

ABBYY



ABBYY Vantage

Connector for UiPath Guide

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About the ABBYY Vantage Connector for UiPath

ABBYY Vantage provides content IQ skills that allow you to turn unstructured content into structured, actionable information by means of classification and extraction, as well as processing specific document types like invoices, orders, W2 forms, and more.


ABBYY Vantage Connector for UiPath allows you to incorporate ABBYY Vantage skills into your UiPath workflow.

System requirements

You will need an account with ABBYY Vantage both to configure and to run your process.

ABBYY Vantage Connector for UiPath can run on the following operating systems:

- Windows 10
- Windows Server 2016
- Windows Server 2019


 **Note:** The connector can't be running on computers with Windows Server 2012 R2, Windows 8.1, and older operating systems.

The connector for UiPath can be used with:

- ABBYY Vantage 2.3.2 or later
- UiPath Enterprise Edition 2023.8.0
- Community Edition 2023.4.4 or later

The following external components must be installed:

- Microsoft .Net Framework 4.7.2 or later
- Microsoft .Net 6.0 or later

 **Note:** We recommend that you convert Windows-legacy projects to Windows compatibility, because legacy compatibility is no longer supported. For information on how to convert Windows-legacy projects to Windows, see [Converting Windows-legacy projects to Windows](#).

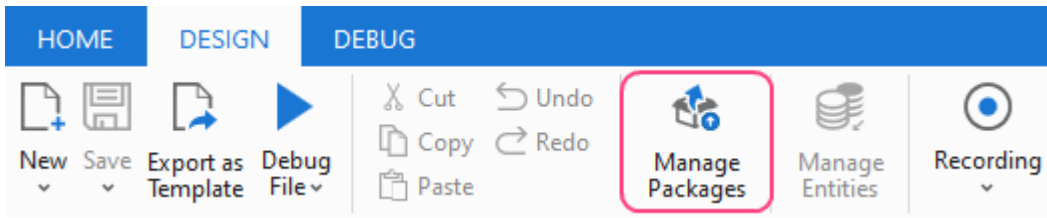
Installing the Connector

ABBYY Vantage Connector for UiPath is a set of activities running on the UiPath side within the user-defined workflow. The activities are delivered as a **NuGet** package.

To install the package:

1. Run **ABBYYVantageConnectorForUiPath.<version>.exe** and follow the instructions of the Installation Wizard. During the installation, specify the connector installation folder. By default, it is set to **C:\Program Files\ABBYY Vantage Connector for UiPath**.
2. In UiPath Studio, open an existing project or create a new one.

3. On the ribbon, click **Manage Packages** on the **Design** tab:

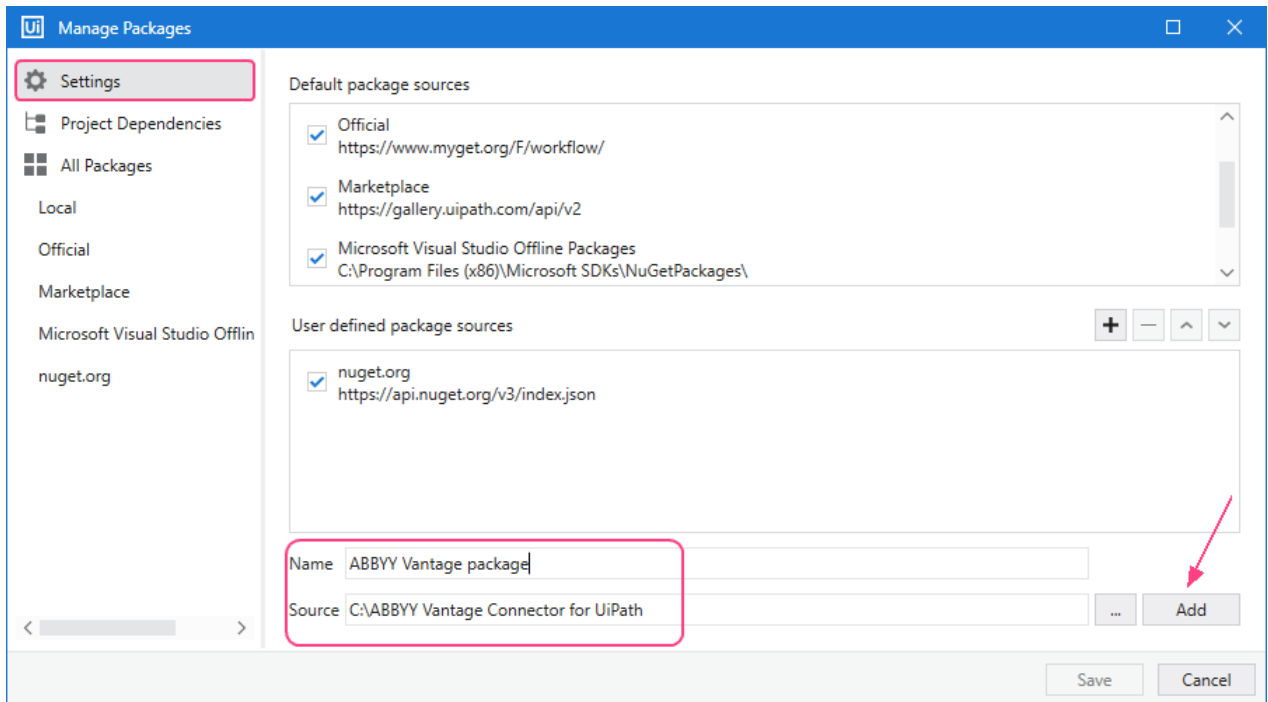


4. Make sure the **nuget.org** package source is enabled. This package source is required in order to install some dependencies for the connector package.

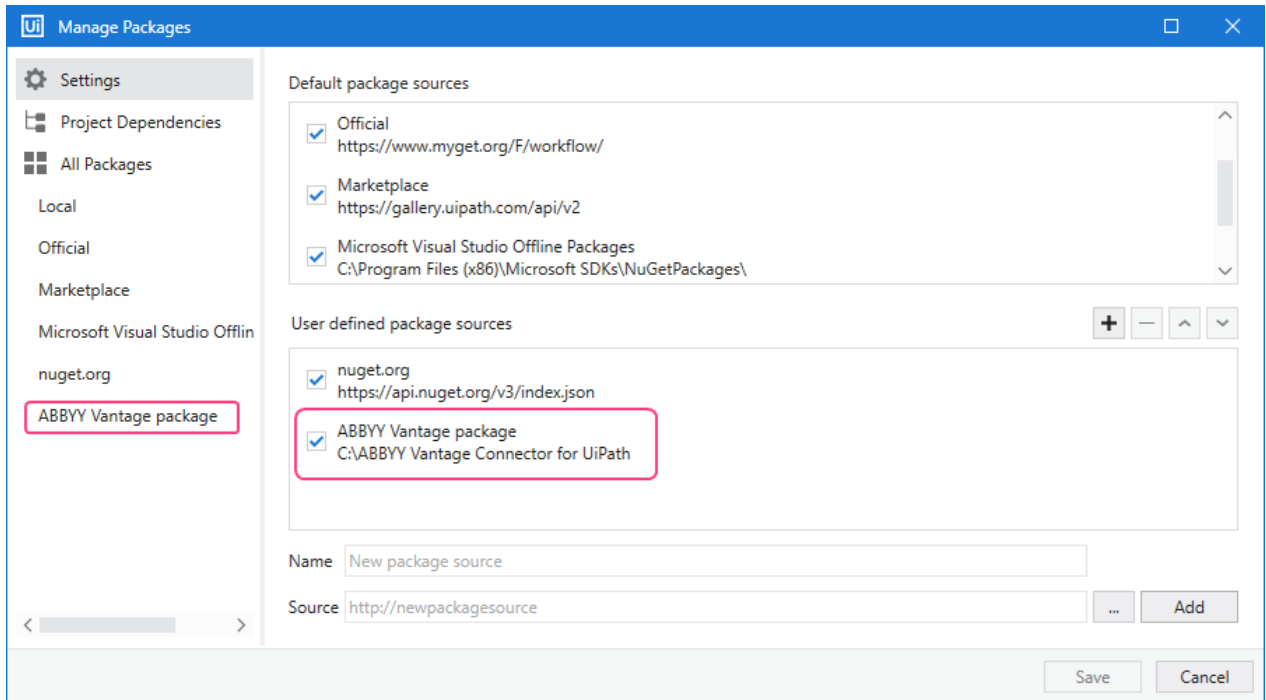
Note: If you already have a configured package source and want to use it, skip step 5.

5. Go to the **Settings** tab of the **Manage Packages** window and create a new package source:

- a. Enter a name for the new package source.
- b. Specify the path to the folder where you intend to place the connector NuGet packages.
- c. Click **Add** to confirm the settings.



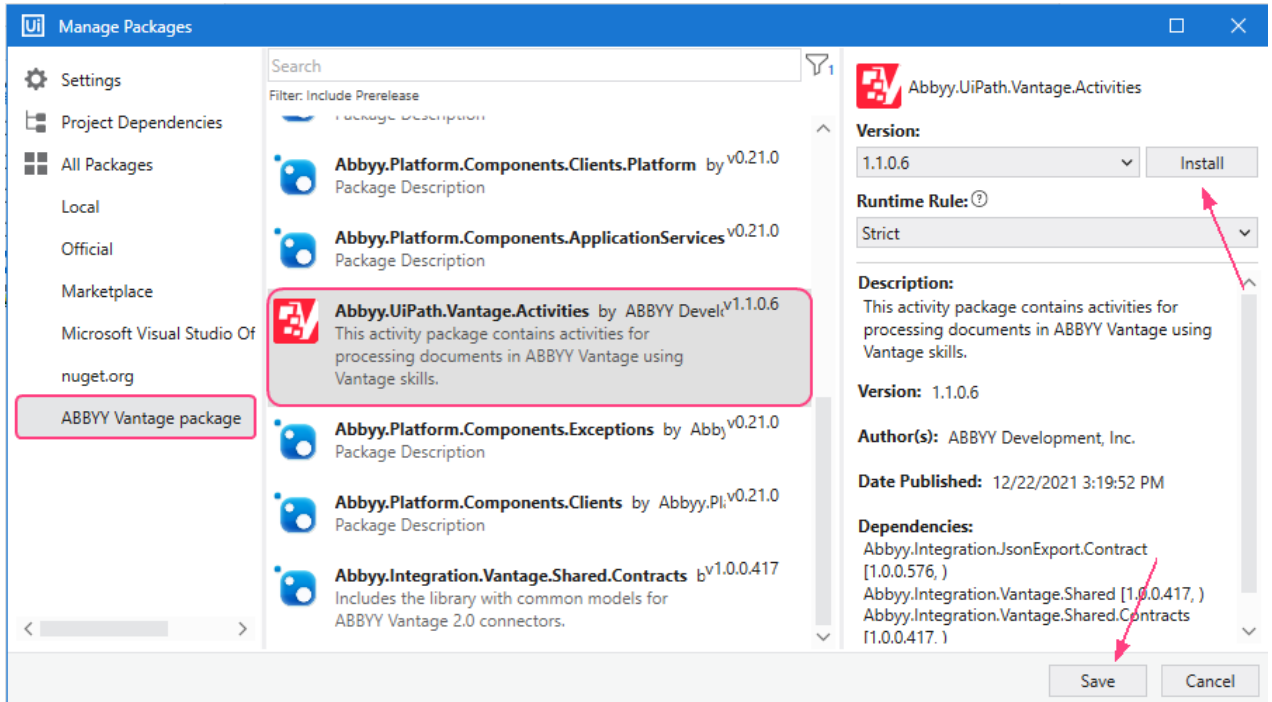
The new package source is displayed in the **User defined package sources** area and in the left pane of the **Manage Packages** window.



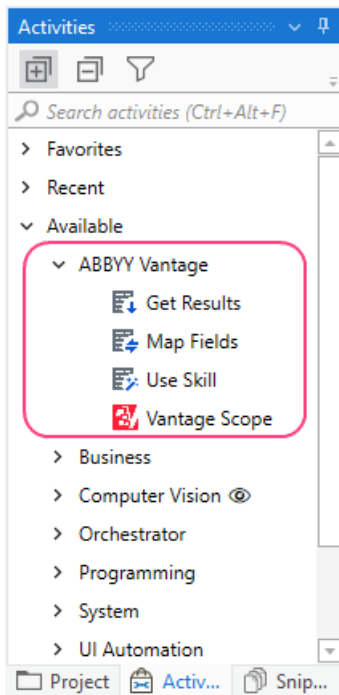
6. Copy all the NuGet packages of the ABBYY Vantage Connector for UiPath from the installation folder to your package source folder. The NuGet packages are located in the **UiPath Activities** subfolder of the installation folder that was created in step 1 (the default location is **C:\Program Files\ABBYY Vantage Connector for UiPath\UiPath Activities**).

After the NuGet connector packages are added to the available package source, you can install the connector package to the project dependencies.

7. In the **Manage Packages** window, navigate to the **All Packages** section and do the following:
 - a. Click the newly created package source category.
 - b. Select **Abbyy.UiPath.Vantage.Activities** from the list of available packages and click **Install**. The **License Acceptance** window will display licensing terms for each third-party package you install.
 - c. Click on **View License** to read the license terms.
 - d. Click **I Accept** to agree with the license terms and install the packages. Finally, click **Save**.



- Once installed, the Vantage activities will appear in the **ABBYY Vantage** section of the list of activities available for your project:



For detailed instructions on installing packages, please refer to the [UiPath Studio Guide](#).

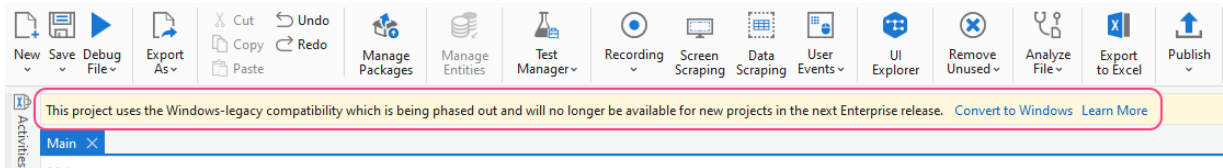
Converting Windows-legacy projects to Windows

We recommend that you convert Windows-legacy projects to Windows.

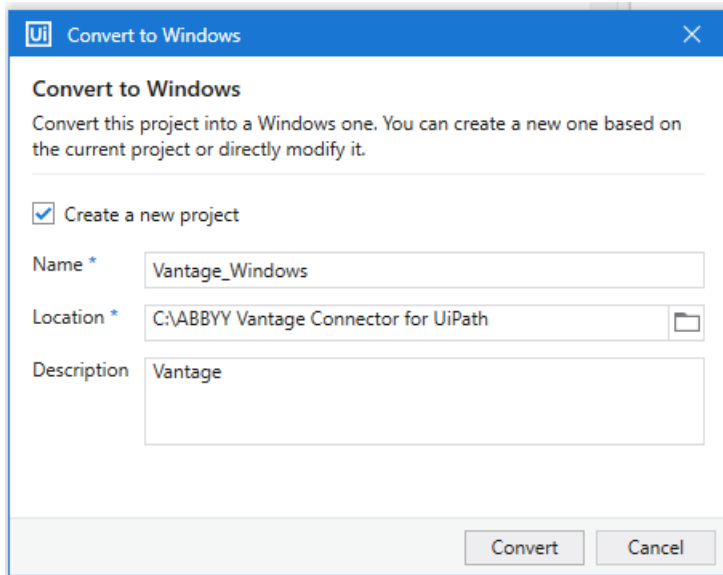
! Important! To convert the project to the Windows compatibility, you need to upgrade the version of the ABBYY Vantage Connector for UiPath. To do this, perform all steps from the section [Installing the Connector](#) except step 5.

The default compatibility for new projects is now Windows compatibility. To convert Windows-legacy projects to Windows compatibility, you should perform the following procedure for each Windows-legacy compatibility project:

1. In UiPath Studio, open the Windows-legacy project.
2. Click the **Convert to Windows** link in the message that appears under the ribbon.



The **Convert to Windows** dialog box will open.



3. Specify how the Windows-legacy project will be converted to Windows:
 - To create a copy of the current project using Windows compatibility and keep the original Windows-legacy project, select **Create a new project**. Enter the name of the project, its desired location, and optionally a description for the new project.
 - To update the existing project and convert it to Windows compatibility, deselect the **Create a new project** option. If you deselect this option, it will not be possible to undo the changes that will be made to the project.
4. Click **Convert**. For more information about converting Windows-legacy projects to Windows compatibility, refer to [UiPath Studio Guide](#).

Using ABBYY Vantage activities in UiPath workflow

The ABBYY Vantage Connector for UiPath lets your workflow send document images to ABBYY Vantage and process it using an available skill.

To view the available skills, create your own skills, or modify existing skills, use the ABBYY Vantage Skill Catalog or ABBYY Vantage Skill Designer. Refer to *ABBYY Vantage Skill Designer Guide* for more information on setting up skills.

The ABBYY Vantage Connector for UiPath delivers the following activities for working with ABBYY Vantage:

- [Vantage Scope](#)
- [Use Skill](#)

- [Get Results](#)
- [Map Fields](#)

To add an activity to the UiPath process, drag the activity from the UiPath Studio **Activities** panel to the **Designer** panel. After the activity has been added to the process, you will need to fill in the fields in the **Properties** panel. You can fill in some of the properties in the **Designer** panel as well. For more details about the properties of the activities, see the sections below.

The ABBYY Vantage Connector for UiPath is shipped with a sample process that demonstrates how you can use ABBYY Vantage activities in your workflow. For more information, see the [Sample process for ABBYY Vantage activities](#) section.

Vantage Scope Activity

The **Vantage Scope** activity passes ABBYY Vantage connection settings to other Vantage activities. It is also a container for other Vantage activities. All other ABBYY Vantage activities must be placed inside the **Vantage Scope** activity.


Note: The **Vantage Scope** activity allows to configure authentication using Resource Owner Password Credentials Flow and Client Credentials Flow. If you set up an External Identity Provider in Vantage, the only authentication flow that will work is the Client Credentials Flow.

For more information, see:

- Setting up an External Identity Provider: https://vantage-eu.abbyy.com/help/English/AdminGuide/?topic=sysadmin_externalidentityprovider if you are in Western Europe, https://vantage-us.abbyy.com/help/English/AdminGuide/?topic=sysadmin_externalidentityprovider if you are in North America, and https://vantage-au.abbyy.com/help/English/AdminGuide/?topic=sysadmin_externalidentityprovider if you are in Australia.
- Creating and configuring a client: https://vantage-eu.abbyy.com/help/English/AdminGuide/?topic=admin_managingrestapiclients_createclient if you are in Western Europe, https://vantage-us.abbyy.com/help/English/AdminGuide/?topic=admin_managingrestapiclients_createclient if you are in North America, and https://vantage-au.abbyy.com/help/English/AdminGuide/?topic=admin_managingrestapiclients_createclient if you are in Australia.
- Authentication flows: https://vantage-eu.abbyy.com/help/English/DevGuide/?topic=developer_apiauthentication if you are in Western Europe, https://vantage-us.abbyy.com/help/English/DevGuide/?topic=developer_apiauthentication if you are in North America, and https://vantage-au.abbyy.com/help/English/DevGuide/?topic=developer_apiauthentication if you are in Australia.

Activity properties

Group	Property	Type	Description
Connection Settings	Authorization grant type	IEnumerable <AuthorizationGrantType>	The grant type that is used for authorization: <ul style="list-style-type: none"> • ResourceOwnerPassword • ClientCredentials

	Password	String	The password used to connect to ABBYY Vantage.
	Secure Password	SecureString	The secure password used to connect to ABBYY Vantage.
	Server URL	String	The ABBYY Vantage server address.
	Tenant	String	The ABBYY Vantage tenant name or tenant identifier.  Important! This property is only required if the user whose credentials are used to connect to the ABBYY Vantage server is registered in several (more than one) tenants on the server. The tenant name can be found on the Vantage sign-in page in your browser when entering the password.
	Username	String	The user e-mail address used to connect to ABBYY Vantage.
Proxy Settings (optional)	Enable Proxy	Boolean	Allows you to use a proxy server to route HTTP requests.
	Server URL	String	The proxy server address (e.g. http://127.0.0.1:8080).
	Username	String	The username used to connect to the proxy server.
	Password	String	The password used to connect to the proxy server.
	Secure Password	SecureString	The secure password used to connect to the proxy server.
Vantage Public API Client settings (optional)	Client Id	String	Vantage application identifier.
	Client Secret	String	Secure Vantage application key.
	Secure Client Secret	SecureString	Secure Vantage application key as a secured string.

Vantage user password, proxy password and Client Secret in the client settings can be set in the Scope Activity either in a string parameter or in the corresponding parameter with the SecureString type.

A password of type String is stored as plain text in the XAML project file and it is not safe. A String password is recommended for use only when configuring the **Use Skill** and **Map Fields** activities for obtaining a list of skills, or for debugging your UiPath process. Once the process is fully configured:

- If you use Resource Owner Password Credentials Flow, remove the **Password** property from the **Vantage Scope** activity and set up the **Secure Password** property.
- If you use Client Credentials Flow, remove the **Client Secret** property from the **Vantage Scope** activity and set up the **Secure Client Secret** property.

We recommend using [UiPath Orchestrator assets](#) to securely store your credentials. In this case, the password can be obtained from Orchestrator by means of the **Get Credential** activity and passed to the **Vantage Scope** activity via a variable. For more details about the **Get Credential** activity, please refer to the official [UiPath guides](#).

Note: The same type of password must be used for Connection Settings, Proxy Settings and for Client Settings.

When you create a client in ABBYY Vantage, configure the following in the **OAuth 2.0 Flows Settings** section of the client settings, depending on the grant type you use:

- Resource Owner Password Credentials Flow:
 - Enable the **Allow Resource Owner Password Credentials Flow** option.
- Client Credentials Flow:
 - Enable the **Allow issuing refresh tokens to refresh access tokens** option.
 - Enable the **Allow client credentials flow** option.
 - Select the required roles with which the application will log in to Vantage by clicking the **Manage Roles** setting. **Important!** If you need to select from the list one or more roles associated with skills, also select the allowed skills for these roles. For more information about ABBYY Vantage roles, see https://vantage-eu.abbyy.com/help/English/AdminGuide/?topic=admin_rolebasedaccess if you are in Western Europe, https://vantage-us.abbyy.com/help/English/AdminGuide/?topic=admin_rolebasedaccess if you are in North America, and https://vantage-au.abbyy.com/help/English/AdminGuide/?topic=admin_rolebasedaccess if you are in Australia.

Fields to be filled for the Resource Owner Password Credentials Flow:

Abbyy.UiPath.Vantage.Activities.VantageScopeActivity	
Common	
DisplayName	Vantage Scope
Connection Settings	
Authorization grant type	ResourceOwnerPassword
Password	<i>The password used to connect</i> (+) ...
Secure Password	SecurePass (+) ...
Server URL	VantageServerUrl (+) ...
Tenant	<i>Id or name of tenant used to c</i> (+) ...
Username	VantageUserName (+) ...
Misc	
Private	<input type="checkbox"/>
Proxy Settings (optional)	
Enable Proxy	False (+) ...
Password	<i>Proxy user password</i> (+) ...
Secure Password	<i>Proxy secured user password</i> (+) ...
Server URL	<i>Proxy server URL (e.g. http://1</i> (+) ...
Username	<i>Proxy user name</i> (+) ...
Vantage Public API Client settings (optional)	
Client Id	ClientID (+) ...
Client Secret	<i>Secure Vantage application ke</i> (+) ...
Secure Client Secret	SecureSecret (+) ...

Note: If all the properties in the Vantage Public API Client settings are empty, then the default ABBYY Vantage client is used.

Fields to be filled for the Client Credentials Flow:

Abbyy.UiPath.Vantage.Activities.VantageScopeActivity	
Common	
DisplayName	Vantage Scope
Connection Settings	
Authorization grant type	ClientCredentials
Password	<i>The password used to connect</i> (+) ...
Secure Password	<i>Secure user password used to</i> (+) ...
Server URL	VantageServerUrl (+) ...
Tenant	<i>Id or name of tenant used to c</i> (+) ...
Username	<i>The username used to connec.</i> (+) ...
Misc	
Private	<input type="checkbox"/>
Proxy Settings (optional)	
Enable Proxy	False (+) ...
Password	<i>Proxy user password</i> (+) ...
Secure Password	<i>Proxy secured user password</i> (+) ...
Server URL	<i>Proxy server URL (e.g. http://1</i> (+) ...
Username	<i>Proxy user name</i> (+) ...
Vantage Public API Client settings (optional)	
Client Id	ClientID (+) ...
Client Secret	<i>Secure Vantage application ke</i> (+) ...
Secure Client Secret	SecureSecret (+) ...

Proxy Settings

You can configure connector requests at runtime to go through a proxy server. The following proxy authentication types are supported: Basic, NTLM, IP authentication, and transparent proxy.

To use a proxy, select the **Vantage Scope** activity. In the **Proxy Settings (optional)** properties group, set the value of the **Enable Proxy** property to "true" and then specify the address of your proxy server in the **Server URL** property.

If you are using Basic authentication, in the **Username** and **Password / Secure Password** properties, specify the proxy connection credentials.

If you are using NTLM authentication, the **Username** and **Password** fields are optional. If the **Username** and **Password** fields are empty, the credentials of the user under which the UiPath process is running will be used.

Use Skill Activity

The **Use Skill** activity creates a transaction for processing a document by means of an ABBYY Vantage skill. A unique identifier of the transaction is then returned as the **Transaction Id** output property.

Activity properties

Group	Property	Type	Description
Connection Settings	Skill Name	String	The name of the Vantage skill.
Input	Input Files	IReadOnlyDictionary<String, InputFile>	A Dictionary collection, where String is the name of the file and InputFile is the class describing the input file. Note: Before adding files to the dictionary, it is necessary to ensure that non-repeating values are passed to the String parameter. You cannot add more than one file to the Input Files dictionary for which the same name will be passed in the String parameter.
	Transaction Registration Parameters	IReadOnlyDictionary<String, String>	A Dictionary collection of transaction registration parameters to pass the key and value of each parameter.
Output	Transaction Id	Guid	The identifier of the created transaction. This ID is then used as the Transaction Id input property of the Get Results activity to get the status of the transaction and the processing results.

InputFile class properties:

Name	Type	Description
fileStream	Stream	The contents of the file that will be passed to ABBYY Vantage.

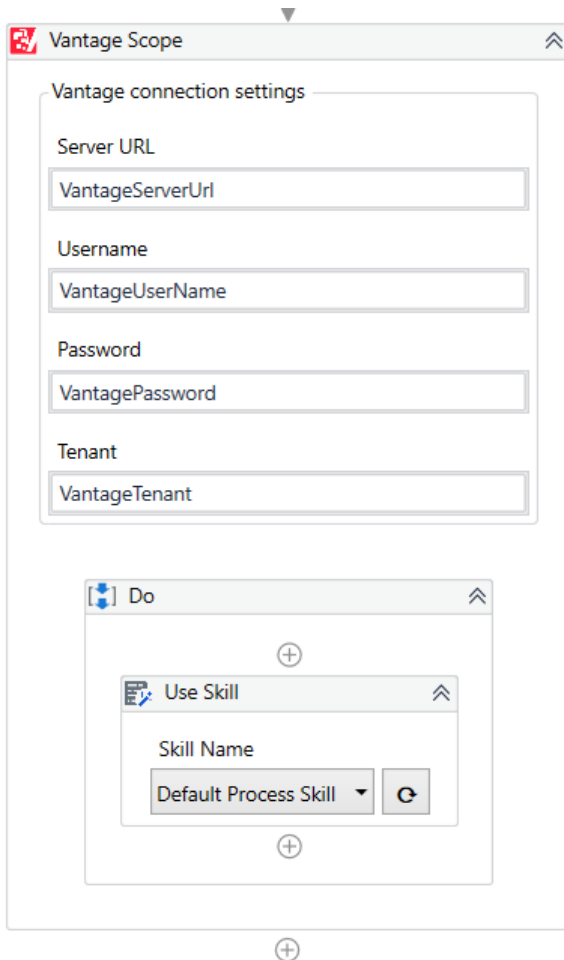
		It is possible to pass the stream of the file on a local disk as a value of this property (e.g. <i>System.IO.File.OpenRead("D:\images\Invoice1.pdf")</i>).
index (optional)	Integer	The index number of the file in the transaction.
fileRegistrationParameters (optional)	ReadOnlyDictionary<String,String>	A Dictionary collection of file registration parameters to pass the key and value of each parameter.

Important! The **Use Skill** activity can only be used inside a configured **Vantage Scope** activity.

When setting up the **Use Skill** activity, do the following depending on the authentication flow you use:

- Resource Owner Password Credentials Flow—Specify the **Password** property of the **Vantage Scope** activity to obtain a list of available skills. Once you have configured your UiPath workflow, consider changing the **Password** property to **Secure Password**.
- Client Credentials Flow—Specify the **Client Secret** property of the **Vantage Scope** activity to obtain a list of available skills. Once you have configured your UiPath workflow, consider changing the **Client Secret** property to **Secure Client Secret**.

For more details, see the [Vantage Scope Activity](#) section.



Click the button to the right of the drop-down list under **Skill Name** to get a list of skills. Then expand the **Skill Name** drop-down list and select the skill that you intend to use for document processing.

Note: We recommend reducing the file size of big files to 30 MB or less to speed up document processing.

Note: In the **Skill Name** parameter of the **Use Skill** activity, you can use a UiPath variable with String type to store the name of the skill. When selecting a skill via the drop-down list of the activity on the design panel, the newly selected skill will be written to the specified variable. You can store the name of the skill directly in the variable. Expressions or references to other variables in the value of the variable are currently not supported.

Get Results Activity

The **Get Results** activity is used to retrieve the processing results from ABBYY Vantage.




Activity properties


Group	Property	Type	Description
Input	Transaction Id	Guid	The identifier of the transaction. Pass to this property the value obtained as the output Transaction Id property of the Use Skill activity.
	Delete Transaction	Boolean	Specifies whether the completed transaction should be deleted, whether successful or not. The default value of the property is FALSE, which means that the transaction is not deleted.
Output	Document Results	IEnumerable<DocumentResult>	A collection of result documents after processing.
	Review Link	String	A link to the ABBYY Vantage Manual Review Client, where the transaction results can be reviewed (this link can be obtained only if the Process skill used contains a Review activity).
	Transaction Status	TransactionStatus	The status of the transaction. The following statuses are possible: "New," "Processing," "Review," "Processed." Based on the status received, you can configure your UiPath process to run a different logic. For example, if the transaction has the "Processing" status, wait a few seconds and call the activity again.

When using a Classification skill, Document skill, and OCR skill, all transaction input files will be assembled into one document. When using a Process skill, multiple result documents can be obtained.

By default, in the Process skill, a separate document is created in ABBYY Vantage for each input file added to the transaction. Documents can be of different classes, but they will all be processed within one transaction. You can also set your own document assembly settings using the Assemble Activity in the Process skill. Thus, each transaction document will have its own processing results. The **Document Results** output parameter of the **Get Results** activity receives the results of processing all the documents of the transaction as a collection of instances of the *DocumentResult* class.

DocumentResult class properties:

Name	Type	Description
DocumentId	String	The identifier of the document.
ClassificationConfidences	IEnumerable<ClassificationConfidence>	A collection of classification confidence values. A list of all the classes available in the Classification skill applied to the document, together with their classification confidence values.
ClassName	String	The document class based on the classification results.
ExtractedData	String	A JSON string containing the extracted data.  Note: For a Process skill, the property can be obtained if the Values, metadata, and field structure for each document option is enabled in the Output Activity.
IsClassificationConfident	Boolean	The resulting class is deemed to have been determined with confidence if this value is TRUE.
ResultFiles	IReadOnlyDictionary<String,Stream>	A collection of result files after processing.
DocumentFullText	String	The full-text layer of a document that has been captured by ABBYY Vantage.  Note: If the skill configuration does not contain a full text export setting, this property will contain the default value. The default value of the property will contain the following text: TXT export was not configured in the ABBYY Vantage skill settings. Please enable TXT export in the skill that you have selected.  Note: TXT export is only available for OCR or Processing skills.

 **Note:** All listed parameters are collected in a separate **DocumentResult** in the [Document Results](#) collection. Even if there is only one output document, its output parameters will be available from the first **DocumentResult** in **Document Results** collection.

ClassificationConfidence class properties:

Name	Type	Description
ClassName	String	Vantage document class.
Confidence	Int	The degree of confidence that the document belongs to this class. Possible values range from 0 to 100.

⚠ Important! The **Get Results** activity can only be used inside a configured **Vantage Scope** activity. If transaction processing is completed successfully (i.e. Transaction Status = "Processed"), the results will be saved in the output properties.

If the transaction is still being processed (i.e. Transaction Status = "New" / "Processing"), wait a few seconds and call the **Get Results** activity again.

A special case, where Transaction Status = "Review", is described below.

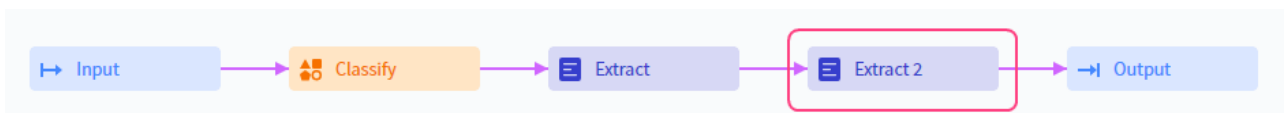
The results that the **Get Results** activity may obtain will vary depending on the skill applied to the document.

- If a Classification skill is used (for example, Vantage Classifier), the following results will be obtained:
 - Transaction Status
 - Document Results (for each **DocumentResult**)
 - DocumentId
 - ClassificationConfidences
 - ClassName
 - IsClassificationConfident
 - ResultFiles (json file containing classification results data)
- If a Document skill is used (for example, Invoice US), the following results will be obtained:
 - Transaction Status
 - Document Results (for each **DocumentResult**)
 - DocumentId
 - ExtractedData
 - ResultFiles (the results will be contained in two JSON files. The first file will contain all document data. The second file will contain the values of the extracted fields and the rule errors (if any). The name of the second file will end with "_fields.json")
- If an OCR skill is used, the following results will be obtained:
 - Transaction Status

- Document Results (for each **DocumentResult**)
 - DocumentId
 - ResultFiles (those files will be received the export to which is configured in the OCR skill)
 - DocumentFullText (if export to TXT is enabled in the skill)
- If a Process skill is used, the obtained results will depend on the activities that make up the Process skill and their settings, in particular the **Output** activity settings. For more information about the Process skill, see https://vantage-eu.abbyy.com/help/English/SkillDesigner/?topic=procskill_settingup if you are in Western Europe, https://vantage-us.abbyy.com/help/English/SkillDesigner/?topic=procskill_settingup if you are in North America and https://vantage-au.abbyy.com/help/English/SkillDesigner/?topic=procskill_settingup if you are in Australia.

If a Process skill comprises a **Classify** activity and an **Extract** activity, the above results will be obtained for both a Classification skill and a Document skill.

If a Process skill comprises multiple **Classify** or **Extract** activities, the results will be obtained for the last activities of a particular type. For example, the JSON file returned by the Process skill illustrated below will contain the extraction results from the **Extract** activity that is highlighted in red.



If the **PDF** option is enabled in the **Exported Data Settings** dialog of an **Output** activity of a Process skill, the results will contain the JSON file with the extraction results and the document image exported to a PDF file together with a text layer. For each transaction document, the **DocumentFullText** parameter will be received if export to TXT is enabled in the skill.

A Process skill can also contain a **Review** activity. When using such a skill for document processing, processing can be suspended if the document requires manual review. In this case, the **Get Results** activity will obtain the following results:

- Transaction Status = "Review"
- Review Link

Once the manual review and transaction processing are completed, you can obtain the above results by calling the **Get Results** activity again.

Transaction processing may fail for a number of reasons (for example, an input file may be corrupted or an input file format may not be supported by ABBYY Vantage). If this is the case, the **Get Results** activity will throw an exception.

Map Fields Activity

The **Map Fields** activity is used to save extracted field values to UiPath variables. You can map ABBYY Vantage fields to UiPath variables in the **Designer** panel.

Activity properties

Group	Property	Type	Description
Connection Settings	Skill Name	String	The name of the Vantage Document skill.
Input	Extracted Data	String	Accepts a JSON string containing the extracted data. Pass to this property the value of the ExtractedData property of the particular DocumentResult received in the Get Results activity. To pass values between the properties, use UiPath variables.

Important! The **Map Fields** activity can only be used inside a configured **Vantage Scope** activity. When setting up the **Map Fields** activity, do the following depending on the authentication flow you use:

- Resource Owner Password Credentials Flow—Specify the **Password** property of the **Vantage Scope** activity to obtain a list of available skills. Once you have configured your UiPath workflow, consider changing the **Password** property to **Secure Password**.
- Client Credentials Flow—Specify the **Client Secret** property of the **Vantage Scope** activity to obtain a list of available skills. Once you have configured your UiPath workflow, consider changing the **Client Secret** property to **Secure Client Secret**.

For more details, see the [Vantage Scope Activity](#) section.

Note: At runtime, the **Extracted Data** property of the **Map Fields** activity must receive the value of the **ExtractedData** property of the particular **DocumentResult** received in the **Get Results** activity containing the data extracted by the Document skill for which the **Map Fields** activity has been configured. After receiving the extracted data of the particular **DocumentResult** received in the **Get Results** activity, check if the name of the Document skill applied to the document is the same as the name of the Document skill for which the **Map Fields** activity has been configured, and if yes, pass the extracted data to **Map Fields**. To obtain the document type (the same thing as the name of the Document skill applied to the document), you may use the output **ClassName** property of the particular **DocumentResult** received in the **Get Results** activity. To get the document type to this parameter, in the **Extract** activity of the Process skill, configure the mapping of the class with the Document skill that has to be used for document processing. When mapping, it is necessary to adhere to the condition that the class name is equal to the name of the selected Document skill. For more information about the setting up of the **Extract** activity, see https://vantage-eu.abbyy.com/help/English/SkillDesigner/?topic=procskill_activity_extract if you are in Western Europe, https://vantage-us.abbyy.com/help/English/SkillDesigner/?topic=procskill_activity_extract if you are in North America and https://vantage-au.abbyy.com/help/English/SkillDesigner/?topic=procskill_activity_extract if you are in Australia.

To map ABBYY Vantage fields to UiPath variables, complete the following steps:

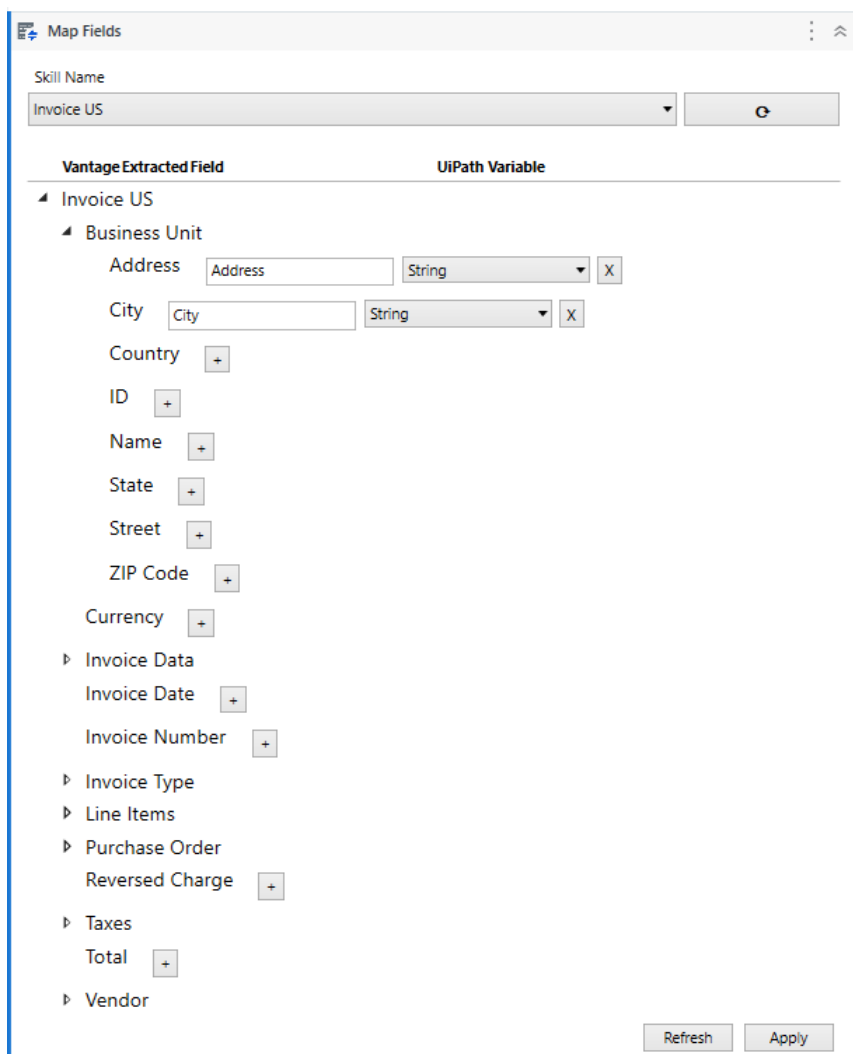
1. Open the **Map Fields** activity in the **Designer** panel and click the button to the right of drop-down list under **Skill Name** to get a list of available skills.

- Expand the **Skill Name** drop-down list and select the Document skill whose extracted field values must be saved to UiPath variables.

Note: You can only choose a Document skill.

- Click the **Refresh** button. A field tree will be displayed in the **Vantage Extracted Field** column.
- Expand the tree and click the **Plus** button next to a field that you want to map. In the **UiPath Variable** column, a UiPath variable name and type will appear. By default, the name of the variable will be the same as the name of the Vantage field, but you can change this name if required.

Note: Ensure that the UiPath variable names specified in the **Map Fields** activity match the Variables Naming Convention configured in your UiPath process. If variable names do not follow the naming rules, they will be displayed with a warning symbol in the UiPath variable list. For more about Variables Naming Convention, see the [UiPath documentation](#).



- Repeat the previous step for all other fields that you need to map. When setting up mapping, you can specify already existing UiPath variables. In this case, make sure that the type of your variables matches the one recommended in [the table below](#).
- After you have mapped your document fields to UiPath variables, click **Apply** to save the changes. Now when the **Map Fields** activity is called at runtime, variable values will be filled in with extracted data.

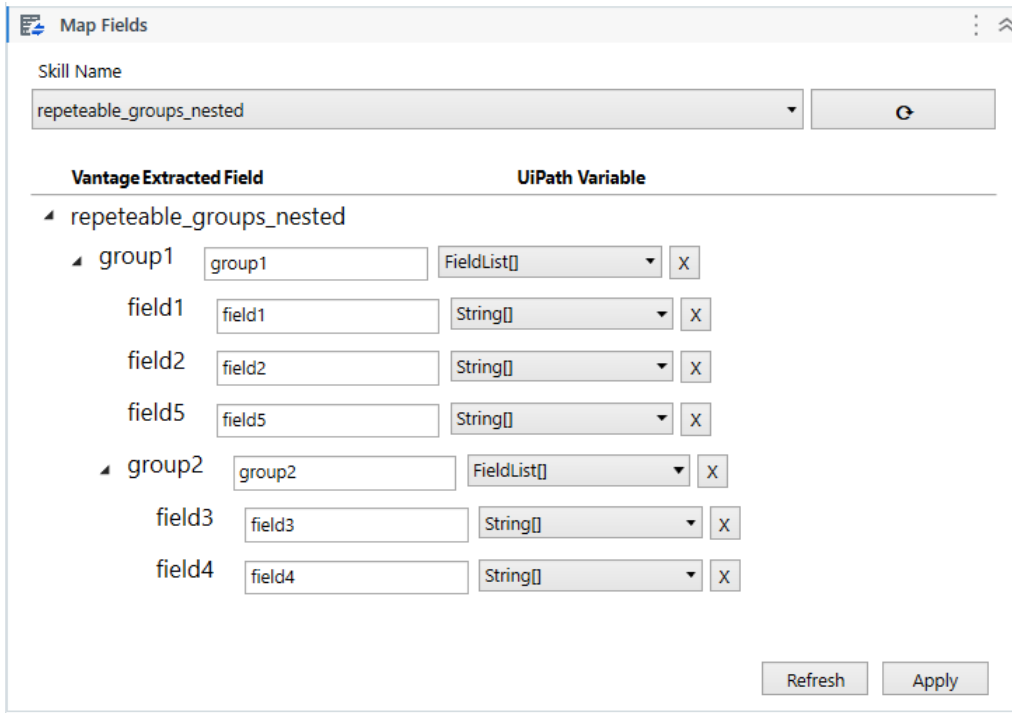
Note: The specified UiPath variables will be created in the closest to the **Map Fields** activity Sequence (for example, in Flowchart).

In the **Skill Name** parameter of the **Map Fields** activity, you can use a UiPath variable with String type to store the name of the skill. When selecting a skill via the drop-down list of the activity on the design panel, the newly selected skill will be written to the specified variable. You can store the name of the skill directly in the variable. Expressions or references to other variables in the value of the variable are currently not supported.

The table below shows what type of UiPath variable corresponds to each ABBYY Vantage field type.

ABBYY Vantage Field Type	UiPath Variable Type
Text	String
Date	String
Number	String
Money	String
Barcode	String
Checkmark	Boolean
Checkmark group (can be obtained as separated checkmarks)	FieldList
Group	FieldList
Group (for repeatable groups)	FieldList[]
Table	FieldList[]

Note: Table columns as well as repeating fields will be mapped to UiPath variables of type String[]. All repeating fields and fields that are part of a repeatable group (or any other repeating fields and repeatable groups within repeatable groups) will be mapped to UiPath variables of type FieldList[]. It is also possible to map child objects of this group into variables of other simple types:



GroupItem class properties:

(GroupItem is a structure containing one instance of some repeating object (field or group of fields))

Method/Property	Parameter	Type	Description
Keys		IEnumerable<string>	Key values. Each value is the name of a specific nesting level.
Values		IEnumerable<ReadOnlyList<FieldList>>	Set of field values of nesting levels.
Count		Integer	Number of nested fields.
ContainsKey	Key: String	Boolean	Specifies if a nested field exists.
TryGetValue	Key: String, Value: IReadOnlyList<FieldList>	Boolean	Specifies if a value exists. If there is a value, returns True and the value, otherwise returns False.
this[]	Name: String	IReadOnlyList<FieldList>	Returns the value of the specified nested field.
Find	Name: String	IEnumerable<FieldList>	Finds all nested fields of any nesting level with the specified name.
Filter	Predicate: (Name: String, Node:	IEnumerable<FieldList>	Finds all nested fields of any nesting level that satisfy the

	FieldList) => Boolean		predicate.
Descendents	NameItems: Params String[]	IEnumerable<FieldList>	Finds all nested fields of any nesting level whose name matches the nameItems parameter.

FieldList class properties:

(FieldList is a structure that corresponds to a field or group of fields (repeating fields or repeating groups with the same name) and contains the values (multiple instances possible) of the fields or groups)

Method/Property	Parameter	Type	Description
Values		IEnumerable<Object>	Set of scalar field values.
Count		Integer	Number of nested GroupItems.
Find	Name: String	IEnumerable<FieldList >	Finds all nested fields of any nesting level with the specified name.
Filter	Predicate: (Name: String, Node: FieldList) => Boolean	IEnumerable<FieldList >	Finds all nested fields of any nesting level that satisfy the predicate.
this[]	Num: Integer	GroupItem	Returns the GroupItem with nested fields (if any) at the number of the num parameter.

Note: The [Sample Process](#) provides an example of using a variable with the FieldList[] type (the Description column of the LineItems table is displayed in the log messages).

For more information about the **Group** field type, see: https://vantage-eu.abby.com/help/English/SkillDesigner/?topic=docskill_fields_group, https://vantage-us.abby.com/help/English/SkillDesigner/?topic=docskill_fields_group or https://vantage-au.abby.com/help/English/SkillDesigner/?topic=docskill_fields_group, depending on your region.

Sample process for ABBYY Vantage activities

ABBYY Vantage Connector for UiPath is shipped with a sample process that demonstrates how you can use ABBYY Vantage activities in your workflow, how to configure your UiPath process to pass input data to ABBYY Vantage activities, and how process data is received from ABBYY Vantage activities. A sample process also shows how you can configure the connector to create a multi-file transaction in ABBYY Vantage, set transaction and file registration parameters, and how you can process results from several documents of one transaction.


Note: The sample process comes with Windows compatibility

You can run this process and see how one person's Bank Statement and Utility Bill documents are processed in a single transaction using the connector. The default location of the sample process is **C:\Users\Public\ABBYY Vantage Connector for UiPath\SampleWorkflow\Vantage**.

The workflow will get input images from the predefined input location (**\SampleWorkflow\Vantage\Input images**) and send it to ABBYY Vantage for processing. Once the processing is complete, some of the processing results will be saved to **\SampleWorkflow\Vantage\Results** and others will appear in the workflow log in the **Output** panel. The following processing results will be saved to **\SampleWorkflow\Vantage\Results**:

- A subfolder with the name equal to the transaction ID will be created.
- In the transaction folder, a **ResultFiles** subfolder for saving all export files from all documents of the transaction will be created. Each file name will have the prefix containing the identifier of the document.
- Next to the **ResultFiles** folder, text files for storing the classification confidence values and full-text recognition result (**ClassificationConfidences** and **DocumentFullText** parameters) of each document will be created. Each file name will have the prefix containing the identifier of the document.

In this sample, **DocumentFullText** will be filled with the default value and will not contain the results of full-text recognition, because the Default Process skill used to create a transaction in the sample process is not configured to export full-text recognition results to TXT. You can create a copy of the Default Process skill, change the export file settings in the Output activity, publish the skill, and then use it in the Use Skill activity.

 **Note:** The TXT file containing the classification confidence values is just an example of how the **Classification Confidences** value received by the **Get Results** activity can be processed. You do not need to save results to TXT files.

The following processing results obtained by the **Get Results** activity will be displayed in the workflow log in the **Output** panel:

- Document Class
- Is Classification Confident
- Values of UiPath variables
These values contain data for individual fields of the document, mapped into Map Fields activities and filled while passing Map Fields activities when the process was executed. The process contains two Map Fields activities, each for a different document type.

The following fields are displayed in the log:

- Bank Statement:
 - Bank Name
 - Account Owner Name
 - Ending Balance of the Period
- Utility Bill:

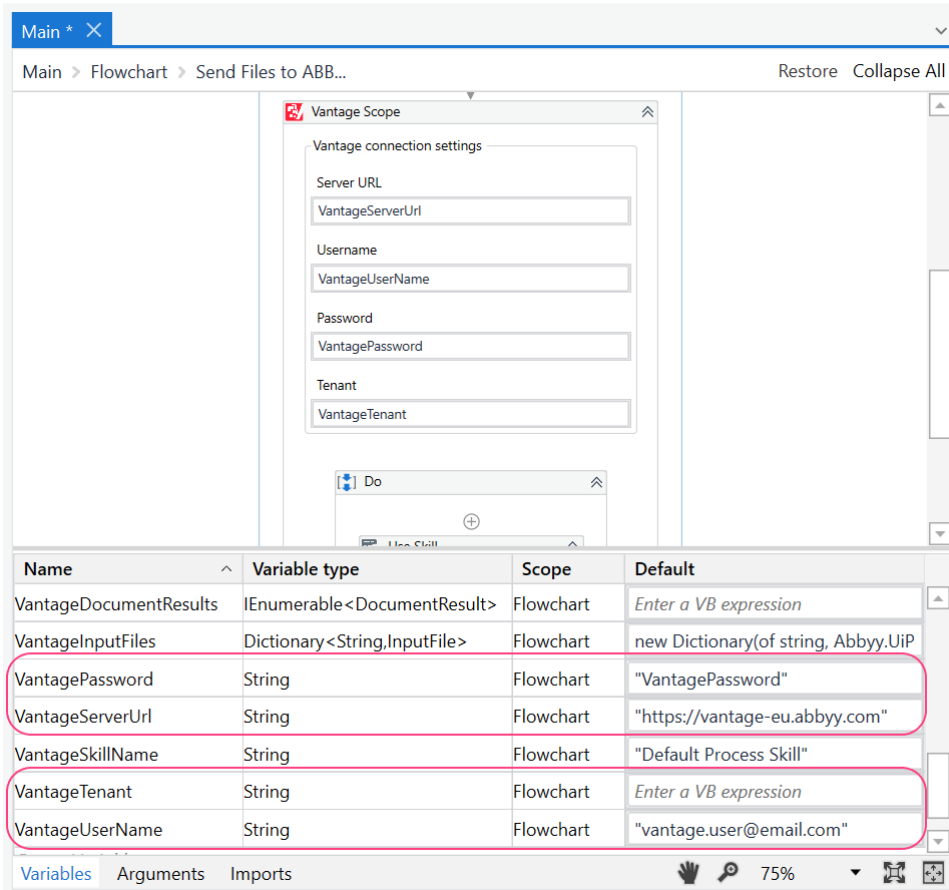
- Customer Name
- Issuer Name
- Bill Date
- Current Charges
- Description column from the LinelItems table

For more details about getting processing results, see the [Get Results Activity](#) section.

Running the sample process

To run the sample process, complete the following steps:

1. Copy the folder containing the sample process (**C:\Users\Public\ABBYY Vantage Connector for UiPath\SampleWorkflow**) into any folder accessible to the user running UiPath Studio.
2. In UiPath Studio, open the **Main.xaml** file.
3. In the variables listed in the **Design** tab, double-click the **Send Files to ABBYY Vantage** sequence and open the **Variables** panel below, specify the address of the ABBYY Vantage server and the credentials that were used to register your ABBYY Vantage account:
 - VantageServerUrl
 - VantageUserName
 - VantagePassword
 - VantageTenant (if your user is in multiple tenants)



4. Run the workflow by clicking **Debug File > Run File** or by pressing **Ctrl + F5**.

Once you have completed the above steps, the workflow will send documents to ABBYY Vantage for processing.

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