WatsonX-Orchestrater Tool Setup Guide

This guide walks you through setting up the Google Search Tool in Watsonx Orchestrate (WXO) using the Application Development Kit (ADK) and configuring a Programmable Search Engine. Please contact Shrinath Thube if you have any questions.

🔧 Prerequisites

Before you begin, ensure the following are installed and available:

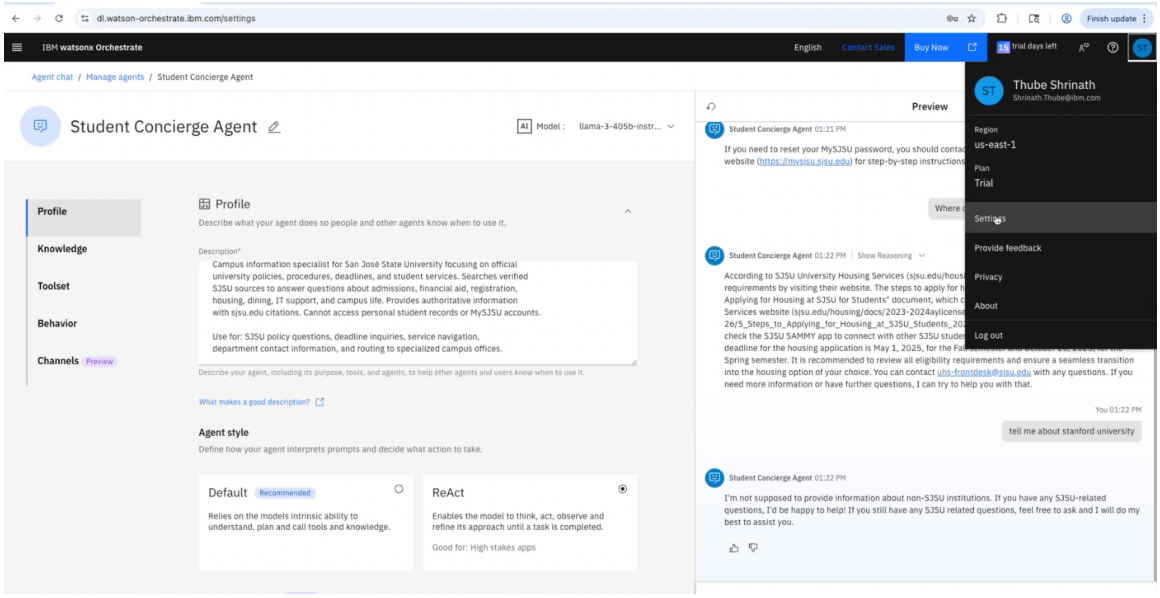
- Git
- Python 3.11 and pip
- WXO Service URL and API Token
- WXO ADK (Application Development Kit) installed and configured
- Programmable Search Engine set up via Google Custom Search

🔐 Step 1: Get WXO Service URL and Token

Go to WXO Portal:

Access your WXO portal at https://dl.watson-orchestrate.ibm.com/

Navigate to Settings → API Details:

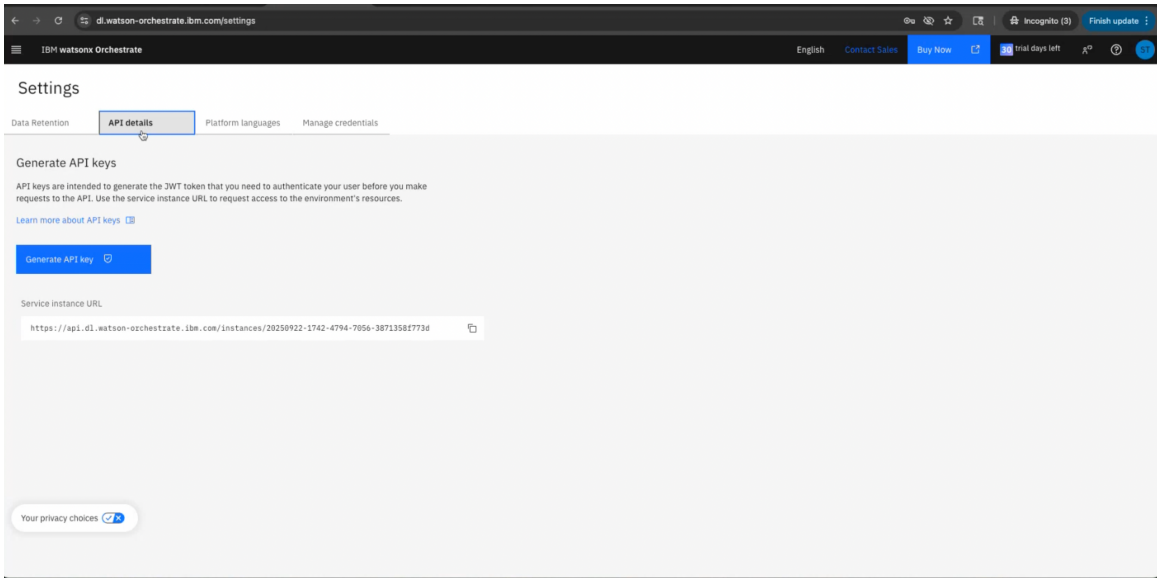


Copy the Service Instance URL:

This URL is used in the orchestrate command to connect and activate the environment using ADK.

Click Generate API Key:

⚠️ **You have 9 chances to generate a key.** Save it securely.



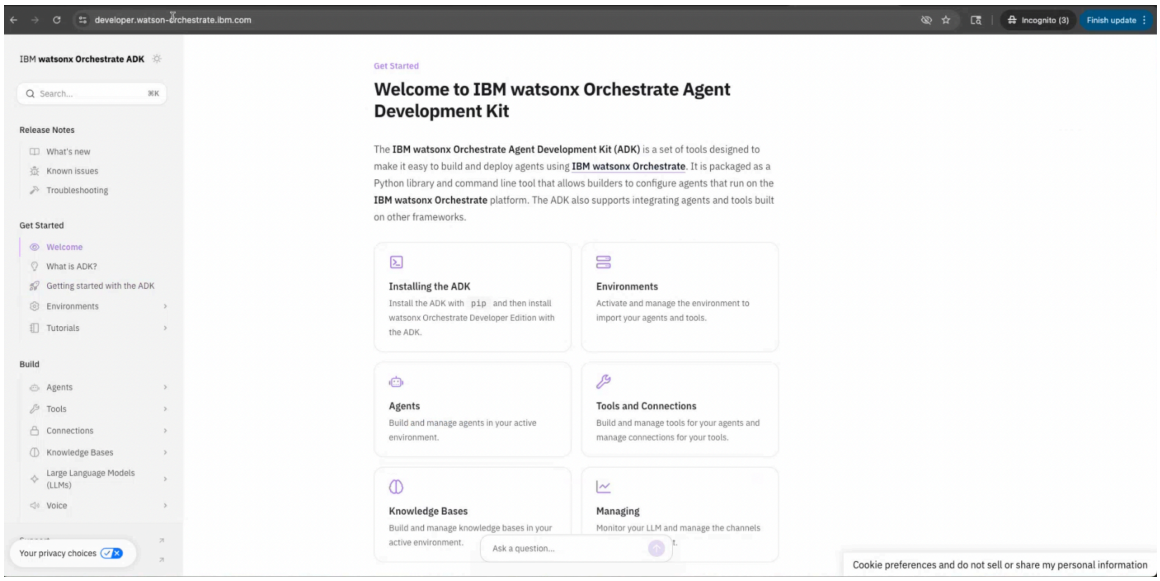
🚀 Step 2: Install and Configure WXO ADK

Verify Python and pip versions:

```
python --version
pip --version
```

Install the ADK:

```
pip install --upgrade ibm-watsonx-orchestrate
```



Configure your environment:

```
orchestrate env add -n <environment-name> -u <service-instance-url> --
activate
```

```
Example: wxo-sjsu-hackathon
```

```
You'll need the Service Instance URL and WXO Token from the Step 1.
Your trial instance will be deployed on AWS.
```

Activate your environment:

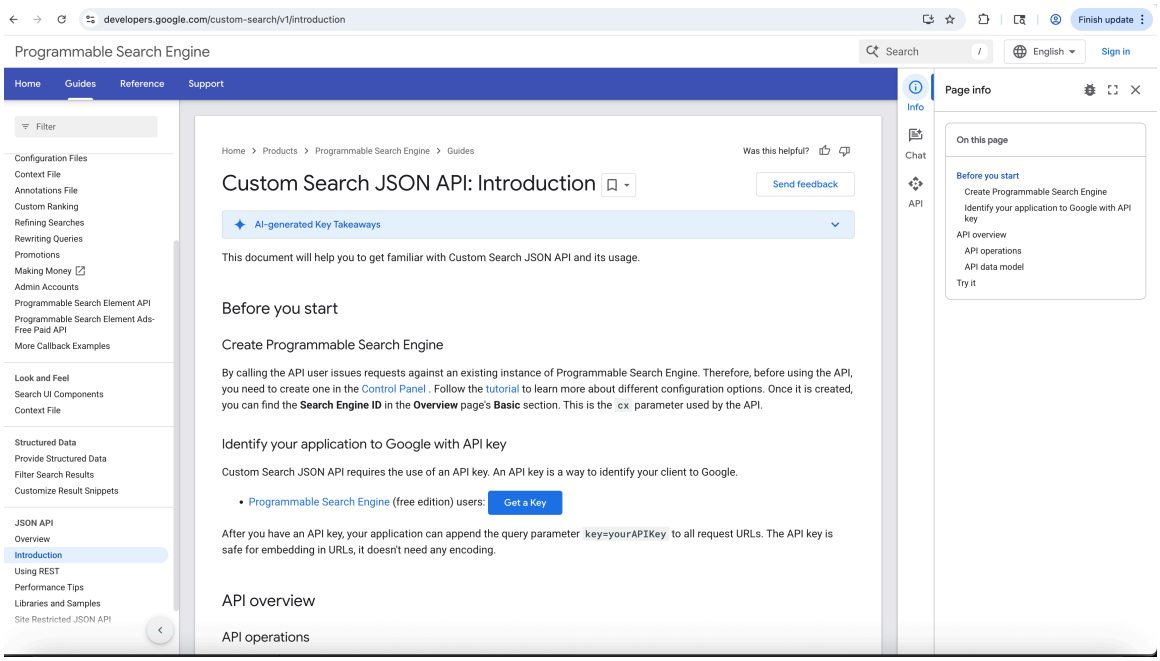
```
orchestrate env activate -n <environment-name>
```

🔍 Step 3: Set Up Google Programmable Search Engine

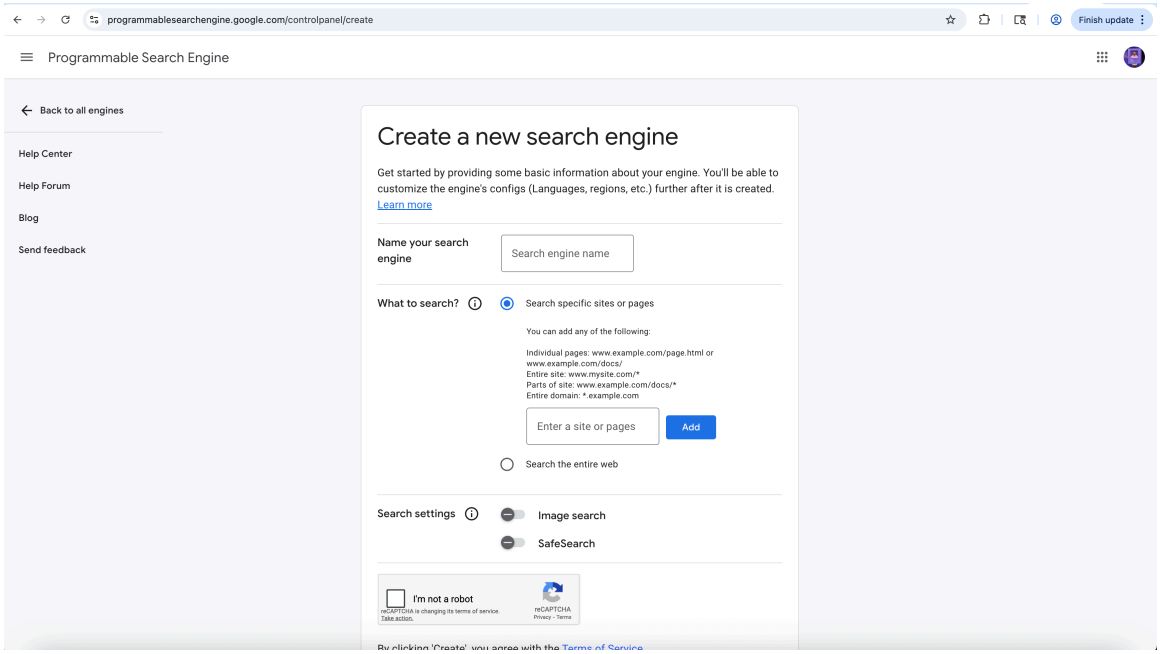
Prerequisite: Gmail account

Go to Google Custom Search:

Visit https://developers.google.com/custom-search/v1/introduction



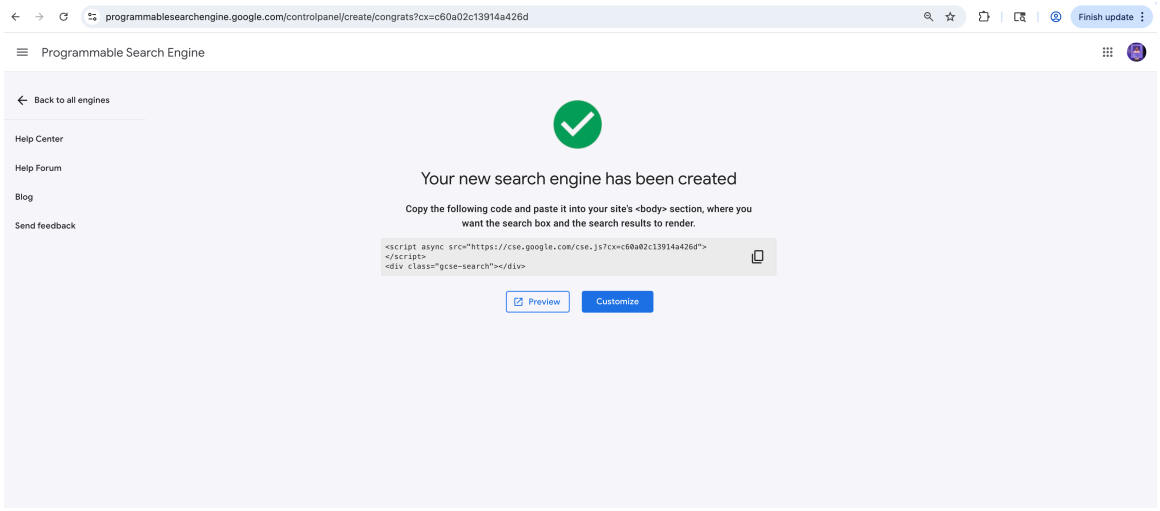
Click Control Panel:



Create a new search engine:

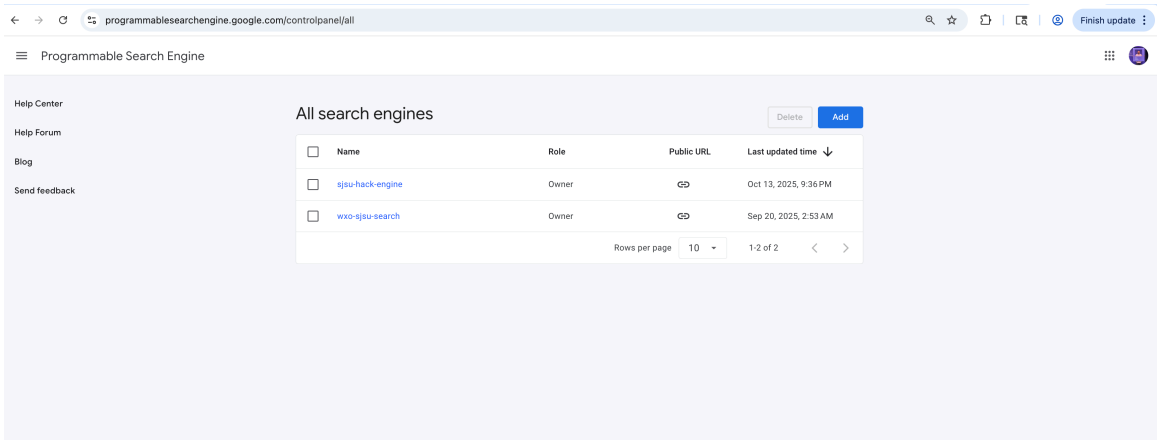
- Add a name
- Choose between:
    - Search specific sites/pages
    - Search the entire web
- ⚠️ Avoid enabling Image Search (not compatible with WXO)

Complete CAPTCHA and click Create.



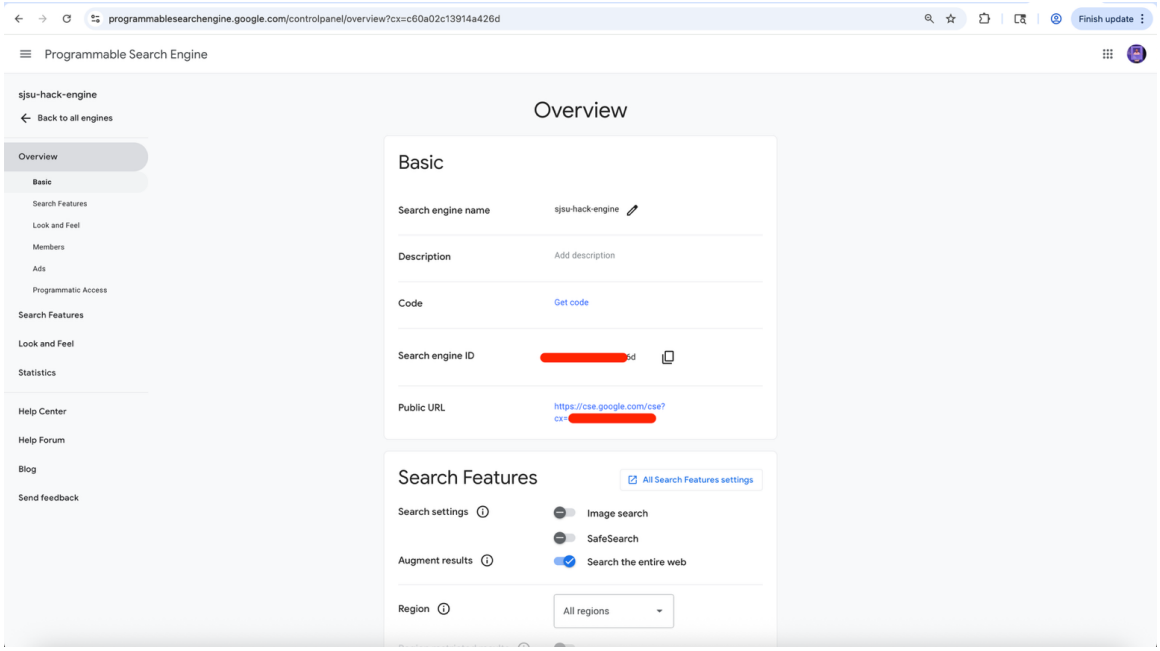
Go back to All Engines:

Click "Back to all engines" to see your created engine. You can create multiple engines as per your use case.



Select your engine and Copy the Search Engine ID:

Click on the engine name to view basic information. Here you will find the Search Engine ID needed for WXO to connect to it.

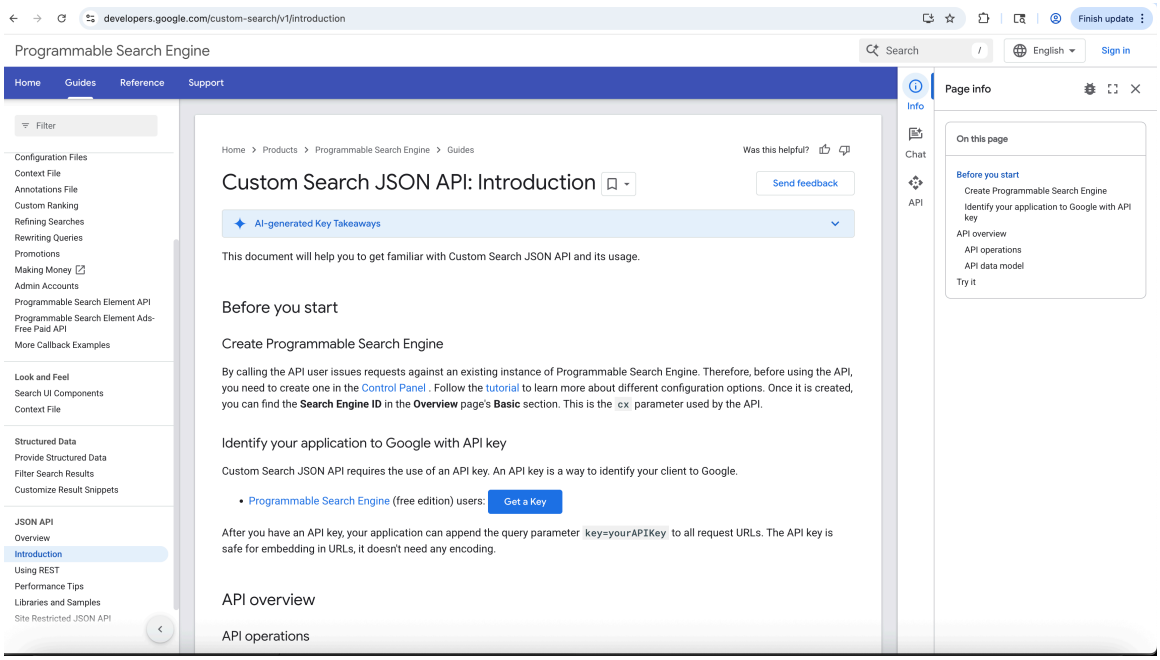


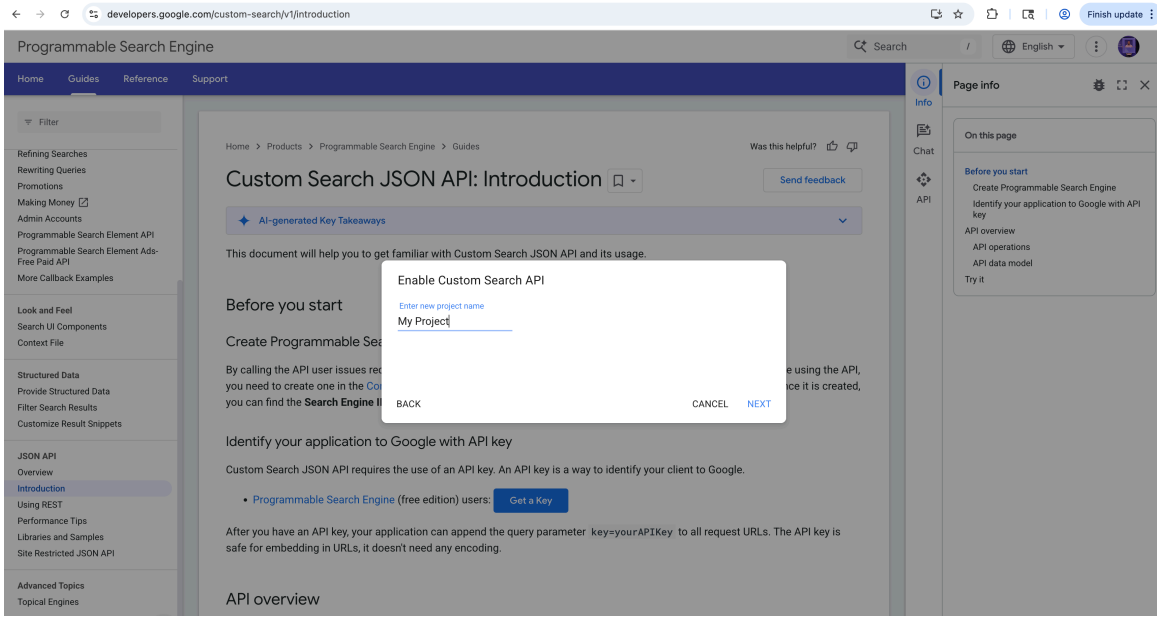
Go to Google Custom Search:

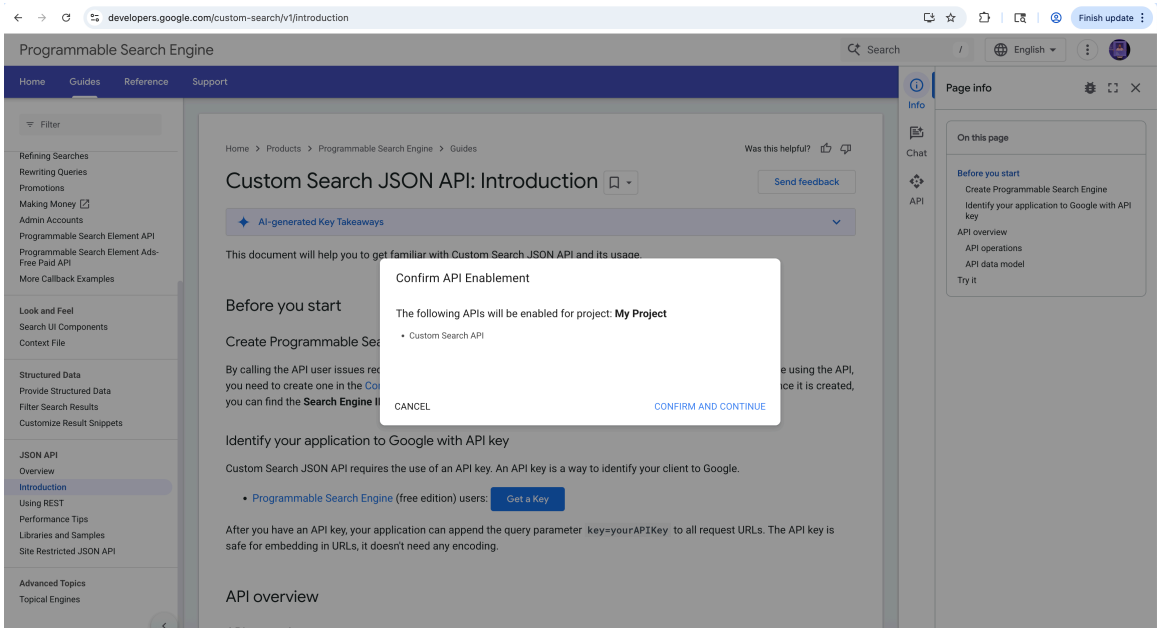
Visit https://developers.google.com/custom-search/v1/introduction

Click Get a Key:

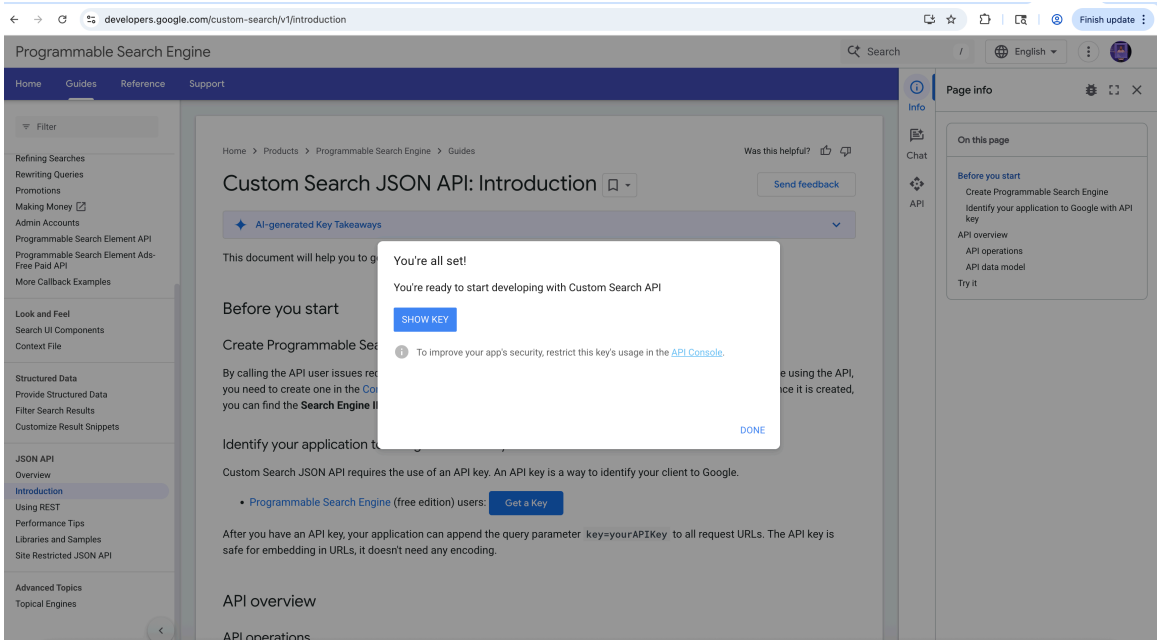
Create a project and follow the steps.







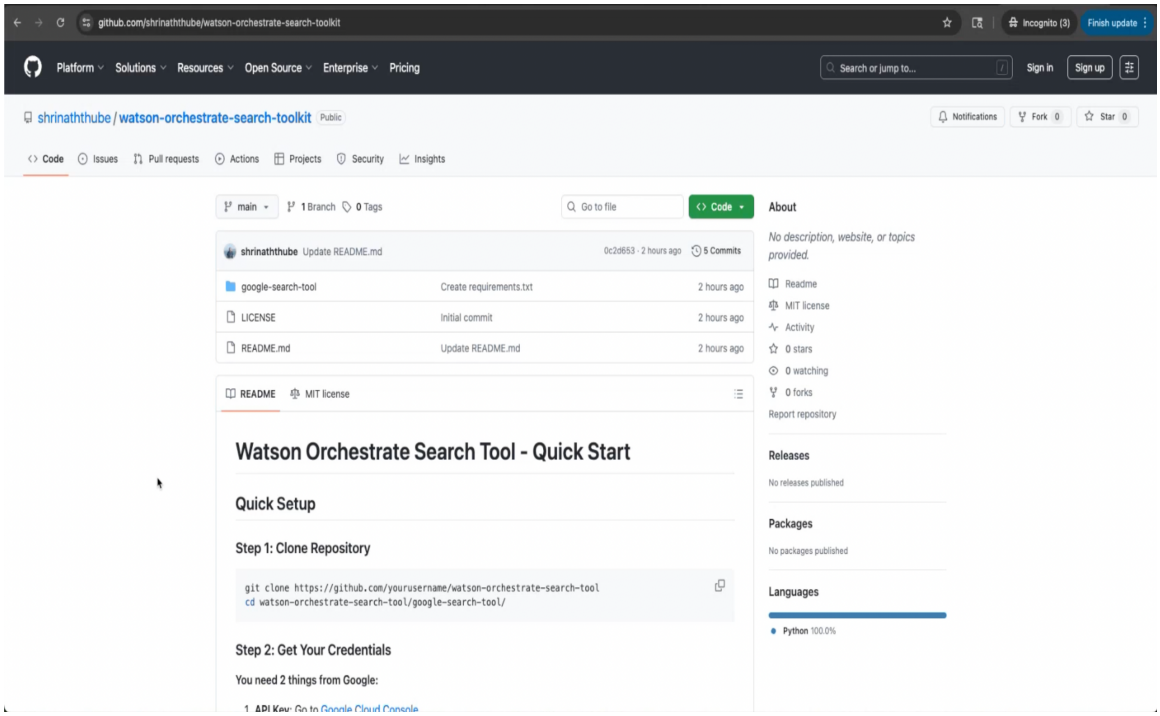
Click "Show key" and save your API Key securely.



🛠️ Step 4: Clone and Import the Google Search Tool

Clone the repository:

```
git clone https://github.com/shrinaththube/watson-orchestrate-search-toolkit
cd watson-orchestrate-search-tool/google-search-tool/
```



Add Your Google Search Engine Credentials:

Edit google_search_tool.py - Replace these lines:

```
GOOGLE_API_KEY = "your-api-key-here"          # ← Put your API key here

SEARCH_ENGINE_ID = "your-search-engine-id"  # ← Put your Search Engine ID here
```

Import the tool into WXO:

```
orchestrate tools import -k python -f google_search_tool.py -r requirements.txt
```

Verify the tool is imported in CLI:

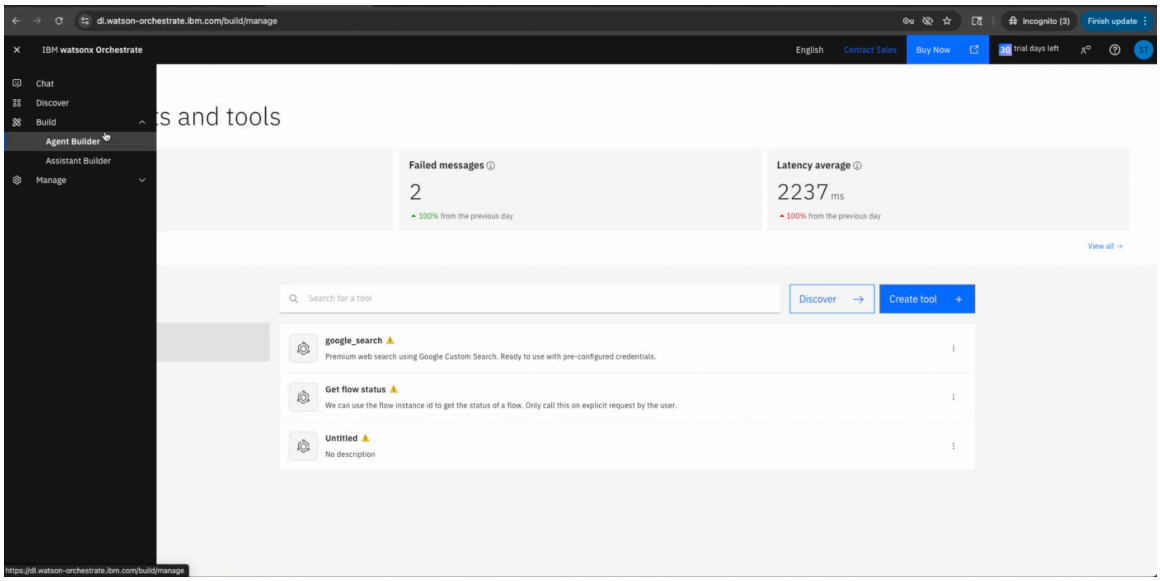
```
orchestrate tools list
```

Verify the tool is imported in WXO portal:

Go to Agent Builder in WXO:

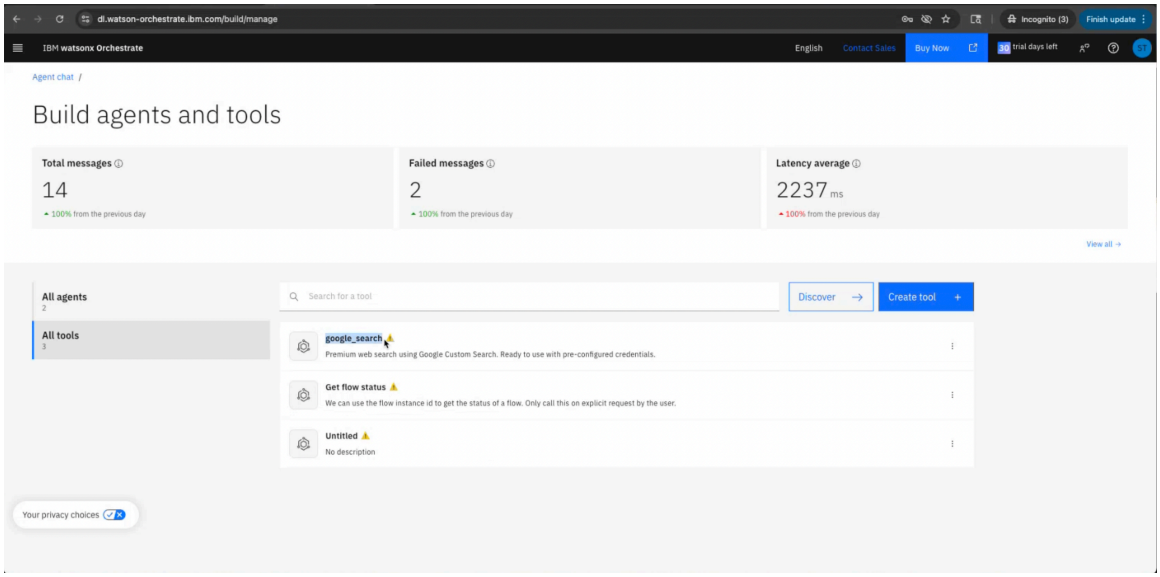
Click All Tools:

You can find it under Agent Builder → Click on all tools.



Locate Google Search Tool:

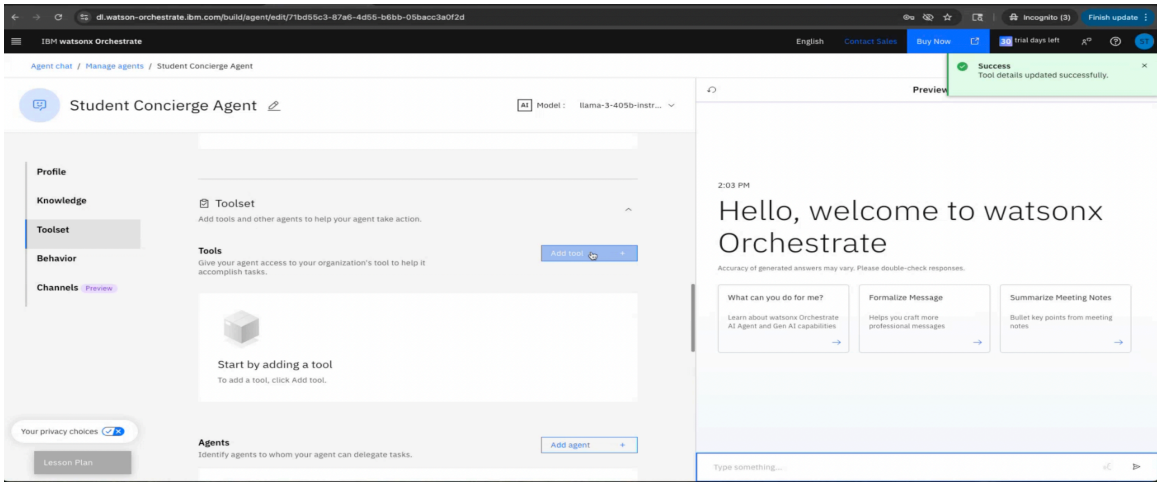
The Google search tool will appear in the list.



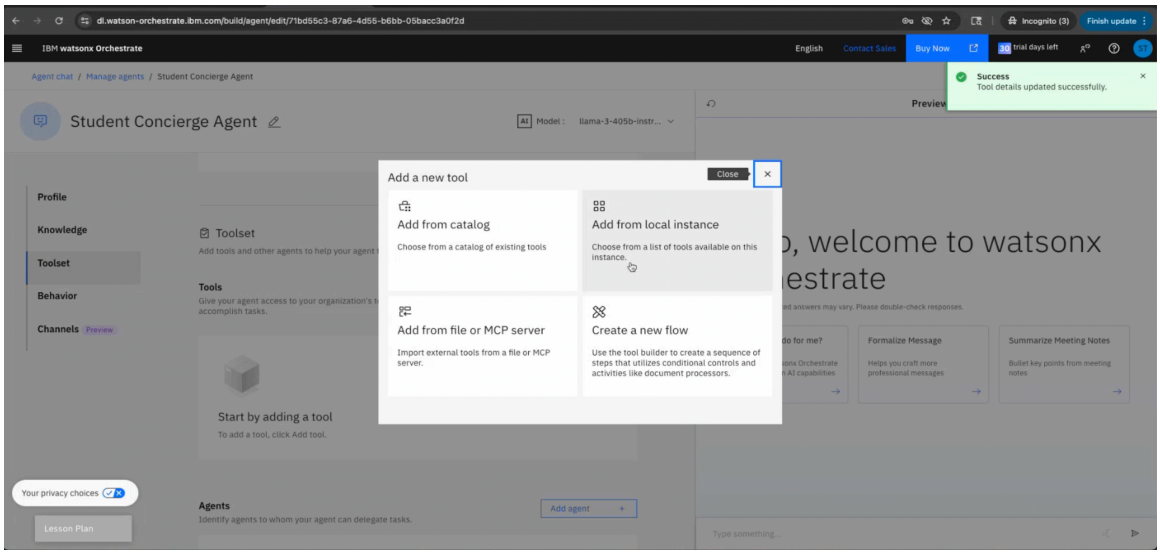
🤖 Step 5: Add the Tool to Your Agent

Go to Agent Builder and select your agent:

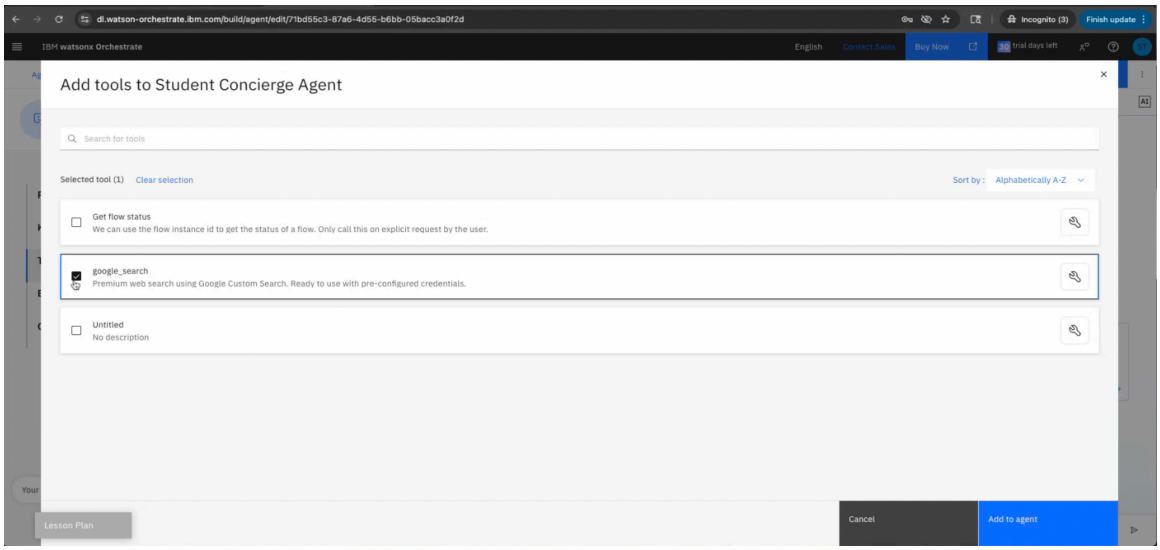
Click Add Tool:



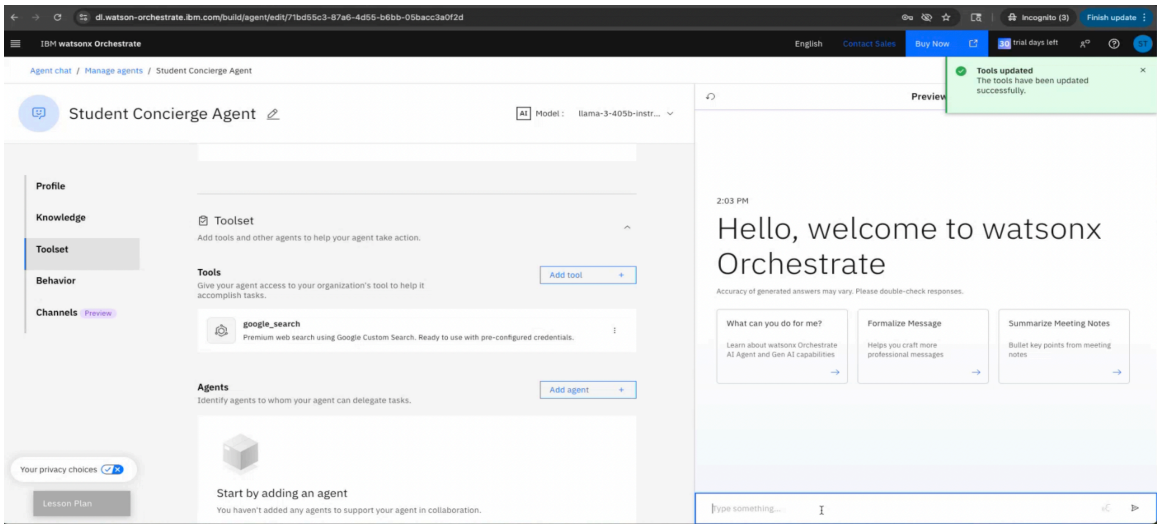
Choose Add from Local Instance:



Select google_search_tool:



Your agent now has search capabilities!



Additional Resources

- WXO ADK Documentation: https://developer.watson-orchestrate.ibm.com/
- Google Custom Search API Docs: https://developers.google.com/custom-search/v1/introduction
- WXO Search Tool GitHub Repo: https://github.com/shrinaththube/watson-orchestrate-search-toolkit