Integration of ABBYY Vantage with Claude AI for Invoice Scam Detection

" Empowering Intelligent Fraud Detection: Seamless Invoice Analysis with ABBYY Vantage and Claude AI"

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About Claude AI Connector for ABBYY Vantage

The Claude AI Connector for ABBYY Vantage provides seamless integration between ABBYY's intelligent document processing (IDP) platform and Claude AI. This connector leverages an out-of-the-box skill in Claude AI to analyze extracted invoice data from ABBYY Vantage. One of the key use cases demonstrated is scam detection, where invoice data is analyzed by Claude AI to identify potential fraudulent elements or discrepancies. While the current setup uses pre-trained capabilities of Claude AI, the solution can be enhanced by training a custom model on Claude's side with specific data to improve detection accuracy and tailor the analysis to specific business needs.

System Requirements and Limitations

To successfully install and use the Claude AI Connector for ABBYY Vantage, ensure the following system requirements are met:

Operating System:

- Windows 10 or later
- macOS 10.15 (Catalina) or later
- Linux distributions supporting Google Chrome or Mozilla Firefox

Web Browser:

- Google Chrome (latest version recommended)
- Mozilla Firefox (latest version recommended)
- Microsoft Edge (latest version recommended)
- Safari (latest version recommended)

Hardware:

- Processor: Intel Core i3 or equivalent
- Memory: 4 GB RAM (8 GB recommended)
- Storage: 200 MB of available disk space for installation
- Internet Connection: Broadband or higher

Software:

- A valid ABBYY Vantage account with access to the document processing capabilities and custom export scripts.
- Access to the Claude AI API (Anthropic API) with a valid API key.

Additional Requirements:

- Supported operating systems: Windows Server 2016 or later, or compatible cloud infrastructure (AWS, Azure, etc.).
- Internet access to connect ABBYY Vantage to Claude AI's external API.

Limitations:
- The out-of-the-box Claude skill provides general insights and scam detection based on pre-trained data. Customization of results may be limited until a model is specifically trained on domain-specific data.
- Sensitive invoice data must be securely handled, especially when shared with external services like Claude AI. Ensure that the data complies with relevant data privacy regulations (e.g., GDPR, HIPAA).

Installing the Connector

ABBYY Vantage Integration with **Claude AI** is a script that runs in a Custom Activity of a Process Skill. The current version of ABBYY Vantage Integration with **Claude AI** is configured by modifying the script (see Configuring the Connector below).

Setting Up Claude AI

To configure the Claude AI side for the integration with ABBYY Vantage, follow the steps outlined below:

- ✓ Visit the Anthropic API portal and sign up for an API key. This API key is crucial for authenticating your requests from ABBYY Vantage to Claude AI.
- ✓ Once your account is created, navigate to the API Management section to generate your API key.
- ✓ Make note of your API key as it will be used during the setup of the connector.

Configuring The Connector in ABBYY Vantage

To set up and configure the Claude AI connector in ABBYY Vantage, follow the steps below:

1. Create the Process Skill

- Log into ABBYY Vantage as an administrator or a user with the necessary permissions.
- Navigate to the **Skills Designer** and choose **Process Skills**.
- Create the specific Process Skill where you want to integrate Claude AI.

2. Create a Custom Activity for Claude AI Integration

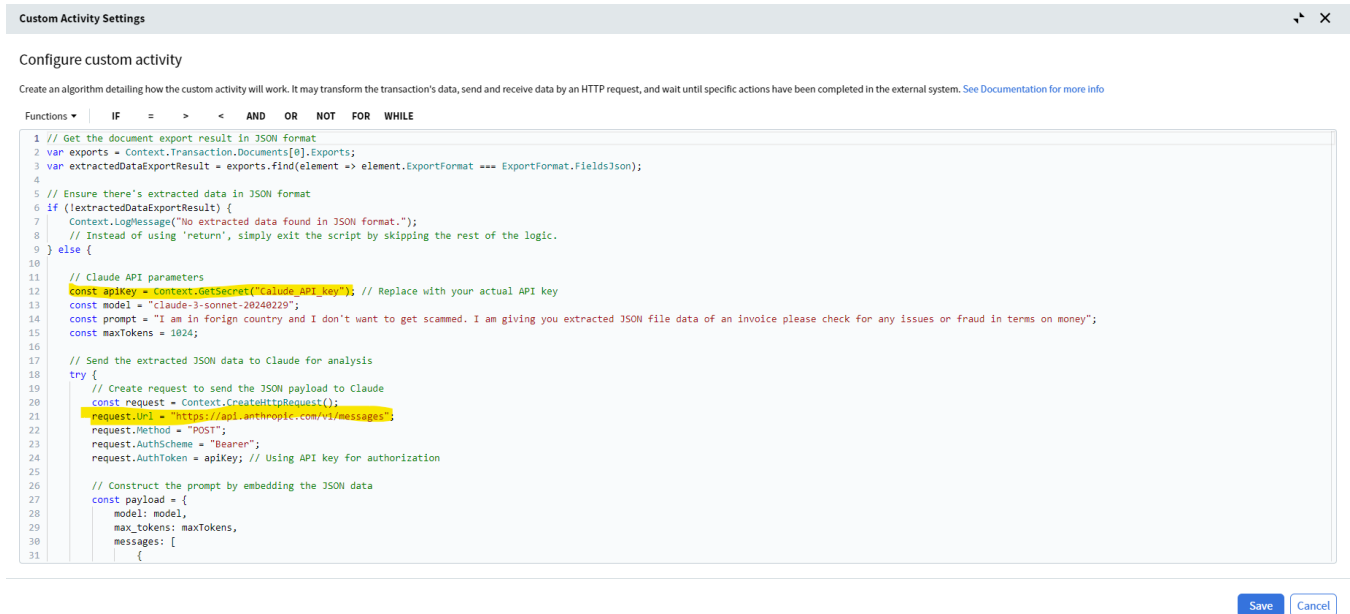- In the Process Skill Editor, create a new **Custom Activity** after Extraction that will handle sending the extracted invoice data to Claude AI using JavaScript.
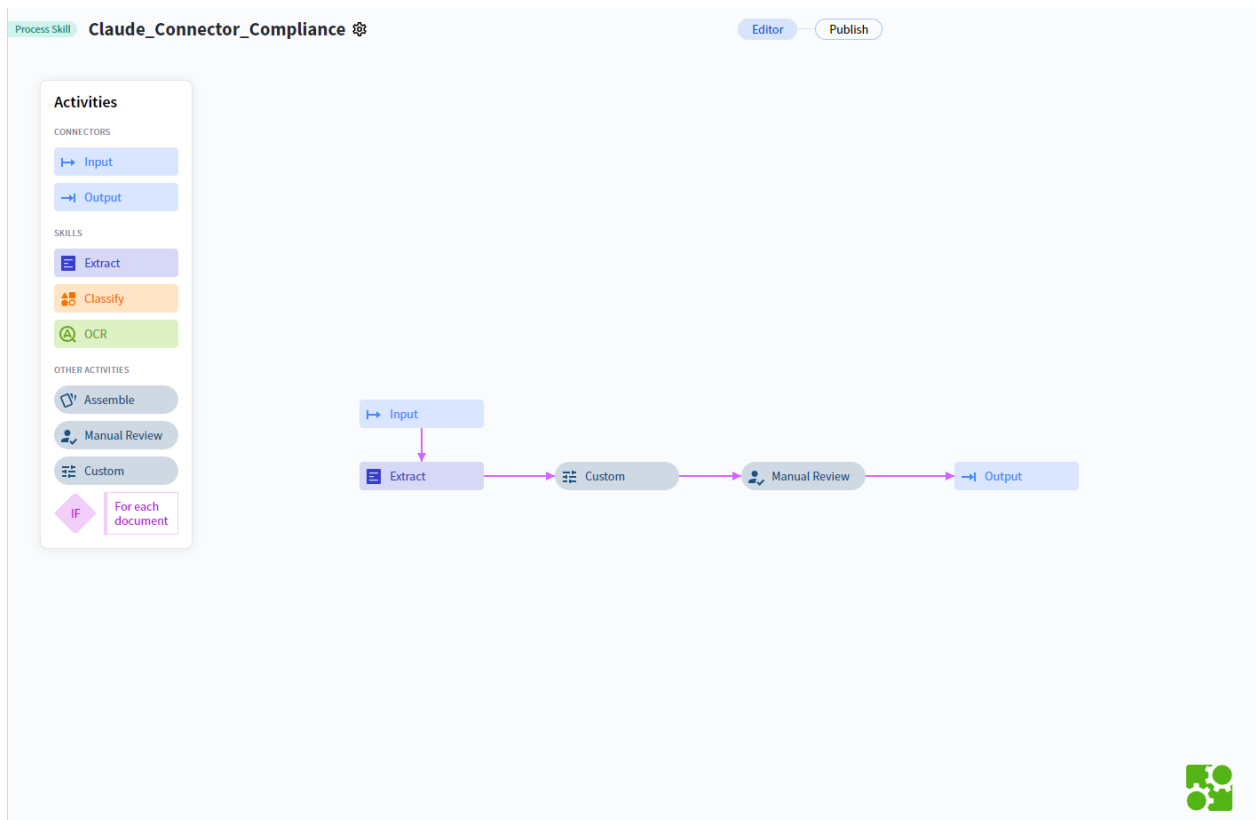
3. Insert the Claude AI API Integration Code

- Use the code script created for the Claude AI connector. The script will gather the extracted data fields, convert them into a JSON format, and send them to Claude AI's API for processing.

- Ensure you update the API key, endpoint URL, and any other necessary configurations as follows:
  - **API Key**: Store the Claude API key in ABBYY Vantage's secure vault. Use Context.GetSecret("Claude_API_key") to retrieve the key during execution.
  - **API Endpoint**: Set the endpoint URL to https://api.anthropic.com/v1/messages for sending requests to Claude AI.


```
Custom Activity Settings                                                                    ↙ ✕

Configure custom activity

Create an algorithm detailing how the custom activity will work. It may transform the transaction's data, send and receive data by an HTTP request, and wait until specific actions have been completed in the external system. See Documentation for more info

Functions ▾    IF    =    >    <    AND   OR   NOT   FOR   WHILE

 1  // Get the document export result in JSON format
 2  var exports = Context.Transaction.Documents[0].Exports;
 3  var extractedDataExportResult = exports.find(element => element.ExportFormat === ExportFormat.FieldsJson);
 4
 5  // Ensure there's extracted data in JSON format
 6  if (!extractedDataExportResult) {
 7      Context.LogMessage("No extracted data found in JSON format.");
 8      // Instead of using 'return', simply exit the script by skipping the rest of the logic.
 9  } else {
10
11      // Claude API parameters
12      const apiKey = Context.GetSecret("Calude_API_key"); // Replace with your actual API key
13      const model = "claude-3-sonnet-20240229";
14      const prompt = "I am in forign country and I don't want to get scammed. I am giving you extracted JSON file data of an invoice please check for any issues or fraud in terms on money";
15      const maxTokens = 1024;
16
17      // Send the extracted JSON data to Claude for analysis
18      try {
19          // Create request to send the JSON payload to Claude
20          const request = Context.CreateHttpRequest();
21          request.Url = "https://api.anthropic.com/v1/messages";
22          request.Method = "POST";
23          request.AuthScheme = "Bearer";
24          request.AuthToken = apiKey; // Using API key for authorization
25
26          // Construct the prompt by embedding the JSON data
27          const payload = {
28              model: model,
29              max_tokens: maxTokens,
30              messages: [
31                  {
```

Save Cancel
```

## 4. Configure Field Mapping

- Map the appropriate invoice fields in ABBYY Vantage to the fields expected by Claude AI.
- In the Custom Activity, ensure the JSON payload contains all the necessary fields for analysis, such as the **Invoice Number**, **Total Amount**, and **Vendor Name**.
- Use Context.Transaction.Documents[0].Fields to retrieve fields from the processed document.
- Current setup is sending the whole JSON output file for the document.

## 5. Add the Custom Activity to the Workflow

- Once the Custom Activity for Claude AI integration is created, add it to your Process Skill's workflow. Place it after the document is classified and the necessary data is extracted.
- The Custom Activity should be executed after the invoice data has been Extracted, allowing the JSON payload to be generated correctly.

**6. Testing the Connector**

- Run a test transaction in ABBYY Vantage with sample invoices to ensure the data is correctly passed to Claude AI.
- Check the logs in ABBYY Vantage to verify that the JSON payload is being sent and that the response from Claude AI is being correctly received and logged.
- Claude AI will return the results of the scam detection analysis. These can be stored in a new field in the document for further review.

**7. Handling Responses from Claude AI**

- Once Claude AI analyzes the invoice data, it will return a structured response, typically flagging any potential issues such as unusual amounts or mismatched vendor details.
- Store the flagged issues in a new document field (e.g., "Flagged Issues") in ABBYY Vantage. This will make it easier for users to review the results directly within the platform.

**8. Deploy the Process Skill**

- Once the connector is configured and tested, deploy the Process Skill to be used in live environments. Ensure that the connector is functioning as expected by monitoring the logs and feedback from Claude AI.

# Summary

The Claude AI Connector for ABBYY Vantage enables seamless integration between ABBYY Vantage's intelligent document processing capabilities and Claude AI's advanced natural language processing for fraud and scam detection. This connector is designed to enhance the review process of extracted data from invoices, providing an additional layer of analysis that helps identify potentially fraudulent activities.

By leveraging the extracted invoice data in JSON format from ABBYY Vantage, the connector sends this data to Claude AI via its API for detailed scrutiny. The AI analyzes the data based on pre-configured prompts, such as detecting inconsistencies or suspicious details within the invoice fields. Claude AI then flags potential issues, which are returned and stored within ABBYY Vantage for further review.

This connector not only demonstrates how ABBYY Vantage can integrate with third-party AI services but also showcases a practical use case where the system aids in preventing scams or fraud in financial documents. As it is built using an out-of-the-box Claude skill, there is potential for further enhancement by training the model on custom data sets, making the solution even more powerful and tailored to specific business needs.

The integration is straightforward, with minimal setup on both the Claude AI and ABBYY Vantage sides and offers a practical solution to streamline document fraud detection, increase operational efficiency, and provide additional value to users by harnessing the capabilities of both platforms.