

# Lab 2a: 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 2a”.

## 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.

The screenshot shows the 'Create a project' page on the IBM Watsonx.ai Agent Lab platform. The URL in the browser is `dataplatform.cloud.ibm.com/projects/new-project?context=wx`. The page has a dark header with the IBM Watson logo and a navigation bar with various icons. Below the header, there's a title 'Create a project' and a sub-instruction 'Start with a new, blank project or select from where to import an existing project.' On the left, there's a sidebar with options '+ New' (which is selected), 'Local file', and 'Sample'. The main form area is titled 'Define details' and contains fields for 'Name' (with 'Lab1' typed in), 'Description (optional)' (with a placeholder 'What's the purpose of this project?'), 'Tags (optional)' (with a placeholder 'Add tags'), and 'Storage' (with a field containing 'itcos-694000056k5-y1qj1'). At the bottom right, there are 'Cancel' and 'Create' buttons, with 'Create' being highlighted in blue.

## 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.

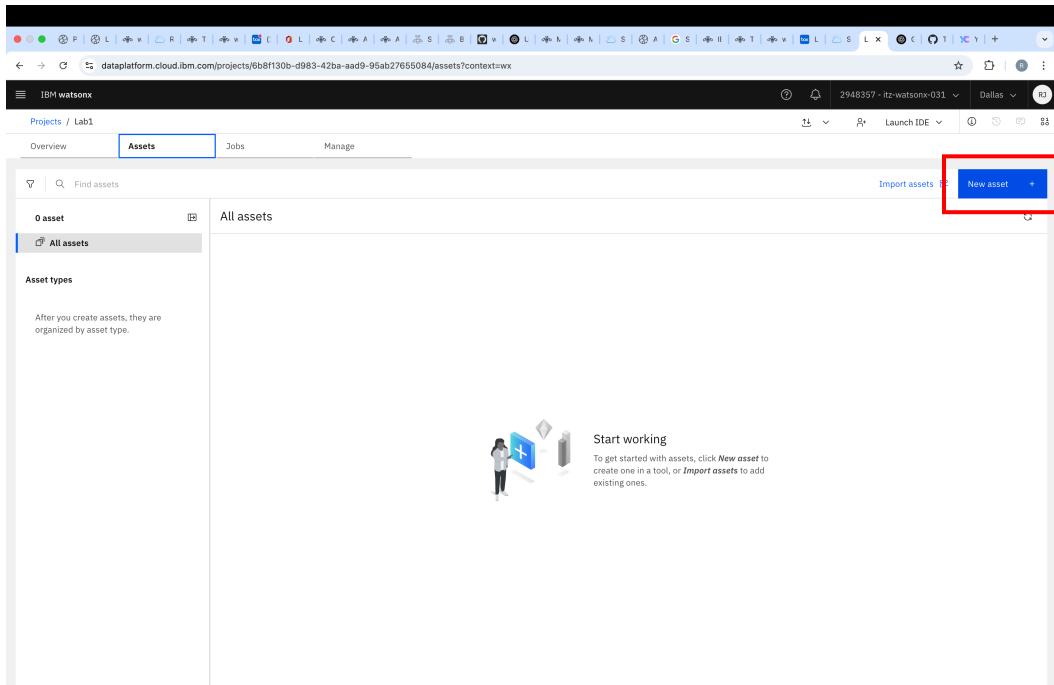
The screenshot shows the 'Associate service' page in the IBM Watsonx interface. The URL in the browser is `dataplatform.cloud.ibm.com/projects/6b8f130b-d983-42ba-aad9-95ab27655084/manage/services?context=ws`. The page title is 'Associate service'. A sub-header says 'Choose an existing or add a new service to associate with your project.' Below this, there are dropdown menus for 'Resource Groups' (set to '2') and 'Locations' (set to 'Dallas'). A search bar labeled 'Find services' is present. A table lists a single service entry:

Name	Type	Plan	Location	Status	Group
itzml-69400056k5-y1qj1	watsonx.ai Runtime	Essentials	Dallas	Not associated	watsonxai-y1qj1

At the bottom right of the table, there is a blue button with the text 'Associate' highlighted with a red box.

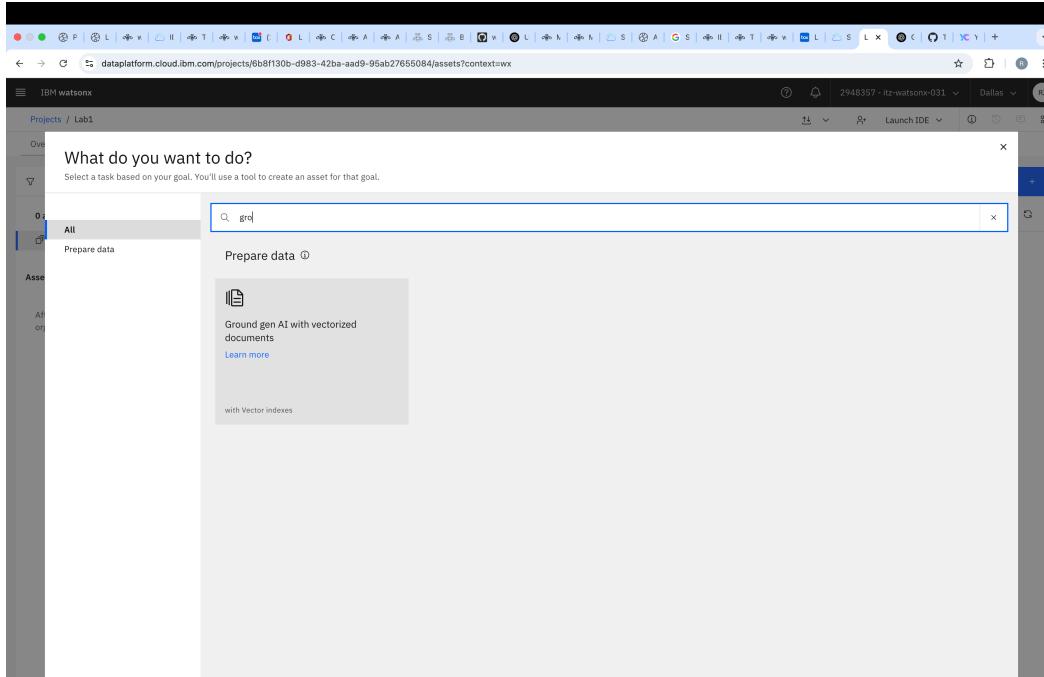
## Step 3: Add a New Asset

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



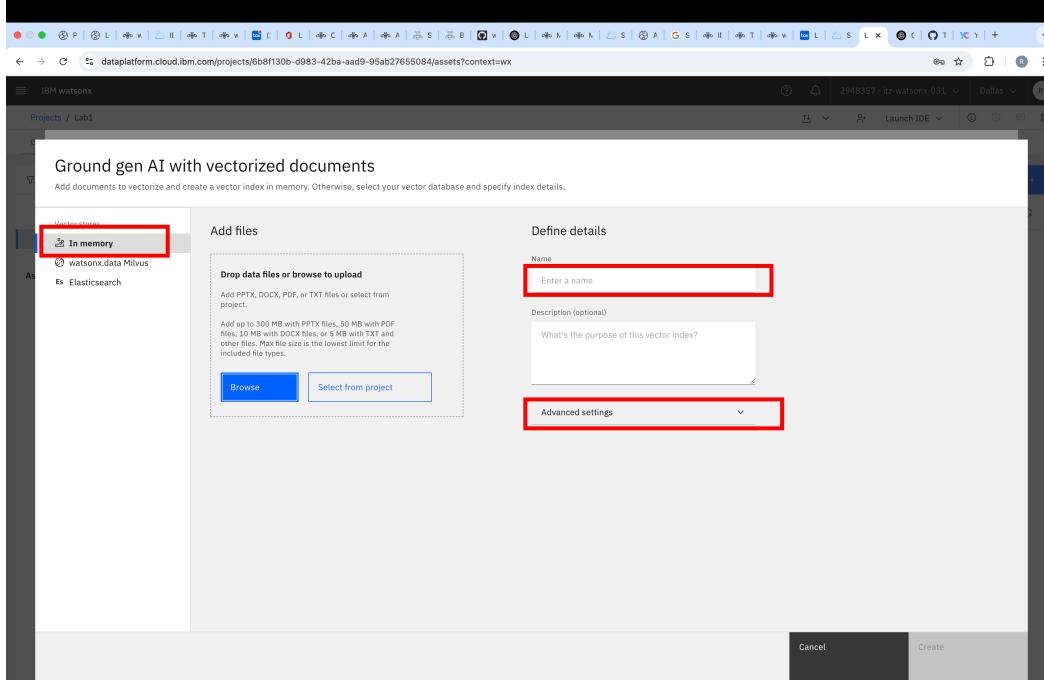
## Step 4: Create an In-Memory Vector Store

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



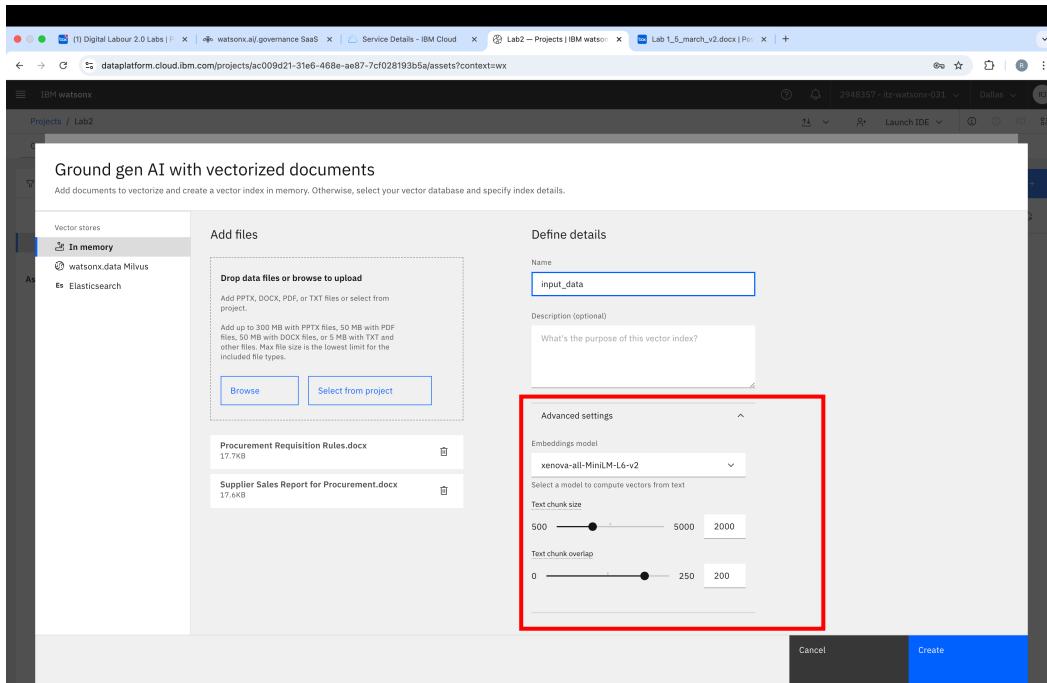
## Step 5: Choose the Vector Index Type

- 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-embeddings-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

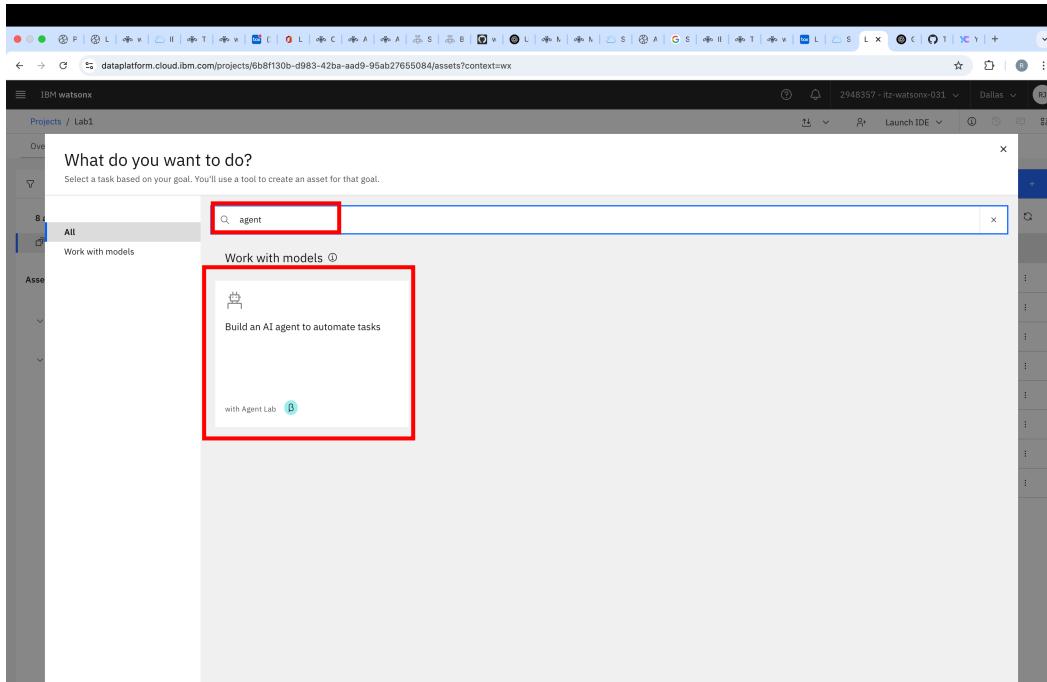
- Once the index is created, a summary screen will display all configured details.

Name	Size
Procurement Requisition Rules.docx	17.7KB
Supplier Sales Report for Procurement.docx	17.6KB

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

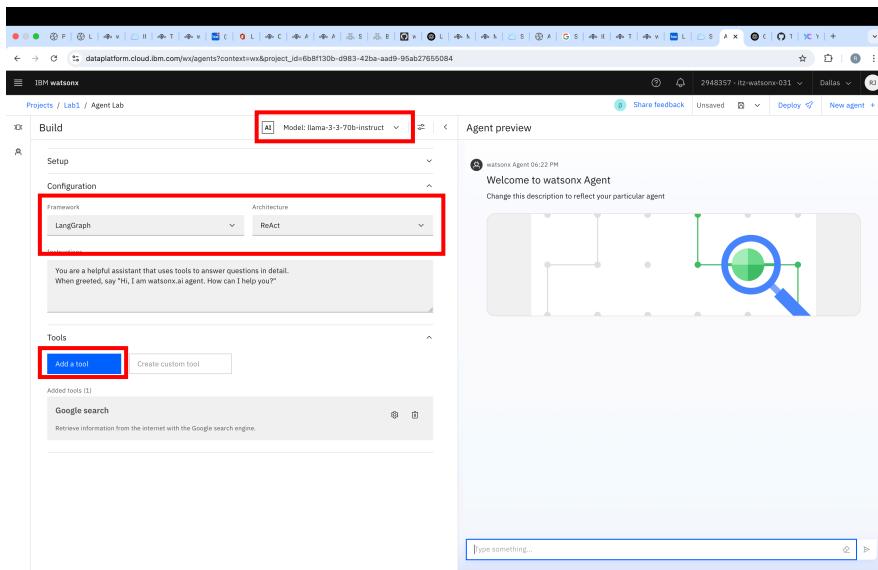
## Step 8: Create an AI Agent

- 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

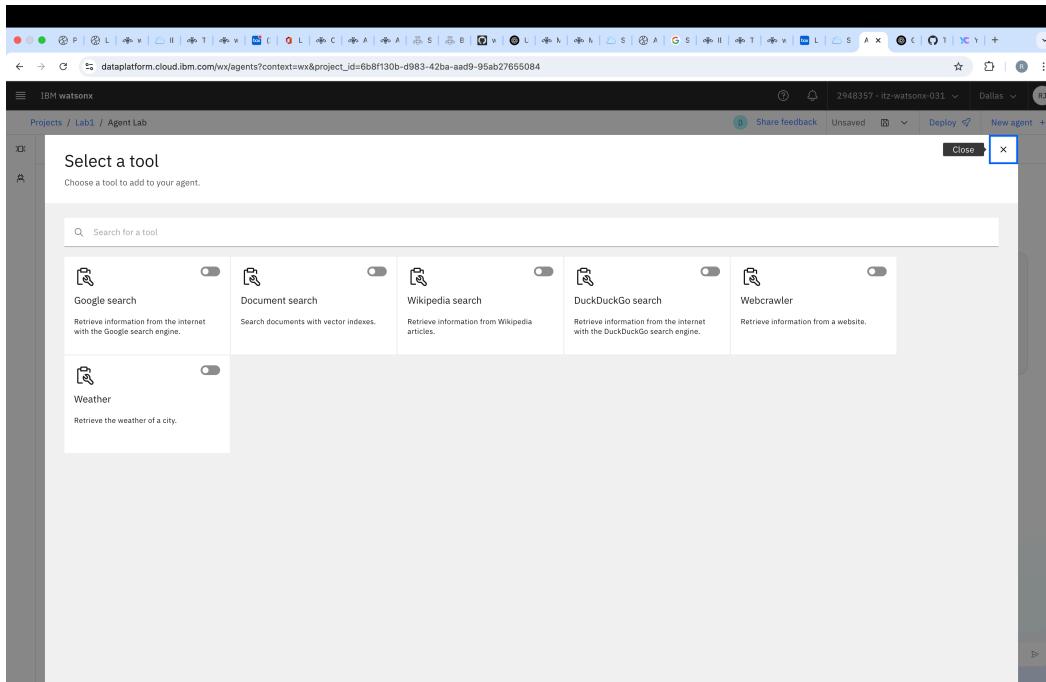
- Click **Build an AI Agent to Automate Tasks** and assign a name to your agent.



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

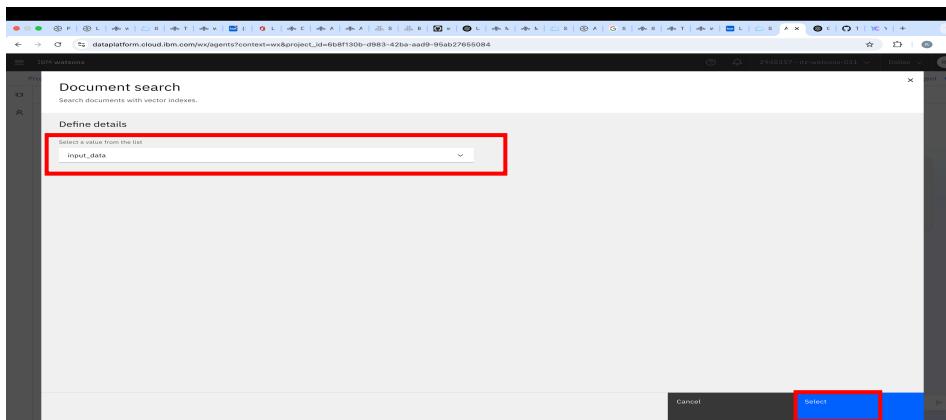
## Step 10: Add Tools to the Agent

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



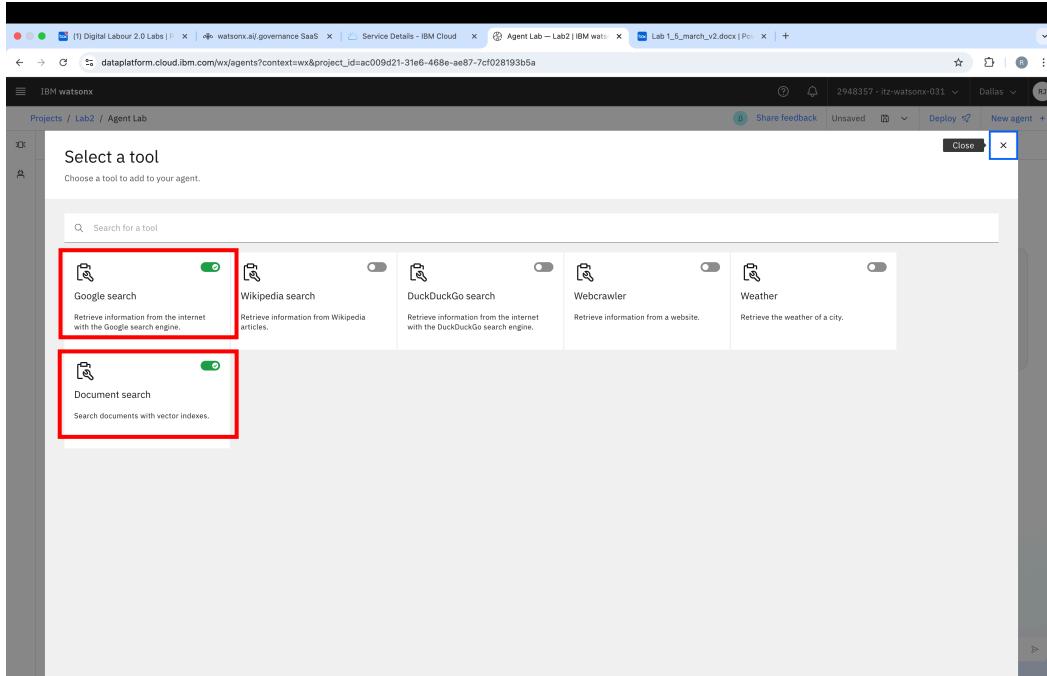
## Step 11: Link the Vector Index

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



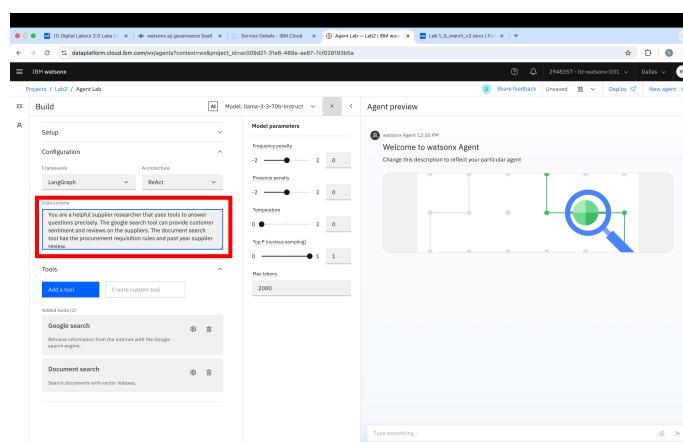
## Step 12: Add Additional Tools

- 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 a 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 Excellentia 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."*

The screenshot shows the IBM Watsonx Agent Lab interface. On the left, the 'Build' configuration pane is open, displaying 'Setup' and 'Configuration' sections. Under 'Configuration', 'Framework' is set to 'LangGraph' and 'Architecture' is set to 'React'. The 'Instructions' section contains a note about being a helpful supplier researcher. On the right, the 'Agent preview' window shows a welcome message from 'watsonx Agent 12:52 PM' and a graphical interface with a magnifying glass icon. A red box highlights a question input field at the bottom of the preview window, which reads: "Which supplier out of Excellentia Supplies and Global Office Supplies is viable to buy product Xtralife from. Give a list of pros and cons of each supplier".

## Step 15: View the Agent's Response

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

The screenshot shows the IBM WatsonX Agent configuration interface. On the left, there's a sidebar with 'Build' selected, showing 'Setup' and 'Configuration' sections. Under 'Tools', two tools are listed: 'Google search' and 'Document search'. The main area is titled 'Agent preview' and contains an AI-generated response. The response is framed by a red box:

You are a helpful supplier researcher that uses tools to answer questions precisely. The google search tool can provide customer sentiment and reviews on the suppliers. The document search tool has the procurement requisition rules and past year supplier review.

Based on the search results, it appears that both Excellentia Supplies and Global Office Supplies have good reviews and ratings. However, it's important to note that the search results are limited and may not provide a comprehensive view of the suppliers' performance.

To get a better understanding of the suppliers' pros and cons, it would be helpful to conduct a more thorough review of their products, services, and customer feedback. This could involve reading more reviews, checking their websites, and contacting them directly to ask questions.

Here is a list of pros and cons for each supplier based on the search results:

**Excellentia Supplies:**

- Good on-time delivery rate
- Strong sales performance
- Wide range of products available

**Cons:**

- Slightly higher return rate
- May require review of quality control processes

**Global Office Supplies:**

- Consistent sales performance
- Lower return rate

At the bottom right of the preview area is a text input field with placeholder text 'Type something...'.

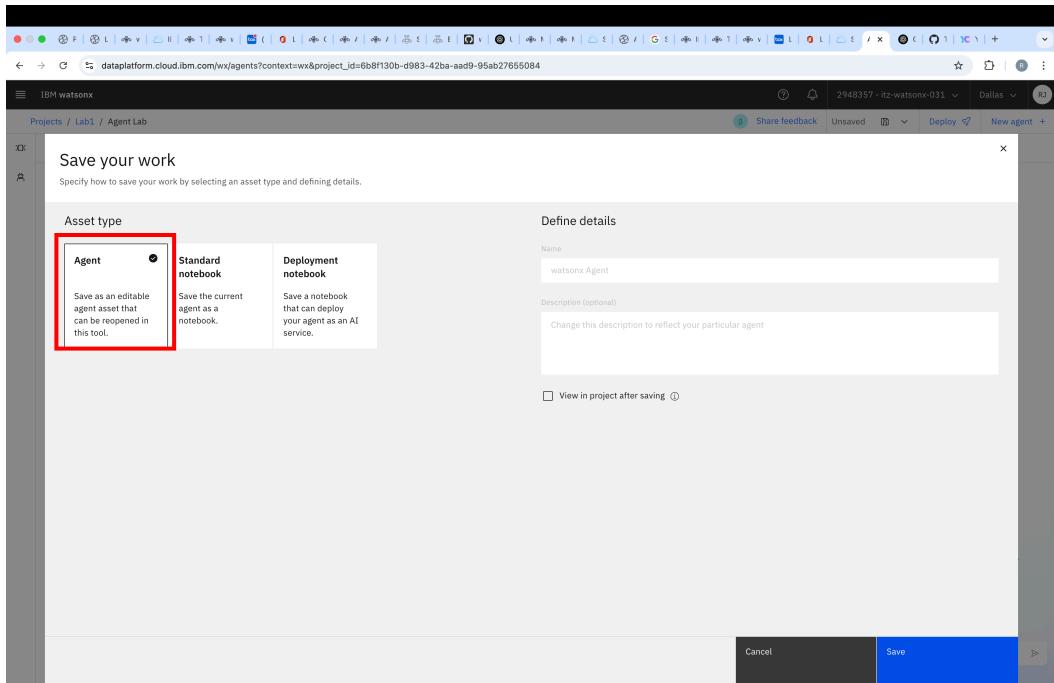
## Step 16: Save Your Agent

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

The screenshot shows the same configuration interface as the previous one, but the 'Save as' button in the top right corner of the 'Agent preview' section is highlighted with a red box. The rest of the interface is identical to the previous screenshot.

## Step 17: Export the Agent

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



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