Module - Building Autonomous Agents

Built by: Power CAT Intelligent Application Solution Architecture Team

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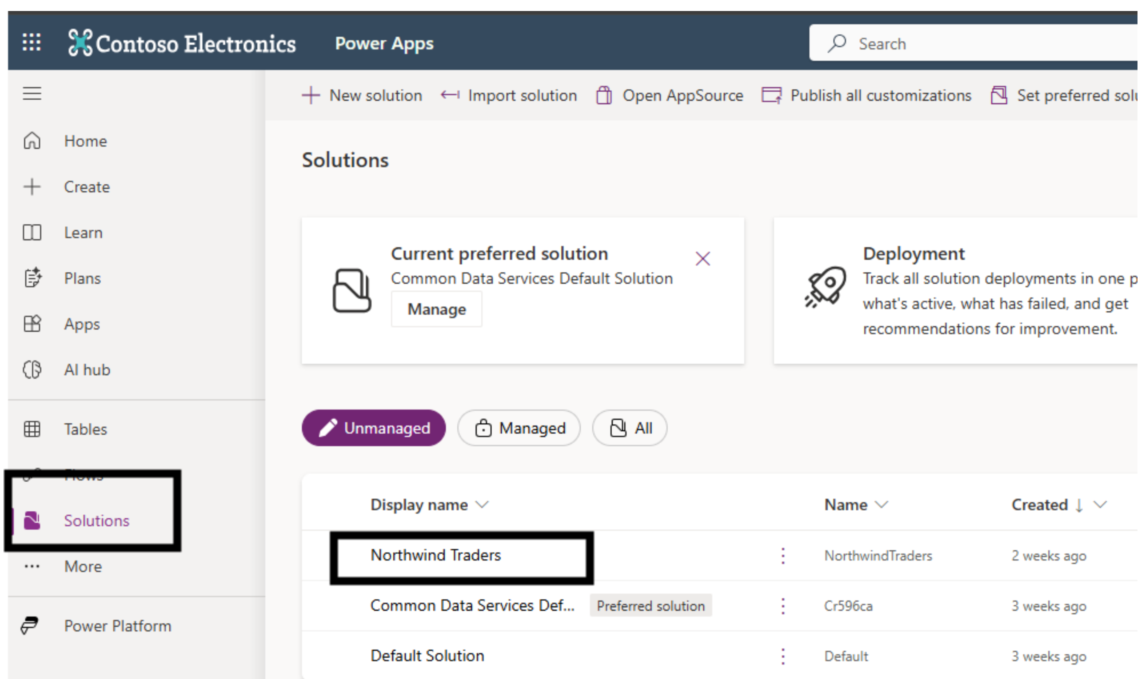
Autonomous Agents

Copilot Autonomous Agents are AI-powered systems built within Microsoft Copilot Studio that independently reason, plan, and act to complete tasks on behalf of individuals, teams, or entire organizations. These agents go beyond traditional automation by dynamically responding to business signals—such as data changes, system alerts, or scheduled events—without requiring human intervention. Designed to handle complex, multi-step workflows, they integrate seamlessly with Microsoft 365, Dataverse, Power Platform, and external APIs. With capabilities like deep reasoning, orchestration of other agents, and transparent activity tracking, Copilot Autonomous Agents are transforming how businesses operate—boosting efficiency, accelerating decision-making, and enabling scalable, intelligent automation across industries.

Pre-requisites

1. To create Autonomous agents, you need to use Northwind traders solution (already installed) in your environment.



2. Lab Module 3 must be completed.

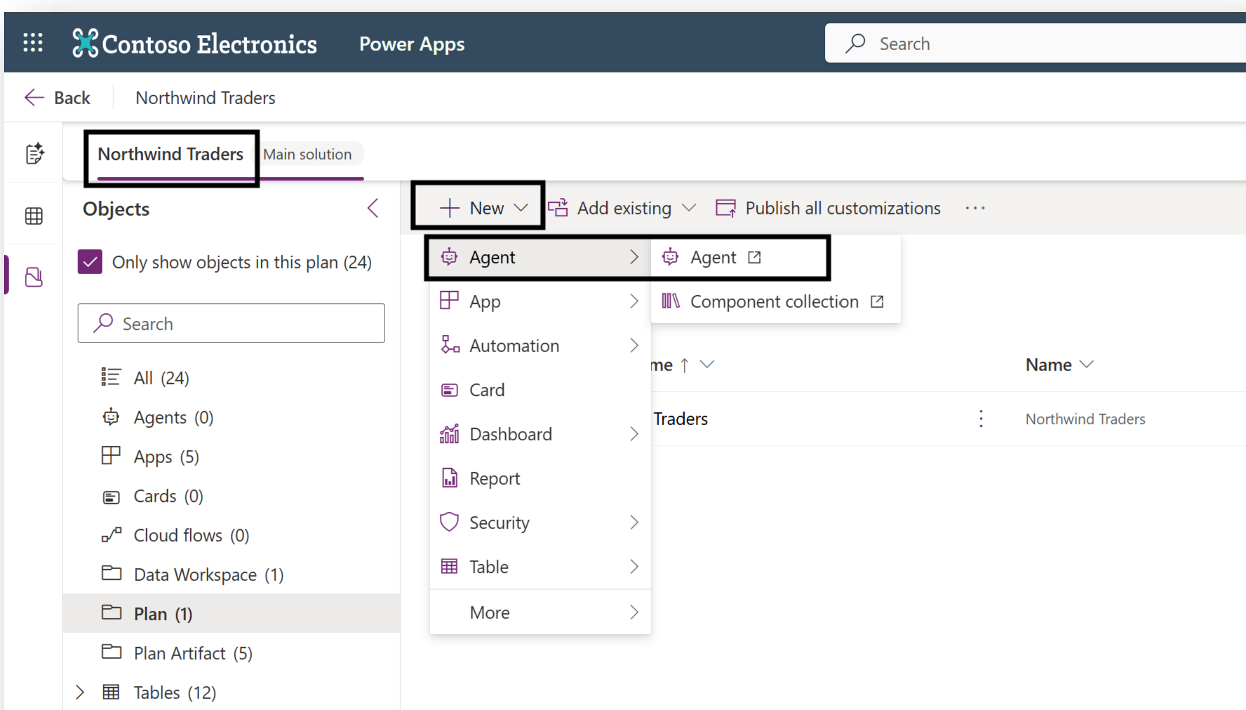
Business Scenario

Northwind Traders organization has created Power Apps solution to manage purchase orders, products and related business operations within an organization. They want to create an autonomous agent for their sales team to automatically create purchase orders based on purchase order requests coming over email. The Agent should also be able to help track the purchase order, share status updates for purchase orders without involving human in the loop.

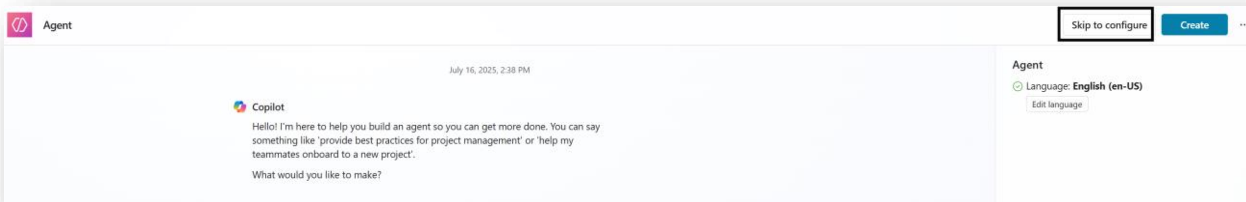
Lets Begin.. !!

Module – Create an Autonomous Agent

1. Login to https://make.preview.powerapps.com in the demo tenant and navigate to your personal environment.
2. Navigate to Northwind traders solution and click on New -> Agent .

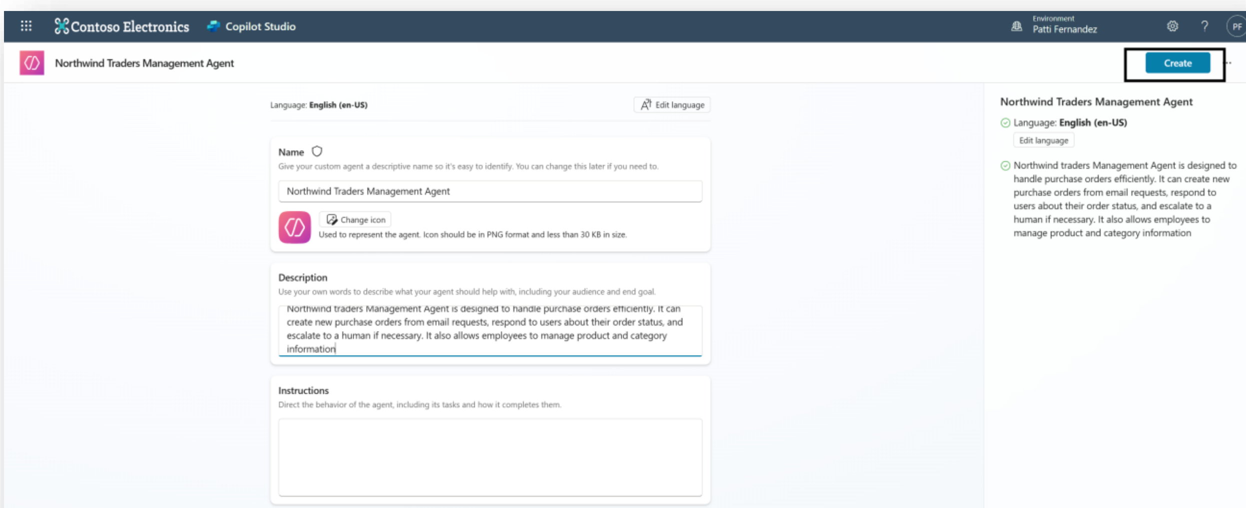


3. After getting redirected to Copilot studio, click on Skip to configure.



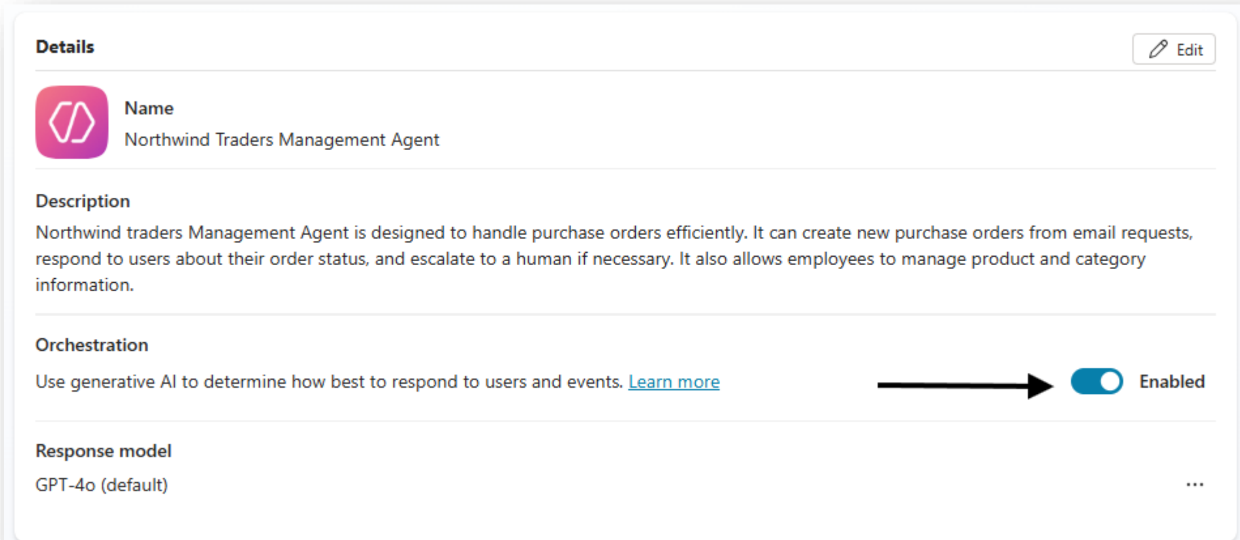
4. Configure the Agent as follows:
   ***Name** : Northwind Traders Management Agent*
   ***Description**: Northwind traders Management Agent is designed to handle purchase orders efficiently. It can create new purchase orders from email requests, respond to users about their order status, and escalate to a human if necessary. It also allows employees to manage product and category information.*

   Click on Create.



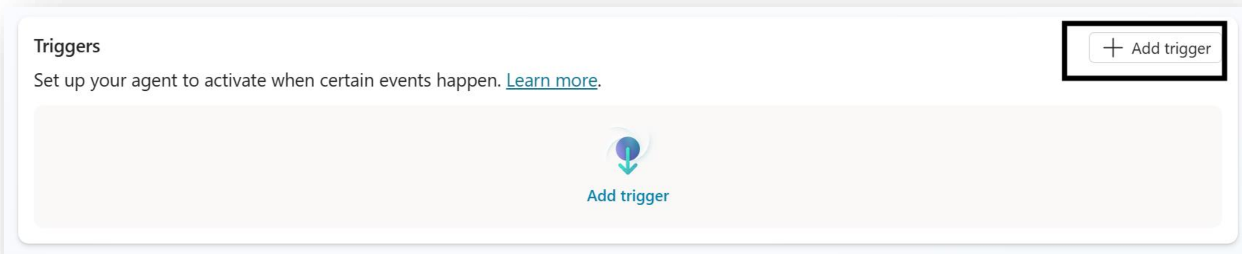
Now that the basic Agent is created, in the next steps, we will start adding Agent triggers and tools and add guidance on how it can act autonomously.

💡 Note: Make sure Use Generative AI orchestration is **Enabled**

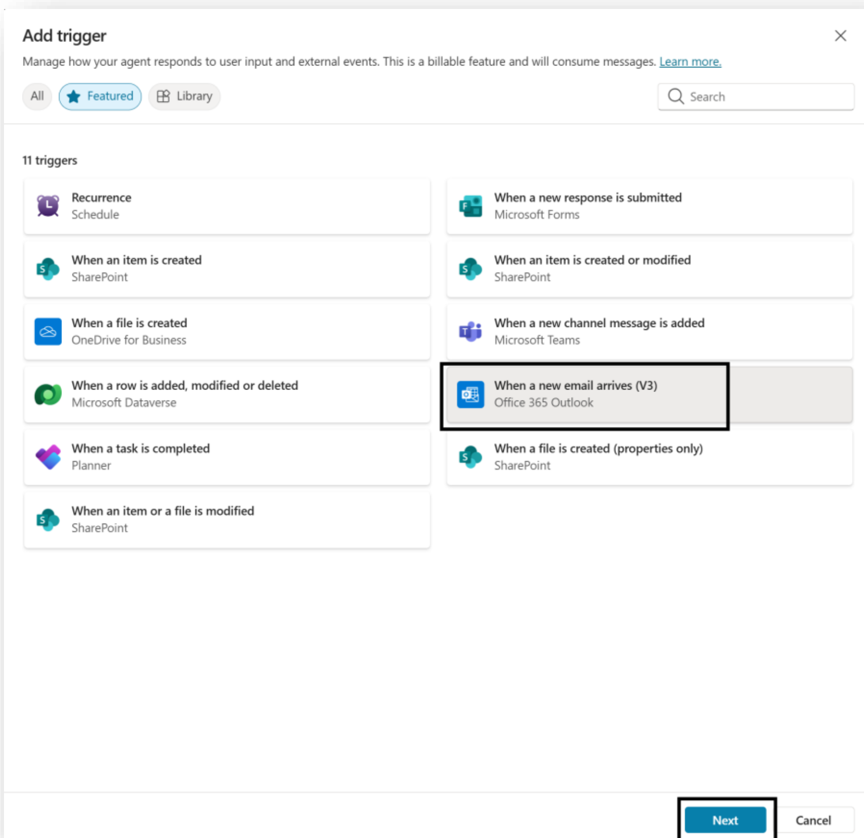


Step 1: Add Agent Triggers

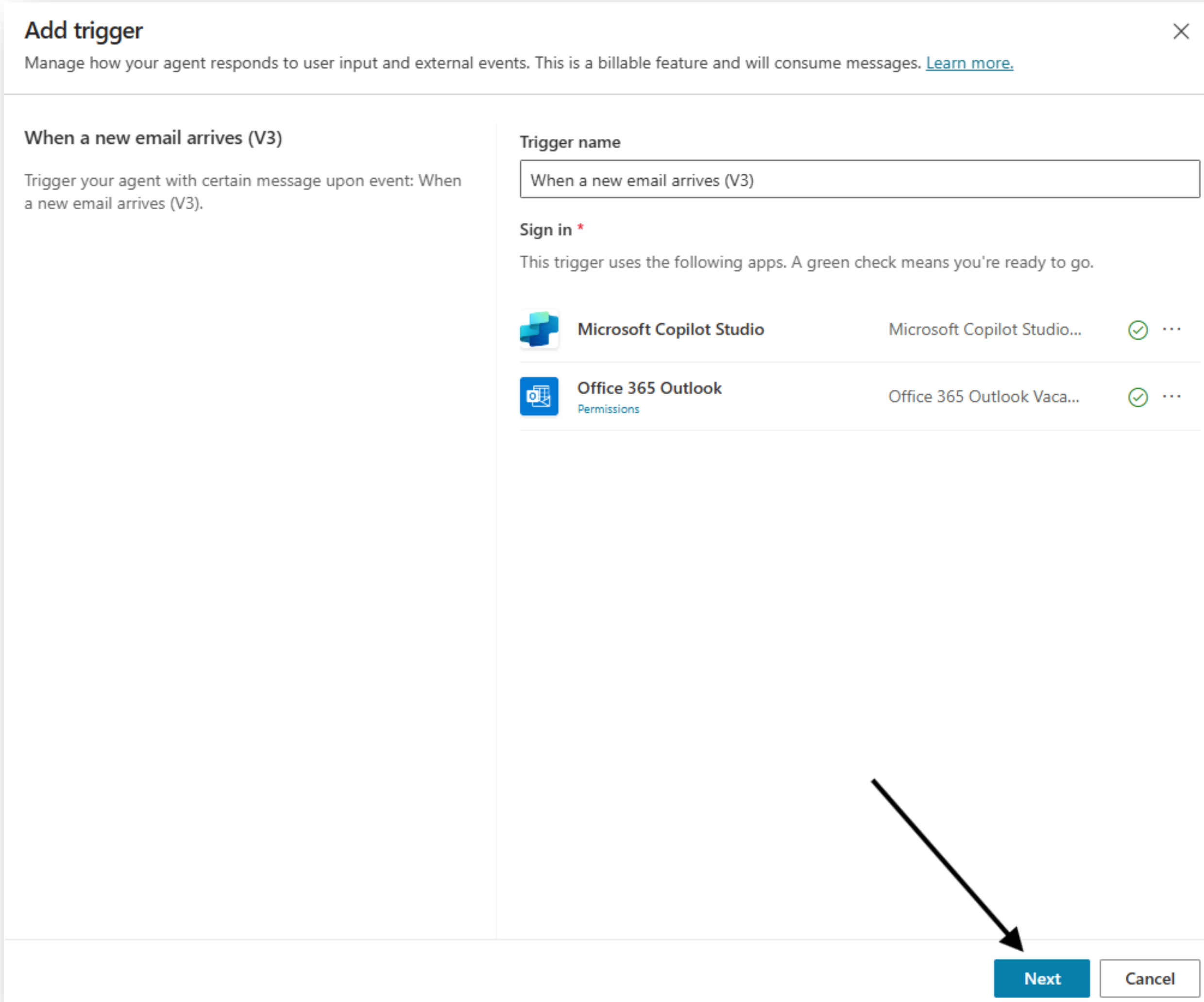
1.1 Scroll down in the Agent Overview Section.
Under Triggers - > Click on **+ Add Trigger.**



1.2 In Add trigger, Select When a new email arrives (V3) and then click **Next**.



1.3 The connections will be setup – then Click on **Next**



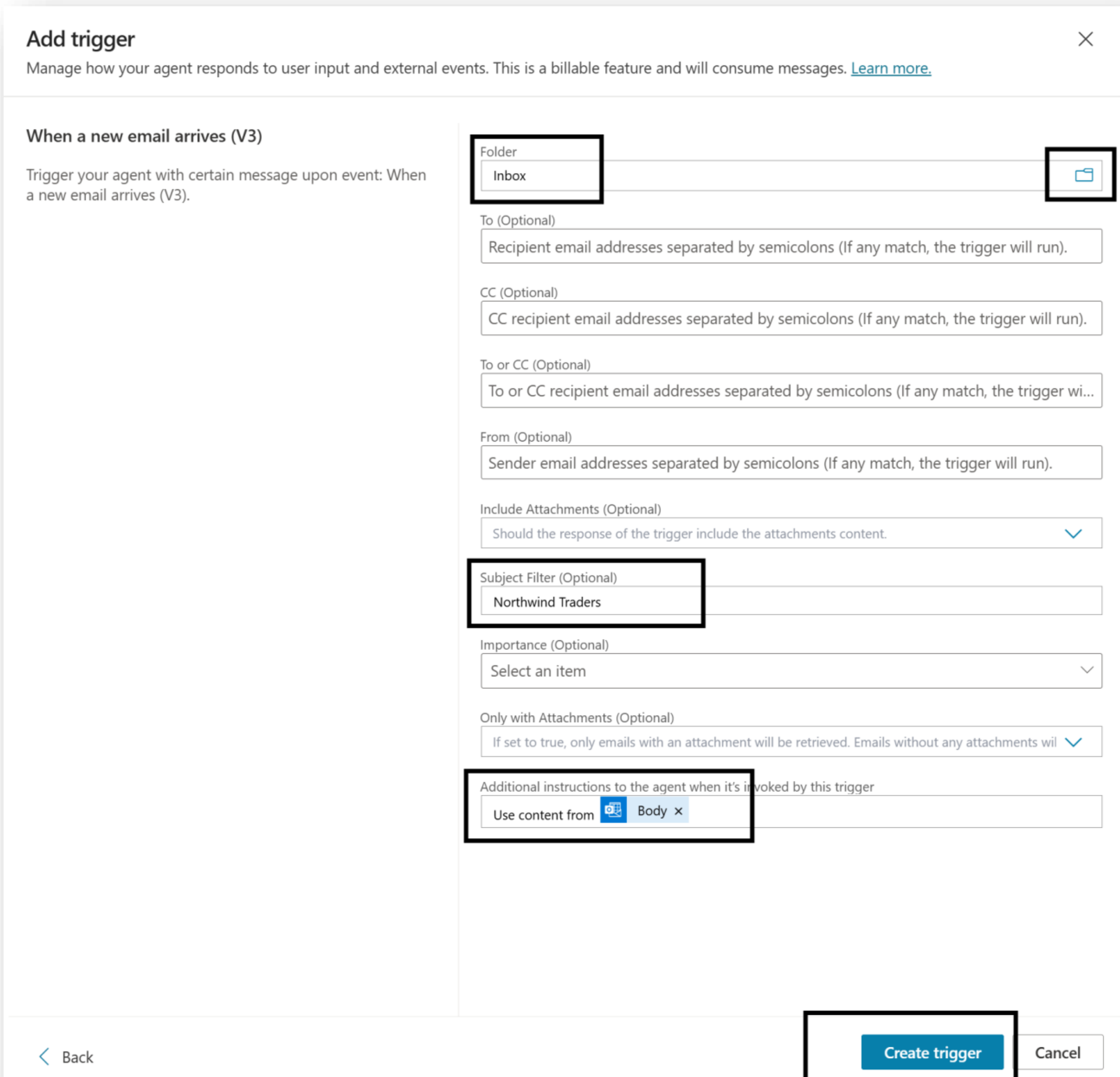
1.4 Configure the Trigger as follows:

***Folder** – Inbox (click on the Folder icon to select the Inbox folder)*

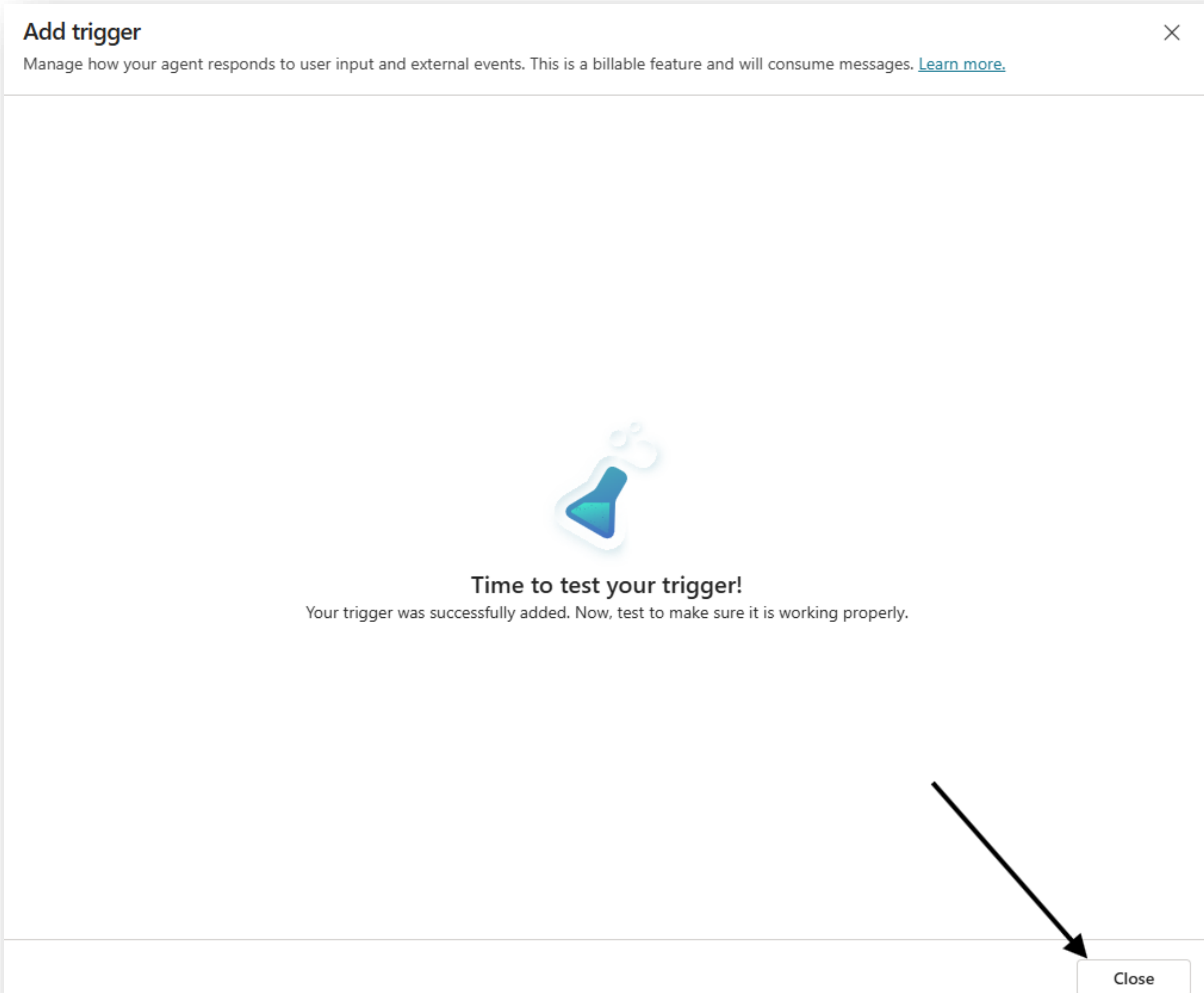
***Subject Filter** – Northwind Traders (Subject filter will help define that agent doesn't trigger for every email).*

***Additional Instructions:** Use content from Trigger Body. (This should be auto populated).*

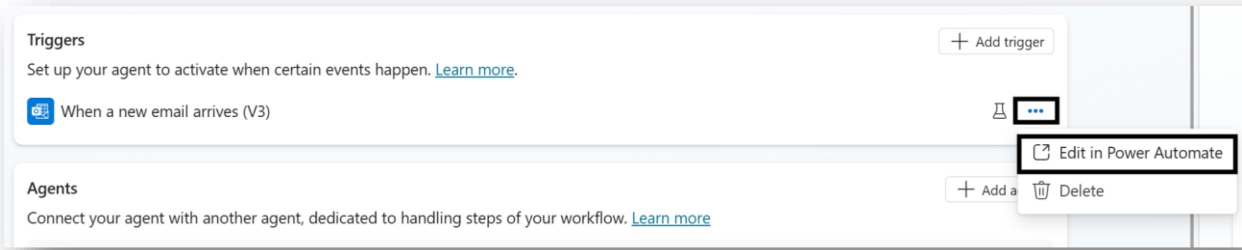
Click on **Create Trigger.**



1.5 Once the trigger is created successfully – You can close the dialog.

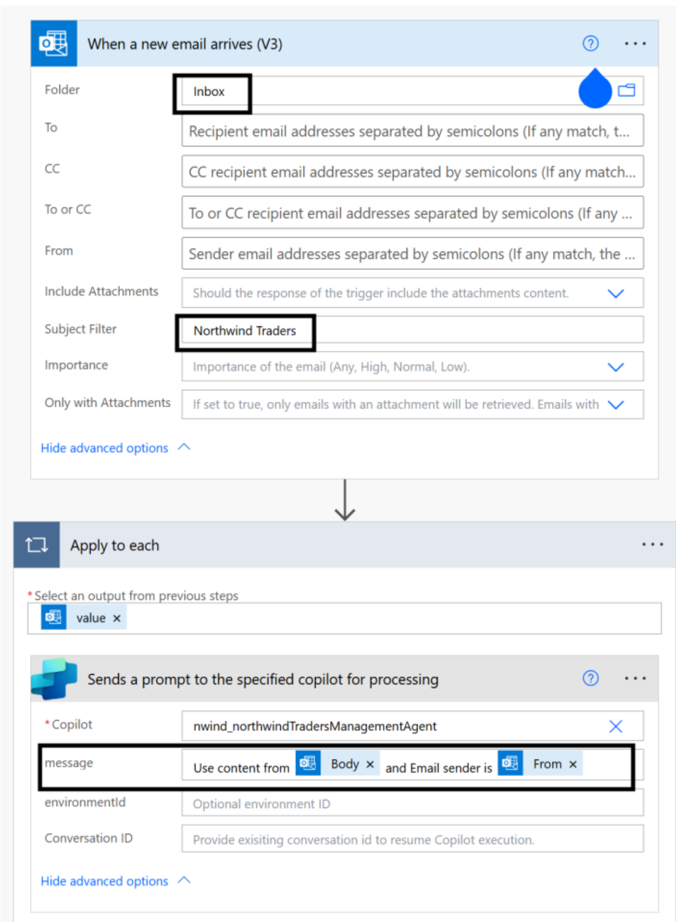


1.6 Once the trigger is created, you can click on the 3 dots in the Trigger section to view and Edit the Power Automate Flow



1.7 In the Power Automate flow, Expand **“Sends a prompt to the specified copilot for processing”**. This flow will help pass on the context of the incoming email to the autonomous agent. In this flow, we will also pass the context of the sender who is sending the email along with the email body.

Add “and Email sender is <Select From in the dynamic content>” in the message



1.8 Click on **Publish.**

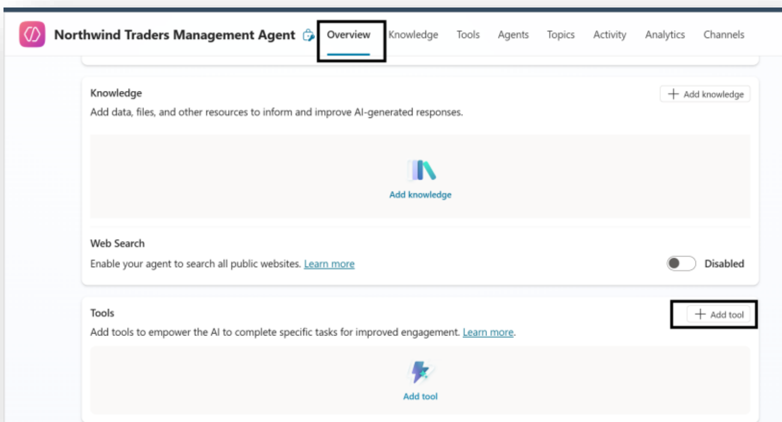
Step 2: Add Agent Tools, Knowledge and Instructions

Now that the agent is ready to trigger on incoming email requests, we need to define actions to teach agent on what steps to take when the email comes.

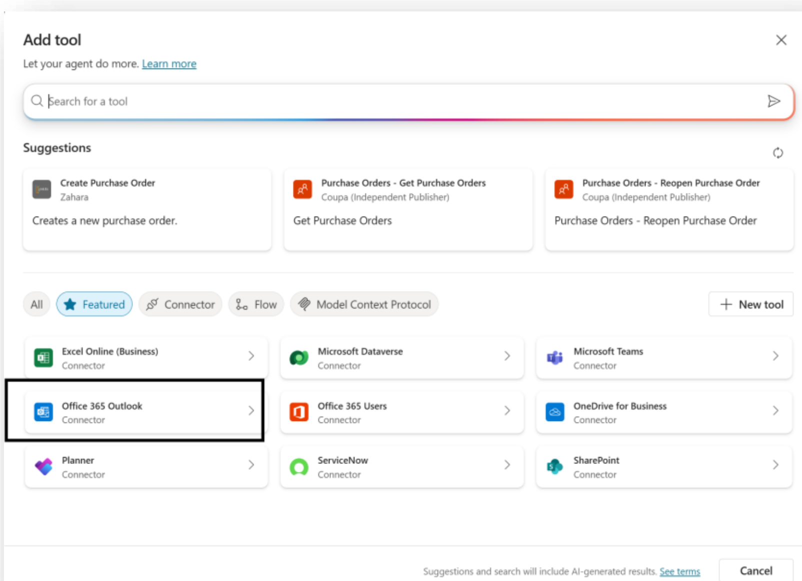
Let's add an action to the autonomous agent to send replies back to sender based on their queries.

Scenario 1 – Reply with the Purchase Order status

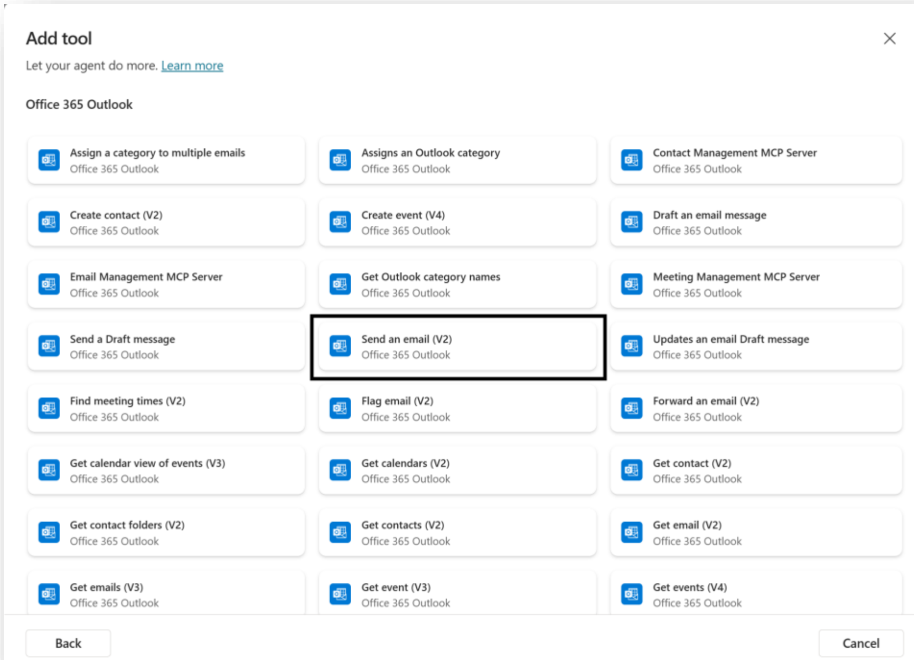
2.1.1 Add a new tool to the Agent. In Overview section , go to Tools, click on **+ Add Tool**.



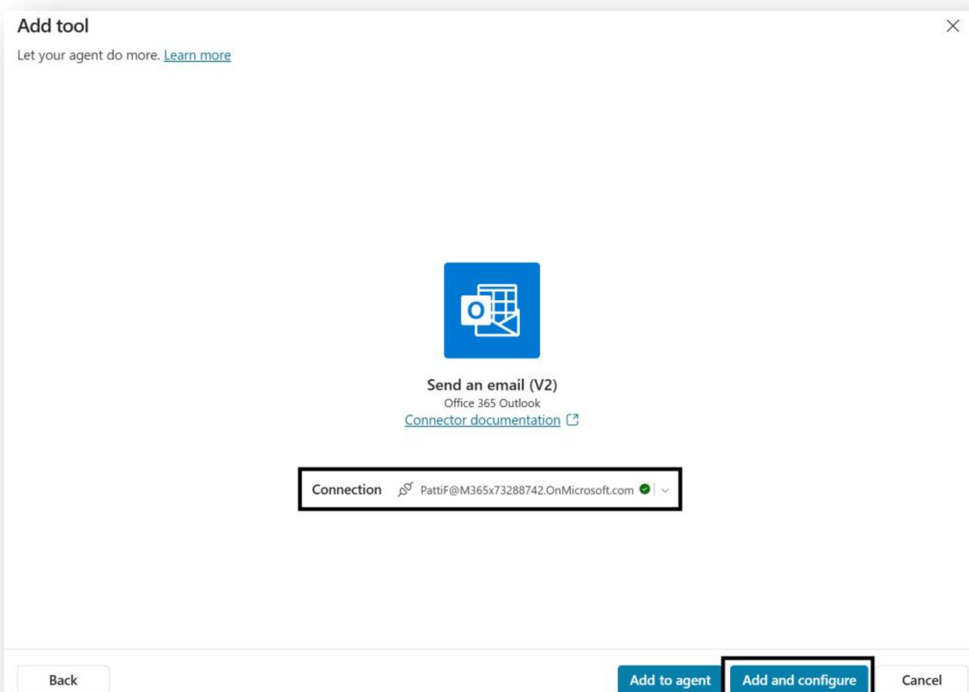
2.1.2 In Add tool, Select Office 365 Outlook connector.



2.1.3 Select **Send an email (V2)** action.

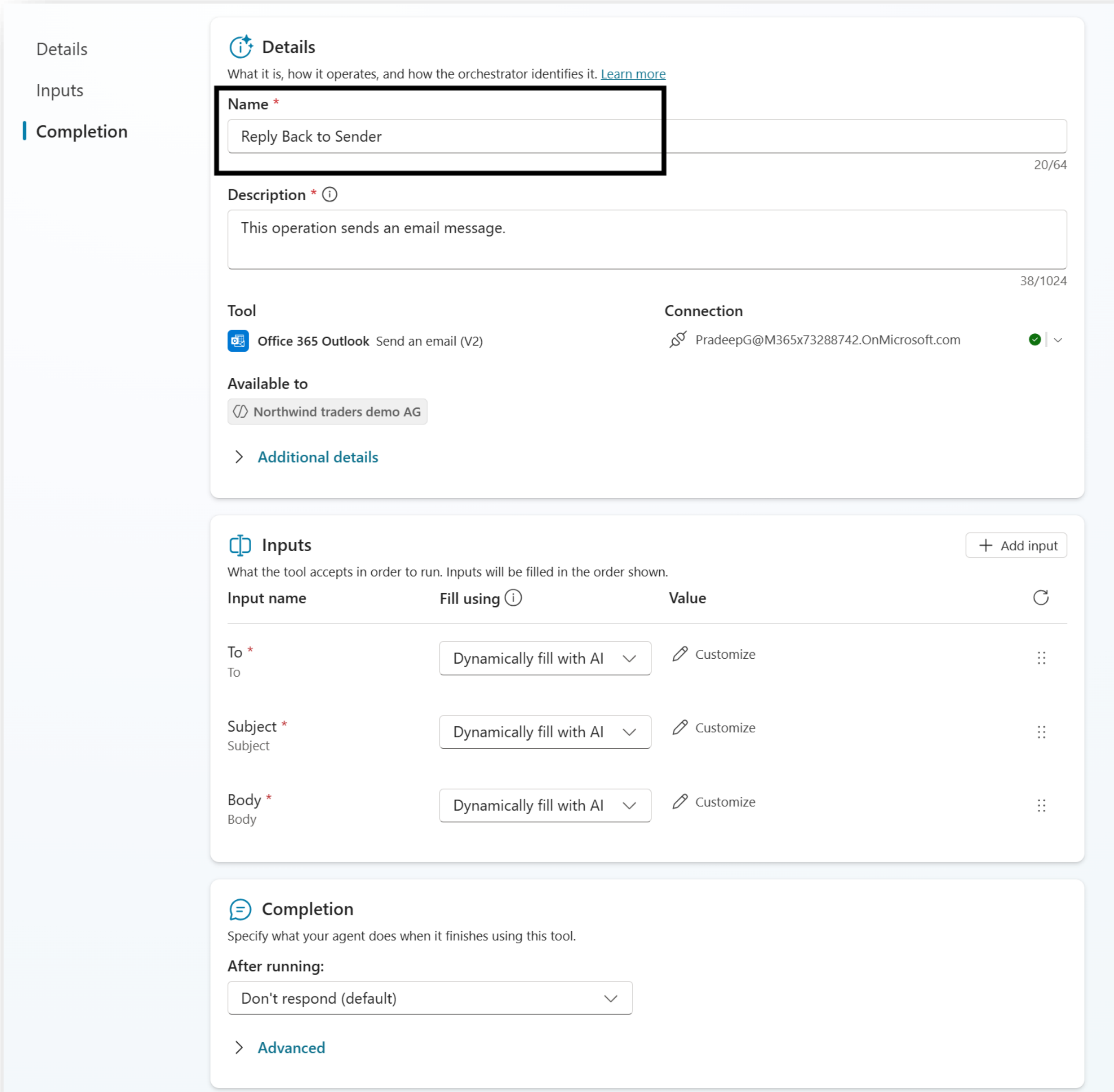


2.1.4 Validate the connection and click on Add and Configure.

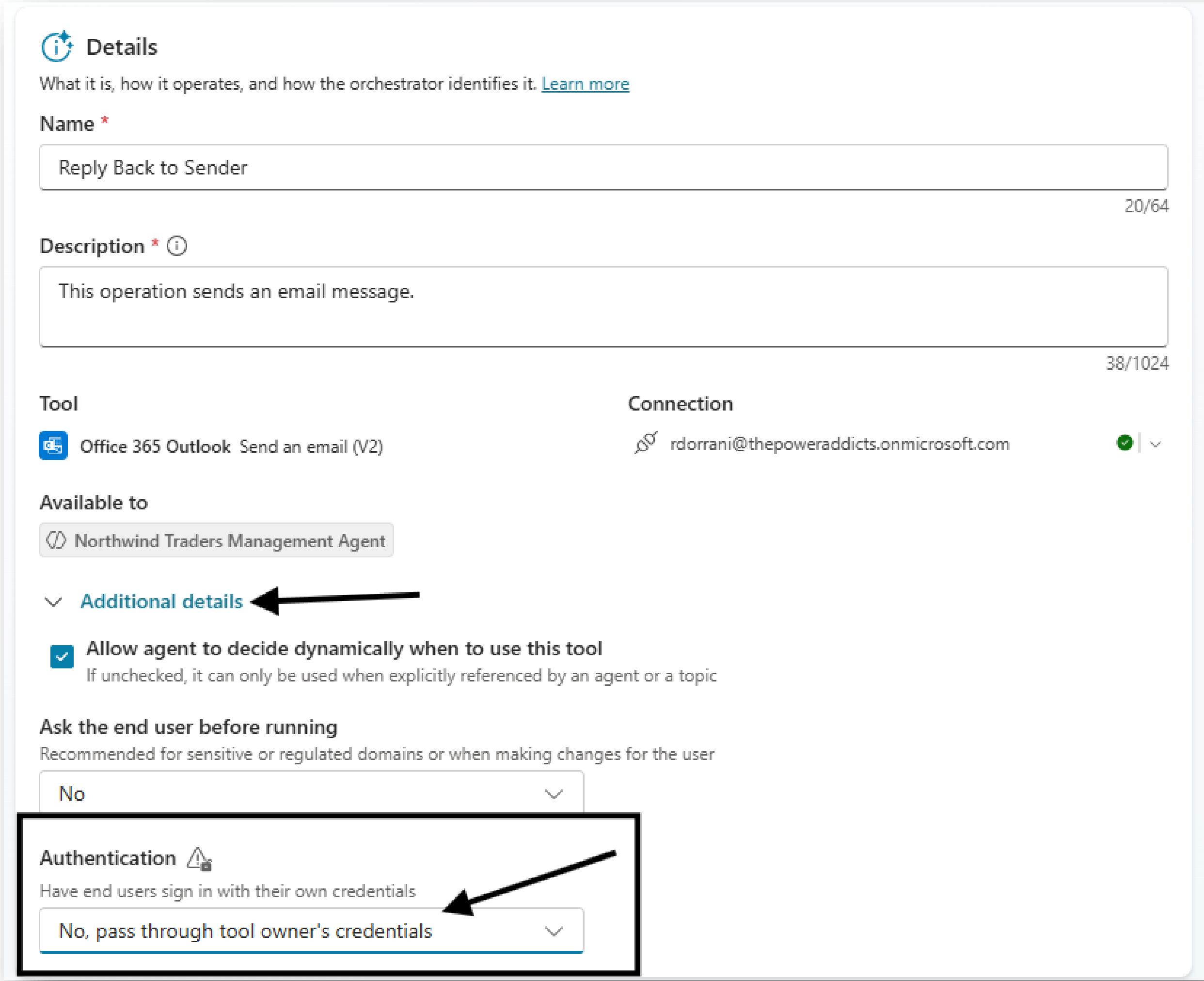


2.1.5 Configure this tool as follows:

***Name** – Reply Back to Sender*



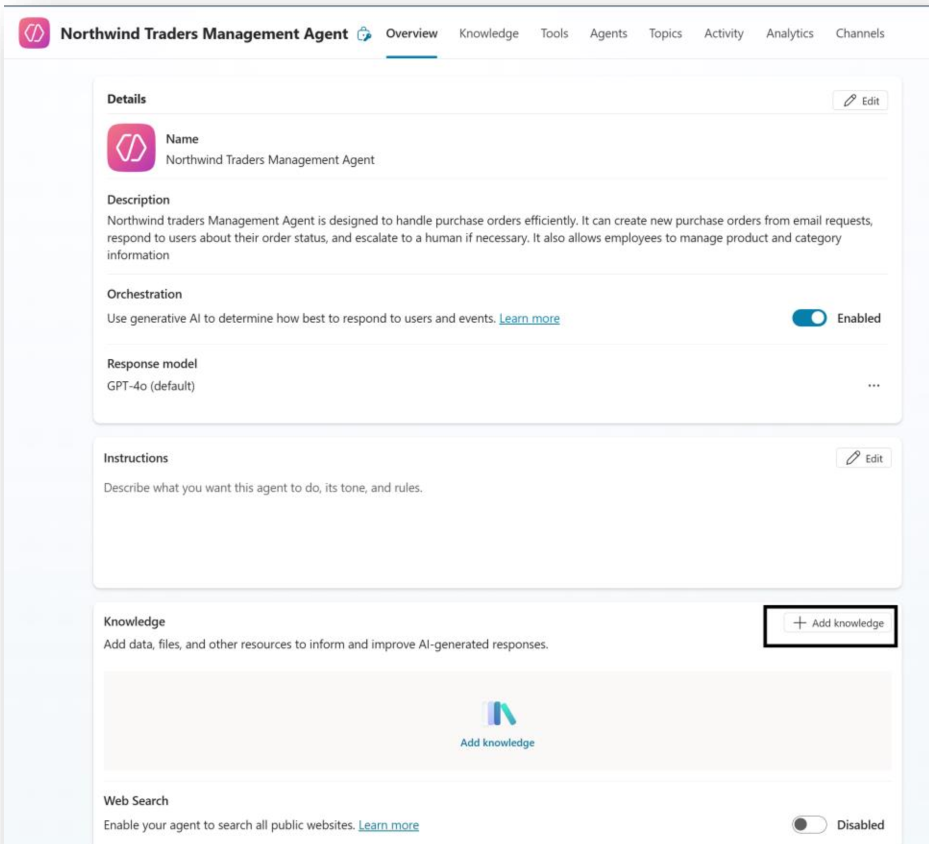
In additional Details, ensure that Authentication is set to pass owner's credentials.



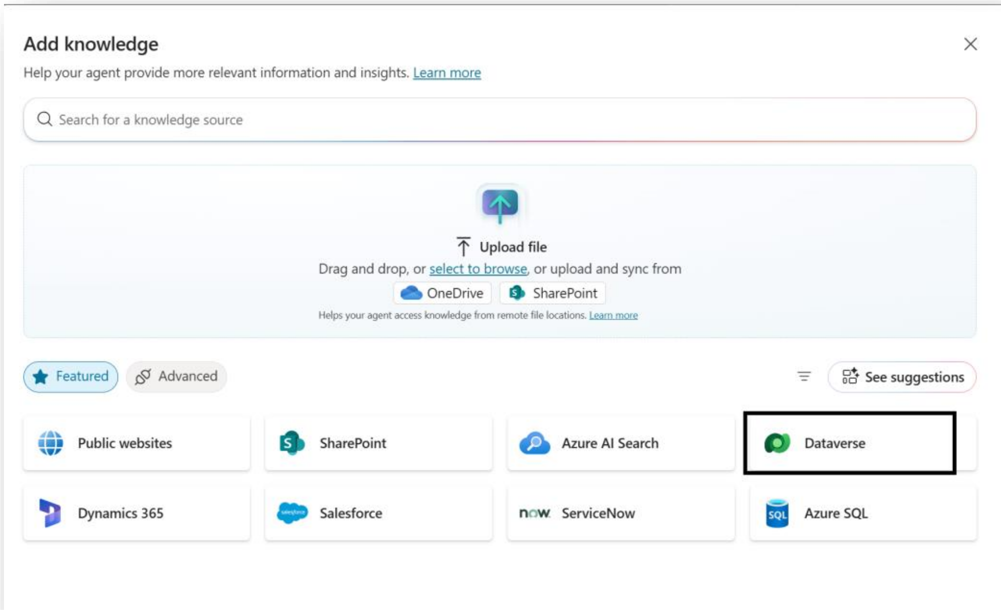
2.1.6 Click on **Save.**

2.1.7 Next, we need to add knowledge source for the agent to search for Purchase Order details and reply back to the sender with the Purchase Order status.

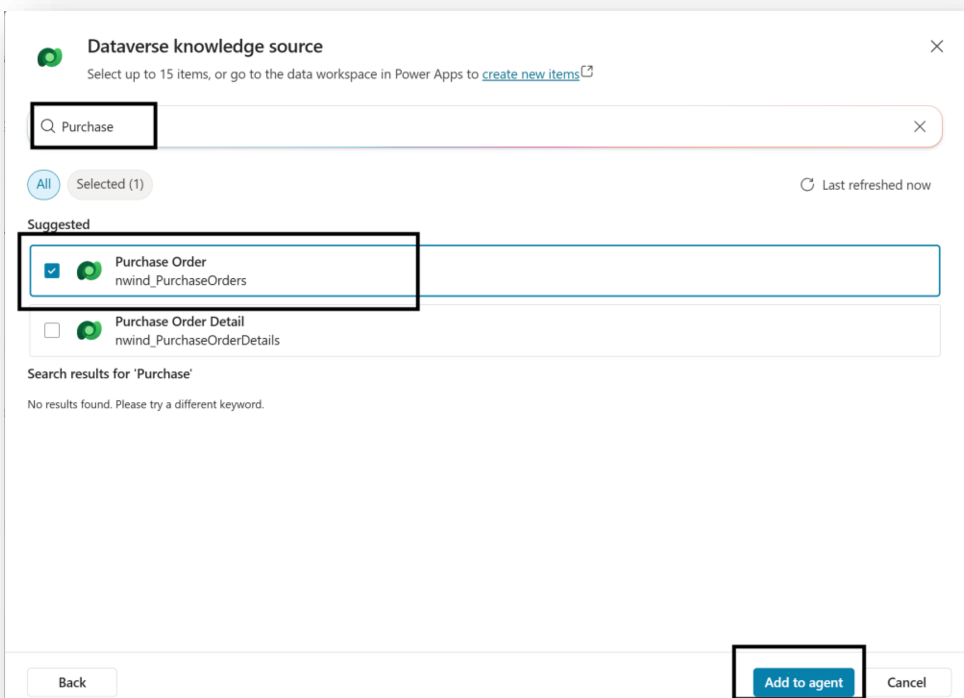
Go back to Agent Overview Tab.
In the knowledge section, click on **+ Add knowledge**



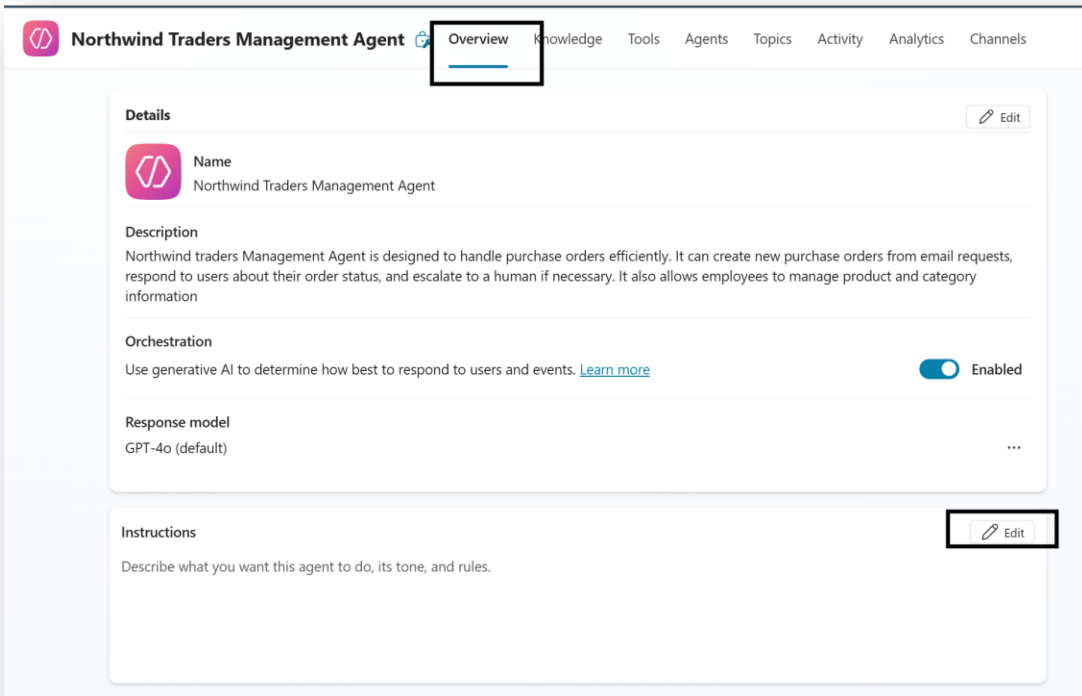
2.1.8 In Add Knowledge section, select Dataverse.



2.1.9 Search for **Purchase Order Table**. Select the table and Click **Add to Agent**.



2.1.10 Now we need to add Instruction to the agent to guide it on how to respond to the incoming email. In the Agent Overview, click on **Edit** in the **Instruction** section.

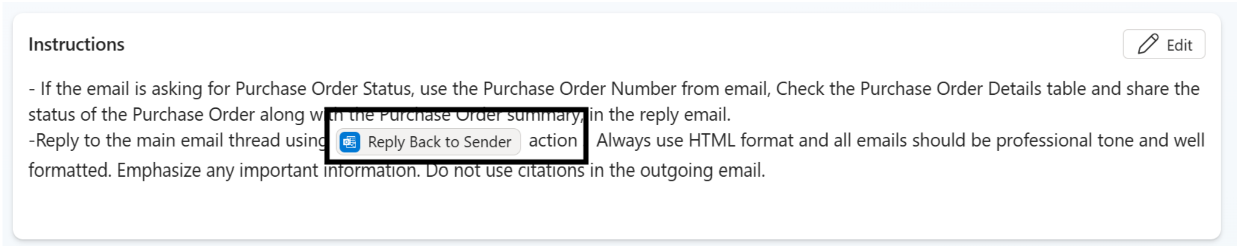


2.1.11 Add the following **instruction** –

- If the email is asking for Purchase Order Status, use the Purchase Order Number from email, Check the Purchase Order Details table and share the status of the Purchase Order along with the Purchase Order summary, in the reply email.

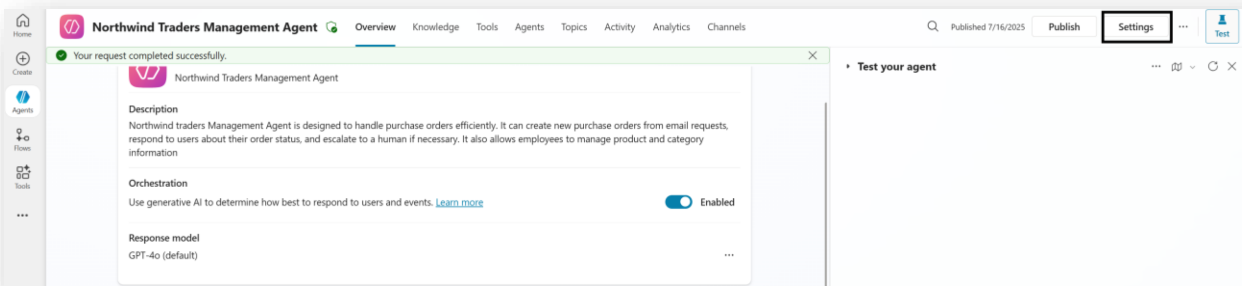
-Reply to the main email thread using <ActionName> action . Always use HTML format and all emails should be professional tone and well formatted. Emphasize any important information. Do not use citations in the outgoing email. Don't use the same subject as incoming email. Do not include Northwind Traders in the Subject line in your reply.

💡 Note: Use '/' sign to dynamically select the Reply Back to Sender' action name.

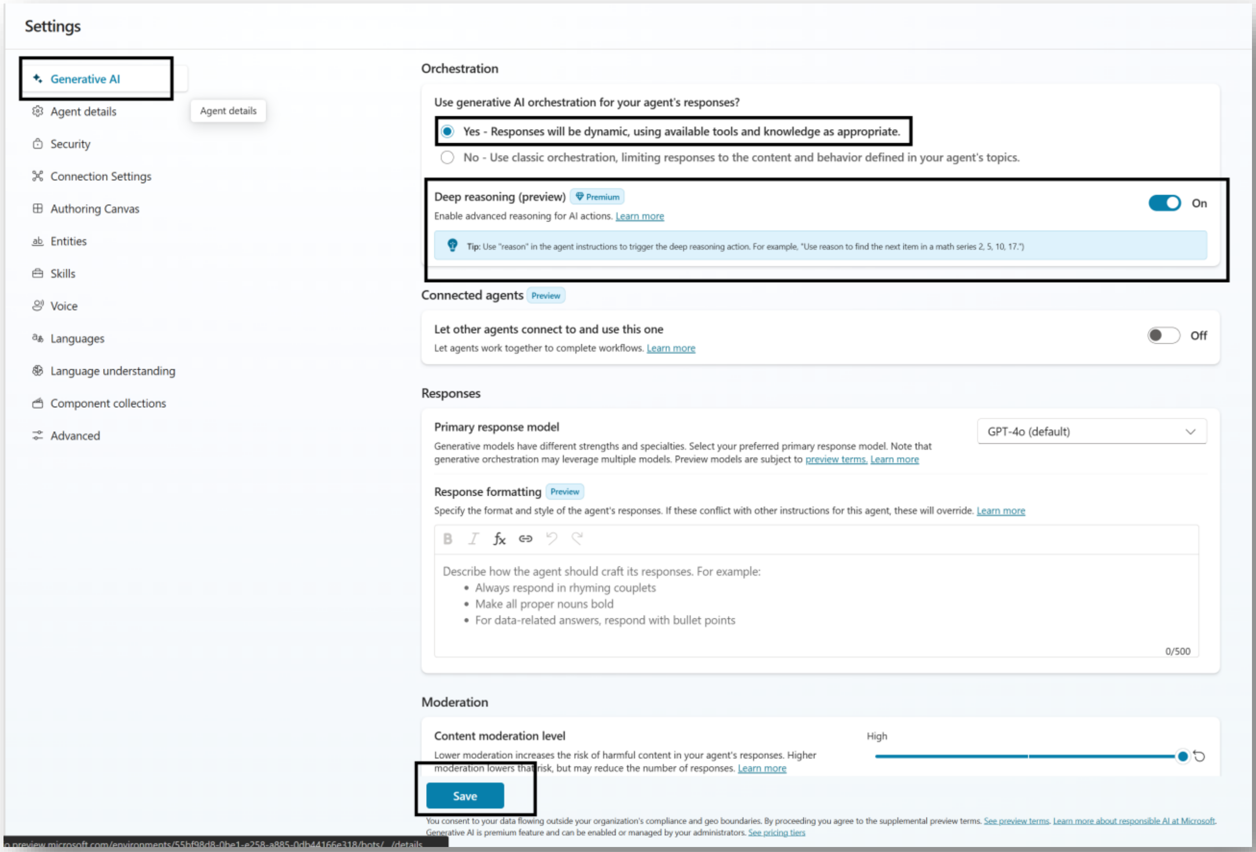


2.1.12 Click on **Save**

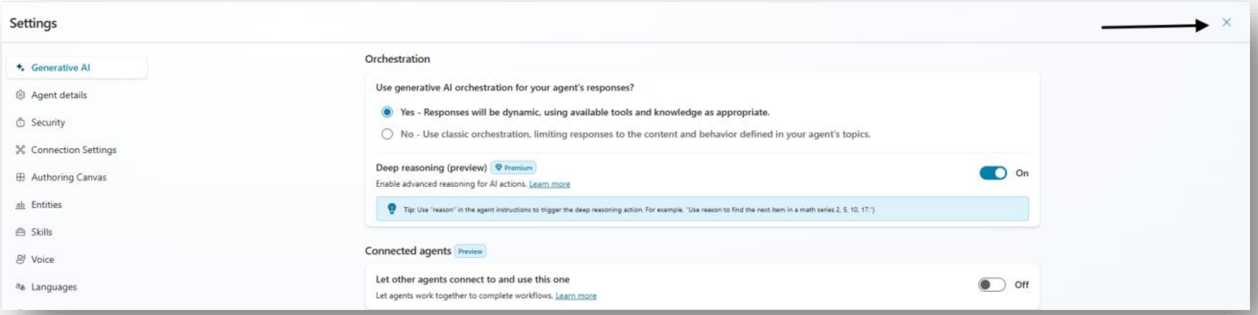
2.1.13 Next, Lets click on the Settings of the Agent.



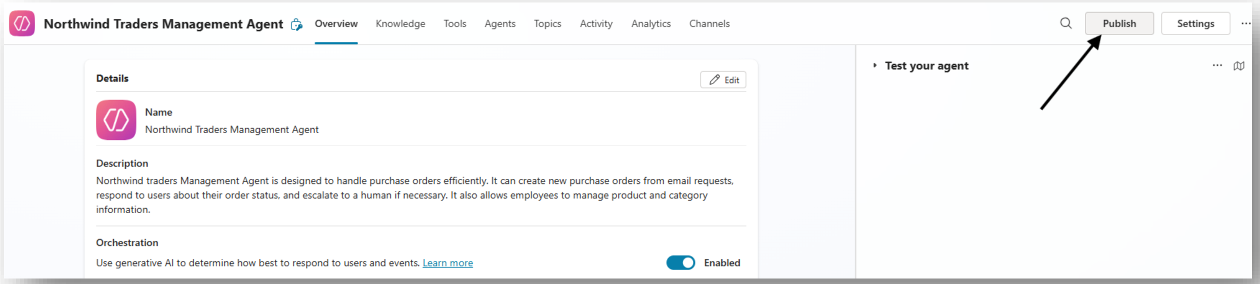
2.1.14 Under Generative AI, make sure that **Use Generative AI** is turned on and **Deep Reasoning** is Enabled. Click **Save.**

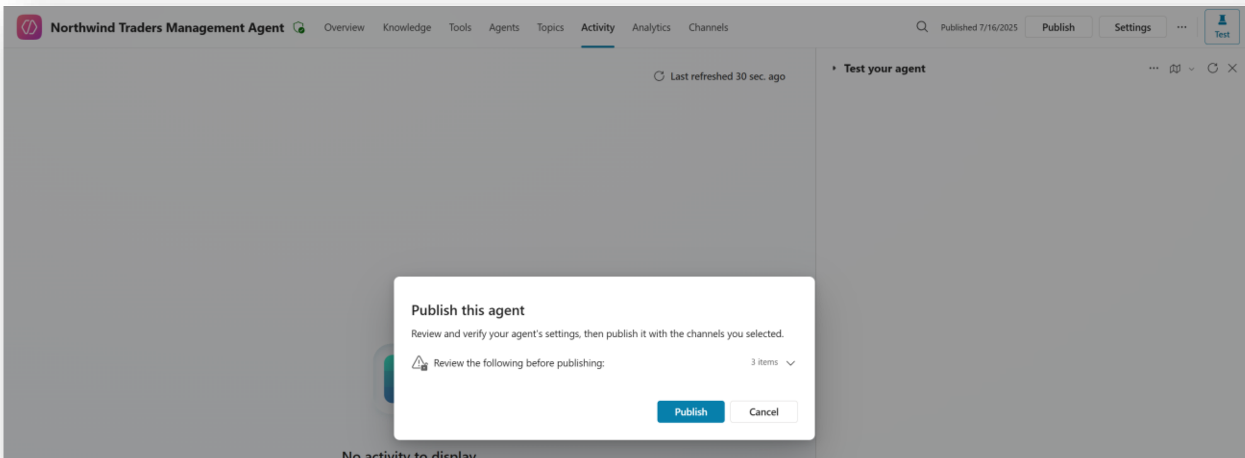


2.1.15 Close the settings page



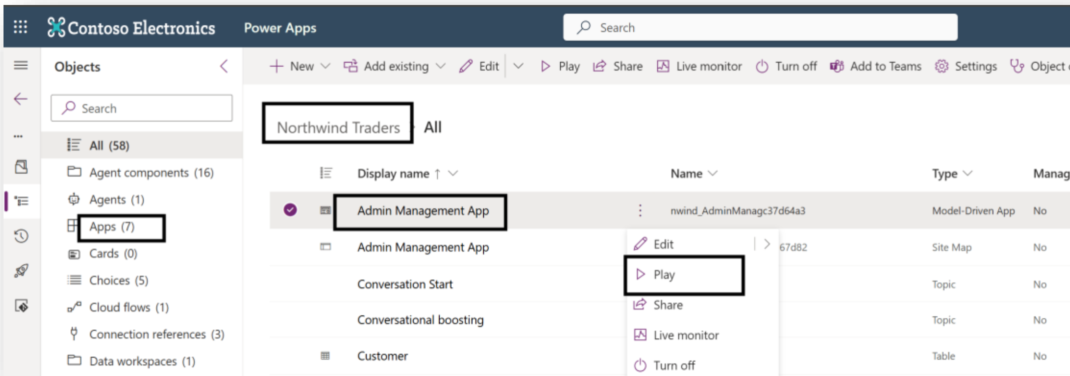
2.1.16 Now Publish the Agent.



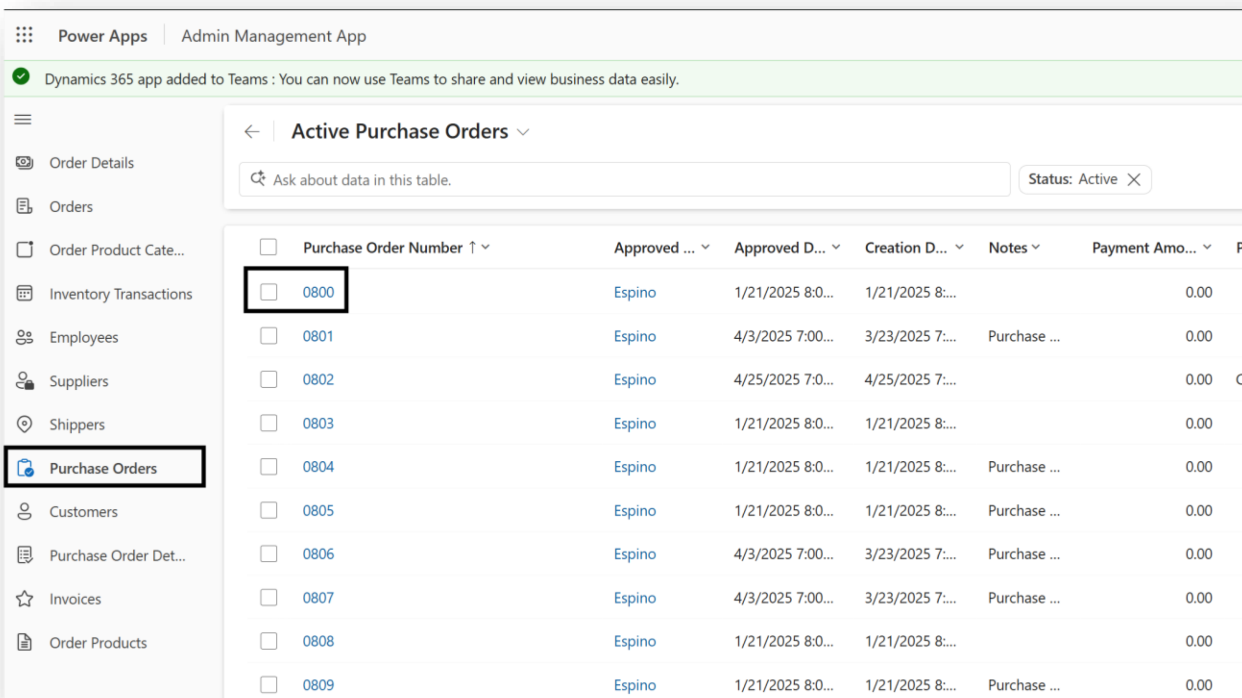


Let's Test Scenario 1

2.1.17 Open the Northwind Traders – Admin Management App. Play the App.

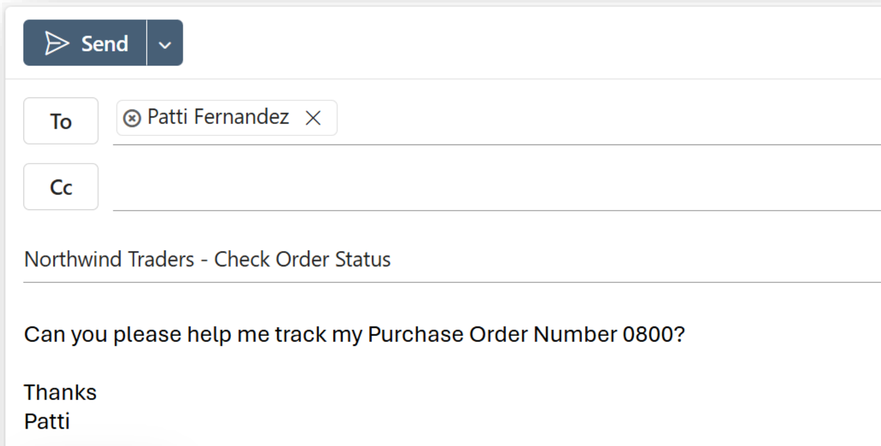


2.1.18 Navigate to Purchase Order Page. Select any Purchase order. Lets check the Status of Order **0800**.



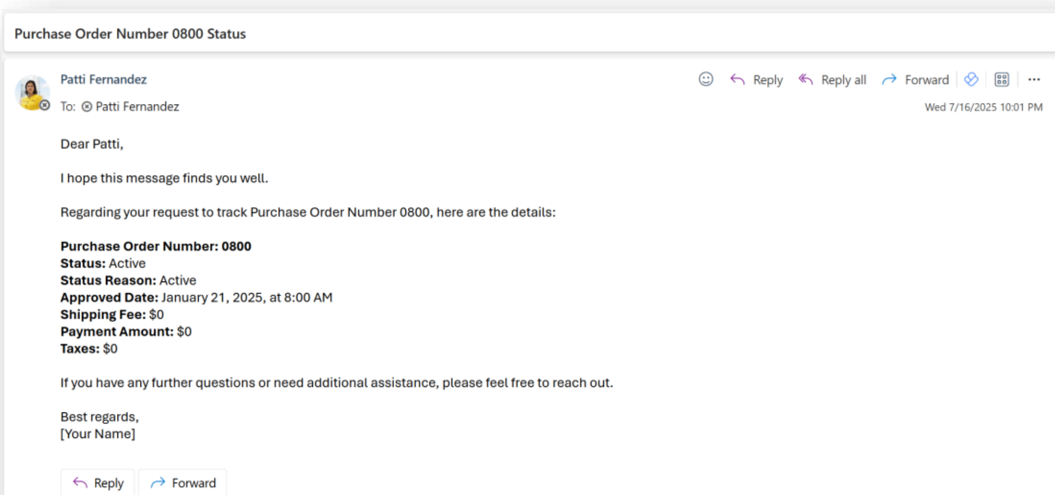
2.1.19 Go to Outlook mailbox for the current account assigned to you and send a mail to yourself as follows:

To: <youruseraccount>
Subject: Northwind Traders – Check Order Status
Email Body: Can you please help me track my Purchase Order Number 0800?



💡 **Note:** Make sure to add Northwind Traders in the Subject Line as the Agent will trigger when the subject contains this keyword.

2.1.20 Once the email is received, the Power Automate Flow should trigger and return the email response with the Order Status.

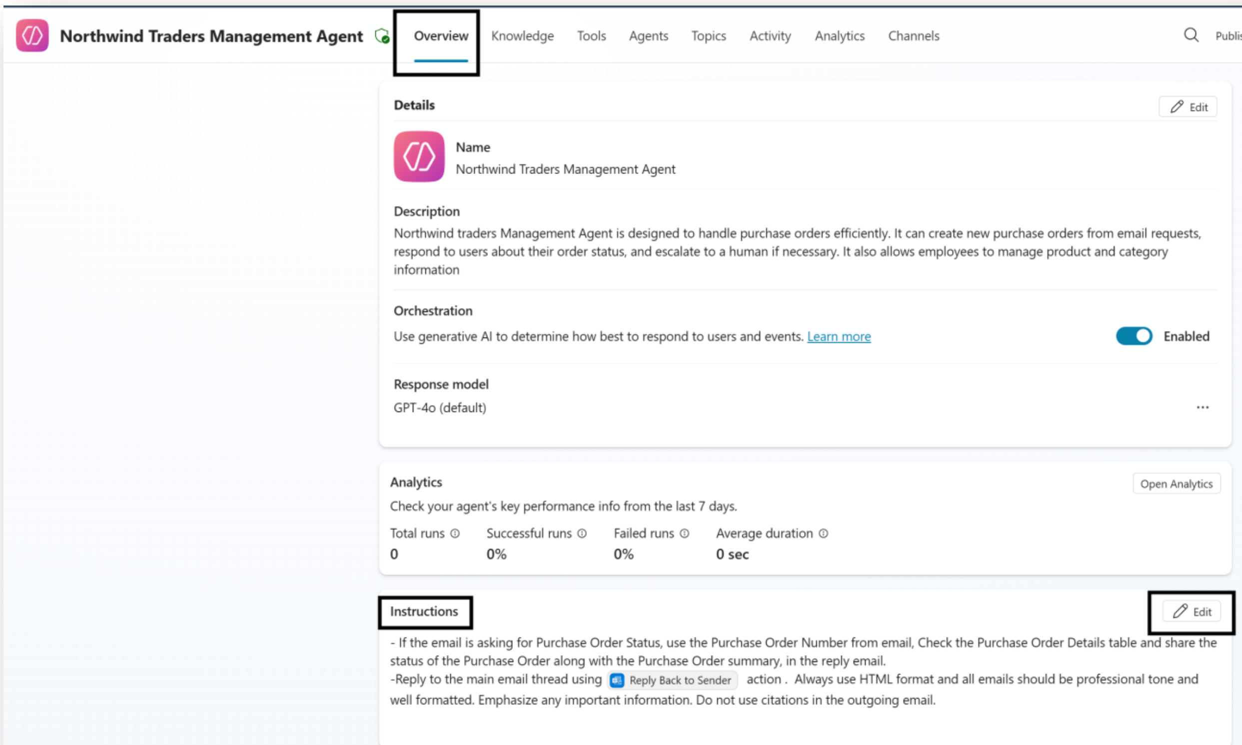


Scenario 2 – Respond to an escalation email

In this scenario, let's assume when the customer receives the Purchase Order Status and they are not Happy with the status and sends a frustrating email. We want our Autonomous Agent to understand the customer tone and reply to them professionally.

To enable this, we need to tweak the Instructions in overview section.

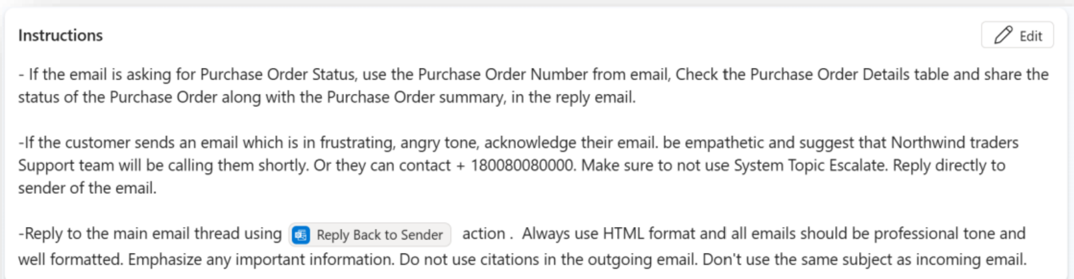
2.2.1 Click on Edit in Instruction section of the Agent.



2.2.2 Add the following statement in the instructions section **before Reply to the email thread instruction**.

-If the customer sends an email which is in frustrating, angry tone, acknowledge their email. be empathetic and suggest that Northwind traders Support team will be calling them shortly. Or they can contact + 180080080000. Make sure to not use System Topic Escalate. Reply directly to sender of the email.

Then Click **Save**.



2.2.3 Publish the Agent once again.

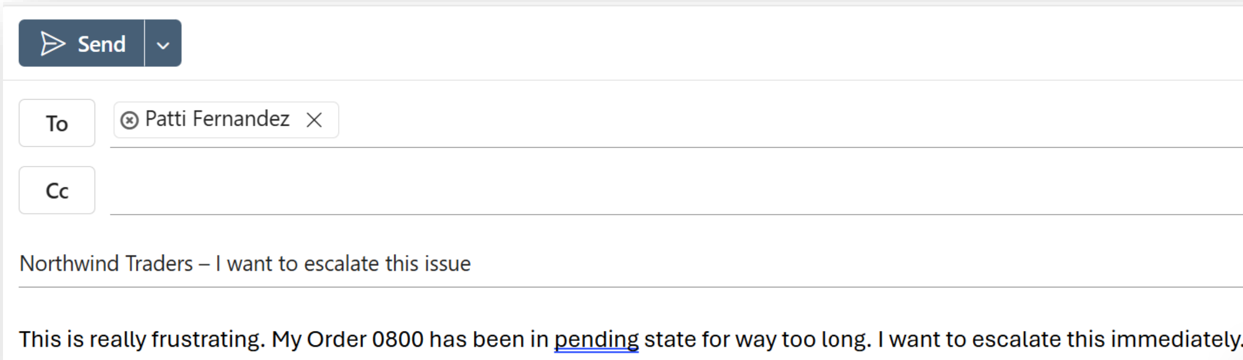
Lets Test Scenario 2

2.2.4 From your assigned account mailbox, send another email with the following details –

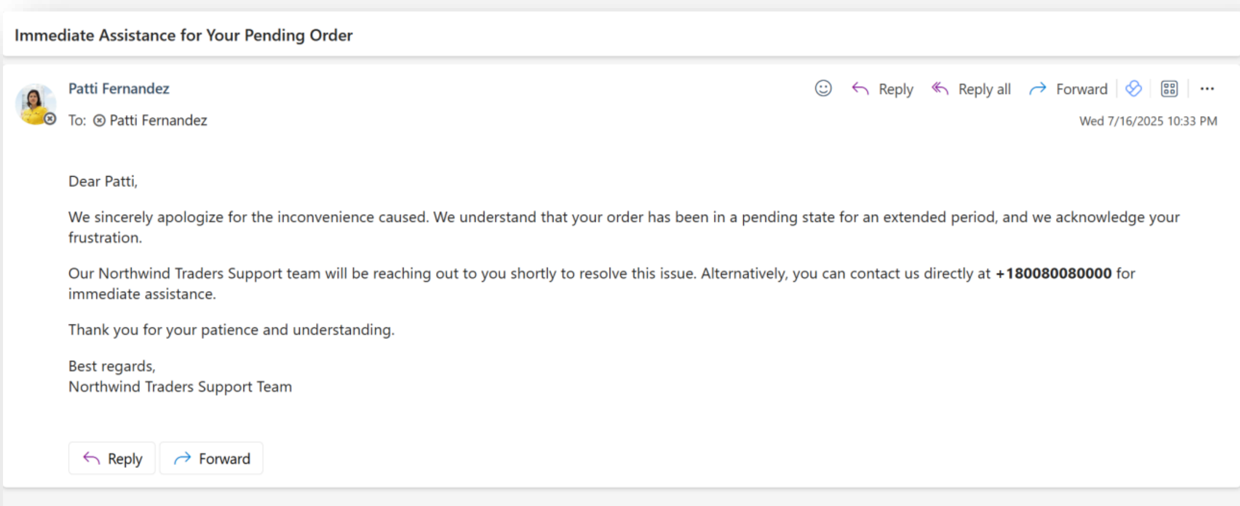
To: <Your account>

Subject – Northwind Traders – I want to escalate this issue

Body - This is really frustrating. My Order has been in pending state for way too long. I want to escalate this immediately.



Agent should be able to send an autonomous response similar to the image shown below –



💡 **Note: AI generated response may vary.**

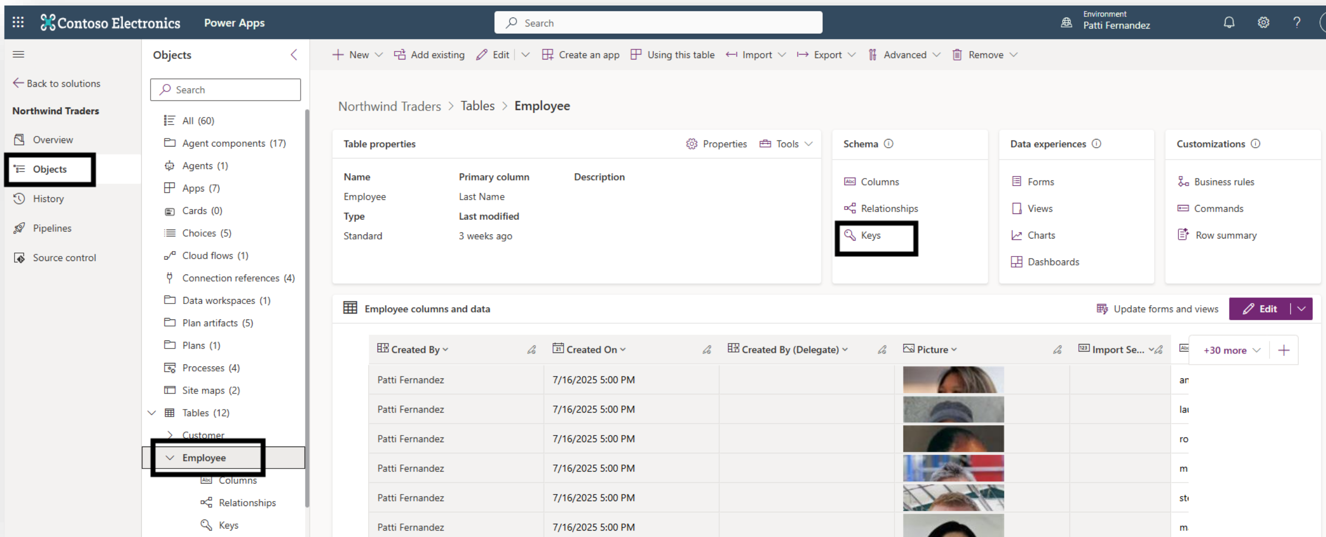
Scenario 3 – Create Purchase Orders in Dataverse

Our next business scenario is to create a purchase order based on the incoming email and reply back to the sender with the newly created purchase order number for future tracking.

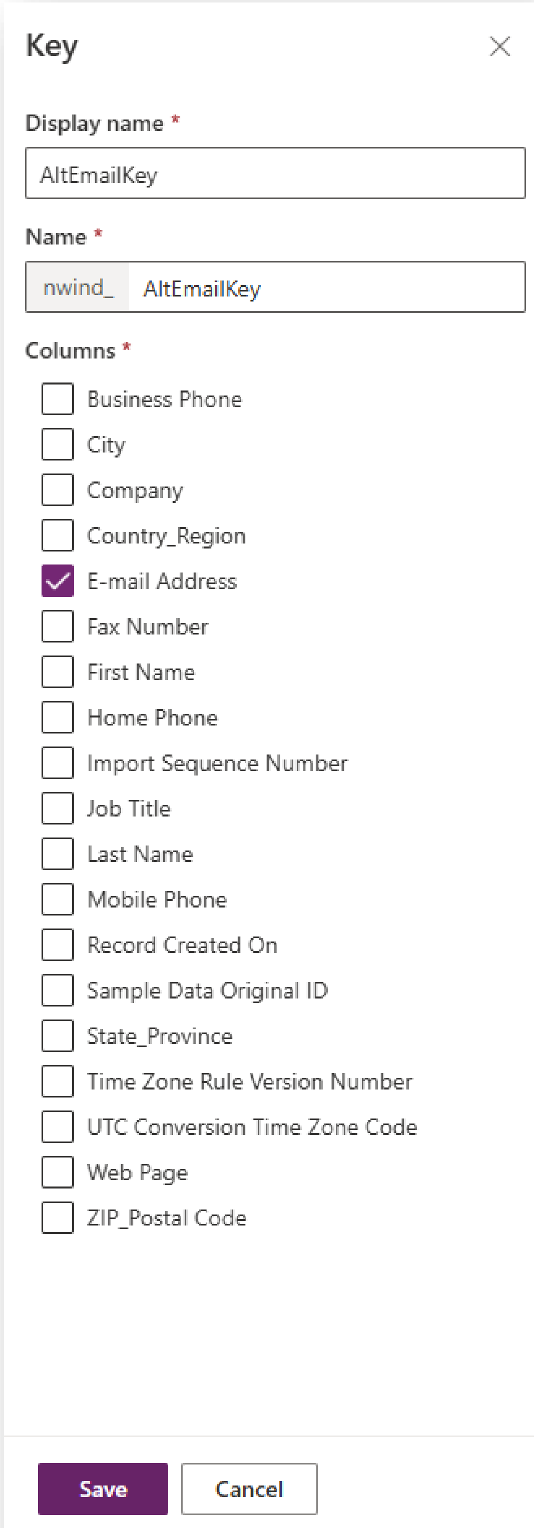
Before integrating the tool into our autonomous agent to create records in the **Purchase Order** table, it's important to ensure that **lookup columns** function correctly—especially when working with **relational data in Dataverse**.

In this lab, we'll use the **"Submitted by"** column in the Purchase Order table to reference the **Employees** table. To enable the autonomous agent to perform this lookup successfully, we need to define a new **alternate key** in the Employees table, specifying that the **email ID** is unique. This setup ensures accurate and efficient data creation by the agent

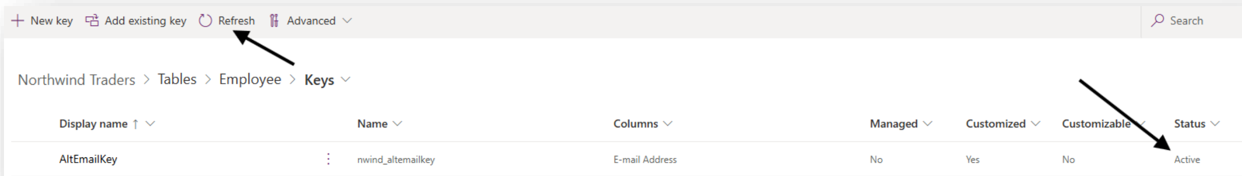
1. Go to the Northwind traders' solution, **Tables -> Employee and click on Keys.**



2. Click on **+ New Key and** configure as follows and then click on **Save**

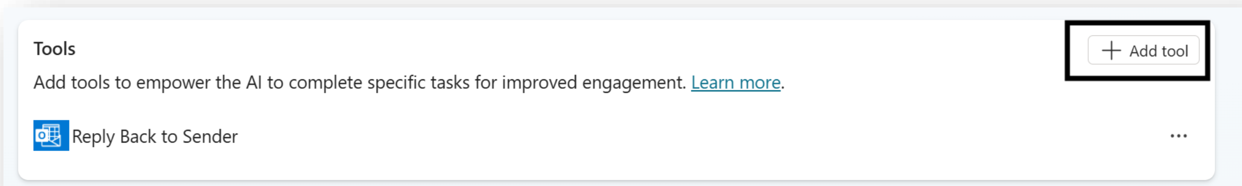


3. The key will show as Pending Status for a few minutes and then it should turn as **Active**.

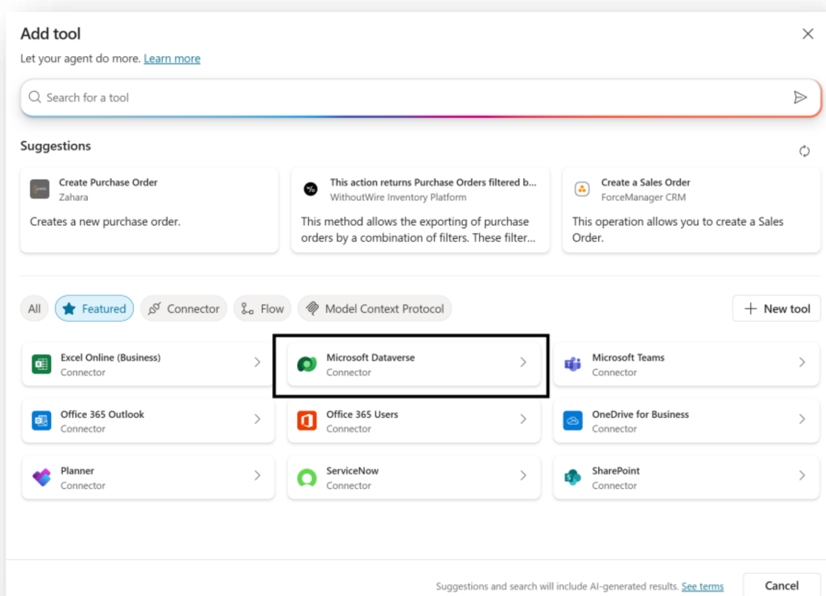


Back to the Agent:

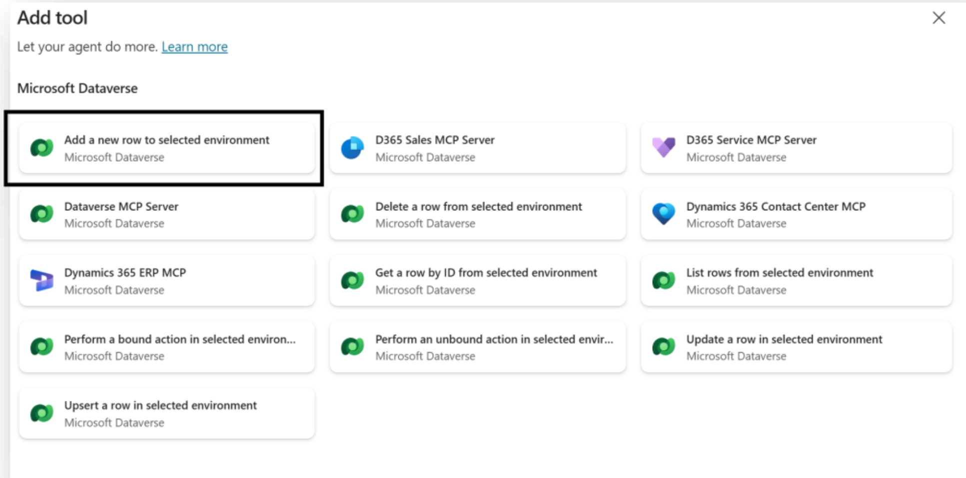
2.3.1 Now, Lets add another tool to create a new row in Dataverse. Go to Tools in Overview section and click on + Add Tool



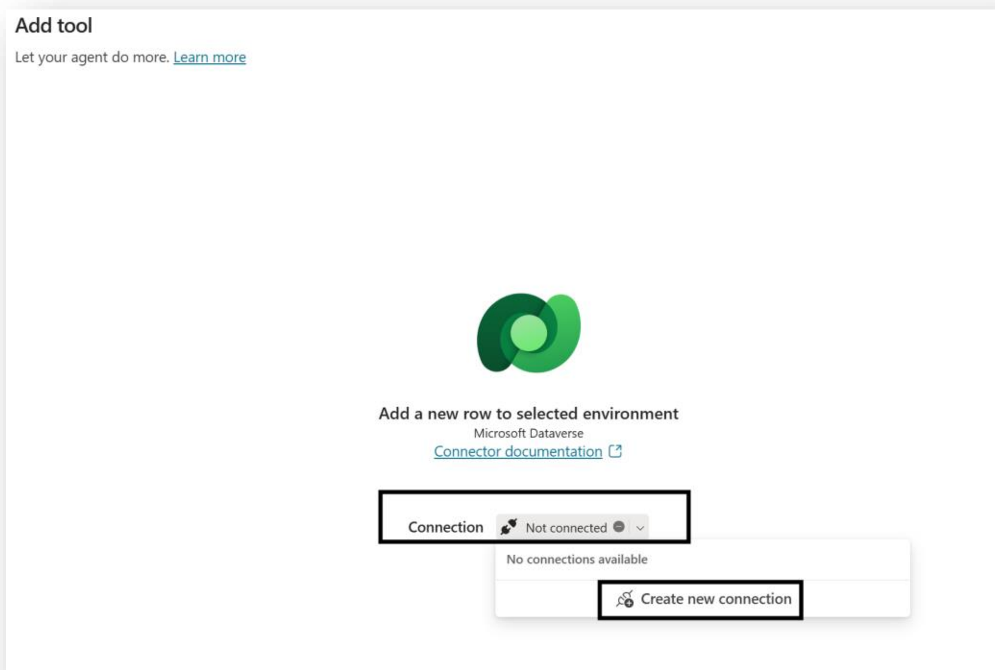
2.3.2 Select **Microsoft Dataverse**



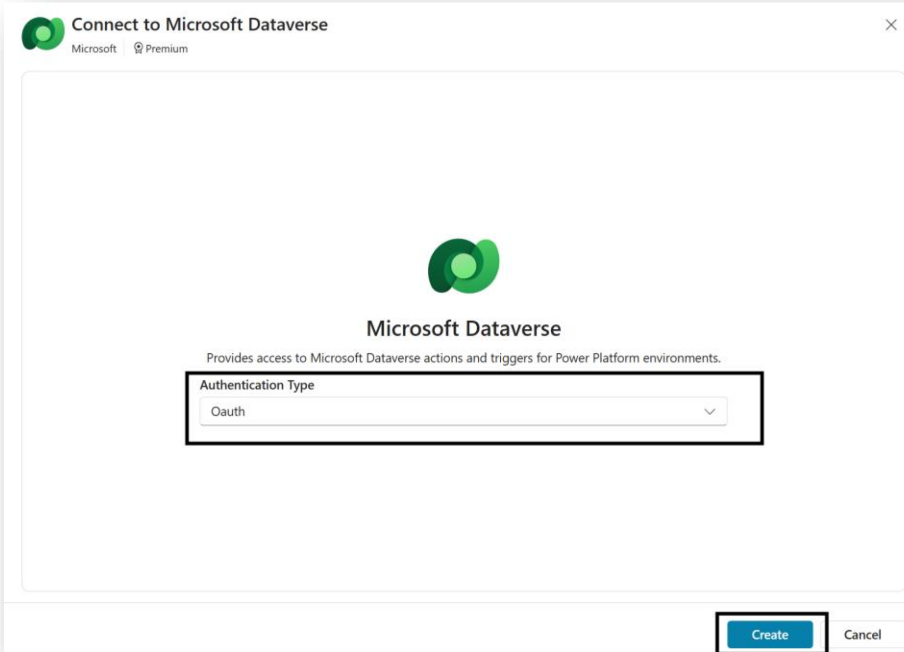
2.3.3 Select Add a new row to selected environment



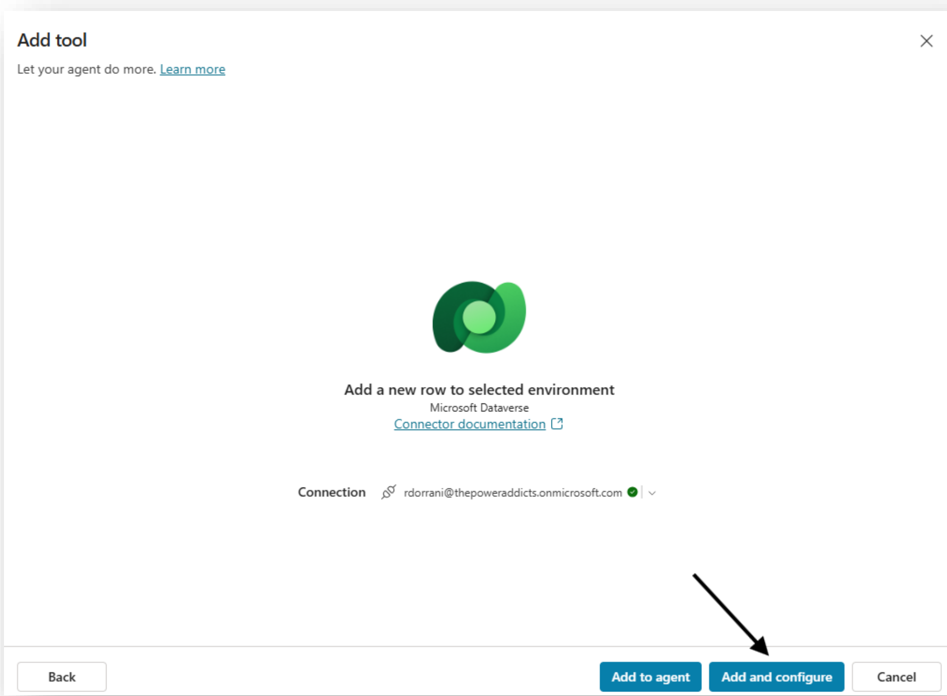
2.3.4 In case if the Connection for Dataverse is not present, Create a new connection for Dataverse.



2.3.5 Select Authentication type as OAuth and click on **Create**

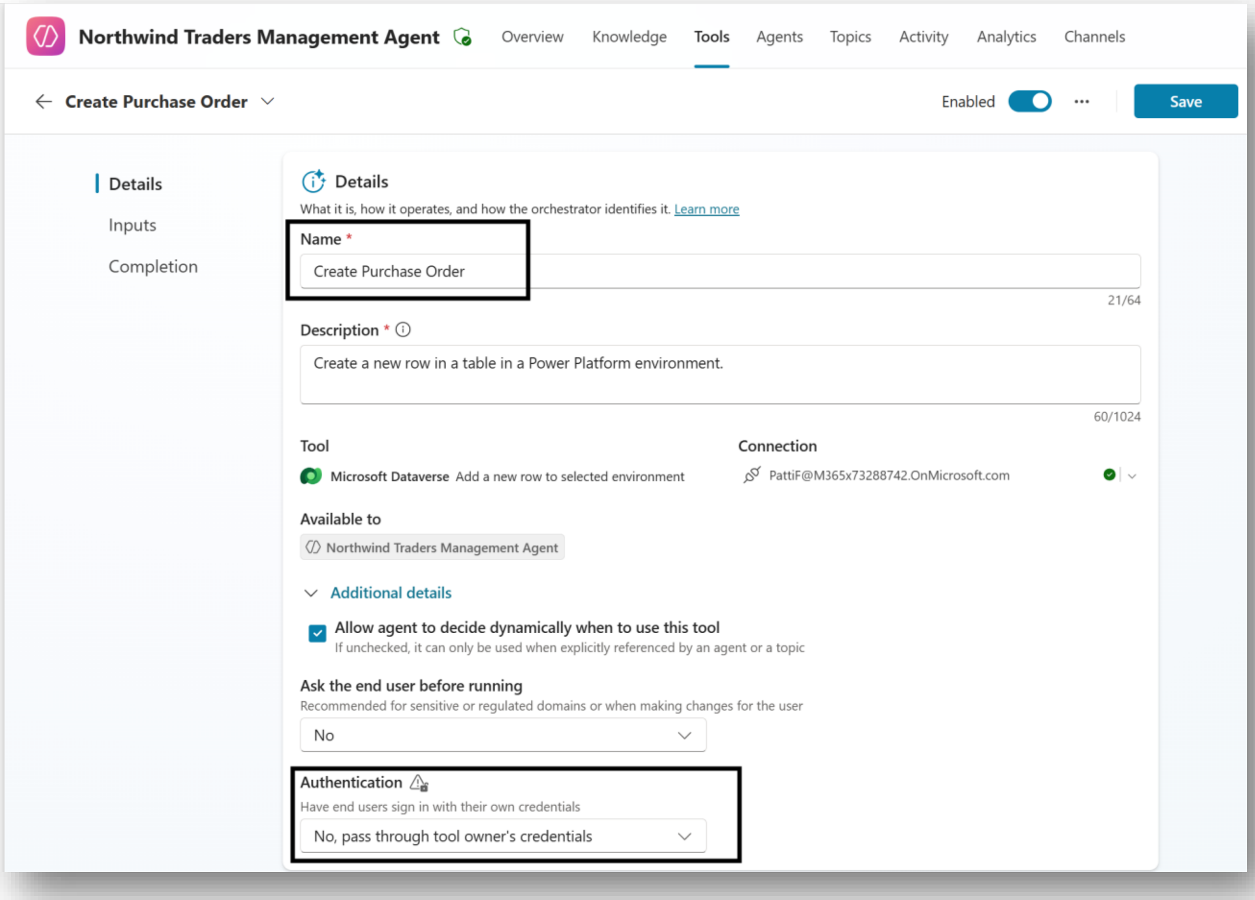


2.3.6 Click on Add and Configure.

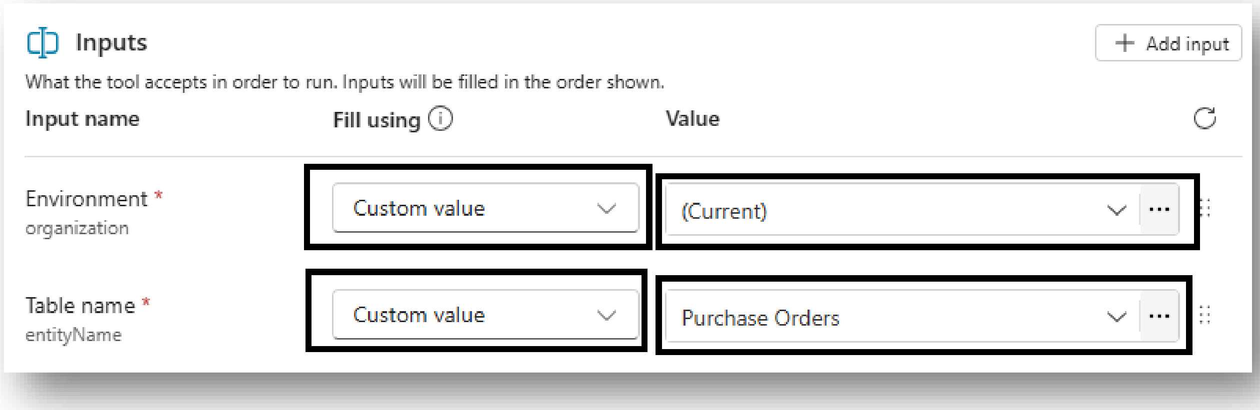


2.3.7 Next, we will configure this action. Set Name of this action as **“Create Purchase Order”.**

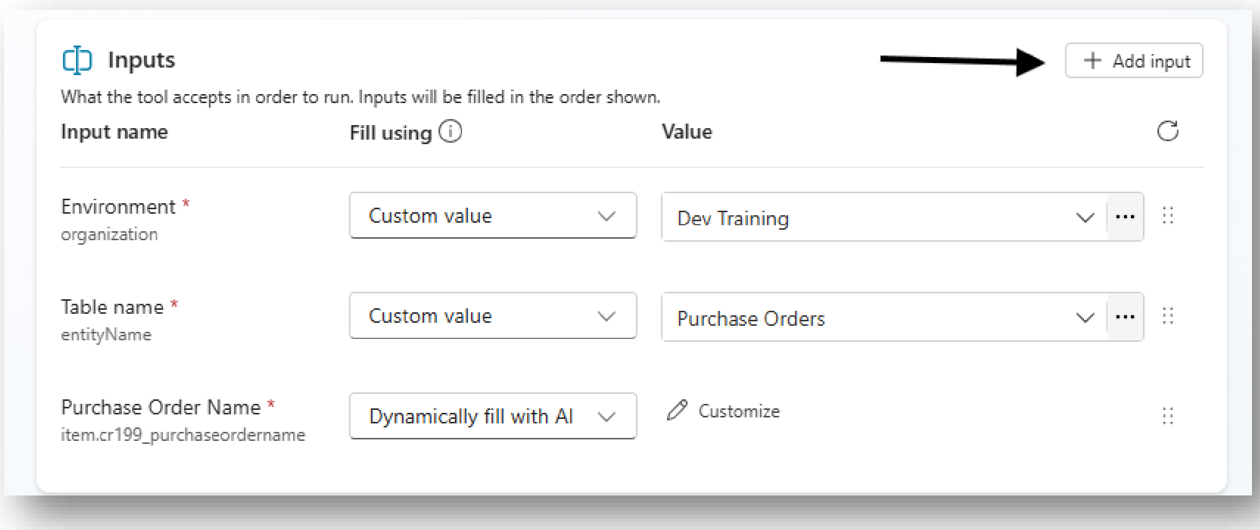
In Additional Details, change Authentication setting to **“No, pass through tool owner’s credentials”.**



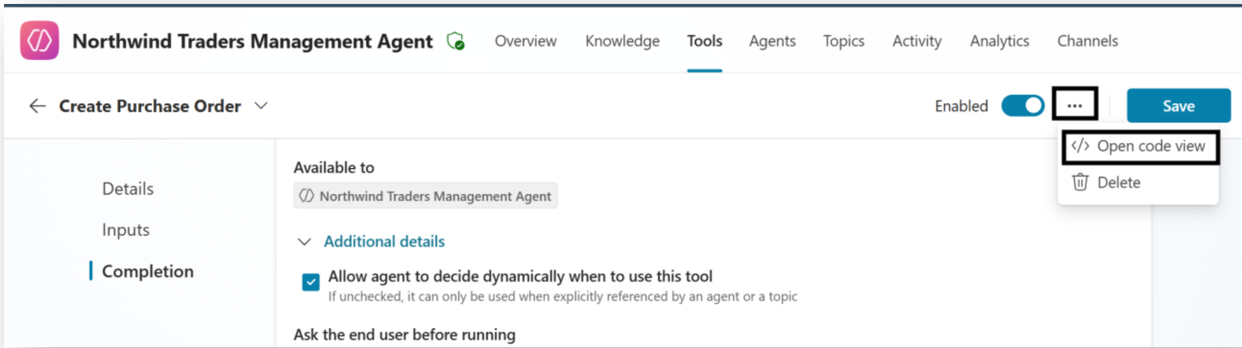
2.3.8 For Environment and Table Name, change “Dynamic Fill with AI” to Custom Value. Select the Environment Name as **(Current)** and Table Name as **Purchase Orders** as shown below:



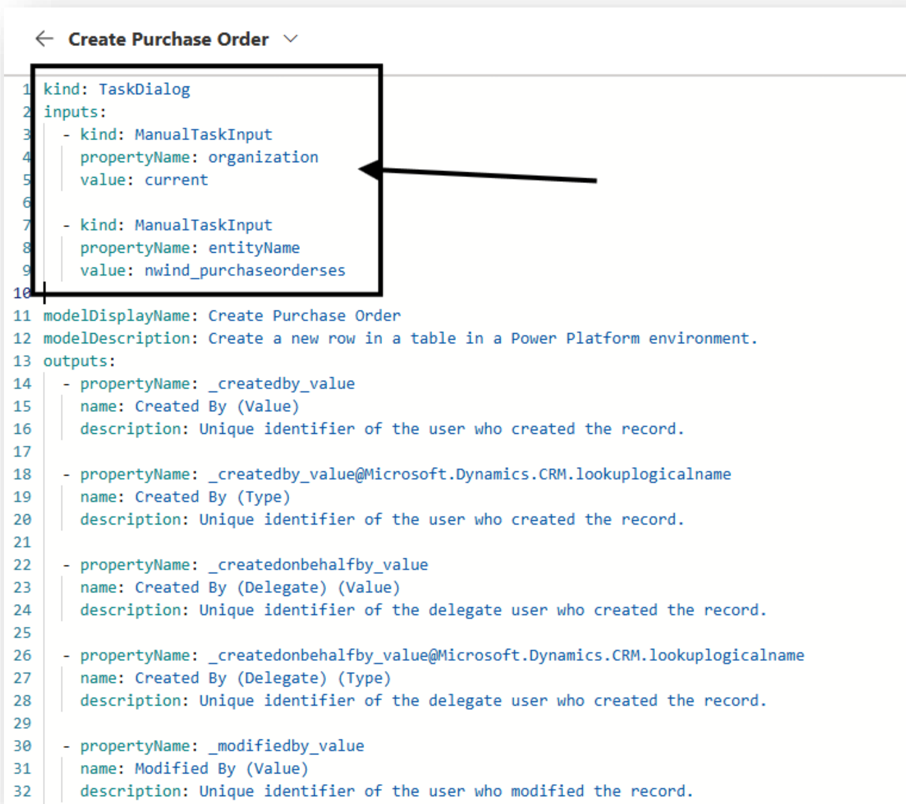
2.3.9 Next, You can click on Add Input to Add the columns that you would like to update as a part of Purchase Order Creation.



2.3.10 For the ease of creation of this Tool, click on the ... and Select **"</> Open Code View".**



2.3.11 Copy and Paste the below mentioned code in the Code view before **modelDisplayName** (You need to replace the code in the section highlighted in image below with the code shared in yellow)



```yaml
    kind: TaskDialog
    inputs:
      - kind: ManualTaskInput
        propertyName: organization
        value: current

      - kind: ManualTaskInput
        propertyName: entityName
        value: nwind_purchaseorderses

  - kind: AutomaticTaskInput
    propertyName: item.'nwind_paymentamount'
    name: Payment Amount
    description: From email body extract Payment Amount

  - kind: AutomaticTaskInput
    propertyName: item.'nwind_paymentmethod'
    name: Payment Method
    description: From email body extract Payment Method

  - kind: AutomaticTaskInput
    propertyName: item.'nwind_shippingfee'
    name: Shipping Fee
    description: From email body extract Shipping Fee

  - kind: AutomaticTaskInput
    propertyName: item.'nwind_notes'
    name: Notes
    description: Entire email body

  - kind: ManualTaskInput
    propertyName: item.'nwind_purchaseorderstatusid'
    value: 0

  - kind: AutomaticTaskInput
    propertyName: item.'nwind_SubmittedBy@odata.bind'
    description: "Use this format nwind_employeeses(nwind_emailaddress='emailID') where
emailID is coming from Incoming email. "

  - kind: AutomaticTaskInput
    propertyName: item.'nwind_submitteddate'
    name: Submitted Date
    description: |
      Generate an Submitted Date by adding the duration to the current date and
time,  formatted as in this example: 2025-01-06T14:57:51.2948938Z
```

2.3.12 Let's understand the code above.

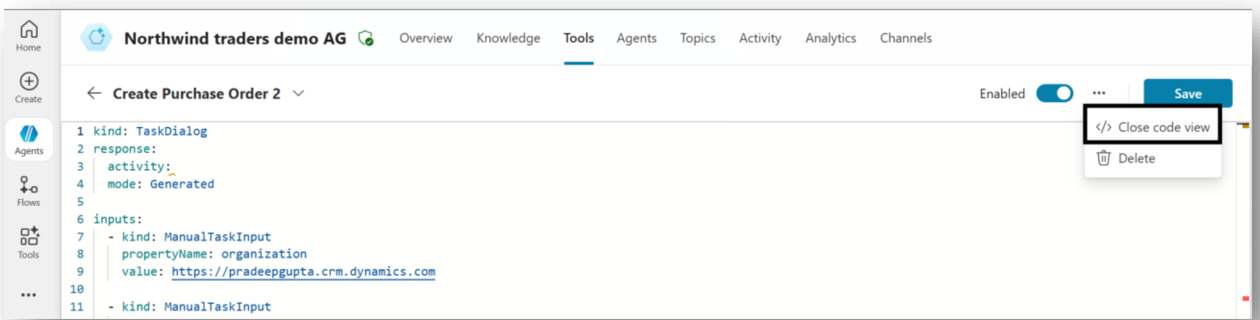
For columns **- Payment amount, Payment method, Shipping fee and notes**, the data will be extracted from the incoming email and will be dynamically filled by AI.

For column – **Purchase Order Status**, is a choice column. We are setting it to 0 (which is "New") .

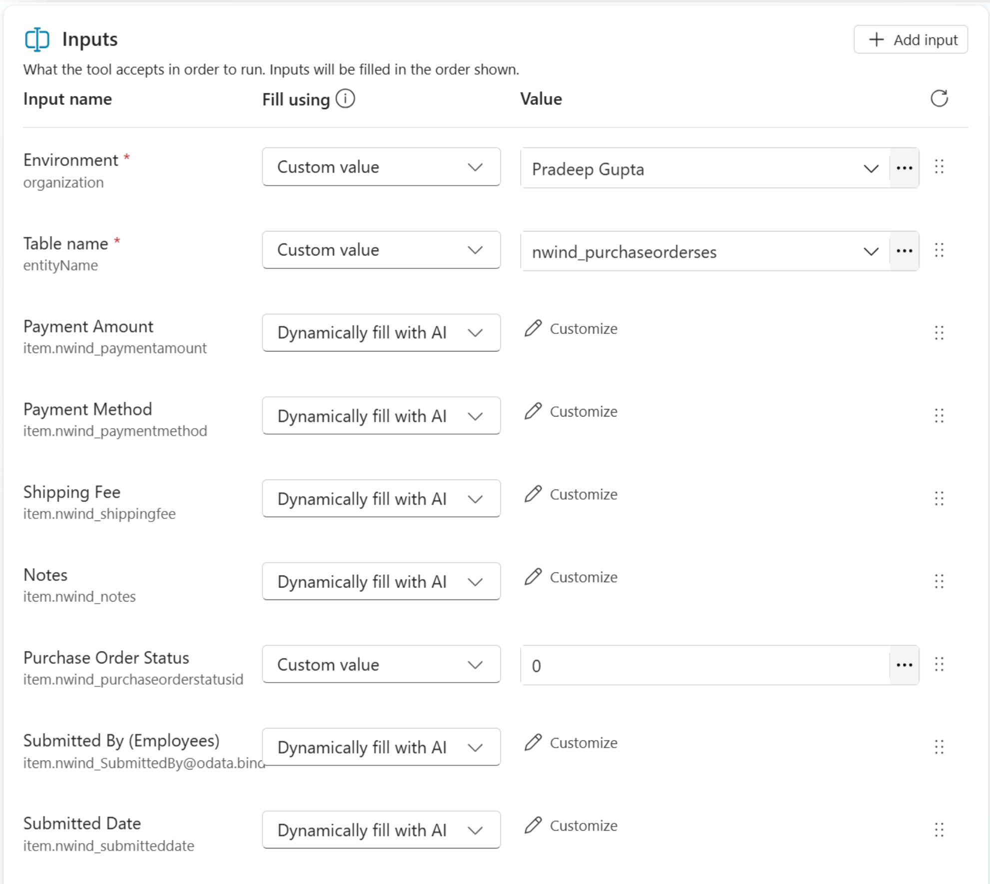
For column – **Submitted by**, we need to specify the format - `nwind_employeeses(nwind_emailaddress='emailID')` where emailID is coming from the incoming email.

For column – Submitted Date, we need to specify the date format example.

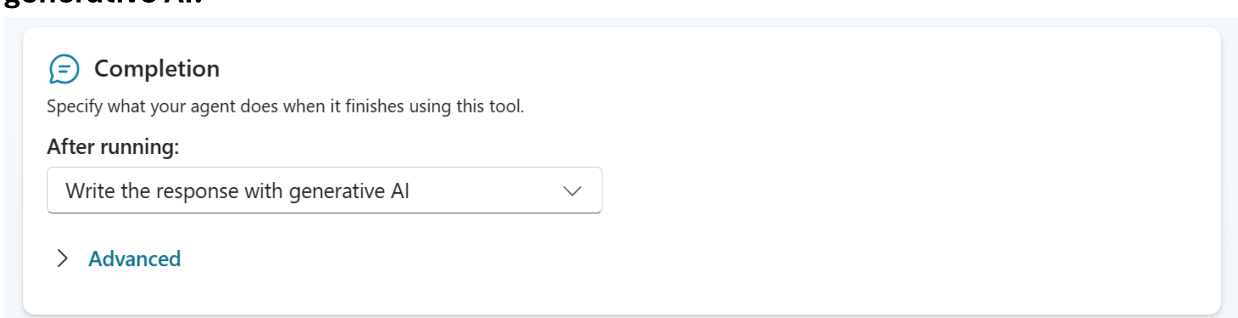
2.3.13 Click on ... and close the code view.



This is how the Inputs section should look like:



2.3.14 Under completion section, Set After running as **Write the response with generative AI.**

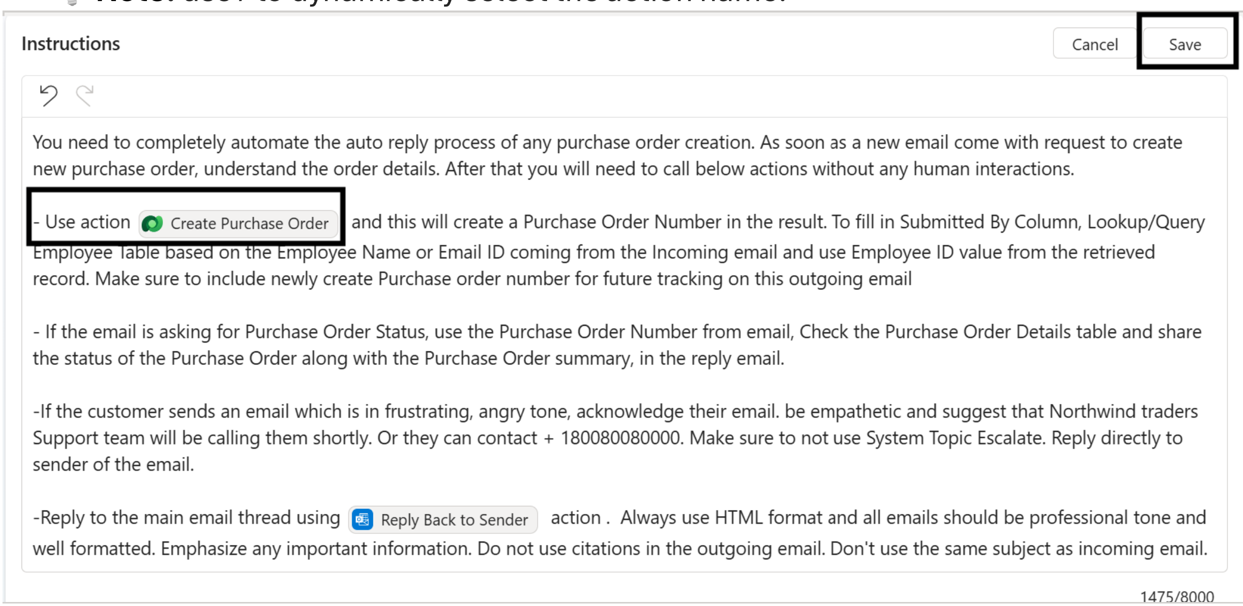


2.3.15 Click on **Save**.

2.3.16 Navigate back to the overview section and add the following note in the beginning of Instructions.

You need to completely automate the auto reply process of any purchase order creation. As soon as a new email come with request to create new purchase order, understand the order details. After that you will need to call below actions without any human interactions.
- Use action <actionName> and this will create a Purchase Order Number in the result. To fill in Submitted By Column, Lookup/Query Employee Table based on the Employee Name or Email ID coming from the Incoming email and use Employee ID value from the retrieved record. Make sure to include newly create Purchase order number for future tracking on this outgoing email

💡 **Note:** use / to dynamically select the action name.



2.3.17 Click on **Save** action. And **Publish** the Agent.

Let's Test Scenario 3

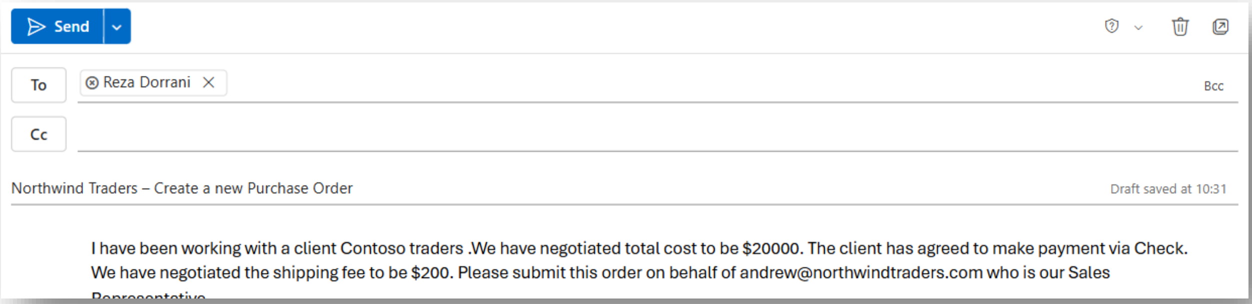
2.3.18 Go to your email mailbox (for account used in lab) and send the following email :

To: your account email

From: Northwind Traders – Create a new Purchase Order

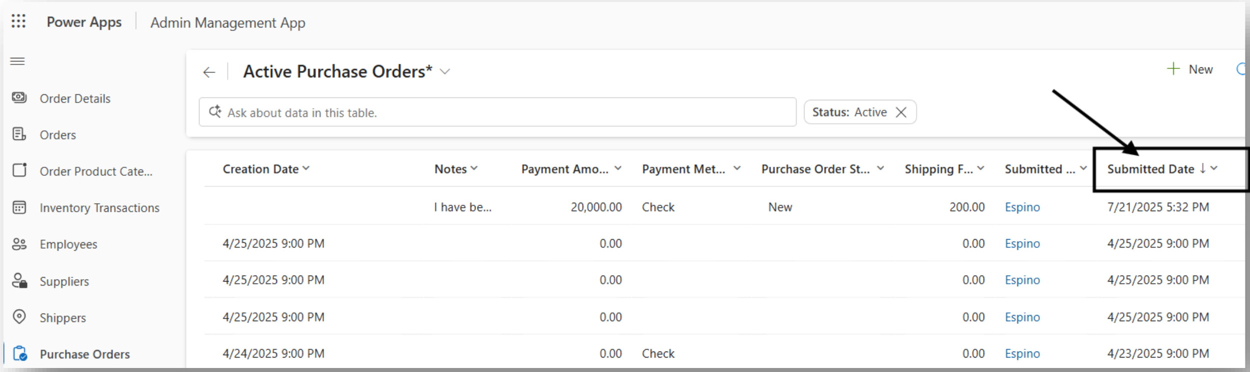
Body:

I have been working with a client Contoso traders .We have negotiated total cost to be $20000. The client has agreed to make payment via Check. We have negotiated the shipping fee to be $200. Please submit this order on behalf of andrew@northwindtraders.com who is our Sales Representative.

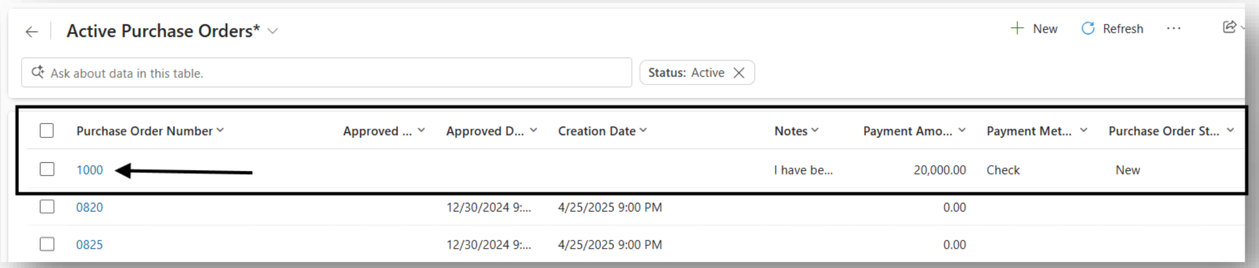


2.3.19 Let's validate and confirm that the Purchase Order is created in the Purchase order table.

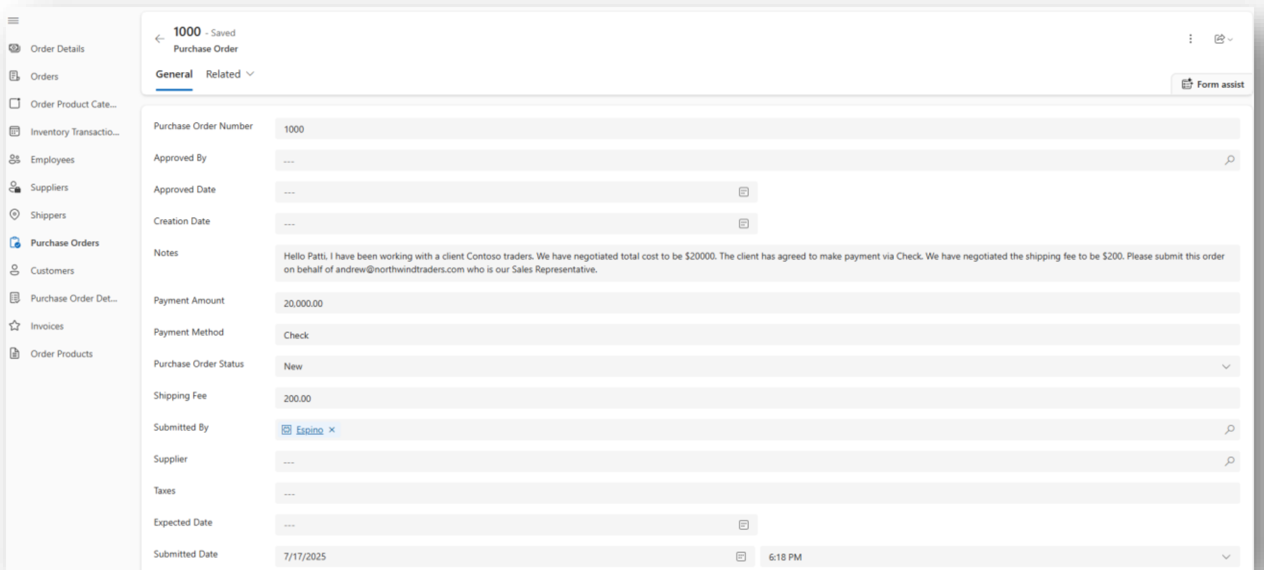
Go to Purchase Orders Page and sort by Submitted Date in descending order.



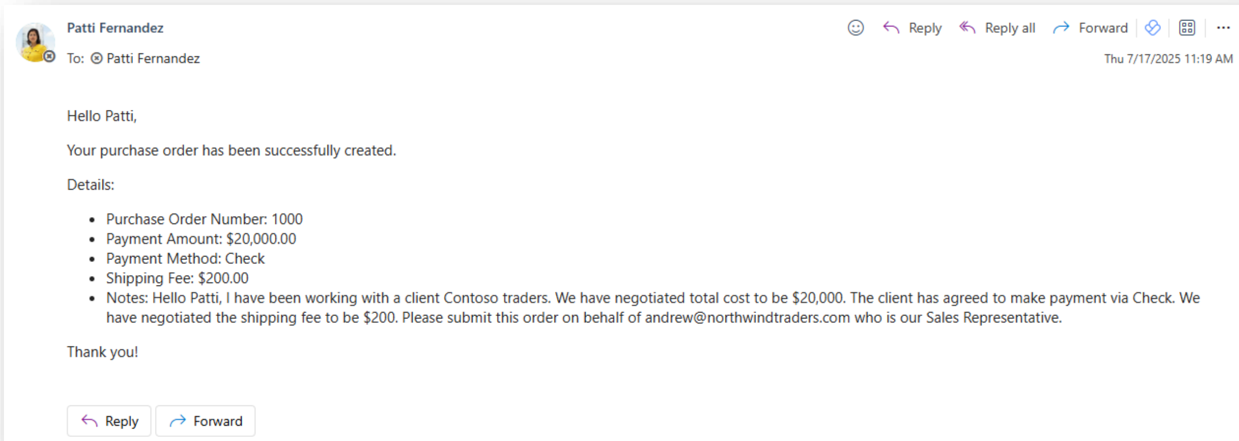
The first record would be the latest created Purchase Order
Click on the Purchase Order number for that record.



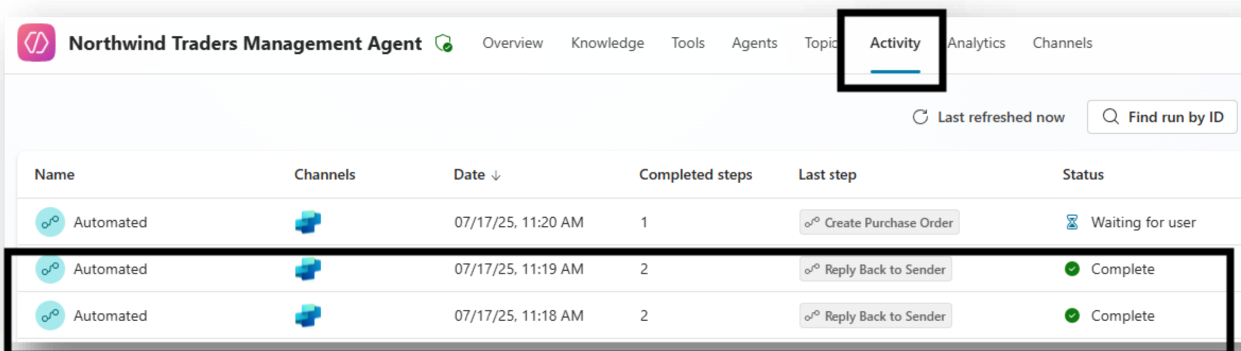
The Purchase Order form has all the details coming in from the incoming email.



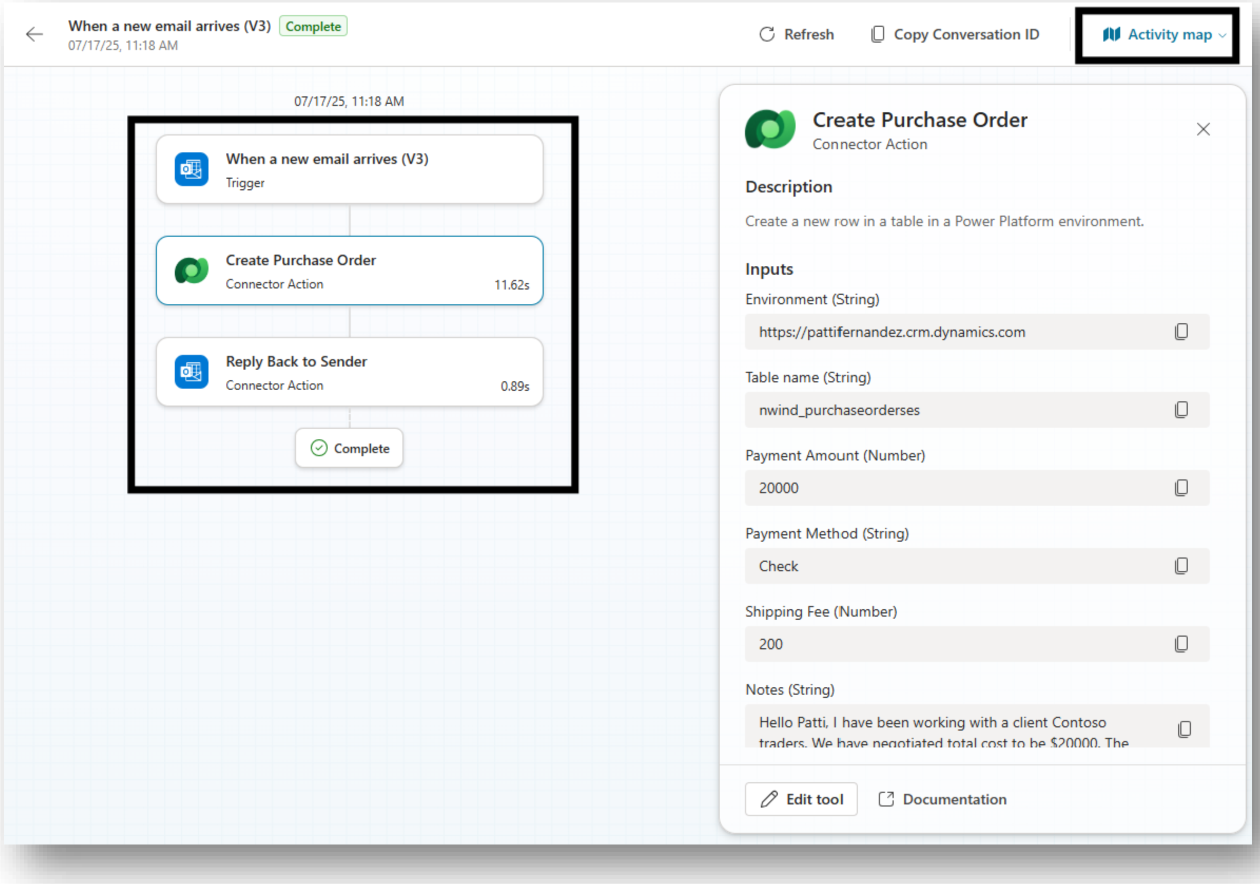
2.3.20 You should have also received an email with acknowledgement that the Purchase Order has been placed successfully.
Email would include the Purchase Order Number and other details.



2.3.21 To view Agent Activity (see what your agent has done autonomously and more), you can go to Activity Section to monitor if agent has been successfully able to perform the actions.



2.3.22 Click on any activity further to review the Activity Map.



🥳 **Congratulations!!!**

You have successfully completed this module.