



# **AWS GenAI – Knowledge Retrieval & Conversation**

## **Readme**

---

**Version 1.0**

**3/29/2024**

## Table of Contents

<b>1. Introduction.....</b>	<b>3</b>
1.1 Overview .....	3
1.2 Use Cases.....	3
<b>2. Requirements &amp; Prerequisites.....</b>	<b>4</b>
2.1 System Requirements.....	4
2.2 Prerequisites .....	4
<b>3. Getting Started .....</b>	<b>5</b>
3.1 Quick Start .....	5
3.1.1 Setup.....	5
3.1.2 Configuration.....	5
<b>4. Support &amp; FAQs .....</b>	<b>9</b>
4.1 Support.....	9
4.2 FAQs .....	9
<b>Appendix A: Record of Changes .....</b>	<b>10</b>
<b>Appendix B: References .....</b>	<b>11</b>

---

# 1. Introduction

---

This document contains all essential information for the user to make full use of this Automation 360 Package. It includes a description of the functions and capabilities and step-by-step procedures for setup & configuration of the Package.

## 1.1 Overview

[Knowledge bases](#) for Amazon Bedrock provides you the capability of amassing data sources into a repository of information. With knowledge bases, you can easily build an application that takes advantage of *retrieval augmented generation (RAG)*, a technique in which the retrieval of information from data sources augments the generation of model responses.

RAG, or Retrieval Augmented Generation, supercharges your automations with the ability to analyze data, ingest best practices and give the ability to your bots to provide recommendations and best next steps. This powerful synergy enables users and automations to not only retrieve relevant information swiftly but also generate customized responses, documentation, and insights tailored to their specific needs.

The package features a simple and intuitive interface that makes it easy to get started, even if you have no prior experience with AI.

## 1.2 Use cases

The AWS GenAI Knowledge Retrieval & Conversation Package from Automation Anywhere can be used by automation developers to bring cognitive capabilities to their builds. Use cases include:

- Natural Language Understanding: Enhancing the comprehension and interpretation of complex queries or documents.
- Question Answering Systems: Facilitating accurate and contextually relevant responses to user inquiries.
- Knowledge Base Generation: Generating comprehensive documentation, guides, and insights from retrieved information.
- Information Retrieval: Improving the efficiency and accuracy of retrieving relevant information from large datasets or knowledge bases.
- Conversational Agents: Enabling more engaging and contextually aware interactions in chatbots or virtual assistants.
- Personalized Recommendations: Providing tailored recommendations or suggestions based on user preferences and historical interactions.
- Decision Support Systems: Assisting in decision-making processes by presenting relevant insights and analyses derived from retrieved information.
- Learning and Education: Facilitating interactive and adaptive learning experiences through personalized content creation and knowledge dissemination.

---

## 2. Requirements & Prerequisites

---

### 2.1 System Requirements

#### [Automation 360 and Community Edition device requirements.](#)

Review the machine hardware specifications, operating system versions, and browser types supported by Automation Anywhere Enterprise for creating and running bots and command packages as an Automation 360 or Community Edition user on your local machine.

### 2.2 Prerequisites

Automation 360

Windows Bot Runner

---

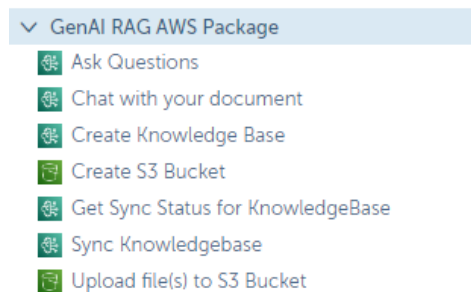
## 3. Getting Started

---

### 3.1 Quick Start

#### 3.1.1 Setup

1. Install the package from Bot Store into your Control Room
2. Validate/Enable the package named **GenAI RAG AWS Package** has been installed and set as default.
  - a. It should install/enable itself upon install of the Bot Store package, but just triple check to be sure.
3. These are the available actions as shown here:



#### 3.1.2 Configuration and Use

There are five actions that makes up this package. Make sure you have the keys and proper AWS IAM permissions to perform the following actions. For more information check the [IAM documentation](#):

1. **Create S3 Bucket:** This action enables users to create a storage repository inside AWS. This is where all the data will be stored and used for the Knowledge Retrieval activities.
  - a. **Region:** This field requires the AWS region where your service is deployed. *(You must add the AWS Access Key ID and AWS Secret Access Key before populating this field)*
  - b. **AWS Access Key ID:** Access Keys are long-term credentials for an IAM user or authorized account. Make sure this IAM user has the proper permissions to perform the necessary request. [AWS Documentation](#).
  - c. **AWS Secret Access Key:** Secret Access Key is tied to the AWS Access Key ID and is a 2-part authentication method. Bot keys must be generated to authenticate. [AWS Documentation](#).
  - d. **S3 Bucket Name:** Provide a name for the new S3 Bucket you are creating with this action.
2. **Create Knowledge Base:** This action enables users to create a knowledge base within the S3 Bucket created in Step 1 with the data that they would like to query a later point. Multiple Knowledge Bases can be created within the same S3 Bucket.
  - a. **Region:** This field requires the AWS region where your service is deployed. *(You must add the AWS Access Key ID and AWS Secret Access Key before*

*populating this field)*

- b. **AWS Access Key ID:** Access Keys are long-term credentials for an IAM user or authorized account. Make sure this IAM user has the proper permissions to perform the necessary request. [AWS Documentation](#).
  - c. **AWS Secret Access Key:** Secret Access Key is tied to the AWS Access Key ID and is a 2-part authentication method. Bot keys must be generated to authenticate. [AWS Documentation](#).
  - d. **Knowledge Base Name:** Provide a name for the Knowledge Base that is being created.
  - e. **Embedding Model:** Choose the kind of Embedding Model to be used to store the data from the dropdown
  - f. **Data Source Name:** A data source is created along with the Knowledge Base. Provide a name for that data source.
  - g. **S3 Bucket Name:** Provide the S3 Bucket Name created in Step 1.
3. **Upload files to S3 Bucket:** This action enables users to upload files into the S3 bucket that has been created in Step 1.
  - a. **Region:** This field requires the AWS region where your service is deployed. *(You must add the AWS Access Key ID and AWS Secret Access Key before populating this field)*
  - b. **AWS Access Key ID:** Access Keys are long-term credentials for an IAM user or authorized account. Make sure this IAM user has the proper permissions to perform the necessary request. [AWS Documentation](#).
  - c. **AWS Secret Access Key:** Secret Access Key is tied to the AWS Access Key ID and is a 2-part authentication method. Bot keys must be generated to authenticate. [AWS Documentation](#).
  - d. **S3 Bucket Name:** Provide the S3 Bucket Name created in Step 1.
  - e. **List of local folder paths:** Provide a list/variable with the folder(s) containing all the files you would like to upload into the S3 Bucket.

Sr, No.	Field name	Value	Input / Output	Description
1	Region	Region name	Input - string	Region in which S3 bucket is created
2	AWS Access Key ID	Key ID value	Input - string	AWS Access key id provided by Admin
3	AWS Secret Access Key	Secret access key value	Input - string	AWS Secret key provided by Admin
4	AWS Session Token (optional)	Session token value	Input - string	Keep empty for AWS service account
5	S3 Bucket Name	Bucket name	Input - string	S3 bucket name to which files are to be uploaded
6	S3 Bucket folder name	Bucket folder name	Input - string	Folder name within S3 bucket
7	List of Folder paths	Folder paths	Input - List	Files within this folder will be uploaded
8	Assigned to (optional)	Return string	Output - string	Output status string

4. **Sync Knowledge Base:** This action enables users to synchronize the latest data source with the knowledge base. This should be called right after “Upload files to S3 Bucket” command so that the uploaded files are indexed/vectorized in the Knowledge Base.

- a. **Region:** This field requires the AWS region where your service is deployed.  
(You must add the AWS Access Key ID and AWS Secret Access Key before populating this field)
- b. **AWS Access Key ID:** Access Keys are long-term credentials for an IAM user or authorized account. Make sure this IAM user has the proper permissions to perform the necessary request. [AWS Documentation.](#)
- c. **AWS Secret Access Key:** Secret Access Key is tied to the AWS Access Key ID and is a 2-part authentication method. Bot keys must be generated to authenticate. [AWS Documentation.](#)
- d. **Knowledge Base:** Select the Knowledge Base created in Step 2 from the dropdown.
- e. **Data Source:** Provide the name of the Data Source created with the Knowledge Base created in Step 2.

Sr. No.	Field name	Value	Input / Output	Description
1	Region	Region name	Input - string	Region in which S3 bucket is created
2	AWS Access Key ID	Key ID value	Input - string	AWS Access key id provided by Admin
3	AWS Secret Access Key	Secret access key value	Input - string	AWS Secret key provided by Admin
4	AWS Session Token (optional)	Session token value	Input - string	Keep empty for AWS service account
5	Knowledge Base	Knowledge base name	Input - string	Select KB name to be synchronized
6	Data Source	Data source name	Input - string	Select data source to be synchronized
7	Assigned to	Return value	Output - dictionary	Keys: status, failure_reasons, numberOfDocumentsDeleted, numberOfDocumentsFailed, numberOfDocumentsScanned, numberOfModifiedDocumentsIndexed, numberOfNewDocumentsIndexed

5. **Get Sync Status for Knowledge Base:** Once your files are uploaded, use this action to get the syn status of your file upload operation
6. **Chat with your Document :** Use this action to retrieve information from your document either document is in local folder, or your documents uploaded to AWS S3 bucket. Enter your prompt query & then you will get the information from your documents. The output dictionary variable will have keys lie “output” that will have you response retrieved, “querySessionId” , “citations-count” and “citation1”.
7. **Ask Questions:** This action enables users to submit a plain text prompt and receive a response in a String variable type format. The prompt can be a question, a request, or a command – and will be addressed by the generative AI capabilities of the foundational model selected below. You can continue the conversation by using the same session name in the subsequent prompts
  - a. **Region:** This field requires the AWS region where your service is deployed.  
(You must add the AWS Access Key ID and AWS Secret Access Key before populating this field)
  - b. **AWS Access Key ID:** Access Keys are long-term credentials for an IAM user or

authorized account. Make sure this IAM user has the proper permissions to perform the necessary request. [AWS Documentation](#).

- c. **AWS Secret Access Key:** Secret Access Key is tied to the AWS Access Key ID and is a 2-part authentication method. Bot keys must be generated to authenticate. [AWS Documentation](#).
- d. **Knowledge Base:** Select the Knowledge Base created in Step 2 from the dropdown.
- e. **Foundational Model:** AWS Bedrock has several Foundational Models embedded within it. Select the Foundational Model you would like to use from the dropdown.
- f. **User Query:** This is the field where you provide the query for the knowledge retrieval from the Knowledge Base created.
- g. **User Query Session ID:** This field is to create a Session ID to have responses in contextual manner.

Sr. No.	Field name	Value	Input / Output	Description
1	Region	Region name	Input - string	Region in which S3 bucket is created
2	AWS Access Key ID	Key ID value	Input - string	AWS Access key id provided by Admin
3	AWS Secret Access Key	Secret access key value	Input - string	AWS Secret key provided by Admin
4	AWS Session Token (optional)	Session token value	Input - string	Keep empty for AWS service account
5	Knowledge Base	Knowledge base name	Input - string	Select KB name to be synchronized
6	Foundation Model	FM name	Input - string	Select Foundation model to be used as LLM in RAG.
7	User Query	User query	Input - string	Provide query to be asked on the documents uploaded.
8	User Query Session ID (Optional)	Session Id provided by previous query	Input - string	First time pass Empty value to get the Session Id in the Response. In the subsequent queries, use the same Session Id to maintain the query context.
9	Assigned to	Response from RAG	Output - Dictionary	Keys: output, sessionId, citations-count, citation1, citation2, citation3, references-count, location1, location2, location3...



---

## 2. Support & FAQs

---

### 2.1 Support

Free bots are not officially supported through Automation Anywhere. You can get access to Community Support through the following channels:

- You can get access to Community Support, connecting with other Automation Anywhere customers and developers on our [Pathfinder Community](#)
- Automation Anywhere also provides a [Product Documentation portal](#) which can be accessed for more information about our products and guidance on [The Automation Success Platform](#).

### 2.2 FAQs

For questions relating to Automation 360: See the [Automation Anywhere FAQs](#).

---

## Appendix A: Record of Changes

---

## Appendix B: References

No.	Topic	Reference Link
1	Overview of Automation 360	Click <a href="#">here</a>
2	Guidance: Building basic Automation 360 bots	Click <a href="#">here</a>
3	Guidance: Building Automation 360 packages	Click <a href="#">here</a>
4	Pathfinder Community Forum	Click <a href="#">here</a>
5	Automation Anywhere University	Click <a href="#">here</a>