

watsonx Orchestrate Lab XX:

Building an Assistant

Objective

In this lab, you will learn how to set up an Assistant using Assistant Builder in watsonx Orchestrate. We will be creating the Initiate Replenishment flow using the current inventory data, historic and forecasted sales.

Use Case:

In this lab, you will learn how to configure an Assistant to initiate replenishment of a Product.

The high-level steps to accomplish this are as follows:

1. Build custom extensions to retrieve historic and forecast sales.
2. Connect with Salesforce to get current inventory data.
3. Calculate optimal reorder quantity with CrewAI agent.
4. Test the Assistant.

Create Initiate Replenishment Assistant

1. Start by creating an Assistant in the AI Assistant Builder

Create a new assistant

Assistant name

Your assistant name will be kept internally and not visible to your customers

Description (optional) 0/128

Add a description for this assistant

Assistant language

English (US)

This is the language your assistant will speak.

Cancel **Create assistant**

2. Go to Skill Sets, and from the dropdown, select “Initiate Replenishment draft” and move to the Connections tab.

IBM Watsonx Orchestrate

Initiate Replenishment draft

Skill sets

Initiate Replenishment draft

Skills Connections

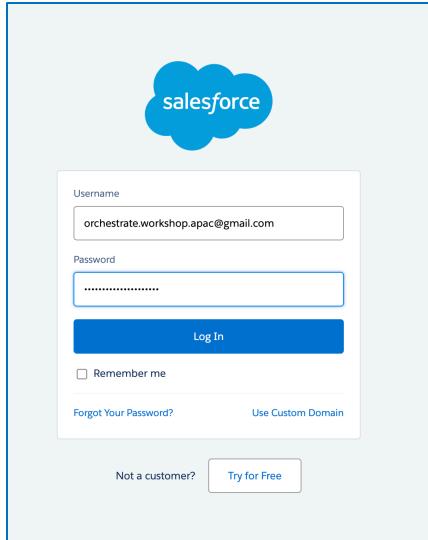
These are the applications that are used by the skills in team skill set. Application connections are required to execute skills. Set preference at an application level to enable skills to either use personal or team credentials.

Application	Number of skills	Credential type	Connected by	Action
Activate or deactivate attracting candidates using ThisWay Global	4	Not specified	-	⋮
Adobe Workfront	37	Not specified	-	⋮
AI File	1	Not specified	-	⋮
Alliance Virtual Office	2	Not specified	-	⋮
Amazon S3	8	Not specified	-	⋮

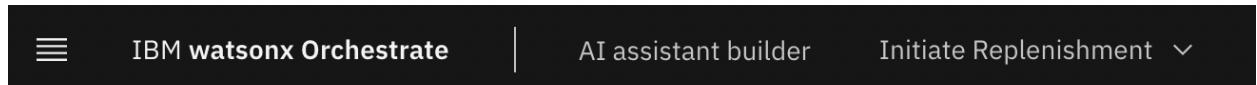
Items per page: 5 1-5 of 142 items 1 of 29 pages ⏪ ⏩

3. Search for “Salesforce” skill and connect the application using the below credentials:

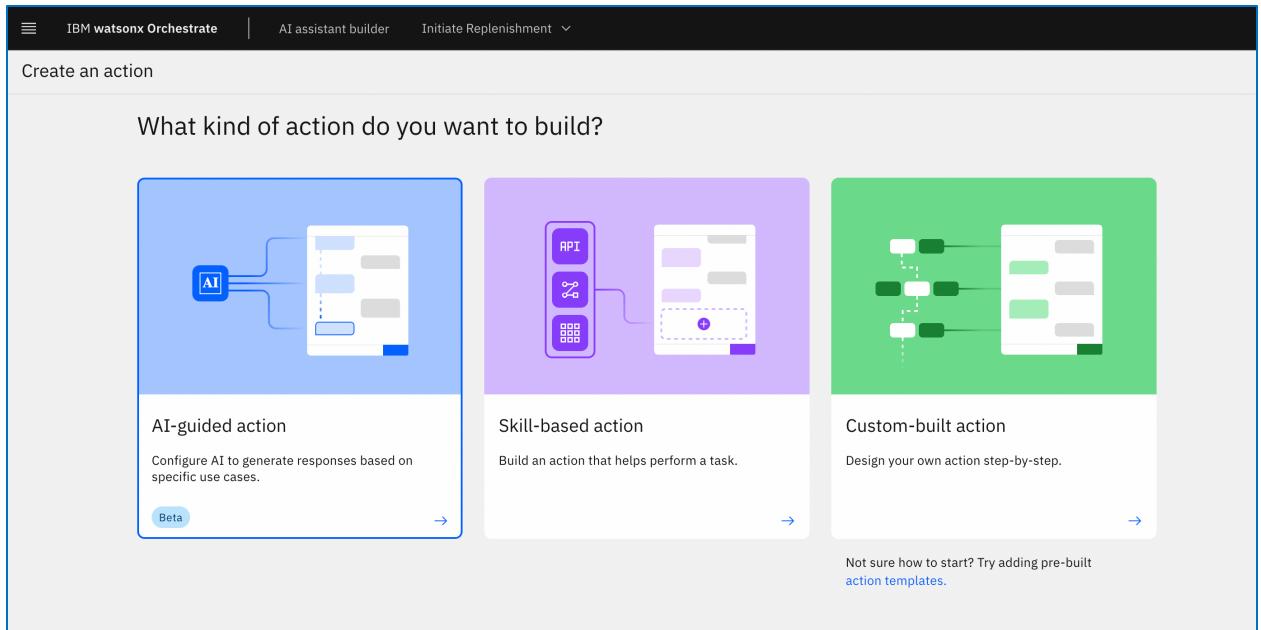
- Select Team Credentials
- You will be prompted to enter Custom URL. Skip and select “Update App”
- Enter the username and password:
Username: orchestrate.workshop.apac@gmail.com
Password: Watsonxorchestrate321



- d. Click on “Allow” to allow all access
4. Search for “Get Historic Sales” and connect the application using the below credentials:
Username: **test**
Password: **test**
 5. Search for “Time Series Forecasting” and connect the application using the same credentials as mentioned in Step 4.
 6. Search for “Calculate Reorder Quantity” and connect the application using the same credentials as mentioned in Step 4.
 7. Go to AI Assistant Builder and select the “Initiate Replenishment Assistant”



8. Go to “Action” click “Create Action” and choose “Skill based Actions”



9. Start adding the following skills one by one.
- a. Get all Products
 - b. Text2SQL with CrewAI
 - c. Time Series Forecasting
 - d. Optimal Reorder Quantity

Build an action from a skill

Select a skill

Choose a conversational skill published as a foundation of your action.

Search a skill ↑↓

Optimal Reorder Quantity API that takes historic sales and forecasts to calculate an optimal reorder quantity Last updated: 2025-03-12T15:18:30.124Z	Text2SQL with Crew AI Converts natural language queries into SQL and executes them on a SQLite database. Last updated: 2025-03-12T10:21:46.969Z
Get all products from Salesforce Last updated: 2025-03-12T06:58:32.771Z	Time Series Forecasting Retrieves predictions from IBM WatsonX using provided input data. Last updated: 2025-03-11T08:11:39.621Z

10. Once all the 4 skills have been added, the Actions tab will look like this

The screenshot shows the 'Actions' tab in the IBM Watsonx Orchestrate interface. The left sidebar has a tree view with 'All items' expanded, showing 'Created by you' selected. The main area displays a table of actions:

Name	Last edited	Examples count	Steps count	Status
Optimal Reorder Quantity	22 minutes ago	1	3	Green
Text2SQL with Crew AI	19 minutes ago	1	1	Green
Time Series Forecasting	17 minutes ago	1	1	Green
Get all products	18 minutes ago	1	2	Green

11. Click on “New Action” and select Custom-built Action. Name the Action “Initiate Replenishment”

The screenshot shows the 'AI assistant builder' interface with the 'Initiate Replenishment' project selected. A modal window titled 'New action' is open, prompting for example phrases. The input field contains 'Initiate Replenishment'. The background shows the conversation steps editor.

12. In the Step 1, add the following details to use Salesforce:

- Assistant says: Fetching current inventory
- And then: Go to Sub action > Get all Products

Editor Visualization

Step 1

Is taken without conditions

Assistant says

Fetching current inventory

Define customer response

And then

Go to a subaction

Goes to action	Get all products
Pass values	
Upon return	Continue

[Edit settings](#) [Edit passed values](#)

13. In the Step 2, add the following details to fetch Historic Sales:

- a. Assistant says: Fetching Historic Sales
- b. And then: Go to Sub action > Text2SQL with CrewAI

Editor Visualization

Step 2

Is taken without conditions

Assistant says

Fetching historic sales

And then

Goes to action

Pass values

Upon return Continue

14. In the Step 3, add the following details to fetch Forecasted Sales:

- a. Assistant says: Fetching Forecasted Sales
- b. And then: Go to Sub action > Time Series Forecasting

Editor Visualization

Step 3

Is taken without conditions

Set variable values

Assistant says

Fetching forecasted sales

Fetching forecasted sales

Define customer response

And then

Go to a subaction

Goes to action	Time Series Forecasting
Pass values	
Upon return	Continue

[Edit settings](#) [Edit passed values](#)

Assistant says

Fetching forecasted sales

Define customer response

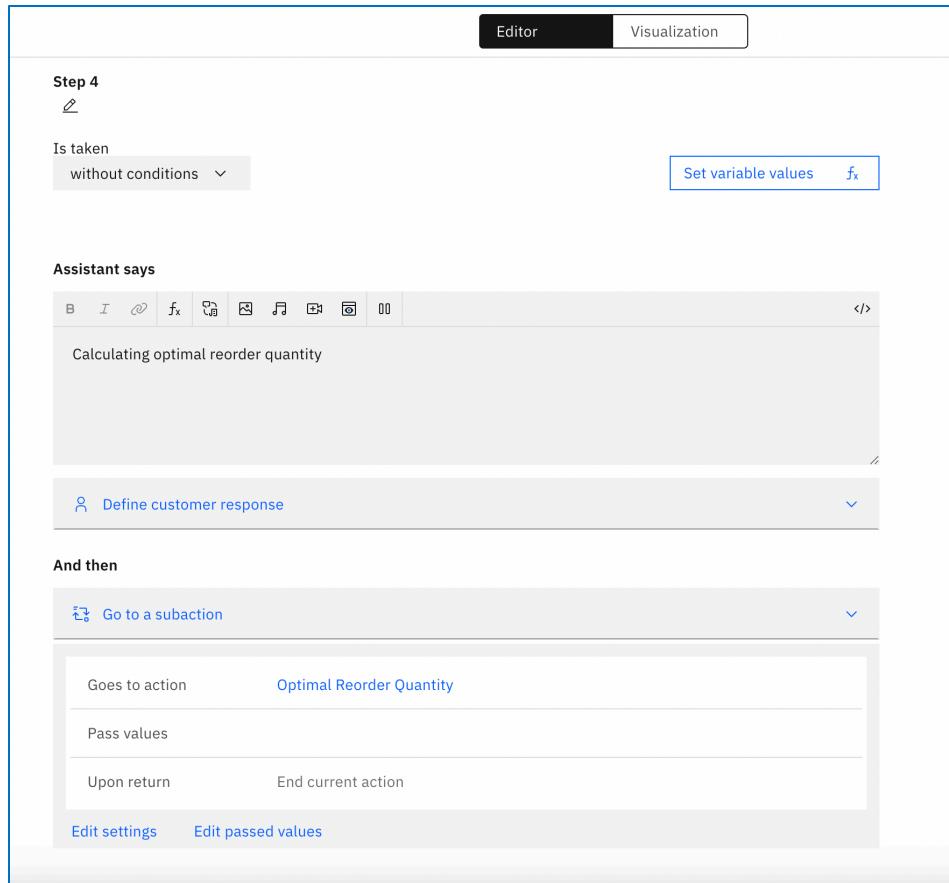
And then

Go to a subaction

Goes to action	Time Series Forecasting
Pass values	
Upon return	Continue

Edit settings Edit passed values

15. In the Step 4, add the following details to calculate Reorder Quantity:
- Assistant says: Calculating optimal reorder quantity
 - And then: Go to Sub action > Optimal Reorder Quantity



16. Once all the 4 steps are complete, the Initiate Replenishment Action will look like this:

Initiate replenishment

Customer starts with:

Initiate replenishment

Conversation steps

1 Fetching current inventory

↳ Go to subaction: **Get all products**

2 Fetching historic sales

↳ Go to subaction: **Text2SQL with Cr...**

3 Fetching forecasted sales

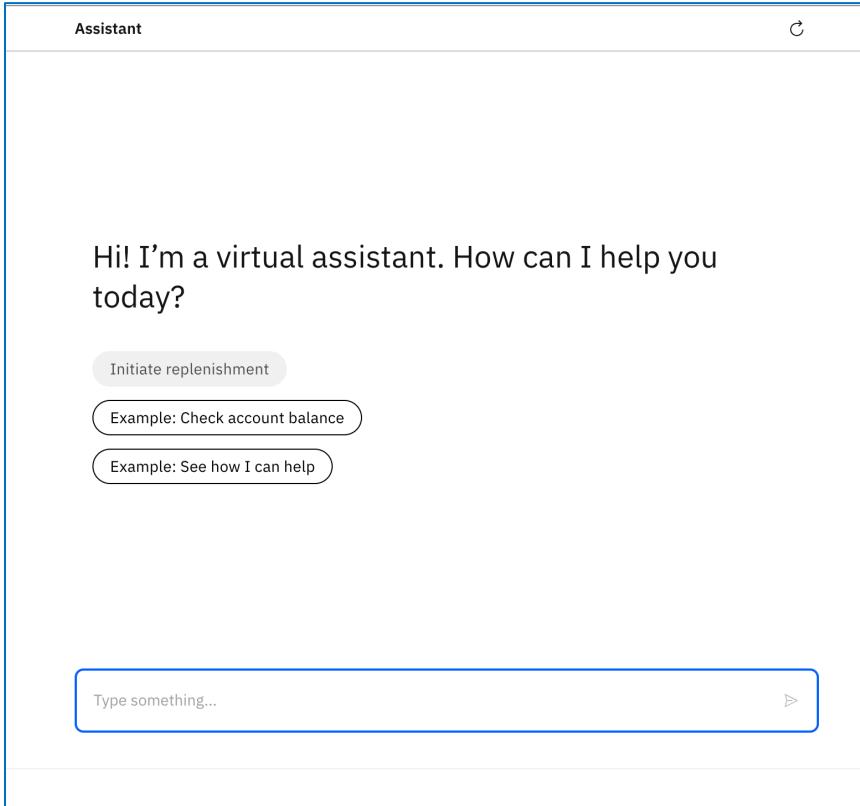
↳ Go to subaction: **Time Series Fore...**

4 Calculating optimal reorder quantity

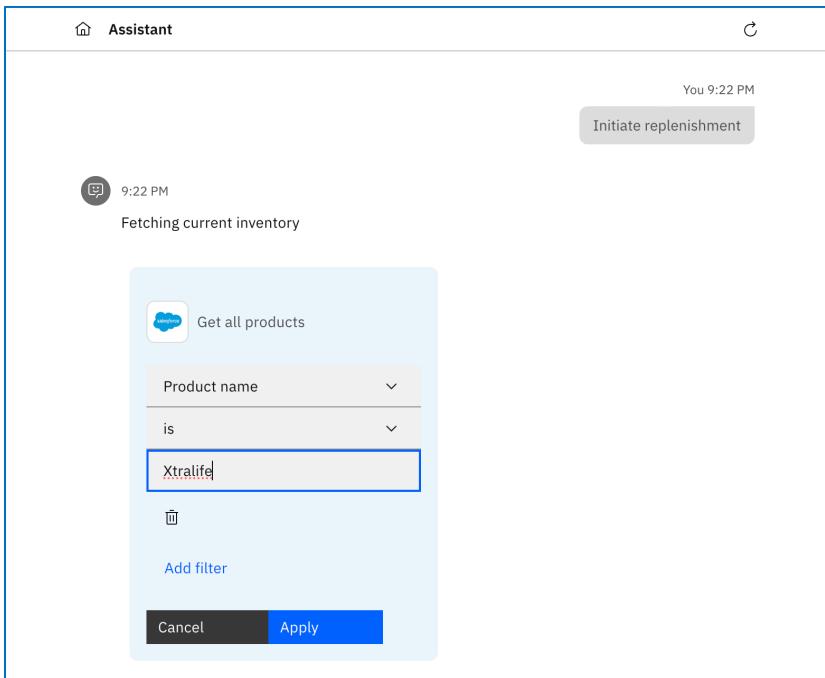
↳ Go to subaction: **Optimal Reorder ...**

Test Initiate Replenishment Assistant

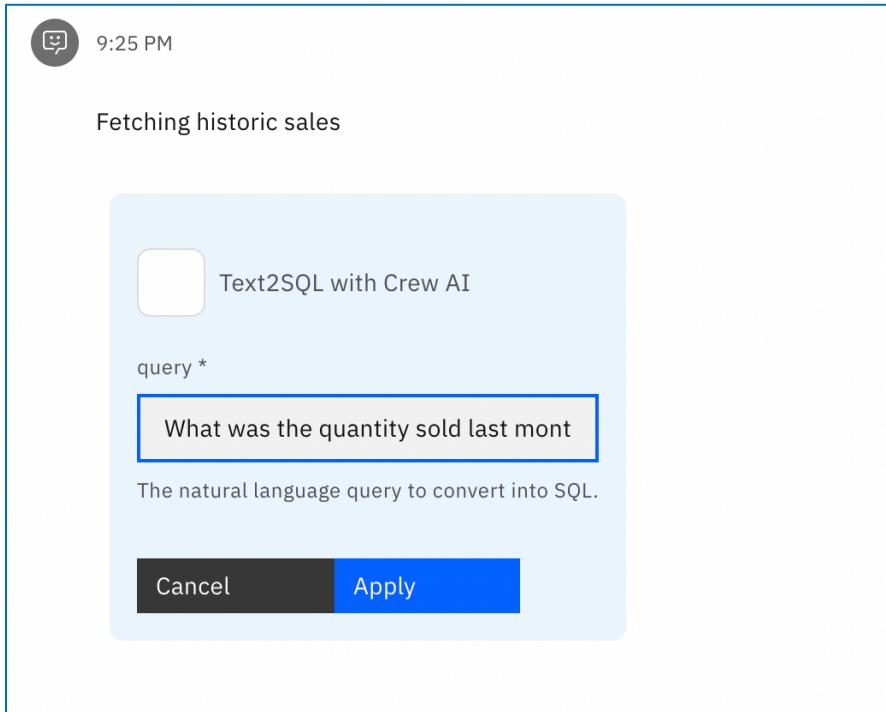
1. Go to Preview tab, and Test the Skill by selecting “Initiate Replenishment”



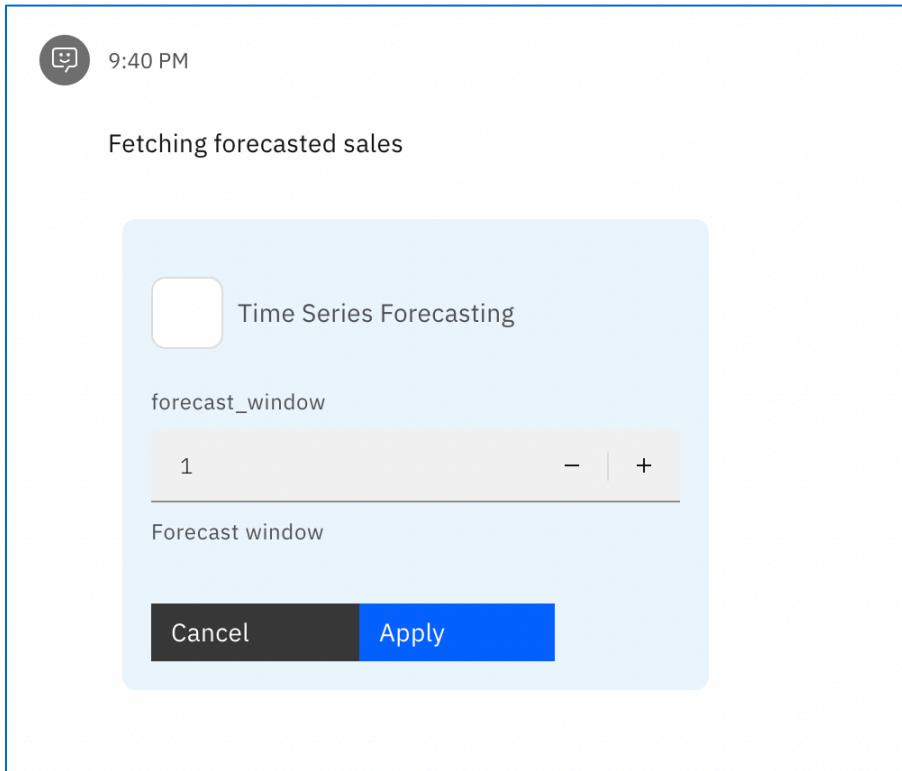
2. Add filter for current inventory by selecting “Product name” is “Xtralife”



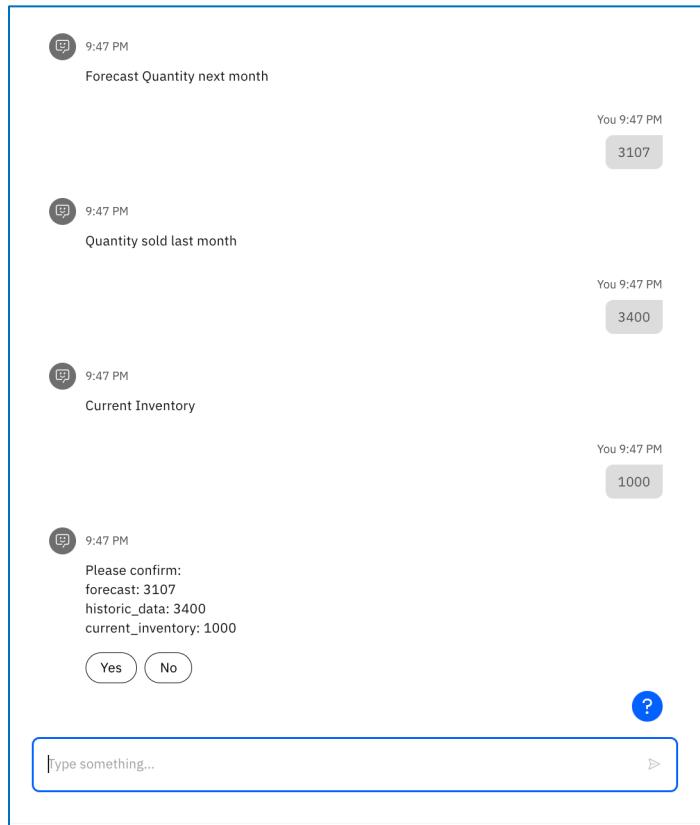
3. For getting historic sales, add the query: “What was the quantity sold last month for Xtralife?” and click Apply.



4. For getting forecasted sales, change the forecast window to 1, and click Apply.



5. After getting the results for the forecast, the Assistant will prompt you to enter details. Enter the following details:
- Forecast Quantity next month: 3107
 - Quantity sold last month: 3400
 - Current Inventory: 1000
 - And the confirm the details.



6. The Assistant will then trigger to calculate the optimal reorder quantity based on the above inputs and provide an output.



9:49 PM

reasoning : The reorder quantity of 2447 is calculated by first determining the shortfall of 2107, which is the difference between the forecasted quantity for next month and the current inventory. Since this shortfall is less than or equal to the historic sales, a safety stock of 340 is added, which is 10% of the historic sales. This approach ensures that we have enough stock to meet the forecasted demand while also accounting for some variability in sales, thus minimizing the risk of stock shortages and excess inventory.

reorder_quantity : 2447

