Lab 1: Build an Agent with wx.ai Agent Lab

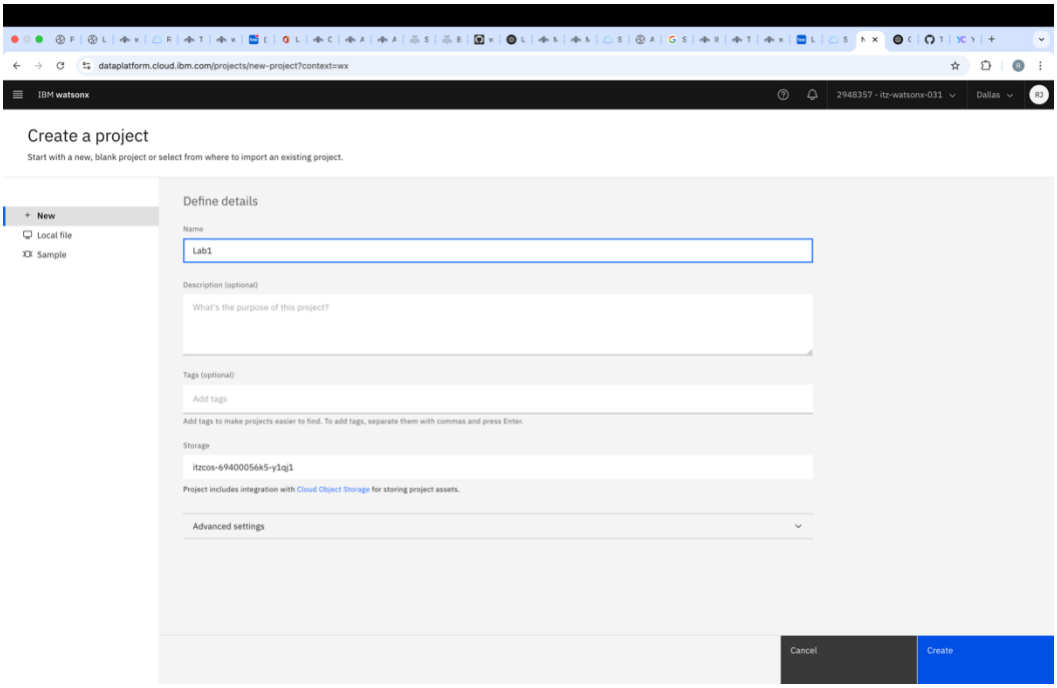
In this lab, you will build a **Supplier Researcher Agent** using **Watsonx.ai Agent Lab**. This agent will allow you to research the suppliers for procuring Xtralife based on past supplier performance, procurement rules and customer reviews.

Files used in lab can be downloaded from box folder “Lab 1”.

Steps to Create the Agent

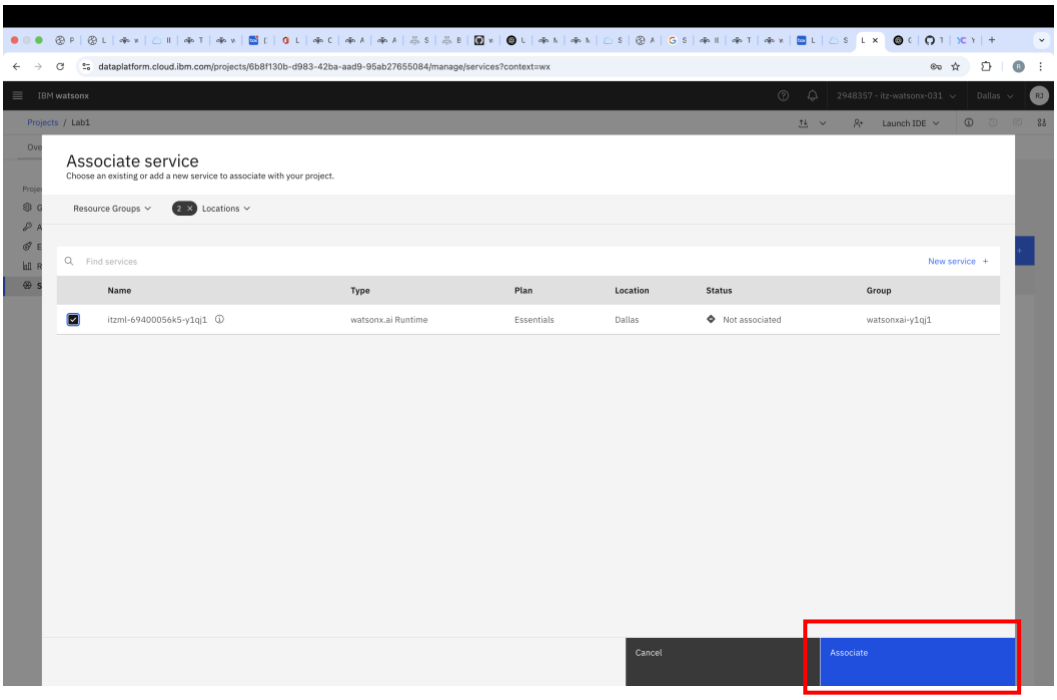
Step 1: Create a Project

- If this is your first time using this account, you must create a project before using Agent Lab.



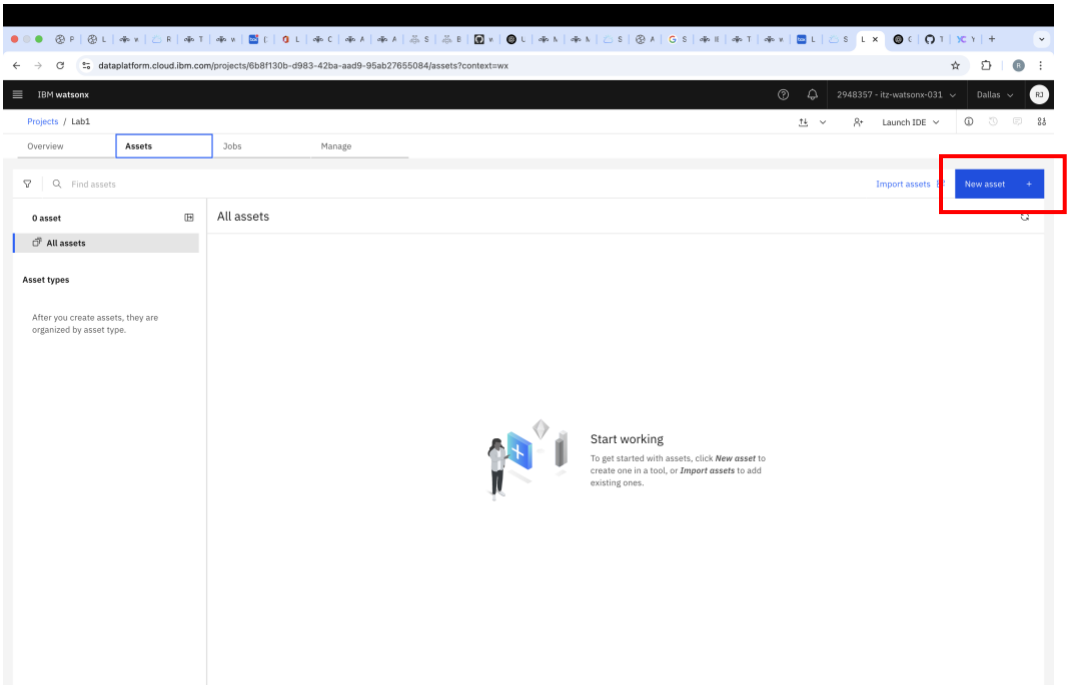
Step 2: Associate the Watsonx.ai Service

- After creating the project, navigate to **Manage → Services & Integrations → Associate Service**.
- Select **Watsonx.ai** and associate it with your project.



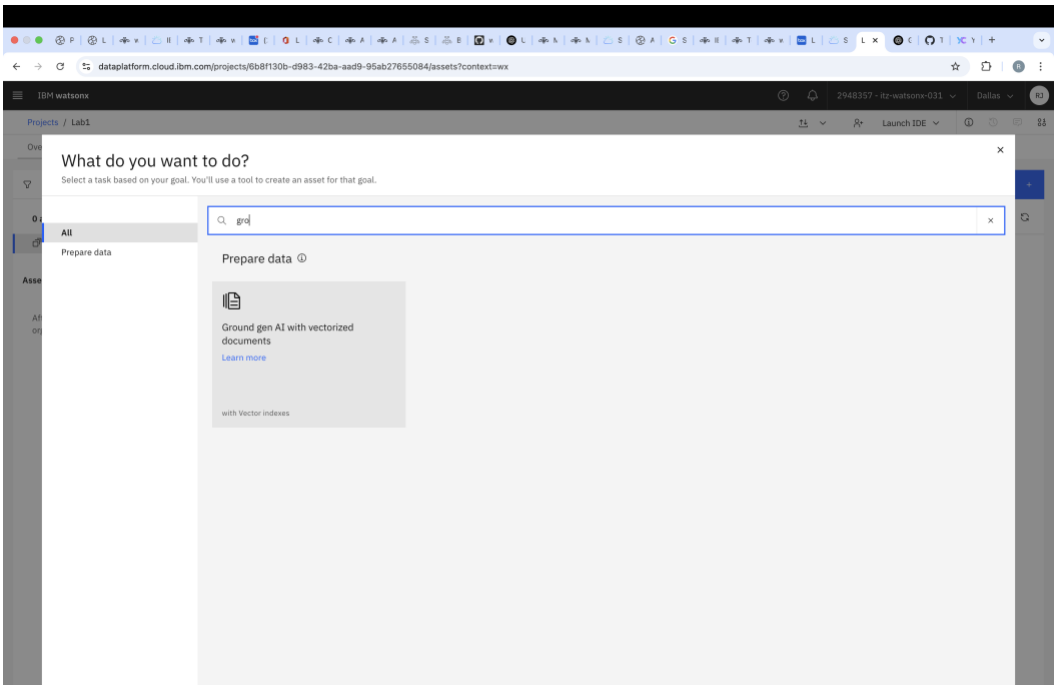
Step 3: Add a New Asset

- Go to the **Assets** tab and click **New Asset**.



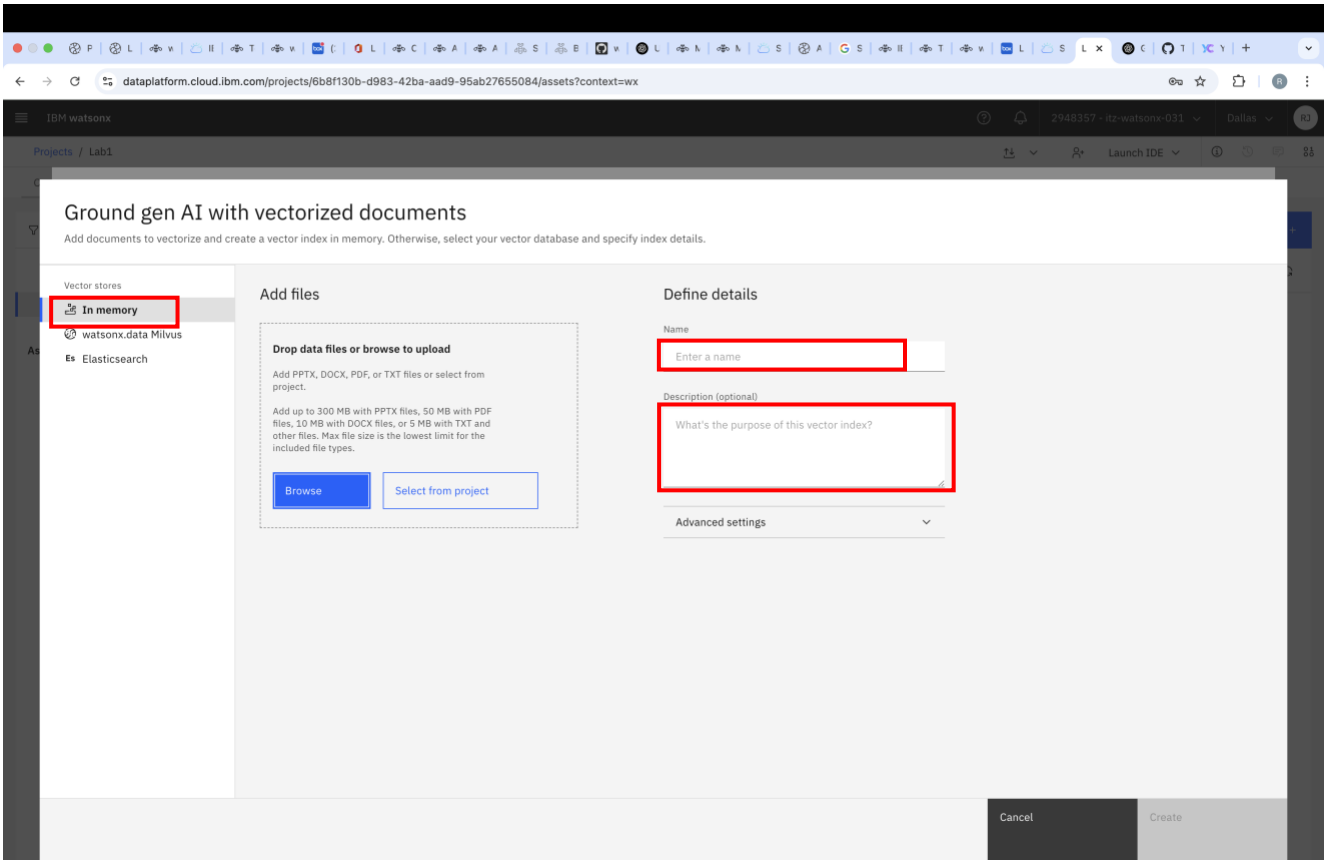
Step 4: Create an In-Memory Vector Store

- Search for **"Ground Gen AI with Vectorized Documents"** and click to create an **In-Memory Vector Store**.



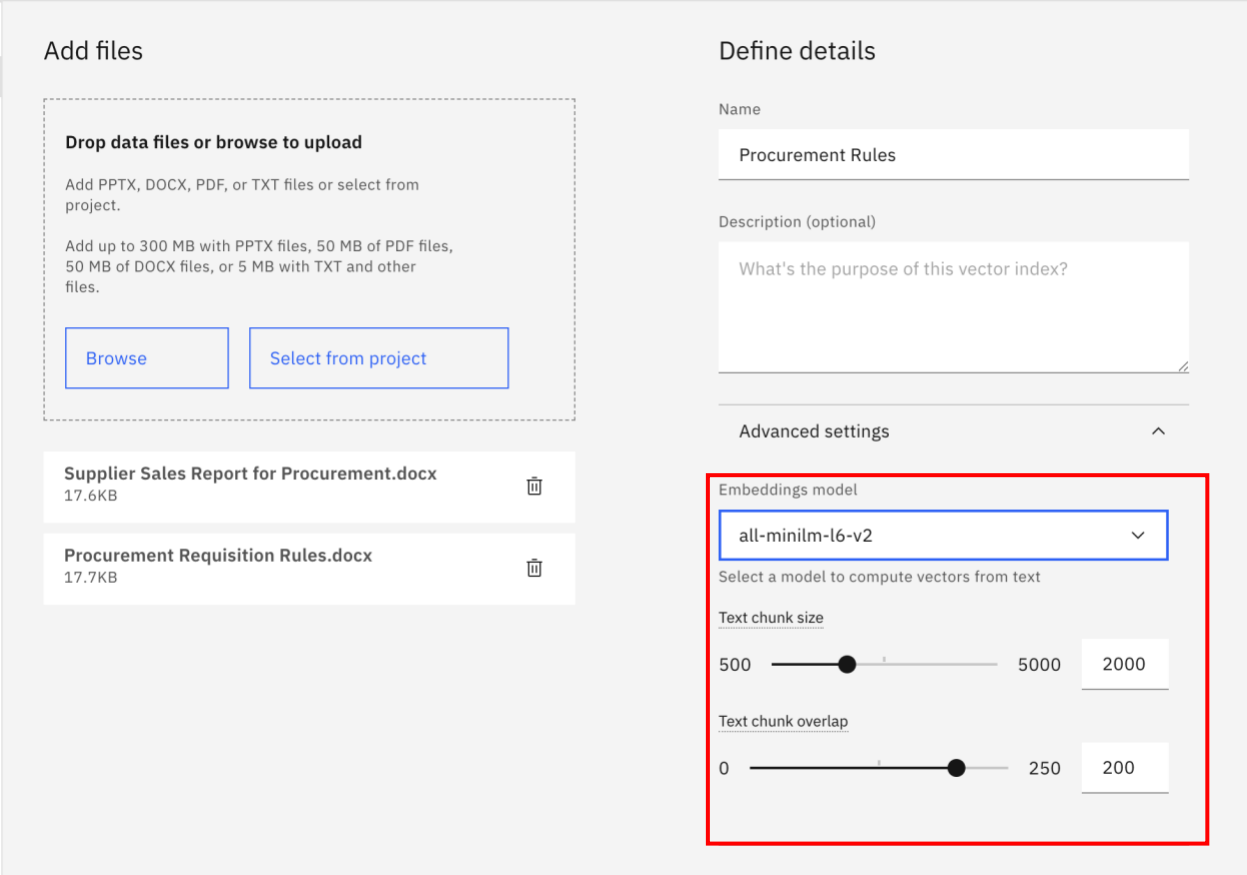
Step 5: Choose the Vector Index Type

- Click on **Ground Gen AI with Vectorized Documents**.
- You will see three options to create a vector index:
  - **In-Memory**
  - **Watsonx.data (Milvus)**
  - **Elasticsearch (ES)**
- For this lab, select **In-Memory**.



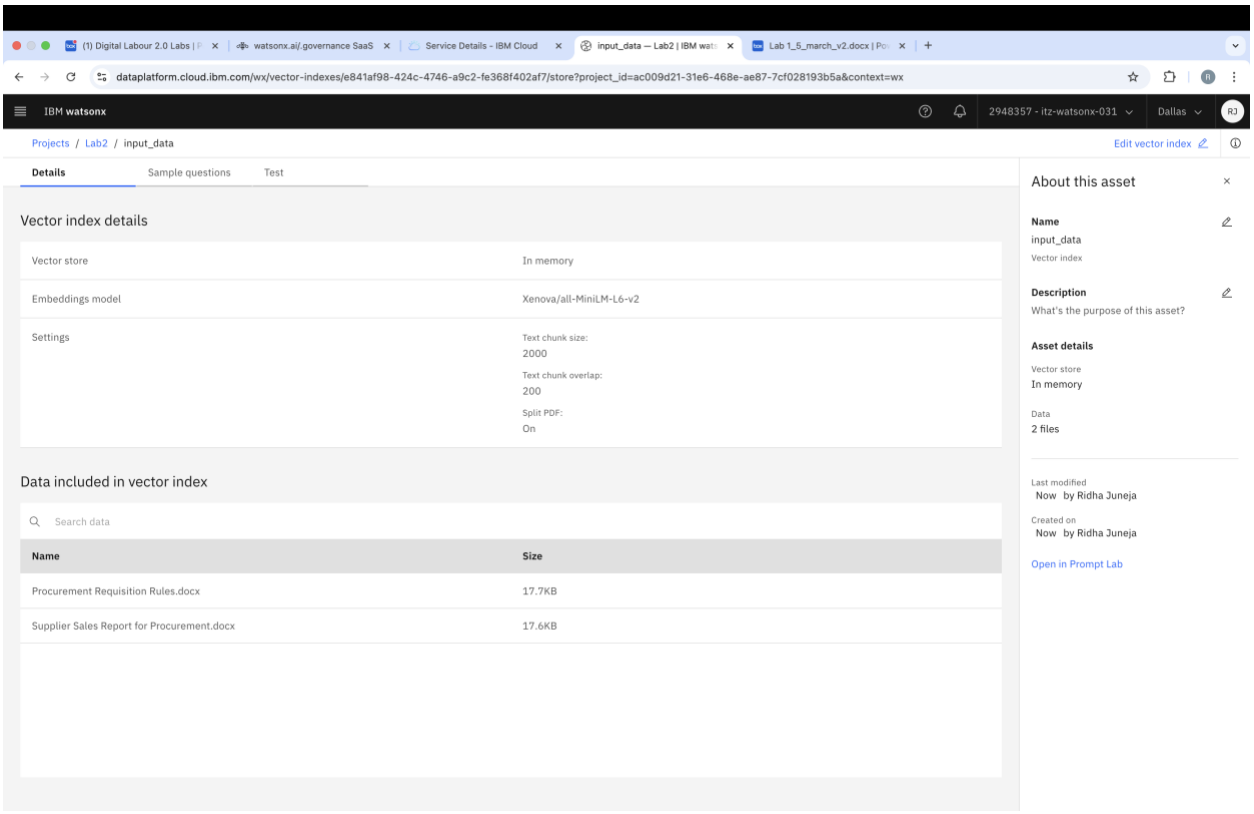
Step 6: Upload Documents and Configure Indexing

- Upload input documents for vector index creation using the **Browse** option.
  - Procurement Requisition Rules.docx
  - Supplier Sales Report for Procurement.docx
- Assign a name to your vector index.
- Click on **Advanced Settings** to configure the following:
  - **Embeddings Model**: Choose "all-MiniLM-L6-v2" embedding model. There may be some variations in the embedding model names. (By default: granite-embaddings-107m-multilingual)
  - **Indexing Parameters** such as **Text Chunk Size** and **Text Chunk Overlap,** select the default values at this moment.
- Click **Create** to generate the vector index.



Step 7: View Vector Index Details

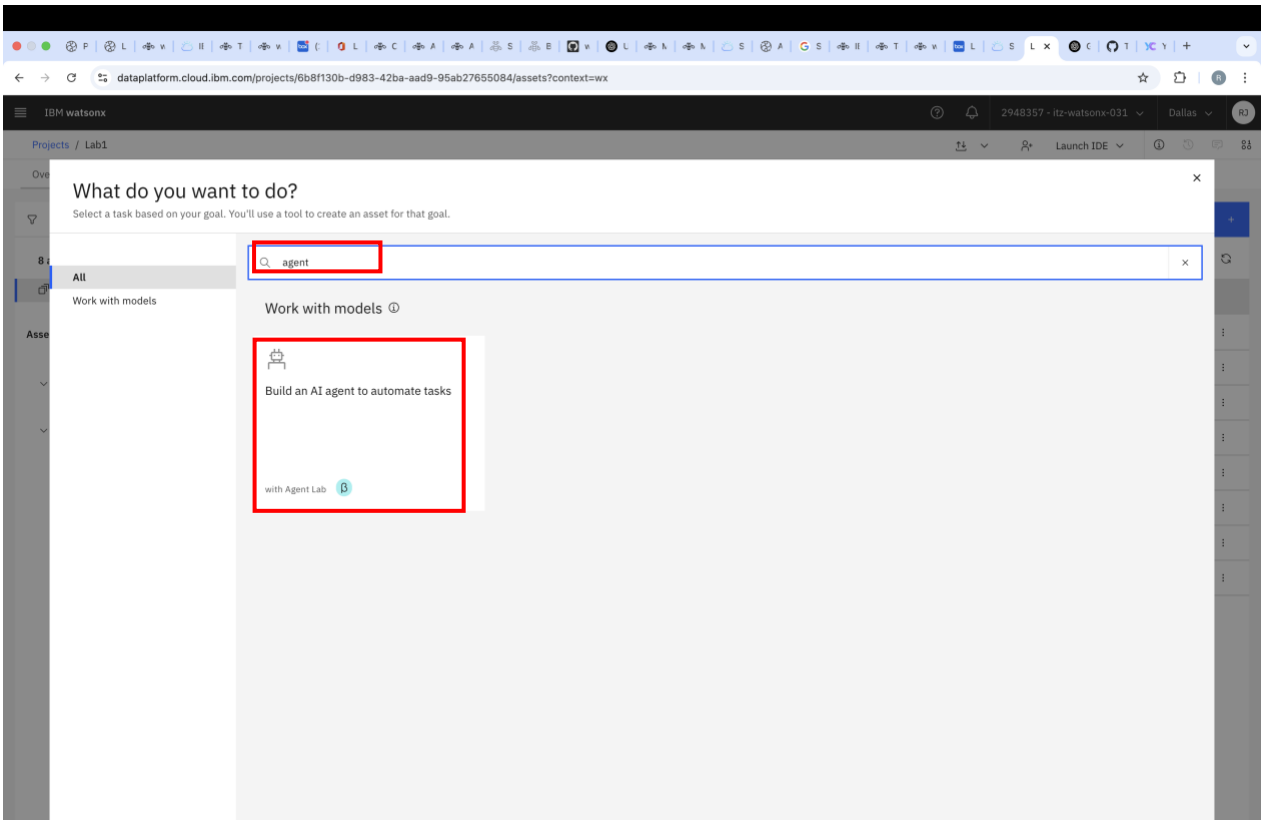
- Once the index is created, a summary screen will display all configured details.



Now, go back to your “Project/Assets” to proceed further to the next step.

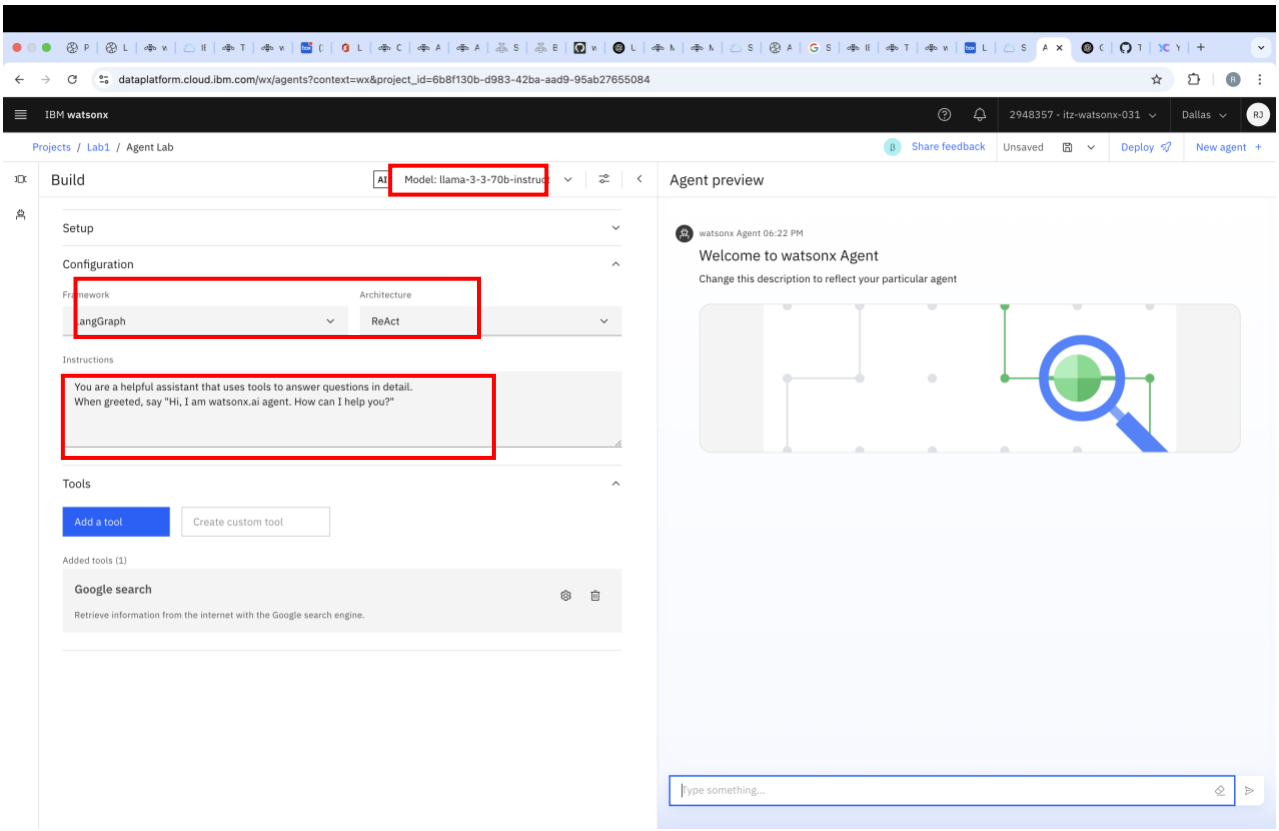
Step 8: Create an AI Agent

- Click on **New Asset at the left** and search for **"Build an AI Agent to Automate Tasks"**. Click on the “Build an AI agent to automate tasks”.



Step 9: Name Your AI Agent

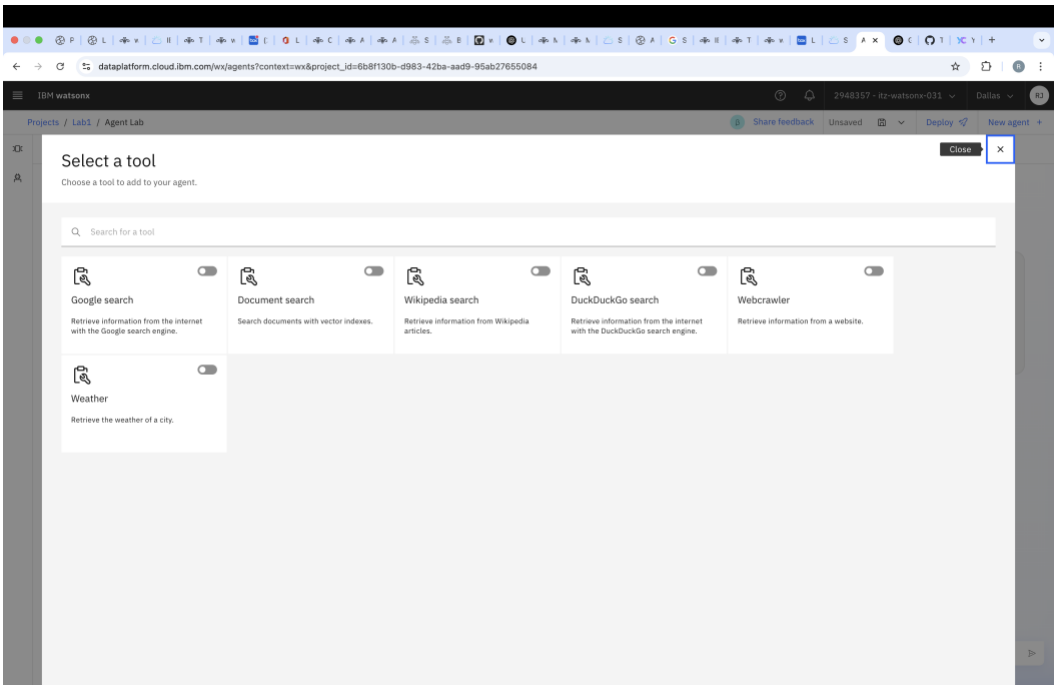
- Click **Build an AI Agent to Automate Tasks** and assign a name to your agent.



You can see the information about the LLM, Framework, Architecture etc for your own understanding.

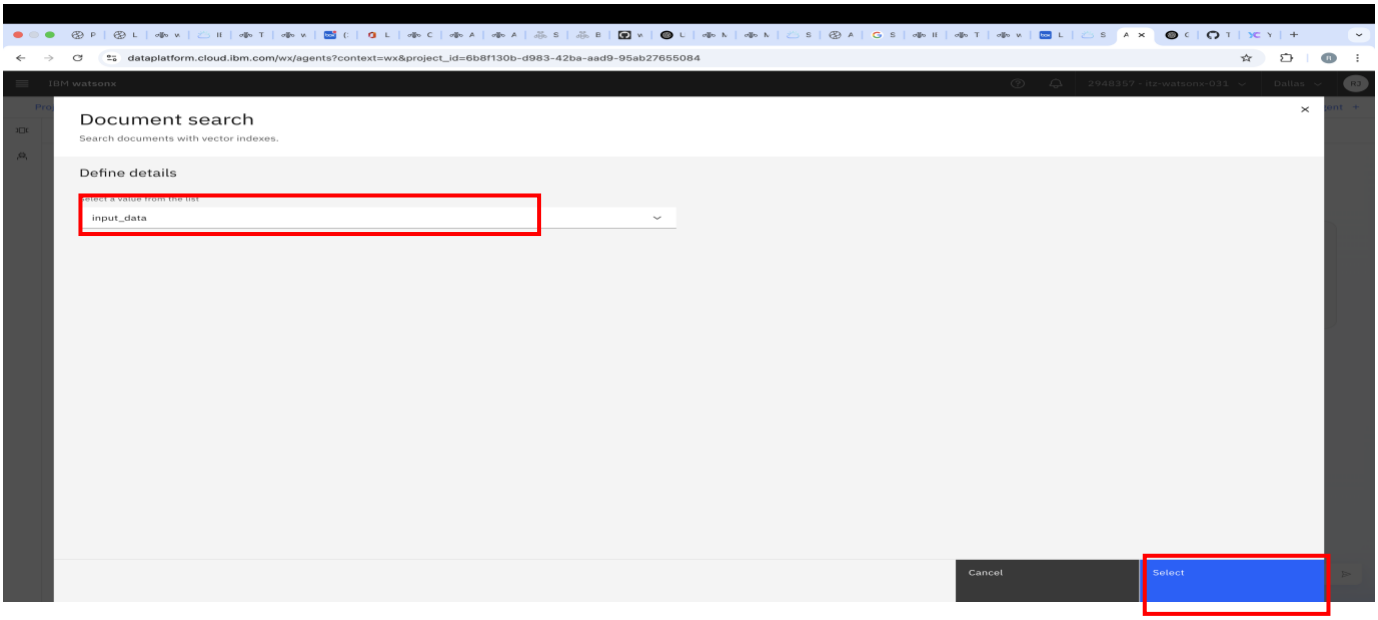
Step 10: Add Tools to the Agent

- Click on **Add Tool** to open a selection panel.



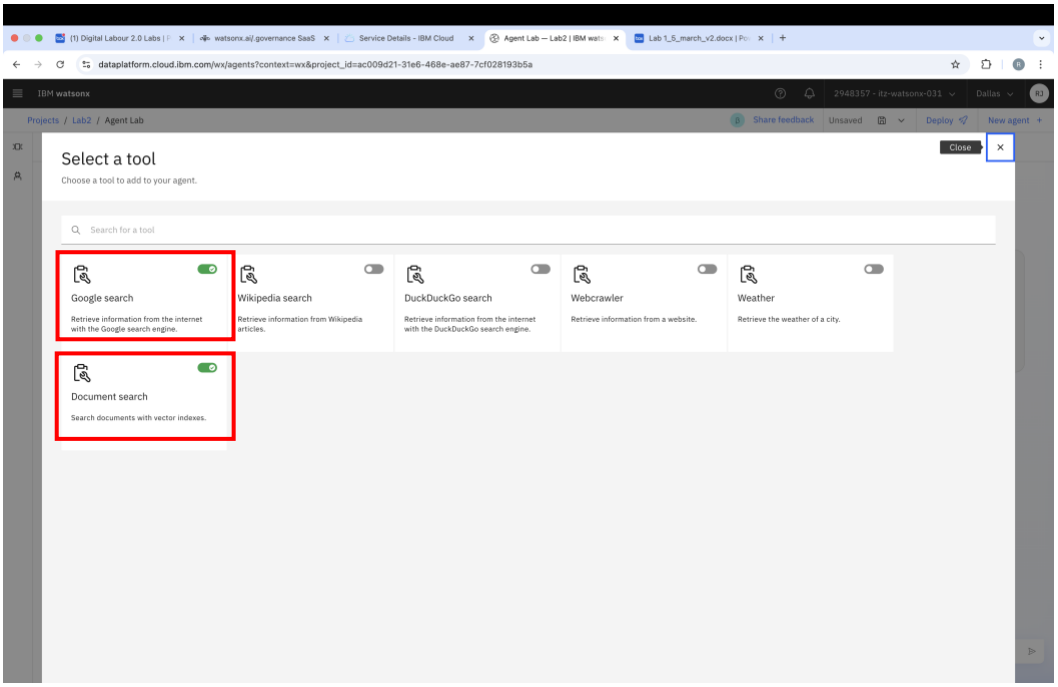
Step 11: Link the Vector Index

- Toggle **Document Search** to enable it.
- In the dropdown menu, select the **vector index** you created earlier.
- Click **Select** to confirm.



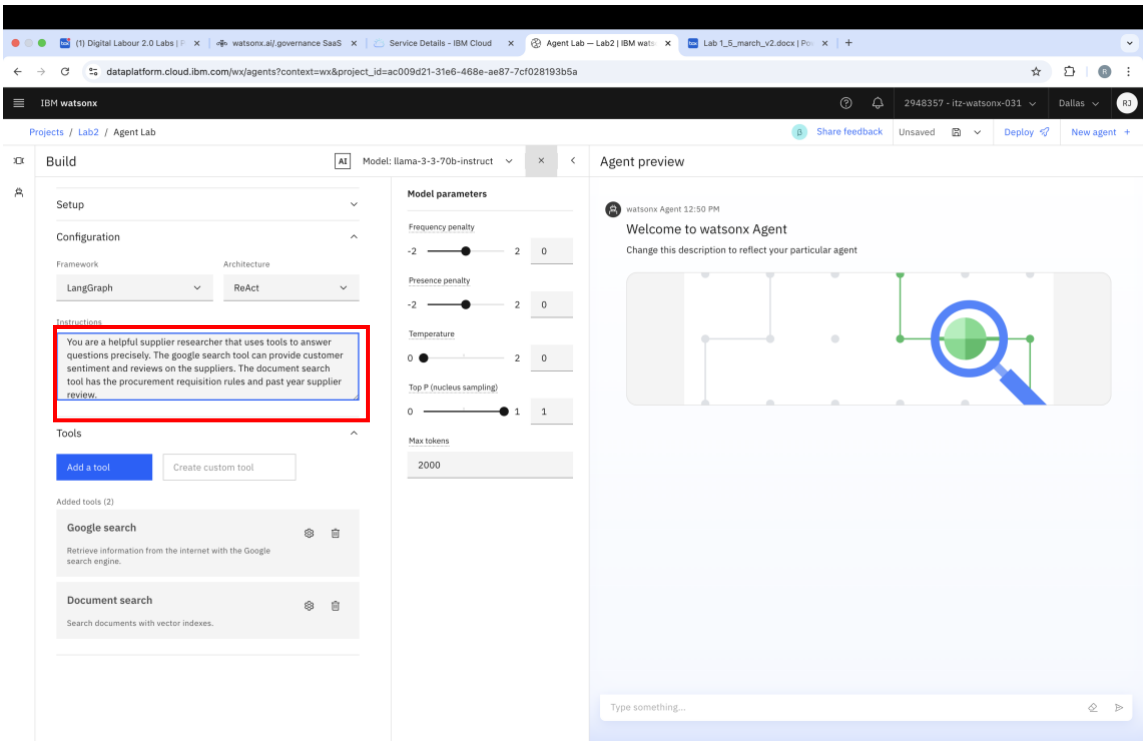
Step 12: Add Additional Tools

- Enable the **Google Search Tool** as an additional tool for your agent.
- The tool panel will now display both **Document Search** and **Google Search Tool**.
- Close the window to proceed further.



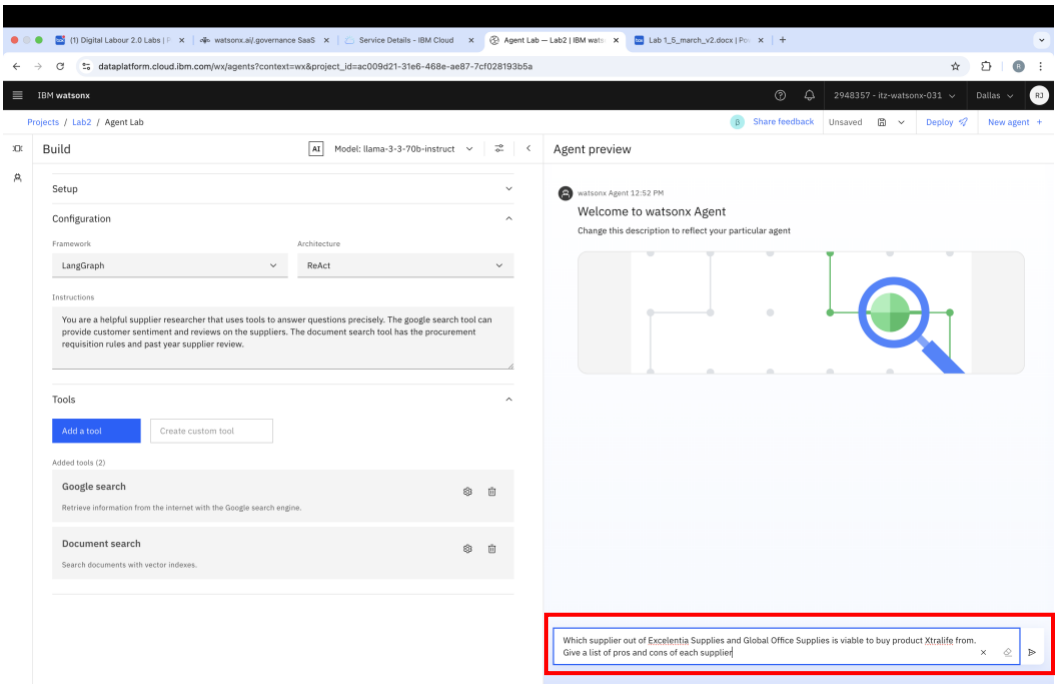
Step 13: Configure the Agent Model and Parameters

- Adjust the foundational model, prompt and other configuration parameters as needed.
- Prompt: You are a helpful supplier researcher that uses tools to answer questions precisely after doing thorough research on google and document search. The google search tool can provide customer sentiment on the suppliers. The document search tool has the procurement requisition rules and past year supplier review.



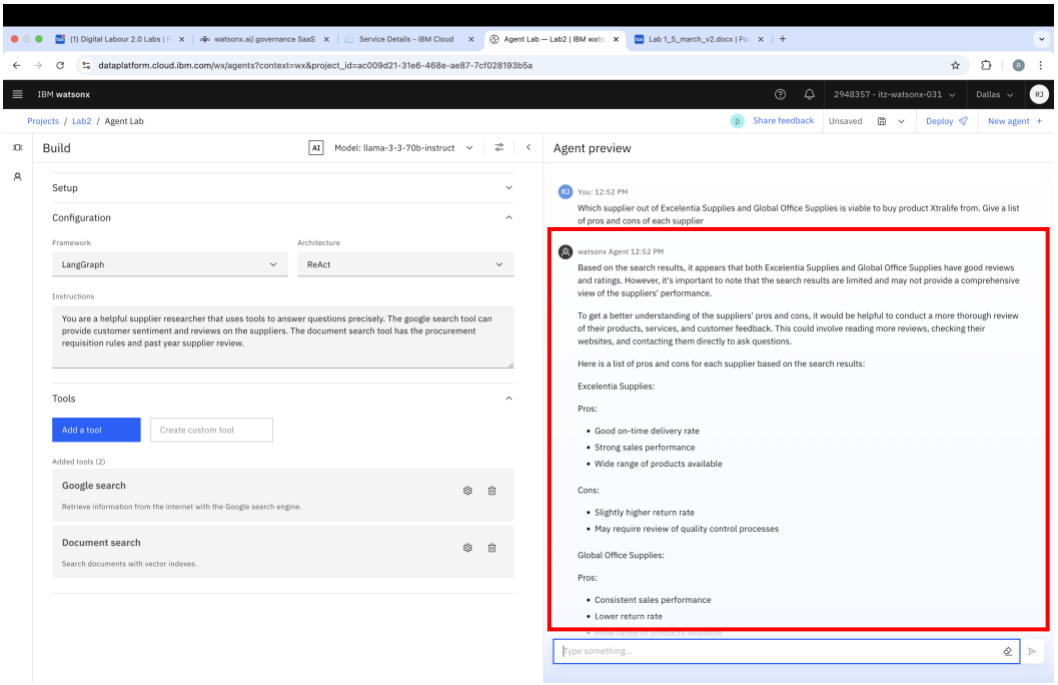
Step 14: Test Your AI Agent

- Start querying your agent with example questions, such as:
  - *" Which supplier out of Excelentia Supplies and Global Office Supplies is viable to buy product Xtralife from. Give a list of pros and cons of each supplier"*
  - *"Which supplier should i choose? i want an urgent delivery."*



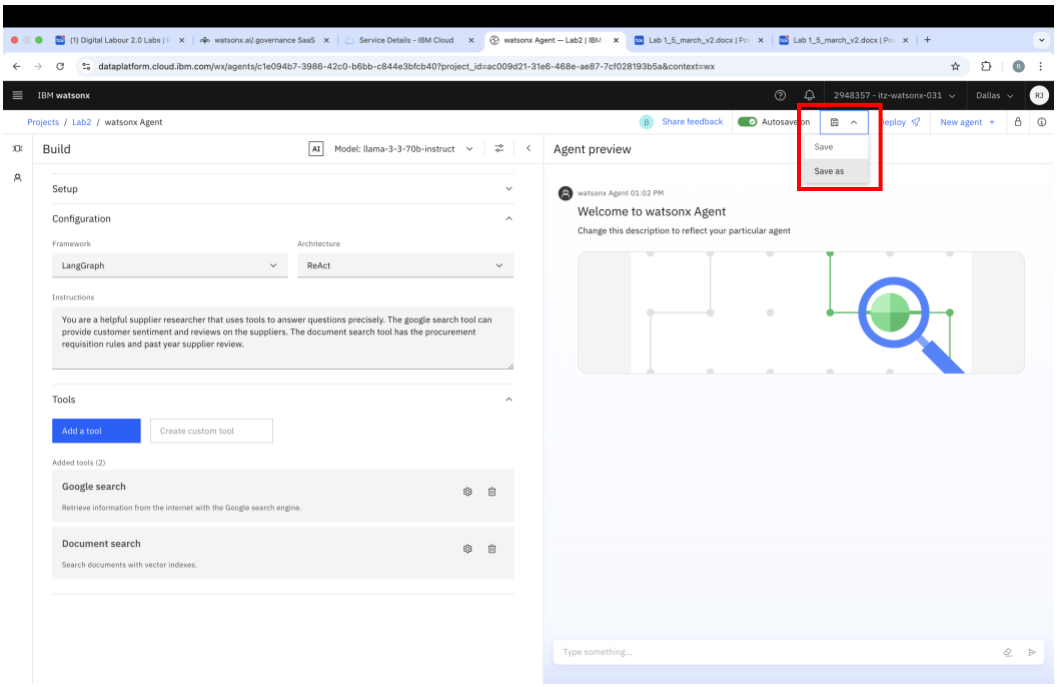
Step 15: View the Agent's Response

- The AI agent will generate a response based on the indexed data.



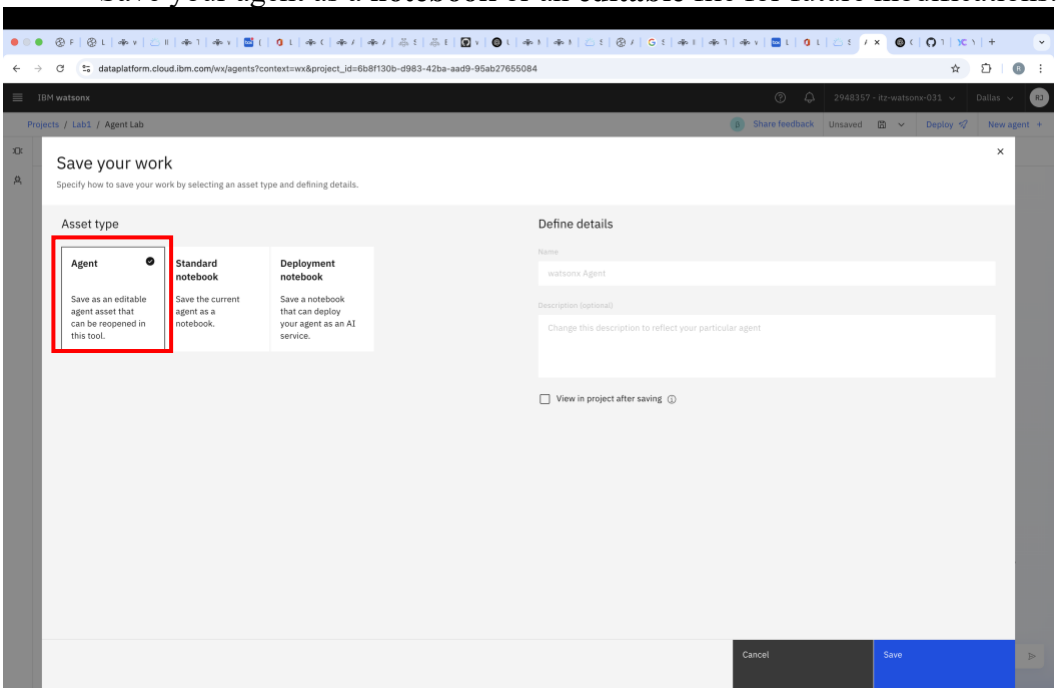
Step 16: Save Your Agent

- Click **Save As** to store your agent configuration.



Step 17: Export the Agent

- Save your agent as a **notebook** or an **editable** file for future modifications.

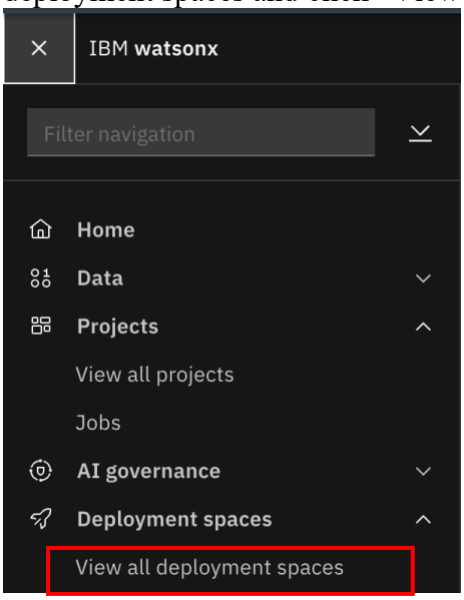


==========READ ONLY SECTION==========

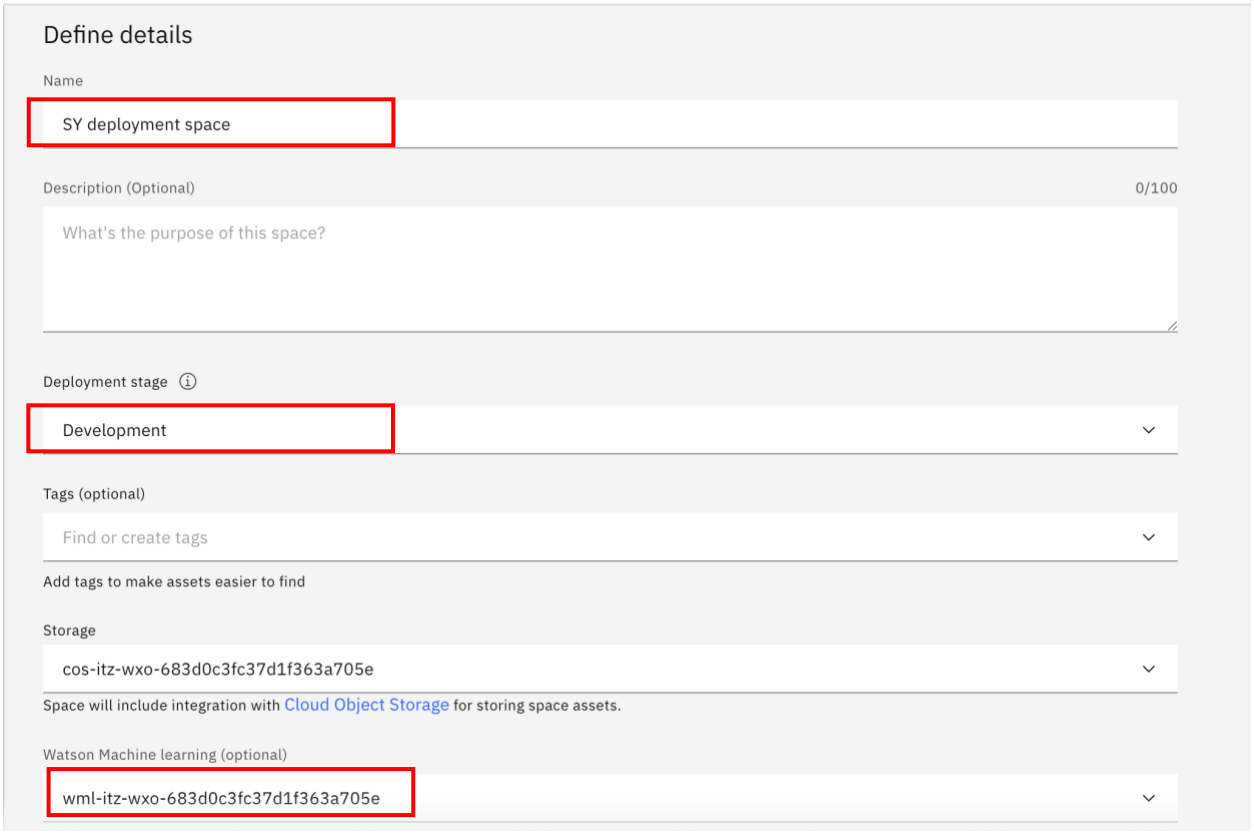
Continue if time permits during workshop

Step 18 :Deploy the Agent

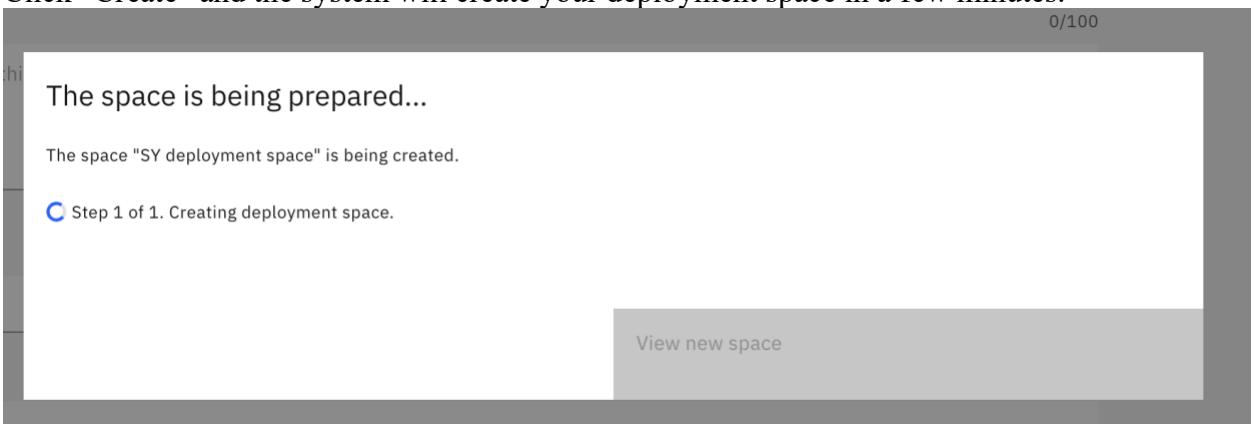
- From the left-hand hamburger menu, look for Deployment spaces >> View all deployment spaces and click “View all deployment spaces”



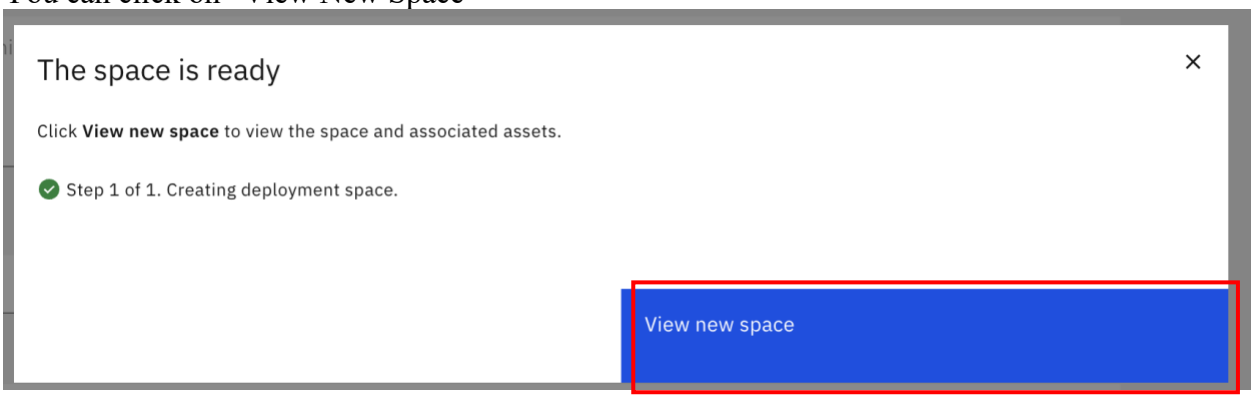
- On the top right corner, click on “New Deployment Space +”
- Fill in the relevant details as shown in the image below



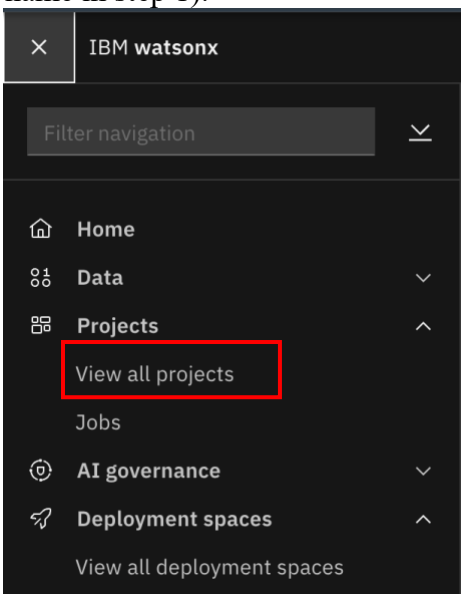
- Click “Create” and the system will create your deployment space in a few minutes.



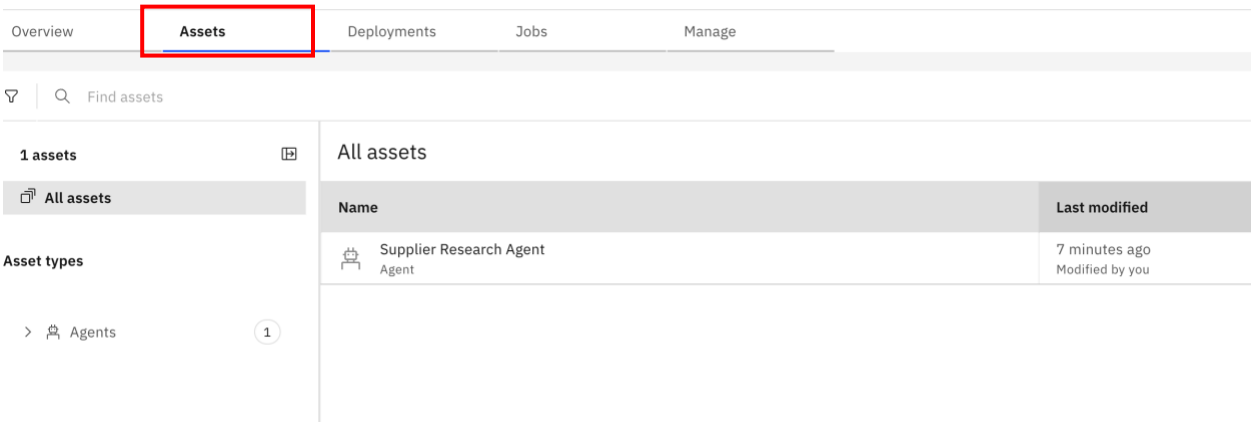
- You can click on “View New Space”



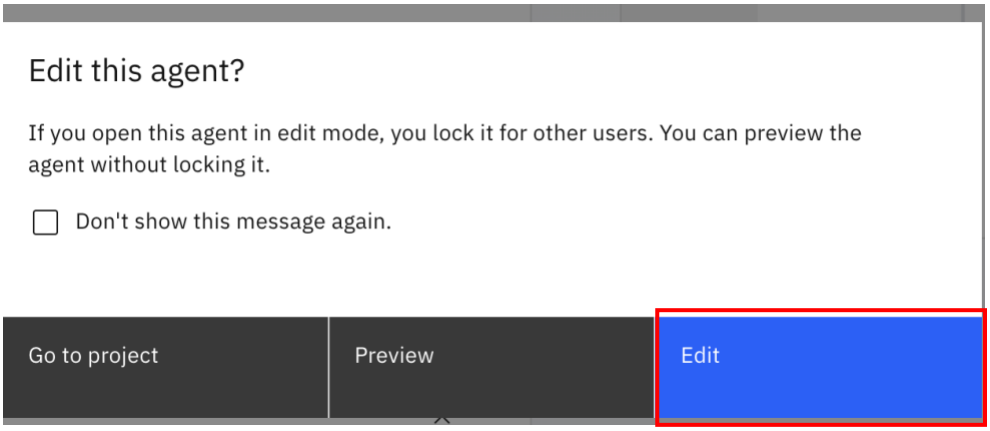
- From the hamburger menu, click on “View all projects” and Select your project (the name in step 1).



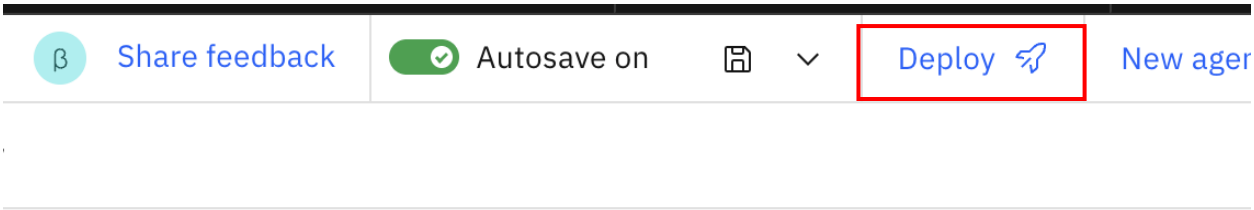
- Select “Assets” and you should see the agent you’ve saved from Step 16.



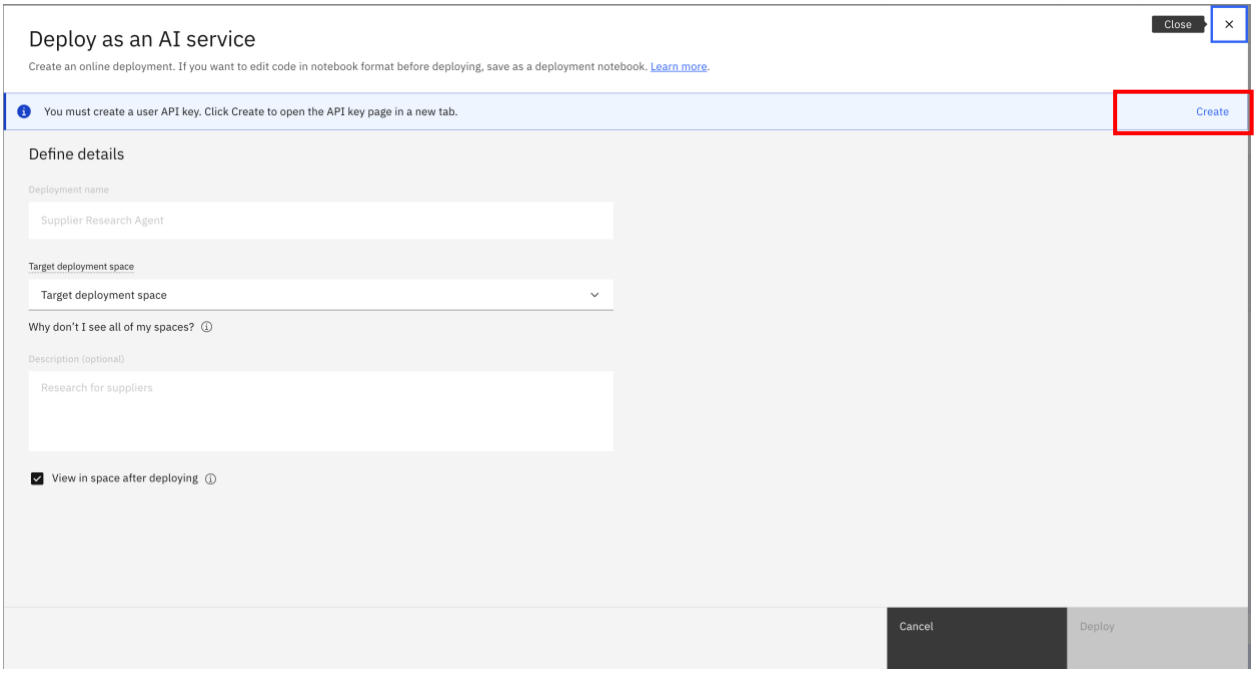
- Click on the agent asset and click “Edit” when prompted



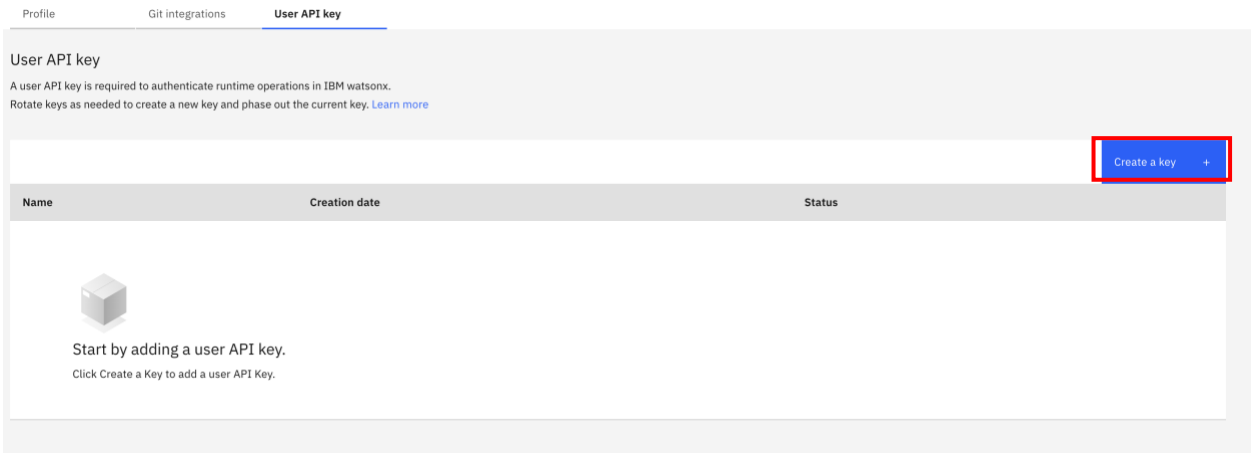
- Now on the top right, click on Deploy



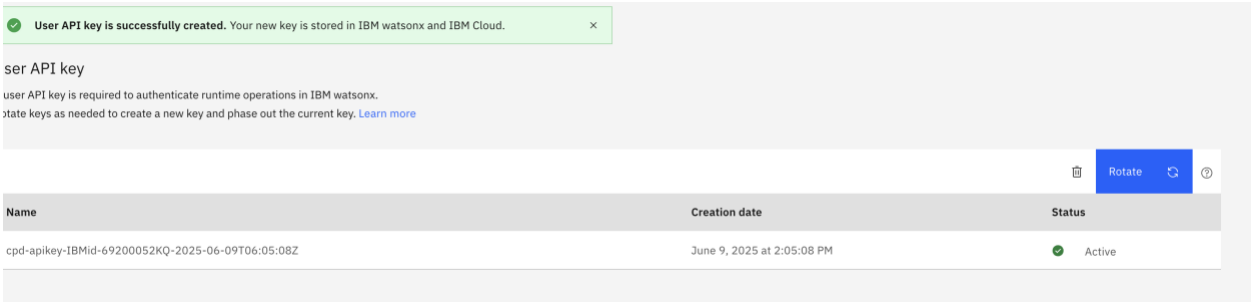
- Click on the “Create” to create an API Key



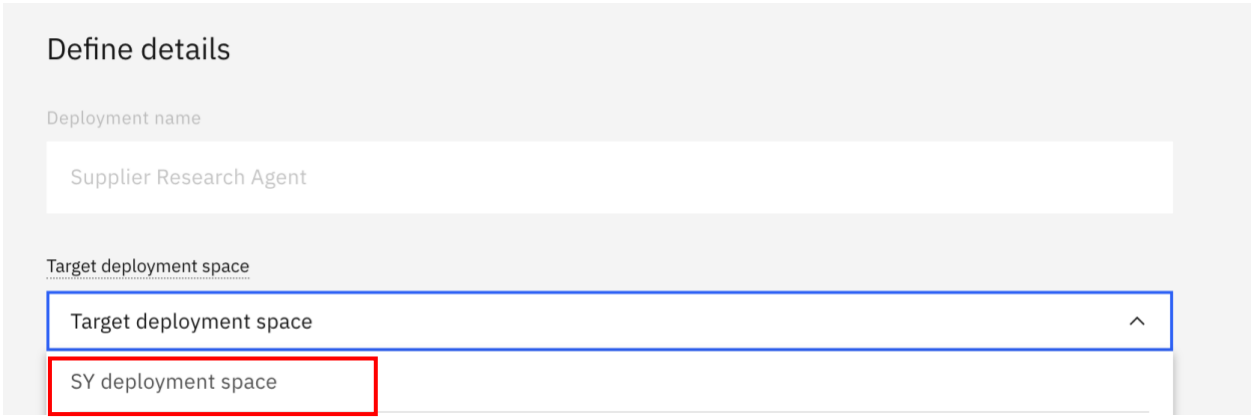
- Another tab will open with the below page. Click on “Create a key”



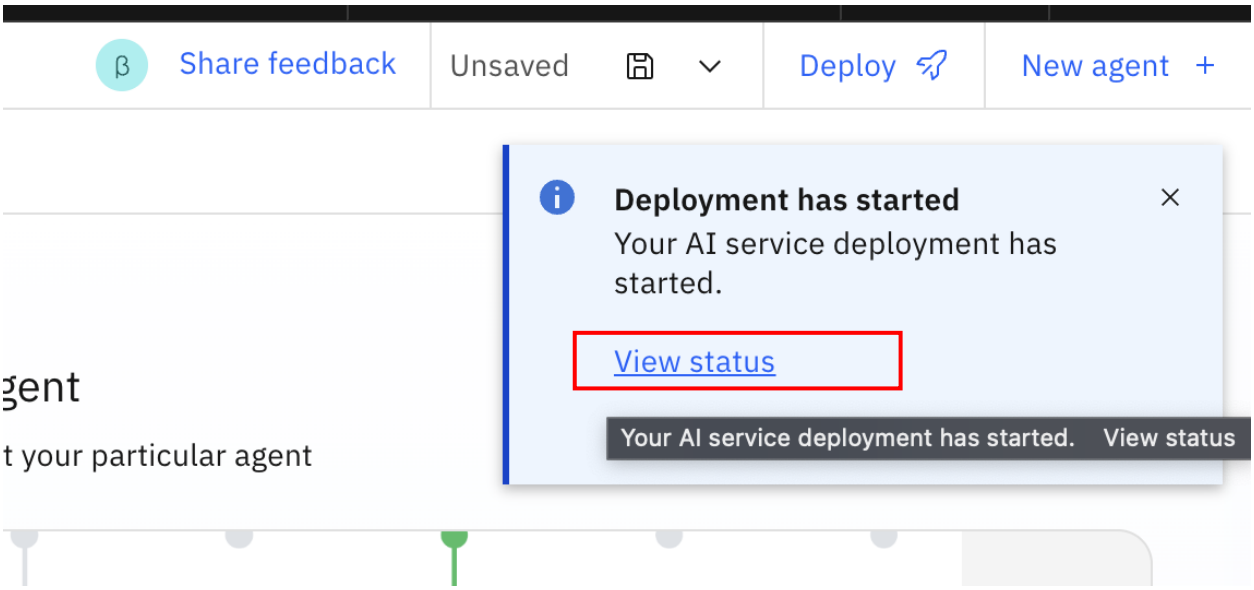
- You will see the page changed to the below.



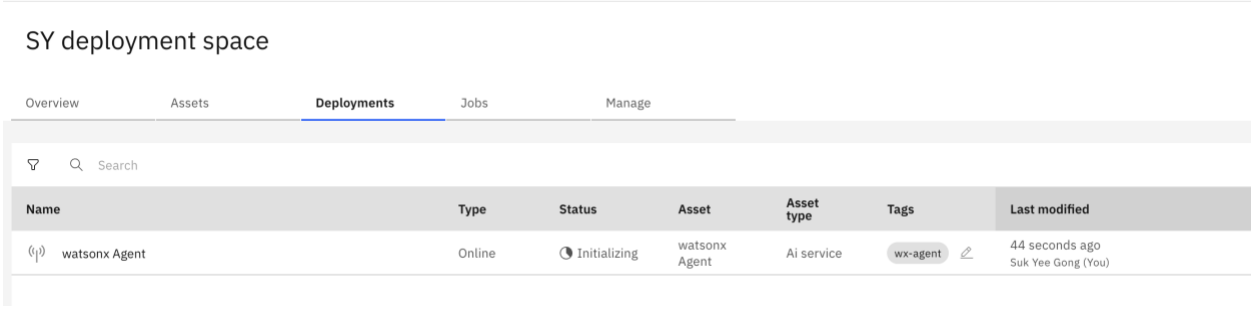
- Return to the previous tab and choose the deployment space you've created, and click "Deploy"



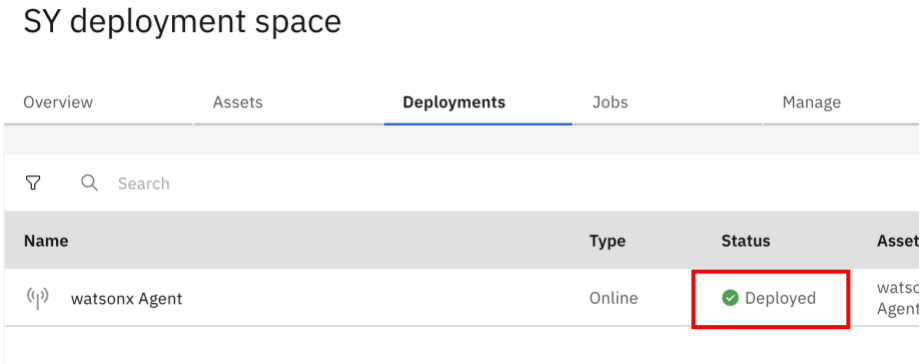
- The deployment process will take a few minutes.
  Once the deployment has started, you will see the below message.
  Click on "View Status".



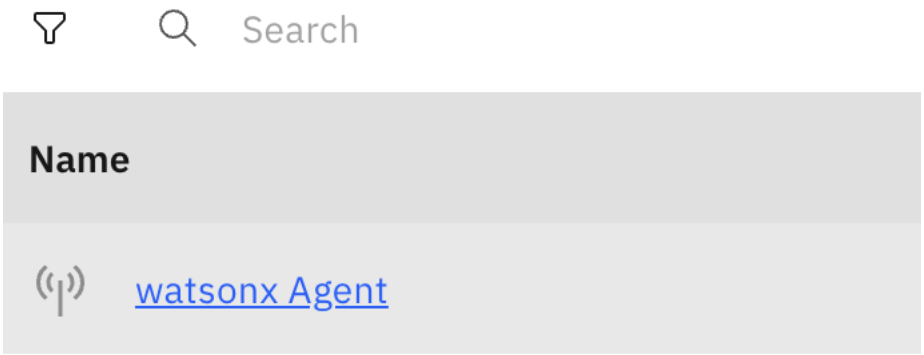
- You will now be in the deployment page.



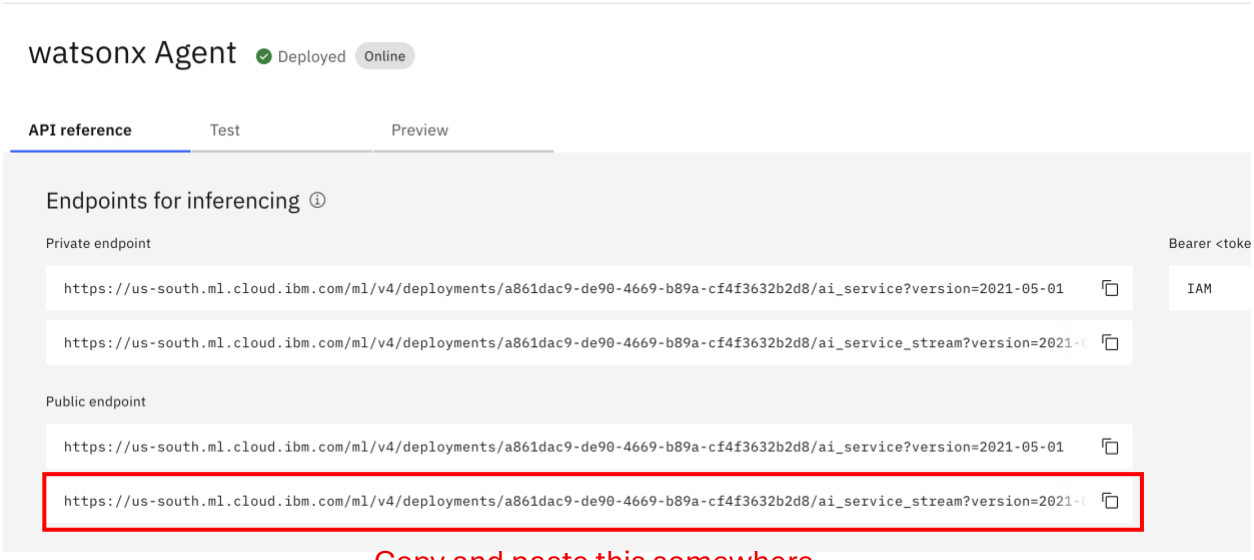
- Wait a few minutes for the status to be “Deployed”



- Click on the Agent

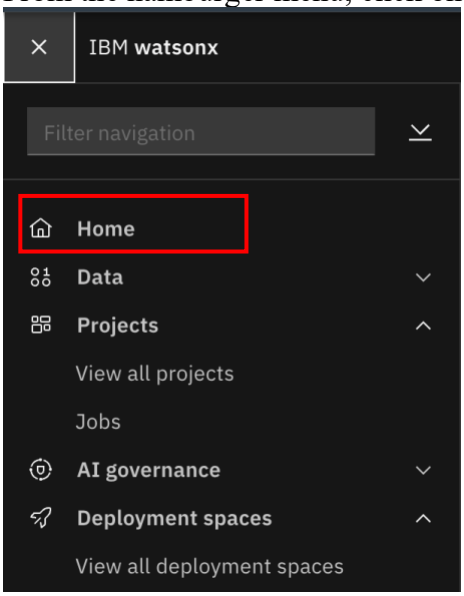


- You will now see the details of deployed agent.
  Keep the Public endpoint handy (copy and paste it somewhere you can access it)

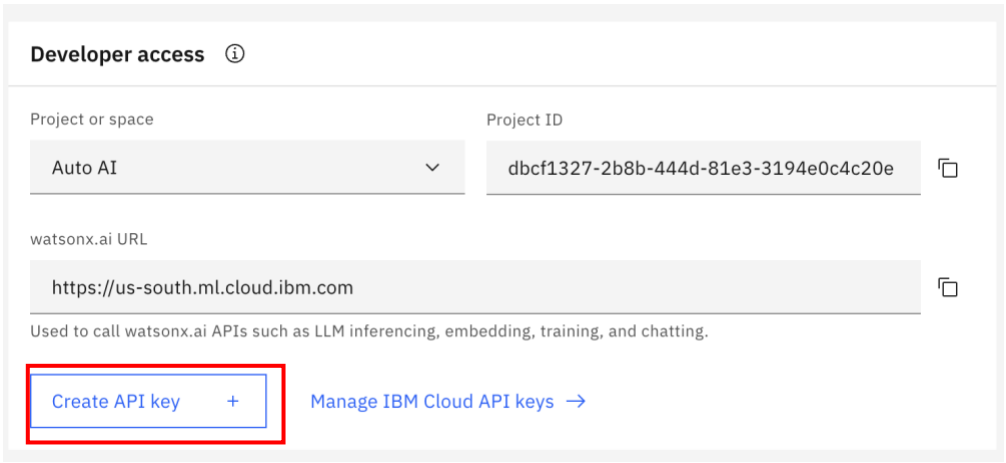


Copy and paste this somewhere

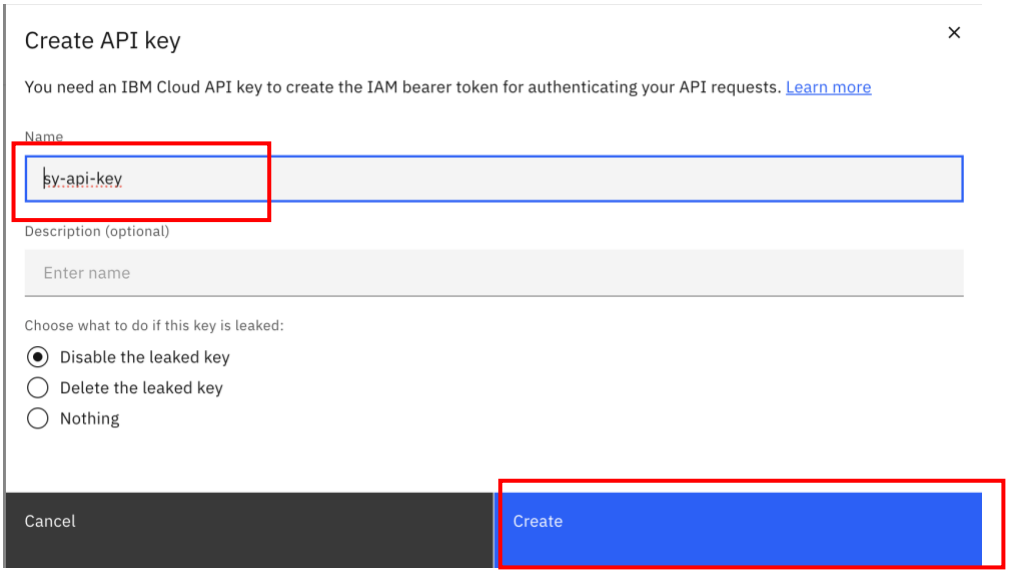
- We will also need to create an IBM Cloud API Key.
- From the hamburger menu, click on “Home”



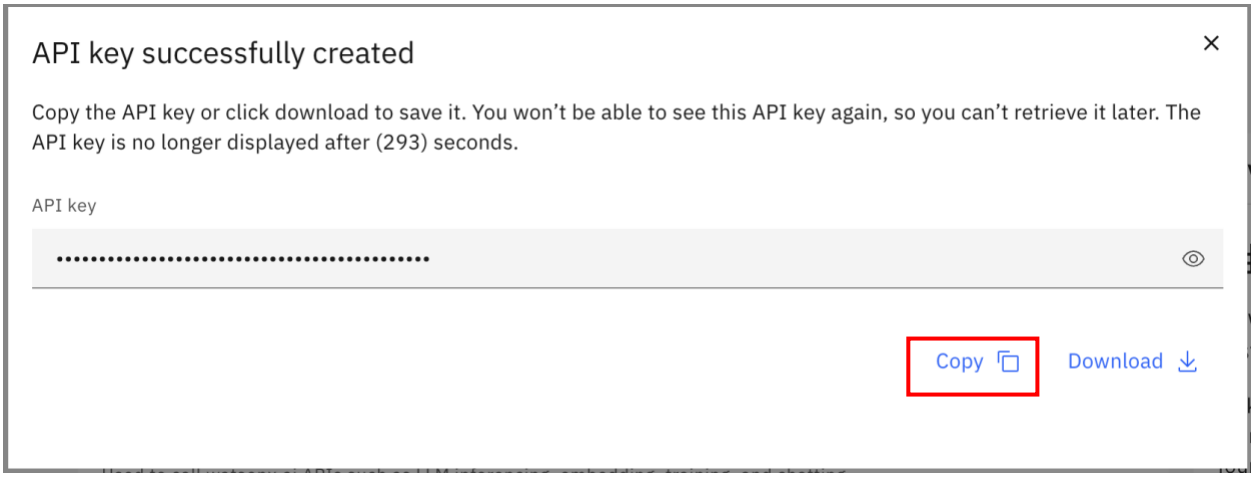
- Scroll down the page until you see the Developer access. Click on Create API Key.



- Enter a name and click on “Create”



- Copy and the value and keep it handy for our next lab.



🚀 Congratulations! You have successfully created an AI-powered Supplier Research Agent. Happy Coding! 🎯