

# IBM Cloud Pak for Business Automation Demos and Labs 2023

Introduction to IBM watsonx Orchestrate.

V 1.1

Bu Feng Hou  
[houbf@cn.ibm.com](mailto:houbf@cn.ibm.com)

Juergen Lukas  
[jlukas@de.ibm.com](mailto:jlukas@de.ibm.com)

Paul Pacholski  
[pacholsk@ca.ibm.com](mailto:pacholsk@ca.ibm.com)

Zhong Tao Gao  
[gaozt@cn.ibm.com](mailto:gaozt@cn.ibm.com)

## Table of Contents

<b>1 Introduction .....</b>	<b>3</b>
1.1 IBM watsonx Orchestrate .....	3
1.2 Lab Scenario .....	3
1.2.1 Client Onboarding Use Case .....	3
1.2.2 IBM watsonx Orchestrate Services Upsell Solution .....	3
1.2.3 Solution Architecture.....	3
1.3 Lab Overview .....	5
1.4 Lab Setup Instructions .....	6
1.4.1 Systems, Lab Files, and Credentials.....	6
1.4.2 Customize the OpenAPI File.....	6
1.4.3 Login to wxO .....	6
<b>2 Exercise: Experience the Orchestrate "Builder" Role .....</b>	<b>7</b>
2.1 Import Skills .....	7
2.2 Publish Skills to Skills Catalog .....	9
<b>3 Exercise: Experience the Orchestrate "User" role .....</b>	<b>13</b>
3.1 Add Skills from the Skill Catalog .....	13
3.2 Test the Solution As Is .....	15
3.3 Enhance User Experience with a Skills Flow .....	19
3.3.1 Create a Skill Flow .....	19
3.3.2 Configure Skill Flow .....	22
3.4 Add Skill Flow from the Skill Catalog .....	26
3.5 Test the Solution with Skill Flow .....	27
3.5.1 Prepare the Upsell Offer .....	27
3.5.2 Try Sending an Upsell Offer Email to your Client. ....	29
3.5.3 Approve the Upsell Offer .....	30
3.5.4 Send an Upsell Offer Email to your Client. ....	32
3.5.5 Verify the Upsell Offer Email to the Client's Mailbox. ....	32
<b>Appendix A. Overview of the "Administrator" Role.....</b>	<b>34</b>

# 1 Introduction

## 1.1 IBM watsonx Orchestrate

IBM watsonx Orchestrate uses natural language processing to draw from a catalog of basic and advanced skills to execute your requests - in context and the correct order. No specialized training is needed. Get started in minutes using prebuilt skills designed for you and your needs. IT doesn't even have to get involved (unless they want to, of course).

To learn more about IBM watsonx Orchestrate, click [here](#). To see the technical documentation, click [here](#).

## 1.2 Lab Scenario

### 1.2.1 Client Onboarding Use Case

Focus Corp is a business services provider that offers various services for different industries. Focus Corp uses a fully automated Client Onboarding solution to onboard services to its clients. Watch this video to see how client onboarding requests are completed: <https://ibm.box.com/v/CLIENT-ONBOARDING-USE-CASE>

### 1.2.2 IBM watsonx Orchestrate Services Upsell Solution

The company's quarterly services upsell initiative is critical to demand generation; however, it is increasingly difficult to manage and execute. Quarterly sales campaigns are time-consuming and ineffective. It takes over ten weeks to complete quarterly promotions. Due to time limitations, the sales team cannot include all eligible customers. Managers are looking for a faster and more effective way of launching upsell offers.

In this lab, you will build an IBM watsonx Orchestrate solution that re-imagines the quarterly promotions process. You will be re-using the existing IT assets to author an intelligent, AI-driven solution that pulls customer data from the system of records and creates targeted emails.

**Note:** From now on, we will use the acronym "wxO" to refer to IBM watsonx Orchestrate and "BAW" for IBM Business Automation Workflow.

### 1.2.3 Solution Architecture

Before we discuss solution architecture, let's introduce some key wxO programming model concepts.

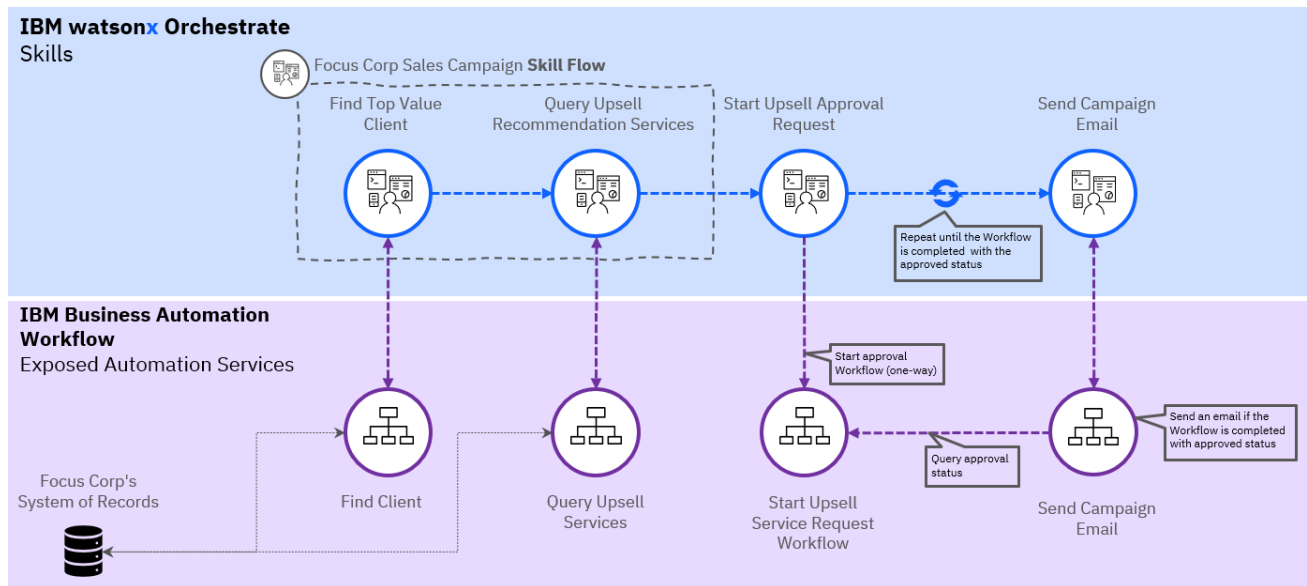
#### 1.2.3.1 What are Skills, Skill Flows, and Apps?

**Skill** is a wrapper around automation (such as BAW Service Flows exposed as REST API) that enables a non-technical user to invoke it through Natural Language. Skills are packaged in Apps.

**Apps** are collections of related skills with the same connection information and authorization. OpenAPI import files define Apps.

**Skill Flows** are linear orchestration of skills from the same or different apps. Skill Flows can also be "trained" to provide a Natural Language interface.

### 1.2.3.2 Solution Architecture



**Figure 1. Upsell Campaign Solution: Skills and Services**

Service Flows implement all Skills in BAW.

The user interaction starts when the sales specialist asks wxO to "start a sales campaign." This action invokes the Focus Corp Sales Campaign Skill Flow.

The first Skill in the Skill Flow retrieves a list of customers suitable for an upsell campaign from the System of Records. The second Skill suggests the appropriate upsell services. The user selects the client (from a list prepared by wxO) and specifies the upsell services (from a list prepared by wxO).

Next, based on wxO's suggestion (next best Skill), the user starts the Submit for Approval skill. This Skill triggers a Workflow that contains the upsell offer details. The sales manager must approve it before the sales specialist can ask wxO to send an upsell offer email to the Client (Send Campaign Email to Client).

The execution of the Send Campaign Email Skill is blocked until the manager approves the upsell offer. Once the approval step in the Workflow is completed, the sales specialist can ask wxO to send the email.

### 1.2.3.3 Skill Implementation

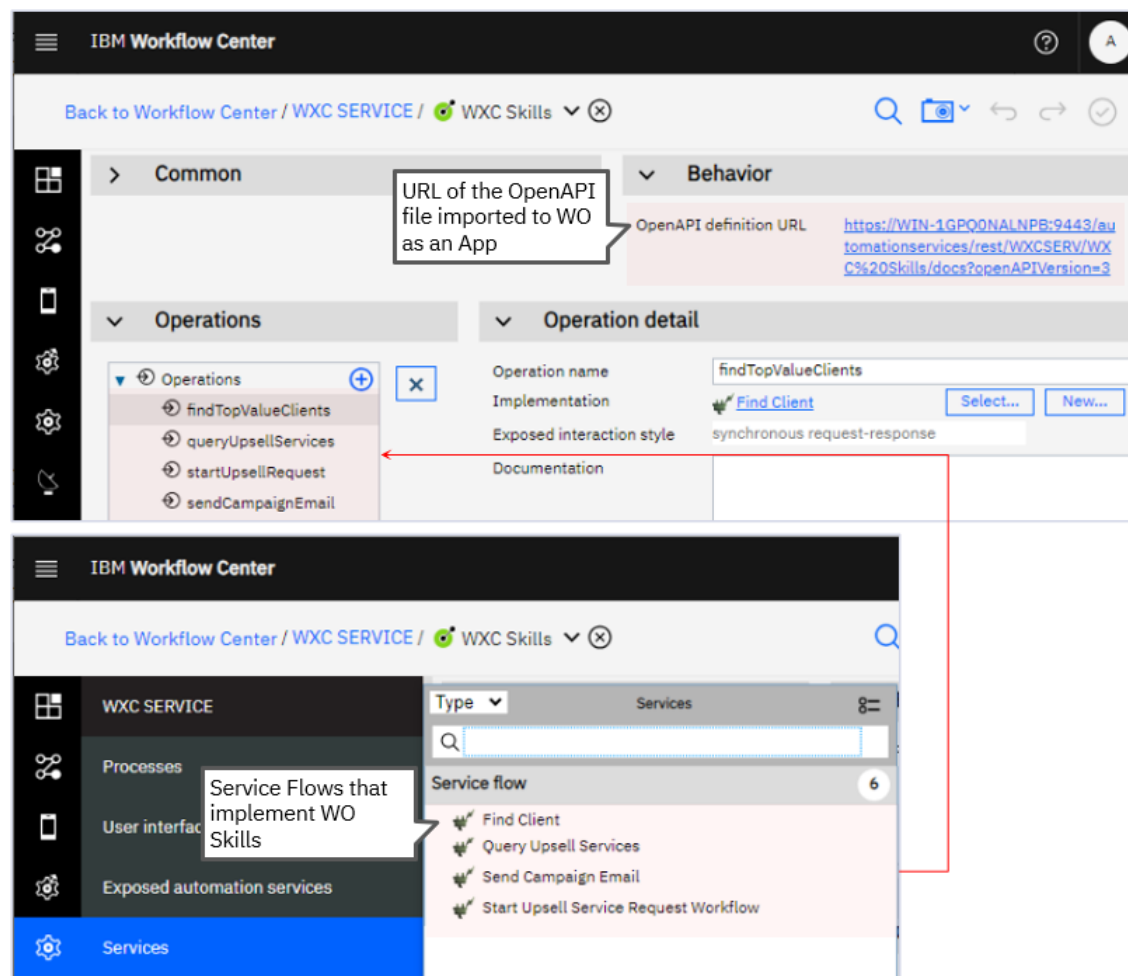


Figure 2. Service Flows that Implement wxO Skills

Skills are implemented using Service Flows authored using BAW and are exposed as operations in a single OpenAPI file.

## 1.3 Lab Overview

This lab is structured around the three roles defined in wxO – see the details [here](#).

Role	Tasks Performed in this Lab
Builder	Import Skills Publish Skills to Skills Catalog  Enhance User Experience with a Skill Flow
User	Add Skills from the Skill Catalog Test the Solution As Is  Add Skill Flow (created by a Builder) from the Skill Catalog Test the Solution with Skill Flow
Administrator	Since we don't have an admin ID available to everyone, we would like to point you to <a href="#">Appendix A. Overview of the "Administrator" Role</a> to familiarize you with this role.

Approximate Duration of this lab: 1.5 hours

## 1.4 Lab Setup Instructions

### 1.4.1 Systems, Lab Files, and Credentials

If you are performing this lab as part of an IBM event, access the document that lists the available systems, URLs, and login instructions. For this lab, you will need to access,

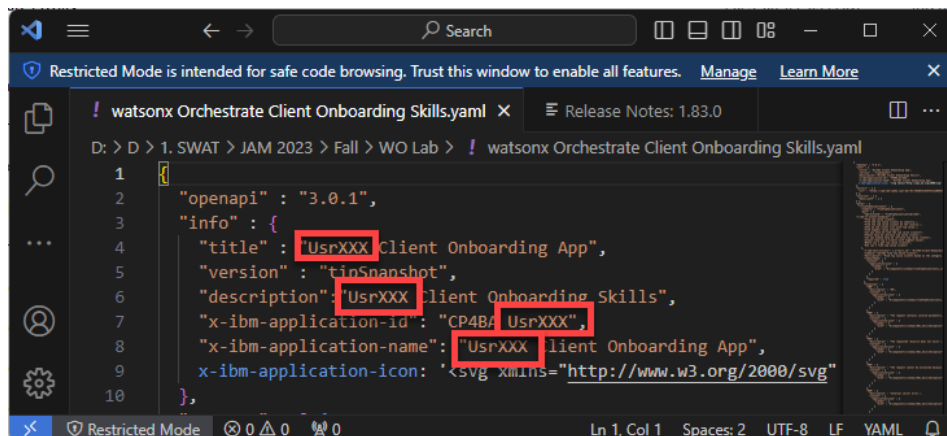
- **IBM watsonx Orchestrate**
- **IBM Business Automation Workplace**
- **Roundcube Webmail**

Download the **watsonx Orchestrate Client Onboarding Skills.yaml** onto your computer from the Lab Data folder.

### 1.4.2 Customize the OpenAPI File

The OpenAPI file *watsonx Orchestrate Client Onboarding Skills.yaml* includes definitions of the REST call to invoke the four REST Services, which expose Service Flows authored in IBM Business Automation Workflow. You will use this file to create Skills in wxO. Since we are using a shared wxO environment, to ensure your Skills have unique names:

1. Use a text editor of your choice to **Open** *watsonx Orchestrate Client Onboarding Skills.yaml* file (see [1.4.1 Systems, Lab Files, and Credentials](#))
2. Replace all occurrences of **UsrXXX** with **the user id you were assigned.**, e.g., Usr002.



3. **Save and close** *watsonx Orchestrate Client Onboarding Skills.yaml* file.

### 1.4.3 Login to wxO

4. In your Web Browser, open **IBM watsonx Orchestrate** (see [1.4.1 Systems, Lab Files, and Credentials](#))
5. Enter your IBM ID and click **Continue to log in.**

Log in to IBM  
Watson Orchestrate

Don't have an account? [Book a demo](#)

Continue with IBMID [Forgot ID?](#)

[Continue](#) →

## 2 Exercise: Experience the Orchestrate "Builder" Role

The builder is responsible for providing and authoring the building blocks of wxO solutions. Based on the input from the end users of wxO solutions, the builder creates Skills from external services and adds them to the Skills Catalog.

You will create Skills from the BAW services defined in the *watsonx Orchestrate Client Onboarding Skills.yaml* file. In this lab part, you will add them to the Skill Catalog. See Figure 3 below:

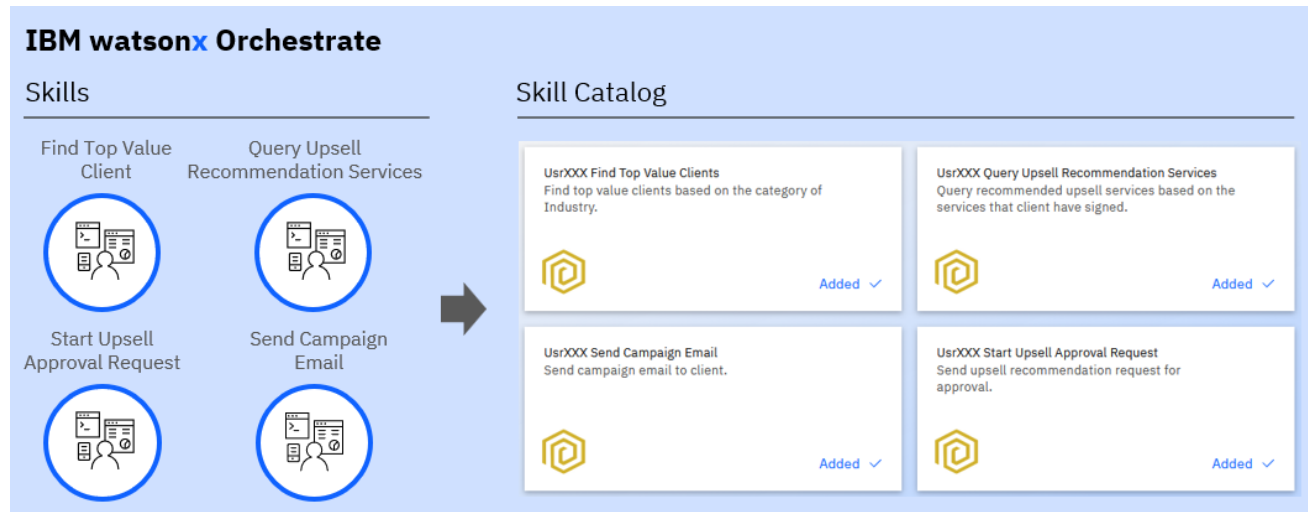
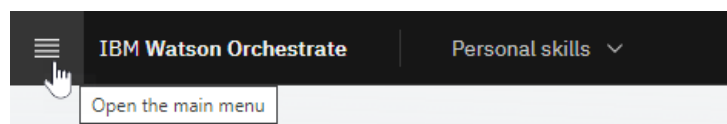


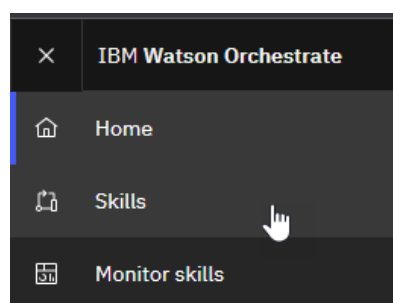
Figure 3. Skills and Skill Catalog

### 2.1 Import Skills

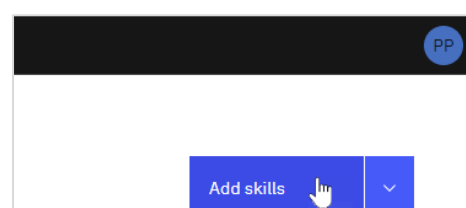
1. Click the **Hamburger** menu.



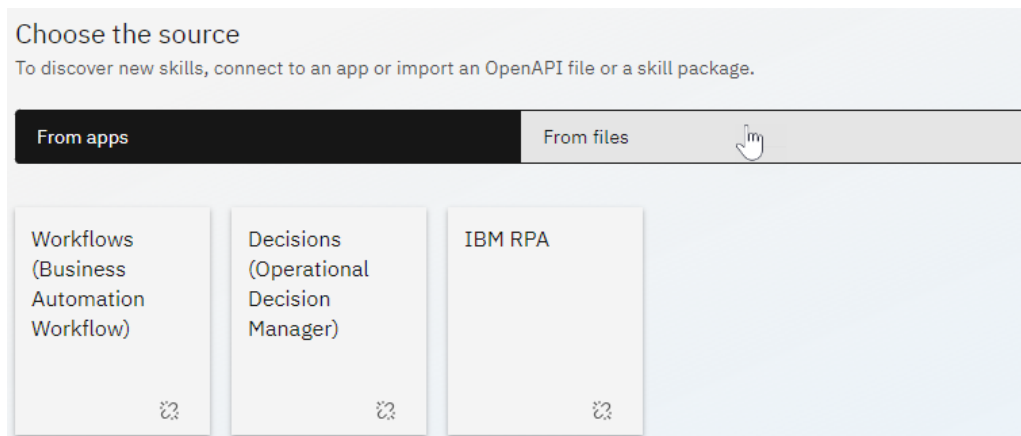
2. Click **Skills**



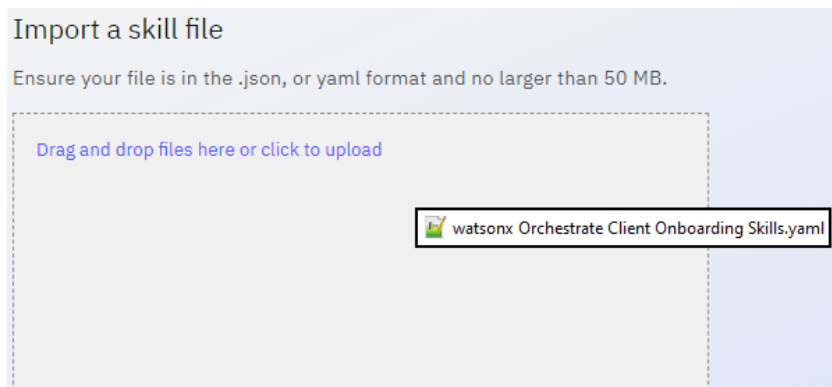
3. In the top-right, click **Add Skills**.



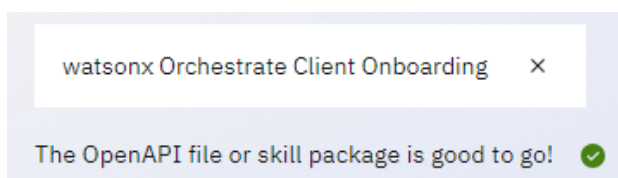
4. From Choose the source, click **From files**.



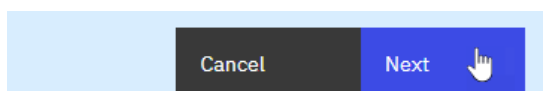
5. From your file system, drag and drop *watsonx Orchestrate Client Onboarding Skills.yaml* to drag and drop files here or click the upload box.



6. Make sure you see "...good to go!" message.



7. In the bottom-right corner, click the **Next** button.






8. **Select** all four skills you imported and click the **Save as draft** button.

4 out of 4 selected Q

	Skill	Description	Status
▼ <input checked="" type="checkbox"/>	UsrXXX Find Top Value Clients	Find top value clients based o...	✓ Ready to add
▼ <input checked="" type="checkbox"/>	UsrXXX Query Upsell Recommenda...	Query recommended upsell servi...	✓ Ready to add
▼ <input checked="" type="checkbox"/>	UsrXXX Start Upsell Approval R...	Send upsell recommendation req...	✓ Ready to add
▼ <input checked="" type="checkbox"/>	UsrXXX Send Campaign Email	Send campaign email to client.	✓ Ready to add

Cancel
Save as draft 

9. You will now see all the Skills, including the skills other users have published.

Note that your published skills will be prefixed with UsrXXX (where XXX is the user ID number you were provided with). Also, note that the Status of your skills is set to "Ready to publish."

Skills					
	Name	Description	Step in the process	Status	Skill type
▼	JL Find Top Value Clients	Find top value clients based o...	Ready to use	Published	Imported
▼	wastonx.ai skill for generatin...	A wastonx.ai skill for generat...	Ready to use	Published	Imported
▼	UsrXXX Find Top Value Clients	Find top value clients based o...	Just 1 step away to be ready	Ready to publish	Imported
▼	UsrXXX Query Upsell Recommenda...	Query recommended upsell servi...	Just 1 step away to be ready	Ready to publish	Imported
▼	UsrXXX Start Upsell Approval R...	Send upsell recommendation req...	Just 1 step away to be ready	Ready to publish	Imported
▼	UsrXXX Send Campaign Email	Send campaign email to client.	Just 1 step away to be ready	Ready to publish	Imported

## 2.2 Publish Skills to Skills Catalog

The skills in the "Ready to publish" state can be published to make them available in the skill catalog. Before publishing, we can make some changes and enhancements. Let's explore Skill enhancement and publishing.

1. In the search field, enter **UsrXXX** (where XXX are the digits in your Tech Jam user id) and hit the **Enter key**.

Note: there may be hundreds of Skills to choose from!

## Skills & Apps

Add new skills, train them to be more effective, and publish them to the catalog so your team can benefit from them quickly.

Q UsrXXX

2. On the row with *UsrXXX Find Top Value Clients*, select the **vertical ellipses (3 dots)**, and then click **Enhance the Skill**.

Name	Description	Step in the process	Status	Skill type	
UsrXXX Find Top Value Clients	Find top value clients based o...	Just 1 step away to be ready	Ready to publish	Imported	⋮
UsrXXX Query Upsell Recommenda...	Query recommended upsell servi...	Just 1 step away to be ready	Ready to publish	Imported	Enhance this skill
UsrXXX Start Upsell Approval R...	Send upsell recommendation req...	Just 1 step away to be ready	Ready to publish	Imported	Delete this skill
UsrXXX Send Campaign Email	Send campaign email to client.	Just 1 step away to be ready	Ready to publish	Imported	Export this skill

3. Examine the tabs that we can use to enhance a Skill before publishing.

[Home](#) / [Manage skills](#) / Enhance this skill

## Enhance the “UsrXXX Find Top Value Clients” skill

Add details that will make people want to use this skill.

Name	Input	Output	Security	Phrases	Next best skills
Name and describe this skill in a way that tells users how it's used and why they would want to use it.					Preview

Tab	Enhancements
Name	Name and describe this Skill in a way that tells users how it's used and why they would want to use it. The preview shows how a skill tile will appear in the skill set and the catalog.
Input	When running the Skill, wxO asks for the necessary input to get the most accurate results.
Output	wxO responds with information that corresponds to the provided input.
Security	Specify the authentication type required to use this Skill and test the connection.
Phrases	Phrases are the text your user types in the chat box to find and use a skill.
Next best Skill	Select the skills you want Watson to suggest as the next skills people could use after they use this Skill.

4. In the bottom-right corner, click the **Publish** button.

Cancel	Publish	Save as draft
--------	---------	---------------

5. **Rerun the Search** to see only your skills.

Note that the state has changed to Published.

✓	Start Upsell Approval Request	Send upsell recommendation req...	Ready to use	Published
---	-------------------------------	-----------------------------------	--------------	-----------

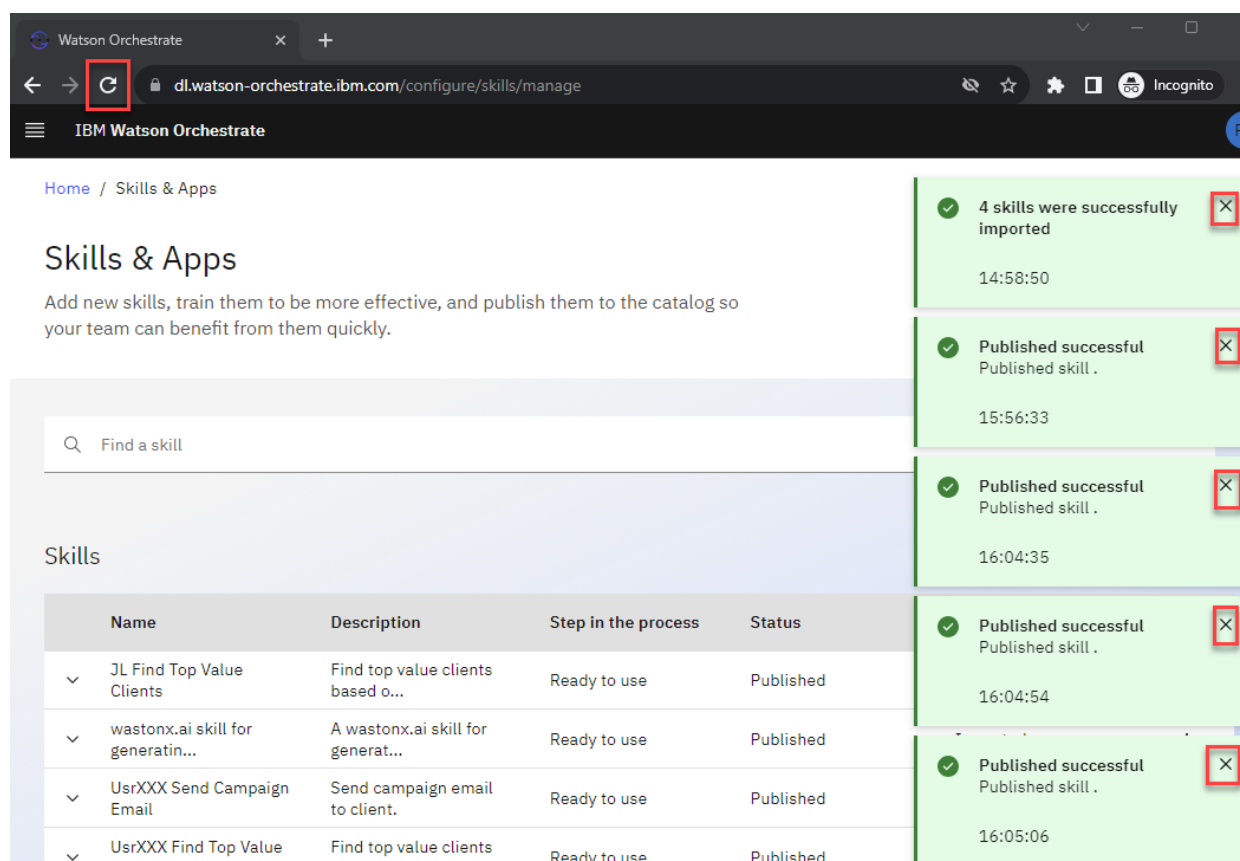
6. Repeat the above five steps to publish the remaining three Skills.

✓	UsrXXX Query Upsell Recommenda...	Query recommended upsell servi...	Just 1 step away to be ready	Ready to publish
✓	UsrXXX Start Upsell Approval R...	Send upsell recommendation req...	Just 1 step away to be ready	Ready to publish
✓	UsrXXX Send Campaign Email	Send campaign email to client.	Just 1 step away to be ready	Ready to publish

7. Verify that all the Skills you have imported are published.

✓	UsrXXX Send Campaign Email	Send campaign email to client.	Ready to use	Published
✓	UsrXXX Find Top Value Clients	Find top value clients based o...	Ready to use	Published
✓	UsrXXX Query Upsell Recommenda...	Query recommended upsell servi...	Ready to use	Published
✓	UsrXXX Start Upsell Approval R...	Send upsell recommendation req...	Ready to use	Published

8. You will see several green information pop-ups. To dismiss them, click the **X** on each pop-up or click the **browser refresh button**.



The screenshot shows the IBM Watson Orchestrator interface. The browser address bar shows the URL `dl.watson-orchestrator.ibm.com/configure/skills/manage`. The page title is "Skills & Apps". Below the title, there is a search bar with the placeholder text "Find a skill". The main content area displays a table of skills. On the right side of the page, there are five green success pop-ups, each with a close button (X) in the top right corner. A red box highlights the browser refresh button in the top left corner of the browser window.

Name	Description	Step in the process	Status
✓ JL Find Top Value Clients	Find top value clients based o...	Ready to use	Published
✓ wastonx.ai skill for generatin...	A wastonx.ai skill for generat...	Ready to use	Published
✓ UsrXXX Send Campaign Email	Send campaign email to client.	Ready to use	Published
✓ UsrXXX Find Top Value Clients	Find top value clients based o...	Ready to use	Published

Pop-up messages (from top to bottom):

- 4 skills were successfully imported (14:58:50)
- Published successful Published skill . (15:56:33)
- Published successful Published skill . (16:04:35)
- Published successful Published skill . (16:04:54)
- Published successful Published skill . (16:05:06)

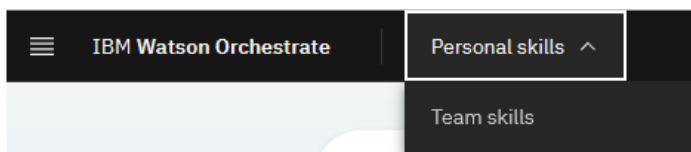
### 3 Exercise: Experience the Orchestrate "User" role

In this part of the lab, you will experience the "User" role:

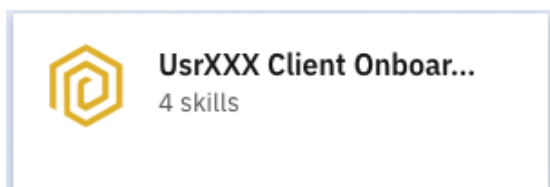
1. Add Skills from the Skill Catalog
2. Test the Solution As Is
3. Enhance User Experience with a Skills Flow (requires "Builder" role)
4. Add Skill Flow from the Skill Catalog
5. Test the Solution with Skill Flow

#### 3.1 Add Skills from the Skill Catalog

There are two categories of skills: Personal skill sets and Team skills.

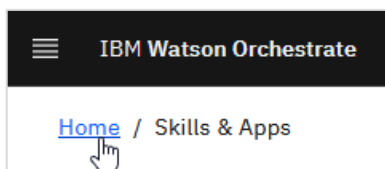


In the previous lab steps, you imported skills using the *watsonx Orchestrate Client Onboarding Skills.yaml* and added them to the Skills Catalog as an App.

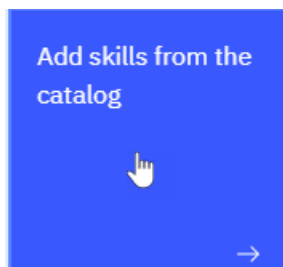


You will now add skills to Personal Skills from the Skill Catalog. Recall that you have added new Skills to the Skill Catalog in the previous part of the lab in the "Builder" role.

1. Click **Home** link

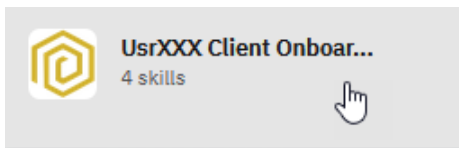


2. Click **Add skills** from the catalog.

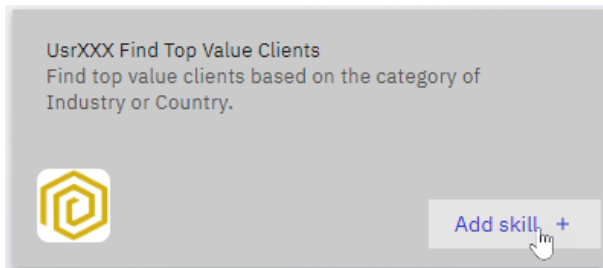


You should now see all the Apps available in the Skills Catalog.

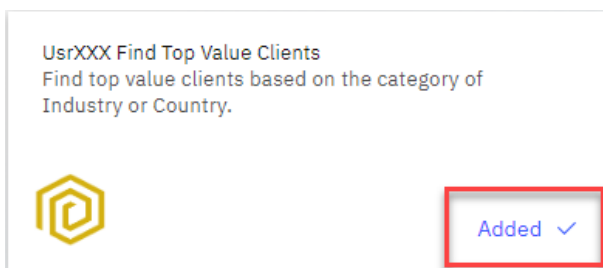
3. Locate the **UsrXXX Client Onboarding App** (remember that XXX are the last three digits of your Tech Jam user id) and **click on it** to open.



4. Locate *UsrXXX Find Top Value Clients* Skill, and click **Add Skill +**

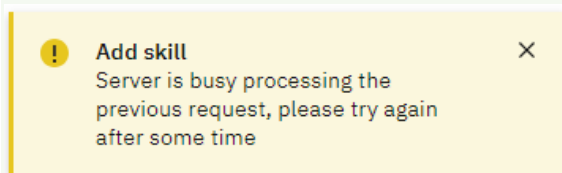


You should now see the *Added check mark* on your Skill.



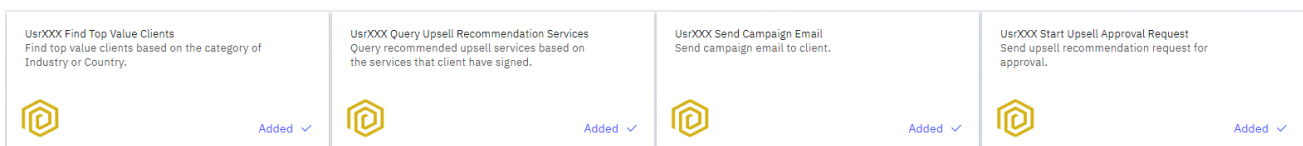
5. Repeat the above step for the other three Skills.

**Note** that if you click too fast, you will get this message.



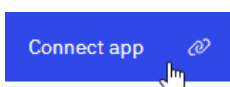
In this case, dismiss the message and repeat.

6. Make sure all Skills have the Added check mark.

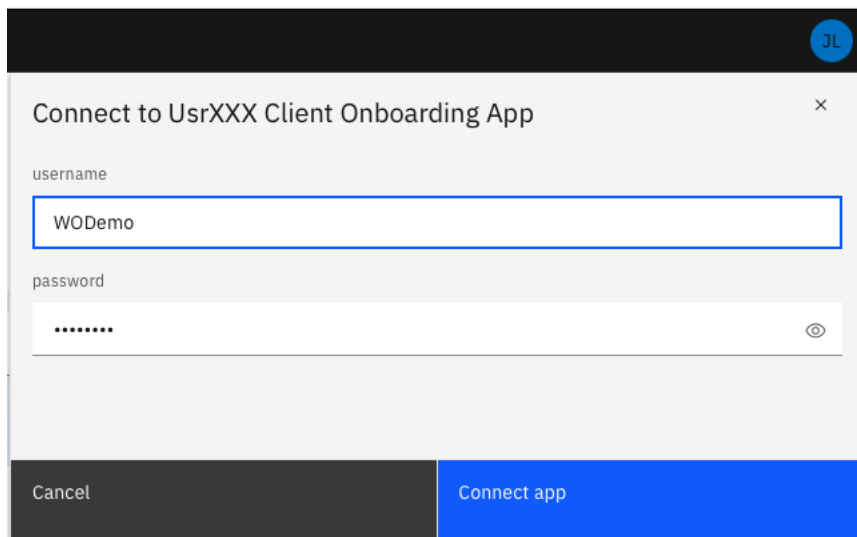


7. **Refresh the web page** or click **X** on all *Add skill information messages*

8. In the top-right corner, click **Connect app** to specify the security credentials for your Skills.



9. For *username* enter **WODemo**, and for *password* **passw0rd** and click the **Connect app** button.



Connect to UsrXXX Client Onboarding App

username

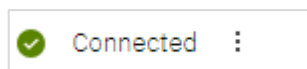
WODemo

password

passw0rd

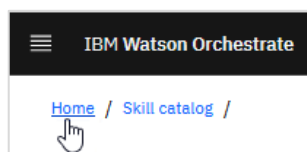
Cancel Connect app

10. You should now see Connected in the top-right corner.



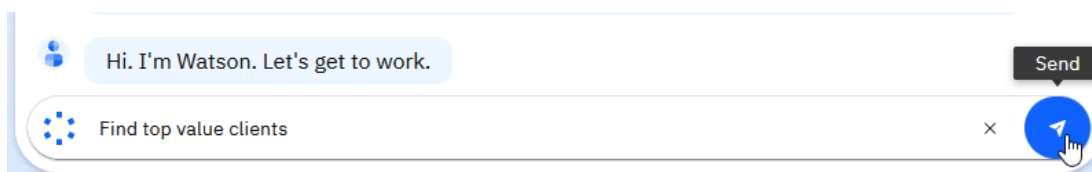
## 3.2 Test the Solution As Is

1. Click the **Home** link to exit the Skill catalog.




2. Enter the phrase **Find top value clients** and click **Send**

The *Find Top Value Client* Skill was activated and asks you for input!



3. For industry, select **Finance**; for number\_of\_cusiomers\_required, enter **2** and then click **Apply**.

Sure. Just complete this form and I'll use the UsrXXX Find Top Value Clients skill for you.

 UshrXXX Find Top Value Clients

industry \*

Finance

The industry could be Finance, Telecom, Healthcare, Federal or Insurance


number\_of\_cusiomers\_returned \*

2

How many top value clients you want to retrieve

Cancel Apply

4. In the output returned, select **Automation Elite**, right-click, and choose **Copy**.

 UshrXXX Find Top Value Clients

Top value client list that you can consider to have sales campaign

Search Download Filter

Client Name	Client Email	Country	Industry	Annual Revenue
Automation Elite		USA	Finance	50000000
Bank of Jakku		Australia	Finance	43892214

Items per page

Copy  
Select All  
Print Selection...  
Take Screenshot  
Search Google for "Automation Elit..."

**Suggested Enhancement:** Suppose you selected Automation Elite as the target customer. You must copy the customer name to the clipboard and supply it to the *Query Upsell Recommendation Services*.

5. Click the next best action UshrXXX Query Upsell Recommendation Services.

Select the next best action

UshrXXX Query Upsell Recommendation Services



**Note.** In case you wondered how wxO knew the next best action is... You can annotate the OpenAPI file to specify the next action.

```
"/queryUpsellServices" : {
  "summary" : "queryUpsellServices",
  "post" : {
    "operationId" : "queryUpsellServicesUsrXXX",
    "x-ibm-next-actions":
    [{"skill_id":"watsonx-Client-Onboarding-Skills-UsrXXX__tipSnapshot__startUpsellRequestUsrXXX",
    "utterance":"UsrXXX Start Upsell Approval Request"}],
```

**Suggested Enhancement:** It would be nice if the *Query Upsell Recommendation Services* Skill was invoked automatically since we always want to find out what upsell services apply to the top-value customer to whom we want to send the upsell offer!

6. Paste **Automation Elite** for ClientName and click **Apply**.

Sure. Just complete this form and I'll use the UsrXXX Query Upsell Recommendation Services skill for you.



UsrXXX Query Upsell Recommendation Services

ClientName \*

Automation Elite

Client name you want to query upsell services.


Cancel

Apply

**Suggested Enhancement:** The selected customer name should have been automatically passed to the *Query Upsell Recommendation Services* Skill, so we do not need to copy and paste!


7. You will see the following response suggesting "Corporate Credit Card" and "Fraud Protection" as Upsell Services for the Client "Automation Elite".


OK



 UstrXXX Query Upsell Recommendation Services

ClientName  
 Automation Elite

Industry  
 Finance


UpsellServices 

UpsellServices  
 Corporate Credit Card 

UpsellServices  
 Fraud Protection 

[Add +](#)

8. wxO suggests another next best action skill:


 Select the next best action

[UstrXXX Start Upsell Approval Request](#)

At this moment, we don't want to call the next best action skill. Instead, we will focus on the suggested enhancements we have identified so far.

Let's use the wxO's **Skill Flow** feature to enhance the user experience and eliminate the issues we have encountered!

Creating Skill flows in wxO requires the wxO Builder role.

### 3.3 Enhance User Experience with a Skills Flow

Let's review the usability enhancements we have identified when testing the As-Is Solution:

Suggested Enhancement
Suppose you selected Automation Elite as the target customer. You must copy the customer name to the clipboard and supply it to the <i>Query Upsell Recommendation Services</i> .
It would be nice if the <i>Query Upsell Recommendation Services</i> Skill was invoked automatically since we always want to find out what upsell services apply to the top-value customer to whom we want to send the upsell offer!
Start Upsell Approval Request should be started automatically, since this would be the next logical action

To address the user experience enhancements we have just identified, we will create a Skill Flow combining two Skills: *Find Top Value Clients* and *Query Upsell Recommendation Services*. After finding top-value clients, Focus Corp.'s sales professional preparing an upsell campaign would next look for upsell recommendations for the client he selects.

Also, after the completion, the Skill Flow will automatically invoke the next logical Skill (*Start Upsell Approval Request*) and pass the Client name and the upsell Services.

Finally, Skill Flow provides parameter mapping capabilities that address the parameter copy-and-paste issues we have identified.

The Figure below illustrates how we implemented the usability enhancements by leveraging Skill Flows parameter passing and Skill orchestration capabilities.

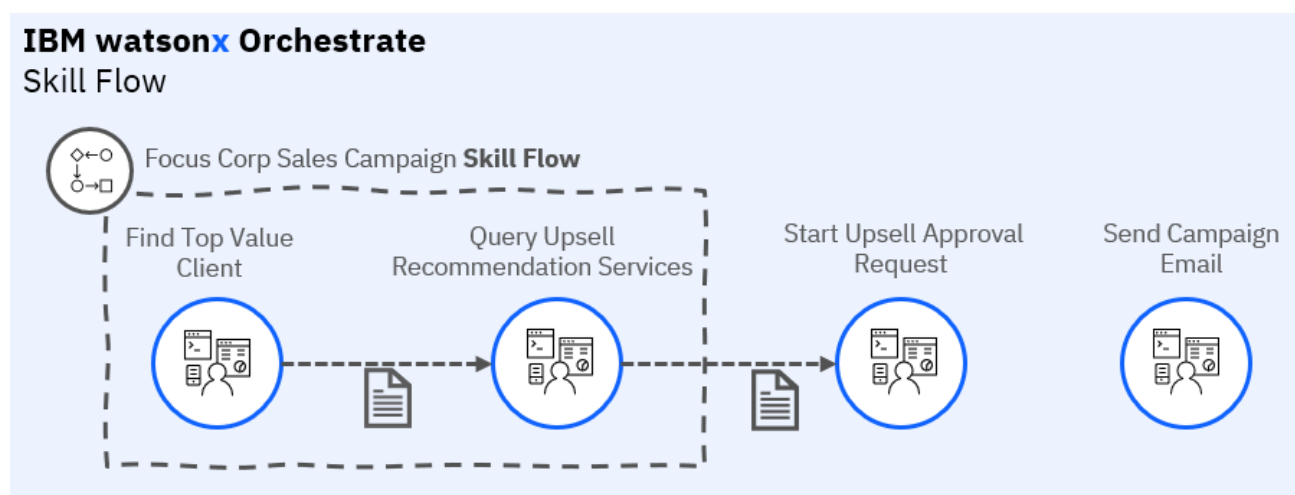
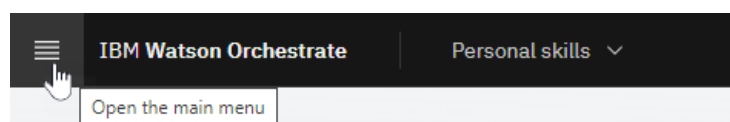


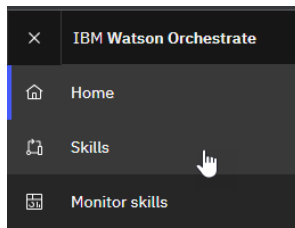
Figure 4. Skill Flow: Automated Skill orchestration and parameter passing

#### 3.3.1 Create a Skill Flow

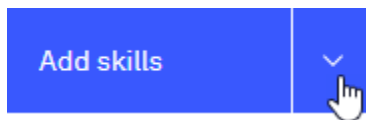
1. Click the **Hamburger** menu.



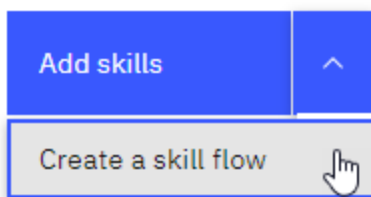
2. Click **Skills**



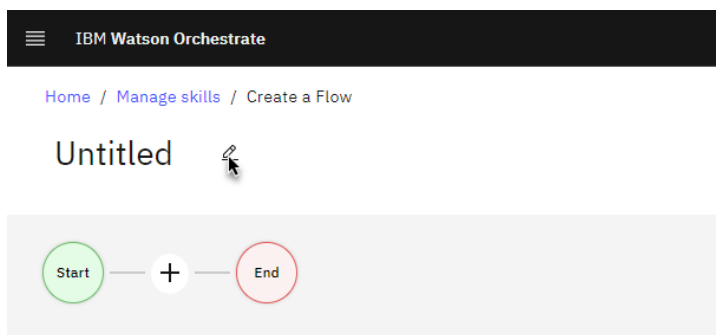
3. In the top-right, click the **dropdown** in **Add Skills**.



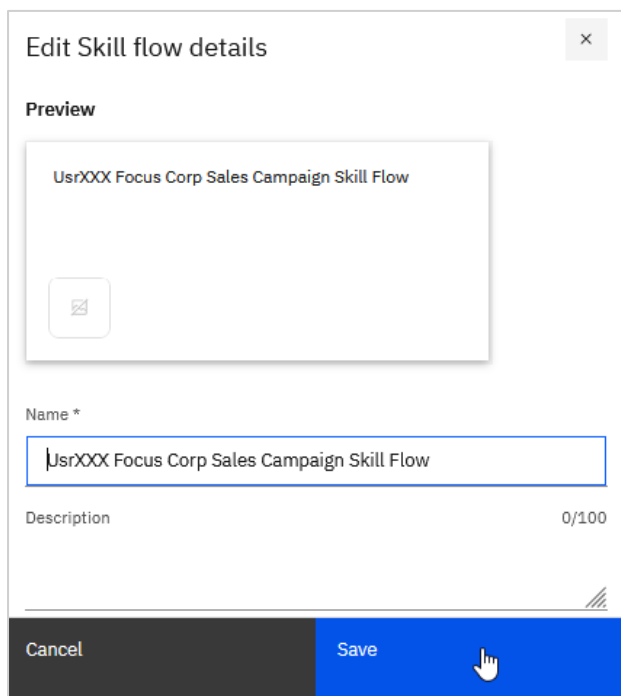
4. Click Create a skill flow.



5. Click the **pencil icon**.



6. For *Name*, enter **UsrXXX Focus Corp Sales Campaign Skill Flow** (remember to replace XXX with your Tech Jam user id) and click **Save**.



Edit Skill flow details

Preview

UsrXXX Focus Corp Sales Campaign Skill Flow

Name \*

UsrXXX Focus Corp Sales Campaign Skill Flow

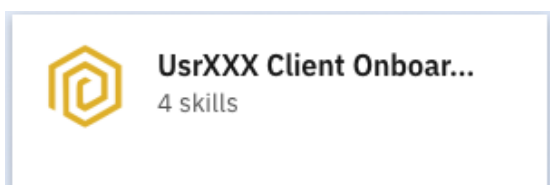
Description 0/100

Cancel Save

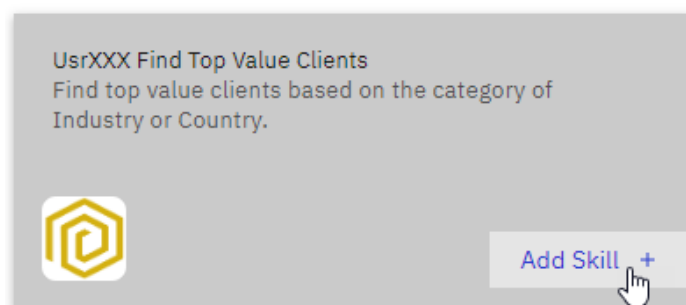
7. Click the **+** icon.



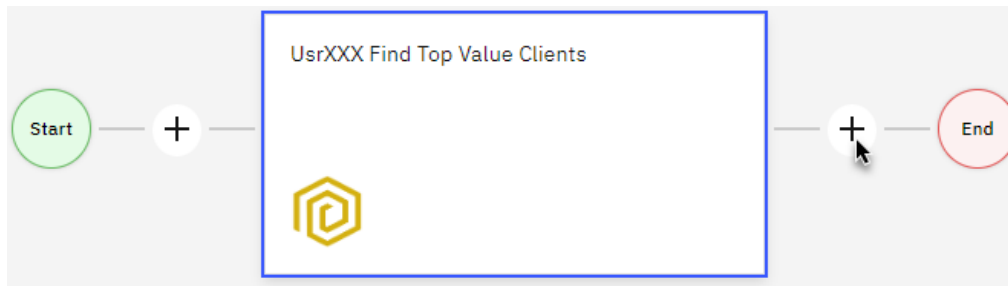
8. Find the App you created (UsrXXX Client Onboarding Skills App – remember XXX is your user id) and **click it**.



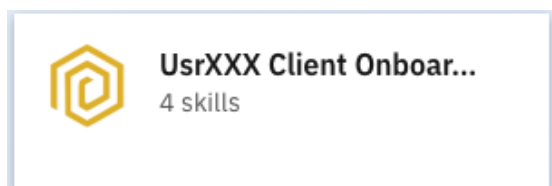
9. On UsrXXX Find Top Value Clients, click **Add Skill +**



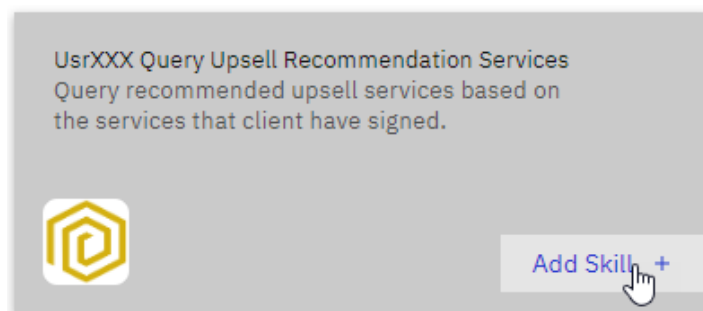
10. Click the right **+** icon



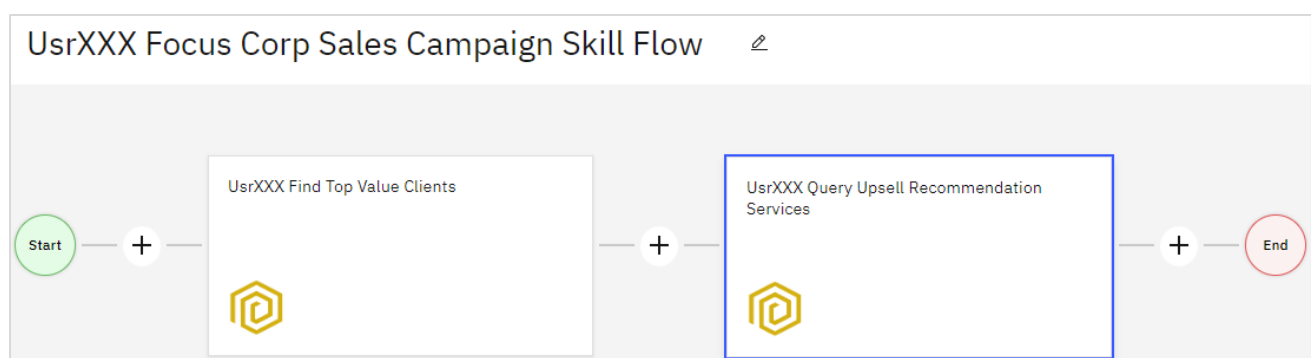
11. Find the App you created (UsrXXX Client Onboarding Skills App – remember XXX is your user id) and **click it**.



12. On UsrXXX Query Upsell Recommendation Services, click **Add Skill +**



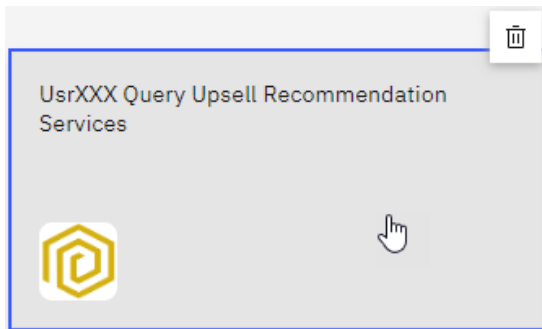
Your Skill Flow should look similar to this:



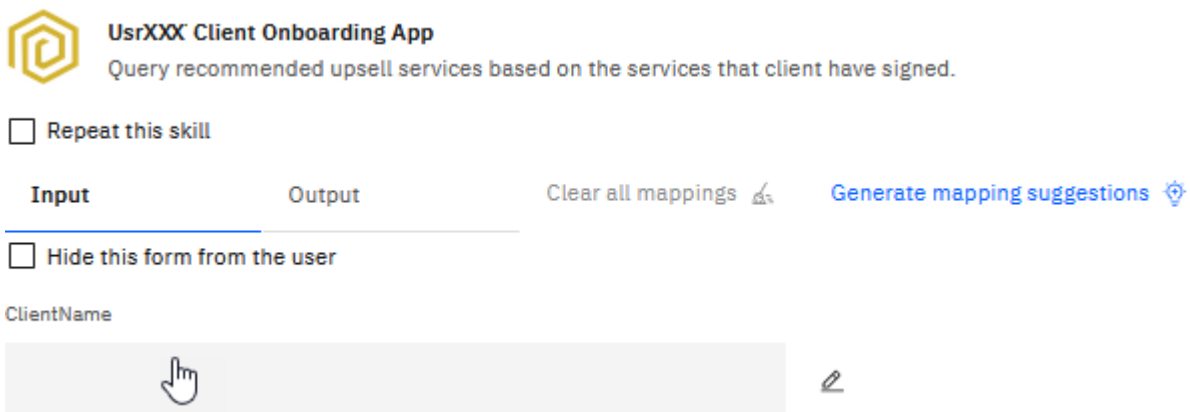
### 3.3.2 Configure Skill Flow

The *Find Top Value Clients* skill will return a list of top value clients, and the *Query Upsell Recommendation Services* skill requires Client Name as input. We will need to map the Client Name from the output of the *Find Top Value Clients* skill to the input of the *Query Upsell Recommendation Services* skill.

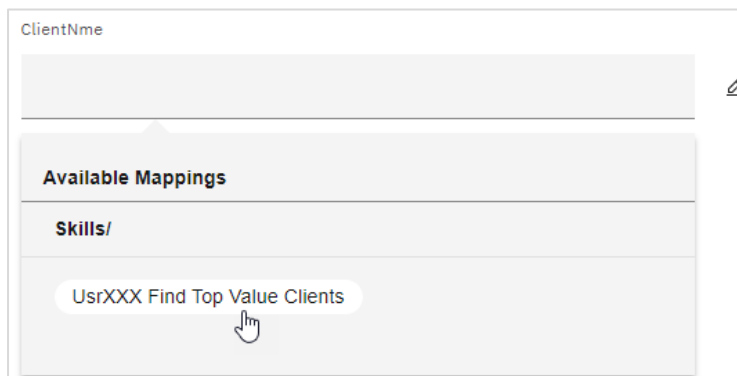
1. Click the UsrXXX Query Upsell Recommendation Services Skill



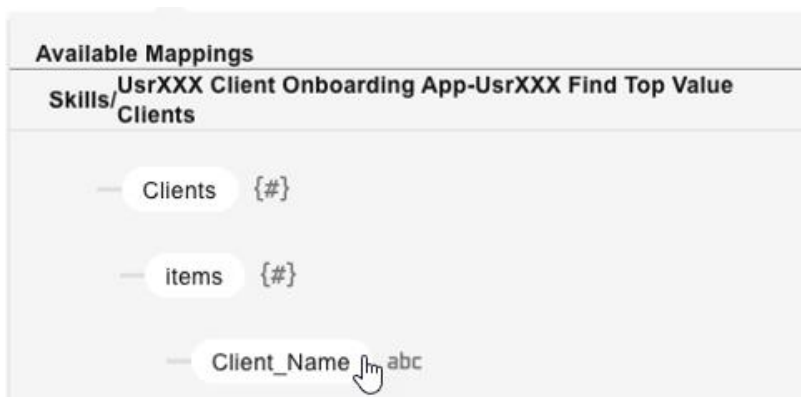
2. In the *Input* Tab, click on the **ClientName** entry field.



3. Click UsrXXX Find Top Value Clients



4. Please scroll down to find **Client\_name** and select it.



You should now see Client\_Name from Find Top Value Clients Skill mapped as input to Query Upsell Recommendation Services.

**UsrXXX Client Onboarding App**  
Query recommended upsell services based on the services that client have signed.

☐ Repeat this skill

☐ Hide this form from the user

ClientName

Clients.Items.properties.Client\_Name x

**Suggested Enhancement:** Note that this will eliminate the issue we encountered: the need to copy and paste the client name.

UsrXXX Find Top Value Clients

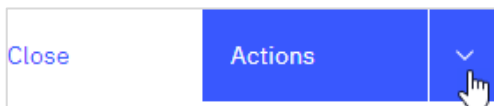
Top value client list that you can consider to have sales campaign

Client Name	Client Email	Country	Industry	Annual Revenue
Automation Elite	june.marie@example.com	USA	Finance	50000000
Bank of Jakku	jim.high@example.com	Australia	Finance	43892214

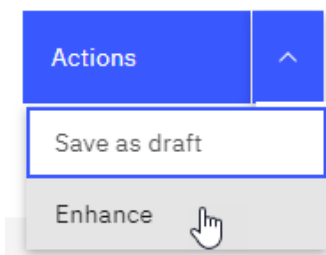
The parameter mapping feature will automatically select the client name from the *Find Top Value Clients* Skill and pass it to the *Query Upsell Recommendation Services* Skill.

5. In the top-right, click the **dropdown** in **Actions**.

**Note:** You may have to scroll up to the top to see the Actions button



6. Click **Enhance**.



7. Click Save and close.

Your changes aren't saved

Your skill enhancements will be lost if you don't save them before you click Close

Close without saving Save and close




8. Select **Phrases** tab

Home / Manage skills / Enhance this skill

## Enhance the “UsrXXX Focus Corp Sales Campaign Skill Flow” skill

Add details that will make people want to use this skill.

Name	Phrases	Next best skills
		


Phrases are the text your user types in the chat box to find and use a skill.

9. Enter **Sales Campaign** for phrase.


Note, if you want to enter multiple phrases, press enter after entering one phrase, then you can add another one.

Name	Phrases	Next best skills
	<p>Phrases are the text your user types in the chat box to find and use a skill.</p> <div style="border: 2px solid red; padding: 5px; margin: 10px 0;">Sales Campaign</div>	

## 10. Click the Next best skills tab.

Name	Phrases	Next best skills 


11. There may be hundreds of Skills to choose from! Click the **Magnifying Glass icon** to use the search feature.

0 out of 184 selected 

Apps	Skill	Description

12. Enter **UsrXXX** (where XXX are the digits in your Tech Jam user id) and hit the **Enter key**.

0 out of 184 selected



×

13. Select **UsrXXX Start Upsell Approval Request** as the next best Skill and click **Publish**.

1 out of 184 selected

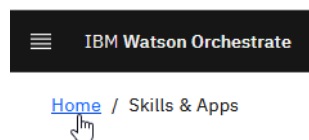
Search: UsrXXX

Apps	Skill	Description
▼ <input type="checkbox"/>	UsrXXX Send Campaign Email	Send campaign email to client.
▼ <input type="checkbox"/>	UsrXXX Find Top Value Clients	Find top value clients based o...
▼ <input type="checkbox"/>	UsrXXX Query Upsell Recommenda...	Query recommended upsell servi...
▼ <input checked="" type="checkbox"/>	UsrXXX Start Upsell Approval R...	Send upsell recommendation req...
▼ <input type="checkbox"/>	UsrXXX Focus Corp Sales Campai...	

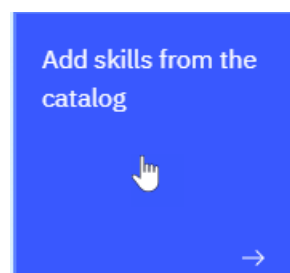
Cancel Publish Save as draft

### 3.4 Add Skill Flow from the Skill Catalog

1. Click the **Home** link.

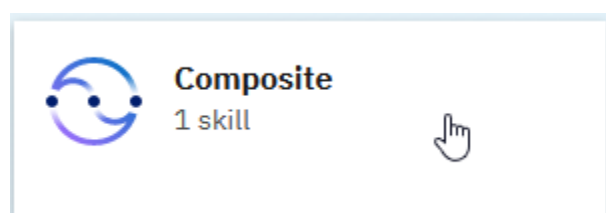


2. Click Add skills from the catalog.

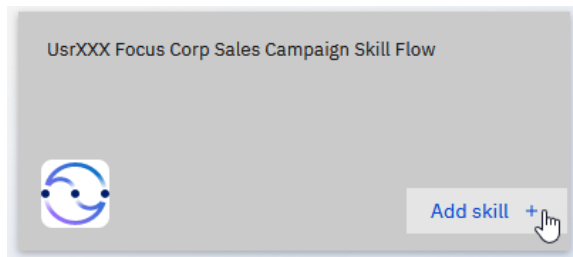


You should now see all the Apps and Skill Flows (Composite) available in the Skills Catalog.

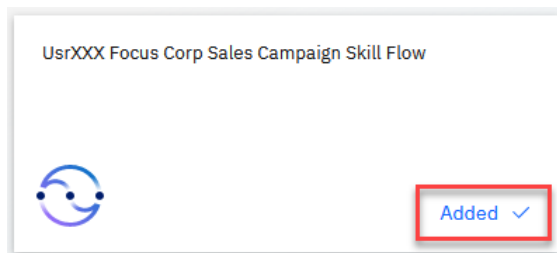
3. Locate the **Composite** tile and **click on it** to open.



4. Locate UstrXXX Focus Corp Sales Campaign Skill Flow and click **Add Skill +**



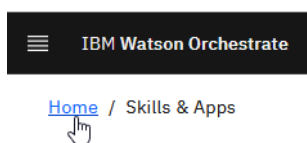
You should now see the *Added check mark* on your Skill.



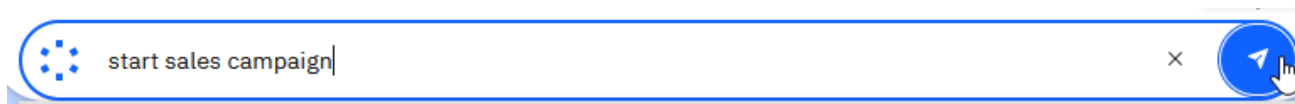
### 3.5 Test the Solution with Skill Flow

#### 3.5.1 Prepare the Upsell Offer

1. Click the **Home** link.



2. Enter the **start sales campaign** phrase and click **Send**



3. For *industry*, select **Finance**; for *number\_of\_cusiomers\_required*, enter **2** and then click **Apply**.

4. Use the radio button to select **Automation Elite** and click **Apply**.

OK

UsrXXX Focus Corp Sales Campaign Skill Flow

Top value client list that you can consider to have sales campaign

Client Name	Client Email	Country	Industry	Annual Revenue	Services Requested
<input checked="" type="radio"/> Automation Elite	june.marie@example.com	USA	Finance	50000000	External Audit;Tax Consultation
<input type="radio"/> Bank of Jakku	jim.high@example.com	Australia	Finance	43892214	Corporate Credit Card;External Audit;Tax Consultation

Items per page: 5 ▾ 1 – 2 of 2 items

Cancel Apply

5. Click **Apply**

You just need to complete this form first.

UsrXXX Focus Corp Sales Campaign Skill Flow

ClientName

Automation Elite

Client name you want to query upsell services.

Cancel Apply

**Note:** The customer name was automatically copied to the next Skill in the Skill Flow. You did not need to copy and paste!

You should now see the recommended upsell Services.

OK

UsrXXX Focus Corp Sales Campaign Skill Flow

ClientName

Automation Elite

Industry

Finance

UpsellServices ^

UpsellServices

Corporate Credit Card

UpsellServices

Fraud Protection

Add +

- Click the **UsrXXX Start Upsell Approval Request** button.

**Note** that this is the Skill you selected as recommended after completing the Skill Flow.

Select the next best action

**UsrXXX Start Upsell Approval Request**

- Notice that wxO automatically filled the output of the previous Skill (Client Name, Recommended Upsell Services) into the input fields of this Skill. Click **Apply** to launch the Start Upsell Approval Request.

**Note.** If you like, you could also change (add or remove) the upsell Services that the *Query Upsell Recommendations Skill* recommended.

Sure. Just complete this form and I'll use the UsrXXX Start Upsell Approval Request skill for you.



UsrXXX Start Upsell Approval Request

ClientName \*

Automation Elite

Client name you want to send upsell request for.

UpsellServices

Corporate Credit Card



Fraud Protection



Add +

Cancel

Apply



- Copy the **Campaign ID** to the clipboard.

**Note.** If the sales manager approves the offer, you need the Campaign ID to email the upsell offer to the client.

OK



UsrXXX Start Upsell Approval Request

Campaign ID

115

### 3.5.2 Try Sending an Upsell Offer Email to your Client.

- Type the **send campaign email** phrase and click **Send**



send campaign email



2. For *Campaign ID* enter your **Campaign ID** and click **Apply**.

Sure. Just complete this form and I'll use the UsrXXX Send Campaign Email skill for you.

UsrXXX Send Campaign Email

Campaign ID \*

115

Cancel Apply

3. Examine the reply from wxO.

You cannot send the email because the Sales manager has not yet approved your Services upsell offer!

OK

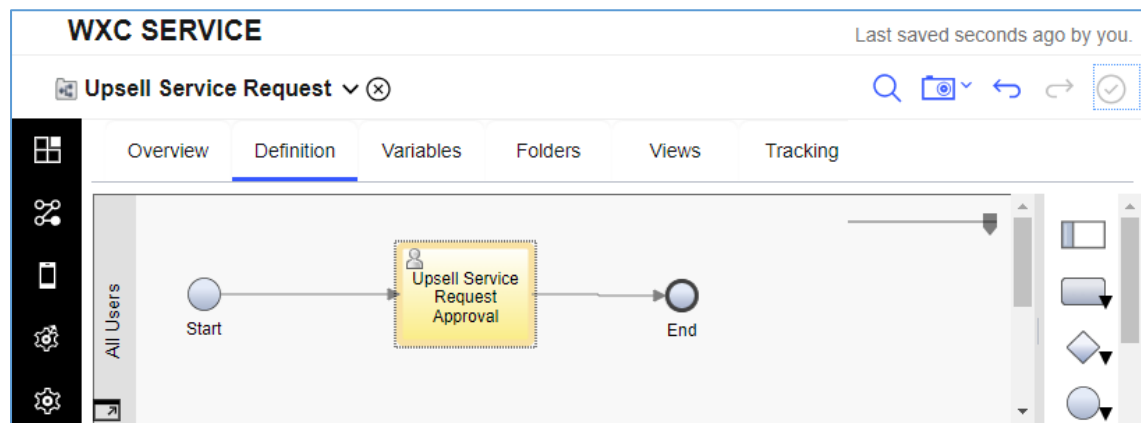
UsrXXX Send Campaign Email

Email Sending Result

Campaign ID: 115 pending for approval.

### 3.5.3 Approve the Upsell Offer

The Start Upsell Approval Request started a BAW Workflow. The Sales Manager must complete the approval task (Upsell Service Request Approval).



1. Open **IBM Workplace** in your browser (see [1.4.1 Systems, Lab Files, and Credentials](#))
2. For *username* enter **WODemo**, for *password* **passw0rd**, and then click the **Log in** button.

3. Find the task related to your Campaign ID.

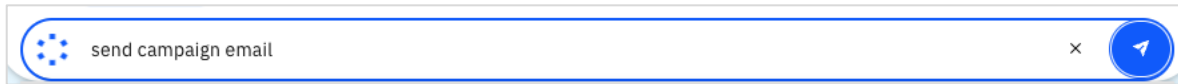
4. Click the task link to claim and work with the task.

5. On the *Claim task* window, click **Claim**.
6. Scroll to the bottom of the form and click the **Approve Selected** button.

**Note.** As Sales Manager, you can make the final changes to the services upsell offer.


### 3.5.4 Send an Upsell Offer Email to your Client.

1. Switch back to the wxO environment.
2. Type the **send campaign email** phrase and click **Send**



3. For Campaign ID, enter your **Campaign ID** and click **Apply**.

Sure. Just complete this form and I'll use the UstrXXX Send Campaign Email skill for you.


UstrXXX Send Campaign Email


Campaign ID \*

Cancel
Apply

4. Take a look at the reply from wxO.

**Note.** Since the Sales Manager approved your Services upsell offer, wxO could send the email.

OK

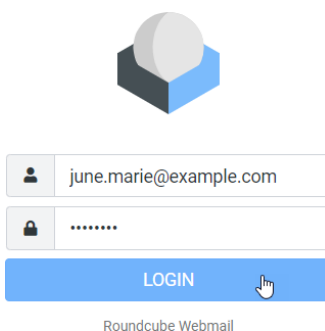

UstrXXX Send Campaign Email

Email Sending Result

Campaign ID: 115 is approved. Mail sent to june.marie@example.com.

### 3.5.5 Verify the Upsell Offer Email to the Client's Mailbox.

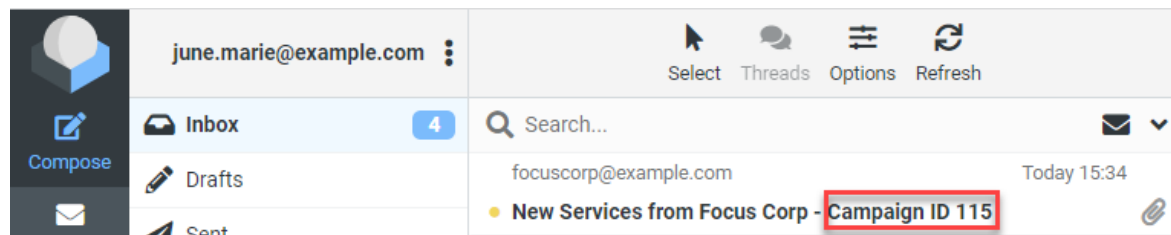
1. Open the **Roundcube Webmail** in your browser (see [1.4.1 Systems, Lab Files, and Credentials](#))
2. Enter the credentials of [june.marie@example.com](mailto:june.marie@example.com) / **passwOrd** and click the **LOGIN** button.



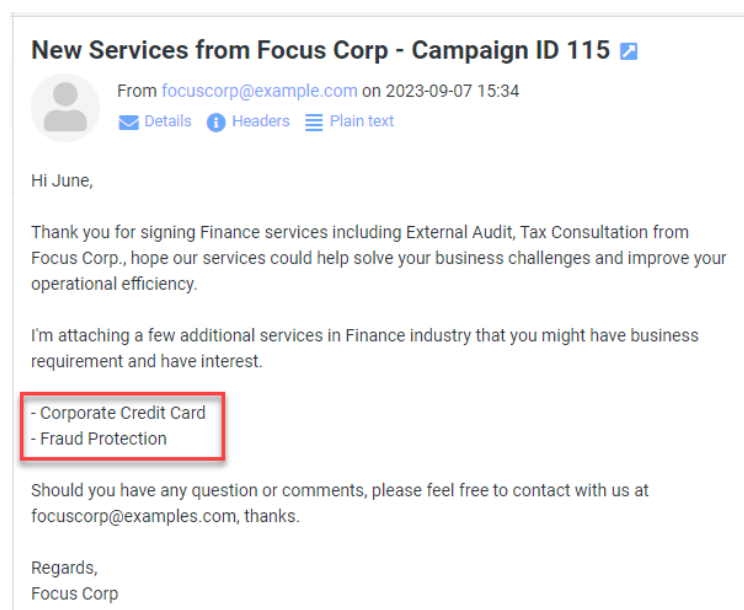
Roundcube Webmail



3. Verify that you have an email with your Campaign ID in the subject.



4. Click the **New Services from Focus Corp – Campaign ID XXX** email to open it.
5. Verify you see the same upsell services wxO selected for the Automation Elite client.



**Congratulations on completing the lab!**

## Appendix A. Overview of the "Administrator" Role

### Managing teams

Teams are composed of roles: Admin, Builder, and User. Every team needs at least one Admin who first created the team.



By default, when you start using IBM watsonx Orchestrate™, you are the admin of your own team of one. You need to invite a user into your team to create a team. You can invite as many team members as you have seats in your license. Of those seats, you can assign any user any of the three roles, but each role has a purpose that might limit what a user can see or do.

Three key activities:

#### 1. Adding Users

The screenshot displays the IBM Watson Orchestrate interface. On the left, the 'Team Skills' panel is visible with tabs for 'Usage', 'Skill sets', and 'Members'. The 'Members' tab is active, showing a list of team members with their names and email addresses. On the right, the 'Add members' dialog is open. It features a yellow warning box indicating '1 seat remain (1/13)'. Below this, there is a text input field containing 'valid@emial.com' and a blue button labeled 'Add member +'. A message below the input field says 'Add one or more email addresses' and 'Press Enter after each address.' At the bottom of the dialog, there are 'Cancel' and 'Add' buttons.

## 2. Removing users

 IBM Watson Orchestrate 


## Team Skills



! 1 seat remain (1/13)

Usage Skill sets **Members**

### Team members (12)

These members have access to all apps and skills added to the team.

 [Add members](#) +

Name	Role	Status	
 ThomasSchulze@de.ibm.com	Builder	<span>Active</span>	<div><a href="#">Remove member</a> </div>

### 3. Adding Roles to Users

The screenshot shows the IBM Watson Orchestrate interface. On the left, the 'Team Skills' page has tabs for 'Usage', 'Skill sets', and 'Members'. The 'Members' tab is active, showing a list of 12 team members. On the right, the 'Edit member' sidebar is open for ThomasSchulze@de.ibm.com. The sidebar shows the user's email, status (Active), and a role dropdown menu. The role dropdown is open, showing three options: 'Builder' (Can build skills that perform tasks), 'Admin' (Can add or remove members who can use this team skill set), and 'User' (Can use this team skill set). A red box highlights the 'Builder' option, and a mouse cursor is pointing at the 'Admin' option.

Name	Email
ThomasSchulze@de.ibm.com	ThomasSchulze@de.ibm.com
JYOTSNA KARUNGANNI NARAYANAN	karungan@us.ibm.com
PAUL PACHOLSKI	pacholsk@ca.ibm.com
Mithun Katti	mithun.katti@ibm.com
ZHONG TAO GAO	gaozt@cn.ibm.com
Sundeep.Anne@ibm.com	Sundeep.Anne@ibm.com
focususr090@gmail.com	focususr090@gmail.com
marco.crepaldi@ibm.com	marco.crepaldi@ibm.com
Jürgen Lukas	jluks@de.ibm.com
Olaf.Hahn!@de.ibm.com	Olaf.Hahn!@de.ibm.com

**Edit member**

ThomasSchulze@de.ibm.com

Email  
ThomasSchulze@de.ibm.com

Status  
Active

Role  
Builder

**Builder**  
Can build skills that perform tasks

**Admin**  
Can add or remove members who can use this team skill set

**User**  
Can use this team skill set

Cancel Save

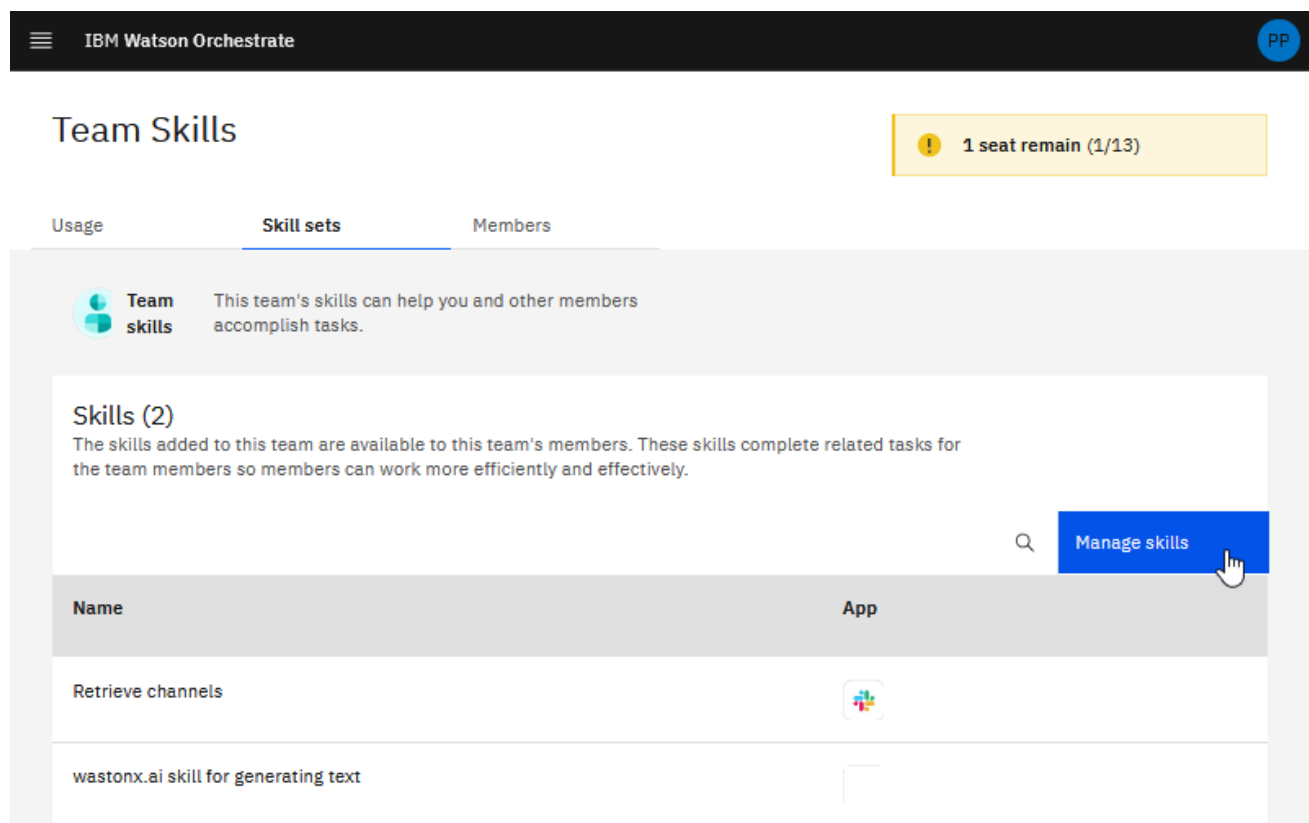
### Managing team skill sets

Fundamentally, there isn't a big difference between your team skill set and your personal skill set. But only with the role Admin you can add, use, and remove skills to the team skill set like you do with your personal skill set. For more information about roles and access, see [Adding team members and defining roles](#).

Once a skill is made available on the team skill set anyone on a team can use this kill. To use a team skill set's Skill, the user must click the Team skill set tab on the IBM watsonx Orchestrate home page and invoke any available skills the same way as they would for any skill in any skill set.

Two key activities:

1. Adding skills to your team skill set



IBM Watson Orchestrator

Team Skills



1 seat remain (1/13)

Usage Skill sets Members

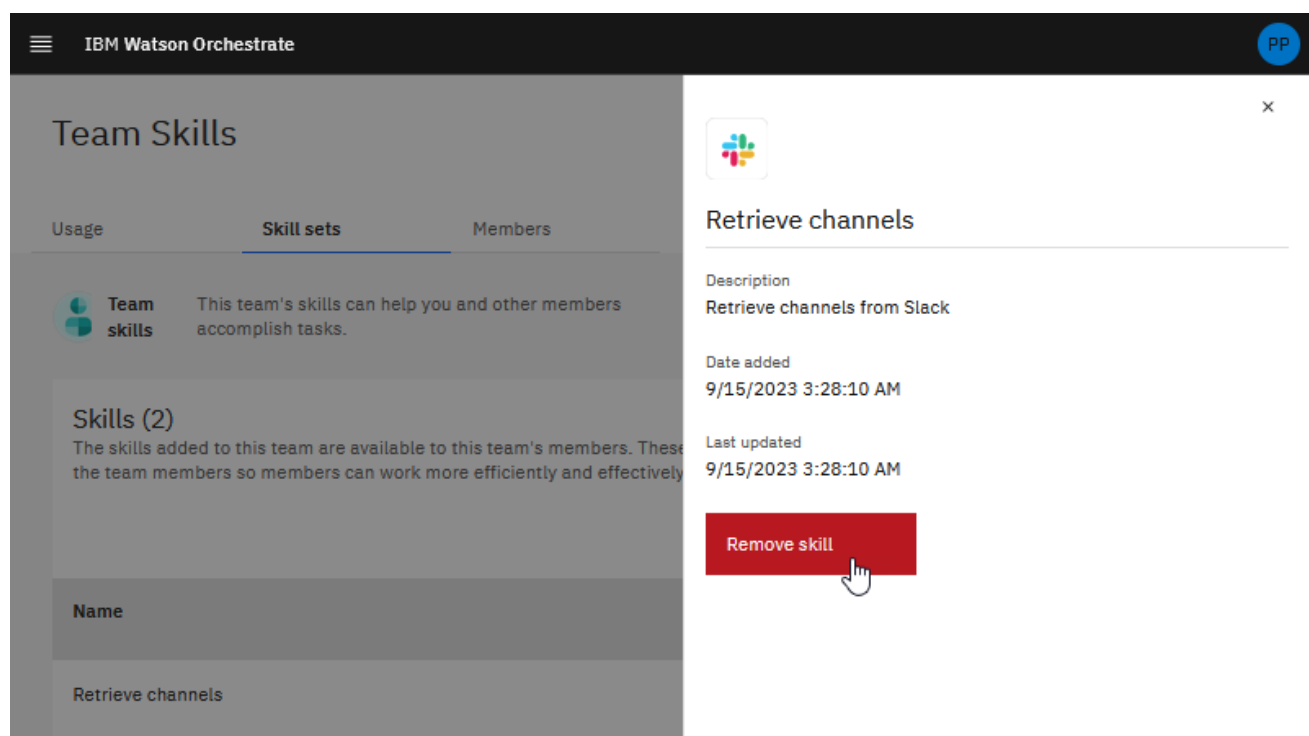
**Team skills** This team's skills can help you and other members accomplish tasks.

**Skills (2)**  
The skills added to this team are available to this team's members. These skills complete related tasks for the team members so members can work more efficiently and effectively.

Manage skills

Name	App
Retrieve channels	
wastonx.ai skill for generating text	

2. Removing skills from your team skill set



IBM Watson Orchestrator

Team Skills

Usage Skill sets Members

**Team skills** This team's skills can help you and other members accomplish tasks.

**Skills (2)**  
The skills added to this team are available to this team's members. These the team members so members can work more efficiently and effectively

Retrieve channels

Description  
Retrieve channels from Slack

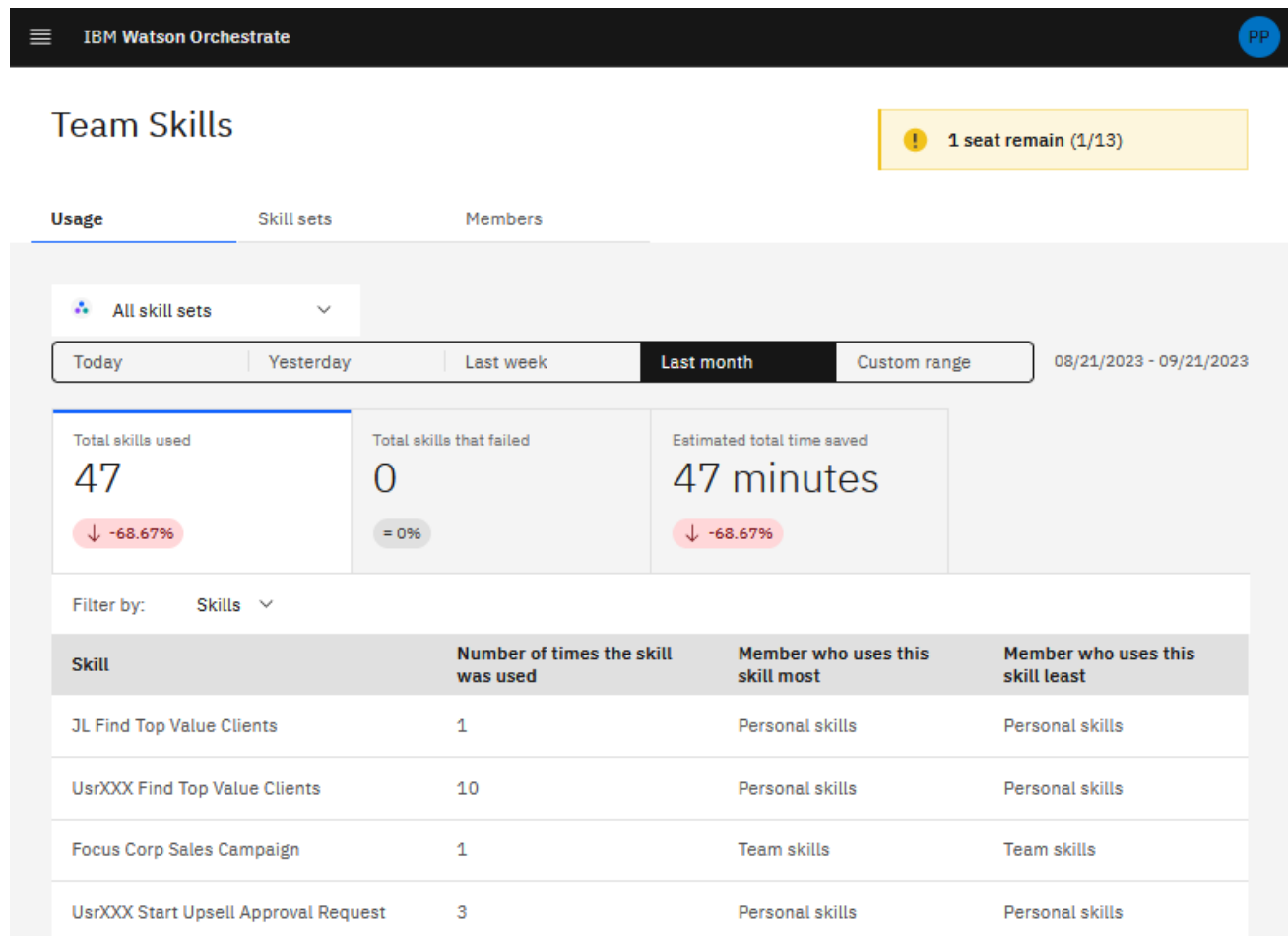
Date added  
9/15/2023 3:28:10 AM

Last updated  
9/15/2023 3:28:10 AM

Remove skill

## Monitoring team skill sets

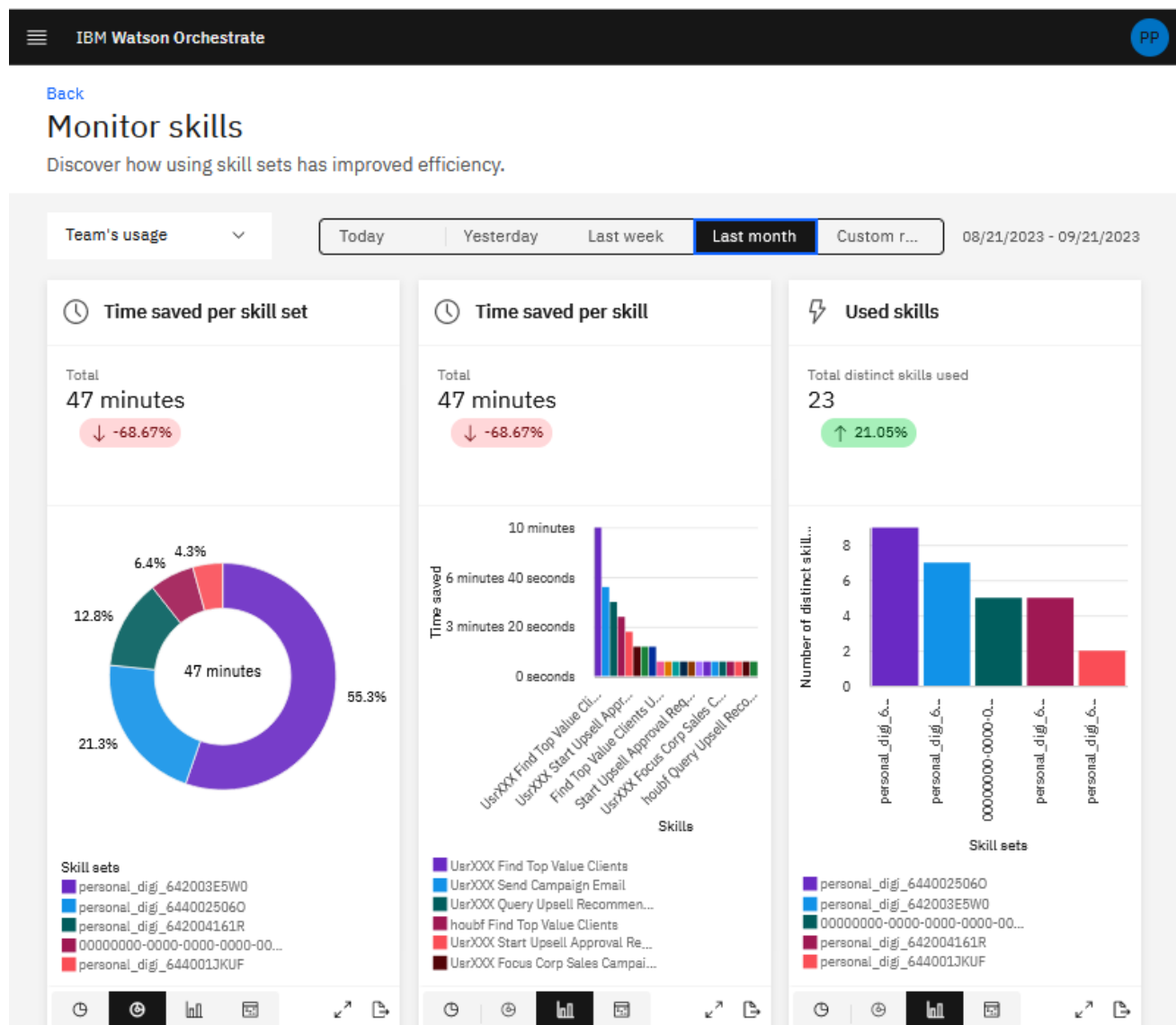
Admin roles can view statistics about how their teams use skills and skill sets to complete tasks. The Usage tab (and the team's dashboard) is not visible to the User or Builder role.



## Monitor usage

You can monitor, evaluate, and assess the performance of your skills in IBM watsonx Orchestrate. The monitoring page includes prebuilt charts that were created from your data to highlight the skills usage

and how your efficiency increased by using the skills from the skill sets. You can review and compare the details in the prebuilt charts to arrive at a factual business strategy.



**NOTICES**

This information was developed for products and services offered in the USA.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or Service is not intended to state or imply that only that IBM product, program, or Service may be used. Any functionally equivalent product, program, or Service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or Service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing  
IBM Corporation  
North Castle Drive, MD-NC119  
Armonk, NY 10504-1785  
United States of America

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

**TRADEMARKS**

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml).

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries, or both and is used under license therefrom.

Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

IT Infrastructure Library is a Registered Trade Mark of AXELOS Limited.

ITIL is a Registered Trade Mark of AXELOS Limited.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Linear Tape-Open, LTO, the LTO Logo, Ultrium, and the Ultrium logo are trademarks of HP, IBM Corp. and Quantum in the US and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

© Copyright International Business Machines Corporation 2020.

This document may not be reproduced in whole or in part without the prior written permission of IBM.

US Government Users Restricted Rights - Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.