

Build a Chatbot with PromptFlow endpoint + PVA

What is PromptFlow?

Prompt flow is a powerful feature within Azure Machine Learning that streamlines the development, evaluation, and continuous integration and deployment (CI/CD) of prompt engineering projects. It empowers data scientists and LLM application developers with an experience that combines natural language prompts, templating language, a list of built-in tools and Python code. You can learn more about it here: [What is Azure Machine Learning prompt flow](#)

What is PVA (Power Virtual Agents)?

Microsoft Power Virtual Agents empowers everyone to create intelligent conversational bots - from citizen developers, business users to professional developers alike - to seamlessly build secure and scalable virtual agents in an integrated building platform. You can learn more about it here: [Power Virtual Agents overview](#)

How to get started

1. You will first need to setup your PromptFlow endpoint. To do this, please setup your custom environment here with your use case: [Deploy a prompt flow using Docker | Github](#). You can test your endpoint using Postman client. Keep your configuration handy. For example:

Request:

```
POST https://promptflow-webapp-hack.azurewebsites.net/score

body:
{ "chat_input": "How to verify a customer?", "chat_history": [] }
```


Response:


```
body:
{
  "answer": "To verify a customer, you need to follow the Account Verification Process - BCSS. The process involves determining the verification method based on the caller's type and workgroup, asking the caller to provide their full name, CTN, account name or company name, and validating the information provided using FaST or Clarify. If the caller is unable to complete all verification requirements, they are unverified and have General Access. (Source: Account Verification Process - BCSS)",
  "context": "Content: What I Need to Know\n\nAdhere to all VID Business Rules found in Account Verification Process - BCSS.\n\nDetermine Verification Method\n\nAsk the caller to provide:\n\nCaller's full name\nATTUID\n\nIf Screen pop is available, the ATTUID can be confirmed instead of requesting it be provided.\n\nIdentify the caller's Business Unit in Webphone. If the"
```

```
caller does not have a Business Unit listed, move up in the hierarchy
until a Business Unit is visible.¶\r\n¶\n\nContinue verification based
on the Business Unit.¶\r\n\nWhen the Business Unit starts with AT&T
Business, follow AT&T Business (BCSS/Enterprise/GBS) or Finance.When
the Business Unit does not start with AT&T Business, follow Non-AT&T
Business – All Retail/Virtual Sales Experience (formerly DMDR/Mobility
Sales)/AT&T Right to You.¶\r\n\nNon-AT&T Business – All Retail/Virtual
Sales ..."
```

```
}
```

2. As a next step, you will need a PVA environment. Easiest way to get access to such an environment is to create a tenant from demos.microsoft.com. Go to My Environments|Create Tenant. You want a D365 Customer Engagement tenant - it comes with the licenses you need.






Tools designed to enhance conversations

Experience the latest Demo content, Customer Immersion and Labs that will give you a hands on opportunity to explore Microsoft 365 and Dynamics product and features.


[Sign in](#)

Work or school account required to sign in. If you are a partner and need further assistance, please visit these links for additional information:

- Microsoft Partner Network Membership Overview (<https://docs.microsoft.com/en-us/partner-center/mpn-overview>)
- Prepare for your move from Partner Membership Center to Partner Center (<https://docs.microsoft.com/en-us/partner-center/prepare-pmc-pc-migration>)





Tools | **CDX** | Experiences | **My Environments** | Dashboard | What's new | Help | Service health

Site tour | Fimbres Puente, Oscar Daniel (CSW) | 


My Environments

[My Tenants](#) | [My Virtual Machines](#) | [My Experiences](#) | [Roles & Limits](#)

Filter by Tenant Name 

Filter by Content Pack 

[Create Tenant](#)



Looks like there are no tenants
Create a tenant, or launch an experience to gain access

Dynamics 365 Customer Engagement

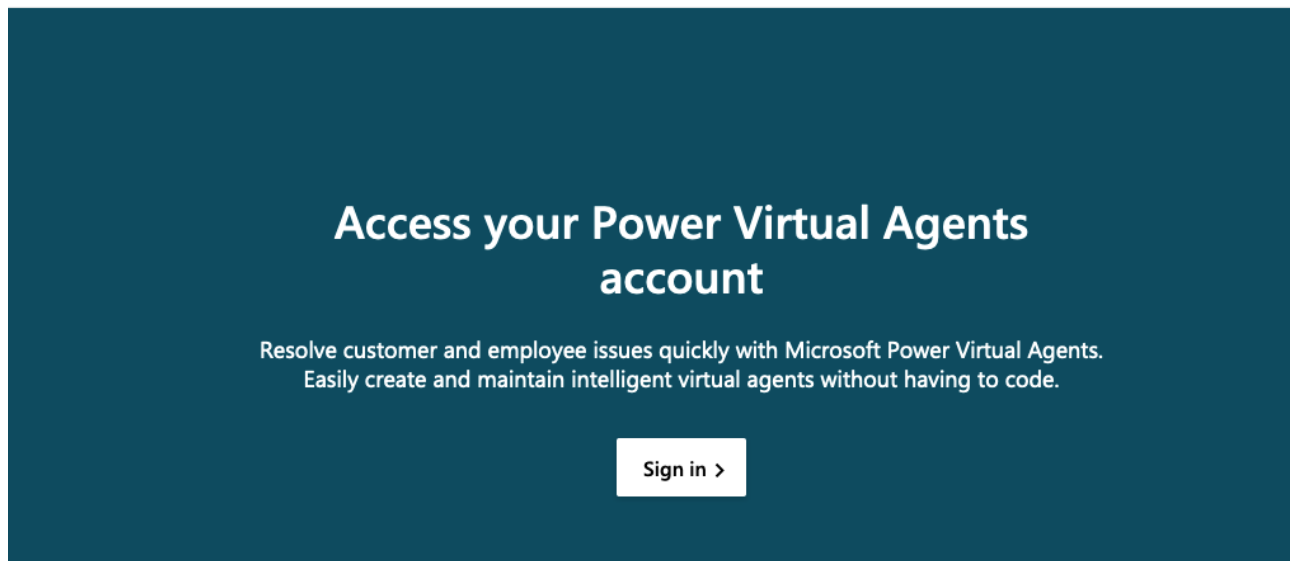
[Create Tenant](#)

This demo environment includes Dynamics 365 Sales, Customer Service, Customer Service Insights, Field Service, PSA, Forms Pro, Power Apps, Power Automate and Office 365 E5 (incl. Power BI Pro).

90-day environment not eligible for extension

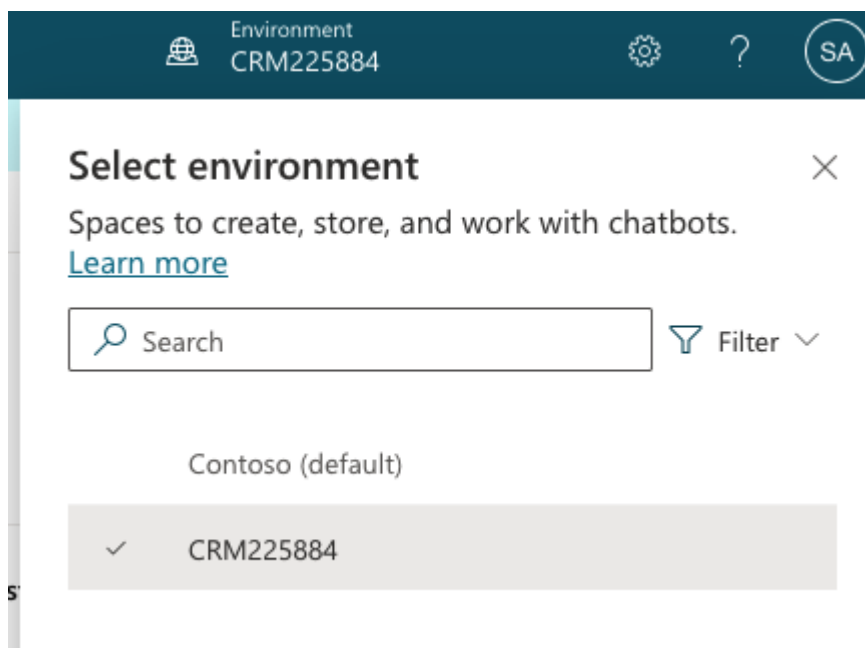
You will receive a set of credentials to access your custom environment. Go to powervirtualagents.microsoft and use these new credentials.

 Microsoft | Power Virtual Agents



Now that you are all set-up, let's get started

1. Sign-in the Power Virtual Agents page with your existing account. Make sure your new environment is selected.



2. One the next step, click "Create" to create a new bot. Then, "Try the unified canvas (preview)". Provide a name for your bot. E.g. "demo_bot", then "Create".

Create a bot

×


Step 1 of 2


Set up the bot


Start fresh with a new bot, and start making it yours.



Want to convert a classic bot to the new authoring canvas? [Start here](#).

Want to enable voice capabilities for your bot? [Start here](#)

Bot name * 

What language do you want your bot to speak? * 

English 

 **Boost your conversations with generative answers (preview)** 

Let your bot create responses in real time with generative answers and information from a website you choose. [Learn more](#)

AI-generated content can have mistakes, so don't forget to make sure it's accurate and appropriate. Review the [preview terms](#) to learn more.

Edit advanced options >

Create


Cancel

Your new bot will be created after a few moments.

3. Once it's created, you will land on the following page.

Power Virtual Agents | ATTchatbot

Environment CRM225884

 ? SA

Chatbots

Overview

Topics


Entities

Analytics


Publish

Settings


Test bot

Track between topics 

Chat

 Hello, I'm demo_bot. How can I help?


A minute ago

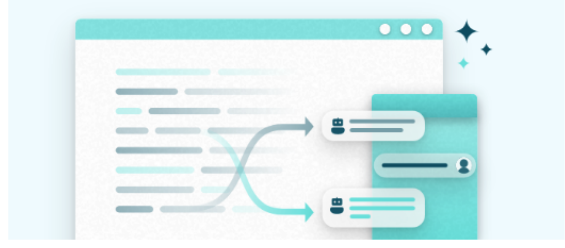
Type your message 

demo_bot

SA


Share

[View Solution \(Default Solution\)](#) 

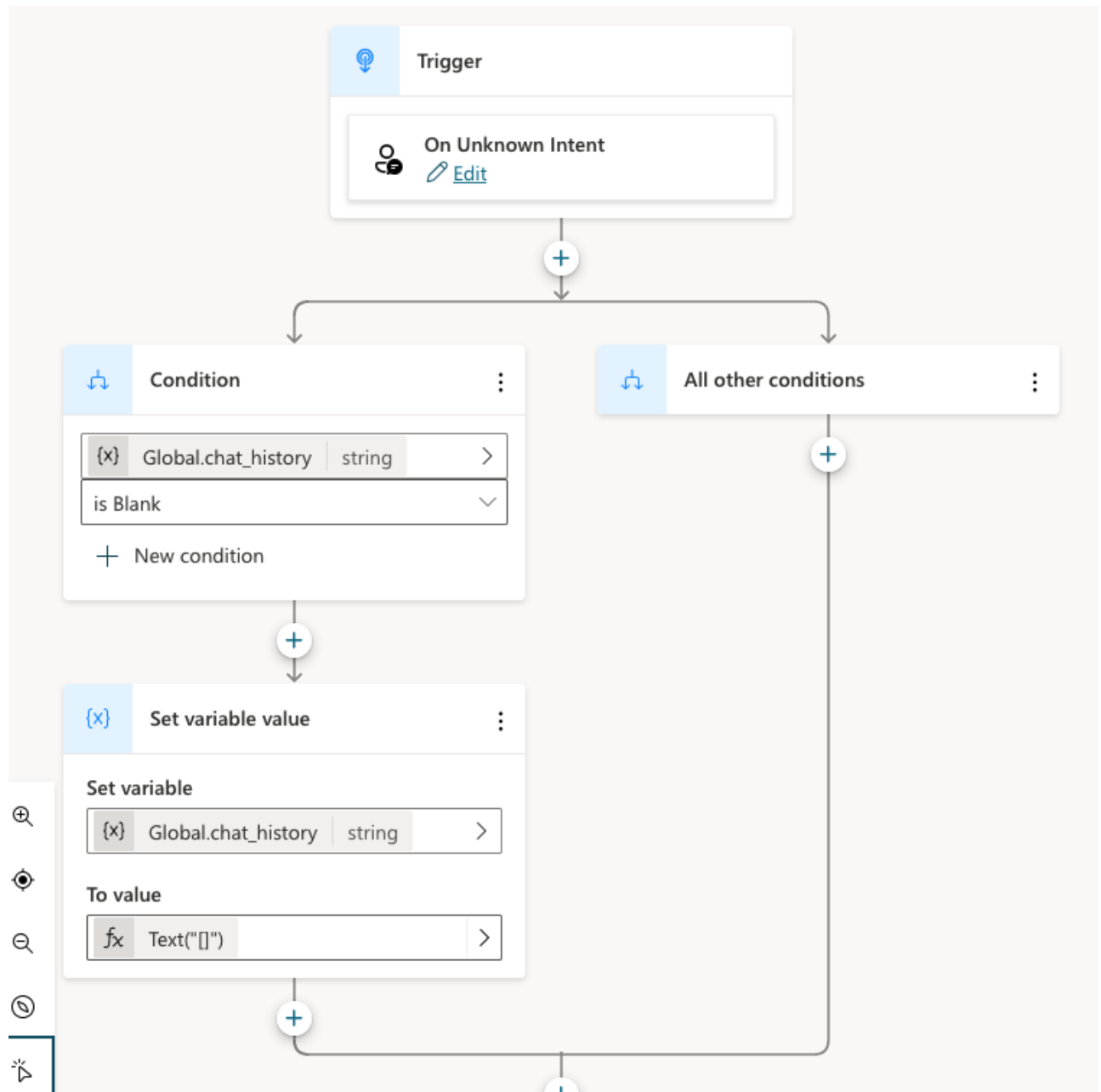


Create generative answers (preview)

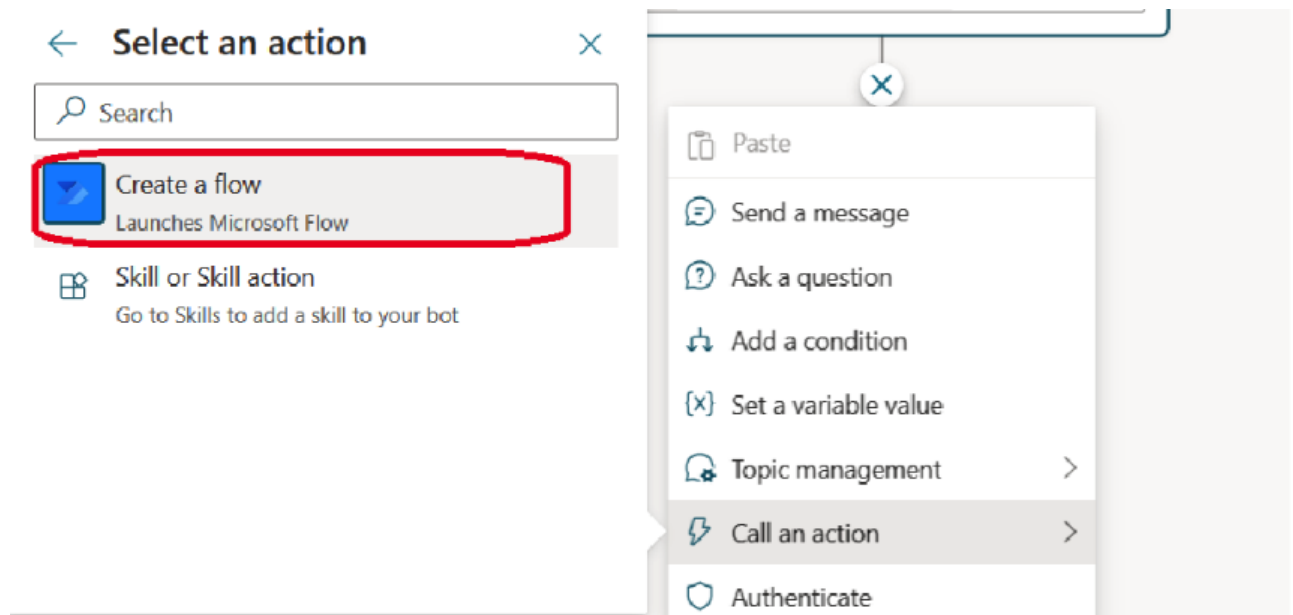
Boost your conversations in real time based on selected content to answer unanticipated questions. [Learn more](#)

 Get started in AI Capabilities

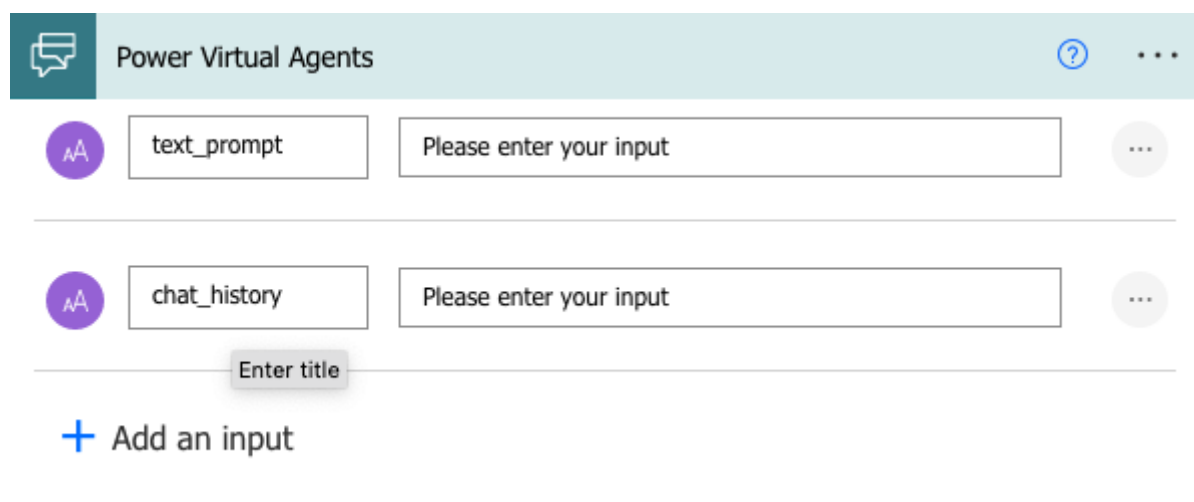
4. On the Topics menu, select "System", and select "Fallback". We need to create a global variable for the chat_history like the following.



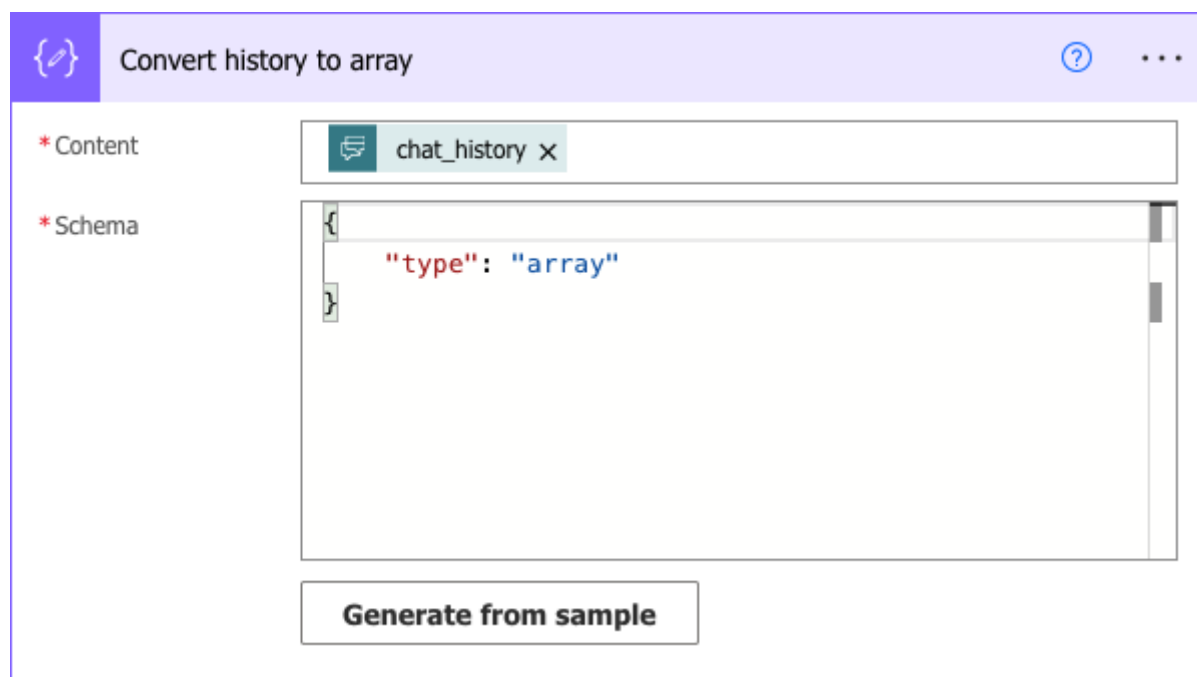
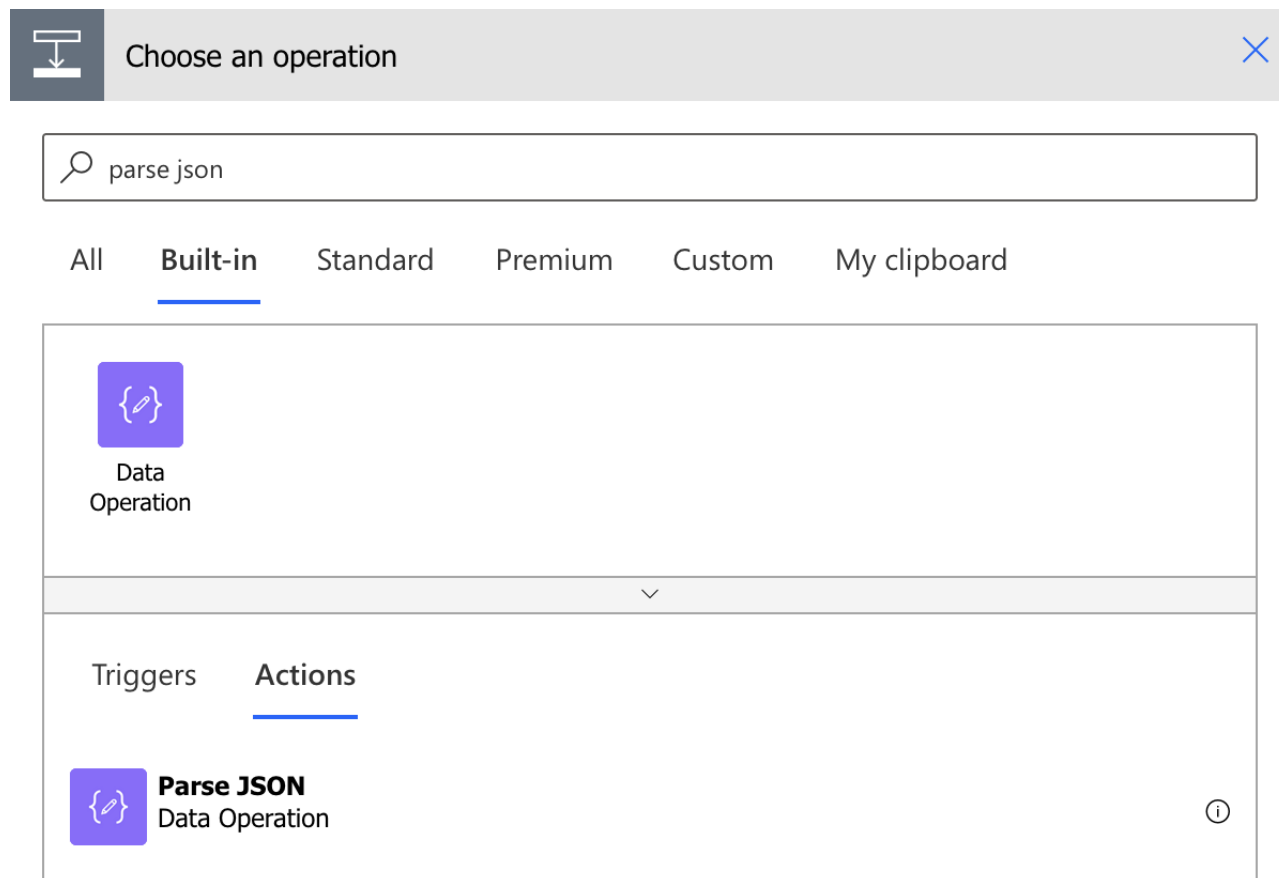
- At the end of this workflow, click on the "+" symbol under the node you just added. Go to "Call an action > Create a flow".



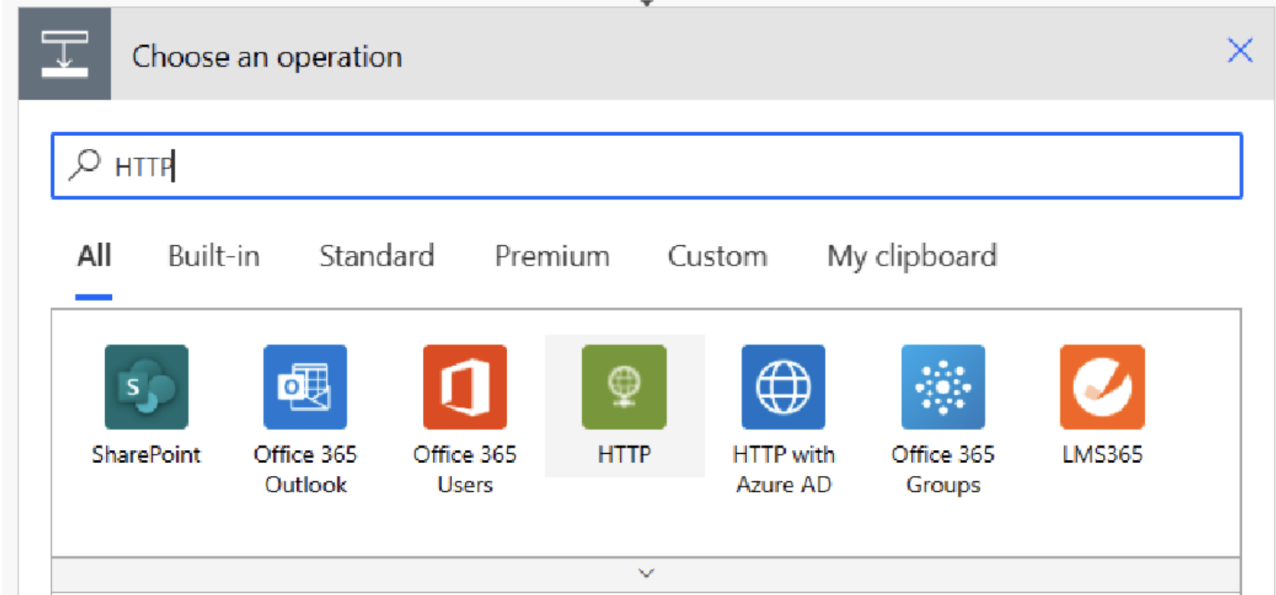
6. This action will redirect you to Power Automate, a service that helps you create automated workflows between your apps and services to synchronize files, get notifications, collect data, and more (find out more here: [Get Started with Power Automate - Power Automate | Microsoft Learn](#)), in order create your flow. On the top "Power virtual agents", add two inputs and provide a name for it, e.g. text_prompt and chat_history. Leave the values of the variables as-is.



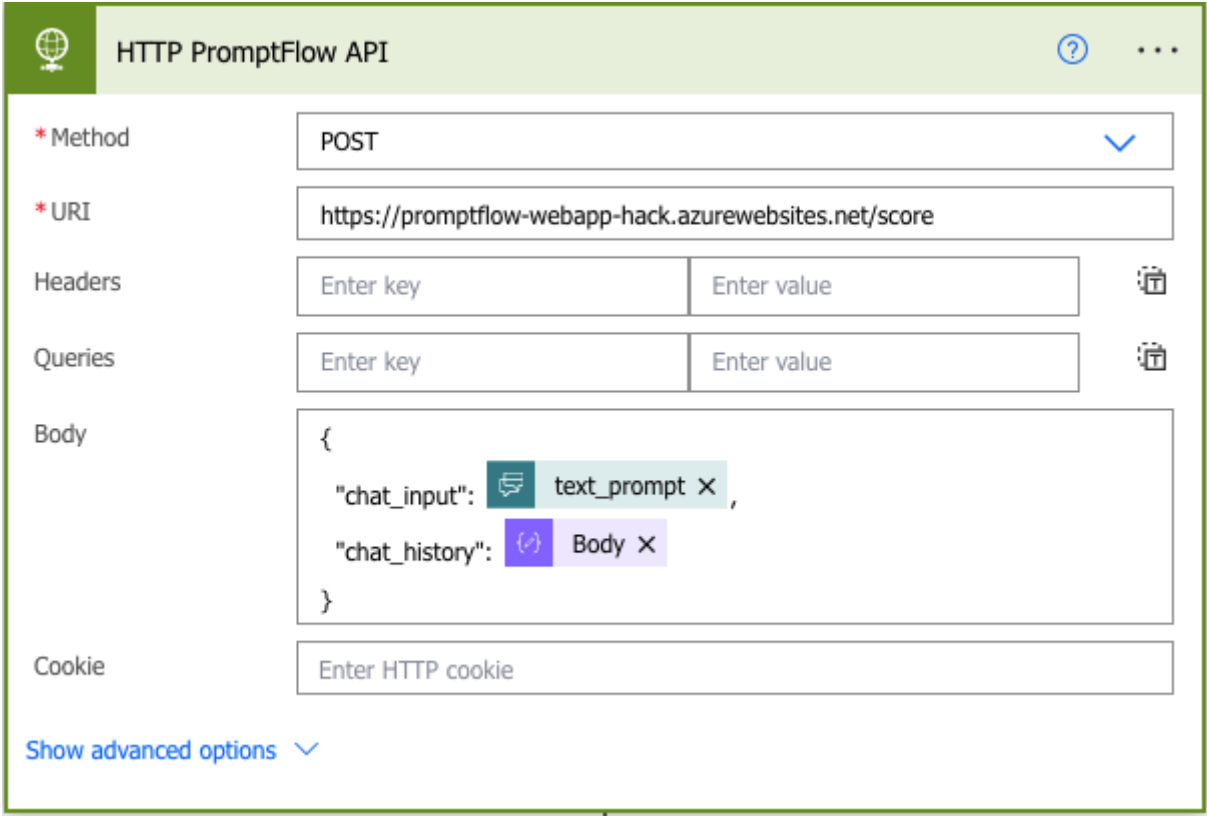
7. Since Power Automate inputs does not understand stringified arrays, we need to parse it before using it as an array. Search for "Parse Json". You can add the ""






8. Click the + symbol after the node you just modified, select "Add an action", type "HTTP" and select the simple option available.





9. Populate with the PromptFlow details as in the image below. Make sure the "Body" and the text_prompt variables are specified.



10. Next, click on the "+" icon to add a new action and search for "Parse Json". As in the previous steps, add the "Body" variable in the content. For the Schema, add the following (you don't need to click on "Generate from sample" option):

 Parse results  

* Content

 Body 




* Schema

```
{
  "type": "object",
  "properties": {
    "answer": {
      "type": "string"
    },
    "context": {
      "type": "string"
    }
  }
}
```

Generate from sample

11. In order to build up the chat history, we need to perform a few variable operations.


Search for initialize variable and cast the array variable from "Convert history to array" output

 Store chat history into array var  



* Name

chat_history




* Type

Array 



Value

 Body 

Search for append to array variable using the text_prompt input and the Parse Json output

 Append to array variable  

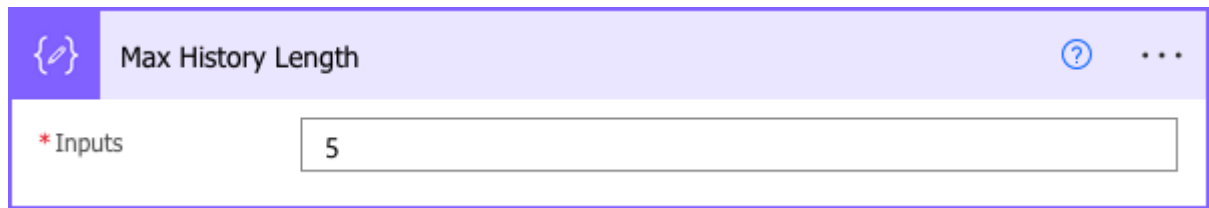
* Name

chat_history  

* Value

```
{
  "inputs": {
    "chat_input": "text_prompt"
  },
  "outputs": {
    "chat_output": "answer"
  }
}
```

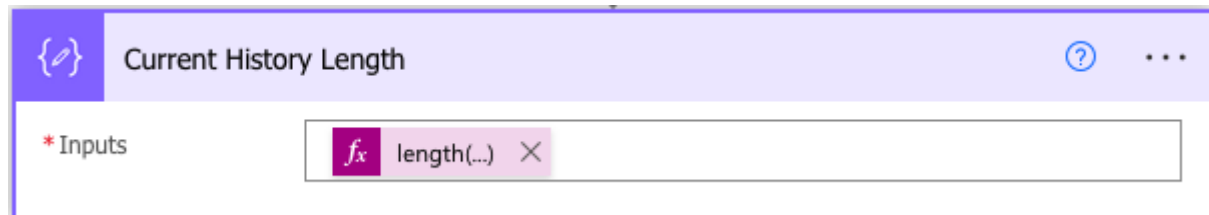
Search for compose and initialize the max history length constant



Max History Length

* Inputs: 5

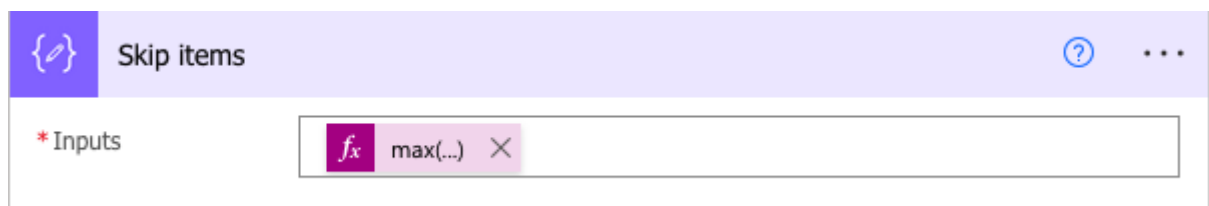
Search for compose and initialize the max history length constant. Use `length(variables('chat_history'))`



Current History Length

* Inputs: `length(...)`


Search for compose and calculate the number of items to skip. Use `max(0, sub(outputs('Current_History_Length'), outputs('Max_History_Length')))`



Skip items

* Inputs: `max(...)`

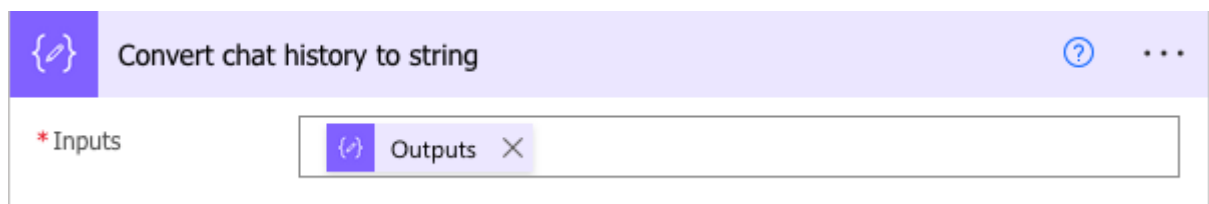
Search for compose and skip the number items of the previous image. Use `skip(variables('chat_history'), outputs('Skip_items'))`



Trim Chat History

* Inputs: `skip(...)`

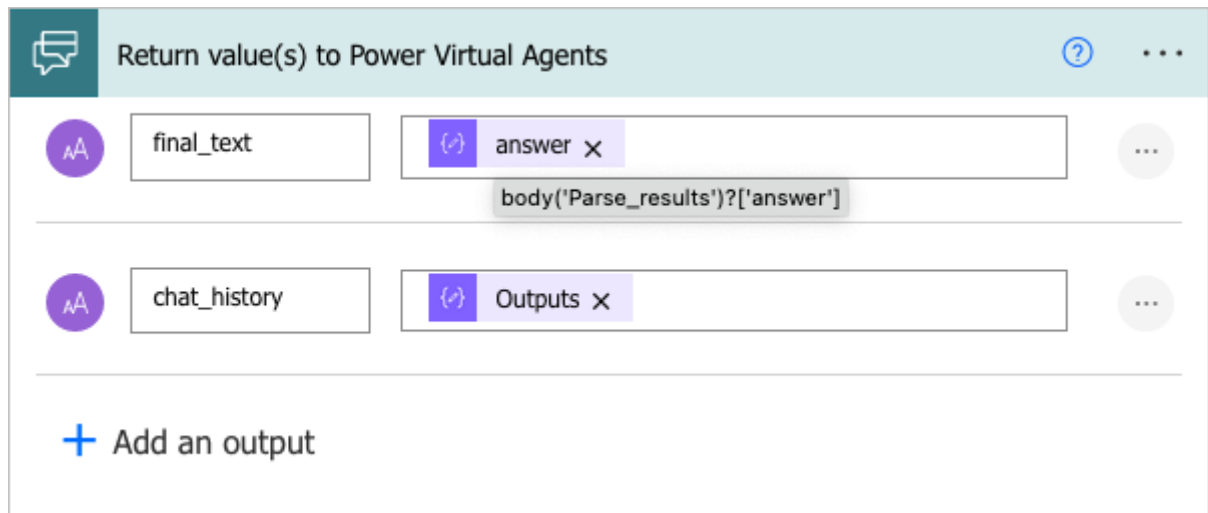
Search for compose and create a new array for chat_history.



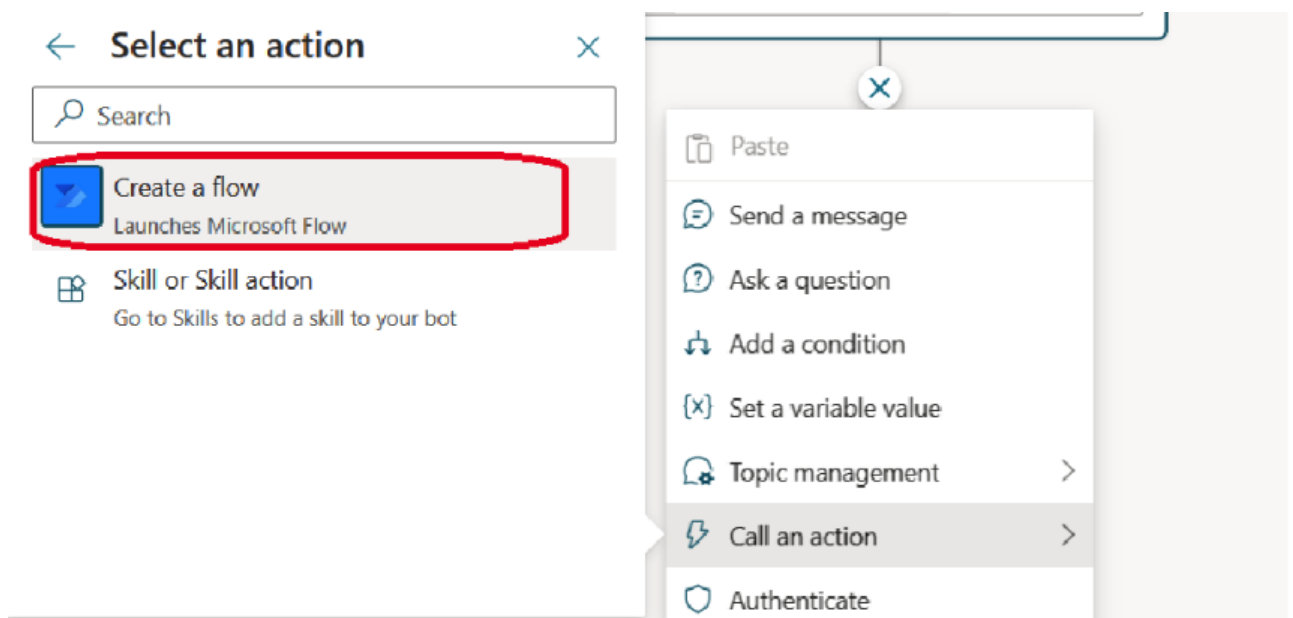
Convert chat history to string

* Inputs: `Outputs`

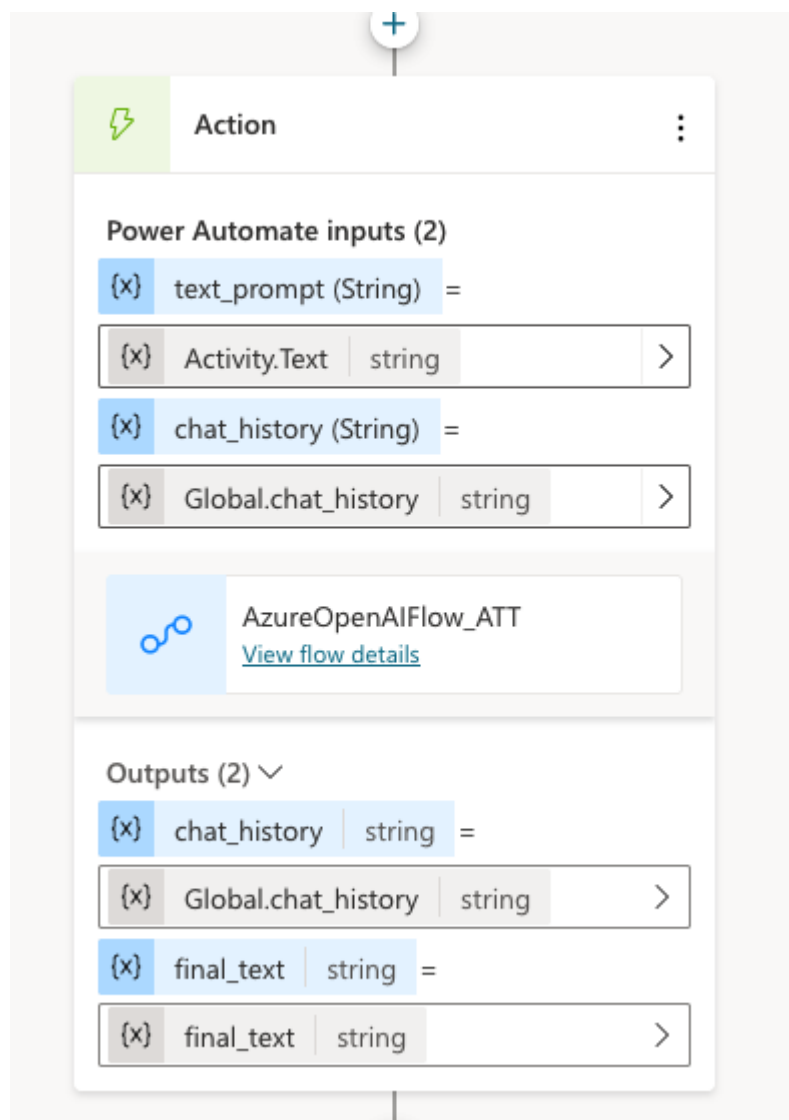
- The final step is to write the output of the REST API request into a variable, in this case we called it "final_text". Click on the text field for assigning the value, right next to it. Do the same with "chat_history" using last output. A new window will pop-up.



13. Now, coming back to Power Virtual Agents page, in fallback topic sets the inputs and outputs to call the workflow.



14. Print the "final_text" message at the end of the workflow.



Let's try the bot

Click on the Test your bot option on the bottom left of your screen. You can ask whatever you want. The following screenshot shows an example of a conversation.