



Take the guesswork out of secure and compliant access to SAP from Copilot and Power Platform with Entra ID

ROOM: 2202, 4/25/2024 11:15 AM CET
Martin Raeppe, Martin Pankraz

Agenda

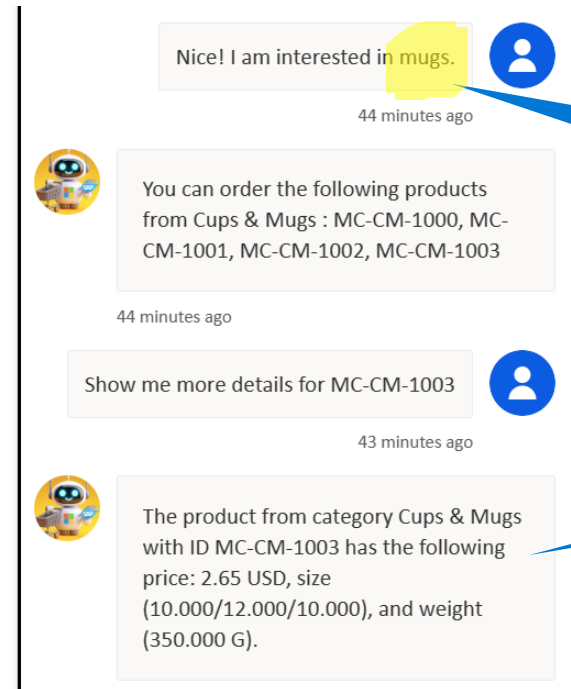
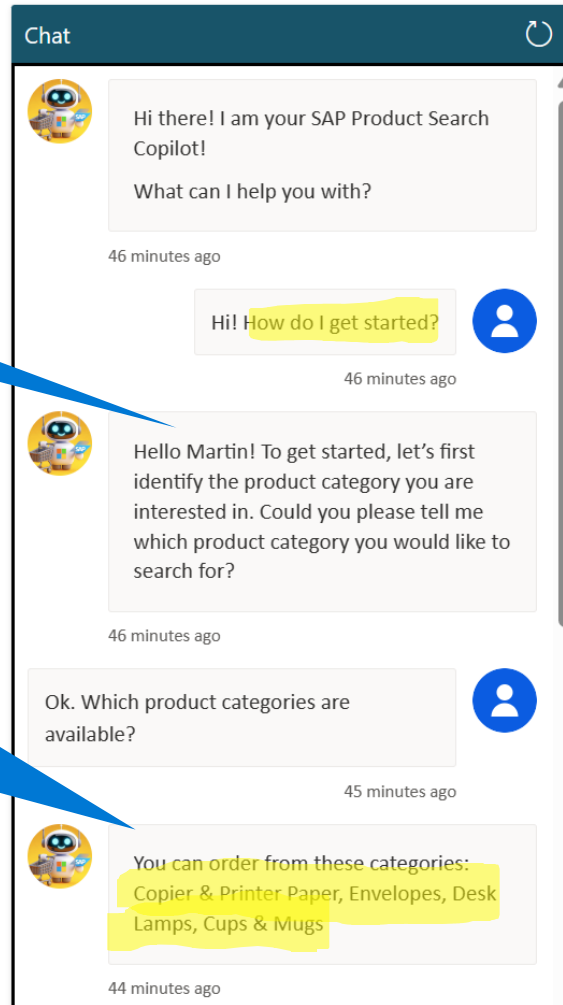
- Scenario Overview
- Solution Architecture
- Hands-on instructions
- *Exercise 1:* Launch the SAP Product Search Copilot
- *Exercise 2:* Troubleshoot the SAP access in Power Automate
- *Exercise 3:* Fix the login error in SAP
- *Exercise 4:* Test SAP data access with the fixed flow
- *Exercise 5:* Change the user's authorizations in SAP

Scenario Overview

Build an AI-powered, secure & compliant copilot for searching products in an SAP system

Respond to unknown user intents* with generative answers

Only return data the user has access to in the SAP system. Authorizations in the backend may change at any time!



Understand incomplete or misspelled user input

Support Single Sign-On (SSO) from Entra to SAP



Auditability: Each data access from Copilot to SAP can be traced back to an individual.

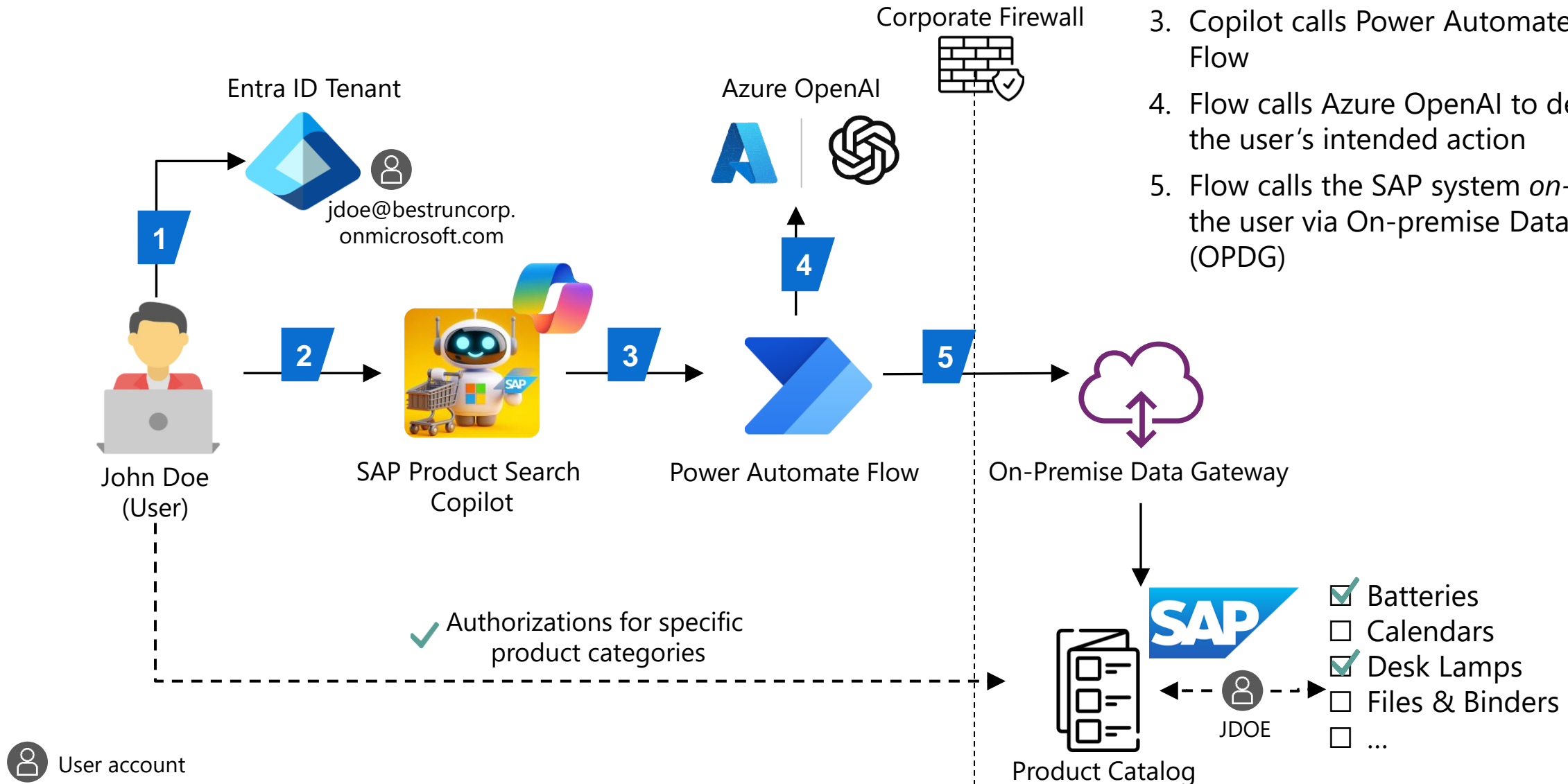


Confidentiality: Only data the user is allowed to see can be accessed in SAP from Copilot

* The goal or purpose that a user has within the context of a conversation with a customer service chatbot.

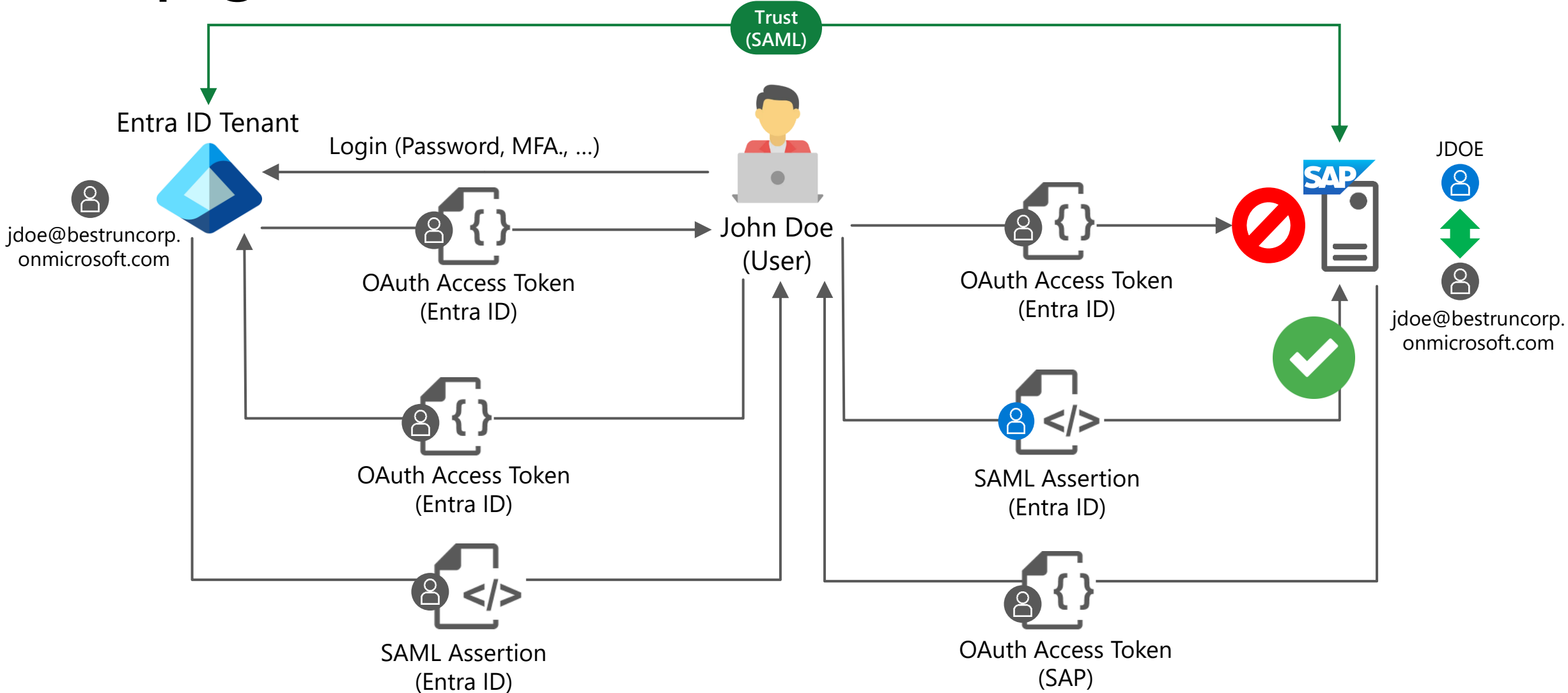
High-level Solution Design

1. User authenticates with Entra ID
2. User starts conversation with SAP Product Search Copilot
3. Copilot calls Power Automate Flow
4. Flow calls Azure OpenAI to determine the user's intended action
5. Flow calls the SAP system *on-behalf-of* the user via On-premise Data Gateway (OPDG)



Solution Architecture

Secure & compliant access to SAP with Principal Propagation



A sample Entra ID OAuth Access Token in the scenario

```
{
  "typ": "JWT",
  "alg": "RS256",
  "x5t": "q-23fa1evZhhd3hm9CQbkP5MQyU",
  "kid": "q-23fa1evZhhd3hm9CQbkP5MQyU"
}.{
  "aud": "api://66283309-24e0-419f-853f-79176d9d4d22",
  "iss": "https://sts.windows.net/85642982-0095-4777-a3e2-147c5c95af60/",
  "iat": 1713713948,
  "nbf": 1713713948,
  "exp": 1713718547,
  "acr": "1",
  "aio": "ATQAY/8WAAAAQIhvezkxOYyMyn0s2I1FtWvLCgD+y00Yb/1fgGZr3uhMsEBb2x7LucDoPkzsBRf",
  "amr": [
    "pwd"
  ],
  "appid": "66283309-24e0-419f-853f-79176d9d4d22",
  "appidacr": "0",
  "given_name": "User25",
  "ipaddr": "213.232.102.10",
  "name": "User25",
  "oid": "6edcd404-091b-45c8-a85e-154008ee1d8f",
  "rh": "0.AYEAgilkhZUAd0ej4hR8XJWvYAkzKGbgJJ9BhT95F22dTSKBAL4.",
  "scp": "sap.access",
  "sub": "Sm1NIbu5dYnwGM8j2EFnV4jGGQ1j8V8BJWE6MIF0bmg",
  "tid": "85642982-0095-4777-a3e2-147c5c95af60",
  "unique_name": "user25@besttruncorp.onmicrosoft.com",
  "upn": "user25@besttruncorp.onmicrosoft.com",
  "uti": "xmyQJ9wwRku3WW_UuZwqAA",
  "ver": "1.0"
}.[Signature]
```

Application for which the token has been issued

Issuer of the access token (Entra ID tenant)

Context information (client IP, authentication method)

Identity information

Scope of access

A sample Entra ID SAML Assertion in the scenario

```
<Assertion ID="_3a0dba09-266d-48c7-b287-86e5c3e02000" IssueInstant="2024-04-21T15:47:47.586Z"
  Version="2.0" xmlns="urn:oasis:names:tc:SAML:2.0:assertion">
  <Issuer>https://sts.windows.net/85642982-0095-4777-a3e2-147c5c95af60/</Issuer>
  <Signature xmlns="http://www.w3.org/2000/09/xmldsig#"
    ...
    <SignatureValue>
      KVyhgqebPaYGj4Zbo1jfSEdaIeaJhldI7WqHyCCB4U13R3mxFxFkjoHu3gYlsNXwu/wlic0kn8BnXOm0oAQr4dmb/5Br
    </SignatureValue>
  </Signature>
  <Subject>
    <NameID Format="urn:oasis:names:tc:SAML:1.1:nameid-format:emailAddress">
      user25@bestruncorp.onmicrosoft.com</NameID>
    <SubjectConfirmation Method="urn:oasis:names:tc:SAML:2.0:cm:bearer">
      <SubjectConfirmationData NotOnOrAfter="2024-04-21T16:55:46.514Z"
        Recipient="https://vhcala4hci.bestrun.corp:50001/sap/bc/sec/oauth2/token" />
    </SubjectConfirmation>
  </Subject>
  <Conditions NotBefore="2024-04-21T15:42:47.514Z" NotOnOrAfter="2024-04-21T16:55:46.514Z">
    <AudienceRestriction>
      <Audience>https://vhcala4hci.bestrun.corp</Audience>
    </AudienceRestriction>
  </Conditions>
  <AttributeStatement>
    <Attribute Name="http://schemas.microsoft.com/identity/claims/tenantid">
      <AttributeValue>85642982-0095-4777-a3e2-147c5c95af60</AttributeValue>
    </Attribute>
    <Attribute Name="http://schemas.microsoft.com/identity/claims/displayname">
      <AttributeValue>User25</AttributeValue>
    </Attribute>
    <Attribute Name="http://schemas.microsoft.com/claims/authnmethodsreferences">
      <AttributeValue>
        http://schemas.microsoft.com/ws/2008/06/identity/authenticationmethod/password</Attribu
      </AttributeValue>
    </Attribute>
    <Attribute Name="http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname">
      <AttributeValue>User25</AttributeValue>
    </Attribute>
    <Attribute Name="http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress">
      <AttributeValue>user25@bestruncorp.onmicrosoft.com</AttributeValue>
    </Attribute>
    <Attribute Name="http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name">
      <AttributeValue>user25@bestruncorp.onmicrosoft.com</AttributeValue>
    </Attribute>
  </AttributeStatement>
  <AuthnStatement AuthnInstant="2024-04-21T05:03:28.526Z">
    <AuthnContext>
      <AuthnContextClassRef>urn:oasis:names:tc:SAML:2.0:ac:classes:Password</AuthnContextClassRef>
    </AuthnContext>
  </AuthnStatement>
</Assertion>
```

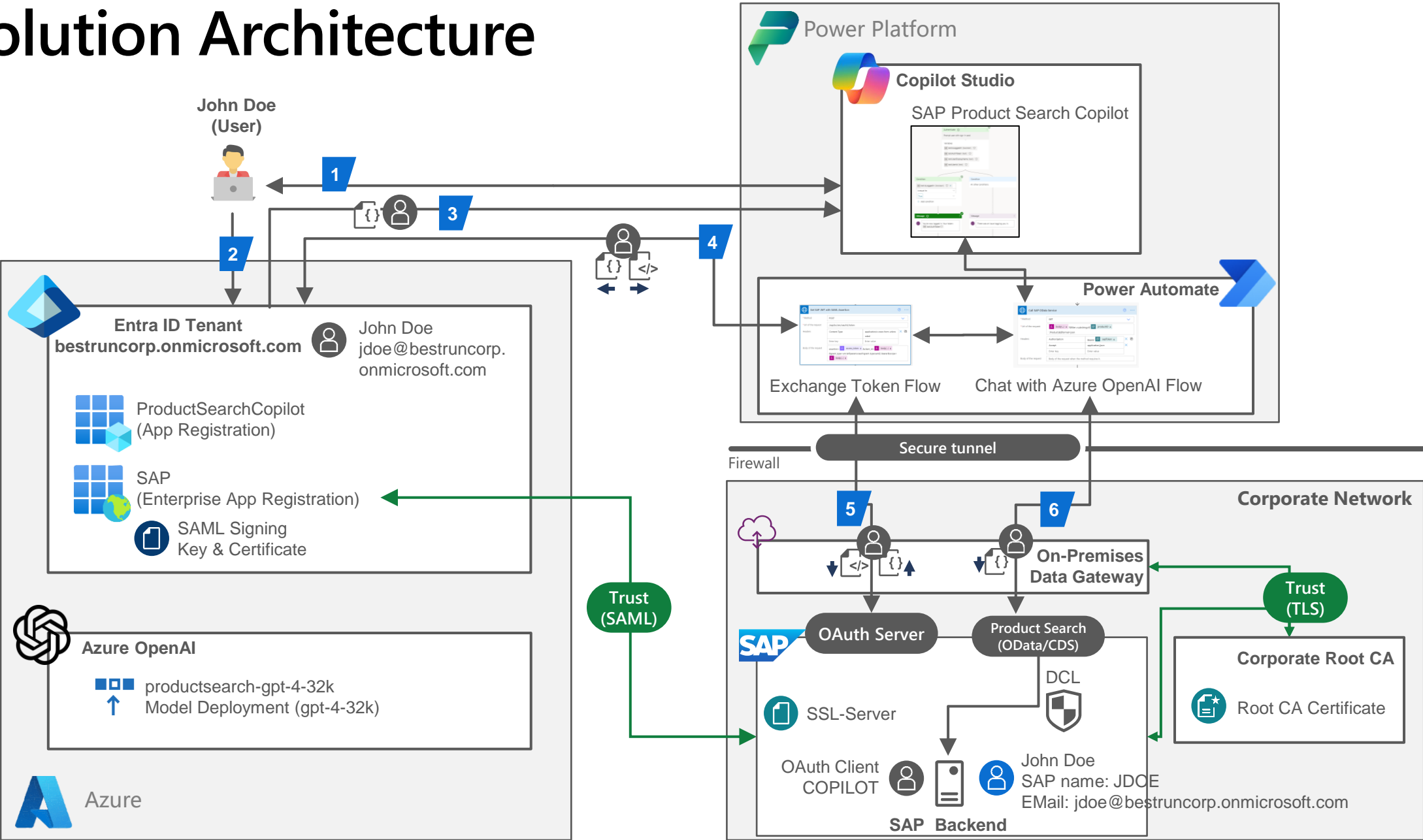
Issuer of the access token (Entra ID tenant)

Application for which the token has been issued

Identity information

Context information (authentication method)

Solution Architecture



Hands-on instructions

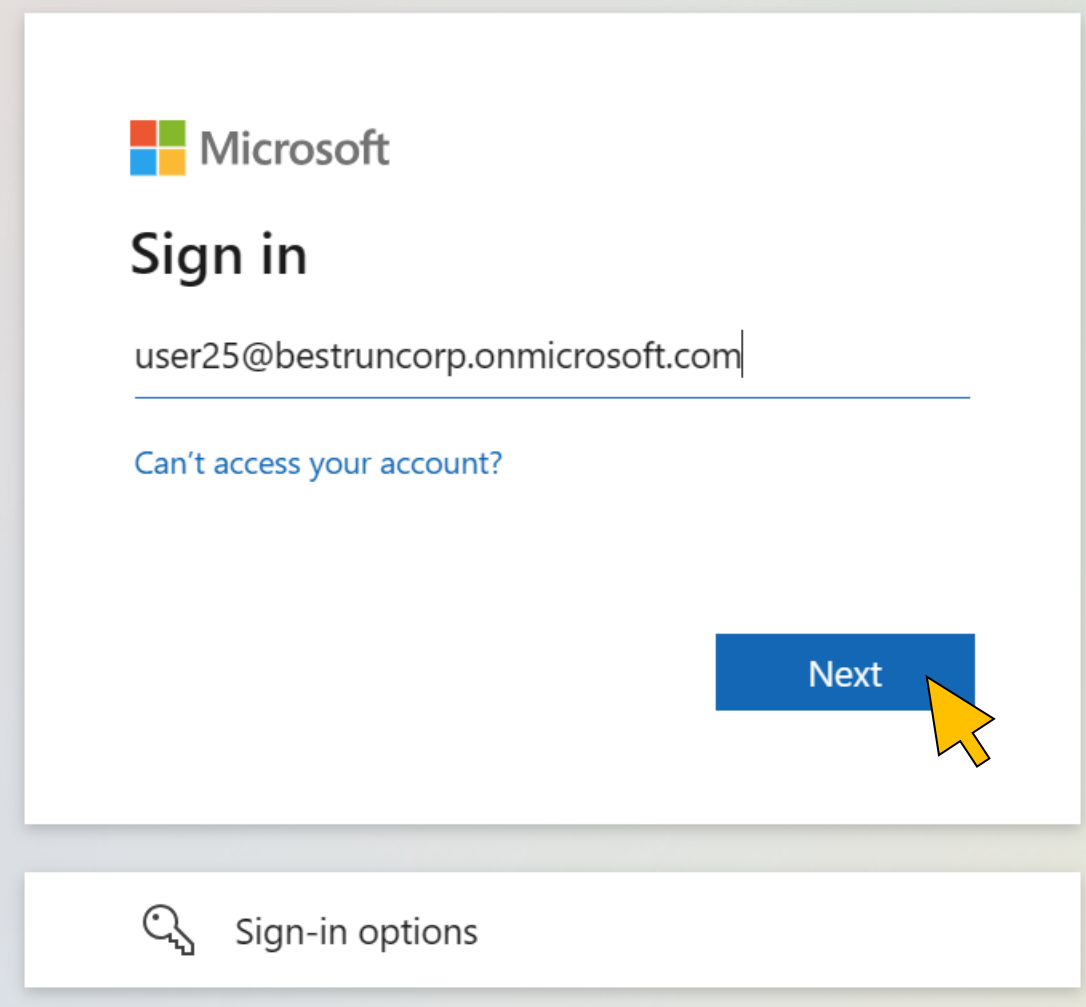
Hands-on instructions

- Take a user:
 - user1@bestuncorp.onmicrosoft.com
 - user2@bestuncorp.onmicrosoft.com
 - ...
 - user20@bestuncorp.onmicrosoft.com
- Password: Welcome24#1234
- *Optional:*
 - Add the following line to your `C:\Windows\System32\drivers\etc\hosts` file
`172.190.56.1 vhcala4hci.bestrun.corp vhcala4hci`
 - Clone the hands-on repository from <https://github.com/raepple/SAPProductSearchCopilot.git>
 - Import the file [trustedca.crt](#) into your computer's local trusted certificate store with `certmgr.msc`

Exercise 1

Launch the SAP Product Search Copilot

1.1 Sign in to [Copilot Studio](#) as
user<N>@bestruncorp.onmicrosoft.com, password Welcome24#1234



The image shows a Microsoft sign-in page. At the top left is the Microsoft logo. Below it, the text "Sign in" is displayed. A text input field contains the email address "user25@bestruncorp.onmicrosoft.com". Below the input field is a link that says "Can't access your account?". On the right side, there is a blue button labeled "Next" with a yellow mouse cursor pointing at it. At the bottom, there is a section titled "Sign-in options" with a key icon.


Microsoft

Sign in

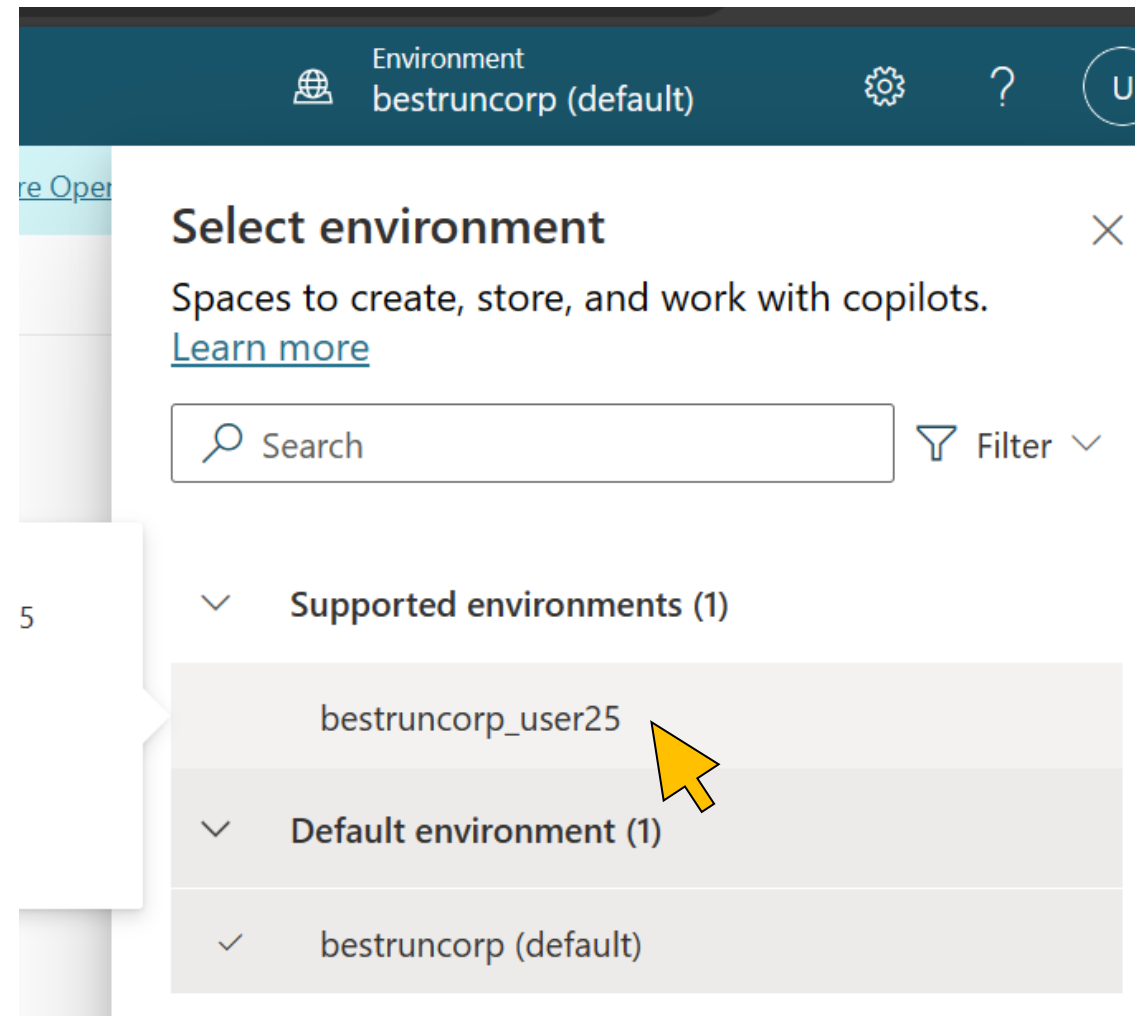
user25@bestruncorp.onmicrosoft.com

[Can't access your account?](#)

Next

 Sign-in options

1.2 Switch to your user's environment bestruncorp_user<N>



1.3 Open the Product Search Copilot

Copilot Studio

☰

Home

Copilots

Extend (preview)

Power Platform

AI integrations

Try out increased conversational coverage with real-time responses using AI

+


New copilot

←

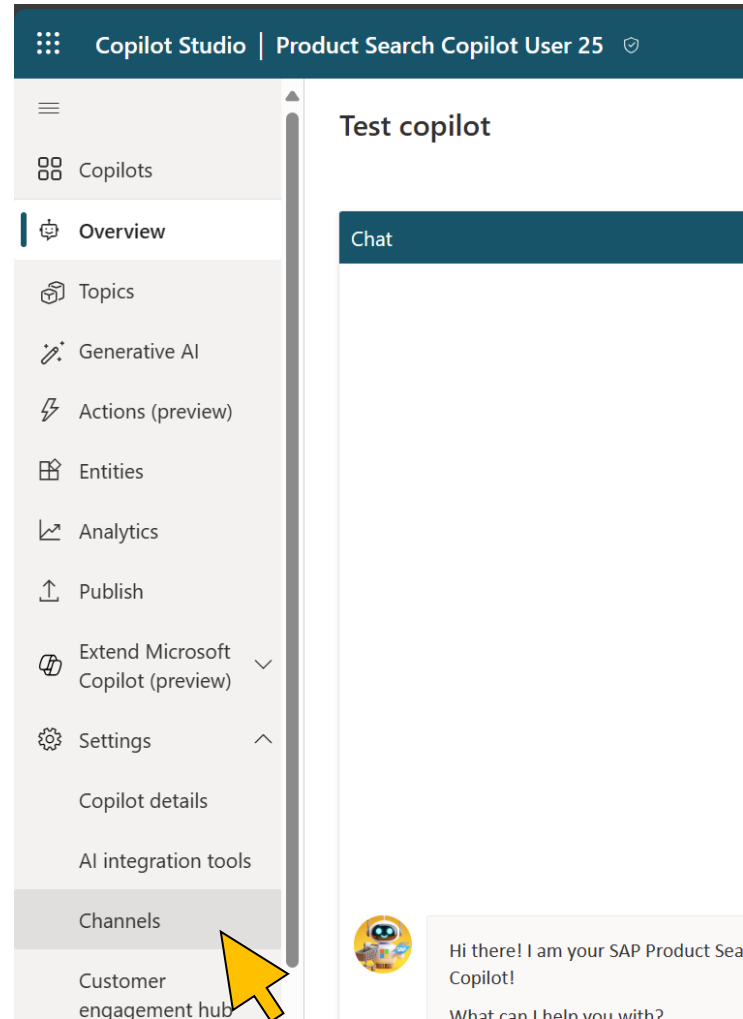
Import copilot

Copilots

Edit and manage copilots from Copilot Studio.

	Name
<div><div></div><div></div></div>	<u>SAP Product Search Copilot</u>

1.4 Select Settings → Channels



1.5: Select Demo website

Channels

Configure your copilot channels to meet your customers'



Looking for Microsoft Copilot extensions? Personalize your



Microsoft Copilot (preview)

Publish plugins to a Microsoft Copilot for a unified experience.



Demo website

Try out your copilot and invite team members to do the same.



1.6 Copy the URL

Share your website

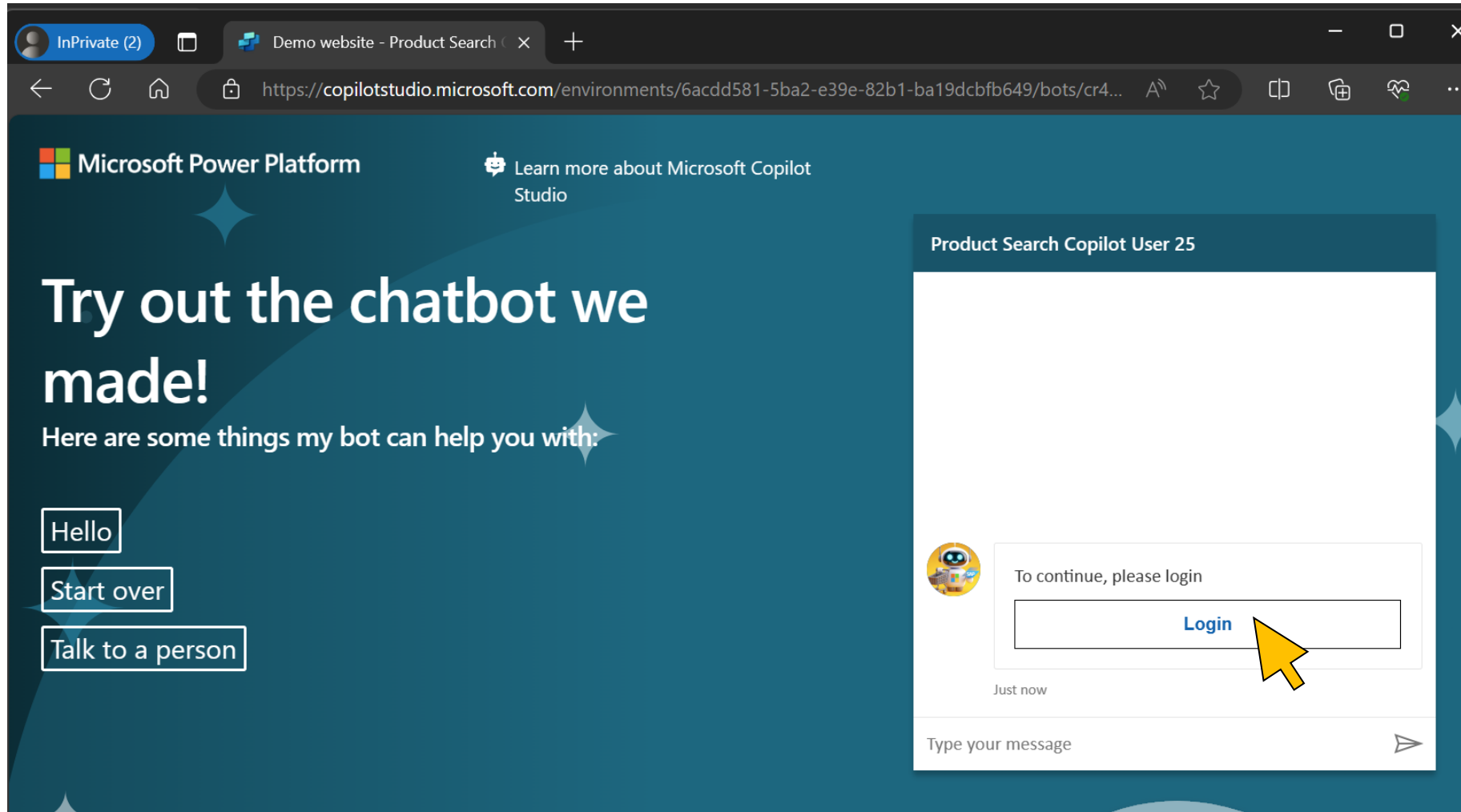
To invite team members to see your copilot in action, copy the link below.

<https://copilotstudio.microsoft.com/environments/6acdd581-5ba2-e39e-82b1-ba1>

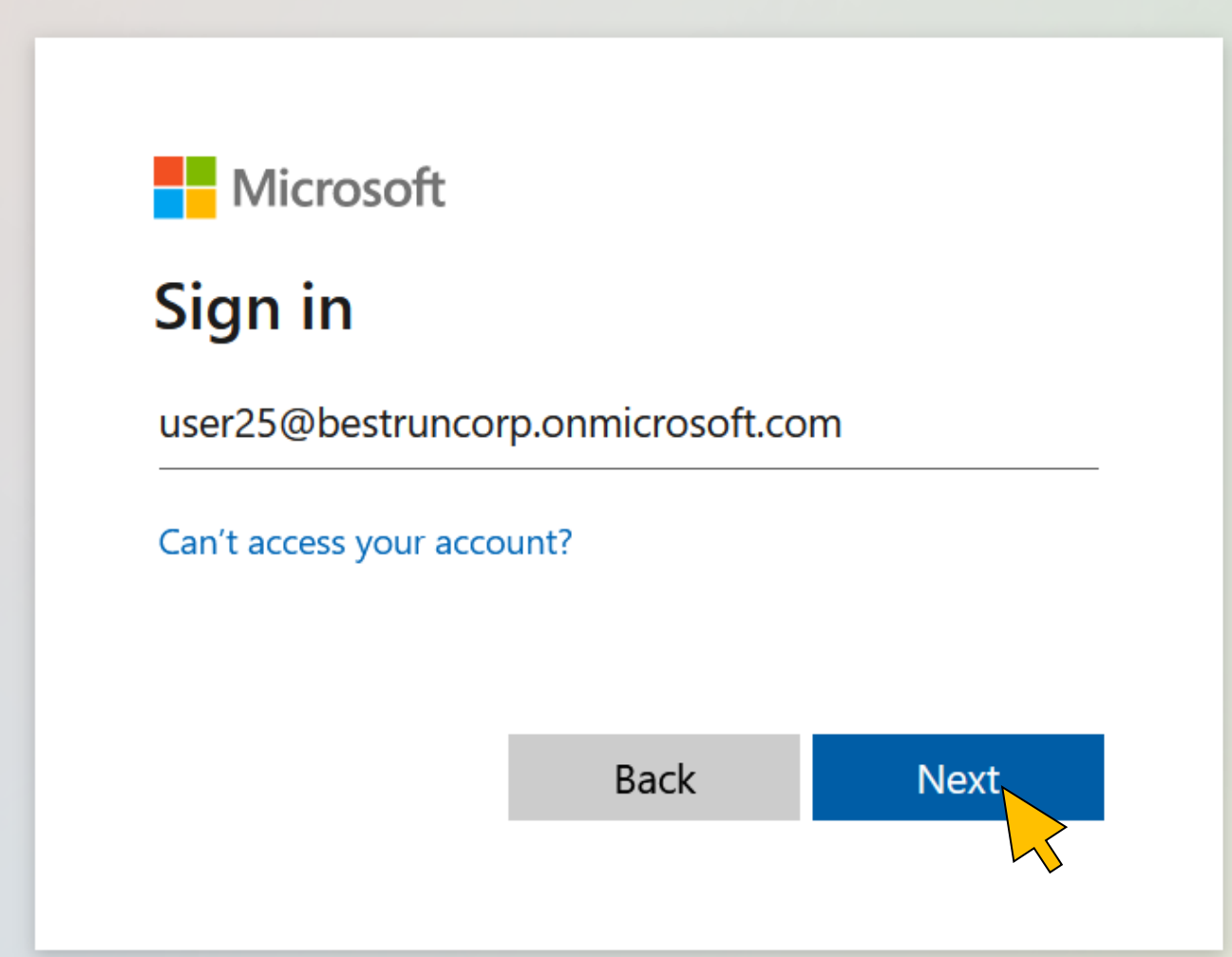
Copy



1.7 Open the demo website in a private browser window. Click Login



1.8 Login to the Copilot as user<N>@besttruncorp.onmicrosoft.com



The image shows a Microsoft sign-in page. At the top left is the Microsoft logo. Below it is the text "Sign in". Underneath is a text input field containing the email address "user25@besttruncorp.onmicrosoft.com". Below the input field is a link that says "Can't access your account?". At the bottom right are two buttons: a grey "Back" button and a blue "Next" button. A yellow mouse cursor is pointing at the "Next" button.

Microsoft

Sign in

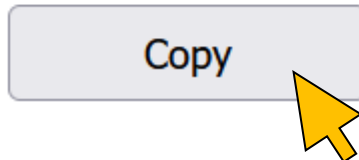
user25@besttruncorp.onmicrosoft.com

[Can't access your account?](#)

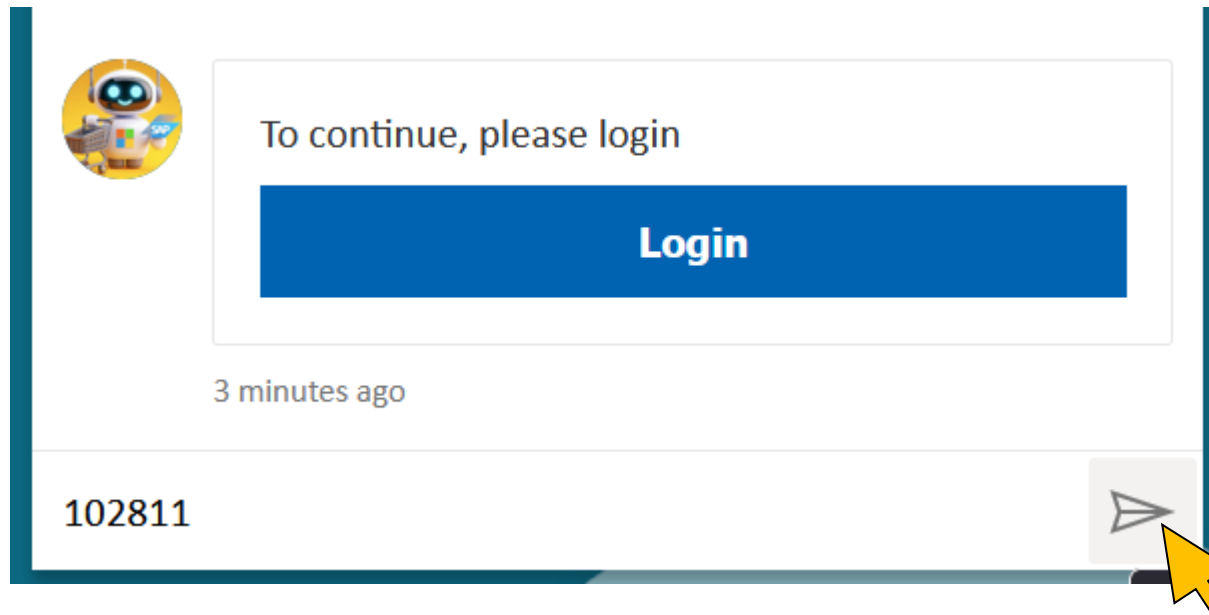
Back Next

1.9 Copy the login validation code

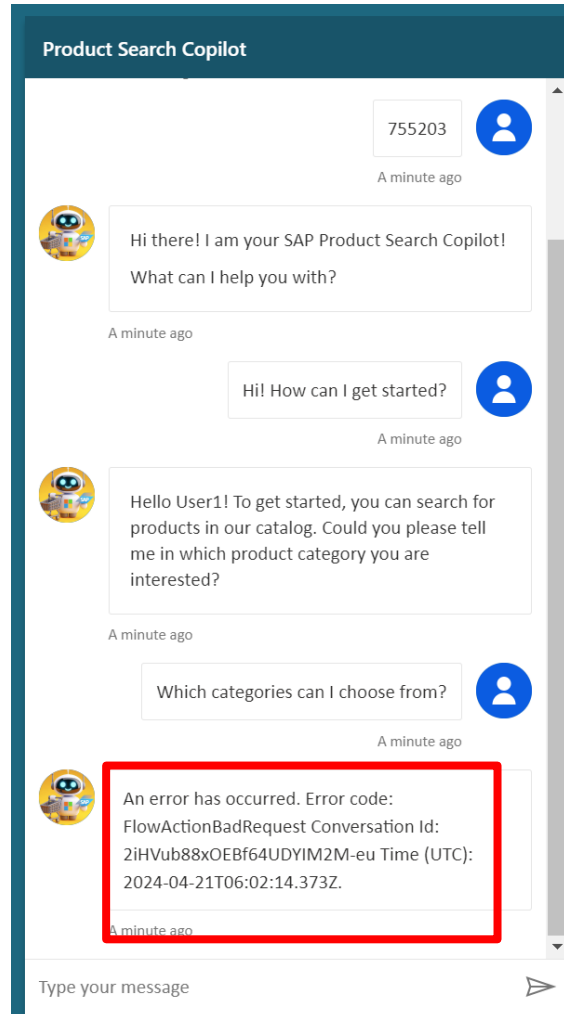
Please enter this validation code into the chat window to complete the sign-in:



1.10 Send the code



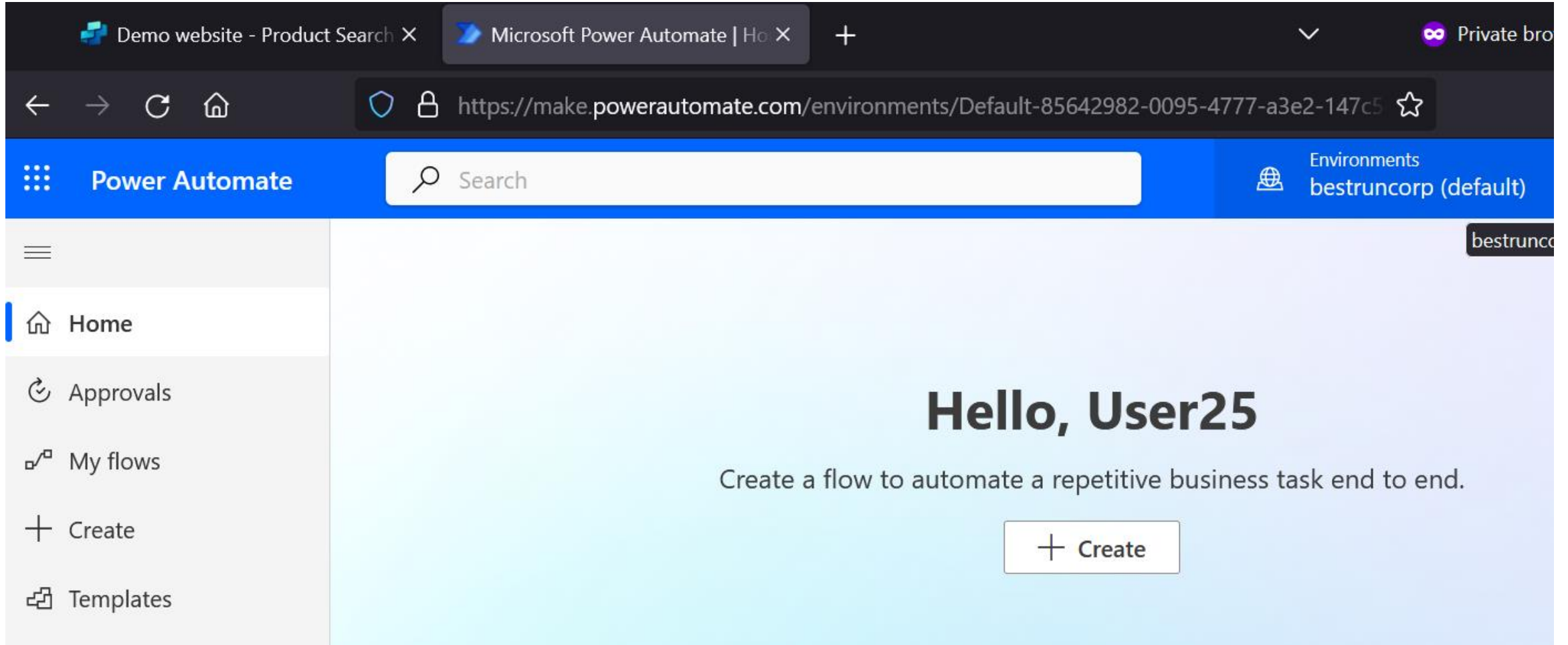
1.11 Start the conversation e.g. by typing „Hi! How do I get started?“ until you run into an error



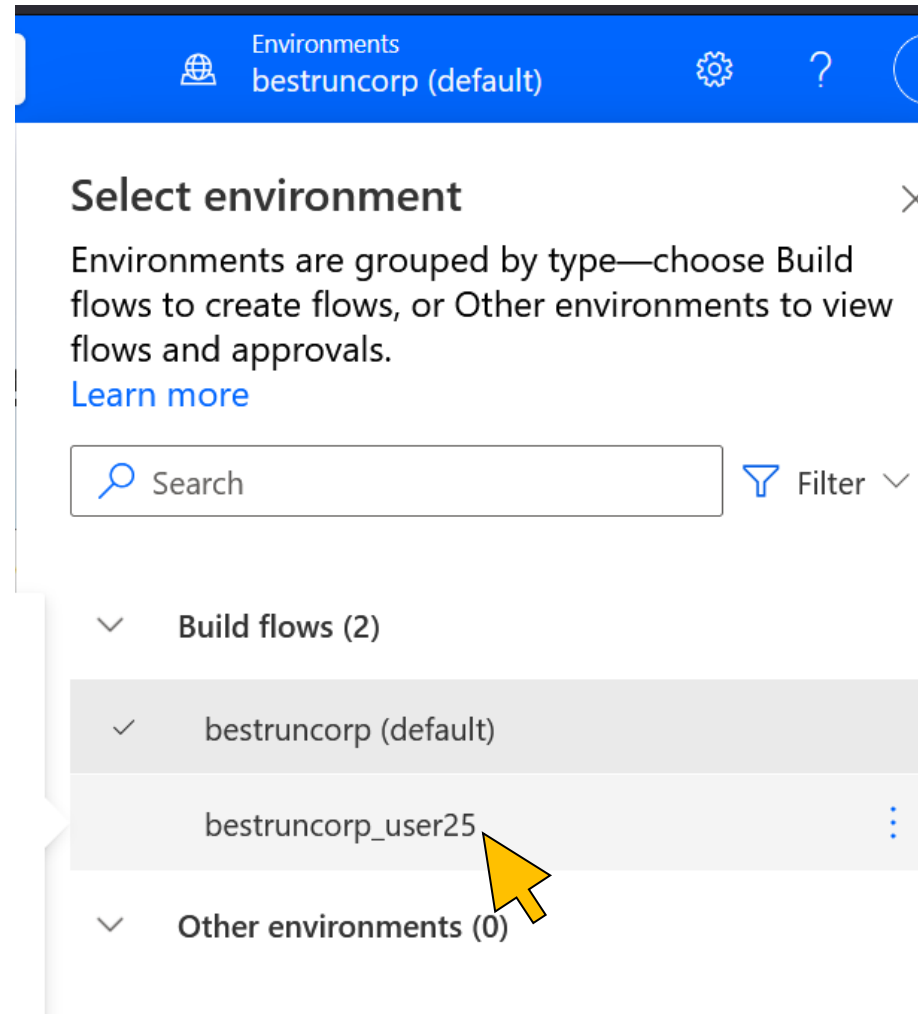
Exercise 2

Troubleshoot the SAP access in Power Automate

2.1 Open Power Automate in a new browser tab



2.2 Switch to your user's environment bestruncorp_user<N>





2.3 Select Solutions → SAP Product Search Copilot

The screenshot shows the Power Automate web interface. On the left is a navigation pane with a blue header 'Power Automate' and a search bar. Below the header are icons for Home, Create, Templates, Learn, and My flows. The 'Solutions' section is highlighted in blue. On the right, there's a header with '+ New solution', '← Import solution', and 'Open AppSource'. Below this is a 'Solutions' tab, with 'Publishers' and 'History' also visible. A table lists solutions with columns for 'Display name' and 'N'. The first row, 'SAP Product Search Copilot', is highlighted in grey and has a yellow arrow pointing to it. The other rows are 'Power Apps Checker Base', 'Power Apps Checker', and 'Contextual Help Base'.

Display name	N
SAP Product Search Copilot	Pr
Power Apps Checker Base	m
Power Apps Checker	m
Contextual Help Base	m

2.4 Select Cloud Flows → Chat with Azure OpenAI

The screenshot displays the Power Automate web interface. On the left, the 'Objects' sidebar is visible with a search bar and a list of object types: All (27), Apps (0), Cards (0), Chatbot subcompon... (15), Chatbots (1), Cloud flows (2), and Connection references (2). The 'Cloud flows' option is selected and highlighted. The main area shows the breadcrumb 'SAP Product Search Copilot > Cloud flows'. Below this, there are buttons for '+ New', 'Add existing', and 'Publish all customization'. A table lists the available cloud flows:

	Display name ↑	Name ↓
	Chat with Azure OpenAI	Chat with Azu...
	Exchange Token	Exchange Tok...

A yellow mouse cursor is pointing at the 'Chat with Azure OpenAI' link, which has a tooltip that reads 'Chat with Azure OpenAI'.

2.3 Select the last failed instance from the run history

The screenshot displays the Power Automate web interface. On the left is a navigation pane with options like Home, Create, Templates, Learn, My flows, Approvals, Solutions, Process mining, AI hub, Desktop flow activity, More, and Power Platform. The top bar includes the 'Power Automate' logo and a search bar. Below the navigation pane, the 'Flows > Chat with Azure OpenAI' section is active. It shows a 'Details' panel with flow information and a '28-day run history' table. The table has columns for Start, Duration, and Status. The most recent entry is highlighted in red, indicating a 'Failed' status, and is being pointed to by a yellow mouse cursor.

Power Automate Search

Flows > Chat with Azure OpenAI

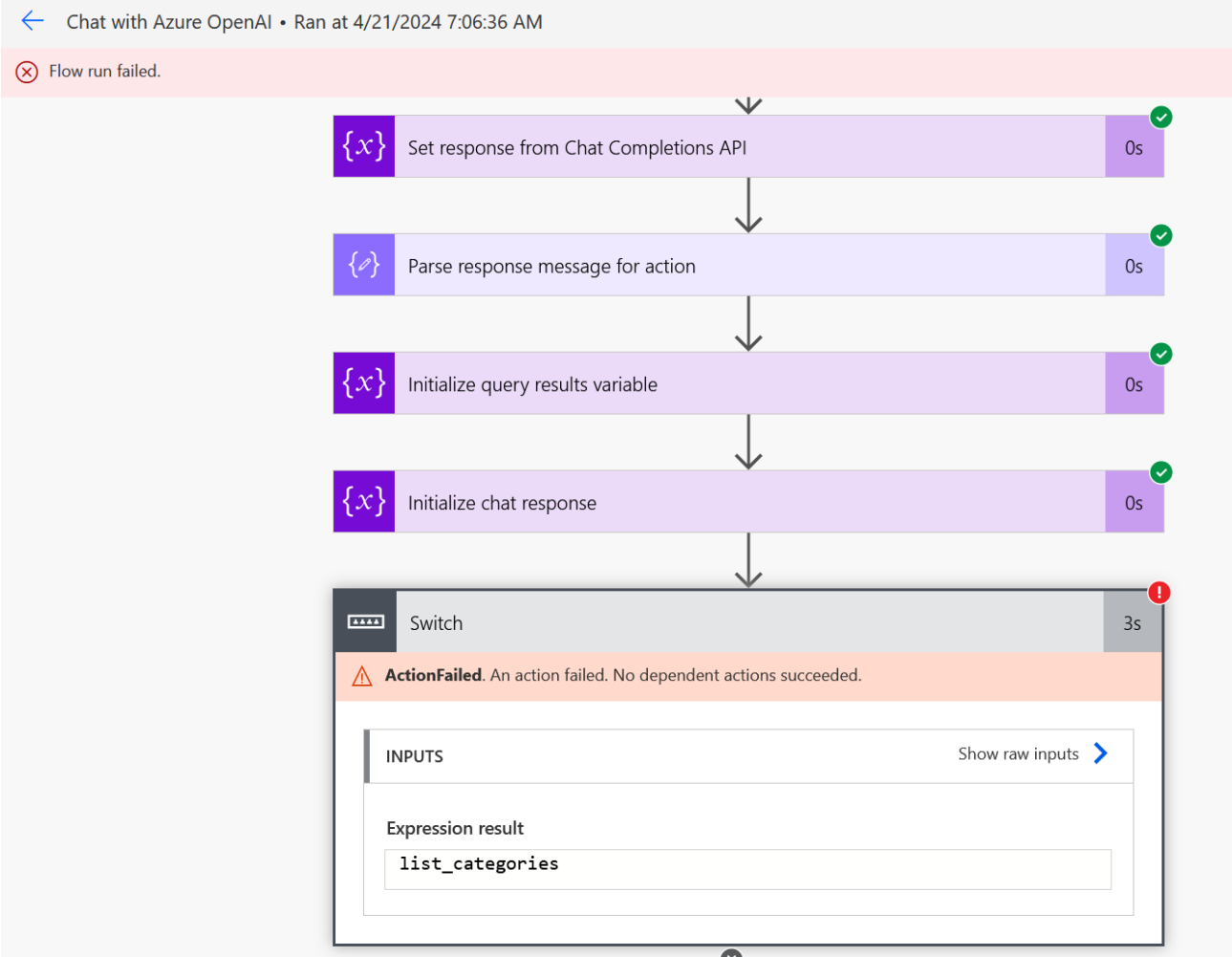
Details Edit

Flow	Chat with Azure OpenAI	Status	On
Description	Chat with Azure OpenAI for accessing the SAP product catalogue	Created	Apr 21, 07:26 AM
Primary owner	# User1	Modified	Apr 21, 07:27 AM
		Type	Instant
		Plan	The user who runs the flow

28-day run history Edit columns All runs

Start	Duration	Status
Apr 21, 08:02 AM (18 min ago)	00:00:05	Failed

2.4 Browse to the failed action in the instance trace



List categories

Equals - list_categories

🌐 Get all products the user has access to from SAP 1s

⚠ Unauthorized.

INPUTS

Show raw inputs >

Method

GET

Url of the request

/sap/opu/odata/sap/ZPRODUCTSVIEW_CDS/ZPRODUCTSVIEW?\$select=Product

Headers

Key	Value
Accept	application/json
Authorization	<fix missing token here>

OUTPUTS

Show raw outputs >

Body

```
{
  "error": {
    "code": 401,
    "source": "europe002-002.azure-apihub.net",
    "clientRequestId": "f083f45b-da1f-430f-85f9-fe716bf55aaf",
    "message": "The response is not in a JSON format.",
    "innerError": "<html><head><meta http-equiv='content-type' cc
```

2.5 Check the „innerError“ message

- `"innerError": "<html><head><meta http-equiv=\"content-type\" content=\"text/html; charset=windows-1252\"><title>Logon failed</title><style>body { background: #ffffff; text-align: center; width:100%; height:100%; overflow:hidden; }.content`

Exercise 3

Fix the login error in SAP

3.1 Click Edit

Power Automate

Search

Environments
besttruncorp_user25

Settings

Help

Home

Create

Templates

Learn

My flows

Approvals

Solutions

Chat with Azure OpenAI • Ran at 4/21/2024 7:06:36 AM

Resubmit Cancel Edit Help

Flow run failed.

GET

Url of the request

/sap/opu/odata/sap/ZPRODUCTSVIEW_CDS/ZPRODUCTSVIEW?\$select=Prodi

Headers

Key	Value
Accept	application/json
Authorization	<fix missing token here>

Run Details

Start time

Apr 21, 07:06 AM (1 h ago)

Duration

00:00:1

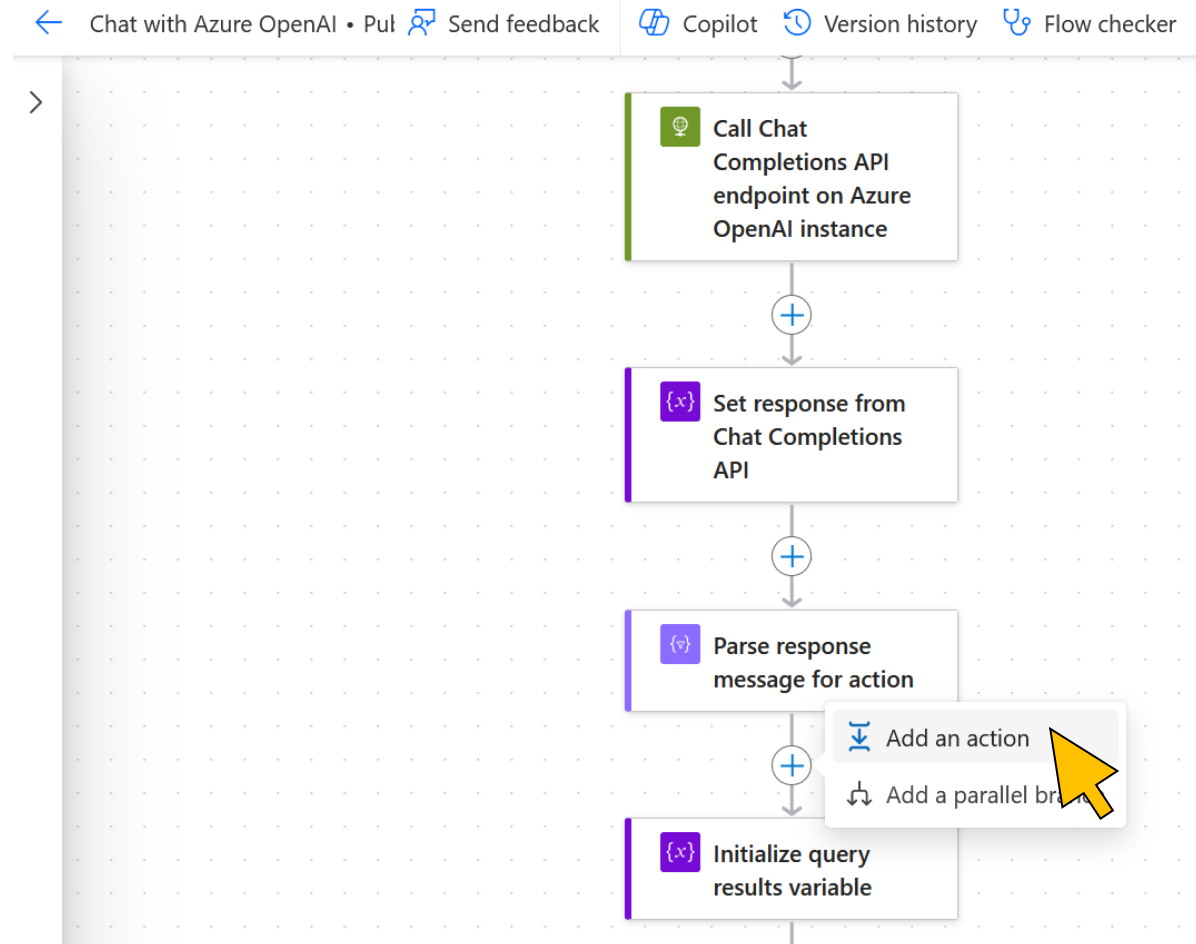
Error

Action

'Get_all_products_the_user_has_access_to_frc failed

Error Details

3.2 Scroll down and click on „+“ → „Add an action“ below the action „Parse response message for action“



3.3 Select Control → Condition


Add an action




Search


Runtime


Select a runtime


 AI Builder


In App




 Approvals




 Azure DevOps



 Control

In App



Add an action




Return to search



Control


Condition

In App





Apply to each

In App




3.4 Click on the Flash icon



 Condition 

Parameters Settings Code View About


Condition Expression ^{*}

Provide the values to compare and select the operator to use.


AND 






Choose a value

is equal to 

Choose a value





 New item 

3.5 Select Body action from the Parse response message for action

Provide the values to compare and select the operator to use.

The screenshot shows a workflow editor interface. On the left, a logic step is configured with the operator 'AND' and a 'New item' button. A 'Choose a value' dropdown menu is open, displaying a search bar and a list of options. The options are categorized into two groups: 'Variables' (indicated by a purple icon) and 'Parse response message for action' (indicated by a purple icon). The 'Body action' option is highlighted in light blue, and a yellow mouse cursor is pointing at it. Below 'Body action' is the option 'Body productID'. The 'messages' and 'System prompt' options are also visible under the 'Variables' category.

AND ▾

Choose a value

+ New item ▾

Search

{x} Variables

messages

System prompt

{v} Parse response message for action

Body

Body action

Body productID

3.6 Select „is not equal to“

Parameters

Settings

Code View

About

Condition Expression *

Provide the values to compare and select the operator to use.

The screenshot shows a workflow editor interface. At the top, there are four tabs: "Parameters" (selected with a blue underline), "Settings", "Code View", and "About". Below the tabs, the text "Condition Expression *" is displayed, followed by the instruction "Provide the values to compare and select the operator to use." The main area shows a configuration for a condition expression. On the left, there is a box labeled "AND" with a dropdown arrow. Below it, there are two inputs connected by a blue line. The first input is a box containing a curly brace icon and the text "Body acti..." with a close button (x). The second input is a box containing a plus icon and the text "New item" with a dropdown arrow. To the right of these inputs is a dropdown menu for selecting an operator. The menu is open, showing a list of operators: "is not equal to", "contains", "does not cont...", "is equal to", "is not equal to", and "is greater than". A yellow mouse cursor is pointing at the "is not equal to" option, which is highlighted. To the right of the operator dropdown is a text box labeled "Choose a valu".

AND ▾

Body acti... ×

+ New item ▾

is not equal to ▾

Choose a valu

contains

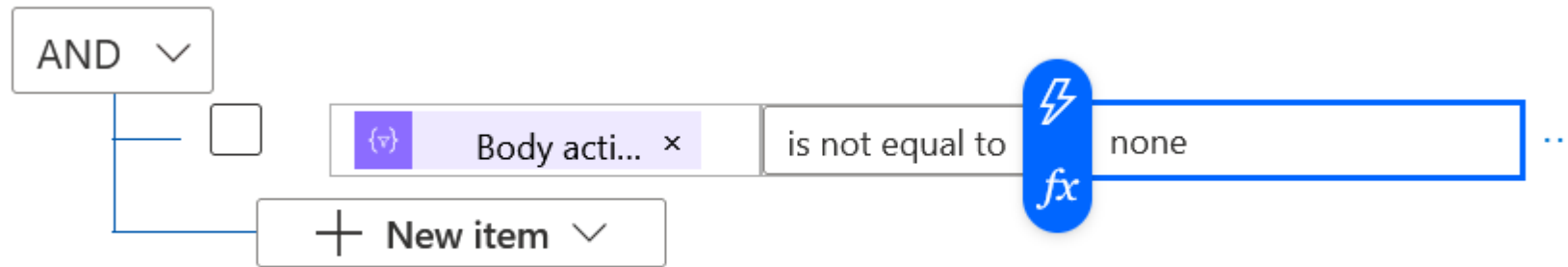
does not cont...

is equal to

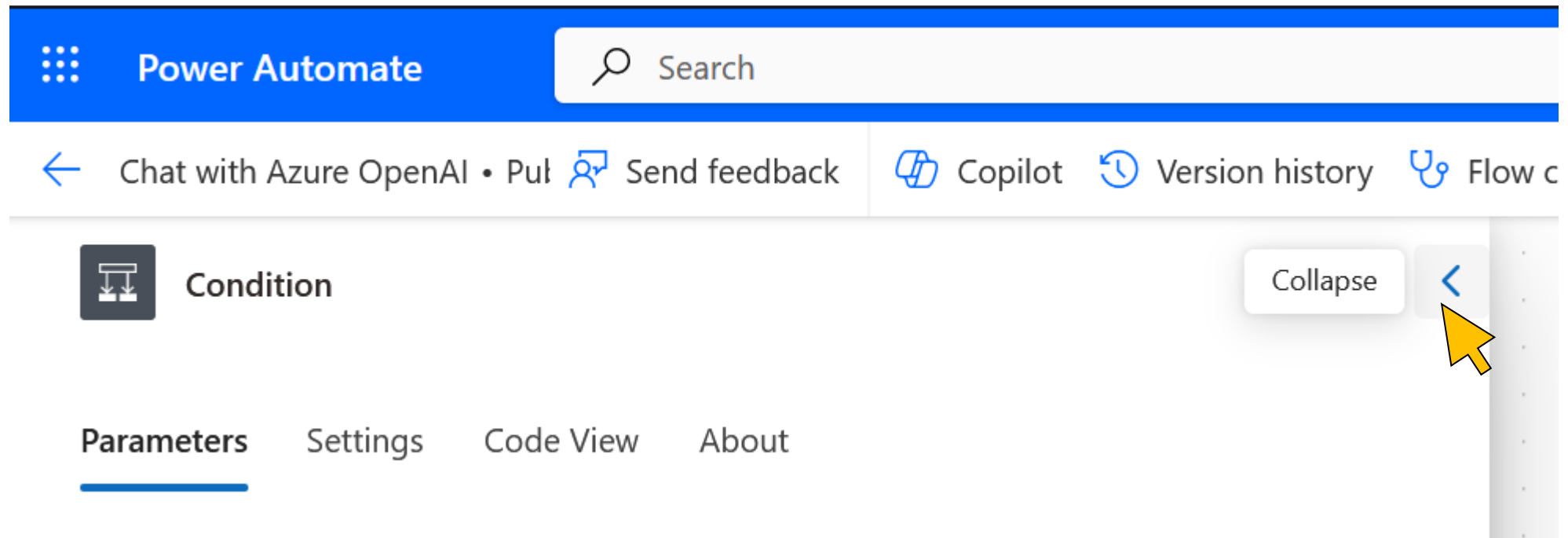
is not equal to

is greater than

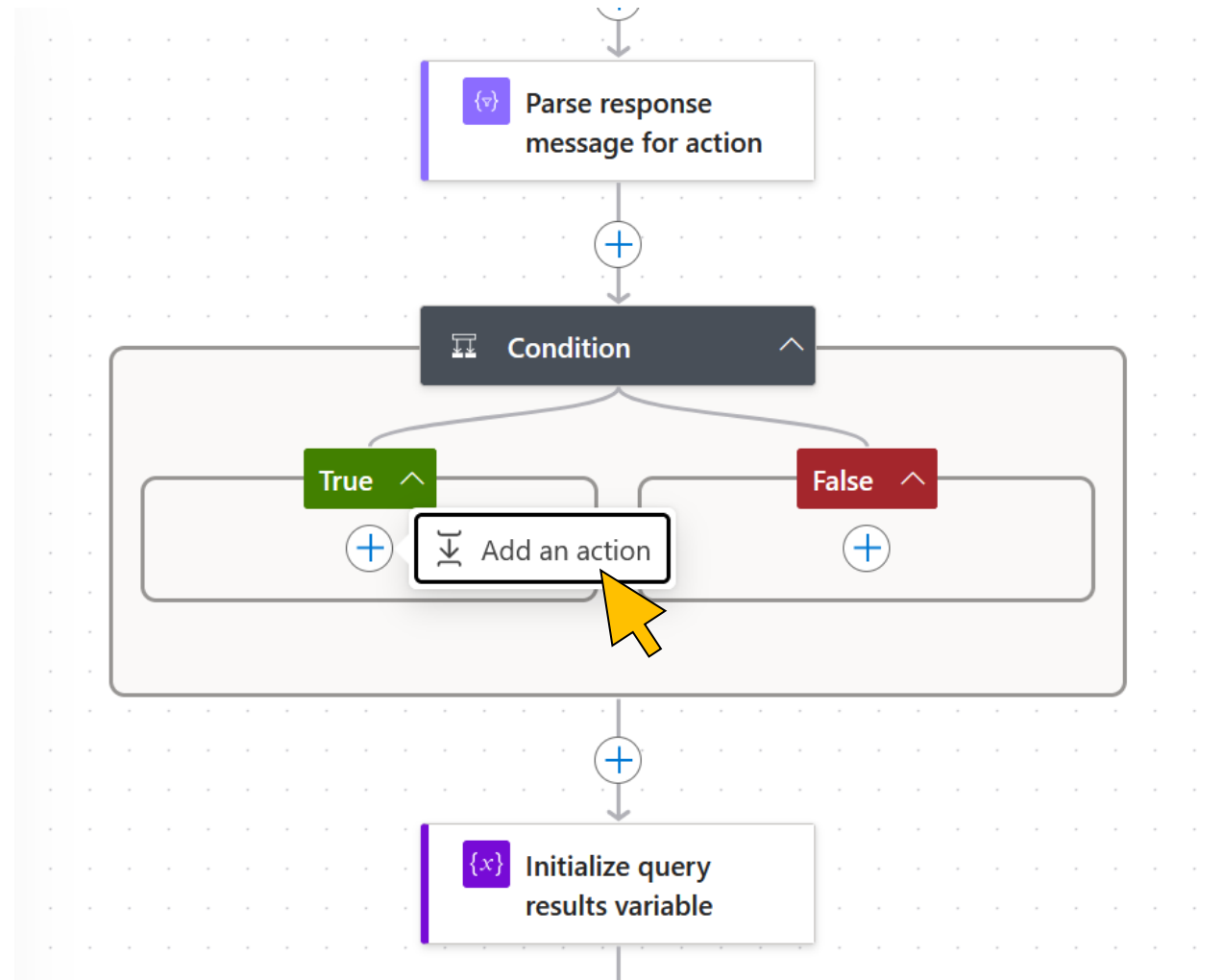
3.7 Enter *none* in the last field



3.8 Click Collapse



3.9 Click on „+“ → „Add an action“ in the *True* path




3.10 Enter „Run a child“ in the search bar and select „Run a Child Flow“ from the list

Add an action ×

Run a child ×


Runtime Select a runtime ▼ Action Type Actions ▼

☒ Group by Connector


 Excel Online (Business) See more

Run script See more


Run script from SharePoint library See more

 Desktop flows See more




Run a flow built with Power Automate for desktop See more

 Flows In App See more

Run a Child Flow In App See more



3.11 Select „Exchange Token“ from the list in Child Flow

 Run a Child Flow  


Parameters

Settings

Code View

About

Child Flow *

Select a flow 

Exchange Token

Enter custom value

3.12 Click on the Flash icon in the EntraIDToken field

The screenshot shows the Power Automate interface. At the top is a blue header with the 'Power Automate' logo and a search bar. Below the header is a navigation bar with links: 'Chat with Azure OpenAI • Pul', 'Send feedback', 'Copilot', 'Version history', and 'Flow che'. The main content area is titled 'Run a Child Flow' and has tabs for 'Parameters', 'Settings', 'Code View', and 'About'. The 'Parameters' tab is active, showing a 'Child Flow *' section with an 'Exchange Token' field. Below this is the 'EntraIDToken *' field, which contains the placeholder text 'Please enter your input'. A blue button with a white lightning bolt icon and the letters 'fx' is positioned to the right of the 'EntraIDToken' field. A yellow mouse cursor is pointing at this button. A tooltip above the button reads: 'Enter the data from previous step. You can also add dat'.

3.13 Select the EntraIDToken data element from the Run a flow from Copilot Trigger

Run a Child Flow

Parameters Settings Code View About

Child Flow *
Exchange Token


EntraIDToken *
Please enter your input
'EntraIDToken' is required.

Search

- Can Chat Completions API endpoint on Azure OpenAI...
- For each previous chat message
- Current item
 - Parse previous chat history
- Body role
- Body content
 - Run a flow from Copilot
- MostRecentUserMessage
Please enter your input
- Username
Please enter your input
- FullUserDialogue
Please enter your input
- EntraIDToken**
Please enter your input


3.14 Rename the action to „Exchange Entra ID Access Token for SAP Access Token“ and click Collapse

← Chat with Azure OpenAI • Published



Exchange EntraID Access Token for SAP Access Token

Collapse




Parameters Settings Code View About

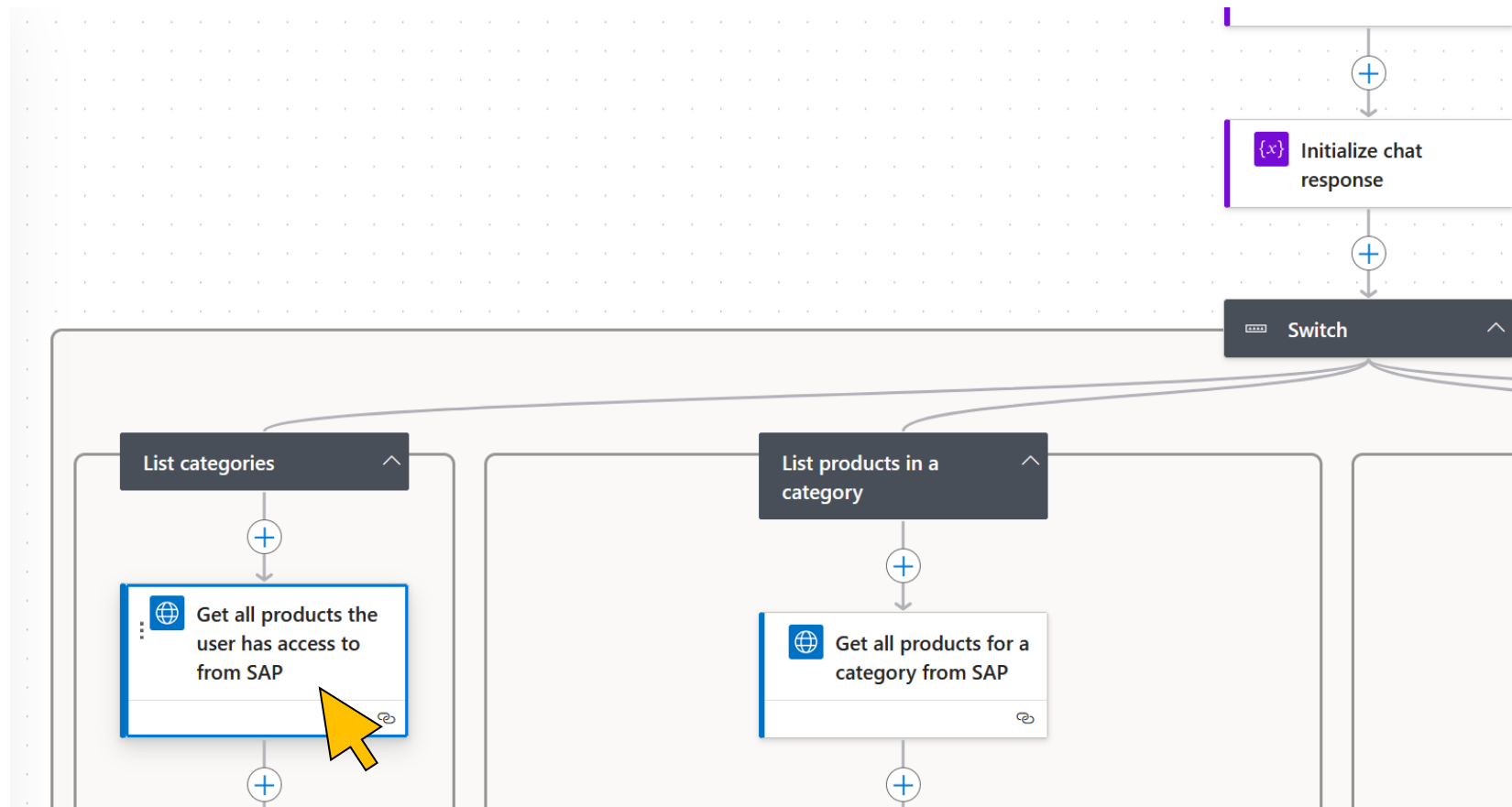
Child Flow *

Exchange Token


EntraIDToken *

 EntraIDT... ×

3.15 Scroll down and select the SAP data access action „Get all products the user has access to from SAP“ from the switch „List categories“ case



3.16 Delete the placeholder text „<fix missing token here>” in the Authorization Headers field. Type in „Bearer<Space>” and click on the Flash icon

 Get all products the user has access to from SAP

Parameters

Settings

Code View

Testing

About

Method *

GET

Url Of The Request *

SAPODat... x ?\$select=ProductCategory

Advanced parameters

Showing 1 of 2

Show all

Clear all

Headers

Accept	application/json
Authorization	Bearer
Enter key	Enter value

Enter the data from previous step. You can also add data by ty

Flash icon

Connected to HTTP With Microsoft Entra ID. [Change connection reference](#)

3.17 Scroll down and select the SAPToken data element from the Exchange EntraID Access Token for SAP Access Token action

Get all products the user has access to from SAP

Parameters Settings Code View Testing About

Method *
GET

Url Of The Request *
SAPODat... * ?\$select=ProductCategory

Advanced parameters
Showing 1 of 2 Show all

Headers

Accept	application/json
Authorization	Enter value
Enter key	Enter value


Connected to HTTP With Microsoft Entra ID. [Change connection reference](#)

Search

- Variables
- chatResponse
- response
- System prompt
- Exchange EntraID Access Token for SAP Access Token
- SAPToken**
- Base...

3.18 Click Collapse

← Chat with Azure OpenAI • Published

 Get all products the user has access to from SAP

Collapse

Parameters

Settings

Code View

Testing

About

Method *

GET

Url Of The Request *

SAPODat...

 × ?\$select=ProductCategory


Advanced parameters

Showing 1 of 2

Show all

Clear all

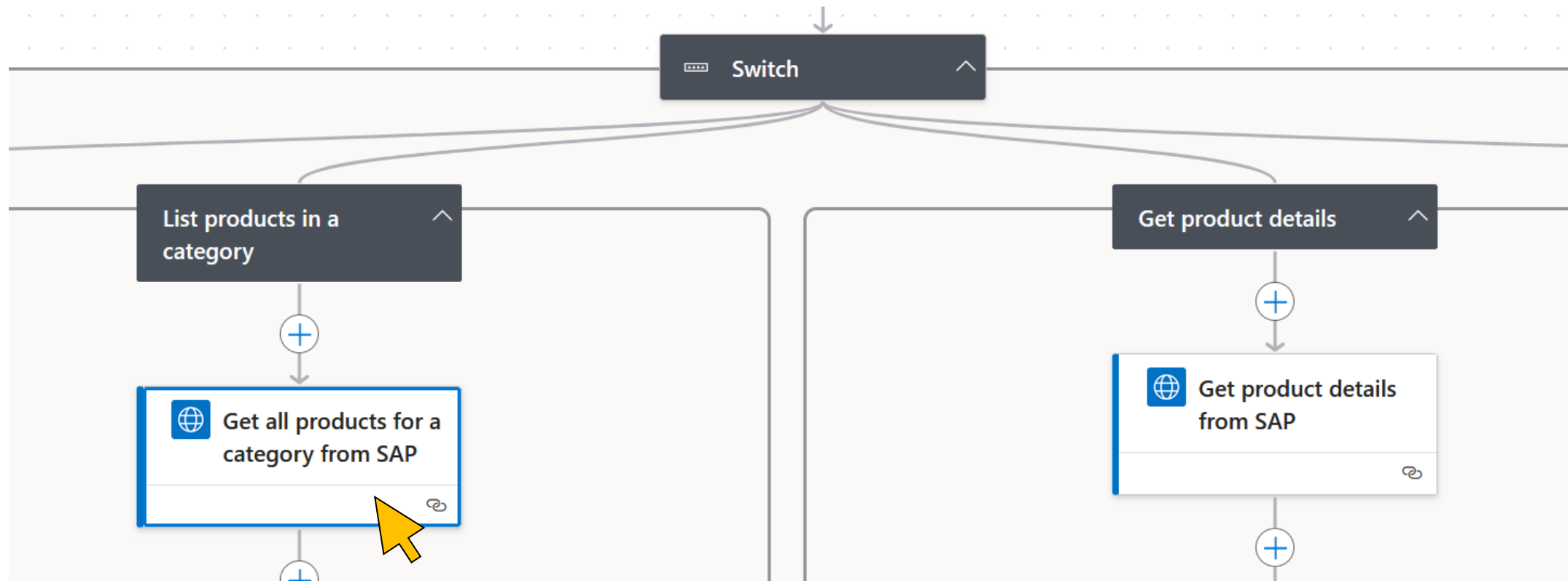
Headers

Accept	application/ <u>json</u>	×	⌵
Authorization	<div><div>Bearer</div><div> SAPToken ×</div></div>	×	⌵
Enter key	Enter value		

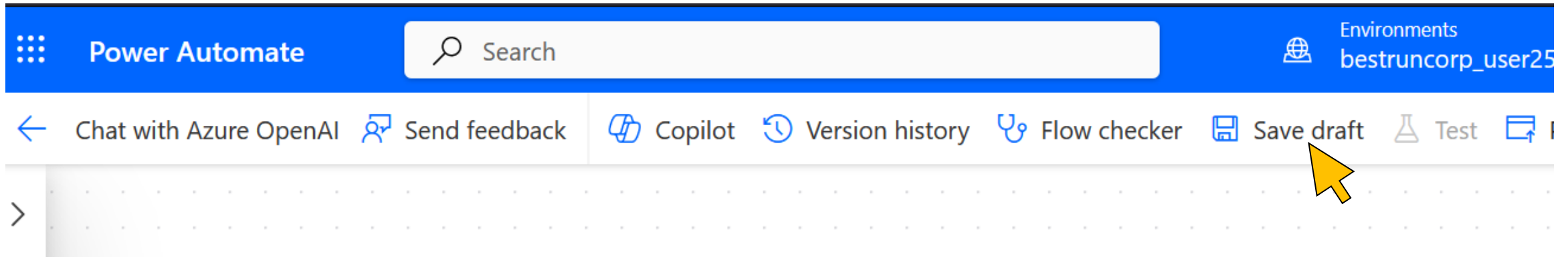
⌵

Connected to HTTP With Microsoft Entra ID. [Change connection reference](#)

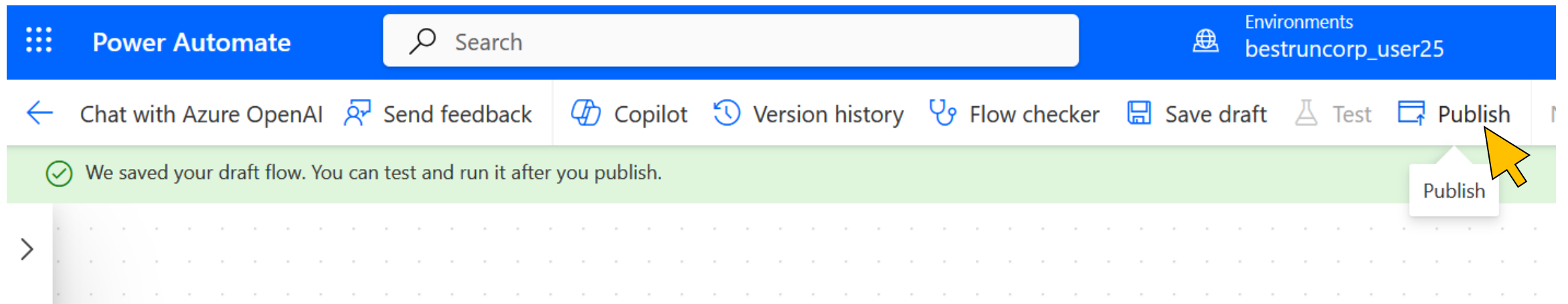
3.19 Repeat the steps 3.15 to 3.18 for the two remaining actions „Get all products for a category from SAP“ and „Get product details from SAP“



3.20 Click Save draft



3.21 Wait for the save operation to complete, then click Publish



3.22 In Copilot Studio, go to Topics → System, and select the „Fallback“ topic

The screenshot shows the Copilot Studio interface for 'SAP Product Search Copilot'. The left sidebar contains a navigation menu with the following items: Copilots, Overview, Topics (selected), Generative AI, Actions (preview), Entities, Analytics, Publish, Extend Microsoft Copilot (preview), Settings, Copilot details, AI integration tools, and Channels. The main content area is titled 'Topics' and includes a 'Create' button. Below the title, there are tabs for 'All', 'Topics (0)', and 'System (13)'. The 'System' tab is active, displaying a list of system topics. A tooltip labeled 'Fallback' is shown over the 'Fallback' topic in the list. A yellow arrow points to the 'Fallback' topic.

Name	Trigger	Description
Confirmed Failure	On Redirect	System Intent Cc
Confirmed Success	On Redirect	System Intent Cc
Conversation Start	On Conversation Start	This system topic
End of Conversation	On Redirect	System Intent De
Escalate	On Talk to Agent	System Intent Es
<u>Fallback</u>	On Unknown Intent	This system topic
Go to	On Recognized Intent	System Intent Gc

3.23 Scroll down to the Action where the Chat with Azure OpenAI flow is called. Click „Select Variable“ on the EntralDToken input field

The screenshot displays the Copilot Studio interface for 'SAP Product Search Copilot'. The left sidebar shows the 'Topics' section selected. The main workspace shows a flow diagram with a 'Set variable' action and a 'Chat with Azure OpenAI' action. The 'Set variable' action is configured with 'Global.FullUserChat' as the variable and a function as the value. The 'Chat with Azure OpenAI' action is expanded, showing its inputs. The 'EntralDToken (String)' input field is highlighted, and a 'Select variable' dialog is open, showing a list of variables. A yellow arrow points to the 'Select variable' button in the dialog.

Copilot Studio | SAP Product Search Copilot

Topics > Fallback

Comments Topic checker Test cop

Edit with Copilot Variables

Set variable

(x) Global.FullUserChat string

To value

fx

Action

Power Automate inputs (4)

- (x) MostRecentUserMessage (...) =
- (x) LastMessage.Text string
- (x) Username (String) =
- (x) User.DisplayName string
- (x) FullUserDialogue (String) =
- (x) Global.FullUserChat string
- (x) EntralDToken (String) =
- <select User.AccessToken here>

Chat with Azure OpenAI

View flow details

3.24 Select the System tab and select User.AccessToken from the list

Topics > Fallback

Comments Topic checker Test copilot

Edit with Copilot Variables Analytics

Action

Power Automate inputs (4)

- * (x) MostRecentUserMessage (...) =
(x) LastMessage.Text string >
- * (x) Username (String) =
(x) User.DisplayName string >
- * (x) FullUserDialogue (String) =
(x) Global.FullUserChat string >
- * (x) EntraIDToken (String) =
<select User.AccessToken here> >

Chat with Azure OpenAI
[View flow details](#)

Outputs (2)

- (x) generatedanswerf... string =
(x) OAIGeneratedAns... string >
- (x) originalunrecogni... string =
(x) OriginalUnrecogni... string >

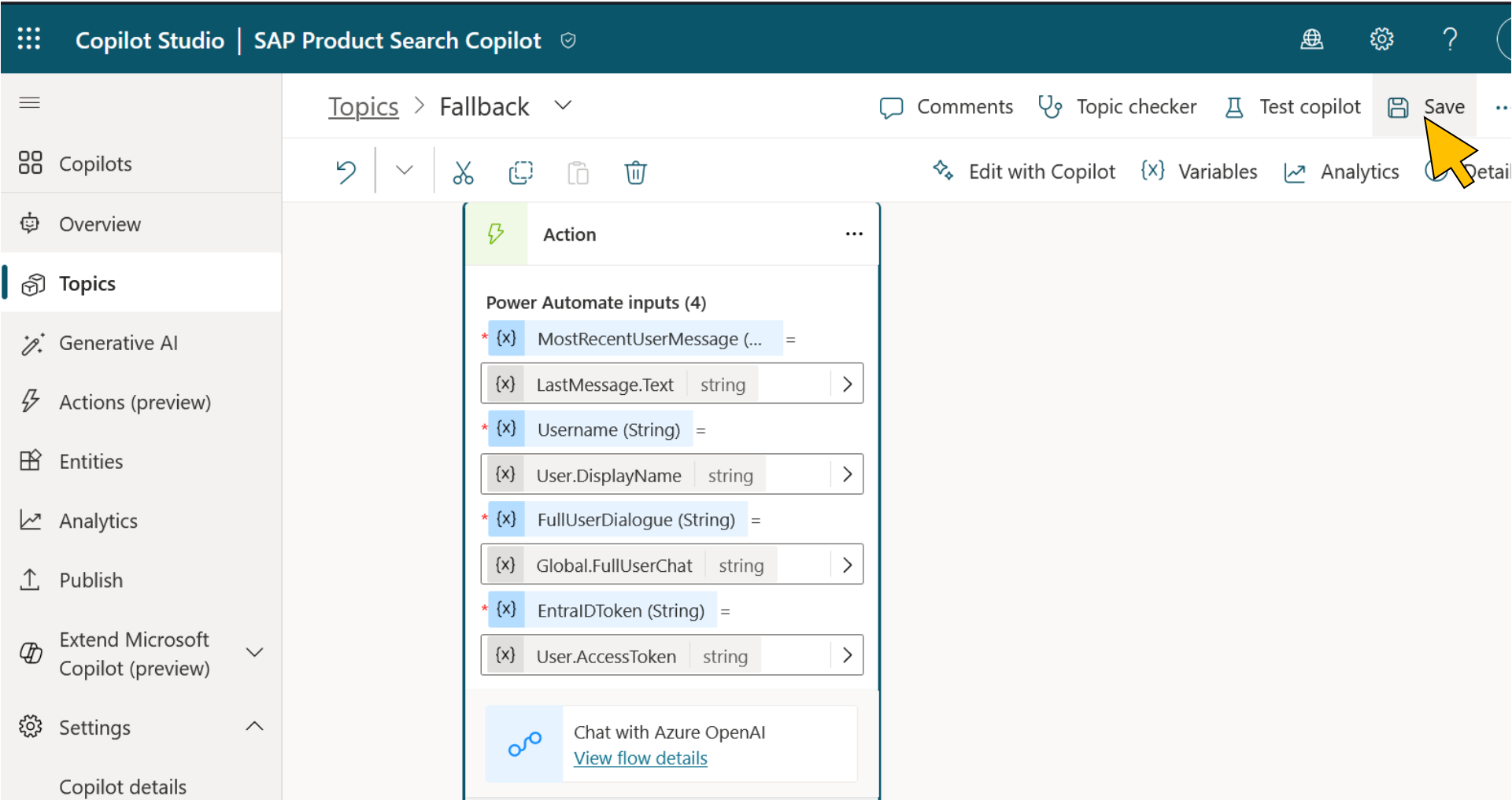
Select a variable

Custom **System** Environment Formula

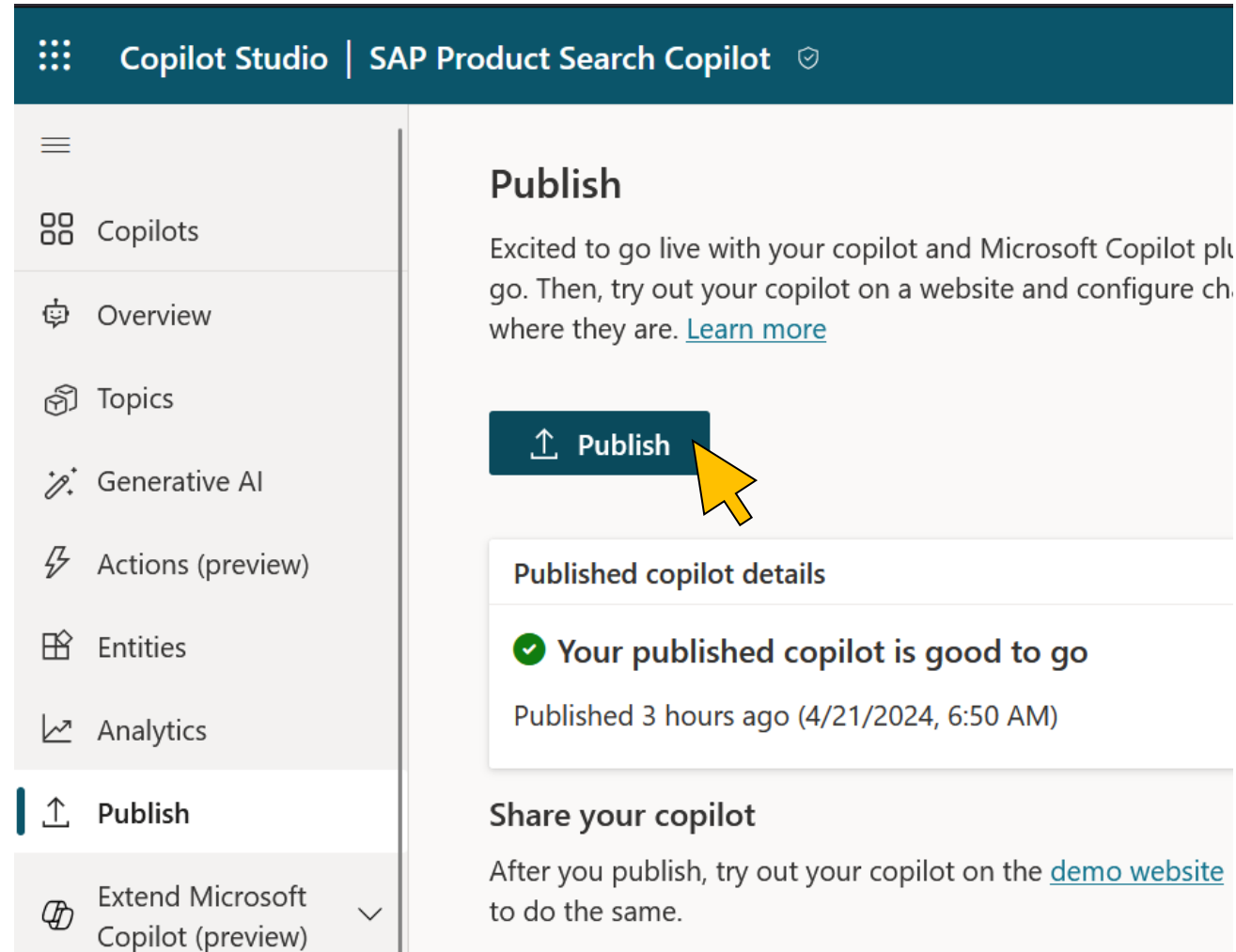
Search variables All

- (System.FallbackCount)
number
- LastMessage.Id
(System.LastMessage.Id)
string
- LastMessage.Text
(System.LastMessage.Text)
string
- Recognizer.TriggeringMessage.Id
(System.Recognizer.TriggeringMessage.Id)
string
- Recognizer.TriggeringMessage.Text
(System.Recognizer.TriggeringMessage.Text)
string
- User.AccessToken**
(System.User.AccessToken)
string [View details](#)

3.25 Click Save



3.26 Go to Publish and click Publish



The screenshot shows the Copilot Studio interface for the 'SAP Product Search Copilot'. The left sidebar contains a menu with the following items: Copilots, Overview, Topics, Generative AI, Actions (preview), Entities, Analytics, Publish (highlighted with a blue bar), and Extend Microsoft Copilot (preview). The main content area is titled 'Publish' and contains the following text: 'Excited to go live with your copilot and Microsoft Copilot plug-ins? Then, try out your copilot on a website and configure where they are. [Learn more](#)'. Below this text is a dark blue 'Publish' button with an upward arrow icon, which is being pointed to by a yellow mouse cursor. Underneath the button is a section titled 'Published copilot details' which shows a green checkmark icon and the text 'Your published copilot is good to go', followed by 'Published 3 hours ago (4/21/2024, 6:50 AM)'. At the bottom of the main content area is a section titled 'Share your copilot' with the text 'After you publish, try out your copilot on the [demo website](#) to do the same.'

Copilot Studio | SAP Product Search Copilot

- Copilots
- Overview
- Topics
- Generative AI
- Actions (preview)
- Entities
- Analytics
- Publish**
- Extend Microsoft Copilot (preview)

Publish

Excited to go live with your copilot and Microsoft Copilot plug-ins? Then, try out your copilot on a website and configure where they are. [Learn more](#)

Publish

Published copilot details

✓ **Your published copilot is good to go**

Published 3 hours ago (4/21/2024, 6:50 AM)

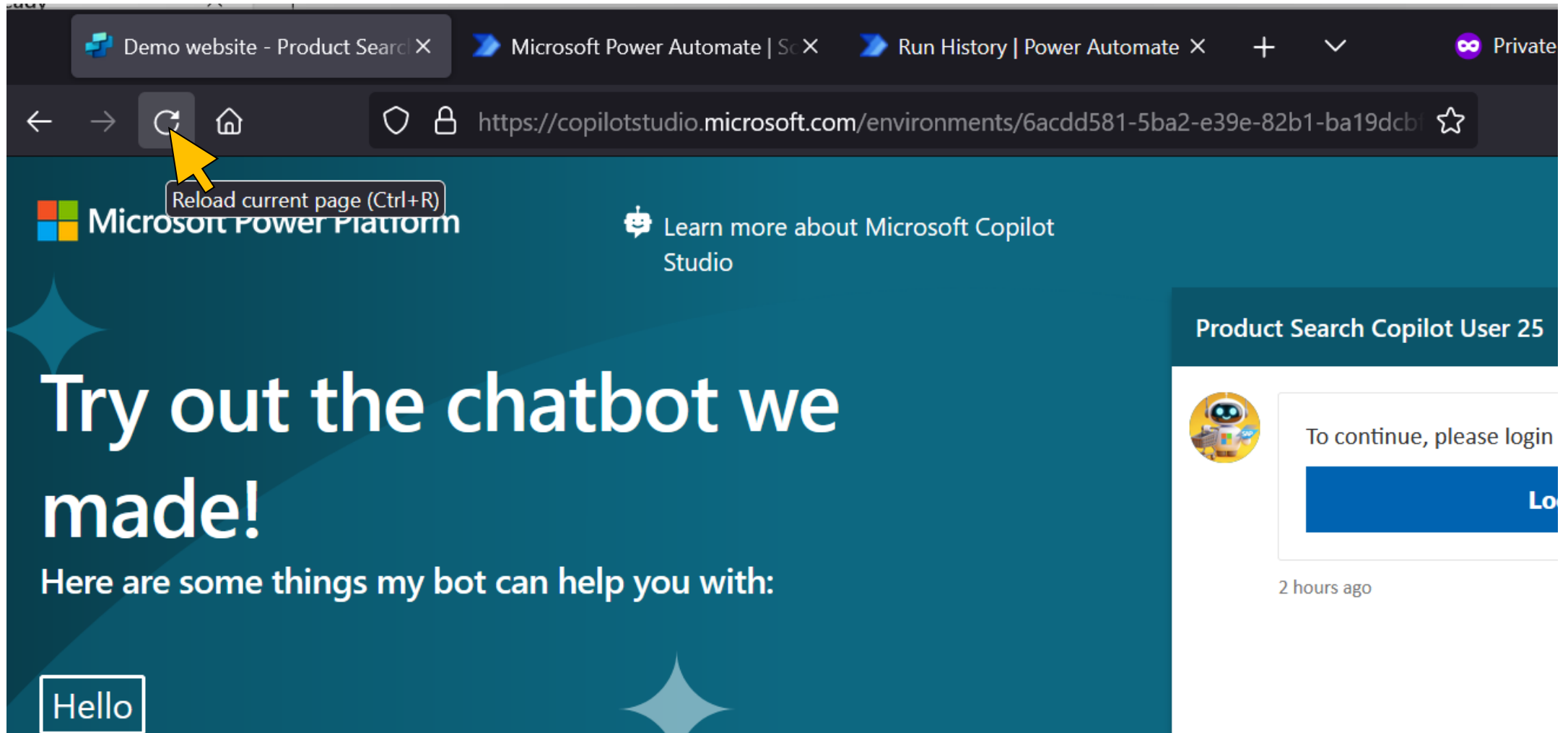
Share your copilot

After you publish, try out your copilot on the [demo website](#) to do the same.

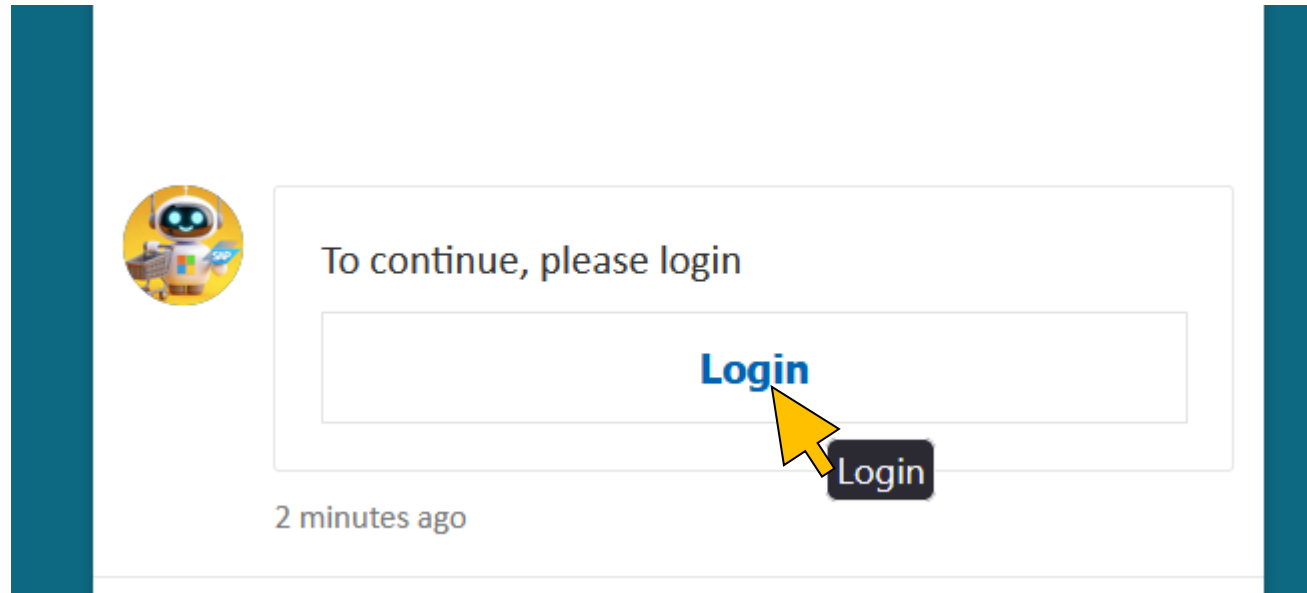
Exercise 4

Test SAP data access with the fixed flow

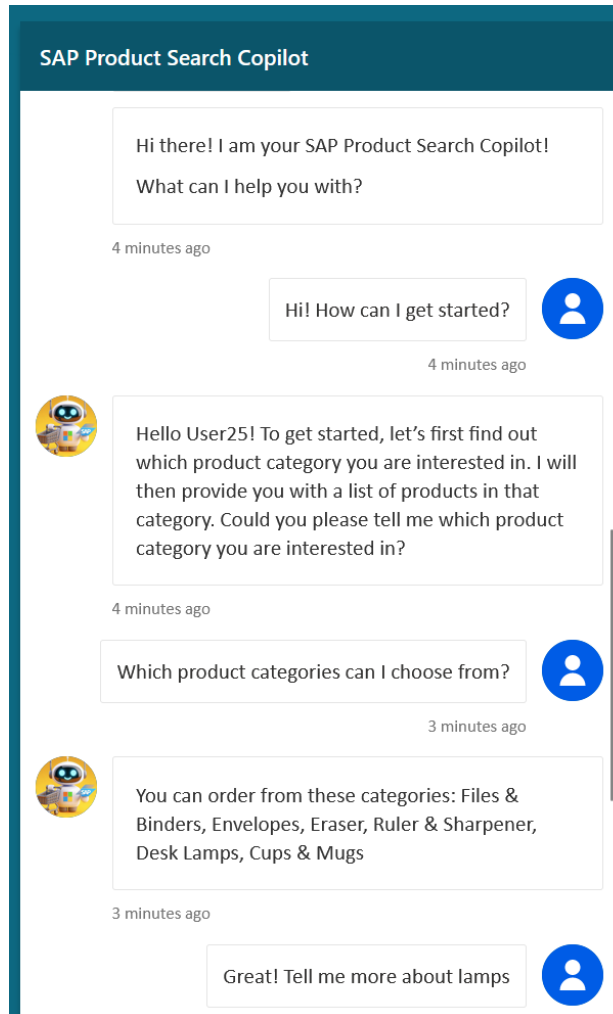
4.1 Reload the demo website



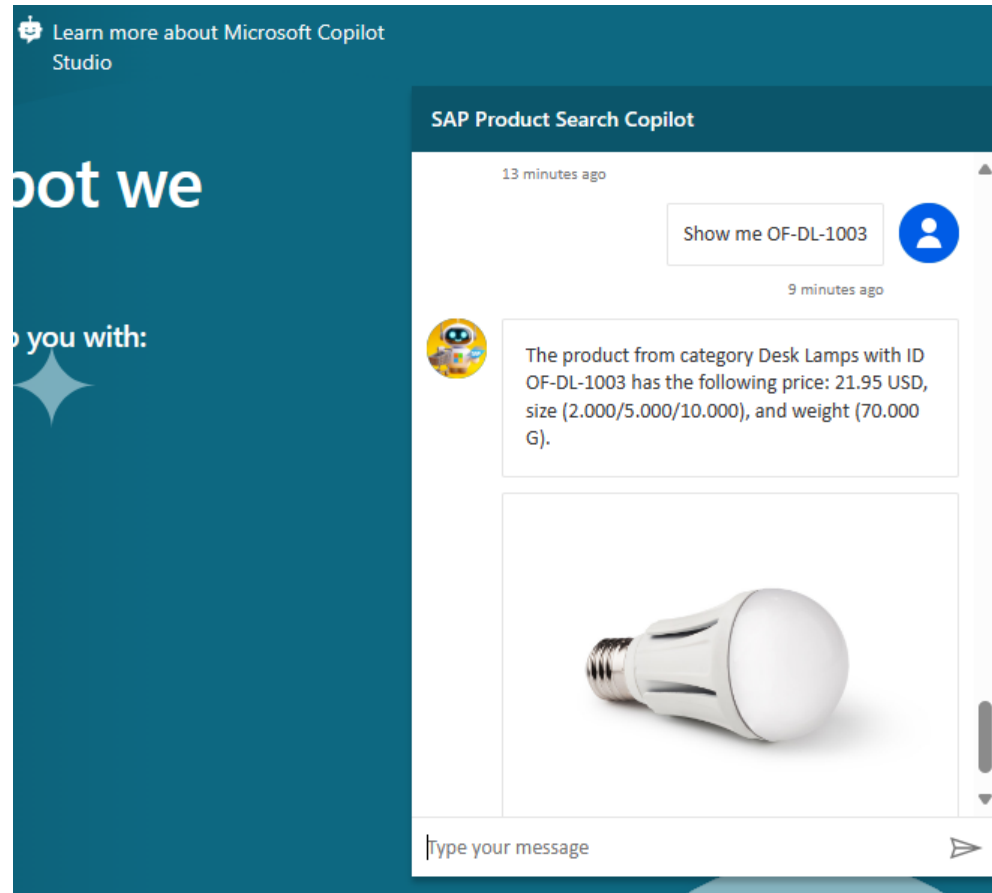
4.2 You may need to re-login to the copilot



4.3 Start the conversation



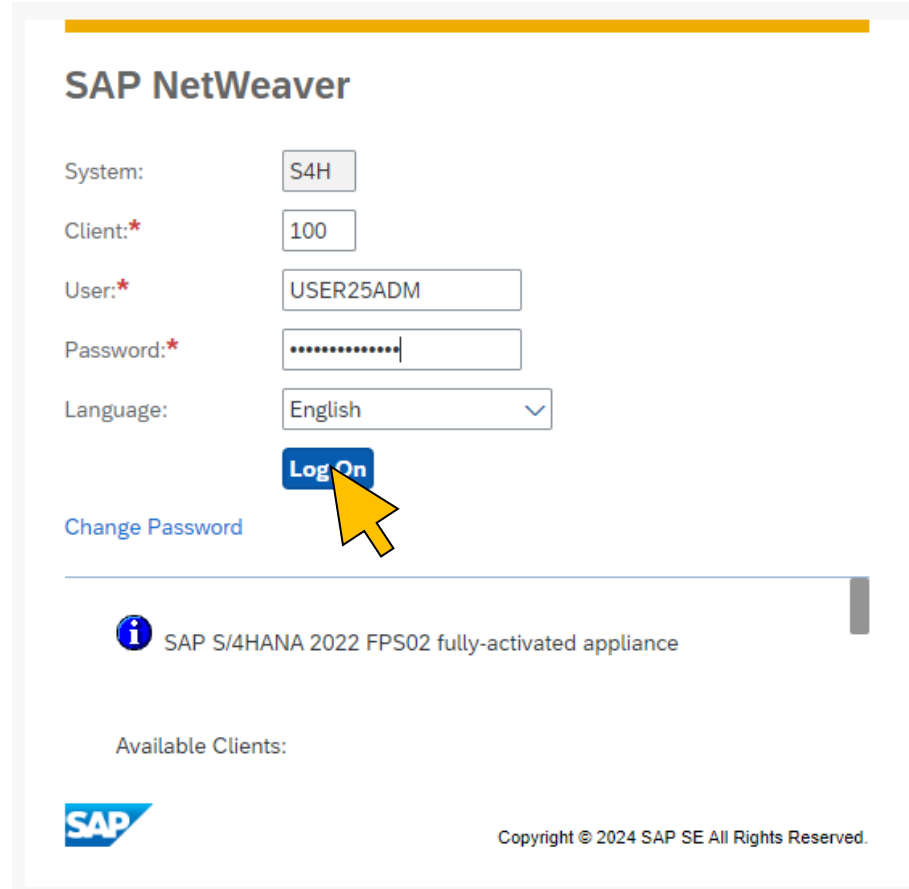
4.4 Continue until you get the details of a product you are interested in



Exercise 5

Change the user's authorizations in SAP

5.1 Access the SAP system as user USER<N>ADM with the Web GUI, password Welcome24#1234



The image shows the SAP NetWeaver login interface. It features a title bar with a yellow line. Below the title, there are input fields for System (S4H), Client (100), User (USER25ADM), Password (masked with dots), and Language (English). A blue 'Log On' button is highlighted with a yellow mouse cursor. Below the login fields is a 'Change Password' link. At the bottom, there is an information icon and text indicating the system is an SAP S/4HANA 2022 FPS02 fully-activated appliance. The SAP logo and copyright notice are at the very bottom.

SAP NetWeaver

System:

Client:*


User:*

Password:*


Language: ▼

Log On

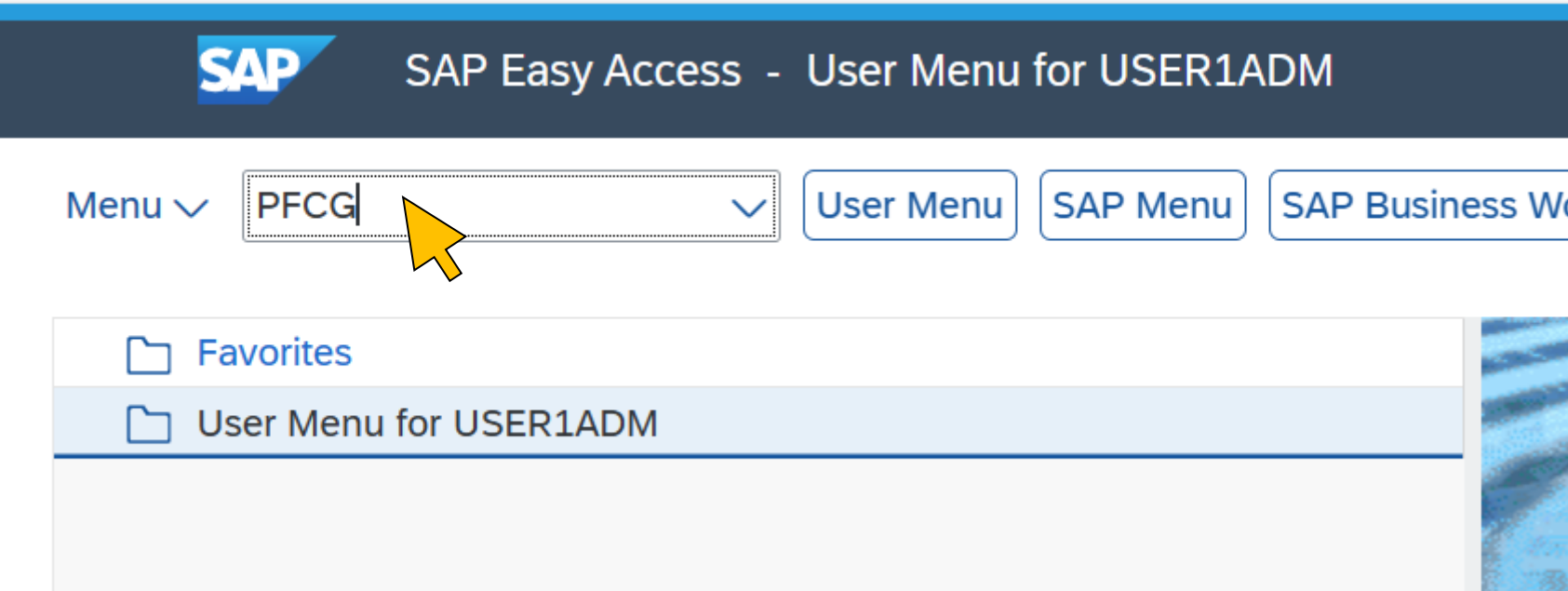
[Change Password](#)

 SAP S/4HANA 2022 FPS02 fully-activated appliance

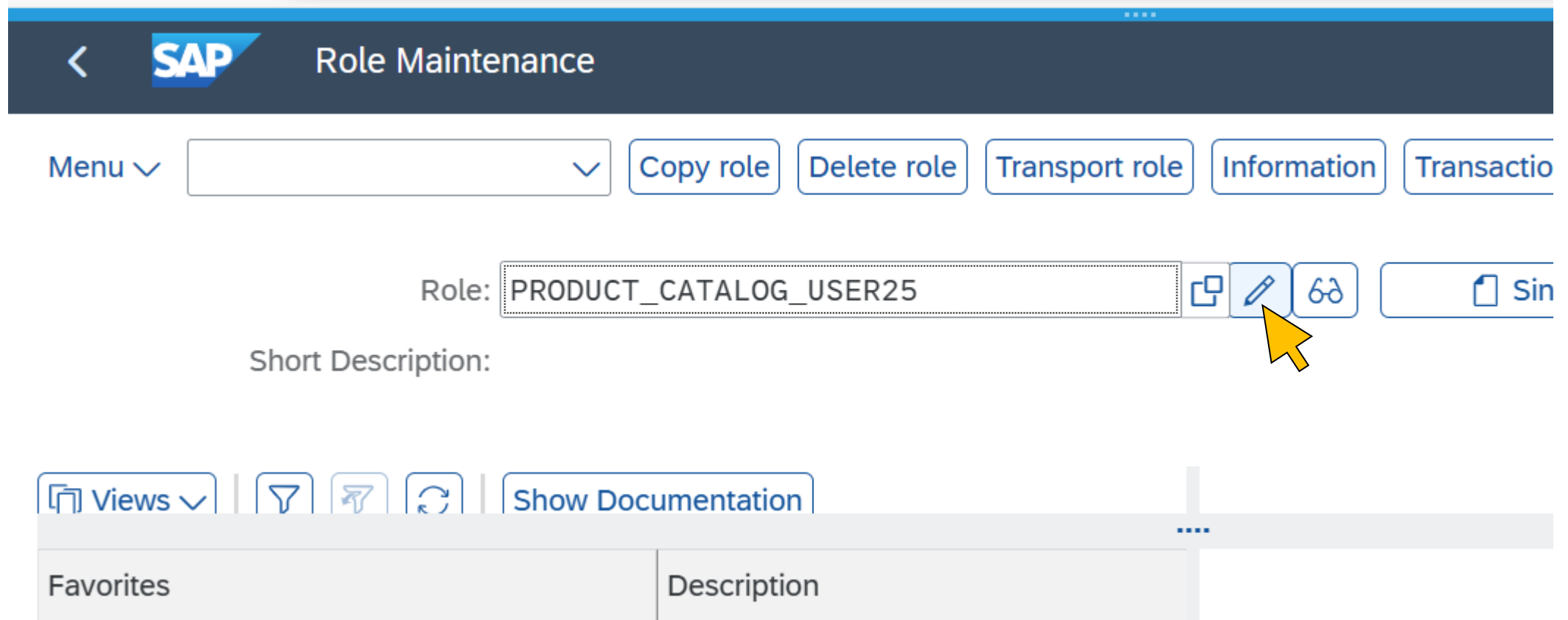
Available Clients:

 Copyright © 2024 SAP SE All Rights Reserved.

5.2 Enter transaction code PFCG (Role Maintenance) and hit Return






5.3 Enter PRODUCT_CATALOG_USER<N> in the Role field and hit the pencil button







The screenshot shows the SAP Role Maintenance interface. At the top, there is a header bar with a back arrow, the SAP logo, and the text "Role Maintenance". Below this, there is a "Menu" dropdown and a search bar. To the right of the search bar are buttons for "Copy role", "Delete role", "Transport role", "Information", and "Transaction". In the center, the "Role:" field contains the text "PRODUCT_CATALOG_USER25". To the right of this field are three icons: a copy icon, a pencil icon (which is highlighted by a yellow mouse cursor), and a lock icon. Further right is a button labeled "Sin". Below the "Role:" field is the label "Short Description:". At the bottom of the interface, there is a toolbar with icons for "Views", a filter, a refresh, and a "Show Documentation" button. Below the toolbar, there are two tabs: "Favorites" and "Description".

< **SAP** Role Maintenance

Menu ▾ ▾ [Copy role](#) [Delete role](#) [Transport role](#) [Information](#) [Transaction](#)

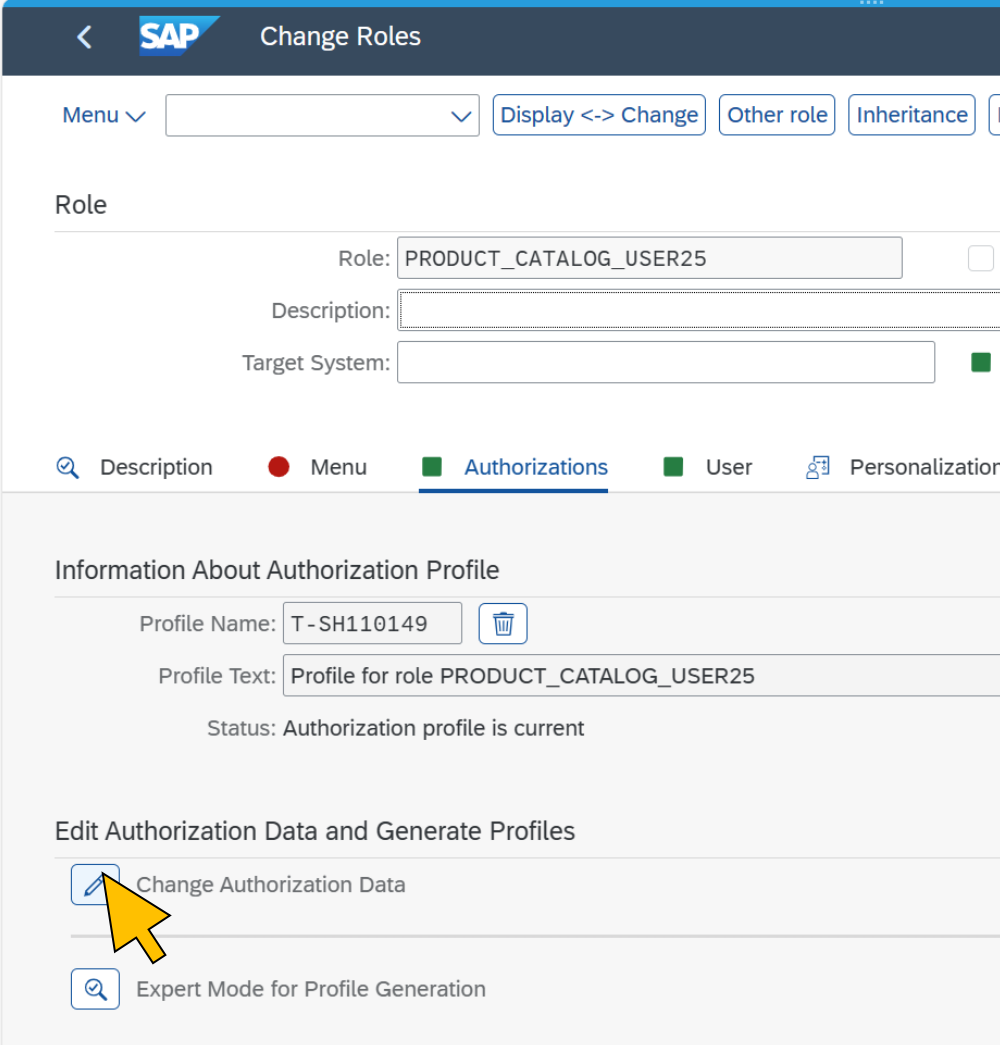
Role:    [Sin](#)

Short Description:

 Views ▾ |    [Show Documentation](#)

Favorites | Description

5.4 Switch to tab Authorizations and click Change Authorization Data



The screenshot displays the SAP 'Change Roles' interface. At the top, there is a header bar with the SAP logo and the title 'Change Roles'. Below the header, there is a navigation bar with a 'Menu' dropdown and buttons for 'Display <-> Change', 'Other role', 'Inheritance', and 'In'. The main content area is divided into sections. The 'Role' section contains fields for 'Role:' (PRODUCT_CATALOG_USER25), 'Description:', and 'Target System:'. Below this is a tab bar with icons and labels for 'Description', 'Menu', 'Authorizations' (which is the active tab), 'User', and 'Personalization'. The 'Information About Authorization Profile' section shows the 'Profile Name:' (T-SH110149) with a delete icon, the 'Profile Text:' (Profile for role PRODUCT_CATALOG_USER25), and the 'Status:' (Authorization profile is current). The 'Edit Authorization Data and Generate Profiles' section contains two buttons: 'Change Authorization Data' (with a pencil icon) and 'Expert Mode for Profile Generation' (with a magnifying glass icon). A yellow mouse cursor is pointing at the 'Change Authorization Data' button.

Menu ▾ Display <-> Change Other role Inheritance In

Role

Role: PRODUCT_CATALOG_USER25 ☐ C

Description:

Target System: ☒

🔍 Description ● Menu ■ **Authorizations** ■ User 👤 Personalization

Information About Authorization Profile

Profile Name: T-SH110149

Profile Text: Profile for role PRODUCT_CATALOG_USER25










Status: Authorization profile is current















Edit Authorization Data and Generate Profiles

Change Authorization Data

Expert Mode for Profile Generation

5.5 Expand the authorization object tree and click the Edit button for the PDCATEGORY authorization field

StatusEdit▼ Search▼ Values

	Group/Object/Authorization/Field	Maintena...	A...	Value	Text
<input type="checkbox"/>	▼   Object class BC_A	Manually			Basis: Administration
<input type="checkbox"/>	▼   Authorization Object S_EPM_PD	Manually			EPM: Authorization object
<input type="checkbox"/>	▼   Authorizat. 00	Manually			EPM: Authorization object
<input type="checkbox"/>	  PDCATEGORY	Manually		Cups & Mugs-Files & Binders	EPM: Product Category
<input type="checkbox"/>	  ACTVT	Manually		Display	Activity

5.6 Click on the value help button of the 'From' field

Field values

Object: S_EPM_PD


EPM: Authorization object for protecting Product data

Field Name: PDCATEGORY

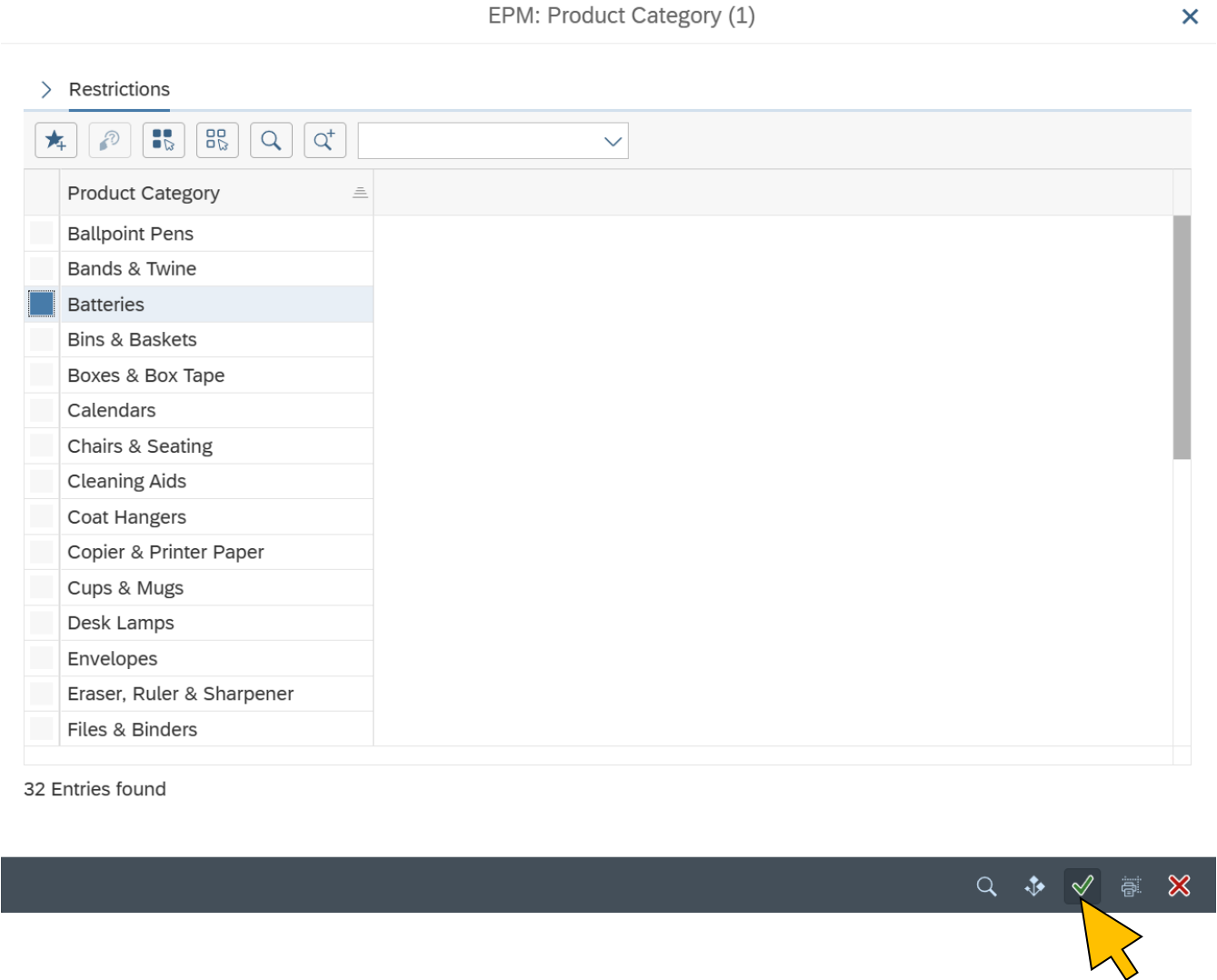
EPM: Product Category

Full authorization

Value Intrvl

	'From'	'To'	
<input type="checkbox"/>	Cups & Mugs	 s & Binders	
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			

5.7 Select a different product category, e.g. Batteries, and confirm with OK



5.8 Also change the 'To' field by clicking on the value help

Field values ✕

Object: S_EPM_PD


EPM: Authorization object for protecting Product data acc...

Field Name: PDCATEGORY

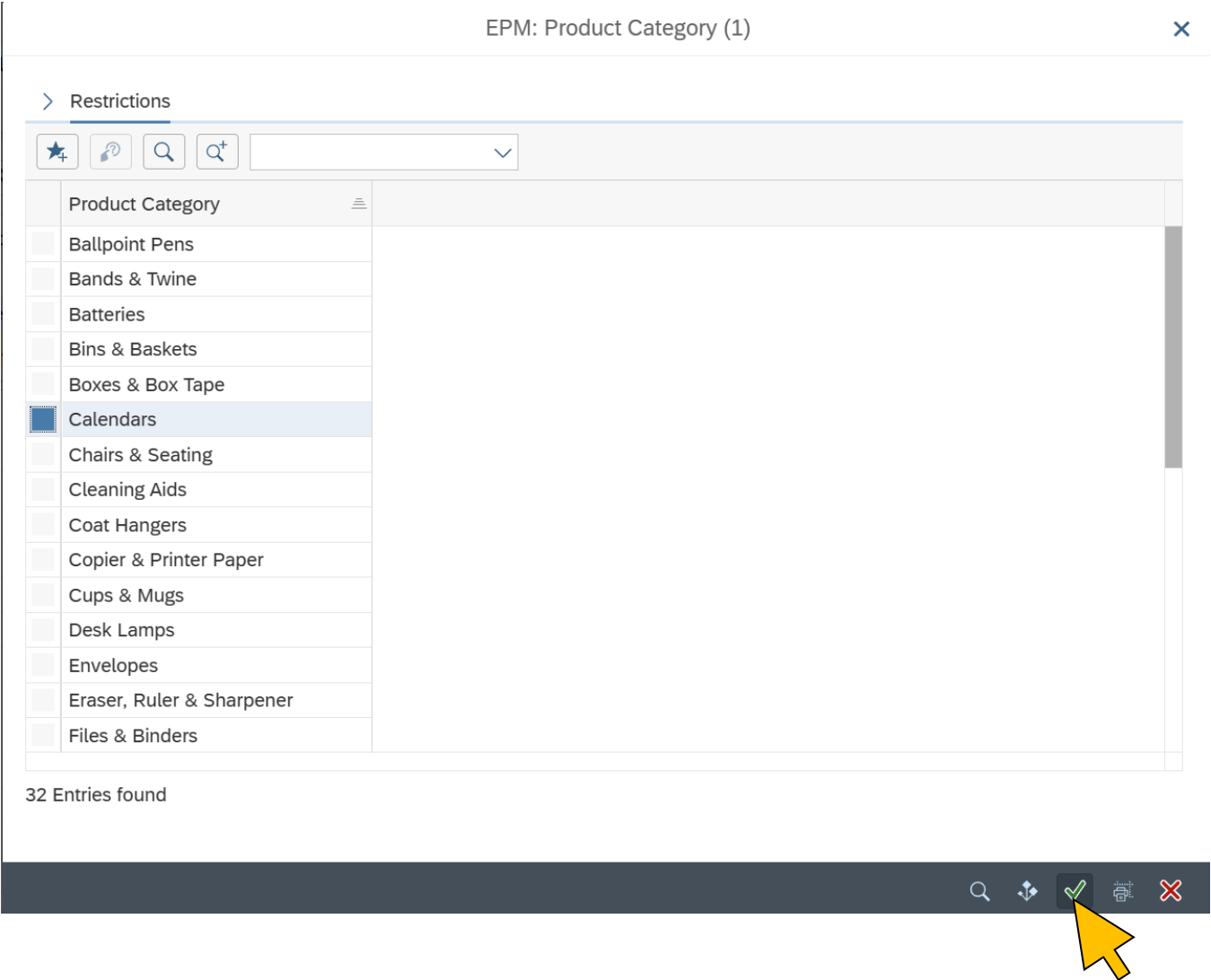
EPM: Product Category

Full authorization

Value Intrvl ⚙

	'From'	'To'	
<input type="checkbox"/>	Batteries	Files & Binders	
<input type="checkbox"/>			
<input type="checkbox"/>			

5.9 Change the value, e.g. to Calendars, and click OK



5.10 Click Save

[illegible]

5.11 Click Save

<

SAP

Change Role: Authorizations

>

S4H (100) ▾

📄

Menu ▾

▾

Generate

Delete inactive

Selection criteria

Manually

Organizational levels...

⋮

Find

Exit

Role

PRODUCT_CATALOG_USER25

Maint.

0 unmaint. org. levels, 0 open fields

Data Status

Changed

⋮

Status

Edit ▾

🔧

▾

⬇

⬆

🖨

▾

⚙

▾

🔍 Search ▾

📄 Values

	Group/Object/Authorization/Field	Maintena...	A...	Value	Text
<input type="checkbox"/>	▾ ▢ Object class BC_A	Manually			Basis: Administration
<input type="checkbox"/>	▾ ▢ Authorization Object S_EPM_PD	Manually	✎		EPM: Authorization object for protecting Pr
<input type="checkbox"/>	▾ ▢ Authorizat. 00	Manually	✎		EPM: Authorization object for protecting Pr
<input type="checkbox"/>	📄 ▢ PDCATEGORY	Manually	✎	Batteries-Calendars	EPM: Product Category
<input type="checkbox"/>	📄 ▢ ACTVT	Manually	✎	Display	Activity

Save

Cancel

5.12 Click Generate

<

SAP

Change Role: Authorizations

>

S4H (100) ▾

📄

Menu ▾

▾

Generate

Delete inactive

Selection criteria

Manually

Organizational levels...

⋮

Find

Exit

Role

PRODUCT_CATALOG_USER25

Maint.

0 unmaint. org. levels, 0 open fields

Data Status

Changed

Status

Edit ▾

🔧

▾

⬇

⬆

🖨

▾

⚙

▾

🔍 Search ▾

📊 Values

	Group/Object/Authorization/Field	Maintena...	A...	Value	Text
<input type="checkbox"/>	▾ ▢ Object class BC_A	Manually			Basis: Administration
<input type="checkbox"/>	▾ ▢ Authorization Object S_EPM_PD	Manually	✎		EPM: Authorization object for protecting Pr
<input type="checkbox"/>	▾ ▢ Authorizat. 00	Manually	✎		EPM: Authorization object for protecting Pr
<input type="checkbox"/>	📄 ▢ PDCATEGORY	Manually	✎	Batteries-Calendars	EPM: Product Category
<input type="checkbox"/>	📄 ▢ ACTVT	Manually	✎	Display	Activity

Save

Cancel

5.13 Click Exit

<

SAP

Change Role: Authorizations

>

S4H (100) ▾

📄

Menu ▾

▾

Generate

Delete inactive

Selection criteria

Manually

Organizational levels...

⋮

Find

Exit

Role

PRODUCT_CATALOG_USER25

Maint.

0 unmaint. org. levels, 0 open fields

Data Status

Changed

Status

Edit ▾

🔍

⏴

⏵

🖨

▾

⚙

▾

🔍 Search ▾

📊 Values

	Group/Object/Authorization/Field	Maintena...	A...	Value	Text
<input type="checkbox"/>	▾ ▢ Object class BC_A	Manually			Basis: Administration
<input type="checkbox"/>	▾ ▢ Authorization Object S_EPM_PD	Manually	✎		EPM: Authorization object for protecting Pr
<input type="checkbox"/>	▾ ▢ Authorizat. 00	Manually	✎		EPM: Authorization object for protecting Pr
<input type="checkbox"/>	📄 ▢ PDCATEGORY	Manually	✎	Batteries-Calendars	EPM: Product Category
<input type="checkbox"/>	📄 ▢ ACTVT	Manually	✎	Display	Activity

Save

Cancel

5.14 Back on the Demo website, click Start over

The screenshot displays the Microsoft Power Platform demo website. The header includes the Microsoft Power Platform logo and a link to 'Learn more about Microsoft Copilot Studio'. The main content area features the text 'Try out the chatbot we made!' and 'Here are some things my bot can help you with:'. Below this, there are three buttons: 'Hello', 'Start over', and 'Talk to a person'. A yellow mouse cursor is pointing at the 'Start over' button. On the right side, there is a chat window titled 'SAP Product Search Copilot' showing a conversation history with a robot icon. The chat history includes three messages: a list of product IDs, a question about the price, and a request for product details.

Microsoft Power Platform

Learn more about Microsoft Copilot Studio

Try out the chatbot we made!

Here are some things my bot can help you with:

Hello

Start over

Talk to a person

SAP Product Search Copilot

You can order the following p
lamps : OF-DL-1000, OF-DL-10
DL-1003, OF-DL-1004

36 minutes ago

Ok. What is the price of

To get the details of the produ
productID. Could you please c
productID is OF-DL-1003?

34 minutes ago

The product from category De
OF-DL-1003 has the following
size (2,000 / 5,000 / 10,000) cm

5.15 Ask the copilot again from which categories you can choose from to see the changes made in the backend

Try out the chatbot we made!


Here are some things my bot can help you with:

Hello

Start over

Talk to a person


SAP Product Search Copilot




The product from category Desk Lamps with ID OF-DL-1003 has the following price: 21.95 USD, size (2.000/5.000/10.000), and weight (70.000 G).

35 minutes ago


Start over



Just now




Ok, I'll start over.




Hi there! I am your SAP Product Search Copilot!
What can I help you with?

Just now

Which categories can I choose from?




Just now



You can order from these categories: Boxes & Box Tape, Bins & Baskets, Calendars, Batteries

Just now

Type your message





Thank you

Please provide your feedback for this session

