NICE Advanced Process Automation

Optical Character Recognition (OCR)

Learn more about NICE's Optical Character Recognition (OCR) feature and the value that it brings to Robotic Process Automation (RPA).

What is OCR?

In short, Optical Character Recognition is the ability to extract text from images.

According to Wikipedia: *OCR is the mechanical or electronic conversion of images of typed, handwritten or printed text into machine-encoded text.*

What value does OCR bring to Robotic Process Automation?

OCR enables organizations to automate a greater volume of operational business processes. The enablement of data extraction from scanned documentation gives way for many additional manual business processes to be automated.

What kind of business processes can be automated with the inclusion of OCR?

NICE supports two types of OCR business cases: Converting unstructured data from scanned documents into structured, digitized data and then more complex use cases that require more complex automation capabilities. The more advanced capabilities are unique to NICE.

Scenario 1: Extraction of data from scanned invoices

- By utilizing the advanced OCR capabilities, NICE RPA will read and extract the information from the scanned document e.g. an invoice. The data can then be transferred to any enterprise application such as CRM, ERP or legacy system.

Scenario 2: Reading screen imagery from applications residing on remote servers

- NICE has the capabilities to deploy surface automations for organisations who require various applications to be automated off remote machines. In this instance, advanced OCR can be applied to read the image and extract the necessary text from the screen image or simulation of the application. This capability enables organisations to automate more processes and expand their automation projects.
- An example of a scenario includes: data from a billing application needs to be accessed off a remote server. Advanced OCR is used to read the billing cycles from the screen image of the application in order to check various dates to ensure that customers are being billed timeously.

How can I maximize the benefits that Advanced OCR has to offer?

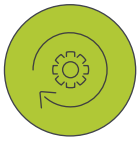
The combination of advanced OCR and NICE's unique ability to seamlessly integrate attended and unattended automations enables the swift and efficient verification of data. Since advanced OCR can pinpoint 'suspicious data', through NICE's desktop automation process, the data will be sent to a human via a call out screen and the human will check and, if necessary, correct the data. The verified or updated data will then be submitted back into the system in order to complete the automation.

When was OCR added to NICE APA (Advanved Process Automation) Solutions?

Our basic OCR engine was added in our 6.4 product version (Q1 2016) and the advanced OCR capability was introduced to our 6.5 product version (Q1 2017).

Which OCR Engines are used in NICE APA solutions?

We have OEM agreements with leading OCR providers and have integrated these engines into our NICE APA platform. Our basic OCR engine is with Nicomsoft and our advanced engine is with ABBYY.



Basic vs. Advanced OCR

Which packages and product versions include OCR?

As a part of our cognitive package, we offer basic OCR as a part of the standard attended and unattended installation, and it is available for all automation deployments starting from version 6.4 onwards. Our advanced OCR offering is an optional add-on (at an additional cost) on top of attended and unattended deployments – it is available from version 6.5 onwards.

What are the advantages of Advanced OCR?

Advanced OCR is based on ABBYY's OCR engine, a premium best-in-breed package available in the market. The advantages include:

- Advanced OCR enables better and more accurate extraction of text from images. The result – better quality output text enables organizations to automate more tasks.
- The Advanced OCR solution has an inbuilt capability to extract images from PDF files seamlessly. By simply providing the OCR engine the pdf file path and page number, it can extract the image effortlessly. This takes away any cumbersome tasks of opening the pdf, navigating to the correct page and copying the image.
- Many documents (such as invoices) contain text that is enclosed within a table. The advanced OCR engine extracts the data from the table making the text available in a logical and structured format. This enables easier and faster process automations. With basic OCR functionality, the output is retrieved as raw text that needs to be parsed i.e. logic needs to be added to the raw text in order to extract the relevant data.
- Get an indication of the confidence level of extracted text. This can serve as the basis for deciding whether automation can be based on OCR outputs or alternatively, if it should be handled in attended mode or as an exception.
- Advanced OCR supports ~over 200 languages including major Asian dialects. Basic OCR supports ~40 languages (excluding Asian dialects)

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Technical Considerations

How are installations done?

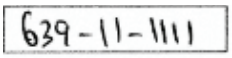
Basic OCR is included in all installations.

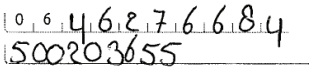
Advanced OCR is installed as an add-on after the installation of the APA Client or Designer. It is installed with dedicated MSI. Please note that the install package is around the size of 1 GB.

What are the main Advanced OCR limitations?

Main limitations to be aware of include:

- Handwriting identification:
  - Handwriting identification is not as good as human capabilities and greatly depends on the handwriting itself. It is not realistic to expect advanced OCR to process 100% of forms which contain hand-writing components. In this instance, we recommend deploying a combination of attended and unattended process automations.
  - Handwriting mode should be used on a specific location in the image, so as to focus only on the relevant field.
  - Signatures will not be understood
  - Two handwriting examples have been placed below, where one succeeded and the other failed.

    Success: 

    Fail: 

- Not all bar code types can be read
- A combination of vertical and horizontal parts in the same image will require rotation and reading of text in phases.

Specific OCR requirements should be analyzed as a part of the connectivity analysis phase

Top Tip

The best results are achieved when OCR is focused. Therefore, relevant parts of the screen should be identified and cropped in order for the OCR engine to read them in isolation.

About NICE

NICE (Nasdaq:NICE) is the worldwide leading provider of both cloud and on-premises enterprise software solutions that empower organizations to make smarter decisions based on advanced analytics of structured and unstructured data. NICE helps organizations of all sizes deliver better customer service, ensure compliance, combat fraud and safeguard citizens. Over 22,000 organizations in more than 150 countries, including over 80 of the Fortune 100 companies, are using NICE solutions. www.nice.com.