

blueprism[®]

Robotic Process Automation Software

Microsoft Vision

USER GUIDE

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1. Introduction

As the market for RPA grows, also grows the interest of what RPA can do and how easy it can integrate with every ecosystem available. With the advent of Artificial Intelligence to the marketplace, interest has grown in capabilities that provide integrations with different pre-trained AI services in the cloud.

This document focuses on the design of the integration between Blue Prism and Microsoft’s Vision Cognitive Service. Microsoft provides these in the form of web services, which are consumed via RESTful APIs.

2. Solution Overview and Configuration

The basic design of the Microsoft Vision Skill is to encapsulate the different AI Cognitive services offered by Microsoft. These integrations can be used as an easy bridge to connect the client’s processes to the different AI services developed by Microsoft.

The Blue Prism’s Microsoft Vision Skill interacts with the Microsoft Cognitive Services by using Blue Prism to construct a REST call. Then, the response given back is handled by Blue Prism and then converted into easy-to-use outputs, such as Text, Numbers, or Collections.

All of Microsoft’s services require a subscription key, which is given to each party as part of their contract with Microsoft. When subscribing to a service, Microsoft grants two keys, but only one key is needed to call each API listed in this document. Data Flow would be as such:



2.1. Limitations

The following limitations should be understood before attempting to use these integrations:

- The customer or partner is responsible for the configuration and maintenance of the relevant cloud subscriptions and services. Blue Prism cannot provide any support on the configuration of the cloud environment itself.
- Use of the APIs may incur additional costs, depending on usage.
- There is always a possibility with external services that the APIs will change. This Skill is provided as-is without warranties, and support is provided by Blue Prism on a best endeavors basis and is not subject to formal SLAs.

3. Pre-Requisites and Environment Configuration

This section outlines the pre-requisites that are required to use the integrations. Note that Blue Prism is not able to provide any support in configuring the Microsoft Cloud Services themselves.

3.1. Microsoft Cloud Services Prerequisites

To implement Microsoft Cognitive Services integration, the following components are required:

- Subscription to Microsoft Azure
- Create an MS Cognitive service for Vision
- Obtain service subscription keys for the API

3.2. Blue Prism Configuration

Before importing the Skill, which has been downloaded from the Digital Exchange, it is necessary that the following information is obtained:

1. API Service Location
2. Credentials

The outlined requirements are explained in the next two subsections.

If any conflict or overwrite messages appear during import, then please refer to the Release Manager section in the Product Help.

3.2.1. API Service Location

Before being able to use the Microsoft Vision Skill, you must first know which region your Microsoft Vision service is located. This can be found in the description of your Azure service, and will look something like the following:

- `[region].api.cognitive.microsoft.com`
 - You just need to note the region.

3.2.2. Credentials

An individual credential, defined and stored in Credential Manager, will hold the Bearer Token required to authenticate against the Microsoft Vision API. Each action has a common parameter denoted ``Microsoft Vision Credential Name``.

This section will now describe how you can create one of these credentials which will then be used to authenticate with Microsoft on each call. This example will be for setting up the Microsoft Vision Skill. To start, navigate to the Security – Credentials tab within the System menu of BluePrism. Then, click the “New” button to the right of the view. A new window will open, see figure 6.2.1.A below. Make sure you select the “Type” as “Bearer Token”.

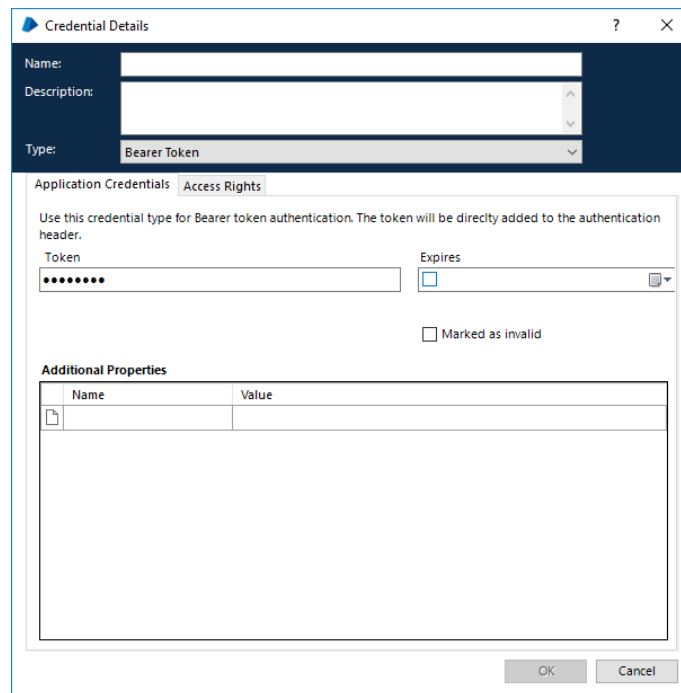


Figure 6.2.1.A

The name of the credential can be anything you wish but labeling it with respect to the API is recommended, for example -> “Microsoft Vision API Credential” – you could even restrict the token by robot, but that side of the configuration is down to you. Finally, within the Token copy and paste the API Key Azure gives you in your service information panel.

The Microsoft Vision Skill has now been correctly configured.

4. Using the Skill

The following section outlines the individual configuration and usage of each action in the Microsoft Vision Skill. In total, this Skill contains 7 actions:

- Analyse and Describe an Image
- Detect Landmarks
- Detect Celebrities
- OCR
- Send Handwriting Recognition
- Get Handwriting Recognition Status
- Get Handwriting Recognition Result

4.1. Common Parameters

Parameter	Direction	Data Type	Description
API Region	In	Text	Which region the Microsoft Vision Service is in.
Microsoft Computer Vision Credential Name	In	Text	The name of the credential which has the Bearer Token used for authentication with Microsoft.

4.2. Analyse and Describe Image

This action extracts a rich set of visual features based on the image content related to the categories found, words related to the image content, and finally a full image description of the content.

4.2.1. Request

Parameter	Direction	Data Type	Description
Image to Analyse	In	Binary	The image to analyse. You can import any picture into a Binary Data item.

4.2.2. Response

Parameter	Direction	Data Type	Description
Analysed Image	Out	Collection	A collection which has all the analysed information related to the categories.

4.3. Detect Landmarks

This action extracts a rich set of detected landmarks based upon the image content.

4.3.1. Request

Parameter	Direction	Data Type	Description
Image to Analyse	In	Binary	The image to analyse. You can import any picture into a Binary Data item.

4.3.2. Response

Parameter	Direction	Data Type	Description
Detected Landmarks	Out	Collection	A collection which contains the landmark related information

4.4. Detect Celebrities

This action extracts a rich set of detected celebrities based on the image content.

4.4.1. Request

Parameter	Direction	Data Type	Description
Image to Analyse	In	Binary	The image to analyse. You can import any picture into a Binary Data item.

4.4.2. Response

Parameter	Direction	Data Type	Description
Detected Celebrities	Out	Collection	A collection which contains the celebrity-related information

4.5. Optical Character Recognition (OCR)

This action detects text in an image and extracts the recognized characters into a machine-usable character stream.

4.5.1. Request

Parameter	Direction	Data Type	Description
Image to Analyse	In	Binary	The image to analyse. You can import any picture into a Binary Data item.
Not Oriented Correctly	In	Flag	If your image has any rotation, set this to True.

4.5.2. Response

Parameter	Direction	Data Type	Description
OCR Response	Out	Collection	A collection which contains the line by line OCR information.

4.6. Send Recognise Handwriting Request

This action converts handwritten text in an image into a machine-usable character stream. When you use the Recognize Handwritten Text interface, the response headers contain a field called “Operation-Location”. The “Operation-Location” field contains the URL that you must use for your Get Handwritten Text Operation Result operation.

Note: this technology is currently in preview and is only available for English text.

4.6.1. Request

Parameter	Direction	Data Type	Description
Image to Analyse	In	Binary	The image to analyse. You can import any picture into a Binary Data item.

4.6.2. Response

This action does not have any responses. Rather, the headers returned by this action contains an Operational ID which can be used to get the status and the result of the handwriting task. This action may take numerous seconds to compute, so it is recommended you call the “Get Recognise Handwriting Status” action before the “Get Recognise Handwriting Response”, and only when the status is “Succeeded”.

4.7. Get Recognise Handwriting Status

This action is used for getting handwritten text operation status. This action should be used before calling the Get Recognise Handwriting Response action.

4.7.1. Request

Parameter	Direction	Data Type	Description
Operational ID	In	Text	A unique identification value which is used to check the status of your handwriting recognition task.

4.7.2. Response

Parameter	Direction	Data Type	Description
Handwriting Status	In	Text	Returns the operation status. Possible values of "status" field are: <ol style="list-style-type: none">1. Not Started2. Running3. Failed4. Succeeded

4.8. Get Recognise Handwriting Response

This action is used for getting handwritten text operation response. This action should be used only when the Get Recognise Handwriting Status action returns a value of "Succeeded".

4.8.1. Request

Parameter	Direction	Data Type	Description
Operational ID	In	Text	A unique identification value which is used to check the status of your handwriting recognition task.

4.8.2. Response

Parameter	Direction	Data Type	Description
Handwriting Response	Out	Collection	A collection which contains the line by line recognised handwriting information.