Köln. For questions about this guide write to support@balsoft.de. Please include the version under Service > Status and the log file of the day.