Copilot Studio and Azure AI Workshop

Lab 3: Copilot Studio – Exploring Agent Setup and Analytics

Hands-on Lab Step-by-Step Guide

April 2025

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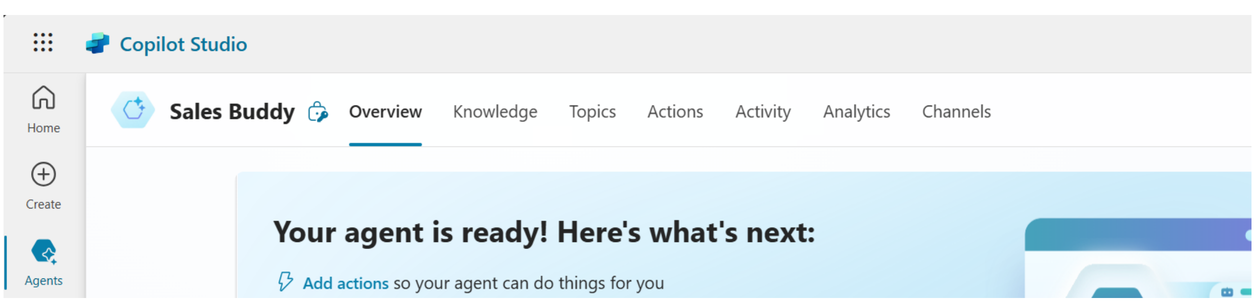
Copilot Studio provides a comprehensive platform for setting up and analyzing agents to enhance their effectiveness. This guide will take you through the process of agent setup and delve into the analytics that can improve agent performance.

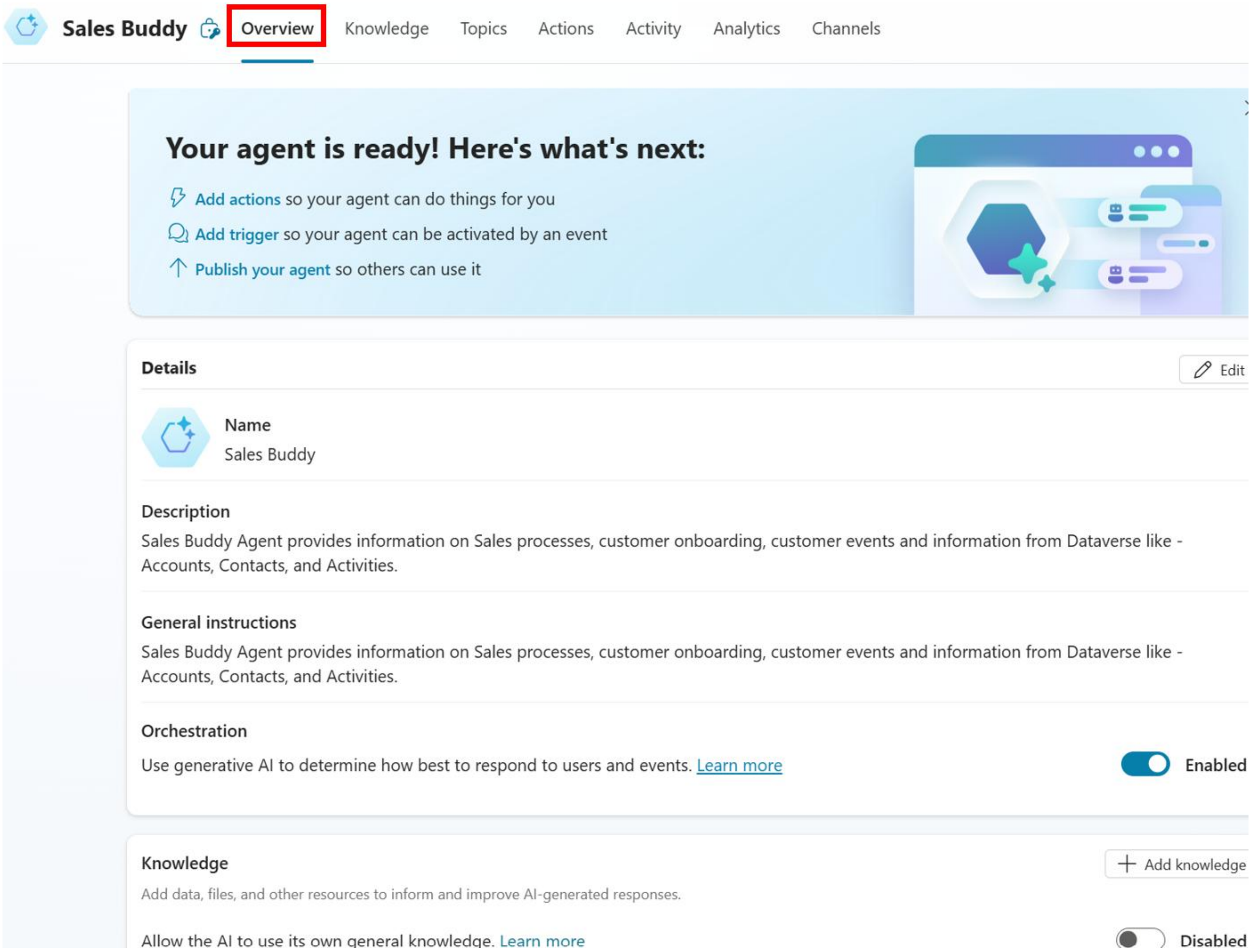
1. Exploring Your Agent

Setting up your agent is the foundational step in utilizing Copilot Studio. You'll learn how to configure the basic parameters, assign tasks, and integrate your agent into various environments.

Review the menu options of your Agent.

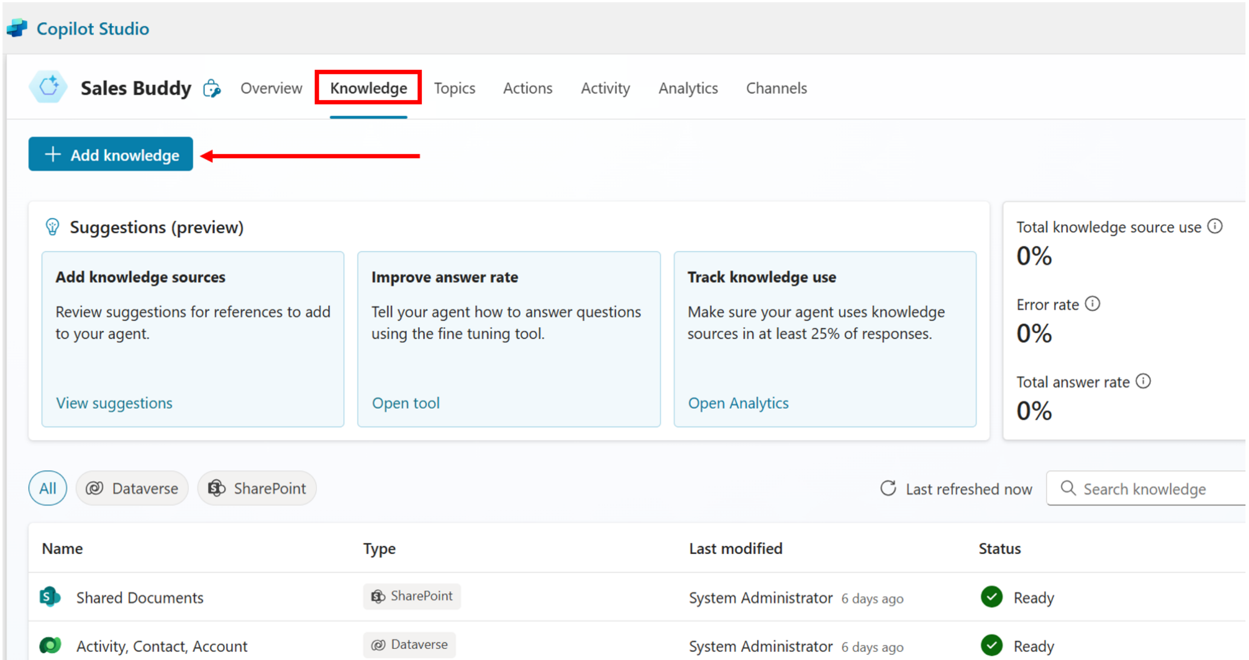


1. Overview – this tab is the home page of your agent providing description and quick links to many of the capabilities and features of your agent

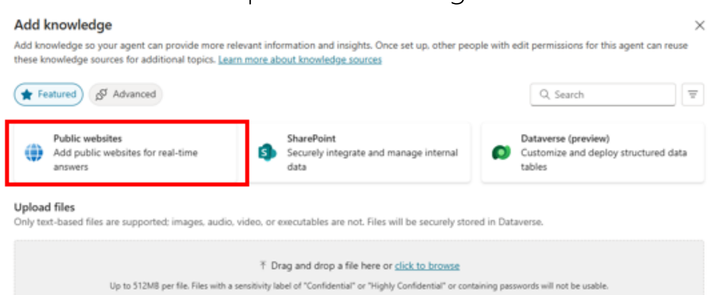


2. Knowledge – on this tab, you can add knowledge sources for your agent, review the existing resources, add new, and analyze usage.

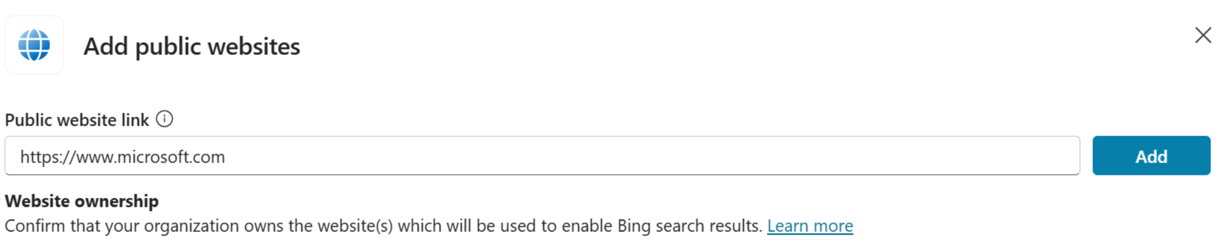
Click to + **add knowledge**



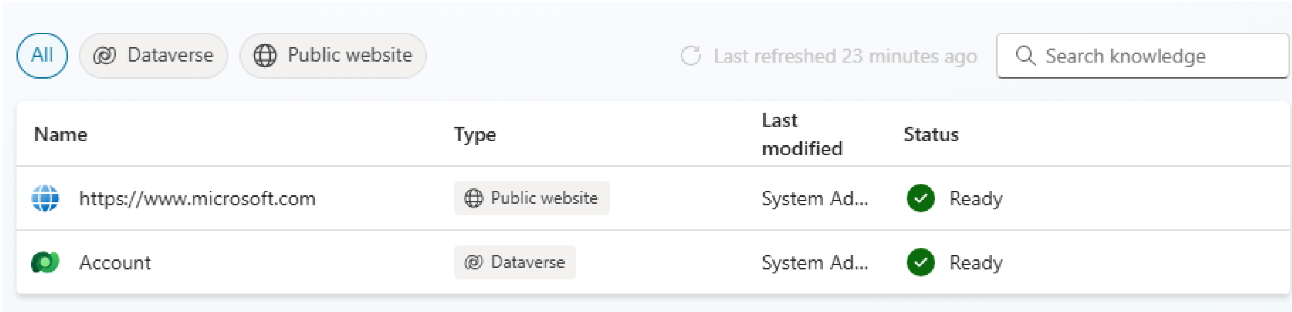
3. There are several options knowledge sources. Click on **Public Websites**



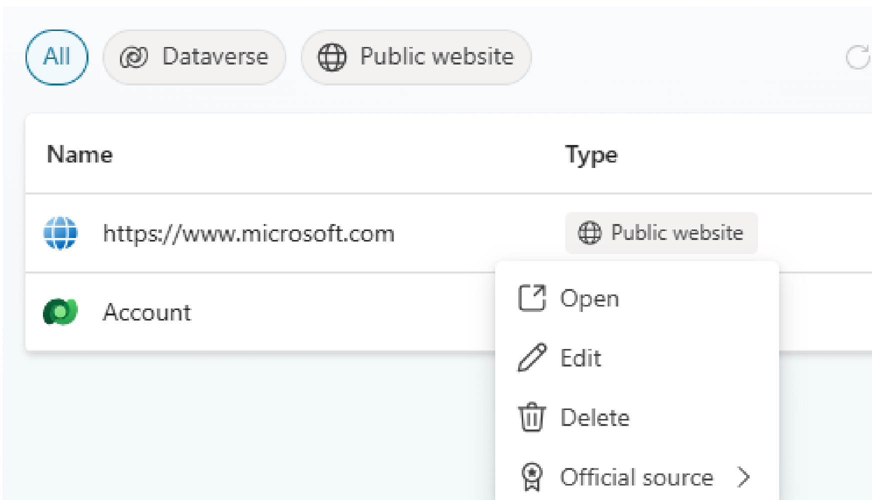
4. Enter a website such as your corporate site and click **Add**



5. Your Agent will process and should show a green ready

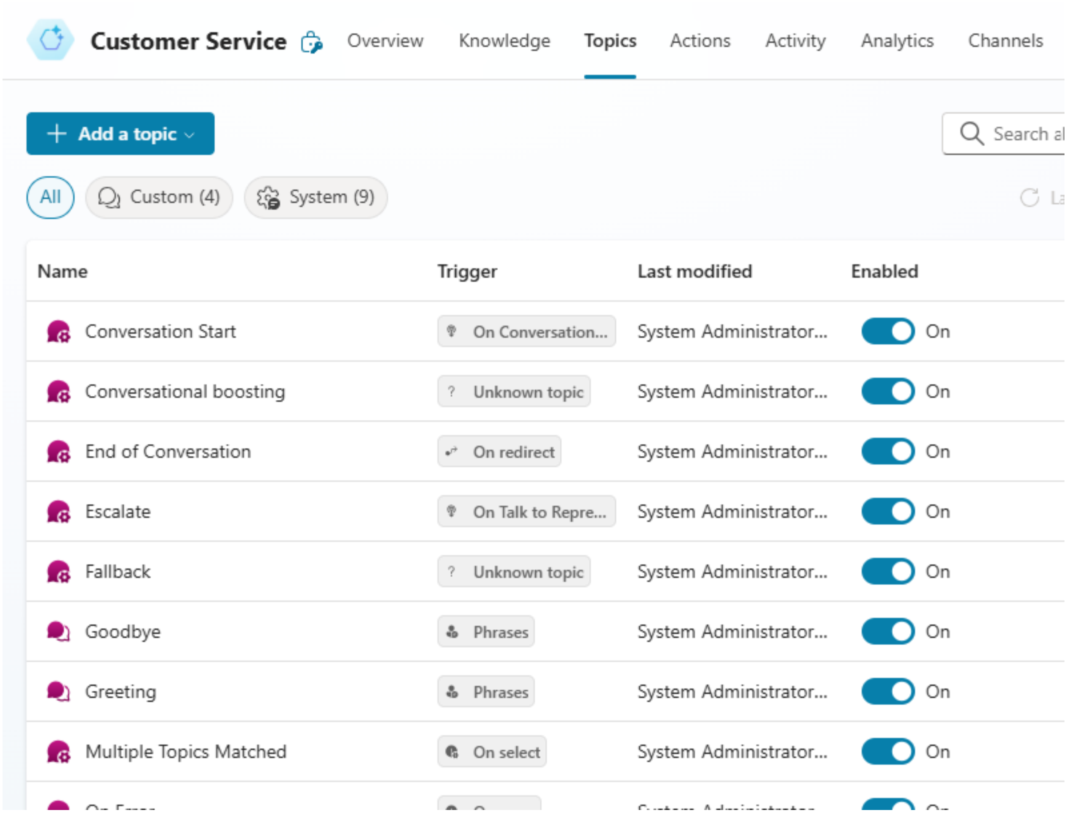


6. Click the ellipsis by your new source and there are options such as editing and indicating Official Source status

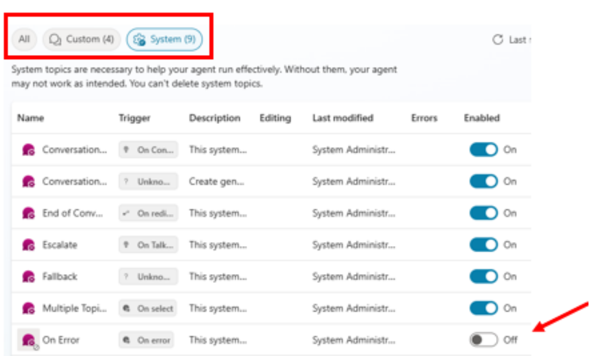


7. Topics – this tab lists all your current topics. Many are generated automatically providing typical topic requirements.

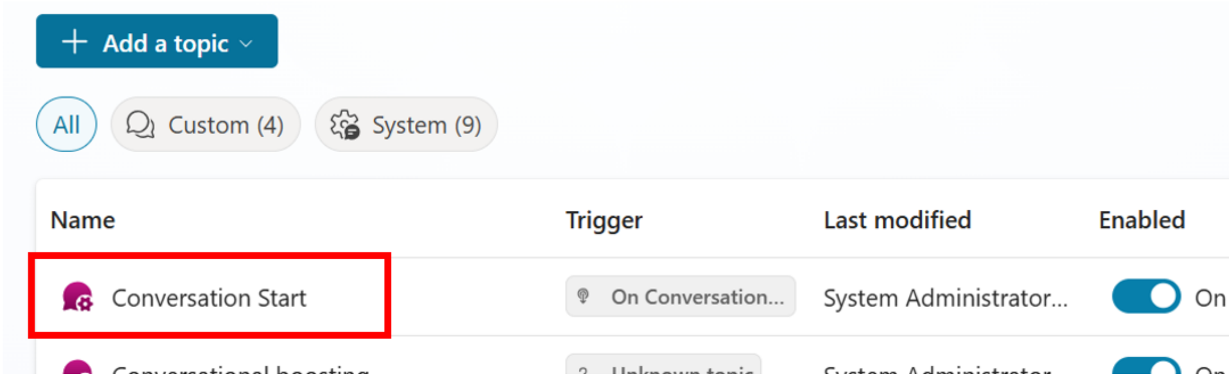
Notice filters to **Custom** and **System** views



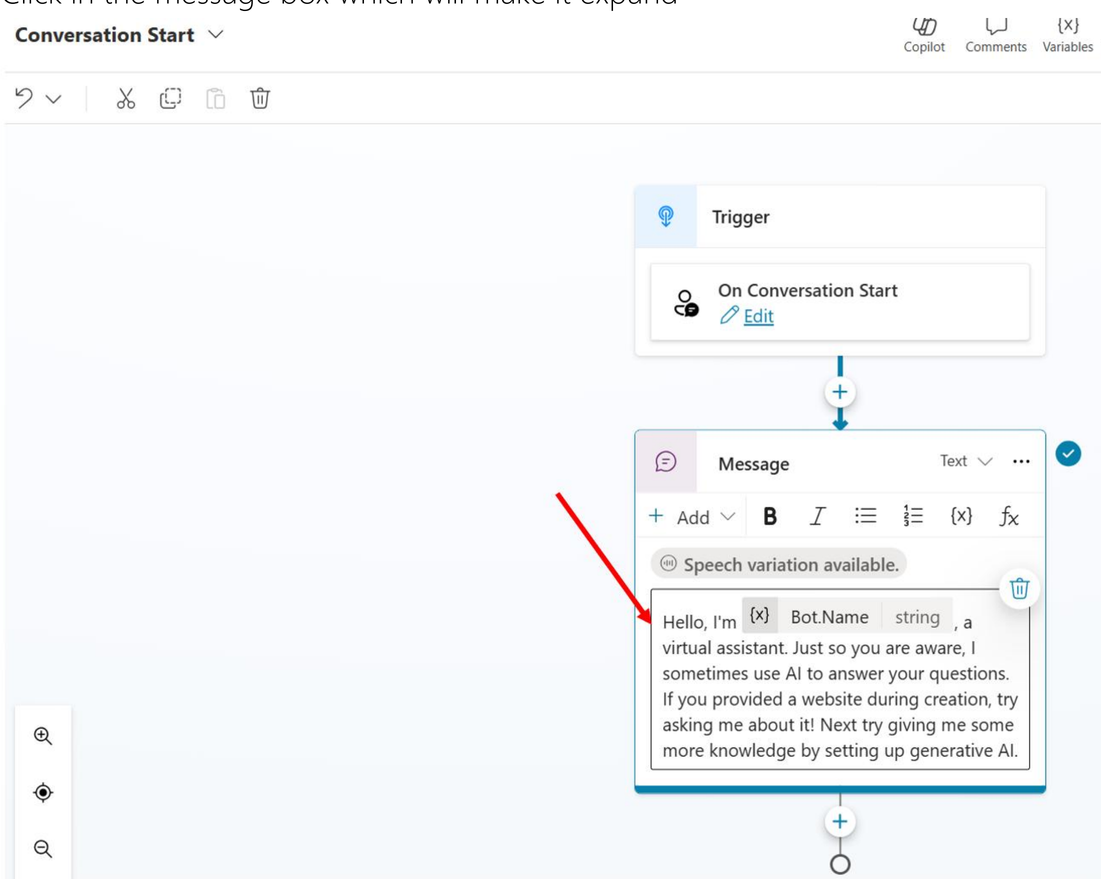
8. Topics may also be disabled if no longer required or redundant



9. Click the **Conversation Start** topic

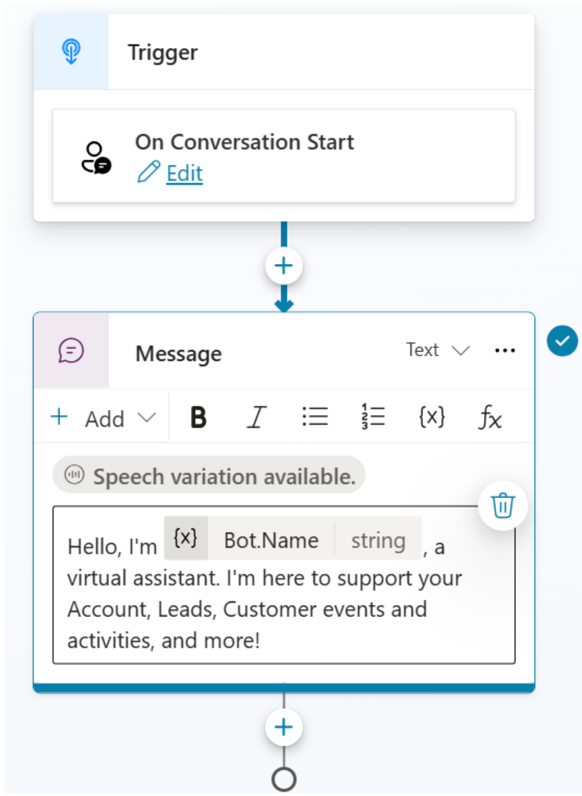


10. Click in the message box which will make it expand

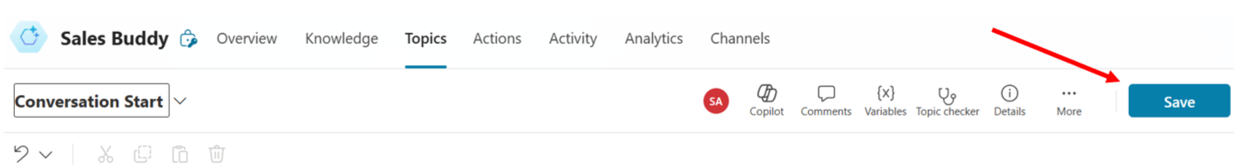


11. Update the message to better fit its purpose (leave the Bot name variable as is). Such as:

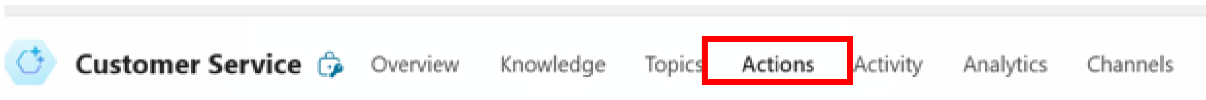
    Hello, I'm [*Bot.Name variable*] a virtual assistant. I'm here to support your Account, Leads, Customer events and activities, and more!



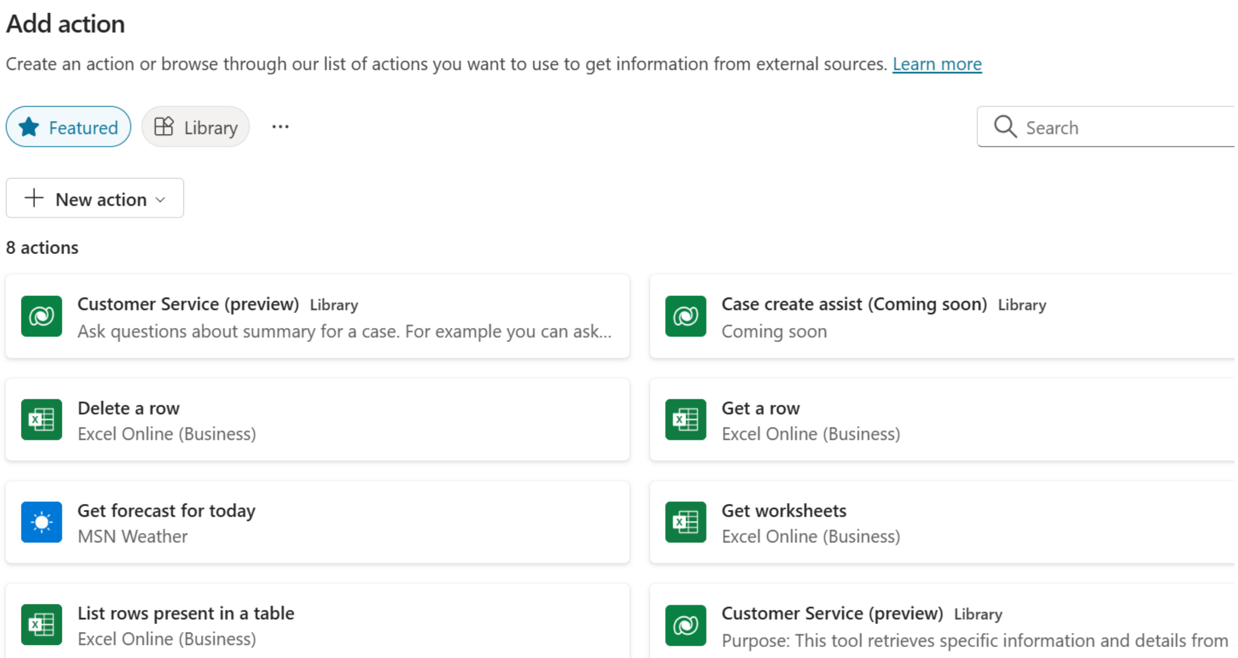
12. Click **Save**



13. **Actions** - this tab will display any existing actions and allow to create new

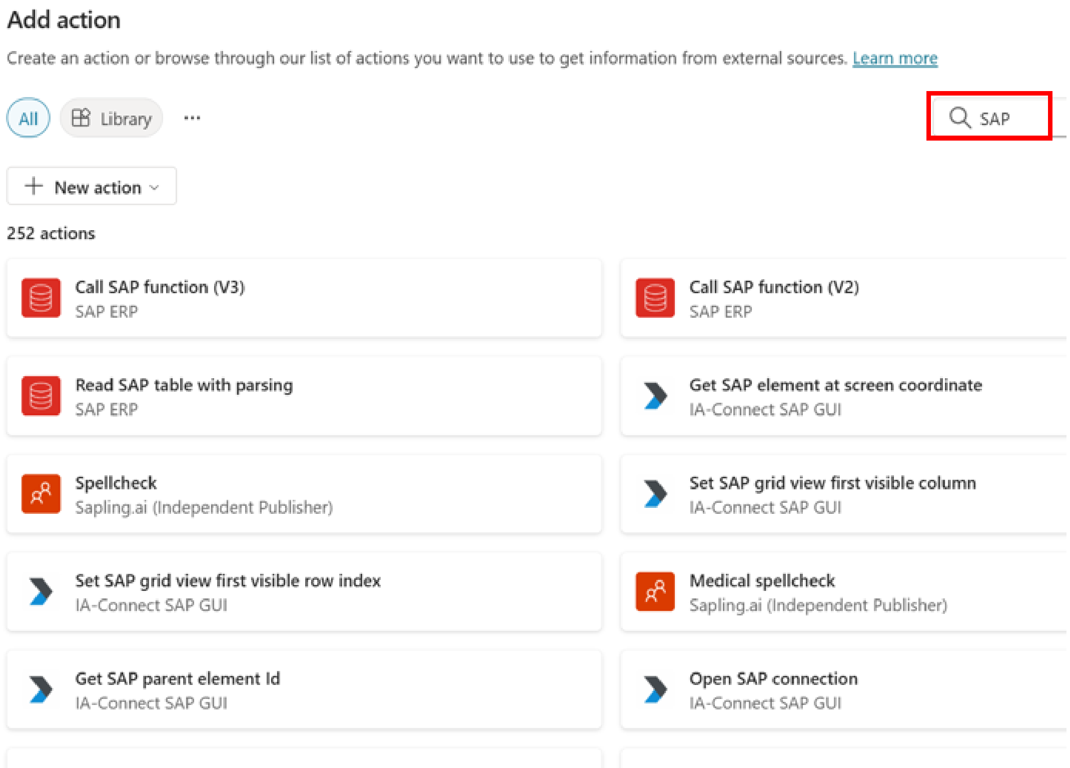


14. Click the **+Add an action** button
    Some sample actions will display.

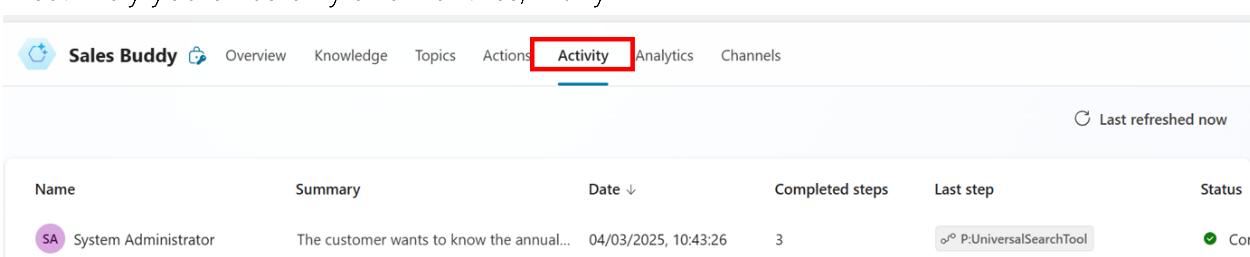


15. In the previous labs we created a couple actions, but let's explore further.
    Click in the Search and type: **SAP**
    Many available actions will be available.
    Try other searches for data you may be familiar with.
    Further information regarding adding enterprise knowledge may be found here:
    [Add enterprise data as a knowledge source - Microsoft Copilot Studio | Microsoft Learn]

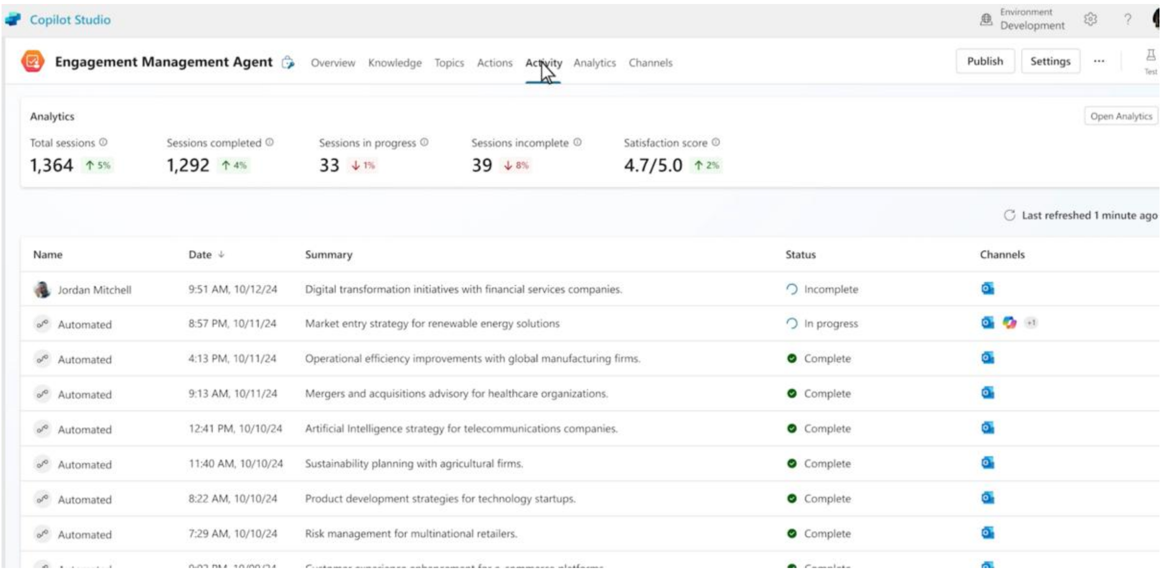
Click **cancel** for now



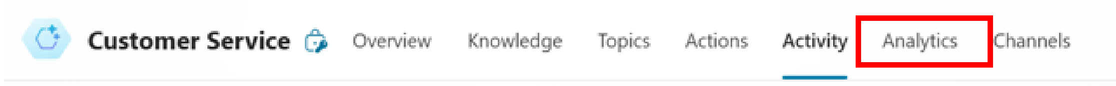
16. **Activity** – this tab will display the history of your agent runs and items your agents may be working on.
    Most likely yours has only a few entries, if any



As you build out your agents, here is an example of what you may subsequently see:

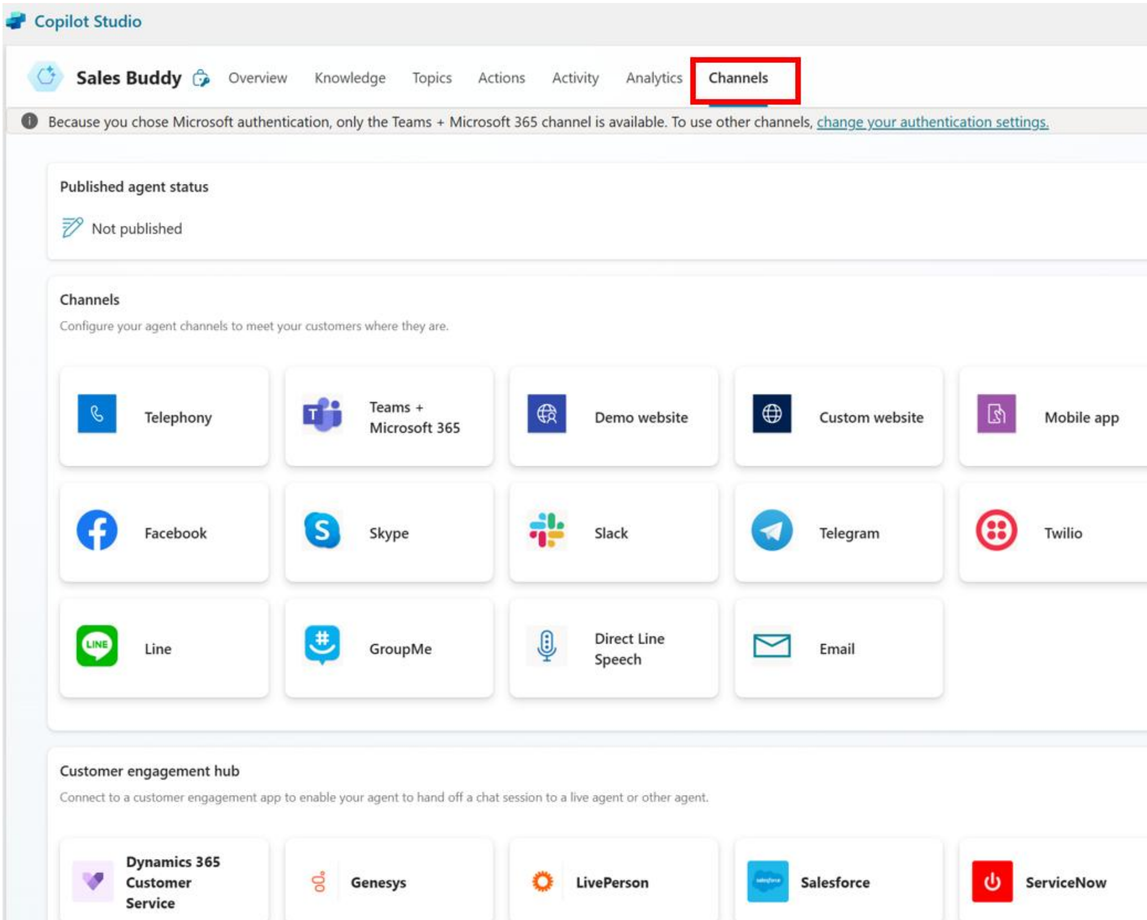


17. Analytics – we will explore this tab in detail in a latter section of this lab.

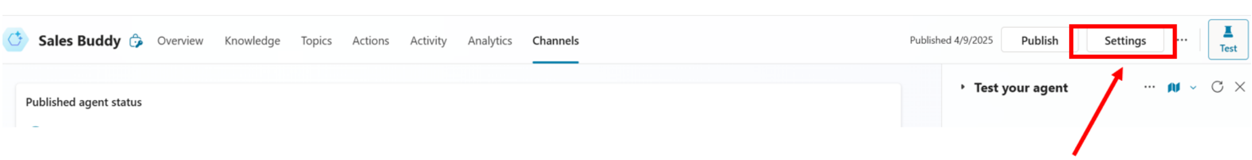


18. Channels – this tab allows you to publish your Agent for your users or customers. Many are typical collaboration channels such as Teams, Apps, and Portals. You may also publish to Dynamics 365 Customer Service or 3rd party applications.

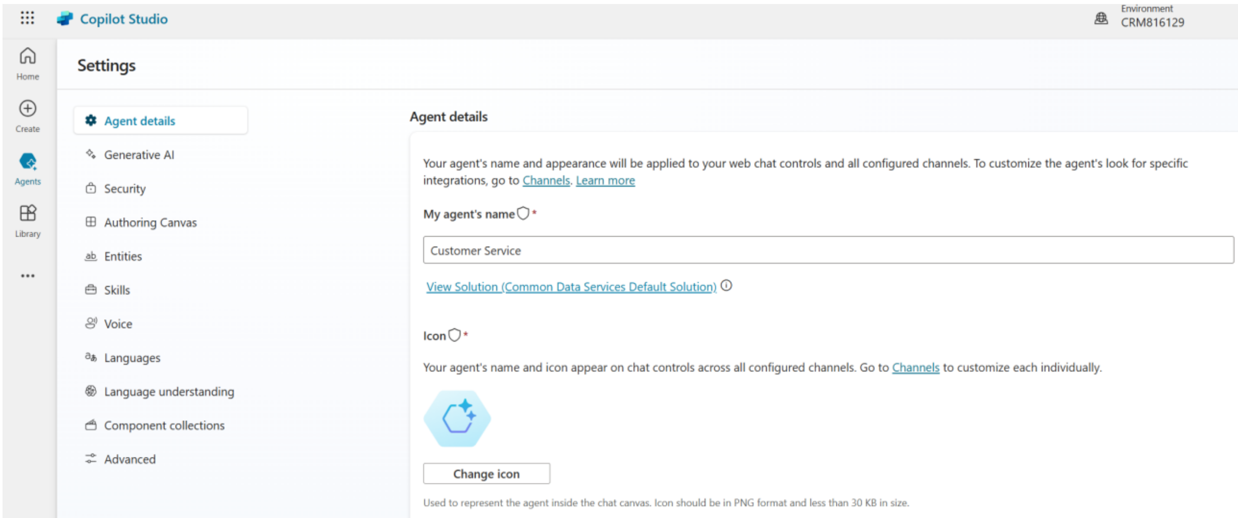
In Lab 4, we will be publishing the Sales buddy agent to Teams and Demo site with authentication.



19. We've reviewed all the tabs but the **Settings** area is important to explore



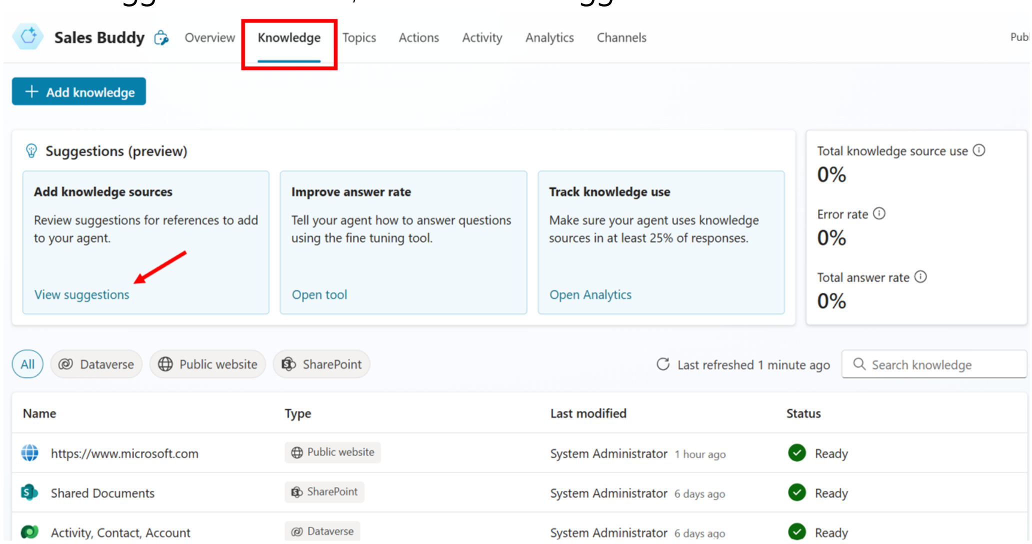
20. The settings details contains many additional configurations you will likely perform for further enhancement of your agent. Many of these you will modify throughout the labs.



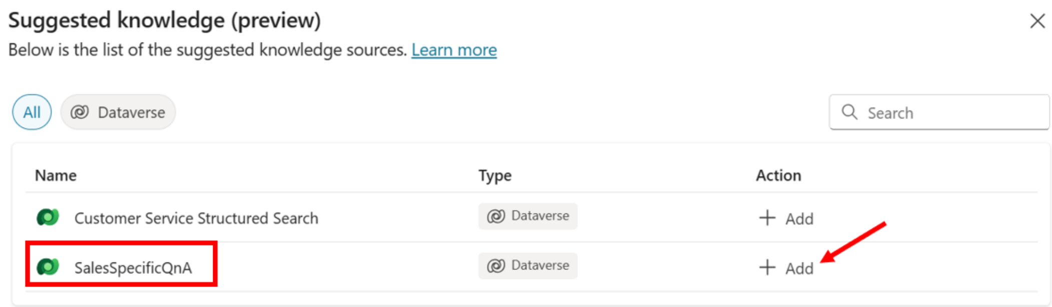
2. Knowledge Tuning

Adding knowledge sources enables you to provide business specific data which augments the responses of your agents. A key to improving agent responses is understanding how and when knowledge sources were used. Additionally, providing context or scoping to the knowledge sources can enhance the reliability of answers provided by your agent.

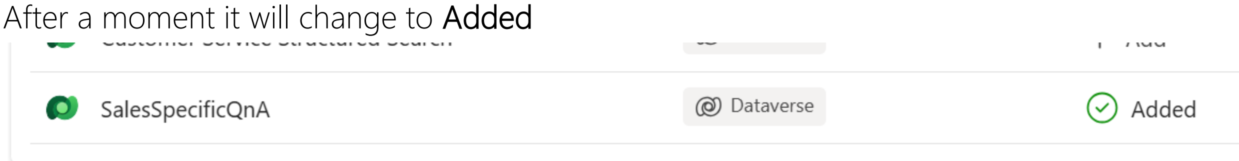
1. Click on **Knowledge**
   In the **Suggestions** section, click on **View suggestions**



2. Click on SalesSpecificQnA and click + Add



3. After a moment it will change to Added

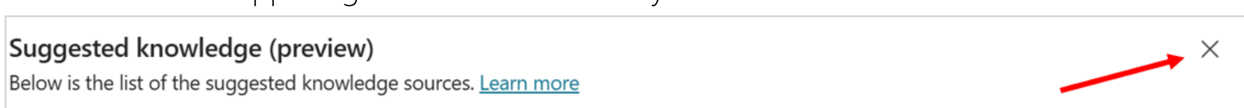


With this feature, you can discover, search, and add sources:

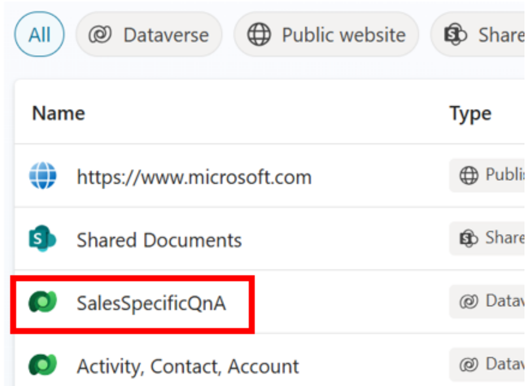
- Used in one of your previous agents
- Used in agents shared with you
- Used previously while working with Office products

The list contains the 100 most recently used knowledge sources.

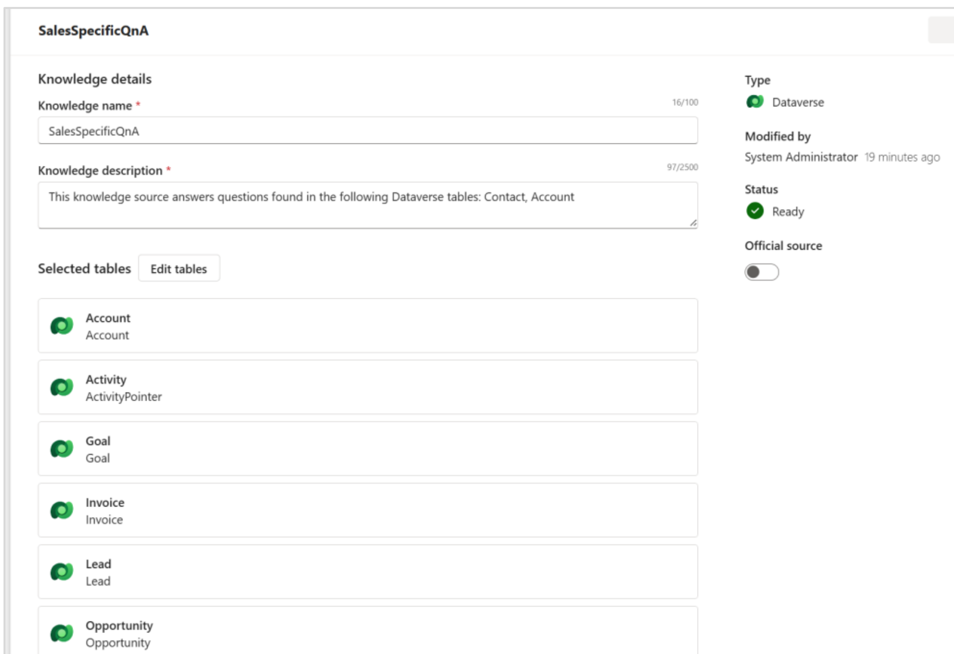
4. Click the X in the upper-right corner to return to your list



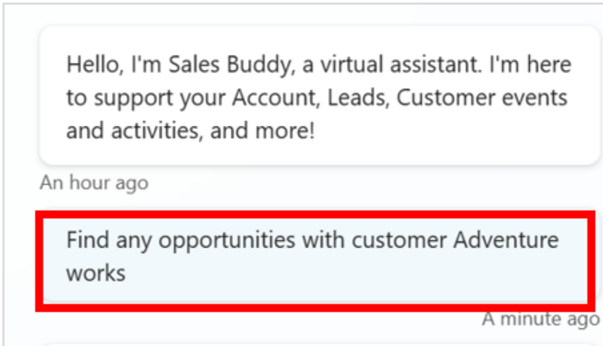
5. Click your new knowledge source



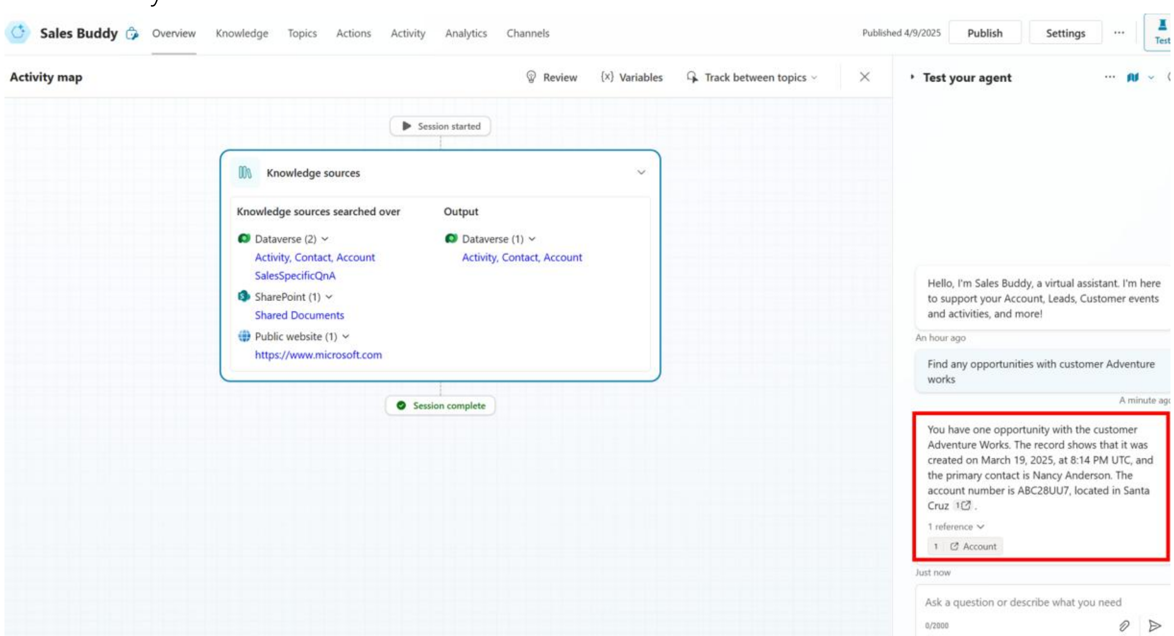
6. Review the new tables added related to Sales



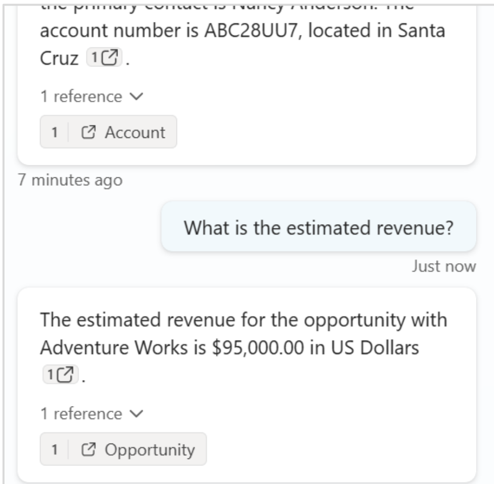
7. Ask your agent information from one of the new tables:
   Find any opportunities with customer Adventure works



8. Sales Buddy will search and return results:



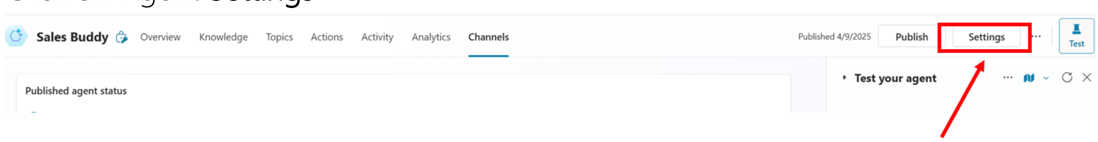
9. Inquire more information about the Opportunity



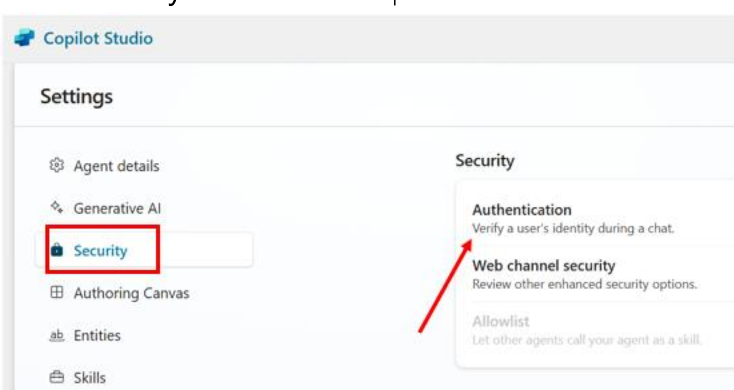
Pretty cool!

3. Security & Authentication

1. Click on Agent **Settings**



2. Click **Security**. Click on that option and click **Authentication**

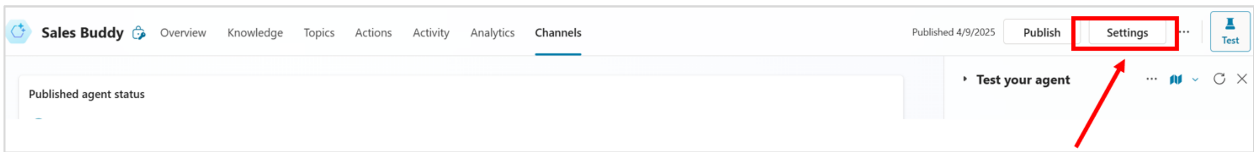


3. Typically, we will select **Authenticate with Microsoft**
   This is used for our deployments to Microsoft Teams and other Microsoft apps

4. Language Capability

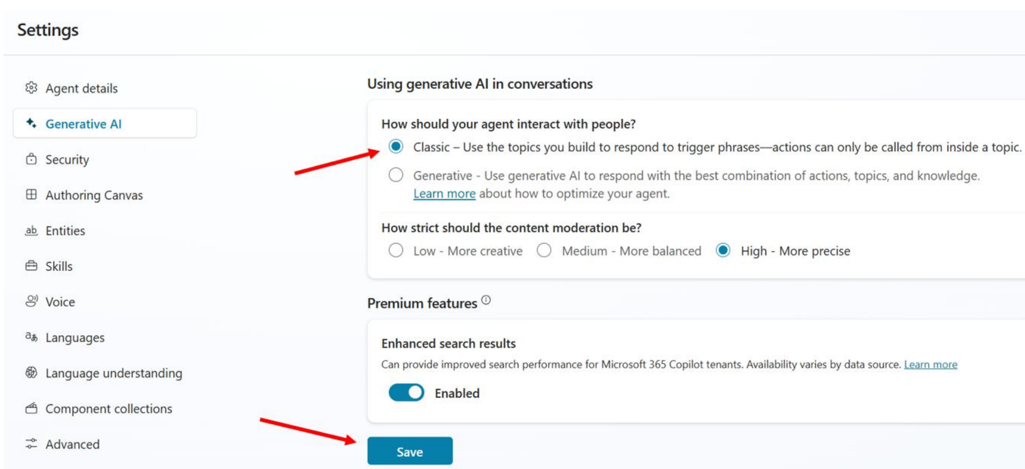
Multilingual agents are agents that can communicate with customers in different languages while keeping all the content in a single agent. In many cases, they can automatically detect the desired language based on the agent user's web browser setting and respond in the same language, providing a more personalized and engaging experience for customers. For the list of supported languages, see Language support.

1. Select **Settings** in your agent

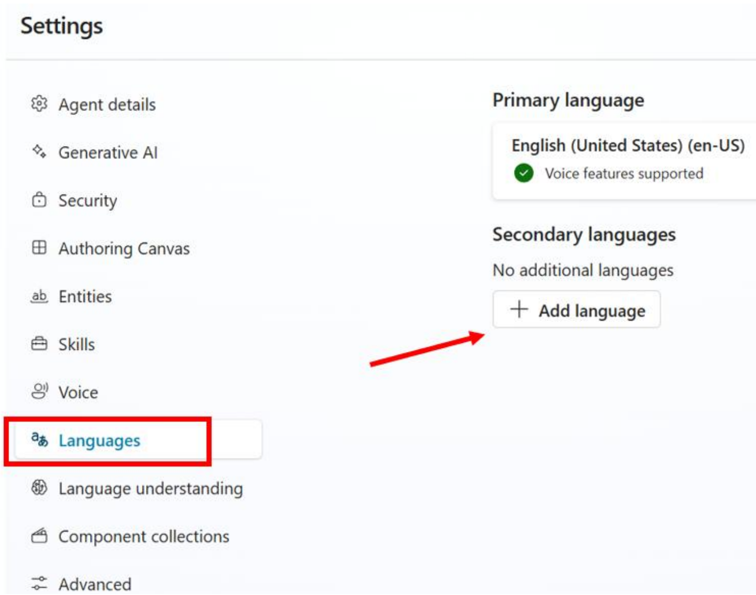


2. In order to use multiple languages, we need to turn off Generative AI, which is only supported in copilots using English. To add support for another language, we need to switch to **classic mode.**

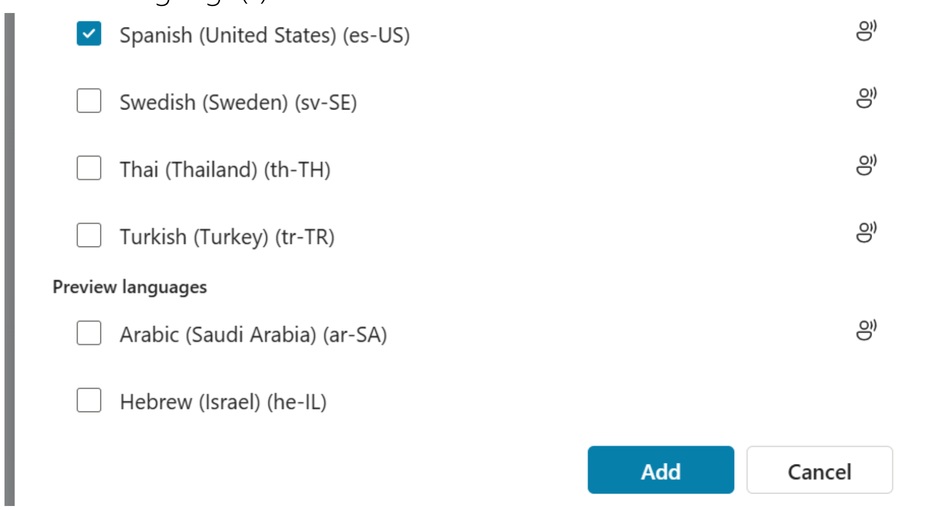
3. Select **Classic** and click **Save**



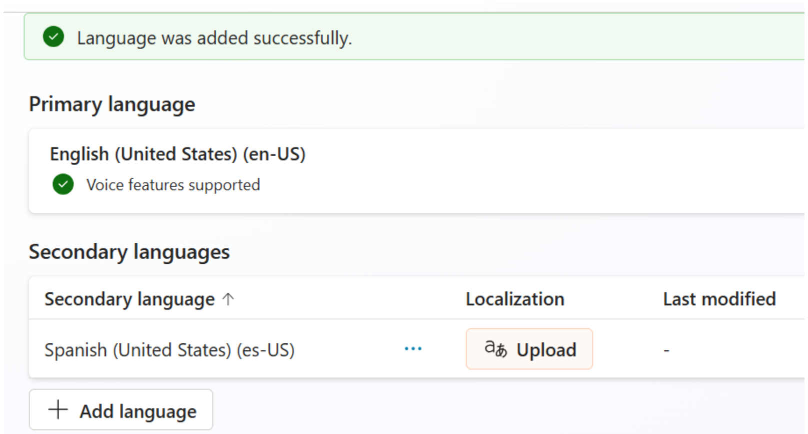
4. Click on **Languages** and click **+ Add language**



5. Choose language(s) to add and click **Add**

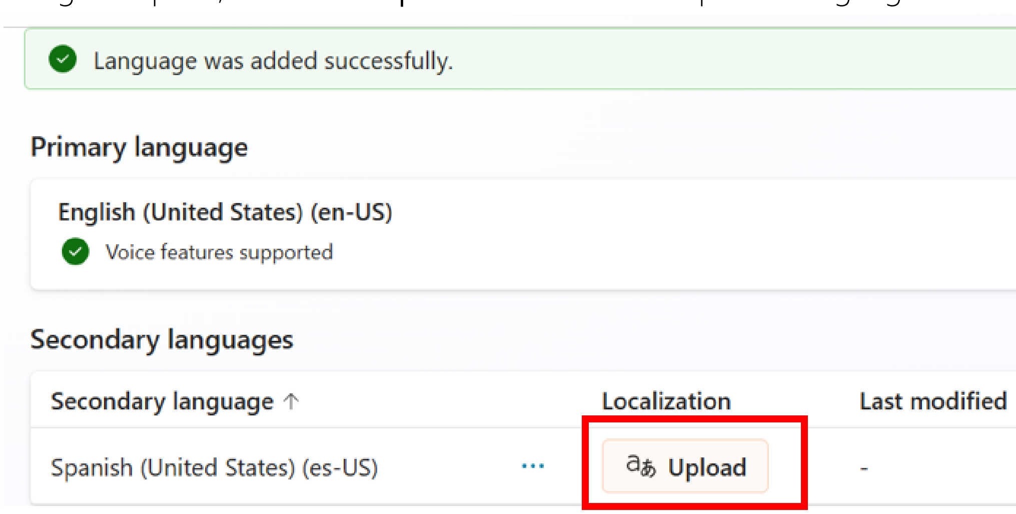


6. A success message is displayed, and the selected language(s) is listed as Secondary language in the Languages page.

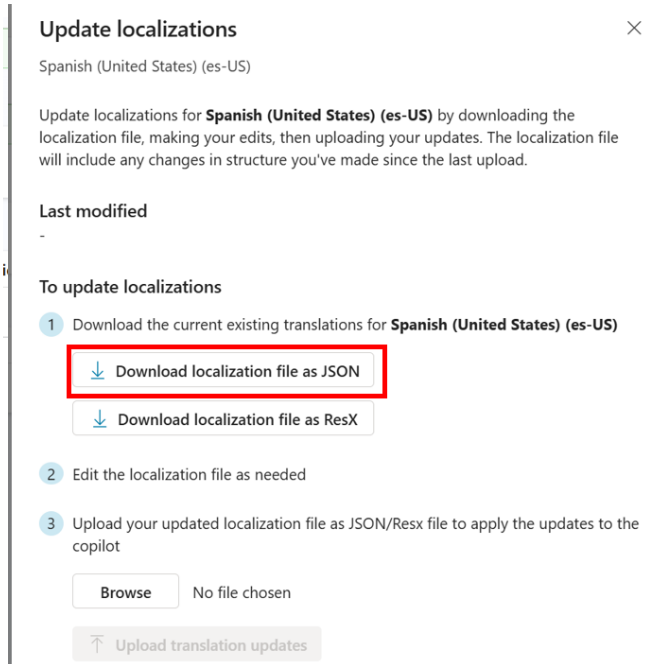


Note: All copilot topic and content editing must be done in the copilot's primary language. To edit the copilot's secondary language to localize the strings, you must use the steps in this section. Once the copilot strings are localized and uploaded to the copilot as described here, you can see the localized content in the authoring canvas by switching the language in the Test copilot window. We will walk you through the steps but have a file for you to use during the labs so you don't have to translate the text during the lab.

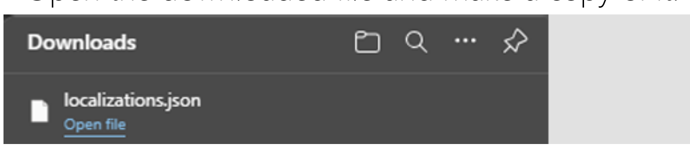
7. With the copilot **Sales Buddy** agent open, expand Languages from the left navigation pane, and select **Upload** button next to Spanish language.



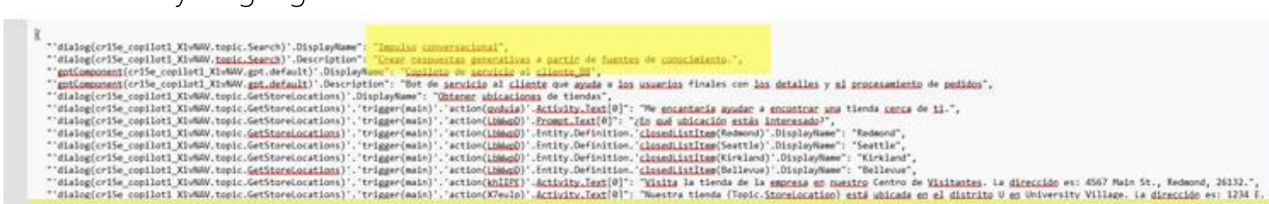
8. On the Update localizations flyout, select Download localization file as JSON to download the current localization file for that language.



9. The following steps are for your information only as we have already created a file with the translation for you to utilize in the labs.
   • Open the downloaded file and make a copy of it.

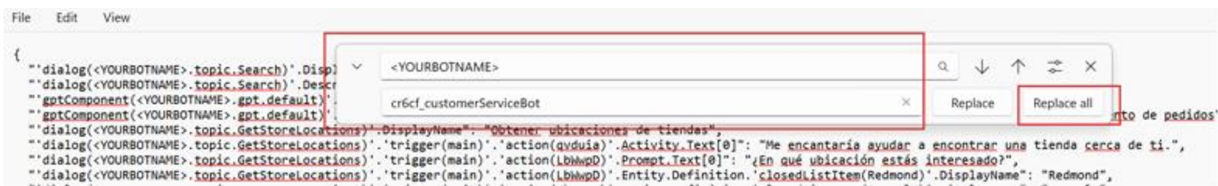


- Rename the copied version of the file as localizations.json(Replace the language with the language you are using. It is Spanish in this case) .
- Open the file and replace the primary language strings with the appropriate translated text similar to the snippet below and save the file.
- Make sure all the copilot's messages that are in English are updated with the secondary language selected.

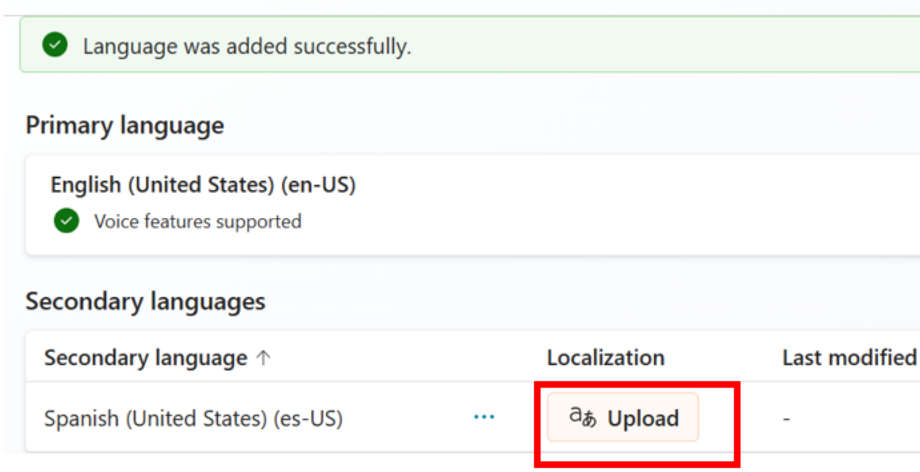


10. For the purpose of this lab, **Open the downloaded JSON file in Notepad** and copy your bot name from line 1 (first word within () before **.topic.Search**), as shown below. We will use this to update the Language_Spanish.txt file next.

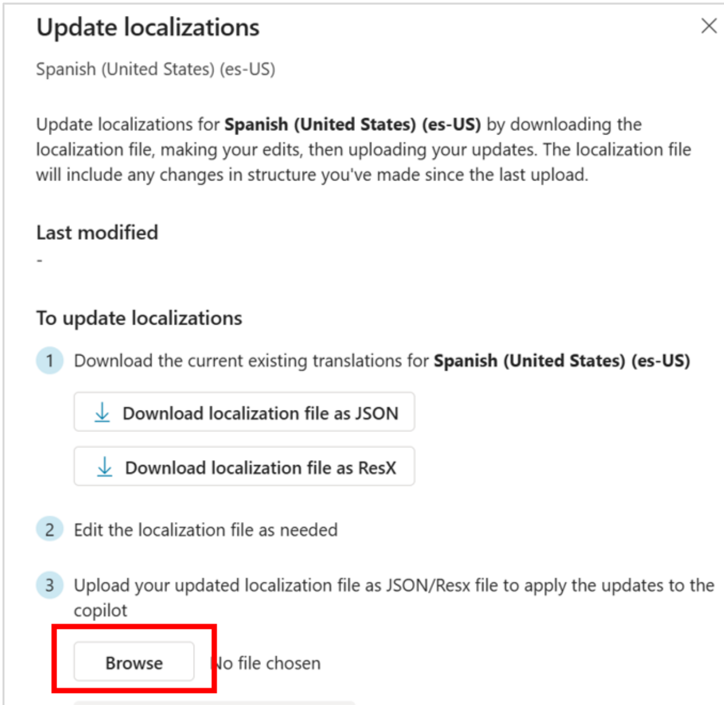
11. Open **Lab 3 Assets** folder and open **Language_Spanish.txt** file. Carefully replace all instances of <YOURBOTNAME> with the bot name you copied in last step - cr6cf_customerServiceBot. (In Notepad, click Edit > Replace option to replace all at once)



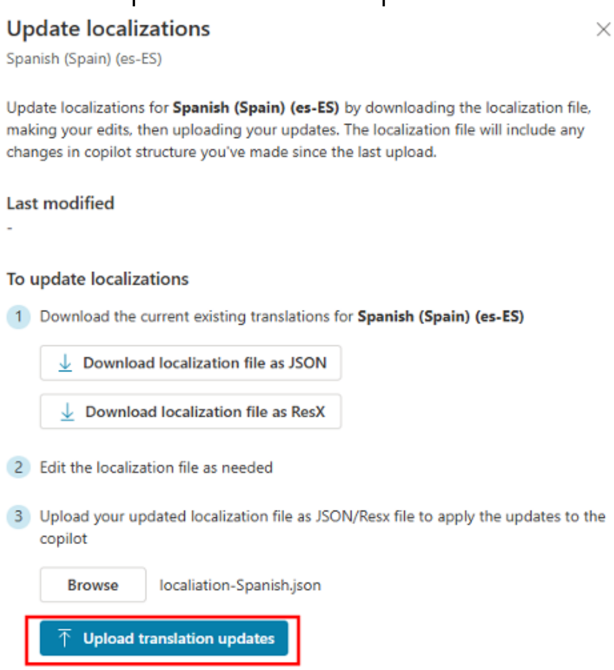
12. Click **File > Save** to save the file as **Language_Spanish.JSON** (Add **.JSON** at the end in file name to ensure this file is saved as JSON file on your computer)
13. Return to the **Languages** page, select Upload for the Spanish secondary language.



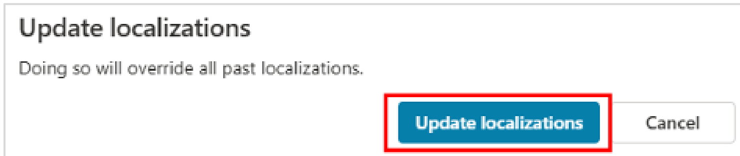
14. Click on Browse and upload the localization-Spanish.json file that you just updated.



15. Click on Upload translation updates

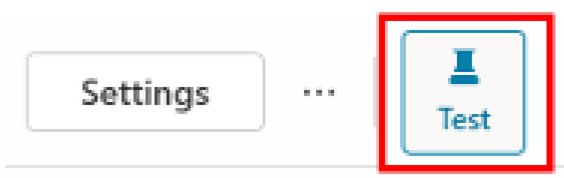


16. Confirm you want to override all past localizations by clicking on **Update localizations.**



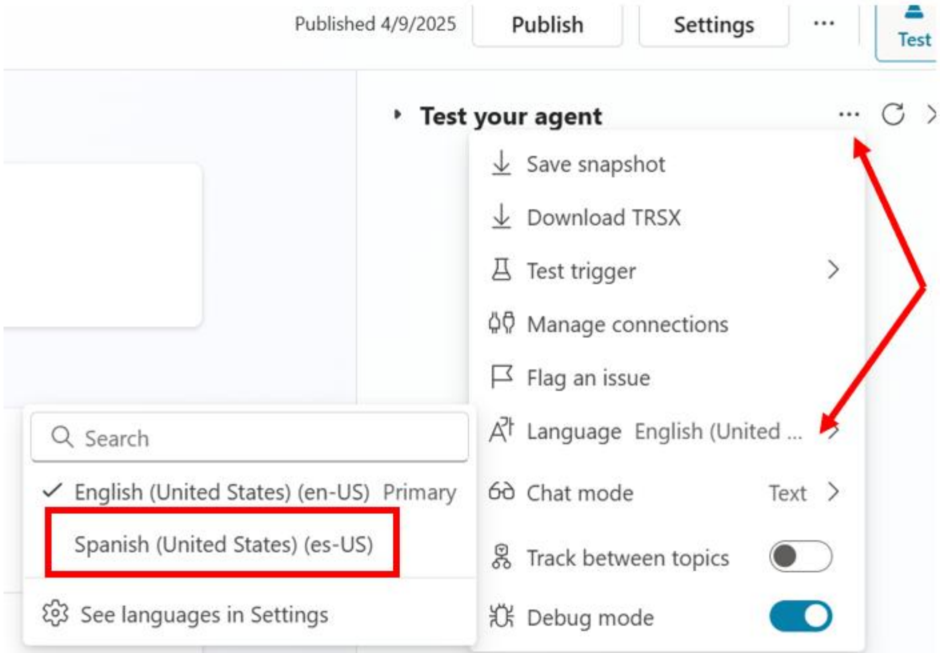
17. A **Localizations updated Successfully** message appears. Click on **Close** to close the Update localizations page.

18. Close the Settings window
19. Click on Test in the upper right

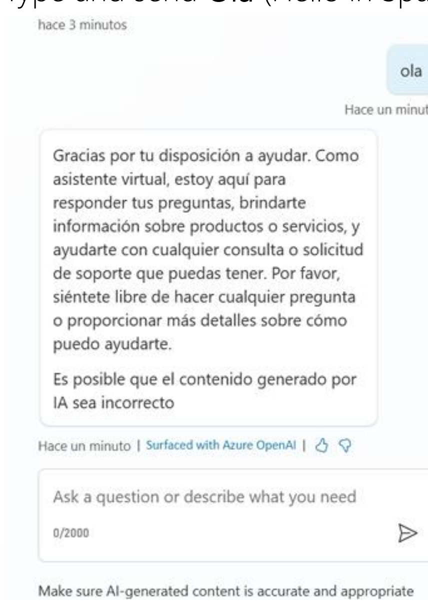


20. Click on the more (...), then **Language** and select **secondary language - Spanish**.

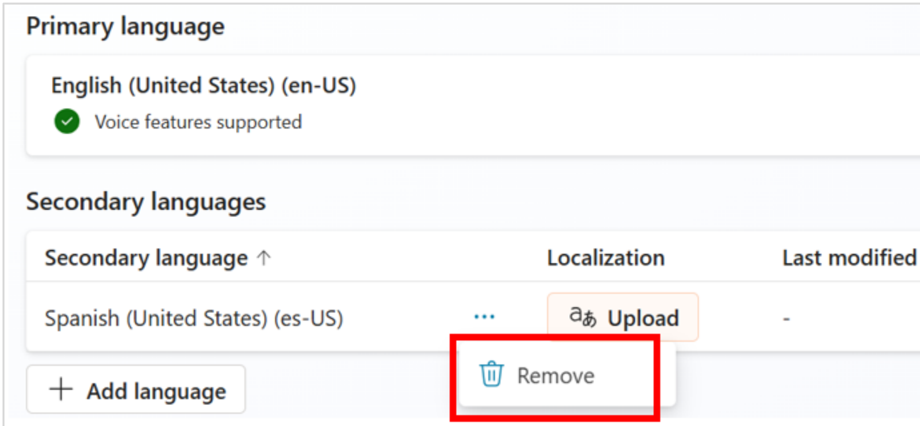
21. The test copilot will reload itself, this time using the selected secondary language. The authoring canvas shows the secondary language.



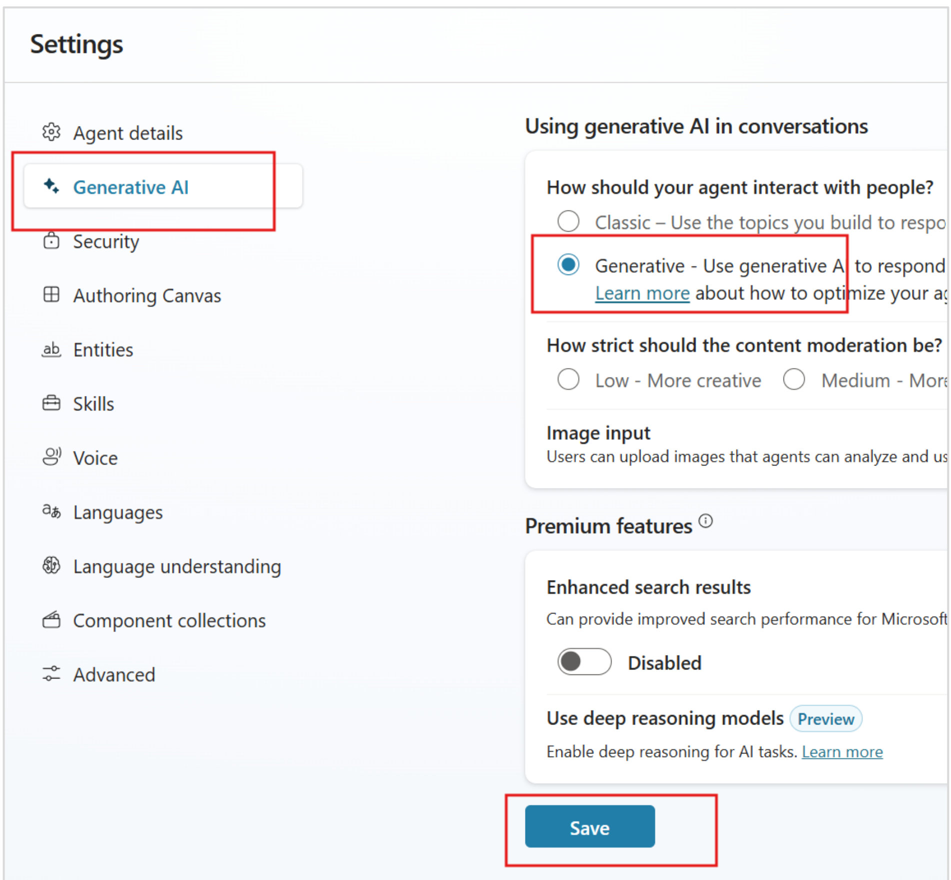
22. Type and send Ola (Hello in Spanish) to see the bot respond in Spanish.



23. Let's switch back to English as Generative AI is only supported in English language. Go to **Languages page** and **remove** the Spanish language.



24. In the same settings window, click on Generative AI tab, Select **Generative** option and **Save.**



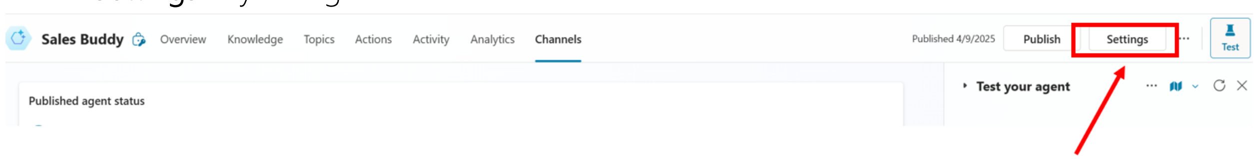
25. Test your Copilot to ensure the welcome message is in English.

5. Entities

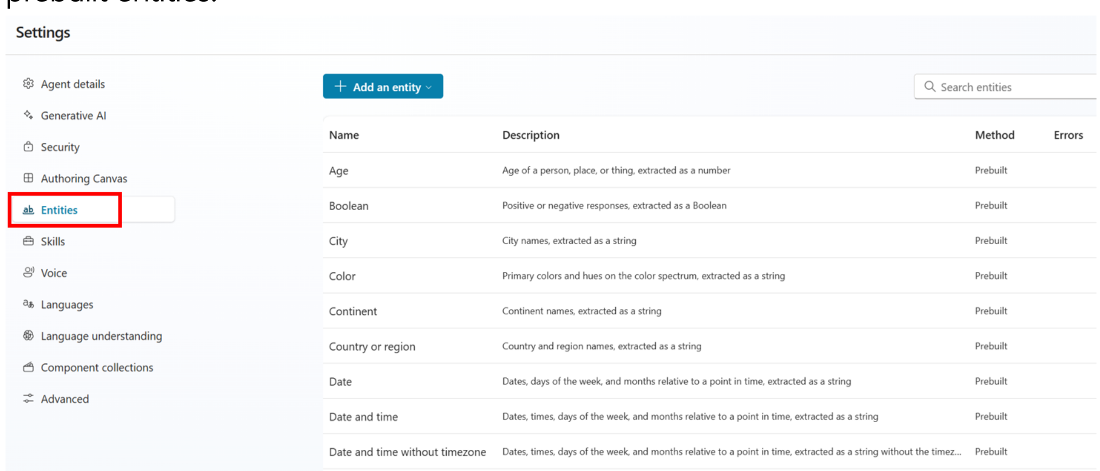
In this section, we will learn to use prebuilt entities and to create and use the custom entities.
Note: Make sure your language is set to Primary language. Otherwise, you may encounter errors.

Microsoft Copilot Studio comes with a set of prebuilt entities, which represent the most commonly used stereotype information in real-world dialogs, such as age, colors, numbers, and names. With the knowledge granted by entities, a bot can smartly recognize the relevant information from a user input and save it for later use.

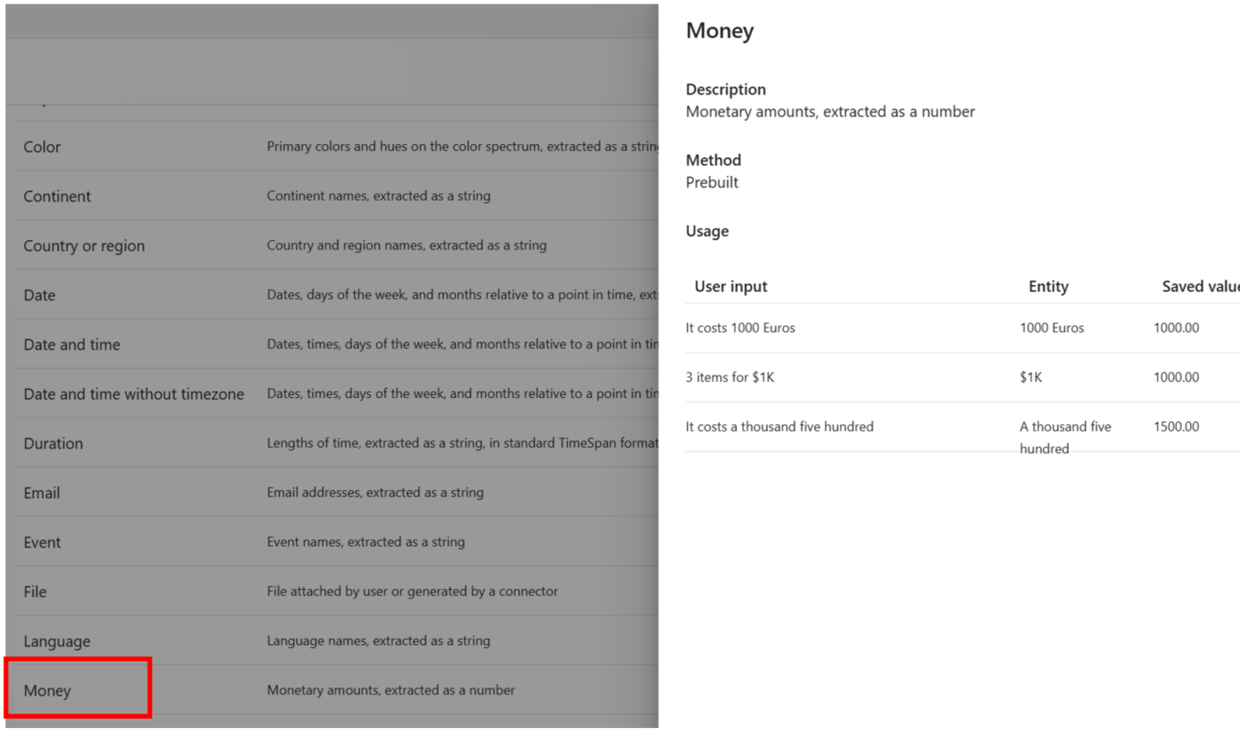
1. Select **Settings** in your agent



2. Select **Entities** On the right pane, a list of entities is displayed. These are the **prebuilt entities.**



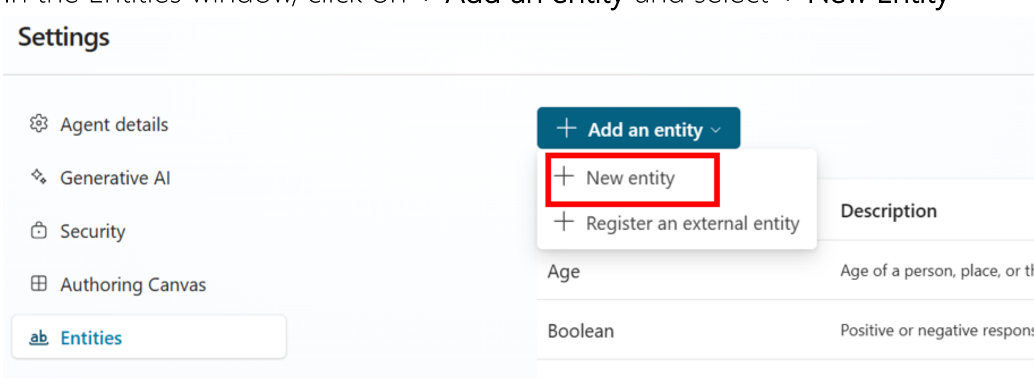
3. Click on the **Money** entity. It opens the details of the entity, showing the description and the values saved for the same.



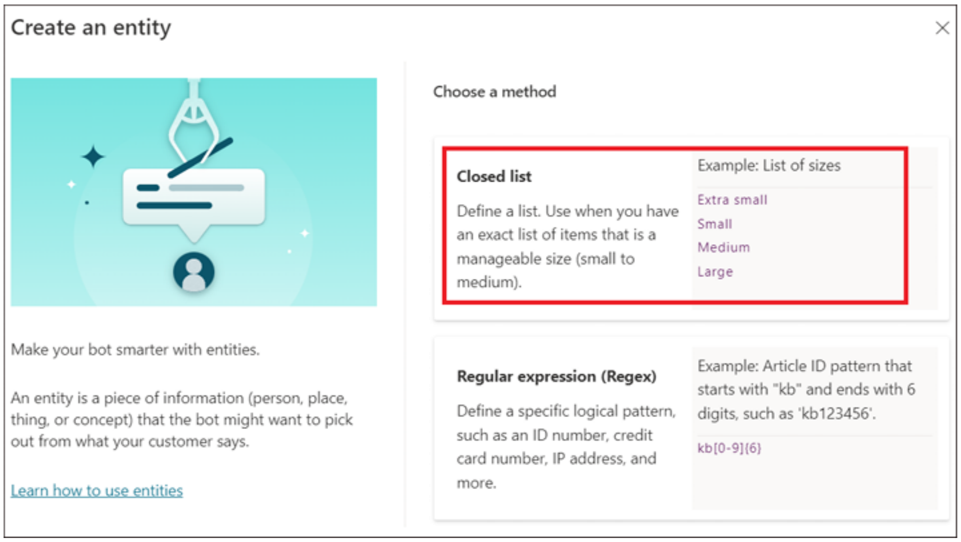
4. Close the window

Next we will create and use a custom entity

6. In the Entities window, click on **+ Add an entity** and select **+ New Entity**

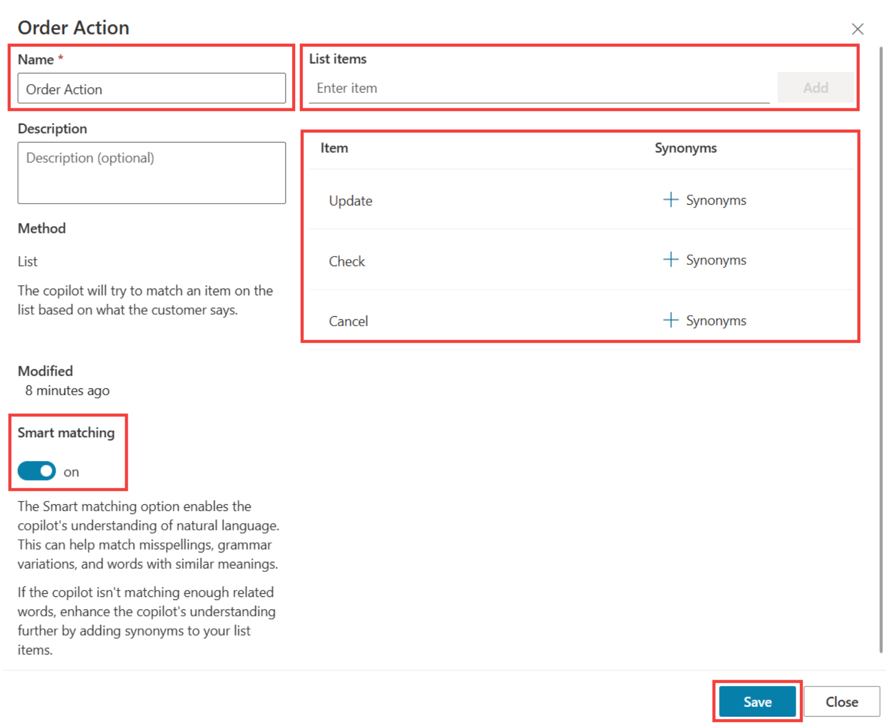


7. Select **Closed List**



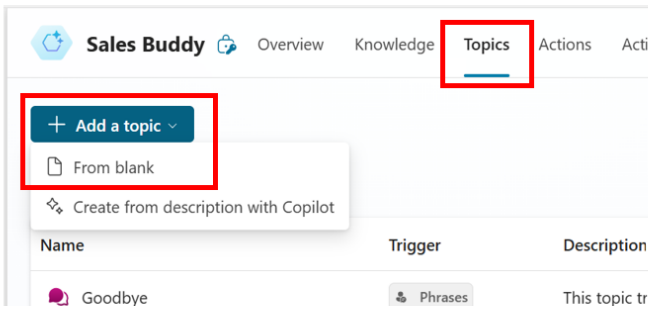
8. Within the **Create an entity** dialog, select **Closed List**.
9. Within the **Name** field of the new entity pane, enter the name `Order Action`.
10. Add three options within the **List items** called `Update`, `Check`, and `Cancel`. You can also choose to add synonyms by selecting synonyms for each option (*optional for this task*).

11. Make sure **Smart matching** is toggled on, and then select **Save**.

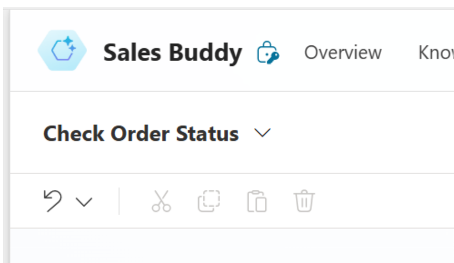


This action creates a new entity called Order Action that you can use with the Question node in your topic to place User's entire response with Order Action.

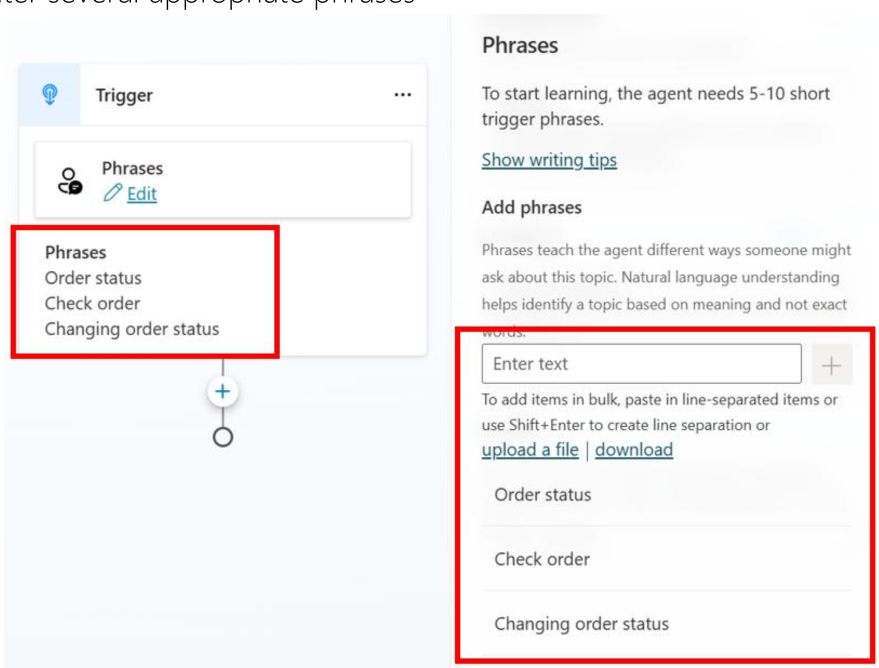
12. Return to the Sales Buddy, create a new topic from scratch



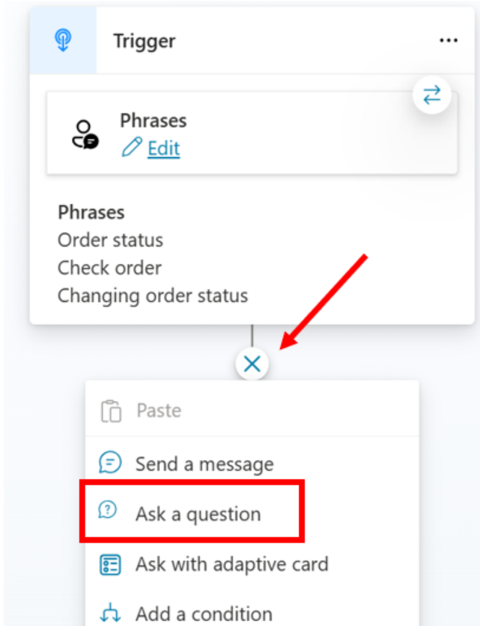
13. Name it: Check Order Status



14. Enter several appropriate phrases

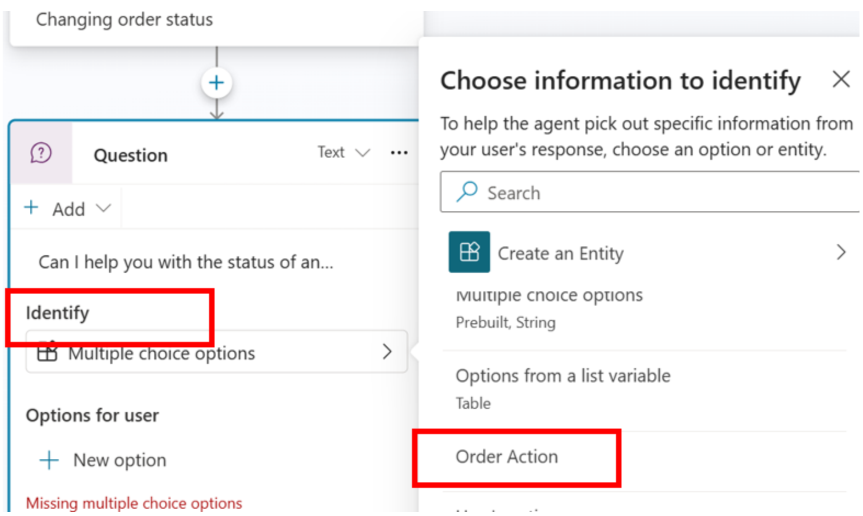


15. Click to add a node and choose Ask a question

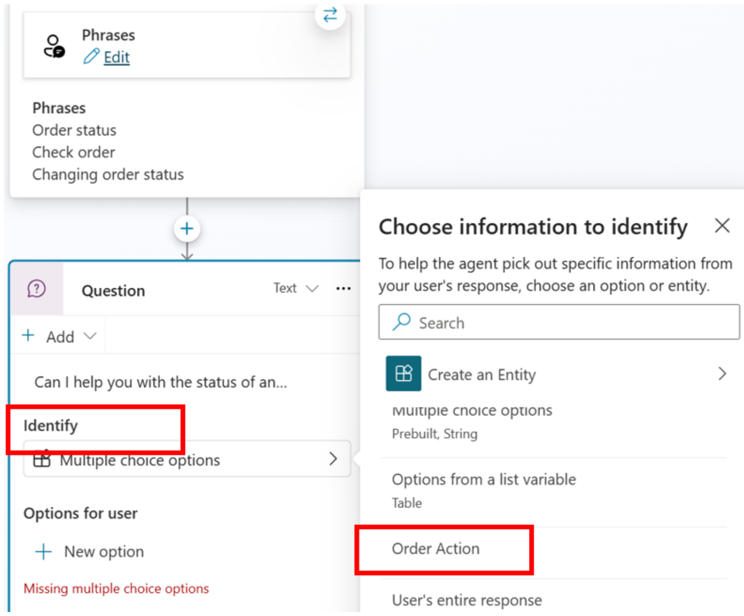


16. Enter Can I help you with the status of an order? Select Identify, and a slide-out menu will display on the right, where you can select an entity from the list.

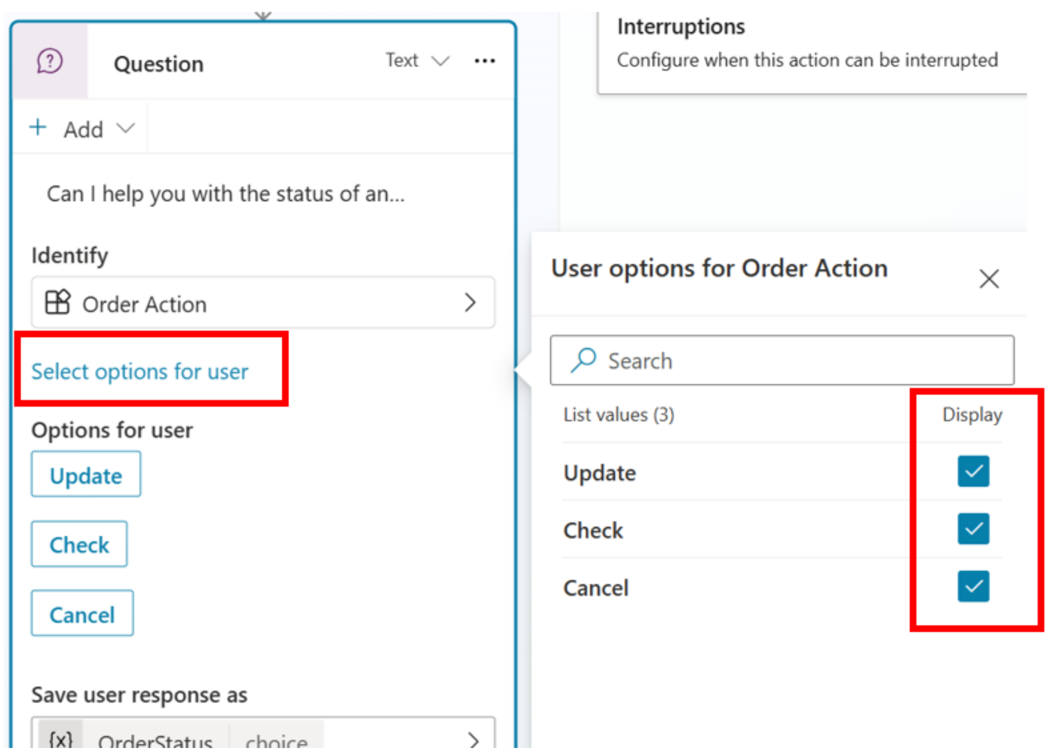
    Search for and select the custom entity that you created in the previous step called Order Action.



17. In the **Save user response as** box, click to rename the variable to **OrderStatus**



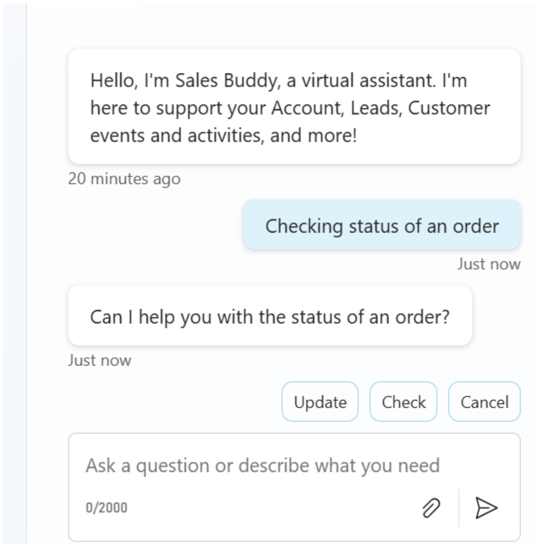
18. **Select options for user** and then select all the options to display to the user.



19. **Save** your topic

You have successfully set up a custom entity for your **Question** node. The default behavior for question nodes is, if the variable that the question response is stored in has a value already, then the question is skipped and not asked.

20. Test by asking about an order



Obviously, we would build out the process to a greater degree such as identifying the customer, locating orders, including conditions for the entity selection, etc.

A more comprehensive example could be found here:
Use entities and slot filling in agents - Microsoft Copilot Studio | Microsoft Learn

5. Image & Voice Capability

Copilot Studio supports interactive voice response (IVR) capabilities, including speech and dual-tone multi-frequency (DTMF) input, context variables, call transfer, and speech and DTMF customization.

Before you can create or edit agents for voice scenarios, you need a phone number to use. With Azure Communication Services, you can get a new phone number or use an existing phone number. For more information, see Integrate a voice-enabled agent with Dynamics 365 Customer Service.

Key concepts for voice authoring

With the growing trend toward self-service applications, voice-enabled agents are making a huge difference for businesses. Voice-enabled agents are used in various applications, such as call centers, mobile apps, and messaging platforms.

Voice-enabled agents can collect user input through speech and Dual-Tone Multi-Frequency (DTMF).

Supported voice features

After your agent is ready for voice services, you can configure features for your scenario.

Expand table

Feature	Description
Barge-in	Allows users to interrupt the system at any time during the conversation.
Dual-tone multi-frequency (DTMF)	Allows users to enter data by pressing keys on their phone keypad. DTMF can accept single key menu navigation and collect business information with multi-digits.
Latency message	Send messages or audio to inform users that the system is still processing their request in long-running operations.
Silence detection and timeouts	Detects when the user stops speaking, allowing the system to respond appropriately.
Speech recognition improvement	Speak naturally, without a script-a user's spoken command or question is translated for the voice-enabled agent to process.
Speech Synthesis Markup Language (SSML)	Control how your agent's voice sounds and behaves with users. You can control the tone, pitch, and speed of the voice that interacts with the user.

How to configure voice features

The following articles show you how to enable features, for a given scenario, step by step.

- Collect user input via speech and DTMF
    - Dual-tone multi-frequency (DTMF) support

  - Silence detection and timeouts
  - Speech recognition improvement
- Control how your agent's voice sounds and behaves with users
  - Barge-in
  - Latency message
  - Speech synthesis markup language (SSML)
- Control the call flow by transferring calls or hanging up
  - Transfer a call to a representative or external phone number
  - Hang up call at the end of a conversation
- Authoring capabilities when building a voice-enabled agent
  - Build a voice-enabled agent from a template
  - Speech & DTMF modality
  - Use voice variables
  - Test your voice-enabled agent in chat

Known limitations

These tips and limitations help you successfully integrate voice into your agent.

Expand table

Feature	Tip or limitation
Channel order	Enable the Telephony channel first and then connect with Dynamics 365. The sequence is for channel reconnection.
Language/Locale	For a full list of supported languages and locales, see Language support. If you have a customized locale request, contact the Copilot Studio team.

Feature	Tip or limitation
DTMF	The question node supports copilot single-digit DTMF (global command) and multi-digit DTMF, with conflict handling for the DTMF key at the same time.
DTMF only	When DTMF only for voice is enabled, some timers might not be effective, such as interdigit timeout for DTMF or silence detection timeout.
Latency message on Action node	- If you don’t enable latency message or the message is empty, all messages before the action node are blocked and sent after the action completes. - If you use multiple consecutive action nodes for one topic and hit any unexpected results, add a message node between the consecutive action nodes.
Test chat dial pad	Pressing a key on the dial pad in the Test chat returns "/DTMF#," which isn't supported, and isn't a valid input. Instead, the command "/DTMFkey#" should be typed into the chat.
Multilingual voice-enabled agents	If you incorporate a multilingual voice-enabled agent, you must set authentication to *No authentication* to be able to publish on the Dynamics 365 Customer Service channel.
Customer engagement hub	Apart from Dynamics 365, all the other customer engagement channels only work with chat-based agents. The following aren't supported for voice-enabled agents: - Genesys - Live person - Salesforce - ServiceNow
Generative AI for voice-enabled agents	Creating and editing topics with Copilot isn't supported for voice-enabled agents. Copilot doesn't create messages for Speech & DTMF, and doesn't configure DTMF mappings.

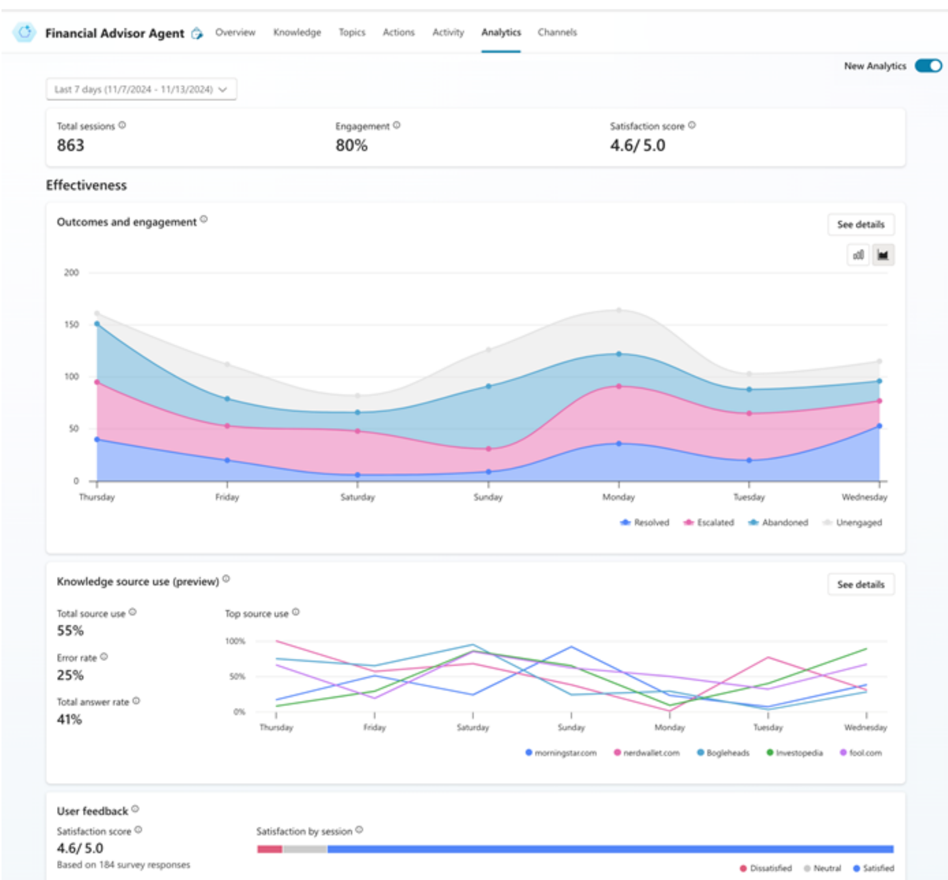
Feature	Tip or limitation
Environment release cycle	Currently, voice-enabled agents are only available in **Standard** environments. For more information, see [Unable to turn on Optimize for voice]().

7. Configuring Agent Analytics

Analytics are crucial for understanding how your agent operates and pinpointing areas for improvement. In this section, you'll explore the different analytics tools available within Copilot Studio and how to leverage them for optimal performance.

The **Analytics** page in Copilot Studio provides an aggregated insight into the overall effectiveness of your agent across analytics sessions.

Most likely your agent will not have produced enough activity yet to preview good insights, but we will tour the options available with example data.



There are three core areas to focus on when reviewing and improving agent effectiveness:

- **Outcomes and engagement**: Knowing the end result of a conversation helps you begin to identify where your agent is succeeding and where it needs improvement.
- **Knowledge source use**: Seeing how often your knowledge sources are used helps you understand how well your agent is able to provide answers to user questions.
- **Action use**: Learning how often actions are used and how often they succeed can help you understand if those actions are useful and successful for users.
- **User feedback**: Reviewing user feedback helps you identify new user scenarios and issues and make improvements based directly on what your users are asking for.

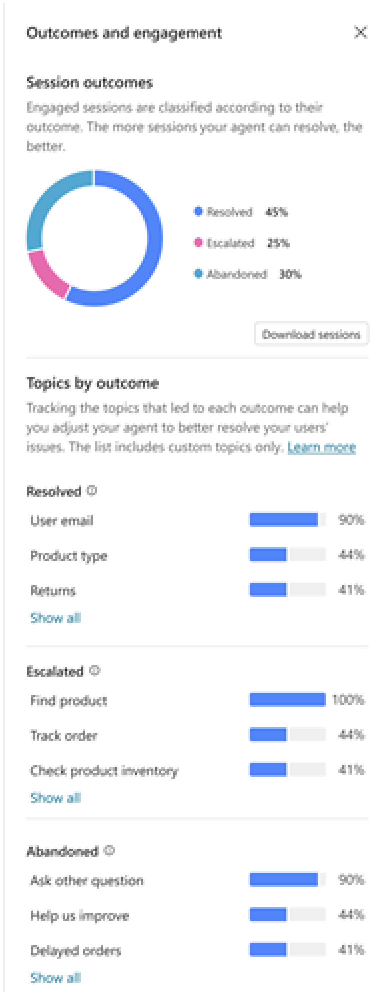
You can view analytics for events that occurred in the last 360 days.

Note

On February 20, 2025, the data retention for analytics changed from 90 days to 360 days, so you can only view analytics from events that occurred after November 22, 2024, even if they happened within the last 360 days.

Outcomes and engagement

The **Outcomes and engagement** section shows a chart that tracks the type of outcome for each session between your agent and users.



To open a side panel with a pie chart breakdown of session outcomes, along with the top topics that led to each outcome, select **See details** on the chart.

A session falls into one of the following two states:

- **Unengaged**: A session starts when a user interacts with your agent or the agent sends a proactive message to the user. The session begins in an *unengaged* state.
- **Engaged**: A session becomes *engaged* when one of the following occurs:
  - a non-system topic is triggered
  - the session is escalated
  - the fallback topic is triggered
  - the conversational boosting topic is triggered

Once the session becomes engaged, it remains engaged. An engaged session has one of the following outcomes:

- **Escalated**: A session ends and is considered *escalated* when the **Escalate** topic is triggered or a **Transfer to agent** node is run (the current analytics session ends, whether the conversation transfers to a live agent or not).
- **Resolved**: A session ends and is considered *resolved* when the **End of Conversation** topic is triggered and the user confirms that the interaction was a success or lets the session time out.
- **Abandoned**: A session ends and is considered *abandoned* when an engaged session times out after 36 minutes and didn't reach a resolved or escalated state.

You can also set the outcome for actions with the conversationOutcome parameter using the action code editor. For example, conversationOutcome: ResolvedConfirmed for confirmed success or conversationOutcome: ResolvedImplied for implied success.

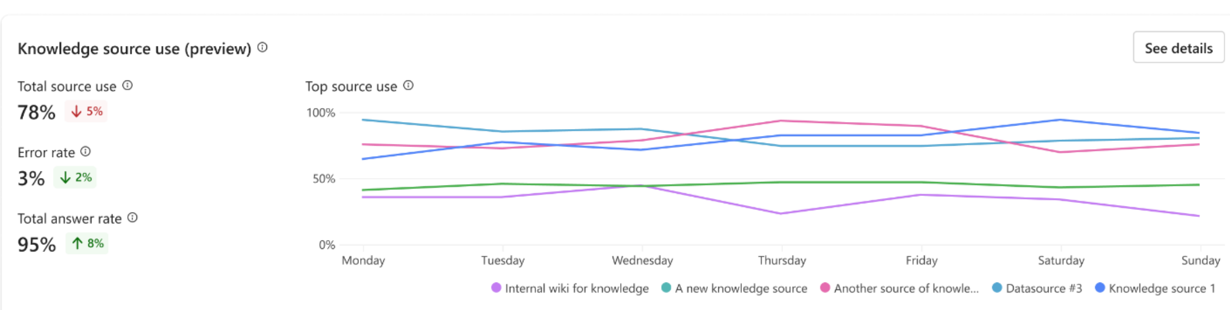
See the guidance documentation Measuring copilot engagement for suggestions and best practices on how to measure and improve engagement.

Knowledge source use

The **Knowledge source use** section shows a chart and metrics that track how often your knowledge sources are used in conversations between your agent and users.

It also shows trend indicators for how often your sources are being used, how many errors are being generated, and how many times the source is being used to provide answers to user questions.

The chart displays the top five knowledge sources used over the date range defined at the top of the **Analytics** page.



Select **See details** to open a side panel with knowledge source usage and error rates over your selected time period. You can use these charts to identify which knowledge sources work well to help users, and which to target for improvements.

- **Knowledge source use** shows the percentage of sessions that used each knowledge source the agent has access to.
- **Errors** shows the percentage of sessions that used each knowledge source type (for example, SharePoint) that resulted in an error.

Action usage

The **Action use** section shows a chart and metrics that track how often your actions are started over time, and how often those actions complete successfully.

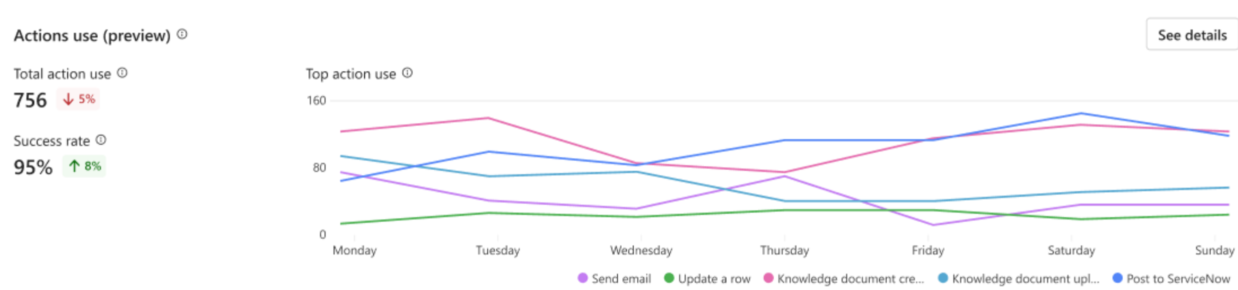
It also shows trend indicators for how often your actions are being used and the percentage of called actions that completed successfully.

Note:

Actions analytics are available for agents with generative mode [turned on](#).

The chart displays the top five actions used over the date period defined at the top of the **Analytics** page.

To open a side panel with a list of all actions used in the specified time period, along with trend indicators, select **See details** on the chart.



User feedback

The **User feedback** section shows a chart and metrics that track the average customer satisfaction (CSAT) scores for sessions in which customers respond to an end-of-session request to take the survey.

8. Improving Agent Effectiveness

Once your agent is set up and analytics are configured, the next step is to utilize these insights to enhance agent effectiveness. This involves iterative testing, performance tuning, and adapting strategies based on analytical feedback.