

Predictive decisioning

300-level live demo preparation instructions for
Cloud Pak for Business Automation V21.0.3

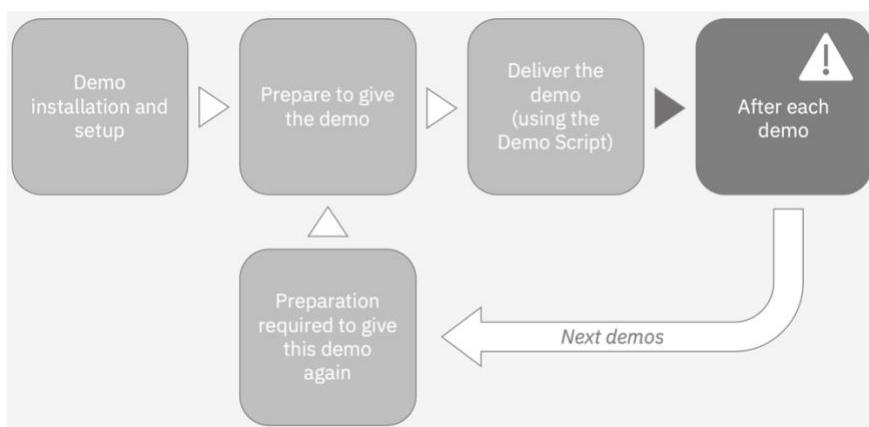
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DEMO OVERVIEW

Scenario overview	This demo shows how the IBM Cloud Pak for Business Automation integrates machine learning to improve decisions. To illustrate this, a company's customer retention offer process is automated.
Demo products	Cloud Pak for Business Automation V21.0.3 , Cloud Pak for Data 4.0 (Machine learning capabilities)
Demo capabilities	Decision management, Machine learning
Demo guidance	<p>This demo script has multiple tasks that each have multiple steps. In each step, you have the details about what you need to do (Actions), what you can say while delivering this demo step (Narration), and what diagrams and screenshots you will see.</p> <p>This demo script is a suggestion, and you are welcome to customize based on your sales opportunity. Most importantly, practice this demo in advance. If the demo seems easy for you to execute, the customer will focus on the content. If it seems difficult for you to execute, the customer will focus on your delivery.</p>
Demo downloads	<ul style="list-style-type: none"> • SkyTalk's Retention offer document.pdf • SkyTalk customer loyalty data.csv • SkyTalk customer value data.csv • SkyTalk call center application 21.0.3 Vxx.twx • SkyTalk-customer-retention-DS 21.0.3 Vxx.zip
How to get support	<p>Contact #itz-techzone-support or techzone.help@ibm.com regarding issues with reserving and provisioning TechZone environments.</p> <p>Contact #platinumdemos-automation-support regarding issues with setting up and running this demo use case.</p>

DEMO INSTRUCTIONS MAP



Note: It is critical to follow the instructions in the **AFTER EACH DEMO** section below when you are not practicing or delivering the demo. The instructions explain how to shut down the ML service to save your free lite ML quota.

DEMO INSTALLATION AND SETUP

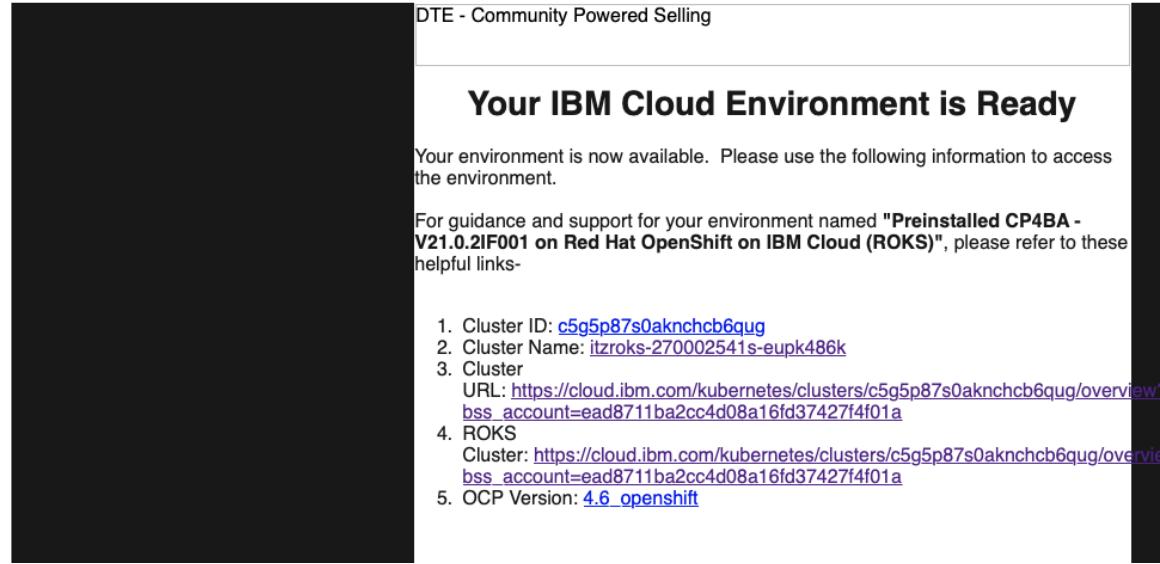
1 - Provision a Cloud Pak for Business Automation environment

Install Cloud Pak for Business Automation **21.0.3**, or provision a ROKS environment. To reserve your ROKS instance, follow these steps:

1. To reserve a preinstalled Cloud Pak for Business Automation (CP4BA) V21.0.3 on Red Hat OpenShift, go [here](#) and complete the form. (If you do not have a sales opportunity, select the purpose **Practice / Self-Education** to create a two-week reservation.)
2. You will receive a confirmation email confirming the instance is provisioning.
3. You will receive a second email once the environment is provisioned. This email contains information, such as URLs, allowing you to connect to the instance.

If you have issues connecting to your instance, please contact TechZone support or refer to the installation documentation [here](#).

Your IBM Cloud environment is ready
IBM Digital Sales Support
To: laurent.tarin@fr.ibm.com
Security: To ensure privacy, images from remote sites were prevented from downloading. [Show Images](#)



The screenshot shows an email from IBM Cloud. The subject line is "Your IBM Cloud environment is ready". The body of the email starts with "DTE - Community Powered Selling". Below this, the main heading is "Your IBM Cloud Environment is Ready". A message follows: "Your environment is now available. Please use the following information to access the environment." It then provides guidance for the environment named "Preinstalled CP4BA - V21.0.2IF001 on Red Hat OpenShift on IBM Cloud (ROKS)". It lists five items of information:

1. Cluster ID: [c5g5p87s0aknchcb6qug](https://cloud.ibm.com/kubernetes/clusters/c5g5p87s0aknchcb6qug)
2. Cluster Name: [itzroks-270002541s-eupk486k](https://cloud.ibm.com/kubernetes/clusters/c5g5p87s0aknchcb6qug/overview?bss_account=ead8711ba2cc4d08a16fd37427f4f01a)
3. Cluster URL: https://cloud.ibm.com/kubernetes/clusters/c5g5p87s0aknchcb6qug/overview?bss_account=ead8711ba2cc4d08a16fd37427f4f01a
4. ROKS Cluster: https://cloud.ibm.com/kubernetes/clusters/c5g5p87s0aknchcb6qug/overview?bss_account=ead8711ba2cc4d08a16fd37427f4f01a
5. OCP Version: [4.6 openshift](#)

4. Once you receive this email, it will take an additional 6-8 hours for the system to fully install Cloud Pak for Business Automation. After the waiting period is over, click the **Cluster URL** from the email you have received.

5. Ensure you are on the **ITZ account**.

The screenshot shows the IBM Cloud interface. In the top right corner, there is a dropdown menu with the account name "2112072 - ITZ - V2" highlighted with a red box. Below it, another option "Laurent Tarin's Account" is visible.

6. Ensure there are no **Alerts** for the cluster.

The screenshot shows the cluster details page. A red box highlights the status summary section, which includes "Node status: 5 of 5 Normal", "Add-on status: 0 of 0 Normal", and "Master status: Normal". Below this, the "Details" section provides more information about the cluster ID, version (4.6.44_1556), infrastructure (Classic), and creation date (11/10/2021, 11:29).

7. Click the **OpenShift web console** blue button on the top right corner of the screen.

The screenshot shows the IBM Cloud interface again. A red box highlights the "OpenShift web console" button located in the top right corner of the main header area.

8. Expand **Workloads** (1) and click **Config Maps** (2).

The screenshot shows the Red Hat OpenShift Container Platform interface. On the left sidebar, under the "Operators" section, the "Workloads" item has a red box with a number "1" over it. Under "Workloads", the "ConfigMaps" item is highlighted with a red box and a number "2" over it. The main content area shows the "Overview" of the cluster, including the Cluster API address, Cluster ID, Provider (IBMCloud), and OpenShift version (4.7.33). The "Status" section indicates that Cluster and Operators are healthy, while Insights is not available. The "Quick Starts" and "Activity" sections are also visible on the right.

9. Select the **dtecp4ba** project.

The screenshot shows the Red Hat OpenShift Container Platform interface. The left sidebar has a dark theme with the following navigation items:

- Administrator** (dropdown)
- Home**
- Operators**
- Workloads** (dropdown)
 - Pods**
 - Deployments**

The main content area is titled "Project: dtecp4ba". It contains a search bar labeled "Select Project..." and a "Create Project" button. Below the search bar is a table with columns "Size" and "Created". The table lists the following projects:

	Size	Created
default	0	17 Nov 2021, 12:28
dtecp4ba	0	17 Nov 2021, 13:09
test	0	17 Nov 2021, 13:09

10. Search for '**access**' in the search area (1). Click the **icp4deploy-cp4ba-access-info** file (2).

The screenshot shows the Red Hat OpenShift Container Platform interface. The left sidebar has a dark theme with the following navigation items:

- Administrator** (dropdown)
- Home**
- Operators**
- Workloads** (dropdown)
 - Pods**
 - Deployments**

The main content area is titled "Project: dtecp4ba". It contains a search bar labeled "Name" with the value "access" and a "Create ConfigMap" button. Below the search bar is a table with columns "Name", "Size", and "Created". The table lists the following ConfigMaps:

Name	Size	Created
CM icp4deploy-cp4ba-access-info	17	17 Nov 2021, 18:48

Note: It may take up to eight hours after receiving the email containing the environment access instructions to see the ConfigMap 'icp4deploy-cp4ba-access-info.' If it does not appear after eight hours please refer to the [ROKS help](#) or contact the TechZone support: techzone.help@ibm.com.

11. Scroll down to the **bastudio-access-info** section. This section contains your login information for Cloud Pak for Business Automation. Create a browser bookmark for the Cloud Pak for Business Automation using the **CloudPak Dashboard URL** (1). Go to the other **URLs** (2) and accept the self-signed certificates. Keep a copy of the **username** and **password** (3) to log in to Cloud Pak for Business Automation.

The screenshot shows the Red Hat OpenShift Container Platform interface. The left sidebar has a dark theme with the following navigation items:

- Administrator** (dropdown)
- Home**
- Operators**
- Workloads** (dropdown)
 - Pods**
 - Deployments**
 - DeploymentConfigs**
 - StatefulSets**
 - Secrets**
 - ConfigMaps**
- CronJobs**
- Jobs**
- DaemonSets**
- ReplicaSets**

The main content area is titled "Project: dtecp4ba". It contains a table with columns "Name" and "Data". The table lists the following ConfigMaps:

Name	Data
bastudio-access-info	<p>CloudPak Dashboard: https://cpd-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud</p> <p>To access Business Automation Studio, first go to the following URLs and accept the self-signed certificates:</p> <ul style="list-style-type: none"> 1 https://bas-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud 2 https://ae-pbk-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud 3 https://bw-aut-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud <p>User credentials:</p> <ul style="list-style-type: none"> username: cp4admin password: zrEE1phSYhJr

12. Scroll down to the **gitea-access-info** section and note the credentials necessary when setting up ADS.

Project: dtecp4ba

Home Operators Workloads

Pods Deployments DeploymentConfigs StatefulSets Secrets ConfigMaps CronJobs Jobs DaemonSets ReplicaSets ReplicationControllers HorizontalPodAutoscalers

Networking Storage Builds

cpe-stateless-access-info

Content Platform Engine health check: <https://cpe-stless-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/PBCE/Health>

Content Platform Engine ping page: <https://cpe-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/FileNet/Engine>

FileNet Process Services details page: <https://cpe-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/peengine/IOR/admin/help>

Content Search Services health check: <https://cpe-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/PBCE/Health/CBRDashboard>

username: cp4admin
password: zrEeIpHSYjI

gitea-access-info

Content Platform Engine health check: <https://cpe-stless-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/PBCE/Health>

Content Platform Engine ping page: <https://cpe-stless-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/FileNet/Engine>

FileNet Process Services details page: <https://cpe-stless-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/peengine/IOR/admin/help>

Content Search Services health check: <https://cpe-stless-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdomain.cloud/PBCE/Health/CBRDashboard>

username: cp4admin
password: zrEeIpHSYjI

graphql-access-info

Content Services GraphQL: <https://graphql-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.container.s.appdomain.cloud/content-services-graphql>

username: cp4admin
password: zrEeIpHSYjI

ier-access-info

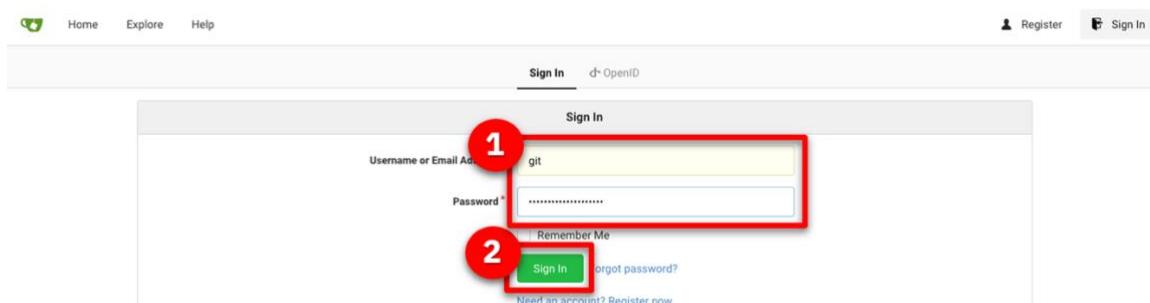
Content Services GraphQl: <https://ier-dtecp4ba.itzroks-270002541s-40lnb1-6cc7f378ae819553d37d5f2ee142bd6-0000.us-south.container.s.appdomain.cloud/EnterpriseRecordsPlugin/IERApplicationPlugin.jar>

13. Connect to your gitea environment using the URL and credentials provided. Click through the privacy messages and click **Sign In**.



Gitea: Git with a cup of tea

14. Enter the same **Username** (1) and **Password** (2) provided in the access file, and click **Sign in** (2).



15. Click **+** to create the git repository.

The screenshot shows a user's dashboard with a "git" profile icon. The top navigation bar includes links for Dashboard, Issues, Pull Requests, Milestones, and Explore. Below the navigation is a "git" section with a "git pushed to master at content-designer/CDD" message. A chart titled "3 total contributions in the last 12 months" is displayed. On the right, there is a sidebar with tabs for Repository and Organization. Under the Repository tab, there is a "Repositories" section with a search bar and a red box highlighting the "+" button. Below the search bar are filters for All, Sources, Forks, Mirrors, and Collaborative. The URL in the address bar is "content-designer/CDD".

16. Name the repository “**SkyTalk_customer_retention**”. (1). Click **Create repository** (2).

Note: Ensure there are no spaces in the name.

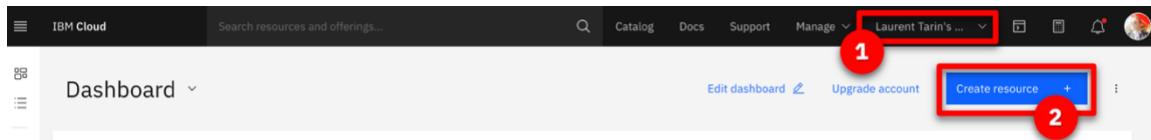
The screenshot shows the "New Repository" creation form. The "Owner" dropdown is set to "git". The "Repository Name" field contains "SkyTalk_customer_retention" with a red circle labeled "1" above it. The "Visibility" section has a checkbox for "Make Repository Private" which is unchecked. The "Description" field is empty. The "Template" field says "Select a template.". The "Issue Labels" field says "Select an issue label set.". The ".gitignore" field says "Select .gitignore templates.". The "License" field says "Select a license file.". The "README" field says "Default". There is a checkbox for "Initialize Repository (Adds .gitignore, License and README)" which is unchecked. The "Default Branch" field is set to "master". At the bottom, there is a green "Create Repository" button with a red circle labeled "2" below it, and a "Cancel" button.

17. Keep a copy of the **repository URL** that's required later for the ADS configuration.

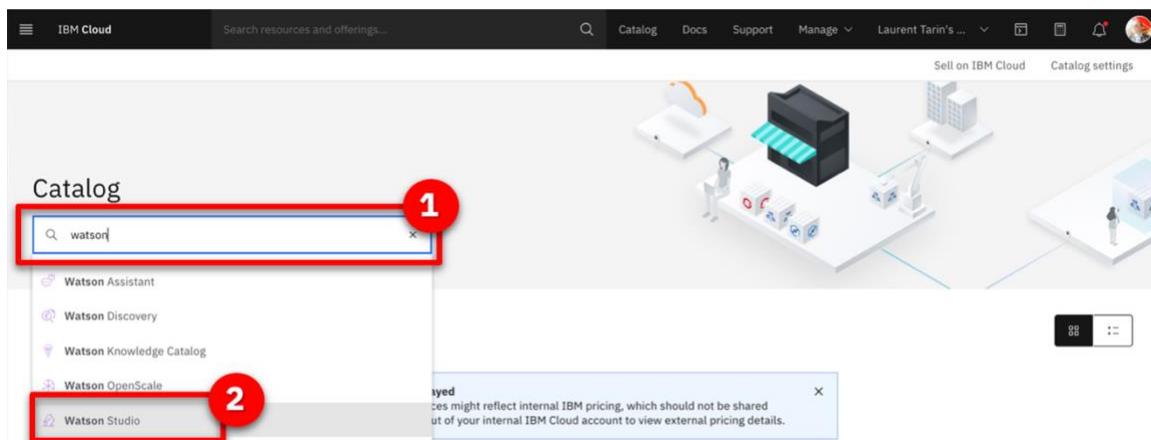
The screenshot shows the repository page for "git / SkyTalk_customer_retention". The top navigation bar is identical to the previous dashboard. The repository name "git / SkyTalk_customer_retention" is at the top. Below it are tabs for Code, Issues, Wiki, and Settings. A "Quick Guide" section includes a "Clone this repository" link and a "Help" link. The "Clone this repository" field shows "https://gitea-dtcp4ba.itzroks-270002541s-40lnb1-6cccd7f378ae819553d37d5f2ee142bd6-0000.us-south.containers.appdom" with a red box around it. There are also "Unwatch" and "Star" buttons with counts of 1 and 0 respectively. The URL in the address bar is "git / SkyTalk_customer_retention".

2 - Create and set up a Watson Studio account

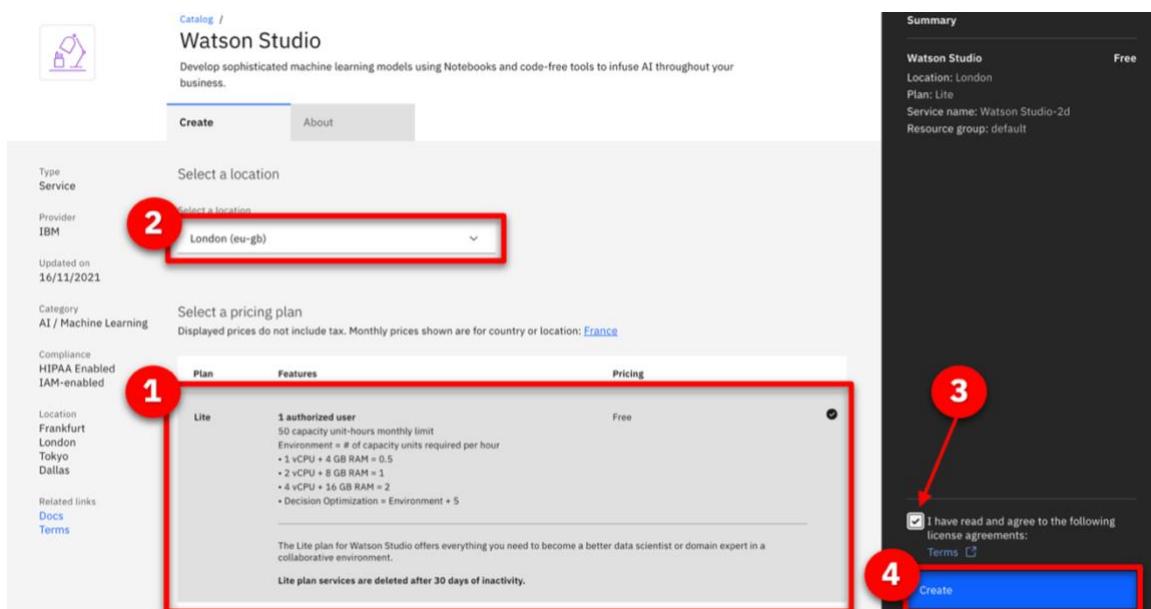
1. Go to [IBM Cloud](#).
2. Enter your **IBM ID**. If you do not have one, create a new one.
3. Ensure you are in your own Cloud Pak for Data instance (1). Click **Create resource** (2).



4. Type “Watson” (1) in the search field, and select **Watson Studio** (2).



5. Select the **Lite** plan (1) and a **location** (2). Read and accept the **license agreements** (3). Click **Create** (4).



6. Return to IBM Cloud.

The screenshot shows the IBM Cloud dashboard with the 'Watson Studio-2d' resource listed. The 'IBM Cloud' button in the top left is highlighted with a red box. The top navigation bar includes 'Catalog', 'Docs', 'Support', 'Manage', and a user profile.

7. Click **Create Resource** at the top right corner.

The screenshot shows the IBM Cloud dashboard with the 'Create resource' button in the top right corner highlighted with a red box. Other visible buttons include 'Edit dashboard' and 'Upgrade account'.

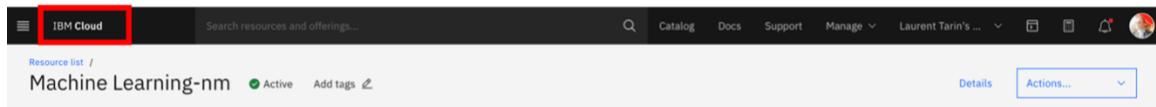
8. Type “Machine” in the search field (1), and select **Machine Learning** (2).

The screenshot shows the IBM Cloud Catalog search results for 'Machine'. A red box highlights the search input field containing 'Machine' (1). Another red box highlights the 'Machine Learning' service entry (2), which is described as 'Simple Machines Forum packaged by Bitnami'.

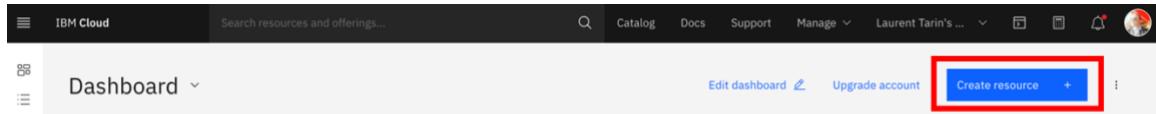
9. Select the **Lite** plan (1) and a **location** (2). Read and accept the **license agreements** (3). Click **Create** (4).

The screenshot shows the IBM Cloud Machine Learning creation wizard. A red box highlights the 'Lite' plan selection (1). Another red box highlights the 'London (eu-gb)' location selection (2). A red box highlights the 'I have read and agree to the following license agreements' checkbox (3). A final red box highlights the 'Create' button (4).

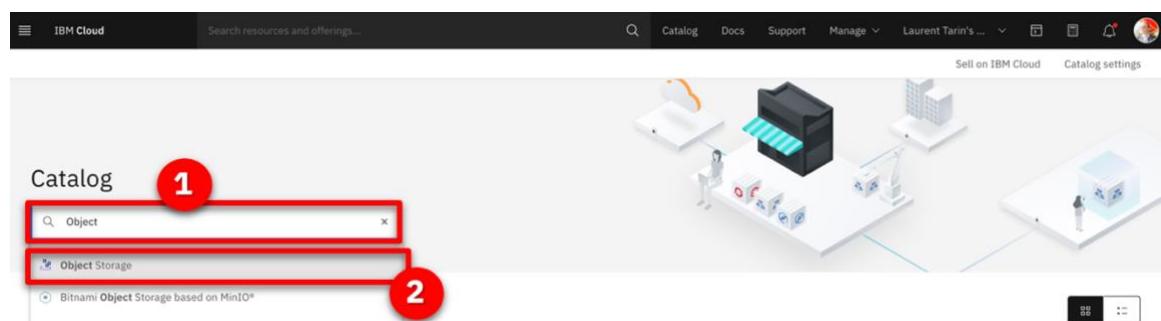
10. Return to the **IBM Cloud**.



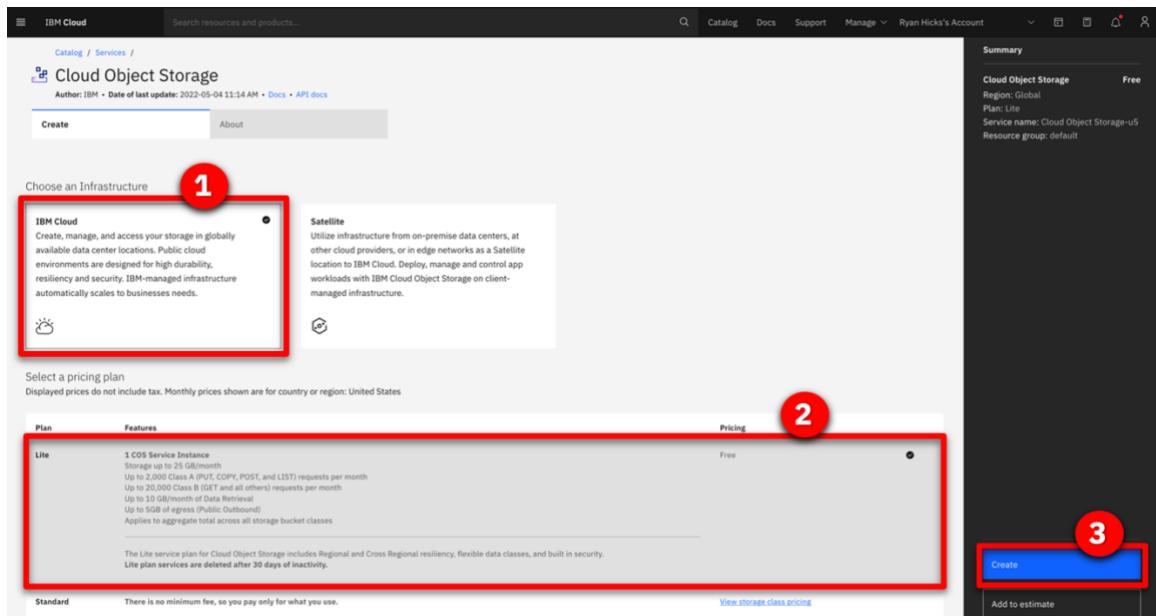
11. Click **Create Resource** at the top right corner.



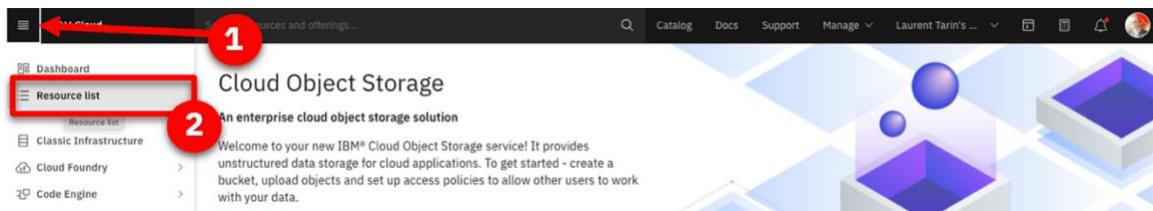
12. Type “**Object**” in the search field (1), and select **Object Storage** (2).



13. Choose **IBM Cloud** infrastructure (1), select the **Lite** plan (2), and click **Create** (3).



14. Click the **top menu** (1) and then **Resource list** (2).



15. Click **Services and software** (1) and then **Watson-Studio - xx** (2).

Name	Group	Location	Product	Status	Tags
Machine Learning-nm	default	London	Machine Learning	Active	-
Watson Studio-2d	default	London	Watson Studio	Active	-

16. Click **Launch in IBM Cloud Pak for Data**.

17. Click **New deployment space**.

18. Name the production space "**SkyTalk production space**" (1). Set the storage service to **Cloud Object Storage-xx** (2). Set the machine learning service to **Machine Learning-xx** (3). Click **Create** (4).

Create a deployment space

Use a space to collect assets in one place to create, run, and manage deployments

Define space details

Name **SkyTalk production space** 1

Description (Optional)

Deployment space description

Upload space assets (optional)

Populate your space with assets exported from a project or space to a .zip file. You can add more assets after the space is created.

Drop .zip file here or browse your files to upload

Deployment space tags (optional) ⓘ

Add a tag

Select storage service ⓘ

Cloud Object Storage-ep 2

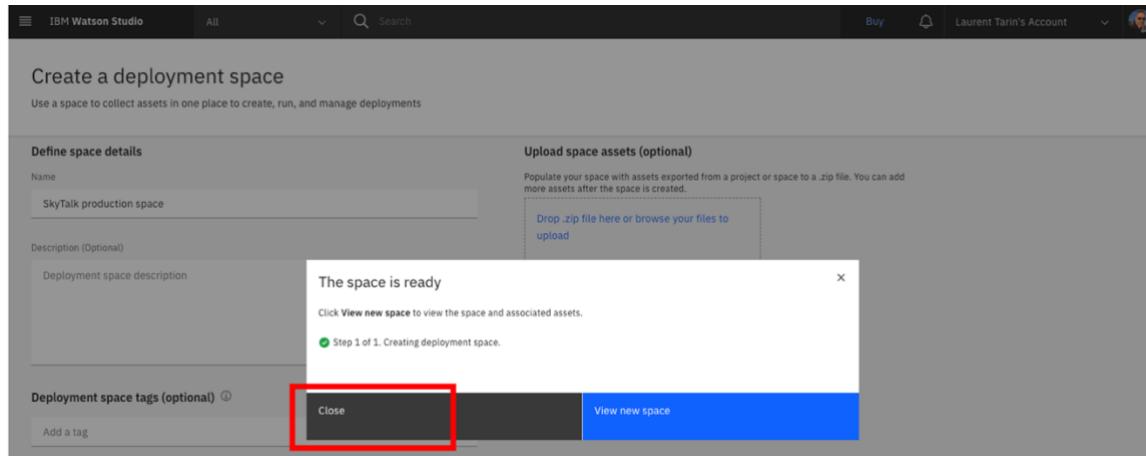
Select machine learning service (optional) ⓘ

Machine Learning-nm 3

Create a new machine learning service

4 Cancel Create

19. Click **Close**.



20. Click the **IBM Watson Studio** logo at the top left-hand side of the page to return to the home page.

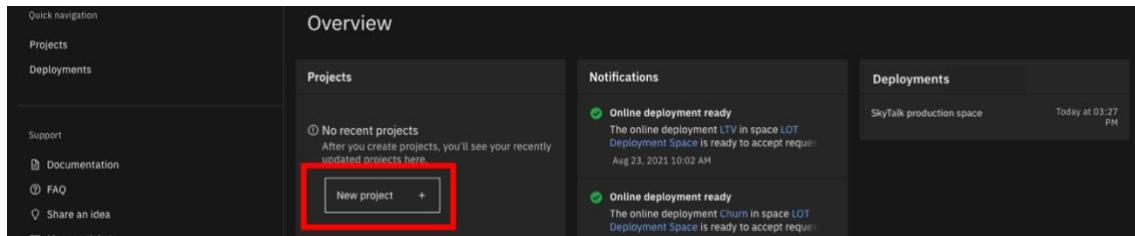
3 - Set up two machine learning models

At this stage, the Watson Studio environment is completely set up. The three services (Watson Studio, ML, and Storage) are ready, and the deployment environment is set up. Now let's create the two prediction services using AutoAI in Watson Studio.

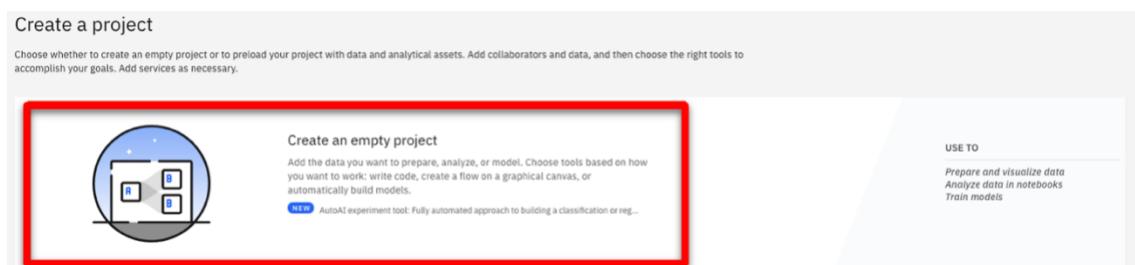
Ensure the two data files have downloaded prior to starting this step:

- [SkyTalk customer loyalty data.csv](#)
- [SkyTalk customer value data.csv](#)

1. Click **New Project** from the IBM Watson Studio home page.



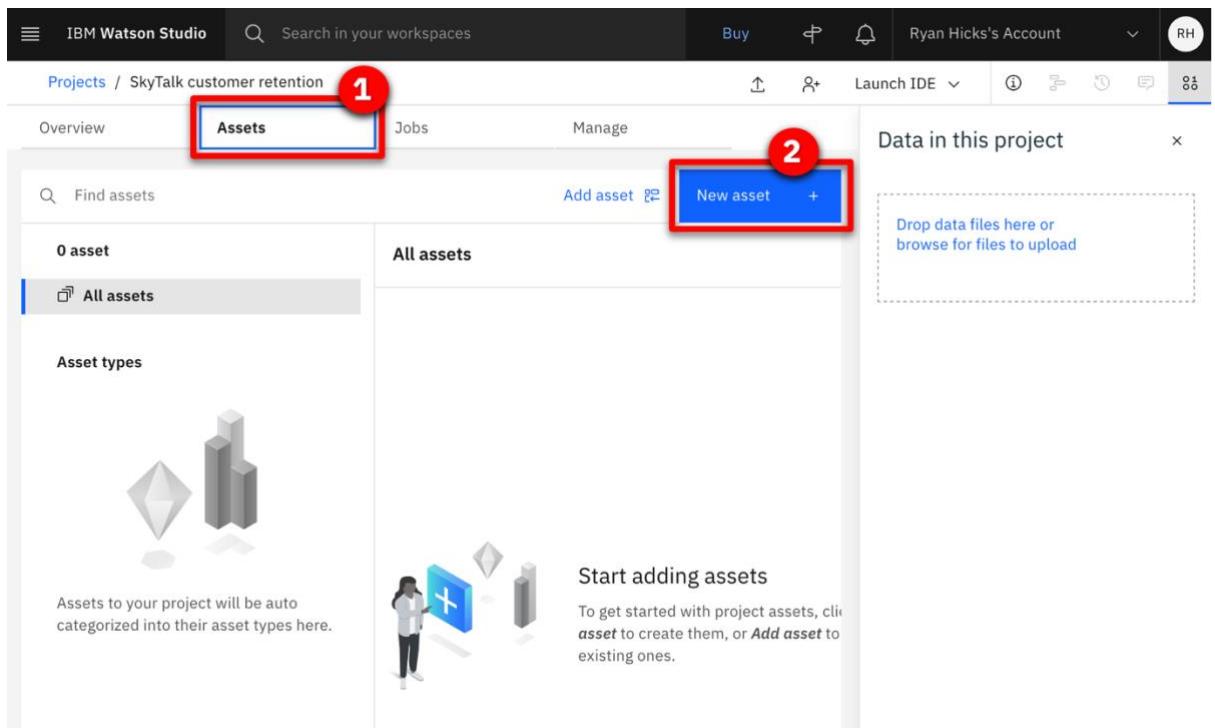
2. Select **Create an empty project**.



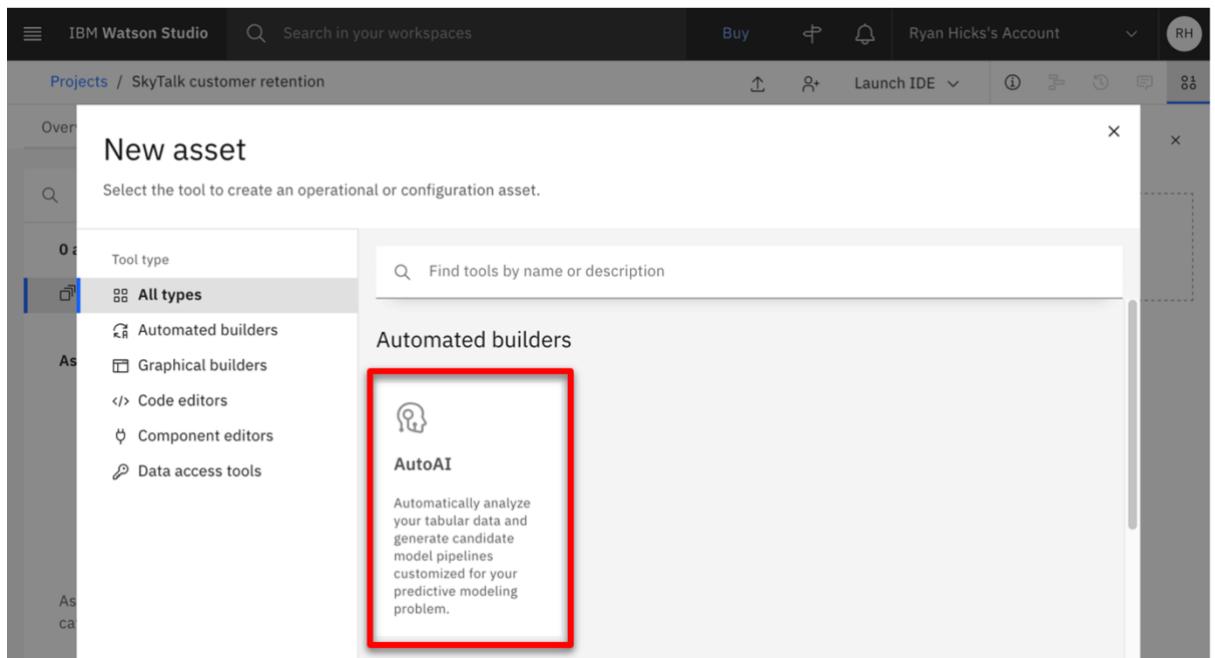
3. Name the project "**SkyTalk customer retention**" (1) and click **Create** (2).

A screenshot of the 'New project' creation dialog. It has a 'Define details' section where the 'Name' field is filled with 'SkyTalk customer retention' (highlighted with a red box and labeled '1'). Below it is a 'Description' section with a 'Project description' input field. Underneath is a 'Choose project options' section with a checkbox for 'Restrict who can be a collaborator' and a note about Cloud Object Storage integration. At the bottom right is a 'Create' button (highlighted with a red box and labeled '2').

4. Click **Assets** (1), then click **New asset +** (2).



5. Select **AutoAI experiment**.



6. Name the AutoAI experiment “**SkyTalk churn prediction**” (1) and click **Associate a Machine Learning service instance** (2).

IBM Watson Studio All Search Buy Laurent Tarin's Account

New AutoAI experiment

+ New Gallery sample

Define details	Define configuration
Name <input type="text" value="SkyTalk churn prediction"/> 1	Watson Machine Learning Service Instance No Machine Learning service instances associated with your project. Associate a Machine Learning service instance with your project on the project settings page, then click the reload button below to refresh the instances available for association. 2
Description (optional)	
What's the purpose of this AutoAI experiment?	

7. Select **Machine learning-we** (1). Click **Associate** (2) in the blue ribbon.

IBM Watson Studio Search in your workspaces Buy Ryan Hicks's Account

Associate service

Choose an existing or add a new service to associate with your project.

Filter by: Resource Groups 2 Locations None

Name	Type	Plan	Location	Status	Group
<input checked="" type="checkbox"/> Machine Learning-zj 1	Machine Learning	Lite	Dallas	Not associated	default

2 Cancel Associate

8. Click **Reload**.

IBM Watson Studio All Search Buy Laurent Tarin's Account

New AutoAI experiment

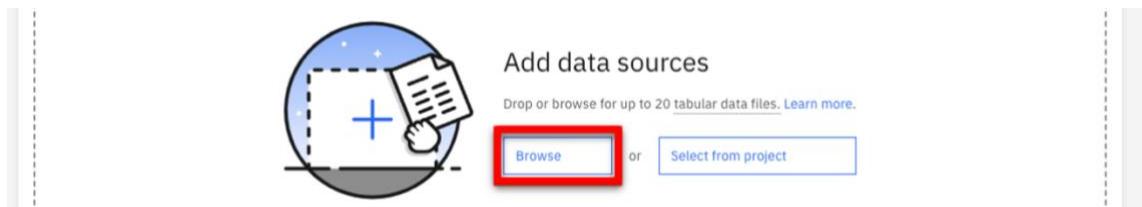
+ New Gallery sample

Define details	Define configuration
Name <input type="text" value="SkyTalk churn prediction"/>	Watson Machine Learning Service Instance No Machine Learning service instances associated with your project. Associate a Machine Learning service instance with your project on the project settings page, then click the reload button below to refresh the instances available for association.
Description (optional)	
What's the purpose of this AutoAI experiment?	
Tags (optional)	1 Reload 2

9. Click **Create**.

The screenshot shows the 'New AutoAI experiment' dialog in IBM Watson Studio. On the left, there's a sidebar with '+ New' and 'Gallery sample'. The main area is divided into two sections: 'Define details' and 'Define configuration'. In 'Define details', the 'Name' field is set to 'SkyTalk churn prediction'. The 'Description (optional)' field contains the placeholder 'What's the purpose of this AutoAI experiment?'. The 'Tags (optional)' field has the placeholder 'Add tags to make assets easier to find.' In 'Define configuration', the 'Watson Machine Learning Service Instance' is set to 'Machine Learning-nm', and the 'Environment definition' is '8 vCPU and 32 GB RAM'. A note below states: 'This environment definition consumes 20 capacity units per hour for training. The consumption rate differs for joining multiple data sources, depending on your configuration. For details, see [Watson Machine Learning plans](#)'. At the bottom right, there are 'Cancel' and 'Create' buttons, with 'Create' being highlighted by a red box.

10. Click **Browse**.



11. Select the **SkyTalk customer loyalty data.csv** file.

12. When prompted the “**Create a time series forecast?**” question, click **No**.

IBM Watson Studio

All

Search

Buy Laurent Tarin's Account

Configure AutoAI experiment

SkyTalk churn prediction

Autosaved: 17:10:42

Add data sources

Drop or browse for up to 20 tabular data files. [Learn more](#)

Browse or Select from project

SkyTalk customer loyalty data.csv

Size: 0.07 MB Columns: 10

Configure details

Create a time series forecast?

Enable this option to predict future activity over a specified date/time range. Data must be structured and sequential. [Learn more](#)

Yes No

13. When prompted the “**What do you want to predict?**” question, select **Churn**.

Configure details

What do you want to predict?

Prediction columns [\(i\)](#)

Select prediction columns

STR CHURN

STR Gender

STR Status

INT Household

DEC Est Income

STD ... Churn

14. Click **Run Experiment**.

Prediction column: CHURN

CUH remaining: 20 CUH

PREDICTION TYPE

Binary Classification

POSITIVE CLASS

T

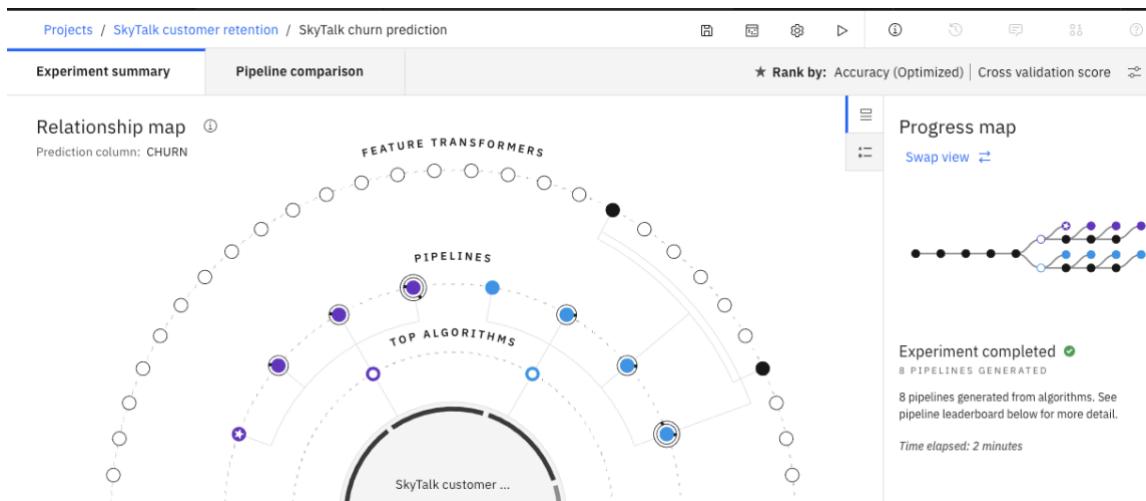
OPTIMIZED FOR

Accuracy & run time

Experiment settings

Run experiment

15. The tool will create eight pipelines, which will take approximately two minutes.



16. Scroll down to access the pipeline list, and click **Save as** to save the highest ranked pipeline as a model.

Pipeline leaderboard ▾						
Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation	Enhancements	Build time	
★ 1	Pipeline 1	LGBM Classifier	0.938	None	00:00:01	Save as
2	Pipeline 2	LGBM Classifier	0.938	HPO-1	00:00:14	

17. Select **Model** (1) and click **Create** (2).

Save as
1

Select asset type

Notebook

Create a notebook if you want to view the code that created this model pipeline or interact with the model programmatically.

Define details

Name:

Description (optional):

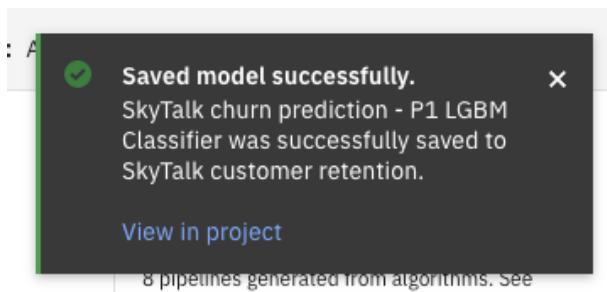
Tags:

Add a tag

Create

2

18. A confirmation message indicating that the model was saved successfully appears.



19. Click **SkyTalk customer retention** in the breadcrumb menu.

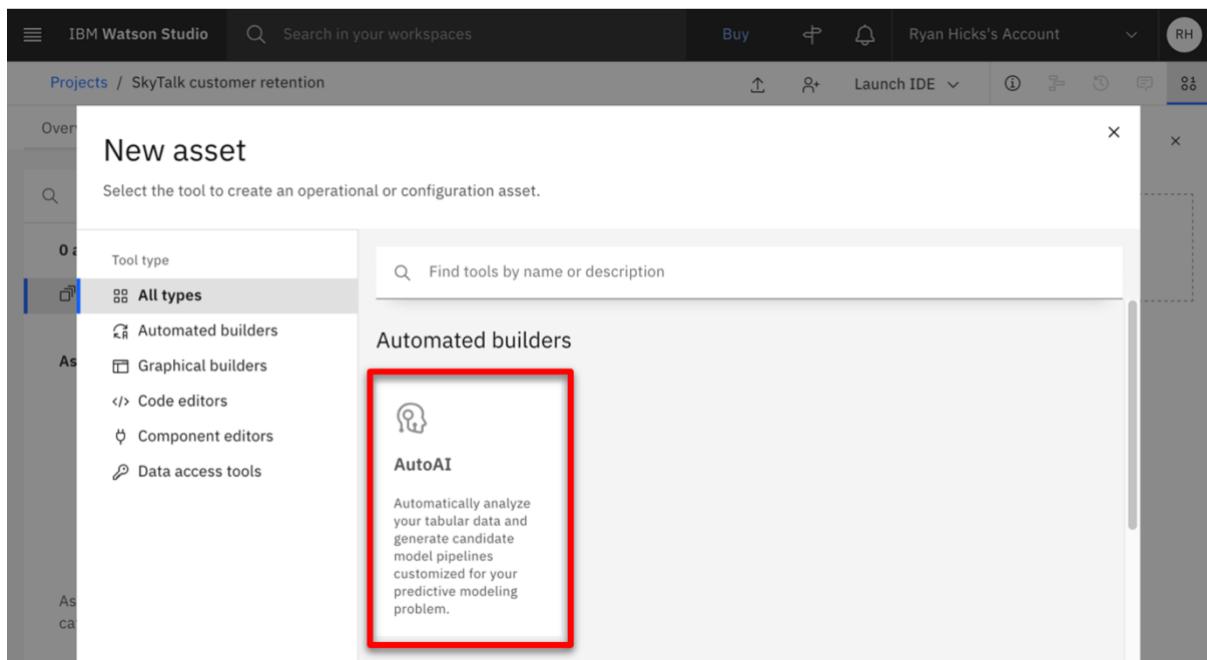
The screenshot shows the IBM Watson Studio interface. The top navigation bar includes "IBM Watson Studio", "All", "Search", "Buy", "Bell", "Laurent Tarin's Account", and a user profile icon. The breadcrumb menu shows "Projects / SkyTalk customer retention". The main content area features a "Relationship map" with nodes for "FEATURE TRANSFORMERS", "PIPELINES", "TOP ALGORITHMS", and "SkyTalk customer ...". A tooltip on the right side of the map displays the same success message as in step 18. On the right, there is a sidebar with sections for "Experiment completed", "PIPLINES GENERATED", and "Time elapsed: 4 minutes".

Create another AutoAI Experiment for the Customer lifetime value prediction using the SkyTalk customer value data.csv data file.

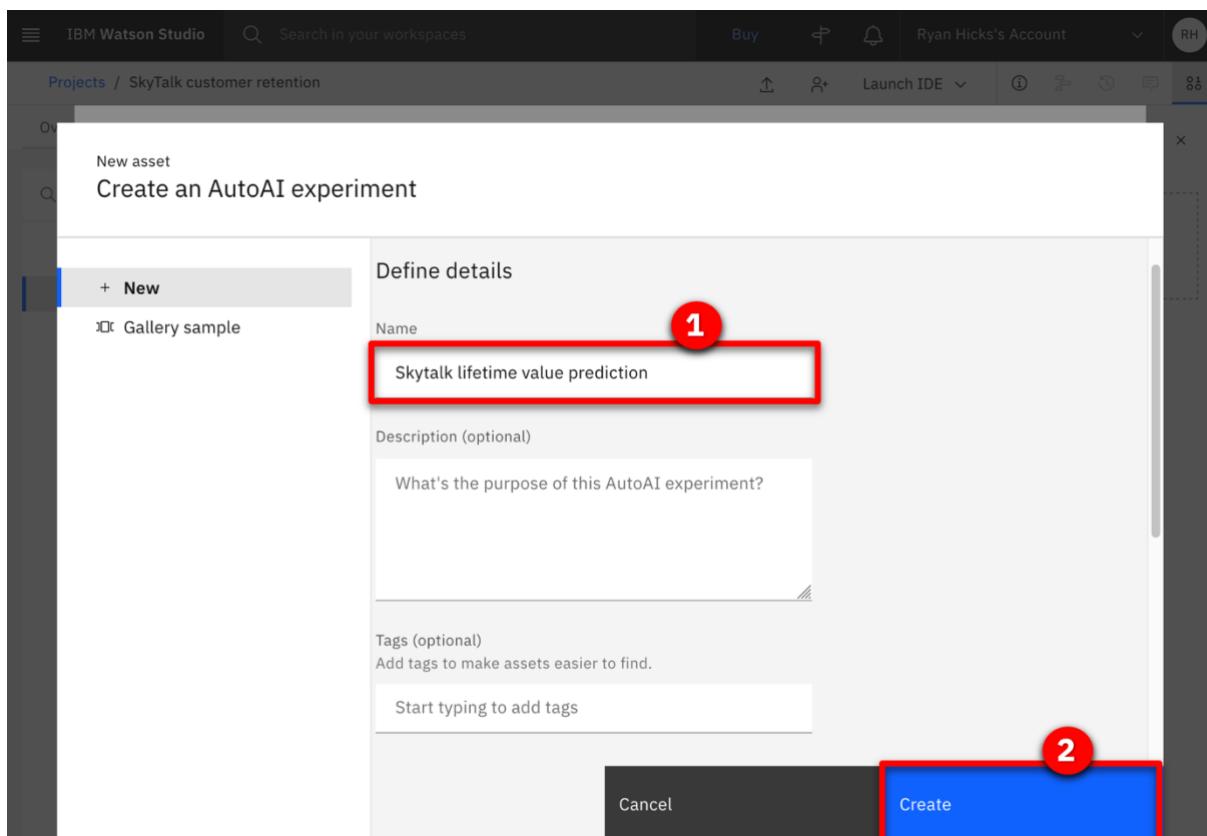
20. Click **New Asset**.

The screenshot shows the "Assets" tab in the IBM Watson Studio interface. The top navigation bar includes "IBM Watson Studio", "Search in your workspaces", "Buy", "Bell", "Ryan Hicks's Account", and a user profile icon. The breadcrumb menu shows "Projects / SkyTalk customer retention". The main content area has tabs for "Overview", "Assets" (which is selected), "Jobs", and "Manage". A search bar "Find assets" is at the top left. In the center, there is a table titled "All assets" with columns "Name" and "Last modified". The table lists three assets: "Skytalk churn predictic Model", "Skytalk churn predictic AutoAI experiment", and "SkyTalk customer loyal CSV". To the right of the table is a "Data in this project" section with a "Drop data files here or browse for files to upload" area. A red box highlights the "New asset" button located at the top right of the asset list area.

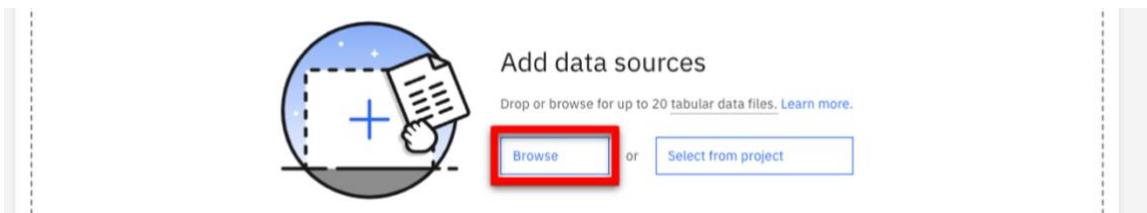
21. Click AutoAI experiment.



22. Name the AutoAI experiment “SkyTalk lifetime value prediction**” (1) and click **Create** (2).**



23. Click **Browse**.



24. Select the **SkyTalk customer value data.csv** file.

25. When prompted the “**Create a time series forecast?**” question, click **No**.

Configure AutoAI experiment

Skytalk lifetime value prediction

Autosaved: 12:42:16 PM

Add data sources

Drop or browse for one or more tabular data files. [Learn more](#).

Browse or **Select from project**

SkyTalk customer value dat...

Size: 0.08 MB | Columns: 10

Configure details

Create a time series forecast?

Enable this option to predict future activity over a specified date/time range. Data must be structured and sequential. [Learn more](#)

Yes No

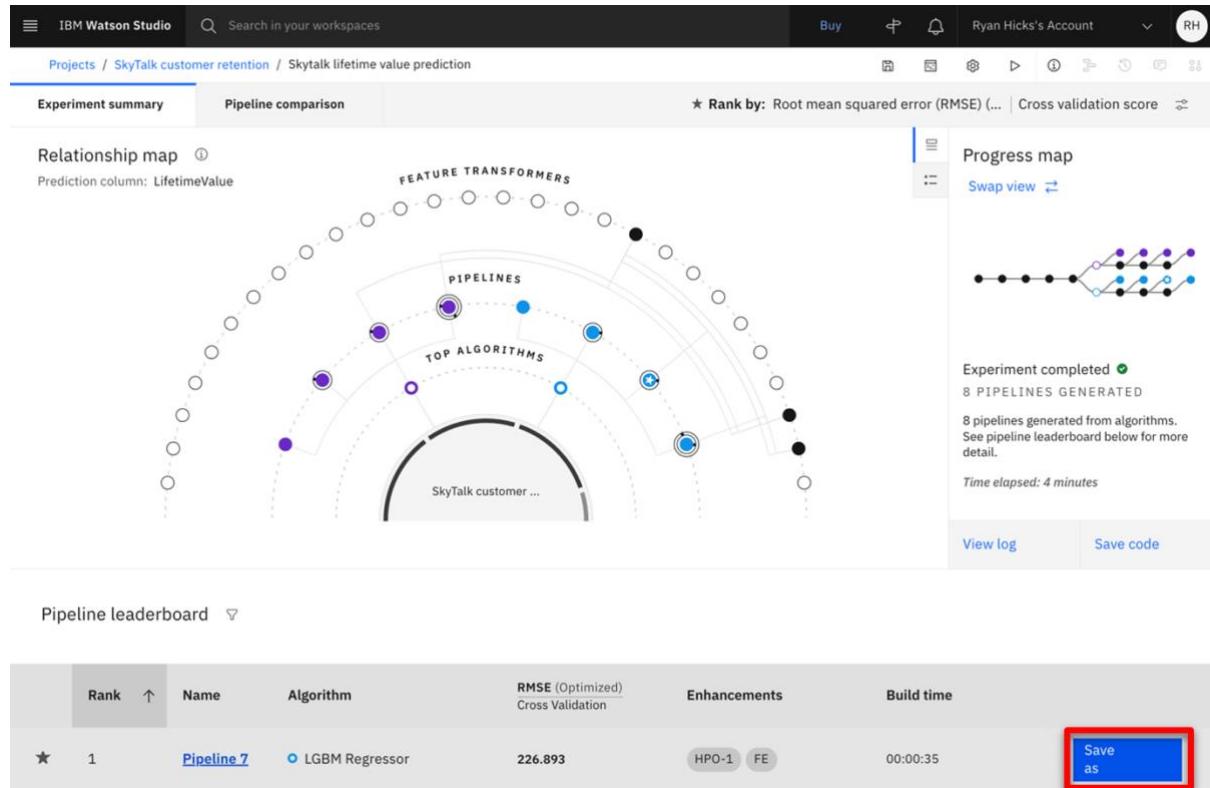
26. When prompted the “**What do you want to predict?**” question, select **LifetimeValue**.

The screenshot shows the 'Configure AutoAI experiment' interface in IBM Watson Studio. On the left, there's a sidebar titled 'Add data sources' with options to 'Browse' or 'Select from project'. A file named 'SkyTalk customer value dat...' is listed with a size of 0.08 MB and 10 columns. On the right, under 'Configure details', there's a section titled 'What do you want to predict?'. It lists several prediction columns: DEC Age, STR Paymethod, DEC Usage, INT RatePlan, and DEC LifetimeValue. The 'LifetimeValue' entry is highlighted with a red rectangle.

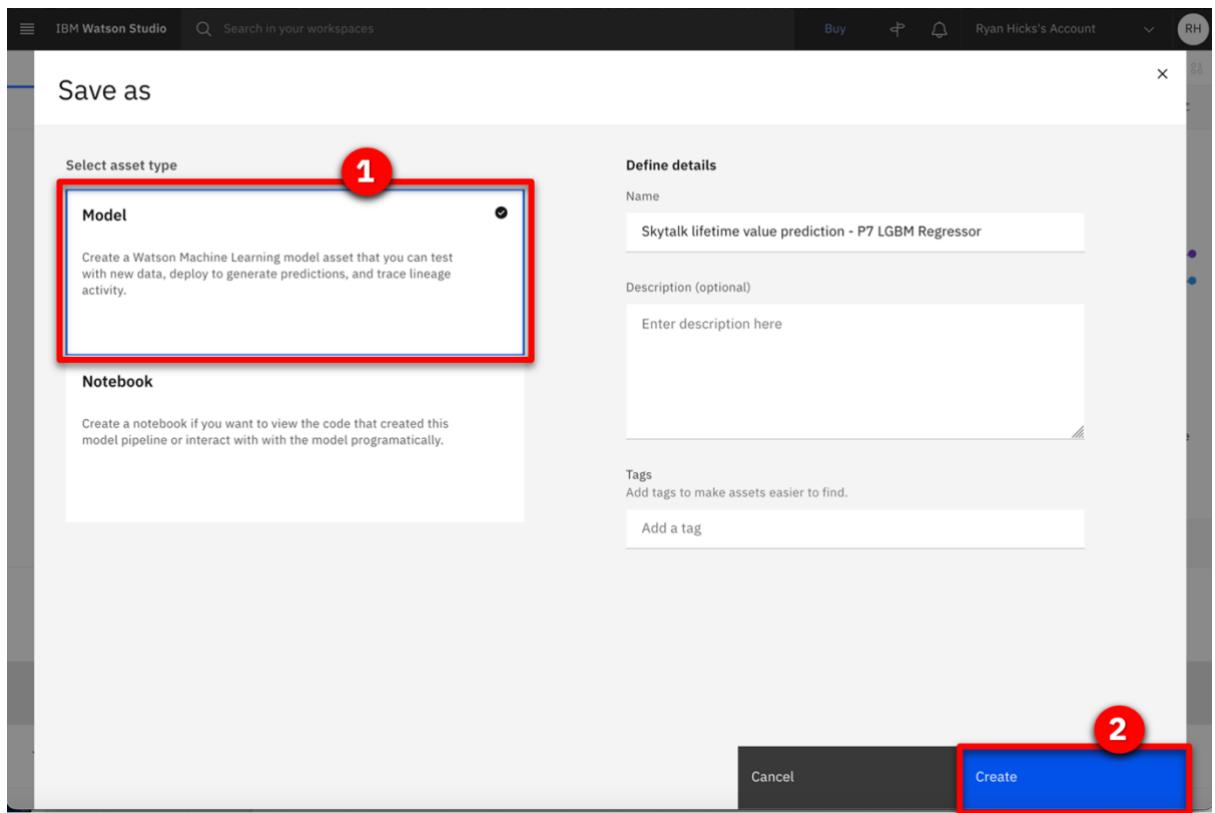
27. Click **Run Experiment**.

The screenshot shows the 'Configure AutoAI experiment' interface in IBM Watson Studio. The 'Configure details' section has the 'Prediction column' set to 'LifetimeValue'. Below it, the 'PREDICTION TYPE' is set to 'Regression' and the 'OPTIMIZED FOR' section is set to 'RMSE & run time'. At the bottom, there are two buttons: 'Experiment settings' and a large blue 'Run experiment' button, which is highlighted with a red rectangle.

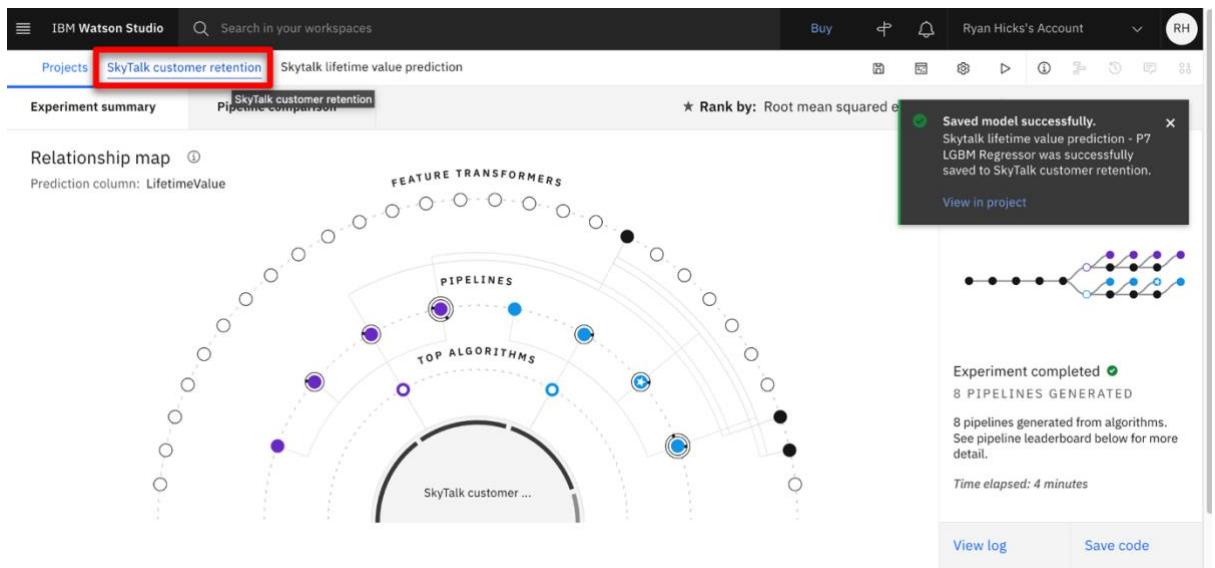
28. After the experiment completes, click **Save as** to save the highest ranked pipeline as a model.



29. Select **Model** (1) and click **Create** (2).



30. After the confirmation message indicating that the model was saved successfully appears, click **SkyTalk customer retention** in the breadcrumb menu.



31. Now there are two models ready to be published in the deployment space.

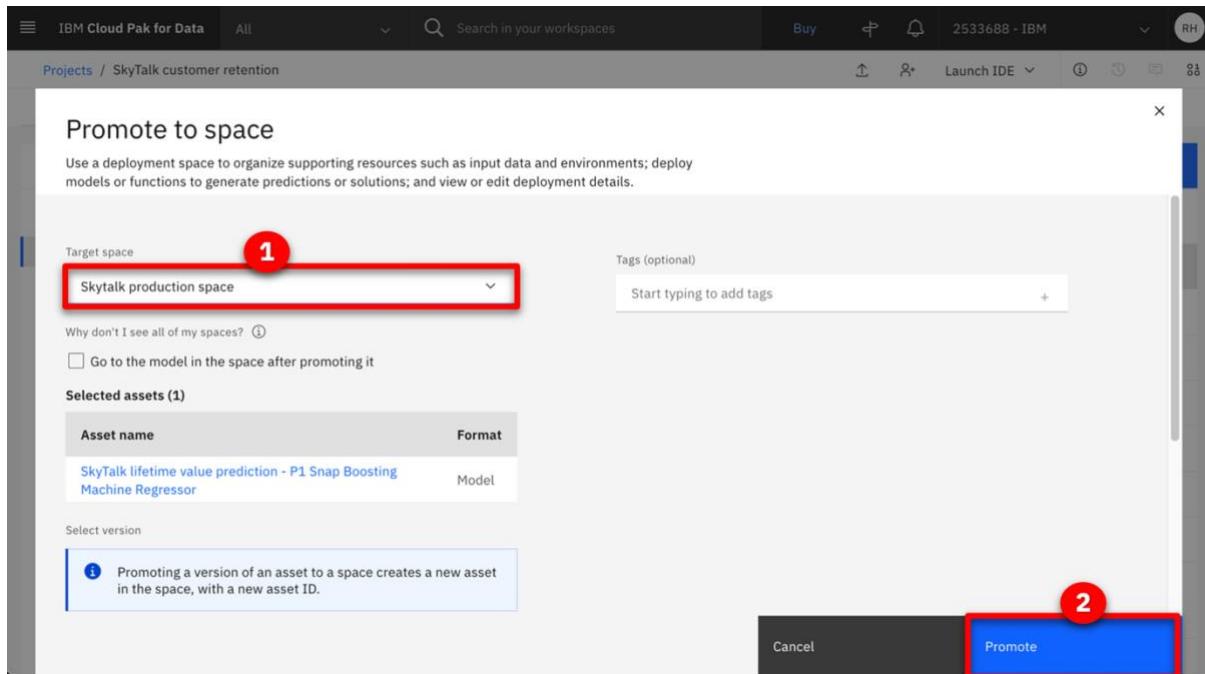
The screenshot shows the 'Assets' tab in the IBM Cloud Pak for Data interface. On the left, there's a sidebar with 'Asset types': Data (2), Experiments (2), and Saved models (2). The main area displays a table titled 'All assets' with columns 'Name' and 'Last modified'. Two specific assets are highlighted with red boxes: 'SkyTalk lifetime value prediction - P1 Snap Boost Model' (last modified 3 minutes ago) and 'SkyTalk churn prediction - P1 XGB Classifier Model' (last modified 34 minutes ago). Both entries show 'Ryan Hicks (You)' as the author.

Name	Last modified
SkyTalk lifetime value prediction - P1 Snap Boost Model	3 minutes ago Ryan Hicks (You)
SkyTalk churn prediction - P1 XGB Classifier Model	34 minutes ago Ryan Hicks (You)
SkyTalk lifetime value prediction AutoAI experiment	13 minutes ago Ryan Hicks (You)
SkyTalk customer value data(1).csv CSV	22 minutes ago Ryan Hicks (You)
SkyTalk churn prediction AutoAI experiment	40 minutes ago Ryan Hicks (You)
SkyTalk customer loyalty data(1).csv CSV	46 minutes ago Ryan Hicks (You)

32. For the first model, click **Promote**.

This screenshot shows the same 'Assets' tab interface as the previous one. The same two assets are highlighted. A context menu is open over the top asset, listing options: 'Publish to catalog' (highlighted with a blue box), 'Promote to space' (highlighted with a red box), and 'Delete'.

33. Choose the **SkyTalk production space** (1) as the deployment space and click **Promote** (2).



34. Promote the second model by repeating the process from steps 32-33.

35. Click **IBM Watson Studio** to return to the home page.

The screenshot shows the IBM Watson Studio home page. The header includes the 'IBM Watson Studio' link, which is highlighted with a red box. Below the header, the page title is 'Projects / SkyTalk customer retention'. The main navigation tabs are 'Overview', 'Assets' (which is selected and highlighted with a blue underline), 'Jobs', and 'Manage'. On the left, there's a sidebar with 'Find assets' and sections for 'Asset types' (Data, Experiments, Models) and 'All assets' (6 assets). The 'All assets' section lists six items, each with a small icon, name, last modified date, and a more options menu. To the right of the asset list, a tooltip message appears twice, both stating 'Successfully promoted Skytalk churn prediction - P2 XGB Classifier to the associated deployment space. Go to the deployment space to prepare the assets for deployment.' with a timestamp of '6:31:01 PM'. Another tooltip message appears below it, stating 'Successfully promoted Skytalk lifetime value prediction - P7 LGBM Regressor to the associated deployment space. Go to the deployment space to prepare the assets for deployment.' with a timestamp of '6:29:35 PM'.

36. Click the **SkyTalk production space** in the deployment space section.

37. Select the **Assets** tab to display two the machine learning services to deploy.

Name	Type	Software specification	Tags	Last modified
SkyTalk churn prediction - P1 LGBM Classifier	wml-hybrid_0.1	hybrid_0.1		Nov 17, 2021 4:06 PM
SkyTalk lifetime value prediction - P1 XGB Regress...	wml-hybrid_0.1	hybrid_0.1		Nov 17, 2021 4:05 PM

4 - Deploy the ML models

Note: Anytime your ML services are deployed, your Watson ML Lite subscription quota is consumed. To avoid running out of Watson ML Lite quota, un-deploy your ML services whenever you are not practicing or giving this demo.

The **Reset the demo to its beginning state** section in this document contains the process to un-deploy the services and stop the billing process.

Re-deploy your ML services approximately 15 minutes prior to practicing or giving this demo.

- From the Watson Studio environment, select the **SkyTalk production space** deployment space.

2. Select the **Assets** tab.

3. Deploy the churn prediction by clicking the corresponding **rocket** icon that appears when you hover over the right side of the row.

4. Select **Online** (1), name the deployment “**churn**” (2), and click **Create** (3).

Create a deployment

Associated asset
SkyTalk churn prediction - P1 LGBM Classifier

Deployment type

1 Online Run the model on data in real-time, as data is received by a web service.

Batch Run the model against data as a batch process.

Name **2** churn

Serving name ⓘ Deployment serving name

Description Deployment description

Tags Add tags to make assets easier to find.

3 Create

5. Deploy the SkyTalk lifetime value prediction by clicking the corresponding **rocket** icon that appears when you hover the right side of the row.

Models (2)					Import model +
Name	Type	Software specification	Tags	Last modified	↓
SkyTalk churn prediction - P1 LGBM Classifier	wml-hybrid_0.1	hybrid_0.1		Nov 17, 2021 4:06 PM	
SkyTalk lifetime value prediction - P1 XGB Regressor	wml-hybrid_0.1	hybrid_0.1		Nov 17, 2021 4:05 PM	

6. Select **Online** (1), name the deployment **Lifetime value** (2), and click **Create** (3).

Create a deployment

Associated asset
SkyTalk lifetime value prediction - P1 XGB Regressor

Deployment type

1 Online Run the model on data in real-time, as data is received by a web service.

Batch Run the model against data as a batch process.

Name **2** Lifetime value

Serving name ⓘ Deployment serving name

Description Deployment description

Tags Add tags to make assets easier to find.

3 Create

7. Click the **Deployments** tab. Ensure the two services are deployed.

The screenshot shows the IBM Watson Studio interface. At the top, there is a navigation bar with the title "IBM Watson Studio". Below the title are buttons for "All", "Search", and "Upgrade". On the right side of the top bar, there is a blue button labeled "Add to space" with a plus sign. The main content area is titled "SkyTalk production space". Below the title, there is a navigation bar with tabs: "Overview", "Assets", "Deployments" (which is highlighted with a red box), "Jobs", and "Manage". Under the "Deployments" tab, there is a search bar with the placeholder text "What deployments are you looking for?". Below the search bar, the heading "Deployments (2)" is displayed. A table lists two deployed assets:

Name	Type	Status	Asset	Tags	Last modified
Lifetime value	Online	Deployed	SkyTalk lifetime value prediction - P1 XGB Regressor		Oct 12, 2021 2:47 PM
churn	Online	Deployed	SkyTalk churn prediction - P1 LGBM Classifier		Oct 12, 2021 2:46 PM

5 - Get the credentials to set up the ML provider

This section explains how to get the credentials to set up the machine learning provider in ADS.

1. In the Deployments - SkyTalk production space, select the **Deployments** tab (1) and click **churn** (2).

Screenshot of the IBM Watson Studio Deployments page for the SkyTalk production space. The 'Deployments' tab is selected (1). A red box highlights the 'churn' deployment (2).

Name	Type	Status	Asset	Tags	Last modified
Lifetime value	Online	Deployed	SkyTalk lifetime value prediction - P1 XGB Regressor		Oct 12, 2021 2:47 PM
churn	Online	Deployed	SkyTalk churn prediction - P1 LGBM Classifier		Oct 12, 2021 2:46 PM

2. Copy the first portion of the **Endpoint URL** (the blue highlighted section in the screenshot), and save it for the upcoming ML provider configuration.

Screenshot of the IBM Watson Studio API reference for the 'churn' deployment. The 'Endpoint' field shows the URL <https://eu-gb.ml.cloud.ibm.com/ml/v4/deployments/1bccb4c0-fb58-4c2a-9246-31815...>

3. Click **SkyTalk product space** in the breadcrumb menu.

Screenshot of the IBM Watson Studio breadcrumb menu showing 'Deployments' and 'SkyTalk production space' selected.

4. Select the **Manage** tab.

Screenshot of the IBM Watson Studio Assets page for the SkyTalk production space. The 'Manage' tab is selected.

- Copy the deployment **Space GUID** and save it for the upcoming ML provider configuration.

Screenshot of IBM Watson Studio showing the 'Manage' tab selected in the top navigation bar. The 'General' section displays 'Space Details' including the Name 'SkyTalk production space', Description 'No description provided.', and Space GUID '374efdfc-7a04-432d-9bc1-fec6d6e56...'. A red box highlights the GUID field. To the right, there's a sidebar for Cloud Object Storage with details like Storage used '177.13 KB used' and Bucket 'a7a804c7-e850-41ec-b313-...'.

- Log out and return to the IBM Cloud environment at cloud.ibm.com (1), ensuring you are in your Cloud Pak for Data instance (2).

Screenshot of the IBM Cloud dashboard showing the 'Manage' tab selected in the top navigation bar. A red box highlights the 'Laurent Tarin's ...' dropdown menu. The dashboard features sections for 'For you' including 'Build', 'Build with Watson', 'Explore IBM Cloud Shell', 'Visit the IBM Cloud catalog', and 'Get started with machine learning + Watson Studio'.

- Click the **Manage** tab and select **Access (IAM)**.

Screenshot of the IBM Cloud dashboard showing the 'Manage' tab expanded to reveal a dropdown menu. The 'Access (IAM)' option is highlighted with a red box. Other options in the menu include Account, Billing and usage, Catalogs, Enterprise, Security and access, and Create resource.

8. Click **API keys** (1) and then **Create an IBM Cloud API key** (2).

The screenshot shows the IBM Cloud interface. On the left, there's a sidebar with various menu items: Access (IAM), Users, Access groups, Service IDs, API keys (which has a red circle '1' over it), Authorizations, Roles, Identity providers, Trusted profiles, and Settings. The main content area is titled 'API keys' and contains instructions about managing API keys. At the bottom right of this area, there's a blue button labeled 'Create an IBM Cloud API key' with a red circle '2' over it.

9. Name the key “**MY_API_Key**” (1) and click **Create** (2).

This screenshot shows a modal dialog titled 'Create API key'. It has a 'Name' input field containing 'MY_API_Key' (with a red circle '1' over it), a 'Description' input field containing 'Personal access key', and two buttons at the bottom: 'Cancel' and 'Create' (with a red circle '2' over it).

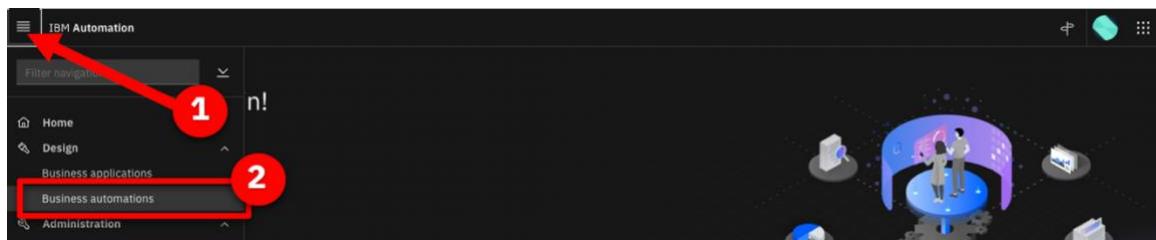
10. Download the **API key file** and save it for the upcoming ML provider configuration.

The screenshot shows the 'API keys' page again. A modal dialog is open in the center, displaying a message: 'API key successfully created'. Below this message, it says: 'Copy the API key or click download to save it. You won't be able to see this API key again, so you can't retrieve it later. The API key is no longer displayed after 292 seconds.' At the bottom of this dialog, there are two buttons: 'Copy' and 'Download' (with a red circle over it). The background of the main page shows the sidebar with the 'API keys' menu item selected.

6 - Open ADS and import the ADS demo project

Prior to performing this step, make sure you have downloaded the file: [SkyTalk-customer-retention-DS_21.0.3_Vxx.zip](#). This file is required to set up the ADS decision service.

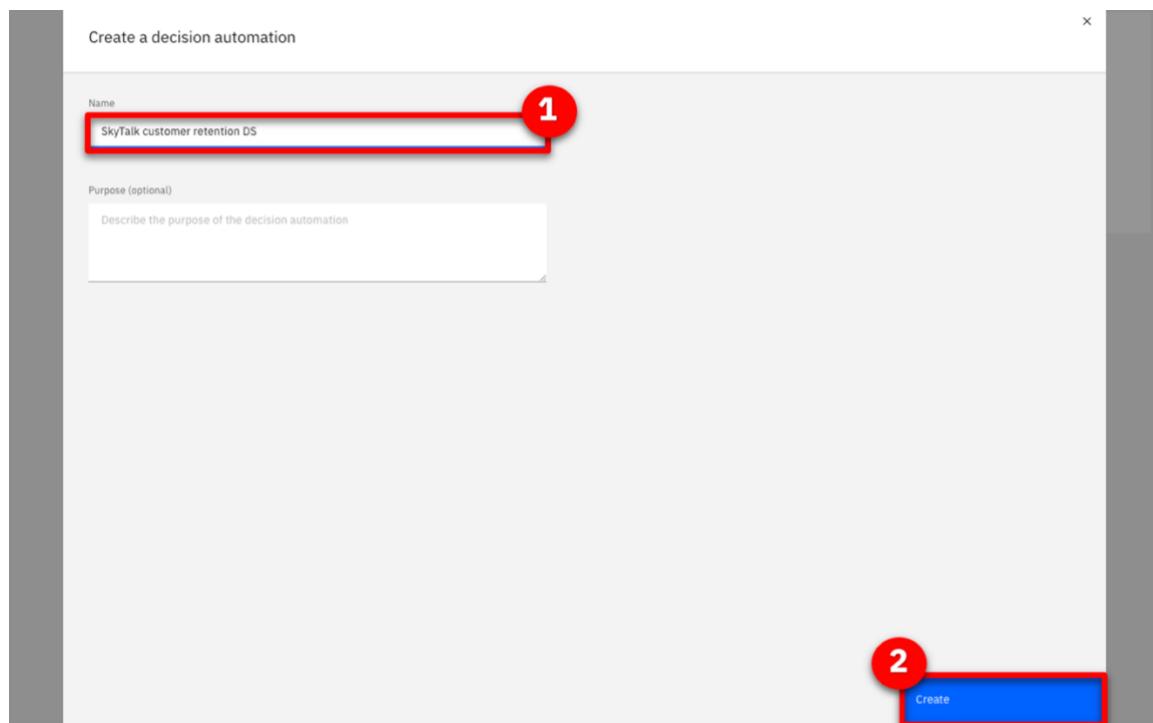
1. Log in to your Cloud Pak for Business Automation instance. (Use the bookmark you created and the credentials you saved in step 13 of step **1 - Provision a Cloud Pak for Business Automation environment**.)
2. Expand the **top menu** (1) and click **Business Automations** (2).



3. Pass through the privacy warning messages by clicking **advanced** and then the "**proceed...**" link.
4. Under **Business automations**, click **Create** (1) and select **Decision automations** (2).



5. Name the automation “**SkyTalk customer retention DS**” (1) and click **Create** (2).



6. Accept any privacy checks that may appear.



Your connection is not private

Attackers might be trying to steal your information from **designer-ads-dtecp4ba.dteroks-270002541s-jqqmj-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud** (for example, passwords, messages or credit cards). [Learn more](#)

NET::ERR_CERT_AUTHORITY_INVALID

To get Chrome's highest level of security, [turn on enhanced protection](#)

[Hide advanced](#)

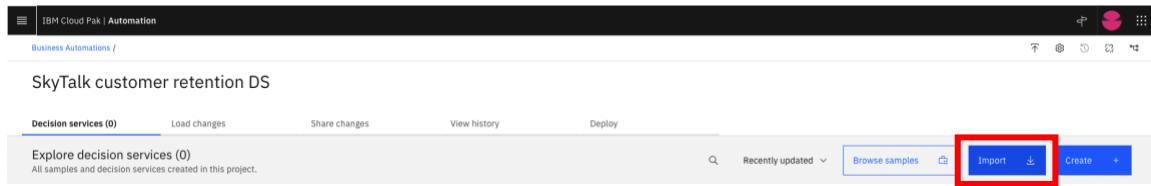
[Back to safety](#)

This server could not prove that it is **designer-ads-dtecp4ba.dteroks-270002541s-jqqmj-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud**; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection.

[Proceed to designer-ads-dtecp4ba.dteroks-270002541s-jqqmj-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud \(unsafe\)](#)

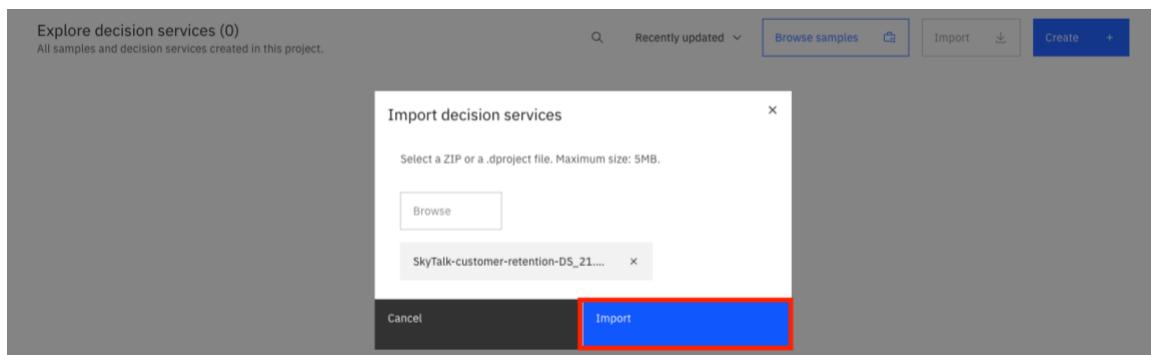
7. Close any guided tour views.

8. Click **Import**.

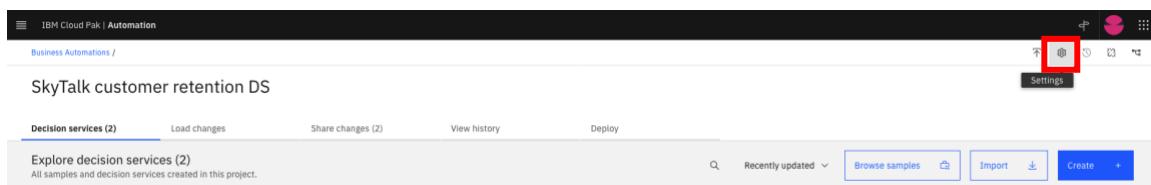


9. Select the **SkyTalk-customer-retention-DS_21.0.3_Vxx.zip** file and click **Open**.

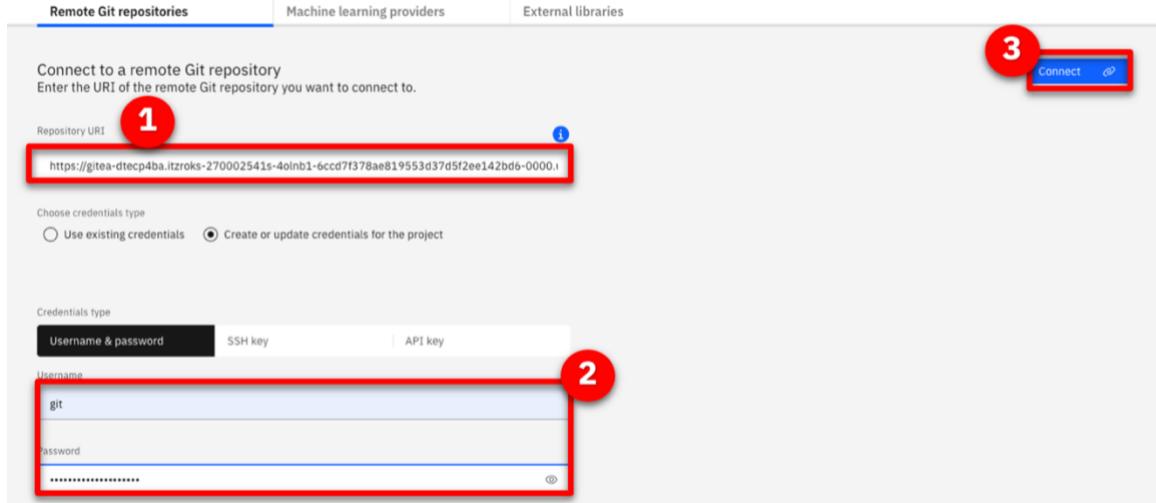
10. Click **Import**.



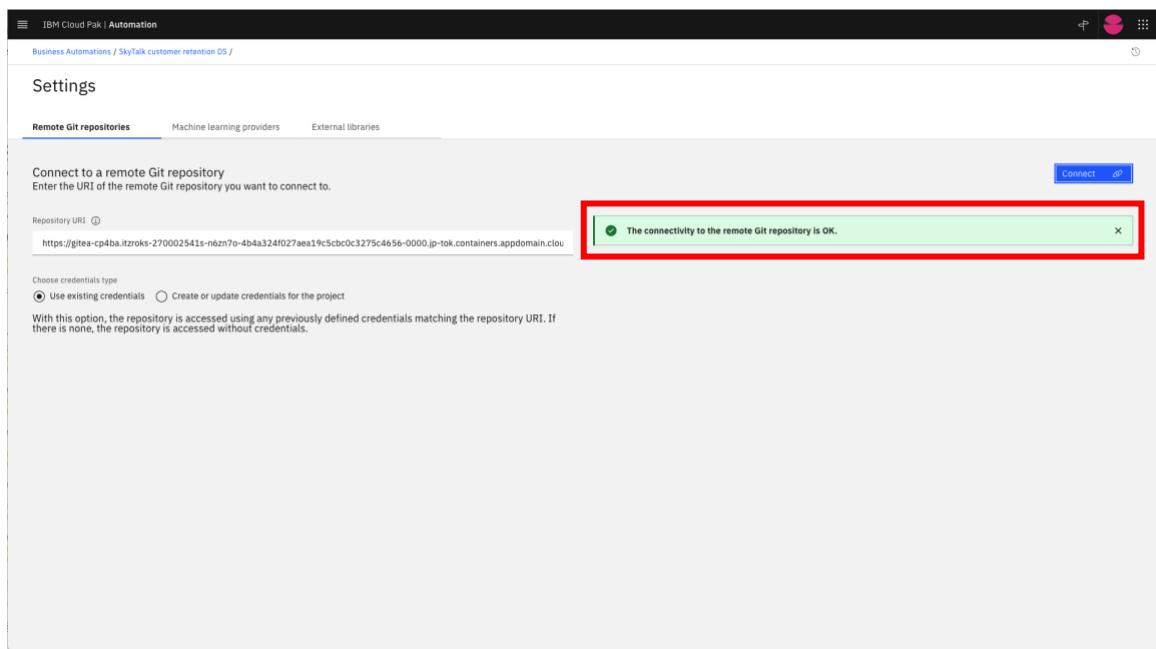
11. Configure the ADS environment by clicking the **Settings** icon.



12. In the **Remote Git repositories** tab, paste the **Repository URL** (1) saved in step 1.17 into the Repository URI field. Enter the git **username** and **password** from step 1.12. Click **Connect** (3).



13. Ensure the remote Git repository status is connected.



To perform the following steps, your two machine learning services must be deployed in the Watson Studio deployment environment.

14. Click the **Machine learning providers** tab to configure the machine learning provider.

The screenshot shows the 'Settings' page in IBM Cloud Pak | Automation. The 'Machine learning providers' tab is highlighted with a red box. Below it, there's a section for connecting to a remote Git repository, with a 'Repository URI' field containing a URL and a green message box indicating successful connectivity. A note about credential types is also present.

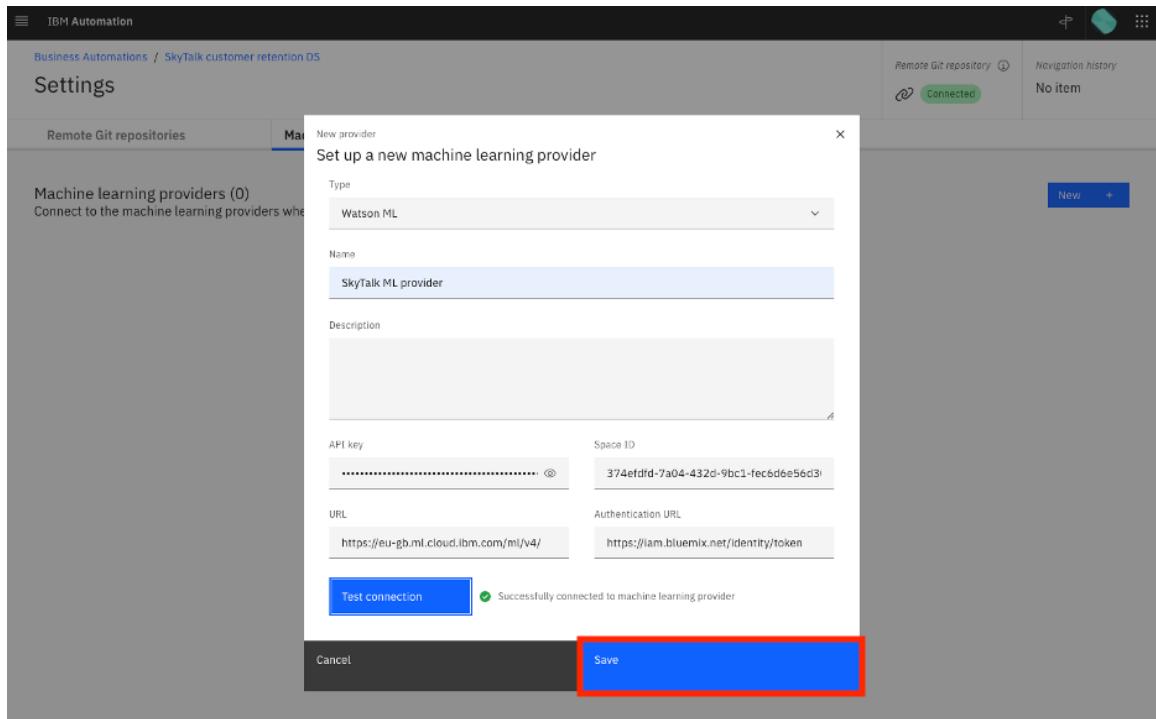
15. Click **New**.

The screenshot shows the 'Settings' page in IBM Automation. The 'Machine learning providers' tab is selected. A red box highlights the 'New' button in the top right corner of the provider list area.

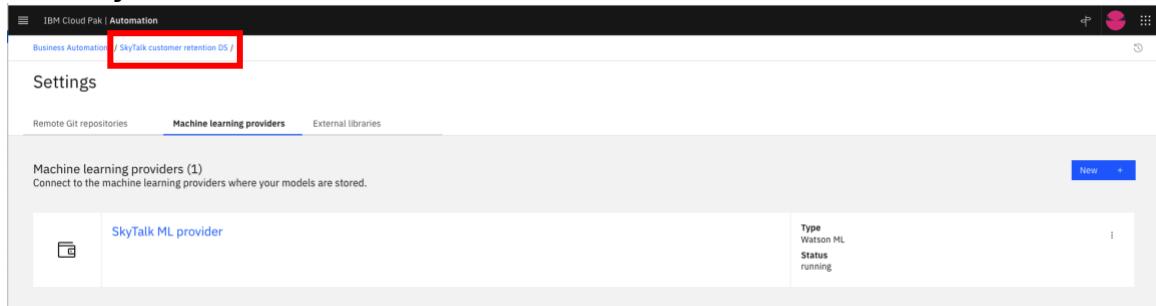
16. Select the **Watson ML** (1) machine provider and name the ML provider “**SkyTalk ML provider**” (2). Enter the **API key** (3), **Space (GUID) ID** (4), and **URL** (5) from step 5 - **Get the credentials to set up the ML provider**. Click **Test connection** (6).

The screenshot shows the 'Set up a new machine learning provider' dialog box. The fields are numbered as follows: 1. Type (Watson ML), 2. Name (SkyTalk ML provider), 3. API key (redacted), 4. Space ID (374efdfc-7a04-432d-9bc1-fec6d6e56d3f), 5. URL (https://eu-gb.ml.cloud.ibm.com/ml/v4/), and 6. Test connection button. A red box highlights the 'Test connection' button.

17. If the connection is successful, click **Save**.



18. Click **SkyTalk customer retention DS** in the breadcrumb menu.



7 - Update the decision model with the deployed ML models

1. Click the **SkyTalk retention decision service** tile.

The screenshot shows the 'SkyTalk customer retention DS' interface. At the top, there are tabs for 'Decision services (2)', 'Load changes', 'Share changes (2)', 'View history', and 'Deploy'. Below the tabs, there is a search bar and a dropdown for 'Recently updated'. On the right, there are buttons for 'Browse samples', 'Import', and 'Create'. A red box highlights the 'SkyTalk retention DS' tile, which contains a message about connecting to two ML models and defines them using AutoAI experiments on the dataset 'customer churn data.csv'. There are also 'Sample' and 'Machine learning customer loyalty' buttons.

2. Click the **Customer Churn** model on the models tab.

The screenshot shows the 'Models' tab in the 'SkyTalk retention DS' interface. It lists three models: 'Customer Churn', 'Customer Lifetime Value', and 'Retention offer'. The 'Customer Churn' model is highlighted with a red box. The table columns include 'Name', 'Last updated by', and 'Last updated at'. The 'Customer Churn' row shows 'Me' as the last updated by user and 'Never shared' as the last update time.

3. Click **Connect**.

The screenshot shows the 'Customer Churn' model details page. On the left, there is a sidebar with various icons. The main area shows the model's name and a description box. To the right, there is a 'Customer Churn' panel with a 'Connect' button highlighted with a red box. The 'Connect' button is located below a 'Machine learning provider' section which says 'Not connected'.

4. Select **SkyTalk ML provider**.

The screenshot shows the 'Configure predictive model' wizard. The current step is 'Select provider and ML deployment'. It has radio buttons for 'Select provider and ML deployment' (selected), 'Define input schema', 'Test invocation' (optional), and 'Define output schema'. Below the radio buttons, there is a 'Select provider' section with a note: 'Select the provider where your deployed model is stored.' A 'Machine learning provider' dropdown is shown, with 'SkyTalk ML provider' selected and highlighted with a red box. There is also a 'New provider' button.

5. Expand the **SkyTalk churn prediction – P1 LGBM Classifier** model (1), select the **churn** deployment (2), and click **Next** (3).

The screenshot shows the 'Configure predictive model' interface. At the top, there are tabs: 'Select provider and ML deployment' (selected), 'Define input schema' (Optional), 'Test invocation' (Optional), and 'Define output schema'. Below these are sections for 'Select provider' and 'Machine learning provider' (set to 'SkyTalk ML provider'). A table lists 'ML model name', 'Training date', and 'Last modified' for two entries: 'SkyTalk lifetime value prediction - P1 XGB Regressor' and 'SkyTalk churn prediction - P1 LGBM Classifier'. The second entry is highlighted with a red box and the number '1'. The deployment 'churn' is selected and highlighted with a red box and the number '2'. At the bottom right, the 'Next' button is highlighted with a red box and the number '3'.

6. Click **Next**.

The screenshot shows the 'Configure predictive model' interface. The 'Test invocation' tab is selected. Below it, a section titled 'Test invocation' with the sub-instruction 'Use test data to make sure the model works as expected.' has a 'Run' button highlighted with a red box.

7. Click **Run** to test the invocation.

The screenshot shows the 'Configure predictive model' interface. The 'Test invocation' tab is selected. Below it, a section titled 'Test invocation' with the sub-instruction 'Use test data to make sure the model works as expected.' has a 'Run' button highlighted with a red box.

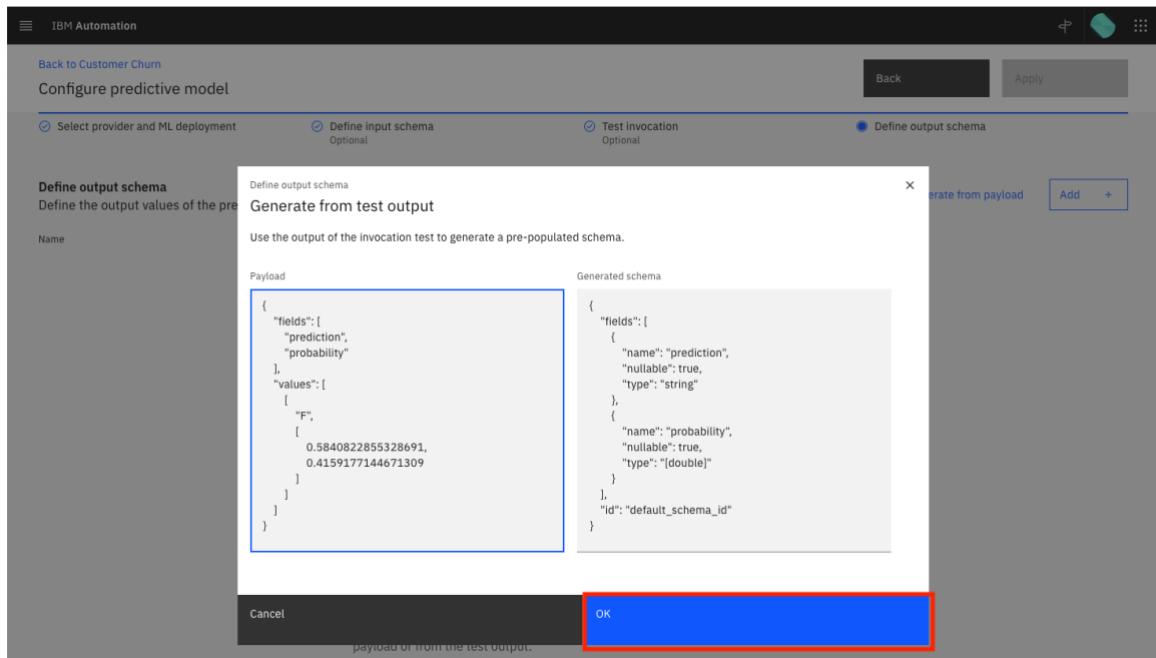
8. If the test succeeds, click **Next**.

The screenshot shows the 'Configure predictive model' interface. The 'Test invocation' tab is selected. Below it, a success message 'Test succeeded' is displayed, followed by the instruction 'You can use the test output to define the output schema.' The 'Next' button is highlighted with a red box.

9. Click **Generate from test output**.

The screenshot shows the 'Configure predictive model' interface. The 'Define output schema' tab is selected. Below it, a section titled 'Define output schema' with the sub-instruction 'Define the output values of the prediction.' has a 'Generate from test output' button highlighted with a red box.

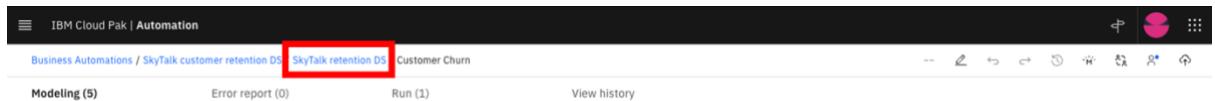
10. Click **OK**.



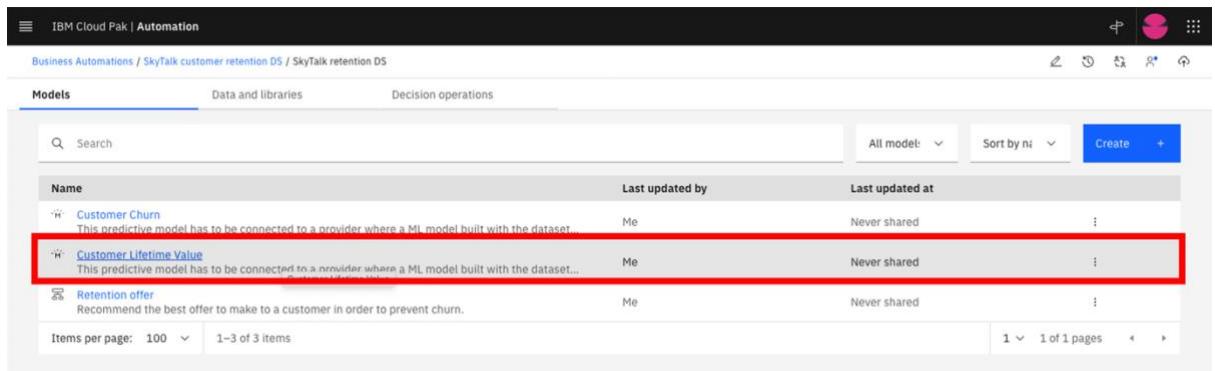
11. Click **Apply**.



12. Return to the **SkyTalk retention DS** using the breadcrumb menu.



13. Click **Customer lifetime value** and repeat steps 7.3-7.12. Make sure to select the **Customer lifetime value prediction** model as the ML provider.



14. When you finish configuring the Customer Lifetime Value model, return to **SkyTalk retention DS**, click the **Retention Offer** model.

The screenshot shows the 'Models' tab selected in the navigation bar. Below it is a search bar and a table with columns: Name, Last updated by, and Last updated at. There are three rows in the table:

Name	Last updated by	Last updated at
Customer Churn	Me	Never shared
Customer Lifetime Value	Me	Never shared
Retention offer	Me	Never shared

15. Select the **Run** tab.

The screenshot shows the 'Run' tab selected in the navigation bar. Below it is a table with columns: Modeling (9), Error report (0), Run (3), and View history. A red box highlights the 'Run (3)' tab.

16. Select the **High Value profile** test file (1) and click **Run** (2).

The retention offer should display. Click **Run** again if you get a timeout error the first time.

The screenshot shows the 'Run (3)' tab selected. On the left, there's a 'Test data' section with a dropdown menu set to 'High value profile'. A red box highlights this dropdown, and a red circle with the number '1' is placed over it. To the right, there's a message: 'Want to try out your decision? Run your decision model to ensure you have it set up correctly.' Below this are several input fields for a customer profile, each with a dropdown arrow. A red box highlights the 'Run' button at the bottom, and a red circle with the number '2' is placed over it.

You should see the following result:

8 - Deploy the decision service

1. Click **SkyTalk customer retention DS** in the breadcrumb menu.

The screenshot shows the IBM Cloud Pak | Automation interface. The top navigation bar includes 'IBM Cloud Pak | Automation', a user icon, and a three-dot menu. Below it, the breadcrumb menu shows 'Business Automations / SkyTalk customer retention DS / SkyTalk retention DS / Retention offer'. The main content area has tabs for 'Modeling (9)', 'Error report (0)', 'Run (3)' (which is selected and highlighted in blue), and 'View history'. On the left, there's a 'Test data' section with a dropdown set to 'High value profile' and a 'Customer' section. On the right, there's a 'High value profile' card with a timestamp '3/23/2022, 4:39:36 PM' and a 'Decision output' section. A 'Show JSON output' link is at the top right of the card.

2. Select the **Share changes** tab.

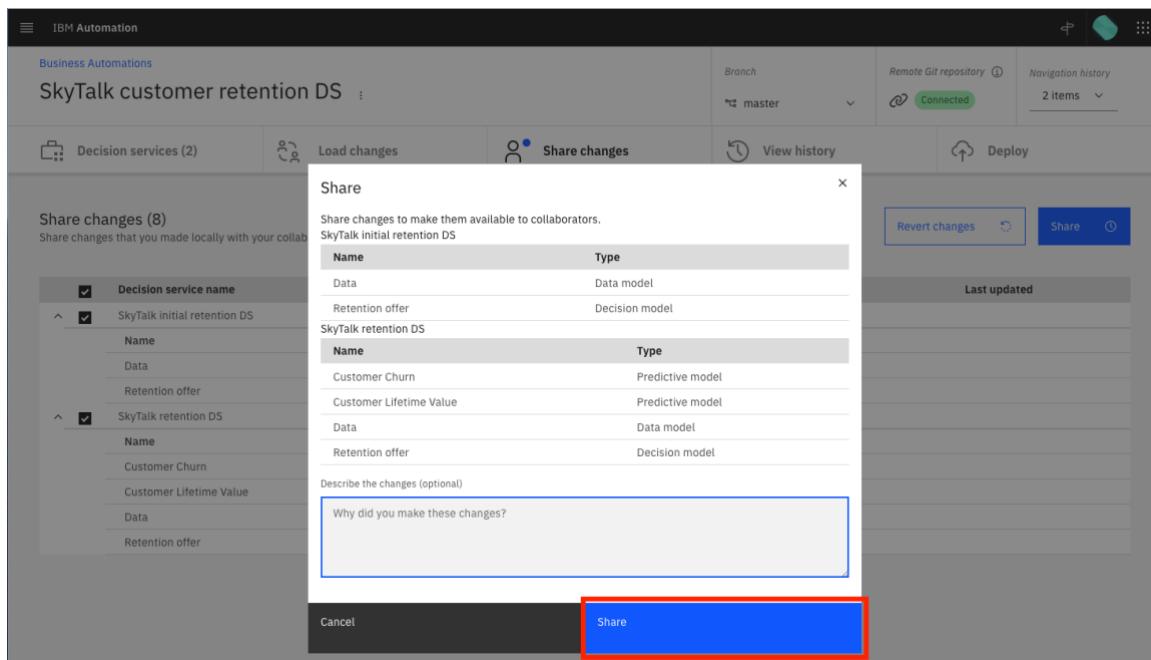
The screenshot shows the 'Share changes' tab selected in the top navigation bar of the IBM Cloud Pak | Automation interface. The tab bar also includes 'Decision services (2)', 'Load changes', 'View history', and 'Deploy'. Below the tabs, there's a search bar and buttons for 'Recently updated', 'Browse samples', 'Import', and 'Create'. The main content area displays two decision services: 'SkyTalk initial retention DS' and 'SkyTalk retention DS', each with a 'Sample' button and a 'Machine learning customer loyalty' link. A red box highlights the 'Share changes (2)' tab label.

3. Click the **select all changes** box (1) and then **Share** (2).

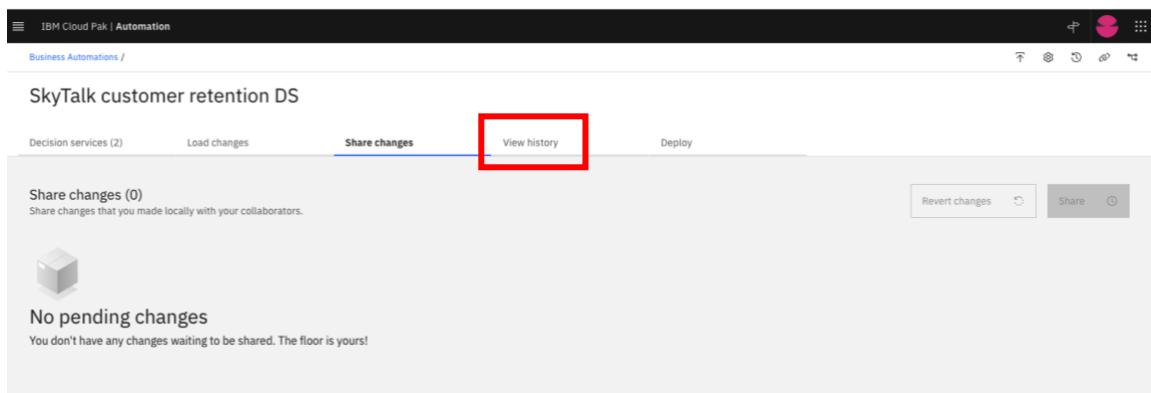
The screenshot shows the 'Share changes' table in the IBM Cloud Pak | Automation interface. The table header includes columns for 'Decision service name', 'Updated artifacts', 'Details', and 'Last updated'. A red box labeled '1' highlights the 'Select all changes' checkbox in the first row. Another red box labeled '2' highlights the 'Share' button in the same row. The table lists changes for two decision services: 'SkyTalk initial retention DS' and 'SkyTalk retention DS', detailing updated artifacts like 'Name', 'Data', and 'Retention offer', along with their types and details.

Decision service name	Updated artifacts	Details	Last updated
SkyTalk initial retention DS	3	Decision service added	
Name	Type		
Data	Data model	Artifact added	
Retention offer	Decision model	Artifact added	
SkyTalk retention DS	5	Decision service added	
Name	Type		
Customer Churn	Predictive model	Artifact added	
Customer Lifetime Value	Predictive model	Artifact added	
Data	Data model	Artifact added	
Retention offer	Decision model	Artifact added	

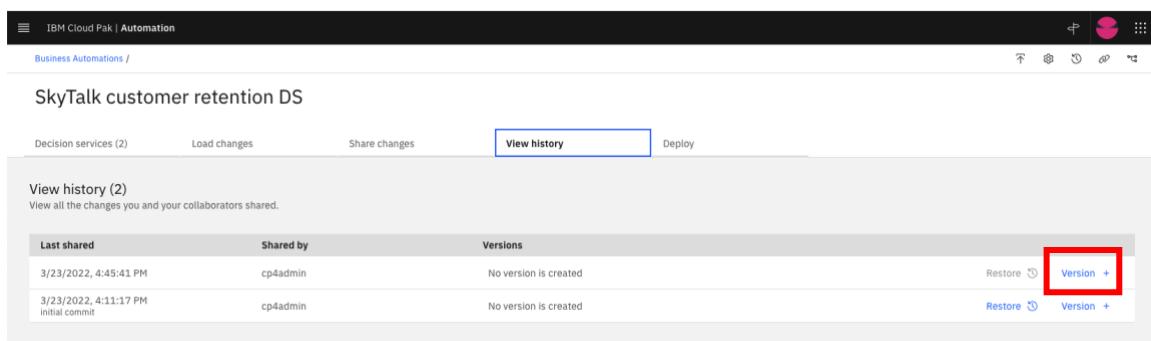
- Click **Share** to push the updates to the git repository.



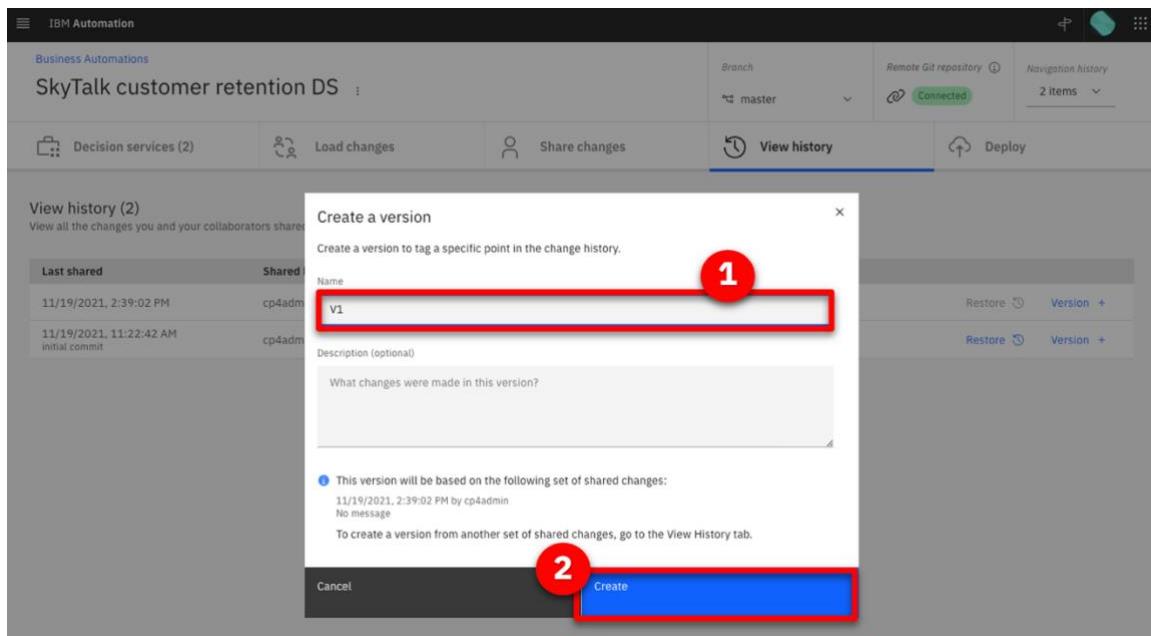
- Select the **View history** tab.



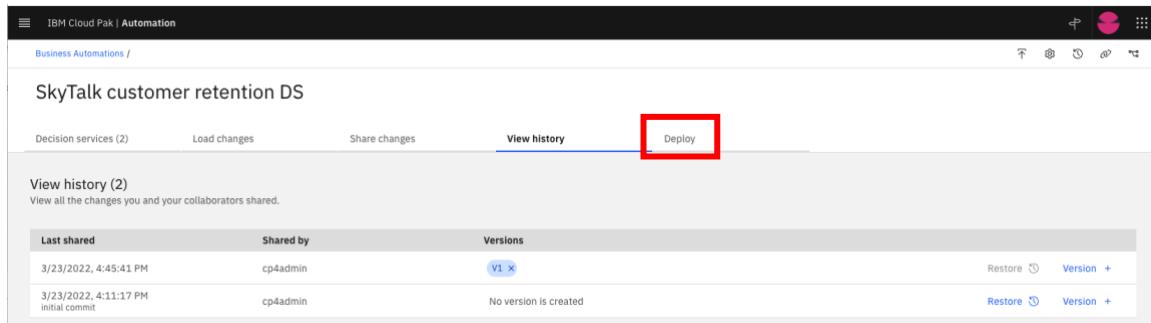
- Refresh the page and click **Version +** for the latest shared history.



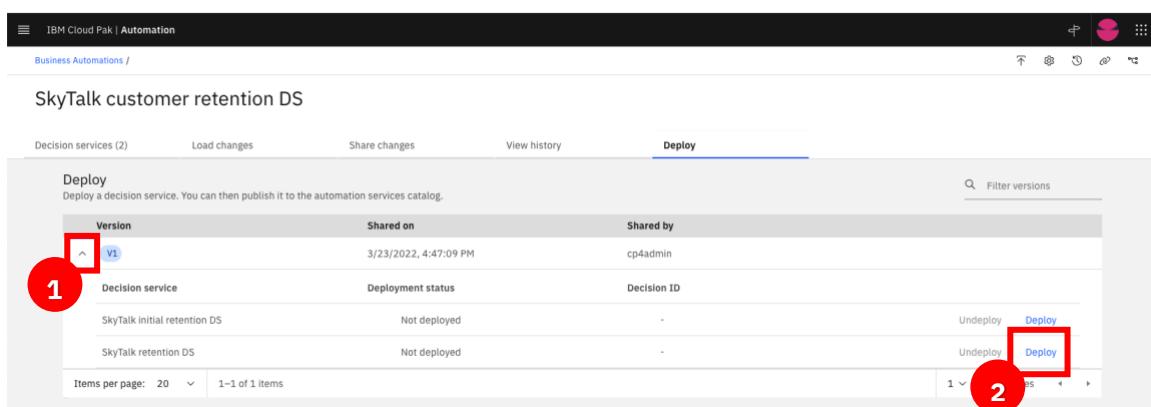
7. Enter “V1” as the version name (1) and click **Create** (2).



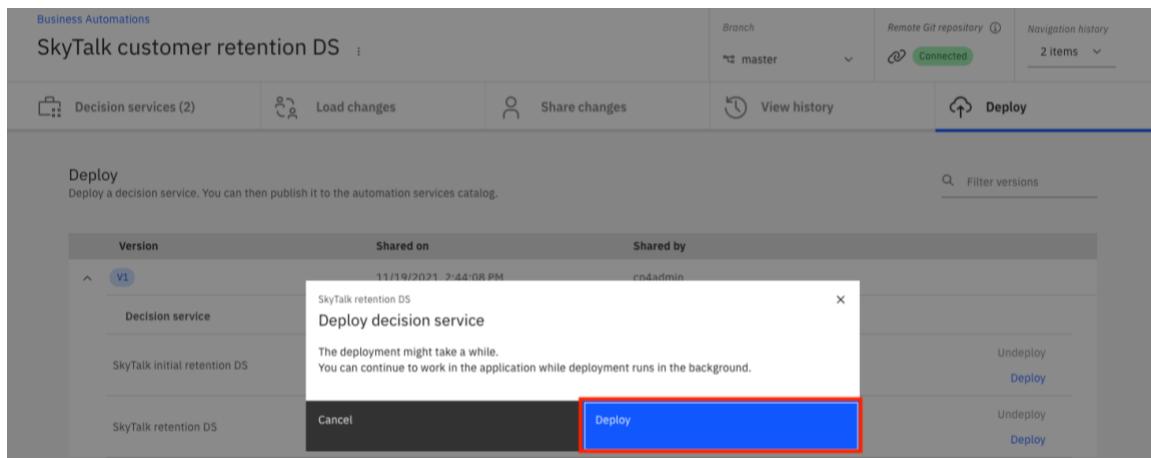
8. Click the **Deploy** tab.



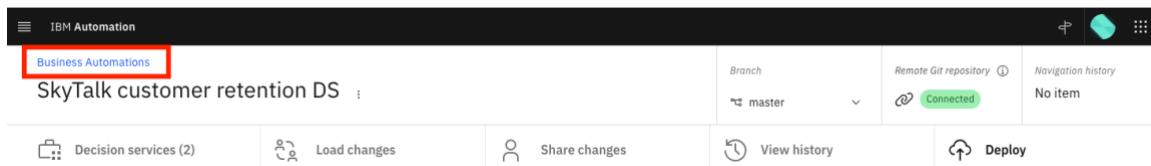
9. Expand **V1** (1) and click **Deploy** (2) for the **SkyTalk retention DS** row.



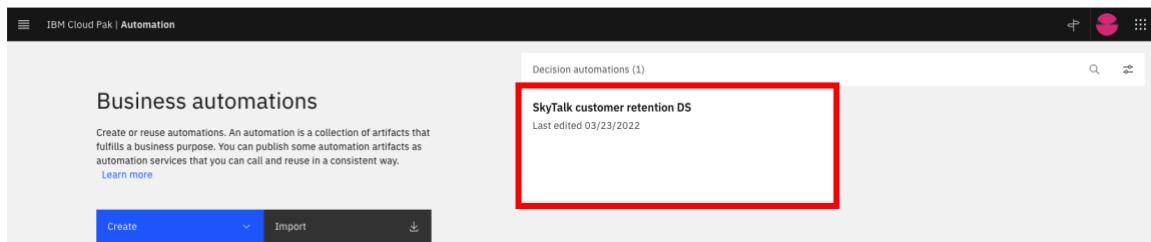
10. Click **Deploy** to confirm.



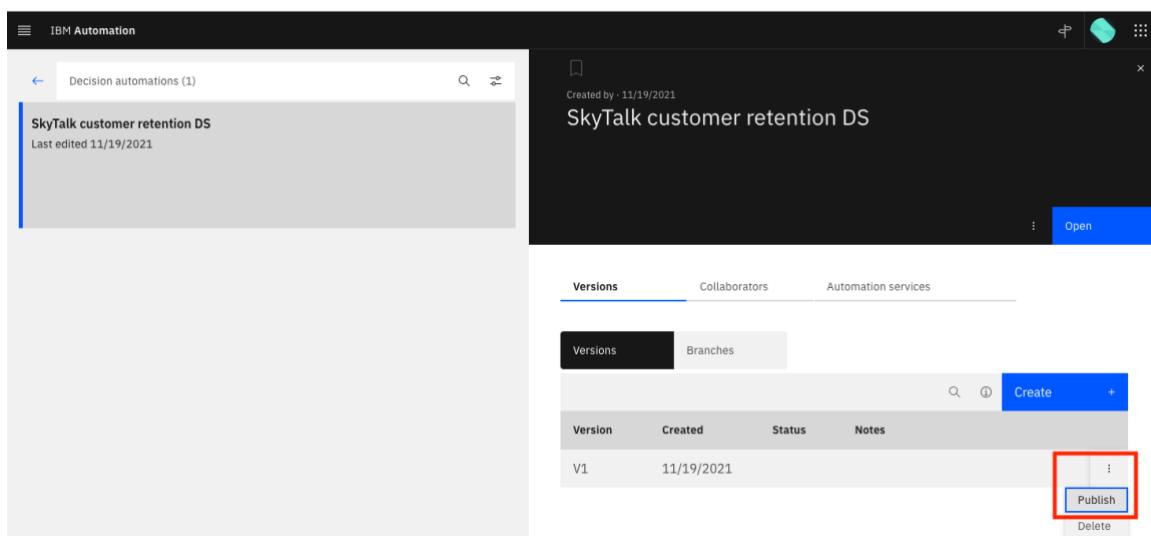
11. Wait for the deployment to finish. Then, click **Business Automations**.



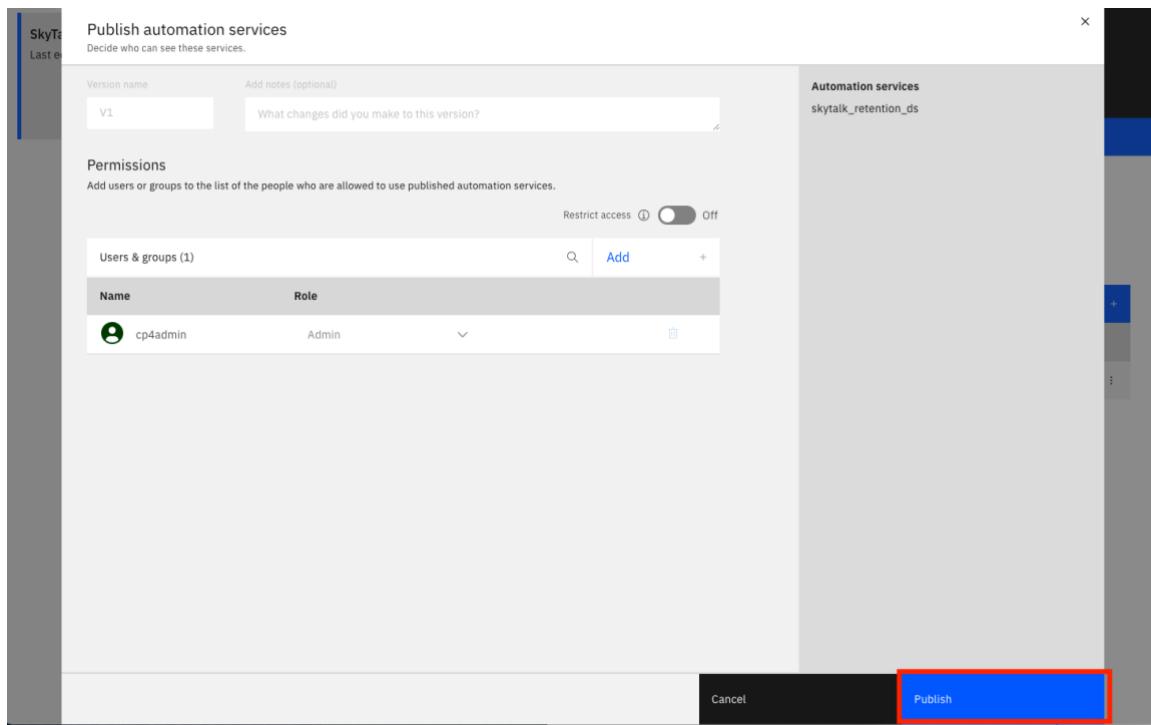
12. Click the **SkyTalk customer retention DS** tile.



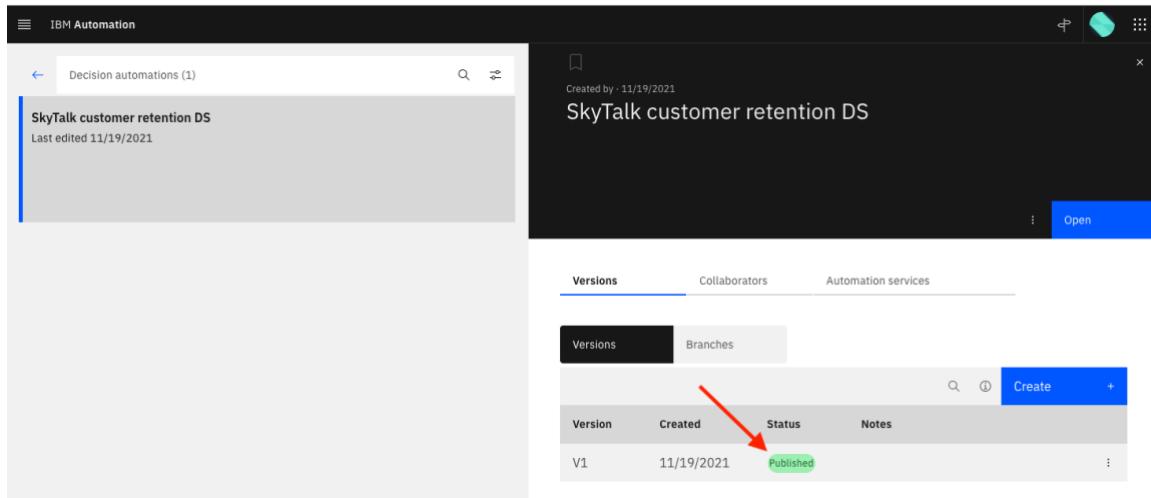
13. The last deployed service displays. Click **Publish**.



14. Click **Publish**.



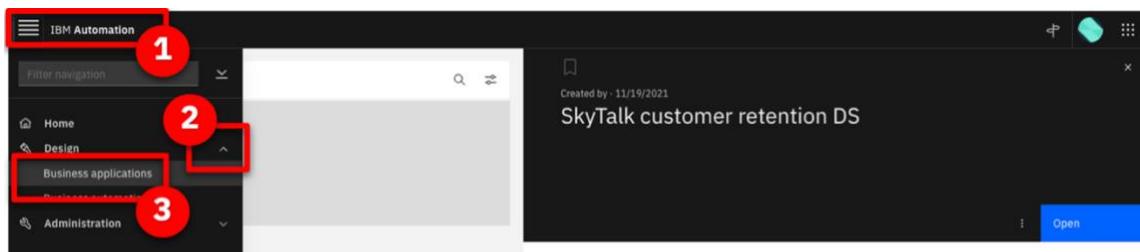
15. Ensure the service appears as **Published**.



9 - Configure Application Designer and import the client application

Prior to performing this step, make sure you have downloaded the [SkyTalk_call_center_application_21.0.3_Vxx.twx](#) file. This file is required to set up the ADS decision service.

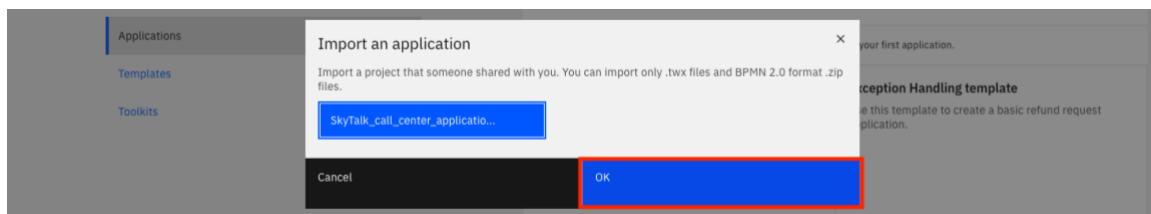
1. Open the **top menu** (1), expand **Design** (2), and click **Business applications** (3).



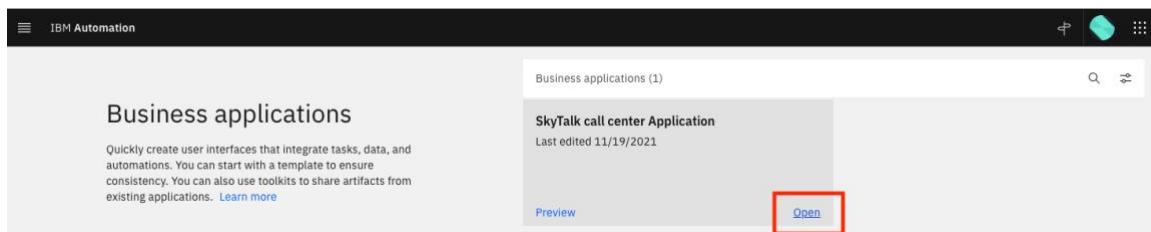
2. Click **Import**.

3. Click **Browse**. Select the **SkyTalk_call_center_application_21.0.3_Vxx.twx** file and then click **Open**.

4. Click **OK**.



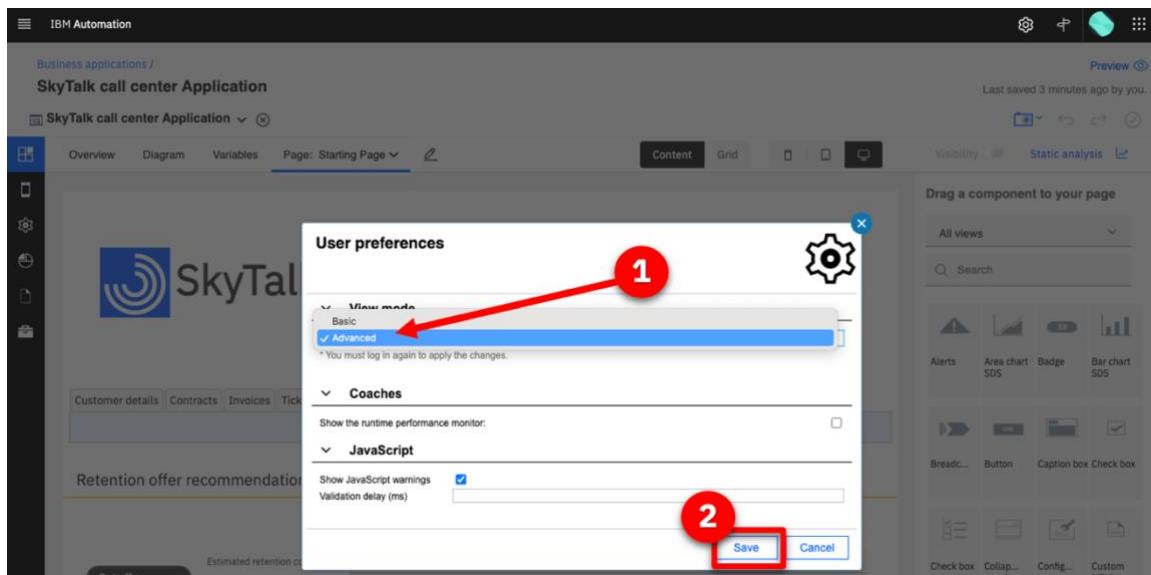
5. After the import, hover the mouse over the **SkyTalk call center Application** tile and click **Open**.



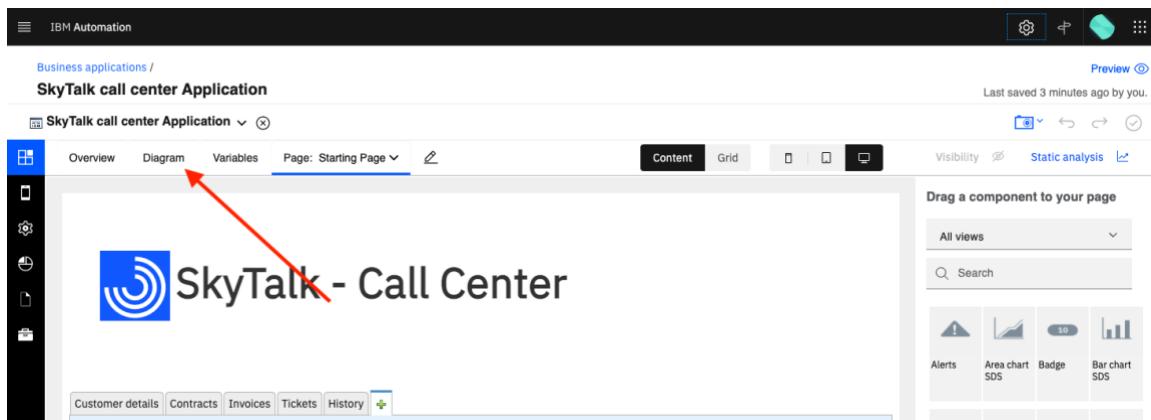
6. Click the **gear** icon.



- Select the **Advanced** view mode (1) and click **Save** (2).



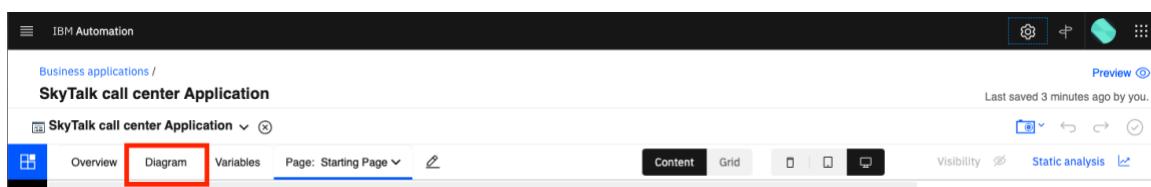
- Refresh the page and ensure the **Advanced** menus are accessible.



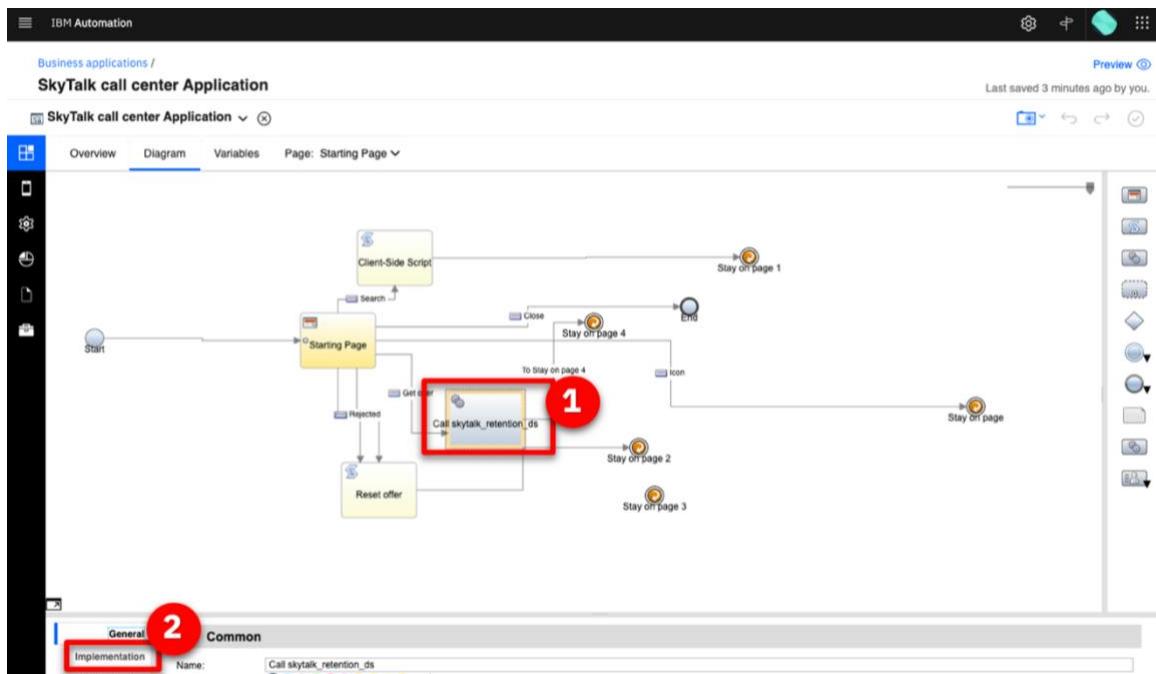
10 - Reconnect the application to the decision service

This step must be performed each time a new version of SkyTalk_rentention_DS is deployed. Make sure only the latest deployed DS is published to prevent data renaming issues when reimporting the new service.

- Click the **Diagram** tab.



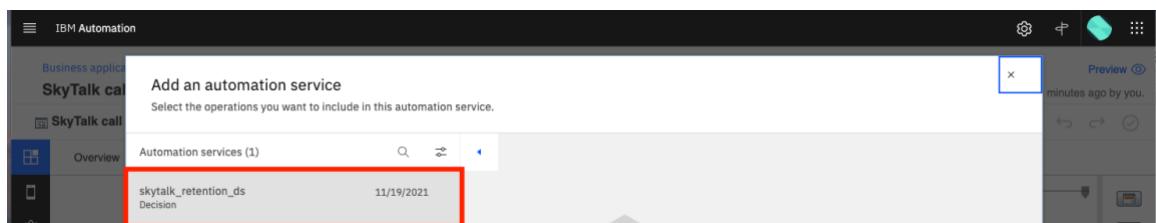
- Click the **SkyTalk_retenion_ds** node (1), then click the **Implementation** tab (2).



- Click **New...**



- Select **skytalk_retenion_ds**.



- Click **Add**.

Add an automation service

Select the operations you want to include in this automation service.

Automation services (1)

skytalk_retention_ds	Decision	10/13/2021
1	1 of 1 pages	< >

skytalk_retention_ds

V2 (last published)

Purpose
This decision service has to be connected to two ML models. Define them using an AutoAI experiment on the datasets 'customer'... [See more](#)

All operations (1) Selected (1)

<input checked="" type="checkbox"/> Operation	Description
<input checked="" type="checkbox"/> retentionOffer	

Add (1)

6. Select **retentionOffer** (1) and click **X** to close the view that appears (2).

IBM Cloud Pak | Automation

Business applications / SkyTalk call center Application

skytalk_retention_ds Service

Automation Service

1

2

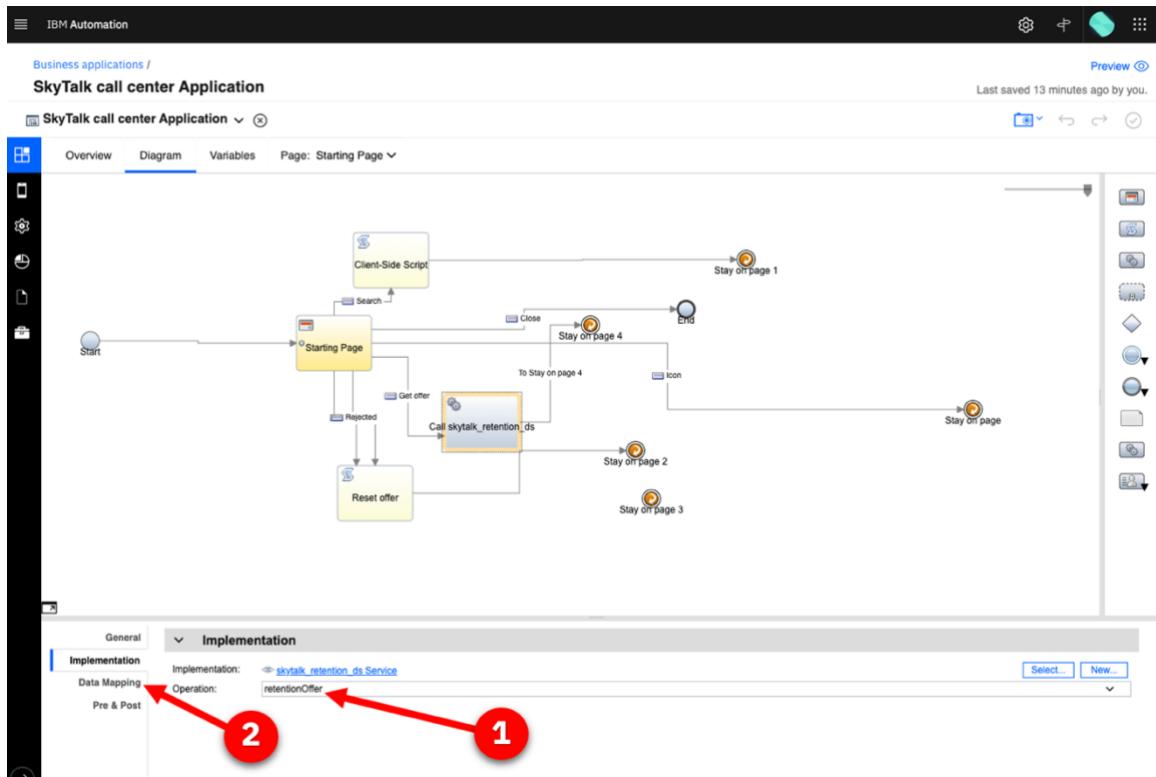
Details

Operation name: retentionOffer

Description: Execute retentionOffer

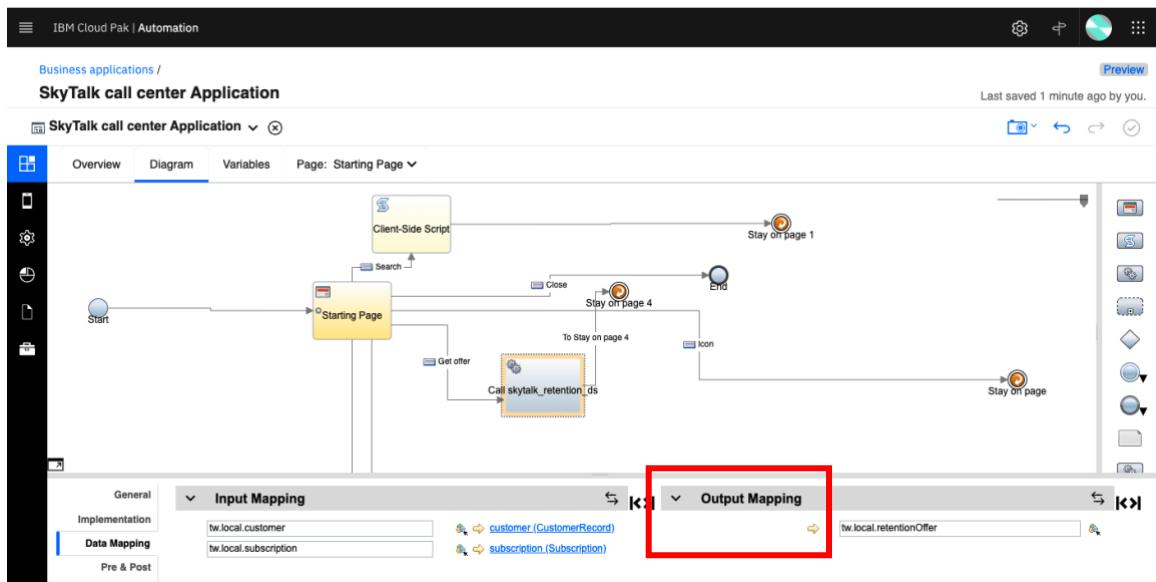
Documentation:

7. Make sure **Operation** is set to **retentionOffer** (1). Select the **Data Mapping** tab (2).

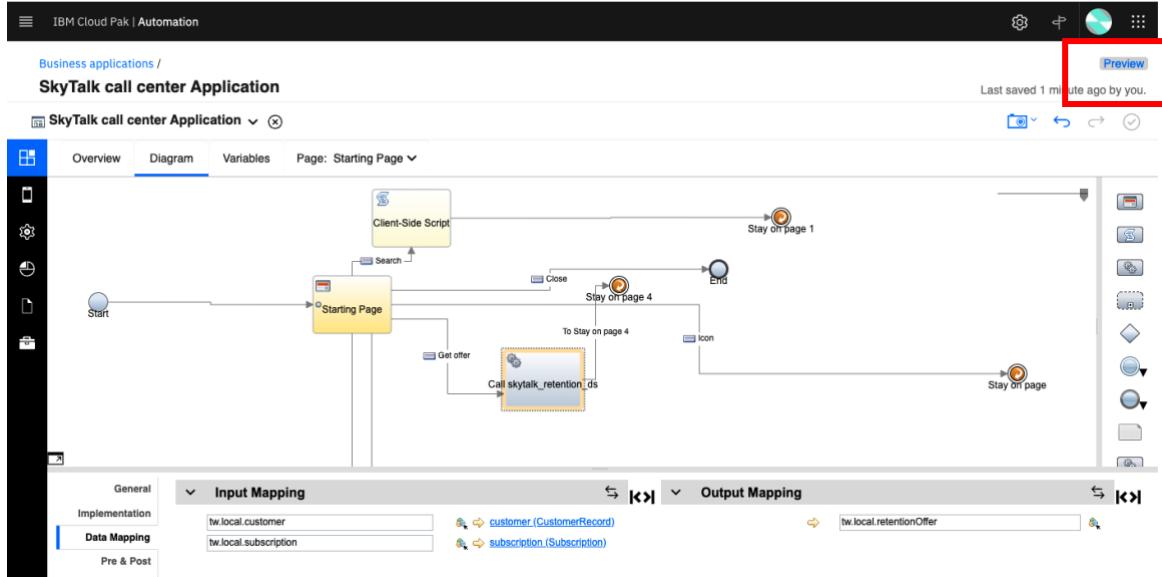


8. Ensure there are no highlighted errors in the data mapping section.

Note: There is an GUI bug. The Output Service variable is not displayed, but it does not impact the demo.



9. Click **Preview** to test the application.



Note: Accept the security checks and enlarge the panel to see the entire view.

10. Enter “Peter Carter” (1) and click **Search** (2).

The screenshot shows the 'SkyTalk - Call Center' application. At the top, there's a header with the title 'SkyTalk - Call Center' and a blue logo. Below the header is a navigation bar with links: Customer details, Contracts, Invoices, Tickets, and History. The main content area has a search bar with the placeholder 'Search customer' and a value 'Peter Carter'. To the right of the search bar is a red circle containing the number '1'. Next to the search bar is a 'Search' button with a magnifying glass icon. To the right of the search button is another red circle containing the number '2'. Below the search bar, there are three sections: 'Customer Information', 'Customer-provided personal data', and 'Subscription details'. Each section contains various input fields like gender, name, email, age, situation, etc.

11. Click **Get offer**.

The screenshot shows the SkyTalk - Call Center software interface. At the top, there is a logo and a search bar with the text "Peter Carter". Below the search bar, it says "1 customer found". The main area is divided into three sections: "Customer information", "Customer-provided personal data", and "Subscription details". Under "Customer information", fields include Gender (M), Name (Peter Carter), Email address (pet.carter78@outRange.com), Mobile number (+33 (4) 92 96 61 61), and Location (urban). Under "Customer-provided personal data", fields include Age (49), Situation (5), Size of household (0), Estimated income (64,000), and a checked checkbox for "Car owner ?". Under "Subscription details", fields include Rate plan (Essentials), Local calls (30), Long distance calls (40), International calls (30), Usage (90), and Payment method (CC). Below these sections, there is a "Retention offer recommendation" section. It shows a "Get offer" button (which is highlighted with a red box) and a note that the yearly retention cost is 0 US\$. A red box also highlights the "Retention offer details" section, which contains the text "Offer Peter Carter a 10% discount on his current subscription". At the bottom, there is a "Customer response" section with "Accepted" and "Rejected" buttons, and a "Close" button.

12. The offer displays, and the demo is ready.

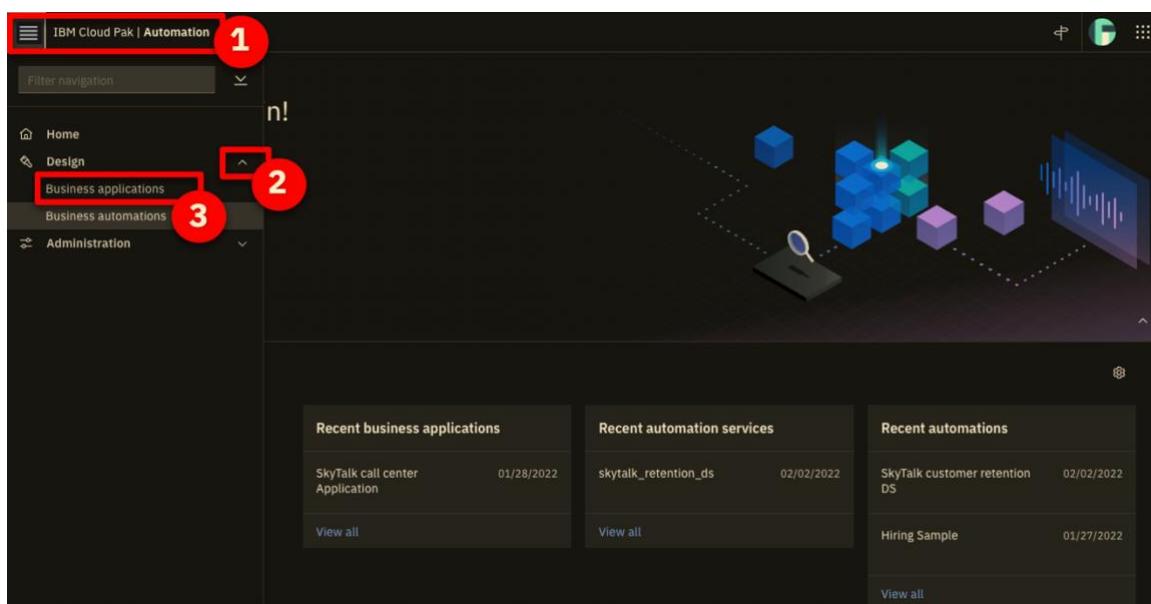
This screenshot shows a detailed view of the "Retention offer recommendation" dialog box. It includes the "Get offer" button, the yearly retention cost (0 US\$), and the "Retention offer details" section, which is highlighted with a red box and contains the text "Offer Peter Carter a 10% discount on his current subscription". Below this, there are "Customer response" buttons for "Accepted" (green) and "Rejected" (red). In the bottom right corner, there is a "Close" button.

PREPARE TO GIVE THE DEMO

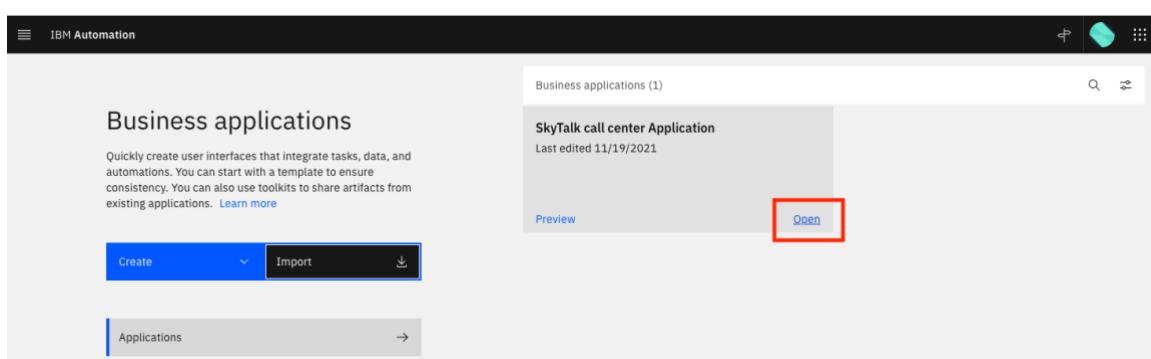
Open the following resources before starting the demo:

1 - SkyTalk call center application

1. Log in to Cloud Pak for Business Automation. Use the bookmark and credentials that were saved during the environment initialization. (See step 13 of section **1 - Provision a Cloud Pak for Business Automation environment**.)
2. Open the **top menu** (1), expand **Design** (2), and click **Business applications** (3).



3. Hover the mouse over the **SkyTalk call center Application** tile and click **Open**.



4. Click the **Preview** to open the application.



5. The **SkyTalk - Call Center** application opens.

SkyTalk - Call Center

Customer details Contracts Invoices Tickets History

Search customer No customer found

Customer information:

Gender	Age	Rate plan
Name	Situation	Local calls
Email address	Size of household	Long distance calls
Mobile number	Estimated income	International calls
Location	<input type="checkbox"/> Car owner ?	Usage

Customer-provided personal data:

0	0	0
0	0	0
0	0	0

Subscription details:

0	0	0
0	0	0
0	0	0

Retention offer recommendation

Estimated retention cost: 0
Retention recommendation: 0

Close

2 - IBM Cloud Pak for Business Automation

1. Return to the Cloud Pak for Business Automation home page by opening the **top menu** (1) and selecting **Home** (2).

IBM Cloud Pak | Automation

1

2

Filter navigation

Home

Design

Business applications

Business automations

Administration

Talk - Call Center

Drop content here

Alerts Area chart SDS Badge Bar chart SDS

Breadc... Button Caption box Check box

2. The Cloud Pak for Business Automation home page opens.

The screenshot shows the IBM Automation home page. At the top, it says "Welcome, cp4admin!". Below that is a "Learn more" section about IBM Cloud Paks for Automation. The main area is titled "Overview" and features three sections: "Recent business applications", "Recent automation services", and "Recent automations".

Recent business applications	Recent automation services	Recent automations
SkyTalk call center Application View all	skytalk_retention_ds View all	SkyTalk customer retention DS Hiring Sample View all

At the bottom left, there are links for "Support" and "Documentation". On the right side of the page, there is a decorative graphic of two people standing on a gear, surrounded by icons representing automation and connectivity.

3. Log in to Cloud Pak for Business Automation. Use the bookmark and credentials that were saved during the environment initialization. (See step 13 of section **1 - Provision a Cloud Pak for Business Automation environment**.)

3 - Watson Studio

1. Go to the [IBM Cloud](#) and log in using your personal credentials. Ensure you are in your Cloud Pak for Data instance. Click the **resource list** icon and then select **Watson Studio-xx (2)**.

The screenshot shows the IBM Cloud Resource list interface. At the top, there's a navigation bar with 'IBM Cloud', a search bar, and various menu items like Catalog, Docs, Support, Manage, and a user profile. Below the navigation is a header with 'Resource list' and several filter options. The main area is a table with columns: Name, Group, Location, Product, Status, and Tags. The table lists various resources under categories like Devices, VPC Infrastructure, Clusters, Container Registry, Satellite, Cloud Foundry apps, Cloud Foundry services, Services and software, Storage, and Network. A specific entry, 'Watson Studio-xx', is highlighted with a red box and labeled '2'. To the left of the table, there's a sidebar with a tree view of resource categories.

2. Click **Launch in IBM Cloud Pak for Data**.

The screenshot shows the 'Watson Studio in Cloud Pak for Data' launch page. It features a 'Manage' tab and a 'Plan' section. The main content area is titled 'Watson Studio in Cloud Pak for Data' and includes a description: 'Watson Studio is one of the core services in Cloud Pak for Data as a Service. Build, deploy and manage AI models, and optimize decisions on IBM Cloud Pak for Data.' Below this is a large 3D diagram showing 'IBM Watson Studio in Cloud Pak for Data' as a central component, supported by 'IBM Cloud Pak for Data Unifying platform' and 'IBM Cloud Base cloud infrastructure'. At the bottom, there's a note: 'IBM Watson Studio is part of IBM Cloud Pak for Data and serves as the data science capability of the data fabric architecture.' A prominent blue button at the bottom is labeled 'Launch in IBM Cloud Pak for Data', which is also highlighted with a red box.

3. **Watson Studio** opens.

The screenshot shows the 'IBM Watson Studio' interface. On the left, there's a sidebar with 'Quick navigation' sections for Projects, Deployments, Support (Documentation, FAQ, Share an idea, Support center), and What's new. The main area has a 'Welcome, Stu!' message. It features three main panels: 'Overview' (Projects, New in gallery, Train AutoAI and reference model), 'Notifications' (with three 'Online deployment ready' notifications), and 'Deployments' (with one entry for 'SkyTalk production space'). A large graphic in the background depicts a complex network of data cubes and a magnifying glass over a central cluster. In the top right corner, there's a 'Feedback' link.

4 - SkyTalk Customer retention policy.pdf

1. Click to open [SkyTalk customer retention policy.pdf.](#)

AFTER EACH DEMO

1 - Un-deploy the ML models

At the end of the demonstration, un-deploy the two ML services.

1. Un-deploy the two ML services from the deployment space (select the **SkyTalk production space**).

The screenshot shows the IBM Watson Studio interface. At the top, there's a navigation bar with 'IBM Watson Studio', 'All', a search bar, and user account information. Below the header is a 'Welcome, Laurent!' message and several quick access links: 'Learn by example', 'Work with data', and 'Extend your capabilities'. The main area has a dark background with a central graphic of a computer monitor displaying a waveform and several 3D cubes. On the left, there's a sidebar with 'Quick navigation' and tabs for 'Projects', 'Deployments' (which is selected), and 'Support'. The main content area is titled 'Overview' and contains three cards: 'Projects' (with a row for 'SkyTalk customer retention'), 'Notifications' (with a green checkmark and text about online deployment ready), and 'Deployments' (with a row for 'SkyTalk production space'). The 'Deployments' row is highlighted with a red box and a red number '1' above it. To the right of the main content is a sidebar for file uploads.

2. Click the **Deployments** tab (1). In the **Lifetime value** row, click the **three dots** in the right-hand side and select **Delete** (2).

Click **Delete** again to confirm the deletion. Repeat step 2 to delete the deployment for the churn prediction row.

Note: As soon as the two services are deleted, your Watson ML Lite subscription quota stops being depleted.

This screenshot shows the 'Deployments' page within the 'SkyTalk production space'. The top navigation bar includes 'Overview', 'Assets', 'Deployments' (which is highlighted with a red box and a red number '1'), 'Jobs', and 'Manage'. A search bar at the top says 'What deployments are you looking for?'. Below the search bar is a table titled 'Deployments (2)'. The table columns are 'Name', 'Type', 'Status', 'Asset', 'Tags', and 'Last modified'. Two rows are listed: 'Lifetime value' (Online, Deployed, 'SkyTalk lifetime value prediction - P1 XGB Regressor', Nov 22, 2021 3:26 PM) and 'churn' (Online, Deployed, 'SkyTalk churn prediction - P1 LGBM Classifier', Nov 22, 2021 3:26 PM). A context menu is open over the 'churn' row, with options: 'Edit configuration' (highlighted with a blue box and a red number '2'), 'Edit serving name', 'Replace asset', and 'Delete'. A red box highlights the 'Delete' option. To the right of the table, there's a note: 'Stay on the page until upload completes. Incomplete uploads are cancelled.' and a file upload area with a dashed border.

- Click **IBM Watson Studio** to return to the Watson Studio home page.

The screenshot shows the top navigation bar of the IBM Watson Studio interface. The 'IBM Watson Studio' tab is highlighted with a red box. Other tabs like 'Buy', 'Laurent Tarin's Account', and various icons are visible.

- Click the **SkyTalk customer retention** project.

The screenshot shows the 'Overview' page for the 'SkyTalk customer retention' project. On the left, there's a sidebar with 'Quick navigation', 'Projects', 'Deployments', 'Support', 'Documentation', 'FAQ', 'Share an idea', and 'Manage tickets'. The main area has three sections: 'Projects' (showing a card for 'SkyTalk customer retention' with a red box around it), 'Notifications' (listing two online deployment ready notifications), and 'Deployment spaces' (listing 'SkyTalk production space' with a red box around it). A blue circular icon with a play button is in the bottom right.

- Click the **Assets** tab.

The screenshot shows the 'Assets' tab selected in the 'SkyTalk customer retention' project. The top navigation bar shows 'IBM Watson Studio / SkyTalk customer retention'. The 'Assets' tab is highlighted with a red box. Other tabs include 'Overview' (which is active), 'Jobs', and 'Manage'.

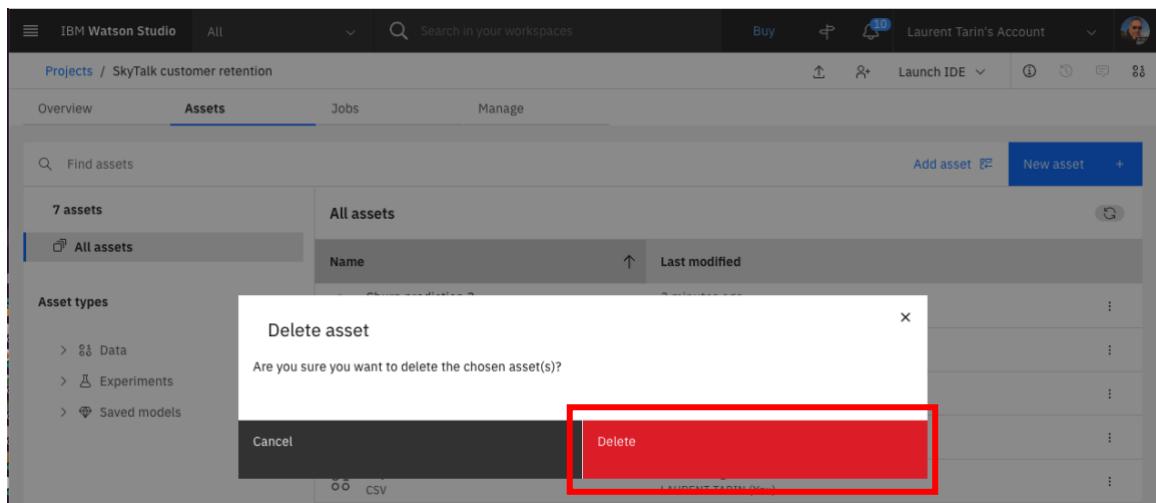
- Click the **three dots** on the right-hand side of the **Churn prediction 2 AutoAI** experiment.

The screenshot shows the 'Assets' page with the 'All assets' tab selected. It lists two experiments: 'Churn prediction 2 AutoAI experiment' (modified 1 minute ago) and 'SkyTalk churn prediction AutoAI experiment' (modified 6 days ago). The first experiment's details panel is open, showing its name and a red box around the three-dot menu icon at the end of the row.

- Click **Delete**.

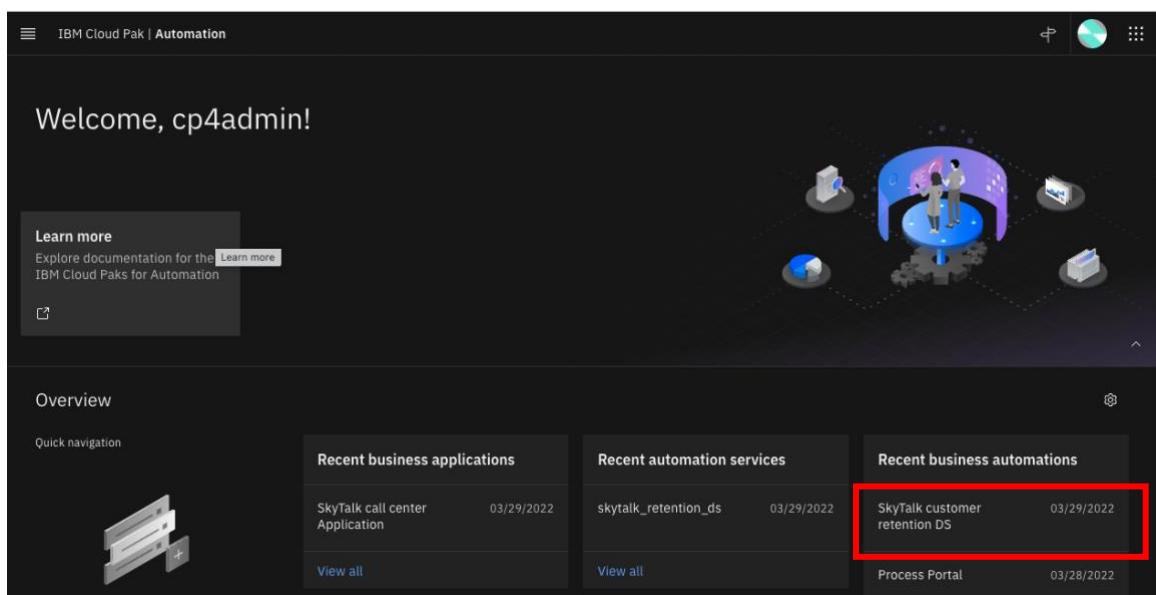
The screenshot shows the 'Assets' page with the 'All assets' tab selected. It lists the same two experiments. The 'Churn prediction 2 AutoAI experiment' row has a red box around the 'Delete' button in its details panel.

8. Click **Delete** again to confirm the removal.

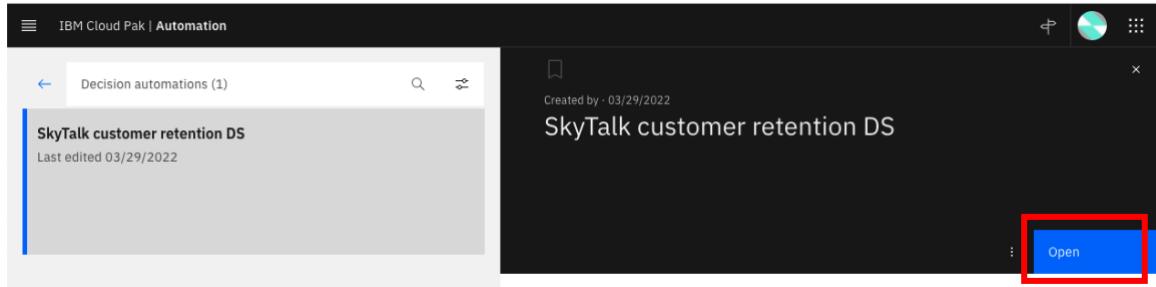


2 - Reset the demo to its beginning state

1. Go to the **Cloud Pak for Automation** browser tab you previously opened. Click **SkyTalk customer retention DS**.



2. Click **Open**.



3. Select the **SkyTalk initial retention DS** tile.

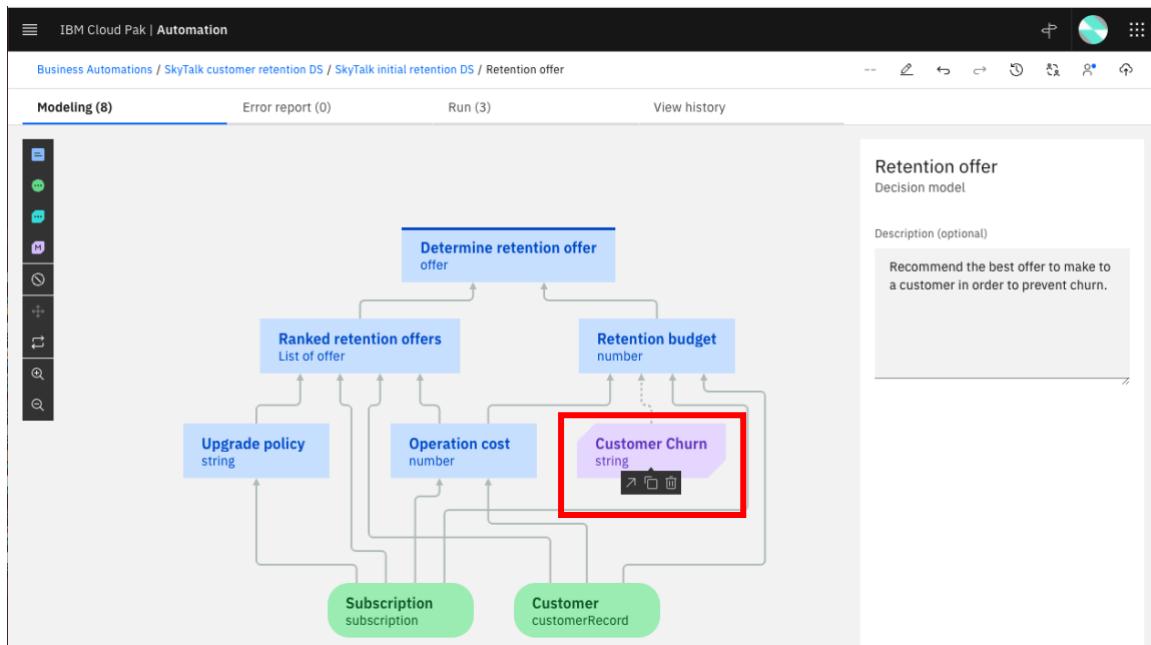
SkyTalk customer retention DS

The screenshot shows the 'SkyTalk customer retention DS' automation details page. The 'Decision services' tab is selected. A list of decision services is shown, with the 'SkyTalk initial ...' service highlighted with a red box.

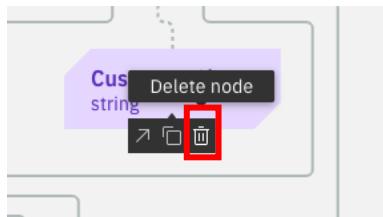
4. Click **Retention offer**.

The screenshot shows the 'Models' section in the IBM Cloud Pak | Automation interface. A list of models is shown, with the 'Retention offer' model highlighted with a red box.

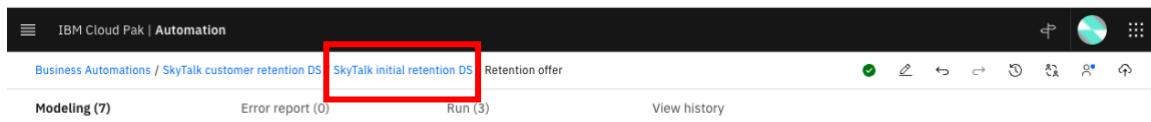
5. Hover the mouse over the purple **Customer Churn** box.



- Click the **trash** icon to remove the node.



- Click **SkyTalk initial retention DS** in the breadcrumb navigation.



- Click the **three dots** icon that appears when you move your cursor to the right-hand side of the **Customer Churn** predictive model row.

The screenshot shows the Models page in the IBM Cloud Pak | Automation interface. It lists two predictive models: 'Customer Churn' and 'Retention offer'. The 'Retention offer' row has a three dots icon highlighted with a red box. The table has columns for Name, Last updated by, and Last updated at.

Name	Last updated by	Last updated at
Customer Churn	Me	Never shared
Retention offer Recommend the best offer to make to a customer in order to prevent churn.	cp4admin	3/29/2022, 10:52:28 AM

9. Click Delete.

The screenshot shows the 'Models' tab in the IBM Cloud Pak | Automation interface. The table lists two items: 'Customer Churn' and 'Retention offer'. The 'Retention offer' row has a context menu open, with the 'Delete' option highlighted by a red box. The table includes columns for Name, Last updated by, and Last updated at.

Name	Last updated by	Last updated at
Customer Churn	Me	Never shared
Retention offer Recommend the best offer to make to a customer in order to prevent churn.	cp4admin	3/29/2022, 10:52:28 AM

10. Click Delete to confirm.

A confirmation dialog box titled 'Predictive models' and 'Confirm deletion' is displayed. It contains the message: 'Are you sure you want to delete this decision artifact? If you do not share your changes, the decision artifact will only be deleted from your local repository.' Two buttons are visible: 'Cancel' and 'Delete', with 'Delete' highlighted by a red box.

11. You should only see this.

The screenshot shows the 'Models' tab after the deletion of 'Customer Churn'. Only the 'Retention offer' row remains, which is highlighted by a red box. The table structure is identical to the previous screenshot.

Name	Last updated by	Last updated at
Retention offer Recommend the best offer to make to a customer in order to prevent churn.	cp4admin	3/29/2022, 10:52:28 AM

PREPARATION REQUIRED TO GIVE THIS DEMO AGAIN

Before starting a new demo, you must redeploy the two ML models you previously created.

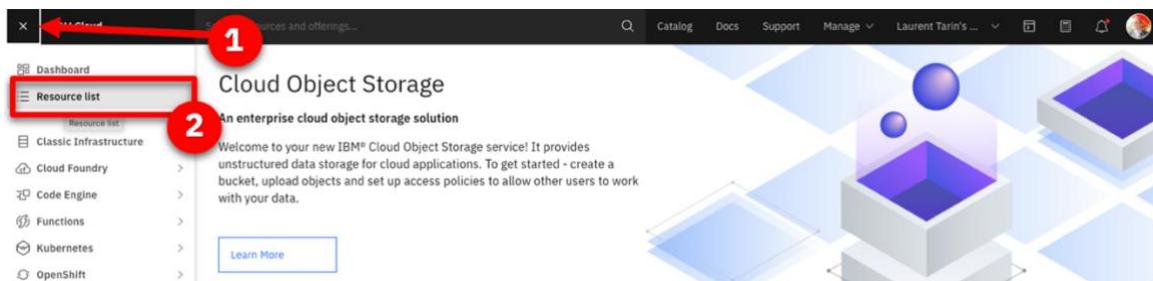
Note: Anytime your ML services are deployed, your Machine Learning Lite subscription quota is consumed. To avoid running out of Watson ML quota, un-deploy your ML services whenever you are not practicing or giving this demo.

The 'Reset the demo to its beginning state' step on this page below contains the process to un-deploy the services and stop the billing process.

Redeploy your ML services approximately 15 minutes prior to practicing or giving this demo.

1 - Redeploy both ML Models in Watson Studio

1. Go to [IBM Cloud](#).
2. Enter your **IBM ID**. If you do not have one, create a new one.
3. Click the **top menu** (1) and then **Resource list** (2).



4. Click **Watson Studio-2d** in the **Software and services** section.

A screenshot of the 'Resource list' table in the IBM Cloud dashboard. The table has columns for Name, Group, Location, Product, Status, and Tags. The 'Name' column shows a hierarchy of resources. Under 'Services and software', there are entries for 'Machine Learning-0m' and 'Watson Studio-2d'. The 'Watson Studio-2d' entry is highlighted with a red box and a red circle with the number '2'. The 'Status' column for 'Watson Studio-2d' shows 'Active'. The 'Product' column shows 'Machine Learning' for the first row and 'Watson Studio' for the second row. The 'Location' column shows 'London' for both rows. The 'Group' column shows 'default' for both rows. The 'Tags' column shows an empty list for both rows.

5. Click **Launch in IBM Cloud Pak for Data**.

The screenshot shows the IBM Cloud interface with a resource named 'Watson Studio-2d'. The 'Manage' tab is selected. Below it, there's a section titled 'Watson Studio in Cloud Pak for Data' with a description: 'Watson Studio is one of the core services in Cloud Pak for Data as a Service. Build, deploy and manage AI models, and optimize decisions on IBM Cloud Pak for Data.' At the bottom of this section is a blue button labeled 'Launch in IBM Cloud Pak for Data', which is highlighted with a red box.

6. From the Watson Studio environment, select the **SkyTalk production space** deployment space.

The screenshot shows the Watson Studio environment with a dark-themed dashboard. On the left, there are sections for 'Learn by example', 'Work with data', and 'Extend your capabilities'. The main area is titled 'Overview' with tabs for 'Projects', 'Notifications', and 'Deployments'. In the 'Notifications' tab, there is a green checkmark icon next to the text 'Online deployment ready' and 'The online deployment Lifetime value in space SkyTalk production space is ready to accept'. To the right of this, in the 'Deployments' tab, there is a row for 'SkyTalk production space' with a timestamp 'Nov 17, 2021 03:27 PM'. A red box highlights this row.

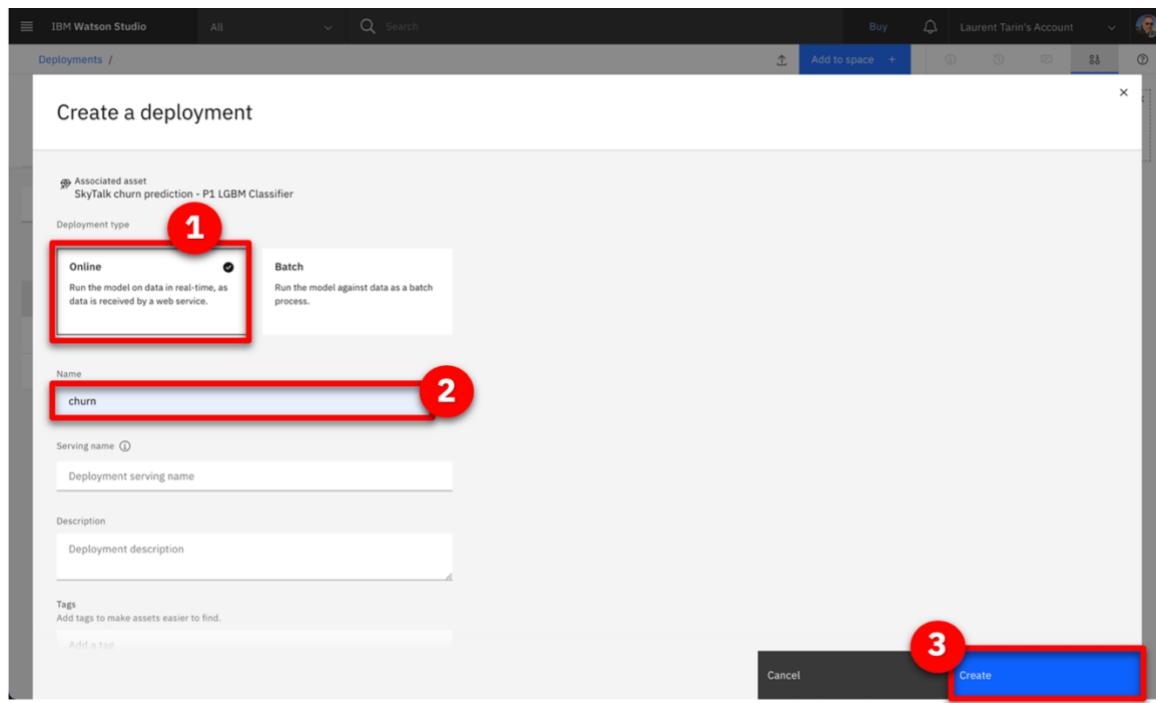
7. Select the **Assets** tab.

The screenshot shows the Watson Studio interface with the 'Assets' tab selected. The top navigation bar includes 'IBM Watson Studio', 'All', 'Search', and 'Laurent Tarin's Account'. Below the navigation is a search bar and a file upload area with the instruction 'Drop files here or browse for files to upload.' The main content area is titled 'SkyTalk production space' and shows tabs for 'Overview', 'Assets' (which is highlighted with a red box), 'Deployments', 'Jobs', and 'Manage'. There is also a note: 'Stay on the page until upload completes. Incomplete uploads are cancelled.'

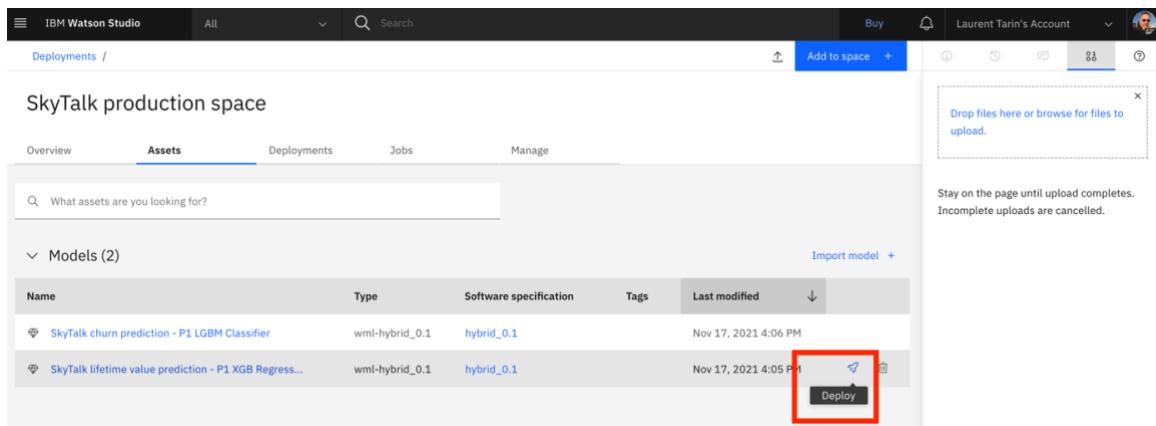
8. Deploy the **SkyTalk churn prediction - P1 LGBM Classifier** model by clicking its corresponding rocket icon.

The screenshot shows the 'Assets' tab for the 'SkyTalk production space'. The top navigation bar and search bar are visible. The main content area shows a table of models under the 'Models (2)' section. The first model listed is 'SkyTalk churn prediction - P1 LGBM Classifier', which has a 'Deploy' button highlighted with a red box. The table columns include 'Name', 'Type', 'Software specification', 'Tags', 'Last modified', and a small icon. A note on the right says 'Stay on the page until upload completes. Incomplete uploads are cancelled.'

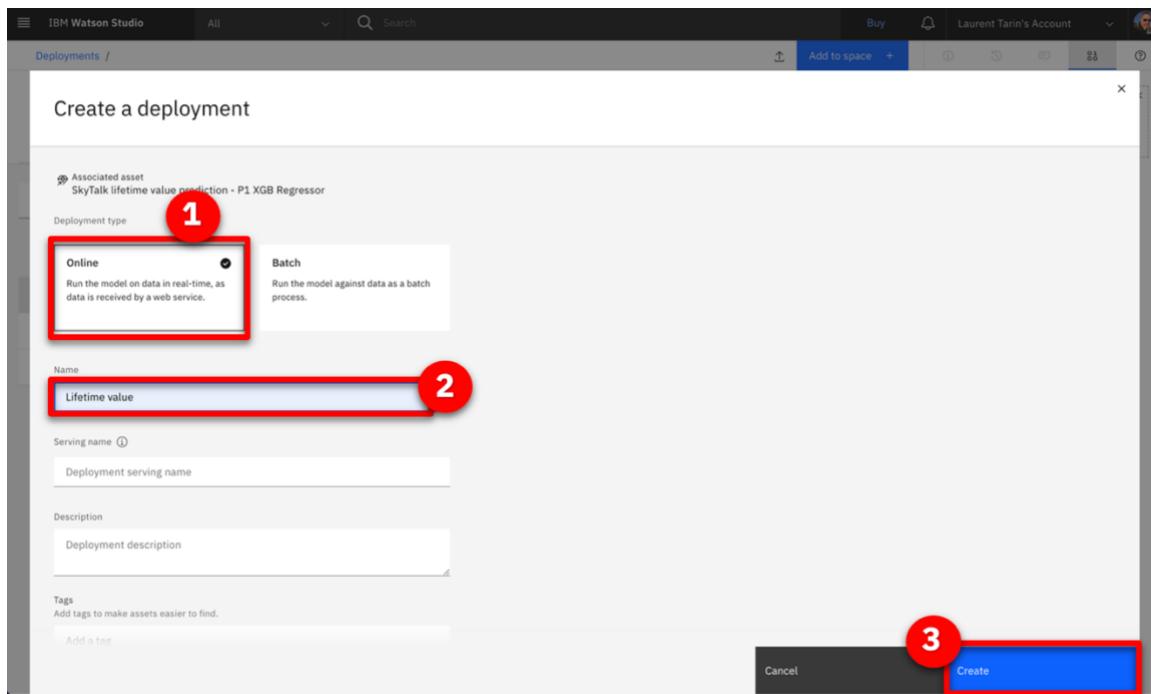
9. Select **Online** (1), name the deployment ‘**churn**’ (2), and click **Create** (3).



10. Deploy the **SkyTalk lifetime value prediction** model by clicking its corresponding rocket icon.



11. Select **Online** (1), name the deployment '**Lifetime value**' (2), and click **Create** (3).



12. Click the **Deployments** tab. Ensure the two services are deployed.

The screenshot shows the 'Deployments' tab in the IBM Watson Studio interface. The tab bar includes 'Overview', 'Assets', 'Deployments' (which is selected and highlighted with a red box), 'Jobs', and 'Manage'. Below the tab bar, there is a search bar with the placeholder 'What deployments are you looking for?'. Under the heading 'Deployments (2)', there is a table listing two services:

Name	Type	Status	Asset	Tags	Last modified
Lifetime value	Online	Deployed	SkyTalk lifetime value prediction - P1 XGB Regressor		Oct 12, 2021 2:47 PM
churn	Online	Deployed	SkyTalk churn prediction - P1 LGBM Classifier		Oct 12, 2021 2:46 PM

2 - Reconnect both ML models to ADS

1. Log in to the Cloud Pak for Business Automation instance.
2. Click the recent automation **Skytalk customer retention DS**.

Welcome, cp4admin!

Learn more

Explore documentation for the IBM Cloud Paks for Automation

Overview

Recent business applications

SkyTalk call center Application	01/28/2022
View all	

Recent automation services

skytalk_retention_ds	01/29/2022
View all	

Recent automations

SkyTalk customer retention DS	01/29/2022
View all	

3. Click **Open**.

Decision automations (1)

SkyTalk customer retention DS

Last edited 01/29/2022

Open

SkyTalk customer retention DS

Created by · 01/28/2022

Open

4. Click **SkyTalk retention DS**.

IBM Cloud Pak | Automation

Business Automations /

SkyTalk customer retention DS

Decision services (2)

Load changes Share changes (2) View history Deploy

Explore decision services (2)

All samples and decision services created in this project.

SkyTalk initial reten... : Sample Machine learning customer loyalty

SkyTalk retention DS : Sample Machine learning customer loyalty

Browse samples Import Create +

- In the **Models** tab, click the **Customer Churn** model.

The screenshot shows the 'Models' tab in the IBM Cloud Pak | Automation interface. The 'Customer Churn' model is highlighted with a red box. The table includes columns for Name, Last updated by, and Last updated at. The 'Customer Churn' row shows 'Me' in all three columns. Below the table, there are dropdowns for 'Items per page' and 'Sort by name'. A 'Create' button is located in the top right corner.

- Click **Edit Configuration**.

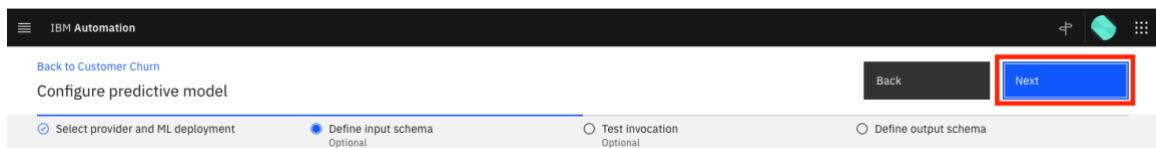
The screenshot shows the 'Modeling (5)' tab in the IBM Cloud Pak | Automation interface. On the left, there's a sidebar with various icons. In the center, there's a flow diagram for the 'Customer Churn' model. It starts with 'Subscription' and 'Customer' inputs, which feed into 'Input mapping ML model input'. This then feeds into 'ML model invocation ML model output', which finally feeds into 'Output mapping number'. To the right of the diagram, there's a detailed view of the 'Customer Churn' model configuration. It includes fields for 'Description (optional)', 'Machine learning provider' (set to 'SkyTalk ML provider'), 'Machine learning model' (set to 'SkyTalk churn prediction - P1 LGBM Classifier'), and 'Deployment' (set to 'CHURN'). A red box highlights the 'Edit Configuration' button.

- Expand the **SkyTalk churn prediction model** (1), select the **churn** deployment (2), and click **Next** (3).

The screenshot shows the 'Configure predictive model' step in the process. At the top, there are tabs for 'Back to Customer Churn', 'Configure predictive model', 'Back', and 'Next' (which is highlighted with a red box and has a red number '3' above it). Below this, there are three radio button options: 'Select provider and ML deployment' (selected), 'Define input schema Optional', and 'Test invocation Optional'. A red box highlights the 'Model not found' message: 'The machine learning model used by this predictive model could not be found.' In the 'Select provider' section, 'SkyTalk ML provider' is selected. In the 'Select machine learning model deployment' section, 'Deployment name' is set to 'CHURN' (highlighted with a red box and has a red number '2' above it). A red box also highlights the 'Show deployed models only' button. The bottom part of the screen shows a table of deployed models:

ML model name	Training date	Last modified
SkyTalk lifetime value prediction - P4 XGB Regressor	3/23/2022, 4:21:56 PM	3/23/2022, 4:21:57 PM
SkyTalk churn prediction - P1 LGBM Classifier	3/23/2022, 4:22:23 PM	3/23/2022, 4:22:23 PM
Deployment name	Status	Deployment date
CHURN	ready	3/29/2022, 12:07:50 PM

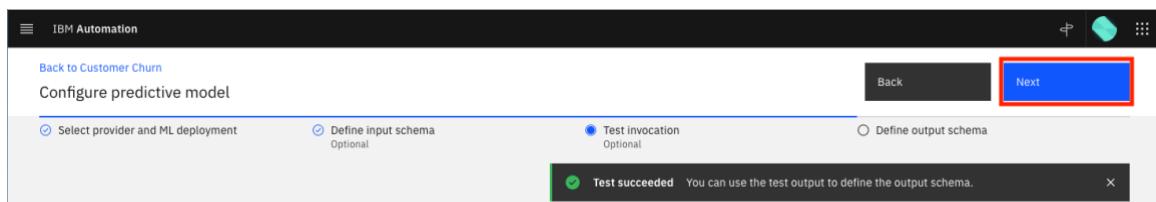
8. Click **Next**.



9. Click **Run** to test the invocation.



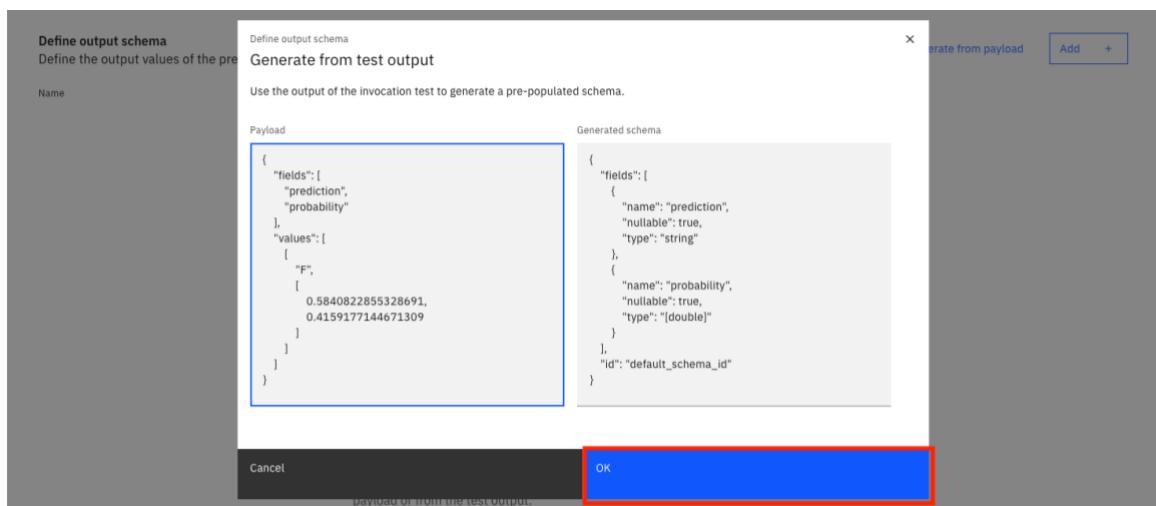
10. If the test succeeds, click **Next**.



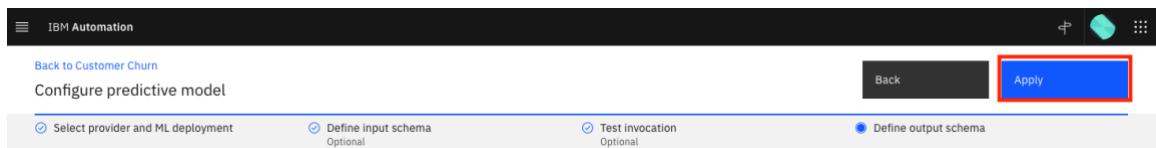
11. Click **Generate from test output**.



12. Click **OK**.



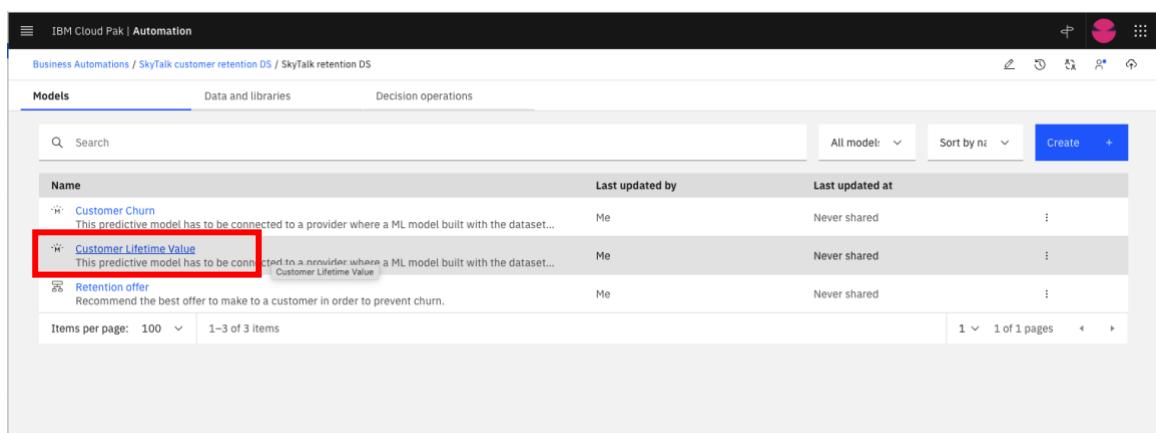
13. Click **Apply**.



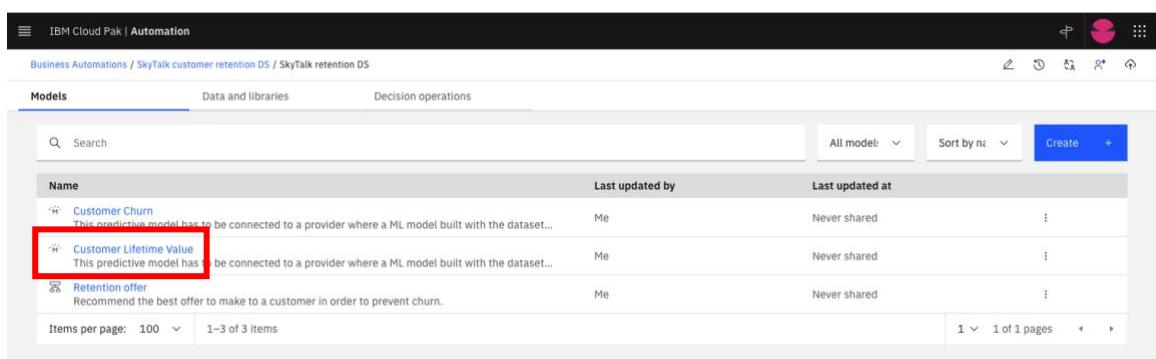
14. Return to the **SkyTalk retention DS** using the breadcrumb menu.



15. Click **Customer lifetime value** and repeat steps 2-12, expanding and selecting the **Customer Lifetime Value** model.



16. Click the **Retention Offer** model.

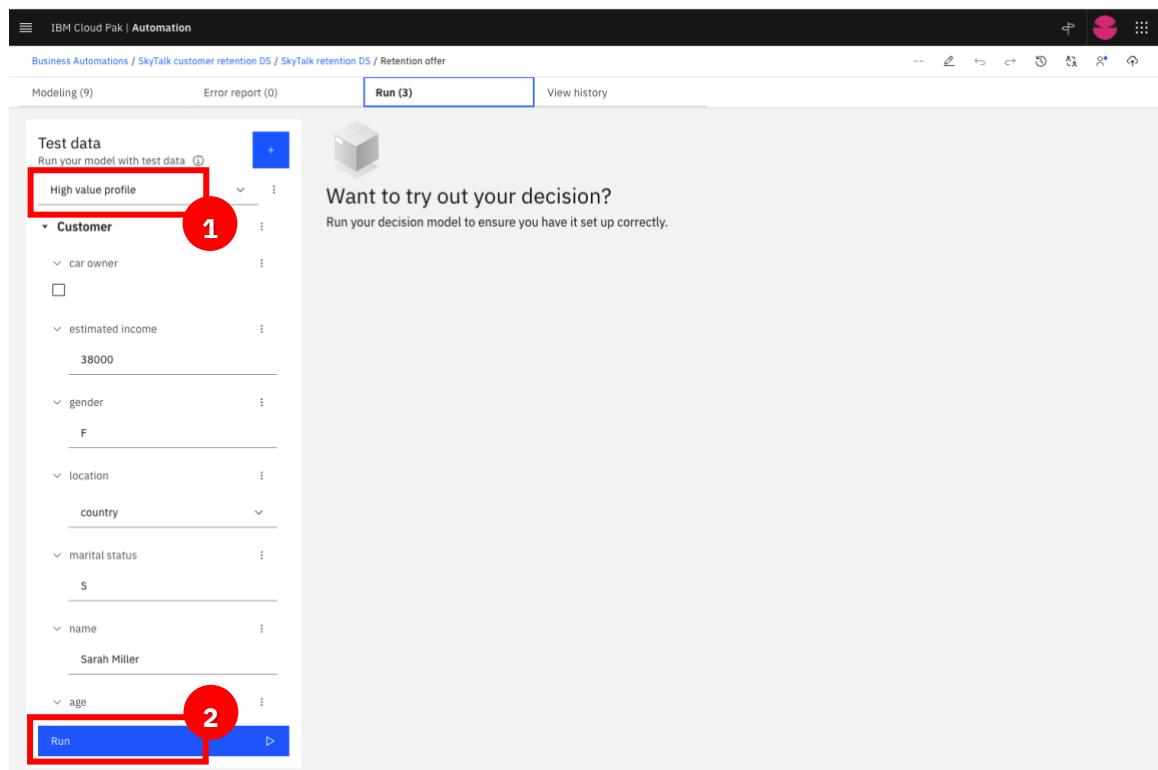


17. Select the **Run** tab.



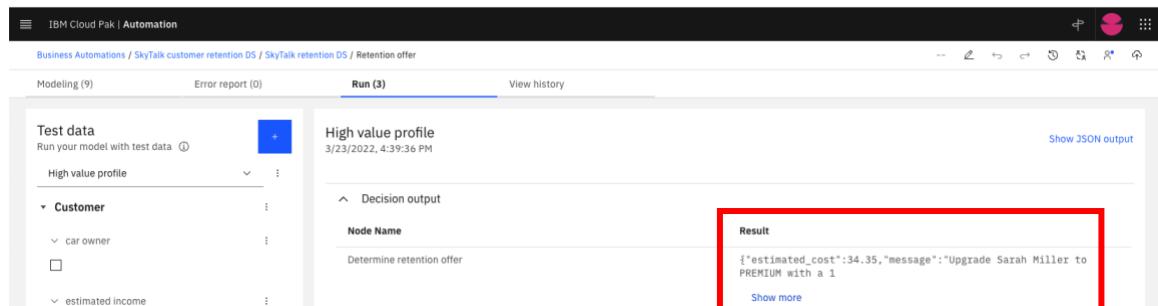
18. Select the **High Value profile** test file (1) and click **Run** (2).

The retention offer should display. Click **Run** again if you get a timeout error the first time.



The screenshot shows the IBM Cloud Pak | Automation interface. In the top navigation bar, the path is Business Automations / SkyTalk customer retention DS / SkyTalk retention DS / Retention offer. Below the navigation, there are tabs for Modeling (9), Error report (0), Run (3) (which is highlighted with a blue border), and View history. The main area is titled "Want to try out your decision?" with the sub-instruction "Run your decision model to ensure you have it set up correctly." On the left, there's a "Test data" section with a dropdown menu set to "High value profile". This dropdown is highlighted with a red box and has a red circle with the number "1" on it. Below the dropdown, there's a "Customer" section containing fields for car owner (checkbox), estimated income (38000), gender (F), location (country), marital status (S), name (Sarah Miller), and age. At the bottom of the "Test data" section is a "Run" button, which is highlighted with a red box and has a red circle with the number "2" on it.

You should see the following result:



The screenshot shows the results of the "Retention offer" model run. The top navigation bar and tabs are the same as the previous screenshot. The "Run (3)" tab is now selected. In the main area, under the "Decision output" section, there is a "Node Name" field with the value "Determine retention offer". To the right, there is a "Result" section containing a JSON object: {"estimated_cost":34.35,"message":"Upgrade Sarah Miller to PREMIUM with a 1". Below the JSON object is a "Show more" link. A red box highlights the "Result" section.

3 - Redeploy the decision service

1. Click **SkyTalk customer retention DS** in the breadcrumb menu.

The screenshot shows the IBM Cloud Pak | Automation interface. The breadcrumb menu at the top displays 'Business Automations / SkyTalk customer retention DS / SkyTalk retention DS / Retention offer'. Below the menu, there are tabs for 'Modeling (9)', 'Error report (0)', 'Run (3)' (which is underlined in blue), and 'View history'. A red box highlights the 'SkyTalk customer retention DS' link in the breadcrumb.

2. Select the **Share changes** tab.

The screenshot shows the 'SkyTalk customer retention DS' page. At the top, there are tabs for 'Decision services (2)', 'Load changes', 'Share changes (2)' (which is highlighted with a red box), and 'View history'. Below the tabs, there is a section titled 'Share changes (3)' with a sub-section 'Changes that you made locally with your collaborators.' A red box highlights the 'Share changes (2)' tab.

3. Click the **select all changes box** (1) and click **Share** (2).

The screenshot shows the 'Share changes (3)' list. A red circle labeled '1' highlights the 'Select all' checkbox in the first row. A red circle labeled '2' highlights the 'Share' button in the top right corner of the list area. The list displays several changes made to the decision service, including updates to artifacts and models.

Decision service name	Updated artifacts	Details	Last updated
SkyTalk initial retention DS	1	Decision service updated	3/29/2022, 10:52:28 AM
SkyTalk retention DS	2	Decision service updated	3/29/2022, 11:32:11 AM
Name	Type		3/29/2022, 11:32:11 AM
Customer Churn	Predictive model	Artifact updated	3/29/2022, 11:32:11 AM
Customer Lifetime Value	Predictive model	Artifact updated	3/29/2022, 11:32:11 AM

4. Click **Share**.

The screenshot shows the 'Share' dialog box. It contains a list of changes and a text input field for 'Describe the changes (optional)'. A red box highlights the 'Share' button at the bottom right of the dialog.

5. Select the **View history** tab.

The screenshot shows the 'SkyTalk customer retention DS' page. The 'Share changes' tab is currently selected. A red box highlights the 'View history' tab. A green success message box is visible in the top right corner, stating 'Success: Your changes were successfully shared.' with the timestamp '29/03/2022, 12:49:35'.

6. Click **Version +** in the row with the deployment you just created.

Screenshot of the IBM Cloud Pak | Automation interface. The page title is "SkyTalk customer retention DS". The "View history" tab is selected. A table shows deployment history:

Last shared	Shared by	Versions
3/29/2022, 12:49:32 PM	cp4admin	No version is created
3/29/2022, 11:32:11 AM	cp4admin	v1 X

At the bottom right of the table, there is a "Version +" button with a red box around it.

7. Name the new version (1). For example, if the last version on the deployment list is 'V2,' then name this deployment 'V3.' Click **Create** (2).

Screenshot of the IBM Cloud Pak | Automation interface. The "Create a version" dialog box is open. The "Name" field contains "V3" with a red box and a red circle containing the number "1" over it. The "Create" button at the bottom is highlighted with a red box and a red circle containing the number "2".

8. Click the **Deploy** tab.

Screenshot of the IBM Cloud Pak | Automation interface. The "Deploy" tab is selected. At the bottom right of the interface, there is a "Deploy" button with a red box around it.

9. Expand the last created version.

Screenshot of the IBM Cloud Pak | Automation interface. The "View history" tab is selected. A table shows deployment history:

Last shared	Shared by	Versions
2/2/2022, 5:09:51 PM	cp4admin	v3 X
1/29/2022, 9:54:09 AM	cp4admin	v2 X
1/28/2022, 5:27:11 PM	cp4admin	v1 X
1/28/2022, 5:13:43 PM	cp4admin	No version is created

At the bottom right of the table, there is a "Version +" button with a red box around it.

10. Select **Deploy** in the **SkyTalk retention DS** row.

Version	Shared on	Shared by
V3	3/29/2022, 12:53:48 PM	cp4admin
Decision service	Deployment status	Decision ID
SkyTalk initial retention DS	Not deployed	-
SkyTalk retention DS	Not deployed	-
V1	3/29/2022, 11:32:27 AM	cp4admin

11. Select deploy on the model both times. Click **Deploy** when prompted.

SkyTalk retention DS

Deploy decision service

The deployment might take a while.
You can continue to work in the application while deployment runs in the background.

Cancel Deploy

12. Wait for the deployment to finish. Then, click **Business Automations**.

Version	Shared on	Shared by
V3	3/29/2022, 12:53:48 PM	cp4admin
Decision service	Deployment status	Decision ID
SkyTalk initial retention DS	Not deployed	-
SkyTalk retention DS	Deployed on 3/29/2022, 1:03:00 PM	cp4admin/skytalk_customer_retention_ds/skytalk_rete...
V1	3/29/2022, 11:32:27 AM	cp4admin

13. The last deployed service displays. Click **Publish**.

Screenshot of the IBM Cloud Pak | Automation interface. The service name is "SkyTalk customer retention DS". The "Versions" tab is selected, showing two versions: V3 (Created 3/29/2022) and V1 (Created 3/29/2022). A red box highlights the "Publish" button next to V1.

14. Click **Publish**.

Screenshot of the "Publish automation services" dialog box. It shows version V3 and a permissions section where "cp4admin" is listed with "Admin" role. The "Publish" button at the bottom is highlighted with a red box.

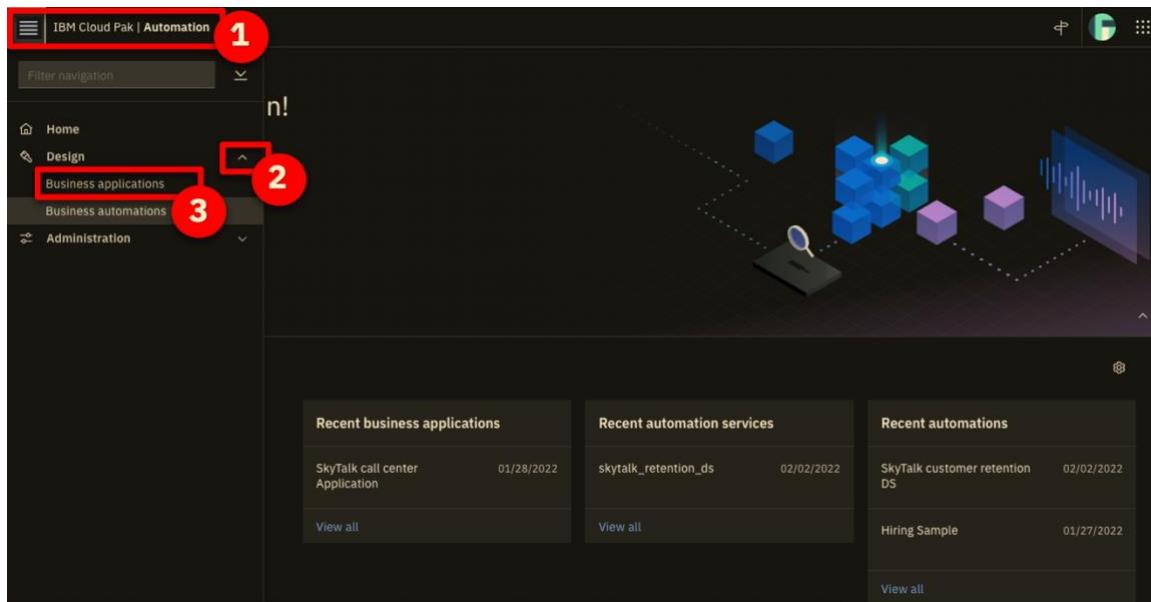
15. Ensure the service appears as **Published**.

Screenshot of the service details page again, showing the "Versions" tab. A red arrow points to the "Status" column for version V3, which now shows a green "Published" status indicator.

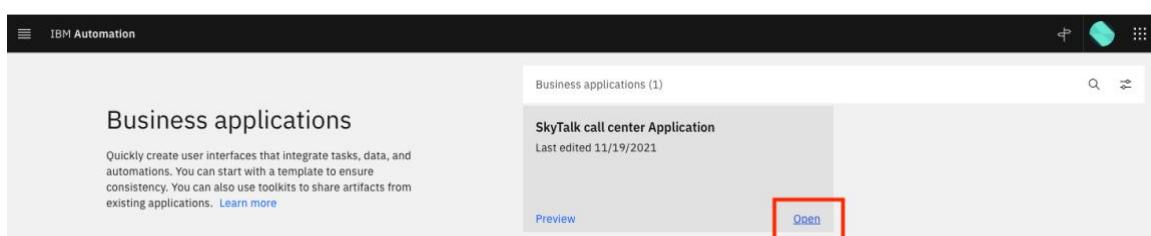
4 - Reconnect the decision services to the call center application

This step must be performed anytime a new version of the SkyTalk_retention_DS is deployed. Make sure only the latest deployed DS is published to prevent data renaming issues when reimporting the new service.

1. Log in to **Cloud Pak for Business Automation**. Use the bookmark and credentials saved in the original deployment instructions (Step 13 of section **1 - Provision a Cloud Pak for Business Automation environment**).
2. Open the **top menu** (1), expand **Design** (2), and click **Business applications** (3).



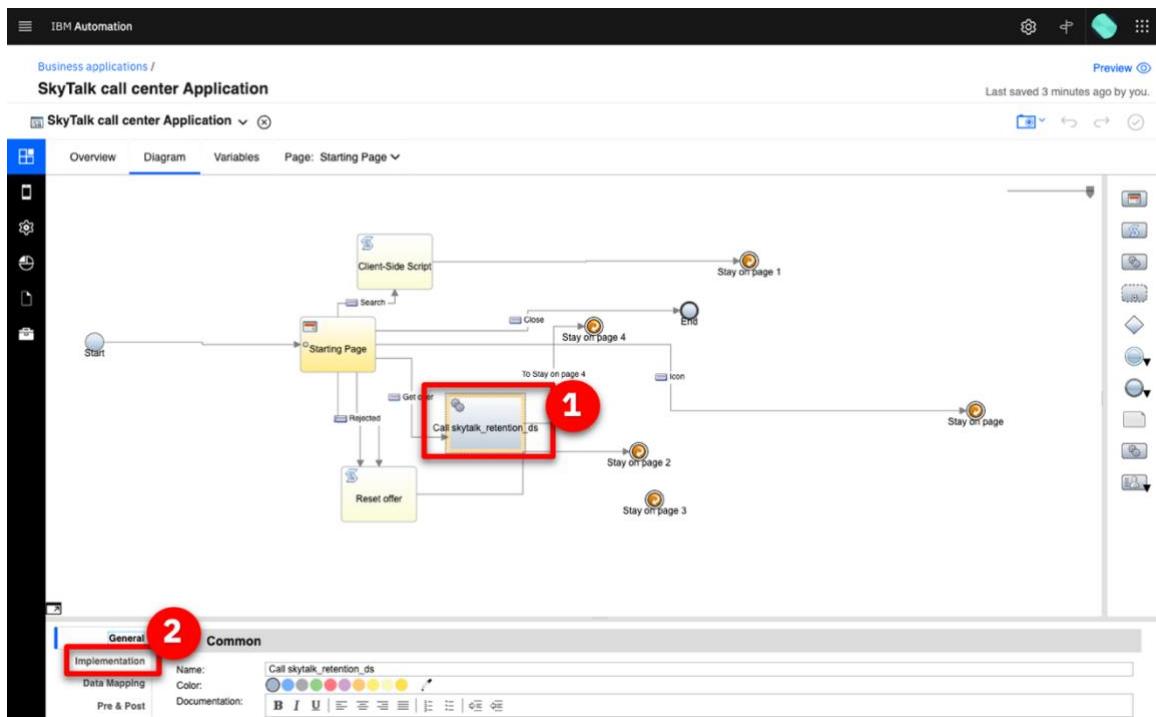
2. Hover the mouse over the **SkyTalk call center Application** tile and click **Open**.



3. Click the **Diagram** tab.



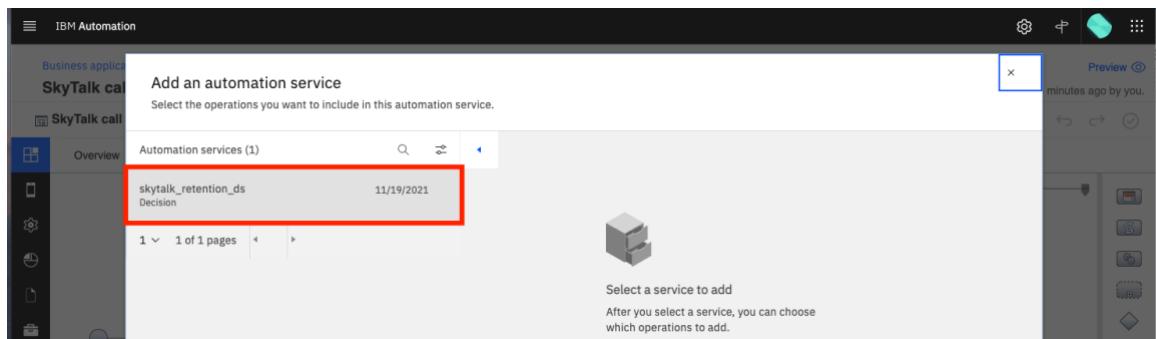
4. Click the **SkyTalk_retenion_ds** node (1), and click the **Implementation** tab (2).



5. Click **New...**



6. Select **skytalk_retenion_ds**.



7. Click **Add**.

Add an automation service

Select the operations you want to include in this automation service.

Automation services (1)

skytalk_retention_ds Decision 10/13/2021 V2 (last published)

Purpose
This decision service has to be connected to two ML models. Define them using an AutoAI experiment on the datasets 'custome... See more

All operations (1) Selected (1)

Operation	Description
<input checked="" type="checkbox"/>	retentionOffer

Add (1)

8. Click **X** to close the view that appears.

IBM Automation

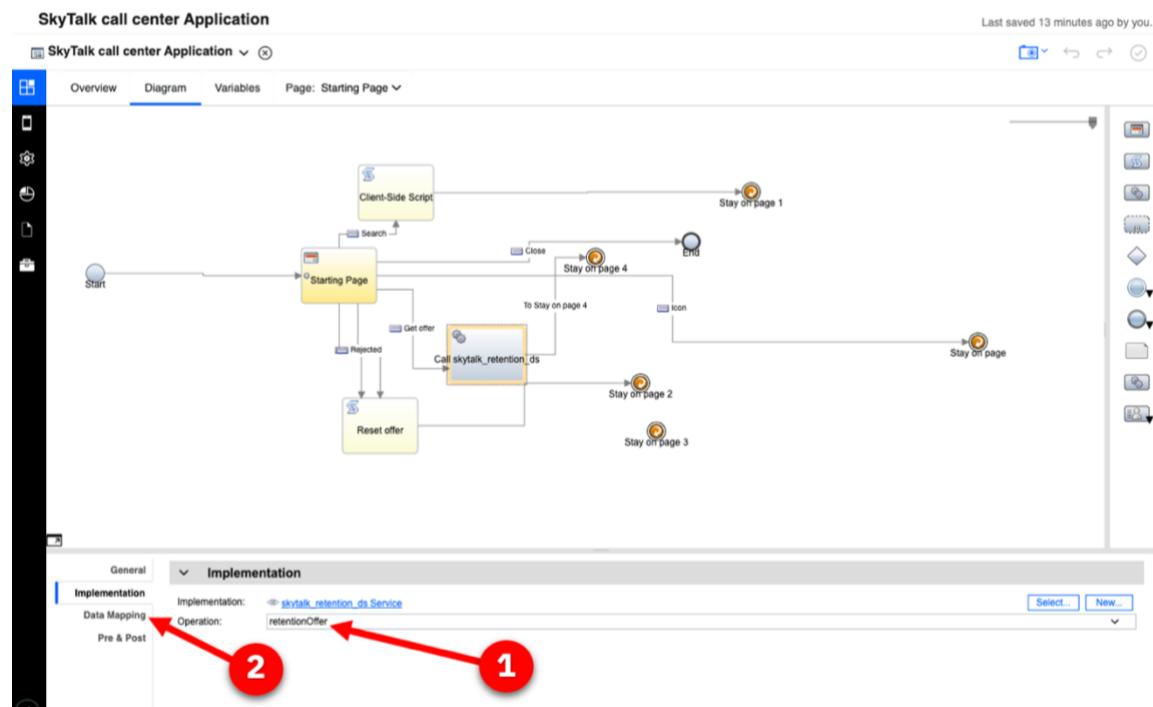
Business applications / SkyTalk call center Application

skytalk_retention_ds Service

Automation Service

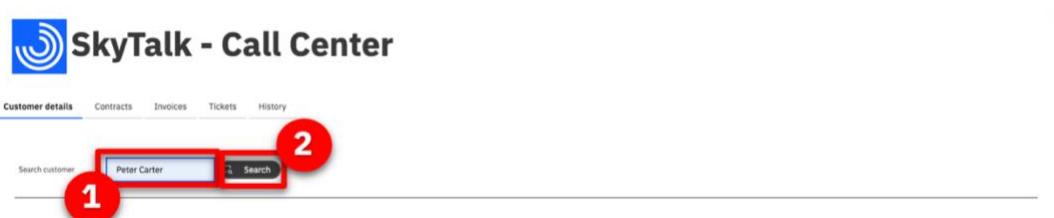
9. Make sure the **Operation** is set to **retentionOffer** (1).

Note: In the **Data Mapping** tab (2), the input parameter may not be displayed (known issue), but this does not impact the demo. It's recommended not to click in this section.



10. Click **Preview**.

11. Enter “Peter Carter” (1) and click **Search** (2).



12. Click **Get offer**.

The screenshot shows a detailed customer profile page. At the bottom, there is a section titled "Retention offer recommendation" with a "Get offer" button highlighted by a red box. The page also displays various personal and subscription details.

Customer information:		Customer-provided personal data:		Subscription details:	
Gender	M	Age	49	Rate plan	Essentials
Name	Peter Carter	Situation	S	Local calls	30
Email address	pet.carter78@outflage.com	Size of household	0	Long distance calls	40
Mobile number	+33 (4) 92 96 61 61	Estimated income	64.000	International calls	30
Location	urban	<input checked="" type="checkbox"/> Car owner ?		Usage	90
				Payment method	CC

13. The offer displays.

The screenshot shows the SkyTalk - Call Center software interface. At the top, there is a logo and a search bar with the text "Peter Carter". Below the search bar, there are tabs for "Customer details", "Contracts", "Invoices", "Tickets", and "History".

The main area displays a customer profile for "Peter Carter". The profile includes sections for "Customer information", "Customer-provided personal data", and "Subscription details".

In the "Customer information" section, fields include: Gender (M), Name (Peter Carter), Email address (pet.carter78@outRange.com), Mobile number (+33 (4) 92 96 61 61), and Location (urban). In the "Customer-provided personal data" section, fields include: Age (49), Situation (5), Size of household (0), Estimated income (\$4,000), and a checked checkbox for "Car owner ?". In the "Subscription details" section, fields include: Rate plan (Essentials), Local calls (30), Long distance calls (40), International calls (30), Usage (90), and Payment method (CC).

Below the profile, there is a section titled "Retention offer recommendation". It shows a yearly retention cost of 9 US\$ and a button labeled "Get offer". A red box highlights the "Retention offer details" message: "Offer Peter Carter a 10% discount on his current subscription".

At the bottom, there is a "Customer response" section with "Accepted" and "Rejected" buttons, and a "Close" button on the right.