LIEN PROCESSING AI AGENT

A practical guide for developers
Looking to build and use an AI-Powered
Lien Processing AI Agent

In collaboration with

AUTOMATION ANYWHERE

Lien Processing AI Agent – How-to Guide

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Lien Processing AI Agent

This an AI-powered Agent designed to automate and streamline various risk and compliance tasks, such as downloading and classifying emails for Liens (embargo or garnishment). This project uses Document Automation + Generative AI (AWS)+ Automation to improve the efficiency, accuracy and scalability of the process of extraction and compliance with judicial measures issued by courts, and government entities which are mandatory for banking and financial services companies. The process integrates seamlessly with existing IT and CRM systems, ensuring smooth data flow and improved operational performance. The benefits include increased efficiency, a better analyst experience, reduced times, cost savings, scalability, and preventing penalties for non-compliance within the deadlines established by law, making it a transformative tool in account management operations with active injunctions.

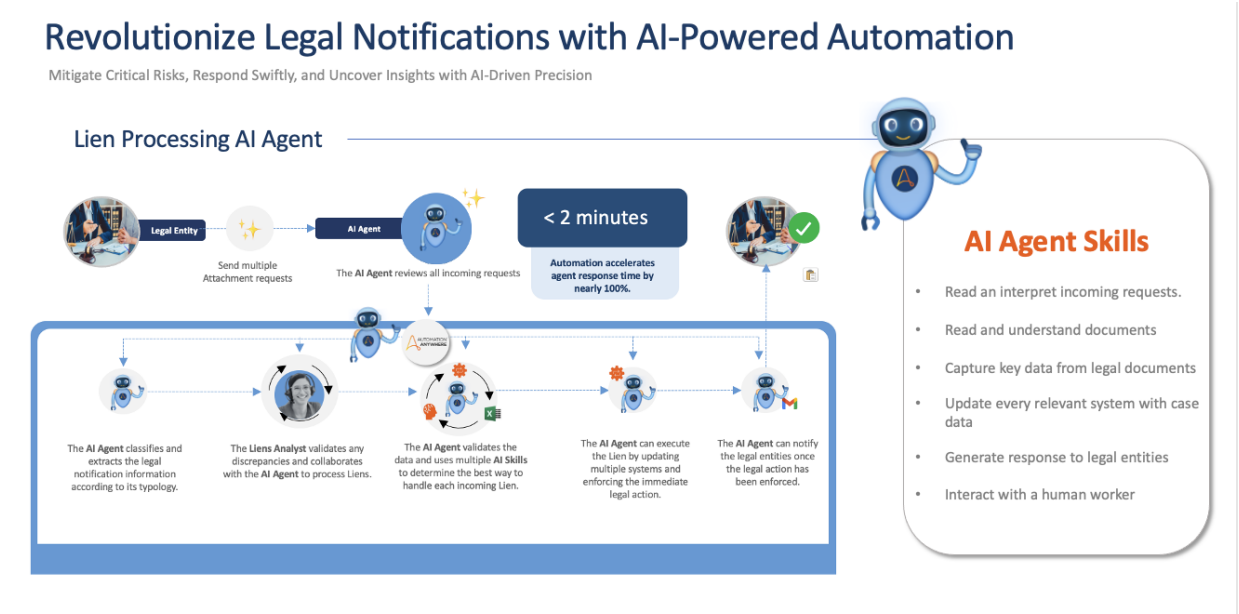
What are Liens?

A Lien or garnishment is a court order to withhold a person's property to secure payment of a debt. The process involves various government entities, courts, and financial institutions. Government entities, such as state, federal, and hospitals, can impose Liens. Financial institutions, including banks, cooperatives, and trustees, are responsible for carrying out garnishments.

The garnishment process begins when the government entity issues a legal order through an official resolution. Financial institutions receive this order and are obliged to freeze the debtor's relevant assets. This process is complex and involves many participants.

What are Liens Removals?

Just as there are actions to collect and garnish assets, there is also a similar process which aims to remove the legal Lien action against a debtor. In the legal realm, it refers to the release of assets (such as bank accounts, wages, vehicles, or property) that had been seized due to debts or breaches. This process involves the same actors of the Lien.



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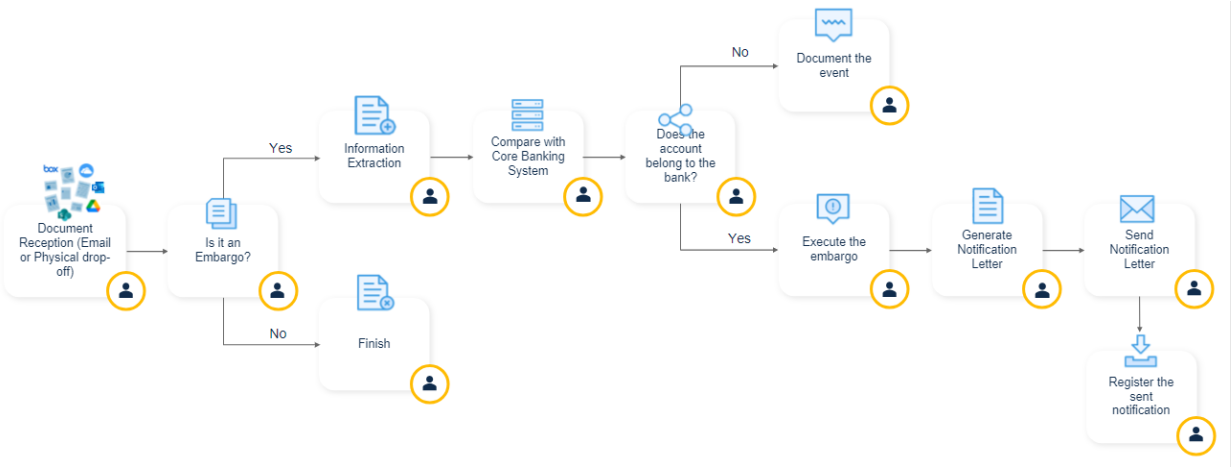
PROBLEM STATEMENT

There are more than 20 million Liens executed every year in LATAM by the largest financial institutions. This process requires the attention and processing of each Lien request in less than 48 hours, otherwise the banks incurred in major liabilities, compliance risks and reputational damage. The current handling of these Liens requests in the traditional environment presents a series of inefficiencies that significantly affect productivity, efficiency and quality of service, the current process is mainly based on manual work, which generates slowness, errors and delays and increasing the operational risk of any financial institution. The reception, review and classification of documents consumes valuable time and resources, the distribution of requests among analysts is based on the number of cases received, without considering the complexity or the time required for their resolution.

How are Liens processed today?

Today, financial institutions employ multiple people to manually process Liens.
This effort-intensive process involves:

1. Review of physical or electronic mail to identify documents (classification)
2. Analysis of Liens or removing of Liens documents to extract key information about the seized persons or entities (extraction)
3. Verify if the seized persons/entities have accounts or any active business relationship with the processing institution (verification)
4. If so, the embargo is enforced by blocking the person's accounts and preventing further access until the Lien is removed (enforcement)
5. The Lien enforcement is communicated to the affected persons/entities (notification).



Limitations of the current approach

The current manual method for processing Liens has the following limitations:

1. Cost: Long-term personnel investments for manual processing are costly
2. Compliance: Longer processing times during periods of increased workload can result in penalties for non-compliance
3. Reputation: Banks can suffer from reputational damage and legal action if Liens are not systematically processed in a timely manner
4. Human error: Human workers can make mistakes during the entire process which might require re-works and increased processing times.

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Solution Overview

The Lien Processing AI Agent is aimed to handle requests, freeing up the team's resources to focus on more complex issues. This leads to improved resolution times and increased employee satisfaction, reduced costs, minimized legal and financial risks, and increased customer satisfaction.

Comprehensive application

This guide serves as a blueprint and practical resource for developers, presenting a systematic approach to developing a powerful AI Agent, by using the power of AI-powered automation from Automation Anywhere, **AWS** and **Anthropic**. This document is aimed to help the developer of this solution in their transformation journey and can be applicable to various scenarios in the Risk & Compliance area of any organization.

The implementation of an automated and standardized system will contribute significantly to achieving these objectives, positioning the financial institution as a leader in the management of this type of request.

Integrated and adaptive solution

Automation Anywhere's AI System with its choice of Document Automation with generative AI, AA Enterprise Knowledge, AI Agent Studio and Automation Co-Pilot for Business Users enables an efficient, responsive, scalable and adaptable solution.

Combining all these different capabilities our AI Agent can streamline various tasks and facilitate uninterrupted work. Employees can rely on the digital assistant to handle routine administrative tasks, access information quickly, and provide relevant notifications and reminders.

Leveraging generative AI

In addition, the AI Agent can leverage Amazon Bedrock to build custom Generative AI Skills. As a fully managed service, whit **Amazon Bedrock** we leverage foundational models (FMs) such as AI21 Labs Jurassic, Amazon Titan, and Anthropic Claude to drive productivity and ensure data security. It seamlessly integrates with Automation Anywhere's AI + Automation System for easy task automation to deliver intelligent insights, personalized recommendations, and agentic workflows, allowing analysts to focus on their core responsibilities and maximize their productivity. By reducing the time spent on repetitive tasks, employees can allocate their efforts toward more strategic, value-added work, resulting in higher overall productivity and job satisfaction while serving the requester.

Smarter Lien Processing:

- Automate document receiving, sorting, and scanning
- Increase engagement with one or more platforms.
- Connect to multiple sources of knowledge such as procedures, guides, manuals, technical documents, etc.,
- Train analysts in the use of the new system and best practices for request management.
- Learn from every human interaction for continuous improvement.

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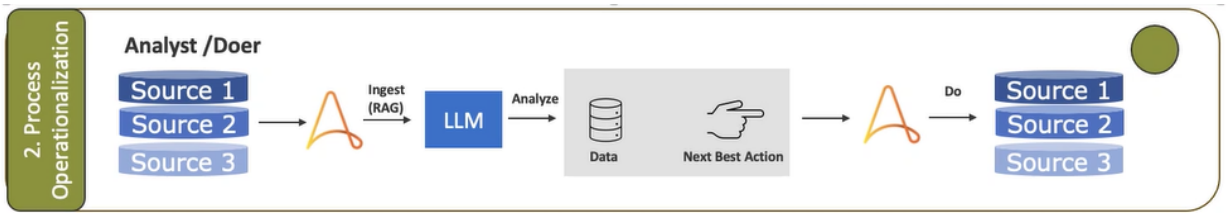


BENEFITS OF AUTOMATED APPROACH POWERED BY GENERATIVE AI

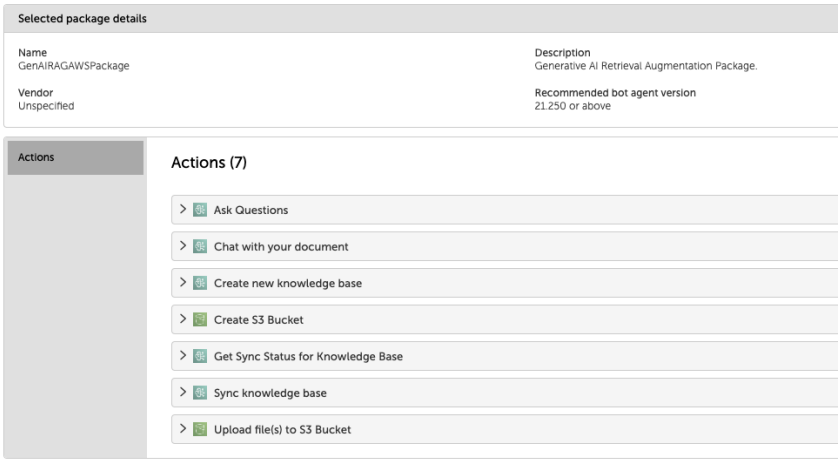
1. Time: Expedited processing time for garnishments and removing Liens, allowing processing to be completed up to 50% faster than the manual process.
2. Error reduction: Minimize errors in document processing, while leveraging human processors for selective validation.
3. Compliance: Achieve full compliance with lien enforcement deadlines and avoid penalties.
4. Reputation: Eliminate reputational risks with sustained, predictable, and report-compliant deployment.

AGENT COMPONENTS FOR LEGAL NOTICES

Our agent's native capabilities leverage access to Generative AI, this strength of Automation Anywhere allows you to integrate with Amazon Bedrock to use your LLMs directly on our platform and leverage the information in decision-making based on your own knowledge sources. By leveraging powerful RAG techniques this AI Agent can constantly learn of new policies, manuals, SOPs and many other data points to make smarter and better decisions when processing Liens.

Connecting to existing RAG pipelines via AWS Bedrock

You can make use of the AWS RAG A360 Connectors available via Botstore to quickly integrate with available RAG Pipelines. This connector makes it really easy to leverage AWS Bedrock services like Amazon Knowledgebases, S3 and OpenSearch.



- AWS Conversation and Knowledge Retrieval Package (link to BotStore)

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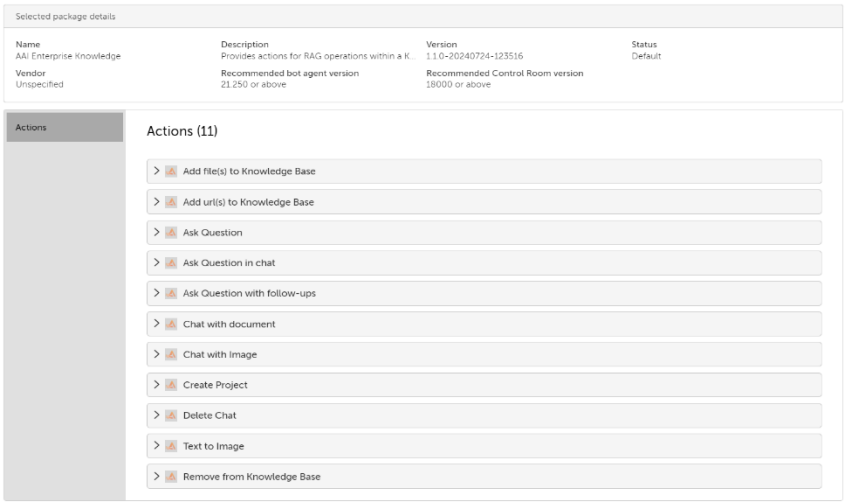
Creating Enterprise Knowledge

Enterprise Knowledge is our latest product which makes the creation of RAG pipelines and LLM Activities very easy. It provides an intuitive interface which accepts a multiple array of files and documents to create these powerful Knowled bases which use RAG to provide answers to questions and integrate these with multiple automations for faster decisions, reasoning and determination of actions within a process. Included with Enterprise Knowledge there is a set of connectors which allows you to integrate your knowledbases with your automations very easily.



- Optional AAI Conversation and Knowledge Retrieval Pack (link to BotStore)

For more complex scenarios, use the console of AWS Bedrock Console or the AAI Enterprise Knowledge console.

Connecting Enterprise Knowledge to an Automation

Automation retrieves data and working knowledge to provide actionable recommendations. System and user prompts are used together to ask questions and receive answers, leveraging knowledge from the Liens Processing AI Agent with the language and reasoning from the LLM. System prompts include dynamic data from the request and persona definitions for what needs to be done. Automation serves as the vehicle for the AI to pass user data, case information, and system metrics to the LLM, enabling fully automated dynamic decision making and case resolution.

DOCUMENT AUTOMATION:

Document Automation is an intelligent cloud-based document processing solution, designed for business users to configure and automate the extraction and processing of documents, it is fully integrated into Automation 360, allowing users to extract information in structured, semi-structured and unstructured documents enabling document-centric business process automation

1. **Pre-trained models:**

Use Automation Anywhere models to proceed with documents such as: invoices, receipts, and utility bills.

2. **Validation Process:**

   Once a learning instance is in production, it automatically improves extraction accuracy based on manual validation feedback.

3. **Generative AI:**

   Document Automation features generative AI capabilities, including support for **Anthropic** LLM on AWS. This includes on-premises and private cloud scenarios, allowing for more complex data extraction needs.

4. **Easy Setup:**

   Document Automation installs simultaneously with the Control Room and shares the Control Room database, simplifying initial setup.

5. **Process Automation:**

   It combines RPA with artificial intelligence techniques to extract and classify semi-structured and unstructured data from complex documents.

6. **Scalability:**

   It allows users to scale their document processing operations by creating learning instances that use pre-trained models to improve data extraction accuracy.

7. **OCR support:**

   Supports optical character recognition (OCR) engines to improve the accuracy of extracted data (ABBYY and Google Vision OCR).

AI AGENT STUDIO:

AI Agent Studio is our central console to create, manage and deploy GenAI-Powered Automation. This enables organizations to effortlessly build intelligent AI Agents by addressing the challenges of selecting and testing foundational generative AI models, visibility into data exchanged with the model, and the accuracy of the response received.

Logging, Audit and Analytics:
Scale with confidence with deep insights for strategic decisions; built-in AI monitoring, auditing, data masking, and more. No sensitive data is ever used for AI LLM training.

AI Governance:

AI Prompt Logging correctly displays logs for connect, disconnect, and authenticate actions for Generative AI Packages. Logs show interaction data from the foundation model. Govern connections to AI Models and securely assign them to different roles.

AI Skill:

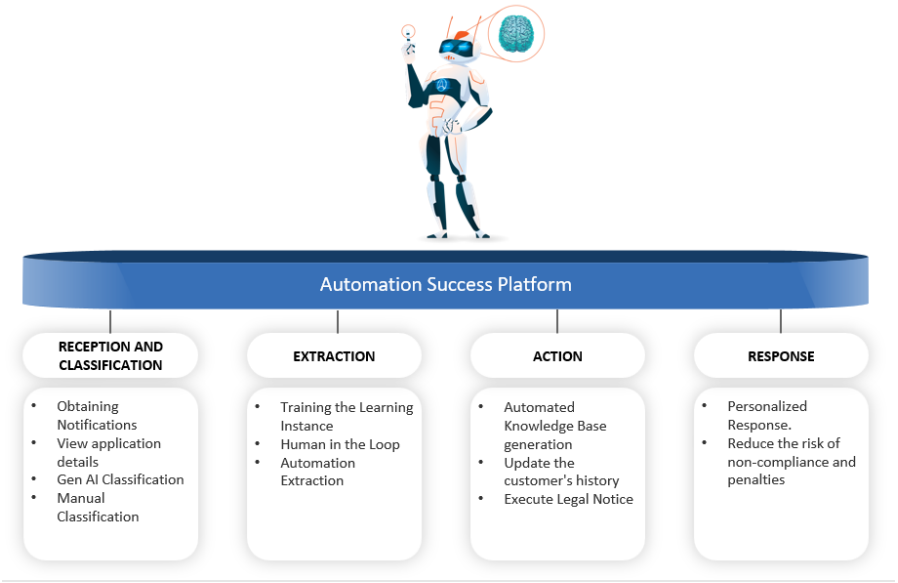
Trusted Model Selection
Enrich model responses with enterprise context using RAG, while automatically evaluating

different model vendors for tone, toxicity, and other factors.

Reusable AI Skills
Create and test Gen AI prompts with our curated library of AI skills or customize your own to match your unique business requirements.

HIGH-LEVEL PROCESS

Liens commonly arrive through an email where their attachments are downloaded, after which they are classified, they must be extracted to respond to the notification with the corresponding action.



MAIN FEATURES

Reception and classification

- Lien Reception
- Lien Status Review
- Gen IA classification: Incoming scanned documents are automatically reviewed to identify whether they are Lien or Removal of Lien documents.
- Manual classification (Human in the Loop)

Optional

- Automation:
  - Multichannel (email, phone, chat, scanned document)
  - Scheduled as needed or triggered.
  - Service SME Analyst chooses automation.
  - Auto invoked with process triggers

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Extraction

- Training the Learning Instance
  The training is carried out by selecting the fields to be extracted, and the possible variants that the names and/or locations have
  - Human in the Loop
    - When no answers are found, the case is sent to a service analyst for review and attention
  - Automation Extraction
    - Document Automation will deliver the extraction of the fields in a structured format, being CSV, JSON

Human-in-the-loop interaction

- Human Integration
- Confirm the suggested steps.
- Solve the problem
- Complete and review resolution notes.
- Complete the message to the Requestor.
- Supervision and escalation management.
- Scaling Overview
- Evaluate the best way forward.
- Choose from automations.
- Work on the application.
- Request a review of grades.

Action

- Automated Knowledge Base Generation (aka KB)
  - Check KB for entity policies for placing a garnishment or lien removal.
  - Download detailed request information, request notes, and even activity history on the client's account(optional).
  - GenAI is used to generate notes, summaries, and steps, and create a pdf/docx document file to include as a knowledge base article to continuously improve the Knowledge Store. This gives better answers which are tied to known good data and reduces hallucinations that happen with LLMs alone. This is your data, under your control, and is grounded to your practices.
- Update the customer's history
  - The documents are scanned to verify if the seized individuals or entities have a business relationship with the processing institution.
  - According to the information extracted, the Legal Notifications agent will enter the different applications where the client's information is hosted and update the information if necessary
- Execute the Legal Notice:
  - The Legal Notices agent proceeds to execute the legal notice in accordance with the related information

Response

- Personalized Response:
    - The Legal Notification Agent sends the response to the legal entity, the area in charge of the process and the client, informing about the action taken

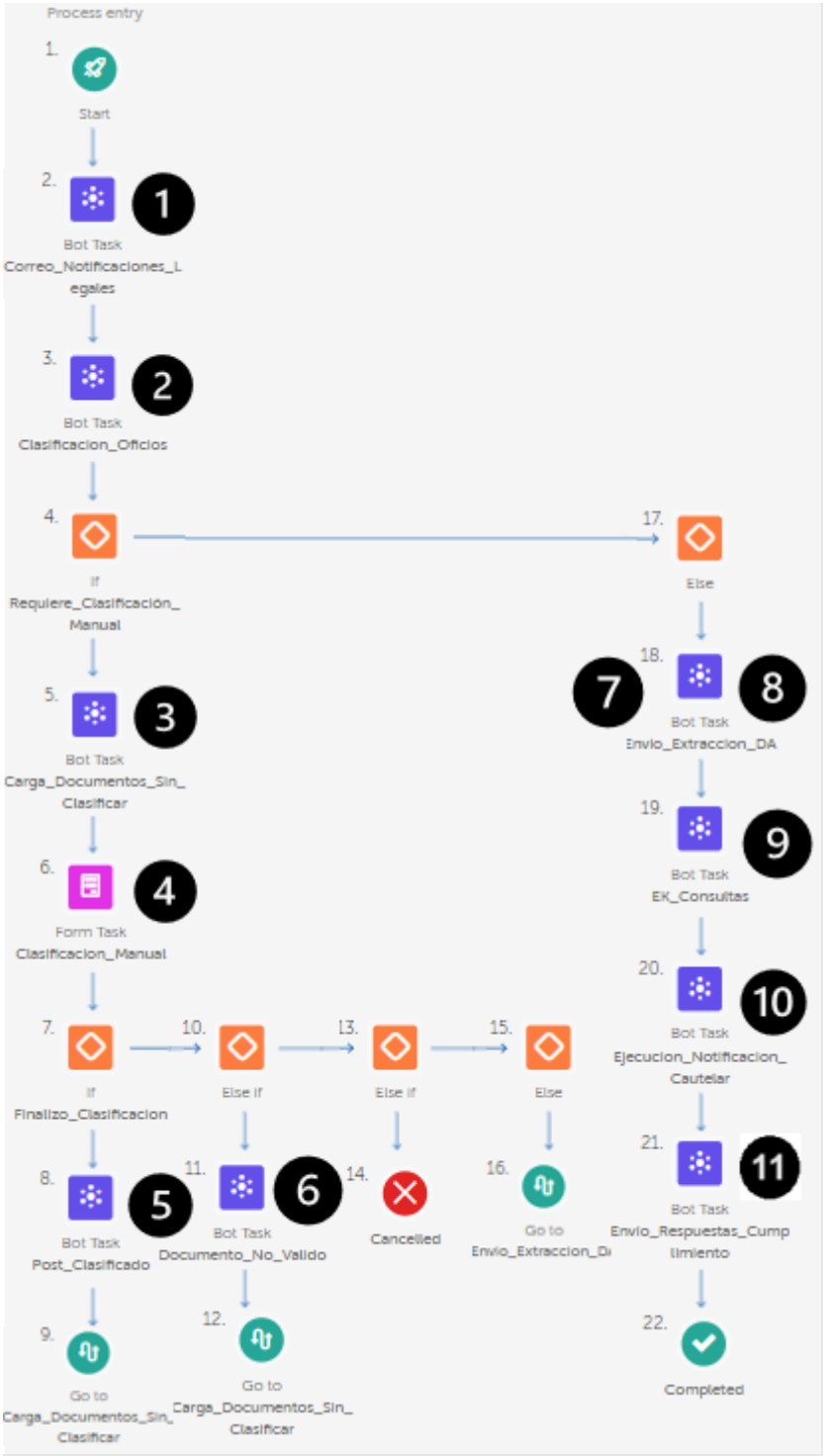
    - Reduce the time of non-compliance and sanctions

        - With the Smart Legal Notification Agent you can have benefits such as:
            - **Reduced workload:** A more efficient repossession process frees up analysts to attend to other cases, improving the operation of the system overall.
            - Avoid sanctions; These sanctions can include pecuniary fines or even the suspension of their activities.

Optional

- Climbing Handling
    - Request Detail Subject
    - The user doesn't know, the analyst must escalate

USING THE CODE



WALKTHROUGH

Below is a high-level flow of the Agent for Intelligent Legal Notifications solution:

1. The Process can work embedded in your Service Operations Platform (CRM, ITSM, email, etc.). The Agent can be programmed to run according to a schedule or activated by an analyst, who starts by checking the inbox of the defined email account and every time a new request

arrives from a judicial or executive entity, it will download the information of each case in a repository defined by the client.

2. In the second step of the process, the information is extracted from the previously downloaded PDF documents, processing and classifying them through the use of generative AI capabilities by the type of requirement, sending it to the repository for Liens, lifting Liens or unidentified, in the latter case the classification is carried out through the support of an analyst who interacts with the agent. In the first two cases, the flow will continue with the execution of the seventh step of the process.
3. In the third step, a Task Bot identifies the documents within the "Undefined" folder created in the previous stage and presents them through a form with information about the requirement, the applicant's email and keywords identified with the help of Generative AI, so that the analyst can perform their manual classification through the human in the loop of our Co-Pilot for Business Users.
4. In the fourth step by using Co-Pilot, the analyst can have different options for action such as classifying the document between "Seizure" or "lifting seizure“, marking it as an Invalid document for the process, canceling the process or continuing to the seventh step within the agent execution flow.
5. If in the fourth step the analyst selected the "Classify" option, he moves on to this fifth step. In which a Task Bot takes the classification instruction and proceeds to send the document to the corresponding repository and returns to the third step to continue with the pending manual classifications, until the analyst clicks on the "Finish" button and continues to the seventh step of the process.
6. If in the fourth step the analyst selected the "Invalid Document" option, he moves on to this sixth step. In which a Task Bot takes the instruction to remove the document from the repository and returns to the third step to continue with the pending manual classifications, until the analyst clicks on the "Finish" button and continues to the seventh step of the process.
7. In this seventh step, the intelligent legal notification agent takes the documents classified between Liens and lifting garnishments and proceeds to send them to Document Automation creating a process for each one.
8. In the Eighth Step Document Automation is the protagonist of performing the extraction of information for the fields configured in the corresponding learning instances for each case, this product includes Generative AI capabilities to increase the success of extraction in unstructured documents; When finished, it will automatically download the results in the path indicated by the user. If validation of any field in the documents is needed, our tool will allow human validation to enhance learning and expand their knowledge. So the next time it receives a similar request, the AI Agent will have the knowledge to handle it automatically.
9. In this ninth step, we check that all DA extraction requests have been completed before continuing with the query of each request in the entity's knowledge base to request recommendations and discard the requests that cannot be executed, notifying the person in charge of the process and leaving the requests that are ready for our AI Agent to process.
10. Once we have the results of the withdrawal, our agent will proceed to load them into the client's own systems and also execute the action ordered in the corresponding legal office to seize or dispossess the bank accounts of the specified users. According to each customer's own process, this step must be **customized** to interact with their systems and meet the proposed automation objective.
11. Finally, in this eleventh step, the corresponding notifications that the law regulates to avoid sanctions are sent, notifying the judicial or administrative entity of compliance with the notification received and also the corresponding area within the financial company

and of course also the user affected by the measure executed.

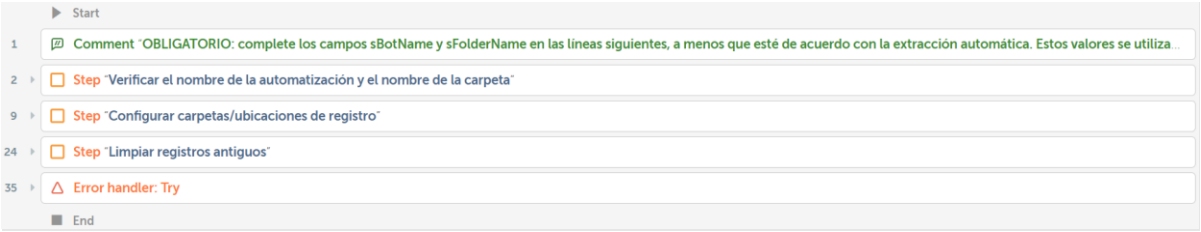
Variables:

- **sRutaOficios** = Type (String) this variable is used in all tasks and contains the base path for document management.
- **sEmailFrom** = Type(String)
- **sEmailSubject**= Type (String)
- **sPalabrasClave =** Type (String)
- **sReferenciaOficio** = Type (String)
- **sClasificacionGenAI =** Type (String)

Framework

The development of the intelligent legal notification agent invites the use and application of the correct development practices, for that reason each Task Bot that makes up the flow of processes in its structure integrates a sample framework that includes the handling of errors, registration and management of records. Feel free to use it as is or modify and customize it to meet your organization's needs.

The default path for saving logs is: C:\ProgramData\AutomationAnywhere\Bots\Logs and is stored in the variable called sRootLogDirectory. The code is developed within the Error handler: Try block on line 35, feel free to modify it according to your needs.

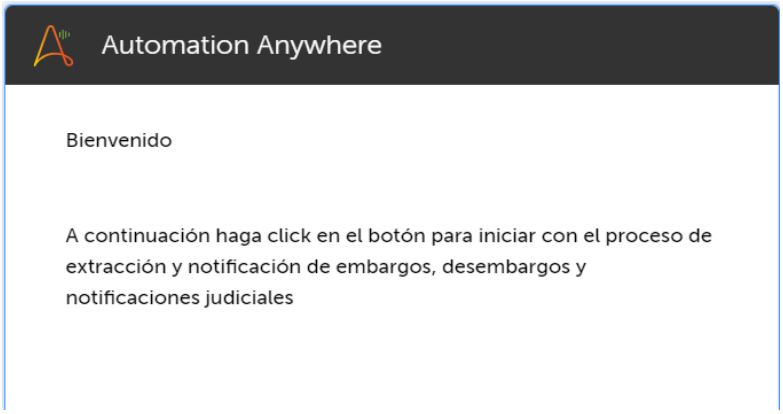


The third STEP will automatically clean records older than 30 days as part of records management. This value can be changed to the required time value or disabled to keep all records if desired, additionally. Error handling in Catch-Block automatically attempts to take a screenshot in case of an error to aid in the debugging process. If your bot handles sensitive data, consider disabling this action.

This example of a framework is a template, if you need to create additional log files for executions, schedule retries, use flags of success or failure between tasks or send notifications by email or other tasks.

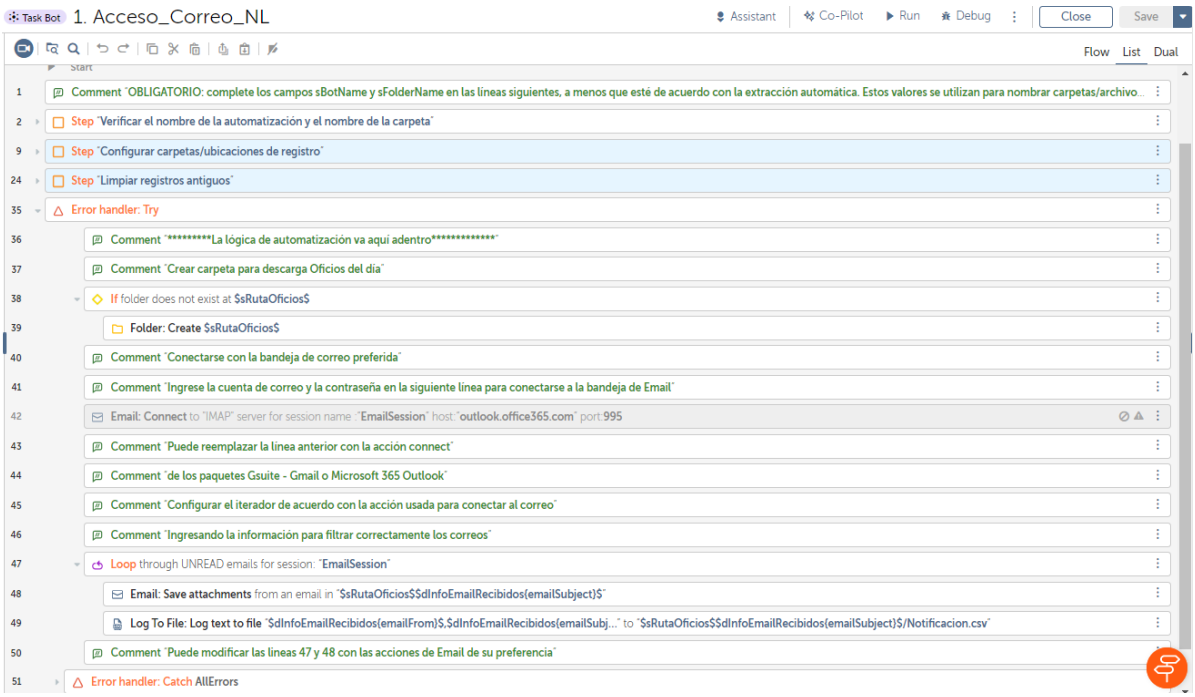
Beginning of the Process

When you start the execution of the intelligent legal notification agent from the Co-Pilot for Business Users interface, a message like the one in the following image appears, you just need to click on the "Send" button and you will continue with the execution of the first task of the automation.



1. Legal Notifications

The following example of a task called Acceso_Correo_NL is responsible for creating a folder in the path defined in the **sRutaOficios** variable, after which it connects to the associated email (Outlook, Gmail) and downloads the trades that are received in the inbox of the organization's notification mail every day, in a subfolder within the folder previously created.



The example of Acceso_Correo_NL uses the connection to Email However, the successful automation platform has API packages that connect directly to the different email providers, Additionally, email information such as the sender and the subject is recorded in a CSV file which is stored.

A key element is **sRutaOficios**, a string-type variable that stores the base path defined for the download of notifications and other treatments that will be carried out throughout the solution. This variable is important for mapping documents to logic and its use by the agent in the Document Automation platform and all file management until the process is completed.

Good practices:

- To identify the source of each attachment downloaded from the email, the email is stored in a folder named with the subject of the email.
- In the folder of each notification received, a file called Notificacion.CSV is stored that contains important information of each application for identification and will be used in steps 1, 2, 3, 4 and 11 of the process, so you should not delete it. Feel free to add information that you may require according to your needs such as an additional record of each task.

2. Classification with Generative AI

AI Skills: Experiment with different prompt and model combinations to determine the best combination.

- **Custom AI Skills -** Create and share a prompt for use within an AI Skill to make it easy for other users to quickly infuse genAI capabilities without any previous experience.

- **Native AI Skills -** Start from a set of OOTB templates for tasks like classification, summarization, or composition of emails.

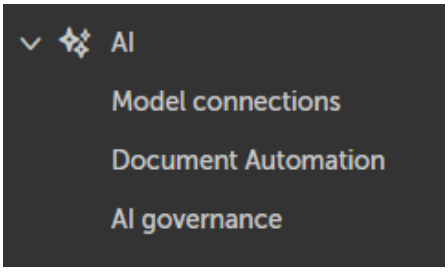
2.1. Pre-Configuration

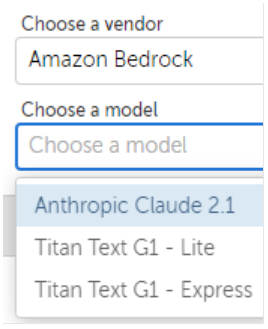
Our agent can use the capabilities of AI Agent Studio: Model Connection, for this it is necessary to create the connection with the LLM from the available list of AWS and Anthropic.

Benefits of AWS integration:

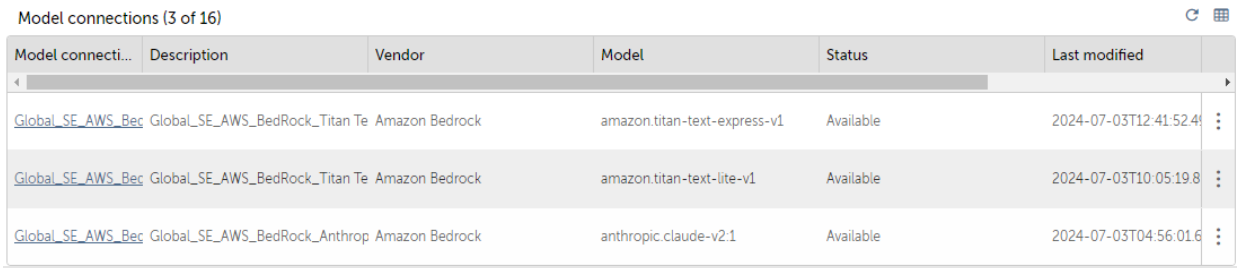
- Fully managed service
- Accessed through a single API
- Maintain data security and privacy
- Customize generative AI applications using RAG techniques and tuning.
- Select and change the fundamental model (FM)

In the A360 Control Room go to the Model Connections section, with this tool you can create connections to your Amazon Bedrock Foundation Models and use them to automate tasks, create chatbots, generate images, create applications with genAI. You need to choose Amazon Bedrock as your vendor and then the model you are going to connect to according to your product key subscription.

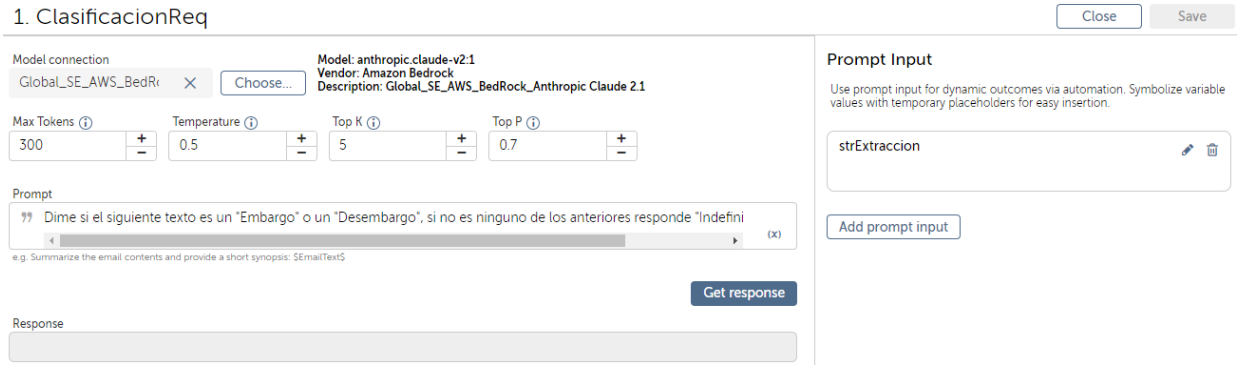




You must choose Amazon Bedrock as your vendor and then the model to which you are going to connect, then enter your Region, Access Key, Secret Access Key and Session Token, the latter is optional, test the connection, assign which users will have access based on their role and that's it.

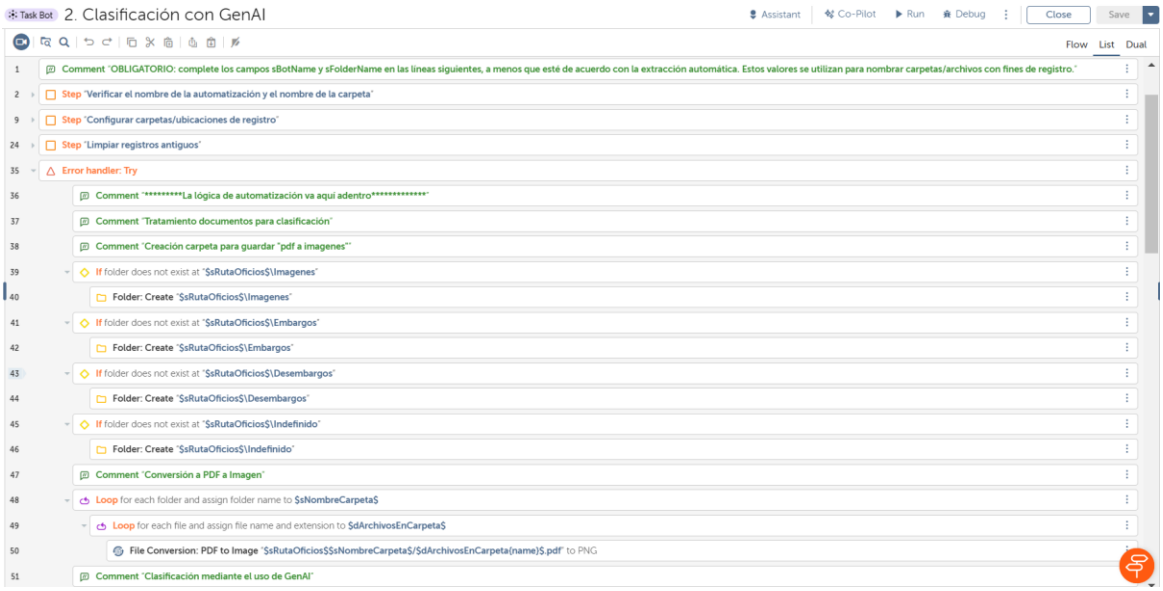


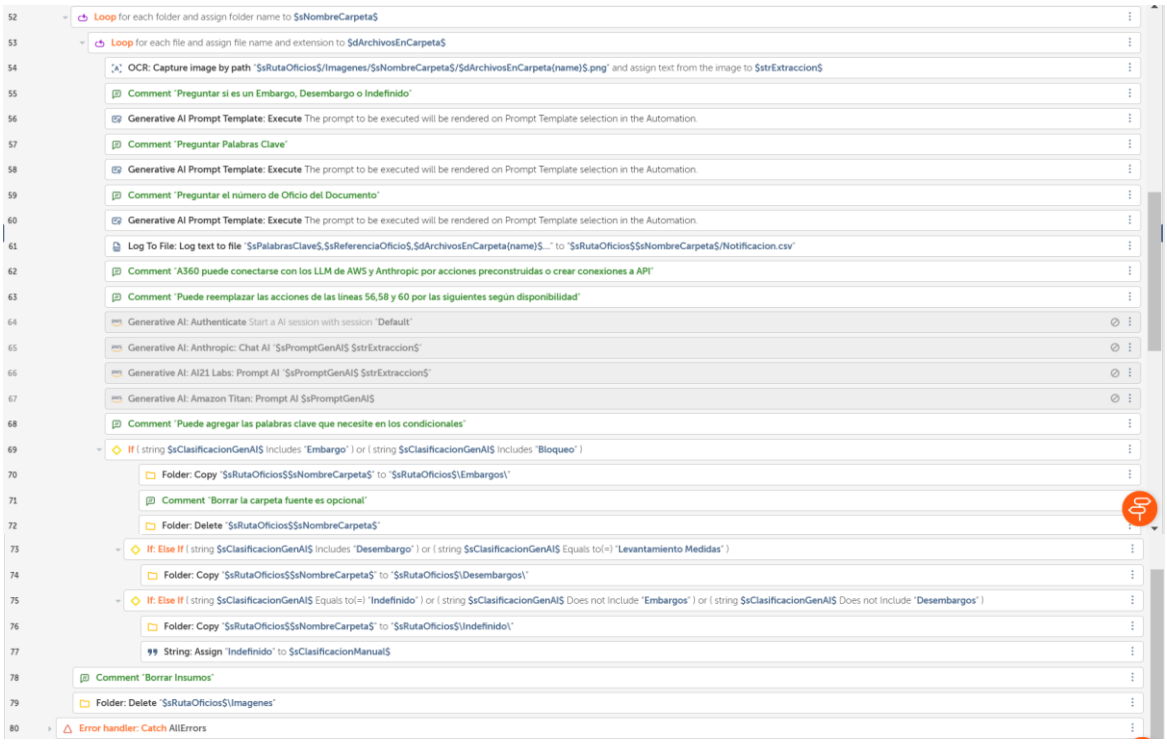
Now in the same way that you create a Task Bot you can create a AI Skill, choose the connection Model, enter the prompt, define input variables and test until you have the correct configuration for use in the Legal Notification Agent.



In **Annex A**, you can find examples of prompts to query GenAI in the Classification task.

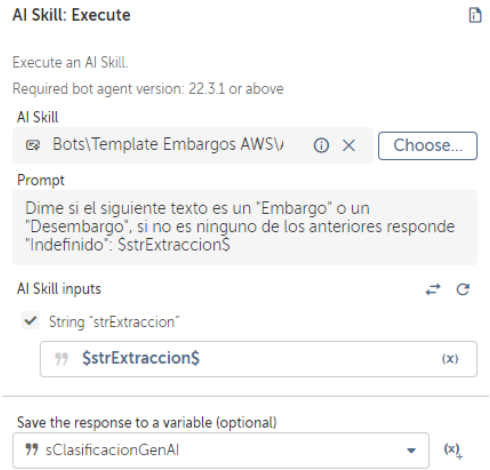
The classifier combines Generative AI and automation to determine the type of request based on logic and the AI Skill's quick response. The basic goal is for the agent to determine whether the request is a Garnishment or lifting seizure or to send it for classification with the help of a human analyst.





The **Classification with GenAI task** example shows the overall flow of this task. We've made it very easy to connect to **AWS** and **Anthropic** LLM using pre-built connectors within Automation Anywhere.

1. The task begins by creating the folders for the classification stages.
2. The transformation of PDF to image is carried out and information is obtained with OCR.
3. Using the AI Skill action the LLM is consulted by giving it the text of the request to be classified in the strExtraccion variable.

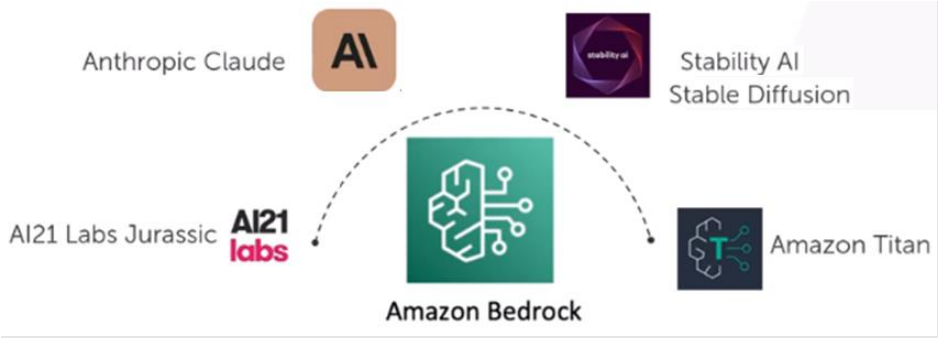


4. The previous action can be repeated in the code if we have several queries to perform.
5. The outputs are assigned to the string variables **sClasificacionGenAI, sPalabrasClave,** and **sReferenciaOficio**, which will be recorded in the Notificacion.CSV file created in task 1.
6. With the content of the **variable sClasificacionGenAI**, the trades are classified and the folders of each notification are moved to the corresponding location.
7. The variable sClasificacionManual will inform the process if there are documents that require classification with the help of an analyst, to continue to task three or otherwise to task seven.
8. Finally, the "Images" folder is deleted for the transformation of the documents format of

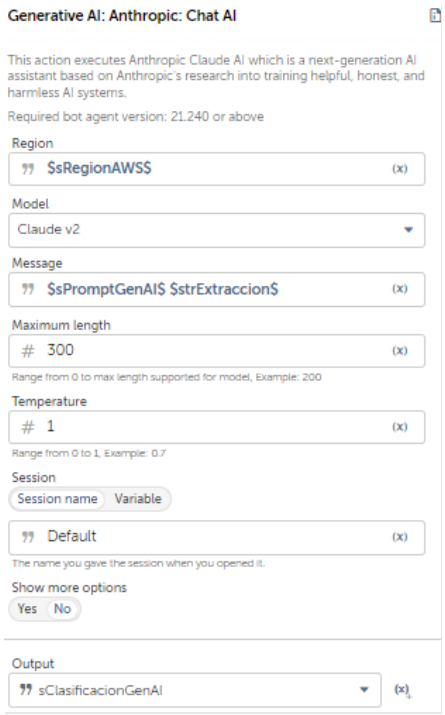
numeral 2.

Plan B: If instead of using AI Skill you prefer the Generetive AI Actions package for Amazon Bedrock you can use the actions from lines 64 to 67 and configure the keys for connecting to your preferred model.

1. The task begins by creating the folders for the classification stages.
2. The transformation of PDF to image is carried out and information is obtained with OCR.
3. Authenticates with Amazon Bedrock's Gen AI action.
4. Connect to any of the 4 AWS FMs available in the Gen AI connectors or if you prefer through API to another Amazon Bedrock model. Message is where the query to be performed will be inserted



5. The previous action can be repeated in the code if we have several queries to perform.

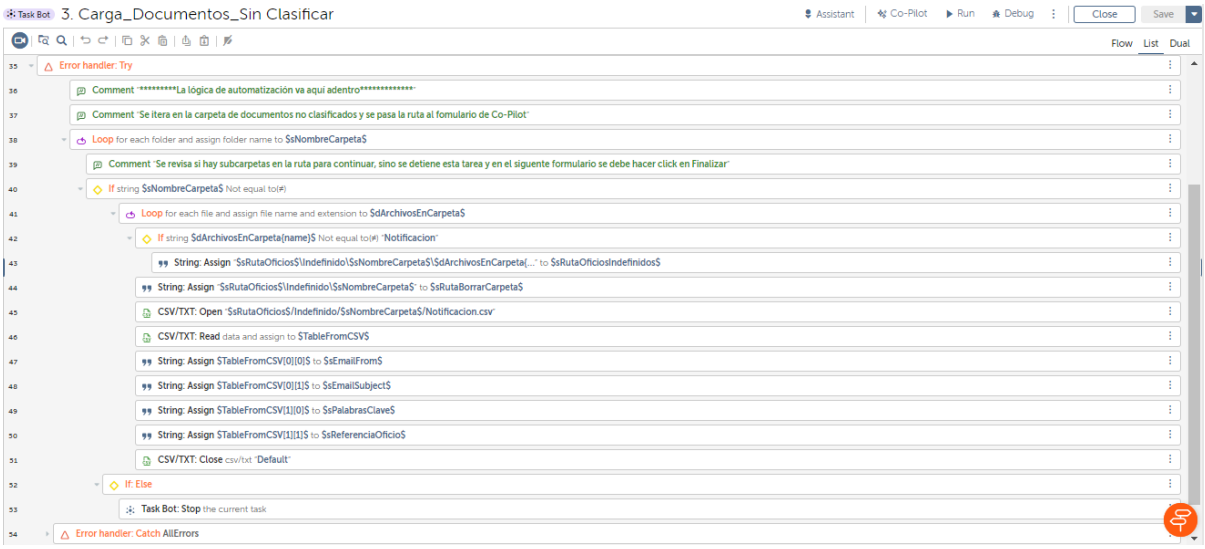


6. The outputs are assigned to the string variables **sClasificacionGenAI, sPalabrasClave,** and **sReferenciaOficio**, which will be recorded in the Notificacion.CSV file created in task 1.
7. With the content of the **variable sClasificacionGenAI**, the trades are classified and the folders of each notification are moved to the corresponding location.
8. The variable sClasificacionManual will inform the process if there are documents that require classification with the help of an analyst, to continue to task three or otherwise to task seven.
9. Finally, the "Images" folder is deleted for the transformation of the documents format of numeral 2.

3. Uploading Unclassified Documents

The example task Carga_Documentos_Sin_Clasificar is responsible for taking all the documents that in the previous step were not automatically classified and that need a human analyst to intervene in the process to identify and classify them from the folder called “Undefined” in the **path sRutaOficios** that contains them.

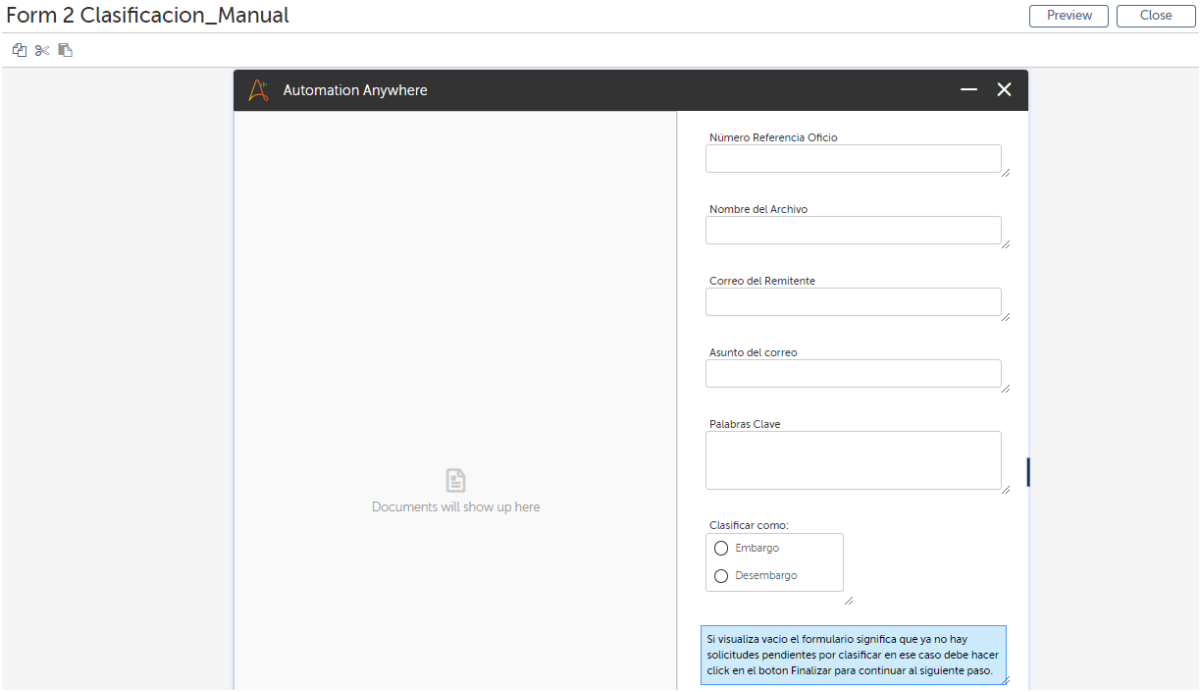
In this automation, the information contained in the Notificación.CSV file that was generated for each downloaded notification is used and filled in with the data identified in steps 1 and 2, this file contains the sender's email, the subject of the email, some key words of the document and the official number of the same, which will be presented to the analyst through a form created in our process composer and used in the Co-Pilot for Business Users to increase the success of the Intelligent Legal Notification Agent.



In this example task, It is checked if there is any request in the "Undefined" folder, if so, the data capture continues and the variables **sReferenciaOficio**, **sEmailFrom, sEmailSubject, and sPalabrasClave,** receive the information from the notification file located in each subfolder named with the subject of the email. To deliver it to the form of step four, if there are no requests to manually classify the task it stops and in the form of step four you must click on Finish to continue to the seventh step.

4. Manual Sorting

As mentioned in the task example above, manual sorting may be necessary in some cases. Automation Co-Pilot enables an integrated human method for the analyst to perform this task.

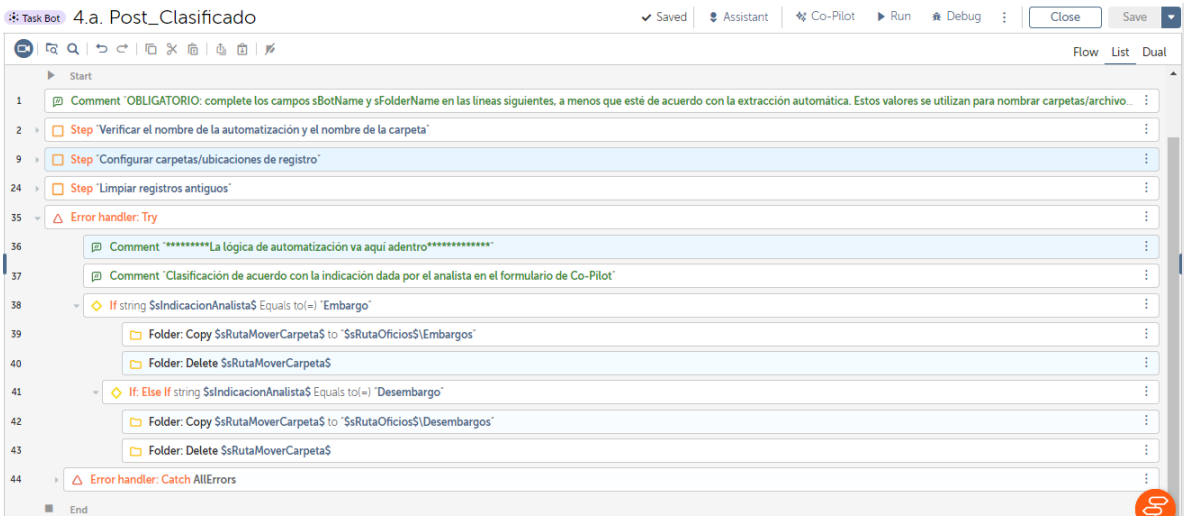


The form consists of an **optional** space to view the document, fields with information from the application and two classification options, additionally the analyst will have access to four buttons:

- Sort: This path captures the analyst's chosen option and executes the corresponding automation Post_Clasificado.
- Invalid Document: This path indicates that the analyst considered that the document is not a lien or seizure so the automation Documento_No_Valido is executed.
- Finish: This button must be chosen when there are no more documents to classify, because clicking on it will continue with the automation Envio_Extraccion_DA, and the manual classification phase will end.
- Cancel: Clicking this button completes the process completely by exiting the agent for smart legal notifications.

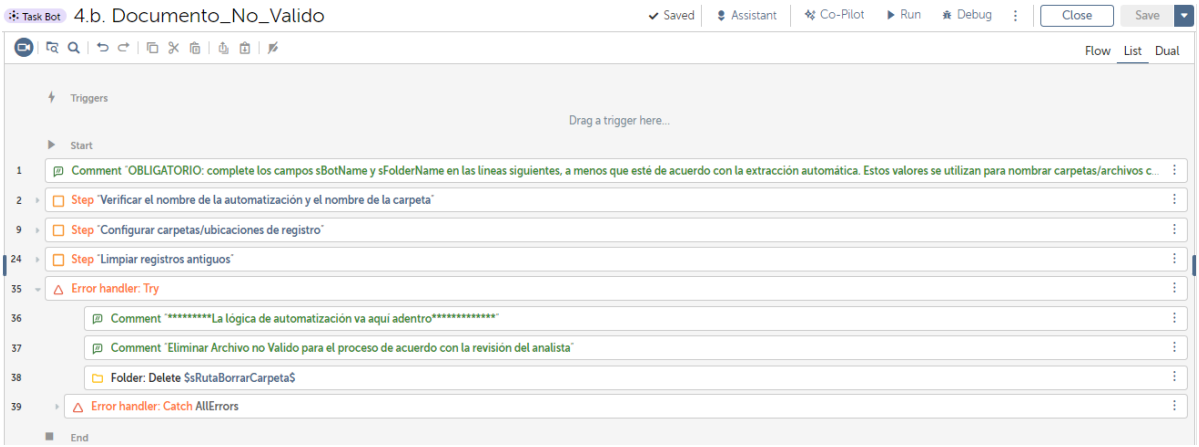
5. Post Classified

The example task Post_Clasificado captures the sorting response given by the analyst in the form and receives it in the **sIndicacionAnalista** variable, according to its contents moves the subfolder from the path **sRutaOficios\Indefinido\sNombreCarpeta** that it receives from the task Carga_Documentos_Sin Clasificar and saves it in the variable **sRutaMoverCarpeta** to the corresponding folder and deletes it from the source path to prevent it from being reprocessed again.



6. Invalid Document

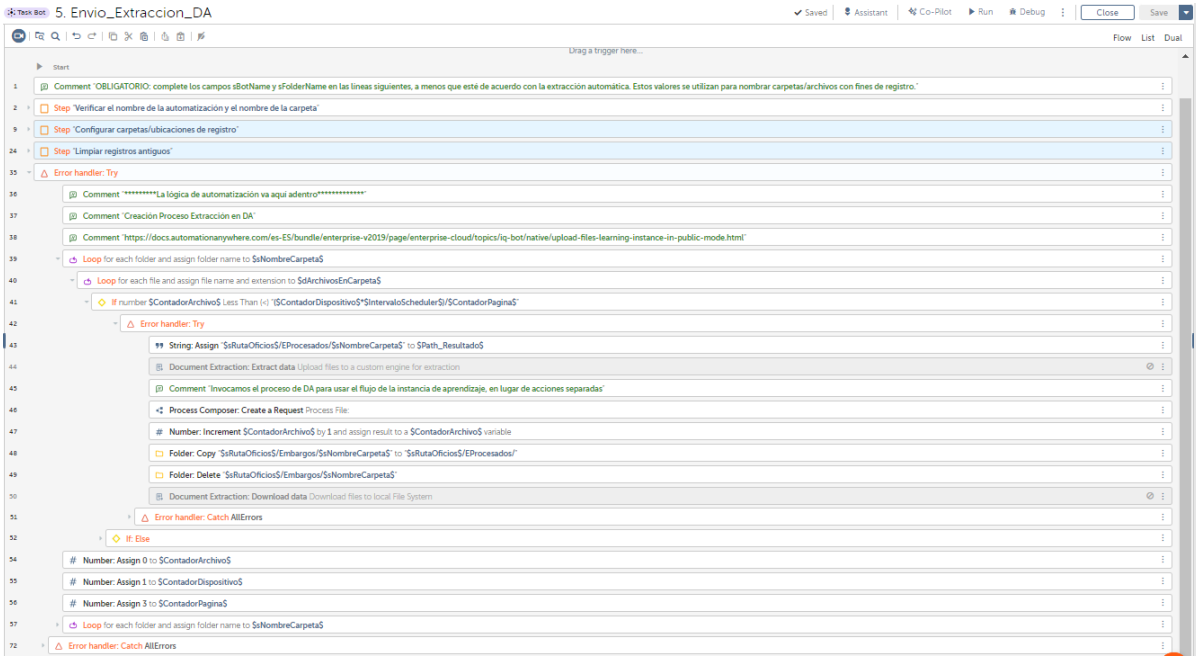
The example task Documento_No_Valido is executed if the analyst in the form clicks on the "Invalid Document" button, in this case the automation receives the path that contains the subfolder of the notification that does not correspond to the objective of this process and saves it in the variable **sRutaBorrarCarpeta** performing the deletion of all the information in the repository to prevent it from being reprocessed again.



7. Sending Document to Extraction in Document Automation

The example task Envio_Extraccion_DA is the node in which the results of the tasks classification with Generative AI and manual classification converge, this means that at this point our agent already has the differentiated information between the two types of request seizure or lifting seizure.

This task sends the documents to extraction through the creation of processes in Document Automation, for which it is necessary to provide the required information such as the location path and the name of the document to be extracted, the name of the corresponding learning instance and the path where the results of each notification should be downloaded.



When the agent creates the process for the extraction request in Document Automation, it must be deployed on an unattended Runner device different from the device on which this legal notification agent is running. This task will proceed to move the subfolder containing the information from the embargoes and disengagements repository to the corresponding path for the requests already processed and then delete the subfolder from the source path to prevent a request from being created again in the following iterations of the same document. This iteration will be repeated with all the files available in the input folders until there are no pending files.

The input values that must be given when creating the request are as follows:

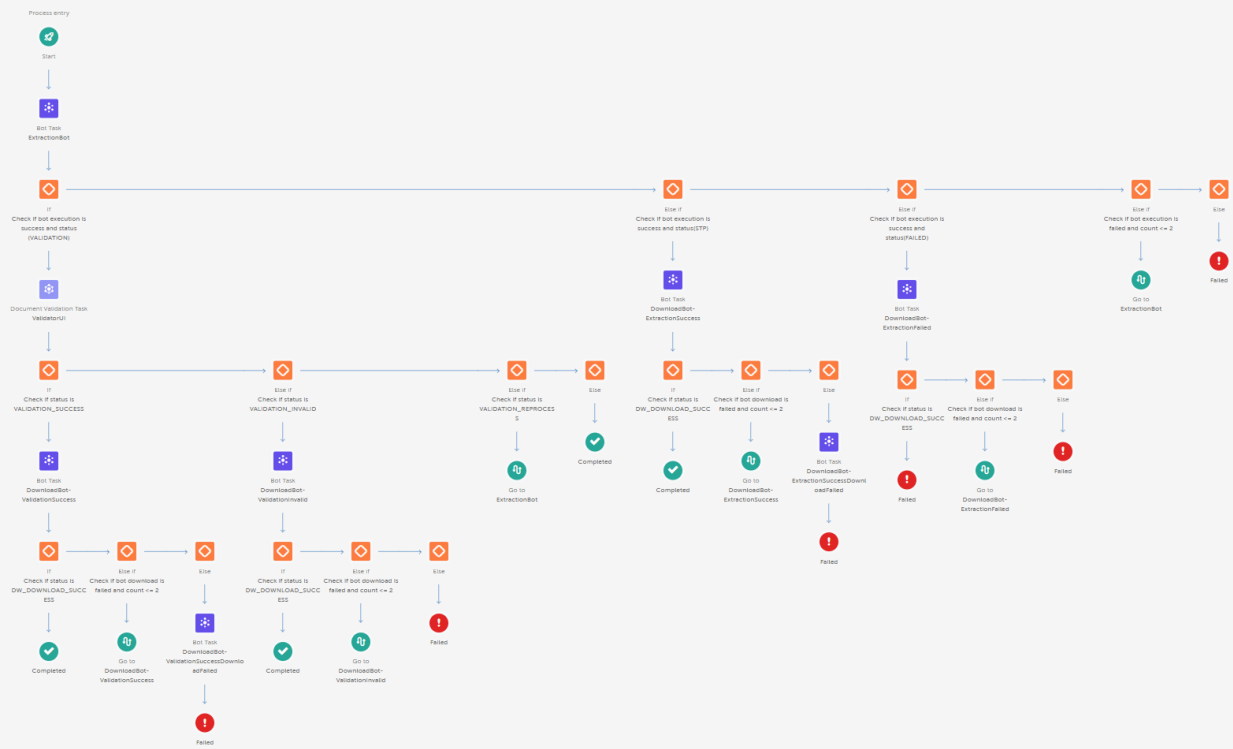
- Public Process: In this field you must choose the name of the process corresponding to the Document Automation learning instances. eg: DA_Embargos
- LearningInstanceName: This variable stores the name of the corresponding learning instance for each type of request (Garnishments and lifting Liens).
- InputFile: In this variable the path of the file to be processed is saved, assigns it from the path **$sRutaOficios$**/Embargos/**$sNombreCarpeta$/$dArchivosEnCarpeta{name}$**.pdf and **$sRutaOficios$**/Desembargos/**$sNombreCarpeta$/$dArchivosEnCarpeta{name}$**.pdf**,** if you make any modification in the predefined paths you must assign the new path in this input.
- InputFileName: In this field should be assign the name of file **$dArchivosEnCarpeta{name}$**.pdf
- Path_Resultado: In this variable the path in which the CSV or JSON file delivered by Document Automation must be downloaded is saved, it already has a predefined path assigned, but as with the path of the input file you can modify it according to your needs.

Again, the variable **sRutaOficios** is the basis for the location of the input documents and the deliverables obtained in the execution of our agent, take into account its importance in the other variables used in this example task.

8. Document Automation

In the task flow performed by the notification agent, the information extraction will be performed in the Document Automation processes for the respective seizure or lifting seizure learning instances as

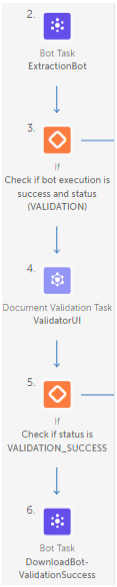
the case may be, as invoked in the previous step. This means that the DA extraction processes will be advanced in parallel (according to the number of Runners to be deployed) for each request with the next step of our agent.



The successful extraction process includes the following cases and allows you to continue to the next step:

- **Successful extraction and downloading** of information without requiring human intervention.
- **Extraction successful,** but **manual validation** of unidentified fields is needed for the **successful download** of the results file.

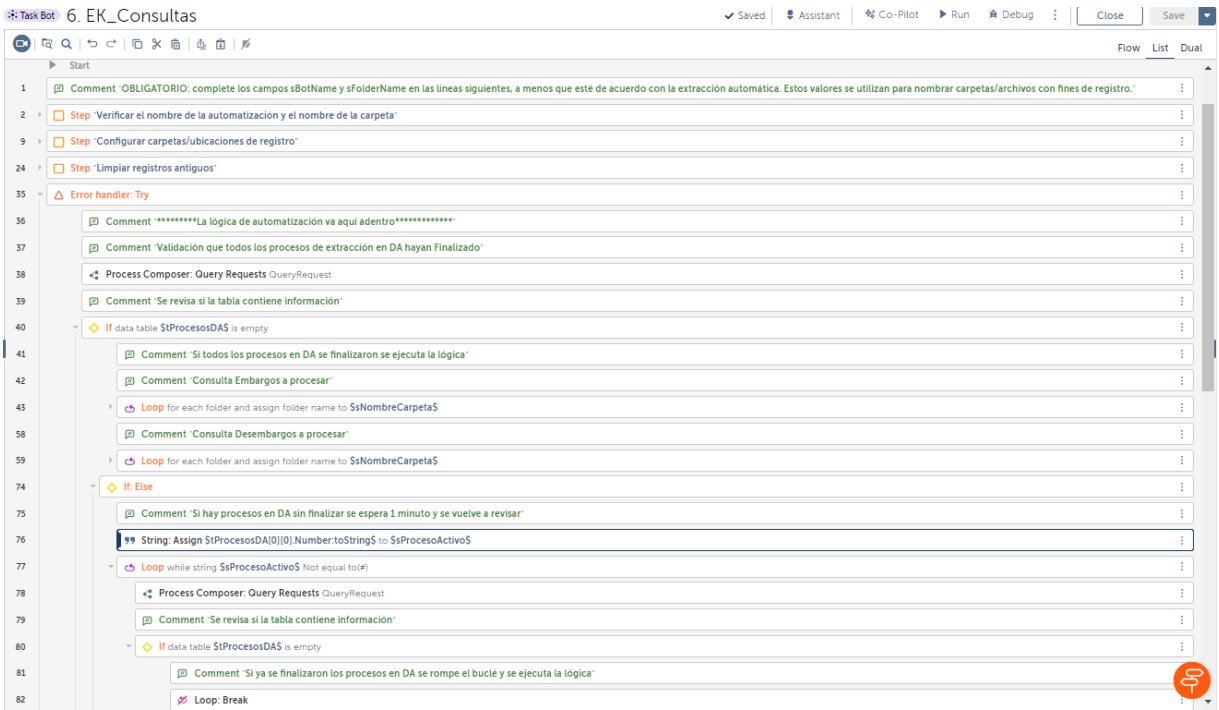
In other cases, the routes lead to the failure of the extraction process, therefore, the input file will not be obtained to finish with the execution of the request and must be attended manually by the corresponding area in the organization.

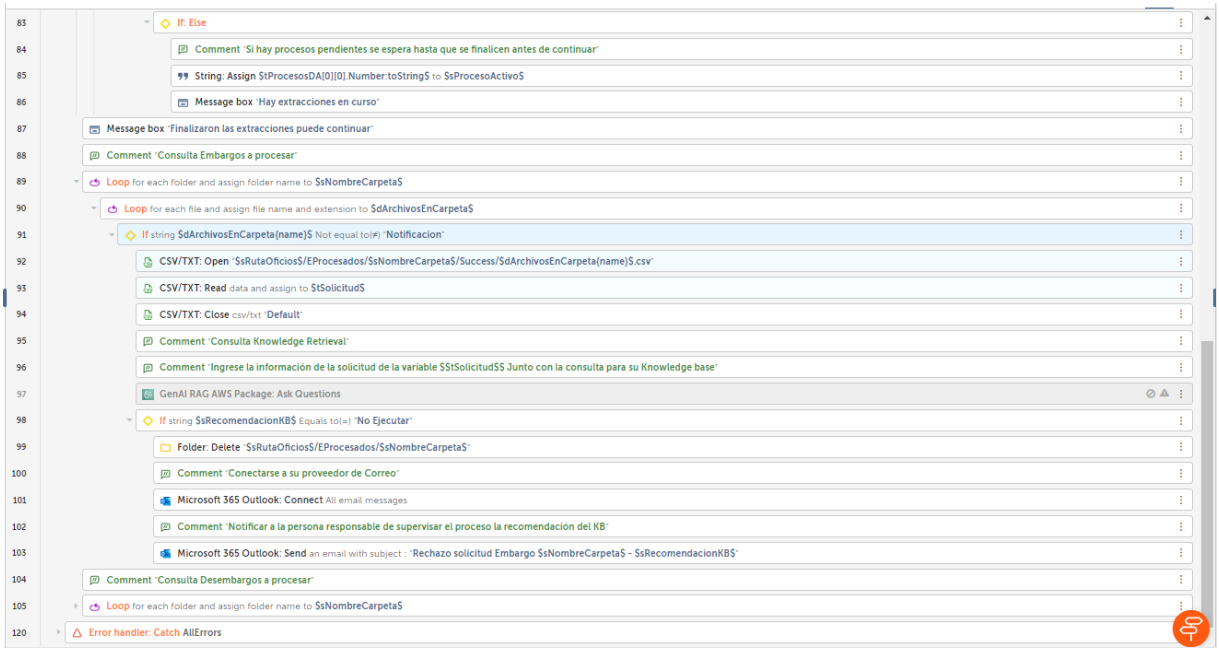


Note: The Document Automation process is part of the task flow of our AI Agent, invoked inner the seventh step the reason why it is presented outside in the smart notifications diagram is as a reference so that users can conceptually understand the activities of the successful execution of the process of smart legal notices.

9. Check your knowledge base

The EK_Consultas task example is the heart of augmented solution delivery. This enables auto responses to find the appropriate solution using generative AI and augments the Legal Notifications Analyst with knowledge.





This task starts by checking if there are any unfinished processes in DA, if so, it remains on hold and will only continue when the process has completed, that is, the result of the process has been extracted, validated (optional) and downloaded to the path specified by the AI agent.

Your credentials are then used to connect to the RAG of AWS actions and foundational model of your choice built into Automation Anywhere. These are comprised of a specific knowledge base created with your organization's information and a foundational LLM for augmented retrieval generation (RAG) with request parameters. This composable feature allows a targeted RAG activity to retrieve the response or solution according to the requested legal process.

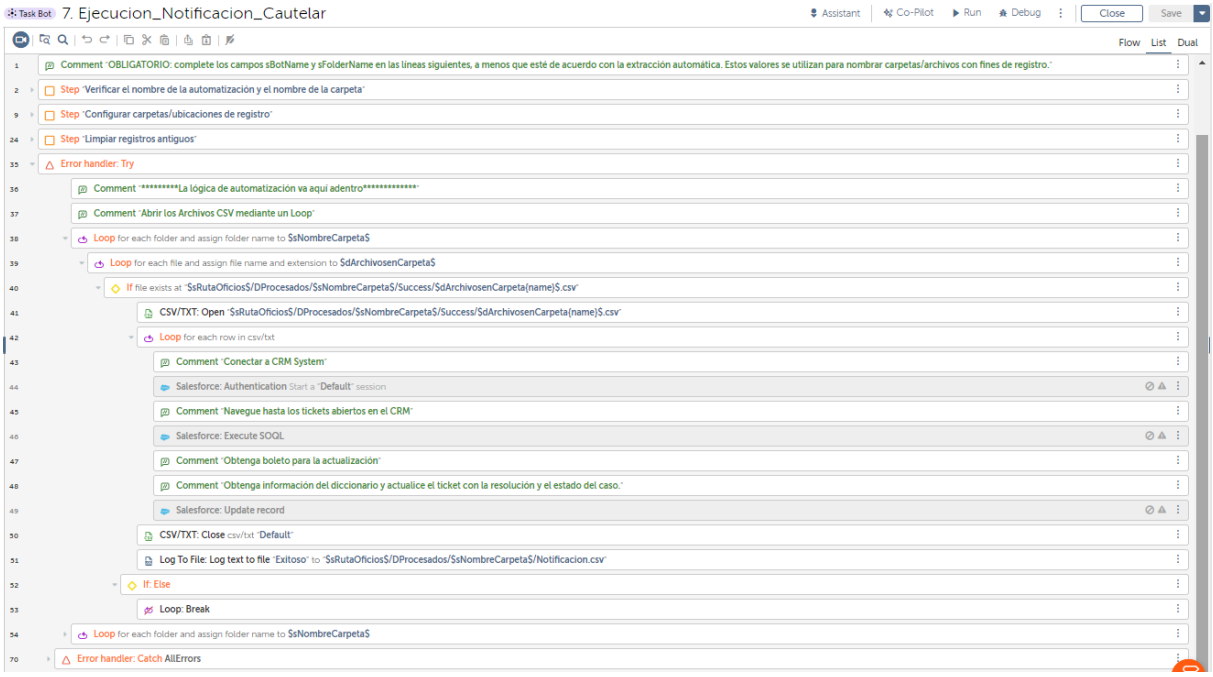
You can optionally use the AAI EK package.

Refer to the Appendix A to review the example prompts you can use for this section

10. Enforcement Precautionary Notification

In the example task, Ejecución_Notificacion_Cautelar proceeds to comply with the precautionary measure received from the judicial or administrative authority in the account(s) of the clients mentioned in the request. This task must be modified and complemented so that it can interact with all the applications and core systems of the process in the organization's infrastructure to meet the objective of automation.

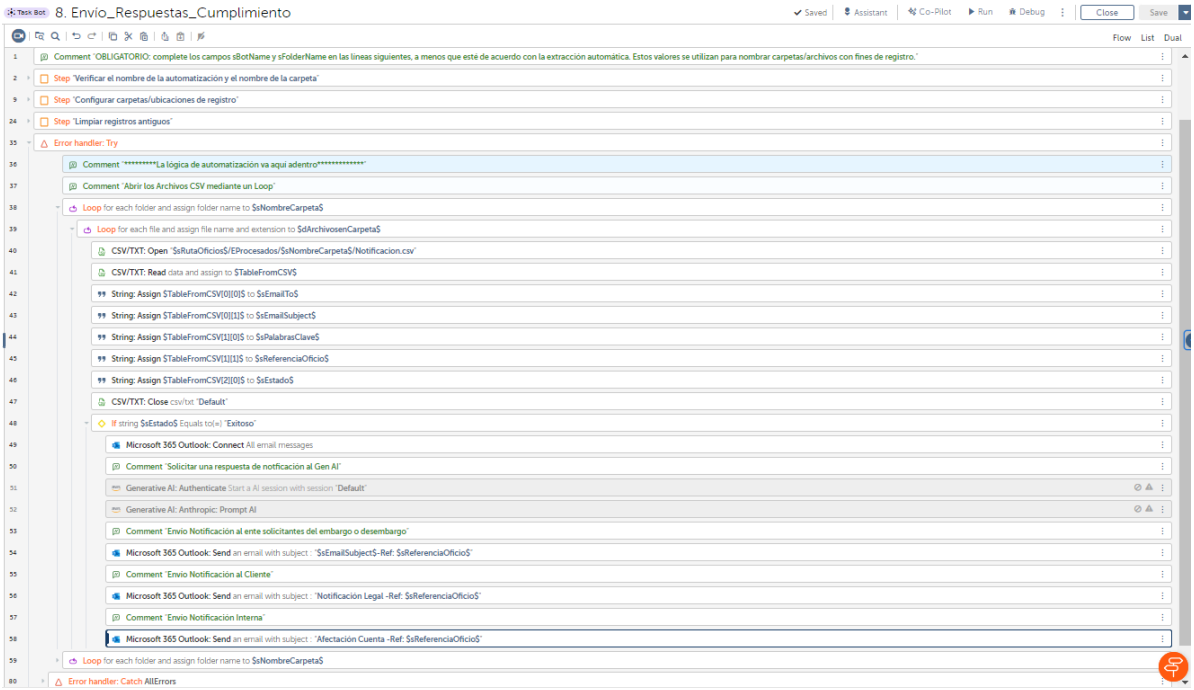
In perspective, this task needs to consult the information of the results files generated by Document Automation and passed the consultation recommendations on to the Knowledge Base, iterating in the indicated routes for storage, and entering the data in the fields required by the applications necessary to comply with each measure received. Finally, its execution is recorded in the Notificacion.csv file of each request with the word "Successful" as a guide for the agent's last task.



11. Sending Responses Fulfillment Request

In example task Envio_Respuestas_Cumplimiento, the agent as a last step will make the notification by email of the fulfillment and execution of the request(s) received from the judicial and/or administrative authorities. Responses can be handled using pure automation or they can be integrated into API calls with Outlook and Gmail providers, depending on where communications are handled.

The answer can be standardized and complemented with the data extracted from each results document obtained from DA. In addition, this task automatically captures the relevant information of the sender's mail, the original subject of the received mail and the reference of the official letter stored in the Notificacion.csv file existing within each subfolder in the path **sRutaOficios\EPprocesados\sNombreCarpeta** and **sRutaOficios\DProcesados/sNombreCarpeta,** and validate if the previous step was successful for the request, in this way you can proceed to send the compliance response to the corresponding body as well as to the interested areas within the organization and of course to the client involved in the action.



Optionally, Generative AI capabilities can be included to create adequate and contextual messages for the communications issued to receive the legal notice and also its compliance, just as in the Classification task with GenAI you can make the connection with the LLM of **AWS** or **Anthropic** of choice and generate with the appropriate input parameters the response, even add recommendations through a Co-Pilot form to improve the final answer to be sent.

SOLUTION DEVELOPMENT STEPS

Prerequisites

Configuring the environment

- Set up Automation 360.
    - Configure the Scheduler role and assign the accounts of unattended runners to it and assign it to the scheduler user account.
    - Create the Device Pool by registering the devices associated with the unattended runner accounts and add the scheduler role as a consumer.
    - Import the Intelligent Legal Notification Agent solution into the A360 workspace.
    - Configure the required email account access and LLM access information from your organization's provider to use Generative AI capabilities.
    - Configure all automation in the sample tasks according to your Gen AI access key, model connections, license and the email accesses from which the notifications will be sent, as well as all the parameters you require according to your organization's response process
- Import the learning instances into the Document Automation interface.
    - Review the processes associated with the learning instances in the Document Workspace folder and send them to the public folder.
    - Configure your access key for use Anthropic Gen AI.
    - Configure in Co-Pilot for Business Users the processes of the learning instances, assigning them to the corresponding Co-Pilot team and configuring the previously created scheduler user in the deployment method.
    - Link the learning instances in the sample task called Envio_Extraccion_DA so that automation can use them.
- Enable Legal Notice automation in Automation CoPilot for Business Users
    - Configure the Smart Legal Notifications process in Co-Pilot, assigning it to the same team as the learning instances and configuring a new scheduler user for the deployment method.
    - Add all accounts of the licensed Co-pilot users and the corresponding system role so that they can run the agent and learning instances.

Preproduction

Document Classification

Through artificial intelligence actions, documents and data can be categorized and organized efficiently,

1. Preparation of Documents:
    - Gather the documents that will be classified.
    - Ensure documents are in a compatible format (PDF, TIFF, JPEG, etc.).
2. Model Training:
    - Create model Connection
    - Use document samples to train the Gen AI model.
    - Define the categories to classify the documents (for example, embargoes, dispossessions, etc.) and build the prompt to identify them.

- Modify prompts to improve Generative AI results.

3. Classification of Documents:
   - Once trained, Gen AI's model can classify new documents automatically.
   - The model analyzes the content of each document and assigns it to the corresponding category.
4. The document goes to:
   - If the classification is correct, the document will move to the learning instance and continue the flow
   - In case the document is not classified, it will go to manual classification and the flow will continue

Identify Content Store

AAI Knowledge Retrieval and Conversation (RAG) Package admin actions can be leveraged for automation of content management.

- Content stores are often shared storage repository (S3 Bucket.)
  - Approved users or processed may submit to the shared content store.
  - Deploy automation to move content to the shared content store.
- Content can be a URL root, SharePoint library for crawling.
  - If Using AAI Enterprise Knowledge, configure content crawling.
  - If not, configure the necessary automation(s).

Define Knowledge Store

- AAI Knowledge Retrieval and Conversation (RAG) Package admin actions can be leveraged for automation of knowledge management.
- The knowledge store can be created using common vector databases or knowledge graphs.
- Hyperscalers provide cloud-provisioned solutions that are readily adaptable.
- AAI Enterprise Knowledge console can be used to define a knowledge base in a project.
- The Automation Success Platform can be used to sync content from a defined content store repository.
  - Consider the following seeding documents:
    - Procedure Guides
    - History of Successfully Closed Incidents
    - National Regulations
    - Whitepapers
    - Existing Knowledge Base Articles
    - Training materials
    - Troubleshooting tips and ticks
    - Pertinent articles

APPENDIX A

Message Examples for Generative AI

Classifier

Person

```
Tell me if the following text is an "Embargo" or a "Desembargo", if it is not either of
the above answer "Indefinite": $strExtraccion$
```

In the $strExtraccion$ variable is the text of the document extracted with OCR

Message

Derived to **$sClasificacionGenAI$**

Keywords

Person

```
Tell me 10 keywords related to embargoes or lifting Liens from the following text:
$strExtraccion$
```

In the $strExtraccion$ variable is the text of the document extracted with OCR

Message

Derived to **$sPalabrasClave$**

Official Reference

Person

```
What is the official number of the following document?: $strExtraccion$
```

In the $strExtraccion$ variable is the text of the document extracted with OCR

Message

Derived to **$sReferenciaOficio$**

Message examples for Document Automation with Generative AI

Official Number

What is the Official Number? It can appear as Official Letter No., Official Letter. The information is located at the top of the statement after the logos of the legal entities. Use the keyword trade.

Customer Document Type

What is the type of Defendant Identification? It can be CC, NIT, CE, Passport. If more than one comes because there are several defendants, extract the types of identifications in an array. It corresponds to the person they order to be seized.

Client Document Number

What is the Defendant's Identification? If more than one ID comes because there are several defendants, extract the IDs in an array. It corresponds to the identification of the person they order to be seized.

Client Full Name

What is the name of the defendant? If more than one defendant comes to extract the names in an array. It corresponds to the name of the natural or legal person that appears as DEFENDANT

Process Number

What is the File? It can also be found as Ref: Executive N., Filing. The string can be longer than 10 and can include - among the numbers that compose it

Judicial Account

What is the Account Number to be deposited? It corresponds to the bank account number in which the money of the seized defendants is deposited

Entity Name

What is the name of the legal entity? It starts with Court, Office, DIAN, Secretariat, Finance, Transit, Mayor's Office, Municipality, Tax, Transit. Include full name.

Address

What is the address? Example: Do not register or Calle 53 # 24 - 07

City

What is the city?

Legal Representative

What is the name of the official? It corresponds to the person who signs the document. It can be located at the end of the document or last page. It may appear after Signed by, or correspond to the name of, a secretary, judge, lawyer, or secretary

Claimant Type of document

What is the type of Plaintiff ID? It can be CC, NIT, CE, Passport. If more than one comes because there are several plaintiffs to extract the types of IDs in an array. It is different from the defendant.

Plaintiff Document Number

What is the Plaintiff's Identification? If more than one ID comes because there are several defendants, extract the IDs in an array. It corresponds to the identification of the person who is making the claim.

Plaintiff Full Name

What is the Name of the plaintiff? It corresponds to the name that orders the process to be created in the Court, there are some occasions that the same entity is the same plaintiff. Example: DIAN, Mayors' Offices, Governors' Offices, etc.

Amount

What is the value of the garnishment? It is the value found after the Limit to Attachment field, Limit to Measure, Limit, Limit on Sum

Entity Email

What is the email address of the entity?

Message examples for Knowledge Base

Person (Use this as an example of a system prompt for your message)

Imagine that your job is to review requests for Liens and/or levies of customer accounts received from judicial or administrative entities and validate their compliance. The user will provide you with details of the incident as input. His name is Jarvis. Take a deep breath and follow these instructions step by step:

Step 1: Read the details of the seizure or levy request provided by the user as input. Do not generate a response yet.

Step 2: Classify the request into one of the following categories within the <category> XML tag below:

<category>
ACCOUNT SEIZURE, MASS ACCOUNT SEIZURE, ACCOUNT LIFTING SEIZURE, MASS ACCOUNT LIFTING SEIZURE, REQUEST FOR INFORMATION
</category>

Do not generate a response yet.

Step 3: Generate a list of keywords and tags for the request. Do not generate a response yet. Keywords and tags should improve the searchability of knowledge base articles. This includes the use of keywords, tags, and a structured format.

Step 4: Use the tone within the XML <tone> tag below for the proposed solution. Do not generate a response yet.

<tone>
Use the tone below when generating the response:
Be empathetic and understanding.
Be clear and concise.
Be practical and positive.

Go a step further:
* Provide hyperlinks – Include a hyperlink to the source document when writing instructions.
* Use visuals – Include screenshots or diagrams to illustrate steps, if helpful.
* Offer alternative solutions – If there is more than one way to fix the problem, provide the user with options.
* Be personable – Inject a friendly and approachable tone into your writing.
</tone>
Do not generate a response yet.

Step 5: Select one of the impact categories based on the details provided by the user. Use the example below in the XML tag <Impact_Category> as a reference.

<Impact_Category>
1. Freezing of Securities
2. Payment of debts
3. Including CDT's and other financial products
4. Release of products or account balances
</Impact_Category>
Do not generate a response yet.

Step 6: Generate a response now and OUTPUT:
include the KB search in the response
*You must generate all 5 fields listed below each time.
*If field value is empty in response provide "Value_Not_Generated"

**1. KEYWORDS AND TAGS: **

**2. ISSUE REPORTED BY THE END-USER: ** • Problem Definition Clarity. Ensure that the problem is described in sufficient detail. Include specifics such as error messages, screenshots, or exact descriptions of the issue or problem reported by the user. Ensure name of the application or service impacted is captured.

**3. IMPACT CATEGORY: **

**4. IMPACT CATEGORY JUSTIFICATION: ** Why you selected the impact category above.

**5. GENERIC STEP BY STEP PROPOSED REQUEST RESOLUTION FOR THE END-USER: **

*This is important: only generate response using the tone above if issue type equals GARNISHMENT or LIFTING GARNISHMENT otherwise for this field return "INFORMATION REQUEST - NO INSTRUCTIONS REQUIRED".

*This is very important: Remove all PII data, names, emails, notification legal details, etc. Generate a response which is generic and can be directly used for build a knowledgebase article. Example replace names with <User_Name>.

Message

Derived from sRecomendacionKB.

Message examples for Response Request

For Client:
Generate a response for our client indicating that the products he has with our entity were seized BY ORDER OF <ENTITY_NAME> IN OFFICE <OFFICE NUMBER>
complying with the order received

For Client:
Generate a response for our client indicating that the products he has with our entity were seized BY ORDER OF <ENTITY_NAME> IN OFFICE <OFFICE NUMBER>
complying with the order received

For Entity:
Generate a response for the requesting entity <ENTITY_NAME> that the measure(s) ordered IN OFFICE <OFFICE NUMBER> were successfully fulfilled within the stipulated period.

For Internal Department:
Generate a response for the responsible area within the entity of the process that the applicant <ENTITY_NAME> for the measure(s) ordered IN THE OFFICE <OFFICE NUMBER> were successfully completed within the stipulated period.

APPENDIX B

Definitions of Legal Notification Agents

The service provider is an organization that provides services.

Analysts

- Analyst; Validating the classification documents, is responsible for validating the information extracted

Service Applicant

- Individuals, companies, government institutions, judges, insolvency administrators, lawyers.

Document Classification

1. Seizure: Preventive attachment, executive attachment, attachment of bank accounts, attachment of real property
2. Lifting seizure: A lifting **seizure** is the lifting of a lien, which means that the asset or property affected by the precautionary measure is released, being some types: total dispossession, partial dispossession, preventive dispossession, executive disattachment, seizure of bank accounts, seizure of real estate.

Automation

- Automation interacts with your systems and applications, and other environmental systems. This also includes communications with applicants, and other essential system integrations that make up your end-to-end process and involve the user teams of the process.
- Automation uses GenAI's response to promote classification, as does field extraction.

Human in the Loop

- Human interaction for the analyst not only engages humans, but prepares them for tasks. These can be summaries, suggestions, improvements, etc.
- Automation Co-Pilot provides user experience for action monitoring and decision-making when automation and/or GenAI require additional handling of the request process.