

Cloud Data Integration for Developers

onDemand Lab Guide

Version: CDI-R42-DEV-OD-202308



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Cloud Data Integration for Developers (onDemand)

Version: CDI-R42-DEV-OD-202308

August 2023

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Document Conventions

This guide uses the following formatting conventions:

If you see...	It means...	Example
>	Indicates a sub menu to navigate to.	Click Repository > Connect. In this example, you should click the Repository menu or button and choose Connect.
boldfaced text	Indicates text you need to type or enter.	Click the Rename button and name the new source definition S_EMPLOYEE .
UPPERCASE	Database tables and column names are shown in all UPPERCASE.	T_ITEM_SUMMARY
<i>italicized text</i>	Indicates a variable you must replace with specific information.	Connect to the Repository using the assigned <i>login_id</i> .
Note:	The following paragraph provides additional facts.	Note: You can select multiple objects to import by using the Ctrl key.
Tip:	The following paragraph provides suggested uses or a Velocity best practice.	Tip: The m_ prefix for a mapping name is...

Other Informatica Resources

In addition to the student and lab guides, Informatica provides these other resources:

- Documentation and Knowledge Base
- Global Customer Support
- Professional Certification

Accessing Documentation and Knowledge Base

To get the latest documentation and Knowledge Base for your product, go to

<https://network.informatica.com>

Contacting Global Customer Support

You can contact a Customer Support Center by telephone or through the Online Support. Online Support requires a username and password. You can request a username and password at

<https://www.informatica.com/services-and-training/support-services/contact-us.html>

Obtaining Informatica Professional Certification

You can take and pass exams provided by Informatica to obtain Informatica Professional Certification. For more information, go to

<https://www.informatica.com/services-and-training/certification.html>

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Pre-requisite Labs

Lab 0-1: Creating Informatica Intelligent Cloud Services (IICS) Trial Account

Overview:

To use the different services that are available in the IICS platform, users must have a valid IICS account. The trial account is valid for 90 days.

This document lists the steps to create an IICS trial account to use in the onDemand training course. The course content and Labs are activated at the time of registration and are available for 90 days or until all the lab hours are consumed.

Objective:

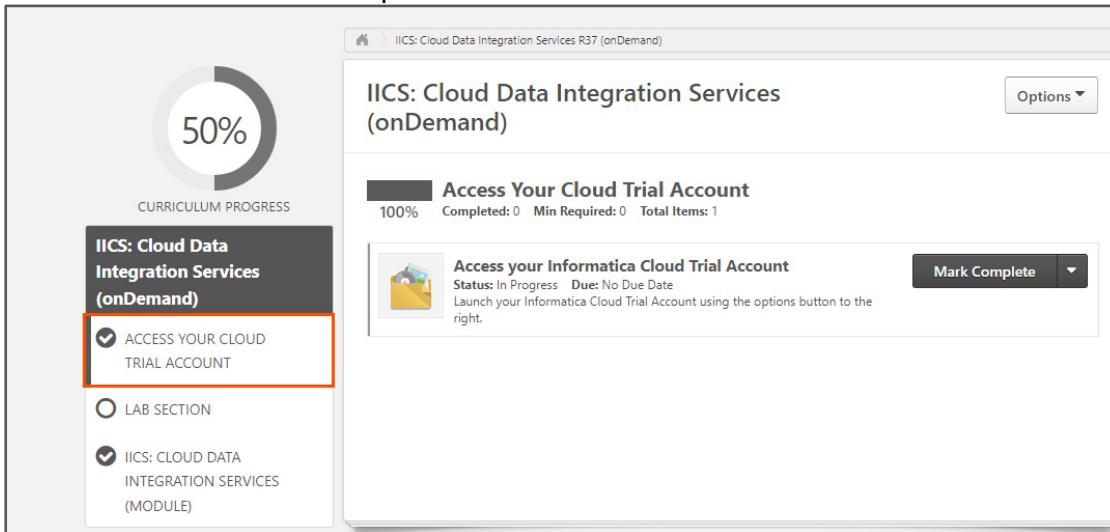
- Create an IICS trial account

Important:

The screenshots used in this lab guide is for Cloud Data Integration course. The name of course may differ depending upon the enrolled course. However, the steps for creating the IICS account will remain the same.

Creating an IICS account

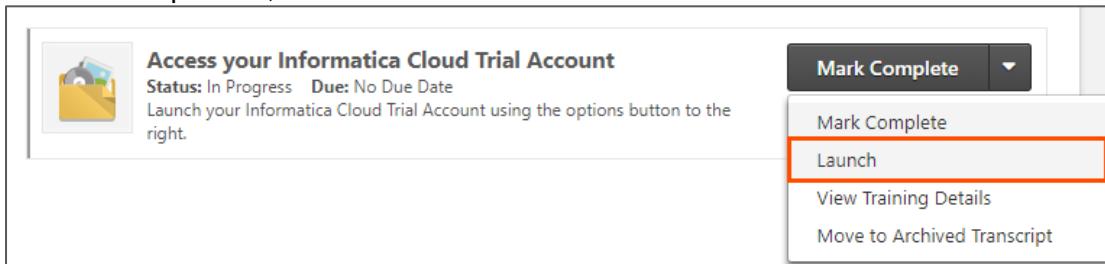
1. From CSOD (the page where you accessed the course), click on the **ACCESS YOUR CLOUD TRIAL ACCOUNT** option.



The screenshot shows the CSOD interface for the 'IICS: Cloud Data Integration Services (onDemand)' course. On the left, there's a curriculum progress bar at 50%. Below it, a list of options: 'IICS: Cloud Data Integration Services (onDemand)' (selected and highlighted with a red box), 'ACCESS YOUR CLOUD TRIAL ACCOUNT' (also highlighted with a red box), 'LAB SECTION', and 'IICS: CLOUD DATA INTEGRATION SERVICES (MODULE)'. On the right, a detailed view of the 'Access Your Cloud Trial Account' option. It shows a progress bar at 100%, status 'Completed: 0 Min Required: 0 Total Items: 1', and a note: 'Status: In Progress Due: No Due Date Launch your Informatica Cloud Trial Account using the options button to the right.' There's also a 'Mark Complete' button.

Note: The Course Name shown on the screen will differ according to the course you have enrolled for.

2. From the drop-down, click **Launch**.

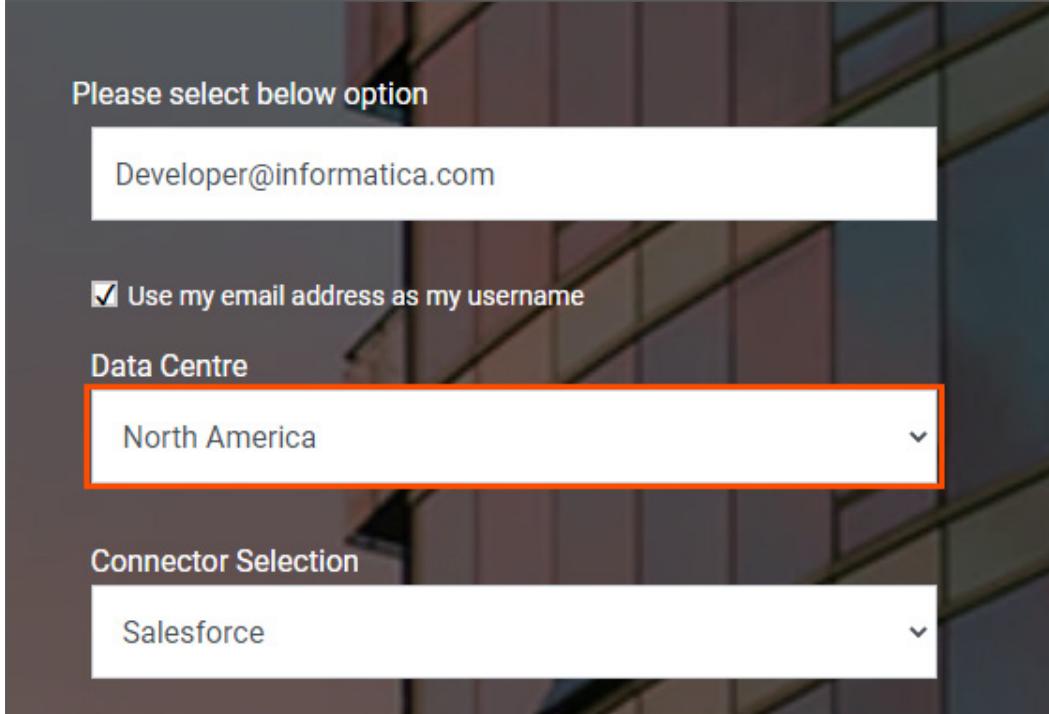


Note: If the option menu is labeled anything other than **Launch**, click the down arrow to the right and click **Launch**.

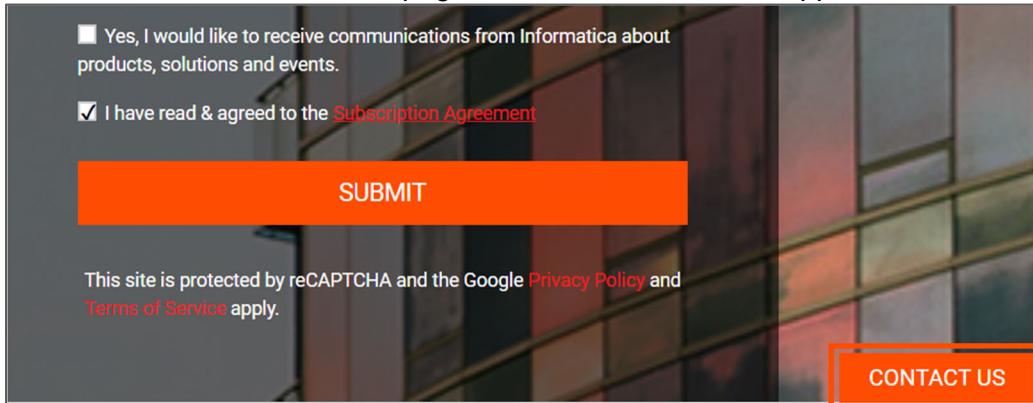
3. A new University Trial window opens in a new tab. Use the new window to sign up for an IICS trial account.

4. On the signup page, enter a valid email id and other required information.

Note: During account creation, you must select the Data Centre as **North America**.



5. If you are unable to register your email-id while creating the account, use the **CONTACT US** button at the bottom of the page to contact Informatica Support.



Yes, I would like to receive communications from Informatica about products, solutions and events.

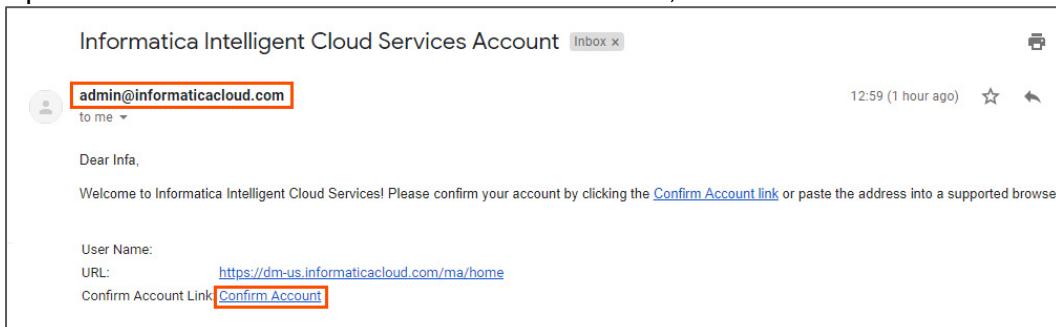
I have read & agreed to the [Subscription Agreement](#)

SUBMIT

This site is protected by reCAPTCHA and the Google [Privacy Policy](#) and [Terms of Service](#) apply.

CONTACT US

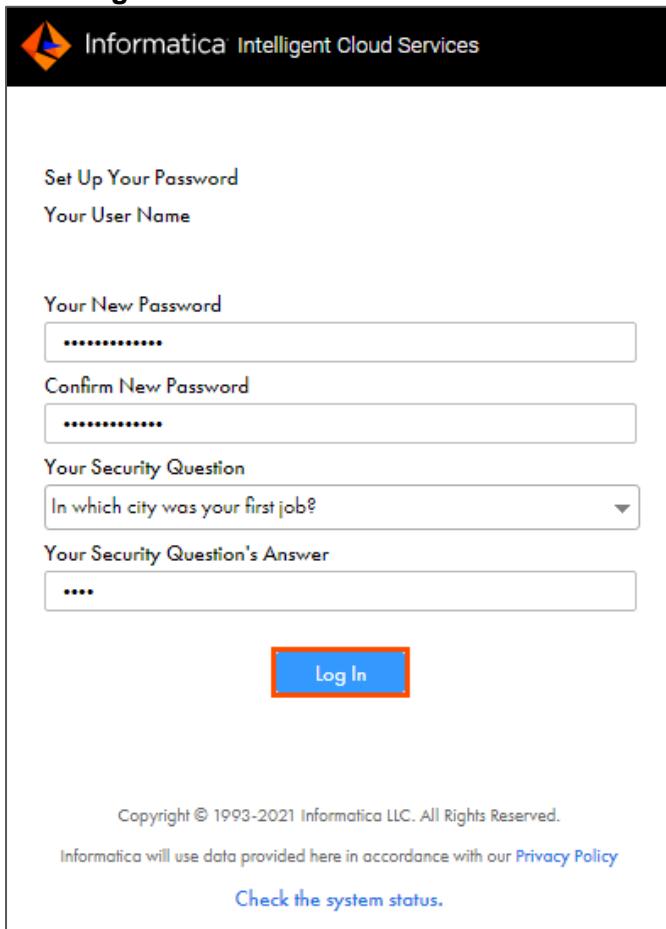
6. Once the required information is entered, check the “**I have read & agreed to the Subscription Agreement**” checkbox and click **SUBMIT**.
7. After you submit the request, in a few seconds you will get an email from admin@informaticacloud.com in your registered mailbox.
8. Open the email and to confirm the account creation, click on **Confirm Account** link.



Note: You can bookmark the URL link to access the IICS login page for future access.

9. In the password setup page, enter a suitable password and a security question for the account.

10. Click Log In.



The screenshot shows a password setup form for Informatica Intelligent Cloud Services. It includes fields for 'Your User Name' (disabled), 'Your New Password' (containing '*****'), 'Confirm New Password' (containing '*****'), 'Your Security Question' ('In which city was your first job?'), 'Your Security Question's Answer' (containing '****'), and a 'Log In' button. The 'Log In' button is highlighted with a red border.

Set Up Your Password

Your User Name

Your New Password

Confirm New Password

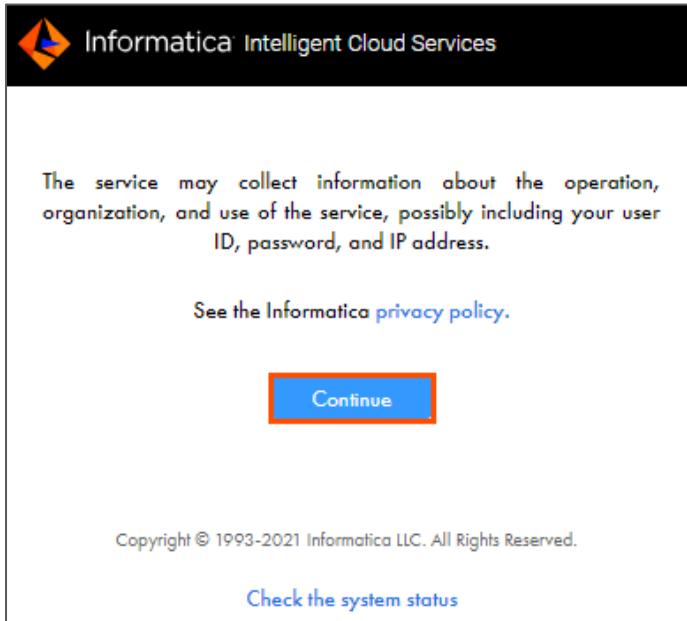
Your Security Question
In which city was your first job?

Your Security Question's Answer

Log In

Copyright © 1993-2021 Informatica LLC. All Rights Reserved.
Informatica will use data provided here in accordance with our [Privacy Policy](#)
[Check the system status.](#)

11. Click Continue.



The screenshot shows a page about privacy policy continuation. It contains a statement about data collection and a link to the 'Informatica privacy policy'. A 'Continue' button is highlighted with a red border.

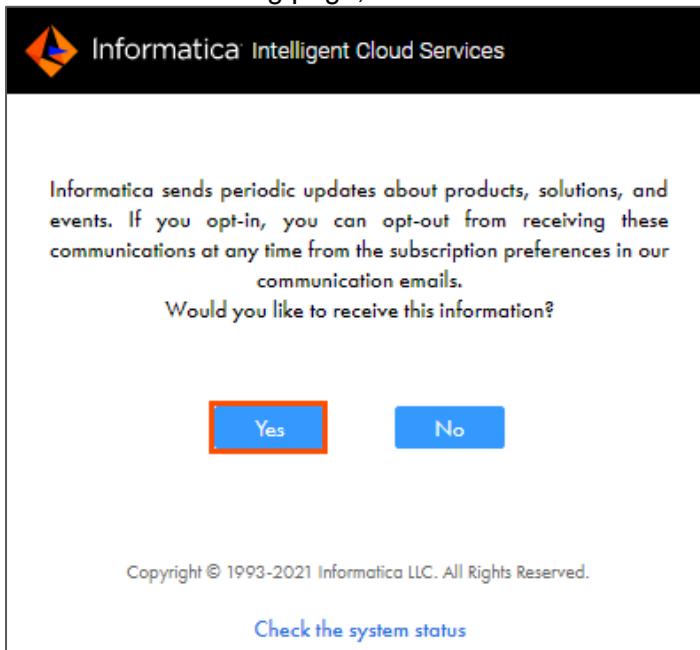
The service may collect information about the operation, organization, and use of the service, possibly including your user ID, password, and IP address.

[See the Informatica privacy policy.](#)

Continue

Copyright © 1993-2021 Informatica LLC. All Rights Reserved.
[Check the system status](#)

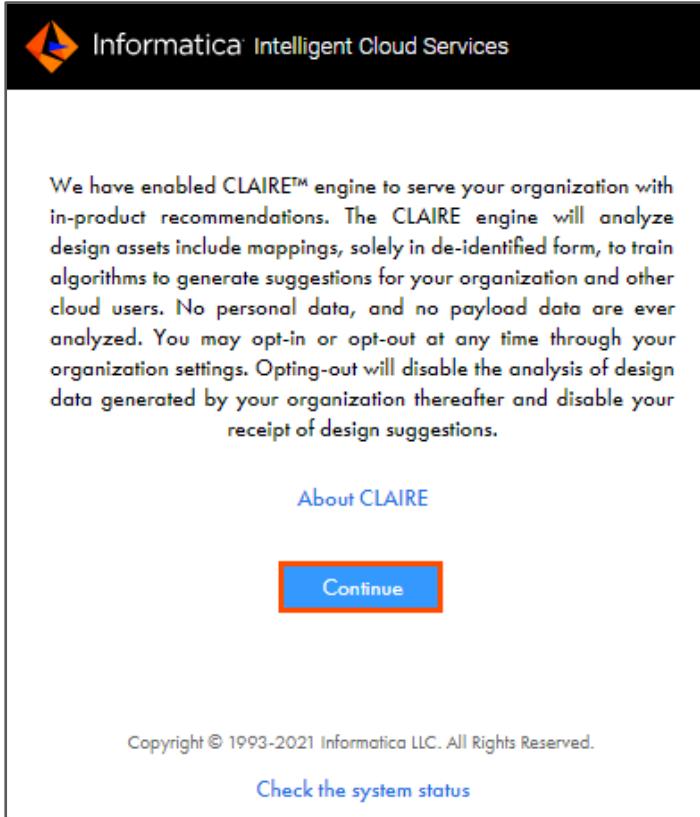
12. In the User Marketing page, select **Yes** or **No** based on your preference.



The screenshot shows a user marketing consent page. At the top, the Informatica Intelligent Cloud Services logo is displayed. Below it, a message states: "Informatica sends periodic updates about products, solutions, and events. If you opt-in, you can opt-out from receiving these communications at any time from the subscription preferences in our communication emails." A question follows: "Would you like to receive this information?" Two buttons are present: a blue "Yes" button with a red border, and a blue "No" button. At the bottom left, there is copyright information: "Copyright © 1993-2021 Informatica LLC. All Rights Reserved." Below that is a link: "Check the system status".

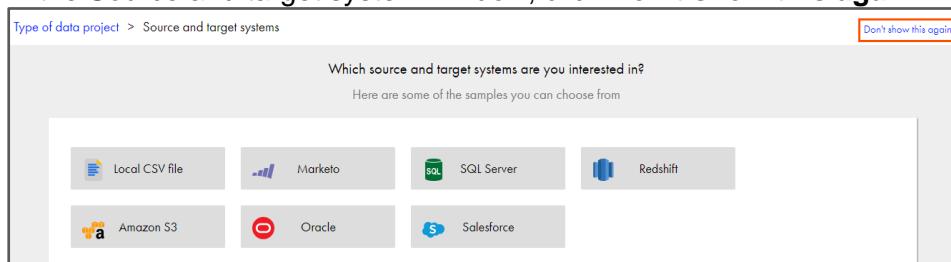
Note: It is recommended to select Yes to receive regular updates about product and other related information.

13. Click **Continue**.

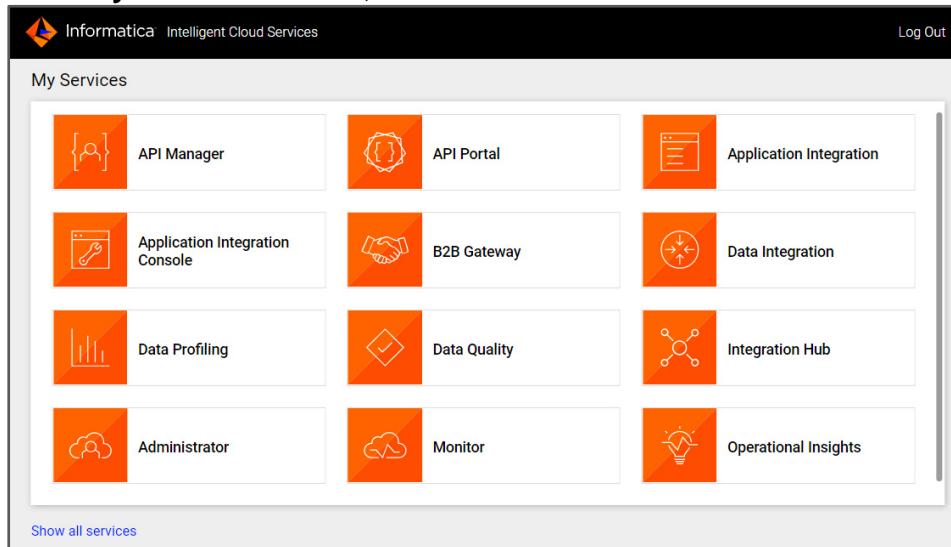


The screenshot shows a page about the CLAIRE™ engine. At the top, the Informatica Intelligent Cloud Services logo is displayed. Below it, a message explains: "We have enabled CLAIRE™ engine to serve your organization with in-product recommendations. The CLAIRE engine will analyze design assets include mappings, solely in de-identified form, to train algorithms to generate suggestions for your organization and other cloud users. No personal data, and no payload data are ever analyzed. You may opt-in or opt-out at any time through your organization settings. Opting-out will disable the analysis of design data generated by your organization thereafter and disable your receipt of design suggestions." Below this text is a link: "About CLAIRE". A prominent blue "Continue" button with a red border is centered below the text. At the bottom left, there is copyright information: "Copyright © 1993-2021 Informatica LLC. All Rights Reserved." Below that is a link: "Check the system status".

14. In the Source and target system window, click **Don't show this again**.



15. In the **My Services** window, notice the list of available services.



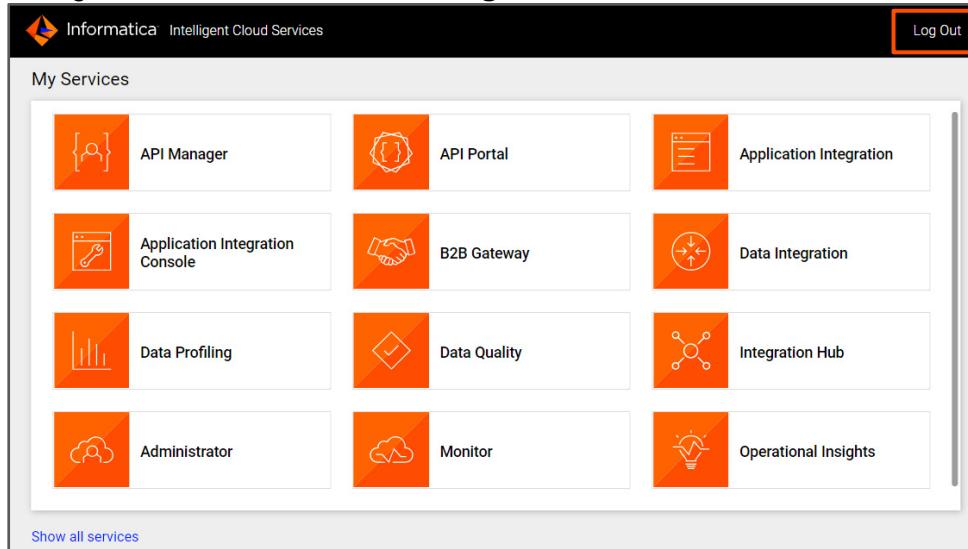
The screenshot displays a grid of service icons and names:

- API Manager
- API Portal
- Application Integration
- Application Integration Console
- B2B Gateway
- Data Integration
- Data Profiling
- Data Quality
- Integration Hub
- Administrator
- Monitor
- Operational Insights

At the bottom left is a link "Show all services". The "Log Out" button in the top right corner is highlighted with a red box.

Note: The number of services that you can see, vary from Org to Org depending upon the licenses and configuration.

16. To log out from the account, click **Log Out**.



This screenshot is identical to the one above, showing the "My Services" grid and the "Log Out" button highlighted with a red box.

This concludes the lab.

Pre-requisite Labs

Lab 0-2: Setting up Lab Environment

Overview:

To execute the labs for this course, there are certain tools and files that must be present in a defined location on your local machine. This document provides steps to setup the lab environment for performing the lab exercises of this course.

Objective:

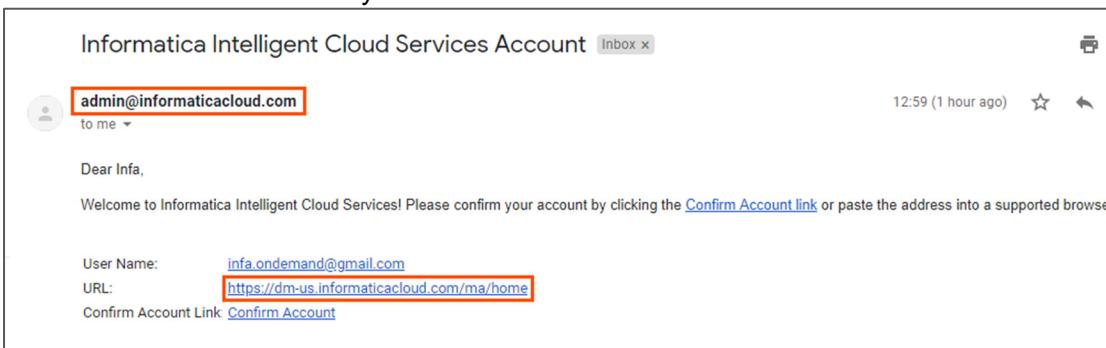
- Enable Connector
- Copy Lab Prep Files

Duration:

20 minutes

Enable Connector

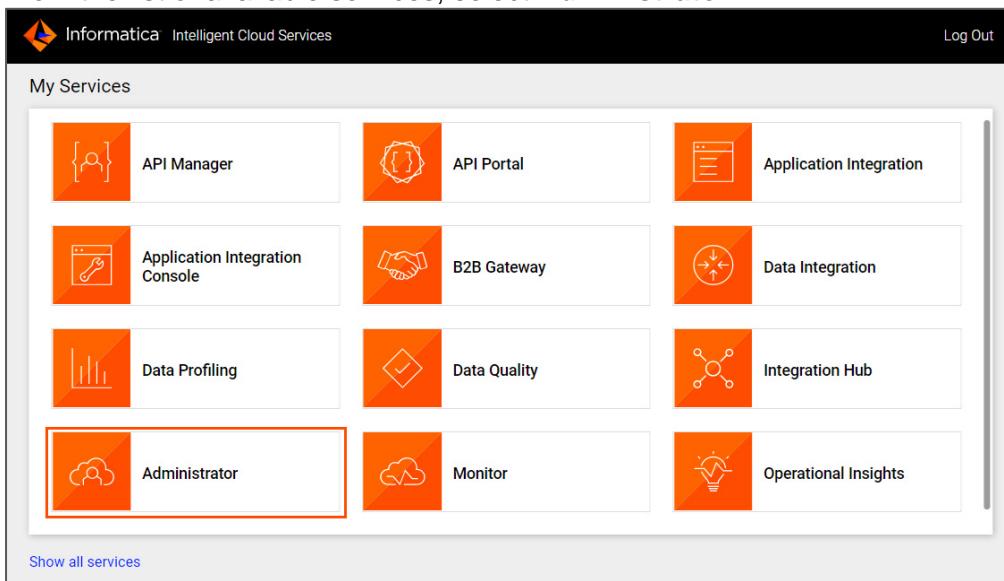
1. For accessing the IICS login page, open the email from **admin@informaticacloud.com** in your mailbox.
2. Use the URL link to access your IICS account.



Note: You must bookmark the above URL for future use.

3. Enter your login credentials and click **Log In**.

4. From the list of available services, select **Administrator**.

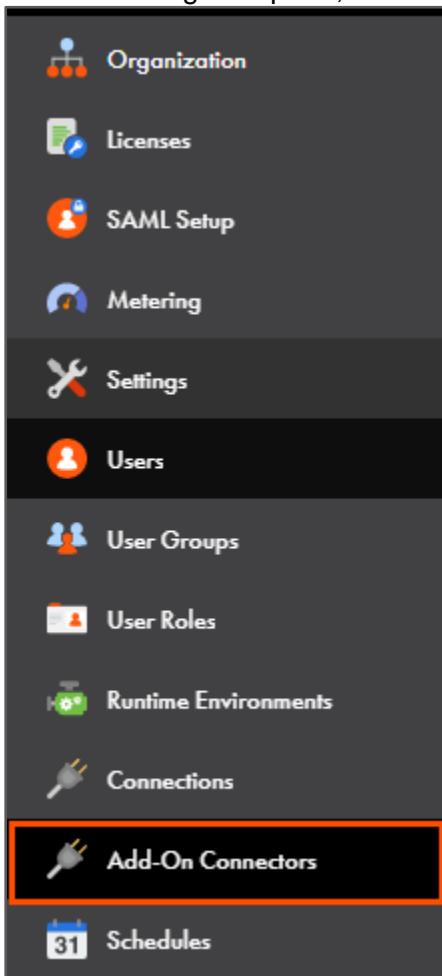


The screenshot shows the 'My Services' section of the Informatica Intelligent Cloud Services interface. It displays a grid of nine service icons:

- API Manager
- API Portal
- Application Integration
- Application Integration Console
- B2B Gateway
- Data Integration
- Data Profiling
- Data Quality
- Integration Hub
- Administrator
- Monitor
- Operational Insights

A red box highlights the 'Administrator' service icon. Below the grid, there is a link labeled 'Show all services'.

5. From the navigation pane, select **Add-on Connectors** tab.

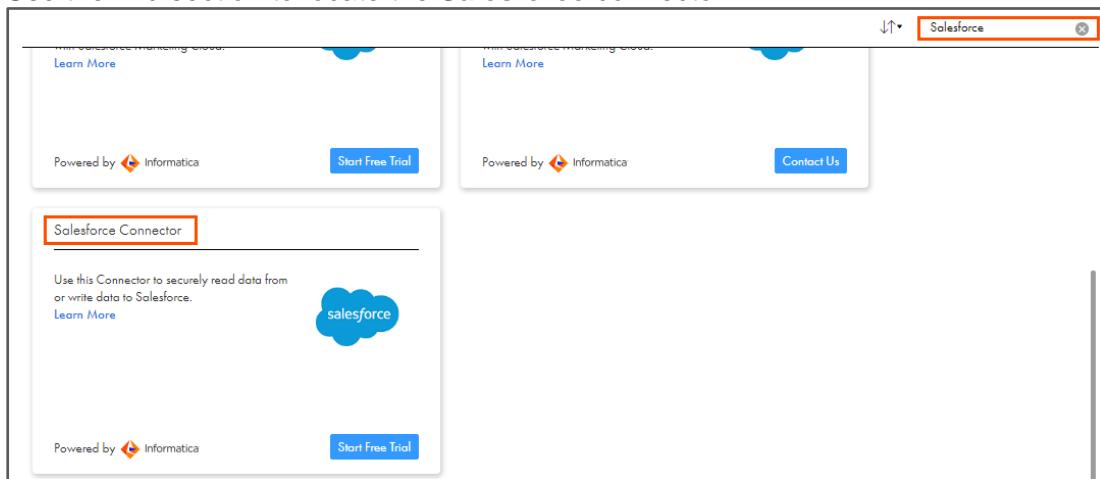


The screenshot shows the navigation pane of the Informatica Intelligent Cloud Services interface. The tabs listed vertically are:

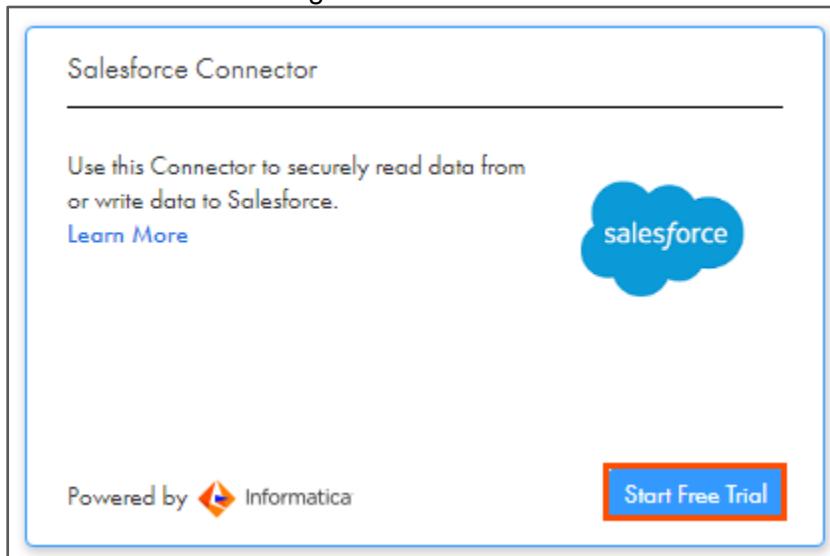
- Organization
- Licenses
- SAML Setup
- Metering
- Settings
- Users
- User Groups
- User Roles
- Runtime Environments
- Connections
- Add-On Connectors
- Schedules

A red box highlights the 'Add-On Connectors' tab.

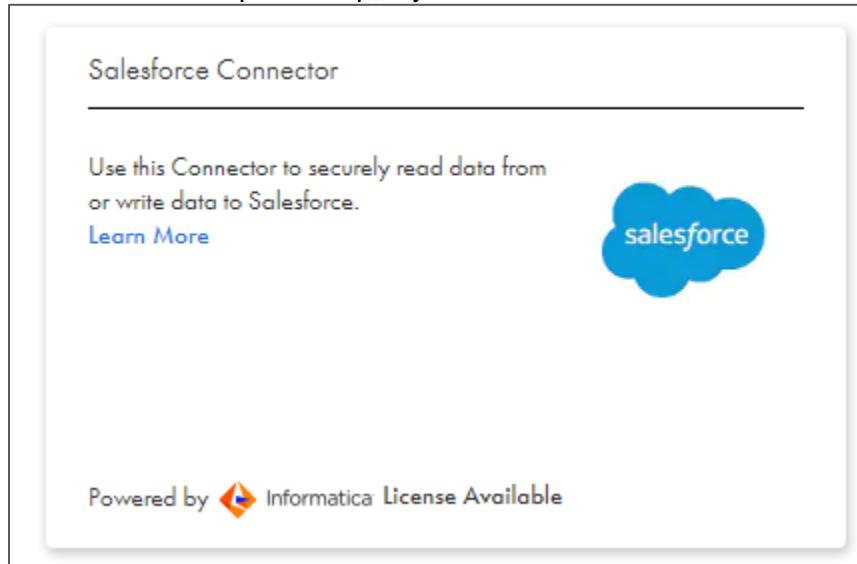
6. Use the find section to locate the **Salesforce** connector.



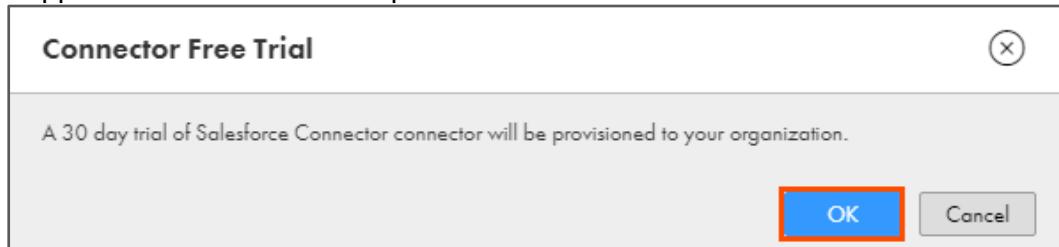
7. Click **Start Free Trial** for the Salesforce Connector. This enables you to view the connector when creating a Salesforce connection in later lab.



Note: You can skip this step, if you see **License Available** for Salesforce connector.



8. Note that the trial period for add on connectors is 30 days. Reach out to the Informatica Support team to renew the expired connectors. Click **OK**.



9. Logout of the IICS Org.

Copy Lab Prep Files

10. From the Informatica training portal, download the **Lab Prep Files**. Unzip the Lab Prep Files folder and observe that there are 3 sub-folders named **SrcFiles**, **TgtFiles**, and **Tables**.
Note: The prep files are the source files required to perform the lab exercise. You must save these files in a defined location for smooth execution of the labs.
11. In the **C:** drive of your secure agent machine, create a new folder and name it as **IICSLabFiles**.
12. Copy the **SrcFiles** and **TgtFiles** folders downloaded from the training portal and paste them in the newly created **IICSLabFiles** folder.

This concludes the lab.

Pre-requisite Labs

Lab 0-3: Configure SQL Server Database

Overview:

MS SQL Server is a relational database management system. It is commonly used for running online transaction processing (OLTP), data warehousing (DW), and mixed (OLTP & DW) database workloads.

This document lists the steps to configure the SQL Server database for performing lab exercises for this course.

Objective:

- Create User
- Create Tables

Duration:

30 minutes

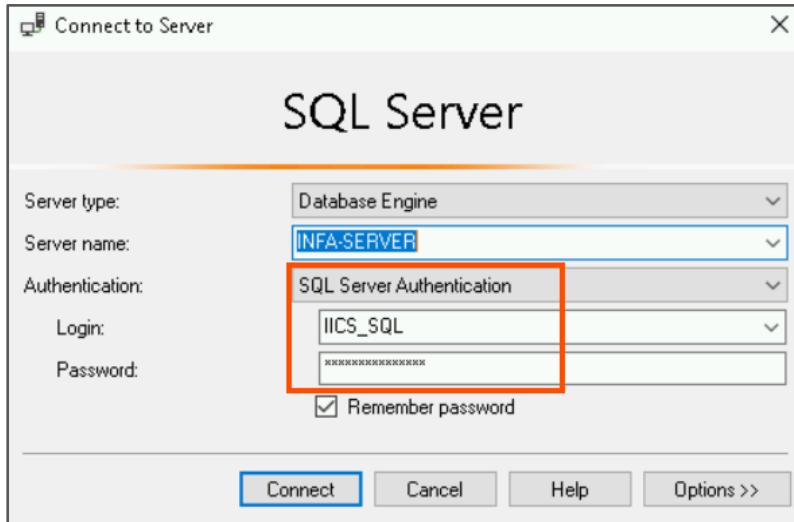
Important

1. It is recommended that your system has a minimum of 8 GB RAM.
2. In the lab exercises for this course, the following lab guides are designed and documented using SQL Server database. We therefore recommend that you have SQL Server database installed on your system (Secure Agent machine) to execute the labs.

List of SQL Server Database Dependent Labs
Lab 3-4: Using Saved Query in a Synchronization Task
Lab 4-1: Creating a Data Transfer Task
Lab 6-1: Classifying the Product Shipping Details Using Various Transformations
Lab 7-1: Using Lookup Transformation in a Mapping
Lab 8-2: Create Maplet and Use it in the Existing Mapping
Lab 8-3: Creating a Mapping Using Existing Maplet and Aggregator Transformations
Lab 9-2: Using In-Out Parameters for Incremental Data Loading
Lab 10-1: Create a Mapping Task and Configure Advanced Settings
Lab 13-2: Creating a Taskflow with Conditional Logics
Lab 14-3: Running a Mapping Task Using REST API

Note: If you do not have SQL Server installed on your system, you can skip the labs that are SQL Server database dependent and continue with the rest of the course and lab exercises.

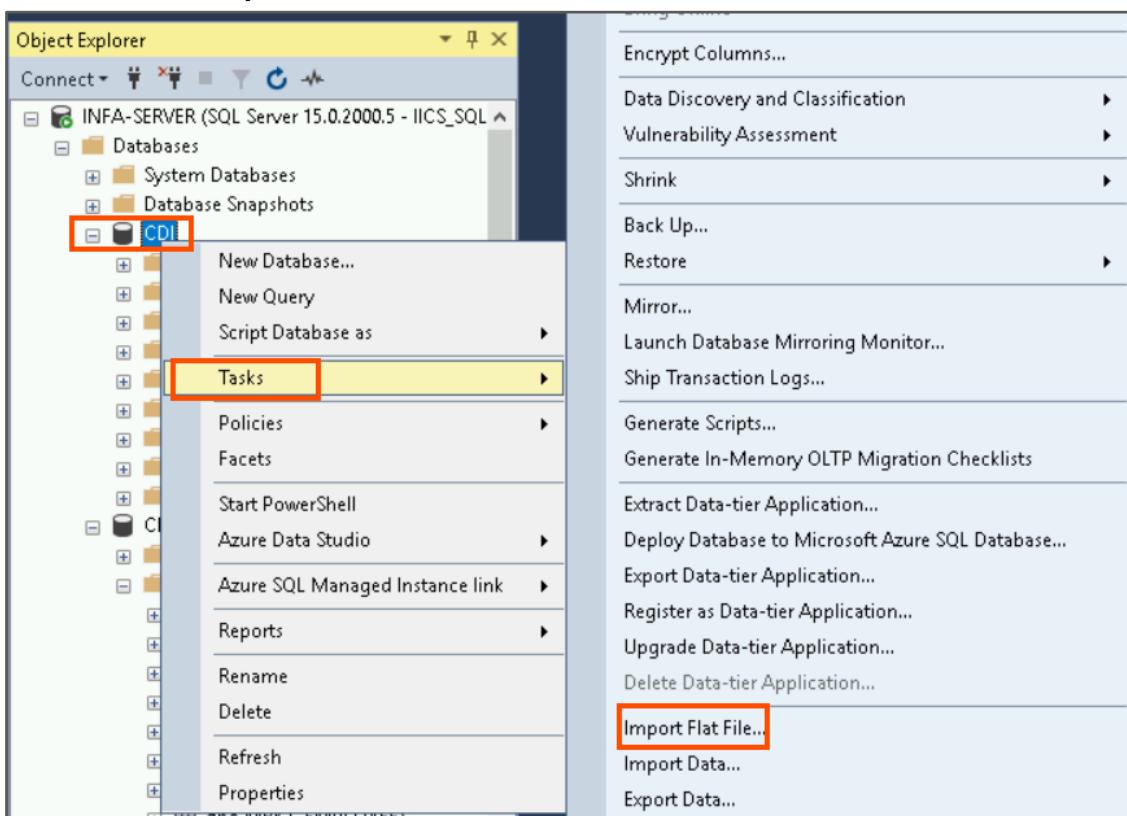
3. The labs for this course are created on **SQL Server 2019** and using the client **Microsoft SQL Server Management Studio** version 19.0.
4. Get in touch with your Organization's IT team and in the SQL Server Management Studio tool, create an **SQL Server Authentication** user with login username as **IICS_SQL** and password as **IICS_SQL**.



5. In MS SQL Server Management Studio, connect to your using the login credentials **IICS_SQL/IICS_SQL**.
6. Expand Databases and create 2 databases named **CDI**, and **CDI_STUDENT**.
Note: CDI is the source database and CDI_STUDENT will be your target database where the target tables will get saved. In this case, you will need to create 1 source SQL Server connection and 1 target SQL Server connection.

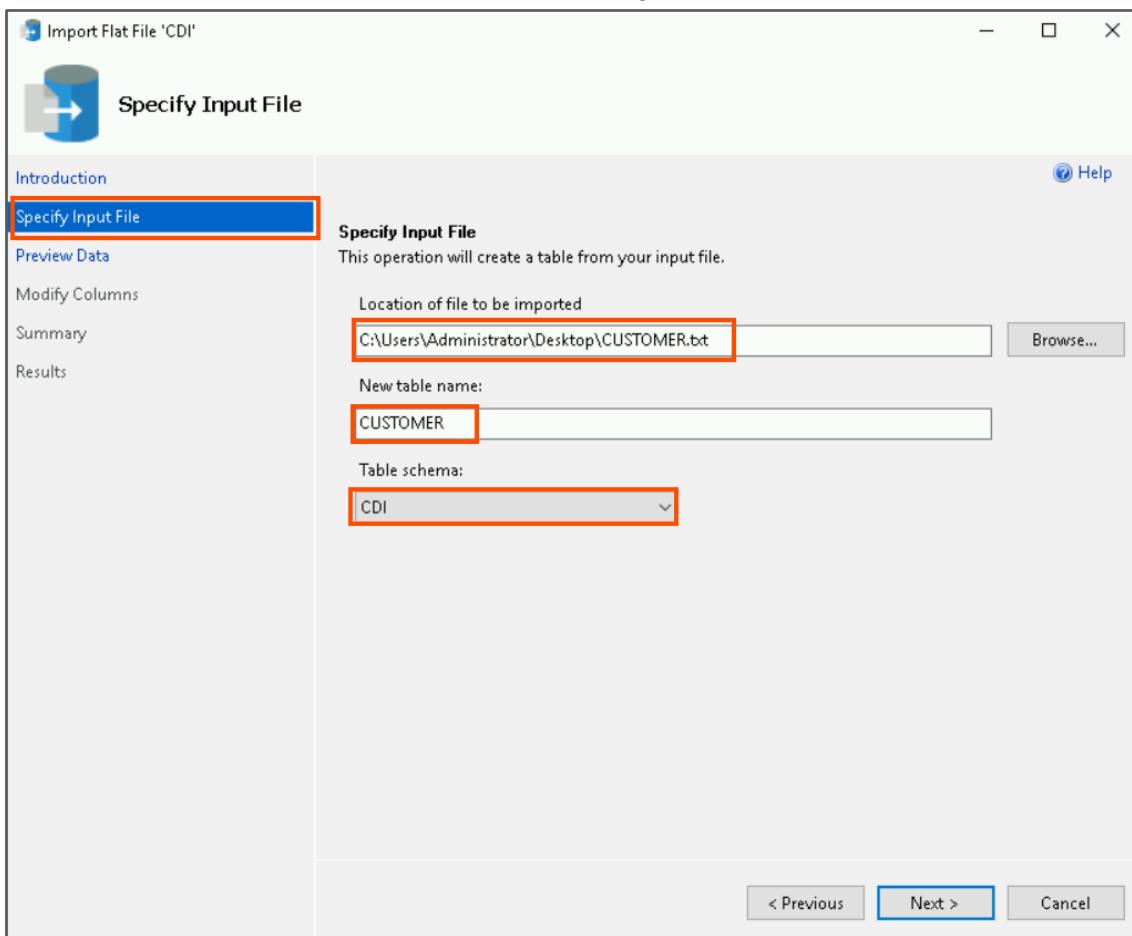
Create Tables

7. From the downloaded Lab Prep Files folder, go to the **Tables** folder. You will see a folder named CDI. These folders contain source tables in a flat file format. You will now import the data tables into the MS SQL Server Management Studio tool.
8. Navigate to the SQL Server client tool and right-click the **CDI** database.
9. Select **Tasks > Import Flat File**.



10. The Import Flat File 'CDI' wizard opens. Click **Next**.
11. In the Specify Input File tab, click **Browse** to navigate to the CDI database folder, and select the flat file **CUSTOMER**.

12. Retain the table name as **CUSTOMER** and change the Table Schema to **CDI**.



13. Click **Next**.

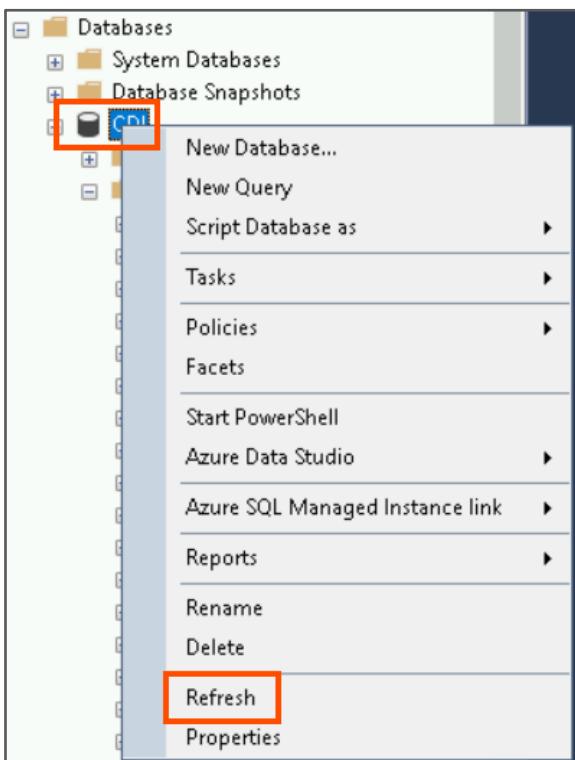
14. In the Preview Data tab, view the data, and click **Next**.

15. In the Modify Columns tab, click **Next**.

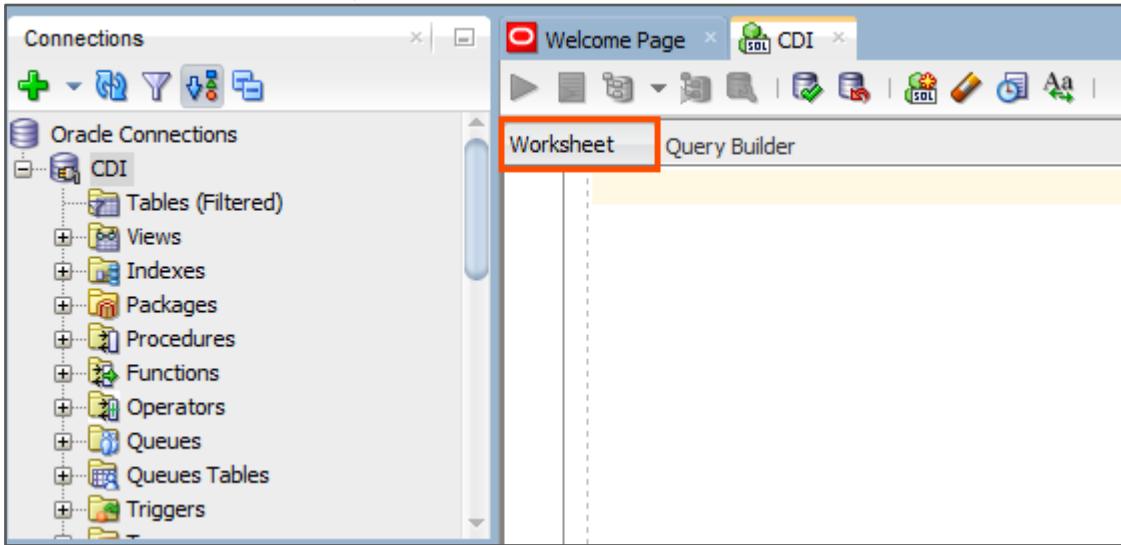
16. In the Summary tab, click **Finish**. This will complete the data import operation.

17. Click **Close** to close the data import wizard.

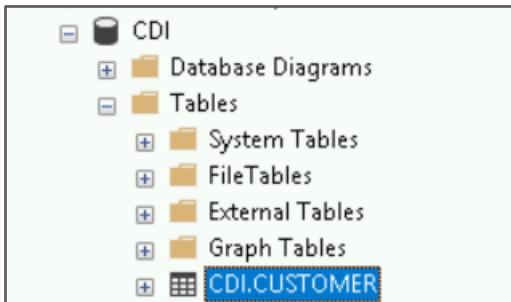
18. To populate the newly added CUSTOMER database table, right-click the database **CDI** and click **Refresh**.



19. To create the tables in CDI, select the **Worksheet** tab.



20. Observe that the CUSTOMER table is successfully created in the CDI database.



21. Similarly, create the following tables in the CDI database (using **CDI** as schema):

Note: You will find all the required Flat Files of the tables in the Tables > CDI folder of Lab Prep Files.

- a. ORDERS
 - b. TRANSACTION
 - c. DEALERSHIP
 - d. EMPLOYEE
22. Now, create another database and name it as **CDI_STUDENT**. This will be your target database.
23. Close the SQL Server client tool.

Thus, you have successfully created databases and database tables in SQL Server.

This concludes the lab.

Module 1: Informatica Cloud Overview

Lab 1-1: Navigating the IICS Interface

Overview:

Informatica Intelligent Cloud Services (IICS) is a platform that helps in Enterprise Data Management through a suite of Intelligent Cloud services. To effectively manage data, the IICS platform provides Data Integration, Administrator, and Monitor services.

The Data Integration service synchronizes data between a heterogeneous source and a target.

The Administrator service provides organization management capabilities such as managing security, licenses, users, user groups, user roles, connections, schedules, add-on bundles, and swagger files.

Objective:

- Log in to the Informatica Cloud Org
- Navigate between services
- Access the Informatica Cloud online help
- Search the online help

Scenario:

After hearing about IICS, Ruby wants to use Informatica Cloud Data Integration Service to improve the performance of her store. So, to introduce Ruby to various features of IICS, John tells Ruby how to access the IICS interface and navigate between the services. He also explains the procedure to access the online help option to Ruby.

In this lab, Ruby will access the IICS interface and access the online help option. Ruby will also explore various IICS services.

Duration:

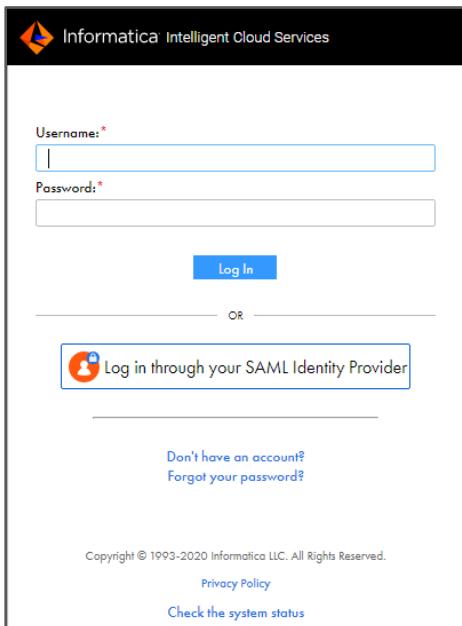
10 minutes

Tasks

Access IICS Interface

1. Open a web browser and copy the following **Informatica Cloud** URL into the browser:
<https://dm-us.informaticacloud.com/identity-service/home>

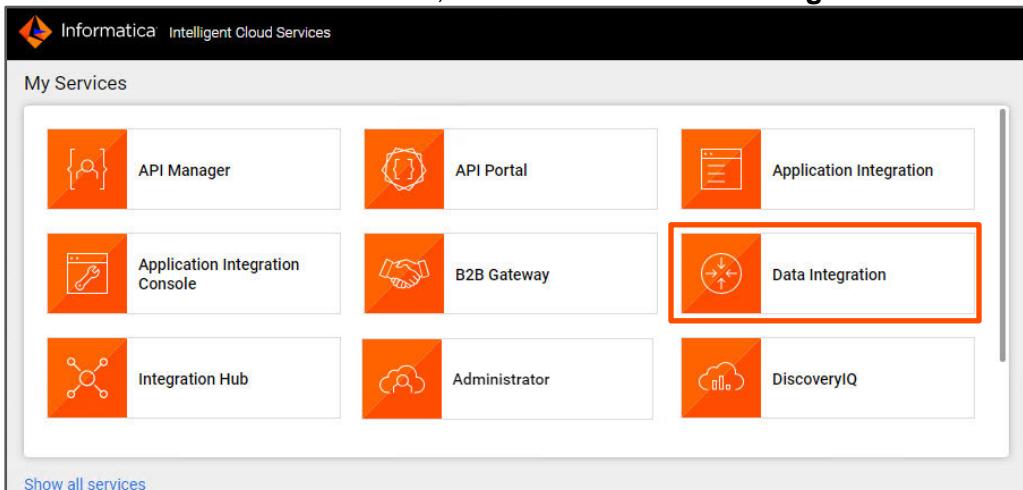
2. Enter your login credentials and click **Log In**.



The screenshot shows the Informatica Intelligent Cloud Services login page. It features a black header bar with the Informatica logo and the text "Informatica Intelligent Cloud Services". Below the header is a white form area with two input fields: "Username:" and "Password:", both marked with a red asterisk. A blue "Log In" button is positioned below these fields. To the right of the buttons is the text "OR". Below "OR" is a blue rectangular button with the text "Log in through your SAML Identity Provider" and a user icon. At the bottom of the form, there are two links: "Don't have an account?" and "Forgot your password?". At the very bottom of the page, the copyright notice "Copyright © 1993-2020 Informatica LLC. All Rights Reserved." is followed by three links: "Privacy Policy", "Check the system status", and "Check the system status".

The **My Services** window appears.

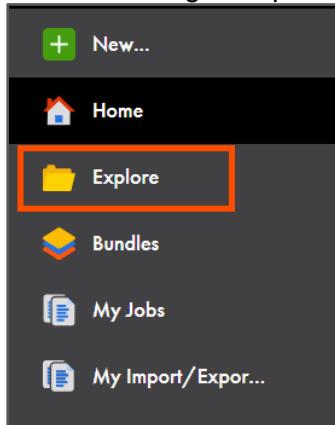
3. From the list of available services, locate and select **Data Integration**.



The screenshot shows the "My Services" window in the Informatica Intelligent Cloud Services interface. The title bar reads "My Services". Below the title, there is a grid of service icons and names. The services listed are: API Manager, API Portal, Application Integration, Application Integration Console, B2B Gateway, Data Integration, Integration Hub, Administrator, and DiscoveryIQ. The "Data Integration" service is highlighted with a red border. At the bottom left of the grid, there is a link "Show all services".

Note: The number of services that you can see in the list varies from Org to Org depending upon the licenses and configuration.

4. From the navigation pane, select **Explore**.



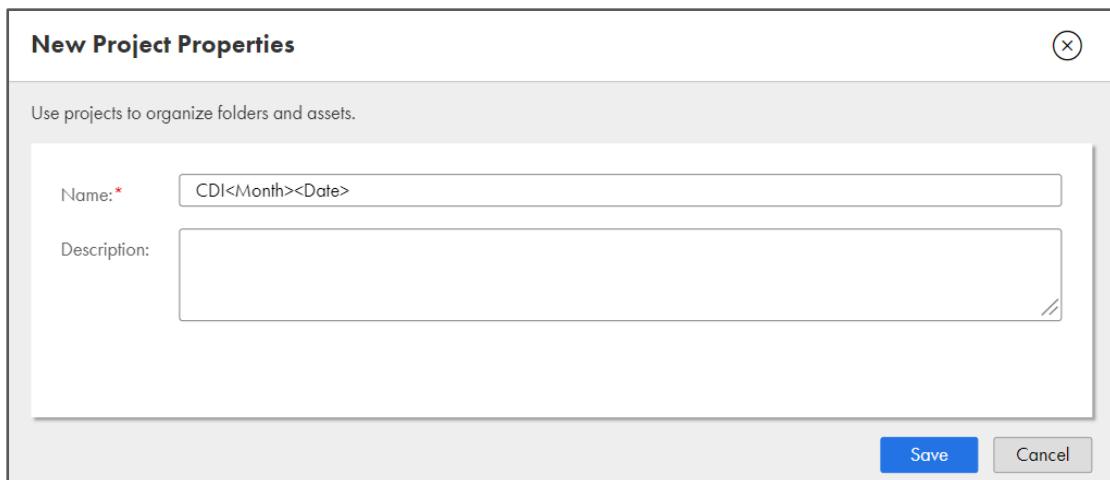
The Explore page shows all the projects and assets built using IICS.

Create a Working Folder

5. Click **New Project**.



6. Name the project as **CDI<Month><Date>**. Here replace <Month> and <Date> with the month and date on you started the training. For example, if you started the CDI training on **19th January**, the course name would be CDI Jan 19. Click **Save**.



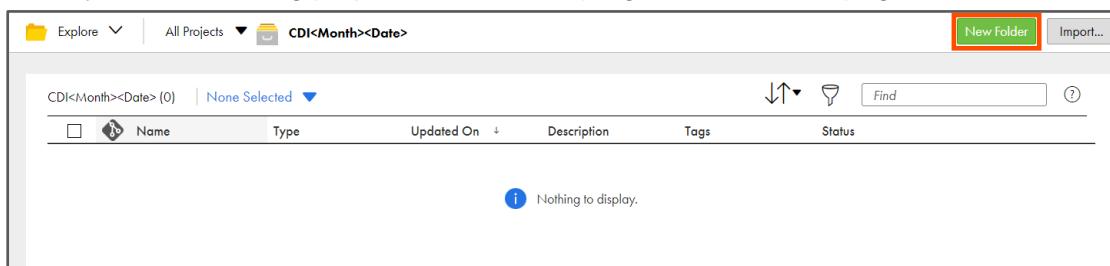
New Project Properties

Name: * CDI<Month><Date>

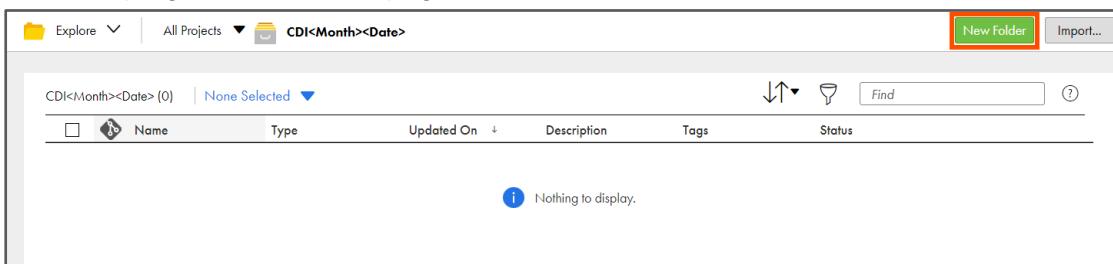
Description:

Save Cancel

7. Go to your CDI training project and on the top right corner of the page, click **New Folder**.



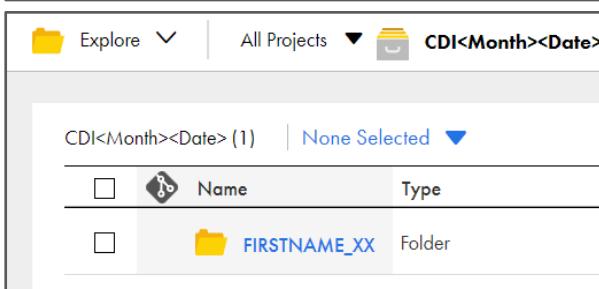
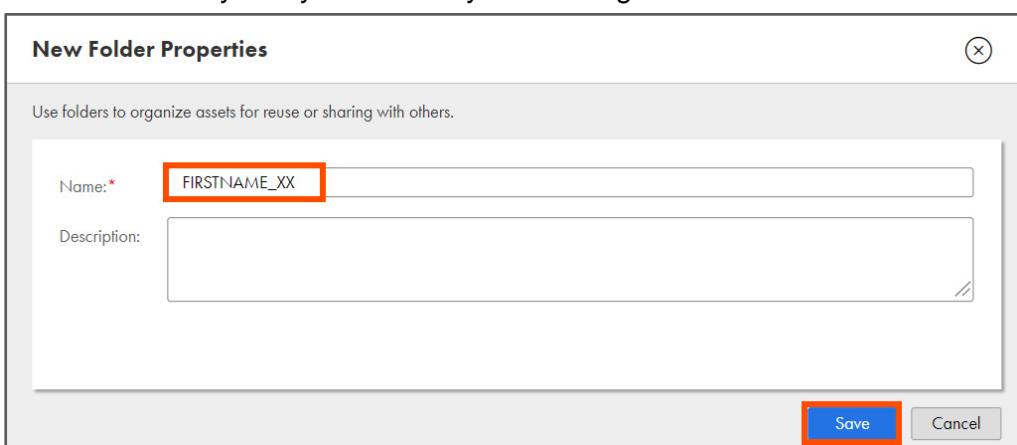
8. On the top right corner of the page, click **New Folder**.



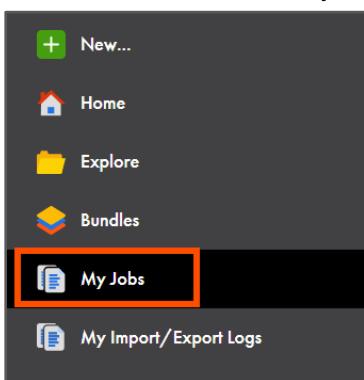
9. Name the folder as **FIRSTNAME_XX**.

Note: Here, replace **FIRSTNAME** with your original first name and **XX** with your DOB to avoid confusion between various working folders.

10. Click **Save**. Verify that you can see your working folder.



11. To check the status of a job, from the navigation pane, select **My Jobs**.



My Jobs | Data Integration

Jobs (561) Up to date Updated 7:17:10 AM PDT    

Instance Name	Subtasks	Start Time ▾	End Time	Rows Processed	Status
02_NormalizerAggregator_Task-2		Feb 15, 2021, 3:58 AM	Feb 15, 2021, 3:58 ...	180	 Success
XX_ErrorHandling_Task-4		Feb 15, 2021, 3:22 AM	Feb 15, 2021, 3:22 ...	15	 Success
SXX_FirstName_StructureParser-2		Feb 15, 2021, 3:17 AM	Feb 15, 2021, 3:17 ...	7	 Success
SXX_FirstName_Employees-9		Feb 15, 2021, 3:11 AM	Feb 15, 2021, 3:11 ...	4	 Success
SXX_FirstName_Employees-8		Feb 15, 2021, 3:09 AM	Feb 15, 2021, 3:09 ...	0	 Success
SXX_FirstName_WebServices-3		Feb 15, 2021, 2:46 AM	Feb 15, 2021, 2:46 ...	6	 Success
SXX_FirstName_REST_GetWeather_By_City-2		Feb 15, 2021, 2:38 AM	Feb 15, 2021, 2:38 ...	1	 Success

Note: If you do not find any jobs on the My Jobs page, it means that you have no previously executed jobs in your IICS account. As you progress with the labs, you will find the executed jobs status here.

12. In the subsequent lab exercises, to check the updated status of a running task, use the

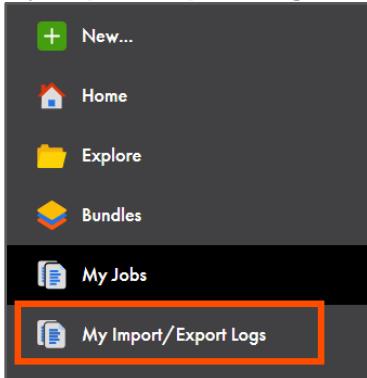
Refresh icon .

My Jobs | Data Integration

Jobs (561) Up to date Updated 7:17:10 AM PDT    

Instance Name	Subtasks	Start Time ▾	End Time	Rows Processed	Status
02_NormalizerAggregator_Task-2		Feb 15, 2021, 3:58 AM	Feb 15, 2021, 3:58 ...	180	 Success
XX_ErrorHandling_Task-4		Feb 15, 2021, 3:22 AM	Feb 15, 2021, 3:22 ...	15	 Success
SXX_FirstName_StructureParser-2		Feb 15, 2021, 3:17 AM	Feb 15, 2021, 3:17 ...	7	 Success
SXX_FirstName_Employees-9		Feb 15, 2021, 3:11 AM	Feb 15, 2021, 3:11 ...	4	 Success
SXX_FirstName_Employees-8		Feb 15, 2021, 3:09 AM	Feb 15, 2021, 3:09 ...	0	 Success
SXX_FirstName_WebServices-3		Feb 15, 2021, 2:46 AM	Feb 15, 2021, 2:46 ...	6	 Success
SXX_FirstName_REST_GetWeather_By_City-2		Feb 15, 2021, 2:38 AM	Feb 15, 2021, 2:38 ...	1	 Success

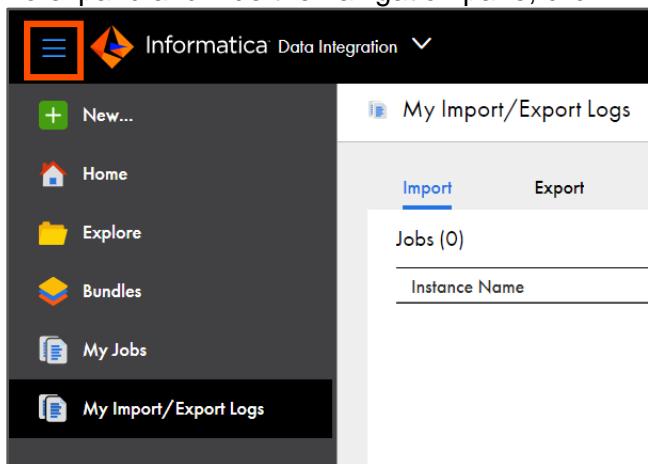
13. To list import/export tasks started by the current user, from the navigation pane, select **My Import/Export Logs**.



The **Import** tab lists all the import jobs, while the **Export** tab shows the export job started by the user.



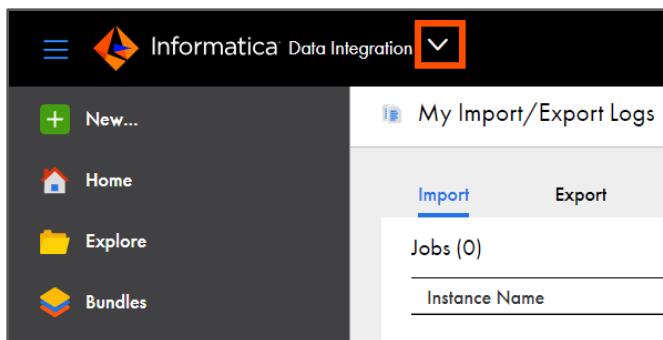
14. To expand and hide the navigation pane, click .



The screenshot shows the Informatica Data Integration interface. On the left is a dark sidebar with icons for 'New...', 'Home', 'Explore', 'Bundles', 'My Jobs', and 'My Import/Export Logs'. The main area is titled 'My Import/Export Logs' with tabs for 'Import' (selected) and 'Export'. Below the tabs is a section for 'Jobs (0)' and an input field for 'Instance Name'.

Switching Between Services

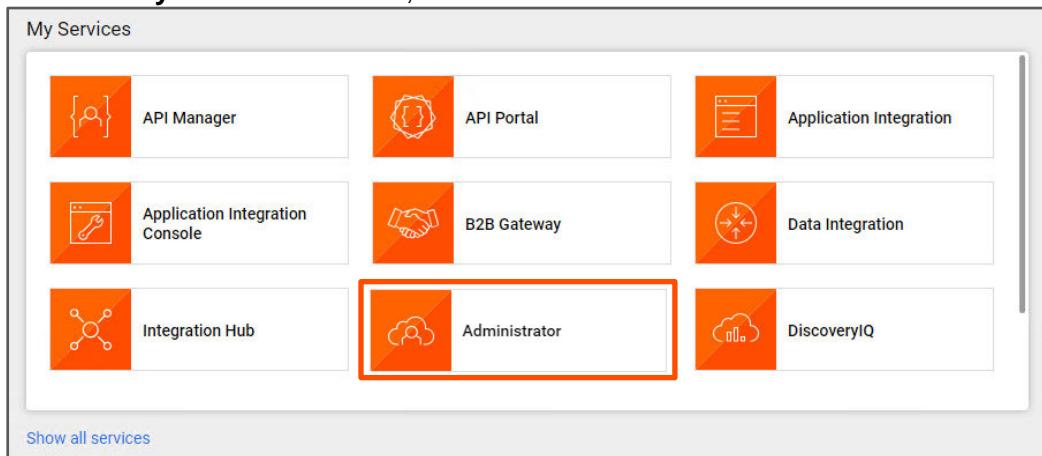
15. To switch between the available services, from the toolbar, select the drop-down next to the current service name. In this case, the service name is **Data Integration**.



The screenshot shows the same interface as above, but the dropdown menu next to the service name 'Data Integration' is open, revealing a list of services: API Manager, API Portal, Application Integration, Application Integration Console, B2B Gateway, Data Integration, Integration Hub, Administrator, and DiscoveryIQ.

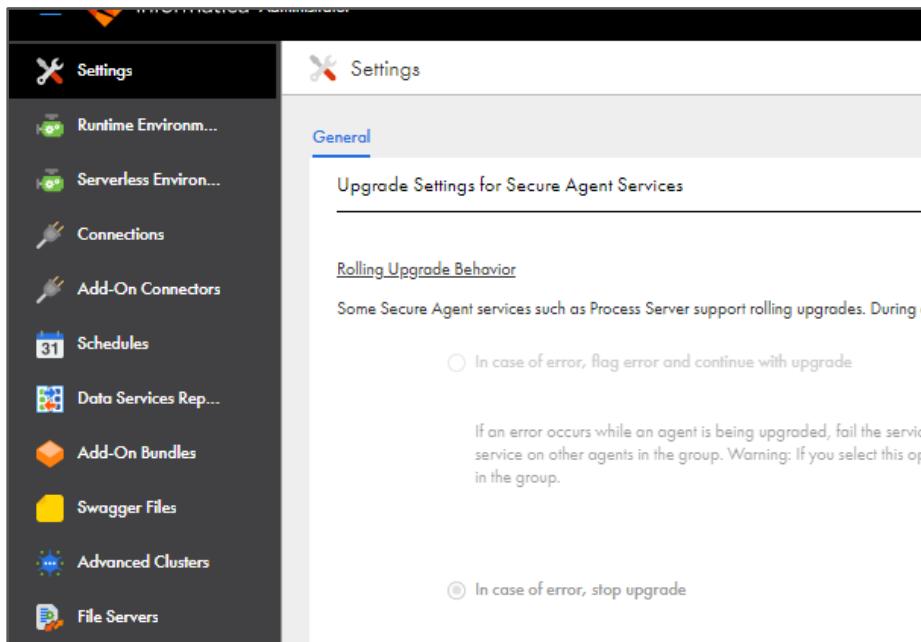
Note: You can select any available service at the time of login as well.

16. From the **My Services** window, select **Administrator**.



The screenshot shows the 'My Services' window with a grid of service icons. The 'Administrator' service is highlighted with a red border. Other services shown include API Manager, API Portal, Application Integration, Application Integration Console, B2B Gateway, Data Integration, Integration Hub, and DiscoveryIQ. At the bottom of the window is a 'Show all services' link.

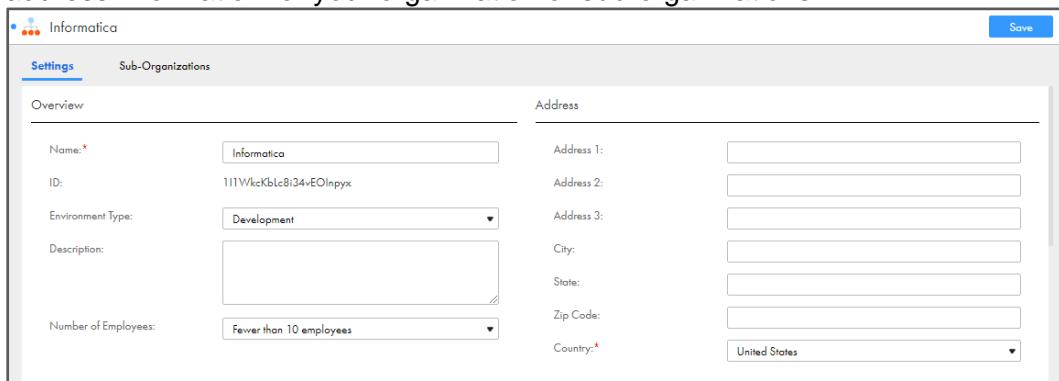
17. If you are not the admin of the IICS Org, then, by default, the Settings page appears.



The screenshot shows the 'Settings' page in the Informatica Cloud interface. On the left, there's a sidebar with various options: Settings (selected), Runtime Environment..., Serverless Environment..., Connections, Add-On Connectors, Schedules, Data Services Rep..., Add-On Bundles, Swagger Files, Advanced Clusters, and File Servers. The main content area is titled 'General' and contains the 'Upgrade Settings for Secure Agent Services' section. It includes a 'Rolling Upgrade Behavior' section with two radio button options: 'In case of error, flag error and continue with upgrade' (unchecked) and 'In case of error, stop upgrade' (checked). A note below explains that if an error occurs while an agent is being upgraded, the service will fail on other agents in the group, with a warning about selecting this option if there are multiple agents.

Note:

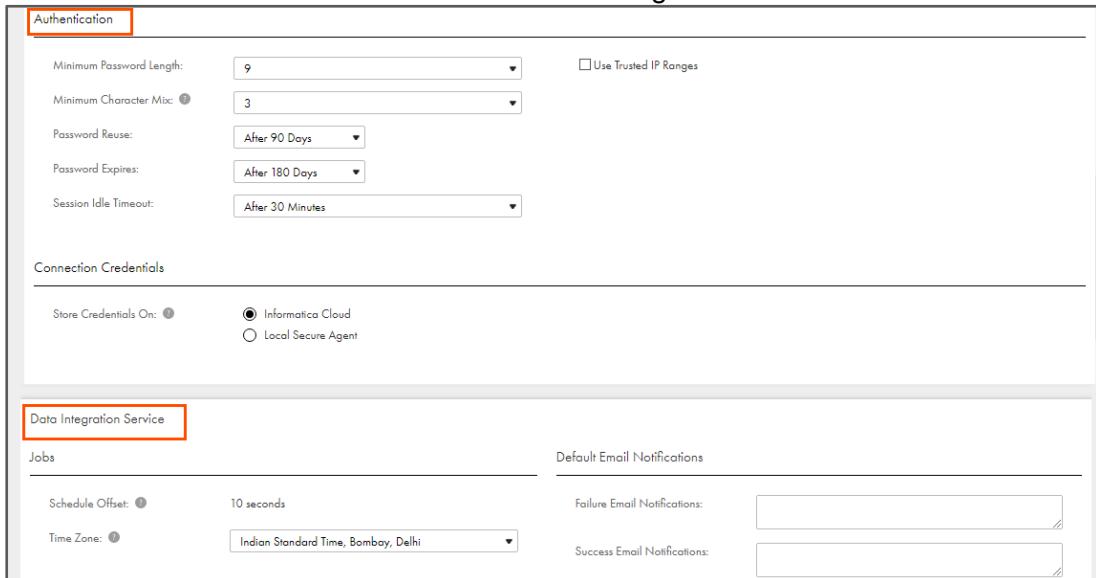
- The tabs you view depend on the privileges and roles you have. If you are an Admin, then, by default, the **Organization** page appears. You can configure Organization properties such as organization name, description, number of employees, and address information for your organization or sub-organizations.



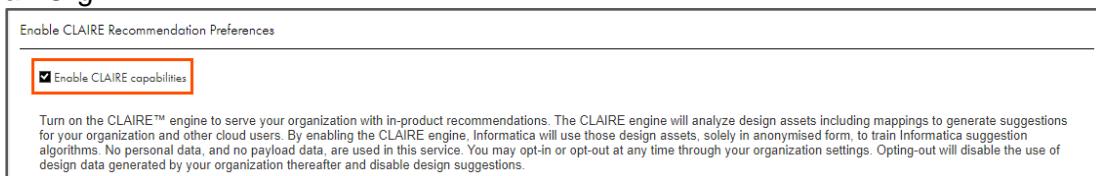
The screenshot shows the 'Organization' settings page. At the top, there's a breadcrumb navigation: 'Informatica' > 'Settings' > 'Sub-Organizations'. The 'Settings' tab is selected. The page has two main sections: 'Overview' and 'Address'. In the 'Overview' section, there are fields for 'Name:' (set to 'Informatica'), 'ID:' (set to '111WkcKblc8i34vEOlnpyx'), 'Environment Type:' (set to 'Development'), 'Description:' (empty), and 'Number of Employees:' (set to 'Fewer than 10 employees'). In the 'Address' section, there are fields for 'Address 1:', 'Address 2:', 'Address 3:', 'City:', 'State:', 'Zip Code:', 'Country:' (set to 'United States'), and a dropdown menu for 'Country'. A blue 'Save' button is located at the top right of the form.

The **Authentication** section is used to update password policies for your Org and connection properties storage.

- b. The **Data Integration service** properties section is used to set the time zone and default addresses for email notifications for the Org.



- c. Towards the bottom of the page, you will have the **CLAIRE Recommendation Preferences** section and by default, the CLAIRE recommendations are enabled in an Org.

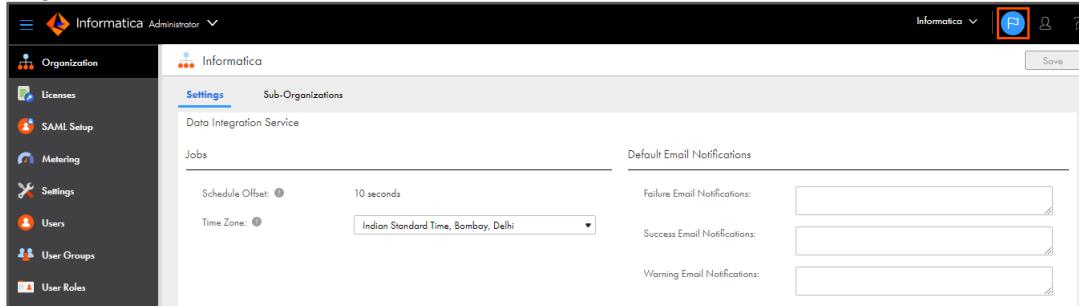


Turn on the CLAIRE™ engine to serve your organization with in-product recommendations. The CLAIRE engine will analyze design assets including mappings to generate suggestions for your organization and other cloud users. By enabling the CLAIRE engine, Informatica will use those design assets, solely in anonymised form, to train Informatica suggestion algorithms. No personal data, and no payload data, are used in this service. You may opt-in or opt-out at any time through your organization settings. Opting-out will disable the use of design data generated by your organization thereafter and disable design suggestions.

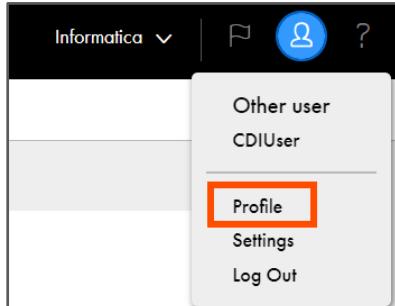
Important: The course is built using the **Admin** role user. Thus, you may see additional tabs/pages in the screenshots.

Accessing Notifications, User details, and Online Help

18. To view the notifications, select the flag icon () on the upper right corner of the IICS page.



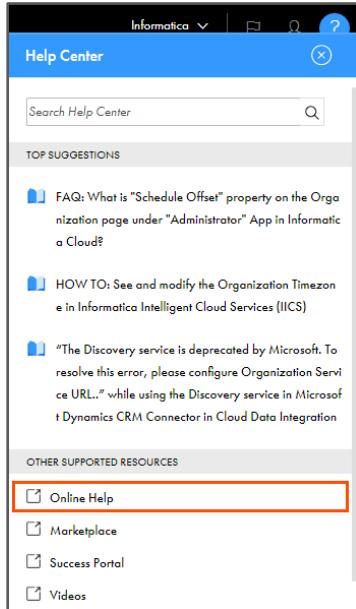
19. To view user-related information, click the user icon ().



Note: You can use the Profile option to update user information like first and last name, job title, password, and security question for the user account. In the above screenshot, the name of the organization and email address have been masked.

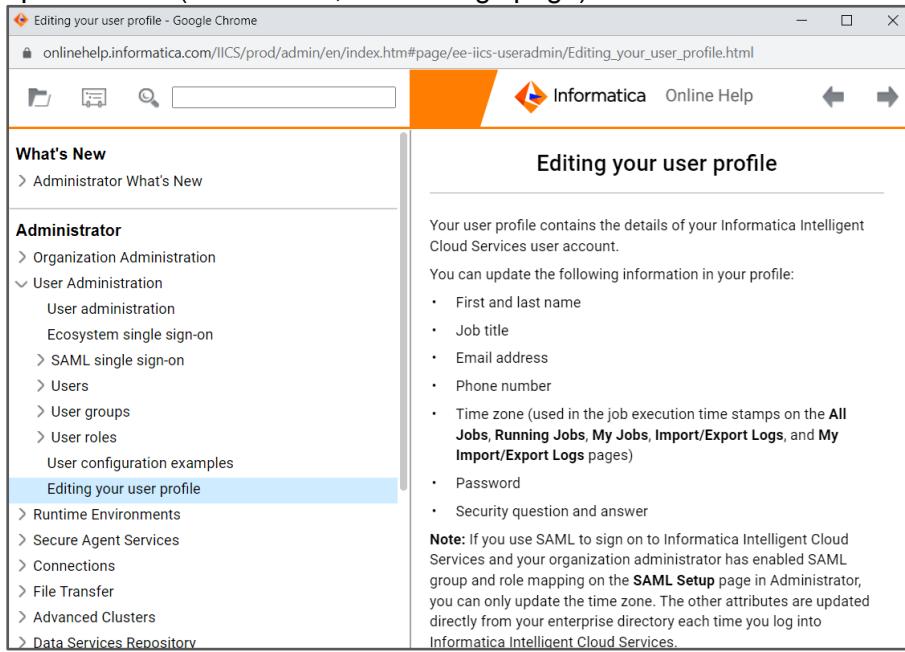
20. To access online help, click the question mark icon ().

21. From the list, select **Online Help**.



Note: The Online Help opens in a new browser window or tab.

22. By default, Online Help shows the information related to the page it was originally opened from (in this case, the Settings page).



What's New

- > Administrator What's New

Administrator

- > Organization Administration
- ▽ User Administration
 - User administration
 - Ecosystem single sign-on
 - > SAML single sign-on
 - > Users
 - > User groups
 - > User roles
 - User configuration examples
 - Editing your user profile**
- > Runtime Environments
- > Secure Agent Services
- > Connections
- > File Transfer
- > Advanced Clusters
- > Data Services Repository

Editing your user profile

Your user profile contains the details of your Informatica Intelligent Cloud Services user account.

You can update the following information in your profile:

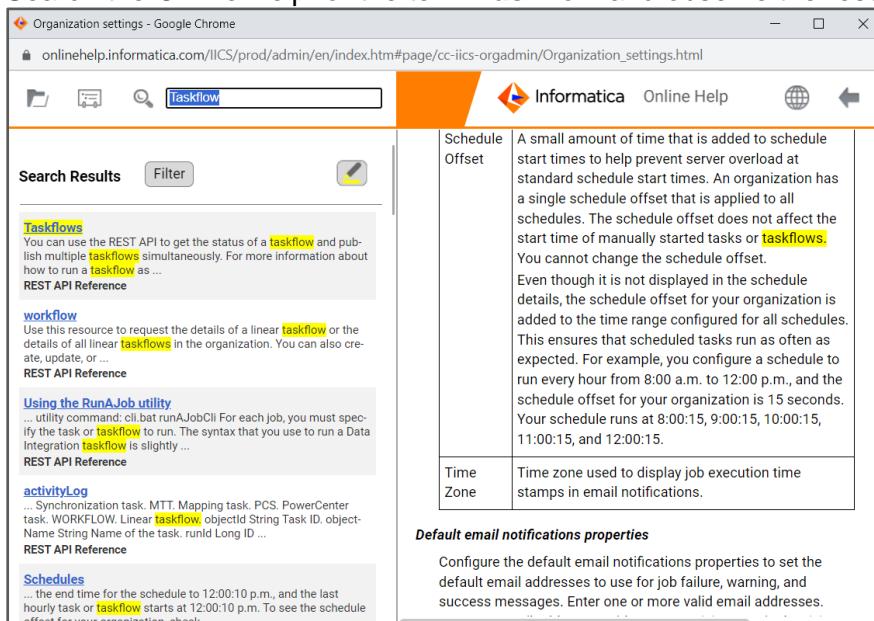
- First and last name
- Job title
- Email address
- Phone number
- Time zone (used in the job execution time stamps on the **All Jobs**, **Running Jobs**, **My Jobs**, **Import/Export Logs**, and **My Import/Export Logs** pages)
- Password
- Security question and answer

Note: If you use SAML to sign on to Informatica Intelligent Cloud Services and your organization administrator has enabled SAML group and role mapping on the **SAML Setup** page in Administrator, you can only update the time zone. The other attributes are updated directly from your enterprise directory each time you log into Informatica Intelligent Cloud Services.

Note: You can browse the Online Help as per the Content, Index, Search, and navigate to the Next and Previous help articles.

If you have performed the **Note** point of step 17, then you will land on the User Profile page in the Online Help section.

23. Search the Online Help for the term **Taskflow** and observe the results.



Schedule Offset	A small amount of time that is added to schedule start times to help prevent server overload at standard schedule start times. An organization has a single schedule offset that is applied to all schedules. The schedule offset does not affect the start time of manually started tasks or taskflows . You cannot change the schedule offset. Even though it is not displayed in the schedule details, the schedule offset for your organization is added to the time range configured for all schedules. This ensures that scheduled tasks run as often as expected. For example, you configure a schedule to run every hour from 8:00 a.m. to 12:00 p.m., and the schedule offset for your organization is 15 seconds. Your schedule runs at 8:00:15, 9:00:15, 10:00:15, 11:00:15, and 12:00:15.
Time Zone	Time zone used to display job execution time stamps in email notifications.

Default email notifications properties

Configure the default email notifications properties to set the default email addresses to use for job failure, warning, and success messages. Enter one or more valid email addresses.

24. Close the online help and the Help Center window.

This concludes the lab.

Module 2: Introduction to Data Integration Service

Lab 2-1: Installing Secure Agent

Overview:

The Secure Agent is a lightweight, self-upgrading program that runs inside your network. It is responsible for moving data from the source to a target. IICS Secure Agent runs all tasks and enables a secure communication between your organization and Informatica Cloud. You can install and run one Secure Agent on a physical or virtual machine. After the Secure Agent is installed, all the users in the organization share the Secure Agent.

In this lab, you will set up the Secure Agent.

Objective:

- Download the Secure Agent
- Install the Secure Agent
- Assign Administrative rights to Secure Agent

Scenario:

John informs Ruby that to integrate various data sources with IICS, she needs to install the Secure Agent in her IICS Org.

In this lab, Ruby will download and install a Secure Agent in IICS. She will also assign Administrative rights to the Secure Agent to access the files present on her machine.

Important:

You can install Secure Agent on machines running on **Windows** or **Linux** operating systems only. This lab guide contains steps to install Secure Agent on Windows machine. For installing Secure Agent on Linux OS, refer the link: <https://knowledge.informatica.com/s/article/513826>

Duration:

30 minutes

Secure Agent Minimum Requirement:

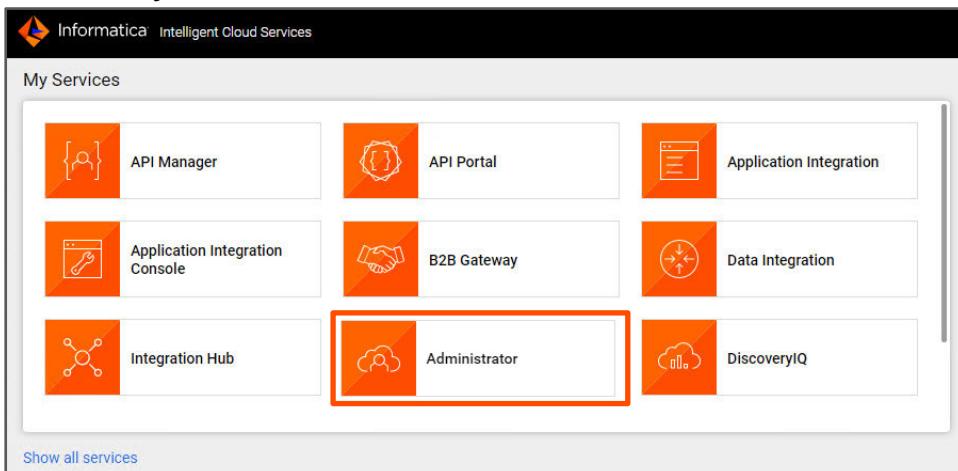
You can install the Secure Agent on any machine that has internet connectivity and can access Informatica Intelligent Cloud Services.

- Verify that the machine where you install the Secure Agent has at least 5 GB of free disk space.
- Verify that the account you use to install the Secure Agent has access to all remote directories that contain flat source or target files.
- Verify that no other Secure Agent is installed on the machine. If another Secure Agent is installed on the machine, you must uninstall it first.

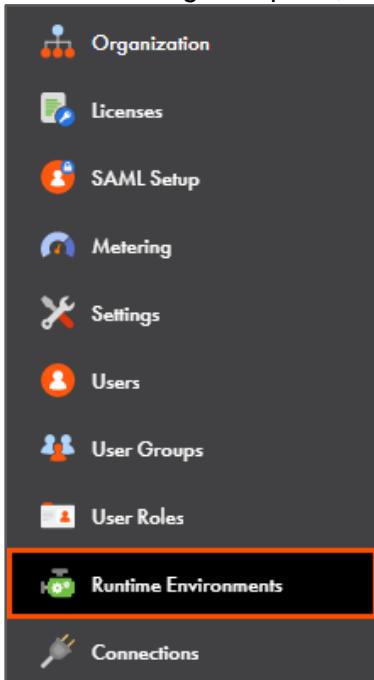
Tasks

Download the IICS Secure Agent

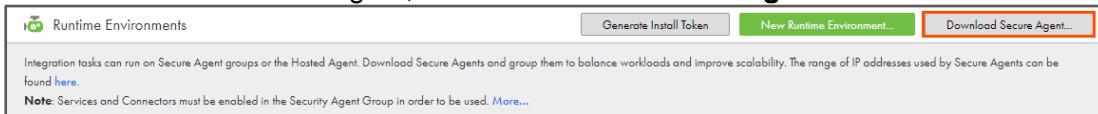
1. Enter your IICS login credentials and click **Log In**.
2. From the **My Services** window, select **Administrator**.



3. From the navigation pane, select **Runtime Environments**.

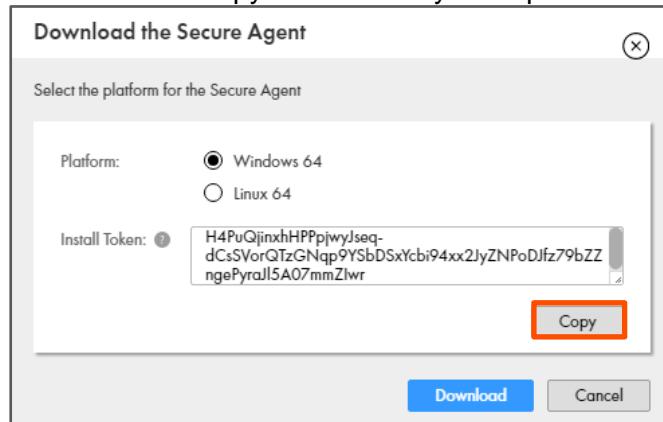


4. To download the Secure Agent, click **Download Secure Agent**.



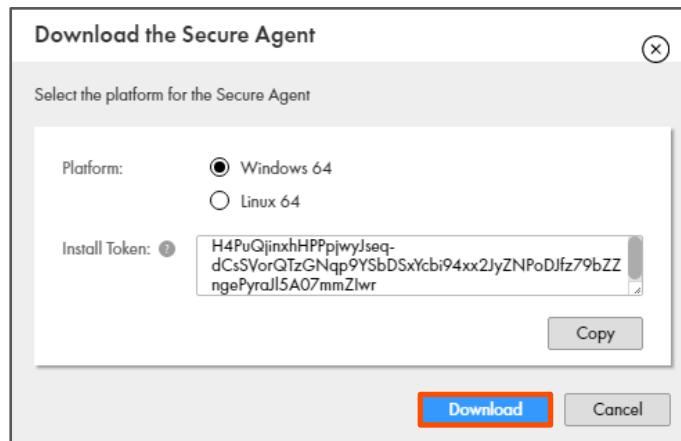
5. From the Download the Secure Agent window, select **Windows 64**, and from the Install Token field, click **Copy**.

Note: This will copy the token to your clipboard.



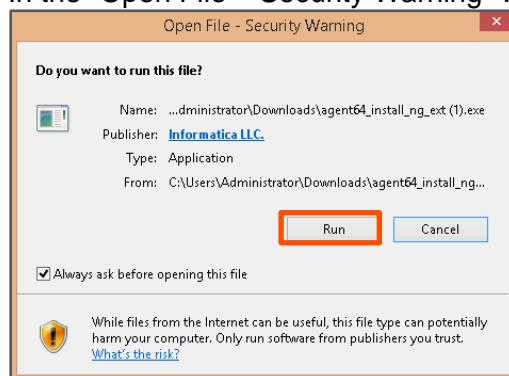
Note: If you are installing Secure Agent on Linux platform, select **Linux 64** in the Download the Secure Agent window.

6. Paste the copied token in a text file.
7. Click **Download**.

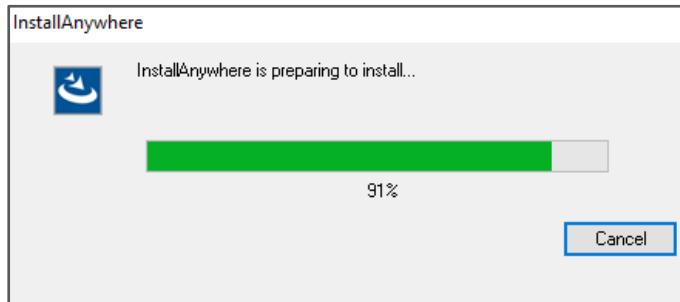


Install the Secure Agent

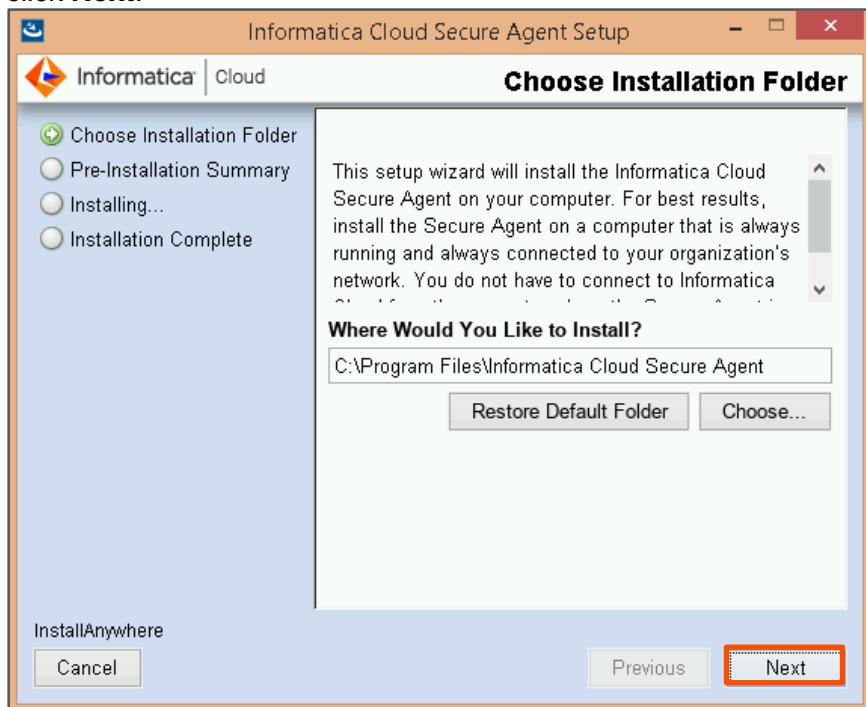
8. Go to the download directory on your machine and locate the agent installation file.
9. To install the Secure Agent, run the executable file **agent64_install_ng_ext.exe**.
10. In the "Open File – Security Warning" window, click **Run**.



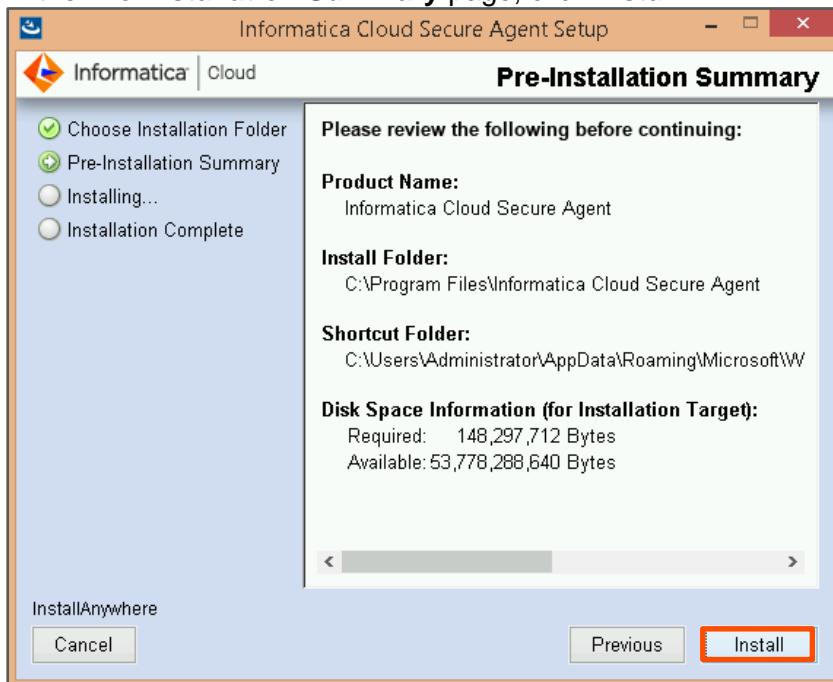
Note: When the Secure Agent initiates the installation, it displays the **InstallAnywhere** window.



11. In the **Choose Installation Folder** window, retain the default installation location and click **Next**.

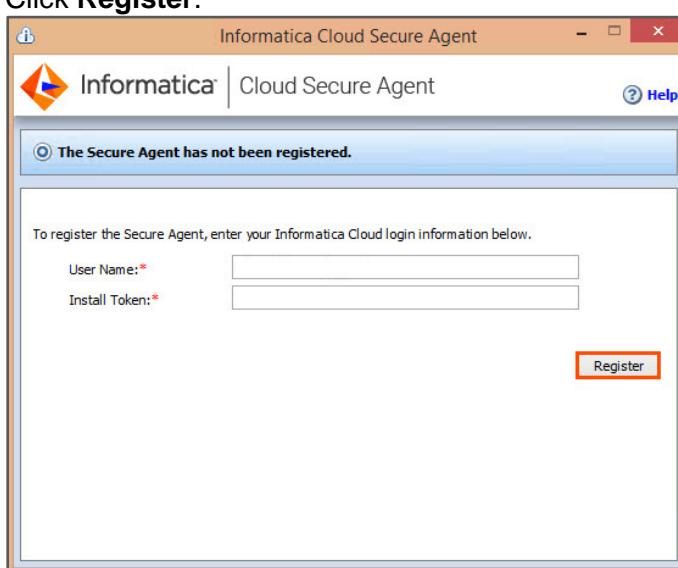


12. In the **Pre-Installation Summary** page, click **Install**.



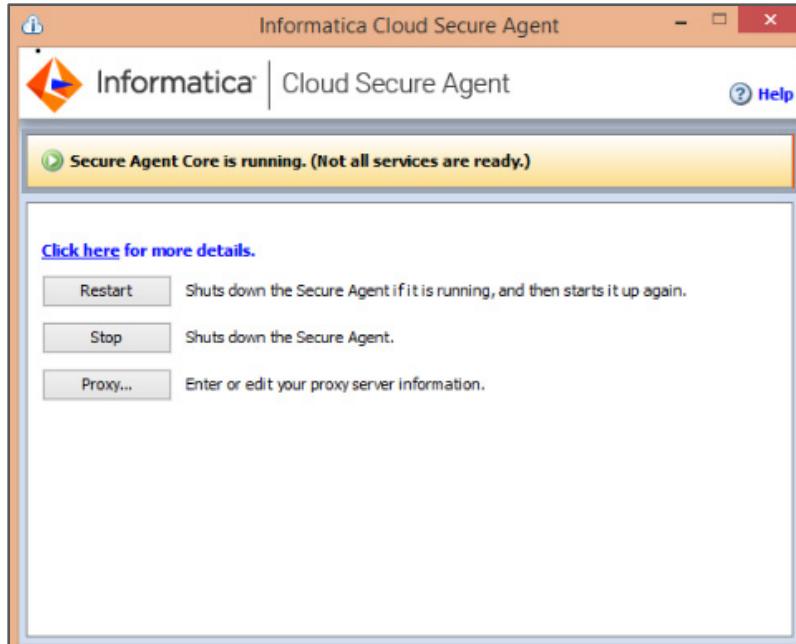
Note: After the installation process is complete, the Secure Agent registration page appears with the message **The Secure Agent has not been registered.**

13. To register your Secure Agent, enter your IICS Org username and paste the Install Token copied earlier in the Install Token field.
14. Click **Register**.



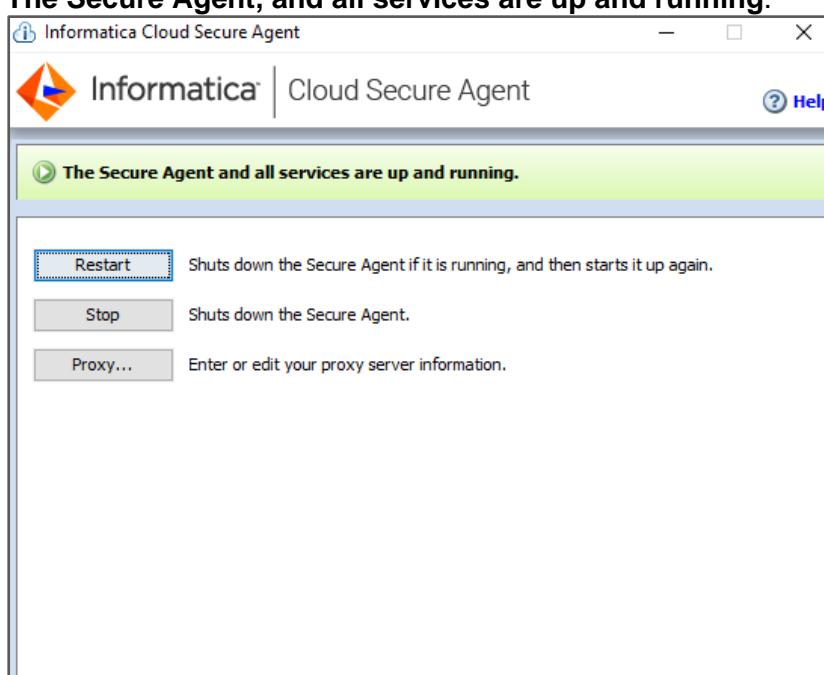
Note: In the above image, the User Name and Install Token is masked. After successful registration, the Secure Agent will download the necessary files for the connectors.

15. When the configuration of the Secure Agent services is in progress, it displays "**Secure Agent Core is running. (Not all services are ready.)**" message.



Note:

- a. It takes about 10 to 15 minutes for the secure agent to come up and for all the services to be in a running state.
 - b. If your organization uses an outgoing proxy server to connect to the internet, you must configure the proxy server settings in the **Proxy** tab of the Secure Agent installer.
16. After the Secure Agent configures all the services, the agent status message changes to **The Secure Agent, and all services are up and running.**

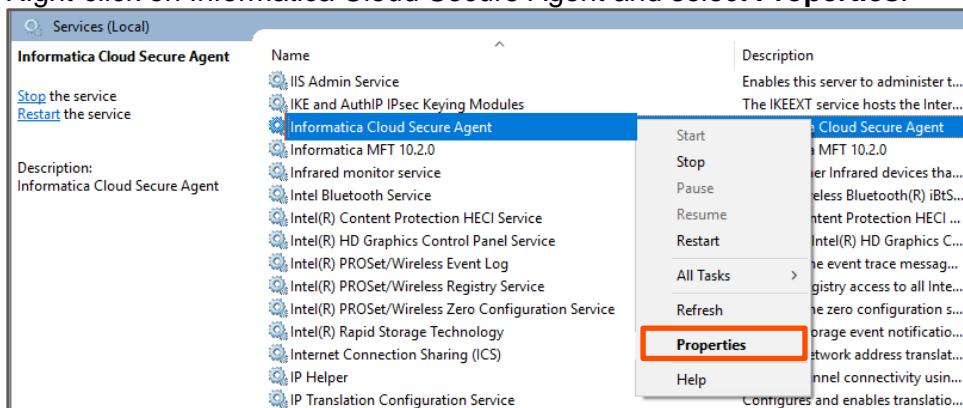


17. Minimize the Secure Agent window.

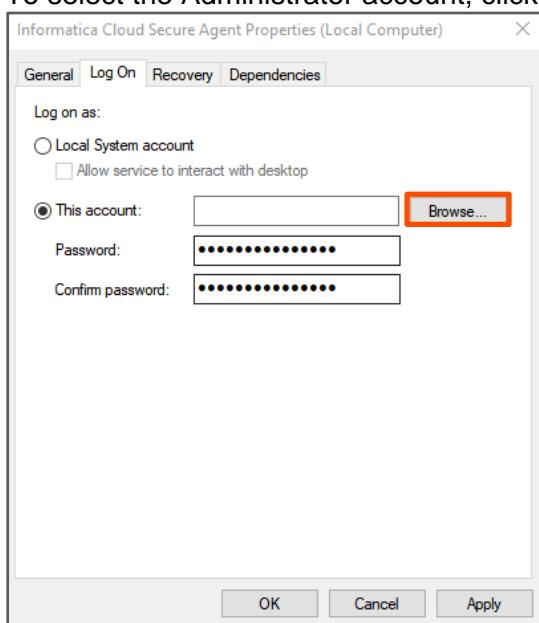
Setting Administrative Rights for Secure Agent

When you install Secure Agent on Windows platform, you need to assign Administrative rights to the Secure Agent service. This allows the Secure Agent to access files and directories present on the machine on which the Secure Agent is installed. This feature is useful when you configure connections or run tasks that use Flat File or FTP/SFTP connection types, that require read and write permissions on the related directories.

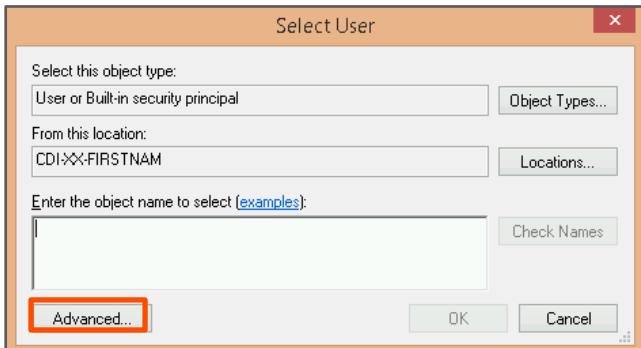
18. Select the windows **Start** menu.
19. In the search bar, type **services**, and press **enter** on your keyboard.
20. In the services page, from the list of services, select **Informatica Cloud Secure Agent**.
21. Right-click on Informatica Cloud Secure Agent and select **Properties**.



22. Go to **Log On** tab and select **This account**.
23. To select the Administrator account, click **Browse**.



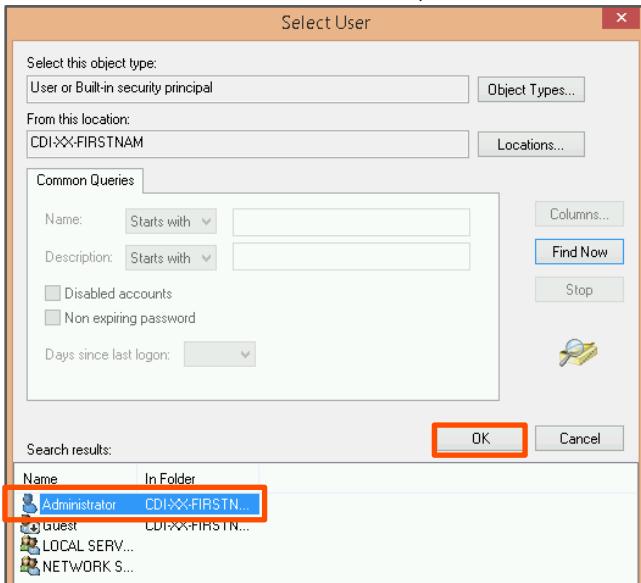
24. Click **Advanced**.



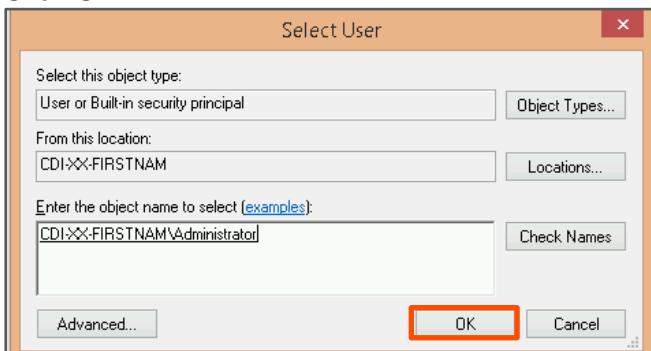
25. In the Select User window, select **Find Now**.

26. From the list, select **Administrator**, and click **OK**.

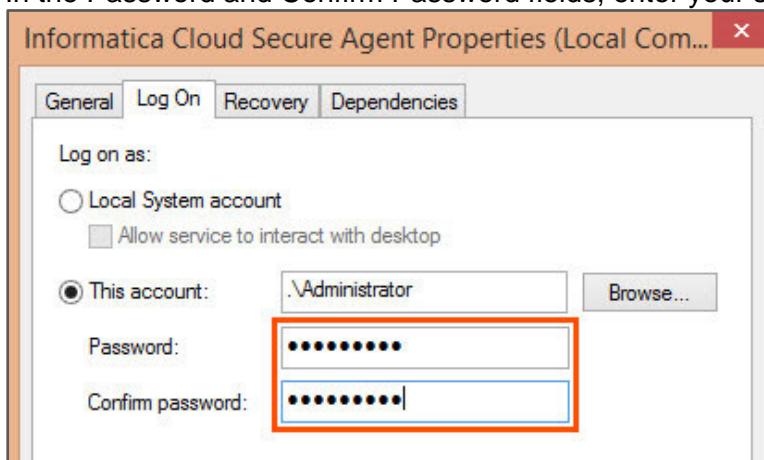
Important Note: You must select your system admin user from the list shown on your screen. In the screenshot below, Administrator is the windows admin profile user.



27. Click **OK**.

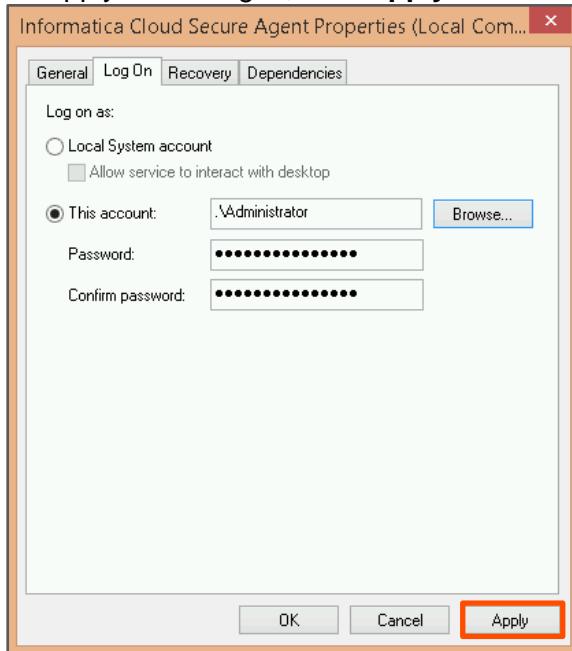


28. In the Password and Confirm Password fields, enter your system user's password.

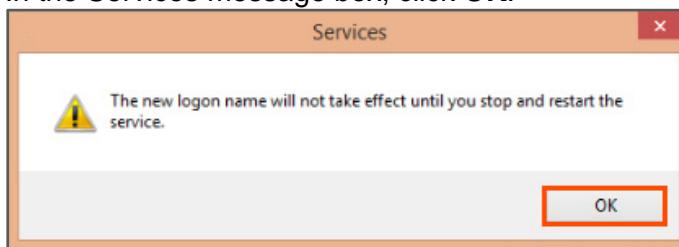


Important Note: This is the password of Windows user used to log in to the machine on which the Secure Agent is installed. If you are installing the agent on your local machine, use your Windows user password in the Password and Confirm Password fields.

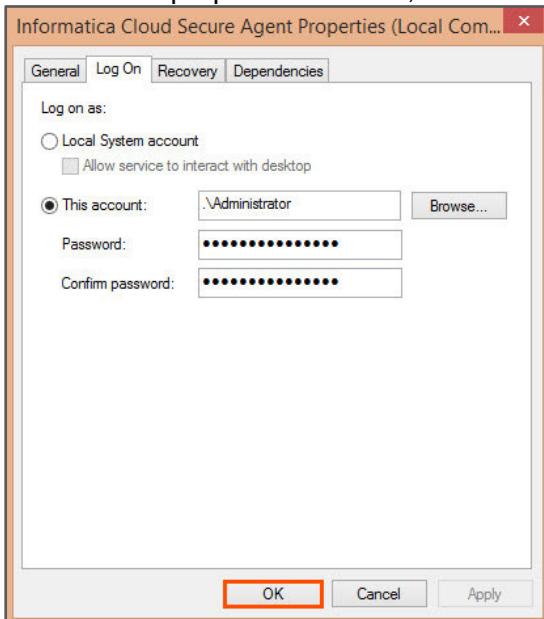
29. To apply the changes, click **Apply**.



30. In the Services message box, click **OK**.



31. To close the properties window, click **OK**.



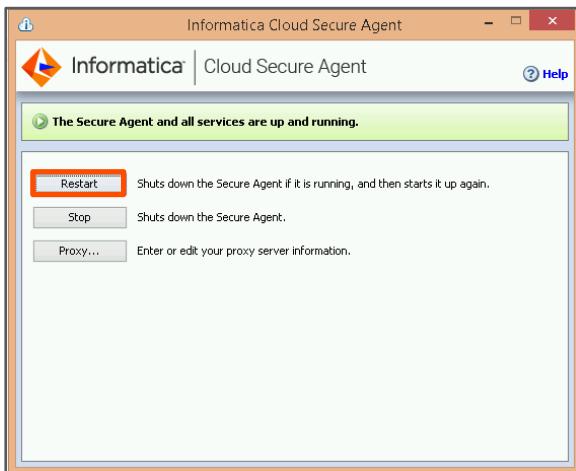
Note: After this, you must restart the Secure Agent for the changes to take effect.

32. Close the Services window.

33. In the desktop, right-click on the Secure Agent, and select **Run as administrator**.

Note: Skip this step if the Secure Agent window is already open.

34. Click **Restart**.



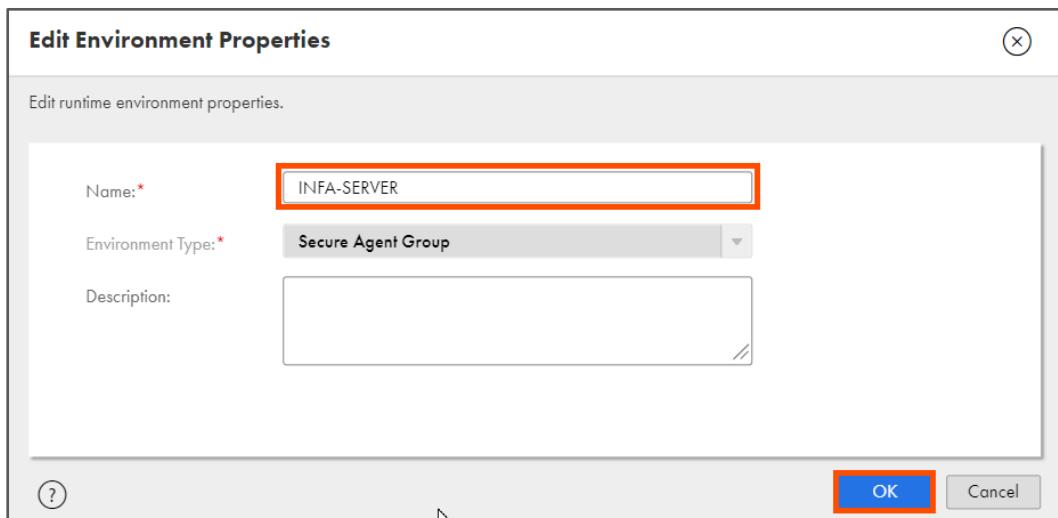
Note: It takes 10-15 minutes for the secure agent to come up. You must wait for the Secure Agent to get back to the running state.

View the Secure Agent and Rename it in IICS

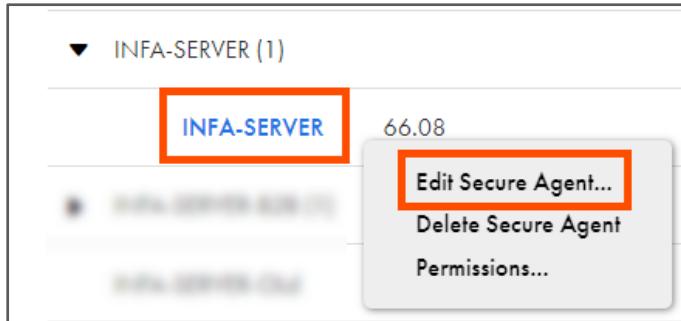
35. Navigate back to the browser, and from the Administrator service navigation pane, select **Runtime Environments**.
36. Refresh the page if its already opened and observe that the Secure Agent status is **Running**.
Note: By default, the Secure Agent takes the name of the computer it is installed on. If the Secure Agent does not appear in **Runtime Environments** page, you can refresh the webpage to view the updated status of the page.
37. Right-click on the secure agent group and select **Edit Environment Properties**.



38. Rename the agent group to **INFA-SERVER** and click **OK**.

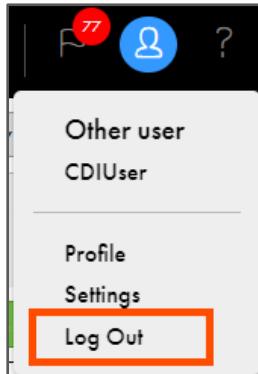


39. Similarly, expand the agent group, right-click on the secure agent, and click **Edit Secure Agent**. Enter **INFA-SERVER** as Agent Name and click **Save**.



Note: It is NOT mandatory to rename the secure agent while working with it. We have asked you to rename secure agent to maintain uniformity of the screenshots you see in the lab guides and the screen you see in your machine. All the lab exercises are built with the secure agent named as **INFA-SERVER**.

40. To log out from the Org, click the **User** icon, and select **Log Out**.



This concludes the lab.

Module 2: Introduction to Data Integration Service

Lab 2-2: Creating Flat File Connections

Overview:

Flat file connections store the information to create, access, and store flat files. There may be multiple flat files that you need to access from a local system.

Objective:

- Create flat file connections

Scenario:

As mentioned earlier, different outlets of NH Suppliers manage data on different data sources. The outlet in California uses flat files to organize the everyday sales data. So, in this lab, Ruby will create a Flat File connection to access flat files on her local machine.

Duration:

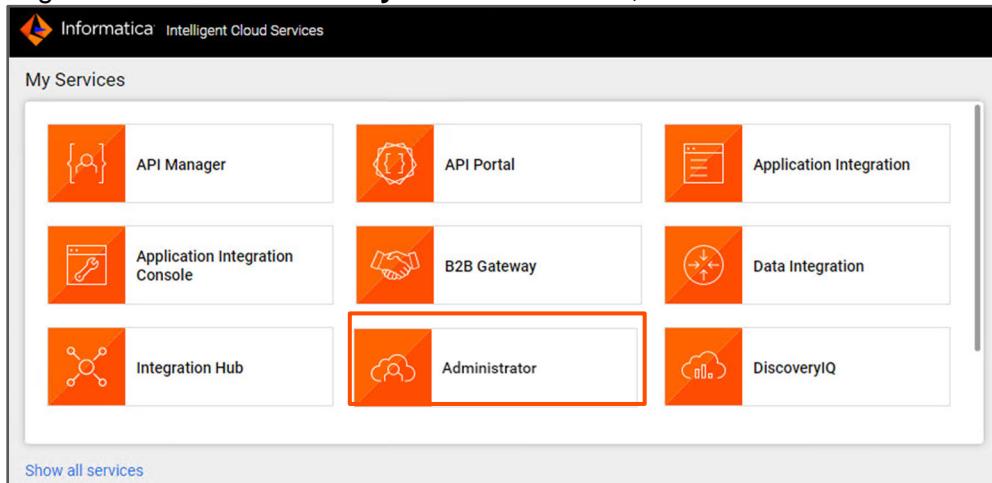
10 minutes

Tasks

Create Source and Target Flat File Connections

You have already created **IICSLabFiles** folder and pasted a source folder named **SrcFiles** – which has all the source files required for the training. Also, you have pasted a target folder named **TgtFiles** – this is the target folder to which you will write the target files/data. Thus, in this section, you will create 2 flat file connections – 1 source connection and 1 target connection pointing to their respective directories.

1. Login to IICS and from the **My Services** window, select **Administrator**.



2. From the navigation pane, select **Connections**.

3. To create a new connection, select **New Connection**.



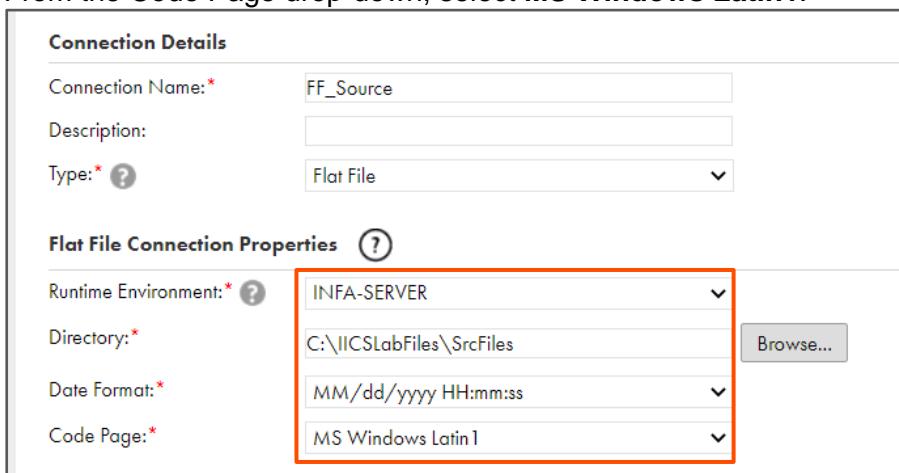
The screenshot shows the Informatica Connections interface. At the top right, there is a green button labeled "New Connection". Below it, a message says "Configure connections to work with applications, databases, and files." There is also a "Connections" icon at the top left.

4. Enter the Connection Name as **FF_Source**. This is the source flat file connection.
 5. From the Type drop-down, select **Flat File**.



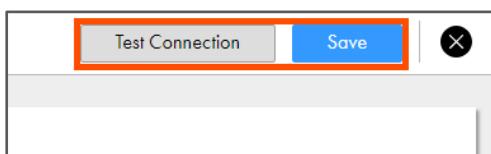
The screenshot shows the "Connection Details" configuration screen. It includes fields for "Connection Name" (set to "FF_Source"), "Description" (empty), and "Type" (set to "Flat File"). The "Type" dropdown is highlighted with a red box.

6. From the **Runtime Environment** drop-down, select your secure agent group.
 7. In the Directory field, enter **C:\IICSLabFiles\SrcFiles**.
 8. From the Code Page drop-down, select **MS Windows Latin1**.



The screenshot shows the "Flat File Connection Properties" section. It contains four fields: "Runtime Environment" (set to "INFA-SERVER"), "Directory" (set to "C:\IICSLabFiles\SrcFiles"), "Date Format" (set to "MM/dd/yyyy HH:mm:ss"), and "Code Page" (set to "MS Windows Latin1"). All these fields are highlighted with a red box.

9. Test and save the connection.



The screenshot shows a small dialog box with three buttons: "Test Connection" (highlighted with a red box), "Save" (highlighted with a blue box), and a close button "X".

FF_Source

The test for this connection was successful.

Connection Details

Connection Name: FF_Source
 Description:
 Type: Flat File (Informatica)
 Created On: Jul 4, 2023 4:53:58 AM
 Updated On: Jul 29, 2023 11:44:12 PM
 Created By: cdiuser
 Updated By: cdiuser

Flat File (Informatica) Connection Properties

Runtime Environment: INFA-SERVER
 Directory: C:\IICSLabFiles\SrcFiles
 Date Format: MM/dd/yyyy HH:mm:ss
 Code Page: MS Windows Latin1

10. Similarly, create target flat file connection and name it as **FF_Tgt_Student_XX**. Here, in the asset name, replace XX with your Data of Birth (DOB).
11. Enter the target flat file directory as **C:\IICSLabFiles\TgtFiles**.

FF_Tgt_Student_XX

Connection Details

Connection Name: FF_Tgt_Student_XX
 Description:
 Type: Flat File (Informatica)

Flat File (Informatica) Connection Properties

Runtime Environment: INFA-SERVER
 Directory: C:\IICSLabFiles\TgtFiles
 Date Format: MM/dd/yyyy HH:mm:ss
 Code Page: MS Windows Latin1

12. Test and save the connection.

FF_Tgt_Student_XX

The test for this connection was successful.

Connection Details	
Connection Name:	FF_Tgt_Student_XX
Description:	
Type:	Flat File (Informatica)
Created On:	Sep 13, 2022 9:16:52 AM
Updated On:	Jul 29, 2023 11:48:30 PM
Created By:	cdiuser
Updated By:	cdiuser

Thus, you have created your source and target flat file connections. Using these flat file connections, you will access the source and target files.

GENERAL INSTRUCTIONS: In the course, all the assets are named in a certain format by following the Informatica naming conventions. They all “XX” in their asset name and a few of them have FirstName in the asset names. Replace **XX** with your DOB or any random number and replace **FirstName** with your **first name**. For example, if your DOB is January 19, then replace **XX** with **19** in the asset names.

This concludes the lab.

Module 3: Synchronization Task

Lab 3-1: Creating a Salesforce Connection

Overview:

In IICS, a connection allows you to gain access to data that is available on Cloud and on-premise applications such as platforms, databases, and flat files. After you create a connection in IICS, it is available to all users in the organization.

A Salesforce connection allows you to securely read data from or write data to Salesforce sources or targets.

Objective:

- Create a Salesforce connection

Scenario:

Now that Ruby has installed the secure agent, John informs her that she needs to create a connection on IICS to connect to a data source. One of the outlets of NH Retails manages data on Salesforce. So, Ruby needs to create a Salesforce connection to read data from Salesforce.

In this lab, Ruby will create a Salesforce connection.

Duration:

20 minutes

IMPORTANT: Before starting this lab, you must have a functional Salesforce **Developer** account. If you do not have a Salesforce Developer account, create one by using the following URL: <https://developer.salesforce.com/signup>

You must only create a Developer account and any existing Salesforce accounts or “free trial” accounts will not work for this training.

IICS accesses Salesforce.com through APIs. You must reset your Salesforce.com security token (unless you have previously accessed the API from your current machine). You must execute this process only once.

Tasks

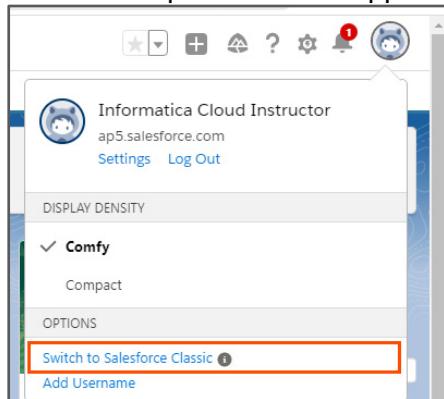
Reset your Security Token in Salesforce.com

1. Open a new tab in the web browser.
2. Log in to Salesforce.com using your Salesforce Developer credentials:

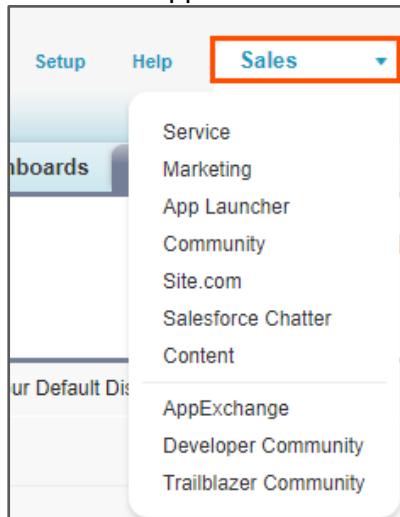
<https://login.salesforce.com/?locale=in>

Note: To log in to Salesforce you must register your phone number on Salesforce.

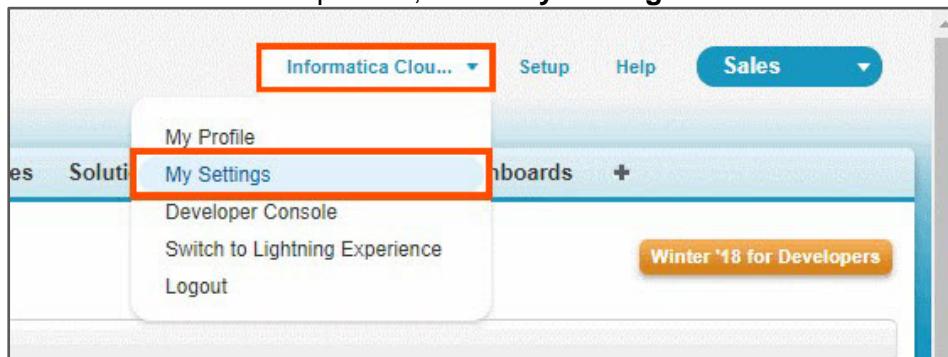
3. This lab is based on the Classic version of Salesforce. If you are using the Lightning version, switch to the Classic version. The option to switch versions is available under the User drop-down in the upper right corner of the user interface.



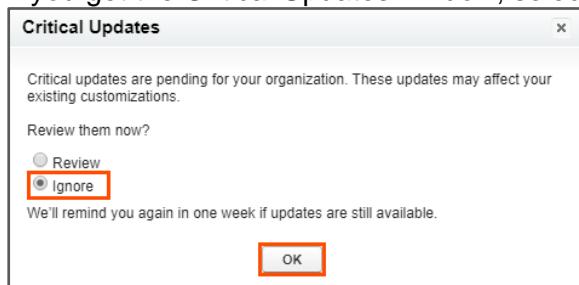
Note: For better visibility of tabs in Salesforce, you must select **Sales** from the Salesforce app menu.



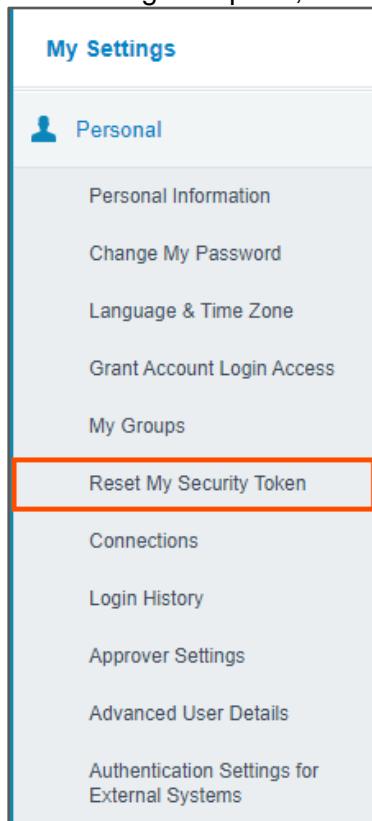
4. From the Username drop-down, select **My Settings**.



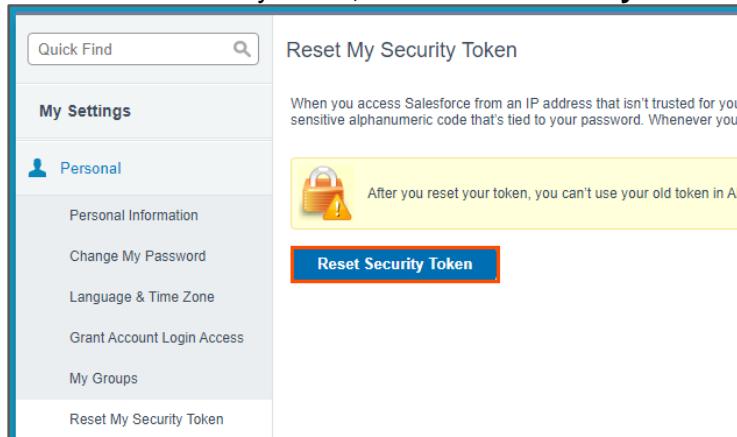
5. If you get the Critical Updates window, select **Ignore** and click **OK**.



6. In the **My Settings** page, drill down to **Personal**.
7. In the navigation pane, select **Reset My Security Token**.



8. To reset the security token, click **Reset Security Token**.

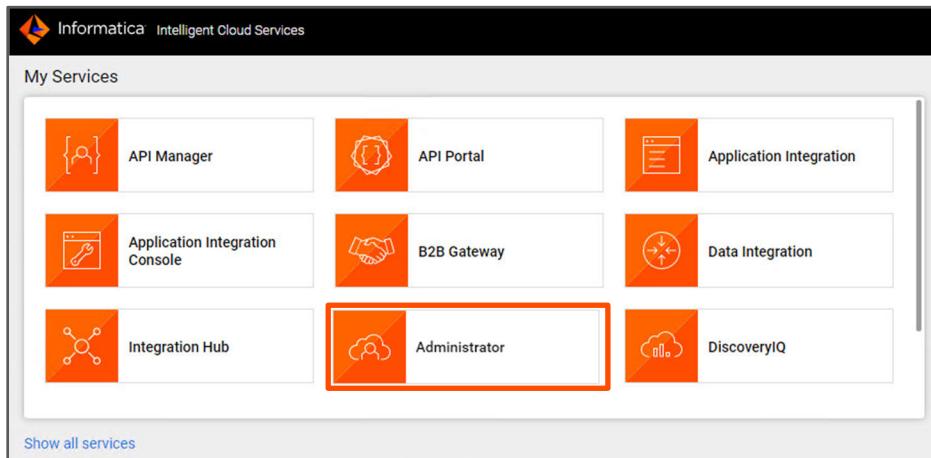


Copy Security Token

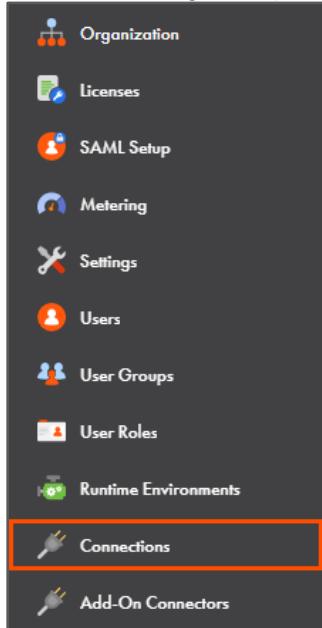
9. After you reset the security token, you will receive an email in your email id registered with Salesforce.
10. Open the email from **support@salesforce.com** from your mailbox.
11. Copy your security token and paste it into a text file.

Create a Salesforce Connection

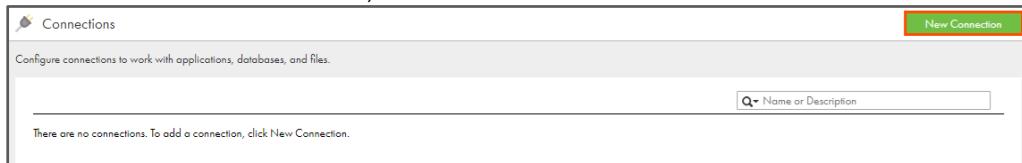
12. If you have logged out of IICS, login back to IICS, and from the **My Services** window, select **Administrator**.



13. From the navigation pane, select **Connections**.



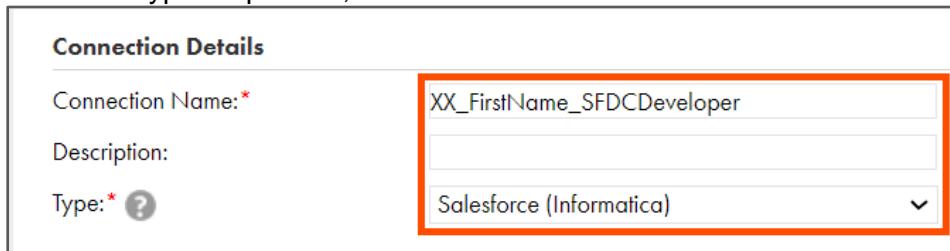
14. To create a new connection, select **New Connection**.



The screenshot shows the 'Connections' interface with a search bar at the top labeled 'Name or Description'. Below it, a message says 'There are no connections. To add a connection, click New Connection.' A red box highlights the 'New Connection' button in the top right corner.

15. Enter the Connection Name as **XX_FirstName_SFDCDeveloper**.

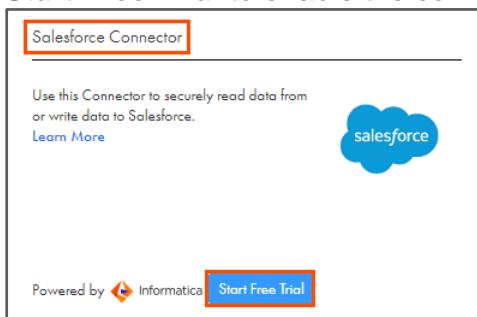
16. From the Type drop-down, select **Salesforce**.



The screenshot shows the 'Connection Details' page. The 'Connection Name:' field contains 'XX_FirstName_SFDCDeveloper'. The 'Type:' dropdown menu is open, showing 'Salesforce (Informatica)' selected. A red box highlights the 'Type:' dropdown.

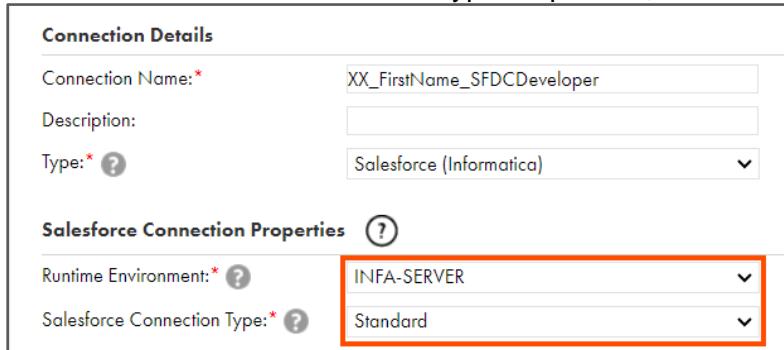
Note:

- If you do not see the desired connector type in the Type drop-down. You can enable the free trial for a connector from the **Add-on Connectors** tab of the Administrator service.
- In the Add-on Connectors page, search for **Salesforce Connector** and click **Start Free Trial** to enable the connector.



17. From the **Runtime Environment** drop-down, select **INFA-SERVER** as the secure agent group.

18. From the Salesforce Connection Type drop-down, select **Standard**.



The screenshot shows the 'Connection Details' page with additional properties. Under 'Salesforce Connection Properties', the 'Runtime Environment:' dropdown is set to 'INFA-SERVER' and the 'Salesforce Connection Type:' dropdown is set to 'Standard'. Both dropdowns are highlighted with a red box.

19. In the **User Name** and **Password** fields, enter your Salesforce credentials.



Standard Connection Properties

User Name:

Password:

Security Token:

Service URL:

Bypass proxy server settings defined for the Secure Agent

20. In the **Security Token** field, paste your Salesforce security token copied earlier from your email.

21. Retain the value in **Service URL**.



Standard Connection Properties

User Name:

Password:

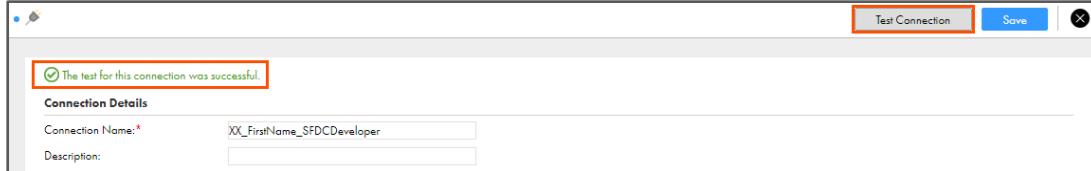
Security Token:

Service URL:

Bypass proxy server settings defined for the Secure Agent

Note: By default, the Service URL contains the latest Salesforce API version. It is recommended not to change the Salesforce API version in Service URL, as some of the features are not available for older versions of Salesforce API.

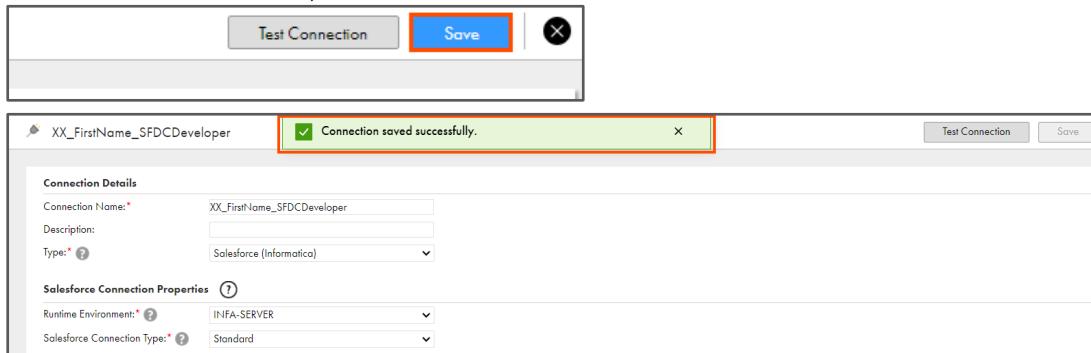
22. To test the connection, click **Test Connection**.



The test for this connection was successful.

Test Connection **Save** **X**

23. To save the connection, click **Save**.



Save

XX_FirstName_SFDCDeveloper **Connection saved successfully.** **X**

Connection Details

Connection Name: XX_FirstName_SFDCDeveloper

Description:

Type:

Salesforce Connection Properties

Runtime Environment:

Salesforce Connection Type:

Test Connection **Save**

24. Close the connection.

This concludes the lab.

Module 3: Synchronization Task

Lab 3-2: Creating SQL Server Connections

Overview:

In IICS, you can connect to SQL server Database through a SQL server connection.

In this lab, you will create a SQL server Connection in IICS.

Objective:

- Create a SQL server connection

Scenario:

The Alaska outlet of NH suppliers uses SQL Server Management Studio database to manage the sales data. So, to integrate data from SQL server database, Ruby must create a SQL Server Connection.

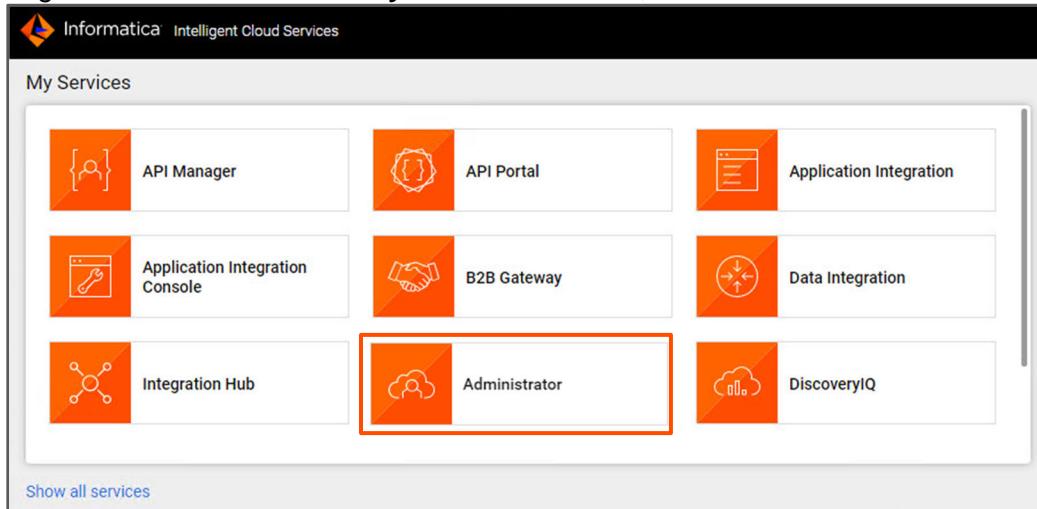
Duration:

10 minutes

Tasks:

Create Source and Target SQL Server Database Connections

1. Log in to IICS and from the **My Services** window, select **Administrator**.



2. From the **Connections** tab create a new connection.



3. In the Name field, enter **CDI_SQL_Src**. This is the source SQL Server connection to the **CDI** database.

4. From the Type drop-down, select **SQL Server**.

Type:*	<input type="text" value="SQL Server"/>
--------	---

5. From the Runtime Environment drop-down, select your secure agent **INFA-SERVER**.
 6. From the SQL Server Version drop-down, **select SQL Server 2019**. Select the version applicable for your software.
 7. From the Authentication mode drop-down, select **SQL Server Authentication**.

SQL Server Version:*	<input type="text" value="SQL Server 2019"/>
Authentication Mode:*	<input type="text" value="SQL Server Authentication"/>

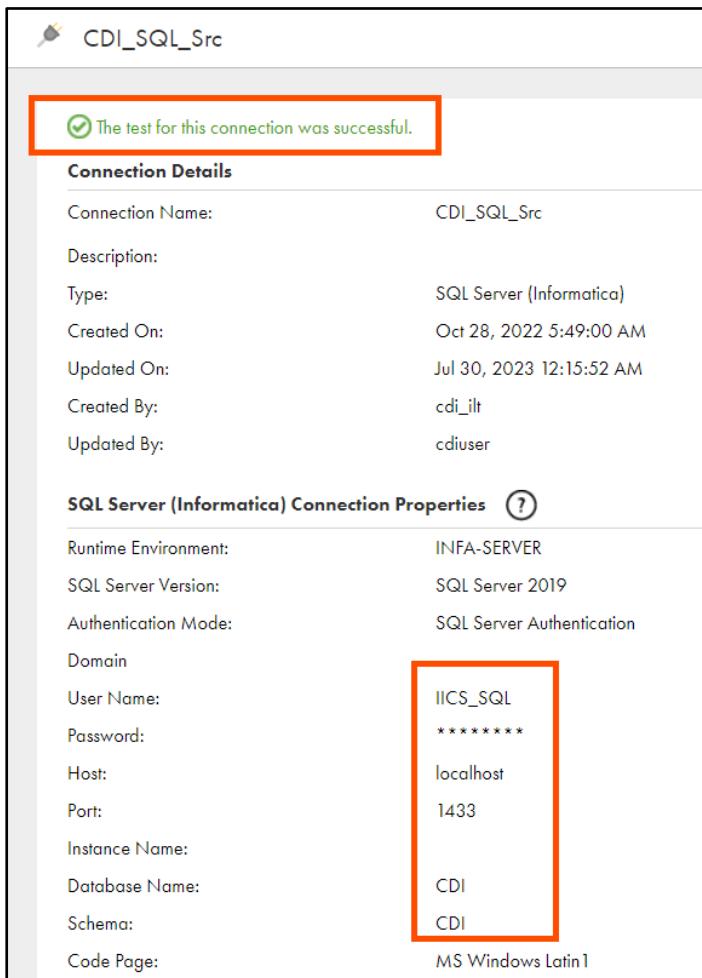
8. Enter the Username and Password as **IICS_SQL**.

Note: The Password is case-sensitive.

9. In the Host field, enter localhost, and retain the Port as **1433**.
 10. In the Database Name field, enter **CDI**.
 11. Enter the Schema name as **CDI**.
 12. From the Code Page drop-down, select **UTF-8**.

User Name:*	<input type="text" value="IICS_SQL"/>
Password:*	<input type="text" value="*****"/>
Host:*	<input type="text" value="localhost"/>
Port:*	<input type="text" value="1433"/>
Instance Name:	<input type="text"/>
Database Name:*	<input type="text" value="CDI"/>
Schema:*	<input type="text" value="CDI"/>
Code Page:*	<input type="text" value="UTF-8"/>
Encryption Method:	<input type="text" value="None"/>
Crypto Protocol Version:	<input type="text" value="TLSv1"/>
Validate Server Certificate:	<input type="text" value="False"/>
Trust Store:	<input type="text"/>

13. Test and save the connection.



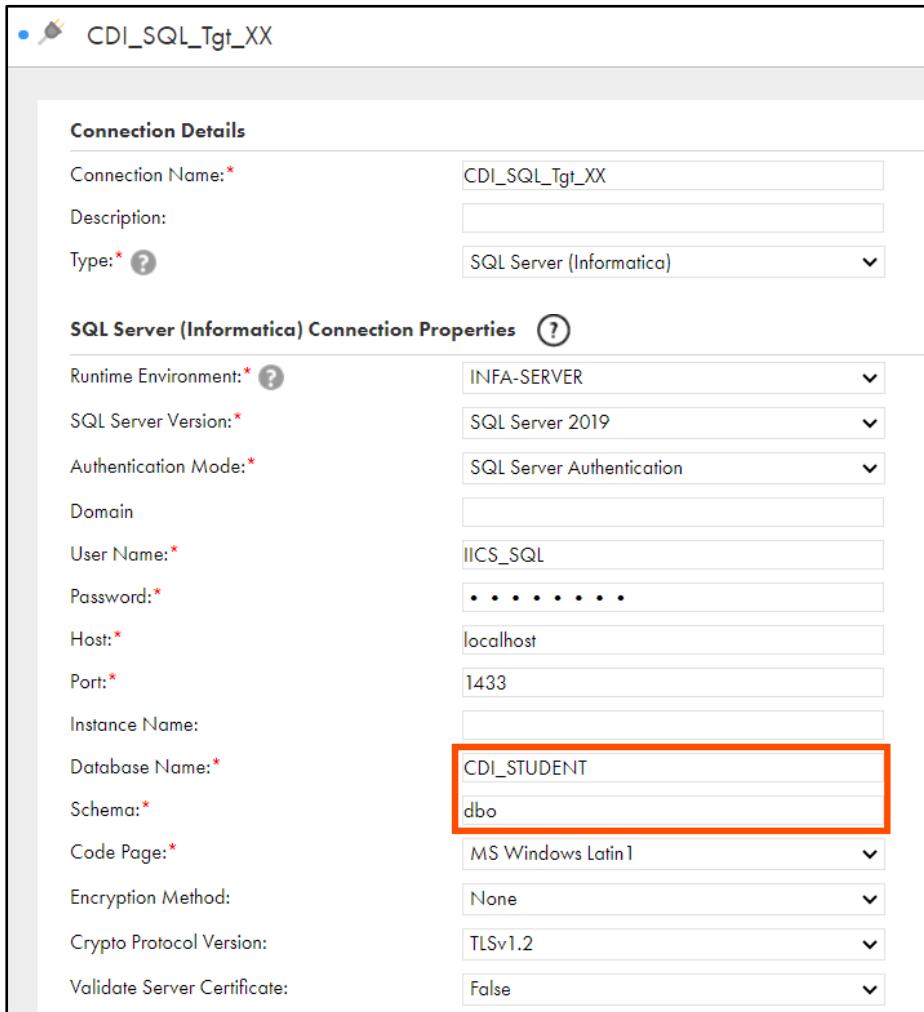
The screenshot shows the 'Connection Details' window for a connection named 'CDI_SQL_Src'. A green success message box at the top states: 'The test for this connection was successful.' Below it, the 'Connection Details' section lists various metadata fields. A red box highlights the 'SQL Server (Informatica) Connection Properties' section, which contains detailed connection parameters. Another red box highlights the 'User Name' field, which is set to 'IICS_SQL'.

Connection Details	
Connection Name:	CDI_SQL_Src
Description:	
Type:	SQL Server (Informatica)
Created On:	Oct 28, 2022 5:49:00 AM
Updated On:	Jul 30, 2023 12:15:52 AM
Created By:	cdi_il
Updated By:	cdiuser

SQL Server (Informatica) Connection Properties	
Runtime Environment:	INFA-SERVER
SQL Server Version:	SQL Server 2019
Authentication Mode:	SQL Server Authentication
Domain:	
User Name:	IICS_SQL
Password:	*****
Host:	localhost
Port:	1433
Instance Name:	
Database Name:	CDI
Schema:	CDI
Code Page:	MS Windows Latin1

14. Similarly, create another SQL Server database connection to access the **CDI_STUDENT** database and name it as **CDI_SQL_Tgt_XX**.

15. Provide the same connection details as above except for Schema and Database Name. For Database Name, enter the value as **CDI_STUDENT** and for Schema, enter **dbo**.



The screenshot shows the 'Connection Details' dialog box for a connection named 'CDI_SQL_Tgt_XX'. The 'Type' is set to 'SQL Server (Informatica)'. Under 'SQL Server (Informatica) Connection Properties', the 'Database Name' is set to 'CDI_STUDENT' and the 'Schema' is set to 'dbo', both of which are highlighted with a red rectangle. Other fields include 'Runtime Environment' (INFA-SERVER), 'SQL Server Version' (SQL Server 2019), 'Authentication Mode' (SQL Server Authentication), 'User Name' (IICS_SQL), 'Password' (redacted), 'Host' (localhost), 'Port' (1433), and 'Code Page' (MS Windows Latin 1).

16. Test and save the connection.
17. You have successfully created 1 source connections to the CDI database and 1 target database connection to the CDI_STUDENT database.

This concludes the lab.

Module 3: Synchronization Task

Lab 3-3: Creating a Synchronization Task

Overview:

The Synchronization task synchronizes data between a source and a target. The Data Synchronization application supports Insert, Update, Upsert, and Delete operations.

Objective:

- Create and configure a synchronization task
- Run the task and validate the results in Salesforce

Scenario:

After Ruby creates the connections in IICS, she asks Joseph about the process to integrate data between various data sources. To this, John says that she must create a Synchronization task in IICS. In this lab, Ruby will create a synchronization task to load outlet data from a CSV file to the Account object in Salesforce.

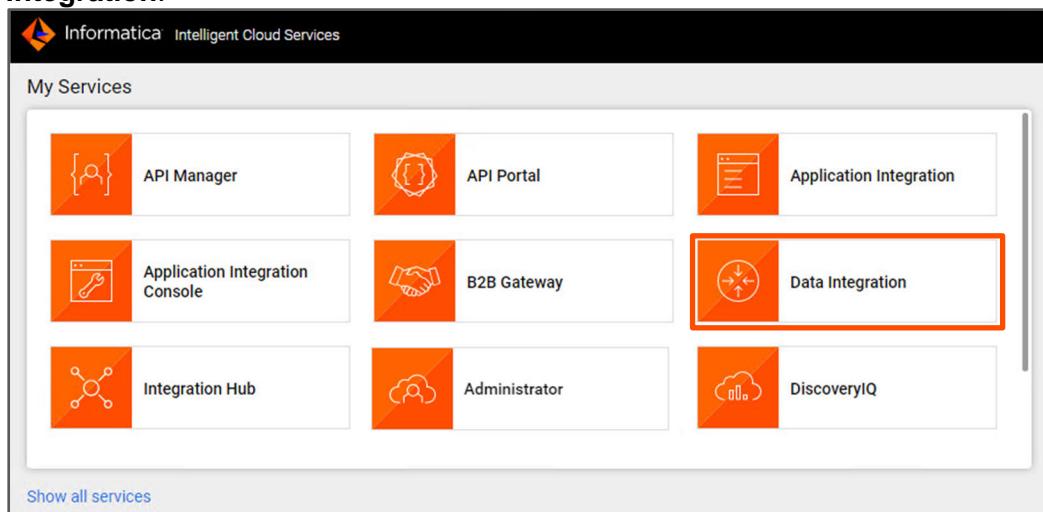
Duration:

15 minutes

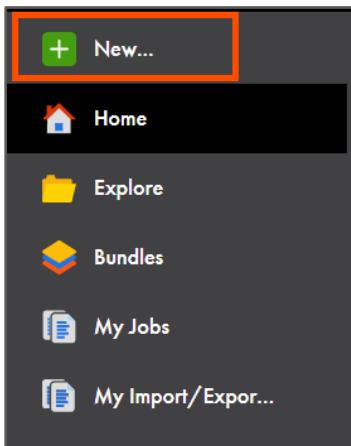
Tasks

Create a Synchronization Task in IICS

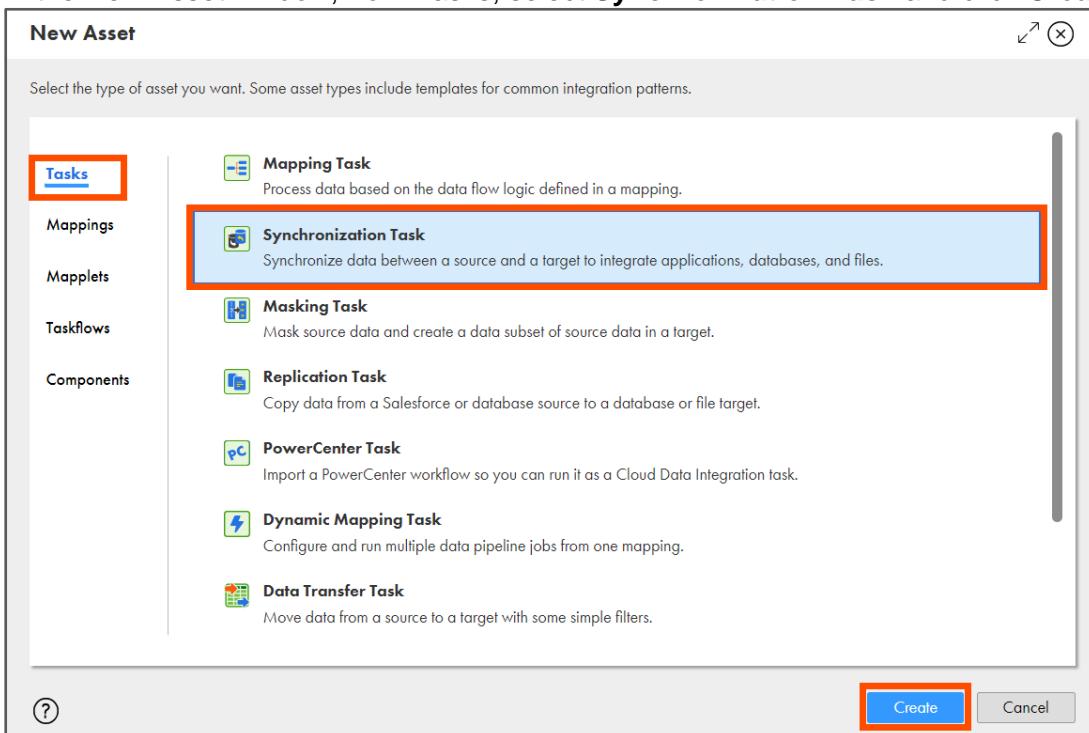
1. If navigated away, login to IICS and from the **My Services** window, select **Data Integration**.



2. To create a new asset, from the navigation pane, select **New**.



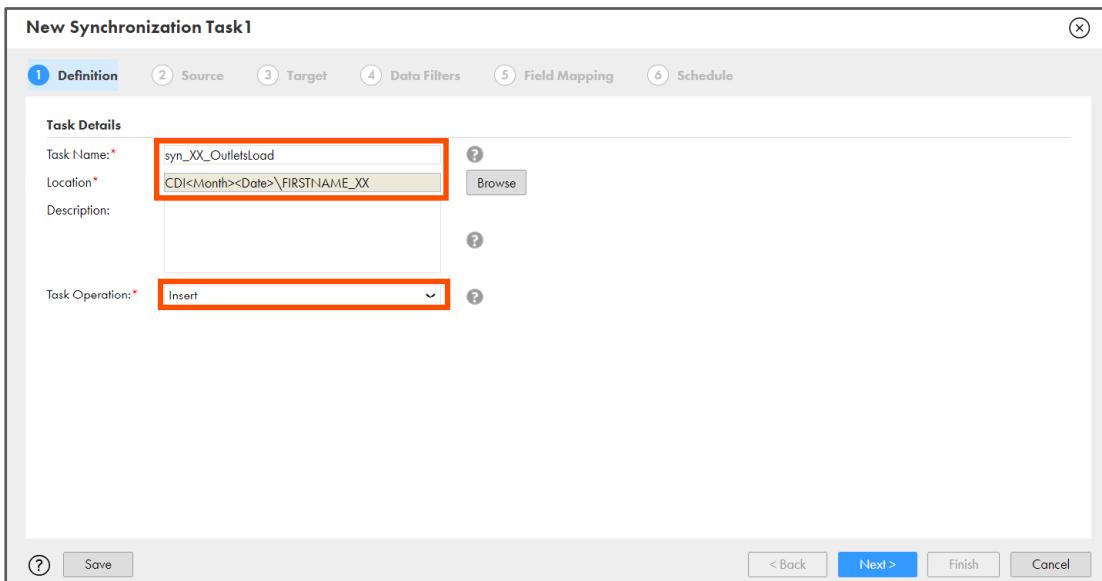
3. In the New Asset window, from Tasks, select **Synchronization Task** and click **Create**.



Specify Definition Information

4. In the Task Name field, enter **syn_XX_OutletsLoad**.
5. Use the **Browse** option to save the asset in your working directory.

6. From the Task Operation drop-down, select **Insert**.



New Synchronization Task1

1 Definition 2 Source 3 Target 4 Data Filters 5 Field Mapping 6 Schedule

Task Details

Task Name: * **syn_XX_OutletsLoad**

Location: * **CDI<Month><Date>\FIRSTNAME_XX**

Description:

Task Operation: * **Insert**

?

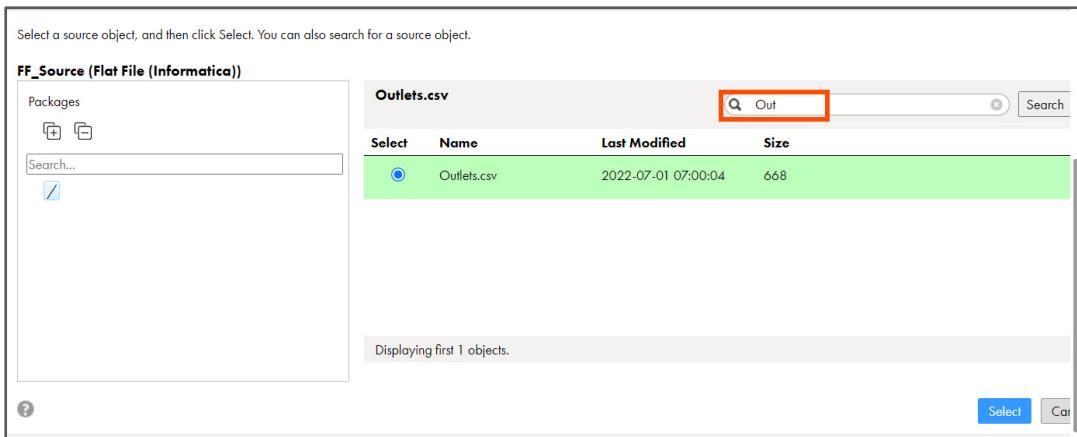
Save < Back Next > Finish Cancel

7. Click **Next**.

Specify Source Information

8. From the Connection drop-down, select **FF_Source**.
 9. From the Source Object drop-down, click **Select** and choose **Outlets.csv**.

Tip: Use the search function to search for the required asset.



Select a source object, and then click Select. You can also search for a source object.

FF_Source (Flat File (Informatica))

Packages

Search...

Select	Name	Last Modified	Size
<input checked="" type="radio"/>	Outlets.csv	2022-07-01 07:00:04	668

Displaying first 1 objects.

?

Select Cancel

New syn_XX_OutletsLoad

(1) Definition (2) **Source** (3) Target (4) Data Filters (5) Field Mapping (6)

Source Details

Connection: * FF_Source (Flat File (Informatica)) ?

Source Type: * Single Multiple Saved Query

Source Object: * Outlets.csv ?

Display source fields in alphabetical order

Note: The Data Preview section appears. It shows the first ten rows of the first five columns in the object and displays the total number of columns in the object.

10. Click **Next**.

Specify Target Information

11. From the Connection drop-down, select your Salesforce connection (present in the format **XX_FirstName_SFDCDeveloper**).
12. From the Target Object drop-down, select **Account**.

New syn_XX_OutletsLoad

(1) Definition (2) Source (3) **Target** (4) Data Filters (5) Field Mapping (6) Schedule

Target Details

Connection: * XX_FirstName_SFDCDeveloper (Salesforce ...) ?

Target Object: * Account ?

Display technical names instead of labels
 Display target fields in alphabetical order

13. Click **Next**.

14. To skip the Data Filters step, click **Next**.

(1) Definition (2) Source (3) Target (4) **Data Filters** (5) Field Mapping (6) Schedule

Row Limit

Process all rows
 Process only the first 100 rows

Data Filters

There are no filters defined. The task will process all data from source.

?

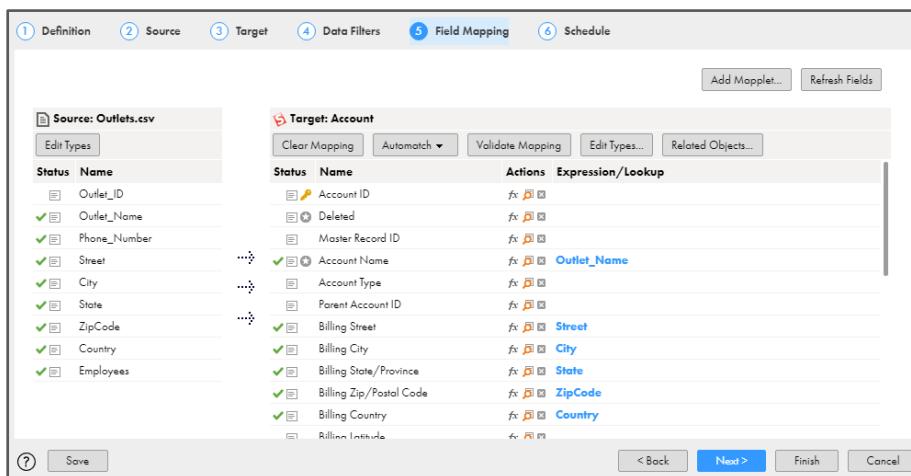
Save

Define Field Mappings

15. Map the Source field with the Target field, as shown in the table below:

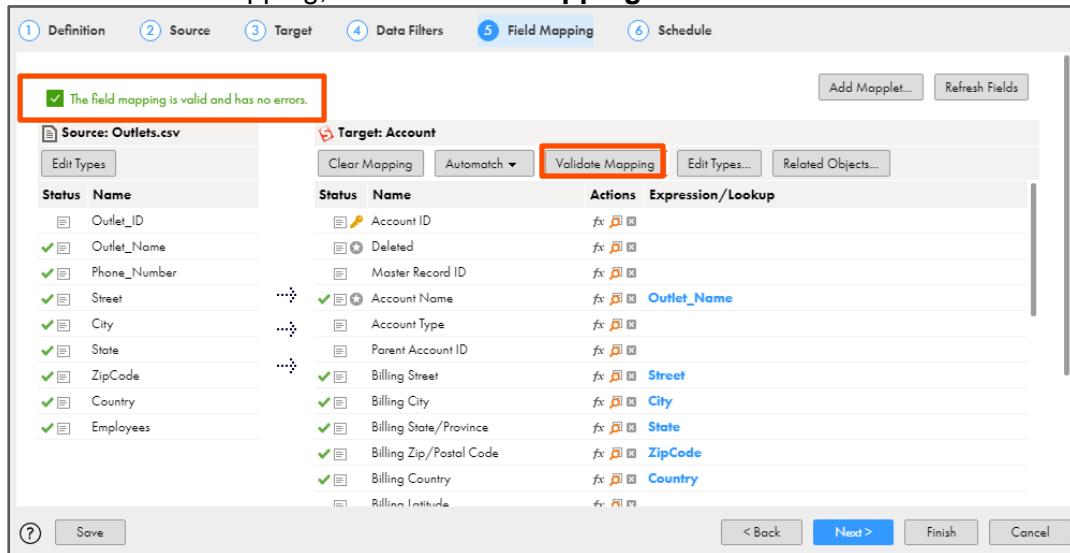
Source Field Name	Target Field Name
Outlet_Name	Account Name (Instead of Account Name, you may see "Name". Map to which ever field you see.)
Phone_Number	Account Phone
Street	BillingStreet
City	BillingCity
State	BillingState
ZipCode	BillingPostalCode
Country	BillingCountry
Employees	Employees

Note: To map the fields, drag a Source field and drop it onto a Target field. If some of the fields are mapped automatically, do not map the fields again. Sometimes, you may see a Target field name that is slightly different from the name mentioned in the table above. However, select the appropriate field. For example, you may see **NumberOfEmployees** instead of **Employees** in the Target object Account.

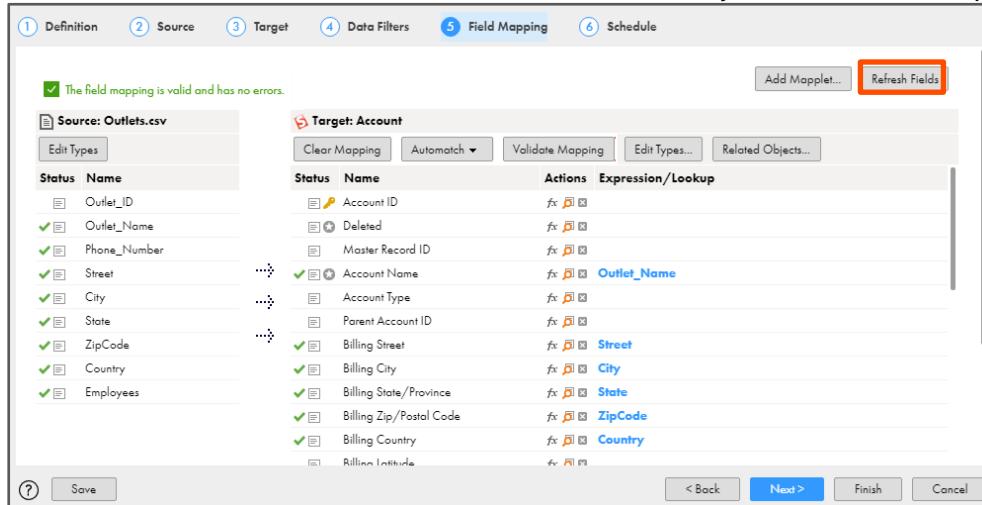


Status	Name	Actions	Expression/Lookup
Account ID	fx <input type="button" value="Map"/>		
Deleted	fx <input type="button" value="Map"/>		
Master Record ID	fx <input type="button" value="Map"/>		
Account Name	fx <input type="button" value="Map"/>	fx <input type="button" value="Map"/>	Outlet_Name
Account Type	fx <input type="button" value="Map"/>		
Parent Account ID	fx <input type="button" value="Map"/>		
Billing Street	fx <input type="button" value="Map"/>		Street
Billing City	fx <input type="button" value="Map"/>		City
Billing State/Province	fx <input type="button" value="Map"/>		State
Billing Zip/Postal Code	fx <input type="button" value="Map"/>		ZipCode
Billing Country	fx <input type="button" value="Map"/>		Country
Billing Latitude	fx <input type="button" value="Map"/>		

16. To validate the mapping, click **Validate Mapping**.

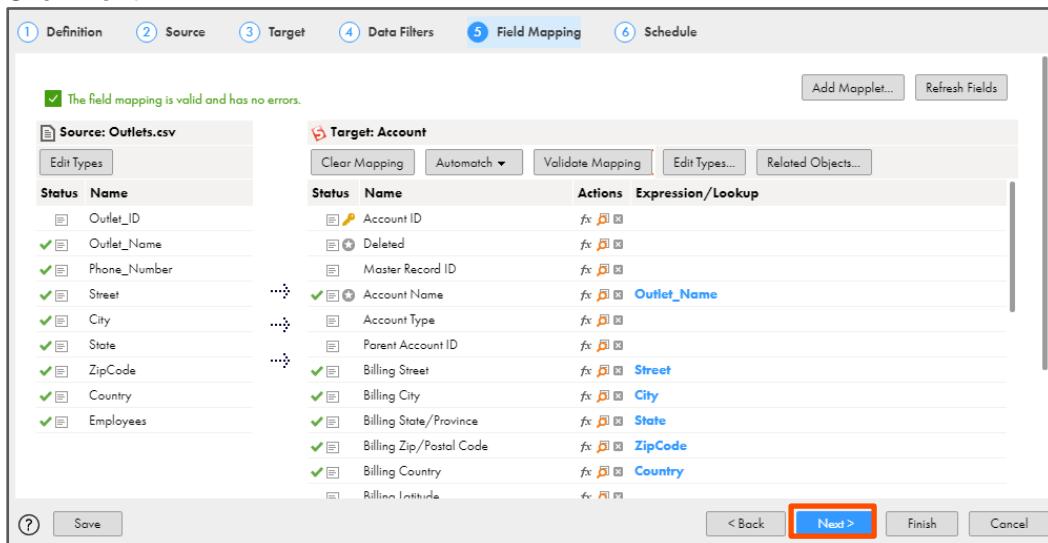


Note: If the validation fails, click **Refresh Fields**, and try to validate the mapping again.



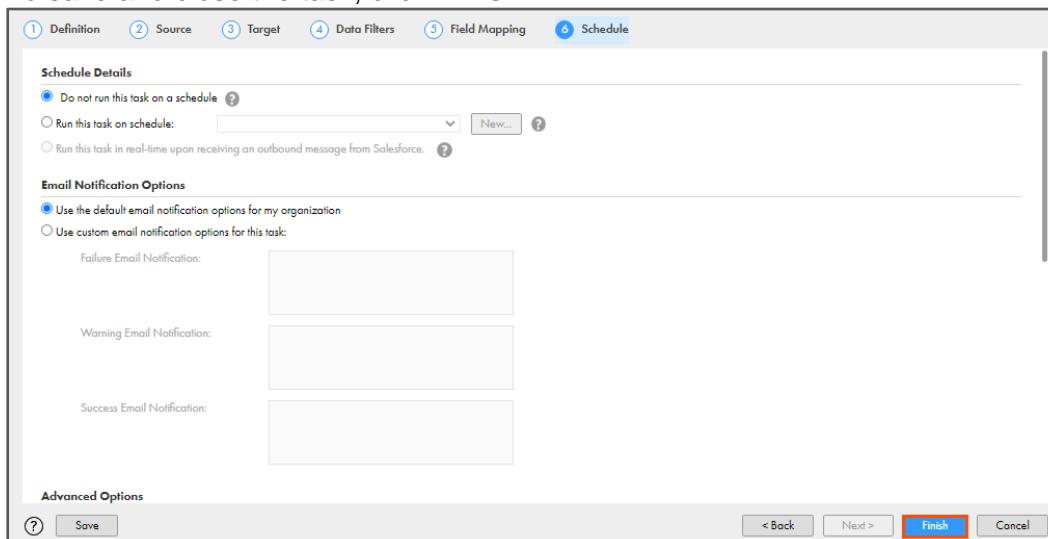
The **Refresh Fields** option updates the data integration cache and shows the latest field attributes.

17. Click Next.



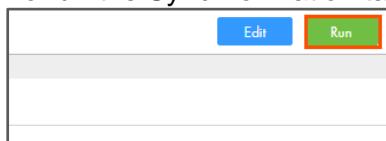
In this lab, you will not define a Schedule.

18. To save and close the task, click Finish.



When you click Finish, the Synchronization Task Asset appears in the navigation pane and displays the task details on the page.

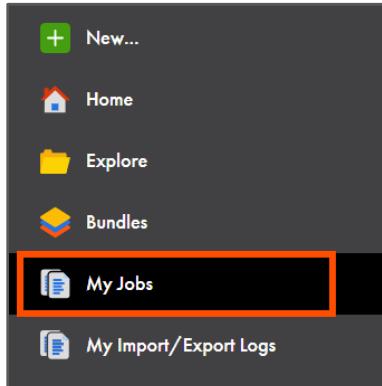
19. To run the Synchronization task, click Run.



Important Note: If you want to re-run a task, delete the records from Salesforce inserted by the task in the first run to avoid getting duplication errors.

Monitor the Synchronization Task

20. To monitor the task, from the navigation pane, click **My Jobs**.



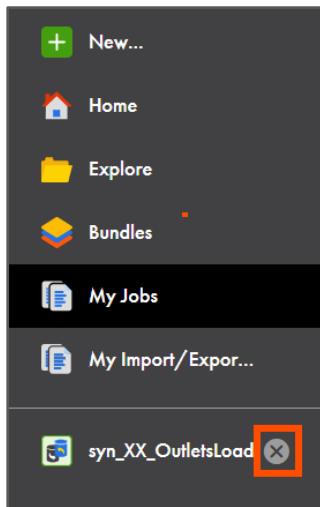
21. When the task completes, the status changes to **Success**.



Jobs (243) <input checked="" type="checkbox"/> Up to date							Updated 1:26:31 AM PDT 			Find
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status				
syn_XX_OutletsLoad-2	CDK<Month><Dat...		Jul 30, 2023, 1:26 AM	Jul 30, 2023, 1:2...	9	 Success				

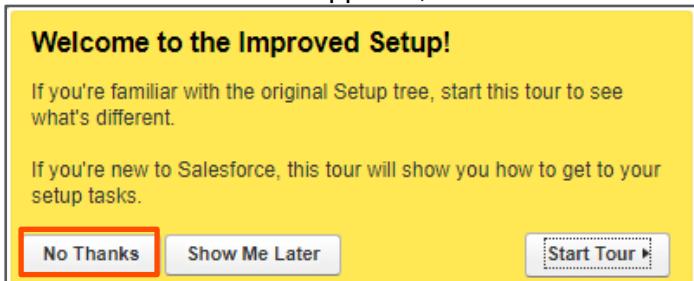
Note: You can use the  button to refresh the page if the status does not change automatically. If you see the Job Status as Warning instead of Success, it means that you have duplicate records in your Salesforce account. In this case, do a Mass Deletion of all records in the Accounts object (in Salesforce) and re-run the job in DI.

22. Close the asset from the navigation pane.

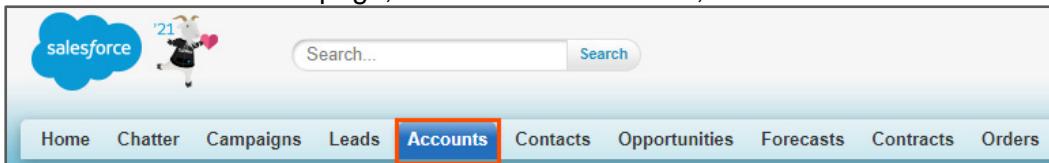


Verify the Results

23. Log in to the Salesforce Developer account using your credentials.
24. If the Welcome window appears, click **No Thanks**.

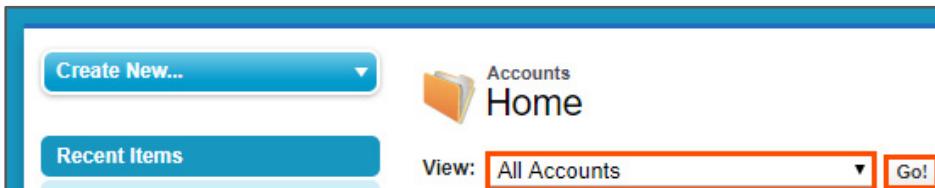


25. On the Salesforce homepage, from the available tabs, select **Accounts**.

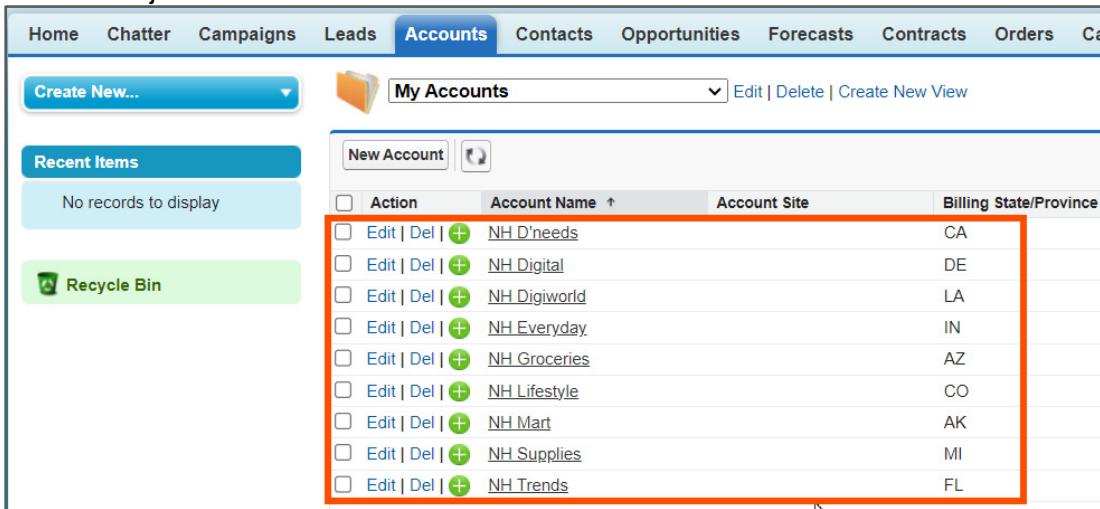


26. From the drop-down, select **All Accounts**.

27. Click **Go!**.



28. Verify that all the Accounts in the source file (Outlets.csv) are now in the Salesforce Account object.



Action	Account Name	Account Site	Billing State/Province
<input type="checkbox"/> Edit Del +	NH D'needs		CA
<input type="checkbox"/> Edit Del +	NH Digital		DE
<input type="checkbox"/> Edit Del +	NH Digiworld		LA
<input type="checkbox"/> Edit Del +	NH Everyday		IN
<input type="checkbox"/> Edit Del +	NH Groceries		AZ
<input type="checkbox"/> Edit Del +	NH Lifestyle		CO
<input type="checkbox"/> Edit Del +	NH Mart		AK
<input type="checkbox"/> Edit Del +	NH Supplies		MI
<input type="checkbox"/> Edit Del +	NH Trends		FL

This concludes the lab.

Module 3: Synchronization Task

Lab 3-4: Using Filter, Expression, and Lookup in a Synchronization Task

Overview:

Data filters help you to fetch the required data from an object. The synchronization task uses the data filters to process the data as per the data filter assigned to that object. A lookup returns values based on a lookup condition. You can create a lookup condition based on the information in the source.

Objective:

- Create data filter
- Create field expressions
- Use a lookup to relate outlet name and account name

Scenario:

Now that Ruby has inserted the data in the Salesforce Accounts object, she wants to load employee data on Salesforce as well.

However, the format of employee data is not compatible with Salesforce. So, John informs Ruby that he can use various features of the IICS synchronization task to transform the data and load it into Salesforce.

In this lab, John will use the data filters to skip loading the sales department's employee data. He will also use the field expression to separate first and last names and to perform a lookup in Salesforce using the account name.

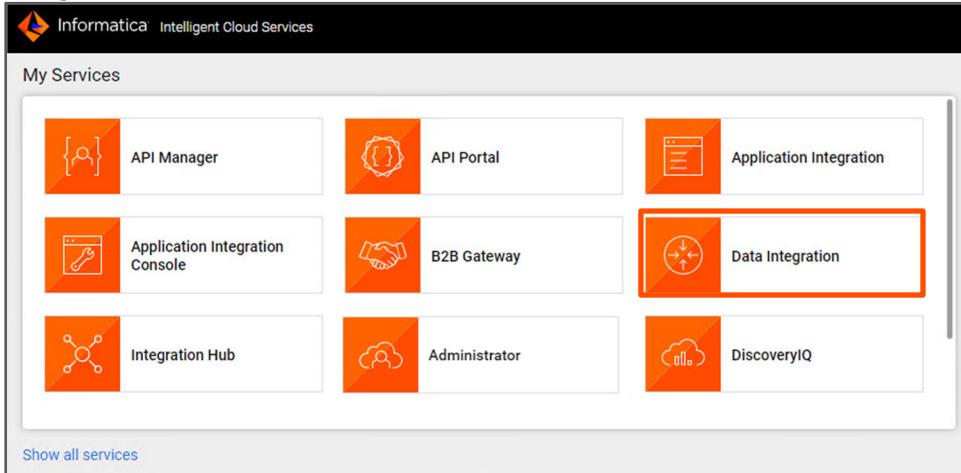
Duration:

20 minutes

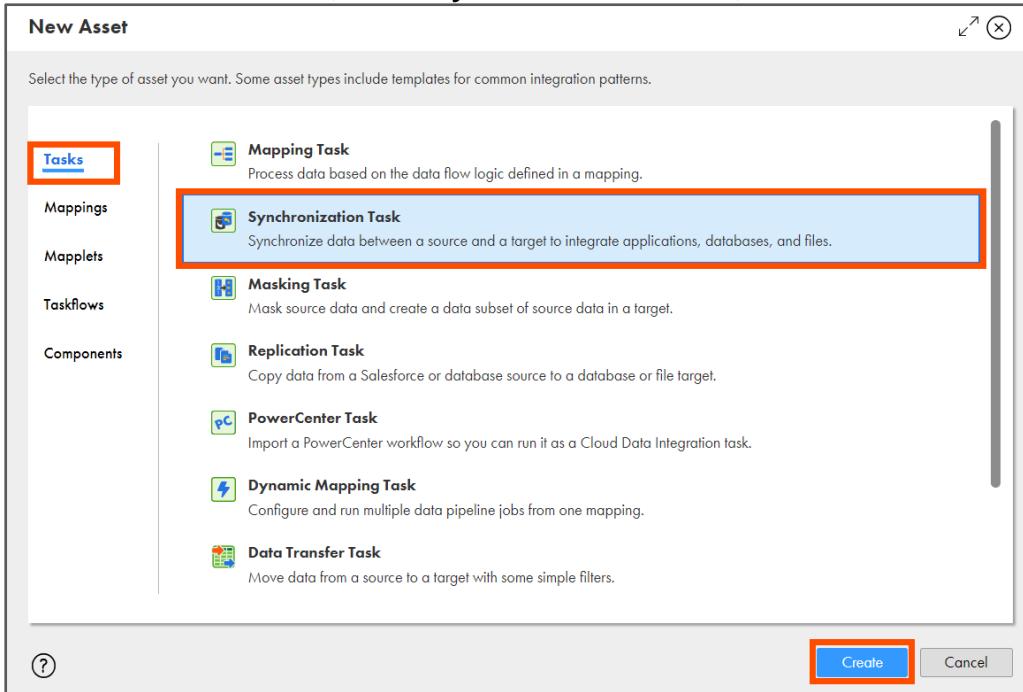
Tasks:

Create a Synchronization Task in IICS

1. If navigated away, login into IICS and from the **My Services** window, select **Data Integration**.



2. To create a new asset, from the navigation pane, select **New**.
3. In the New Asset window, select **Synchronization Task**, and click **Create**.



Specify Definition Information

4. In the Task Name field, enter **syn_XX_Employee**.
5. From the Task Operation drop-down, select **Insert**.

New Synchronization Task1

1 Definition 2 Source 3 Target 4 Data Filters 5 Field Mapping 6 Schedule

Task Details

Task Name:*	syn_XX_Employee	?
Location*	CDI<Month><Date>\FIRSTNAME_XX	Browse
Description:	?	
Task Operation:*	Insert	?

6. Verify that the asset Location is your working directory.
7. Click **Next**.

Specify Source Information

8. From the Connection drop-down, select **FF_Source**.
9. From the Source Object field, click **Select** and choose **Employee.csv**.

New syn_XX_Employee

1 Definition 2 Source 3 Target 4 Data Filters 5 Field Mapping 6 Schedule

Source Details

Connection:*	FF_Source (Flat File (Informatica))	View... New... Sample... ?
Source Type:*	<input checked="" type="radio"/> Single <input type="radio"/> Multiple <input type="radio"/> Saved Query	
Source Object:*	Employee.csv	Select... Formatting Options... ?

Display source fields in alphabetical order

Data Preview

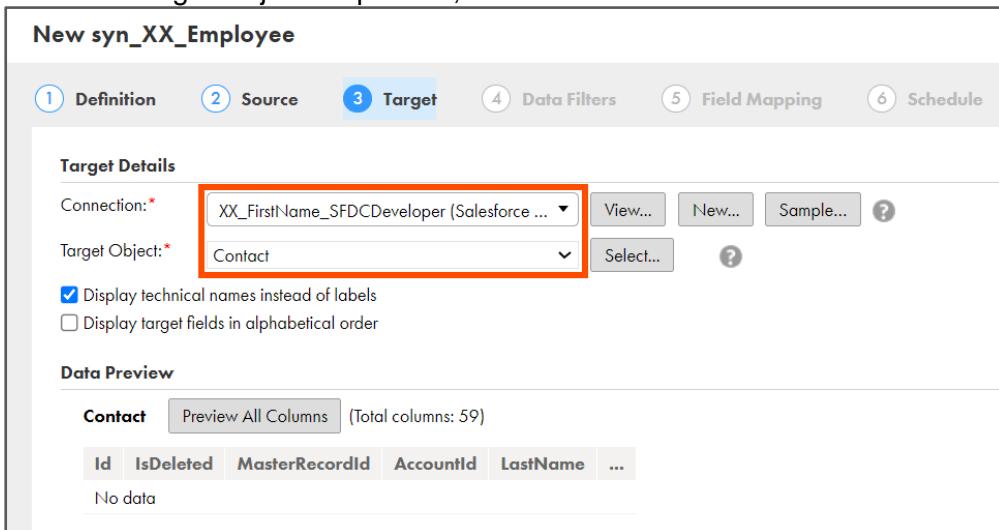
Employee.csv Preview All Columns (Total columns: 6)					
Emp_ID	Full_Name	Email	Outlet_Name	Department	...
677509	Lois Walker	lois.walker@nhsupplies.com	NH D'needs	Marketing	...
940761	Brenda Robinson	brenda.robinson@nhsupplies.com	NH Mart	Finance	...
428945	Joe Robinson	joe.robinson@nhsupplies.com	NH Groceries	Inventory	...
408351	Diane Evans	diane.evans@nhsupplies.com	NH Lifestyle	Marketing	...
193819	Benjamin Russell	benjamin.russell@nhsupplies.co...	NH Digital	Logistics	...
499687	Patrick Bailey	patrick.bailey@nhsupplies.com	NH Trends	Finance	...
520710	Karen Davis	karen.davis@nhsupplies.com	NH Customer	Inventory	...

Note: The Data Preview section appears. It shows the first ten rows of the first five columns in the object and displays the total number of columns in the object.

10. Click **Next**.

Specify Target Information

11. From the Connection drop-down, select your Salesforce connection (present in the format **XX_FirstName_SFDCDeveloper**).
12. From the Target Object drop-down, select **Contact**.



New syn_XX_Employee

① Definition ② Source ③ Target ④ Data Filters ⑤ Field Mapping ⑥ Schedule

Target Details

Connection: * XX_FirstName_SFDCDeveloper (Salesforce ...)
 Target Object: * Contact
 Display technical names instead of labels
 Display target fields in alphabetical order

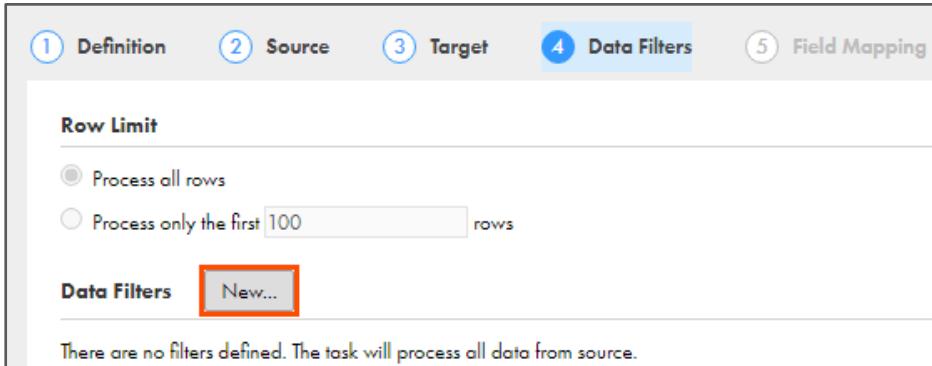
Data Preview

Contact Preview All Columns (Total columns: 59)
 Id IsDeleted MasterRecordId AccountId LastName ...
 No data

13. Click **Next**.

Define Data Filters to Skip Contacts with Department as Sales

14. To define Data Filters, click **New**.



① Definition ② Source ③ Target ④ Data Filters ⑤ Field Mapping

Row Limit

Process all rows
 Process only the first 100 rows

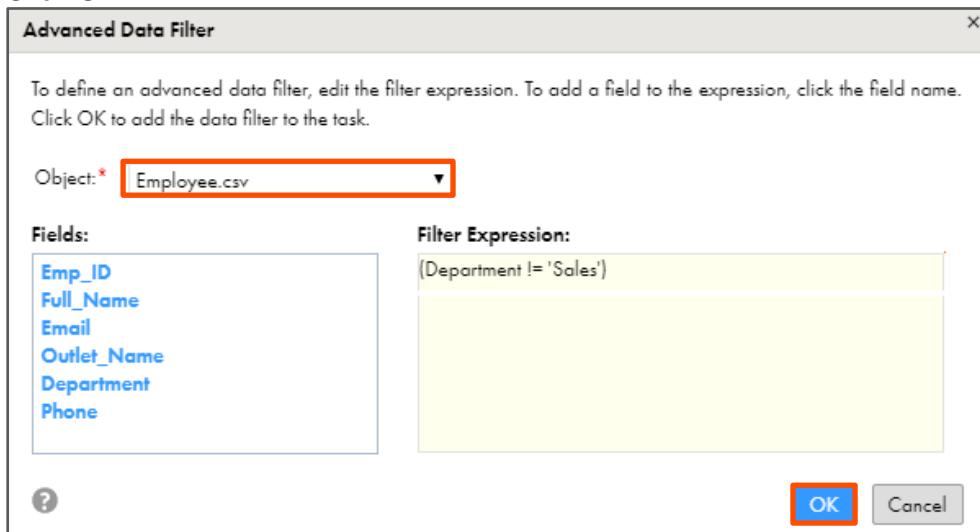
Data Filters **New...**

There are no filters defined. The task will process all data from source.

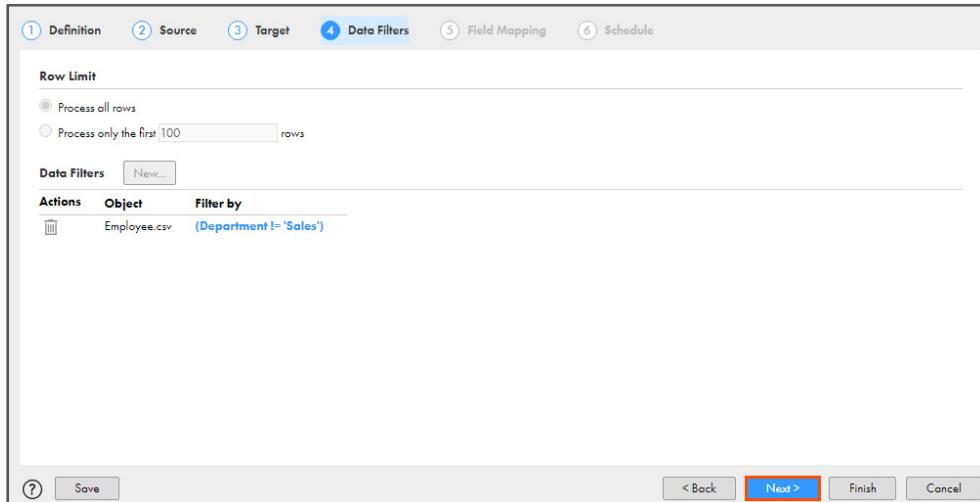
Note: The Advanced Data Filter window appears. You cannot apply a simple filter if the source connection is a flat-file connection.

15. From the Object drop-down, select **Employee.csv**.
16. In the Filter Expression field, enter the following expression. This expression filters out all the entries that have Department as Sales in the Employee.csv file.
(Department != 'Sales')

17. Click OK.



18. Click Next.

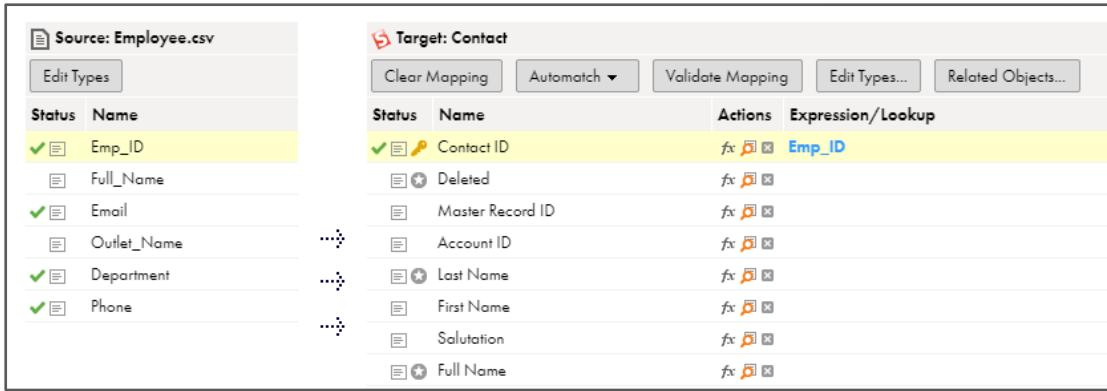


Define Field Mappings

19. Map the Source field with the Target field, as shown in the table below:

Source Field Name	Target Field Name
Emp_ID	Contact ID (or ID, whichever you see)
Email	Email
Department	Department
Phone	Business Phone (or Phone, whichever you see)

Note: For this lab, do not map **Full_Name** and **Outlet_Name** fields. Some of the fields might be mapped automatically. For fields that are already mapped, do not map them again.

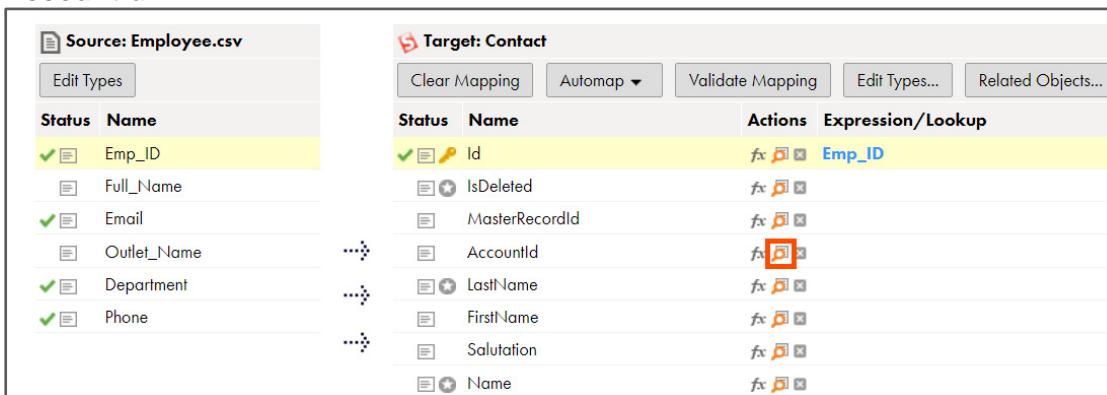


The screenshot shows the Field Mapping interface. On the left, under 'Source: Employee.csv', the 'Status' and 'Name' columns are listed with fields: Emp_ID, Full_Name, Email, Outlet_Name, Department, and Phone. On the right, under 'Target: Contact', the 'Status' and 'Name' columns are listed with fields: Contact ID, Deleted, Master Record ID, Account ID, Last Name, First Name, Salutation, and Full Name. A mapping row for 'Emp_ID' to 'Contact ID' is highlighted, showing the expression 'fx Emp_ID'.

Add a Lookup Condition

To get the Account ID from the Salesforce Account object, create a lookup in the Field Mapping page of the synchronization task wizard. The lookup returns values based on a lookup condition. Here, the lookup condition returns the Account ID for the fields where Outlet_Name is equal to Account Name.

20. To define a lookup condition, from the Target: Contact section, select for **AccountId**.



The screenshot shows the same Field Mapping interface as above, but the 'AccountId' field in the 'Target: Contact' section has a red box around it, indicating it is selected. The expression 'fx Emp_ID' is visible next to it.

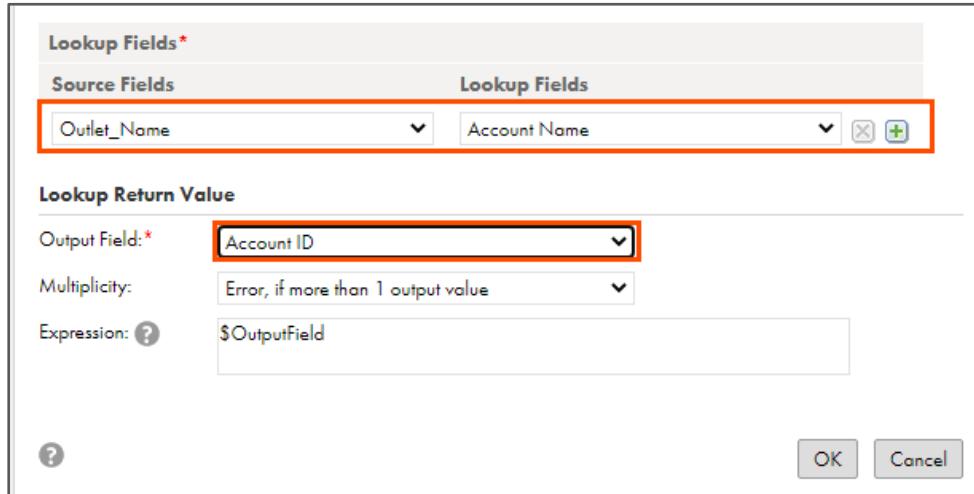
21. From the Lookup Connection drop-down, select **XX_FirstName_SFDCDeveloper** (your Salesforce connection).
 22. From the Lookup Object drop-down, select **Account**.



The screenshot shows the 'Lookup' dialog box. It includes fields for 'Lookup Connection:' (set to 'XX_FirstName_SFDCDeveloper') and 'Lookup Object:' (set to 'Account'). Below these are two checkboxes: 'Display technical names instead of labels' and 'Display fields in alphabetical order'. Both the connection and object dropdowns have red boxes around them, indicating they are selected.

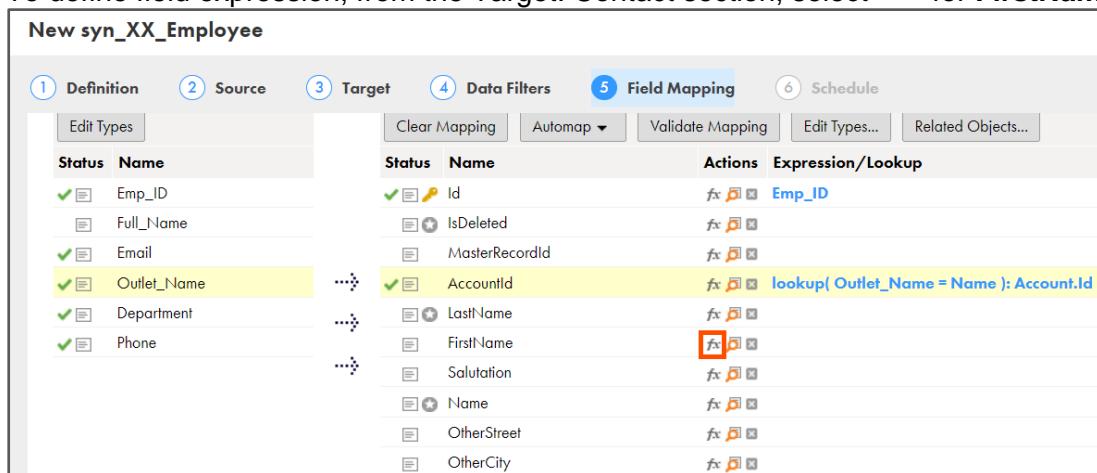
23. In the Source Fields drop-down, select **Outlet_Name**.
 24. In the Lookup Fields drop-down, select **Account Name**.

25. In the **Lookup Return Value** section, from the Output Field drop-down, select **Account ID** and click **OK**.



Define Field Expression to Split Full Name into First Name and Last Name

26. To define field expression, from the Target: Contact section, select  for **FirstName**.

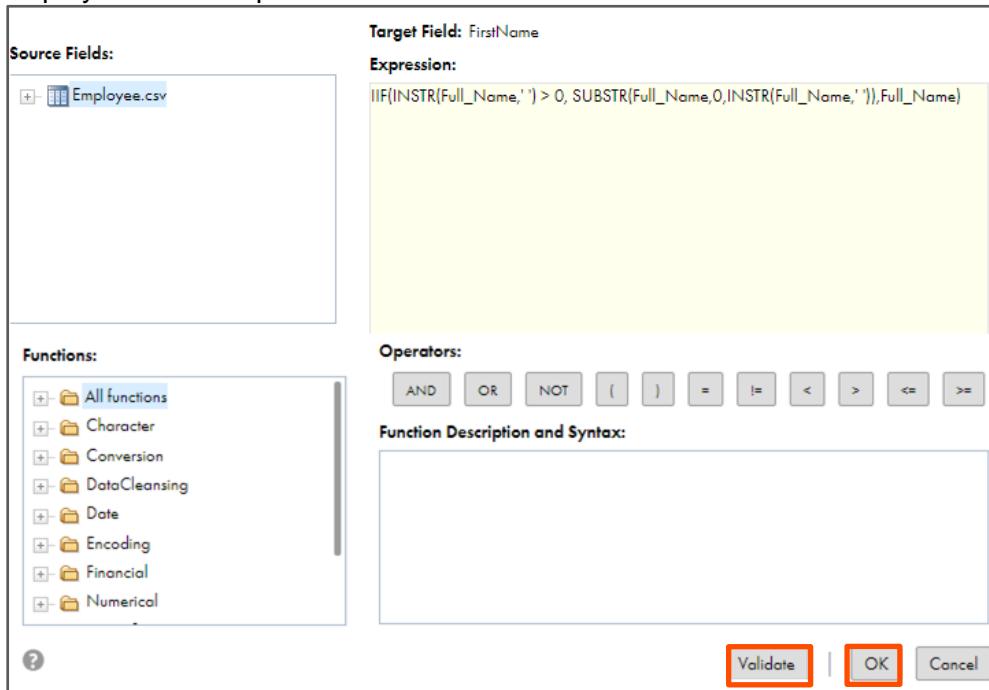


Status	Name	Status	Name	Actions	Expression/Lookup
✓	Emp_ID	✓	Id		Emp_ID
	Full_Name		IsDeleted		
✓	Email		MasterRecordId		
✓	Outlet_Name	...	AccountId		lookup(Outlet_Name = Name): Account.Id
✓	Department	...	Last-Name		
✓	Phone	...	First-Name		
			Salutation		
			Name		
			OtherStreet		
			OtherCity		

27. In the **Expression** field, enter the following expression:

```
IIF(INSTR(Full_Name, ' ') > 0, SUBSTR(Full_Name,0,INSTR(Full_Name, ' ')),Full_Name)
```

28. To validate the expression, scroll down, and click **Validate**. At the top of the window, it displays that the expression is valid. Click **OK**.

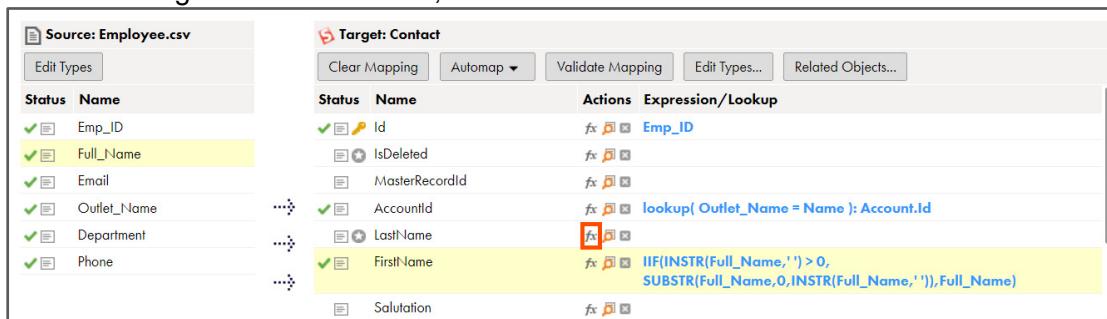


The screenshot shows the Expression Editor interface. On the left, under "Source Fields", there is a tree view with "Employee.csv" selected. In the center, the "Target Field" is set to "FirstName" and the "Expression" is displayed as:

```
IIF(INSTR(Full_Name, ' ') > 0, SUBSTR(Full_Name,0,INSTR(Full_Name,' ')),Full_Name)
```

Below the expression, there are sections for "Functions" (listing categories like All functions, Character, Conversion, etc.) and "Operators" (listing standard operators like AND, OR, NOT, =, !=, <, >, <=, >=). To the right of the expression is a "Function Description and Syntax" panel which is currently empty. At the bottom right are three buttons: "Validate" (highlighted with a red box), "OK" (highlighted with a red box), and "Cancel".

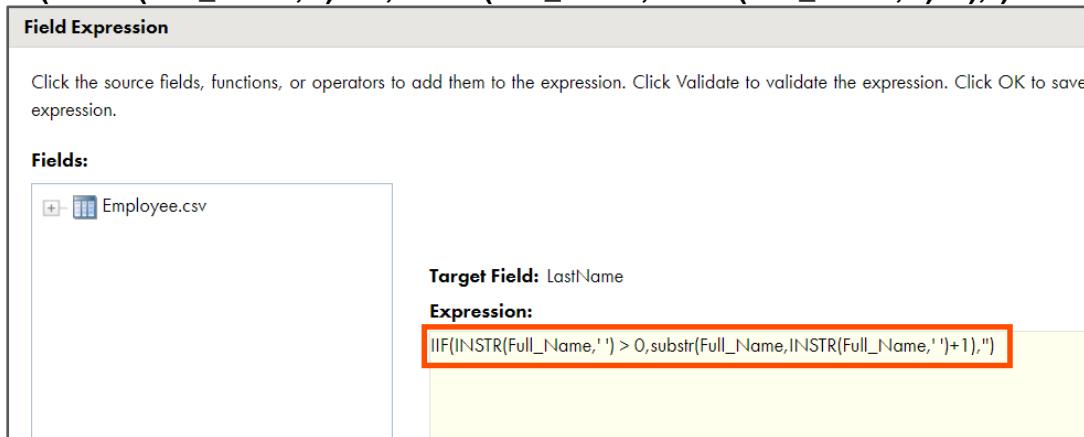
29. From the Target: Contact section, select  for Last Name.



The screenshot shows the "Target: Contact" mapping table. The "Source" column lists fields from "Employee.csv": Emp_ID, Full_Name, Email, Outlet_Name, Department, and Phone. The "Target" column lists fields in "Contact": Id, IsDeleted, MasterRecordId, AccountId, LastName, FirstName, and Salutation. The "Actions" and "Expression/Lookup" columns show the mapping details. The "LastName" field has its expression set to  `IIF(INSTR(Full_Name, ' ') > 0, SUBSTR(Full_Name,0,INSTR(Full_Name,' ')),Full_Name)`, where the fx icon is highlighted with a red box.

30. In the **Expression** field, enter the following expression:

IIF(INSTR(Full_Name, ' ') > 0,substr(Full_Name,INSTR(Full_Name,' ')+1),"")



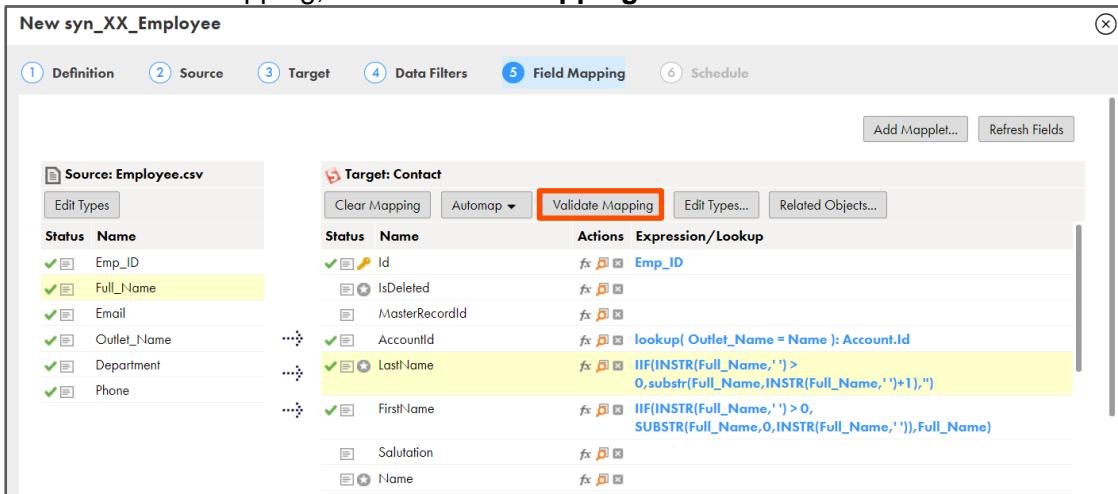
The screenshot shows the "Field Expression" editor. It has a "Fields" section on the left with "Employee.csv" selected. In the center, the "Target Field" is set to "LastName" and the "Expression" is displayed as:

```
IIF(INSTR(Full_Name, ' ') > 0,substr(Full_Name,INSTR(Full_Name,' ')+1),"")
```

The entire expression line is highlighted with a red box.

31. **Validate** the expression and click **OK**.

32. To validate the mapping, click **Validate Mapping**.

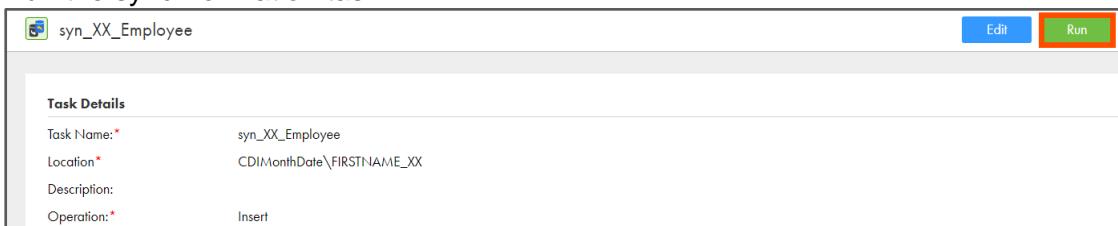


The screenshot shows the 'Field Mapping' tab of the 'New syn_XX_Employee' task configuration. On the left, the 'Source: Employee.csv' pane lists fields: Status, Name, Emp_ID, Full_Name, Email, Outlet_Name, Department, and Phone. The 'Full_Name' field is selected. On the right, the 'Target: Contact' pane lists fields: Id, IsDeleted, MasterRecordId, AccountId, LastName, FirstName, Suffix, and Name. The 'LastName' field is selected. The 'Actions' column contains expressions: 'Emp_ID' for Id, and 'lookup(Outlet_Name = Name) : Account.Id' for AccountId. The 'Expression/Lookup' column contains complex expressions for LastName and FirstName.

33. To save and close the task, click **Finish**.

Note: When you click Finish, the Synchronization Task Asset appears in the navigation pane and displays the task details on the page.

34. Run the synchronization task.

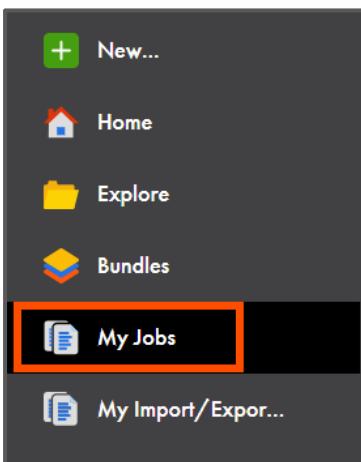


The screenshot shows the 'Task Details' section for the 'syn_XX_Employee' task. It includes fields for Task Name (syn_XX_Employee), Location (CDIMonthDate\FIRSTNAME_XX), Description, and Operation (Insert). The 'Edit' and 'Run' buttons are at the top right.

Important Note: If you want to re-run a task, delete the records inserted by the task in the first run to avoid getting duplication errors.

Monitor the Synchronization Task

35. To monitor the task, from the navigation pane, click **My Jobs**.



The screenshot shows the navigation pane with several options: 'New...', 'Home', 'Explore', 'Bundles', 'My Jobs' (which is highlighted with a red box), and 'My Import/Export...'. The 'My Jobs' option is the active selection.

36. When the task completes, the status changes to **Success**.

My Jobs		Data Integration						
Jobs (244)		Up to date		Updated 1:51:23 AM PDT		↻	↑↓	Find
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status		
syn_XX_Employee-1	CDI<Month>...		Jul 30, 2023, 1:50 ...	Jul 30, 2023, ...	33		Success	

Note: Verify that 33 rows are processed by the task. You can use the refresh option if the status of the task does not change automatically.

37. Close the asset from the navigation pane.

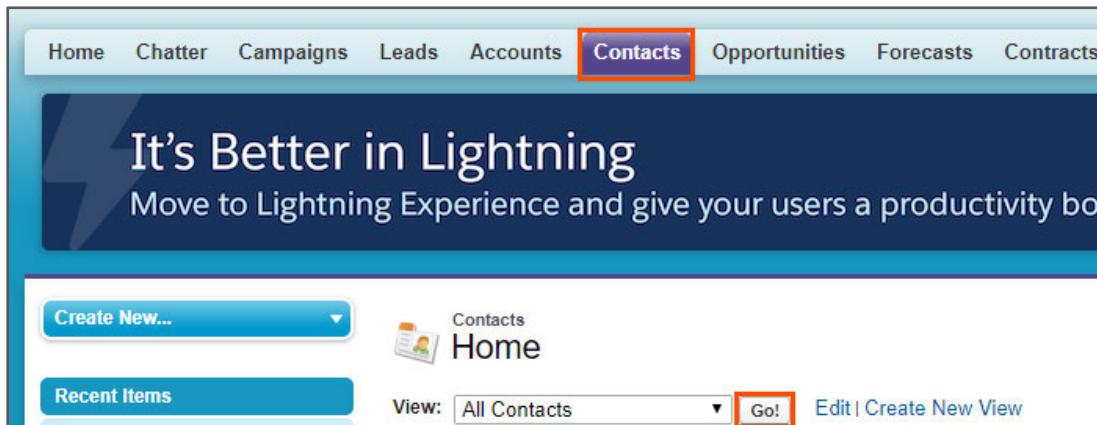
Verify the Results

38. Log in to your Salesforce Developer account using your credentials.

39. To view the new account records that were inserted, click **Contacts**.

Note: Verify that the View field is set to **New This Week**.

40. Click **Go!**.



41. To verify that the First Name and Last Name are parsed correctly, select a contact and click **Edit**.

New Contact		Add to Campaign		A B C D E F G H I J K L M N O P Q R S T U V W X Y Z		
Action	Name	Account Name	Title	Phone	Email	Contact Owner Alias
	Bailey_Patrick	NH Trends		319-812-6957	patrick.bailey@nhsupplies...	ITrai
	Baker_Nancy	NH Supplies		229-336-5117	nancy.baker@nhsupplies...	ITrai
	Barr_Tim	Grand Hotels & Resorts Ltd	SVP, Administration and Fi...	(312) 596-1000	barr_tim@grandhotels.c...	ITrai
	Bond_John	Grand Hotels & Resorts Ltd	VP, Facilities	(312) 596-1000	bond_john@grandhotels.c...	ITrai
	Boyle_Lauren	United Oil & Gas Corp.	SVP, Technology	(212) 842-5500	lboyle@uog.com	ITrai
	Brown_Donna	NH Everyday		212-434-7910	donna.brown@nhsupplies...	ITrai

42. Observe that the entries in the First Name, Last Name, Account Name, and Department fields are parsed correctly.

Contact Edit

Contact Information

Contact Owner	Informatica Training
Salutation	--None--
First Name	Patrick
Last Name	Bailey
Account Name	NH Trends
Title	
Department	Finance
Birthdate	

43. Click Cancel.

Contact Edit

Contact Information

Contact Owner	Informatica Training
Salutation	--None--

Note: If you do not find the Cancel button at the top of the page, you can find it at the bottom.

Also, you can perform a random check among the records loaded into Salesforce to verify that there is no record with the **Department** category as **Sales** (as you have added the Data filter to not load the records that belong to the Sales department).

This concludes the lab.

Module 3: Synchronization Task

Lab 3-5: Using Saved Query in a Synchronization Task

Overview:

The Synchronization task synchronizes data between a source and a target. The Data Synchronization application supports Insert, Update, Upsert, and Delete operations.

Objective:

- Create a saved query
- Use the saved query in the Synchronization task

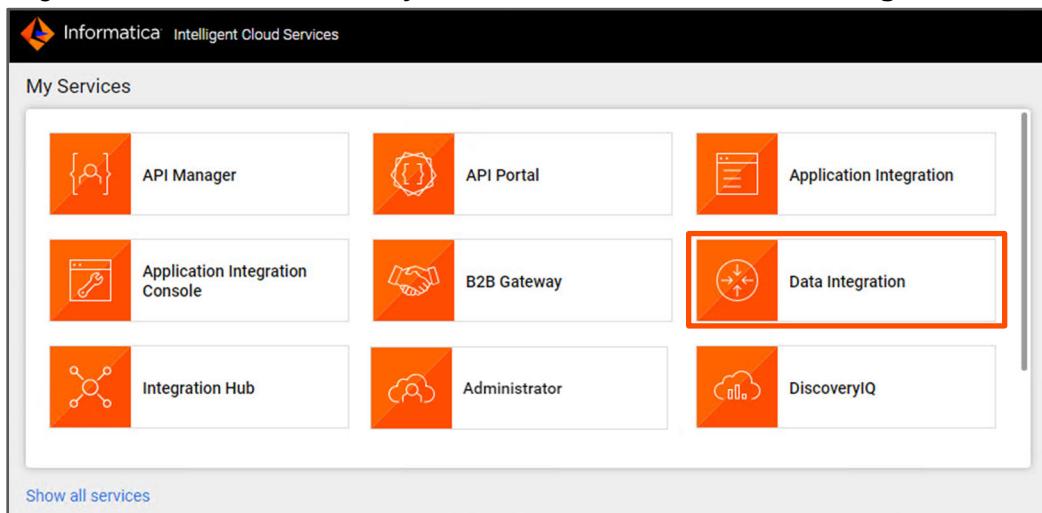
Duration:

10 minutes

Tasks

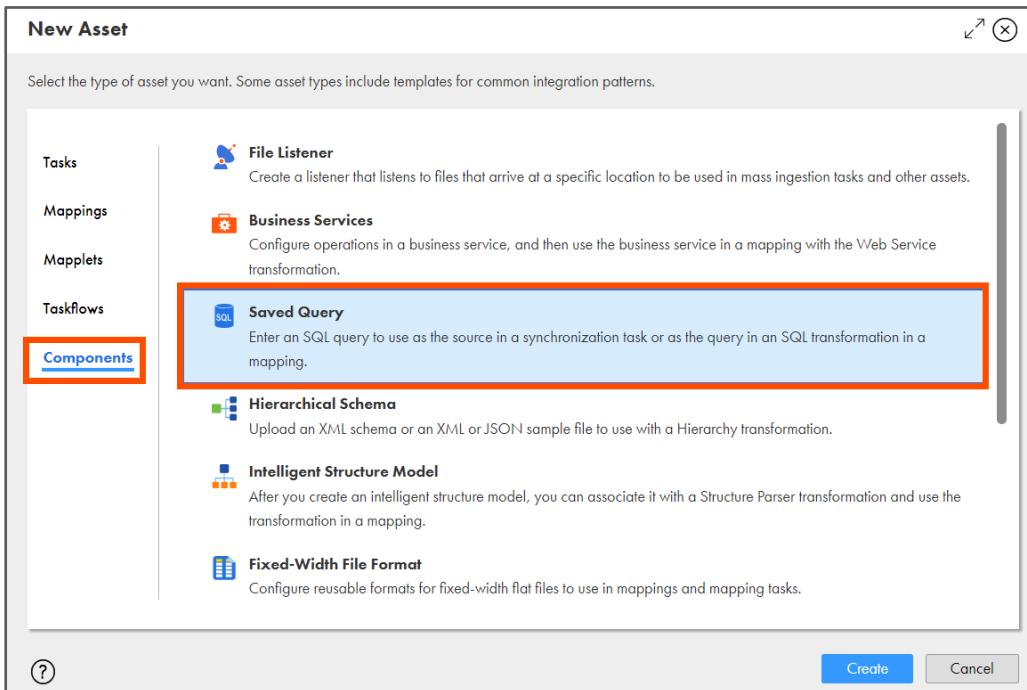
Create a saved query

1. Login into IICS and from the **My Services** window, select **Data Integration**.

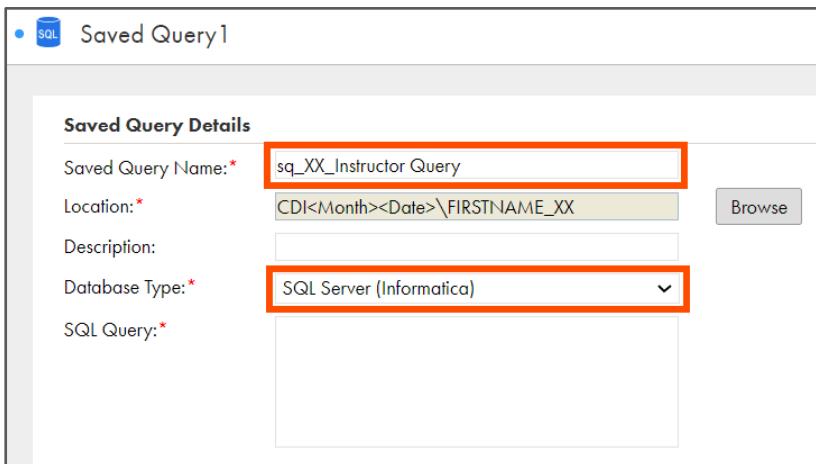


2. To create a new saved query, from the navigation pane, select **New**.

3. From the **Components** tab, select **Saved Query**.

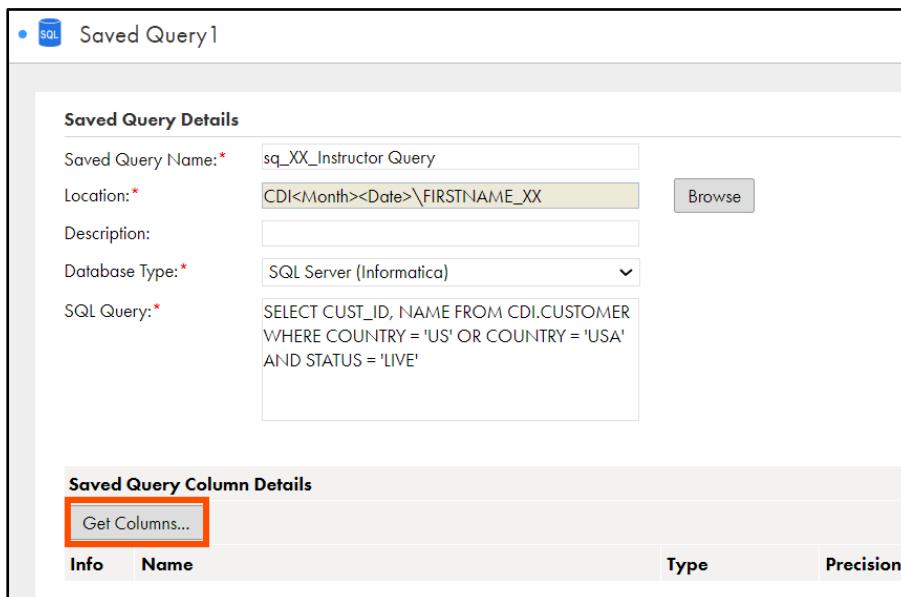


4. Click **Create**.
 5. In the saved Query Name enter the name as **sq_XX_Instructor Query**.
 6. Use the Browse option to save the asset in your working directory.
 7. Select the Database Type as **SQL Server**.



8. In the SQL Query enter the Query as mentioned below:
SELECT CUST_ID, NAME FROM CDI.CUSTOMER WHERE COUNTRY = 'US' OR COUNTRY = 'USA' AND STATUS = 'LIVE'

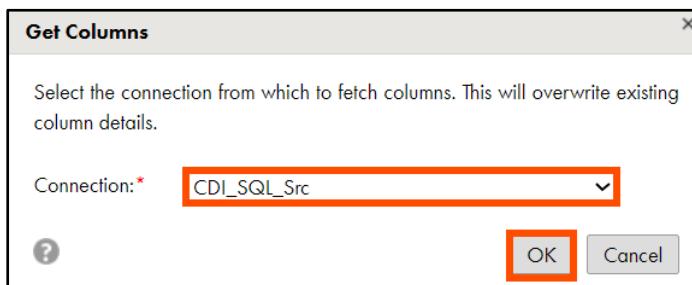
9. Click on the **Get Columns** tab.



The screenshot shows the 'Saved Query Details' window for 'Saved Query1'. The 'Get Columns...' button in the 'Saved Query Column Details' section is highlighted with a red box. The window includes fields for Saved Query Name, Location, Description, Database Type, and SQL Query.

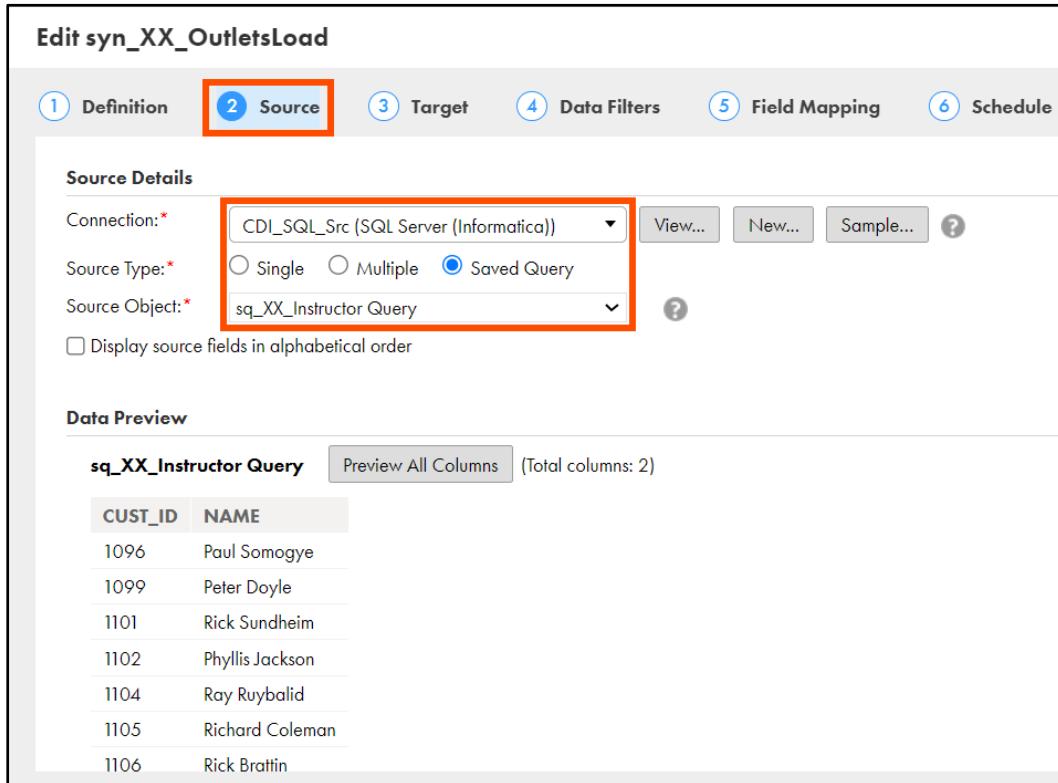
Column	Value
Saved Query Name:	sq_XX_Instructor Query
Location:	CDI<Month><Date>\FIRSTNAME_XX
Description:	
Database Type:	SQL Server (Informatica)
SQL Query:	SELECT CUST_ID, NAME FROM CDI.CUSTOMER WHERE COUNTRY = 'US' OR COUNTRY = 'USA' AND STATUS = 'LIVE'

10. From the Connection drop-down select **CDI_SQL_Src** and click **OK**.



11. **Save** the SQL Query.
12. Now, in the Explore folder, in your directory, open the existing Synchronization task **syn_XX_OutletsLoad**.
13. To modify the task, click **Edit**.
14. Go to the Source tab and in the source details field, select the Connection as **CDI_SQL_Src**.
15. Select the Source Type as **Saved Query**.

16. From the source object property, select your saved query created earlier, that is, **sq_XX_Instructor Query**.



Edit syn_XX_OutletsLoad

Source Details

Connection: CDI_SQL_Src (SQL Server (Informatica))

Source Type: Single, Multiple, **Saved Query** (selected)

Source Object: **sq_XX_Instructor Query**

Display source fields in alphabetical order

Data Preview

sq_XX_Instructor Query Preview All Columns (Total columns: 2)

CUST_ID	NAME
1096	Paul Somogye
1099	Peter Doyle
1101	Rick Sundheim
1102	Phyllis Jackson
1104	Ray Ruybalid
1105	Richard Coleman
1106	Rick Brattin

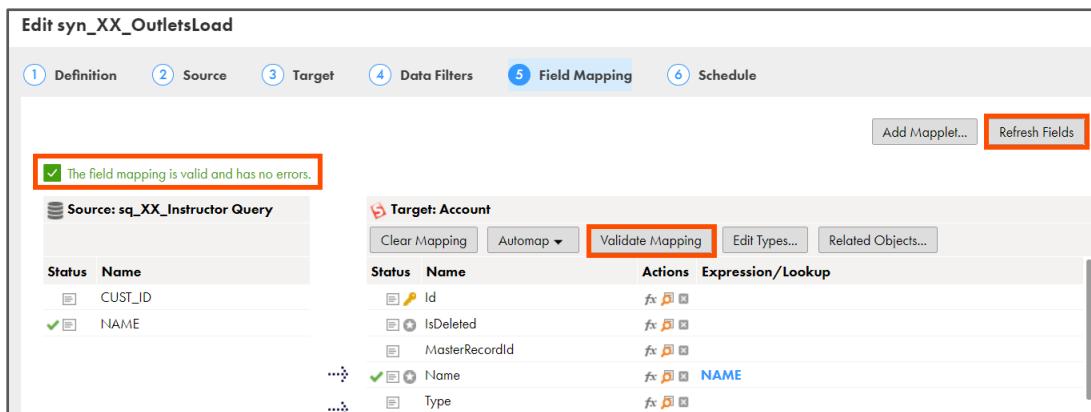
17. Navigate to the Field Mapping tab.

18. Clear the existing fields mapping using the **Clear Mapping** option and map the fields as shown below:

Source Field Name	Target Field Name
Name	Account Name (or Name, whichever you see)

19. Validate the mapping.

Note: If you see an Internal Error after validating the mapping, Refresh the mappings fields, and try validating again.



Edit syn_XX_OutletsLoad

Field Mapping

The field mapping is valid and has no errors.

Source: sq_XX_Instructor Query

Status	Name
	CUST_ID
	NAME

Target: Account

Status	Name	Actions	Expression/Lookup
	Id	fx	
	IsDeleted	fx	
	MasterRecordId	fx	
	Name	fx	NAME
	Type	fx	

20. Click **Finish**.

21. To run the Synchronization task, click **Run**.



The screenshot shows the 'Task Details' page for a task named 'syn_XX_OutletsLoad'. The 'Run' button is highlighted in green.

Task Name:	syn_XX_OutletsLoad
Location:	CDIMonthDate\FIRSTNAME_XX

Monitor the Synchronization Task

22. To monitor the task, from the navigation pane, click **My Jobs**.

23. When the task completes, the status changes to **Success**.



The screenshot shows the 'My Jobs' page with a completed task named 'syn_XX_OutletsLoad-3'. The status is marked as 'Success' with a checkmark.

Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
syn_XX_OutletsLoad-3	CDI<Month><...		Jul 30, 2023, 2:10 ...	Jul 30, 2023, ...	8	<input checked="" type="checkbox"/> Success

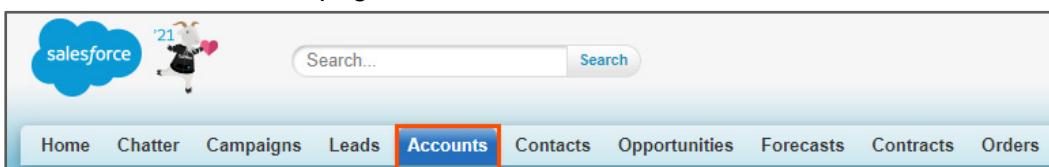
Note: You can use the  icon to refresh the page if the status does not change automatically.

24. Close all the assets from the navigation pane.

Verify the Results

25. Log in to the Salesforce Developer account using your credentials.

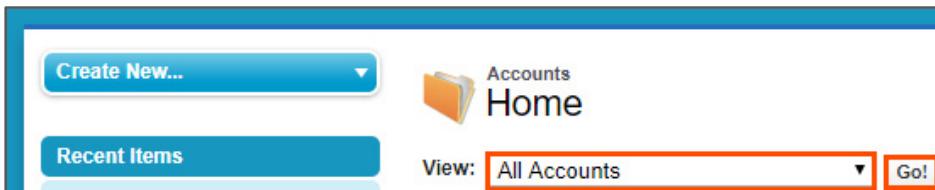
26. On the Salesforce homepage, from the available tabs, select **Accounts**.



The screenshot shows the Salesforce homepage with the 'Accounts' tab selected.

27. From the drop-down, select **All Accounts**.

28. Click **Go!**.



The screenshot shows the 'Accounts Home' page with the 'View' dropdown set to 'All Accounts' and the 'Go!' button highlighted.

29. Verify that all the Accounts in the source file (SQL server database tables) are now added to your Salesforce Account object.

Action	Account Name	Account Site	Billing State/Province
<input type="checkbox"/> Edit Del +	NH D'needs		CA
<input type="checkbox"/> Edit Del +	NH Digital		DE
<input type="checkbox"/> Edit Del +	NH Digiworld		LA
<input type="checkbox"/> Edit Del +	NH Everyday		IN
<input type="checkbox"/> Edit Del +	NH Groceries		AZ
<input type="checkbox"/> Edit Del +	NH Lifestyle		CO
<input type="checkbox"/> Edit Del +	NH Mart		AK
<input type="checkbox"/> Edit Del +	NH Supplies		MI
<input type="checkbox"/> Edit Del +	NH Trends		FL
<input type="checkbox"/> Edit Del +	Paul Somogye		
<input type="checkbox"/> Edit Del +	Peter Doyle		
<input type="checkbox"/> Edit Del +	Phyllis Jackson		
<input type="checkbox"/> Edit Del +	Ray Ruybalid		
<input type="checkbox"/> Edit Del +	Richard Coleman		
<input type="checkbox"/> Edit Del +	Rick Brattin		
<input type="checkbox"/> Edit Del +	Rick Sundheim		
<input type="checkbox"/> Edit Del +	Robert Cori		

Note: The number of records shown in the screenshot above may vary depending on the records present in your Salesforce account.

This concludes the lab.

Module 3: Synchronization Task

Lab 3-6: Using Upsert Operation in Synchronization Task

Overview:

A Synchronization Task can be configured with the Task Operation property set to Upsert (Update or Insert) for a relational target table that has a primary key. This enables new records to be inserted while records that already exist in the target (same primary key value) will generate an update operation that can change the data in the target to match the source data for that record. This feature is available in Salesforce targets configured with an External ID.

Objectives:

- Create a Synchronization task with the Task Operation property set to Upsert
- Modify the Field Mapping after the source file is changed
- Observe how the upsert logic impacts the target data

Scenario:

A database table is set up to hold customer records with individual customer attributes such as address fields, phone numbers, and email. A CUST_ID field uniquely identifies each customer, and since it is a primary key on the database, duplicate records (same CUST_ID value) cannot be inserted. We need to keep the data in this table updated according to changes in the source data, and we also want to avoid writing duplicate records that would be rejected by the target database. Finally, we need to capture new customer records when they appear in the data.

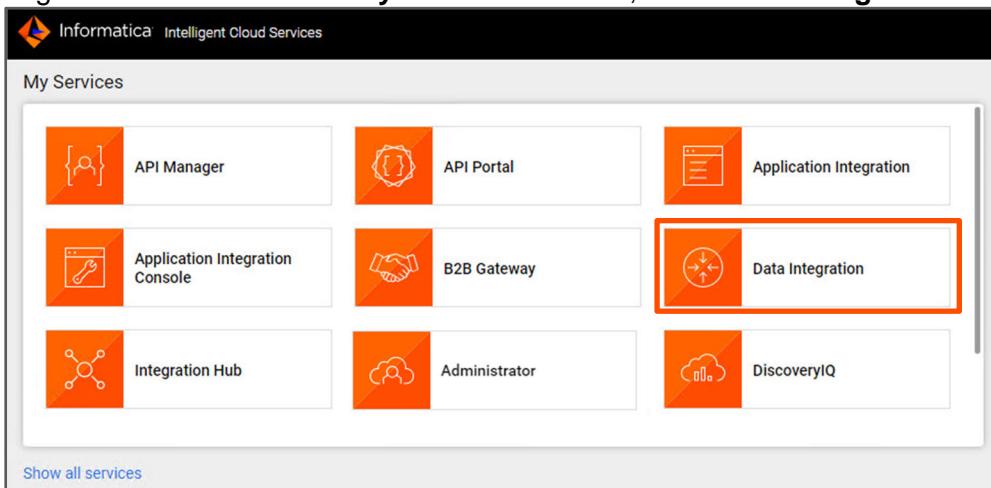
Duration:

20 minutes

Tasks

Create Synchronization Task

1. Login to IICS and from the **My Services** window, select **Data Integration**.



2. Create a new Synchronization Task and name it **syn_XX_UPSERT_CUSTOMERS**.
3. Verify that you are saving the asset to your working folder.
4. Set the Task Operation property to **Upsert (Update or Insert)**.

New Synchronization Task1

1 Definition 2 Source 3 Target 4 Data Filters 5 Field Mapping 6 Schedule

Task Details

Task Name: **syn_XX_UPSERT_CUSTOMERS**

Location: **CDI<Month><Date>\FIRSTNAME_XX**

Description:

Task Operation: **Upsert (Update or Insert)**

5. Click **Next**.
6. In the Source tab, set the Connection to **FF_Source**.
7. Select the source object as **INITIAL_CUSTOMERS.CSV**.

New syn_XX_UPSERT_CUSTOMERS

1 Definition 2 Source 3 Target 4 Data Filters 5 Field Mapping 6 Schedule

Source Details

Connection: **FF_Source (Flat File (Informatica))**

Source Type: **Single**

Source Object: **INITIAL_CUSTOMERS.CSV**

Display source fields in alphabetical order

Data Preview

INITIAL_CUSTOMERS.CSV Preview All Columns (Total columns: 10)

CUST_ID	FIRST_NAME	LAST_NAME	ADDR1	ADDR2	...
1	Neil	Armstrong	100 Maple St		...
2	Michael	Collins	3612 Broadway	Box 278	...
3	Buzz	Aldrin	453 Galaxy Way		...
4	Edward	Mitchell	1290 Paranormal Ave.		...

8. Note the source file has ten records, each with a unique **CUST_ID**.

Data Preview					
INITIAL_CUSTOMERS.CSV					
Preview All Columns (Total columns: 10)					
CUST_ID	FIRST_NAME	LAST_NAME	ADDR1	ADDR2	...
1	Neil	Armstrong	100 Maple St		...
2	Michael	Collins	3612 Broadway	Box 278	...
3	Buzz	Aldrin	453 Galaxy Way		...
4	Edward	Mitchell	1290 Paranormal Ave.		...
5	John	Glenn	456 Valley Way		...
6	John	Young	74 Harrison Ave		...
7	Alan	Shepard	3000 Park Ave	Box 4588	...
8	Harry	Schmitt	8944 William St.		...
9	Pete	Conrad	23 Cherry St.		...
10	Frank	Borman	3856 King St.		...

9. Click **Next**.

10. In the Target tab, set the Connection to **CDI_SQL_Src**.

11. Select the Target Object as **CUSTOMER_MASTER**. Note that the table currently has no data.

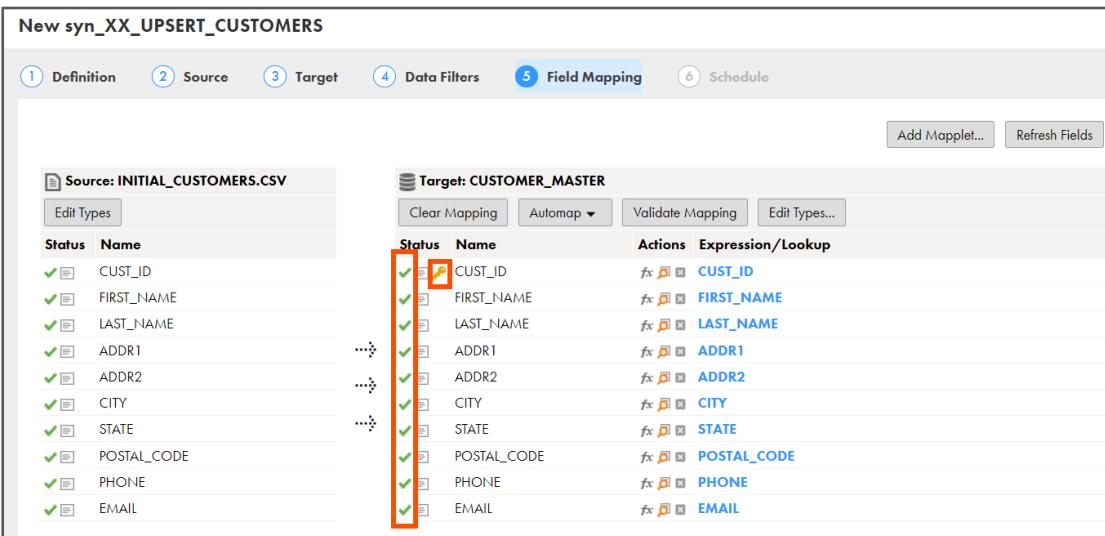
New syn_XX_UPSERT_CUSTOMERS

1 Definition	2 Source	3 Target	4 Data Filters	5 Field Mapping	6 Schedule												
Target Details <div style="border: 1px solid #ccc; padding: 5px;"> Connection: * CDI_SQL_Src (SQL Server (Informatica)) View... New... Sample... ? Target Object: * CUSTOMER_MASTER Select... ? <input type="checkbox"/> Display target fields in alphabetical order </div>																	
Data Preview <div style="border: 1px solid #ccc; padding: 5px;"> CUSTOMER_MASTER Preview All Columns (Total columns: 10) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>CUST_ID</th><th>FIRST_NAME</th><th>LAST_NAME</th><th>ADDR1</th><th>ADDR2</th><th>...</th></tr> </thead> <tbody> <tr> <td colspan="6">No data</td></tr> </tbody> </table> </div>						CUST_ID	FIRST_NAME	LAST_NAME	ADDR1	ADDR2	...	No data					
CUST_ID	FIRST_NAME	LAST_NAME	ADDR1	ADDR2	...												
No data																	

12. Click **Next**.

13. Skip the Data Filters tab. Click **Next**.

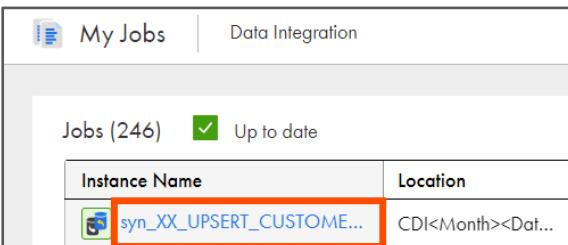
14. In the Field Mapping tab, note the CUST_ID is a primary key on the target table. Also, note each of the target fields has been mapped automatically because the target field names match the source fields.



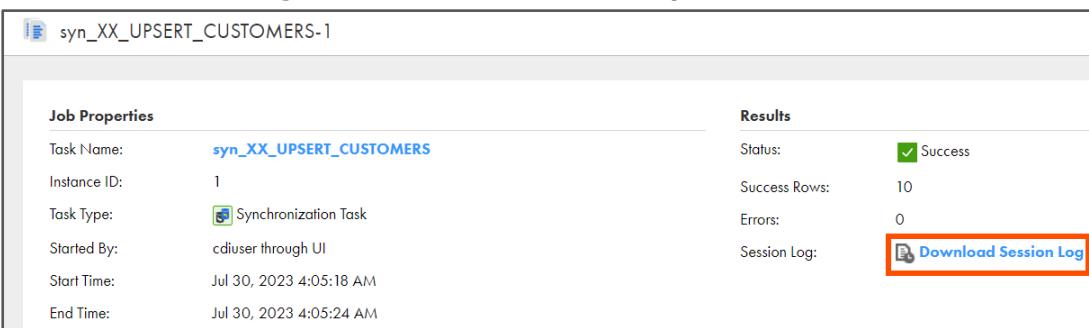
15. Click **Finish** to save the Synchronization Task.
 16. Run the Synchronization Task and navigate to the **My Jobs** page.
 17. Observe that all ten records have been inserted into the target table.



18. Click on the job to open the job properties page.



19. Click the **Session Log** link to access the session log file.

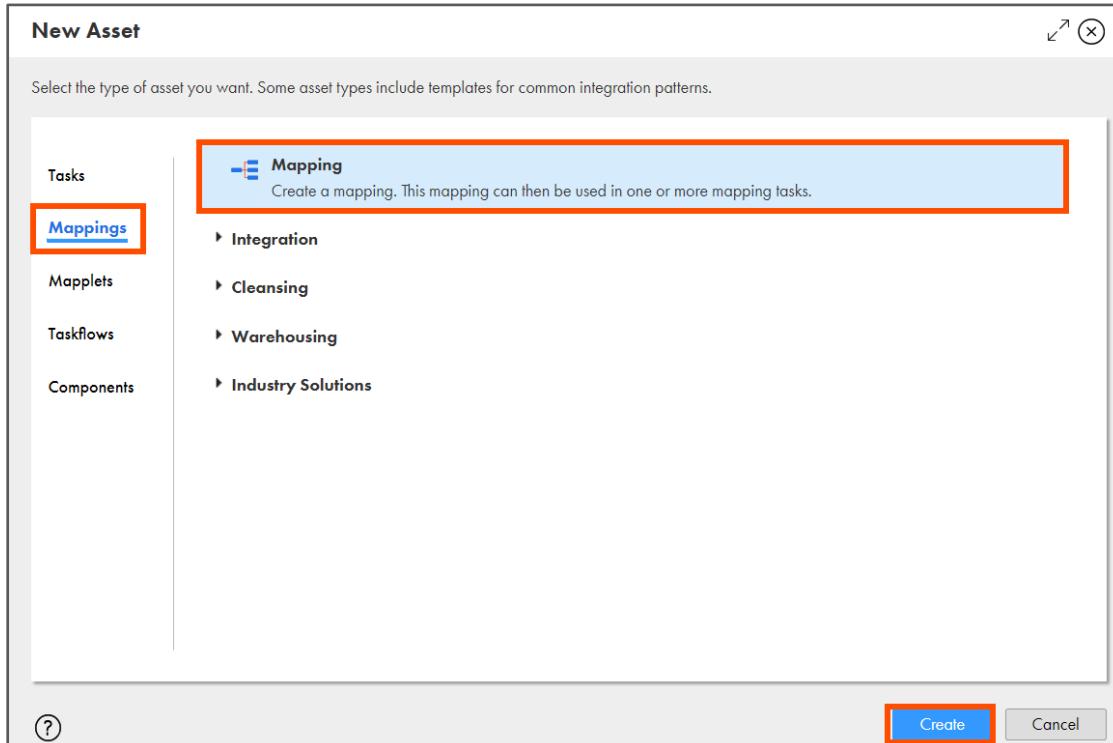


20. Open the downloaded log file and scroll down to the bottom to observe the **Load Summary**. Note that ten records have been inserted. Also, note that there is a value under “**Mutated from update**” on the right, even though no update records were sent to the database. In this context, “Mutate” means records changed.

```
LOAD SUMMARY
=====
WRT_8036 Target: CUSTOMER_MASTER (Instance Name: [CUSTOMER_MASTER])
WRT_8039 Inserted rows - Requested: 10      Applied: 10      Rejected: 0      Affected: 10      Mutated from update: 10
```

Create a Dummy Mapping To View Data

21. Click **New** and from the **Mappings** tab, create a new mapping.

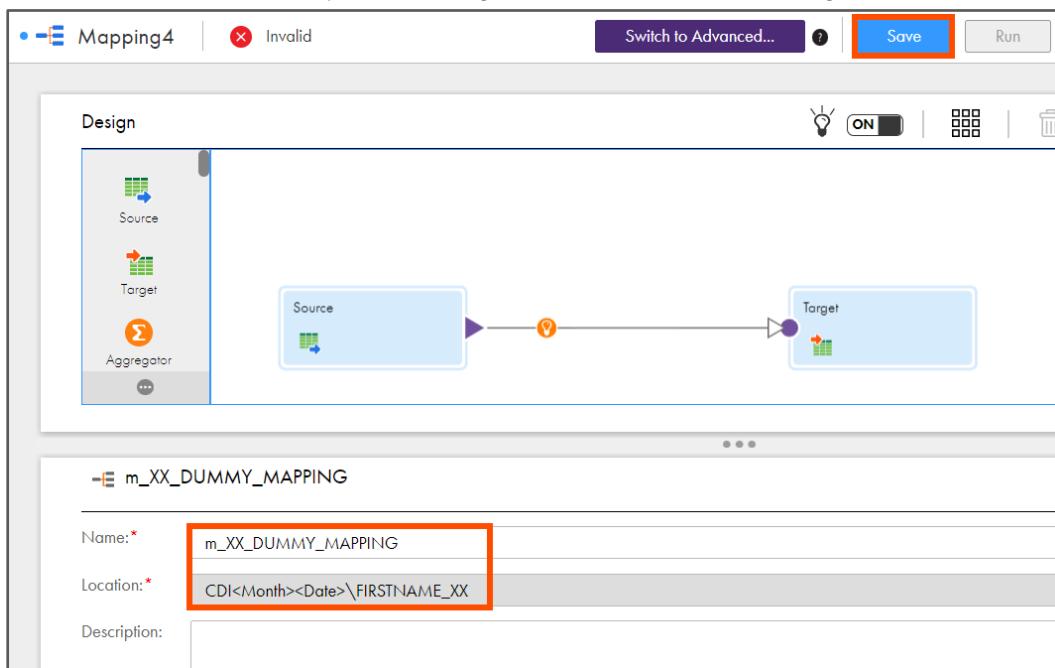


Note: You will learn about mappings in the succeeding modules. You will just create a dummy mapping to view the data that is written to the target table.

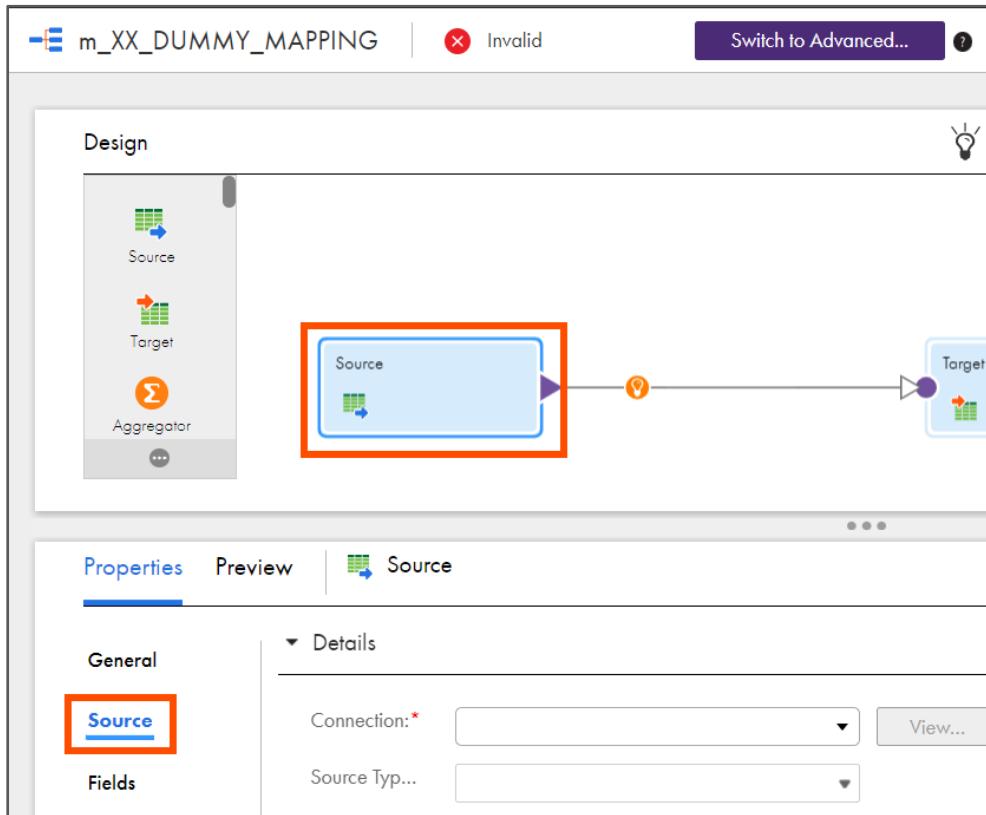
By default, you will have a source and target linked to each other on the mapping canvas.

22. Name the mapping as **m_XX_DUMMY_MAPPING**.

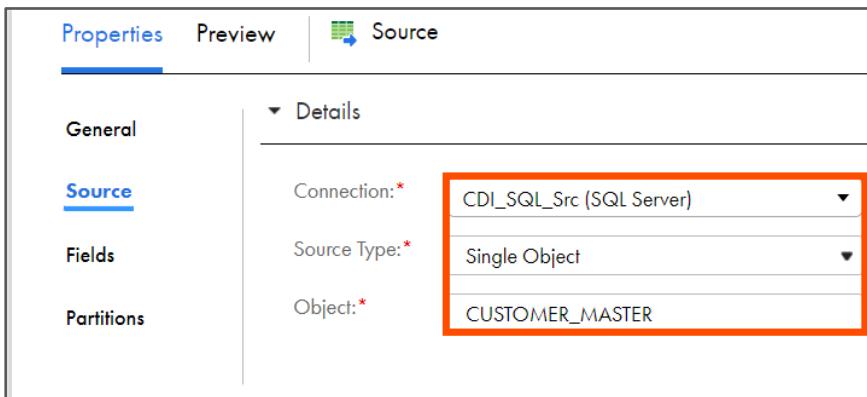
23. Set the asset location to your working folder and save the changes.



24. From the mapping canvas, select **Source**, and navigate to the **Source** properties tab.



25. Select the Connection as **CDI_SQL_Src** and the Object as **CUSTOMER_MASTER**.



Properties Preview |  Source

General ▾ Details

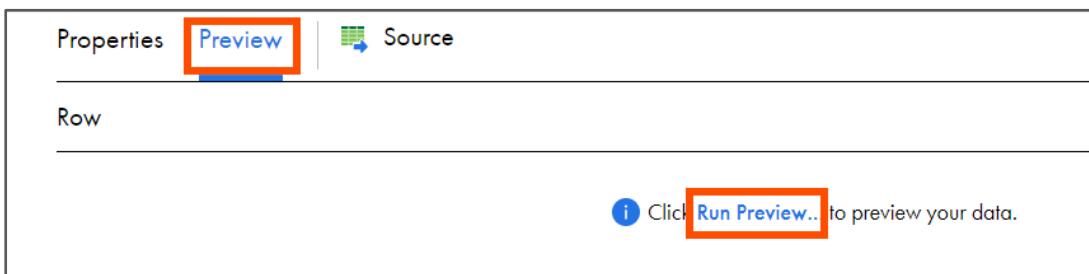
Source

Connection: * CDI_SQL_Src (SQL Server)

Source Type: * Single Object

Object: * CUSTOMER_MASTER

26. Navigate to the **Preview** section and click **Run Preview**.



Properties **Preview** |  Source

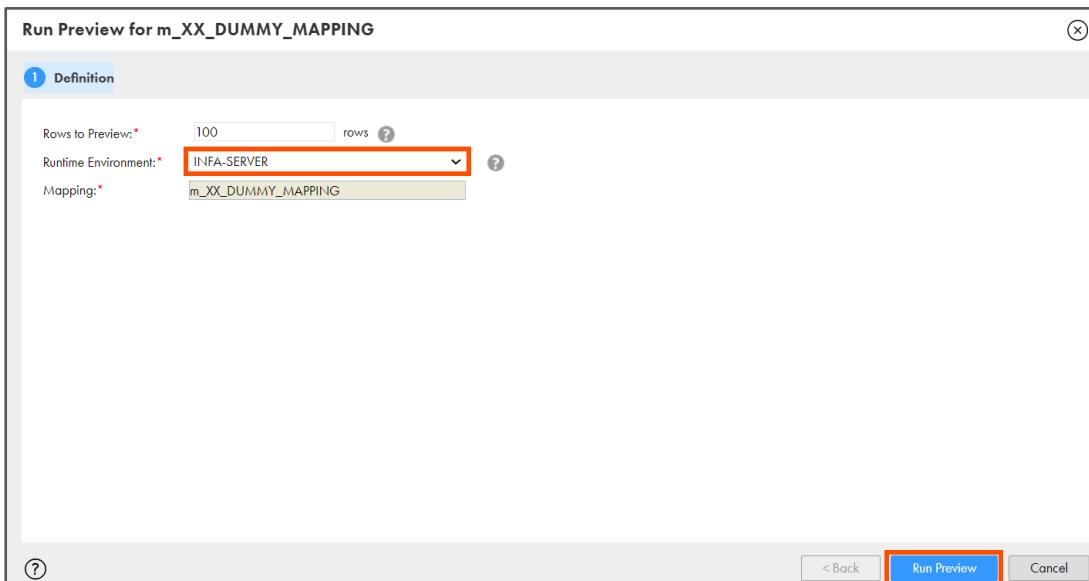
Row

Row

i Click **Run Preview...** to preview your data.

27. In the Continue tab, click **Yes** to save the changes.

28. If you are prompted with the Run Preview window, select the Runtime Environment as **INFA-SERVER** and click the **Run Preview** button.



Run Preview for m_XX_DUMMY_MAPPING

1 Definition

Rows to Preview: * 100 rows ?

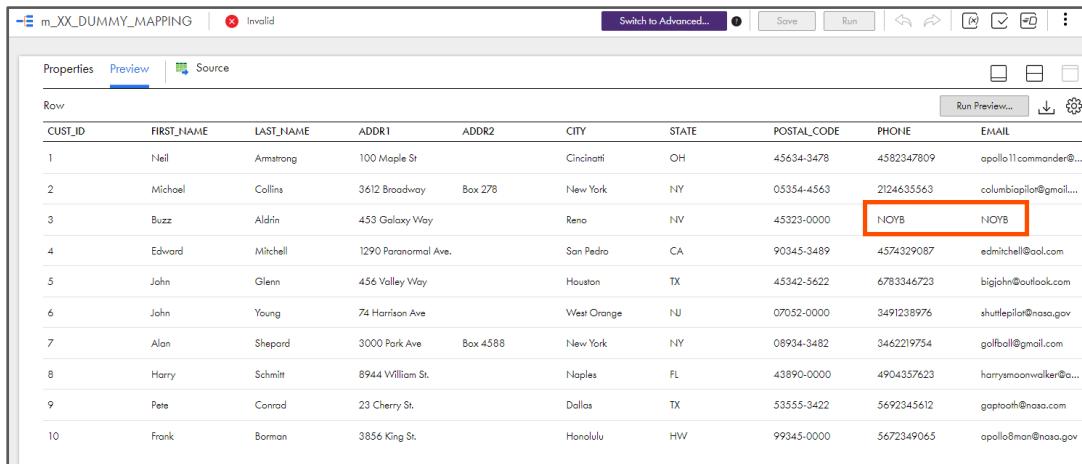
Runtime Environment: * INFA-SERVER ?

Mapping: * m_XX_DUMMY_MAPPING

Run Preview Cancel

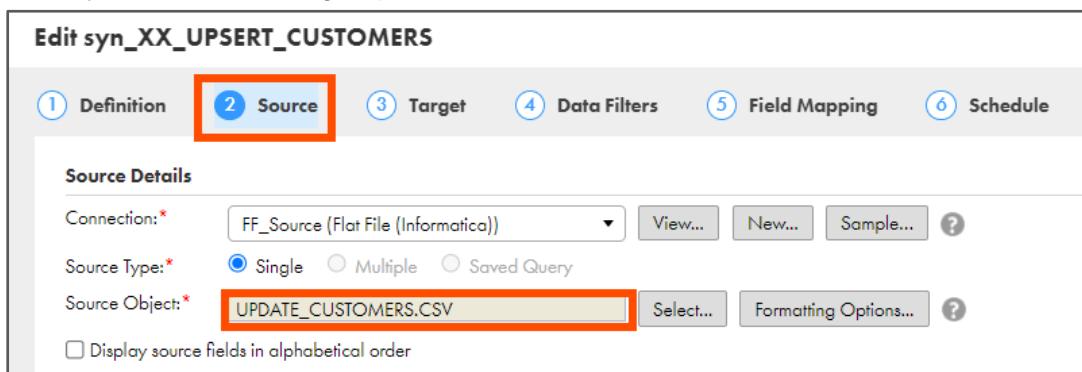
Note: If you have only 1 secure agent configured in your Org, then you will not be prompted with the Run Preview window to select the runtime environment.

29. Wait for a couple of seconds for the results to load in the Preview tab. Maximize the Preview tab to view all the records (use the Minimize and Maximize icons present at the top right corner of the section for a better view). Note that customer number three has failed to provide phone and email contact data.



CUST_ID	FIRST_NAME	LAST_NAME	ADDR1	ADDR2	CITY	STATE	POSTAL_CODE	PHONE	EMAIL
1	Neil	Armstrong	100 Maple St		Cincinnati	OH	45634-3478	4582347809	apollo11commander@...
2	Michael	Collins	3612 Broadway	Box 278	New York	NY	05354-4563	2124635563	columbiapilot@gmail...
3	Buzz	Aldrin	453 Galaxy Way		Reno	NV	45323-0000	NOYB	NOYB
4	Edward	Mitchell	1290 Paranormal Ave.		San Pedro	CA	90345-3489	4574329067	edmitchell@aol.com
5	John	Glenn	456 Valley Way		Houston	TX	45342-5622	6783346723	bigjohn@outlook.com
6	John	Young	74 Harrison Ave		West Orange	NJ	07052-0000	3491238976	shuttlepilot@nasa.gov
7	Alan	Shepard	3000 Park Ave	Box 4588	New York	NY	08934-3482	3462219754	golball@gmail.com
8	Harry	Schmitt	8944 William St.		Naples	FL	43890-0000	4904357623	harrysmoonwalker@...
9	Pete	Conrad	23 Cherry St.		Dallas	TX	53555-3422	5692345612	gaptooth@nasa.com
10	Frank	Borman	3856 King St.		Honolulu	HW	99345-0000	5672349065	apollo8man@nasa.gov

30. Restore the size of the Preview tab, if you have maximized it.
 31. Open the Synchronization Task **syn_XX_UPSERT_CUSTOMERS** in the edit mode.
 32. Go to the Source tab and change the source file to **UPDATE_CUSTOMERS.CSV**. This file contains a total of ten records, eight of which include data from the ten customers already loaded in the target, plus two new customer records.



Edit syn_XX_UPSERT_CUSTOMERS

- 1 Definition**
- 2 Source**
- 3 Target**
- 4 Data Filters**
- 5 Field Mapping**
- 6 Schedule**

Source Details

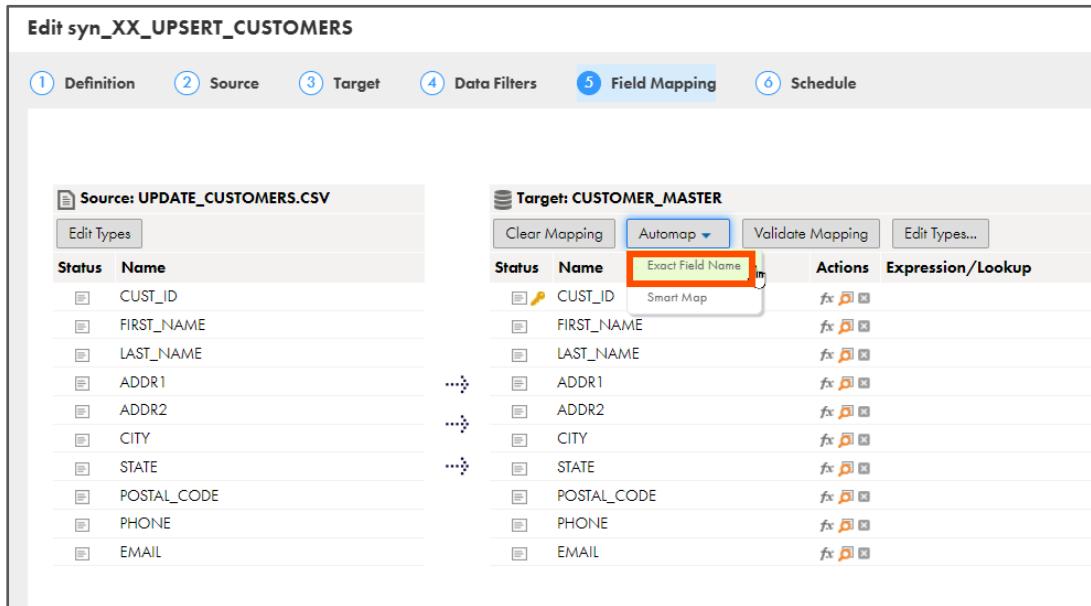
Connection: * FF_Source (Flat File (Informatica)) ?

Source Type: * Single Multiple Saved Query

Source Object: * UPDATE_CUSTOMERS.CSV ?

Display source fields in alphabetical order

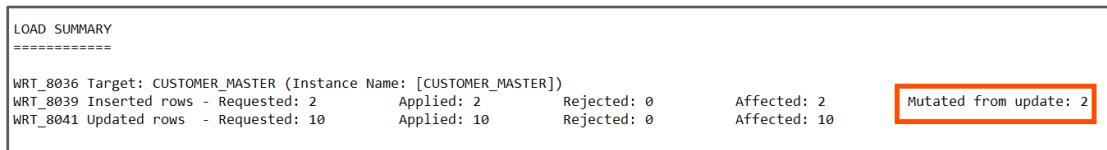
33. In the Field Mapping tab, you must click the **Clear Mapping** button above the target fields, and then Automap by Exact Field Name.



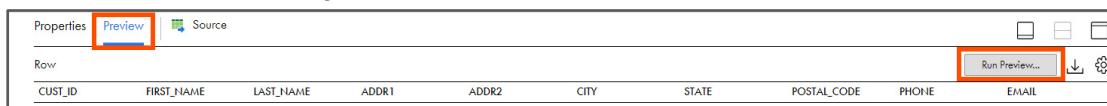
34. Validate, save, and run the Synchronization Task.
 35. Observe that twelve records have been processed to the target.



36. Download the Session log file and open it.
 37. Scroll down to the bottom to observe the Load Summary. Note that two records have been inserted into the target table, while eight records generated updates because the corresponding CUST_ID values already existed in the target (existing customers). Any changes to the data should have been captured by the target database. According to the "Mutated from update" statistic, two records changed.

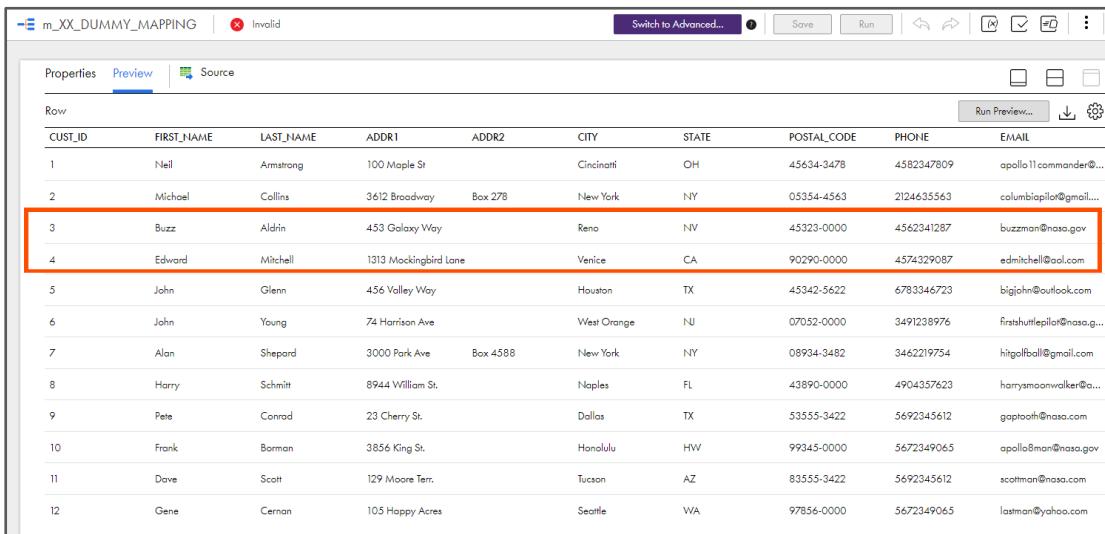


38. Navigate to your dummy mapping and run the Preview in the Preview tab of the source to view the refreshed target data.



39. If prompted, select the runtime environment as INFA-SERVER and run the preview.

40. Note that two new records were loaded. Also, note that customer number three has now provided his contact information, and customer number four has changed his address.



CUST_ID	FIRST_NAME	LAST_NAME	ADDR1	ADDR2	CITY	STATE	POSTAL_CODE	PHONE	EMAIL
1	Neil	Armstrong	100 Maple St		Cincinnati	OH	45634-3478	4582347809	apollo11commander@...
2	Michael	Collins	3612 Broadway	Box 278	New York	NY	05354-4563	2124635563	columbiapilot@gmail...
3	Buzz	Aldrin	453 Galaxy Way		Reno	NV	45323-0000	4562341287	buzzman@nasa.gov
4	Edward	Mitchell	1313 Mockingbird Lane		Venice	CA	90290-0000	4574329087	edmitchell@aol.com
5	John	Glenn	456 Valley Way		Houston	TX	45342-5622	6783344723	bigjohn@outlook.com
6	John	Young	74 Harrison Ave		West Orange	NJ	07052-0000	3491238976	firstshuttlepilot@nasa.g...
7	Alan	Shepard	3000 Park Ave	Box 4588	New York	NY	08934-3482	3462219754	hitgolfball@gmail.com
8	Harry	Schmitt	8944 William St.		Naples	FL	42890-0000	4904357623	harrymoonwalker@o...
9	Pete	Conrad	23 Cherry St.		Dallas	TX	53555-3422	5692345612	gaptooth@nasa.com
10	Frank	Borman	3856 King St.		Honolulu	HI	99345-0000	5672349065	apollo8man@nasa.gov
11	Dave	Scott	129 Moore Terr.		Tucson	AZ	83555-3422	5692345612	scottman@nasa.com
12	Gene	Cernan	105 Happy Acres		Seattle	WA	97856-0000	5672349065	lastman@yahoo.com

The Upsert setting has added new records and updated (changed) existing records with the source data while avoiding duplicate records and database uniqueness constraint rejections.

41. Save and close all the assets from the navigation pane.
-

This concludes the lab

Module 4: Data Transfer Task

Lab 4-1: Creating a Data Transfer Task

Overview:

The data transfer task allows you to transfer data from a source to a target. For example, you might use a data transfer task to transfer data from an on-premises database to a cloud data warehouse.

Objective:

- Create a data transfer task to copy fields from SQL to flat-file

Scenario:

Ruby wants to create a backup of the CUSTOMER SQL table for the fields with TIER as not null. So, John suggests creating a data transfer task to copy data to a flat file.

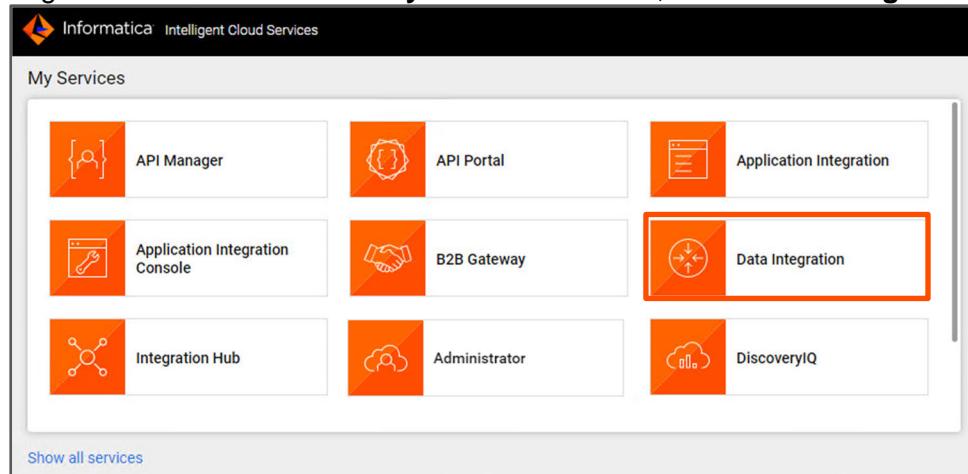
Duration:

10 minutes

Tasks

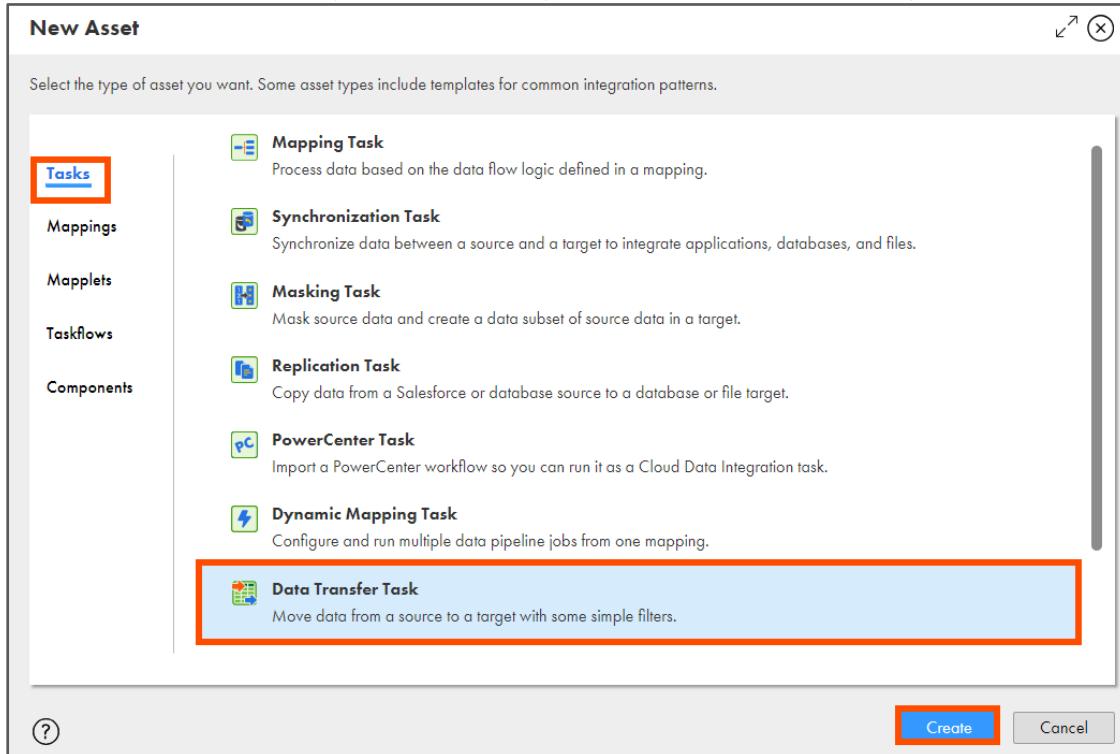
Create a Data Transfer in IICS

1. Login into IICS and from the **My Services** window, select **Data Integration**.

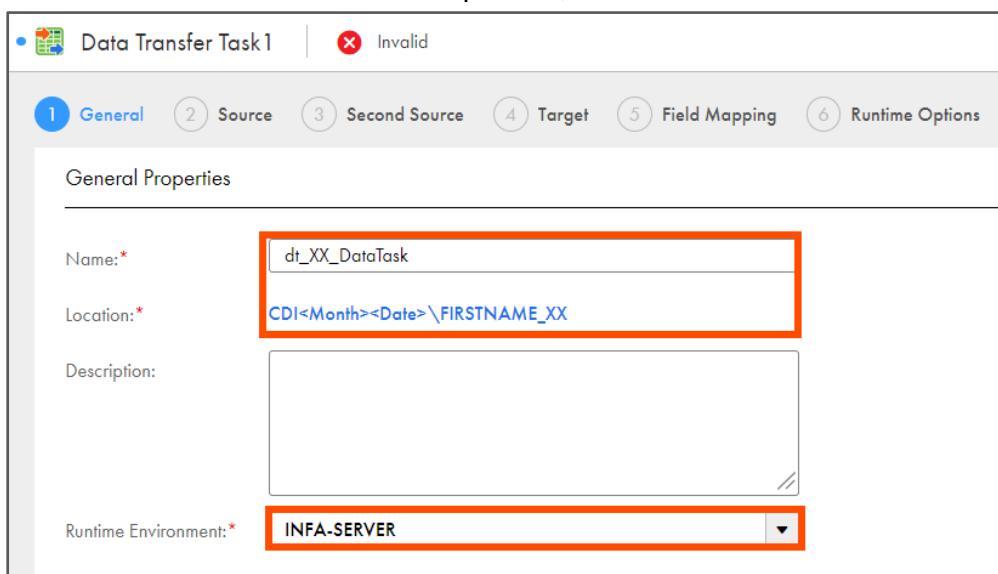


2. To create a new asset, from the navigation pane, select **New**.

3. In the New Asset window, from Tasks tab, select **Data Transfer Task**, and click **Create**.



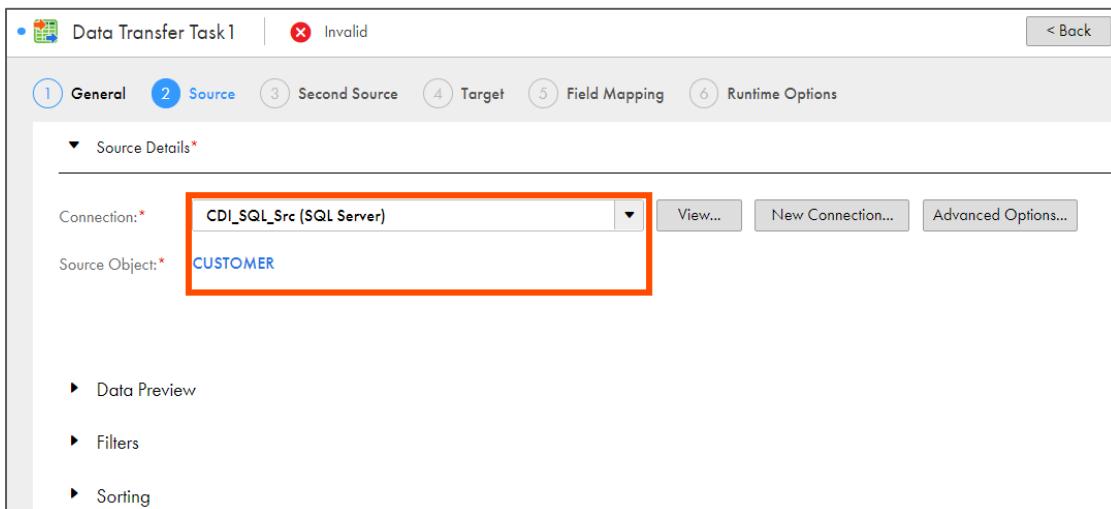
4. In the Task Name field, enter **dt_XX_DataTask**.
 5. Verify that the asset Location is your working directory.
 6. From the Runtime Environment drop-down, select **INFA-SERVER**.



The screenshot shows the 'Data Transfer Task 1' configuration screen. It has tabs at the top: General (selected), Source, Second Source, Target, Field Mapping, and Runtime Options. The 'General' tab displays 'General Properties'. The 'Name:' field contains 'dt_XX_DataTask'. The 'Location:' field contains 'CDI<Month><Date>\FIRSTNAME_XX'. The 'Runtime Environment:' dropdown is set to 'INFA-SERVER'.

7. Click **Next**.
 8. From the Connection drop-down, select **CDI_SQL_Src**.

9. From the Source Object field, click **Select** and choose **CUSTOMER**.

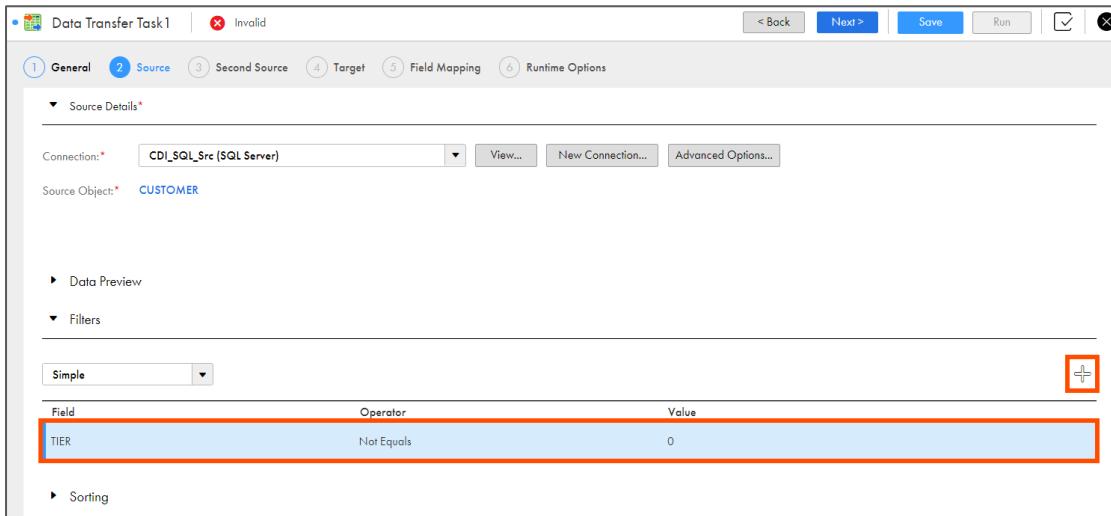


The screenshot shows the 'Data Transfer Task 1' interface with the 'Source' tab selected. The 'Source Details' section is expanded, showing the 'Connection' dropdown set to 'CDI_SQL_Src (SQL Server)' and the 'Source Object' dropdown set to 'CUSTOMER'. Both dropdowns are highlighted with a red box.

10. To apply a filter, expand the **Filters** section and click  to add a filter condition.

11. Enter the filter condition, as shown in the table below:

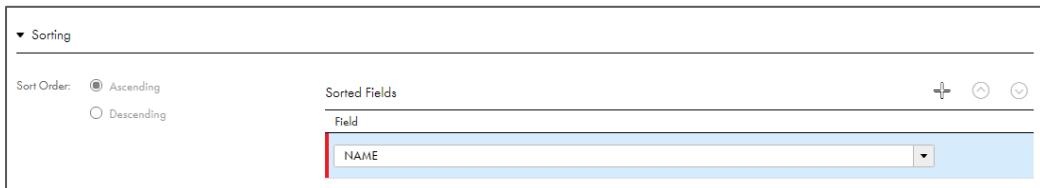
Field	Operator	Value
TIER	Not Equals	0



The screenshot shows the 'Data Transfer Task 1' interface with the 'Source' tab selected. The 'Source Details' section is expanded, showing the 'Connection' dropdown set to 'CDI_SQL_Src (SQL Server)'. The 'Filters' section is expanded, showing a single filter condition: 'TIER Not Equals 0'. This row is highlighted with a red box.

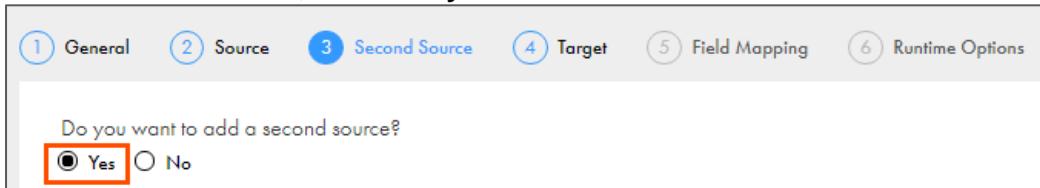
12. To sort the fields, expand the **Sorting** section and click the  icon to add the sort condition.

13. Click in the field and from the field drop down, select **NAME**.



14. Click **Next**.

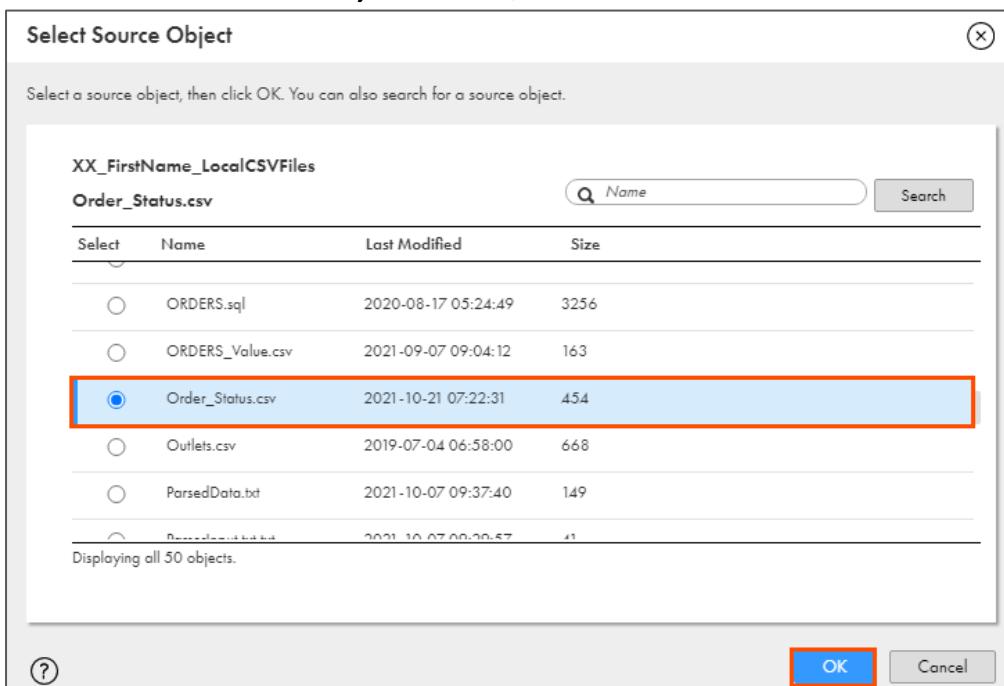
15. To add another source, select **Do you want to add a second source?** as **Yes**.



16. In the Source Details section, from the Connection drop down, select **FF_Source**.

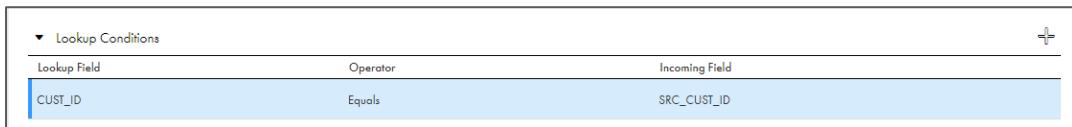
17. For the Source Object field, click **Select**.

18. From the Select Source Object window, click **Order_Status.csv** and **OK**.

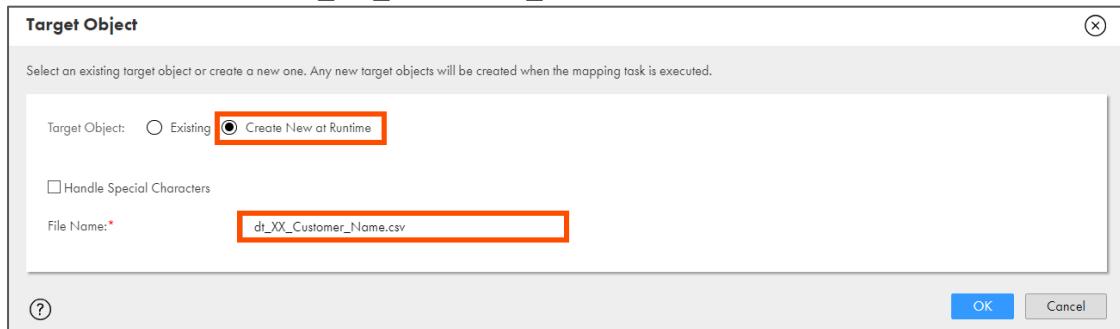


19. Scroll down to the Lookup Conditions section, and click  to add a lookup condition as shown in the table below:

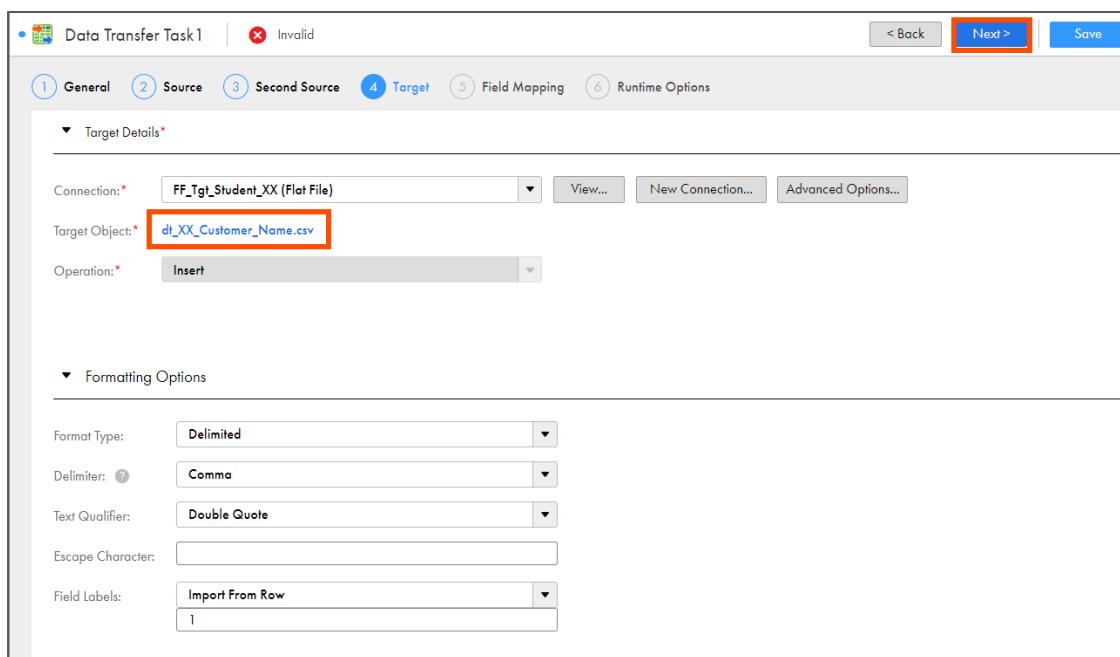
Lookup Field	Operator	Incoming Field
CUST_ID	Equals	SRC_CUST_ID



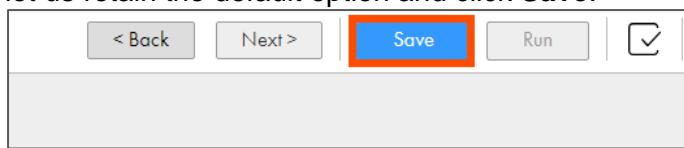
20. Click **Next**.
21. In the Target Details section, select your **target Flat File connection**.
22. From the Target Object drop-down, click **Select**.
23. In the Target Object window, click **Create New at Runtime**.
24. Enter the filename as **dt_XX_Customer_Name.csv**.



25. Click **OK**.
26. Retain the default values for Formatting Options.
27. Click **Next**.



28. Verify that the source and target fields are mapped. Click **Next**.
29. You can configure the task to run on schedule in the Runtime Options tab. For this lab, let us retain the default option and click **Save**.



30. Click **Run** to run the task.

Monitor Task

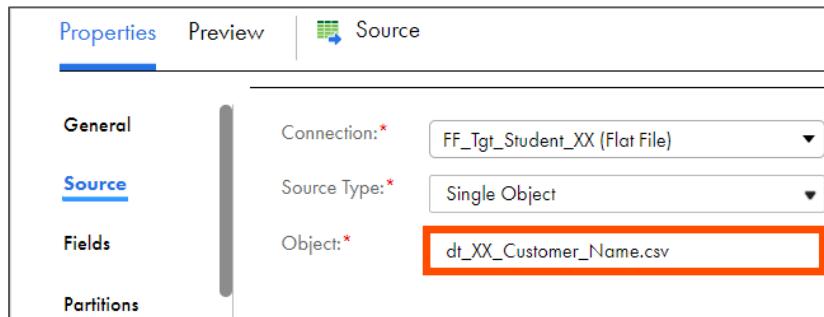
31. To monitor the task, from the navigation pane, click **My Jobs**.
32. When the task completes, the status changes to **Success**.



Jobs (250)						
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
dt_XX_DataTask-1	CDI\u003cMonth...		Jul 30, 2023, 5:20 AM	Jul 30, 2023, 5:20 AM	5	Success

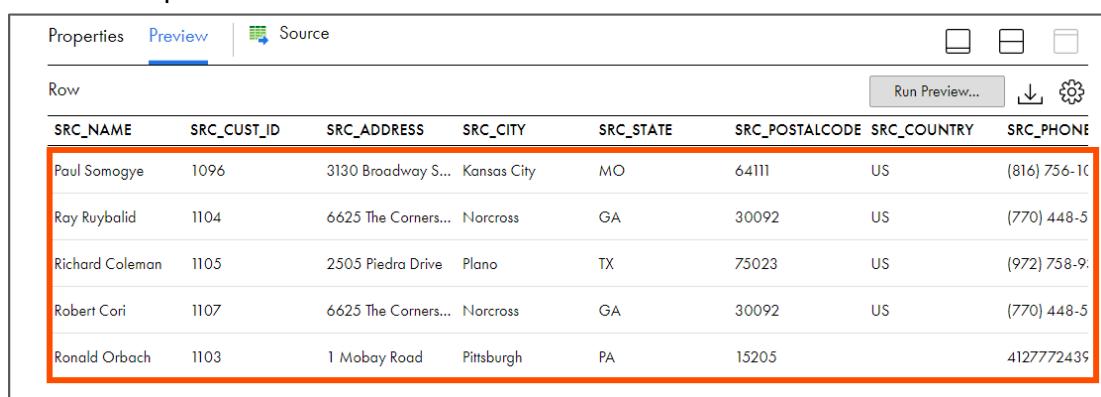
Optional - Open the Dummy Mapping and View the Data

33. Navigate to your working folder and open the dummy mapping **m_XX_DUMMY_MAPPING**.
34. From the mapping canvas, select **Source** and go to the **Source** properties tab.
35. Change the Connection to your target Flat File connection. Click **Yes** in the Change Connection window.
36. Select the Object as your target – **dt_XX_Customer_Name.csv**.



Properties	Preview	Source
General	Connection:*	FF_Tgt_Student_XX (Flat File)
Source	Source Type:*	Single Object
Fields	Object:*	dt_XX_Customer_Name.csv
Partitions		

37. Go to the Preview section and click **Run Preview**. In the Continue window, click **Yes**.
38. If prompted, select runtime environment as **INFA-SERVER** and click **Run Preview**.
39. Wait for the preview results to load and view the data records.



Row							
SRC_NAME	SRC_CUST_ID	SRC_ADDRESS	SRC_CITY	SRC_STATE	SRC_POSTALCODE	SRC_COUNTRY	SRC_PHONE
Paul Somogyi	1096	3130 Broadway S...	Kansas City	MO	64111	US	(816) 756-10
Ray Ruybalid	1104	6625 The Corners...	Norcross	GA	30092	US	(770) 448-5
Richard Coleman	1105	2505 Piedra Drive	Plano	TX	75023	US	(972) 758-9:
Robert Cori	1107	6625 The Corners...	Norcross	GA	30092	US	(770) 448-5
Ronald Orbach	1103	1 Mobay Road	Pittsburgh	PA	15205		4127772439

40. Close all the assets from the navigation pane.

This concludes the lab.

Module 6: IICS Transformations

Lab 6-1: Classifying the Product Shipping Details Using Various Transformations

Overview:

The Mapping Designer feature of IICS allows you to create a mapping and use it in a Mapping Task. You can also create a custom query to perform complicated joins of multiple tables or to reduce the number of fields that enter the data flow.

Objective:

- Create a Mapping
- Add Joiner, Expression, and Filter transformations and complete the logic

Scenario:

NH Suppliers recently started offering express delivery to their customers with an order value of more than 1000 USD. However, Ruby, the owner of NH suppliers, wants to automate the delivery selection process. John, who is the Lead Developer in NH Suppliers, suggests using the IICS Mapping Designer to fulfill this requirement.

In this lab, John will combine the Products and Order details to calculate the total order amount. This calculated amount will be utilized to process the orders as normal shipping or expedited shipping.

Duration:

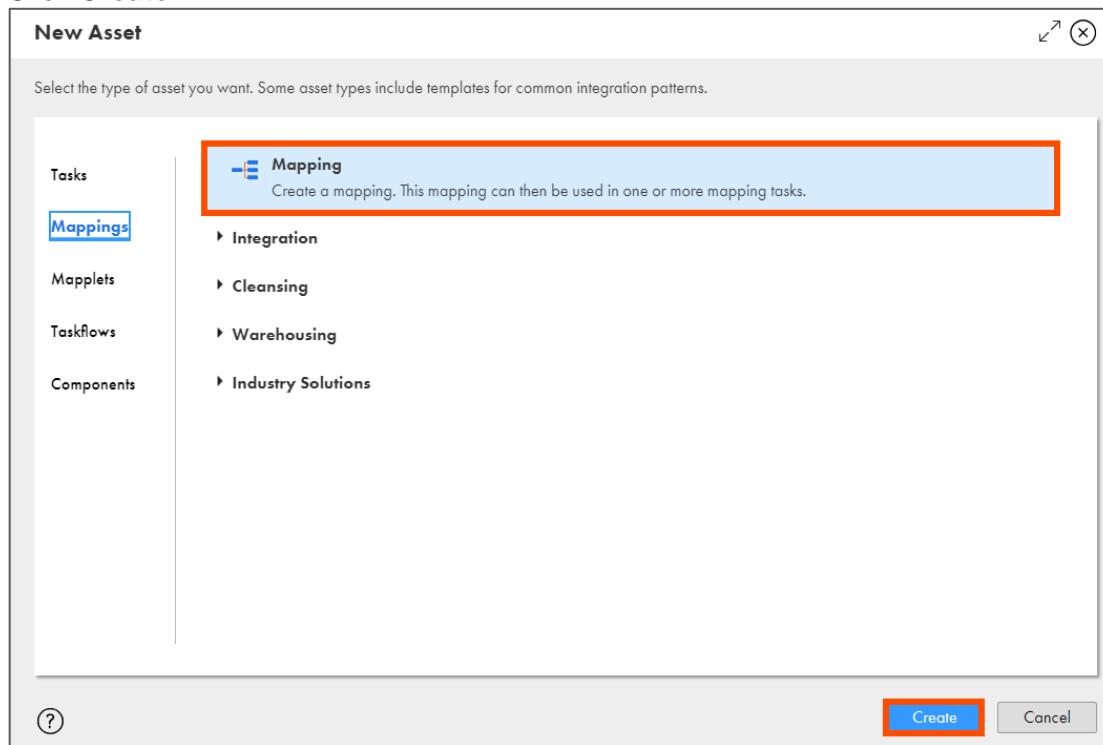
35 minutes

Tasks

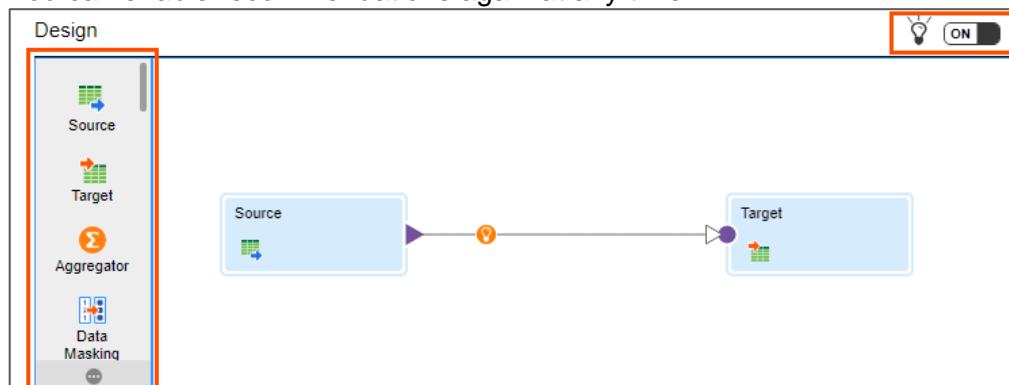
Create Mapping

1. Login into IICS and from the My Services window, select **Data Integration**.
2. From the navigation pane, select **New**.
3. From the New Asset window, click the **Mappings** tab, and select **Mapping**.

4. Click **Create**.

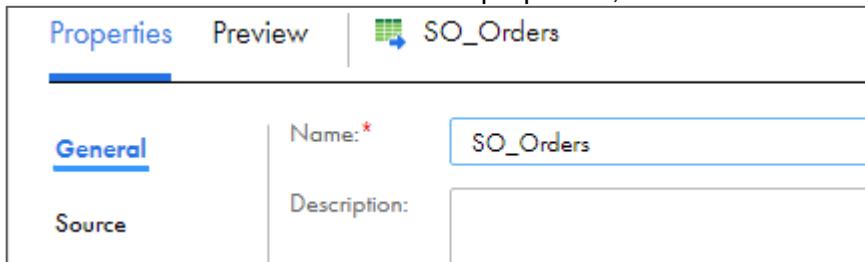


Note: The following Mapping page appears. By default, the mapping canvas has a Source and Target transformation. You can add transformations on the canvas from the Transformation palette on the left side of the canvas. If your IICS Org has CLAIRE recommendations enabled, you can receive recommendations during mapping design. To disable recommendations for the current mapping, use the recommendation toggle. You can enable recommendations again at any time.



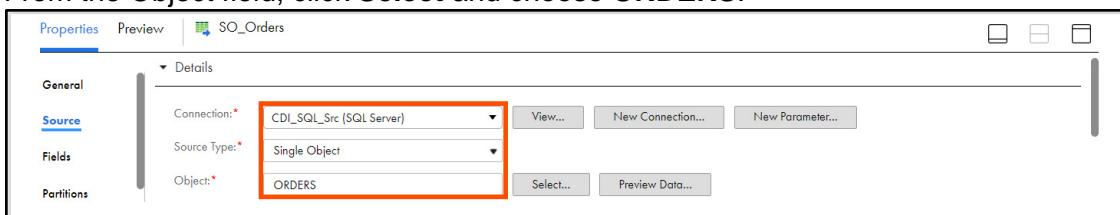
5. In the Name field, enter the mapping name as **m_XX_ShippingFiles**.
6. To configure the source, from the mapping canvas, click the **Source** transformation.

7. In the General section of the Source properties, enter Name as **SO_Orders**.



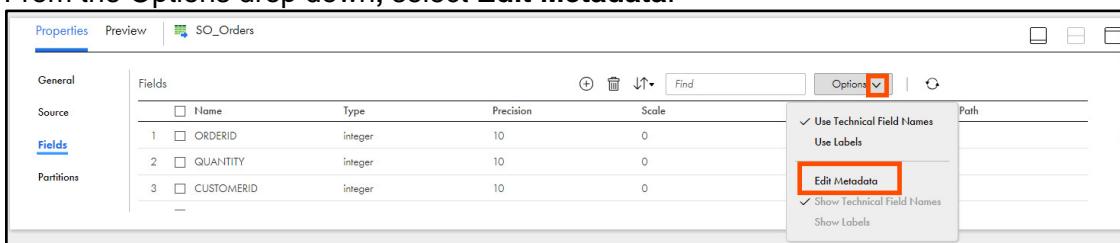
The screenshot shows the Informatica Properties pane for a source named "SO_Orders". The "General" tab is selected. The "Name:" field is populated with "SO_Orders". The "Source" tab is also visible.

8. From the properties pane, click **Source**.
 9. From the Connection drop-down, select **CDI_SQL_Src**.
 10. From the Source Type field, retain Single Object.
 11. From the Object field, click **Select** and choose **ORDERS**.



The screenshot shows the Informatica Properties pane for "SO_Orders". The "Source" tab is selected. The "Connection:" dropdown is set to "CDI_SQL_Src [SQL Server]". The "Object:" dropdown is set to "ORDERS".

12. From the properties pane click **Fields**.
 13. From the Options drop down, select **Edit Metadata**.



The screenshot shows the Informatica Properties pane for "SO_Orders". The "Fields" tab is selected. In the options dropdown, the "Edit Metadata" checkbox is checked.

14. For the **PRODUCTID** field, set Native Type as **nvarchar**.

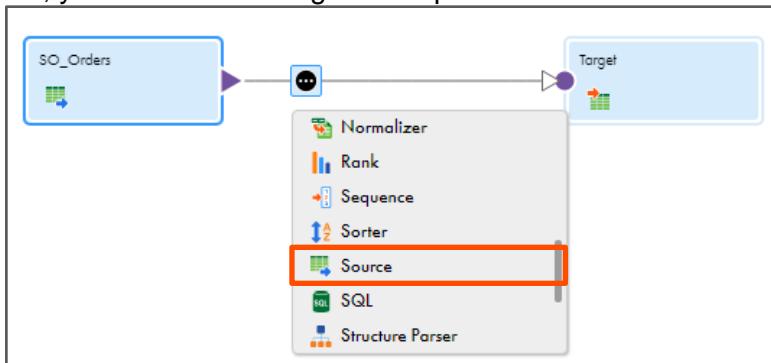
3	<input type="checkbox"/> CUSTOMERID	CUSTOMERID	integer	integer
4	<input type="checkbox"/> SHIPMENTTRAC...	SHIPMENTTRAC...	varchar	string
5	<input type="checkbox"/> ORDERSTATUS	ORDERSTATUS	varchar	string
6	<input type="checkbox"/> PRODUCTDESC...	PRODUCTDESC...	varchar	string
7	<input type="checkbox"/> OUTLETID	OUTLETID	varchar	string
8	<input checked="" type="checkbox"/> PRODUCTID	PRODUCTID	nvarchar	string

15. From the Options drop-down, uncheck **Edit Metadata**.

Add Source Transformation

16. From the list of available transformations, drag and drop a **Source** transformation onto the mapping canvas.

Note: You can also use the Add Transformation icon (the orange bulb icon on the link) to add transformations to a mapping directly on the mapping canvas. The Add Transformation icon appears when you hover over the link between the transformations only when the CLAIRE recommendations option is enabled for the mapping. For this lab, you will use the drag and drop feature to select the transformations.



17. Select **Source** from the mapping canvas.

18. In the General section of Source properties, enter Name as **SO_Products**.



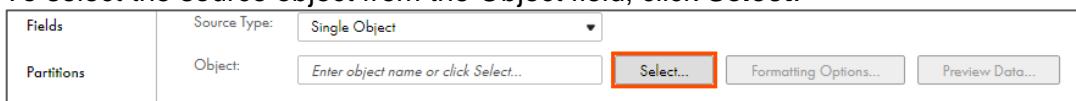
Properties		Preview	SO_Products
		Name:*	SO_Products
<u>General</u>			

19. From the properties pane, click **Source**.

20. From the Connection drop-down, select **FF_Source**.

21. Retain Source Type as **Single Object**.

22. To select the source object from the Object field, click **Select**.



Fields	Source Type:	Single Object
Partitions	Object:	Enter object name or click Select...
		Select...
		Formatting Options...
		Preview Data...

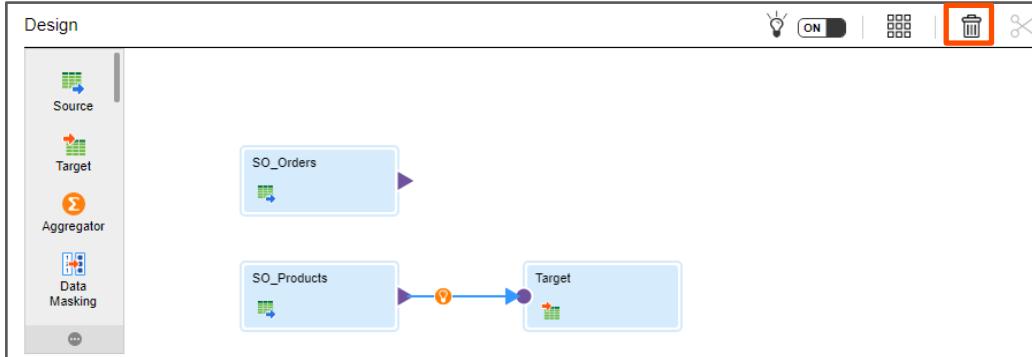
23. From the list, select **Products.csv** and click **OK**.

Add Joiner Transformation

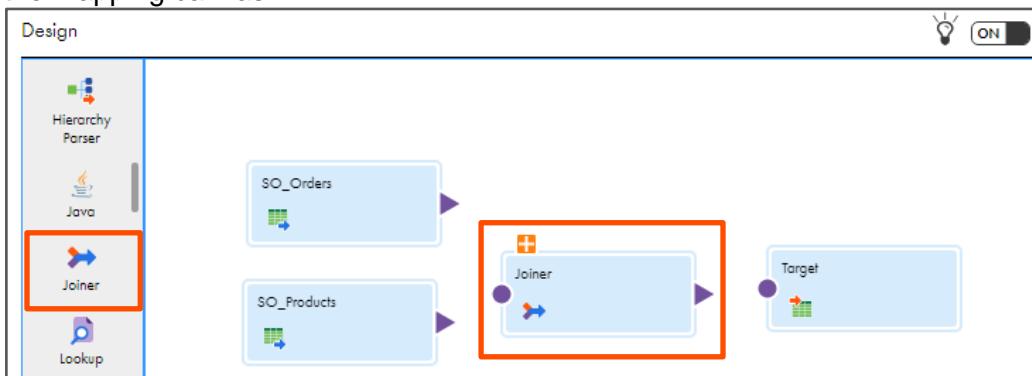
To join data from the Orders table and Products CSV file, use the Joiner transformation. The Joiner transformation joins data based on the join conditions and the join type. A join condition matches fields between the two sources. Here, you will join the data using the Product ID value for both sources.

24. Click the link joining the **SO_Products** with **Target** and click .

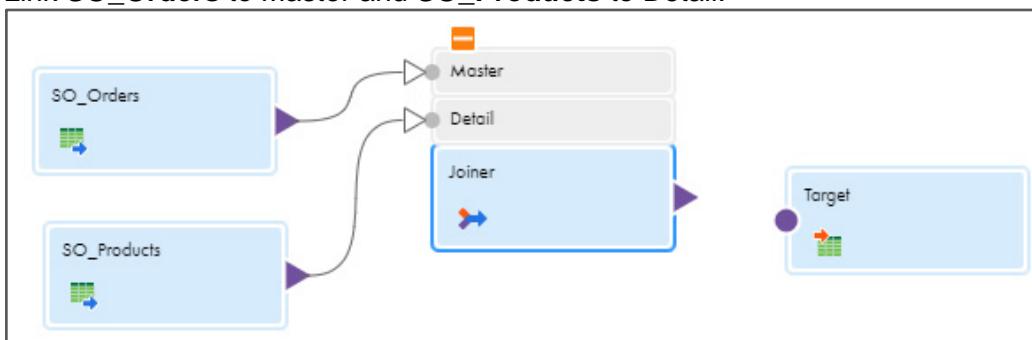
Note: If you used the drag-and-drop feature to add the Source transformation, click the link joining **SO_Orders** with **Target** and click .



25. From the list of available transformations, drag and drop a **Joiner** transformation onto the mapping canvas.

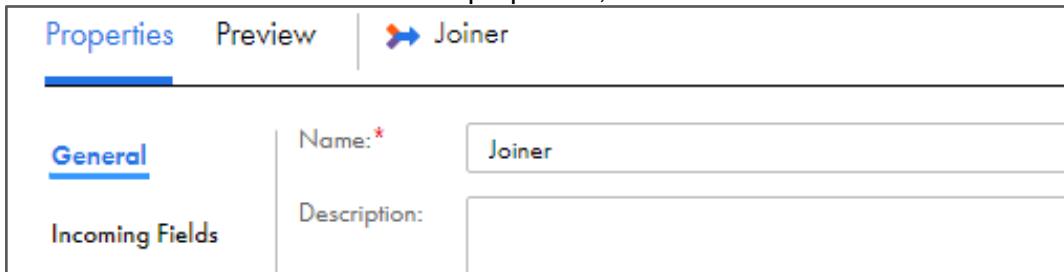


26. To expand the join options, click .
27. Link **SO_Orders** to Master and **SO_Products** to Detail.



28. To configure the Joiner transformation, from the mapping canvas, click the **Joiner** transformation.

29. In the General section of the Joiner properties, retain the Name as **Joiner**.

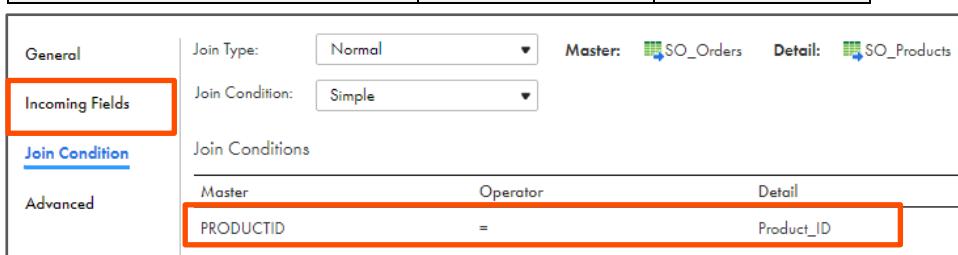


30. From the properties pane, click **Join Condition**.

31. To add a new join condition, click .

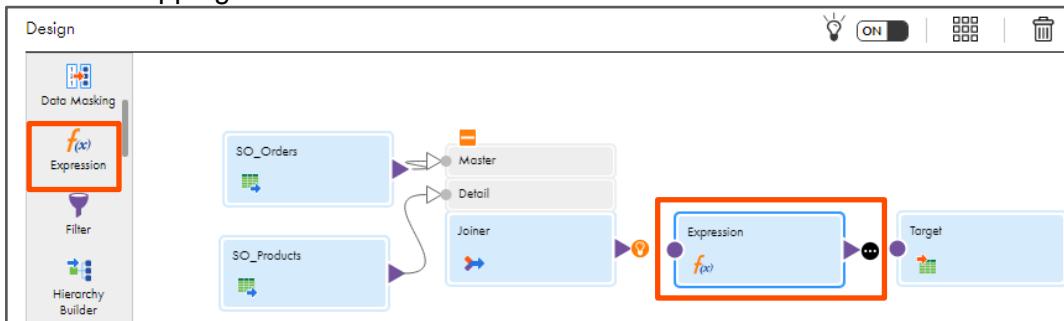
32. Enter the join condition, as shown in the table below:

Master	Operator	Detail
PRODUCTID	=	Product_ID

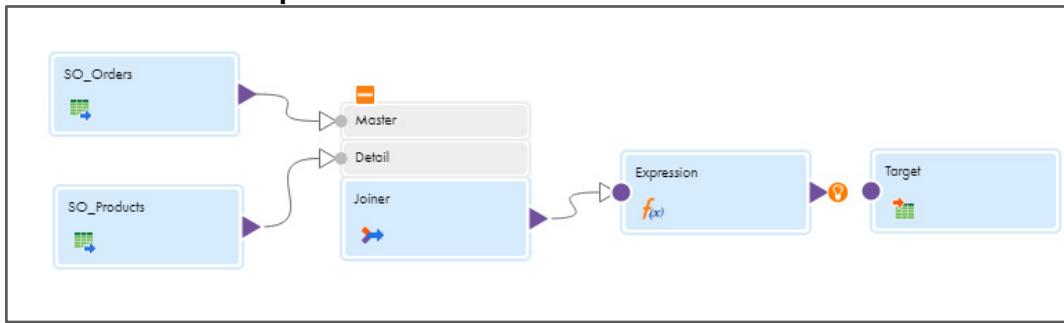


Add Expression Transformation to calculate the order total

33. From the list of available transformations, drag and drop an **Expression** transformation onto the mapping canvas.

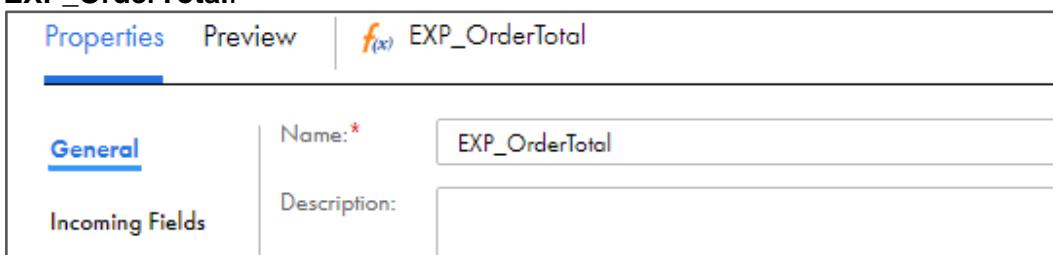


34. Link Joiner to the Expression transformation.



Note: To arrange all the transformations on the canvas, click .

35. Select the Expression transformation from the mapping canvas.
 36. In the General section of the Expression properties, enter the Name as **EXP_OrderTotal**.



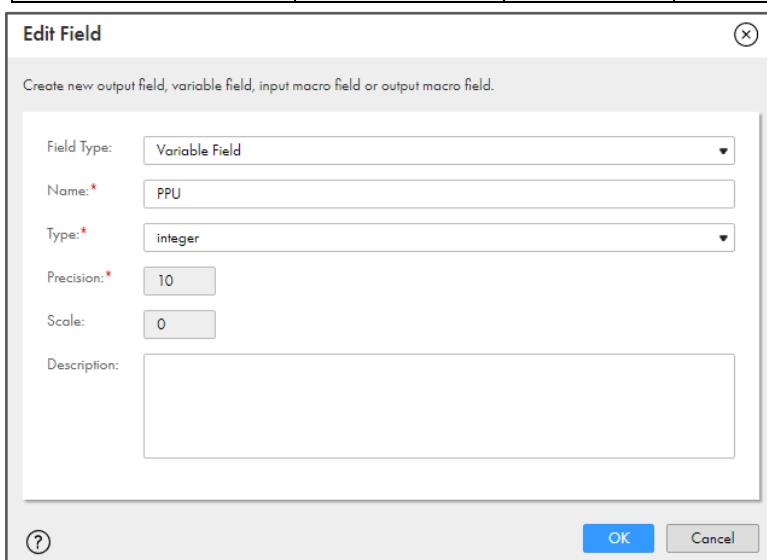
Properties		Preview	 EXP_OrderTotal
<u>General</u>		Name: [*]	EXP_OrderTotal
Incoming Fields		Description:	

Note: You must create two variable expressions to convert the incoming fields (UnitPrice and Quantity) to integers before you can use them in the output field to calculate the Order Total.

37. From the properties pane, click **Expression**.
 38. To add a new expression, click .

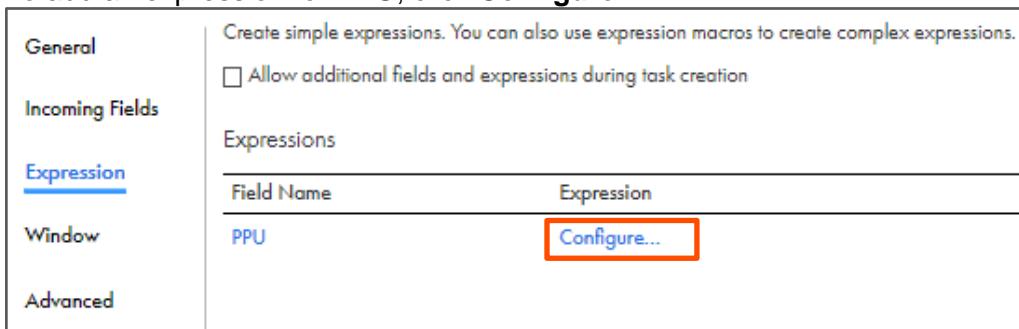
39. Enter the details as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Variable Field	PPU	integer	10	0



Edit Field	
Create new output field, variable field, input macro field or output macro field.	
Field Type:	Variable Field
Name: [*]	PPU
Type: [*]	integer
Precision: [*]	10
Scale:	0
Description:	
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

40. To add an expression for PPU, click **Configure**.

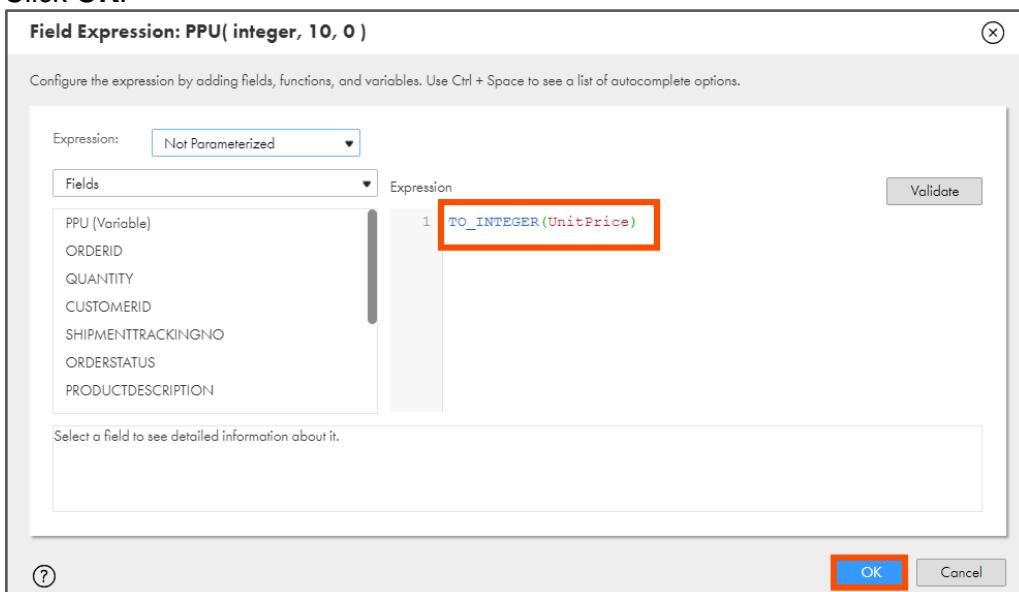


Field Name	Expression
PPU	Configure...

41. In the expression window, enter the following expression:

TO_INTEGER(UnitPrice)

42. Click **OK**.



Field Expression: PPU(integer, 10, 0)

Configure the expression by adding fields, functions, and variables. Use Ctrl + Space to see a list of autocomplete options.

Expression: Not Parameterized

Fields: PPU (Variable), ORDERID, QUANTITY, CUSTOMERID, SHIPMENTTRACKINGNO, ORDERSTATUS, PRODUCTDESCRIPTION

Expression: 1 TO_INTEGER(UnitPrice)

Validate OK Cancel

43. Add another expression as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Output Field	Total	integer	10	0

Edit Field

Create new output field, variable field, input macro field or output macro field.

Field Type:	Output Field
Name:*	Total
Type:	integer
Precision:*	10
Scale:	0
Description:	(empty)

OK Cancel

44. Click **Configure** for Total.
45. In the expression window, enter the following expression:
PPU*QUANTITY
46. Click **OK**.

Field Expression: Total(integer, 10, 0)

Configure the expression by adding fields, functions, and variables. Use Ctrl + Space to see a list of autocomplete options.

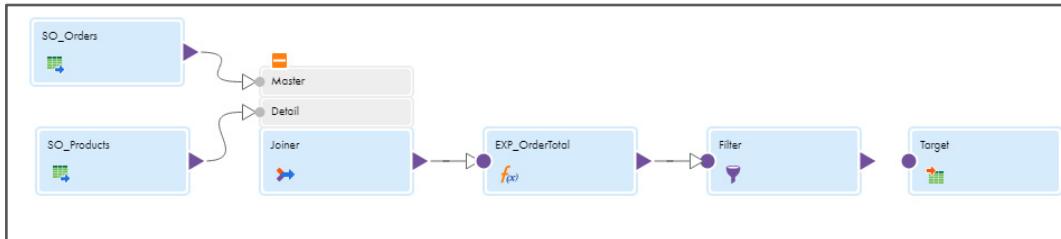
Expression:	Not Parameterized
<input checked="" type="checkbox"/> The expression is valid.	
Fields	Expression
PPU (Variable) ORDERID QUANTITY CUSTOMERID SHIPMENTTRACKINGNO ORDERSTATUS PRODUCTDESCRIPTION	1. PPU*QUANTITY
Origin: ORDERS Name: QUANTITY Type: integer	
Precision: 10 Scale: 0	

Validate OK Cancel

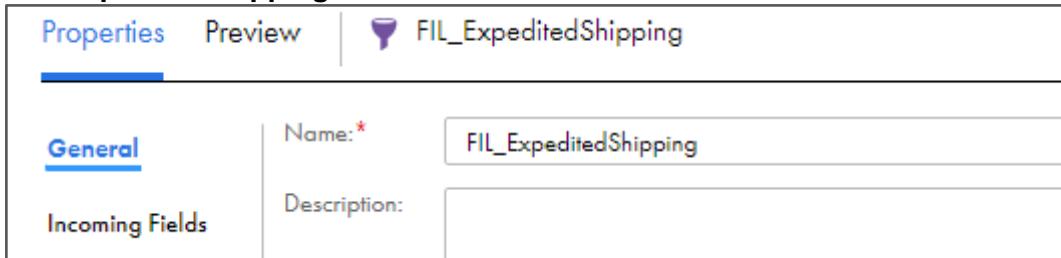
Add Filter Transformation

To process the orders as normal shipping or expedited shipping, use the Filter transformation to filter data based on the Total value of the order.

47. From the list of available transformations, drag and drop a **Filter** transformation onto the mapping canvas.
48. Link **EXP_OrderTotal** to the **Filter** transformation.



49. In the General section of the Filter properties, enter the Name as **FIL_ExpeditedShipping**.



Properties	Preview	FIL_ExpeditedShipping
<hr/>		
General	Name: *	FIL_ExpeditedShipping
Incoming Fields	Description:	

50. From the properties pane, click **Filter**.



51. To add a new filter, click .

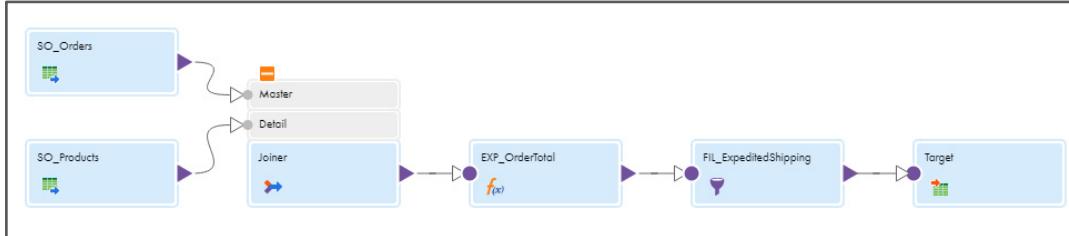
52. Enter filter condition as shown in the table below:

Field Name	Operator	Value
Total	>= (Greater than or equal to)	1000

General	Filter Condition: Simple						
Incoming Fields	Filter Conditions						
Filter	<table border="1"> <thead> <tr> <th>Field Name</th><th>Operator</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Total</td><td>>=</td><td>1000</td></tr> </tbody> </table>	Field Name	Operator	Value	Total	>=	1000
Field Name	Operator	Value					
Total	>=	1000					
Advanced							

Configure Target Transformation

53. Link **FIL_ExpeditedShipping** to the **Target** transformation.



54. Select the **Target** transformation from the mapping canvas.

55. In the General section of the Target properties, enter the Name as **TG_ExpeditedShipping**.

Properties	Preview
TG_ExpeditedShipping	
<u>General</u>	Name: * TG_ExpeditedShipping Description:
Incoming Fields	

56. From the properties pane, click **Target**.

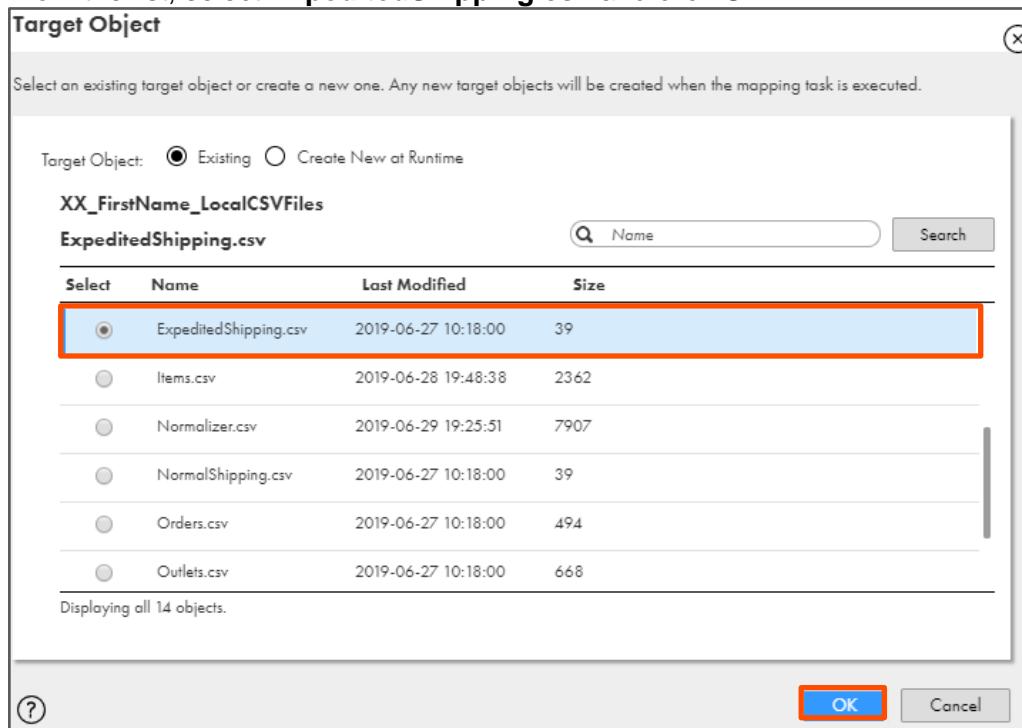
57. From the Connection drop-down, select **your target flat file connection**.

58. Retain Target Type as **Single Object**.

59. To select the target object from the Object field, click **Select**.

<u>Target</u>	Target Type: Single Object Object: <input type="text" value="Enter object name or click Select..."/> Select...	Formatting Options...	Preview Data...
Target Fields			

60. From the list, select **ExpeditedShipping.csv** and click **OK**.



61. From the properties pane, click **Field Mapping**.

Note: The Field Mapping tab is used to map source fields with the target fields for writing the mapping output in the target object. In this case, ExpeditedShipping.csv.

62. Match the fields as shown in the following table:

Note: Click and drag the fields to map them. Some of the fields might be mapped automatically. For the already mapped fields, do not map them again.

Incoming Field	Target Field
ORDERID	OrderID
PRODUCTDESCRIPTION	ProductDescription
Total	OrderTotal

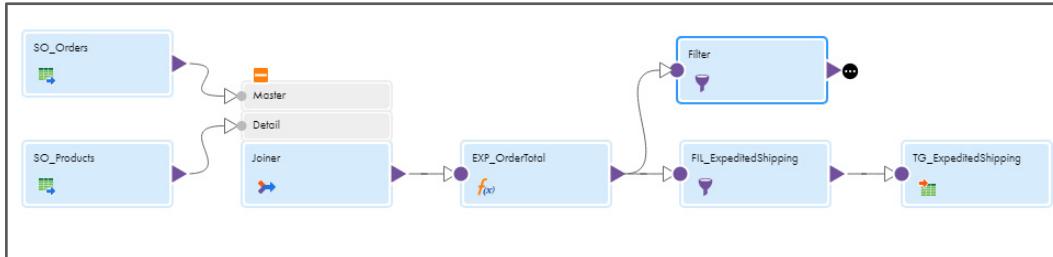


The dialog box has tabs: General, Incoming Fields, Target, Target Fields, and Field Mapping (selected). The 'Incoming Fields' section shows fields: Total, QUANTITY, PRODUCTID, PRODUCTDESCRIPTION, and ORDERID. The 'Target Fields' section shows fields: OrderID, PRODUCTDESCRIPTION, and OrderTotal. The 'Field Mapping' section shows the mappings between them.

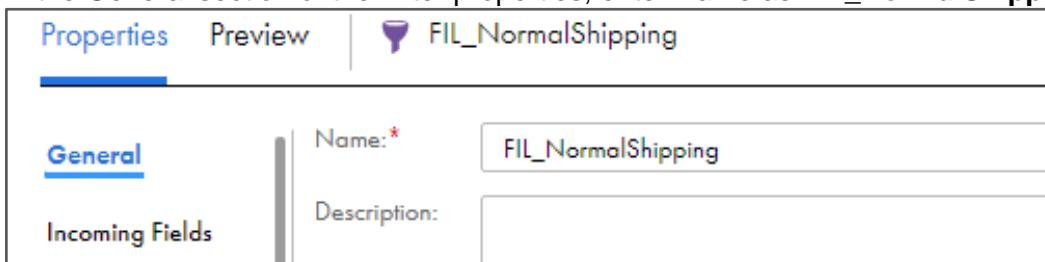
Incoming Fields: (3 of 9 mapped)		Target Fields: (3 of 3 mapped)	
Field Name	Find	Field Name	Find
Total		OrderID	ORDERID
QUANTITY		ProductDescription	PRODUCTDESCRIPTION
PRODUCTID		OrderTotal	Total
PRODUCTDESCRIPTION			
ORDERID			

Add Filter Transformation

63. From the list of available transformations, drag and drop another **Filter** transformation onto the mapping canvas.
64. Link **EXP_OrderTotal** to the **Filter** transformation.



65. Select the **Filter** transformation from the mapping canvas.
66. In the General section of the Filter properties, enter Name as **FIL_NormalShipping**.



67. From the properties pane, click **Filter**.

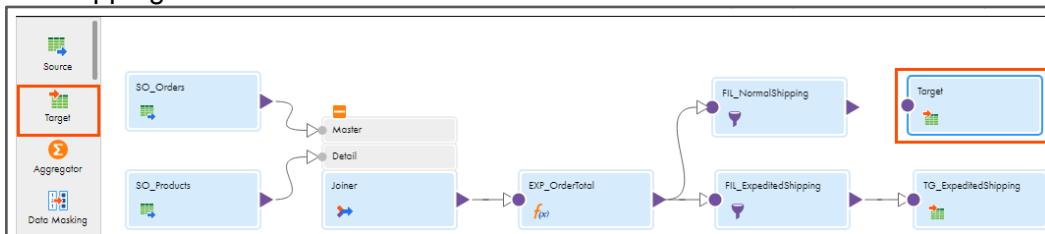
68. To add a new filter, click .

69. Enter filter condition as shown in the table below:

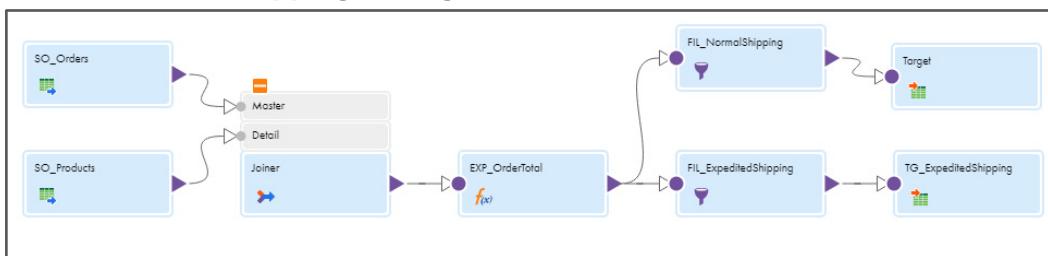
Field Name	Operator	Value
Total	< (Less than)	1000
General		Filter Condition: Simple
Incoming Fields		Filter Conditions
Filter	Field Name	Operator
Advanced	Total	<
		1000

Configure Target Transformation

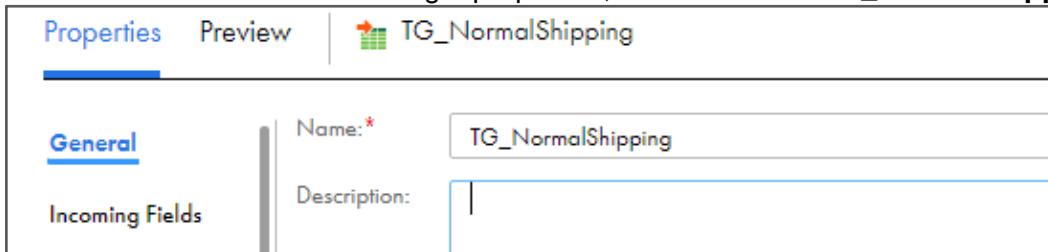
70. From the list of available transformations, drag and drop a **Target** transformation onto the mapping canvas.



71. Link **FIL_NormalShipping** to **Target** transformation.



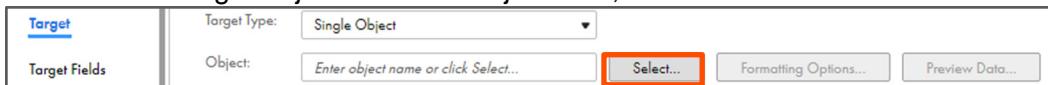
72. In the General section of the Target properties, enter Name as **TG_NormalShipping**.



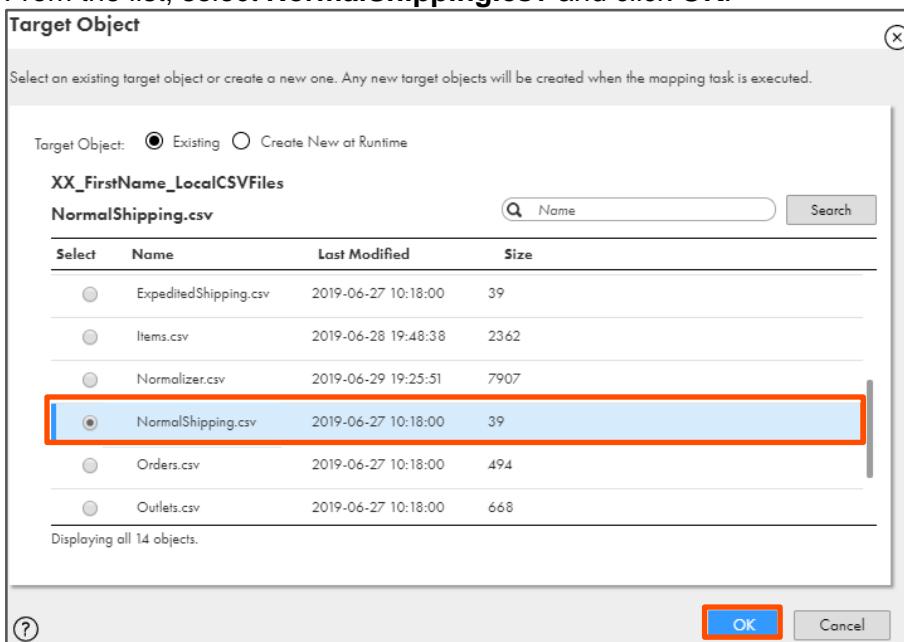
73. From the properties pane, click **Target**.

74. From the Connection drop-down, select **your target flat file connection**.

75. To select the target object from the Object field, click **Select**.

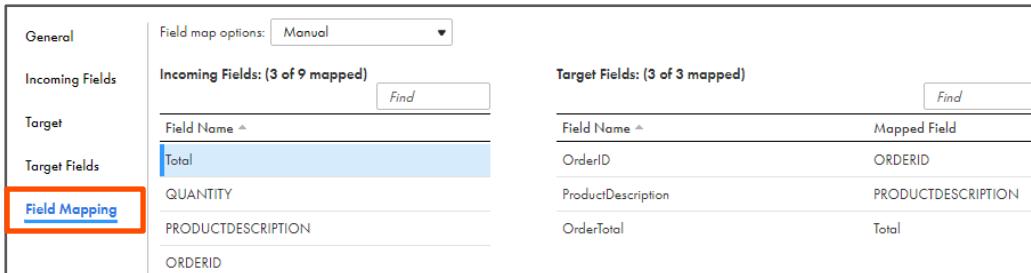


76. From the list, select **NormalShipping.csv** and click **OK**.



77. Match the fields as shown in the table below:

Incoming Field	Target Field
ORDERID	OrderID
PRODUCTDESCRIPTION	ProductDescription
Total	OrderTotal



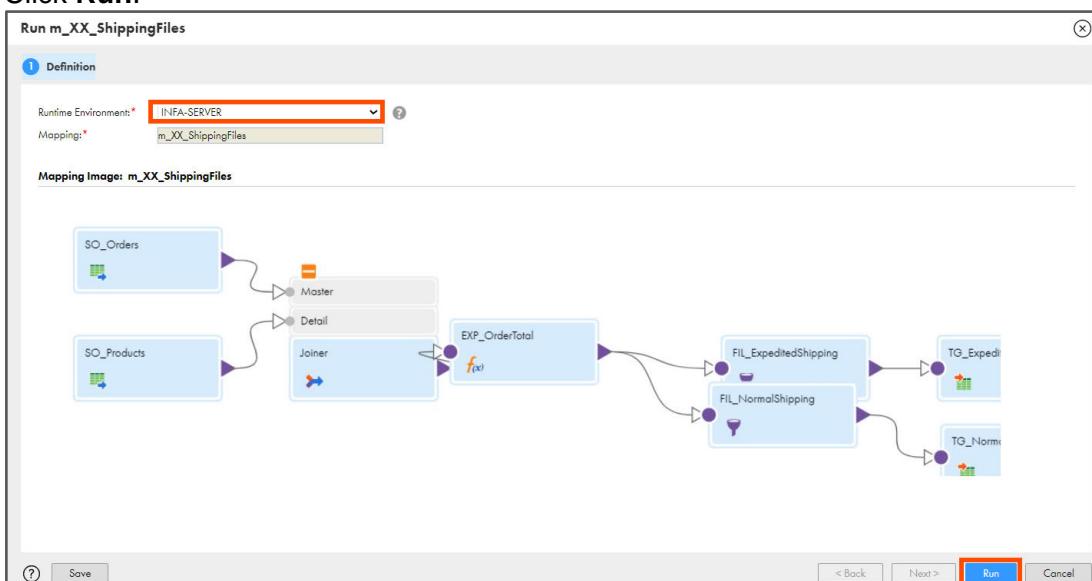
Field Name	Mapped Field
Total	ORDERID
QUANTITY	PRODUCTDESCRIPTION
PRODUCTDESCRIPTION	OrderTotal
ORDERID	ORDERID

78. To save the mapping, click **Save**.

79. To run the mapping, click **Run**.

80. From the Runtime Environment drop-down, select **INFA-SERVER**.

81. Click **Run**.



Note: At this point, the IICS generates a temporary Mapping Task for the mapping and runs it.

Monitor Status

82. Monitor the task status from the **My Jobs** page.

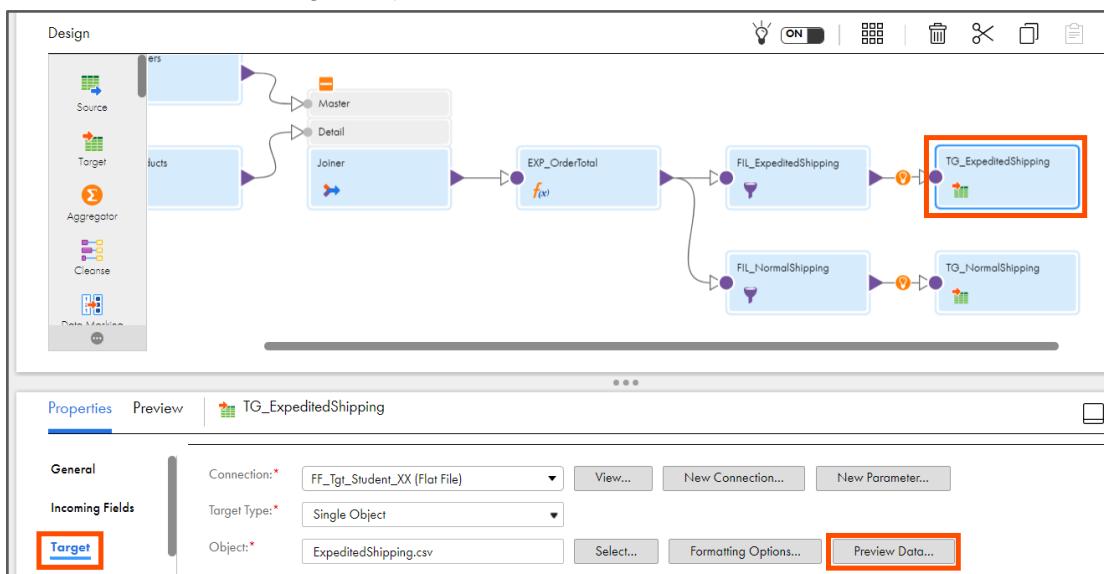
83. When the task completes, the status changes to **Success**.

Jobs (253)							Updated 7:01:31 AM PDT	Find
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status		
m_XX_ShippingFiles-1	CD\d\Month>\Date>\F...		Jul 30, 2023, 7:01 AM	Jul 30, 2023, 7:01 AM	6	Success		

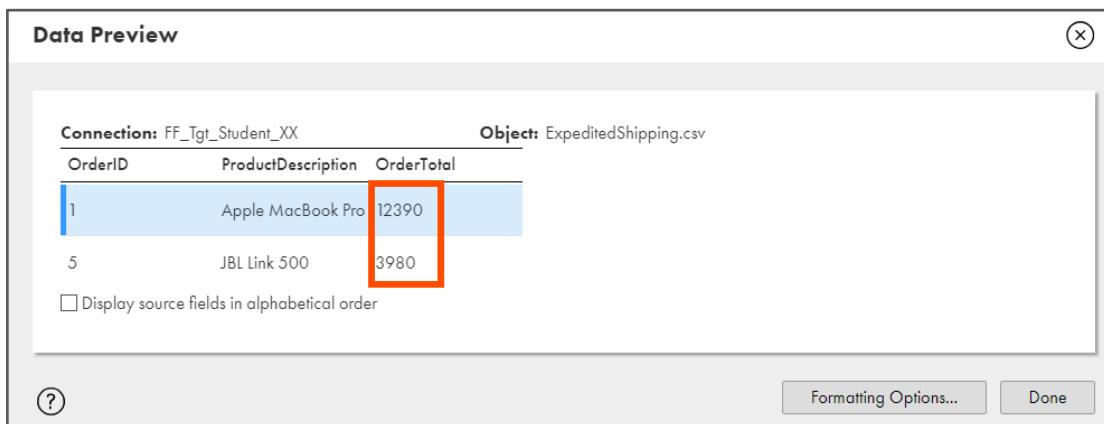
Note: You can refresh the job status if it does not change automatically.

Optional - View Target Data

84. Navigate back to your mapping **m_XX_ShippingFiles**.
85. From the mapping canvas, select the target object **TG_ExpeditedShipping** and navigate to the **Target** properties tab.
86. Next to the selected target Object, click **Preview Data**.



87. Observe that both the records have their OrderTotal greater than **1000**.



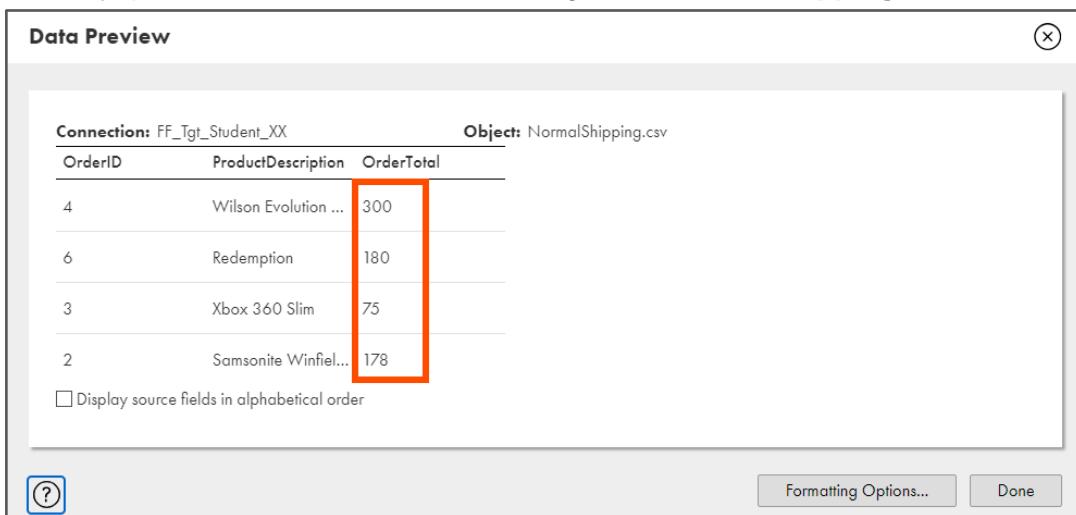
The screenshot shows the **Data Preview** dialog box. It displays a table with the following data:

OrderID	ProductDescription	OrderTotal
1	Apple MacBook Pro	12390
5	JBL Link 500	3980

The **OrderTotal** column values are highlighted with a red box. The dialog also includes a checkbox for "Display source fields in alphabetical order" and buttons for "Formatting Options..." and "Done".

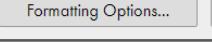
88. Click **Done**.

89. Similarly, preview the data written to the target **TG_NormalShipping**. Click **Done**.



OrderID	ProductDescription	OrderTotal
4	Wilson Evolution ...	300
6	Redemption	180
3	Xbox 360 Slim	75
2	Samsonite Winfiel...	178

Display source fields in alphabetical order

90. Save and close the asset from the navigation pane.

This concludes the lab.

Module 6: IICS Transformations

Lab 6-2: Using Union, Sorter, and Rank Transformations in a Mapping

Overview:

The Union transformation is used to read data from multiple pipelines and merge data into a single pipeline. You can use the Rank transformation to return the largest or smallest numeric values in a group. Sorter transformation sorts the data based on the incoming fields either in ascending or descending order.

Objective:

- Create a Mapping using the Union, Rank, and Sorter Transformations

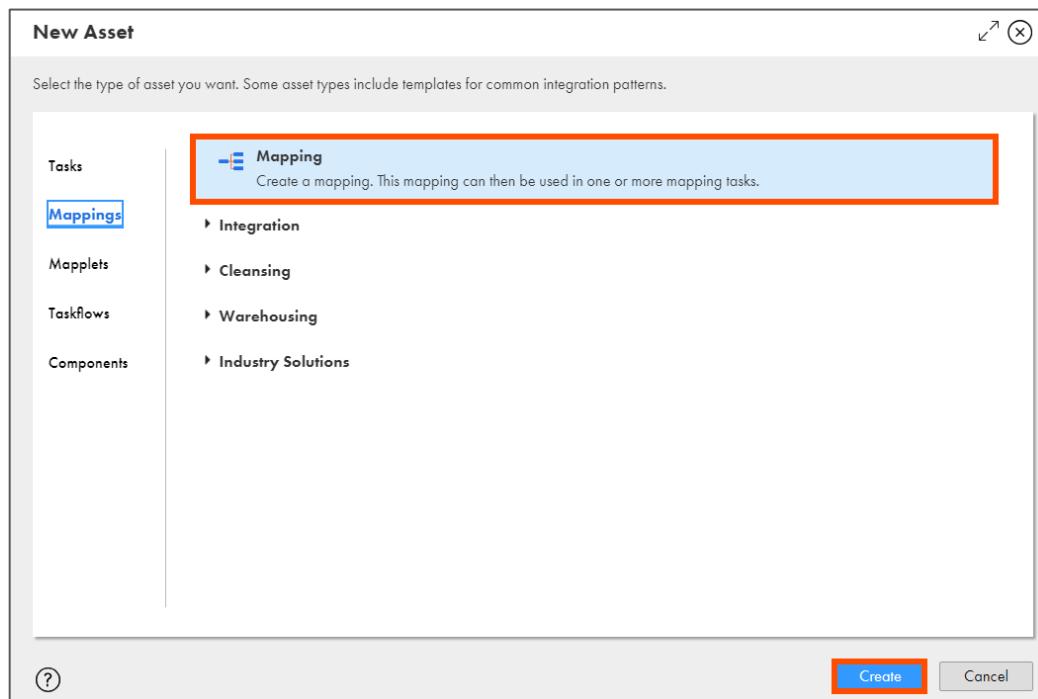
Duration:

15 minutes

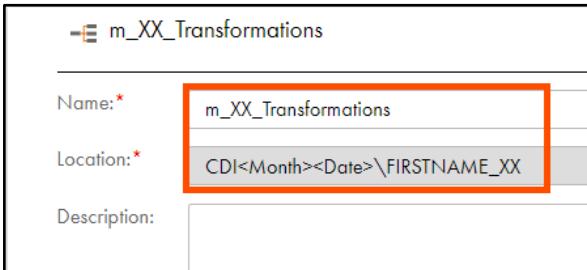
Tasks

Create Mapping

1. Login into IICS and from the My Services window, select **Data Integration**.
2. From the navigation pane, create a new mapping.



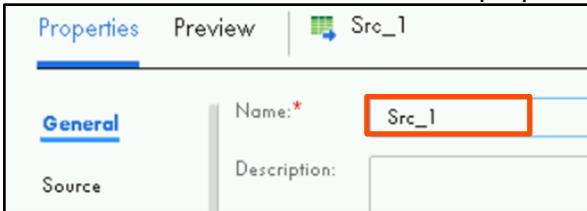
3. In the Name field, enter **m_XX_Transformations**.
4. Verify that the asset Location is pointing to your working folder.



The screenshot shows the 'm_XX_Transformations' asset being created. The 'Name:' field contains 'm_XX_Transformations' and the 'Location:' field contains 'CDI<Month><Date>\FIRSTNAME_XX'. Both fields are highlighted with a red border.

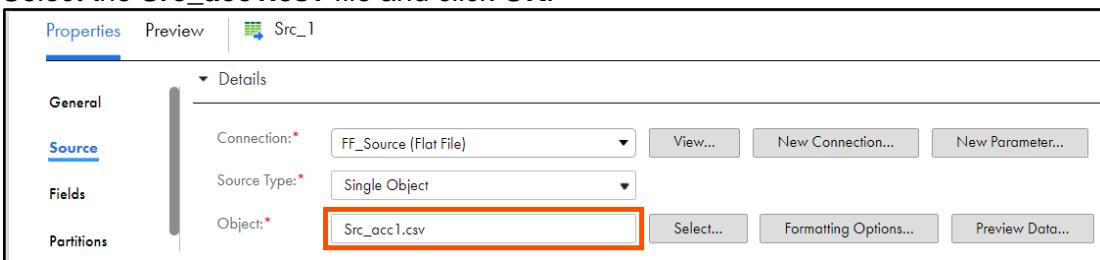
Configure Source Transformation

5. Delete the existing link between the source and the target objects in the mapping canvas.
6. To configure the source, from the mapping canvas, click the **Source** transformation.
7. In the General section of the Source properties, enter Name as **Src_1**.



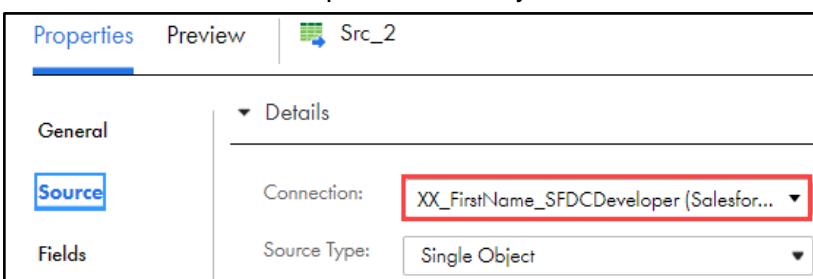
The screenshot shows the 'Properties' pane for 'Src_1'. The 'General' tab is selected, and the 'Name:' field is set to 'Src_1', which is highlighted with a red border.

8. From the properties pane, click **Source**.
9. From the Connection drop-down, select **FF_Source**.
10. From the Object Type field, click **Select**.
11. Select the **Src_acc1.csv** file and click **OK**.



The screenshot shows the 'Properties' pane for 'Src_1'. The 'Source' tab is selected. In the 'Details' section, the 'Object:' field is set to 'Src_acc1.csv', which is highlighted with a red border.

12. Drag and drop another source transformation onto the mapping canvas.
13. In the General section of Source properties, enter Name as **Src_2**.
14. From the properties pane, click **Source**.
15. From the Connection drop-down select your **Salesforce Connection**.



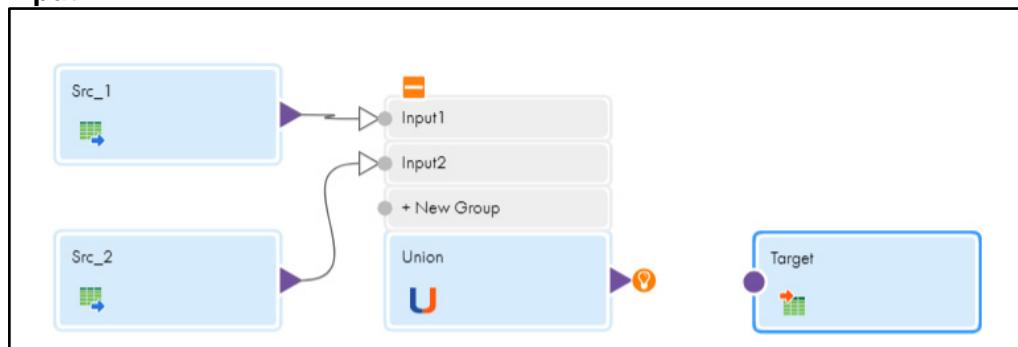
The screenshot shows the 'Properties' pane for 'Src_2'. The 'Source' tab is selected. In the 'Details' section, the 'Connection:' dropdown is set to 'XX_FirstName_SFDCDeveloper (Salesfor...', which is highlighted with a red border.

16. Retain Source Type as **Single Object**.
17. To select the source object from the Object field, click **Select**.
18. From the list, select **Contact** and click **OK**.

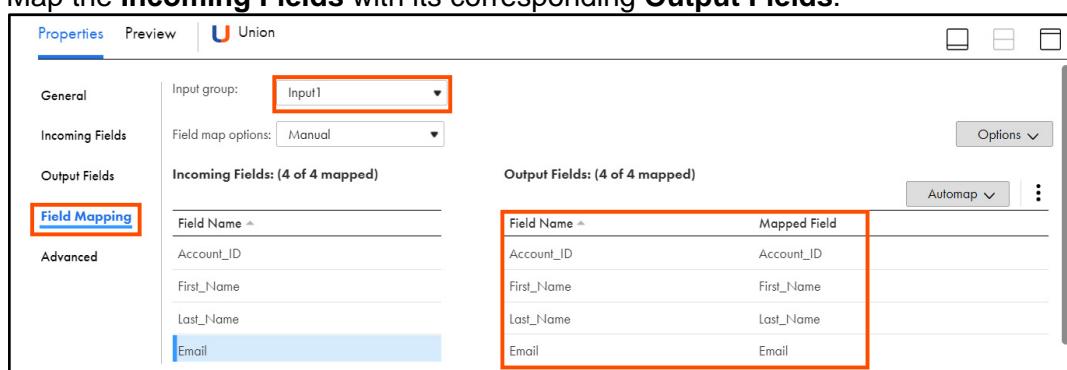
Add Union Transformation

The union is used to combine two or more data sources into a single stream that includes the union of all rows.

19. Drag and drop Union transformation onto the mapping canvas.
20. Click on the + sign of the Union transformation and join **Src_1** to **Input1** and **Src_2** to **Input2**.



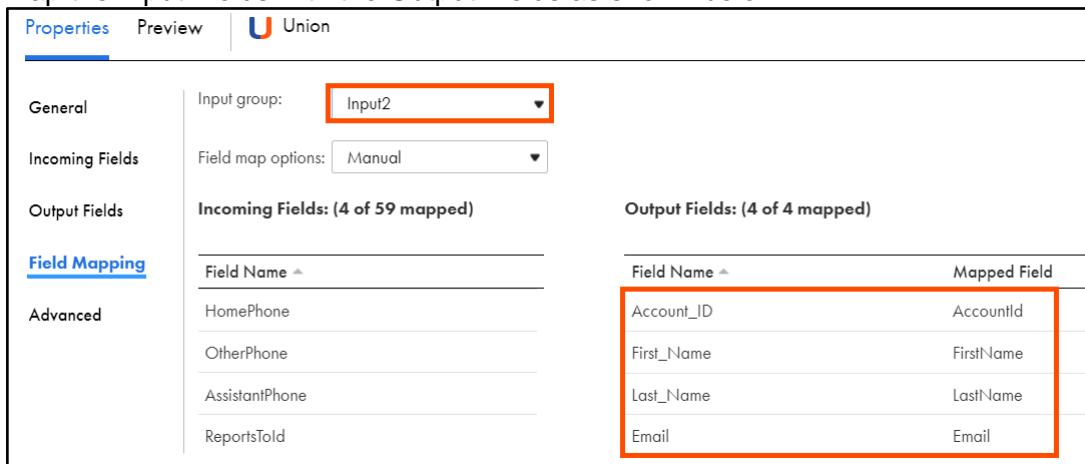
21. Select the Union transformation and from the properties pane select **Field Mapping**.
22. In the Input group, select **Input1**.
23. Map the **Incoming Fields** with its corresponding **Output Fields**.



Field Name	Mapped Field
Account_ID	Account_ID
First_Name	First_Name
Last_Name	Last_Name
Email	Email

24. Similarly, from the Input group drop-down, select **Input2**.

25. Map the Input Fields with the Output Fields as shown below:

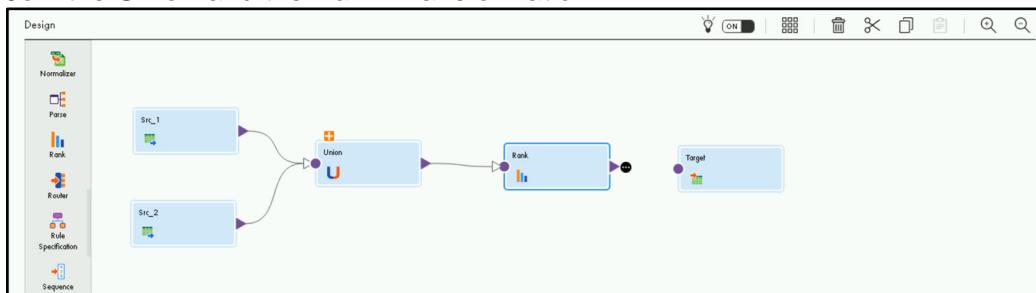


The screenshot shows the Properties pane for a Union transformation. The 'Input group' dropdown is set to 'Input2'. The 'Field Mapping' tab is selected. Under 'Incoming Fields', there are four fields: HomePhone, OtherPhone, AssistantPhone, and ReportsTold. Under 'Output Fields', there are four mapped fields: Account_ID, First_Name, Last_Name, and Email.

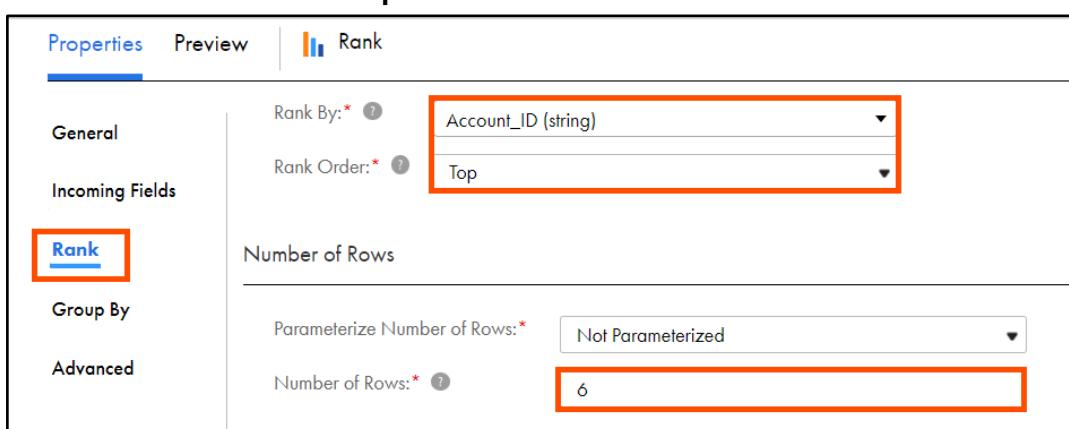
Field Name	Mapped Field
Account_ID	AccountID
First_Name	FirstName
Last_Name	LastName
Email	Email

Add Rank Transformation

26. From the list of available transformations, drag and drop a **Rank** transformation onto the mapping canvas.
27. Join the **Union** and the **Rank** Transformation.



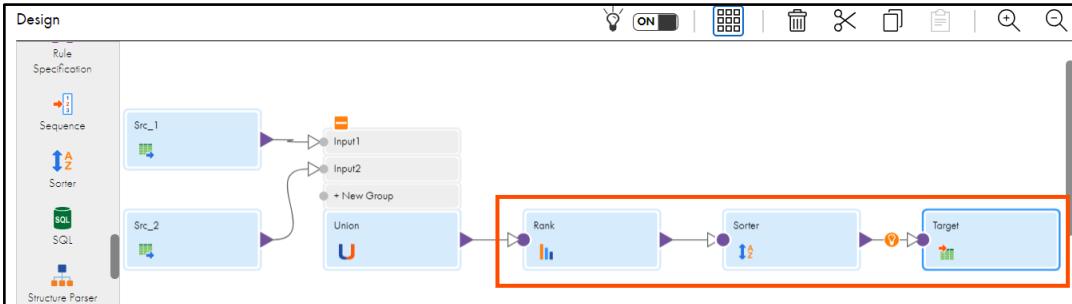
28. Select the **Rank** transformation on the mapping canvas.
29. From the properties pane, click **Rank**.
30. From the Rank By drop-down, select **Account_ID**
31. Retain the Rank Order as **Top** and set the Number of Rows as **6**.



The screenshot shows the Properties pane for the Rank transformation. The 'Rank' tab is selected. The 'Rank By' dropdown is set to 'Account_ID (string)'. The 'Rank Order' dropdown is set to 'Top'. Under 'Number of Rows', the 'Parameterize Number of Rows' dropdown is set to 'Not Parameterized', and the 'Number of Rows' input field is set to '6'.

Add Sorter Transformation

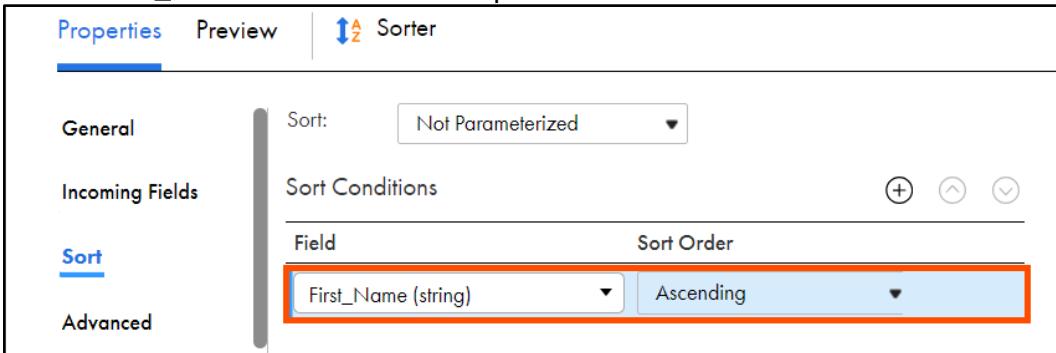
32. From the list of available transformations, drag and drop a **Sorter** transformation onto the mapping canvas.
33. Join the **Sorter** transformation with the Rank and Target transformation.



34. Select the **Sorter Transformation** from the mapping canvas.
35. From the properties pane, select **Sort**.
36. From the Sort Conditions, select the Add icon.



37. Select **First_Name** from the **Field** drop-down. Retain the Sort Order as **Ascending**.

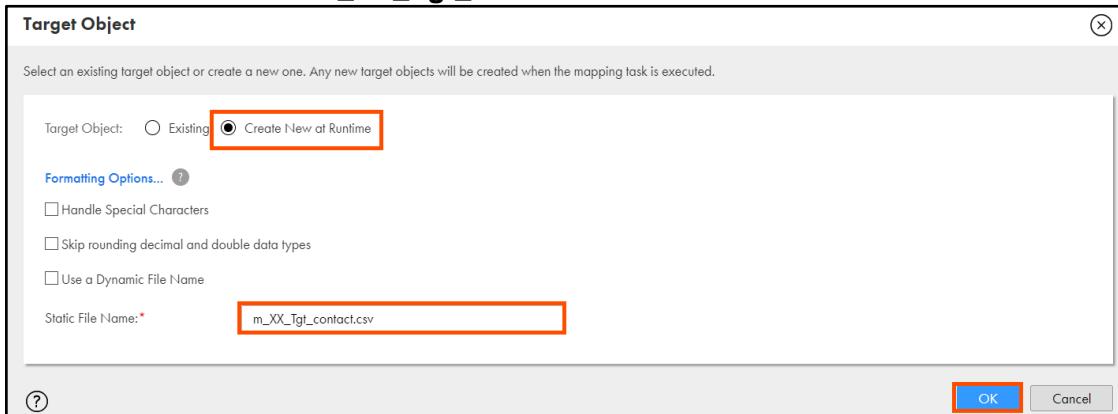


Configure the Target transformation

38. Select the Target transformation on the mapping canvas.
39. From the properties pane, select **Target**.
40. From the connection drop-down, select the connection as your **target flat file** connection.
41. Retain the Target Type as Single Object.
42. In the Object name, click **Select**.

43. In the Target Object window, Select the **Create New at Runtime** option.

44. Enter the File Name as **m_XX_Tgt_contact.csv** and click **OK**.



Extra Information: On the mapping canvas, towards the bottom of the space, you will see a floating icon . This is called the Birds Eye View. Click on the icon, and scroll up and down on the canvas page. This will help you to provide a better and clear visibility of all your mapping assets. Using this option, you can position your mapping assets so that you can locate and view your mapping. Click the cross mark to close the Birds Eye View window.

45. **Save and Run** the Mapping.

46. Select the Runtime Environment as **INFA-SERVER** and click **Run**.

Monitor Status

47. Monitor the task status from the **My Jobs** page.

48. When the task completes, the status changes to **Success**.

Jobs (254)		Up to date	Updated 7:47:38 AM PDT		Find	
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
- m_XX_Transformations-1	CDI<Month>...		Jul 30, 2023, 7:47 ...	Jul 30, 2023, ...	6	 Success

Note: You can refresh the job status if it does not change automatically.

49. Close the asset from the navigation pane.

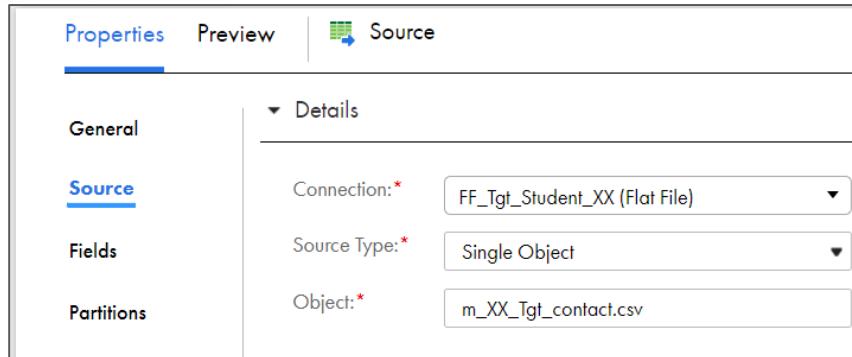
Optional - Open the Dummy Mapping and View the Data

50. Navigate to your working folder and open the dummy mapping **m_XX_DUMMY_MAPPING**.

51. From the mapping canvas, select **Source** and go to the **Source** properties tab.

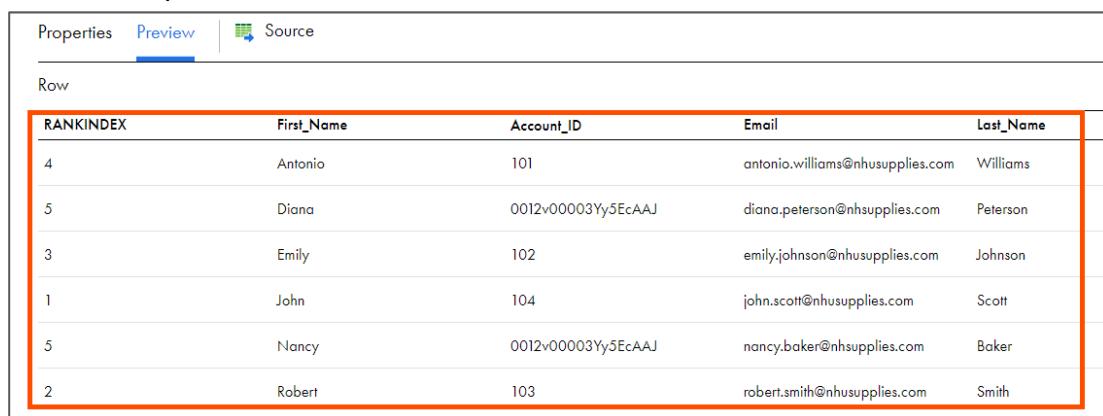
52. Change the Connection to your target Flat File connection. Click **Yes** in the Change Connection window.

53. Select the Object as your target – **m_XX_Tgt_Contact.csv**.



The screenshot shows the 'Properties' window for a source asset. The 'Source' tab is selected. Under the 'Source' section, the 'Connection' is set to 'FF_Tgt_Student_XX (Flat File)'. The 'Source Type' is 'Single Object' and the 'Object' is 'm_XX_Tgt_contact.csv'.

54. Go to the Preview section and click **Run Preview**. In the Continue window, click **Yes**.
55. If prompted, select runtime environment as **INFA-SERVER** and click **Run Preview**.
56. Wait for the preview results to load and view the data records.



The screenshot shows the 'Preview' window displaying a list of contacts. The columns are RANKINDEX, First_Name, Account_ID, Email, and Last_Name. The data rows are:

RANKINDEX	First_Name	Account_ID	Email	Last_Name
4	Antonio	101	antonio.williams@nhusupplies.com	Williams
5	Diana	0012v00003Yy5EcAAJ	diana.peterson@nhusupplies.com	Peterson
3	Emily	102	emily.johnson@nhusupplies.com	Johnson
1	John	104	john.scott@nhusupplies.com	Scott
5	Nancy	0012v00003Yy5EcAAJ	nancy.baker@nhusupplies.com	Baker
2	Robert	103	robert.smith@nhusupplies.com	Smith

57. Save and close all the assets from the navigation pane.

This concludes the lab.

Module 7: Joiner and Lookup Transformations

Lab 7-1: Using Lookup Transformation in a Mapping

Overview:

Lookup transformation in Informatica Cloud (IICS) is used to look up a database table or a flat file based on a condition and retrieve value from the object used as a lookup.

Objective:

- Use Lookup transformation in the mapping

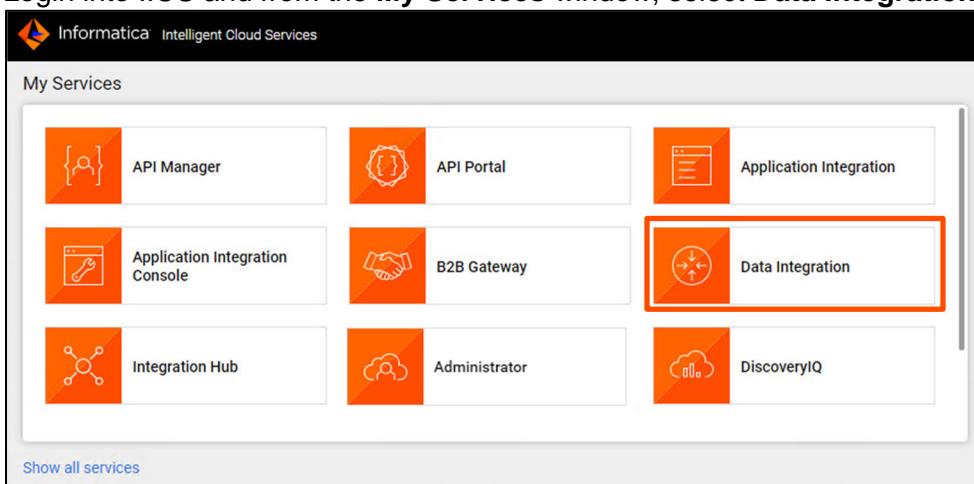
Duration:

50 minutes

Tasks

Create Mapping

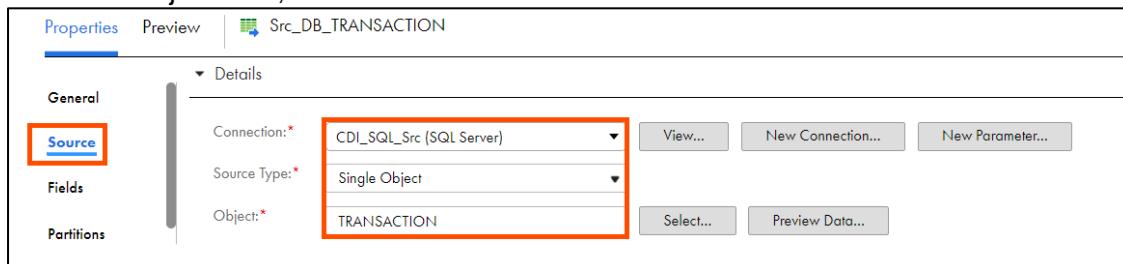
1. Login into IICS and from the **My Services** window, select **Data Integration**.



2. Create a new Mapping.
3. In the Name field, enter **m_XX_Transactions**.
4. Verify that the asset Location is pointing to your working folder.
5. To configure the source, from the mapping canvas, click the **Source** transformation.
6. In the **General** section of Source properties, enter Name as **Src_DB_TRANSACTION**.

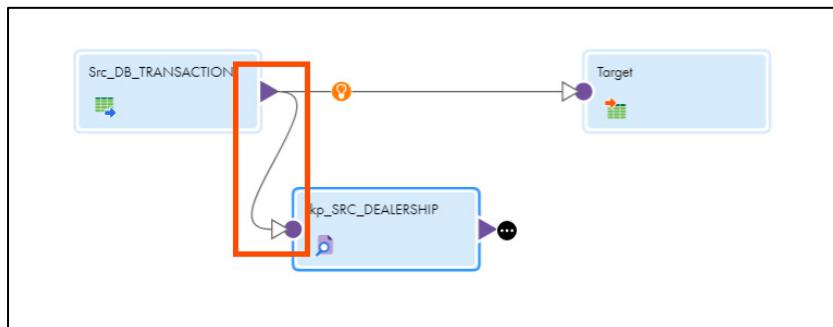


7. From the properties pane, click **Source**.
8. From the Connection drop-down, select **CDI_SQL_Src**.
9. From the Object field, select the **TRANSACTION** table.



Add Lookup Transformation

10. From the list of available transformations, drag and drop a Lookup transformation on the mapping canvas.
11. Select the Lookup transformation on the mapping canvas.
12. In the **General** section of Lookup properties, enter Name as **Ikp_SRC DEALERSHIP**.
13. Link the **Src_DB_TRANSACTION** with the **Ikp_SRC DEALERSHIP** on the mapping canvas.



14. From the properties pane, go to **Incoming Fields**.
15. In the Field Rules section, from the **Field Selection Criteria** drop-down, select **Named Fields**.



Note: After selecting Named Fields, click anywhere on the blank space to enable the Configure link.

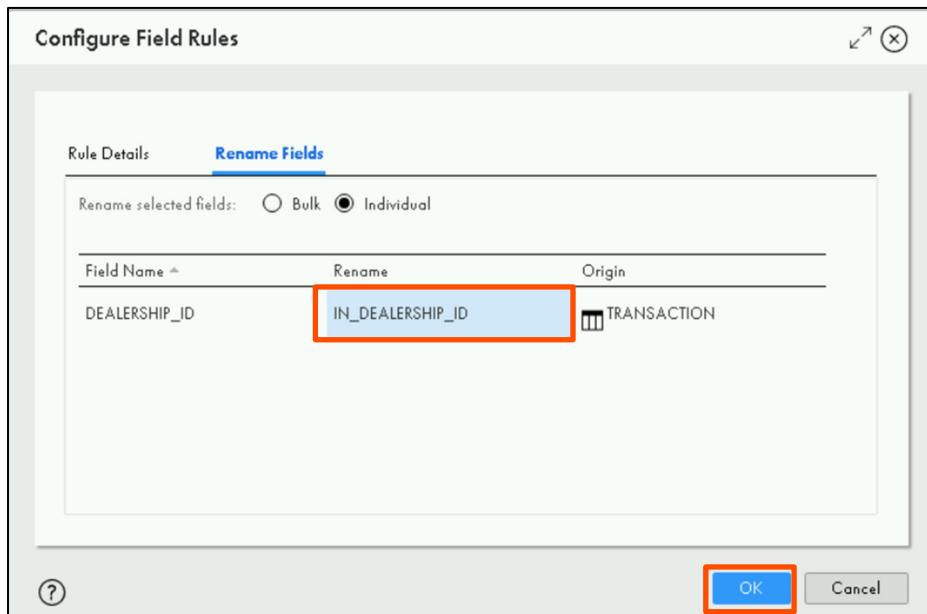
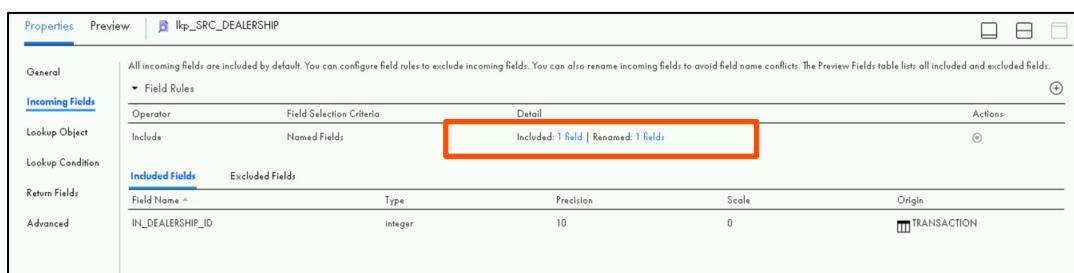
16. Click **Configure**.



17. Select **DEALERSHIP_ID** from the **Rule Details** tab.

18. Select the **Rename Fields** tab and in the **Rename** field, enter **IN_DEALERSHIP_ID**.

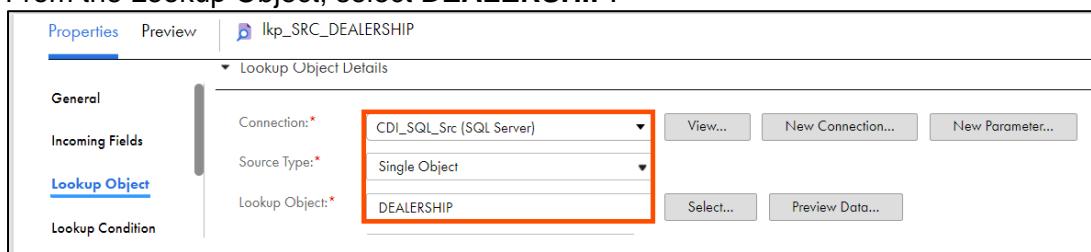
19. Click **OK**.

20. From the properties pane, select **Lookup Object**.

21. From the connection dropdown, select **CDI_SQL_Src**.

22. From the Lookup Object, select **DEALERSHIP**.



23. Select **Lookup Condition**, from the properties pane.

24. To add a new Lookup condition, click .

25. Enter the details as shown in the table below and click **OK**.

Lookup Field	Operator	Incoming Field
DEALERSHIP_ID	=	IN DEALERSHIP_ID

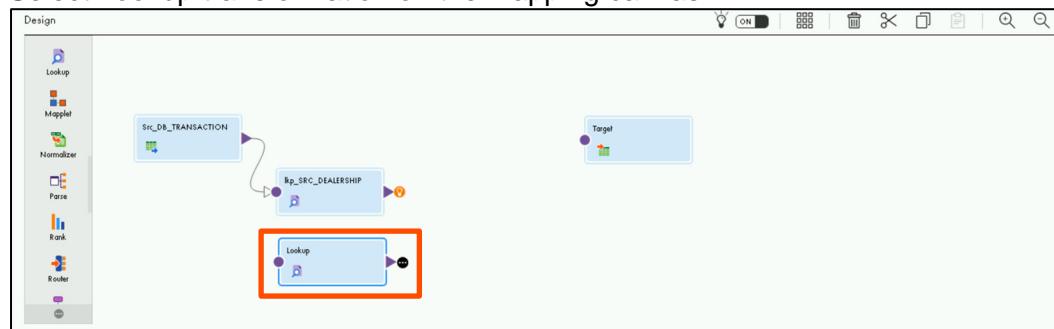


The screenshot shows the Informatica mapping canvas. A 'Lookup' transformation object is selected and highlighted with a red box. The canvas also contains a 'Src_DB_TRANSACTION' source object, an 'Rp_SRC_DEALERSHIP' target object, and a 'Target' object. Arrows indicate the flow of data between these objects.

26. From the list of available transformations, drag and drop another **lookup** transformation on the mapping canvas.

27. Delete the link between Source and Target objects.

28. Select **Lookup transformation** on the mapping canvas.



29. In the General field, enter the name as **Ikp_SRC_EMPLOYEE**.



The screenshot shows the 'Properties' pane for the 'Ikp_SRC_EMPLOYEE' transformation. The 'General' tab is selected. The 'Name' field is set to 'Ikp_SRC_EMPLOYEE' and is highlighted with a red box. Other fields include 'Description' (empty), 'Lookup Object' (empty), and 'Lookup Condition' (checkbox 'Unconnected Lookup' is unchecked).

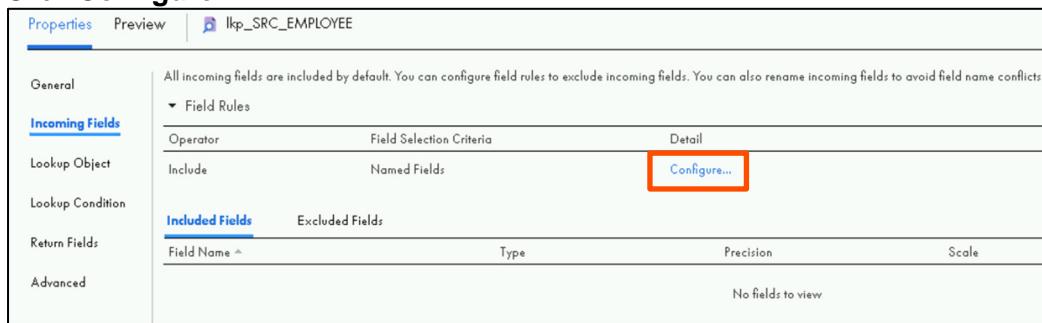
30. Link the **Src_DB_TRANSACTION** with the **Ikp_SRC_EMPLOYEE**

31. From the properties pane, click on **Incoming Fields**.

32. In the **Field Rules** section, from the Field Selection Criteria drop-down, select **Named Fields**.

Note: After selecting Named Fields, click anywhere on the blank space to enable the Configure link.

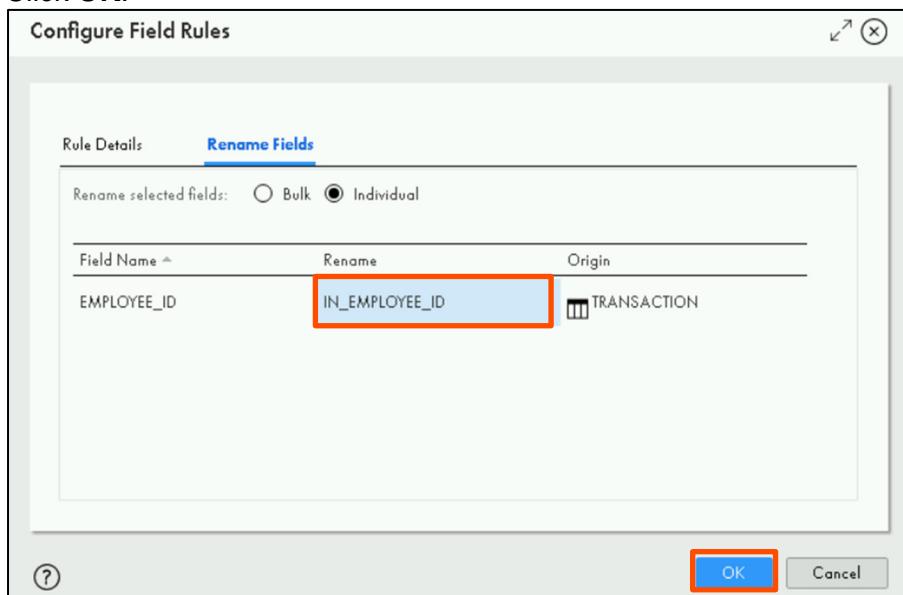
33. Click **Configure**.



34. Select **EMPLOYEE_ID** from the Rule Details tab.

35. Select the Rename Fields tab, and in the Rename field enter **IN_EMPLOYEE_ID**.

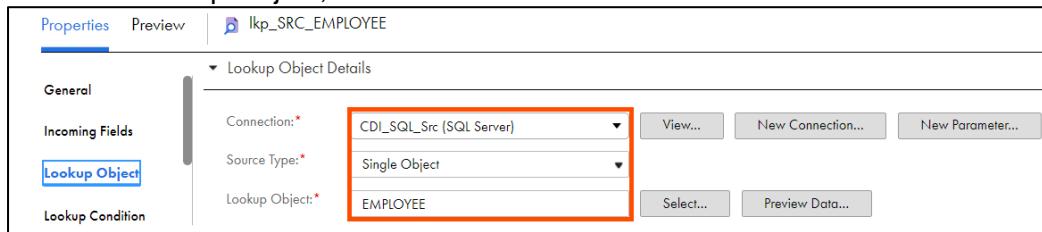
36. Click **OK**.




37. From the properties pane, select **Lookup Object**.

38. From the connection dropdown, select **CDI_SQL_Src**.

39. From the Lookup Object, select **EMPLOYEE**.

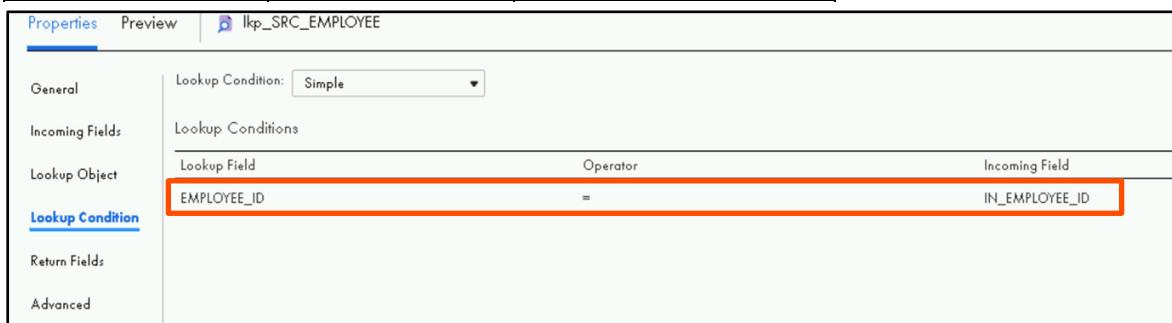


40. Select **Lookup Condition**, from the properties pane.

41. To add a new Lookup condition, click .

42. Enter the details as shown in the table below and click **OK**.

Lookup Field	Operator	Incoming Field
EMPLOYEE_ID	=	IN_EMPLOYEE_ID



Add Expression Transformation

Expression transformation calculates value within a single row. Expression transformation can also be used to test conditional statements before passing the data to other transformations.

When you configure an Expression transformation, create an expression field for the output of each calculation that you want to use in the data flow.

43. From the list of available transformations, drag and drop the Expression transformation onto the mapping canvas.

44. Select the Expression transformation from the mapping canvas.

45. From the properties, in the General section, enter the name as **exp_CALC_REVENUE**.



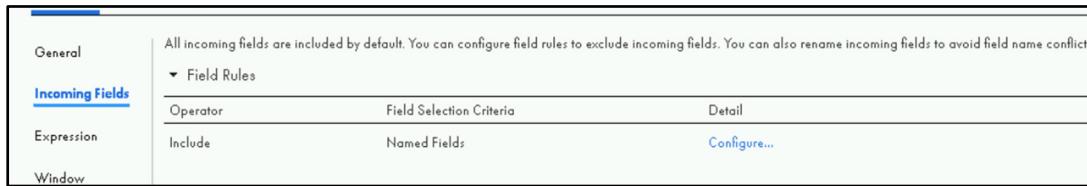
46. Link the **Src_DB_TRANSACTION** to the expression transformation.

47. Select the Expression transformation on the mapping canvas. From the properties pane, click on **Incoming Fields**.

48. In the Field Rules section, from the Field Selection Criteria drop-down, select **Named Fields**.

Note: After selecting Named Fields, click anywhere on the blank space to enable the Configure link.

49. Click **Configure**.



The screenshot shows the 'Incoming Fields' section of the Rule Details tab. It includes fields for Operator (Include), Field Selection Criteria (Named Fields), and a 'Configure...' button.

50. Select **COST**, **DATE_ID**, **DISCOUNT**, **HOLDBACK**, **PAYMENT_DESC**, **PROMO_ID**, **QUANTITY**, **REBATE**, and **SELLING PRICE** from the Rule Details tab.

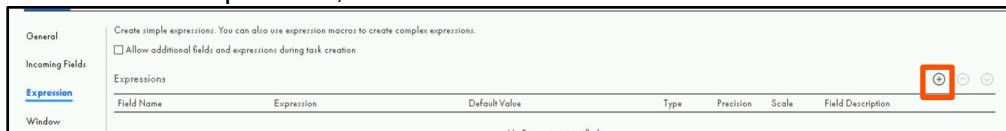
51. Do not rename any fields. Click **OK**.

52. Confirm that your Included Fields list appears like the screenshot below:

Included Fields	Excluded Fields	Type	Precision	Scale
COST		decimal	10	2
DATE_ID		integer	10	0
DISCOUNT		decimal	10	2
HOLDBACK		decimal	10	2
PAYMENT_DESC		string	10	0
PROMO_ID		integer	10	0
QUANTITY		integer	10	0
REBATE		decimal	10	2
SELLING_PRICE		decimal	10	2

53. From the properties pane, select **Expression**.

54. To add a new Expression, click .



The screenshot shows the 'Expression' properties pane. It includes sections for General, Incoming Fields, Expression, and Window. The 'Expression' section has a table with columns: Field Name, Expression, Default Value, Type, Precision, Scale, and Field Description. A red box highlights the 'Add' icon (a plus sign) in the top right corner of the table header.

55. Enter the details as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Output Field	REVENUE	decimal	10	2

Edit Field

Create new output field, variable field, input macro field or output macro field.

Field Type:	Output Field
Name:*	REVENUE
Type:*	decimal
Precision:*	10
Scale:	2
Default Value:	ERROR('transformation error')
Description:	

(?) **OK** Cancel

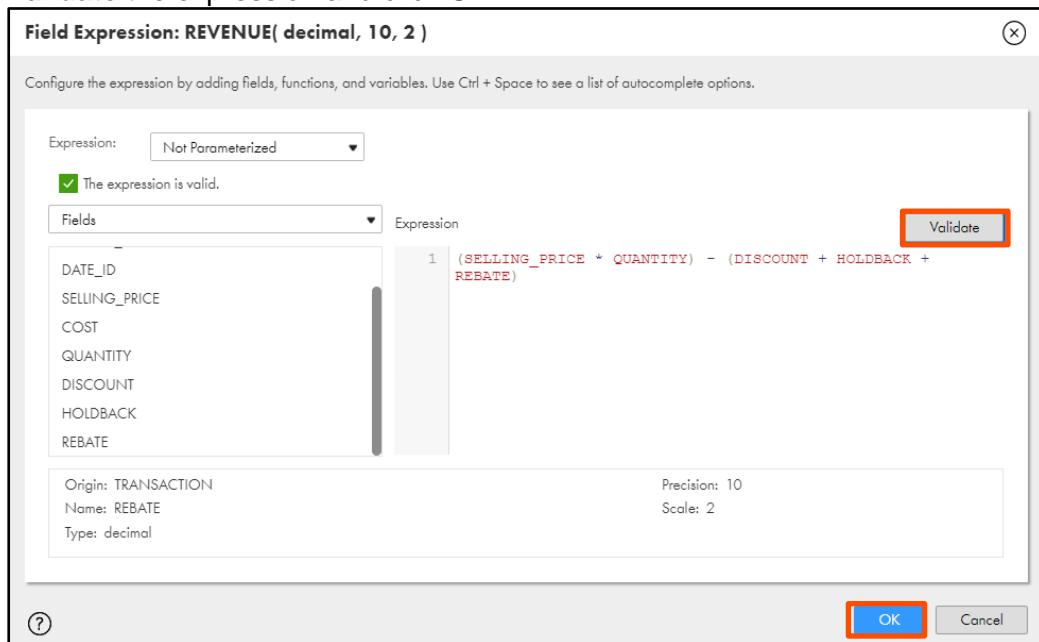
56. To configure the expression, click **Configure**.

General	Create simple expressions. You can also use expression macros to create complex expressions. <input type="checkbox"/> Allow additional fields and expressions during task creation
Incoming Fields	
Expression	Expressions
Window	
Advanced	

Field Name	Expression	Default Value	Type	Precision	Scale	Field Description
REVENUE	Configure...	ERROR('transformation error')	decimal	10	2	

57. In the Expression field, copy and paste the following expression:
(SELLING_PRICE * QUANTITY) - (DISCOUNT + HOLDBACK + REBATE)

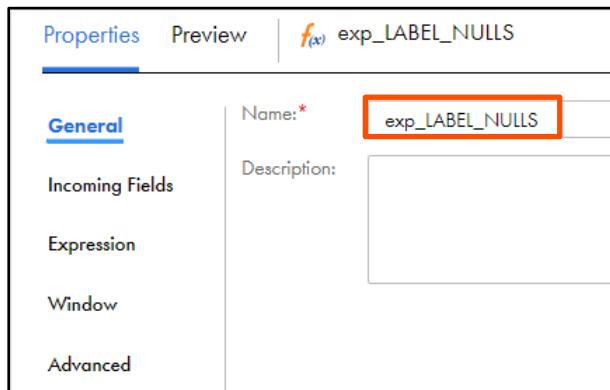
58. Validate the expression and click **OK**.



59. From the list of available transformations, drag and drop another **Expression** transformation on the mapping canvas.

60. Select the new Expression transformation from the mapping canvas.

61. From the properties pane, in the General section, enter the name as **exp_LABEL_NULLS**.



62. Link the output of the **Ikp_SRC DEALERSHIP** lookup to the new Expression transformation **exp_LABEL_NULLS**.

63. From the properties pane, click on **Incoming Fields**.

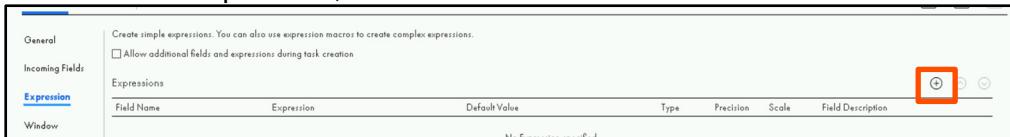
64. From the **Field Selection Criteria** drop down, select the **Named Fields**.

65. **Include** the fields **DEALERSHIP_ID**, **DEALERSHIP_LOCATION**, **DEALERSHIP_REGION**, and **DEALERSHIP_STATE**. Ensure the other fields are unchecked. Your Incoming Fields properties should match the screenshot below.

Field Rules			
Operator	Field Selection Criteria	Detail	
Include	Named Fields	Included: 4 fields	
Included Fields			Excluded Fields
Field Name ^	Type	Precision	Scale
DEALERSHIP_ID	integer	10	0
DEALERSHIP_LOCATION	string	100	0
DEALERSHIP_REGION	string	20	0
DEALERSHIP_STATE	string	20	0

66. Navigate to the Expression tab.

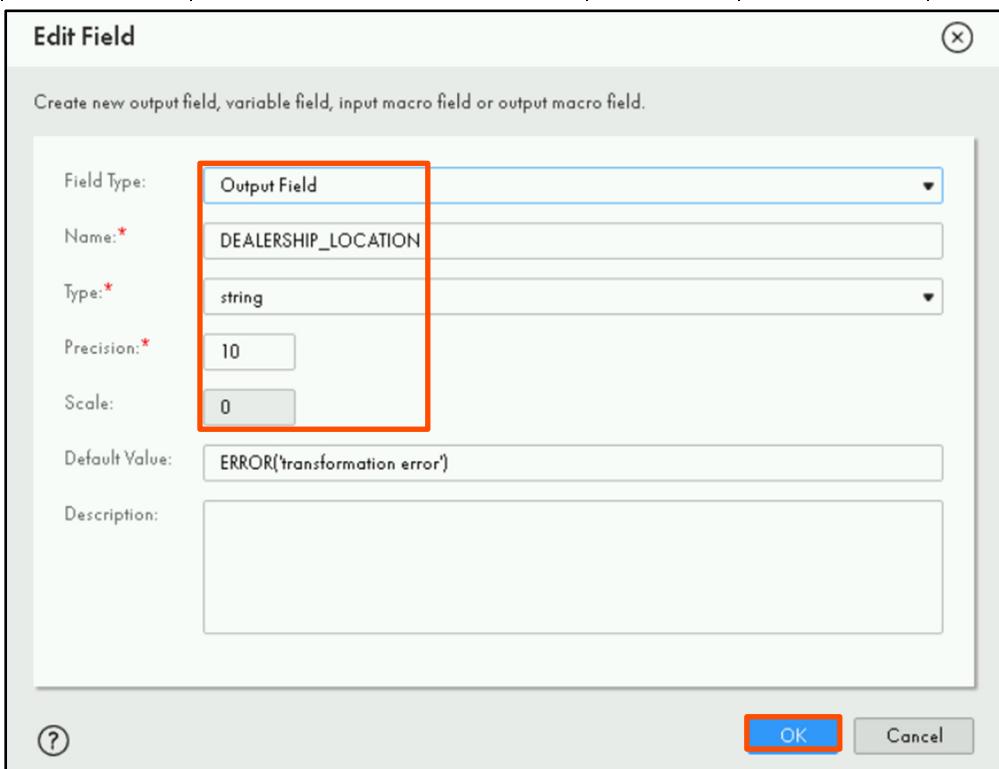
67. To add a new Expression, click .



The screenshot shows the 'Expression' tab of a configuration interface. In the 'Expressions' section, there is a table with columns: Field Name, Expression, DefaultValue, Type, Precision, Scale, and Field Description. A red box highlights the '+' button at the top right of this table.

68. Set the new expression properties as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Output Field	DEALERSHIP_LOCATION	string	50	0



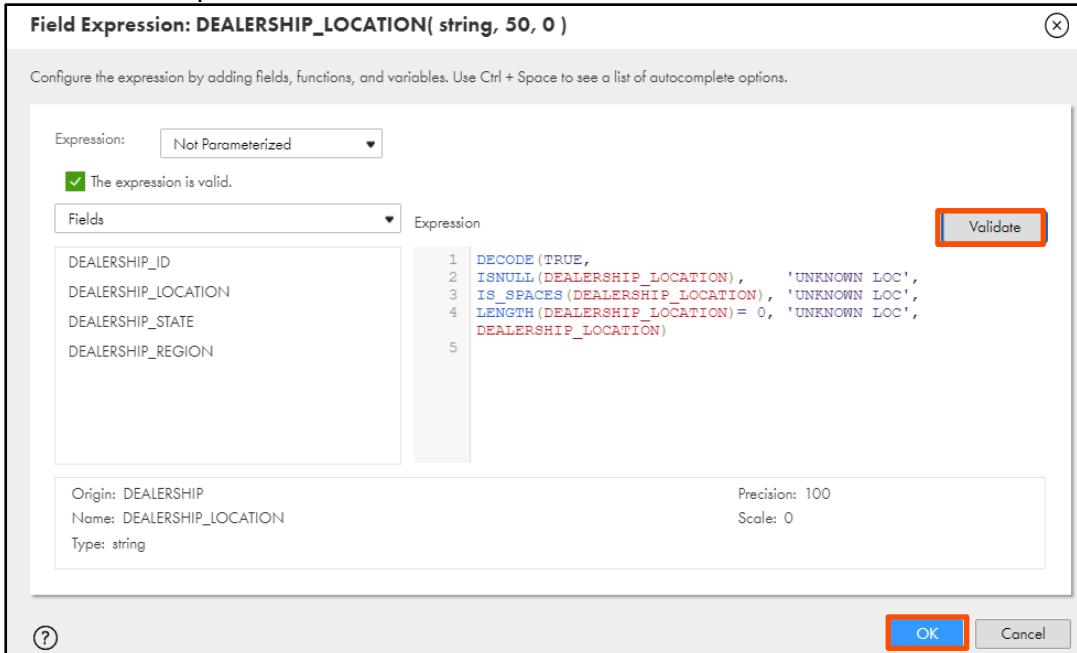
The screenshot shows the 'Edit Field' dialog box. It has sections for Field Type, Name, Type, Precision, Scale, Default Value, and Description. The 'Field Type' dropdown is set to 'Output Field'. The 'Name' field contains 'DEALERSHIP_LOCATION'. The 'Type' dropdown is set to 'string'. The 'Precision' field is set to '10' and the 'Scale' field is set to '0'. The 'Default Value' field contains 'ERROR('transformation error')'. The 'Description' field is empty. The 'OK' button is highlighted with a red box.

69. To configure the expression, click **Configure**.

70. In order to identify and label NULL or blank values in the DEALERSHIP_LOCATION value, in the Expression field, enter the following expression:

```
DECODE(TRUE,
ISNULL(DEALERSHIP_LOCATION), 'UNKNOWN LOC',
IS_SPACES(DEALERSHIP_LOCATION), 'UNKNOWN LOC',
LENGTH(DEALERSHIP_LOCATION)= 0, 'UNKNOWN LOC',
DEALERSHIP_LOCATION)
```

71. Validate the expression and click **OK**.



72. In the Expression tab, add another expression and set its properties as shown in the table below. Click **OK**.

Field Type	Name	Type	Precision	Scale
Output Field	DEALERSHIP_REGION	string	50	0

Edit Field

Create new output field, variable field, input macro field or output macro field.

Field Type:	Output Field
Name: *	DEALERSHIP_REGION
Type: *	string
Precision: *	50
Scale:	0
Default Value:	ERROR('transformation error')
Description:	(empty)

Buttons: **?** **OK** **Cancel**

73. To configure the expression, click **Configure**.
74. In the Expression field, enter the following expression:
**DECODE(TRUE,
ISNULL(DEALERSHIP_REGION), 'UNKNOWN DESC',
IS_SPACES(DEALERSHIP_REGION), 'UNKNOWN DESC',
LENGTH(DEALERSHIP_REGION)= 0, 'UNKNOWN DESC',
DEALERSHIP_REGION)**

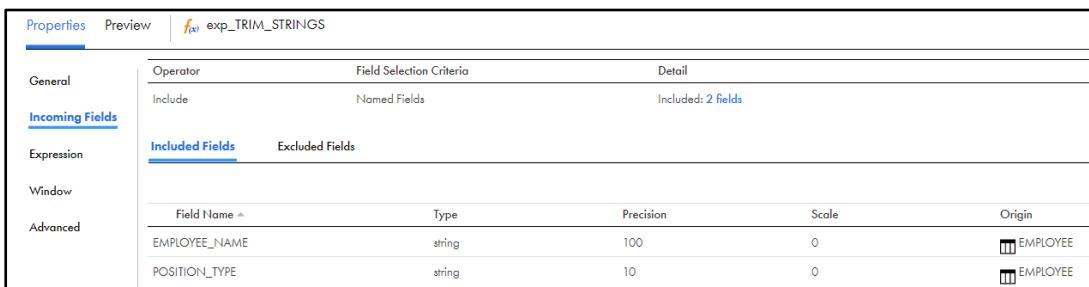
75. Validate the expression and click **OK**.

Properties Preview |  exp_LABEL_NULLS

Create simple expressions. You can also use expression macros to create complex expressions.																							
General	<input type="checkbox"/> Allow additional fields and expressions during task creation																						
Incoming Fields																							
Expression	Expressions <table border="1"> <thead> <tr> <th>Field Name</th> <th>Expression</th> <th>Default Value</th> <th>Type</th> <th>Precision</th> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>DEALERSHIP_LOCATION</td> <td>DECODE[TRUE, ISNULL(DEALERSHIP_LOCATION), 'UNKNOWN L' ERROR('transformation error')]</td> <td></td> <td>string</td> <td>50</td> <td>0</td> </tr> <tr> <td>DEALERSHIP_REGION</td> <td>DECODE[TRUE, ISNULL(DEALERSHIP_REGION), 'UNKNOWN DES' ERROR('transformation error')]</td> <td></td> <td>string</td> <td>50</td> <td>0</td> </tr> </tbody> </table>					Field Name	Expression	Default Value	Type	Precision	Scale	DEALERSHIP_LOCATION	DECODE[TRUE, ISNULL(DEALERSHIP_LOCATION), 'UNKNOWN L' ERROR('transformation error')]		string	50	0	DEALERSHIP_REGION	DECODE[TRUE, ISNULL(DEALERSHIP_REGION), 'UNKNOWN DES' ERROR('transformation error')]		string	50	0
Field Name	Expression	Default Value	Type	Precision	Scale																		
DEALERSHIP_LOCATION	DECODE[TRUE, ISNULL(DEALERSHIP_LOCATION), 'UNKNOWN L' ERROR('transformation error')]		string	50	0																		
DEALERSHIP_REGION	DECODE[TRUE, ISNULL(DEALERSHIP_REGION), 'UNKNOWN DES' ERROR('transformation error')]		string	50	0																		
Window																							
Advanced																							

76. Add another Expression transformation to the mapping and name it **exp_TRIM_STRINGS**.
77. Link the **Ikp_SRC_EMPLOYEE** Lookup to the new Expression transformation **exp_TRIM_STRINGS**.

78. The new **exp_TRIM_STRINGS** Expression transformation needs to include only two fields: **EMPLOYEE_NAME** and **POSITION_TYPE**. Configure the Incoming Fields tab so that only those two fields are included.



Field Name	Type	Precision	Scale	Origin
EMPLOYEE_NAME	string	100	0	EMPLOYEE
POSITION_TYPE	string	10	0	EMPLOYEE

79. In the Expression tab, create two output fields **TRIM_EMPLOYEE_NAME** and **TRIM_POSITION_TYPE**, both string datatype with precision 50.



Field Name	Expression	Default Value	Type	Precision	Scale
TRIM_EMPLOYEE_NAME	Configure...	ERROR('transformation error')	string	50	0
TRIM_POSITION_TYPE	Configure...	ERROR('transformation error')	string	50	0

80. Enter these expressions for the TRIM_EMPLOYEE_NAME and TRIM_POSITION_TYPE fields, respectively:

In TRIM_EMPLOYEE_NAME:

LTRIM(RTRIM(EMPLOYEE_NAME))

In TRIM_POSITION_TYPE:

LTRIM(RTRIM(POSITION_TYPE))

81. Confirm your Expression tab matches the screenshot below:



Field Name	Expression	Default Value	Type	Precision
TRIM_EMPLOYEE_NAME	LTRIM(RTRIM([EMPLOYEE_NAME]))	ERROR('transformation error')	string	50
TRIM_POSITION_TYPE	LTRIM(RTRIM([POSITION_TYPE]))	ERROR('transformation error')	string	50

82. Create a new Expression transformation and name it **exp_PASS_THROUGH**.

83. Link the output of the **Src_DB_TRANSACTIONS** source object to the new **exp_PASS_THROUGH** transformation.

Note: The purpose of this transformation is to send four fields from the source directly to the target without any expression logic applied to those fields. The use of a single transformation for this purpose avoids name conflicts (and having to bulk rename fields) in the other transformations.

84. In the **Incoming Fields** tab, include the following fields: CUST_ID, PRODUCT_ID, TRANSACTION_DATE, and TRANSACTION_ID.

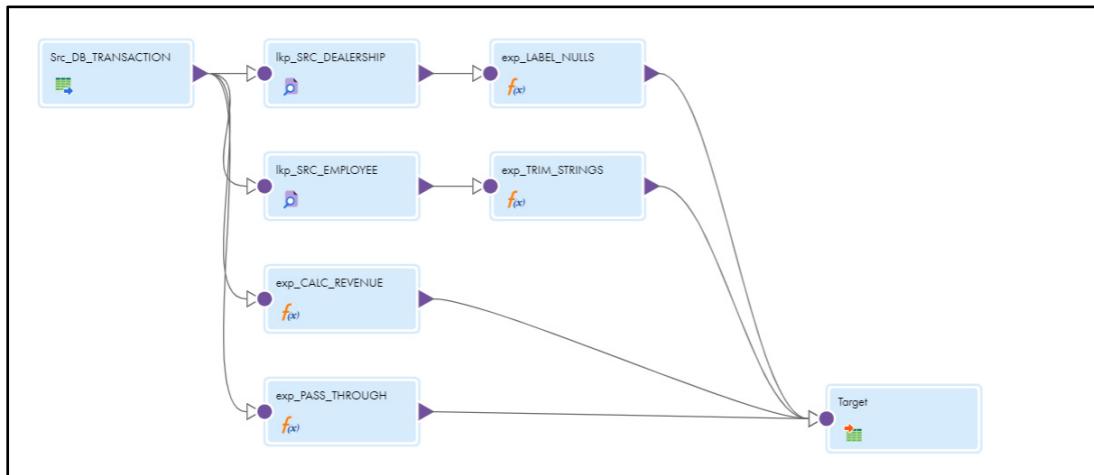
85. Your Incoming Fields tab should match the screenshot below:

Field Rules				
Operator	Field Selection Criteria	Detail		
Include	Named Fields	Included: 4 Fields		
Included Fields				
CUST_ID	Type	Precision	Scale	Origin
PRODUCT_ID	integer	10	0	TRANSACTION
TRANSACTION_DATE	date/time	29	9	TRANSACTION
TRANSACTION_ID	integer	10	0	TRANSACTION

86. Save the mapping.

Configure Target

87. Link the outputs of **all four** of the Expression transformations to the target object. Your mapping should now resemble the screenshot below:



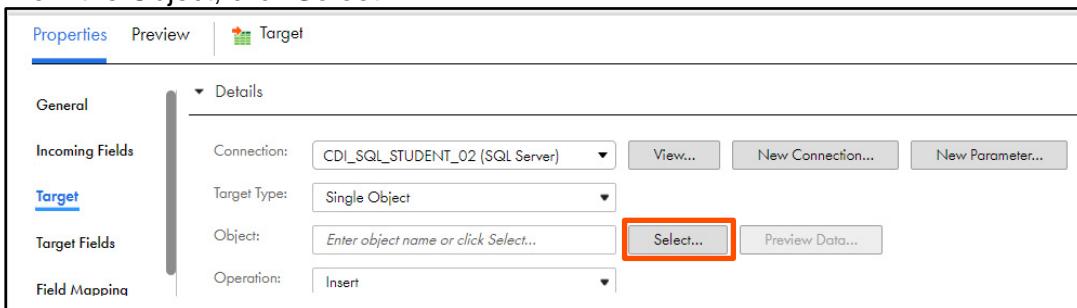
88. Select **Target** on the mapping canvas.

89. From the properties pane, select **Target**.

Properties	Preview	Target
General	Details Connection: <input type="button" value="View..."/> <input type="button" value="New Connection..."/> <input type="button" value="New Parameter..."/> Target Type: <input type="button"/>	
Incoming Fields		
Target		
Target Fields		
Field Mapping		

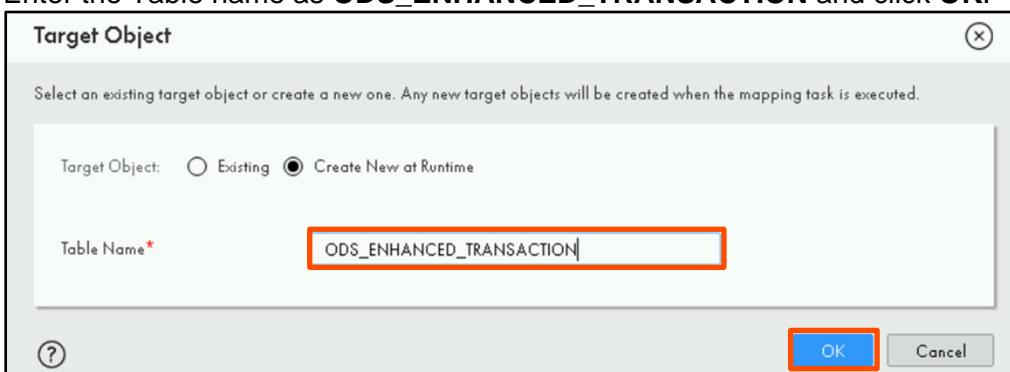
90. From the Connection drop down, select your **SQL Server target** connection.

91. From the Object, click **Select**.

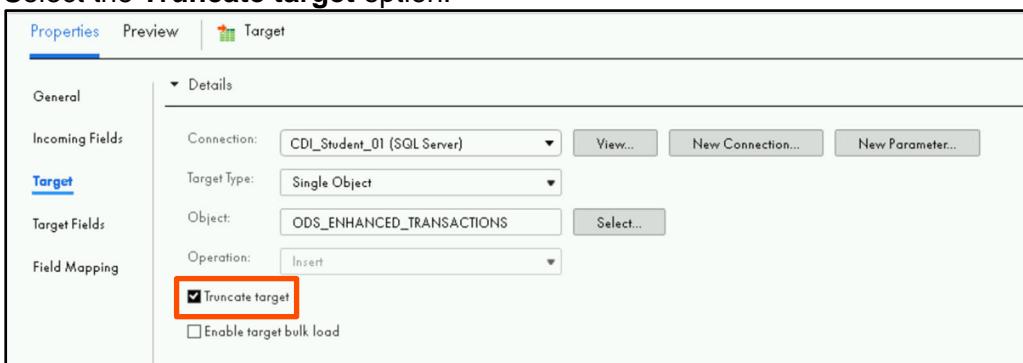


92. In the Target Object, click on **Create New at Runtime**.

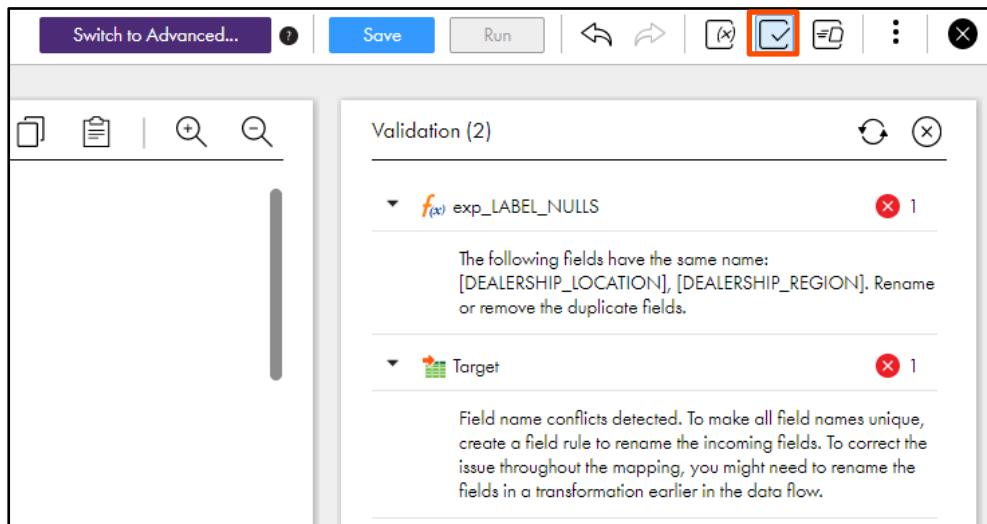
93. Enter the Table name as **ODS_ENHANCED_TRANSACTION** and click **OK**.



94. Select the **Truncate target** option.

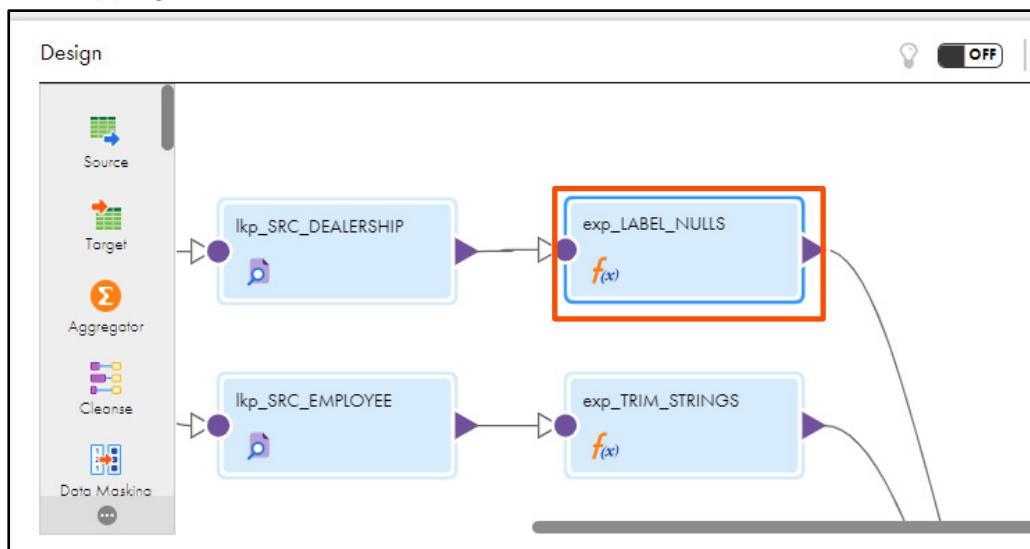


95. Validate the mapping.



Note: If the mapping is invalid due to “field name conflicts” in any of the transformations or the target, examine the Incoming Fields tab of the invalid object and ensure they conform to the previous instructions. Ensure only the specified fields for that object have been included. Also, ensure the mapping resembles the screenshot on the previous page with respect to the order of the transformations.

96. Click on the first object in the Validation panel. It will highlight the corresponding object in the mapping canvas.

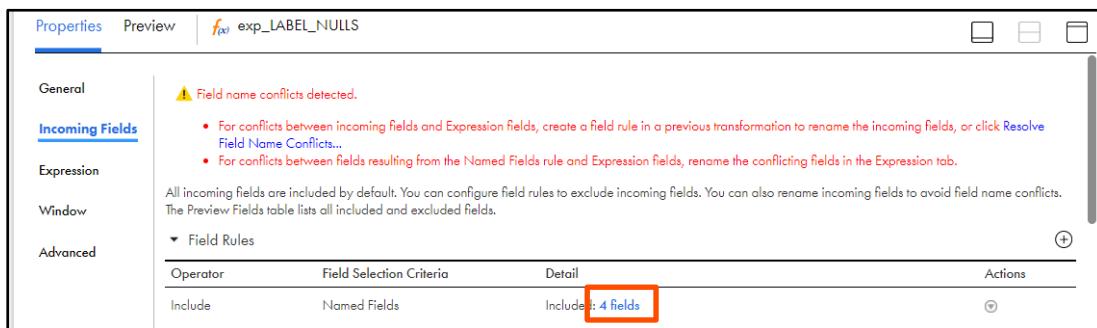


97. Navigate to the **Incoming Fields** tab and observe the naming conflicts message.



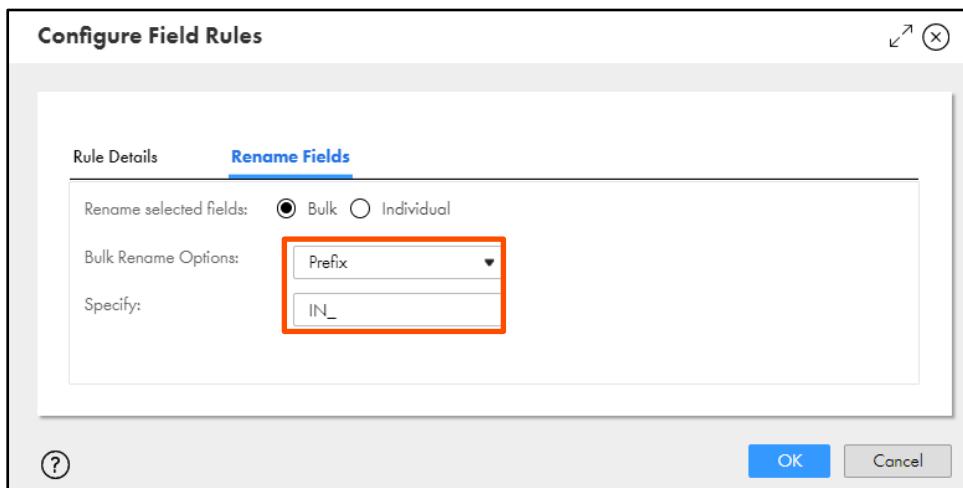
The screenshot shows the Informatica Properties window for a transformation named 'exp_LABEL_NULLS'. The 'Incoming Fields' tab is selected. A yellow warning icon in a box indicates 'Field name conflicts detected.' with two bullet points: 'For conflicts between incoming fields and Expression fields, create a field rule in a previous transformation to rename the incoming fields, or click Resolve Field Name Conflicts...' and 'For conflicts between fields resulting from the Named Fields rule and Expression fields, rename the conflicting fields in the Expression tab.' Below this, a note states that all incoming fields are included by default and provides instructions for configuring field rules to exclude them. A table titled 'Field Rules' shows one entry: 'Include' with 'Named Fields' selected, and 'Included: 4 fields'.

98. From the Fields Rules section, click on the **4 fields** hyperlink.



This screenshot is identical to the one above, showing the 'Incoming Fields' tab selected in the Properties window. The 'Field Rules' table now has a red box around the 'Included: 4 fields' link under the 'Actions' column for the 'Include' row.

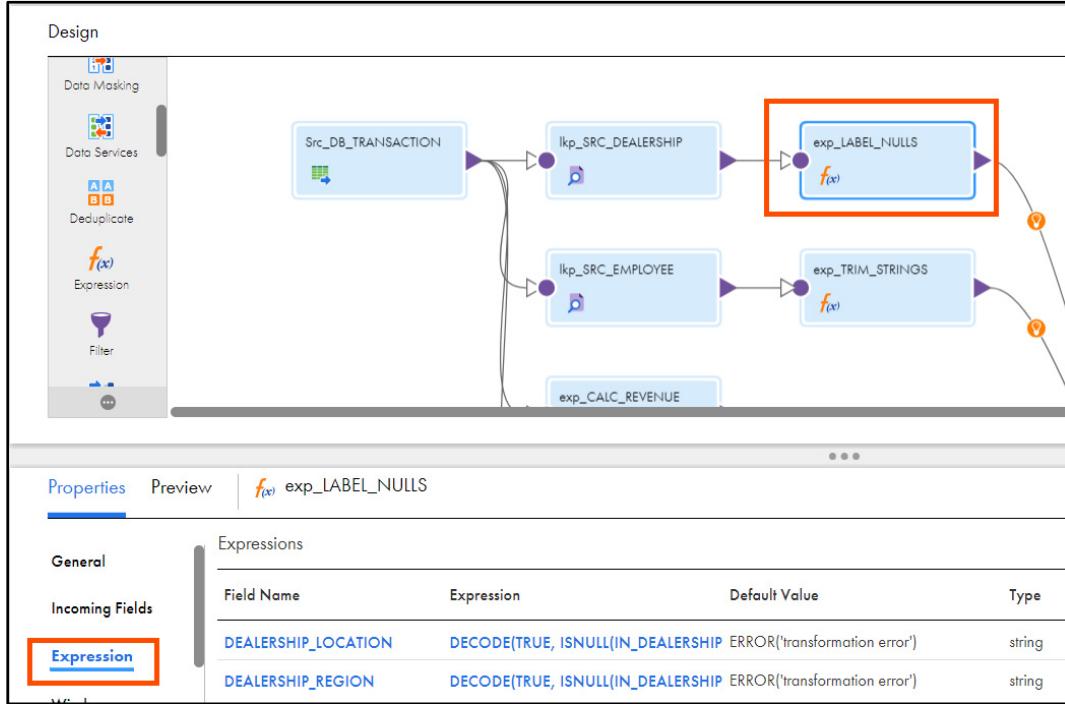
99. Go to the Rename Fields tab, select **Bulk**, and specify the **Prefix** as **IN_**.



The screenshot shows the 'Configure Field Rules' dialog box. The 'Rename Fields' tab is selected. Under 'Rule Details', the 'Rename selected fields:' option is set to 'Bulk' (radio button selected). In the 'Bulk Rename Options:' section, a dropdown menu is open over a text input field containing 'Prefix'. Below it, another text input field contains 'IN_'. At the bottom right are 'OK' and 'Cancel' buttons.

100. Click **OK**.

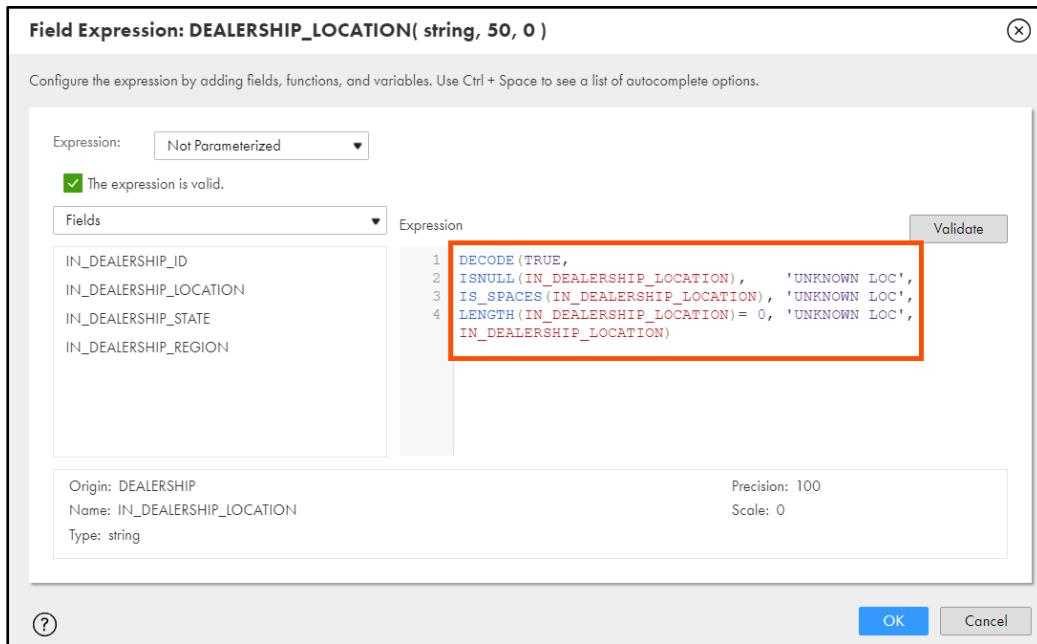
101. Make sure `exp_LABEL_NULLS` is selected from the mapping canvas and go to the Expression properties tab.



The screenshot shows the Informatica Mappings Designer interface. On the left, there's a sidebar with icons for Data Masking, Data Services, Deduplicate, Expression (which is selected and highlighted with a red box), and Filter. The main canvas displays a data flow starting from a source node 'Src_DB_TRANSACTION'. This flows through two lookup nodes, 'lkp_SRC_DEALERSHIP' and 'lkp_SRC_EMPLOYEE', and then to a target node 'exp_CALC_REVENUE'. Between 'lkp_SRC_DEALERSHIP' and 'exp_CALC_REVENUE', there is an expression node 'exp_LABEL_NULLS' (also highlighted with a red box). Below the canvas is the 'Properties' tab, which is currently active. Under the 'Expression' tab, there are two entries:

Field Name	Expression	Default Value	Type
DEALERSHIP_LOCATION	<code>DECODE(TRUE, ISNULL(IN DEALERSHIP_ERROR('transformation error'))</code>		string
DEALERSHIP_REGION	<code>DECODE(TRUE, ISNULL(IN DEALERSHIP_ERROR('transformation error'))</code>		string

102. Click on each of the Expression fields and update the expression so that `IN DEALERSHIP LOCATION` is used instead of `DEALERSHIP LOCATION` and `IN DEALERSHIP REGION` is used instead of `DEALERSHIP REGION`.

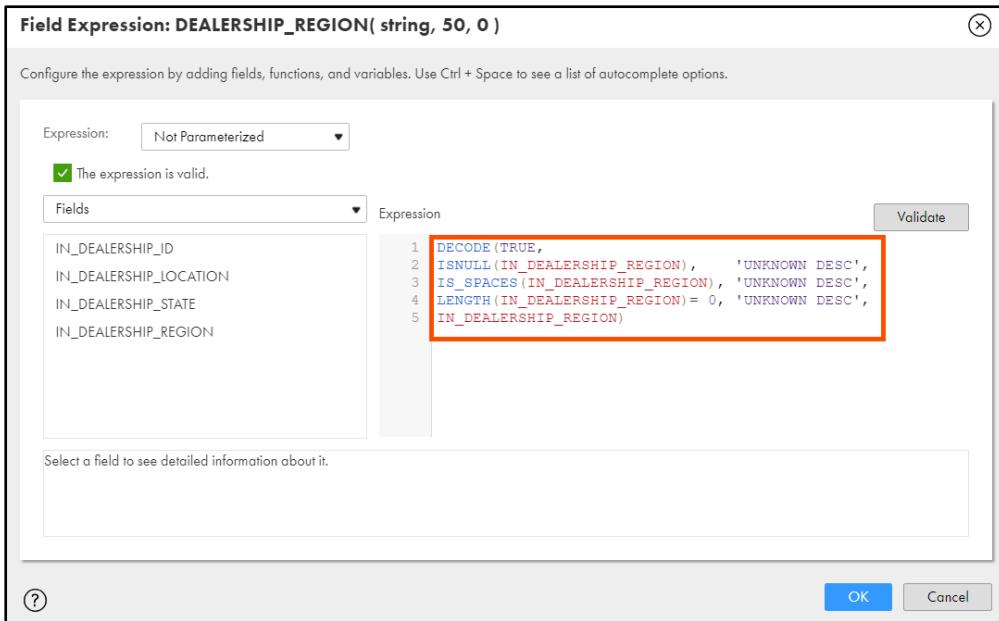


The screenshot shows the 'Field Expression' dialog for the 'DEALERSHIP_LOCATION' field. The title bar says 'Field Expression: DEALERSHIP_LOCATION(string, 50, 0)'. The dialog has several sections:

- Expression:** A dropdown set to 'Not Parameterized'.
- Fields:** A list containing 'IN DEALERSHIP_ID', 'IN DEALERSHIP_LOCATION', 'IN DEALERSHIP_STATE', and 'IN DEALERSHIP_REGION'.
- Expression:** A code editor containing the following SQL-like expression, with the entire code block highlighted with a red box:

```

1 DECODE(TRUE,
2 ISNULL(IN DEALERSHIP_LOCATION),
3 IS_SPACES(IN DEALERSHIP_LOCATION),
4 LENGTH(IN DEALERSHIP_LOCATION)= 0,
5 'UNKNOWN LOC',
6 IN DEALERSHIP_LOCATION)
    
```
- Origin:** DEALERSHIP
- Name:** IN DEALERSHIP_LOCATION
- Type:** string
- Precision:** 100
- Scale:** 0
- Buttons:** OK and Cancel.



103. **Save and Run the mapping.**



104. Select the runtime environment as INFA-SERVER and click **Run**.

Monitor Status

105. Monitor the task status from the **My Jobs** page.

106. When the task completes, the status changes to **Success**.

Jobs (256)		Up to date	Updated 11:50:53 AM PDT				Find
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status	
-E m_XX_Transactions-1	CDI<Month><Date...		Jul 30, 2023, 11:50 AM	Jul 30, 2023, 11:...	5474	 Success	

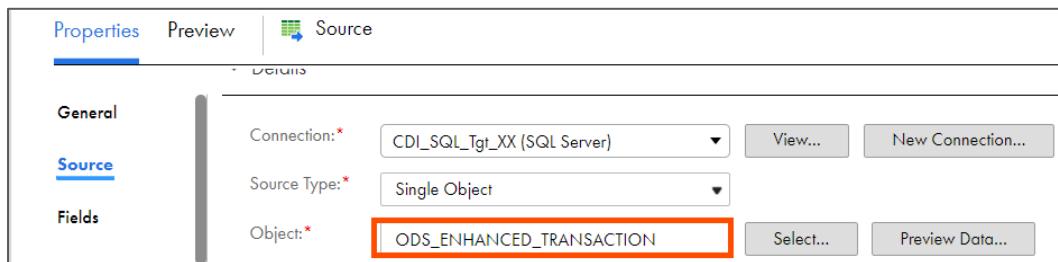
Optional - Open the Dummy Mapping and View the Data

107. Navigate to your working folder and open the dummy mapping **m_XX_DUMMY_MAPPING**.

108. From the mapping canvas, select **Source** and go to the **Source** properties tab.

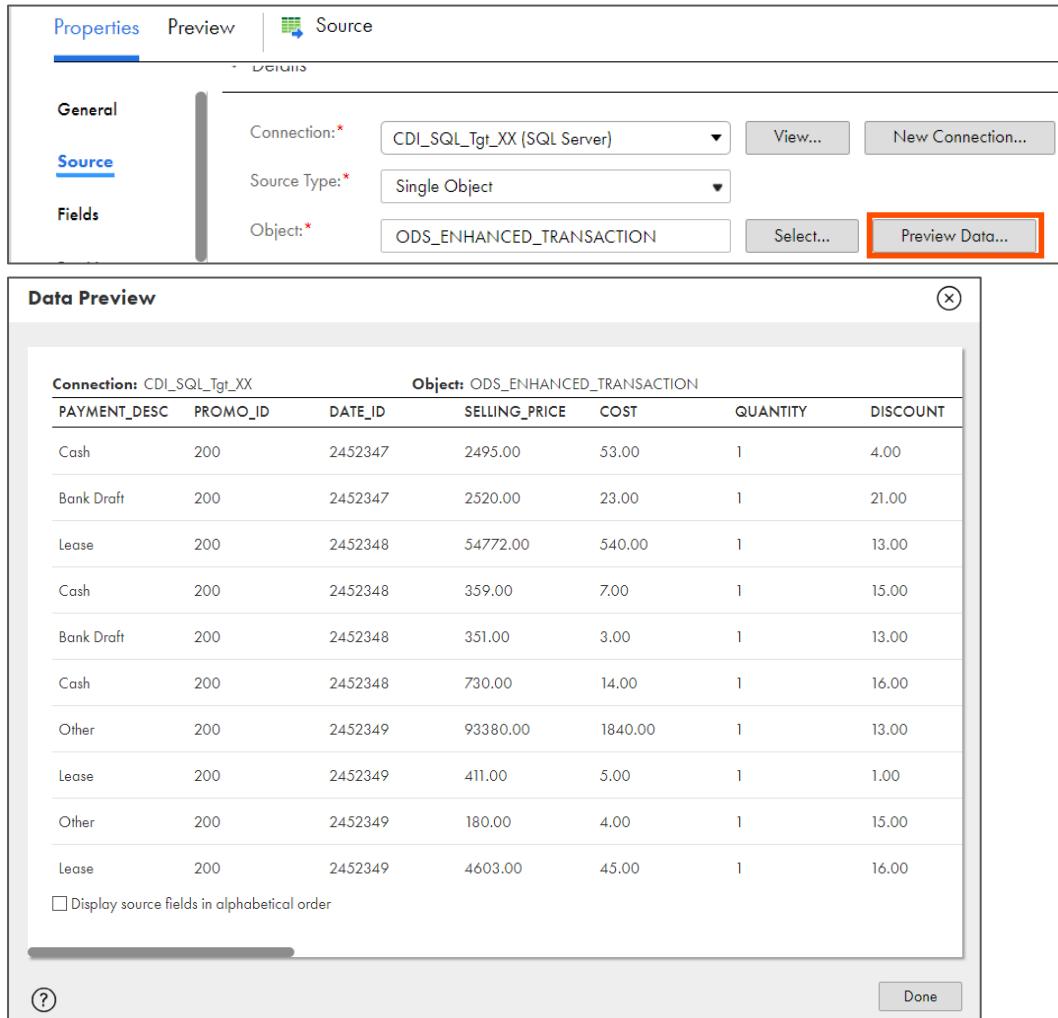
109. Change the Connection to your target SQL Server DB connection. Click **Yes** in the Change Connection window.

110. Select the Object as your target – **ODS_ENHANCED_TRANSACTION**.



The screenshot shows the 'Source' tab of the Properties dialog. The 'Object' field is highlighted with a red box, containing the value 'ODS_ENHANCED_TRANSACTION'. Other fields visible include 'Connection' set to 'CDI_SQL_Tgt_XX (SQL Server)', 'Source Type' set to 'Single Object', and buttons for 'View...', 'New Connection...', 'Select...', and 'Preview Data...'.

111. Click **Preview Data** and view the results.



The screenshot shows the 'Preview' tab of the Properties dialog. The 'Object' field is set to 'ODS_ENHANCED_TRANSACTION'. The 'Preview Data...' button is highlighted with a red box. Below it, the 'Data Preview' window is open, displaying a table with the following data:

PAYMENT_DESC	PROMO_ID	DATE_ID	SELLING_PRICE	COST	QUANTITY	DISCOUNT
Cash	200	2452347	2495.00	53.00	1	4.00
Bank Draft	200	2452347	2520.00	23.00	1	21.00
Lease	200	2452348	54772.00	540.00	1	13.00
Cash	200	2452348	359.00	7.00	1	15.00
Bank Draft	200	2452348	351.00	3.00	1	13.00
Cash	200	2452348	730.00	14.00	1	16.00
Other	200	2452349	93380.00	1840.00	1	13.00
Lease	200	2452349	411.00	5.00	1	1.00
Other	200	2452349	180.00	4.00	1	15.00
Lease	200	2452349	4603.00	45.00	1	16.00

Below the table, there is a checkbox labeled 'Display source fields in alphabetical order' and a 'Done' button.

112. Click **Done**.

113. Save and close all the assets from the navigation pane.

This concludes the lab.

Module 7: Joiner and Lookup Transformations

Lab 7-2: Merging Current and Previous Data Loads Using Full Outer Join

Overview:

A Joiner transformation joins two related heterogeneous sources. The Joiner transformation joins data based on the join conditions and the join type. The result set passed to the rest of the mapping is based on the join type. Full outer join includes rows with matching join conditions and all incoming data from the master pipeline and the detail pipeline.

Objective:

- Configure a mapping in Informatica Cloud
- Use full outer Join and complete the logic

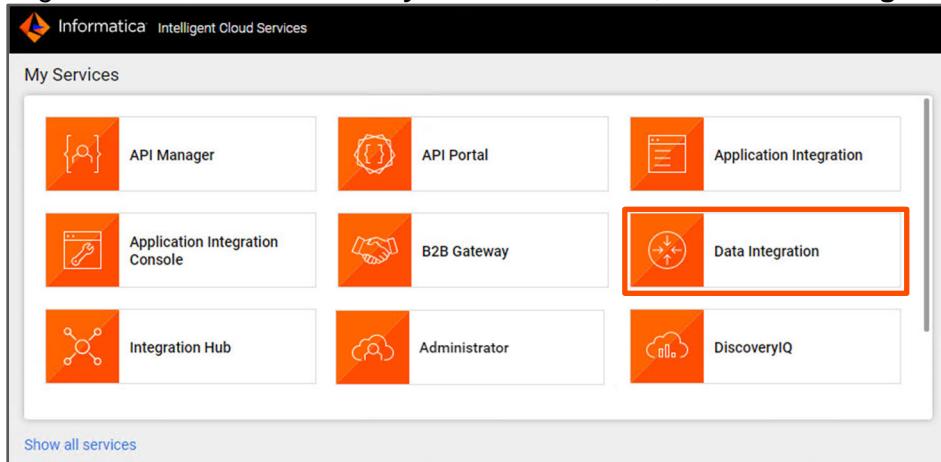
Duration:

35 minutes

Tasks

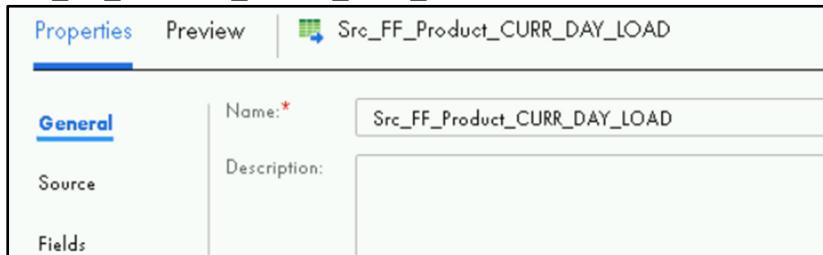
Create a Mapping

1. Login into IICS and from the **My Services** window, select **Data Integration**.

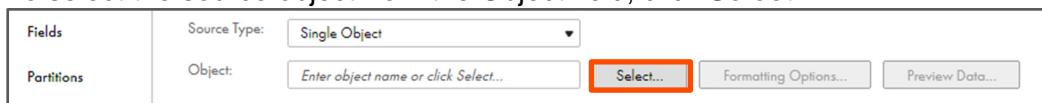


2. Create a new **Mapping**.
3. In the Name field, enter **m_XX_Full_outer_join**.
4. Verify that the asset Location is pointing to your working folder.
5. To configure the source, from the mapping canvas, click the **Source** transformation.

6. In the **General** section of the Source properties, enter the Name as **Src_FF_Product_CURR_DAY_LOAD**.

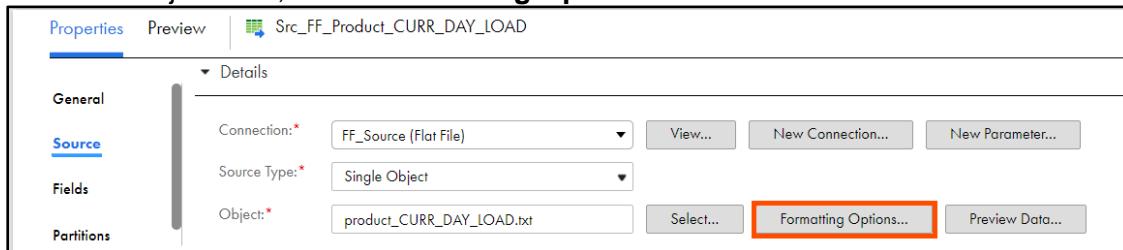


7. From the properties pane, click **Source**.
 8. From the Connection drop-down, select **FF_Source**.
 9. To select the source object from the Object field, click **Select**.

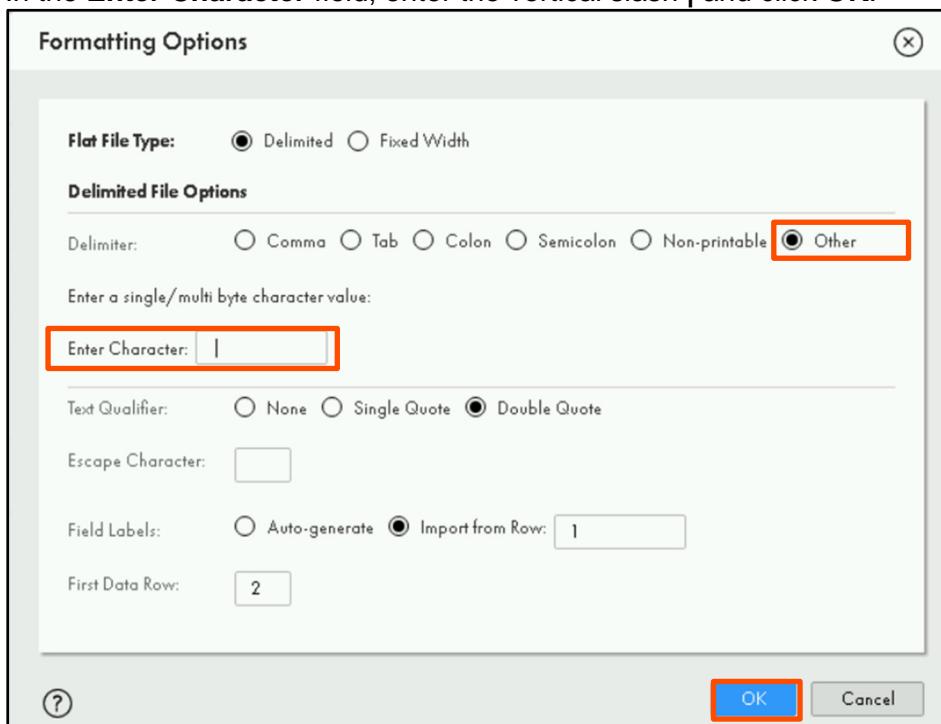


10. From the list, select **product_CURR_DAY_LOAD.txt** and click **OK**.

11. From the Object field, select **Formatting Options**.



12. From the Delimiter field, select the **Other** option.
 13. In the **Enter Character** field, enter the vertical slash | and click **OK**.

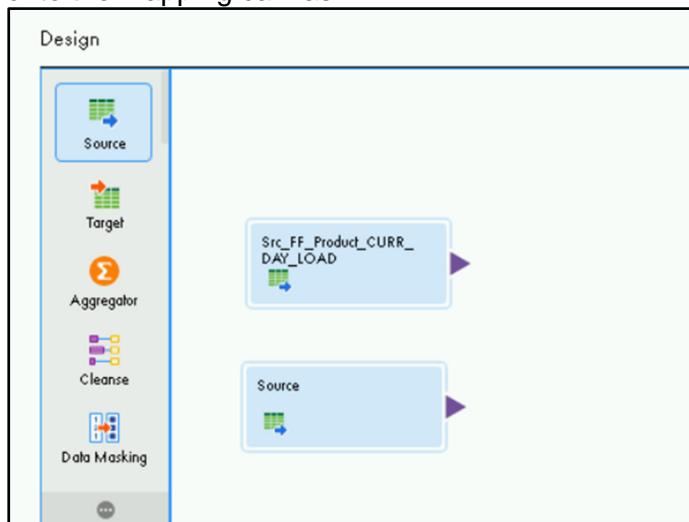


14. From the properties pane, in the **Fields** section, all the fields can be seen.

Fields					
	Name	Type	Precision	Scale	Origin
1	_PRODUCT_ID	string	255	0	product_CURR_DAY_LOAD.csv
2	GROUP_ID	string	255	0	product_CURR_DAY_LOAD.csv
3	PRODUCT_DESC	string	255	0	product_CURR_DAY_LOAD.csv
4	GROUP_DESC	string	255	0	product_CURR_DAY_LOAD.csv
5	DIVISION_DESC	string	255	0	product_CURR_DAY_LOAD.csv

15. Delete the link between the Source and the Target.

16. From the list of available transformations, drag and drop another source transformation onto the mapping canvas.



17. To configure the source, from the mapping canvas, click the **Source** transformation.

18. In the General section of the Source properties, enter the Name as

Src_FF_Product_PREV_DAY_LOAD.

Properties	Preview
General	Name: * <input type="text" value="Src_FF_Product_PREV_DAY_LOAD"/> Description: <input type="text"/>
Source	
Fields	

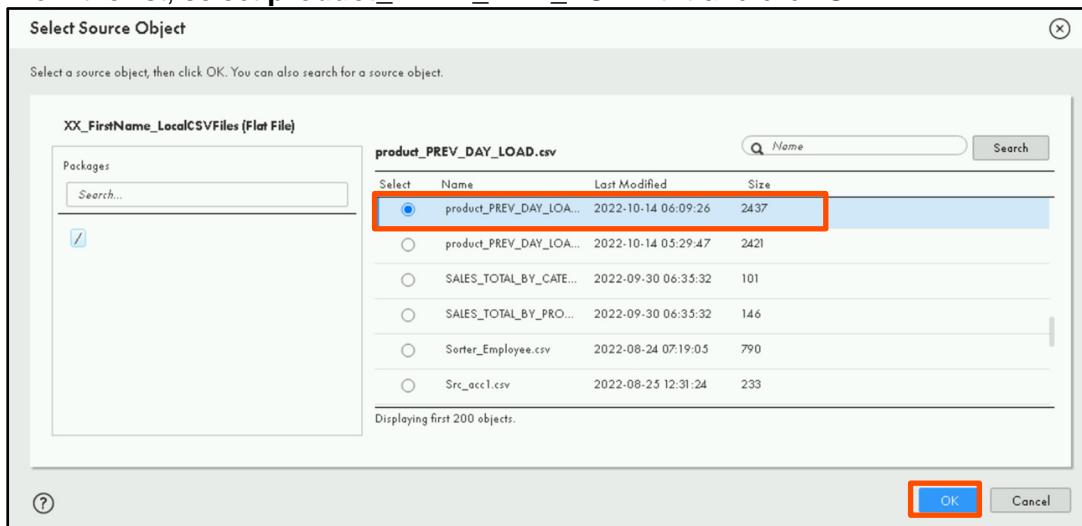
19. From the properties pane, click **Source**.

20. From the Connection drop-down, select **FF_Source**.

21. To select the source object from the Object field, click **Select**.

Fields	Source Type: <input type="button" value="Single Object"/>
Partitions	Object: <input type="text" value="Enter object name or click Select..."/> <input type="button" value="Select..."/> <input type="button" value="Formatting Options..."/> <input type="button" value="Preview Data..."/>

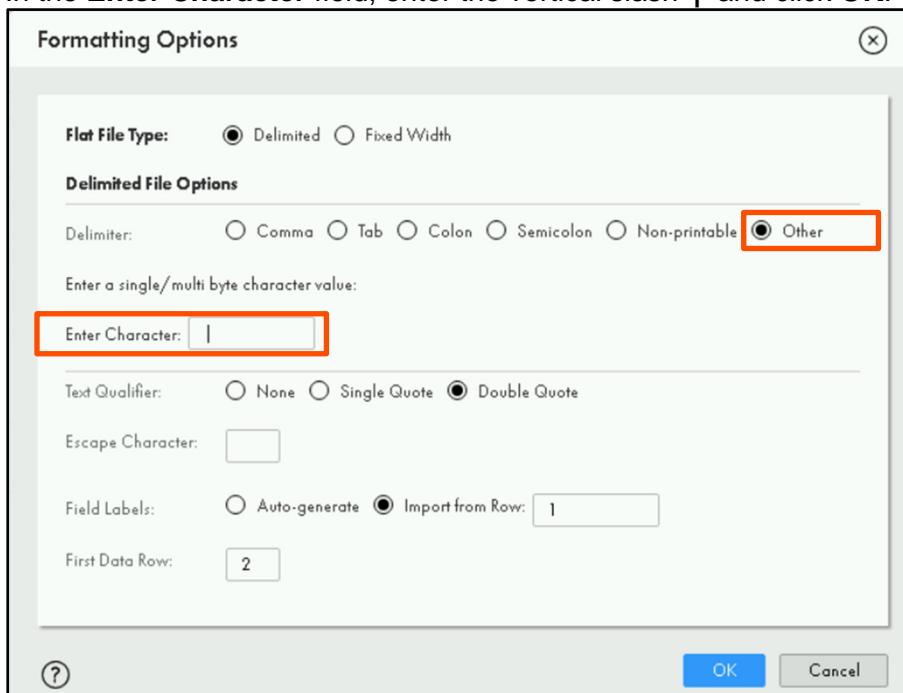
22. From the list, select **product_PREV_DAY_LOAD.txt** and click **OK**.



23. From the Object field, select **Formatting Options**.

24. From the Delimiter field, select the **Other** option.

25. In the **Enter Character** field, enter the vertical slash ' | ' and click **OK**.

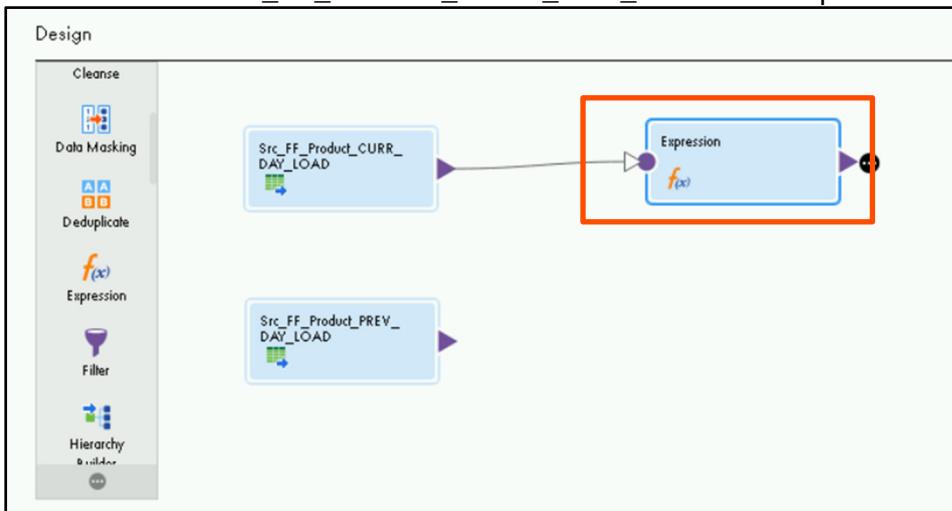


26. From the properties pane, in the **Fields** section, all the fields can be seen.

Fields					
	Name	Type	Precision	Scale	Origin
1	_PRODUCT_ID	string	255	0	product_PREV_DAY_LOAD.csv
2	GROUP_ID	string	255	0	product_PREV_DAY_LOAD.csv
3	PRODUCT_DESC	string	255	0	product_PREV_DAY_LOAD.csv
4	GROUP_DESC	string	255	0	product_PREV_DAY_LOAD.csv
5	DIVISION_DESC	string	255	0	product_PREV_DAY_LOAD.csv

Add Expression Transformation

27. From the list of available transformations, drag and drop the expression transformation onto the mapping canvas.
28. Link the Source **Src_FF_Product_CURR_DAY_LOAD** with expression transformation.

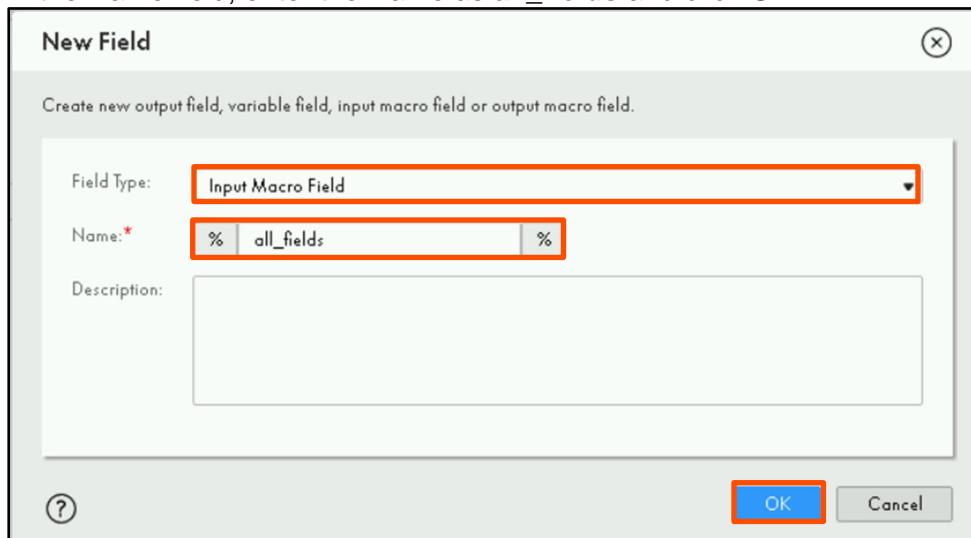


29. Select the expression transformation on the mapping canvas.
30. From the properties pane, in the General field, enter the Name as **exp_cr_MDF_CDL**.

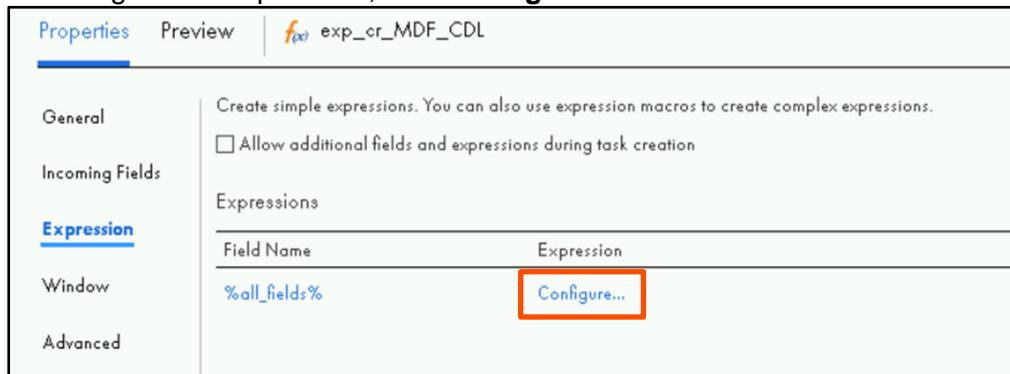


31. From the properties pane, go to the **Expression** Field.
32. To add a new expression, click .
33. From the Field Type drop down, select **Input Macro Field**.

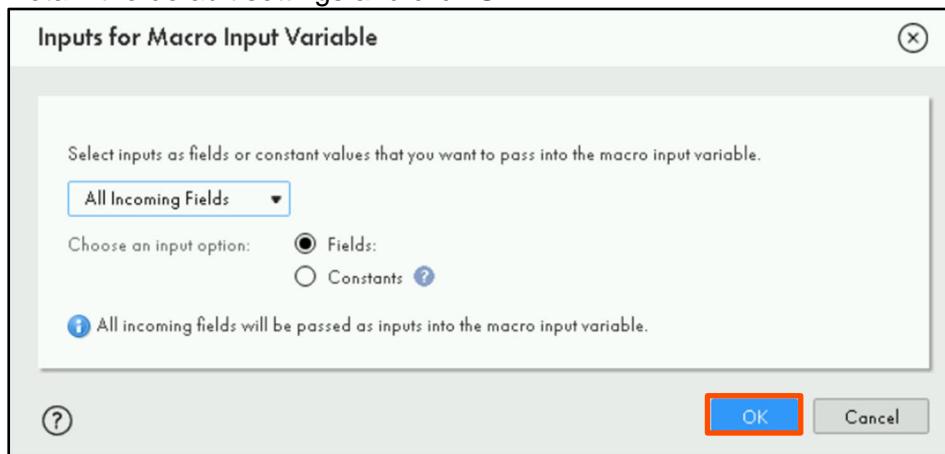
34. In the Name field, enter the Name as **all_fields** and click **OK**.



35. To configure the expression, click **Configure**.



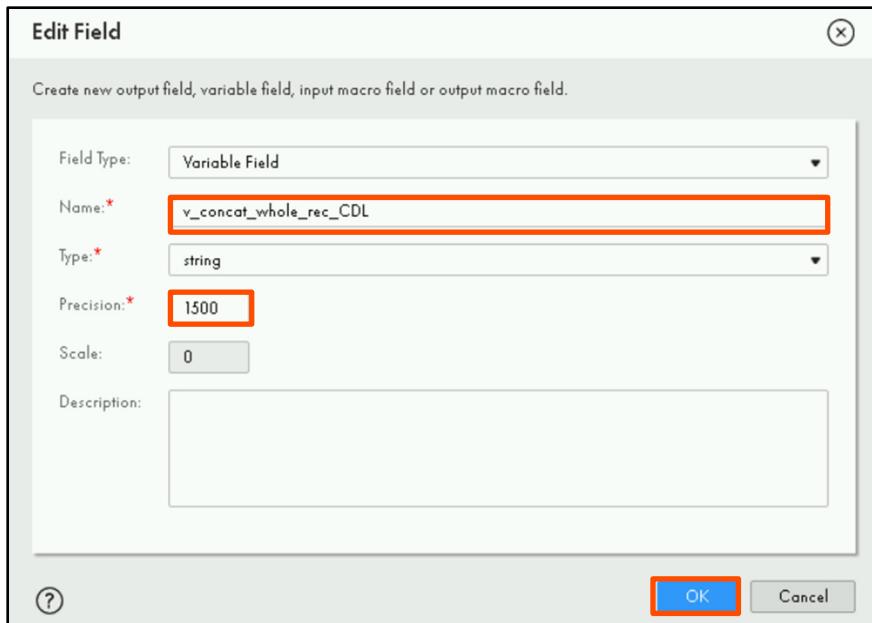
36. Retain the default settings and click **OK**.



37. To add another Expression, click .

38. Enter the condition as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Variable Field	v_concat_whole_rec_CDL	string	1500	0



39. To configure the Expression, click **Configure**.

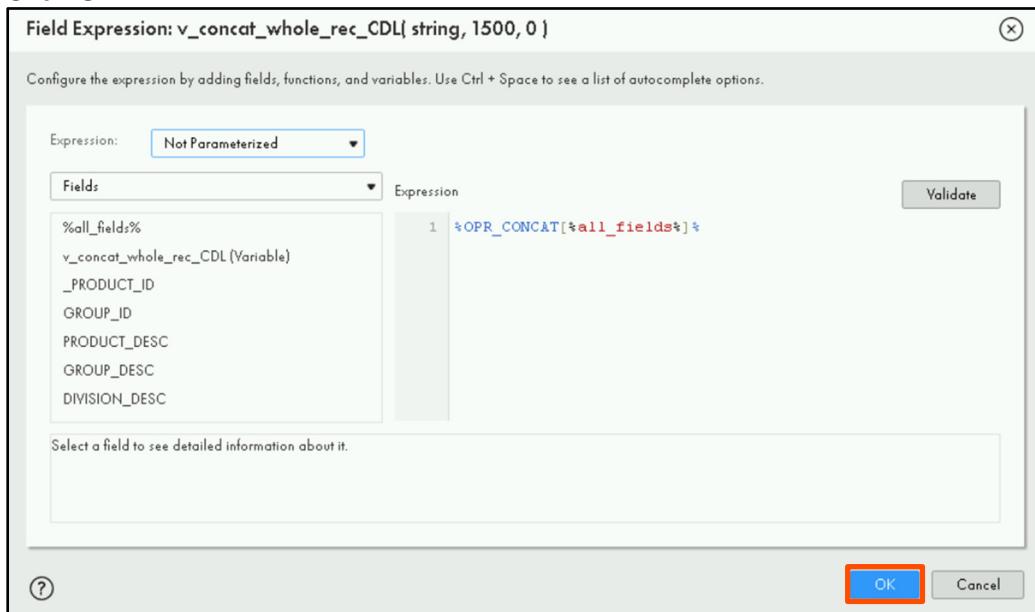


Field Name	Expression
%all_fields%	{"all_fields": "All Ports"}
v_concat_whole_rec_CDL	Configure...

40. Enter the expression as mentioned below:

%OPR_CONCAT[%all_fields%]%

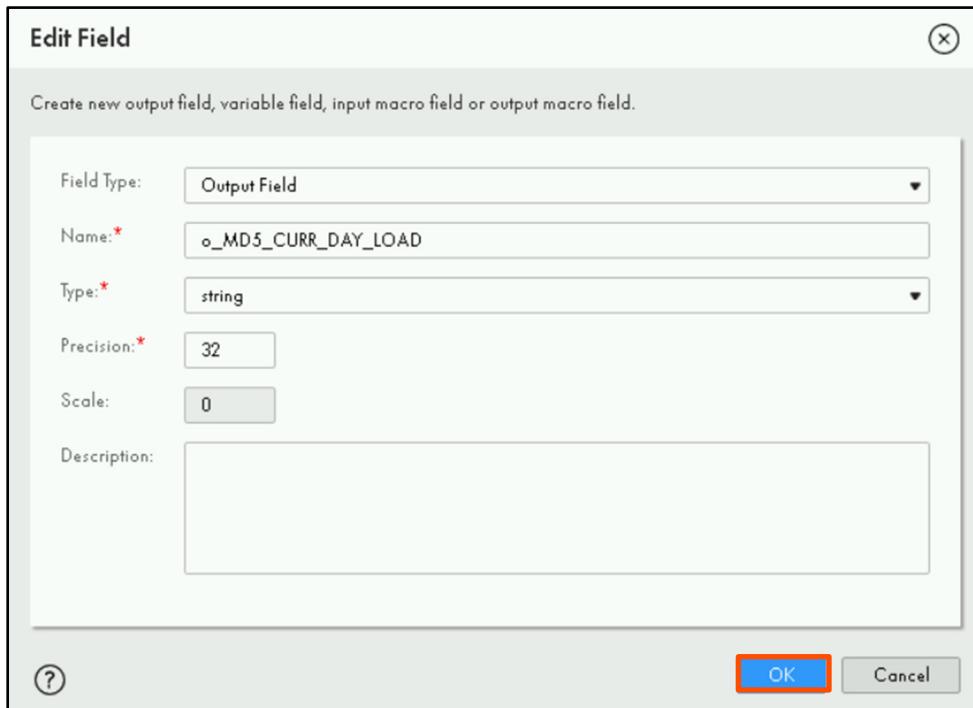
41. Click **OK**.



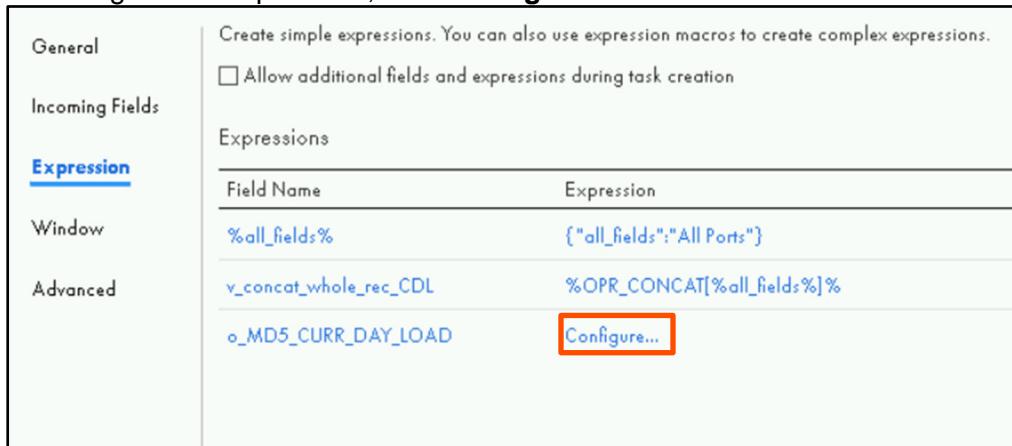
42. To add a new expression, click .

43. Enter the details as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Output Field	o_MD5_CURR_DAY_LOAD	string	32	0



44. To configure the expression, click **Configure**.



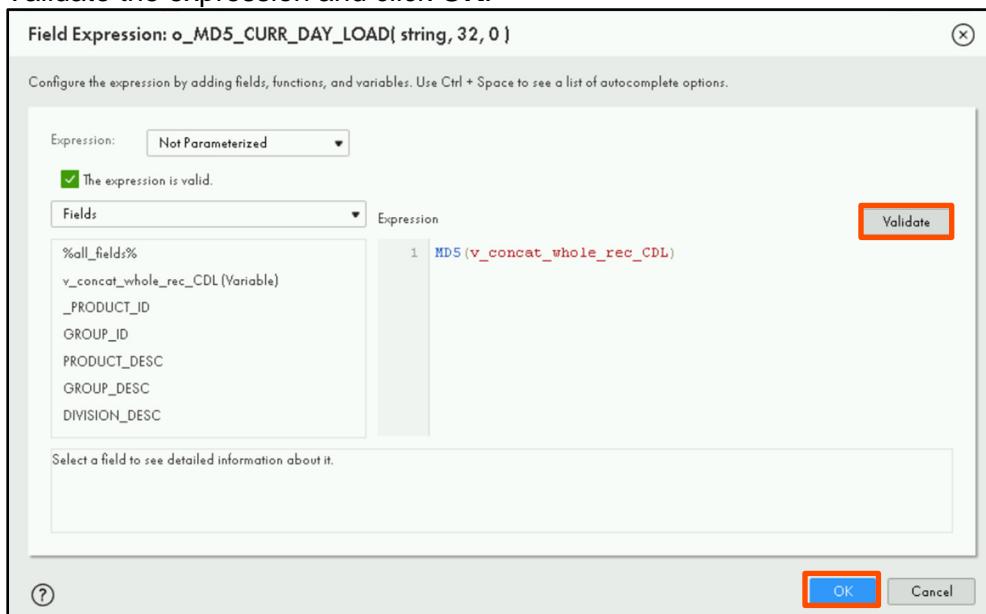
The screenshot shows the 'Expression' tab of a configuration dialog. It includes sections for General, Incoming Fields, Expression, Window, and Advanced. The 'Expression' section contains a table with three rows:

Field Name	Expression
%all_fields%	{"all_fields":"All Ports"}
v_concat_whole_rec_CDL	%OPR_CONCAT[%all_fields%]%
o_MD5_CURR_DAY_LOAD	Configure...

45. In the Expression field, enter the following expression:

MD5(v_concat_whole_rec_CDL)

46. Validate the expression and click **OK**.



The screenshot shows the 'Field Expression' dialog with the expression `MD5(v_concat_whole_rec_CDL)`. The 'Validate' button is highlighted with a red box.

Field Expression: o_MD5_CURR_DAY_LOAD(string, 32, 0)

Configure the expression by adding fields, functions, and variables. Use Ctrl + Space to see a list of autocomplete options.

Expression: Not Parameterized

The expression is valid.

Fields Expression

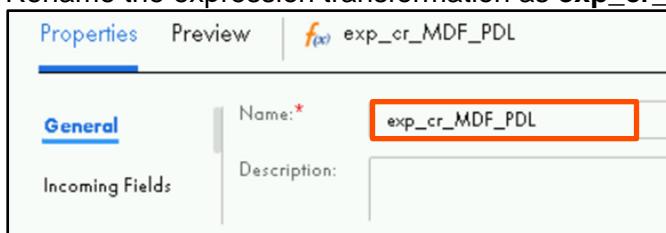
1 MD5 (v_concat_whole_rec_CDL)

Validate

OK Cancel

47. Copy the Expression transformation **exp_cr_MDF_CDL** and Paste it on the mapping canvas (Ctrl-C & Ctrl-V). Link the second source with the new expression transformation (in the Previous Day's load path).

48. Rename the expression transformation as **exp_cr_MDF_PDL**.



The screenshot shows the properties pane for the transformation. The 'General' tab is selected, showing the 'Name' field set to `exp_cr_MDF_PDL`, which is highlighted with a red box.

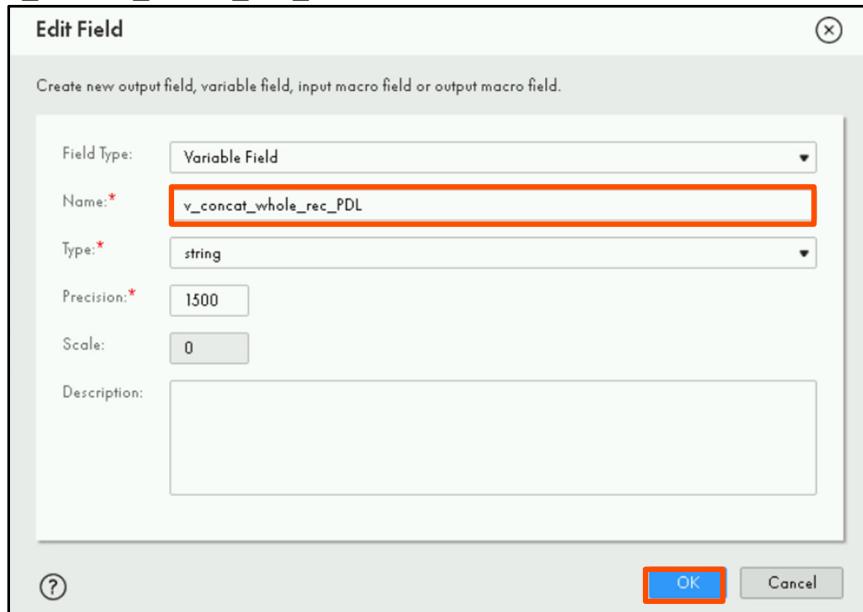
Properties Preview exp_cr_MDF_PDL

General Name: * exp_cr_MDF_PDL

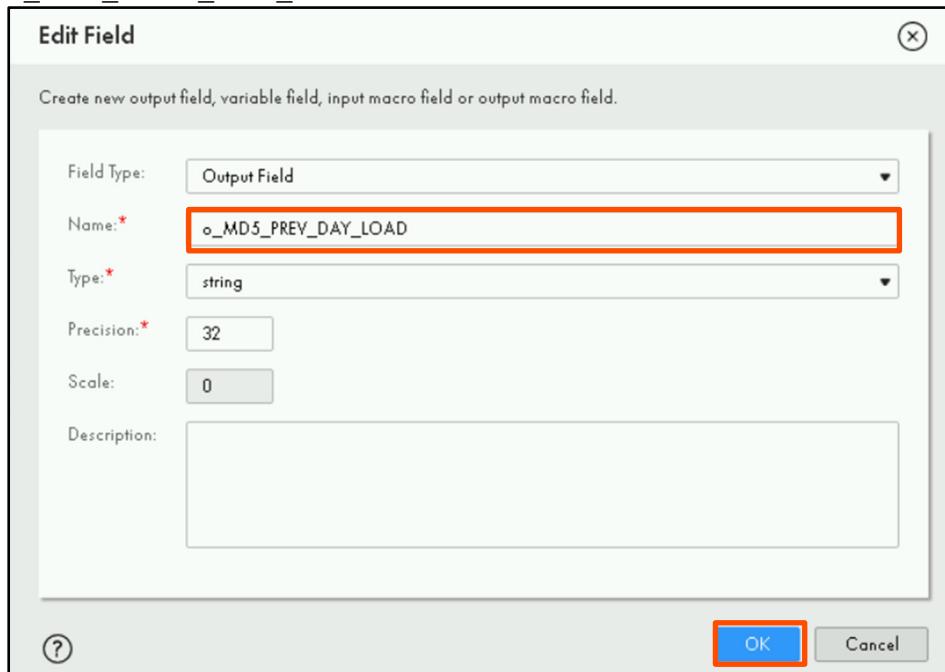
Incoming Fields Description:

49. From the properties pane, click **Expression**.

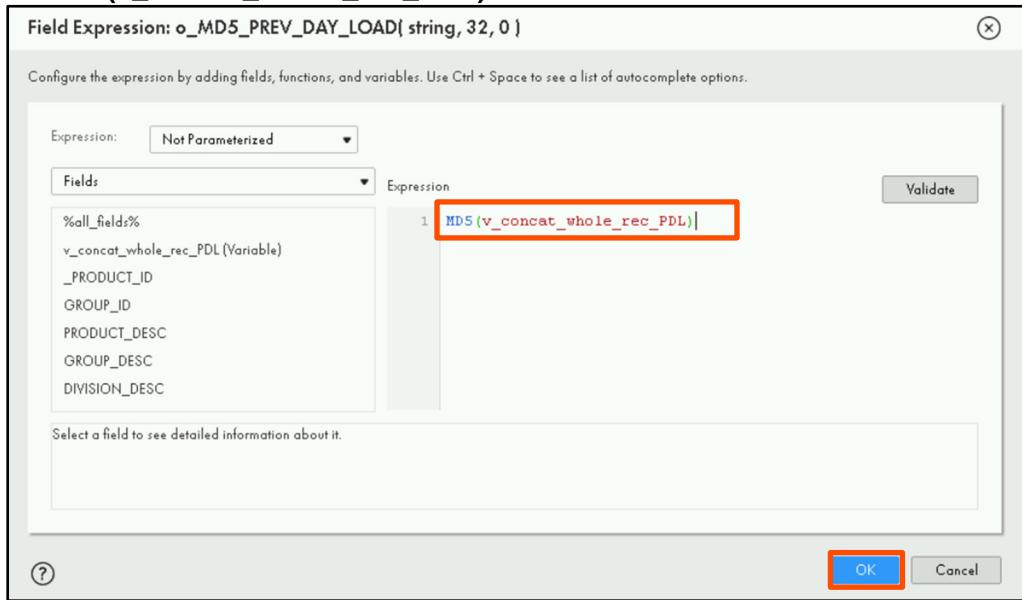
50. Select the Field name **v_concat_whole_rec_CDL** and change it to **v_concat_whole_rec_PDL**.



51. Select the field name **o_MD5_CURR_DAY_LOAD** and Rename the Name field as **o_MD5_PREV_DAY_LOAD**. Click **OK**.

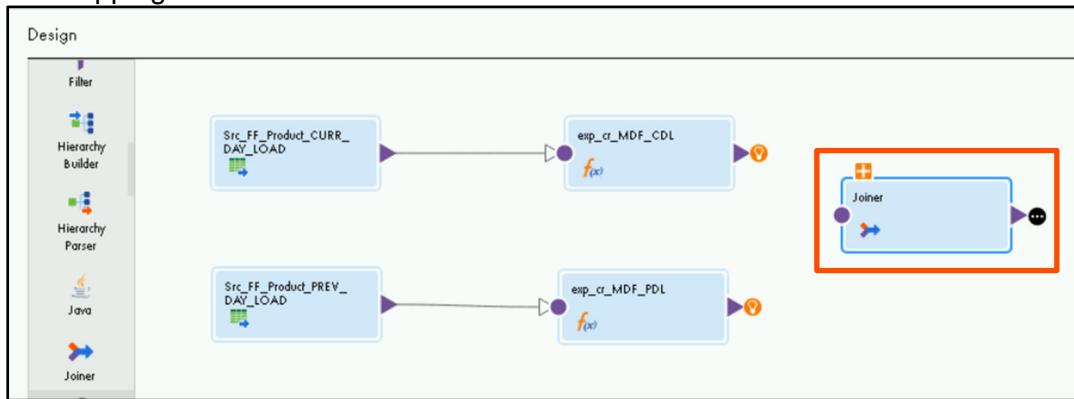


52. Click on the Expression **MD5(v_concat_whole_rec_CDL)** and modify the Expression as **MD5(v_concat_whole_rec_PDL)**.



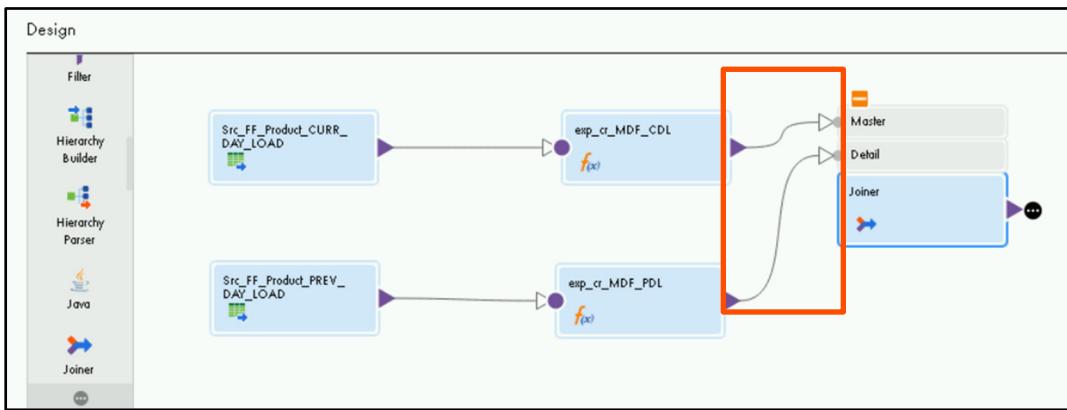
Add Joiner Transformation

53. From the list of available transformations, drag and drop the **Joiner** transformation onto the mapping canvas.



54. Click the **+** on the Joiner transformation.

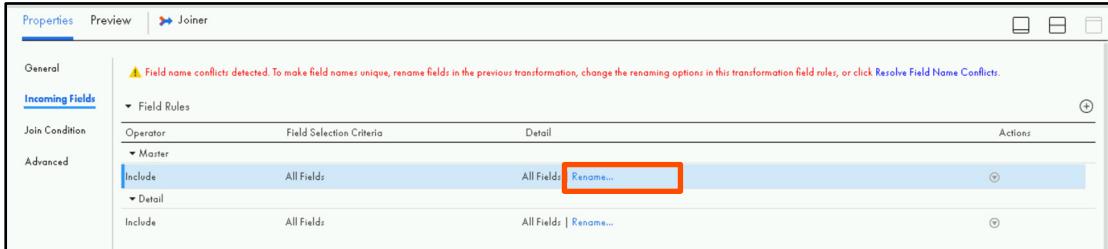
55. Link the **exp_cr_MDF_CDL** with the Master and the **exp_cr_MDF_PDL** with the detail.



56. Select the **Joiner** transformation from the mapping canvas.

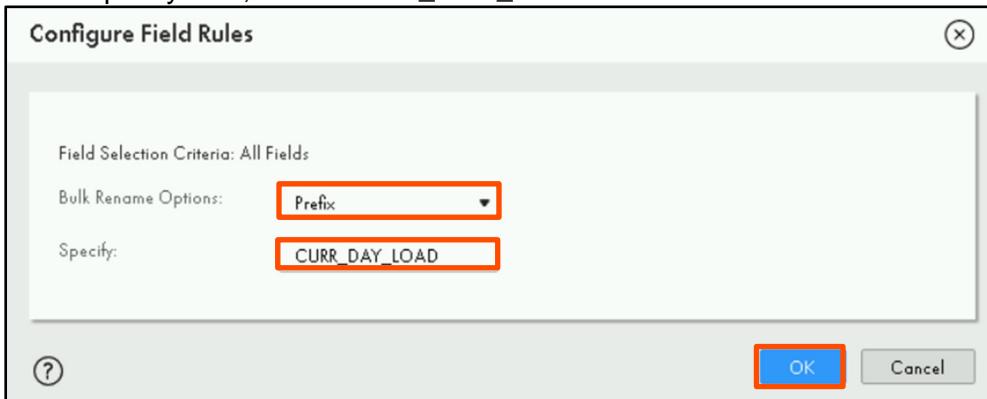
57. From the properties pane, click **Incoming Fields**.

58. If you see the **Field name conflicts detected** warning, from the Details tab in the Master field, select **Rename**.

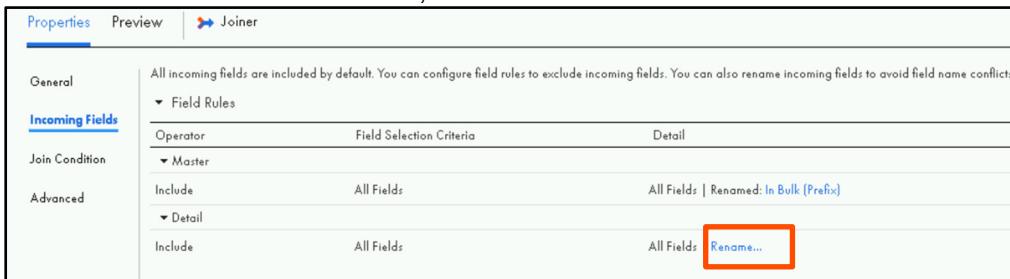


59. In the Configure Field Rules, from the Bulk Rename Options drop down select **Prefix**.

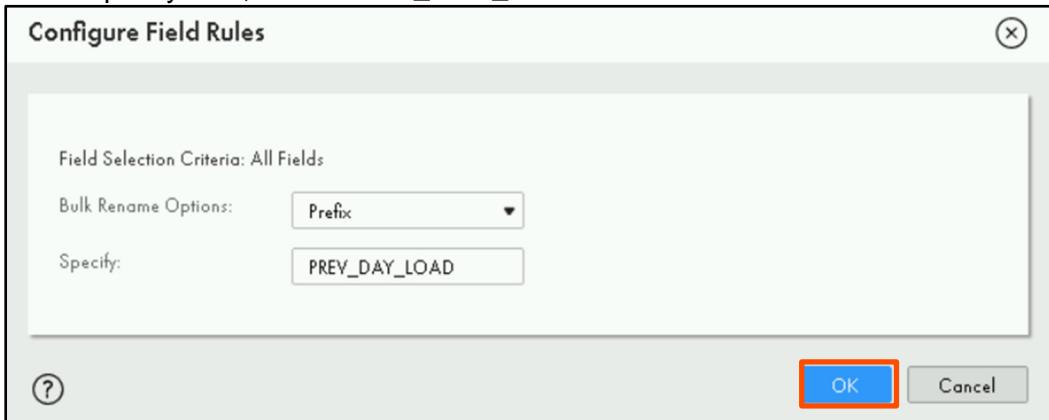
60. In the Specify field, enter **CURR_DAY_LOAD**. Click **OK**.



61. From the other Details tab fields, select **Rename**.



62. In the Configure Field Rules, from the Bulk Rename Options drop down select Prefix.
 63. In the Specify field, enter **PREV_DAY_LOAD**. Click **OK**.

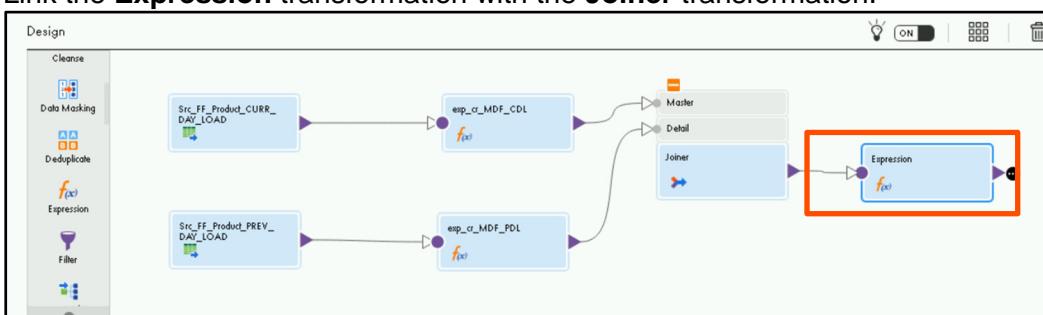


64. From the properties pane, click **Join Condition**.
 65. From the Join Type drop down, select **Full Outer**.
 66. To add the Join condition, click .
 67. Add the join condition as shown in the table below:

Master	Operator	Detail
CURR_DAY_LOAD_PRODUCT_ID	=	PREV_DAY_LOAD_PRODUCT_ID



68. From the list of available transformations, drag and drop another **Expression** transformation on the mapping canvas.
 69. Link the **Expression** transformation with the **Joiner** transformation.



70. Select the **Expression** transformation on the mapping canvas.

71. From the properties pane, in the General section, enter the name as **exp_set_DML_FLAG**.

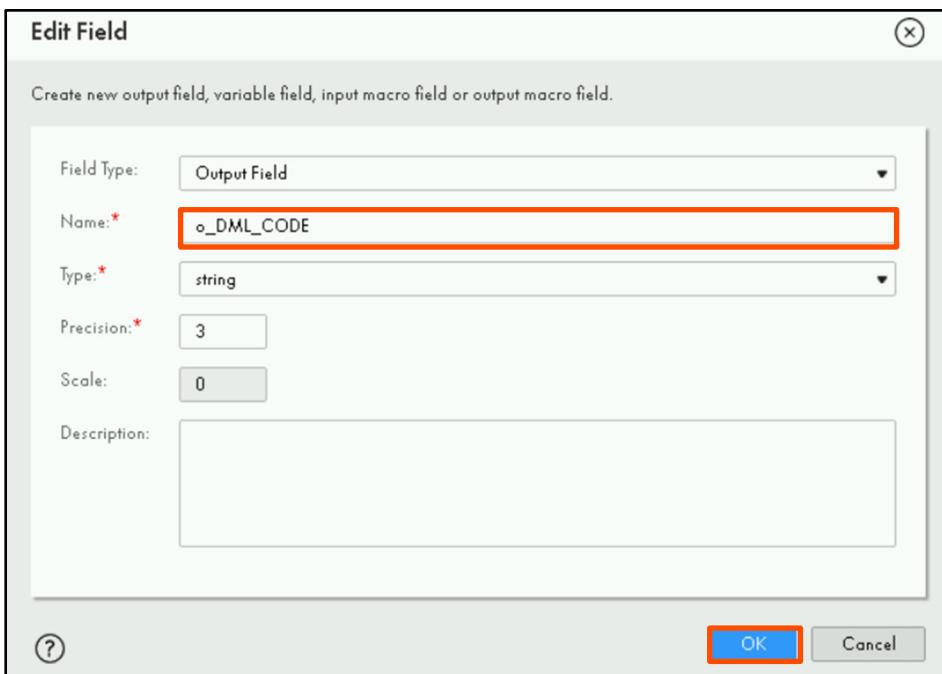


72. From the properties pane, click **Expression**.

73. To add the new expression, click .

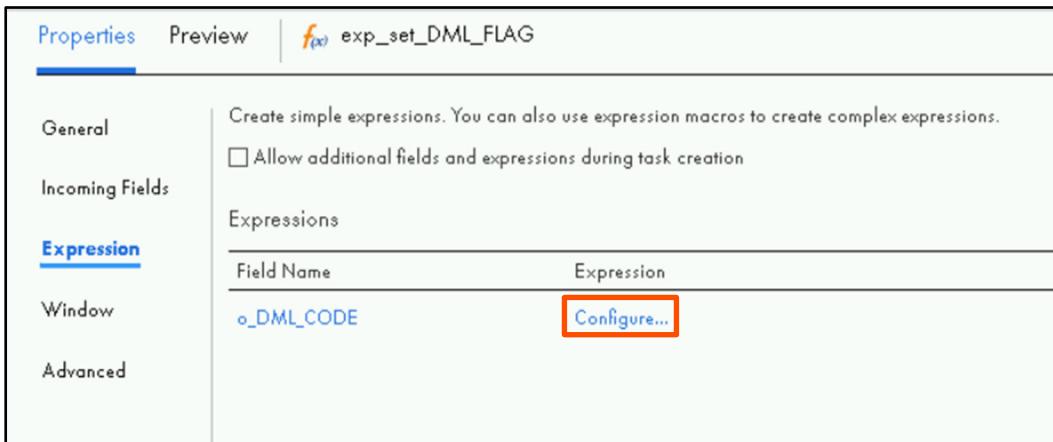
74. Enter the details as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Output Field	o_DML_CODE	string	3	0



The screenshot shows the "Edit Field" dialog box. At the top, it says "Create new output field, variable field, input macro field or output macro field." The "Field Type:" dropdown is set to "Output Field". The "Name:" field contains "o_DML_CODE", which is highlighted with a red box. The "Type:" dropdown is set to "string". The "Precision:" field contains "3". The "Scale:" field contains "0". The "Description:" field is empty. At the bottom, there are "OK" and "Cancel" buttons, with "OK" being highlighted with a red box.

75. To configure the expression, click **Configure**.



Field Name	Expression
<code>o_DML_CODE</code>	Configure...

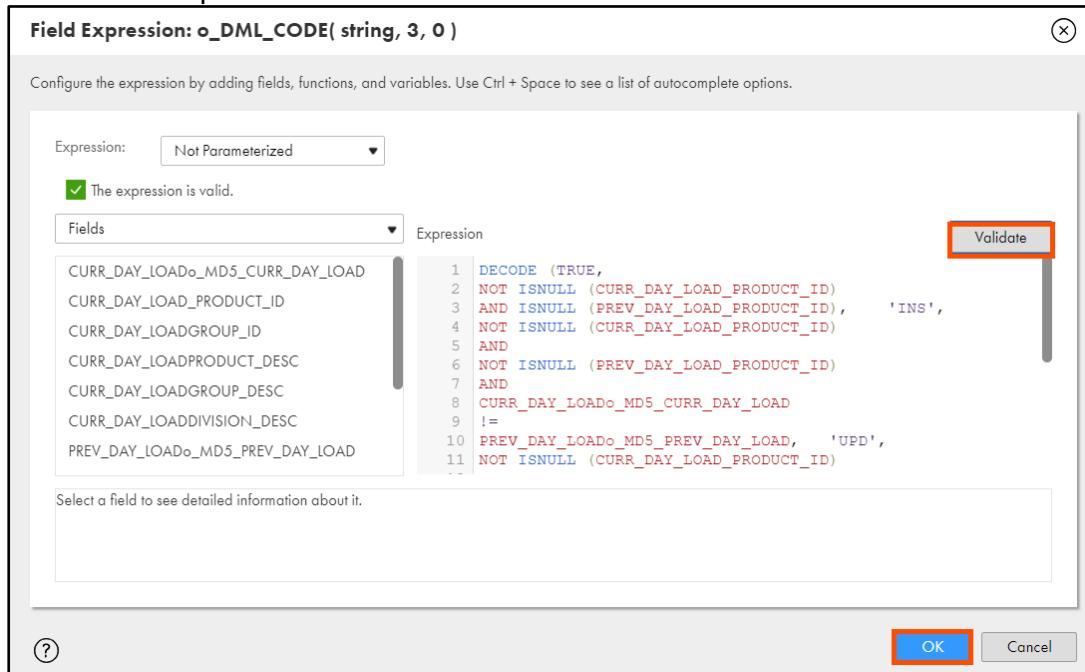
76. In the Expression field, enter the following expression:

```

DECODE (TRUE,
NOT ISNULL (CURR_DAY_LOAD_PRODUCT_ID)
AND ISNULL (PREV_DAY_LOAD_PRODUCT_ID), 'INS',
NOT ISNULL (CURR_DAY_LOAD_PRODUCT_ID)
AND
NOT ISNULL (PREV_DAY_LOAD_PRODUCT_ID)
AND
CURR_DAY_LOADDo_MD5_CURR_DAY_LOAD
!=
PREV_DAY_LOADDo_MD5_PREV_DAY_LOAD, 'UPD',
NOT ISNULL (CURR_DAY_LOAD_PRODUCT_ID)
AND
NOT ISNULL (PREV_DAY_LOAD_PRODUCT_ID)
AND
CURR_DAY_LOADDo_MD5_CURR_DAY_LOAD
=
PREV_DAY_LOADDo_MD5_PREV_DAY_LOAD, 'DUP',
ISNULL (CURR_DAY_LOAD_PRODUCT_ID)
AND
NOT ISNULL (PREV_DAY_LOAD_PRODUCT_ID), 'DEL',
'REJ'
)

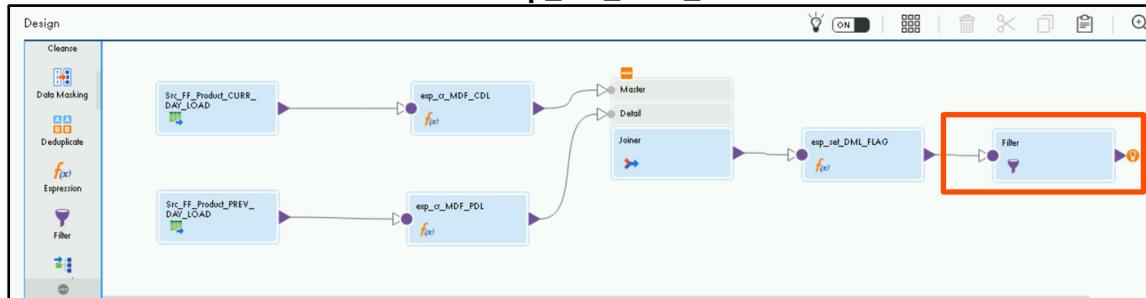
```

77. Validate the expression and click **OK**.



78. From the list of available transformations, drag and drop **Filter** transformation on the mapping canvas.

79. Link the Filter transformation with the **exp_set_DML_FLAG**.



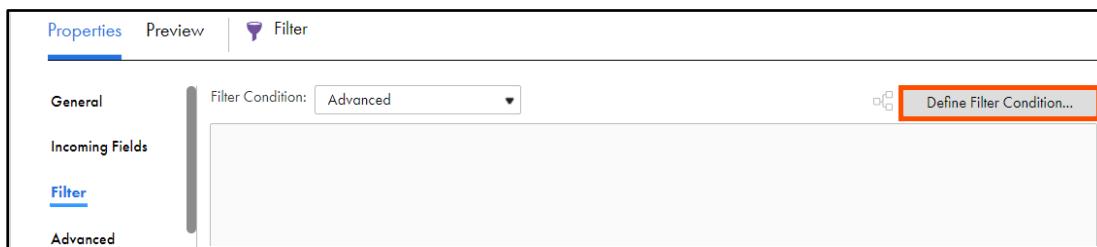
80. From the properties pane, in the General section, retain the name as **Filter**.

81. From the properties pane, click **Filter**.

82. From the Filter Condition drop down, select **Advanced**.

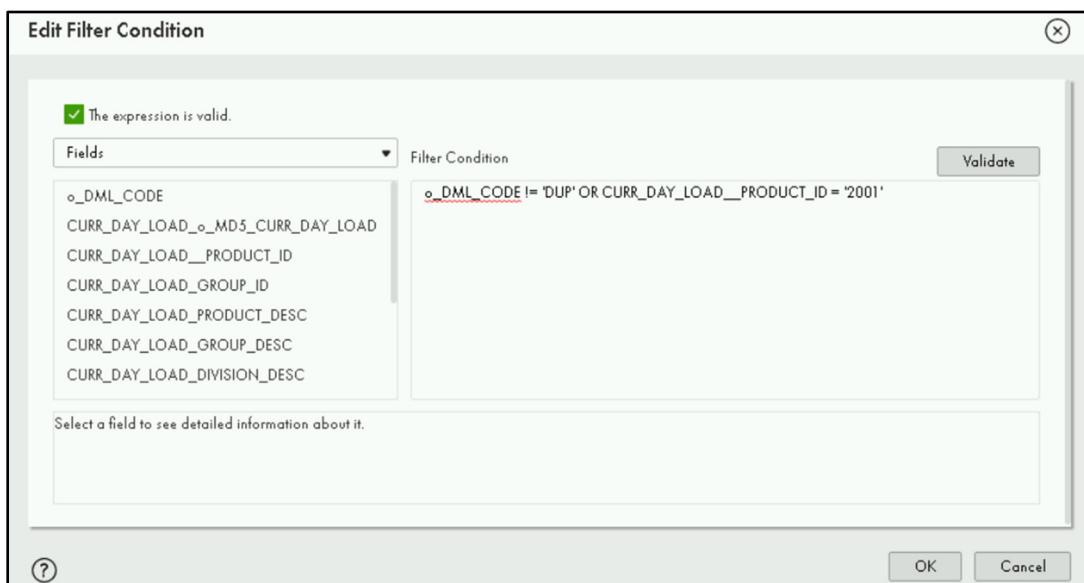


83. Click on **Define Filter Condition**.



84. In the Filter Condition window, enter the following filter condition and click **OK**.

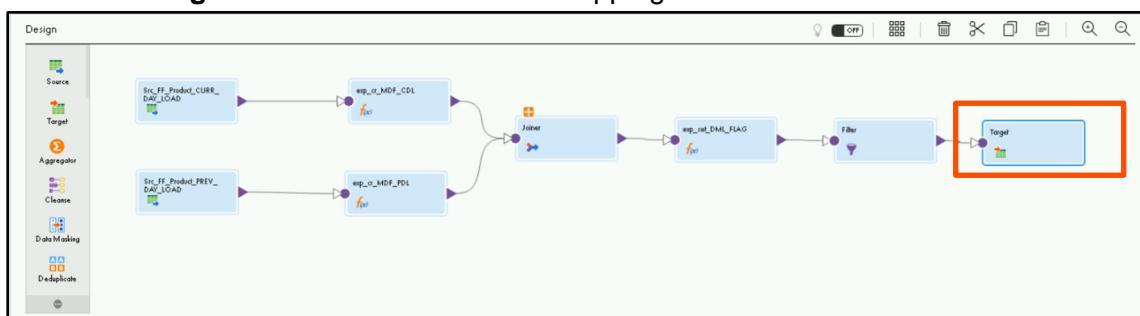
o_DML_CODE != 'DUP' OR CURR_DAY_LOAD_PRODUCT_ID = '2001'



Configure Target Transformation

85. Link the **Filter** with the Target transformation.

86. Select the **Target** transformation from the mapping canvas.



87. From the properties pane, in the General section retain the name as **Target**.

88. From the properties pane, click **Target**.

89. From the Connection drop-down, select **your target flat file** connection.

90. From the Object Field, Click **Select**.

91. From the Target Object, select **Create New at Runtime**.
92. In the Static File Name, enter the name as **m_XX_FOJ_DML_CHECK.csv**. Click **OK**.
93. Save and run the mapping.
94. From the Runtime Environment drop-down, select **INFA-SERVER** and click **Run**.

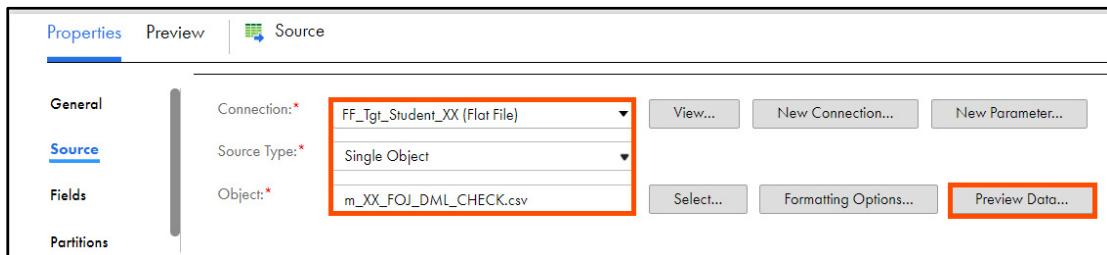
Monitor Status

95. Monitor the task status from the **My Jobs** page.
96. When the task completes, the status changes to **Success**.

Jobs (257)						
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
m_XX_Full_outer_join_1	CDI<Month><Date...		Jul 30, 2023, 12:28 PM	Jul 30, 2023, 12:...	4	 Success

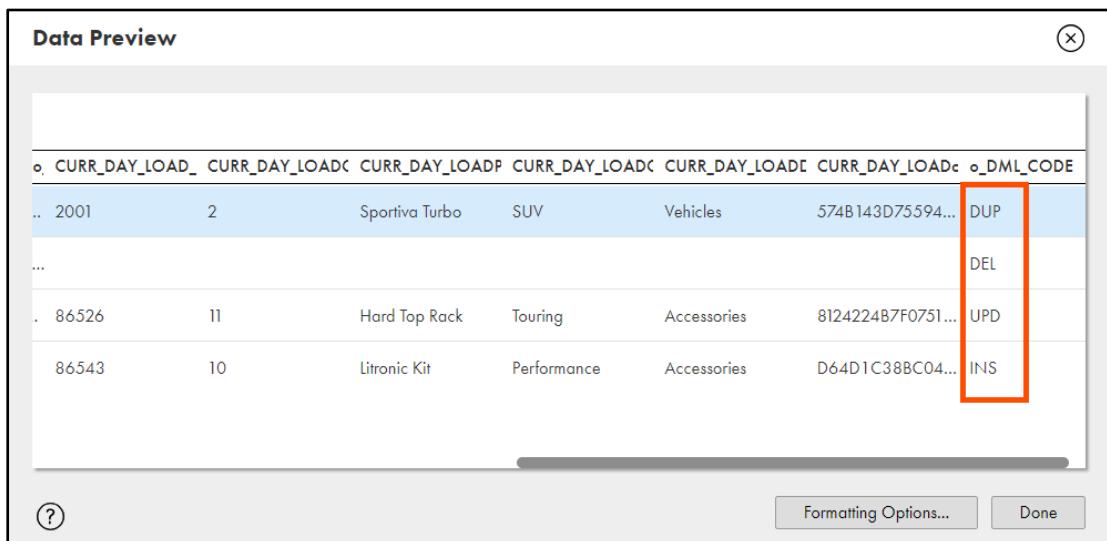
Optional - Open the Dummy Mapping and View the Data

97. Change the Source connection and object details in your dummy mapping and preview the data.



The screenshot shows the 'Source' tab of the Properties dialog. Under 'General', the 'Connection:' dropdown is set to 'FF_Tgt_Student_XX (Flat File)'. Under 'Source', the 'Source Type:' dropdown is set to 'Single Object' and the 'Object:' dropdown is set to 'm_XX_FOJ_DML_CHECK.csv'. A red box highlights the 'Object:' dropdown. On the right side, there are buttons for 'View...', 'New Connection...', 'New Parameter...', 'Select...', 'Formatting Options...', and 'Preview Data...'. The 'Preview Data...' button is also highlighted with a red box.

There are Results for Duplicate, Delete, Update, and Insert Records.



The screenshot shows the 'Data Preview' window. It displays a table with columns: Curr_Day_Load, Curr_Day_LoadC, Curr_Day_LoadP, Curr_Day_LoadD, Curr_Day_LoadE, Curr_Day_LoadS, and o_DML_CODE. The table contains several rows, each with a status column on the right labeled 'DUP', 'DEL', 'UPD', or 'INS'. A red box highlights the status column. At the bottom, there are buttons for 'Formatting Options...' and 'Done'.

Curr_Day_Load	Curr_Day_LoadC	Curr_Day_LoadP	Curr_Day_LoadD	Curr_Day_LoadE	Curr_Day_LoadS	o_DML_CODE
2001	2	Sportiva Turbo	SUV	Vehicles	574B143D75594...	DUP
...						DEL
86526	11	Hard Top Rack	Touring	Accessories	8124224B7F0751...	UPD
86543	10	Litronic Kit	Performance	Accessories	D64D1C38BC04...	INS

98. Save and close all the assets in the navigation pane.

This concludes the lab.

Module 8: Mapplets

Lab 8-1: Using Maplet Transformation in a Mapping

Overview:

In IICS, Maplet transformation inserts a maplet created in Data Integration, imported from PowerCenter, or generated from an SAP asset into a mapping. A maplet can encapsulate two or more transformations.

In this lab, you will create a Maplet and use the created Maplet in a mapping.

Objective:

- Create a Maplet
- Use Maplet Transformation in a mapping

Scenario:

Ruby asks John if he can help her in automating the process of maintaining a list of product names, IDs, and costs for every product that every outlet of NH Retail offers. John informs Ruby that he can use the Mapplets features of IICS to create a set of transformations that he can use in multiple mappings to calculate the product-wise cost.

In this lab, John will create a maplet to read product details as input. He will use the expression transformation in the maplet to calculate the cost and pass it as the output to the maplet. He will also use this maplet in mapping.

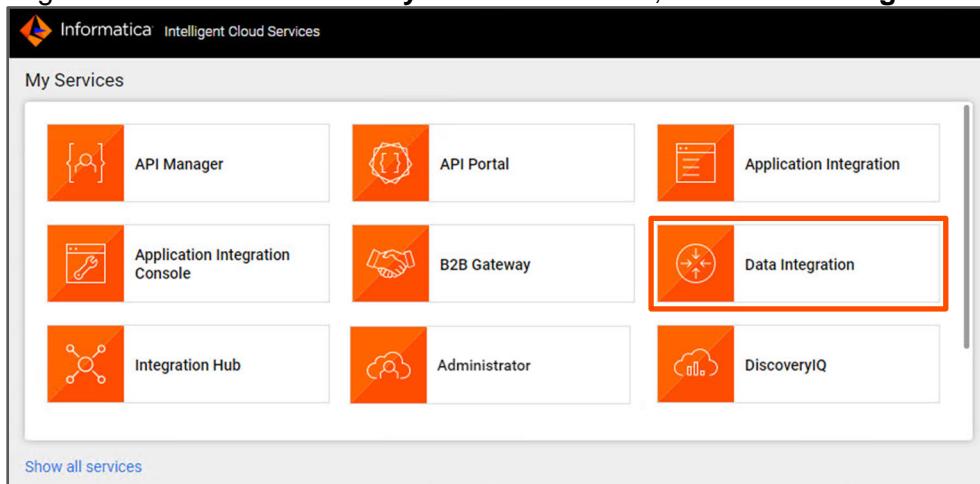
Duration:

20 minutes

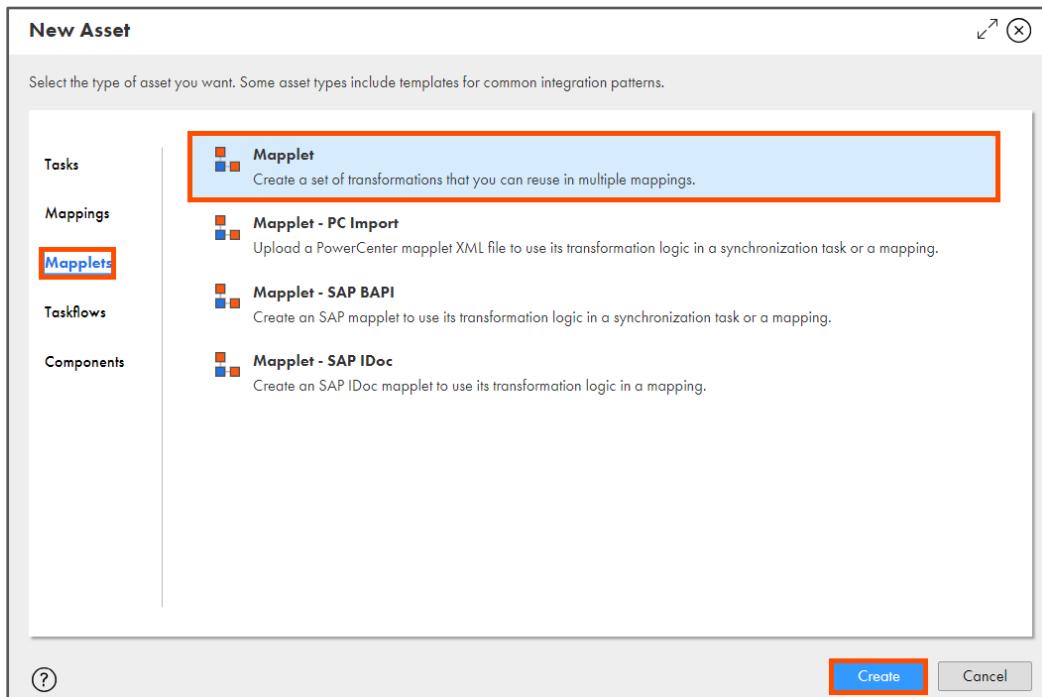
Tasks

Create Maplet

1. Login into IICS and from the **My Services** window, select **Data Integration**.

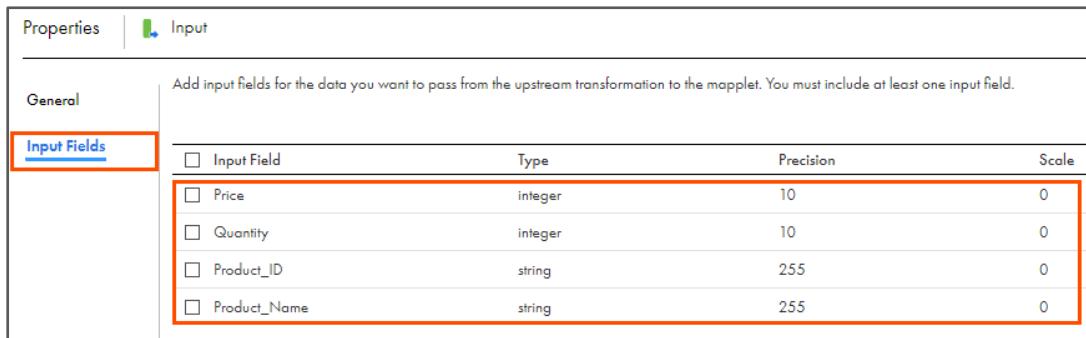


2. From the navigation pane, select **New**.
3. From the New Asset window, click the **Mapplets** tab, and select **Mapplet**.
4. Click **Create**.



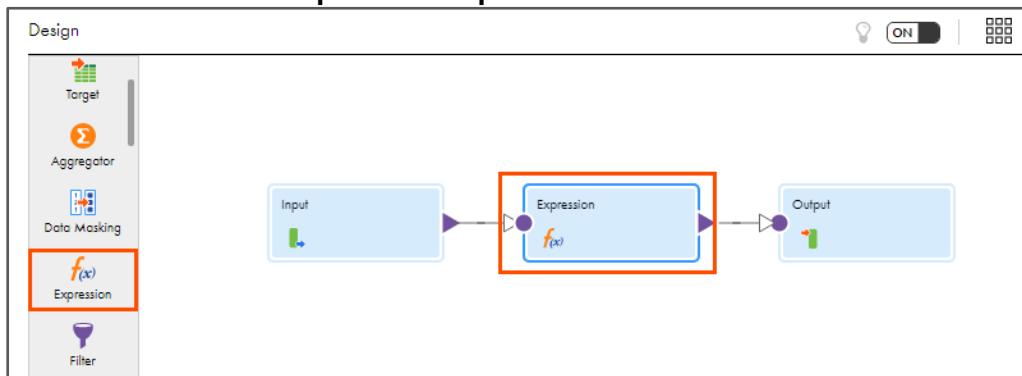
5. In the Name field, enter **mplt_XX_Mapplet**.
6. To configure the Input, from the mapplet canvas, click the **Input** transformation.
7. From the properties pane, click **Input Fields**.
8. To add input fields, click .
9. Define the input fields, as shown in the table below:

Name	Type	Precision	Scale
Price	integer	10	0
Quantity	integer	10	0
Product_ID	string	255	0
Product_Name	string	255	0



Input Field	Type	Precision	Scale
Price	integer	10	0
Quantity	integer	10	0
Product_ID	string	255	0
Product_Name	string	255	0

10. From the list of available transformations, drag and drop an **Expression** transformation onto the link between **Input** and **Output**.



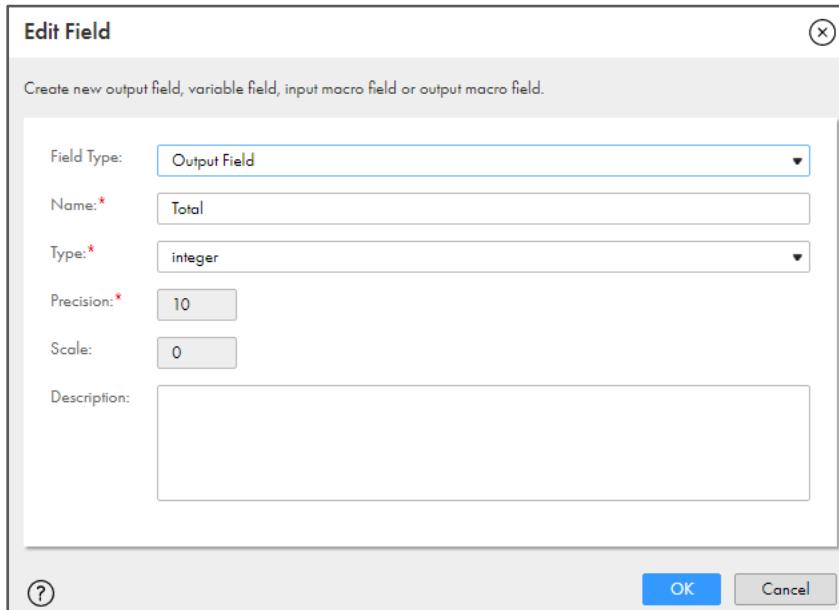
11. Select the **Expression** transformation from the mapplet canvas.

12. From the properties pane, click **Expression**.

13. To add a new expression, click .

14. Enter the details as shown in the table below and click **OK**.

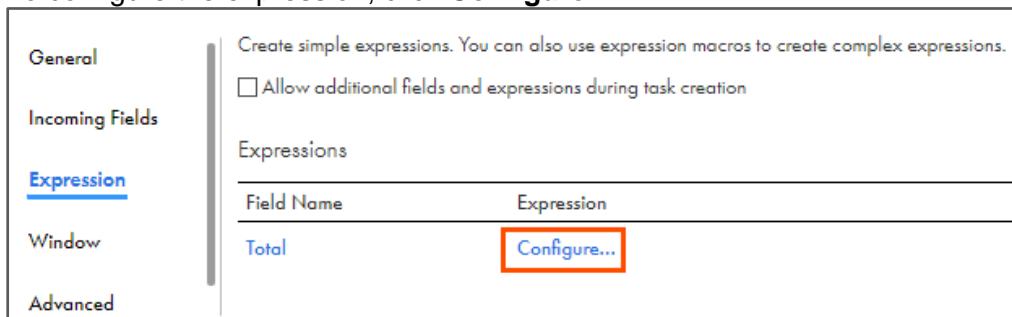
Field Type	Name	Type	Precision	Scale
Output Field	Total	integer	10	0



The screenshot shows the 'Edit Field' dialog box. It has fields for Name (Total), Type (integer), Precision (10), and Scale (0). The 'Field Type' dropdown is set to 'Output Field'. There is also a 'Description' text area and 'OK' and 'Cancel' buttons at the bottom.

Field Type:	Output Field
Name:*	Total
Type:*	integer
Precision:*	10
Scale:	0
Description:	(empty)
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

15. To configure the expression, click **Configure**.

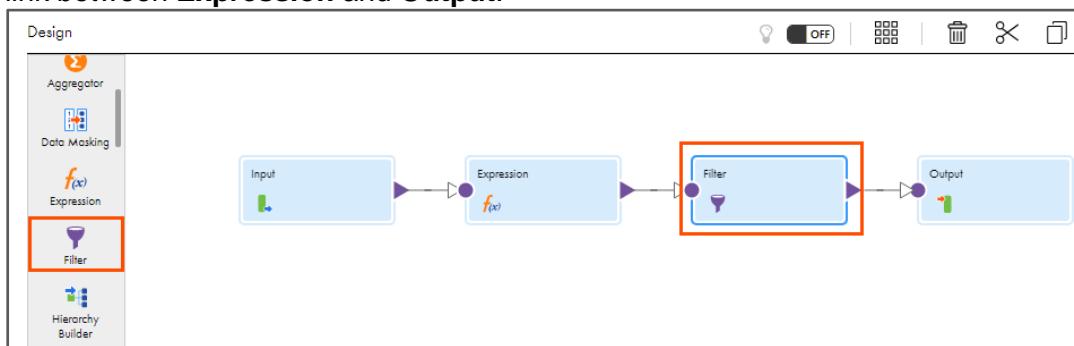


16. In the Expression field, copy and paste the following expression:

Price*Quantity

17. Click **OK**.

18. From the list of available transformations, drag and drop a **Filter** transformation on the link between **Expression** and **Output**.



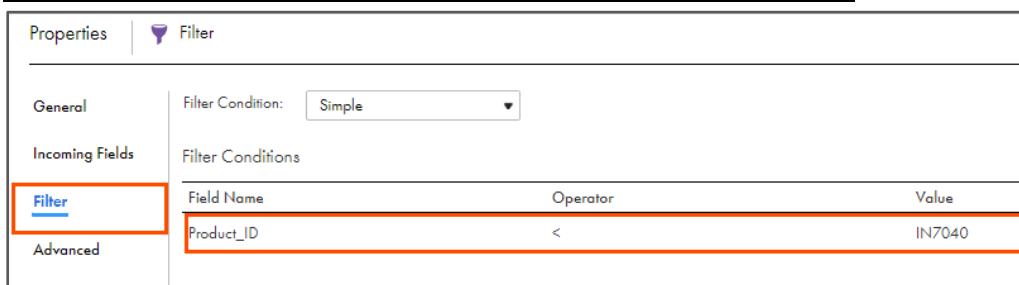
19. Select the **Filter** transformation from the mapplet canvas.

20. From the properties pane, select **Filter**.

21. To add filter condition, click .

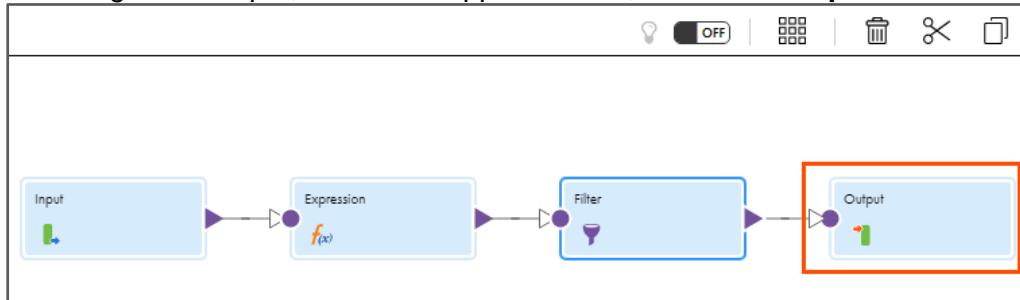
22. Define the filter as shown in the table below:

Field Name	Operator	Value
Product_ID	< (Less Than)	IN7040



Field Name	Operator	Value
Product_ID	< (Less Than)	IN7040

23. To configure the Input, from the mapplet canvas, select the **Output** transformation.

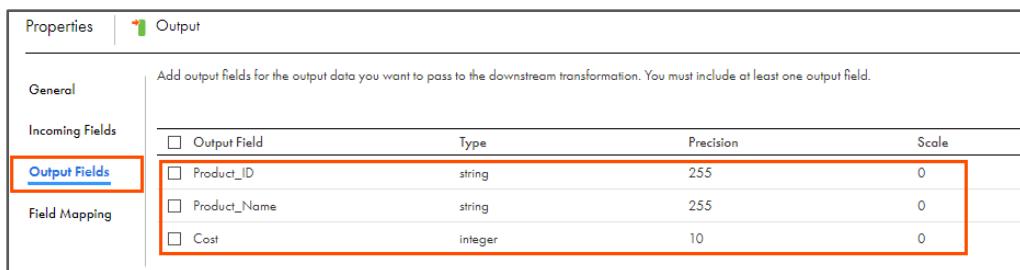


24. From the properties pane, select **Output Fields**.

25. To add output fields, click .

26. Define the output fields as shown in the table below:

Name	Type	Precision	Scale
Product_ID	string	255	0
Product_Name	string	255	0
Cost	Integer	10	0



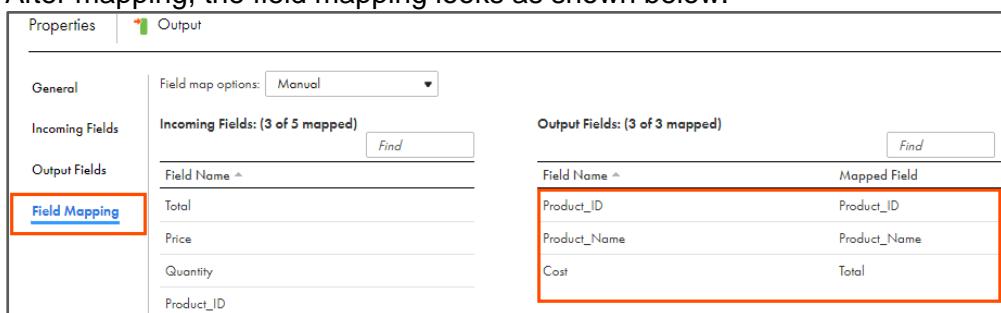
Output Field	Type	Precision	Scale
Product_ID	string	255	0
Product_Name	string	255	0
Cost	integer	10	0

27. From the properties pane, select **Field Mapping**.

28. Match the fields as shown in the table below:

Incoming Field	Target Field
Product_ID	Product_ID
Product_Name	Product_Name
Total	Cost

After mapping, the field mapping looks as shown below:

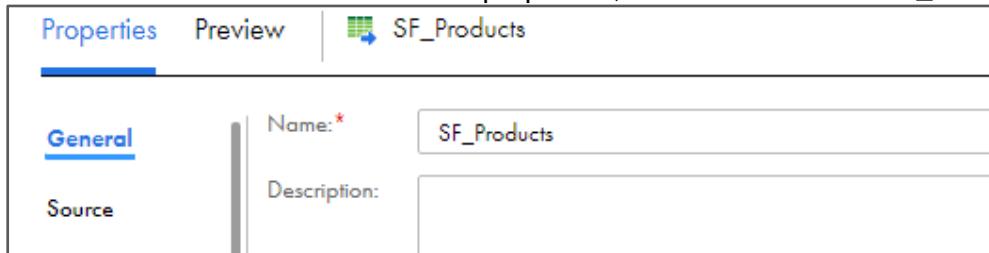


Field Name	Mapped Field
Product_ID	Product_ID
Product_Name	Product_Name
Cost	Total

29. Save the mapplet.

Create Mapping

30. From the Data Integration service, create a new **Mapping**.
31. In the Name field, enter **m_XX_MappletTransformation**.
32. To configure the source, from the mapping canvas, click the **Source** transformation.
33. In the General section of the Source properties, enter the Name as **SF_Products**.

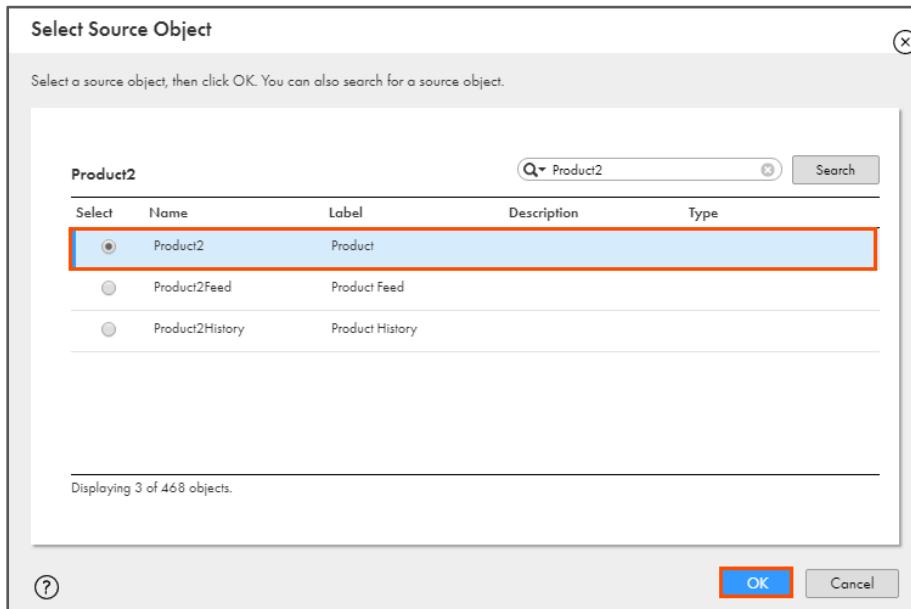


34. From the properties pane, click **Source**.
35. From the Connection drop-down, select your **Salesforce** connection (present in the format **XX_FirstName_SFDCDeveloper**).
36. To select the source object from the Object field, click **Select**.

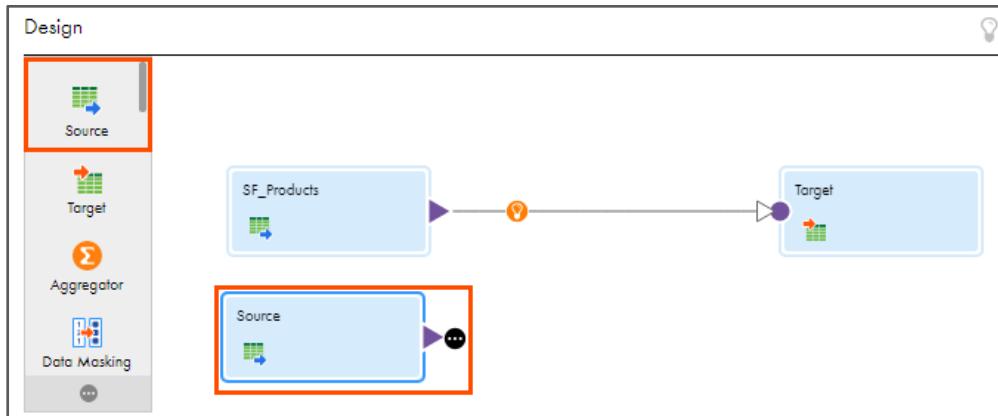


37. From the list, select **Product2**.
- Note:** You can use the search option to locate the object.

38. Click **OK**.



39. From the list of available transformations, drag and drop another **Source** transformation on the mapping canvas.



40. Select the newly added transformation from the mapping canvas.

41. In the General section of the Source properties, enter the Name as **FF_Product**.



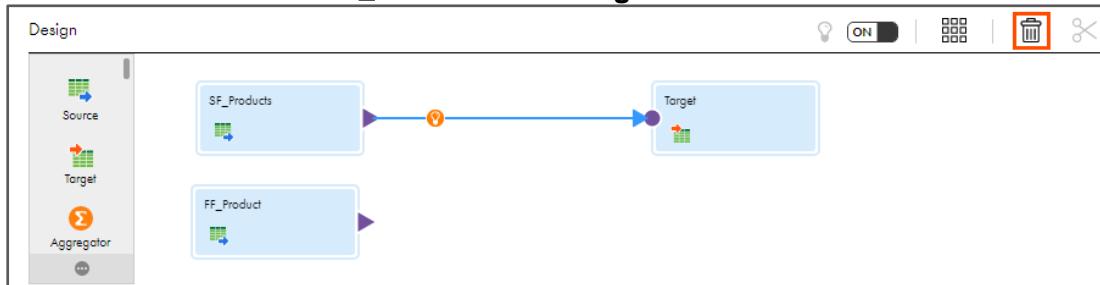
42. From the properties pane, click **Source**.

43. From the Connection drop-down, select **FF_Source**.

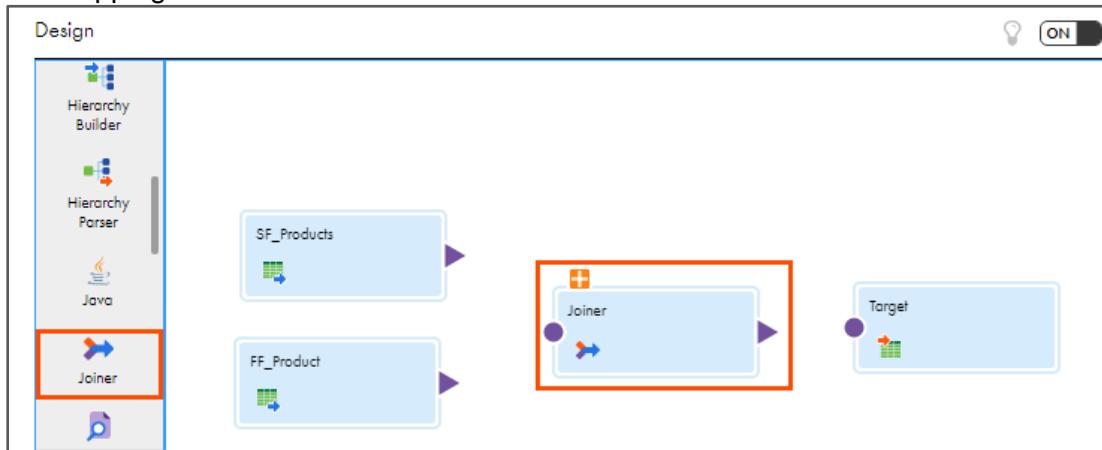
44. In the Object field, select **Product_List.csv**.



45. Delete the link between **SF_Products** and **Target**.

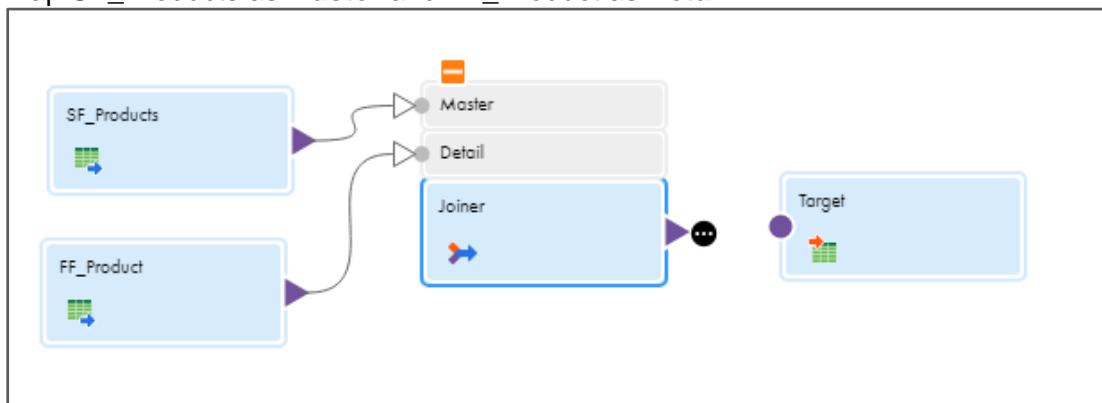


46. From the list of available transformations, drag and drop a **Joiner** transformation onto the mapping canvas.



47. Select the Joiner transformation and click .

48. Map SF_Products as **Master** and FF_Product as **Detail**.

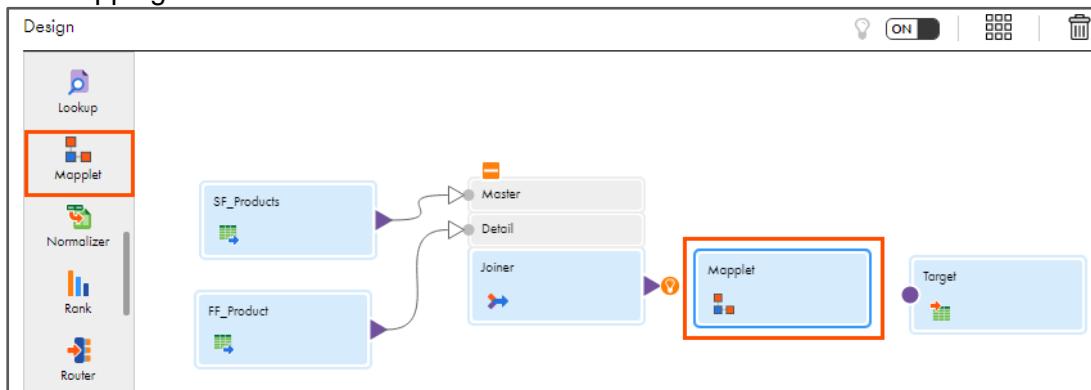


49. From the properties pane, click **Join Condition**.

50. Add the condition as shown in the table below:

Master	Operator	Detail						
ProductCode	= (Equals)	Product_ID						
General Incoming Fields Join Condition Advanced	Join Type: Normal Join Condition: Simple Join Conditions <table border="1"> <thead> <tr> <th>Master</th><th>Operator</th><th>Detail</th></tr> </thead> <tbody> <tr> <td>ProductCode</td><td>=</td><td>Product_ID</td></tr> </tbody> </table>	Master	Operator	Detail	ProductCode	=	Product_ID	Master: SF_Products Detail: FF_Product
Master	Operator	Detail						
ProductCode	=	Product_ID						

51. From the list of available transformations, drag and drop a **Mapplet** transformation onto the mapping canvas.



52. From the properties pane, select **Mapplet**.

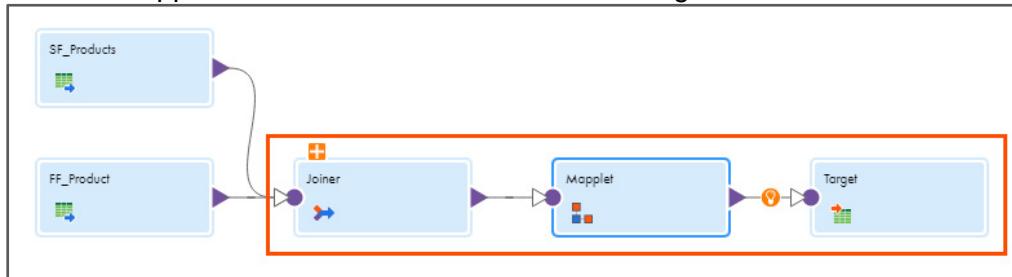
53. To select the mapplet, click **Select**.



54. Navigate to your working directory and select **mplt_XX_Mapplet**.

Note: Notice that the mapping type is **Active**. This is because, you have used active transformations like Filter in the mapplet. If you make any changes in the Mapplet, use the **Synchronize** option to update the mapplet changes in the mapping.

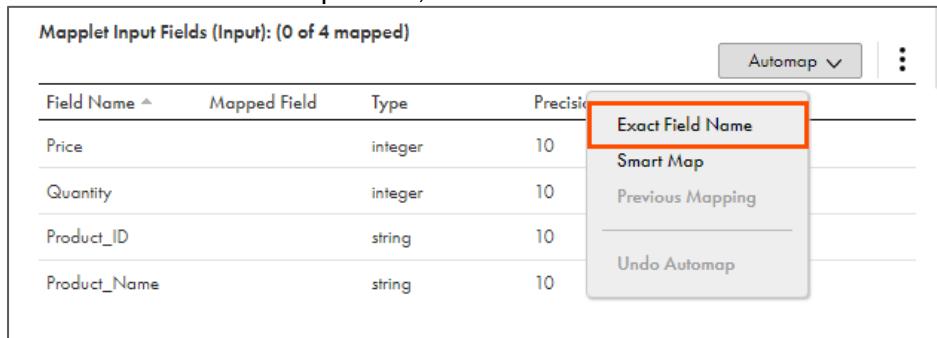
55. Link the Mapplet transformation with Joiner and Target transformations as shown below.



56. Select the Mapplet transformation from the mapping canvas.

57. From the properties pane, click **Field Mapping**.

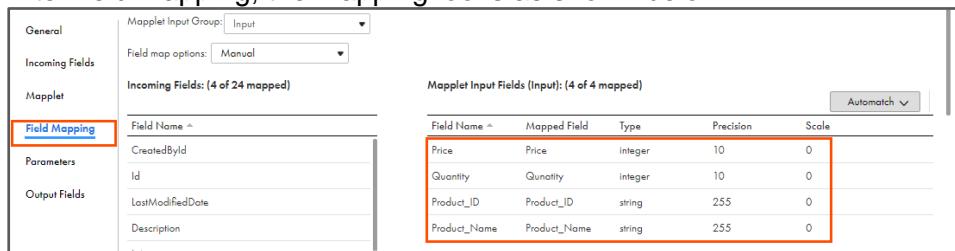
58. From the Automatch drop-down, select **Exact Field Name**.



The screenshot shows the 'Maplet Input Fields (Input)' properties pane. It lists four fields: 'Price' (integer, precision 10), 'Quantity' (integer, precision 10), 'Product_ID' (string, precision 10), and 'Product_Name' (string, precision 10). An 'Automap' dropdown menu is open, and the 'Exact Field Name' option is highlighted with a red box. Other options in the menu include 'Smart Map', 'Previous Mapping', and 'Undo Automap'.

Field Name	Mapped Field	Type	Precision	Automap
Price		integer	10	Exact Field Name
Quantity		integer	10	Smart Map
Product_ID		string	10	Previous Mapping
Product_Name		string	10	Undo Automap

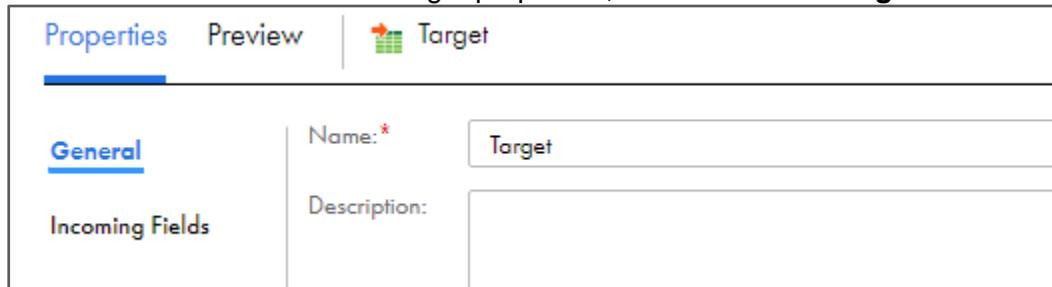
59. After field mapping, the mapping looks as shown below:



Field Name	Mapped Field	Type	Precision	Scale
CreatedBy	Price	integer	10	0
Id	Quantity	integer	10	0
LastModifiedDate	Product_ID	string	255	0
Description	Product_Name	string	255	0

60. To configure the target, from the mapping canvas, click the **Target** transformation.

61. In the General section of the Target properties, retain Name as **Target**.



Properties	Preview	Target
<u>General</u>	Name: *	Target
Incoming Fields	Description:	

62. From the properties pane, click **Target**.

63. From the Connection drop-down, select your **target flat file** connection.

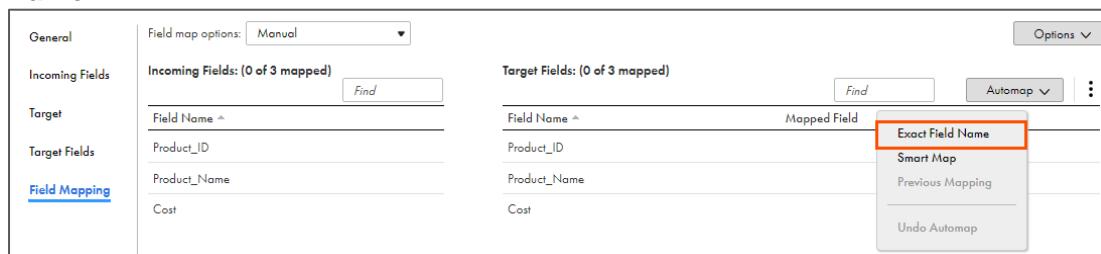
64. Select the target object as **OrderCost.csv**.



<u>Target</u>	Target Type: Single Object
Target Fields	Object: OrderCost.csv
Field Mapping	Operation: Insert

65. From the properties pane, click **Field Mapping**.

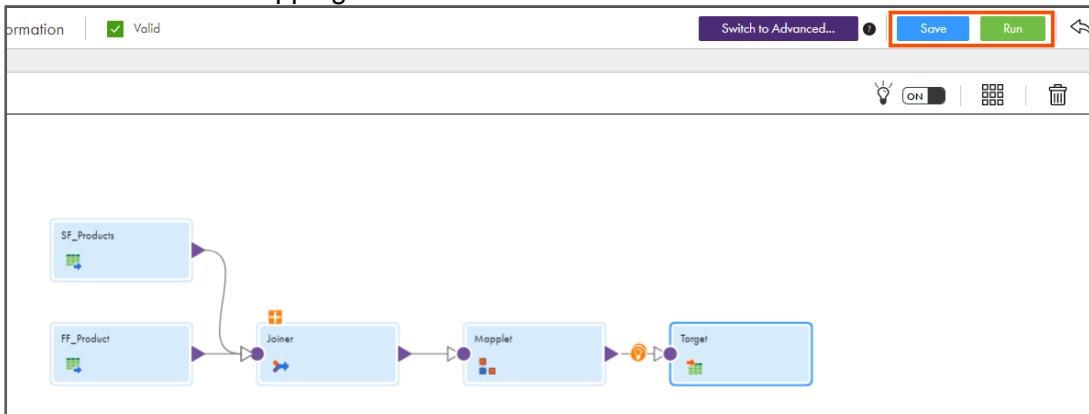
66. To match the fields automatically, from the Automap drop-down, select **Exact Field Name**.



General	Field map options: Manual	Options
Incoming Fields	Incoming Fields: (0 of 3 mapped)	Find
Target	Target Fields: (0 of 3 mapped)	Find
Target Fields	Field Name	Mapped Field
<u>Field Mapping</u>	Product_ID	Product_ID
	Product_Name	Product_Name
	Cost	Cost

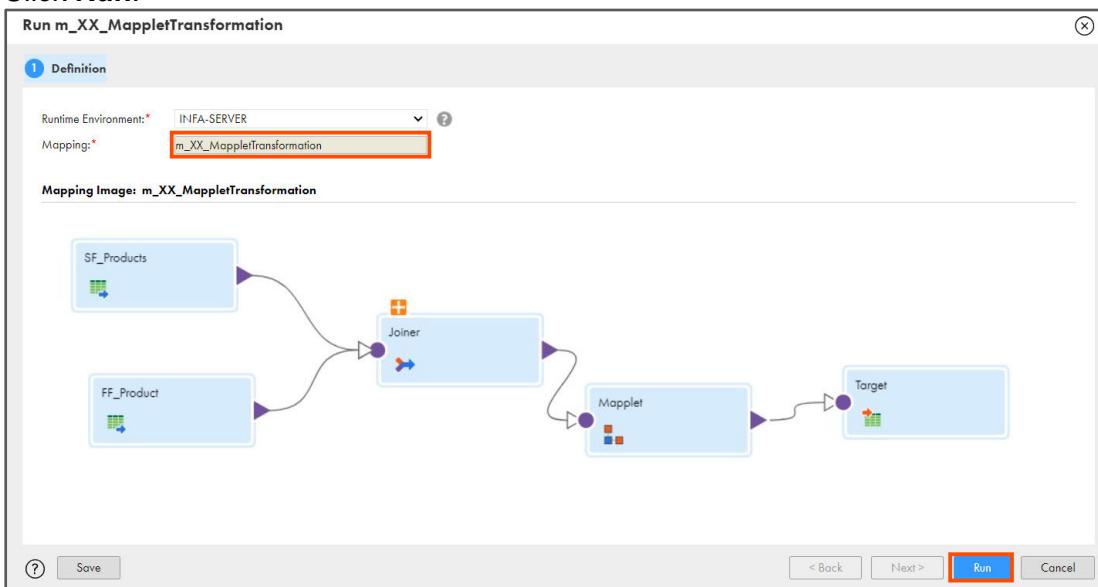
Exact Field Name
 Smart Map
 Previous Mapping
 Undo Automap

67. Save and run the mapping.



68. From the Runtime Environment drop-down, select INFA-SERVER.

69. Click Run.



Monitor Status

70. To monitor the mapping status, navigate to the **My Jobs** page.

71. When the task completes, the status changes to **Success**.

Jobs (258)						
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
m_XX_MappletTransformation...	CDI<Month><Date...		Jul 30, 2023, 12:55 PM	Jul 30, 2023, 12:...	10	Success

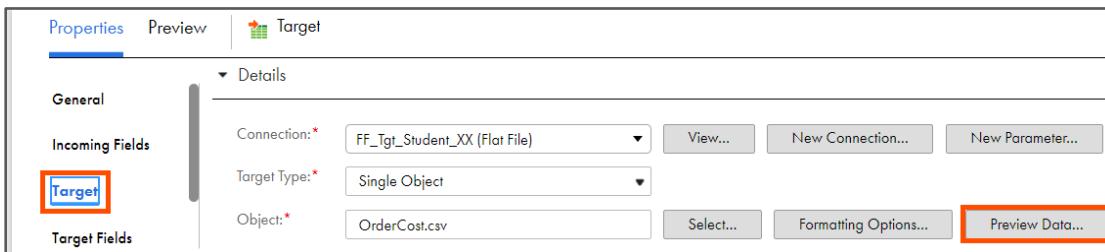
72. Close the mapplet and mapping assets from the navigation pane.

Optional - View Target Data

73. Navigate back to your mapping **m_XX_MappletTransformation**.

74. From the mapping canvas, select the target object and navigate to the **Target** properties tab.

75. Next to the selected target Object, click **Preview Data**.



76. Observe the results.

Data Preview

Connection: FF_Tgt_Student_XX Object: OrderCost.csv

Product_ID	Product_Name	Cost
GC1040	RALPH LAUREN P...	67
GC1020	Essential Oil Diffus...	75
GC3040	Tommy Hilfiger M...	410
GC3020	Pro Impact Cricket...	2950
GC3060	Microsoft Surface ...	11085
GC1060	Pureology Hydrat...	108
GC5040	Gourmia GAF64...	9900
IN7020	Skechers Women'...	850
GC5020	Wilson Energy XL ...	880
GC5060	Google Chromec...	408

Display source fields in alphabetical order

(?) Formatting Options... Done

77. Click **Done**.

78. Save and close all the opened assets.

This concludes the lab.

Module 8: Mapplets

Lab 8-2: Create Mapplet and Use It in the Existing Mapping

Overview:

A mapplet is reusable transformation logic that you can use to transform source data before it is loaded into the target.

In this lab, you will create a Mapplet and use the created Mapplet in a mapping.

Objective:

- Create a Mapplet
- Replace the existing mapping objects with the mapplet
- Replace Filter transformation with Router in the mapping

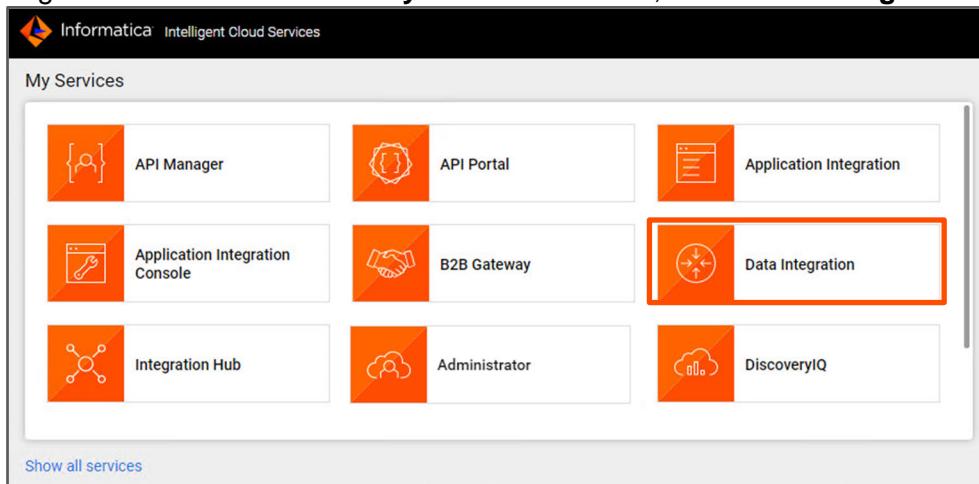
Duration:

30 minutes

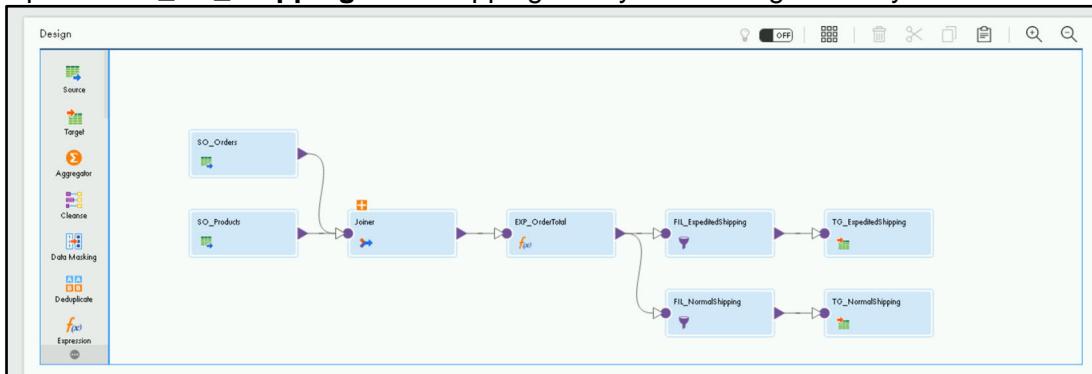
Tasks

Modify the Existing Mapping

1. Login into IICS and from the **My Services** window, select **Data Integration**.



2. From the navigation pane, select **Explore**.
3. Open the **m_XX_ShippingFiles** mapping from your working directory.

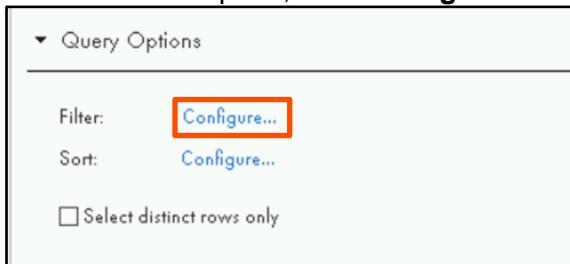


You need to modify the Mapping and make changes to it.

4. Select the **SO_Orders** source from the Mapping canvas.
5. Navigate to the **Source** properties tab and verify that the object selected is **ORDERS**.

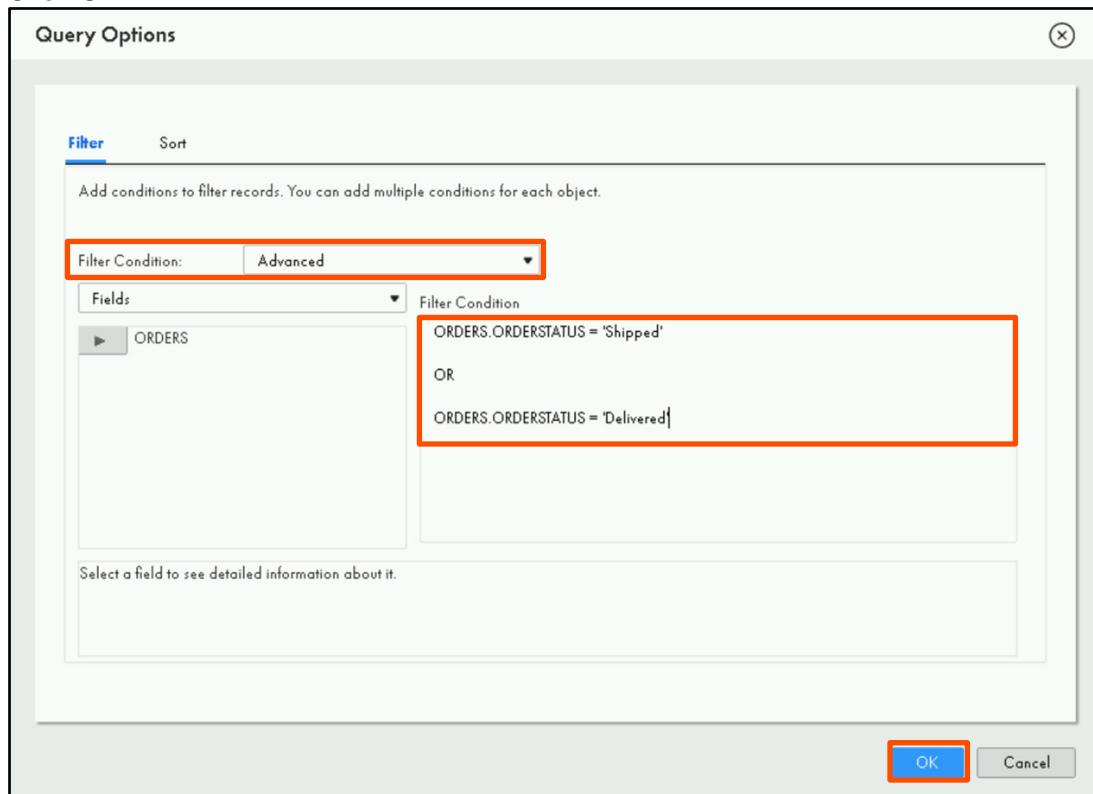


6. Scroll down and expand the **Query Options** section.
7. From the Filter option, click **Configure**.



8. From the Filter Condition drop down, select the **Advanced** option.
9. In the Filter Condition expression window, enter the following expression:
ORDERS.ORDERSTATUS = 'Shipped'
OR
ORDERS.ORDERSTATUS = 'Delivered'

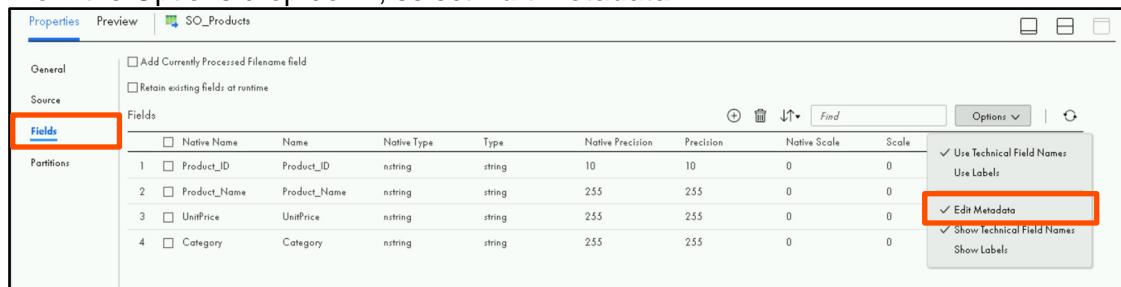
10. Click **OK**



11. Select the **SO_Products** source from the mapping canvas.

12. From the properties pane, click **Fields**.

13. From the Options drop down, select **Edit Metadata**.



14. For the **UnitPrice** field, set the Native Type as **double** and the Native Precision as **15**.

Fields	Native Name	Name	Native Type	Type	Native Precision	Precision	Native Scale	Scale	Origin
1 <input type="checkbox"/> Product_ID	Product_ID	nstring	string	10	10	0	0	0	Products.csv
2 <input type="checkbox"/> Product_Name	Product_Name	nstring	string	255	255	0	0	0	Products.csv
3 <input type="checkbox"/> UnitPrice	UnitPrice	nstring	string	255	255	0	0	0	Products.csv
4 <input type="checkbox"/> Category	Category	nstring	string	255	255	0	0	0	Products.csv

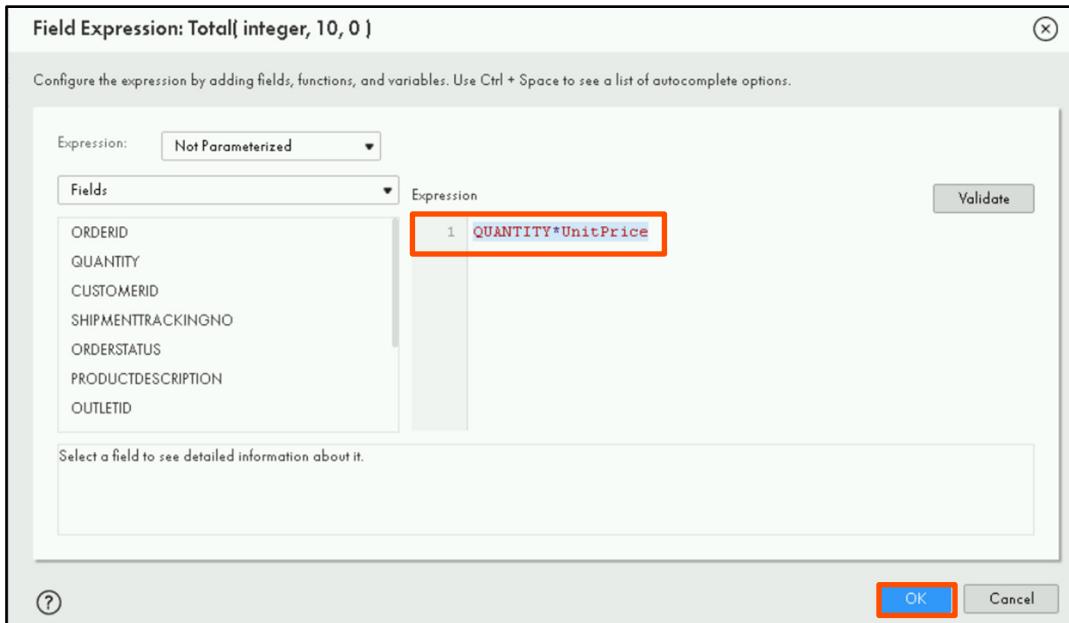
15. From the Options drop-down, uncheck **Edit Metadata**.

16. Select the **EXP_OrderTotal** from the mapping canvas.

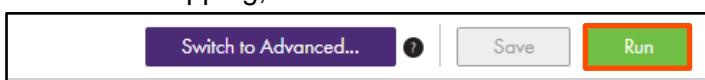
17. From the properties pane, click **Expression**.

18. Delete the field **PPU**. Give **Yes** on the Confirmation window.

19. For the field Total, click on the Expression **PPU*QUANTITY**.
20. Delete the Expression PPU*QTY from the Expression window.
21. In the Expression window, enter the following expression:
QUANTITY*UnitPrice
22. Click **OK**.



23. To save the mapping, click **Save**.
24. To run the mapping, click **Run**.



25. From the Runtime Environment drop-down, select INFA-SERVER.
26. Click **Run**.

Monitor Status

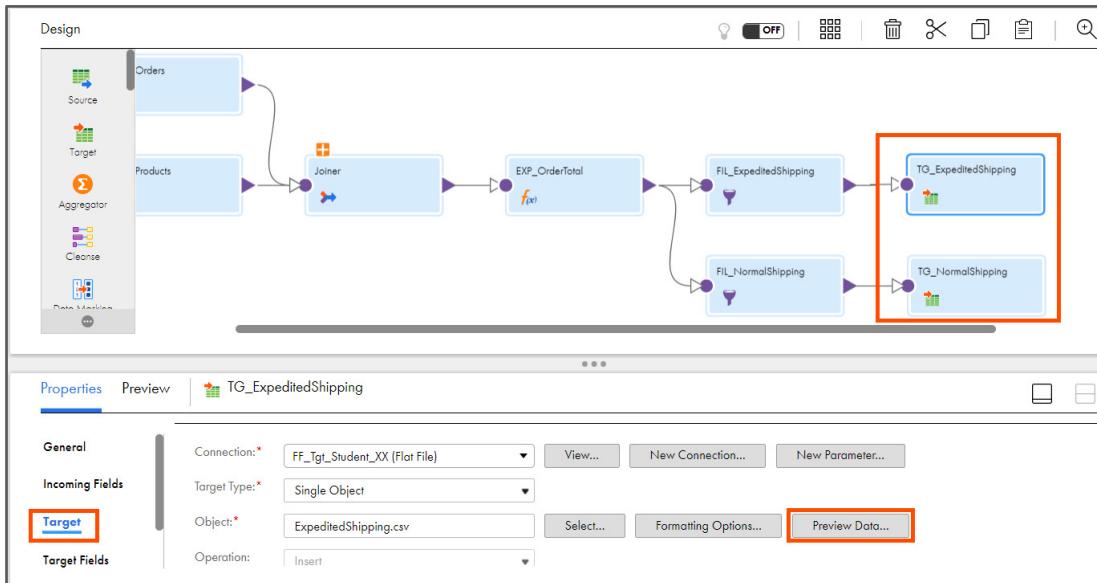
27. Monitor the task status from the **My Jobs** page.
28. When the task completes, the status changes to **Success**.

Jobs (259)							Updated 1:10:32 PM PDT	↻	↓↑	✖	Find
Instance Name	Location	Subtasks	Start Time ▾	End Time	Rows Processed	Status					
m_XX_ShippingFiles-2	CDI<Month><Date...		Jul 30, 2023, 1:10 PM	Jul 30, 2023, 1:1...	4	Success					

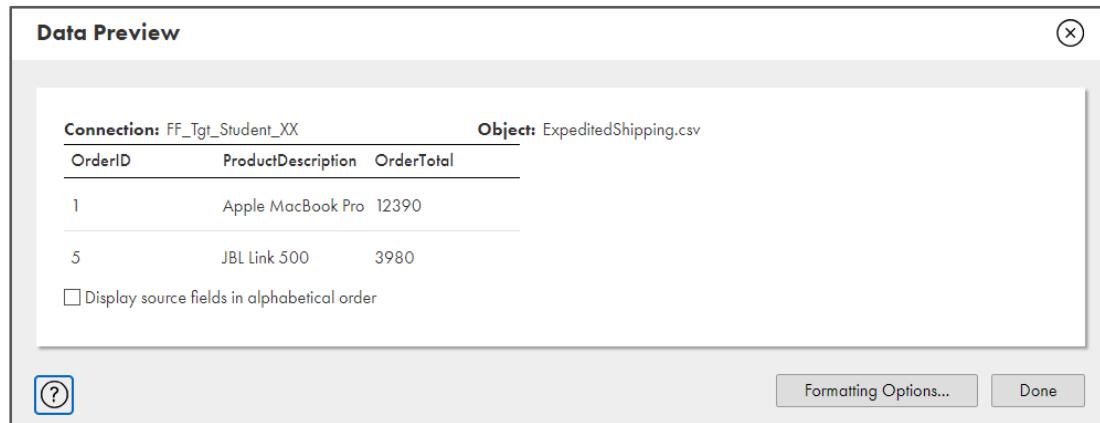
Note: You can refresh the job status if it does not change automatically.

Optional

29. You can preview the target data from the targets present on the mapping canvas.



ExpeditedShipping.csv:



Data Preview

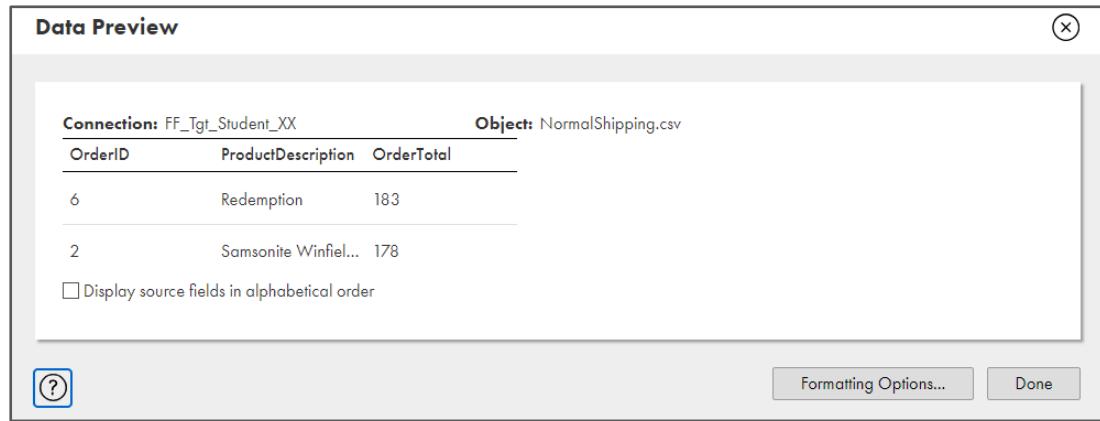
Connection: FF_Tgt_Student_XX Object: ExpeditedShipping.csv

OrderID	ProductDescription	OrderTotal
1	Apple MacBook Pro	12390
5	JBL Link 500	3980

Display source fields in alphabetical order

(?) Formatting Options... Done

NormalShipping.csv:



Data Preview

Connection: FF_Tgt_Student_XX Object: NormalShipping.csv

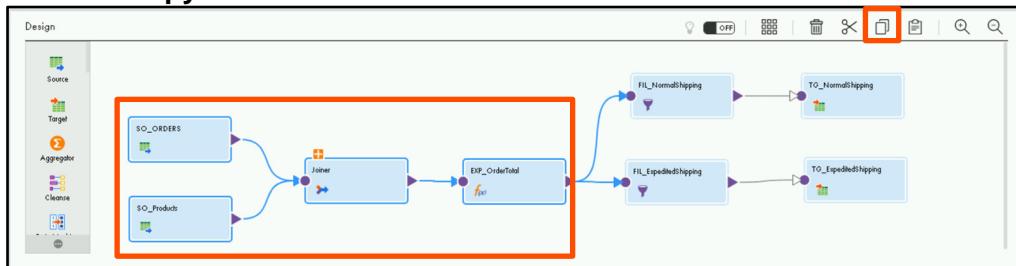
OrderID	ProductDescription	OrderTotal
6	Redemption	183
2	Samsonite Winfiel...	178

Display source fields in alphabetical order

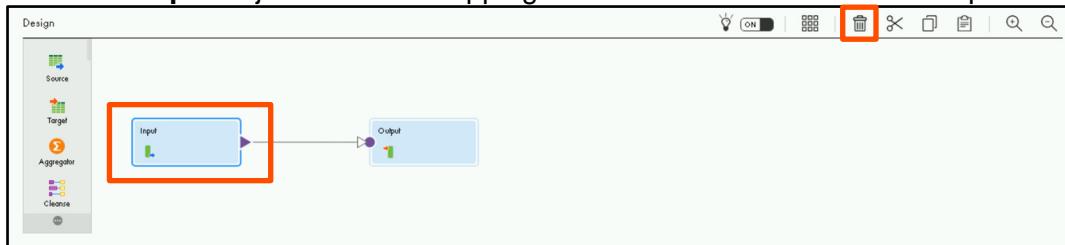
(?) Formatting Options... Done

Create Maplet

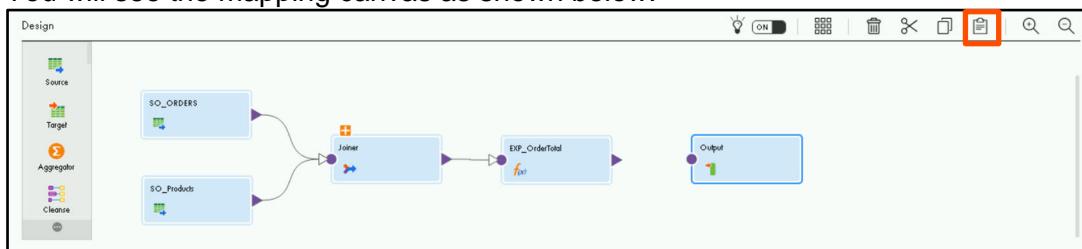
30. From the navigation pane, select **New**.
31. From the New Asset window, click the **Maplets** tab, and select **Maplet**.
32. Click **Create**.
33. In the Name field, enter **mplt_XX_MapletOrders**.
34. Go to your working directory and open the asset **m_XX_ShippingFiles** (if its closed).
35. From the mapping canvas, select the sources, **SO.Orders**, **SO.Products**, **Joiner**, and **EXP.OrderTotal**.
36. Click the **Copy** icon.



37. Go back to your Maplet canvas.
38. Select the **Input** object from the mapping canvas and click on the **delete** option.



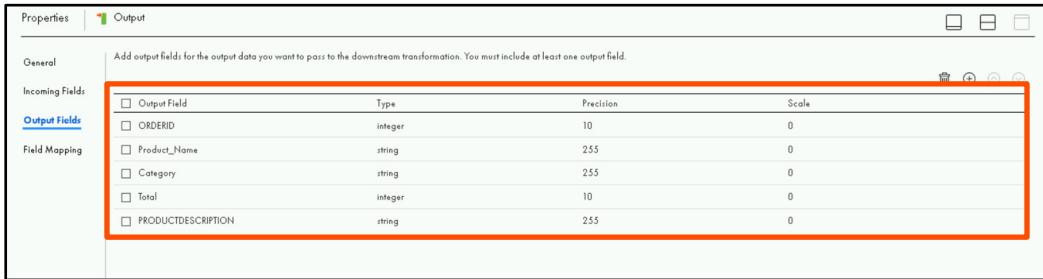
39. Click the **Paste** icon, on the mapping canvas.
40. You will see the mapping canvas as shown below:



41. Link the **EXP.OrderTotal** and the **Output**.
42. Select **Output** from your mapping canvas.
43. From the properties pane, click **Output Fields**.
44. To add a new Output Field, click .

45. Define the output fields, as shown in the table below:

Name	Type	Precision	Scale
ORDERID	integer	10	0
Product_Name	string	255	0
PRODUCTDESCRIPTION	string	255	0
Category	string	255	0
Total	integer	10	0



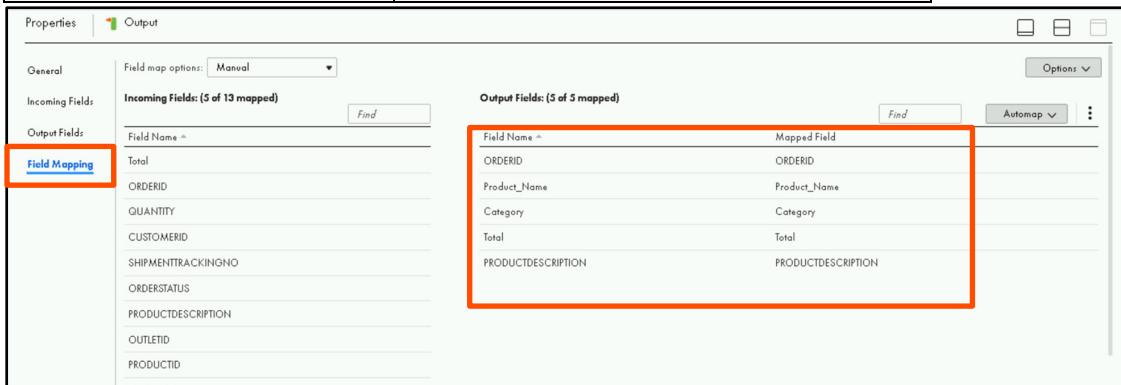
The screenshot shows the 'Properties' pane with the 'Output' tab selected. Under the 'Output Fields' section, there is a table listing five fields: ORDERID, Product_Name, Category, Total, and PRODUCTDESCRIPTION. Each field has its type (integer or string), precision (10 or 255), and scale (0) specified. The entire table is highlighted with a red box.

46. From the properties pane, click **Field Mapping**.

47. Match the fields as shown in the following table:

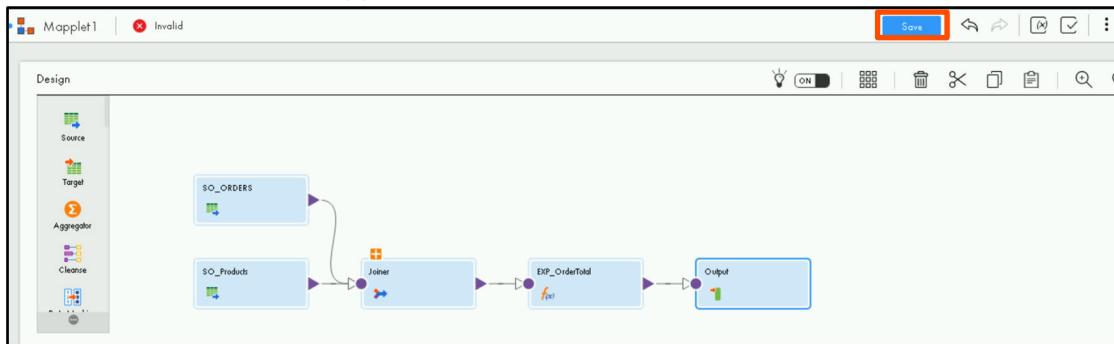
Note: Click and drag the fields to map them.

Incoming Field	Output Fields
ORDERID	ORDERID
Product_Name	Product_Name
Category	Category
Total	Total
PRODUCTDESCRIPTION	PRODUCTDESCRIPTION



The screenshot shows the 'Properties' pane with the 'Field Mapping' section selected. On the left, under 'Incoming Fields', there is a list of fields: Total, ORDERID, QUANTITY, CUSTOMERID, SHIPMENTTRACKINGNO, ORDERSTATUS, PRODUCTDESCRIPTION, OUTLETID, and PRODUCT. On the right, under 'Output Fields', there is a table showing the mapped fields: ORDERID to ORDERID, Product_Name to Product_Name, Category to Category, Total to Total, and PRODUCTDESCRIPTION to PRODUCTDESCRIPTION. The entire table is highlighted with a red box.

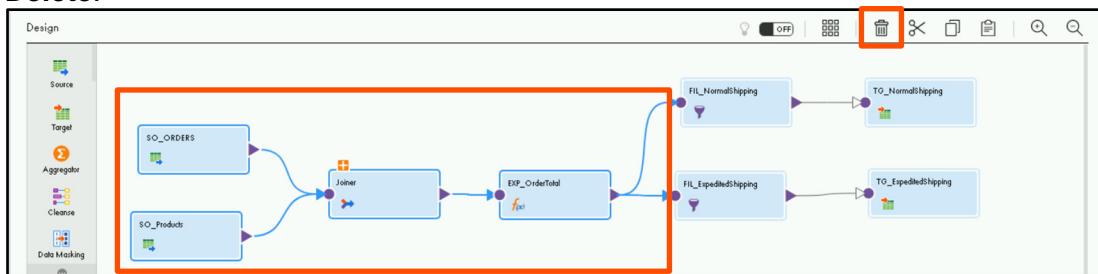
48. Click **Save** to save the Maplet.



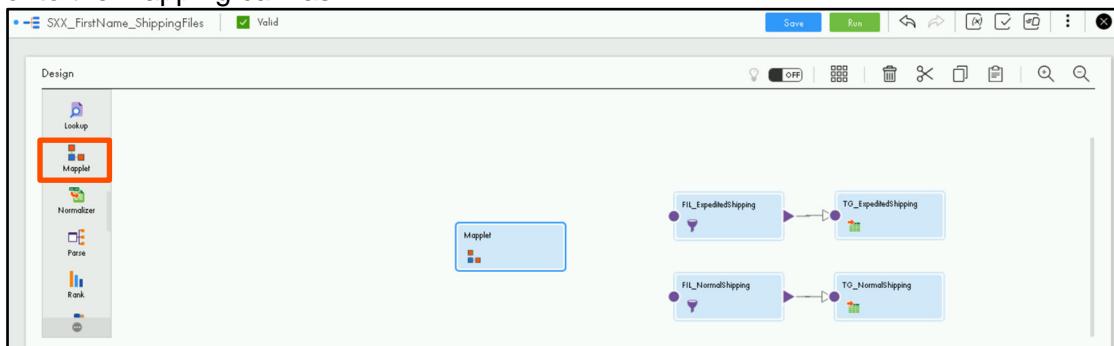
Mapping with Maplet

49. Navigate to the **m_XX_ShippingFiles** mapping tab.

50. Now, select the **SO_Orders**, **SO_Products**, **Joiner**, and **EXP_OrderTotal** and click **Delete**.



51. From the list of available transformations, drag and drop the **Maplet** transformation onto the mapping canvas.



52. Select the **Maplet** from the mapping canvas.

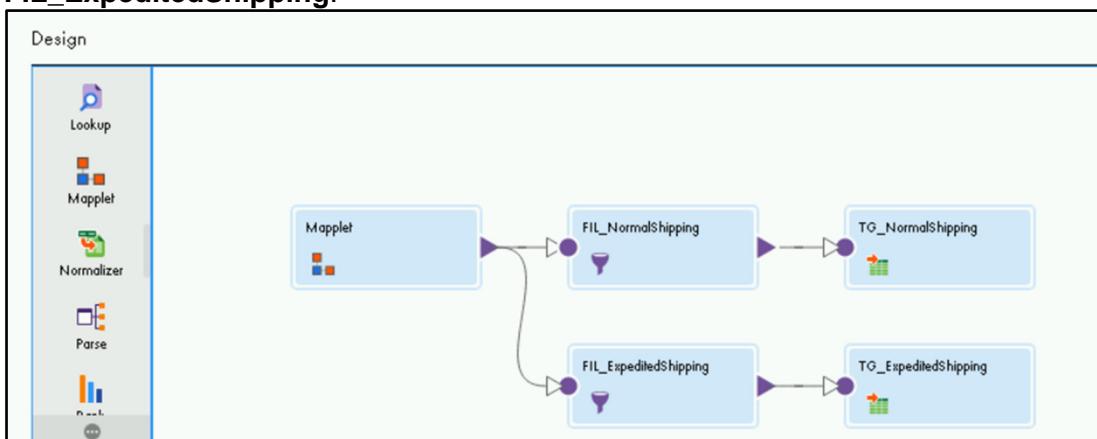
53. From the properties pane, click **Maplet**.

54. To select the Maplet, click **Select**.



55. From your working directory select the maplet, **mplt_XX_MapletOrders**.

56. From the mapping canvas, link the Maplet with the **FIL_NormalShipping** and **FIL_ExpeditedShipping**.



57. **Save and Run** the Mapping.



58. From the Runtime Environment drop down, select INFA-SERVER.

59. Click **Run**.

Monitor Status

60. Monitor the task status from the **My Jobs** page.

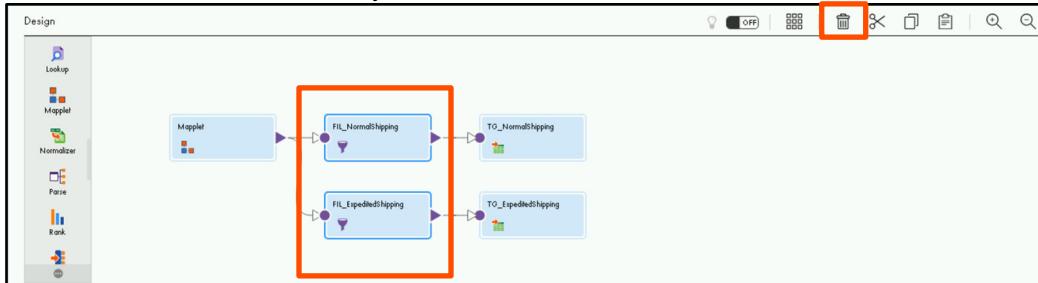
61. When the task completes, the status changes to **Success**.

Note: You can refresh the job status if it does not change automatically.

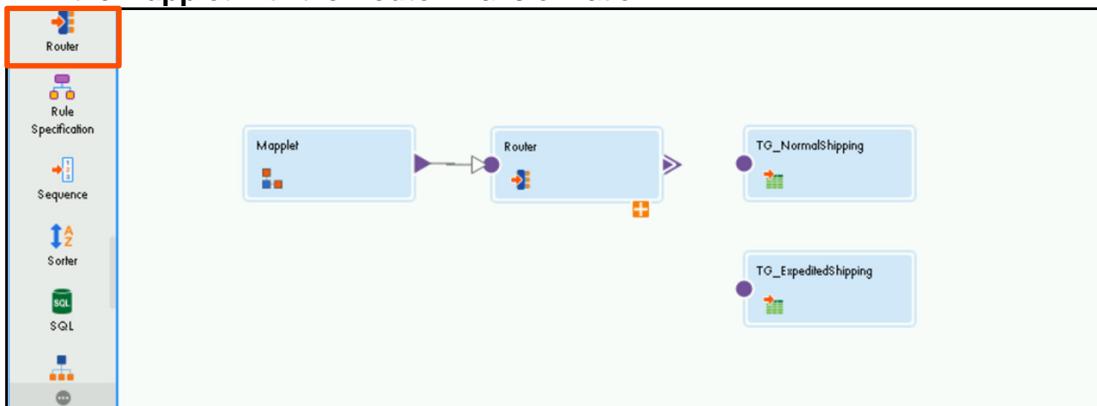
62. Optionally, you can view the preview data from the Target properties tab.

Mapping with Router Transformation

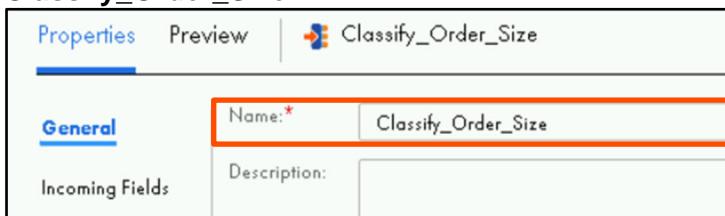
63. Navigate to the **m_XX_ShippingFiles** mapping tab.
64. From the mapping canvas, select **FIL_NormalShipping** and **FIL_ExpeditedShipping**.
65. Click **Delete** to delete the objects.



66. From the list of available transformations, drag and drop a **Router** transformation onto the mapping canvas.
67. Link the **Maplet** with the **Router** Transformation.

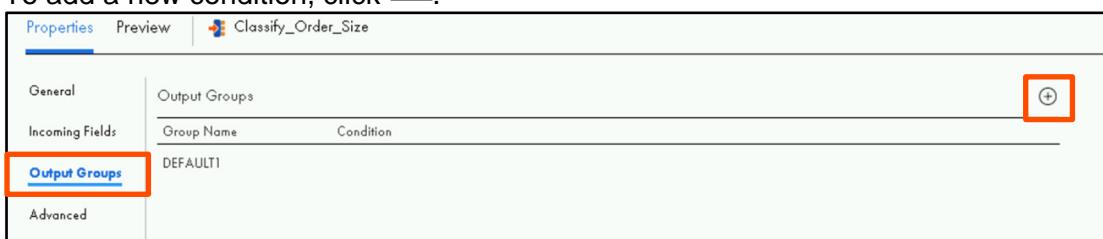


68. In the General section of the Router properties, enter the Name as **Classify_Order_Size**.



69. From the properties pane, select **Output Groups**.

70. To add a new condition, click 

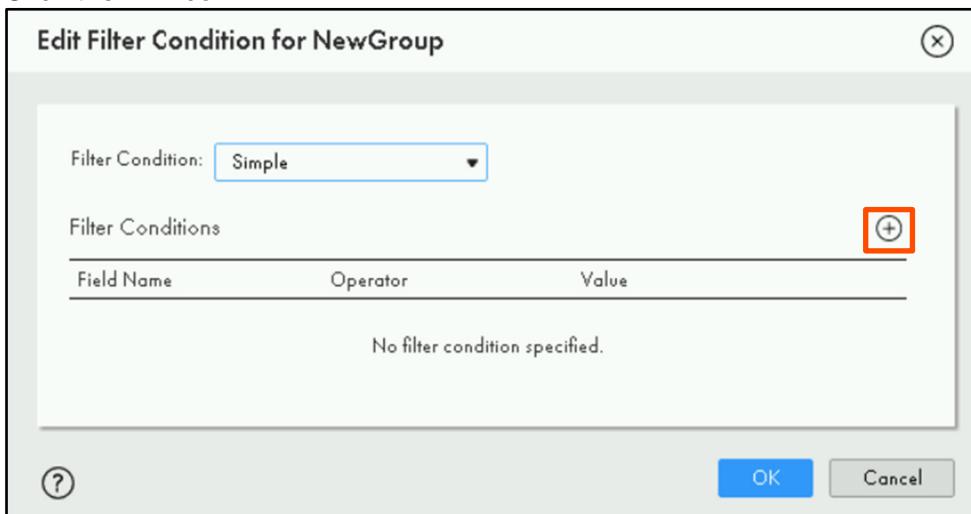


71. To enter the condition, click **Configure**.



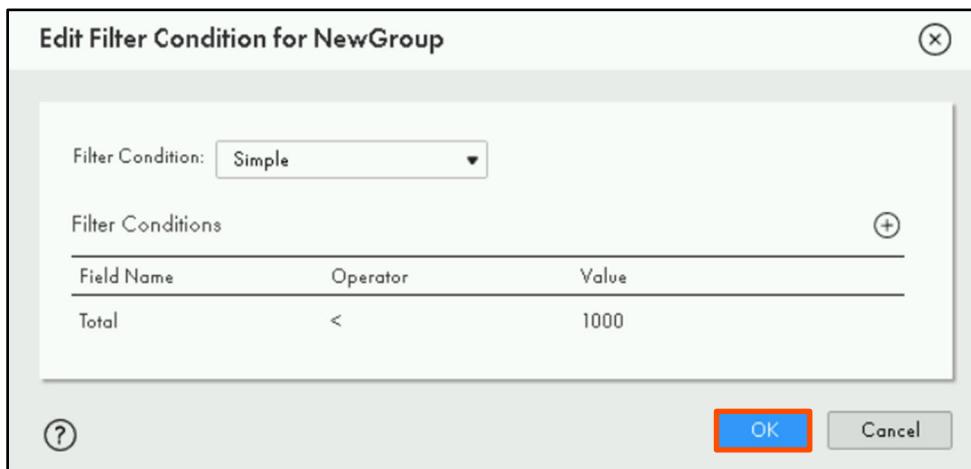
The Edit Filter Condition for NewGroup window appears.

72. Click the  icon.



73. Enter the filter condition as shown in the table below and click **OK**.

Field Name	Operator	Value
Total	< (Less than)	1000



74. Change the Group Name to **Normal_Shipping**.

75. To add another filter condition, click .

76. Click **Configure**.

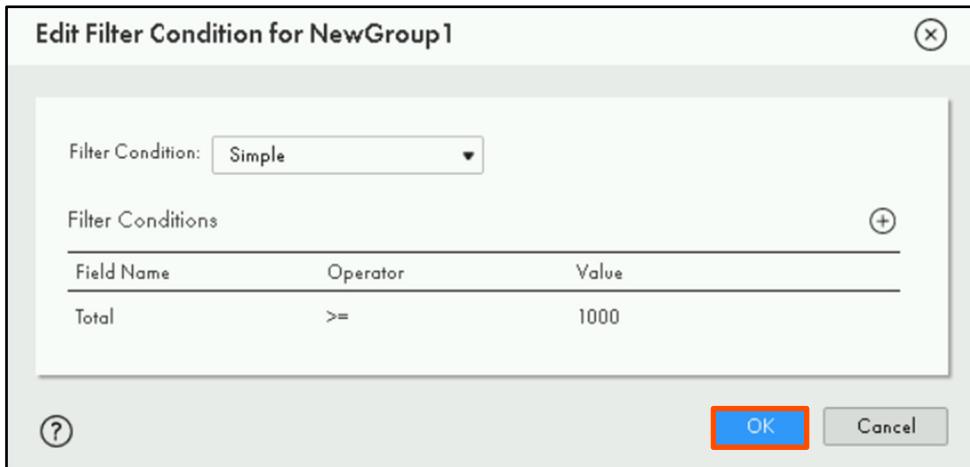


Group Name	Condition
DEFAULT	
NewGroup	Total < '1000'
NewGroup1	Configure...

77. Enter filter condition as shown in the table below:

Field Name	Operator	Value
Total	>= (Greater than equal to)	1000

78. Click **OK**.



Edit Filter Condition for NewGroup1

Filter Condition: Simple

Filter Conditions

Field Name	Operator	Value
Total	>=	1000

OK Cancel

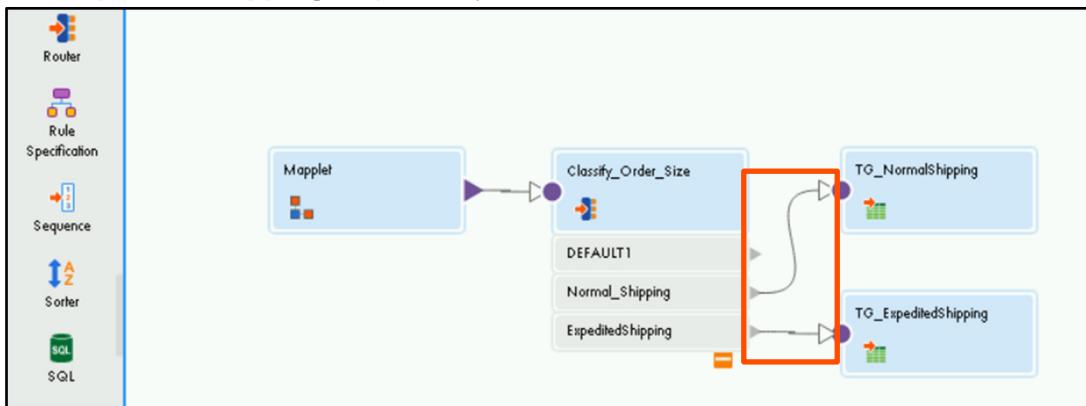
79. Change the Group Name to **Expedited_Shipping**.



Group Name	Condition
DEFAULT	
Normal_Shipping	Total < '1000'
Expedited_Shipping	Total >= '1000'

80. On the mapping canvas, click the plus icon on the Router transformation to expand the output groups.

81. Link the **Classify_Order_size** to the **TG_NormalShipping** and **TG_ExpeditedShipping** respectively.



82. **Save** and **Run** the Mapping.



83. From the Runtime Environment drop down, select INFA-SERVER.

84. Click **Run**.

Monitor Status

85. To monitor the mapping status, navigate to the **My Jobs** page.
86. When the task completes, the status changes to **Success**.
87. Optionally, you can view the preview data from the Target properties tab.
88. Close the mapplet and mapping assets from the navigation pane.

This concludes the lab.

Module 8: Mapplets

Lab 8-3: Creating a Mapping Using Existing Mapplet and Aggregator Transformations

Overview:

A mapplet is reusable transformation logic that you can use to transform source data before it is loaded into the target. After you create a mapplet, you can add it to a Mapplet transformation to use its transformation logic. You can use a mapplet in another mapplet.

You can select a mapplet that you created or imported into the DI service.

In this lab, you will use the created Mapplet in a mapping and finish the login using the aggregator transformation.

Objective:

- Use the existing Mapplet
- Use the Aggregator transformation

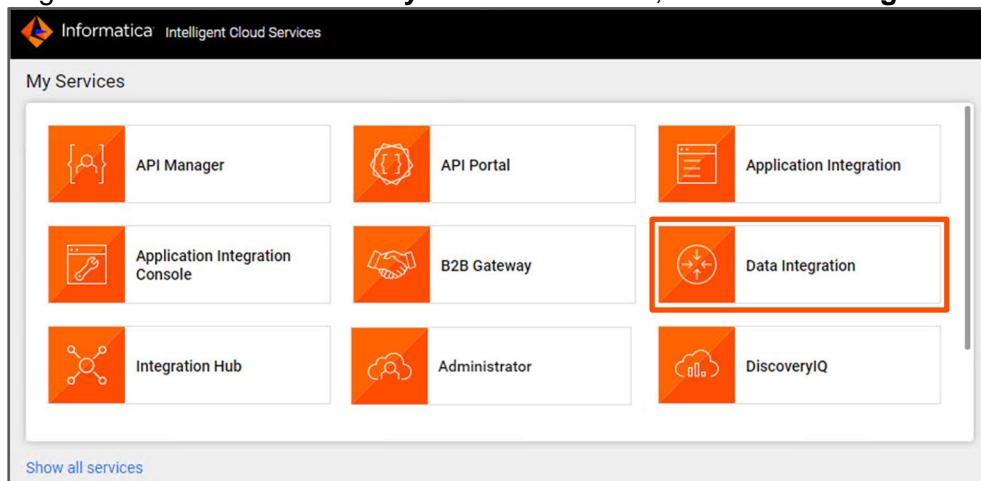
Duration:

20 minutes

Tasks

Create Mapping

1. Login into IICS and from the **My Services** window, select **Data Integration**.



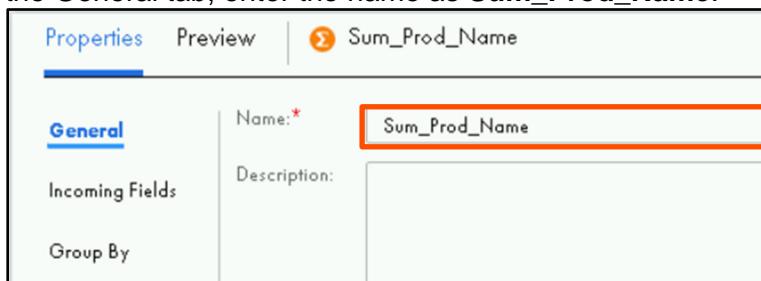
2. From the navigation pane, select **New**.
3. From the New Asset window, click the **Mappings** tab, and select **Mapping**.
4. Click **Create**.
5. In the Name field, enter **m_XX_SummarizedSales**.
6. Specify the location of your working directory.
7. From the mapping canvas, select the **Source** and click the **Delete** option.
8. From the list of available transformations, drag and drop a **Mapplet** on the mapping canvas.



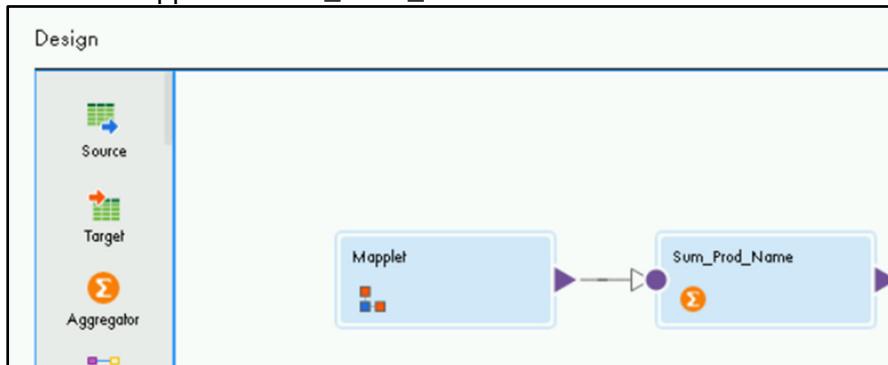
9. Select the **Mapplet** from the mapping canvas.
10. From the properties pane, click **Mapplet**.
11. From the Mapplet, click **Select**.



12. From your working directory, select the mapplet **mplt_XX_MappletOrders**.
13. From the list of available transformations, drag and drop the **Aggregator** transformation between Mapplet and Target on the mapping canvas.
14. With the Aggregator transformation being selected, navigate to the properties pane, in the General tab, enter the name as **Sum_Prod_Name**.



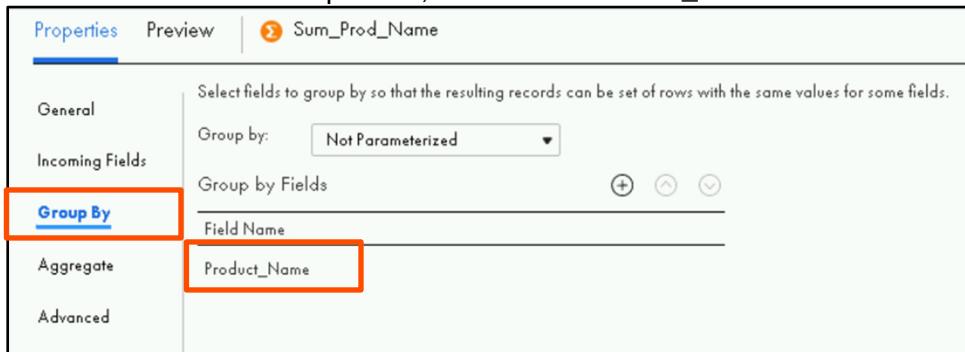
15. Link the Maplet to **Sum_Prod_Name**.



16. From the properties pane, click **Group By**.

17. To add a new expression, click .

18. From the Field name drop down, select the **Product_Name**.



Properties		Preview	Sum_Prod_Name
General	Select fields to group by so that the resulting records can be set of rows with the same values for some fields.		
	Group by: Not Parameterized		
	Group by Fields   		
	Field Name		
Incoming Fields			
Group By			
Aggregate	Product_Name		
Advanced			

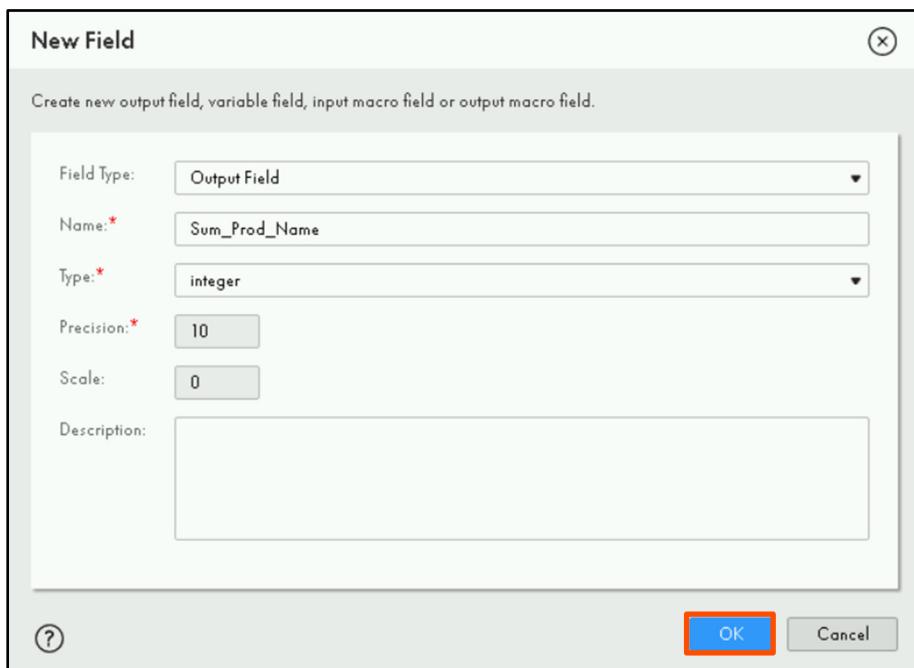
19. From the properties pane, click **Aggregate**.

20. To add the new Aggregate field, click .

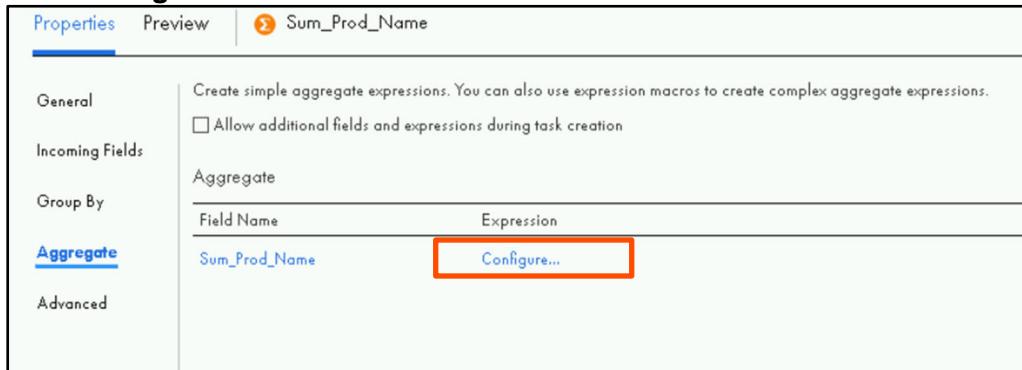
21. Enter the details as shown below:

Field Type	Name	Type	Precision	Scale
Output Field	Sum_Prod_Name	integer	10	0

22. Click **OK**.



23. Click **Configure**.

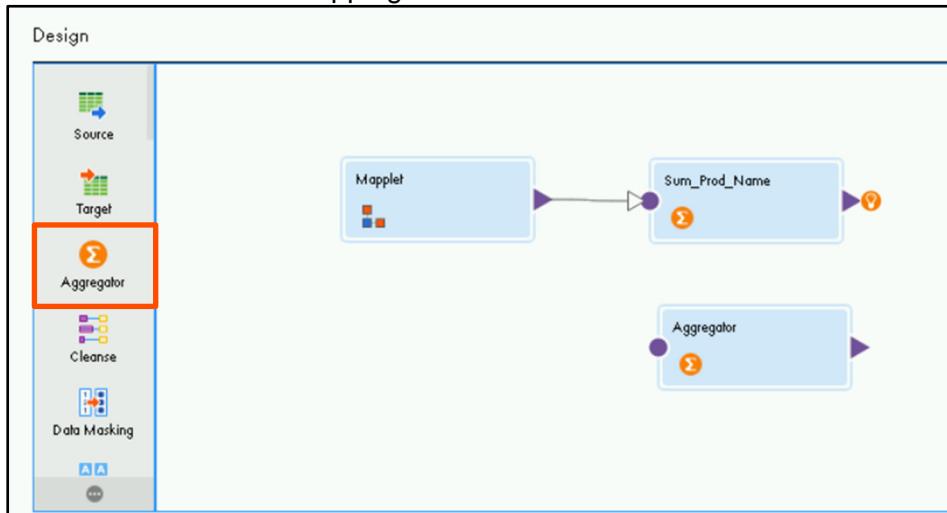


24. In the Expression window, enter the following expression:

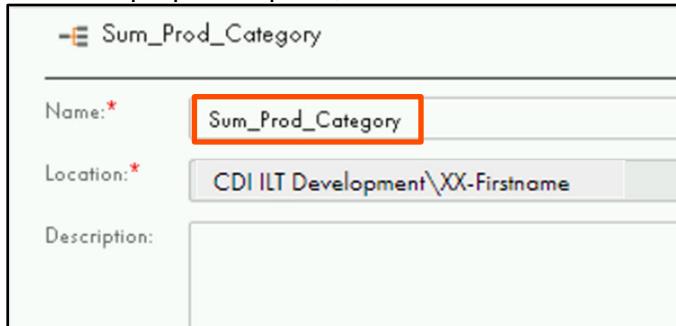
SUM(Total)

25. Click **OK**.

26. From the list of available transformations, drag and drop another aggregate transformation on the mapping canvas.



27. From the properties pane, in the Name field enter the name as **Sum_Prod_Category**.

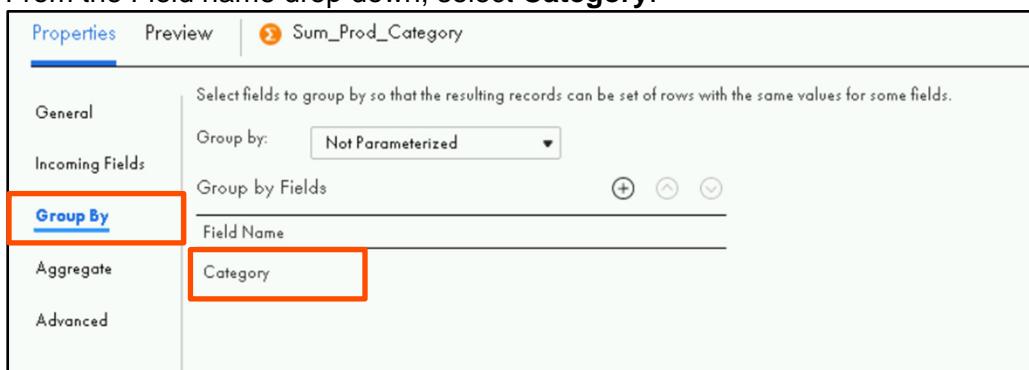


28. Link the Maplet to the **Sum_Prod_Category** transformation.

29. From the properties pane, click **Group By**.

30. To add a new expression, click .

31. From the Field name drop down, select **Category**.



32. From the properties pane, click on **Aggregate**.

33. To add the new Aggregate Field, click .

34. Enter the details as shown below:

Field Type	Name	Type	Precision	Scale
Output Field	Sum_Prod_Category	integer	10	0

35. Click **OK**.

New Field

Create new output field, variable field, input macro field or output macro field.

Field Type:	Output Field
Name:*	Sum_Prod_Category
Type:*	integer
Precision:*	10
Scale:	0
Description:	

① OK Cancel

36. Click **Configure**.

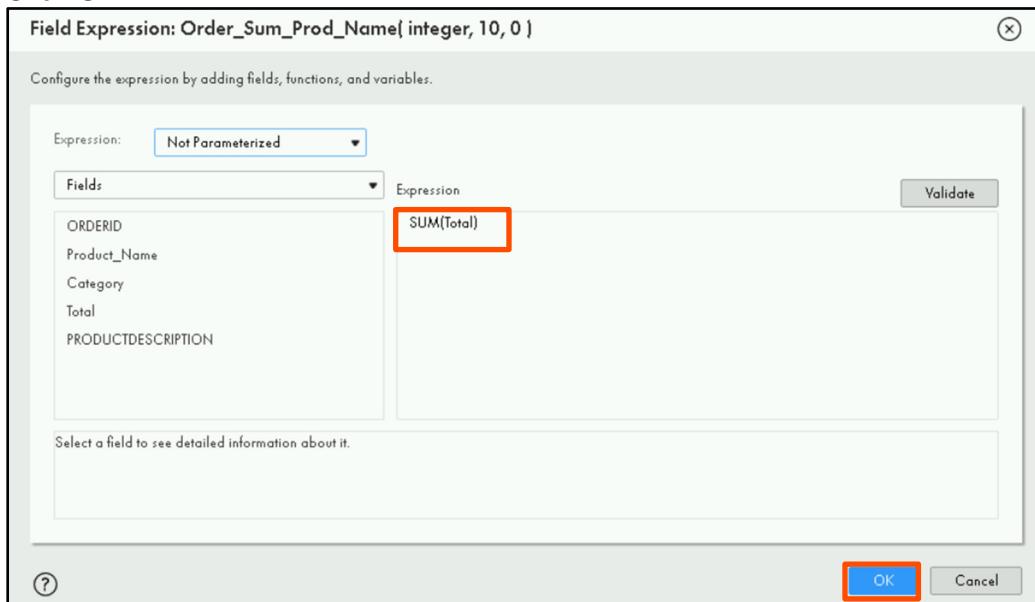
Properties Preview |  Aggregator

General	Create simple aggregate expressions. You can also use expression macros to create complex aggregate expressions. <input type="checkbox"/> Allow additional fields and expressions during task creation				
Incoming Fields					
Group By					
<u>Aggregate</u>	<table border="1"> <tr> <th>Field Name</th> <th>Expression</th> </tr> <tr> <td>Sum_Prod_Category</td> <td>Configure...</td> </tr> </table>	Field Name	Expression	Sum_Prod_Category	Configure...
Field Name	Expression				
Sum_Prod_Category	Configure...				
Advanced					

37. In the Expression window, enter the following expression:

SUM(Total)

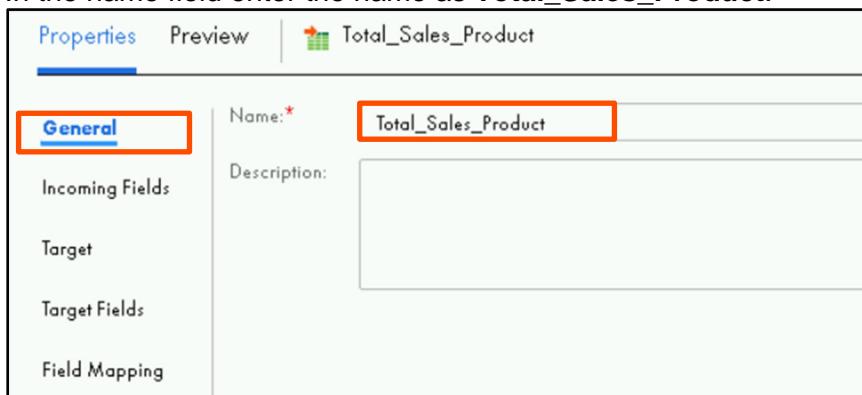
38. Click **OK**.



39. Select the Target from the mapping canvas.

40. Link the **Sum_Prod_Name** transformation to **Target**.

41. In the name field enter the name as **Total_Sales_Product**.



42. From the properties pane, select **Target**.

43. From the Connection drop down, select your **target Flat File** connection.

44. Retain the Target Type as **Single Object**.

45. In the Object field, click **Select**.



46. From the list, select the **Total_Sales_Product.csv**. Click **OK**.

47. From the properties pane, select **Field Mapping**.

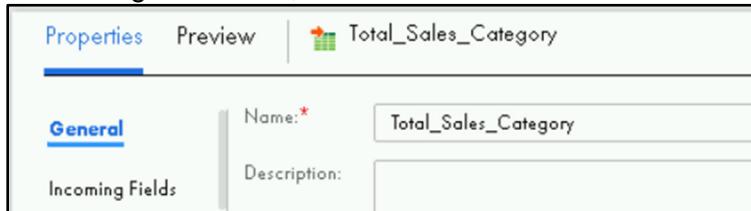
48. Map the fields as shown in the table below (If they are mapped already, verify, and proceed with the next step):

Incoming Field	Target Field
Product_Name	Product_Name
Total	Total



49. Drag and drop another Target from the mapping canvas.

50. From the general field, enter the name as **Total_Sales_Category**.



51. Link **Sum_Prod_Category** to **Total_Sales_Category**.

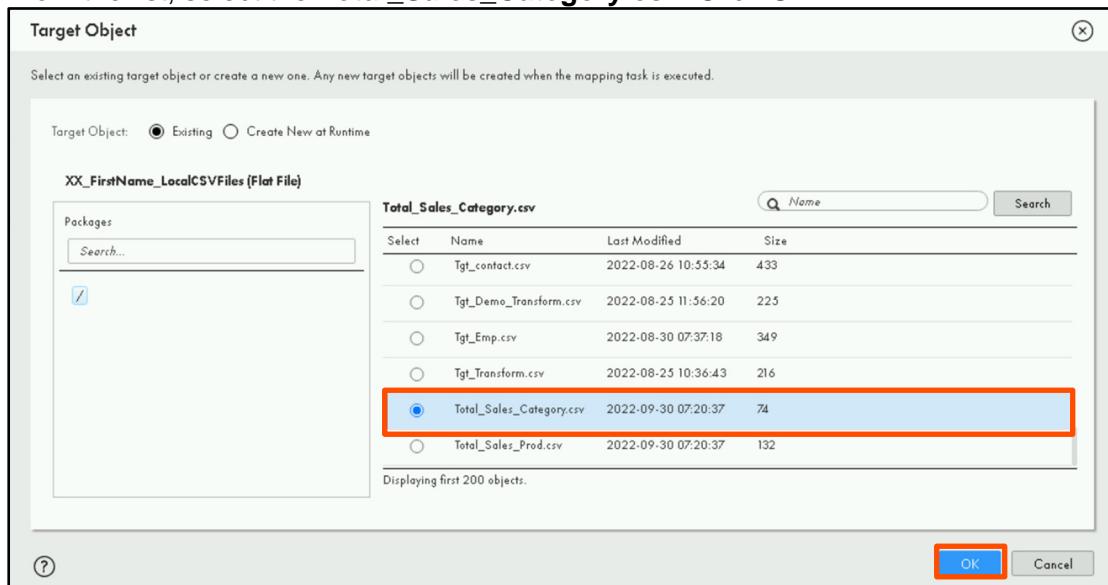
52. Select the **Total_Sales_Category** from the mapping canvas and from the properties pane, select **Target**.

53. From the Connection drop-down, select your **target Flat File** connection.

54. To select the source object from the Object field, click **Select**.



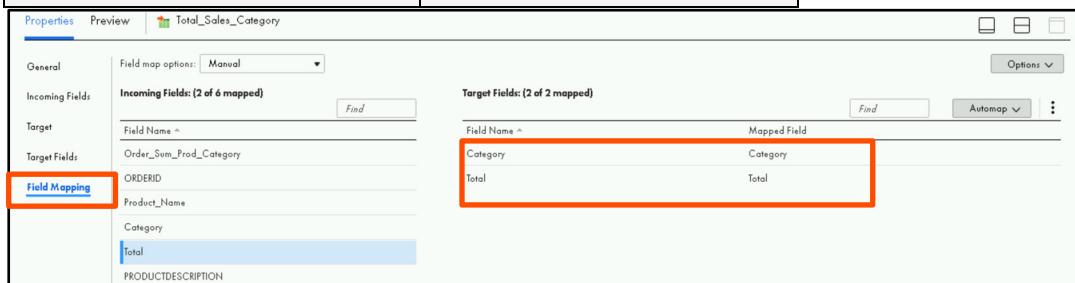
55. From the list, select the **Total_Sales_Category.csv**. Click **OK**.



56. From the properties pane, click **Field Mapping**.

57. Map the fields, as shown in the following table:

Incoming Fields	Target Fields
Category	Category
Total	Total



The properties pane has tabs 'Properties', 'Preview', and 'Total_Sales_Category'. The 'Field Mapping' tab is active and highlighted with a red box. In the 'Incoming Fields' section, 'Category' and 'Total' are listed. In the 'Target Fields' section, 'Category' and 'Total' are listed. Both sections have their respective fields highlighted with a red box.

58. **Save** and **Run** the mapping.

59. From the Runtime Environment drop down, select **INFA-SERVER**.

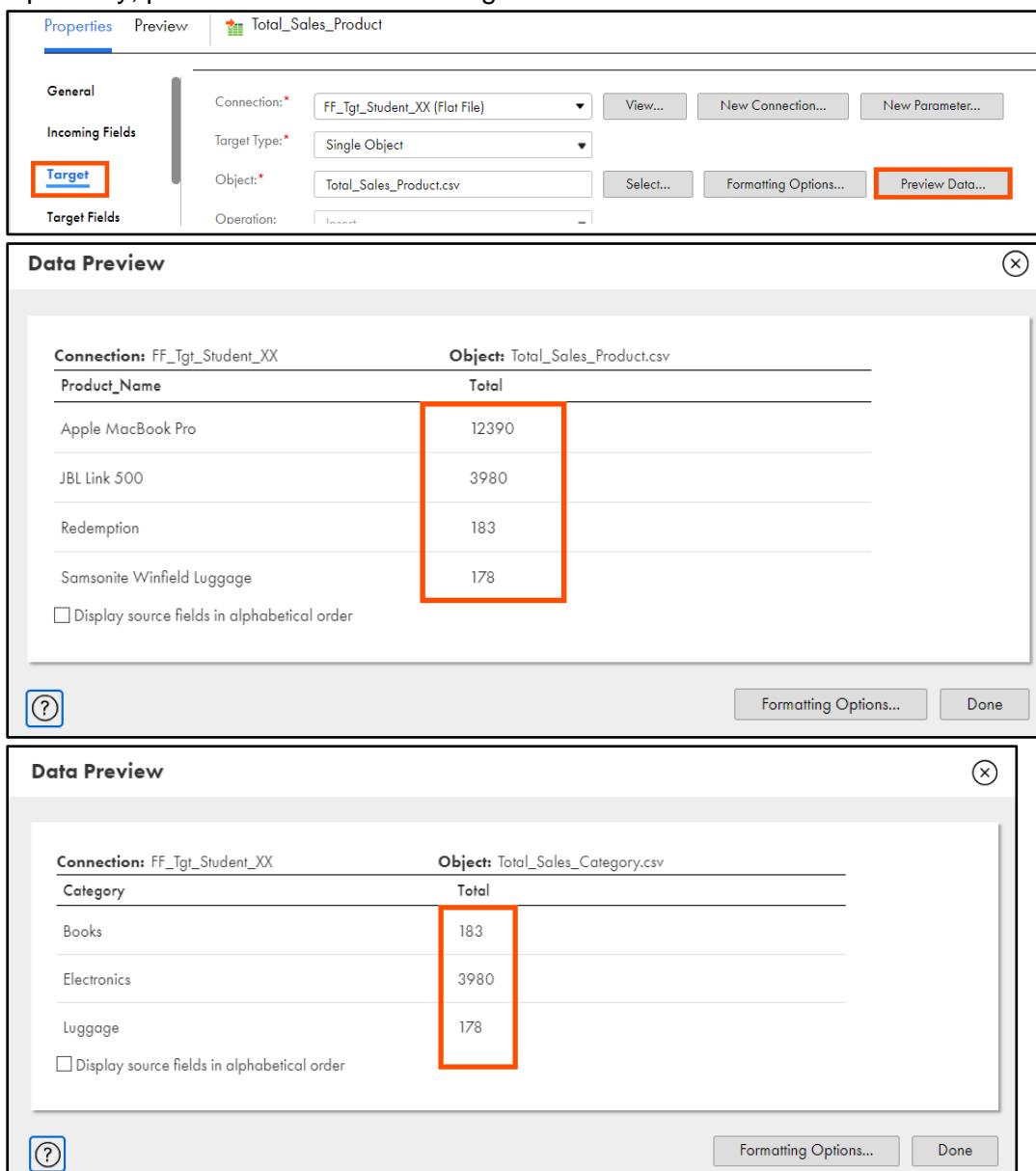
60. Click **Run**.

Monitor Status

61. Monitor the task status from the **My Jobs** page.

62. When the task completes, the status changes to **Success**.

63. Optionally, preview the data on the targets.



The screenshot shows two windows related to a Mapplet named "Total_Sales_Product".

Mapplet Properties:

- General:** Connection: FF_Tgt_Student_XX (Flat File), Target Type: Single Object, Object: Total_Sales_Product.csv, Operation: Insert.
- Incoming Fields:** Target (highlighted with a red box).
- Target Fields:** None listed.
- Buttons:** Preview Data... (highlighted with a red box).

Data Preview (for Total_Sales_Product.csv):

Product_Name	Total
Apple MacBook Pro	12390
JBL Link 500	3980
Redemption	183
Samsonite Winfield Luggage	178

Data Preview (for Total_Sales_Category.csv):

Category	Total
Books	183
Electronics	3980
Luggage	178

64. Close the asset from the navigation pane.

This concludes the lab.

Module 9: Mapping Parameterization

Lab 9-1: Performing Complete Parameterization

Overview:

Parameters are placeholders that represent values in a mapping. In IICS, you can make a mapping reusable with the help of parameters.

Objective:

- Create a completely parameterized mapping

Scenario:

Ruby wants to filter the Salesforce opportunities based on probability. However, creating a mapping every time an opportunity is added is time consuming. When she explained this concern to John, he recommends creating a completely parameterized mapping.

Duration:

30 minutes

Tasks

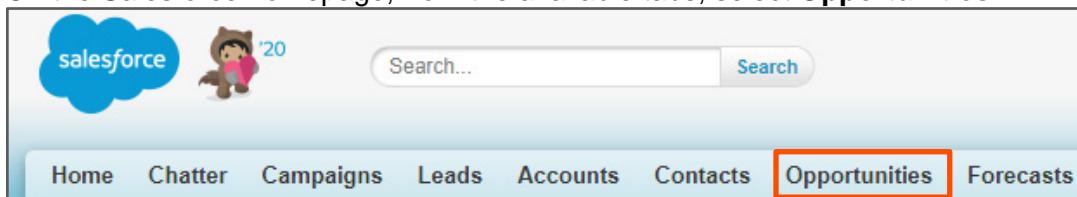
Create Opportunities in Salesforce

1. Log in to your Salesforce Developer account using your credentials.

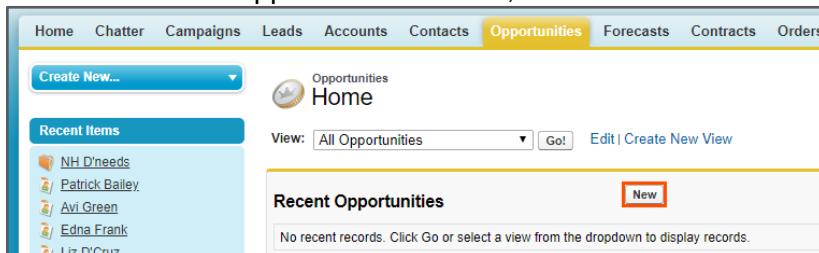
Note: You can use the below mentioned link to log in:

<https://login.salesforce.com/>

2. On the Salesforce homepage, from the available tabs, select **Opportunities**.



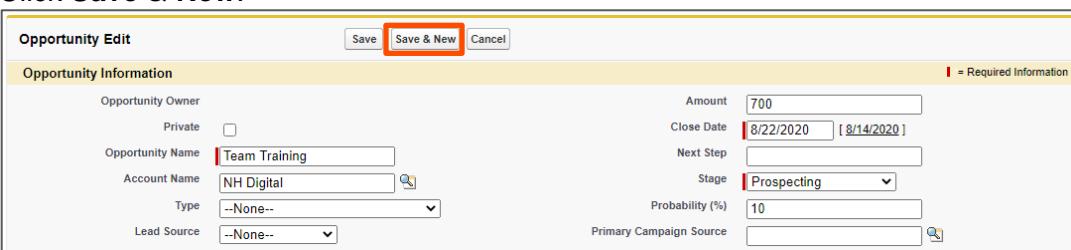
3. From the Recent Opportunities section, select **New**.



4. Enter the details, as shown in the table below:

Field Name	Values
Opportunity Name	Team Training
Account Name	NH Digital
Amount	700
Close Date	Choose a date greater than the current date
Stage	Prospecting
Probability	10

5. Click **Save & New**.



The screenshot shows the 'Opportunity Edit' page. At the top, there are three buttons: 'Save', 'Save & New' (which is highlighted with a red box), and 'Cancel'. Below the buttons is a section titled 'Opportunity Information' with a note '1 = Required Information'. The form contains fields for Opportunity Owner (Private checked), Opportunity Name (Team Training), Account Name (NH Digital), Type (None), Lead Source (None), Amount (700), Close Date (8/22/2020), Next Step (empty), Stage (Prospecting), Probability (%)(10), and Primary Campaign Source (empty).

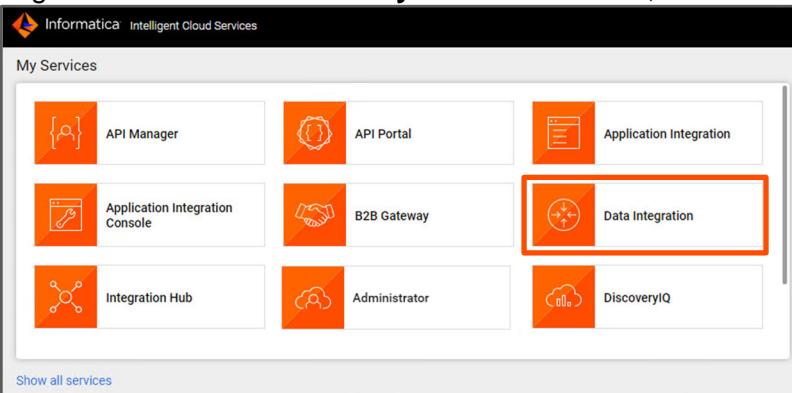
6. Similarly, create three or more opportunities in Salesforce. You can refer to the image below to create opportunities:

A	B	C	D	E	F
Opportunity Name	Account Name	Amount	Close Date	Probability	Stage
Stock Supply	NH Trends	1000000	Choose a date greater than the current date	75	Proposal/Price Quote
Service Contract Renewal	NH Everyday	95000	Choose a date greater than the current date	60	Id. Decision Makers
Annual Maintenance	NH Mart	50000	Choose a date greater than the current date	90	Negotiation/Review

7. After the last opportunity is added, click **Save**.

Create Mapping

8. Login into IICS and from the **My Services** window, select **Data Integration**.



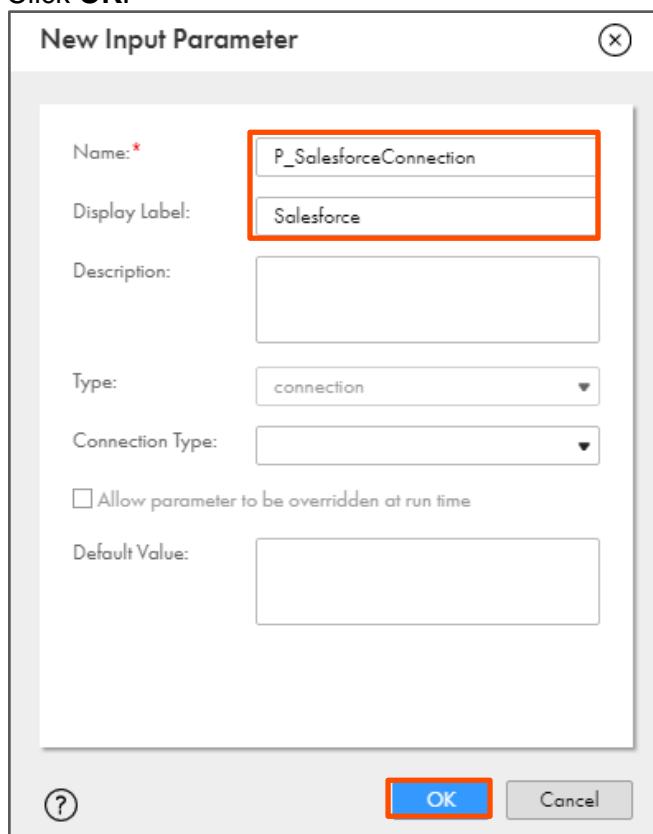
9. Create a new Mapping and name it **m_XX_MappingParameters**.
10. Verify the asset location.
11. To configure the source, from the mapping canvas, click the **Source** transformation.
12. In the General section of the Source properties, enter Name as **SO_Salesforce**.



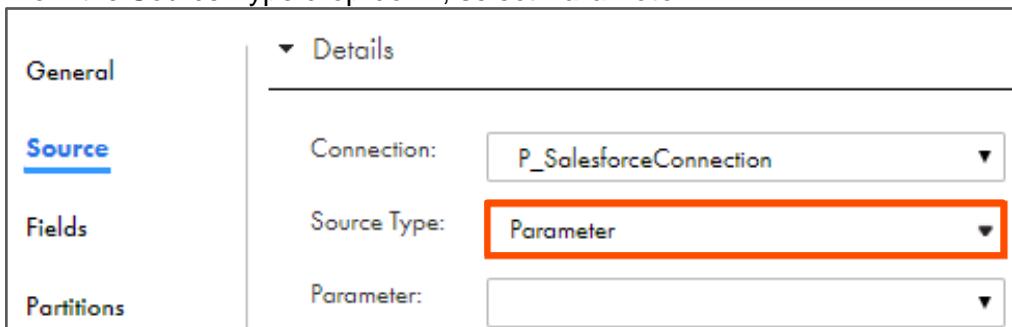
13. From the properties pane, click **Source**.
14. To create a new connection parameter, click **New Parameter...**.



15. Enter Name as **P_SalesforceConnection**, and Display Label as **Salesforce**.
16. Click **OK**.

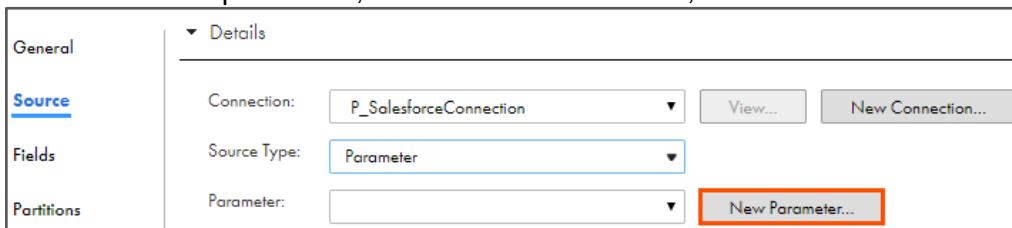


17. From the Source Type drop-down, select **Parameter**.



General	▼ Details
Source	Connection: P_SalesforceConnection
Fields	Source Type: Parameter
Partitions	Parameter:

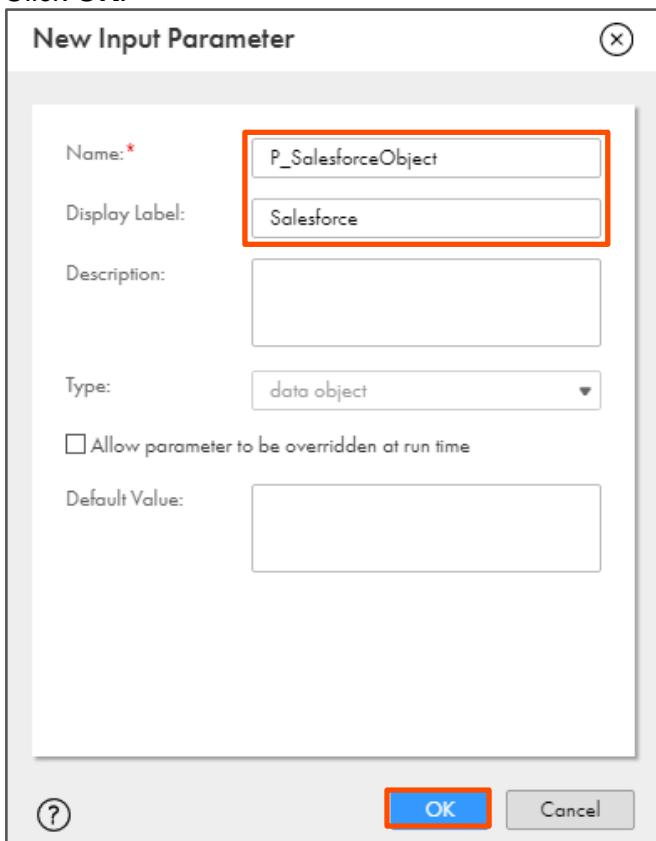
18. To create a new parameter, from the Parameter field, click **New Parameter**.



General	▼ Details
Source	Connection: P_SalesforceConnection
Fields	Source Type: Parameter
Partitions	Parameter: New Parameter...

19. Enter Name as **P_SalesforceObject**, and the Display Label as **Salesforce**.

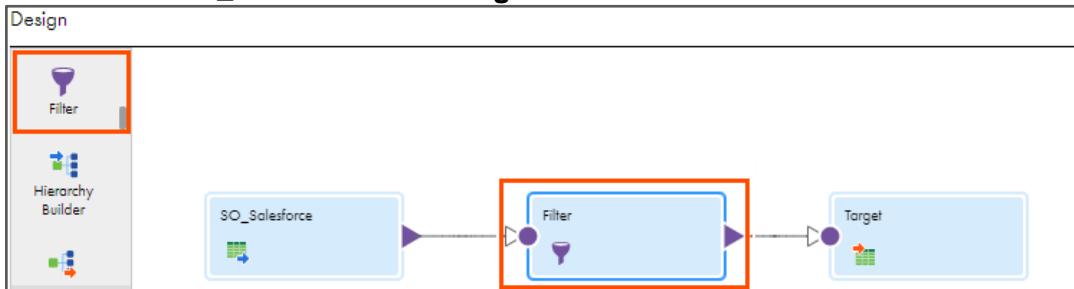
20. Click **OK**.



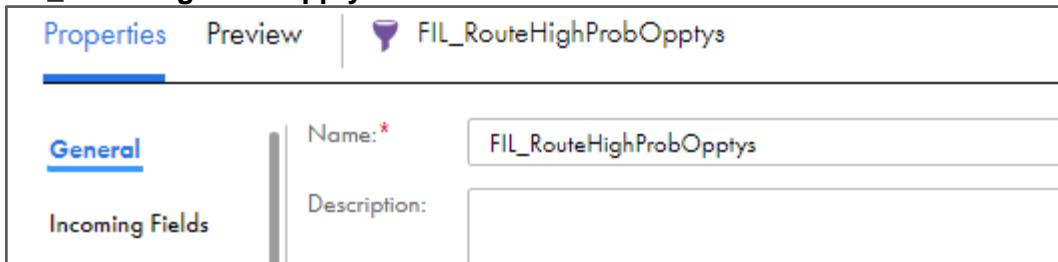
New Input Parameter

Name:*	P_SalesforceObject
Display Label:	Salesforce
Description:	(empty)
Type:	data object
<input type="checkbox"/> Allow parameter to be overridden at run time	
Default Value:	
<input data-bbox="334 1721 367 1763" type="button" value="?"/> <input data-bbox="693 1721 775 1763" type="button" value="OK"/> <input data-bbox="824 1721 905 1763" type="button" value="Cancel"/>	

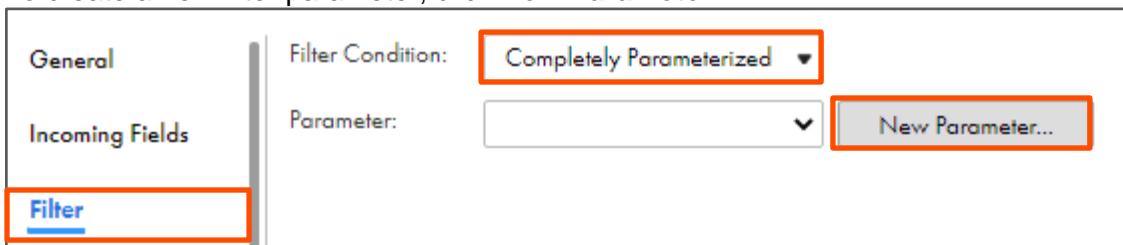
21. From the list of available transformations, drag and drop a **Filter** transformation onto the link between **SO_Salesforce** and **Target**.



22. In the General section of the Filter properties, enter the Name as **FIL_RouteHighProbOpptys**.

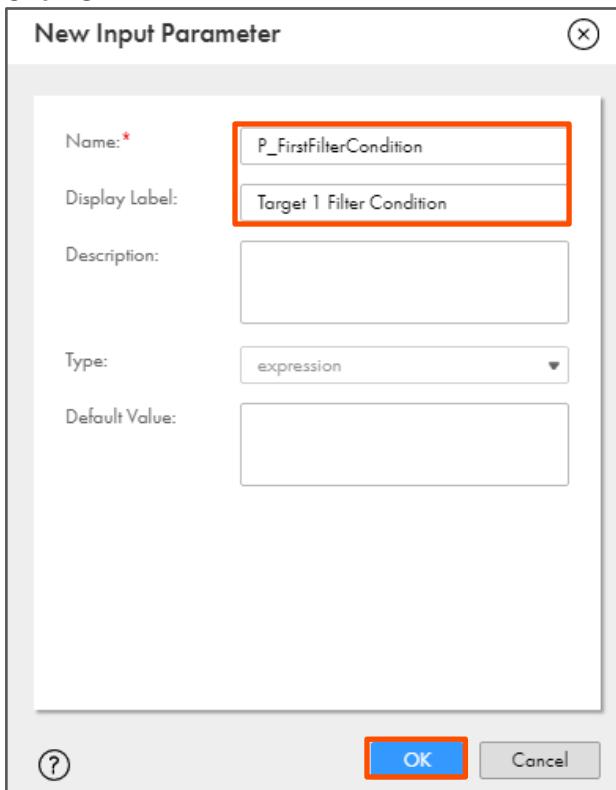


23. From the properties pane, click **Filter**.
 24. From the Filter Condition drop-down, select **Completely Parameterized**.
 25. To create a new filter parameter, click **New Parameter**.



26. Enter Name as **P_FirstFilterCondition**, and Display Label as **Target 1 Filter Condition**.

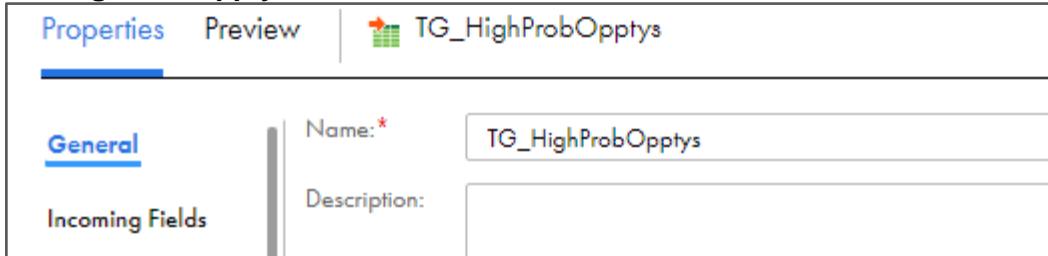
27. Click **OK**.



28. To configure the target, from the mapping canvas, click the **Target** transformation.

29. In the General section of the Target properties, enter the Name as

TG_HighProbOpptys.



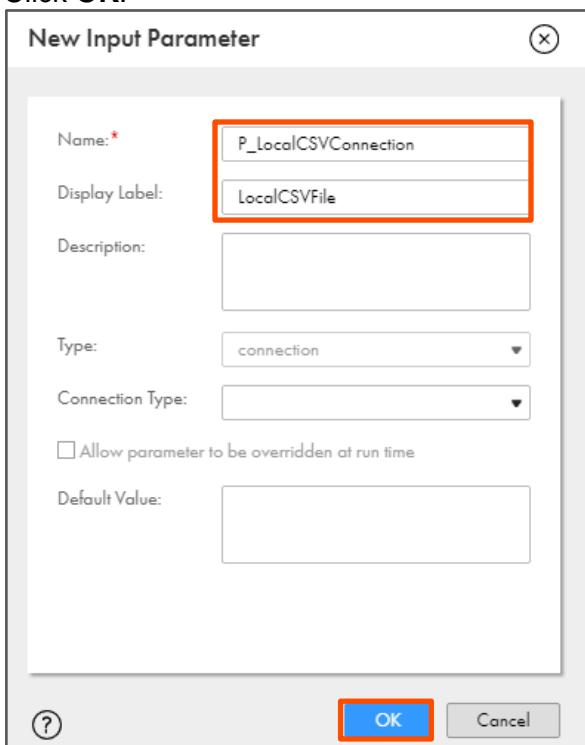
30. From the properties pane, click **Target**.

31. To create a new connection parameter, click **New Parameter**.



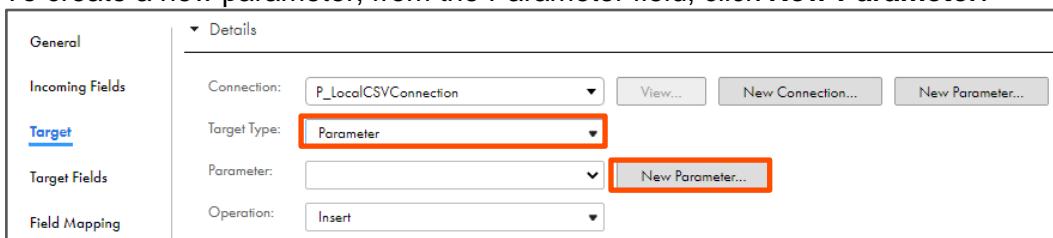
32. Enter Name as **P_LocalCSVConnection**, and Display Label as **LocalCSVFile**.

33. Click **OK**.



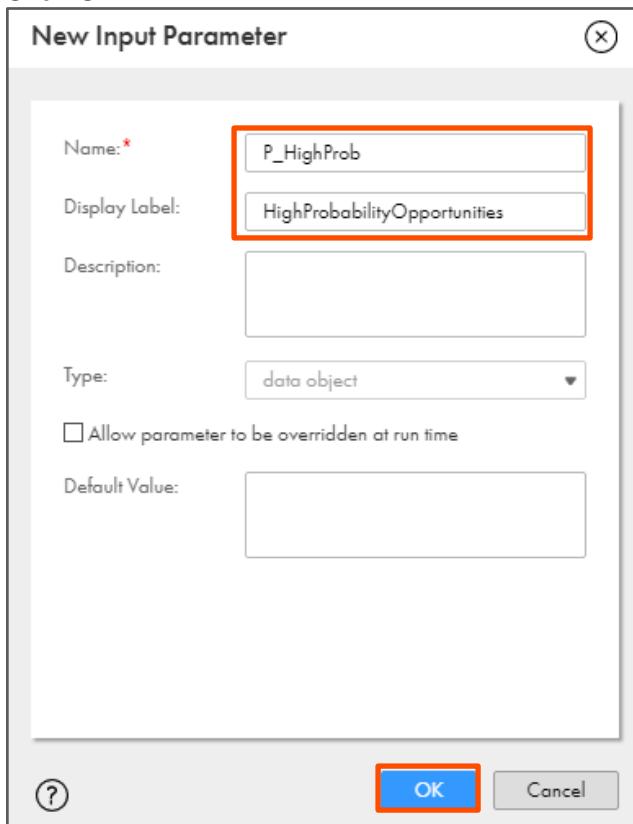
34. From the Target Type drop-down, select **Parameter**.

35. To create a new parameter, from the Parameter field, click **New Parameter**.



36. Enter Name as **P_HighProb**, and the Display Label as **HighProbabilityOpportunities**.

37. Click **OK**.

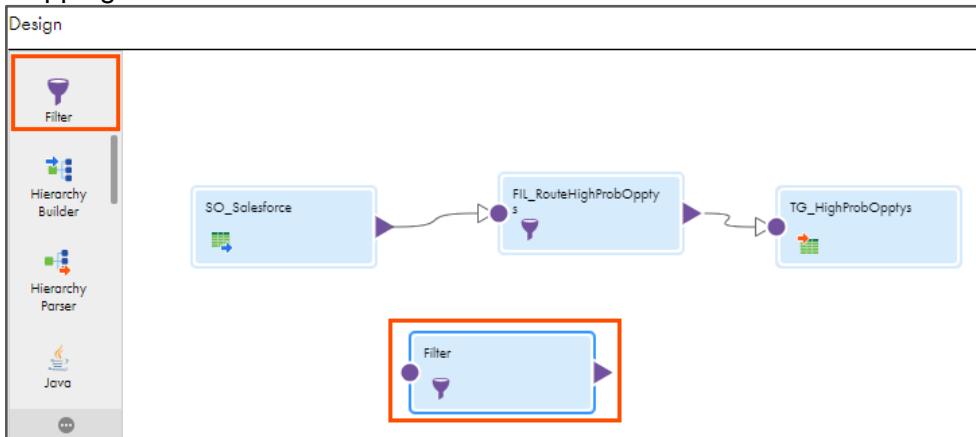


38. From the properties pane, click **Field Mapping**.

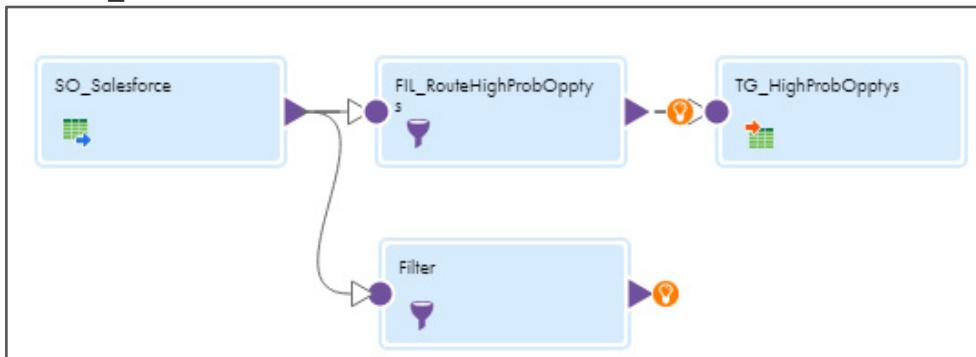
39. From the Field map options drop-down, select **Automatic**.



40. From the list of available transformations, drag and drop a **Filter** transformation onto the mapping canvas.

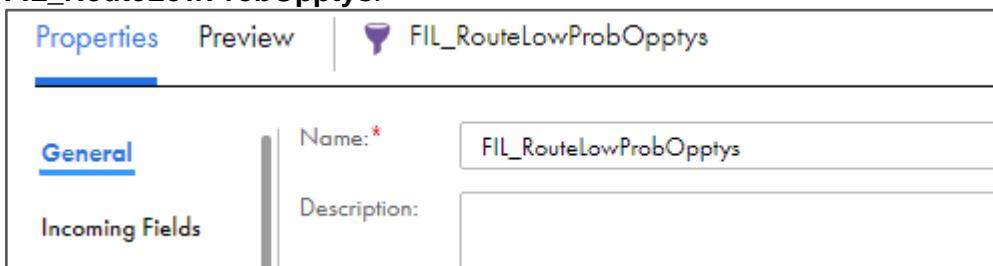


41. Link **SO_Salesforce** to the **Filter** transformation.



42. Select the **Filter** transformation from the mapping canvas.

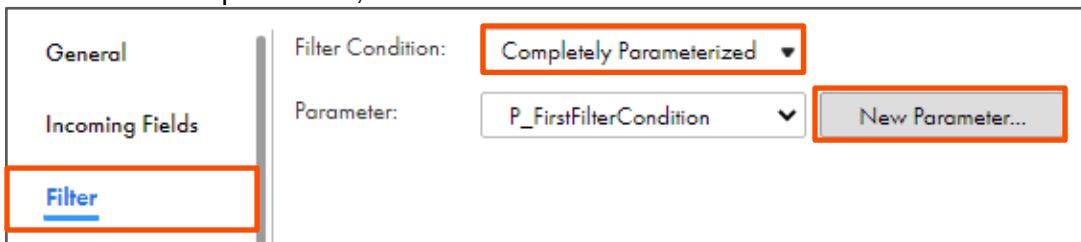
43. In the General section of the Filter properties, enter the Name as
FIL_RouteLowProbOpptys.



44. From the properties pane, click **Filter**.

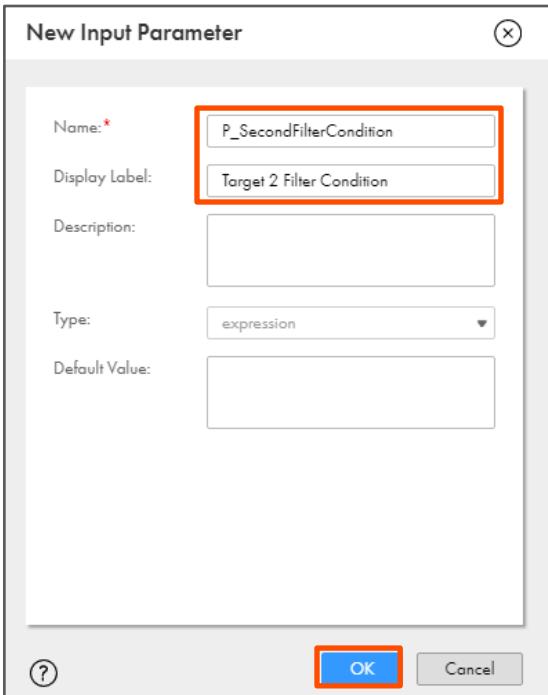
45. From the Filter Condition drop-down, select **Completely Parameterized**.

46. To create a new parameter, click **New Parameter**.

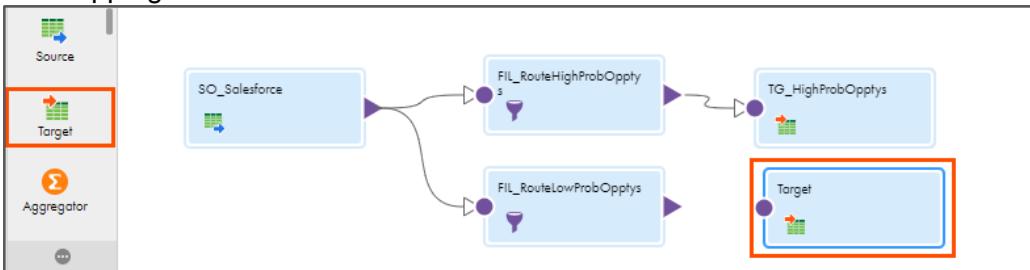


47. Enter Name as **P_SecondFilterCondition**, and Display Label as **Target 2 Filter Condition**.

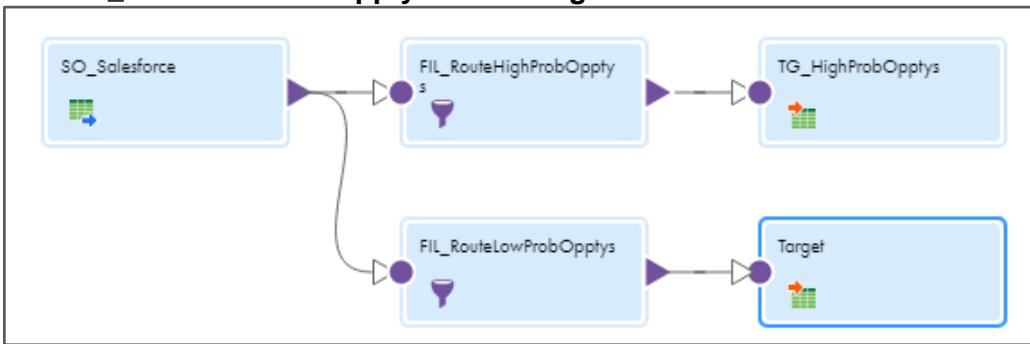
48. Click **OK**.



49. From the list of available transformations, drag and drop a **Target** transformation onto the mapping canvas.



50. Link **FIL_RouteLowProbOpptys** to the **Target** transformation.



51. Select the **Target** transformation from the mapping canvas.

52. In the General section of Target properties, enter Name as **TG_LowProbOpptys**.

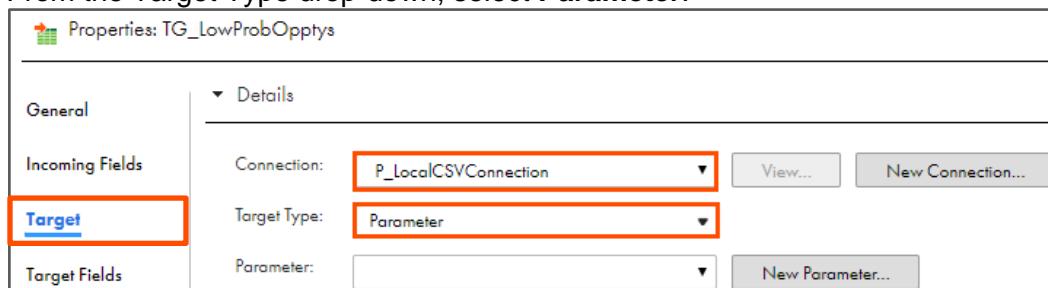


The screenshot shows the 'Properties' pane for a target object named 'TG_LowProbOpptys'. The 'General' tab is selected. The 'Name:' field contains 'TG_LowProbOpptys'. The 'Description:' field is empty.

53. From the properties pane, click **Target**.

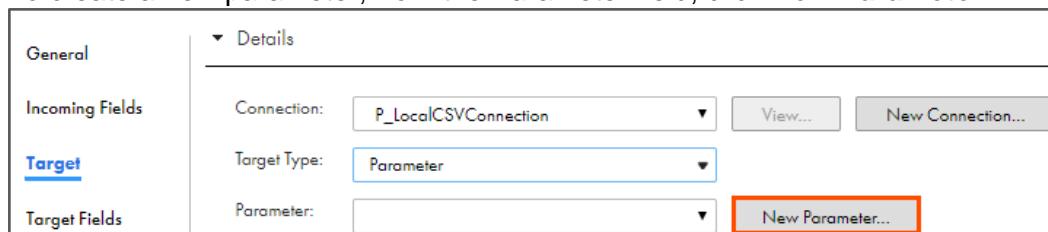
54. From the Connection drop-down, select **P_LocalCSVConnection**.

55. From the Target Type drop-down, select **Parameter**.



The screenshot shows the 'Properties: TG_LowProbOpptys' pane. The 'Target' tab is selected. The 'Connection:' dropdown is set to 'P_LocalCSVConnection'. The 'Target Type:' dropdown is set to 'Parameter'.

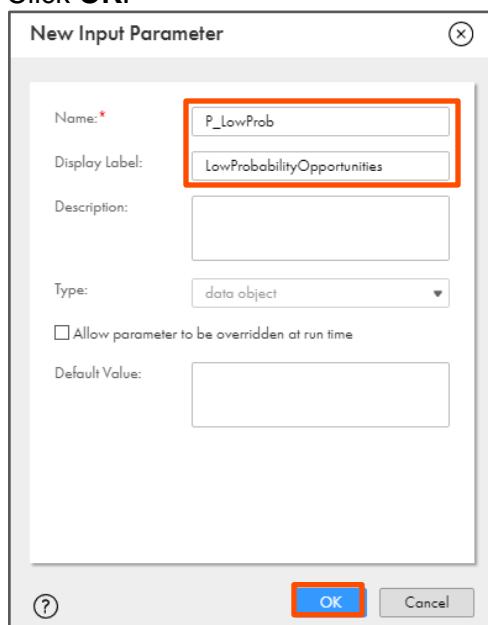
56. To create a new parameter, from the Parameter field, click **New Parameter...**



The screenshot shows the 'Properties: TG_LowProbOpptys' pane. The 'Target' tab is selected. The 'Parameter:' field is highlighted with a red box, and the 'New Parameter...' button is also highlighted with a red box.

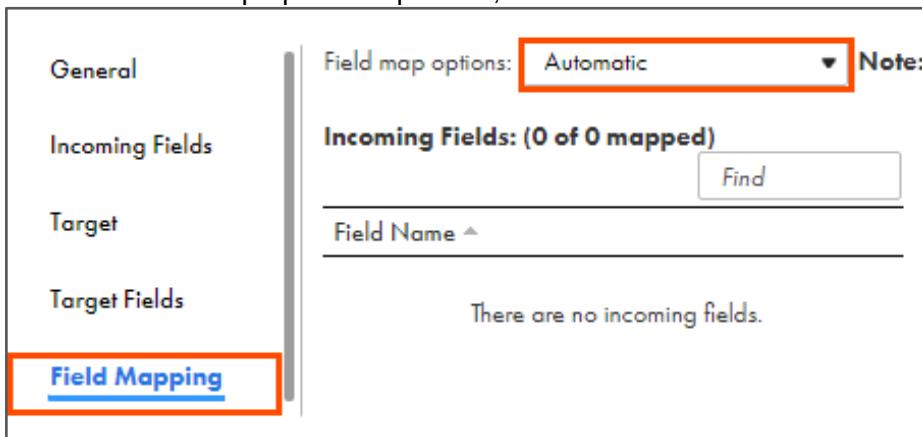
57. Enter Name as **P_LowProb**, and the Display Label as **LowProbabilityOpportunities**.

58. Click **OK**.



The screenshot shows the 'New Input Parameter' dialog box. The 'Name:' field is set to 'P_LowProb' and the 'Display Label:' field is set to 'LowProbabilityOpportunities'. The 'OK' button at the bottom is highlighted with a red box.

59. From the properties pane, click **Field Mapping**.
 60. From the Field map option drop-down, select **Automatic**.



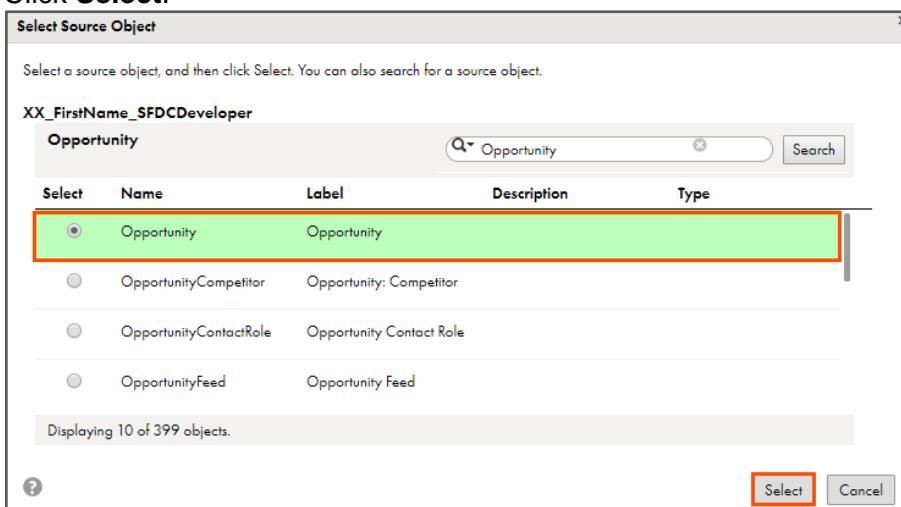
The screenshot shows the 'Field Mapping' tab selected in the properties pane. The 'Field map options' dropdown is set to 'Automatic'. The 'Incoming Fields' section displays '(0 of 0 mapped)'.

61. Save and run the mapping.
 62. From the Runtime Environment drop-down, select INFA-SERVER.
 63. Click **Next**.
 64. From the Salesforce (P_SalesforceConnection) Connection drop-down, select your **Salesforce** connection.
 65. From the Salesforce Object field, click **Select**.



The screenshot shows the 'Sources' tab selected. The 'Salesforce Object' dropdown has its 'Select...' button highlighted with a red box.

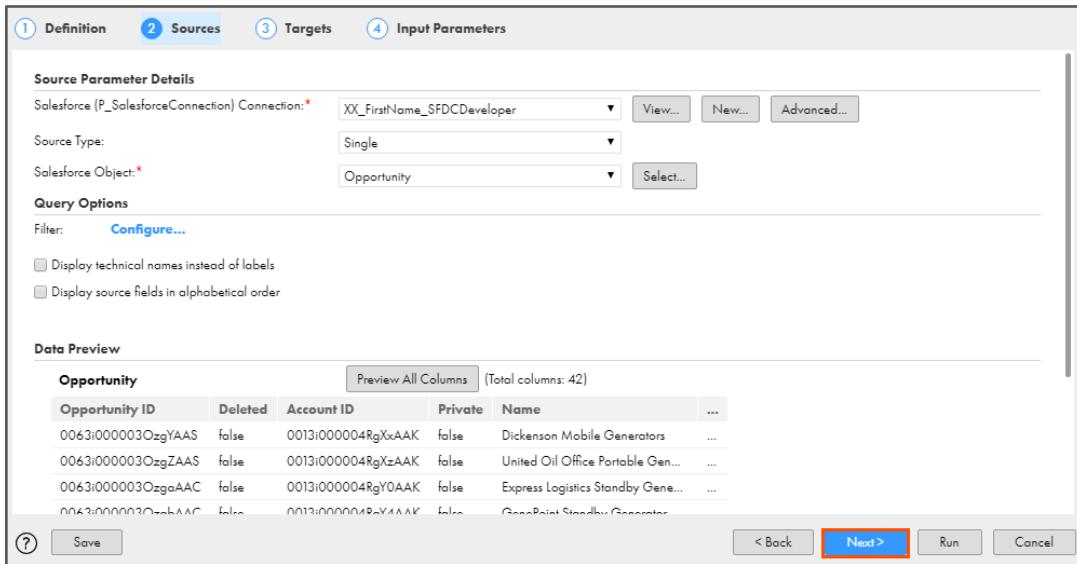
66. From the list, select **Opportunity**.
Note: You can also use the search feature.
 67. Click **Select**.



The screenshot shows the 'Select Source Object' dialog box. The 'Opportunity' object is selected and highlighted with a red box in the list.

Select	Name	Label	Description	Type
<input checked="" type="radio"/>	Opportunity	Opportunity		
<input type="radio"/>	OpportunityCompetitor	Opportunity: Competitor		
<input type="radio"/>	OpportunityContactRole	Opportunity Contact Role		
<input type="radio"/>	OpportunityFeed	Opportunity Feed		

68. Click **Next**.



Source Parameter Details

Salesforce (P_SalesforceConnection) Connection: XX_FirstName_SFDCDeveloper

Source Type: Single

Salesforce Object: Opportunity

Query Options

Filter: [Configure...](#)

Display technical names instead of labels
 Display source fields in alphabetical order

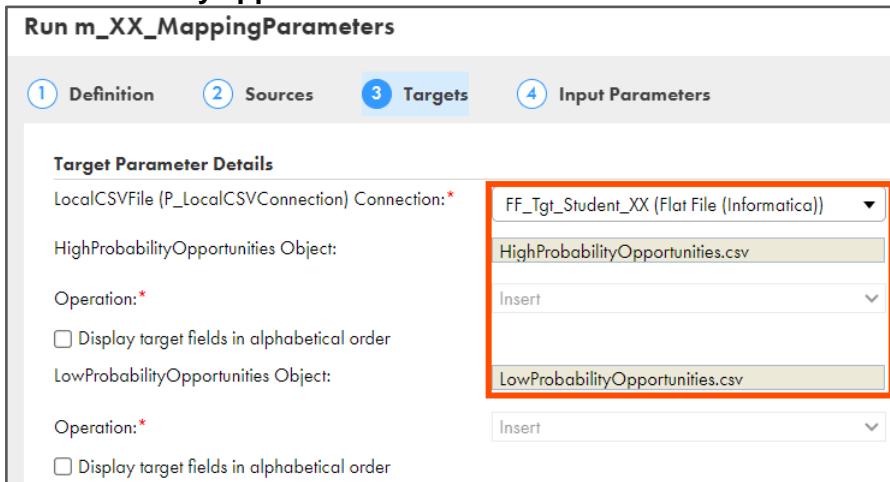
Data Preview

Opportunity					Preview All Columns (Total columns: 42)
Opportunity ID	Deleted	Account ID	Private	Name	...
0063i000003OzgYAAS	false	0013i000004RgXzAAK	false	Dickenson Mobile Generators	...
0063i000003OzgZAAS	false	0013i000004RgXzAAK	false	United Oil Office Portable Gen...	...
0063i000003OzgAAC	false	0013i000004RgY0AAK	false	Express Logistics Standby Gene...	...
0042i000003OzgAAC	false	0013i000004RgY1AAK	false	General Standby Generator	...

69. From the LocalCSVFile (P_LocalCSVConnection) Connection drop-down, select your **target Flat File** connection.

70. To select the HighProbabilityOpportunities Object, click **Select** and choose the **HighProbabilityOpportunities.csv** file.

71. From the LowProbabilityOpportunities Object field, click **Select** and choose the **LowProbabilityOpportunities.csv** file.



Run m_XX_MappingParameters

1 Definition 2 Sources 3 Targets 4 Input Parameters

Target Parameter Details

LocalCSVFile (P_LocalCSVConnection) Connection: FF_Tgt_Student_XX (Flat File (Informatica))

HighProbabilityOpportunities Object: **HighProbabilityOpportunities.csv**

Operation: Insert

Display target fields in alphabetical order

LowProbabilityOpportunities Object:

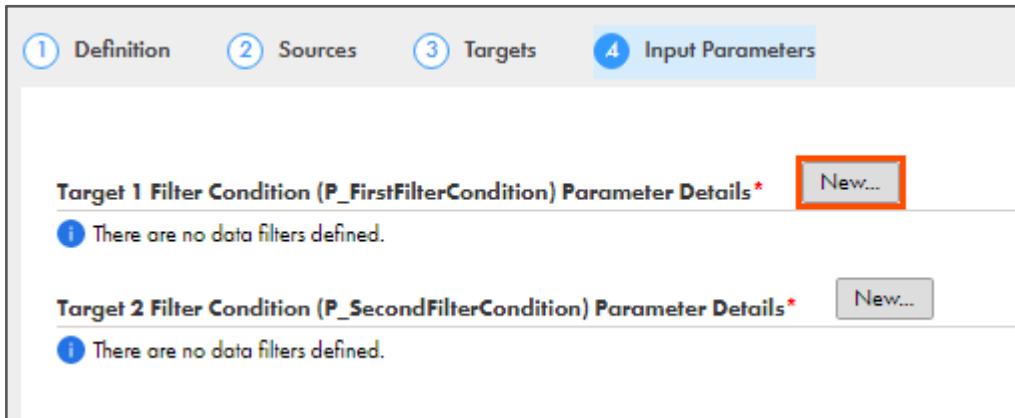
LowProbabilityOpportunities Object: **LowProbabilityOpportunities.csv**

Operation: Insert

Display target fields in alphabetical order

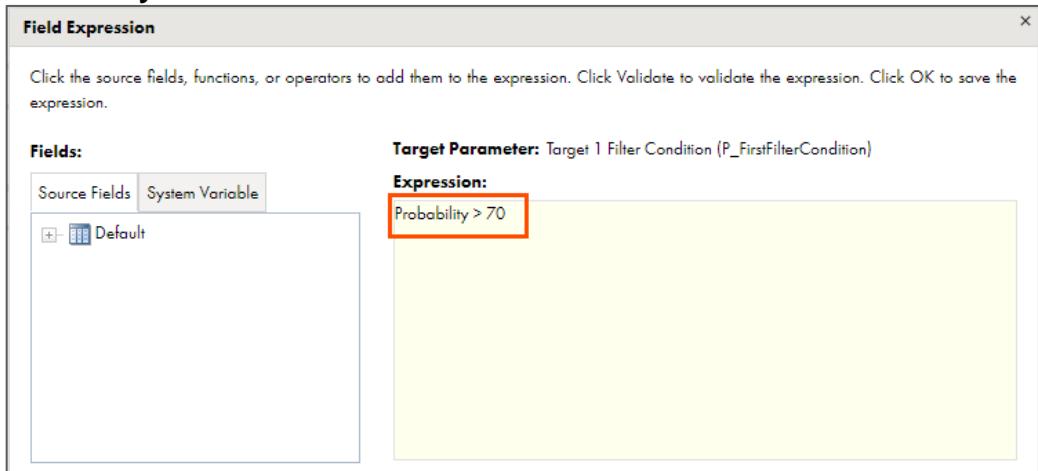
72. Click **Next**.

73. To define Target 1 Filter Condition (P_FirstFilterCondition) Parameter Details, click **New** and select **Advanced**.

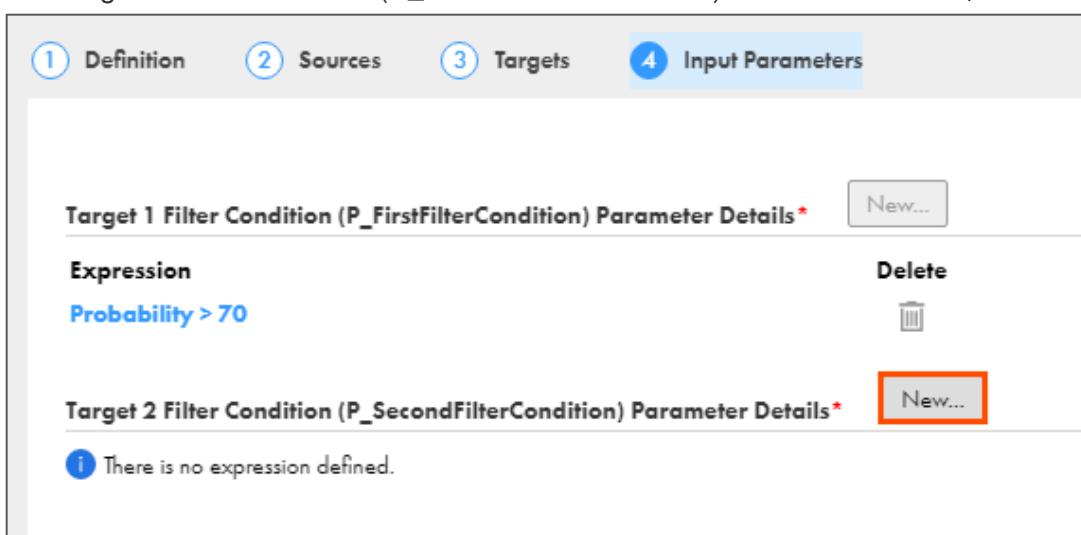


74. Enter the filter condition as shown below and click **OK**.

Probability > 70

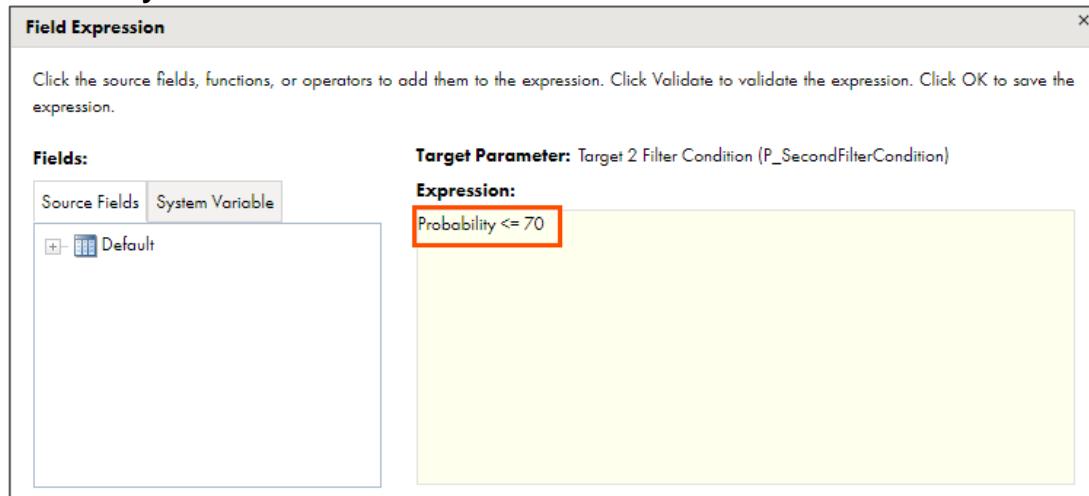


75. For Target 2 Filter Condition (P_SecondFilterCondition) Parameter Details, click **New**.



76. Enter the filter condition as shown below and click **OK**.

Probability <= 70



77. Click **Run**.

Monitor Status

78. To monitor the task status, navigate to the **My Jobs** page.

79. The task status changes to **Success**.

Note: You can refresh the job status if it does not change automatically.

80. Close the asset from the navigation pane.

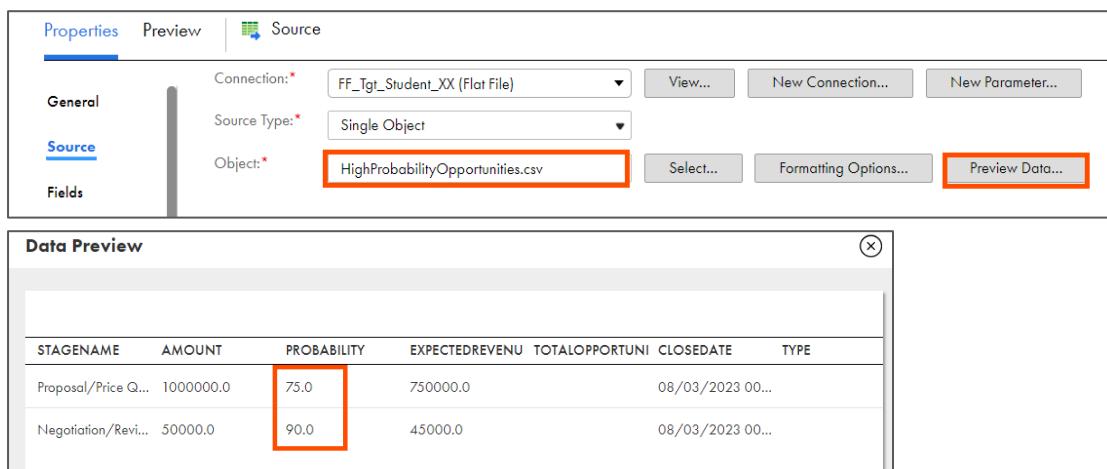
Optional - Open the Dummy Mapping and View the Data

81. Navigate to your working folder and open the dummy mapping **m_XX_DUMMY_MAPPING**.

82. From the mapping canvas, select **Source** and go to the **Source** properties tab.

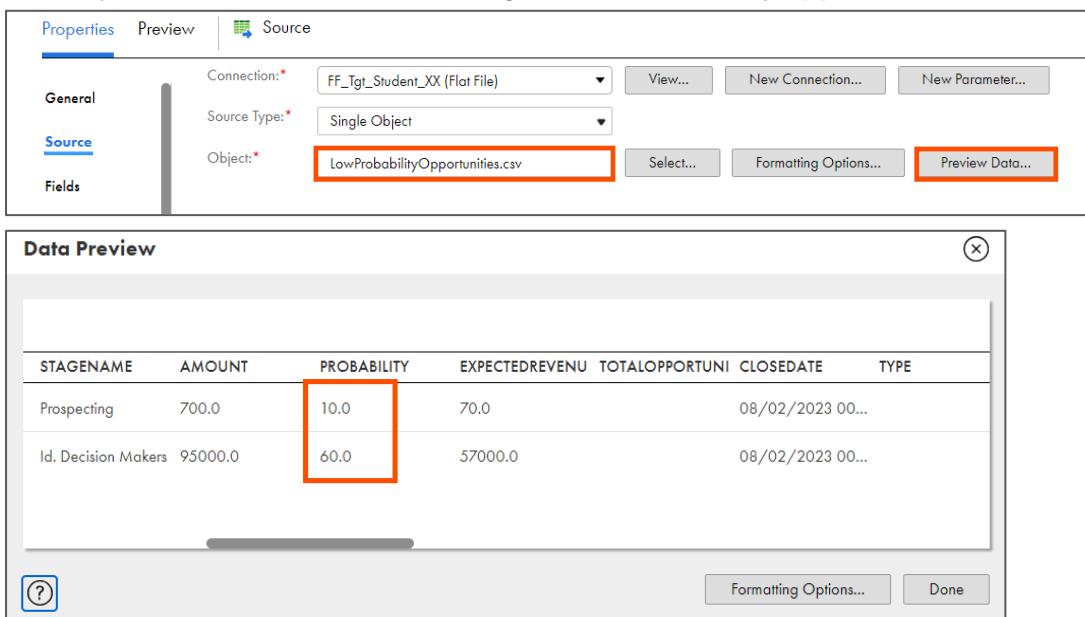
83. Change the Connection to your target Flat File connection. Click **Yes** in the Change Connection window.

84. Select the Object as your target – **HighProbabilityOpportunities.csv**, and preview the data.



STAGENAME	AMOUNT	PROBABILITY	EXPECTEDREVENU	TOTALOPPORTUNI	CLOSEDATE	TYPE
Proposal/Price Quo...	1000000.0	75.0	750000.0		08/03/2023 00...	
Negotiation/Review...	50000.0	90.0	45000.0		08/03/2023 00...	

85. Similarly, observe the results of the target - **LowProbabilityOpportunities.csv**.



The screenshot shows the Informatica PowerCenter interface. In the top navigation bar, 'Properties' is selected. Below it, the 'Source' tab is active. Under the 'General' section, 'Connection:' is set to 'FF_Tgt_Student_XX (Flat File)' and 'Source Type:' is 'Single Object'. The 'Object:' dropdown is set to 'LowProbabilityOpportunities.csv', which is highlighted with a red box. To the right of this dropdown are 'Select...', 'Formatting Options...', and 'Preview Data...' buttons, with 'Preview Data...' also highlighted with a red box.

The 'Data Preview' window is open, displaying the contents of 'LowProbabilityOpportunities.csv'. The data is presented in a table with the following columns: STAGENAME, AMOUNT, PROBABILITY, EXPECTEDREVENU, TOTALOPPORTUNI, CLOSEDATE, and TYPE. Two rows of data are shown:

STAGENAME	AMOUNT	PROBABILITY	EXPECTEDREVENU	TOTALOPPORTUNI	CLOSEDATE	TYPE
Prospecting	700.0	10.0	70.0		08/02/2023 00...	
Id. Decision Makers	95000.0	60.0	57000.0		08/02/2023 00...	

Below the preview table are 'Formatting Options...' and 'Done' buttons. A question mark icon is located in the bottom-left corner of the preview window.

86. Save and close all the assets from the navigation pane.

This concludes the lab.

Module 9: Mapping Parameterization

Lab 9-2: Using In-Out Parameters for Incremental Data Loading

Overview:

In IICS, you can use an in-out parameter as a persistent task variable to manage an incremental data load.

In this lab, you will create a mapping with in-out parameter.

Objective:

- Use Input-Output parameters in a mapping

Scenario:

The Alaska outlet of NH suppliers is facing issues in maintaining sales data and wants to archive the older data. They also want to maintain the data based on the order Ids. So, they contact Ruby for help. Ruby discusses the issue with John, who suggests using the In-Out parameters in IICS for incremental data load.

In this lab, John uses the in-out parameters to define an orderid parameter in the mapping.

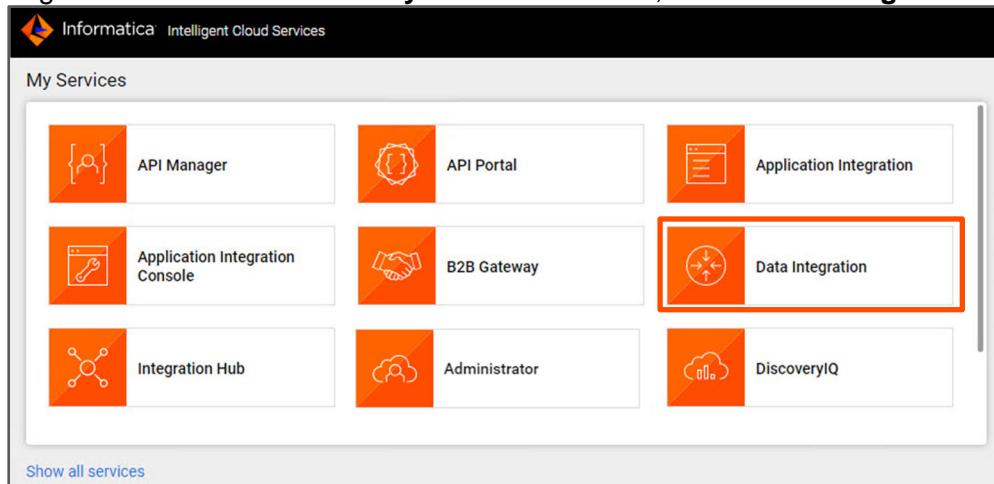
Duration:

15 minutes

Tasks

Create a Mapping

1. Login into IICS and from the **My Services** window, select **Data Integration**.

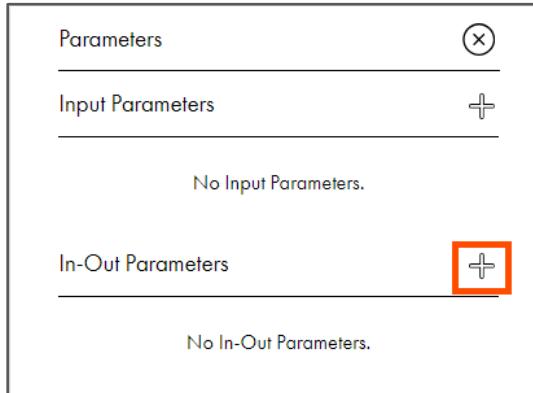


2. Create a new Mapping and name it **m_XX_InOutParameter**.

3. To create an input-output parameter, click .



4. From the In-Out Parameters section, click .



Parameters 

Input Parameters 

No Input Parameters.

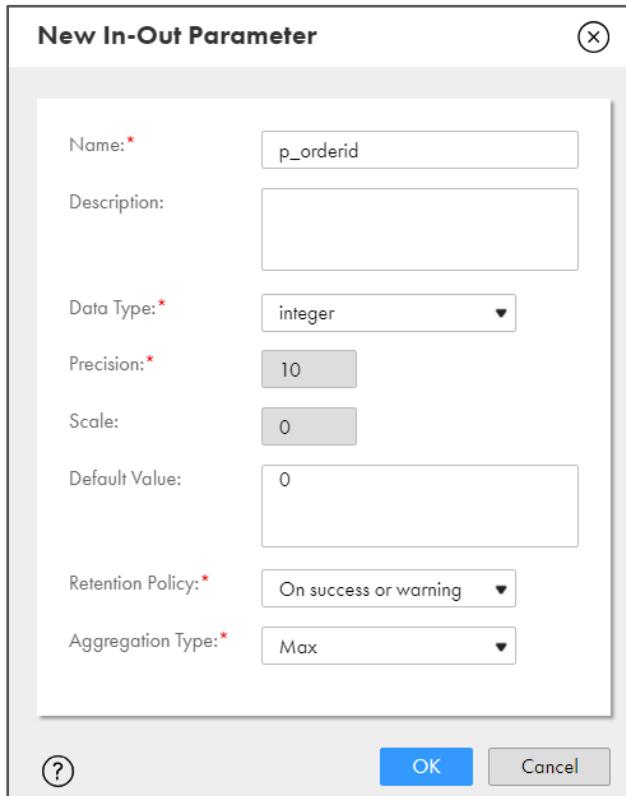
In-Out Parameters 

No In-Out Parameters.

5. Create the field as shown in the table below:

Name	Data Type	Precision	Default Value
p_orderid	integer	10	0

6. Click **OK**.



New In-Out Parameter 

Name: * p_orderid

Description:

Data Type: * integer

Precision: * 10

Scale: 0

Default Value: 0

Retention Policy: * On success or warning

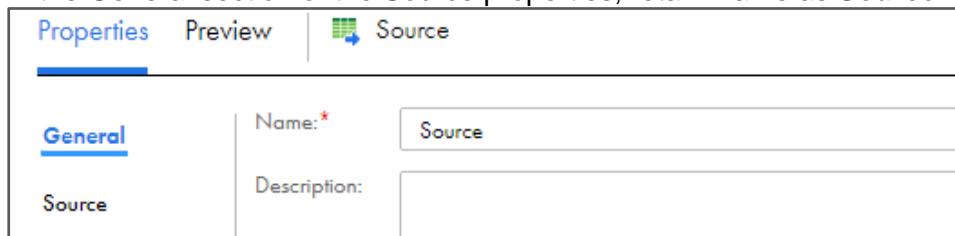
Aggregation Type: * Max

7. Close the Parameters window.

8. To configure the source, from the mapping canvas, click the **Source** transformation.

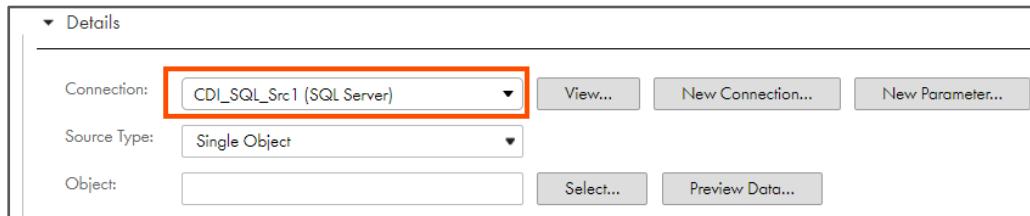
9. In the General section of the Source properties, retain Name as **Source**.



General	
Name:	* Source
Description:	

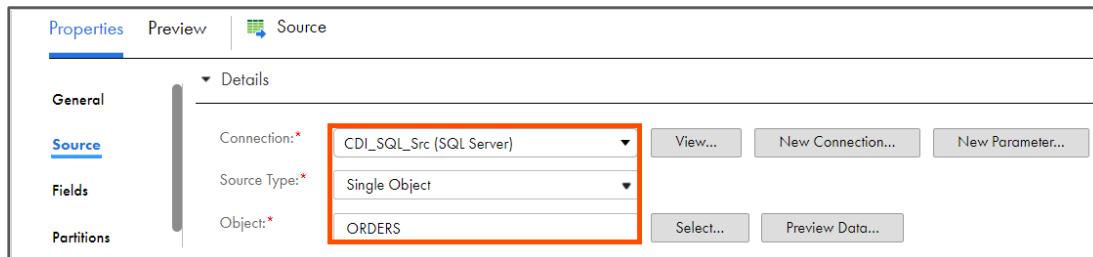
10. From the properties pane, click **Source**.

11. From the Connection drop-down, select **CDI_SQL_Src**.



Source	
Connection:	CDI_SQL_Src1 (SQL Server)
Source Type:	Single Object
Object:	

12. To select the source object from the Object field, click **Select**, and choose ORDERS.



Source	
Connection:	CDI_SQL_Src (SQL Server)
Source Type:	Single Object
Object:	ORDERS

13. Scroll down and expand **Query Options**.

14. To apply the filter to select rows from the ORDERS table, click **Configure**.



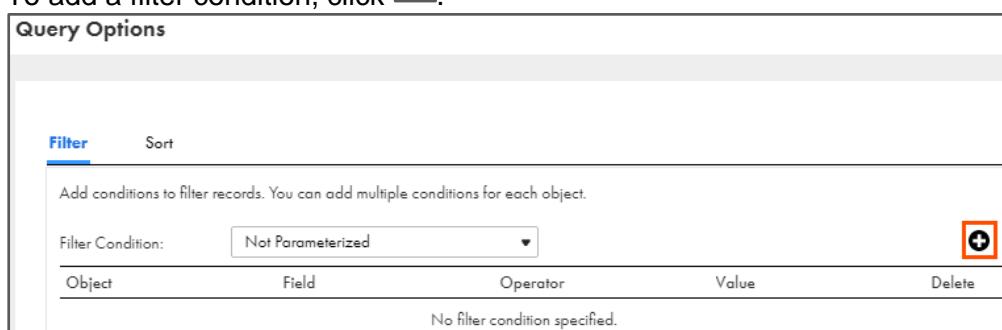
▼ Query Options

Filter: [Configure...](#)

Sort: [Configure...](#)

Select distinct rows only

15. To add a filter condition, click .



Query Options

Filter Sort

Add conditions to filter records. You can add multiple conditions for each object.

Filter Condition: Not Parameterized

Object	Field	Operator	Value	Delete
No filter condition specified.				

16. Enter the details as shown in the table below:

Object	Field	Operator	Value
ORDERS	ORDERID	Greater Than (>)	\$\$p_orderid

Query Options

Filter **Sort**

Add conditions to filter records. You can add multiple conditions for each object.

Filter Condition: Not Parameterized

Object	Field	Operator	Value	Actions
ORDERS	ORDERID	> (Greater Than)	\$\$p_orderid	

17. Click **OK**.

18. To configure the sort condition, select the **Sort** tab.

Query Options

Filter **Sort**

Add conditions to sort records. You can add multiple conditions for each object.

Sort: Not Parameterized Sort Order: Ascending

Object	Field	Actions
No sort field specified.		

19. To add a sort condition, click .

20. Enter the details as shown in the table below:

Object	Field
ORDERS	ORDERID

Query Options

Filter **Sort**

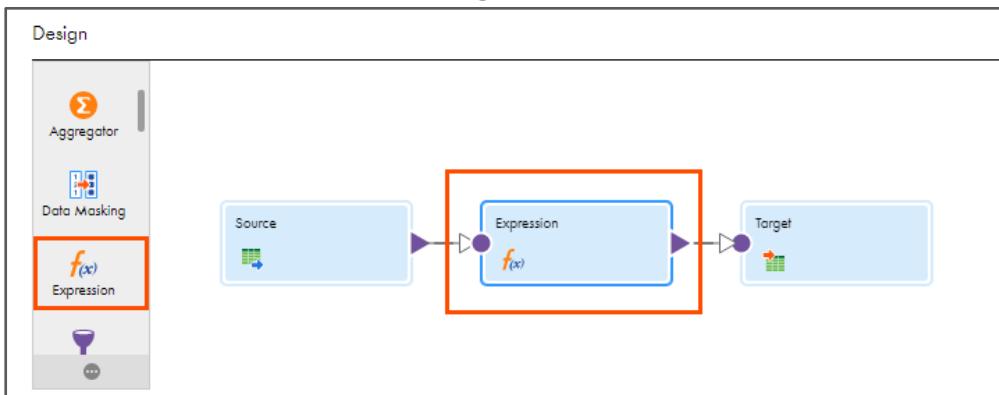
Add conditions to sort records. You can add multiple conditions for each object.

Sort: Not Parameterized Sort Order: Ascending

Object	Field	Actions
ORDERS	ORDERID	

21. Click **OK**

22. From the list of available transformations, drag and drop an **Expression** transformation on the link between **Source** and **Target**.



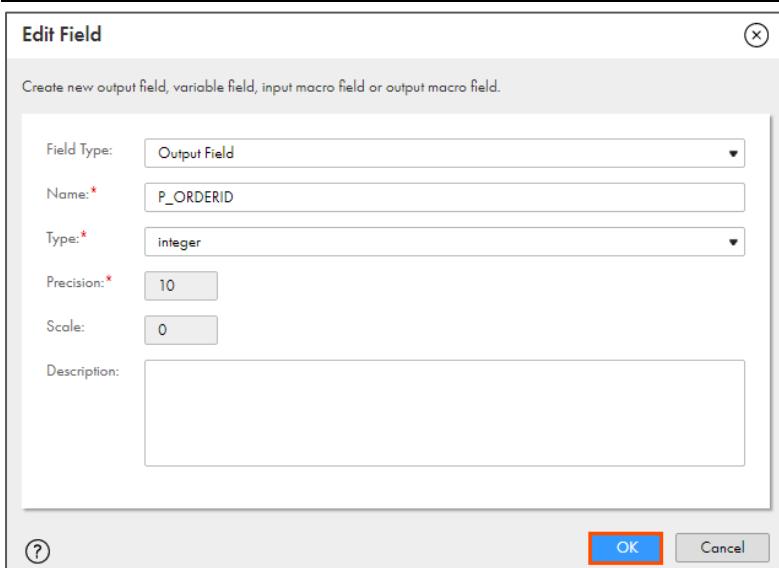
23. Select the **Expression** transformation from the mapping canvas.

24. From the properties pane, click **Expression**.

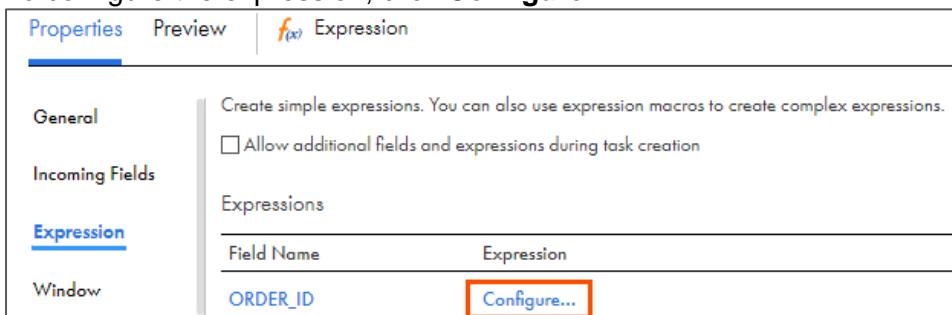
25. To add a new expression, click .

26. Enter the details as shown in the table below and click **OK**.

Field Type	Name	Type	Precision	Scale
Output Field	P_ORDERID	integer	10	0



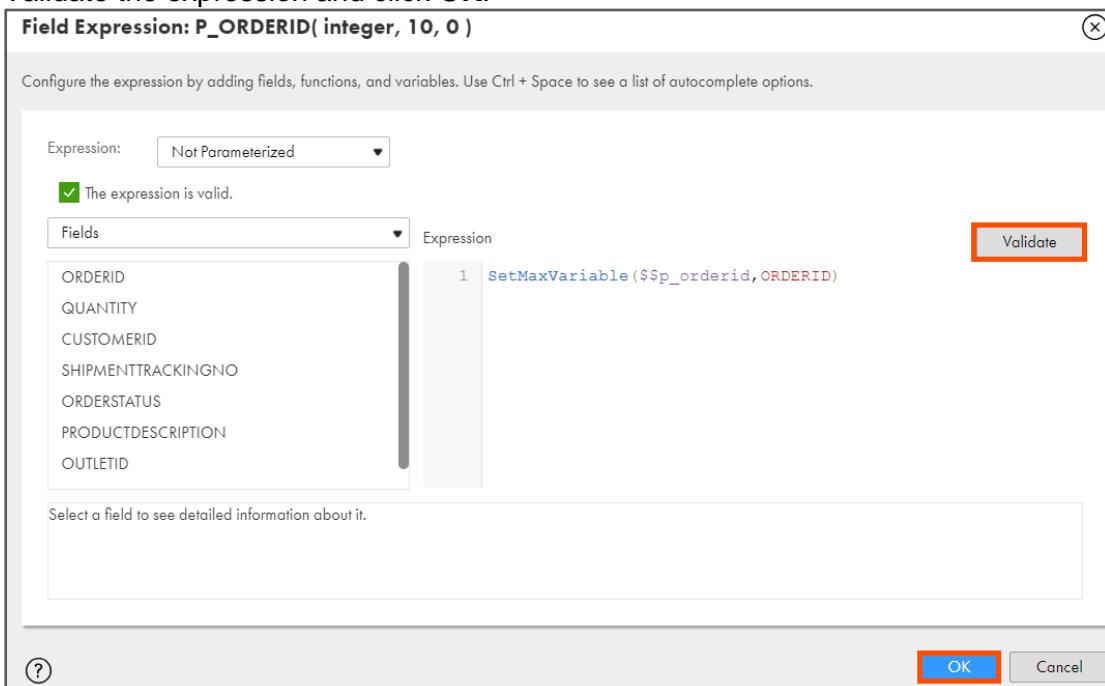
27. To configure the expression, click **Configure**.



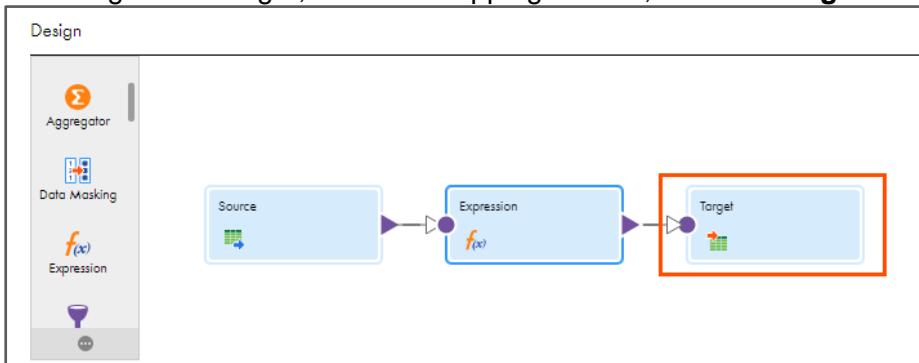
28. In the Expression field, copy and paste the following expression:

SetMaxVariable(\$\$p_orderid,ORDERID)

29. Validate the expression and click **OK**.



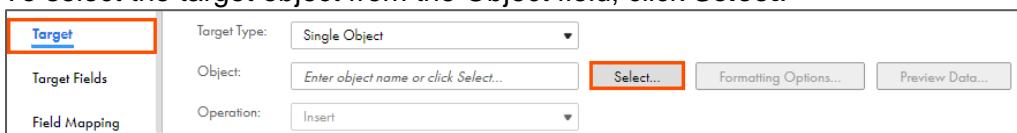
30. To configure the target, from the mapping canvas, click the **Target** transformation.



31. From the properties pane, click **Target**.

32. From the Connection drop-down, select your **target Flat File** connection.

33. To select the target object from the Object field, click **Select**.

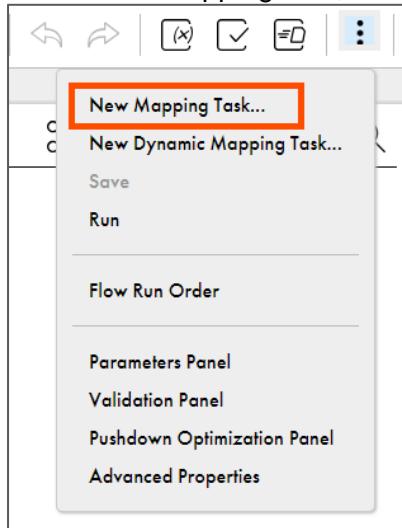


34. In the Target Object window, select **Create New at Runtime**.

35. In the Table Name field, enter **m_XX_InOutParameter.csv** and click **OK**.

36. **Save** the mapping.

37. To create a mapping task, click on the ellipsis icon and select **New Mapping Task**.

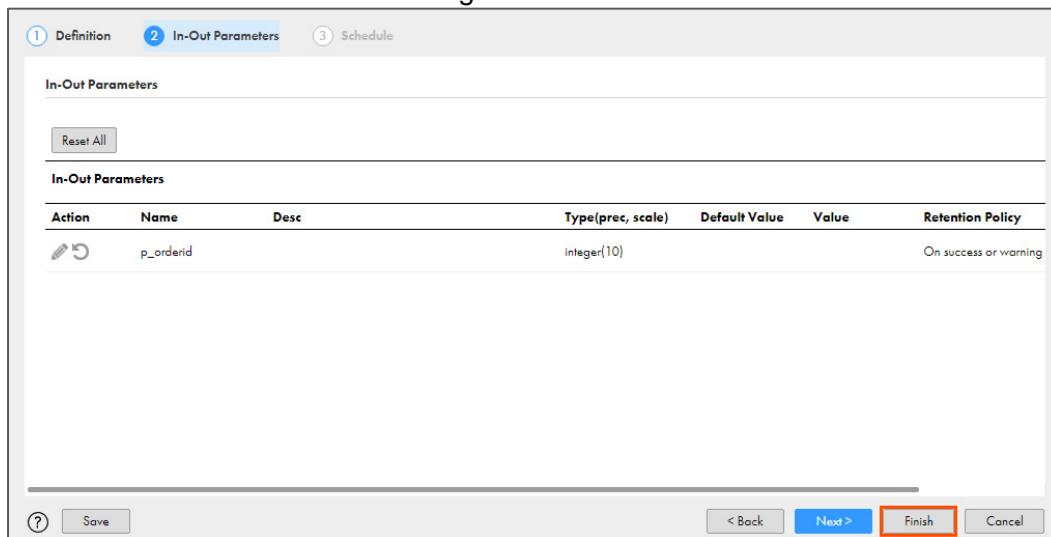


38. In the Task Name field, enter **mt_XX_InOutParameter_Task**.

39. From the Runtime Environment drop-down, select **INFA-SERVER**.

40. Click **Next**.

41. Retain the In-Out Parameters configuration and click **Finish**.



Action	Name	Desc	Type(prec, scale)	Default Value	Value	Retention Policy
	p_orderid		integer(10)			On success or warning

42. Click **Run**.



mt_XX_InOutParameter_Task								
Task Details <table border="1"> <tr> <td>Task Name:</td> <td>mt_XX_InOutParameter_Task</td> </tr> <tr> <td>Location:</td> <td>C:\FIRSTNAME_XX</td> </tr> <tr> <td>Description:</td> <td></td> </tr> </table>			Task Name:	mt_XX_InOutParameter_Task	Location:	C:\FIRSTNAME_XX	Description:	
Task Name:	mt_XX_InOutParameter_Task							
Location:	C:\FIRSTNAME_XX							
Description:								

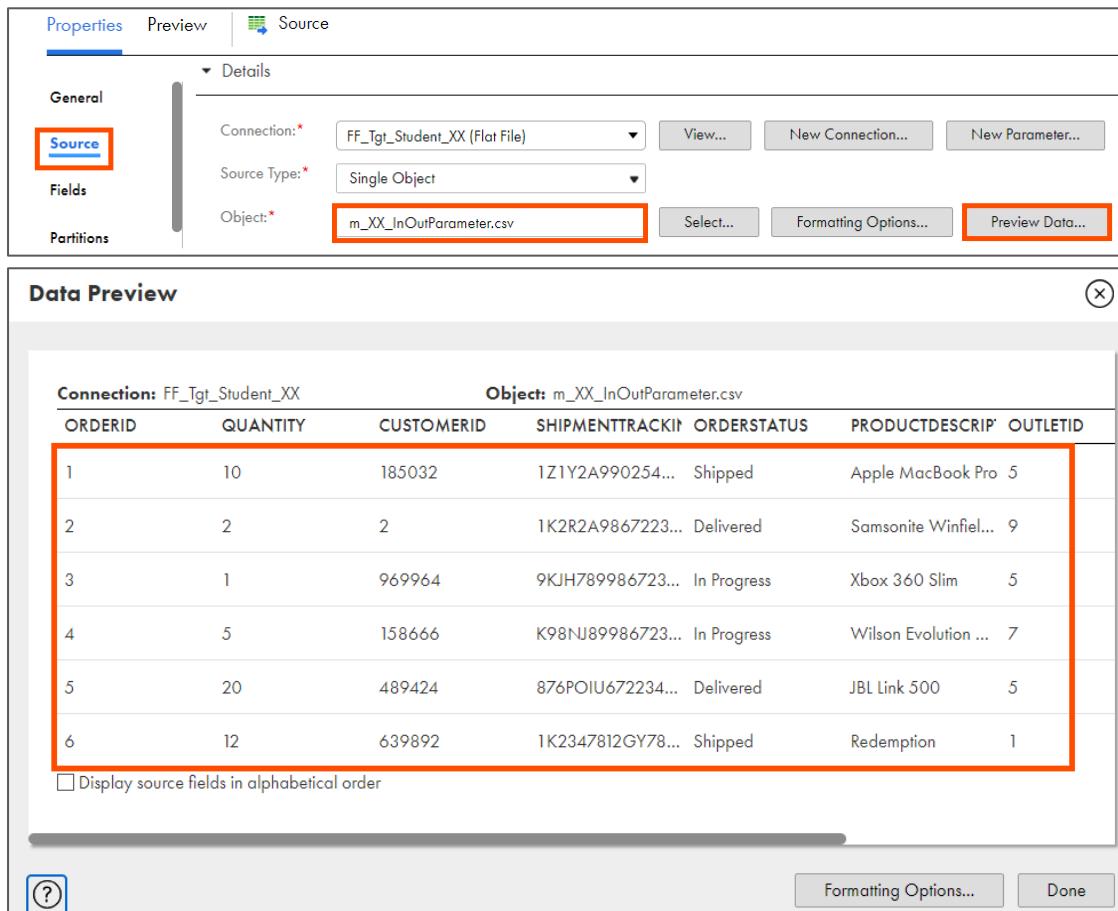
Monitor Status

43. Monitor the job status and verify that 6 rows are processed by the mapping.



Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
mt_XX_InOutParameter_Task-1	CDI<Month><Date...		Jul 30, 2023, 2:31 PM	Jul 30, 2023, 2:31 PM	6	Success

44. Optionally, you can view the target data in your dummy mapping.



Data Preview

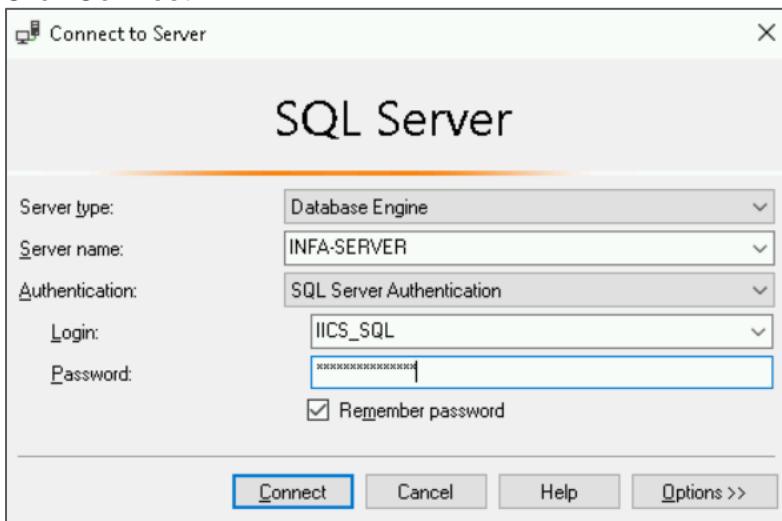
Connection:	Object:					
FF_Tgt_Student_XX	m_XX_InOutParameter.csv					
ORDERID	QUANTITY	CUSTOMERID	SHIPMENTTRACKIN	ORDERSTATUS	PRODUCTDESCRIPTION	OUTLETID
1	10	185032	1Z1Y2A990254...	Shipped	Apple MacBook Pro	5
2	2	2	1K2R2A9867223...	Delivered	Samsonite Winfield...	9
3	1	969964	9KJH789986723...	In Progress	Xbox 360 Slim	5
4	5	158666	K98NU89986723...	In Progress	Wilson Evolution ...	7
5	20	489424	876POIU672234...	Delivered	JBL Link 500	5
6	12	639892	1K2347812GY78...	Shipped	Redemption	1

Display source fields in alphabetical order

Formatting Options... Done

45. Save and close all the assets from the navigation pane.
 46. To verify the incremental load of orders data, from the Windows Start menu, open **SQL Server Management Studio**.
 47. From the **Connections** section, enter the Login and Password as **IICS_SQL**.

48. Click **Connect**.

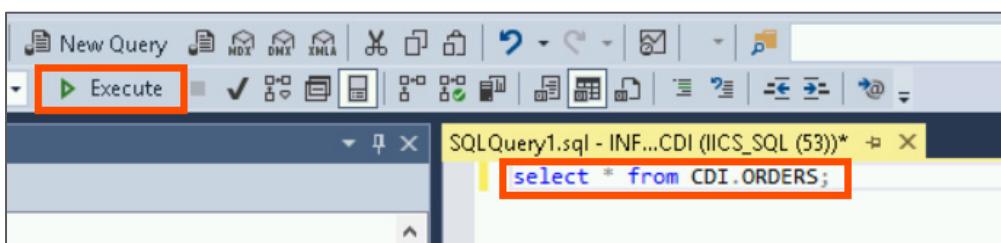


49. Expand the **Databases > CDI > Tables** and click on **CDI.ORDERS** table.

50. Click **New Query**.

51. To check the existing data in the **CDI.ORDERS** table, execute the below query.

```
select * from CDI.ORDERS;
```



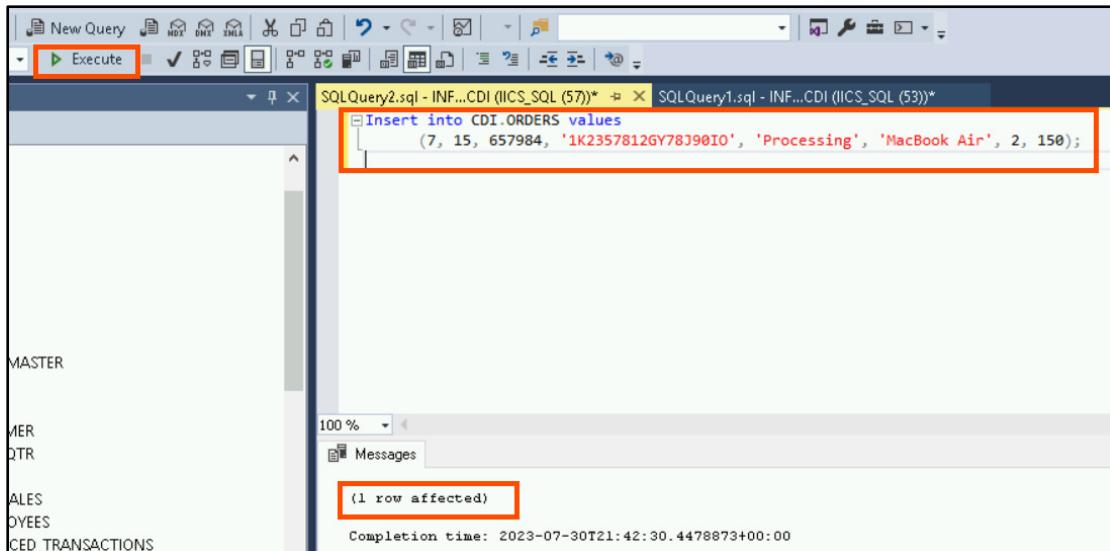
52. Add a new row and enter the below data.

ORDER ID	QUANTITY	CUSTOMER ID	SHIPMENT TRACKING NO	ORDER STATUS	PRODUCT DESCRIPTION	OUTLET ID	PRODUCT ID
7	15	657984	1K2357812GY78J90IO	Processing	MacBook Air	2	150

For Adding the new row, use the query shown below in a new query window:

Insert into CDI.ORDERS values

```
(7, 15, 657984, '1K2357812GY78J90IO', 'Processing', 'MacBook Air', 2, 150);
```



```
SQLQuery2.sql - INF...CDI (IICS_SQL (57))*
SQLQuery1.sql - INF...CDI (IICS_SQL (53))*
Insert into CDI.ORDERS values
(7, 15, 657984, '1K2357812GY78J9010', 'Processing', 'MacBook Air', 2, 150);

(1 row affected)

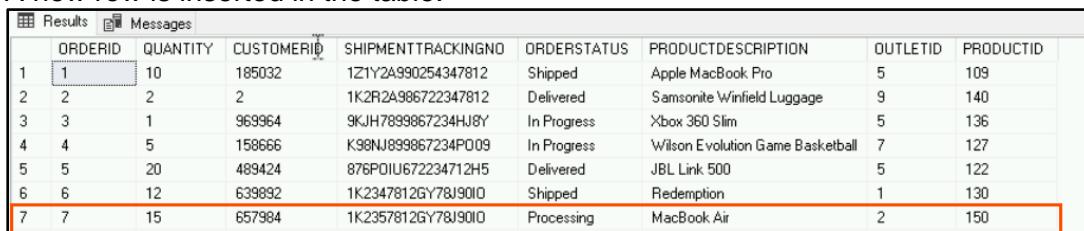
Completion time: 2023-07-30T21:42:30.4478873+00:00
```

53. Now, to check the newly inserted row, navigate back to the previous query window and re-run the command or enter the below query and click **Execute**.

```
select * from CDI.ORDERS;
```

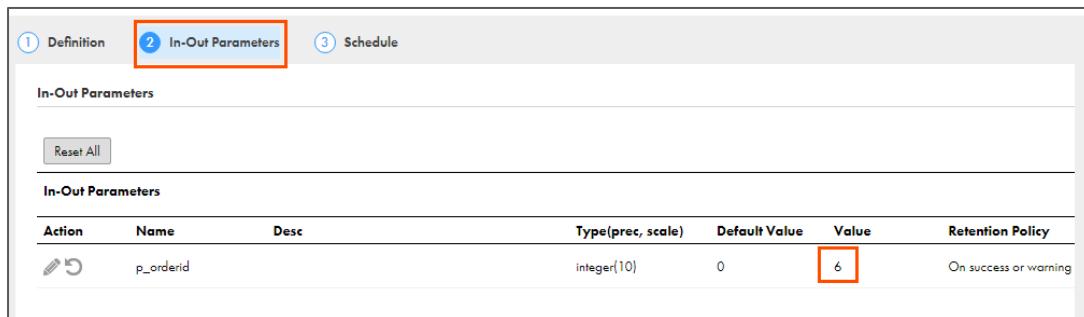


54. A new row is inserted in the table.



	ORDERID	QUANTITY	CUSTOMERID	SHIPMENTTRACKINGNO	ORDERSTATUS	PRODUCTDESCRIPTION	OUTLETID	PRODUCTID
1	1	10	185032	1Z1Y2A990254347812	Shipped	Apple MacBook Pro	5	109
2	2	2	2	1K2R2A98672347812	Delivered	Samsonite Winfield Luggage	9	140
3	3	1	969964	9KJH7899867234HJ8Y	In Progress	Xbox 360 Slim	5	136
4	4	5	158666	K98NU899867234P009	In Progress	Wilson Evolution Game Basketball	7	127
5	5	20	489424	876P0IU672234712H5	Delivered	JBL Link 500	5	122
6	6	12	639892	1K2347812GY78J9010	Shipped	Redemption	1	130
7	7	15	657984	1K2357812GY78J9010	Processing	MacBook Air	2	150

55. Navigate back to IICS, from your working directory, and edit the **mt_XX_InOutParameter_Task** asset.
 56. Go to In-Out Parameters step and verify that the value is set to **6**. This is because the task read the 6 rows in the first run.



Action	Name	Desc	Type(prec, scale)	Default Value	Value	Retention Policy
	p_orderid		integer(10)	0	6	On success or warning

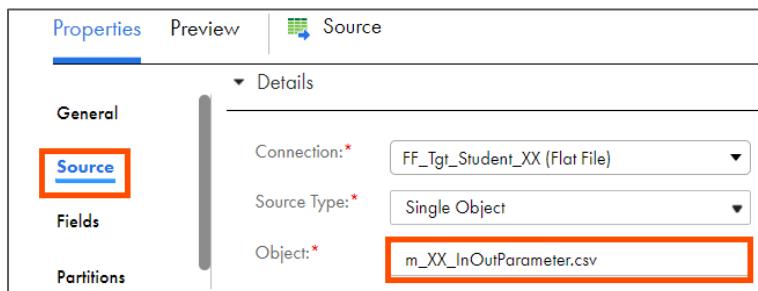
57. Click **Cancel** to close the edit window and **Run** the task again.

58. Go to the **My Jobs** page to verify the task status. Notice that only 1 row is processed in the second run of the task.

Jobs (265)						
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
mt_XX_InOutParameter_Task-2	CDI<Month><Date...		Jul 30, 2023, 2:49 PM	Jul 30, 2023, 2:4...	1	Success

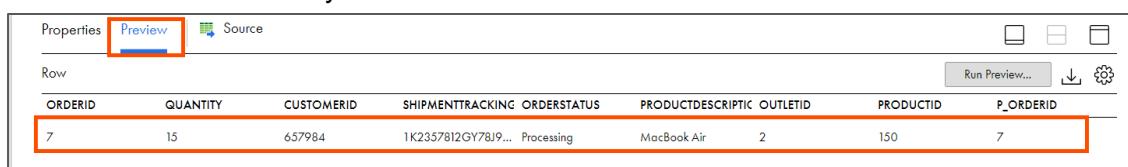
Optional

59. You can preview the target data in your dummy mapping.



The screenshot shows the 'Properties' panel for a mapping component. The 'Source' tab is selected. Under the 'General' section, the 'Connection' dropdown is set to 'FF_Tgt_Student_XX (Flat File)'. The 'Source Type' dropdown is set to 'Single Object', and the 'Object' dropdown is set to 'm_XX_InOutParameter.csv'.

60. To view the updated target records, navigate to the Preview tab and click **Run Preview**. Observe that there is only 1 record.



The screenshot shows the 'Preview' tab of the mapping component. It displays a single record in a table with columns: ORDERID, QUANTITY, CUSTOMERID, SHIPMENTTRACKING, ORDERSTATUS, PRODUCTDESCRIPTION, OUTLETID, PRODUCTID, and P_ORDERID. The record values are: ORDERID=7, QUANTITY=15, CUSTOMERID=657984, SHIPMENTTRACKING=1K2357812GY78J9..., ORDERSTATUS=Processing, PRODUCTDESCRIPTION=MacBook Air, OUTLETID=2, PRODUCTID=150, and P_ORDERID=7.

61. Save and close all the assets.

This concludes the lab.

Module 10: Mapping Task

Lab 10-1: Create a Mapping Task and Configure Advanced Settings

Overview:

The Mapping task allows you to process data based on the data flow logic defined in a Mapping. When you create a mapping task, you select the mapping for the task to use. On the Schedule page of the mapping task, you can define to run a mapping task manually or schedule it to run at a specific time or interval.

Objective:

- Create a Mapping Task
- Configure email notifications

Scenario:

Ruby wants to monitor the job statuses of a few important jobs timely for 48 hours. Instead of verifying whether the job status is success or fail, Ruby will configure the email notifications property to get notified about the job statuses.

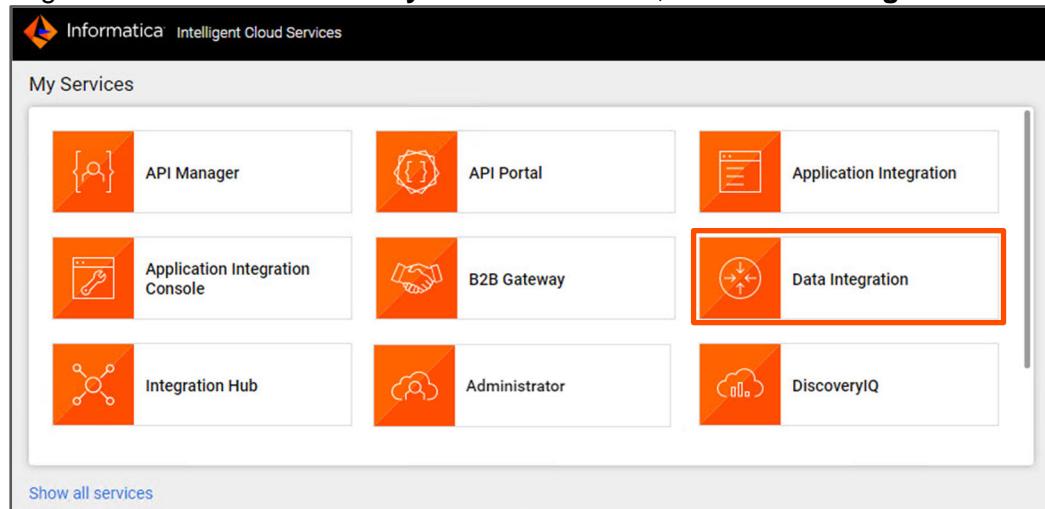
Duration:

15 minutes

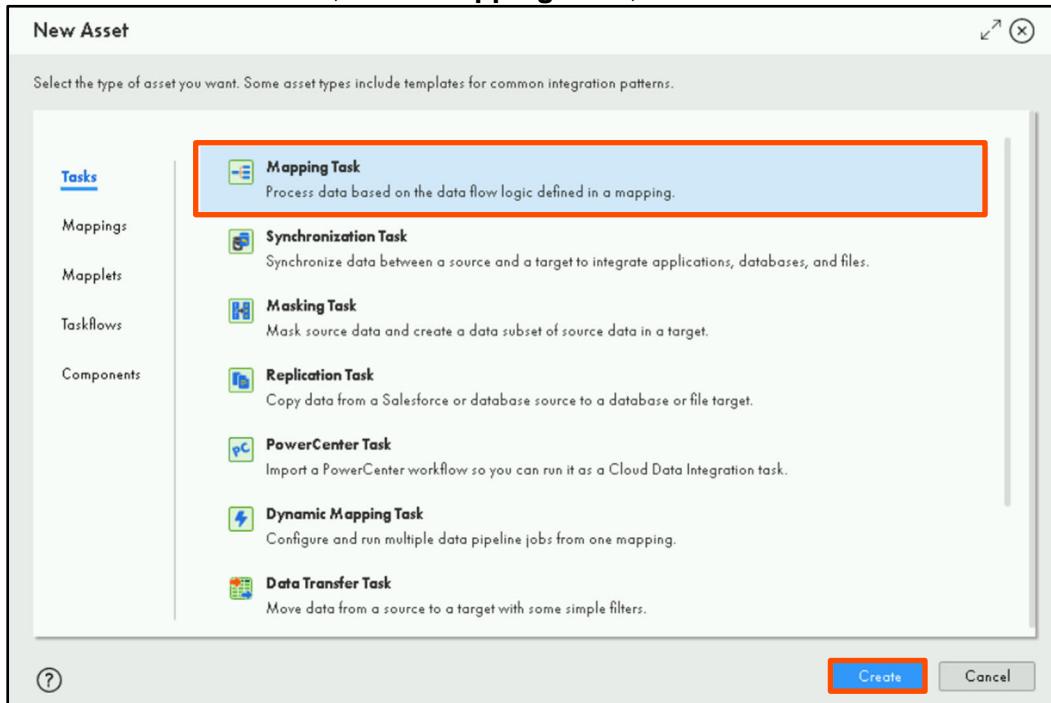
Tasks

Create a Mapping Task in IICS

1. Login into IICS and from the **My Services** window, select **Data Integration**.

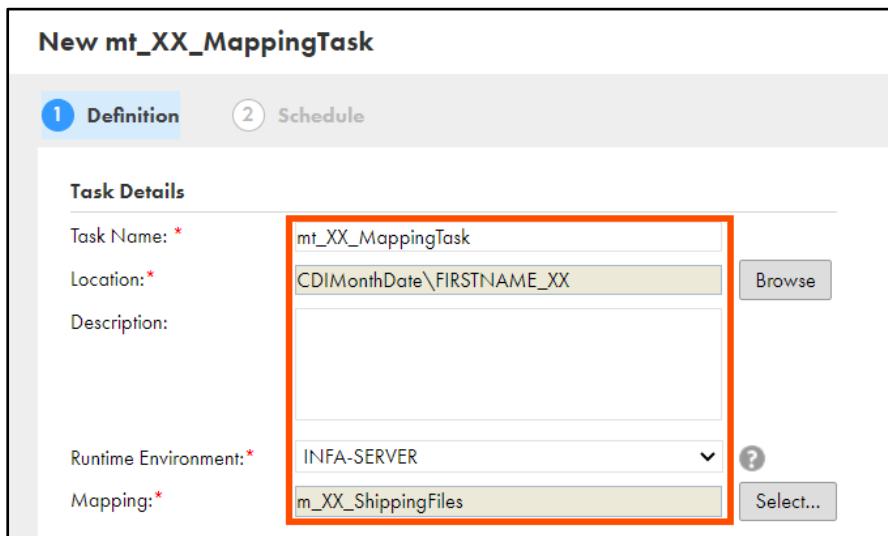


2. To create a new asset, from the navigation pane, select **New**.
3. In the New Asset window, select **Mapping Task**, and click **Create**.



Specify Definition Information

4. In the Task Name field, enter the name as **mt_XX_MappingTask**.
5. Use the **Browse** option to save the asset in your working directory.
6. From the Runtime Environment drop down, select **INFA-SERVER**.
7. In the Mapping field, click **Select**.
8. Navigate to your working folder and select the mapping **m_XX_ShippingFiles**.



New mt_XX_MappingTask

1 Definition **2 Schedule**

Task Details

Task Name: *	mt_XX_MappingTask
Location: *	CDIMonthDate\FIRSTNAME_XX
Description:	
Runtime Environment: *	INFA-SERVER
Mapping: *	m_XX_ShippingFiles

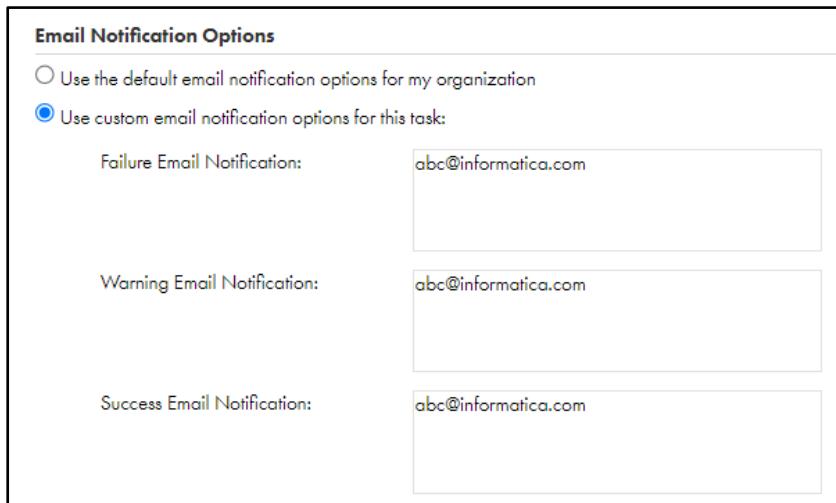
9. Click **Next**.

Configure the Email notifications

10. Scroll down to the Email Notification Options, and select **Use custom email notification options for this task**.

You can set it to receive emails if the mapping or Mapping task is successful, failed, or finished with some warnings.

11. Specify a valid and active email ID for the **Failure Email Notification**, **Warning Email Notification**, and **Success Email Notification** fields.



Email Notification Options

Use the default email notification options for my organization
 Use custom email notification options for this task:

Failure Email Notification:	abc@informatica.com
Warning Email Notification:	abc@informatica.com
Success Email Notification:	abc@informatica.com

12. Click **Finish**.

13. Run the Mapping task using the **Run** option.



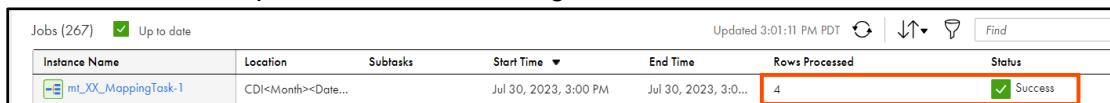
Task Details

Task Name:	mt_XX_MappingTask
Location:	CDI\FIRSTNAME_XX
Description:	
Runtime Environment:	INFA-SERVER

Monitor Task

14. To monitor the task, from the navigation pane, click **My Jobs**.

15. When the task completes, the status changes to **Success**.



Jobs (267)		Up to date	Updated 3:01:11 PM PDT				
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status	
mt_XX_MappingTask-1	CDI<Month><Date...>		Jul 30, 2023, 3:00 PM	Jul 30, 2023, 3:0...	4	✓ Success	

16. Close the asset from the navigation pane.

17. You will get the email on the registered email address with the task details. Verify your email inbox.

Mapping task "mt_XX_MappingTask" completed successfully. [Org Name: Informatica]

 admin@informaticacloud.com
To [REDACTED]
Retention Policy Exchange online 3 Years delete (3 years)

The Mapping Task **mt_XX_MappingTask** completed successfully.

Organization ID: [REDACTED]
Organization Name: Informatica
Start Time: Jul 31, 2023 3:30:54 AM (IST)
End Time: Jul 31, 2023 3:31:03 AM (IST)

Task Description:

Mapping name: m_XX_ShippingFiles
Source Connection: CDI_SQL_Src
Source Object: ORDERS
Source Connection: FF_Source
Source Object: Products.csv
Target Connection: FF_Tgt_Student_XX
Target Object: ExpeditedShipping.csv
Target Connection: FF_Tgt_Student_XX
Target Object: NormalShipping.csv
Result: 4 Success Rows, 0 Errors.

You can access your Informatica Cloud account at <https://dm-us.informaticacloud.com/ma>

This concludes the lab.

Module 11: Replication Task

Lab 11-1: Replicating Data to a Flat File

Overview:

A replication task replicates data from a source to a target.

Objective:

- Create a replication task to replicate data to a CSV file

Scenario:

Ruby is concerned that the updated data on the Salesforce Account object is not saved anywhere for backup purposes. So, John suggests creating a replication task to load Account objects in Salesforce to a flat file.

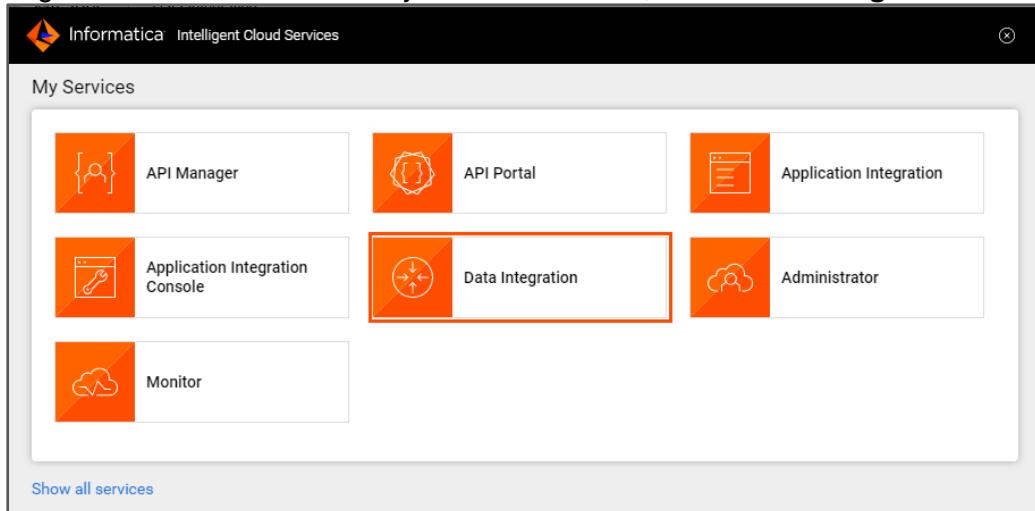
Duration:

10 minutes

Tasks

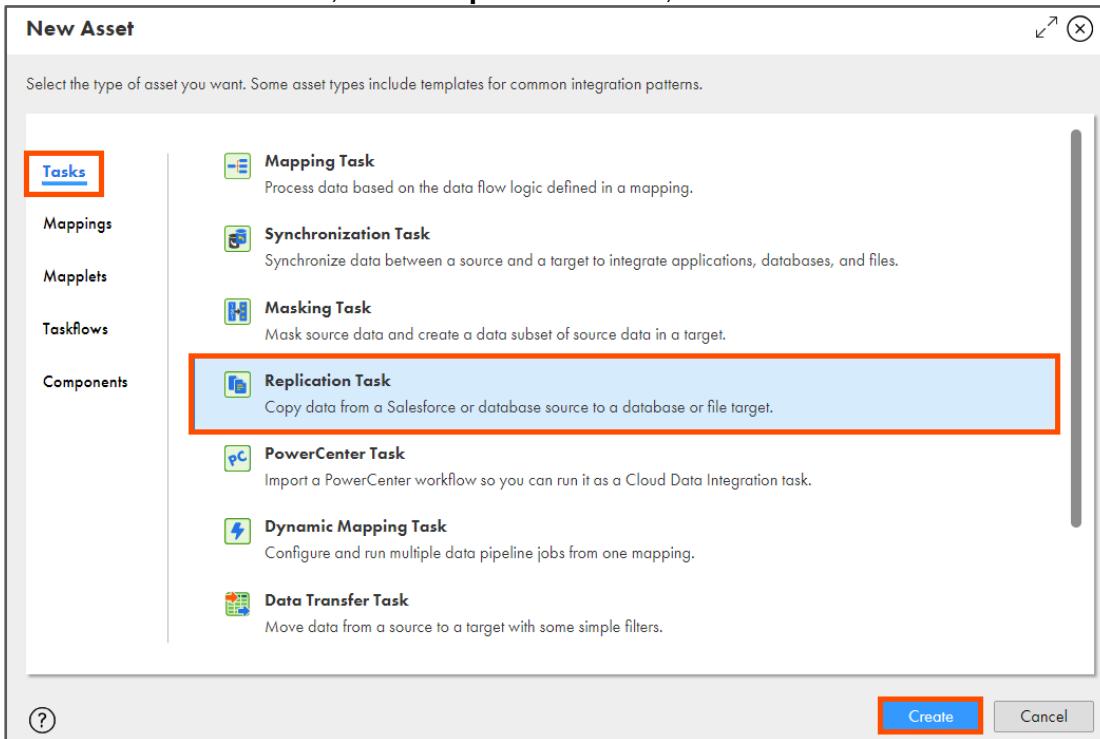
Create Replication Task

1. Login into IICS and from the My Services window, select **Data Integration**.

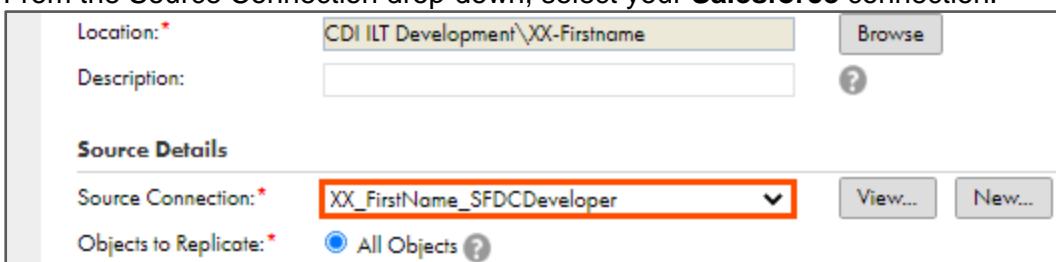


2. To create a new asset, from the navigation pane, select **New**.

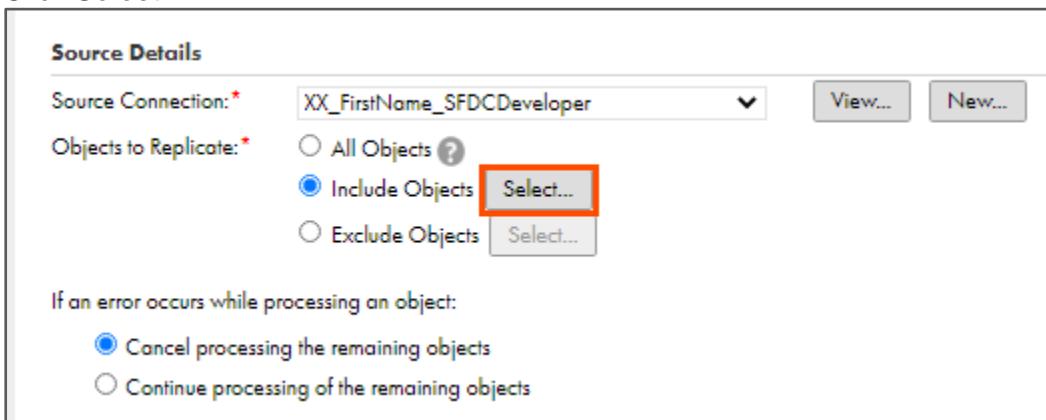
3. In the New Asset window, select **Replication Task**, and click **Create**.



4. In the Task Name field, enter **rpl_XX_SFDCAccount_to_FF**.
 5. Verify that the asset Location is pointing to your working folder.
 6. From the Source Connection drop-down, select your **Salesforce** connection.

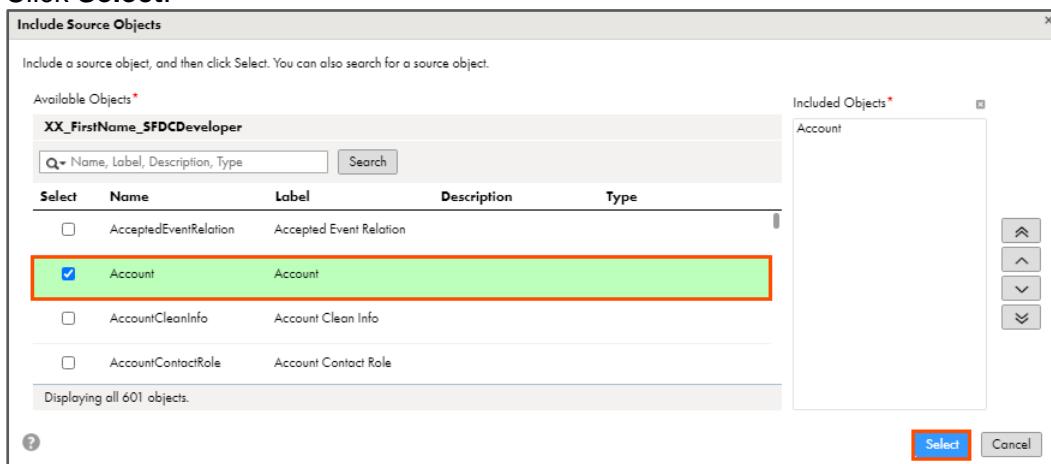


7. From the Objects to Replicate field, select **Include Objects**.
 8. Click **Select**.



9. From the list, select **Account**.

10. Click **Select**.



11. Click **Next**.

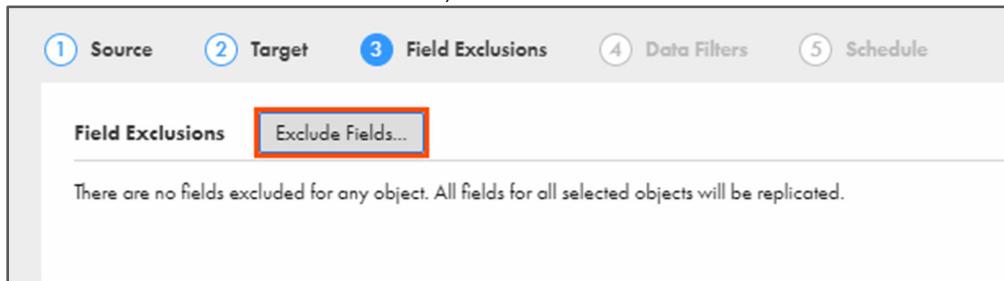
12. From the Connection drop-down, select your **target Flat File** connection.

13. Enter **SXX_** in the Target Prefix field.



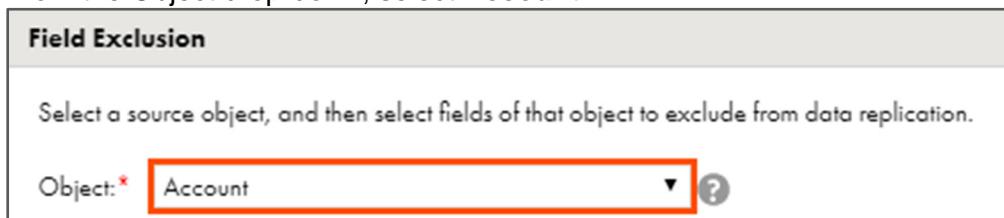
14. Click **Next**.

15. From the Field Exclusions section, click **Exclude Fields**.



The Field Exclusion window appears.

16. From the Object drop-down, select **Account**.

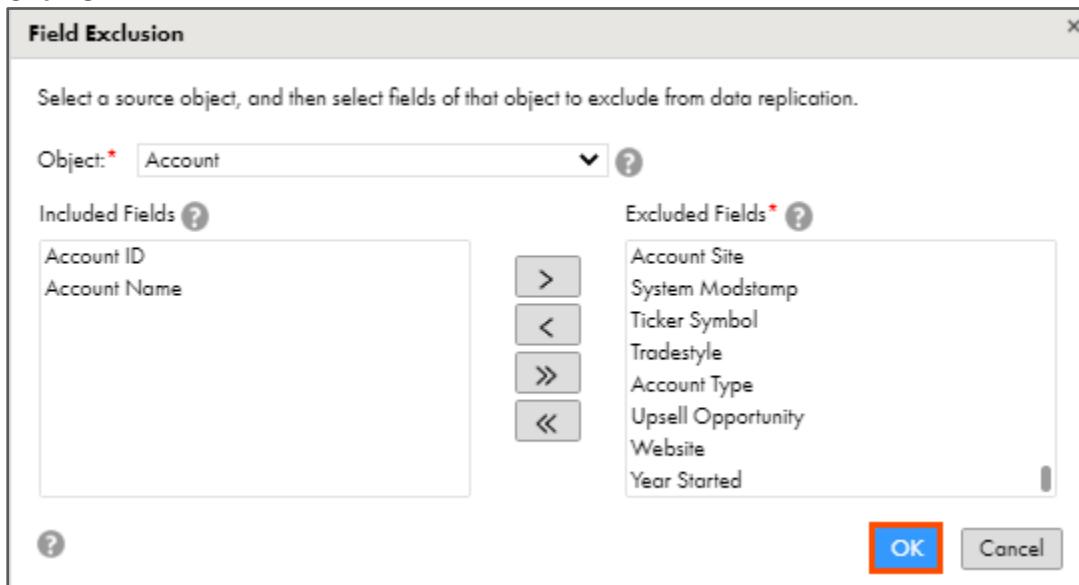


17. In the Included Fields section, retain only the **Account Name** and **Account ID**.

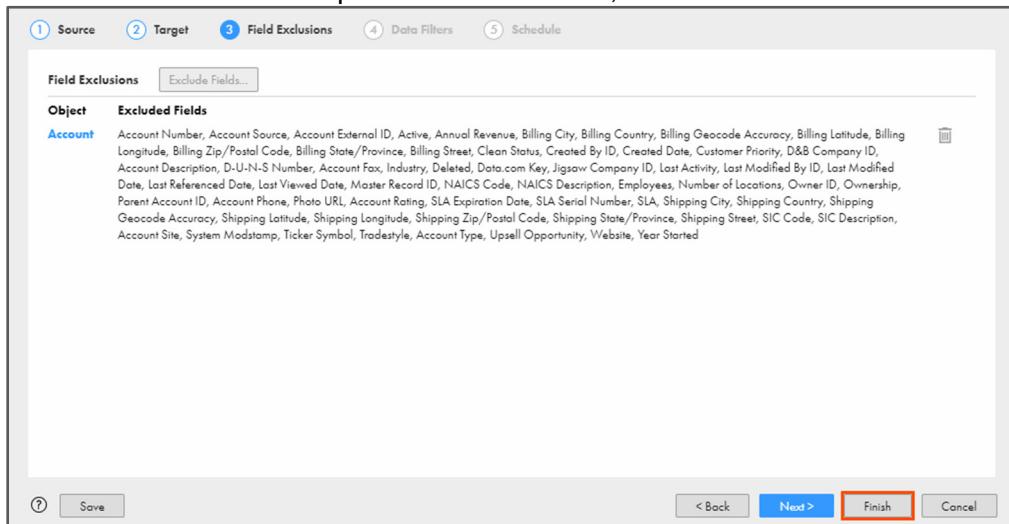
Note: To retain the Account Name and Account ID, select the rest of the fields, and click



18. Click **OK**.



19. To save and close the Replication Task wizard, click **Finish**.



20. To run the Replication task, click **Run**.



Monitor Task

21. To monitor the task, from the navigation pane, click **My Jobs**.

22. When the task completes, the status changes to **Success**.

Jobs (268) <input checked="" type="checkbox"/> Up to date							Updated 3:10:47 PM PDT     Find
Instance Name	Location	Subtasks	Start Time ▾	End Time	Rows Processed	Status	
rpl_LX_SFDCAccount_to_FF-1	CDI<Month><Date...	1 task	Jul 30, 2023, 3:10 PM	Jul 30, 2023, 3:1...	17	<input checked="" type="checkbox"/> Success	

Note: The number of processed rows can change depending on the data in the Salesforce Account object.

23. Close the asset from the navigation pane.

24. Optionally, you can view the target data in your dummy mapping.

Properties Preview Source

General

Source FF_Tgt_Student_XX (Flat File) View... New Connection... New Parameter...

Fields Single Object

Partitions SXX_ACCOUNT.csv Select... Formatting Options... Preview Data...

Data Preview (X)

Connection: FF_Tgt_Student_XX	Object: SXX_ACCOUNT.csv
ID	NAME
0012v00003Yy5OEEAZ	Paul Somogye
0012v00003Yy5OFAAZ	Peter Doyle
0012v00003Yy5OGAAZ	Rick Sundheim
0012v00003Yy5OHAAZ	Phyllis Jackson
0012v00003Yy5OIAAZ	Ray Ruybalid
0012v00003Yy5OJAAZ	Richard Coleman
0012v00003Yy5OKAAZ	Rick Brattin
0012v00003Yy5OLAAZ	Robert Cori
0012v00003Yy5EUAAZ	NH D'needs
0012v00003Yy5EVAAZ	NH Mart

Display source fields in alphabetical order


Formatting Options...
Done

This concludes the lab.

Module 12: Masking Task

Lab 12-1: Creating a Masking Task

Overview:

A masking task masks source data and creates a data subset of the source data in the target.

In this lab, you will mask the account phone number using a masking task.

Objective:

- Create a masking task to mask the phone number

Scenario:

Ruby wants to use the customer data for development and testing purposes. However, as customer information is sensitive data, John suggests using the Masking task to mask customer phone number details.

Duration:

10 minutes

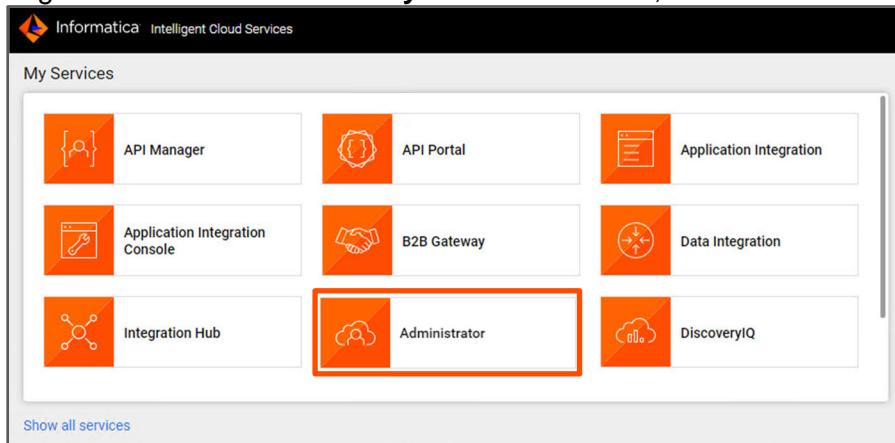
Tasks

Create Masking Task

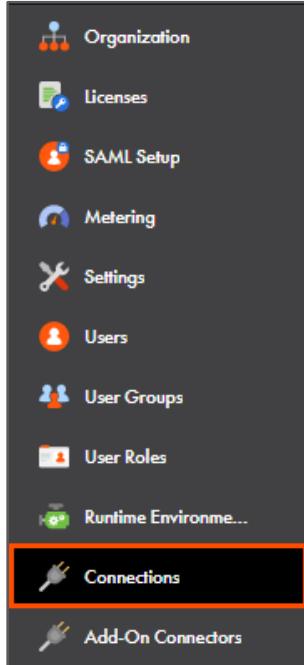
1. The following screenshot shows the data of the **Outlets.csv** file used in creating the Synchronization Task lab. Note the phone numbers for some of the accounts.

A	B	C	D	E	F	G	H	I
Outlet_ID	Outlet_Name	Phone_Number	Street	City	State	ZipCode	Country	Employees
1	NH D'needs	754-3010	11 West Park Road	Pasadena	CA	91001	USA	4
2	NH Mart	281-6000	6620 W. Broad St.	Rampart	AK	99767	USA	4
3	NH Groceries	522-8175	7227 W Harry St	Winslow	AZ	86047	USA	4
4	NH Lifestyle	864-8000	2145 Hamilton Ave	Salida	CO	81201	USA	5
5	NH Digital	314-3600	6601 Hawkinsville Rd	Milford	DE	19963	USA	5
6	NH Trends	782-9000	95 N Moorland Rd	Miami	FL	33101	USA	4
7	NH Everyday	454-3071	114 Division Ave N	Bloomington	IN	47401	USA	4
8	NH Digiworld	547-2518	651 Holiday Dr	Pineville	LA	71359	USA	5
9	NH Supplies	612-6700	32 Old Slip	Grand Rapids	MI	49501	USA	5

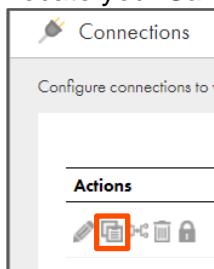
2. Login into IICS and from the **My Services** window, select **Administrator**.



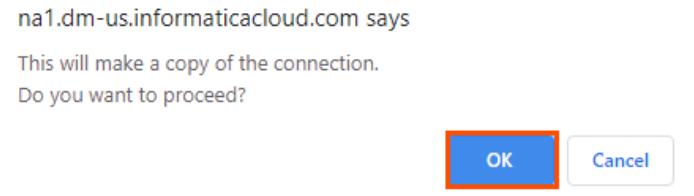
3. From the navigation pane, select **Connections**.



4. Locate your **Salesforce** connection and click on  to make a copy of the connection.



5. In the pop-up window, click **OK**.



6. Edit the **XX_FirstName_SFDCDeveloper_2** connection.

Actions	Name	Type	Runtime Environment
	XX_FirstName_SFDCDeveloper_2	Salesforce	CDI-XX-FIRSTNAME

7. Update the connection name to **SXX_SFDCDeveloper**.

Connection Details

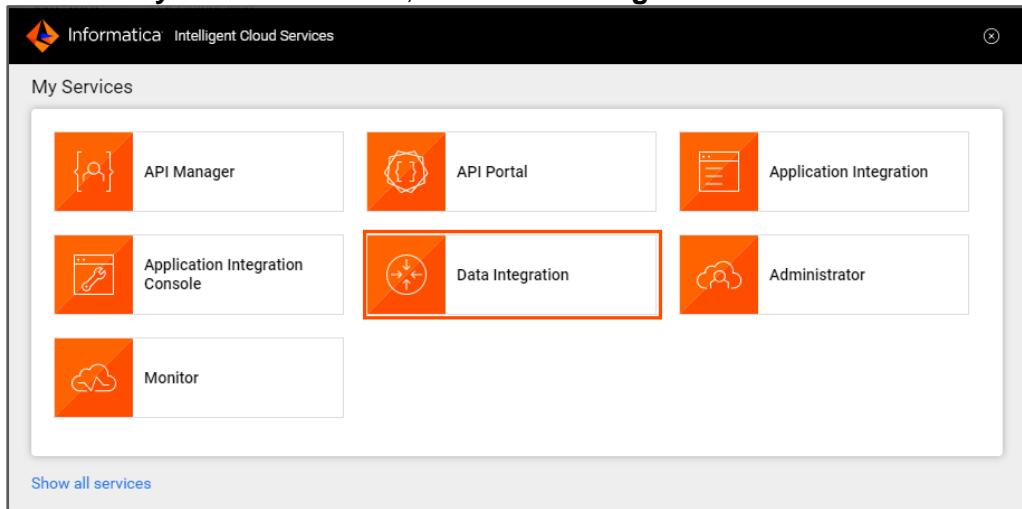
Connection Name: * **SXX_SFDCDeveloper**

Note: When you create a Masking Task, the connection name cannot start with a number. So, you must update the connection name to use it in the Masking task.

8. **Test** the connection and **save** the changes. Make sure that the connection is valid. If you encounter any issues while testing the connection, for example: “**..username, password, or security token is not valid..**”, reset your security token and specify the valid details.
9. To switch between the available services, from the toolbar, select the drop-down next to **Administrator**.

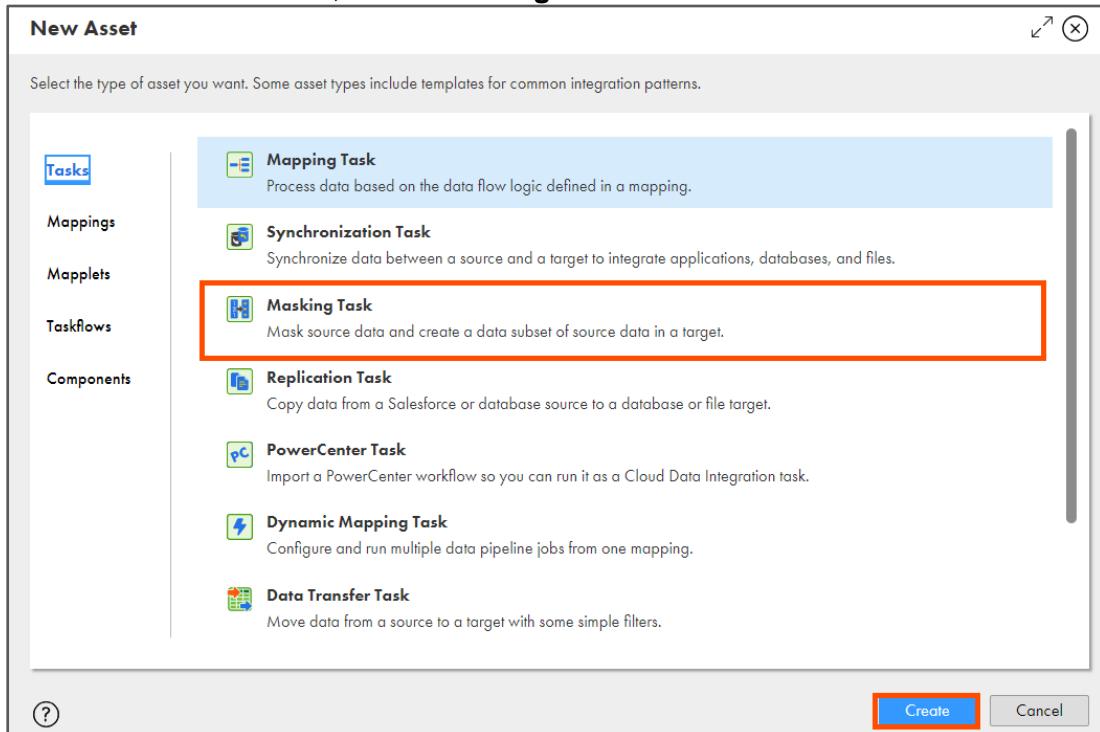
≡ **Administrator**

10. From the **My Services** window, select **Data Integration**.



11. To create a new asset, from the navigation pane, select **New**.

12. In the New Asset window, select **Masking Task** and click **Create**.



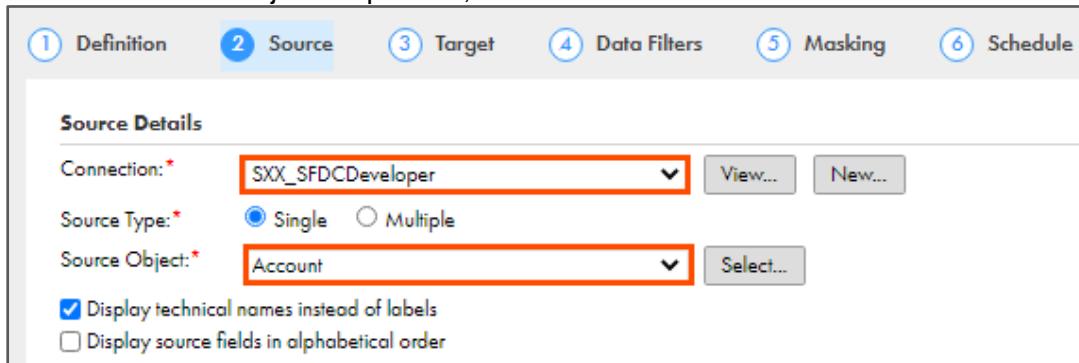
13. In the Task Name field, enter **mask_XX_PhoneNumber_Masking**.

14. Verify that the asset Location is pointing to your working folder.

15. Click **Next**.

16. From the Source Connection drop-down, select your duplicate **Salesforce** connection **SXX_SFDCDeveloper**.

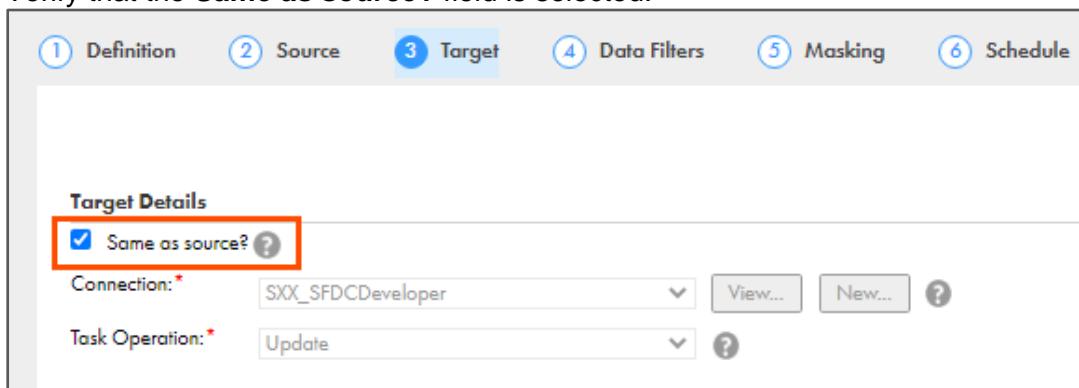
17. From the Source Object drop-down, select **Account**.



The screenshot shows the 'Source Details' section of the Informatica interface. It includes fields for Connection (SXX_SFDCDeveloper), Source Type (Single), Source Object (Account), and two checkboxes: 'Display technical names instead of labels' (checked) and 'Display source fields in alphabetical order'.

18. Click **Next**.

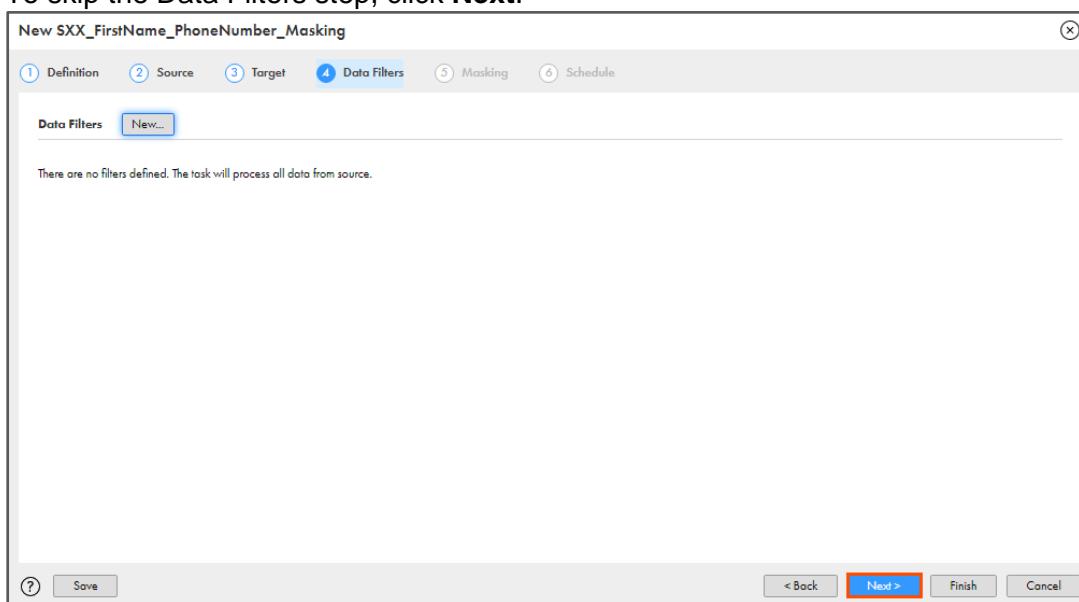
19. Verify that the **Same as source?** field is selected.



The screenshot shows the 'Target Details' section of the Informatica interface. It includes a checked 'Same as source?' checkbox, a Connection dropdown (SXX_SFDCDeveloper), and a Task Operation dropdown (Update).

20. Click **Next**.

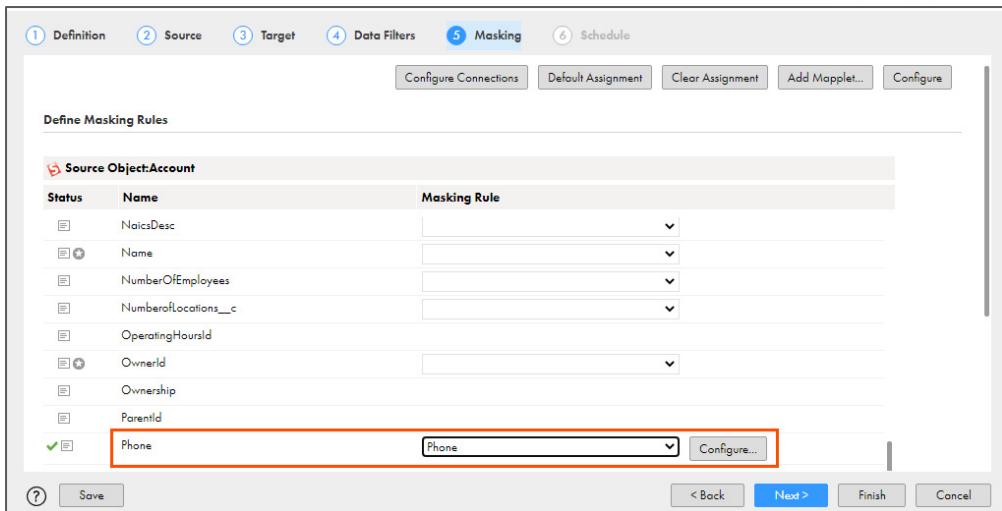
21. To skip the Data Filters step, click **Next**.



The screenshot shows the 'Data Filters' step of the task configuration. It displays a message: 'There are no filters defined. The task will process all data from source.' The 'Data Filters' tab is active, and there is a 'New...' button. The bottom navigation bar includes 'Save', '< Back', 'Next >', 'Finish', and 'Cancel'.

22. In the Define Masking Rules section, from the Phone field drop-down, select **Phone**.

Note: To mask all the fields of the Account object, you can use the Default Assignment option. For this lab, we will just mask the Phone field.

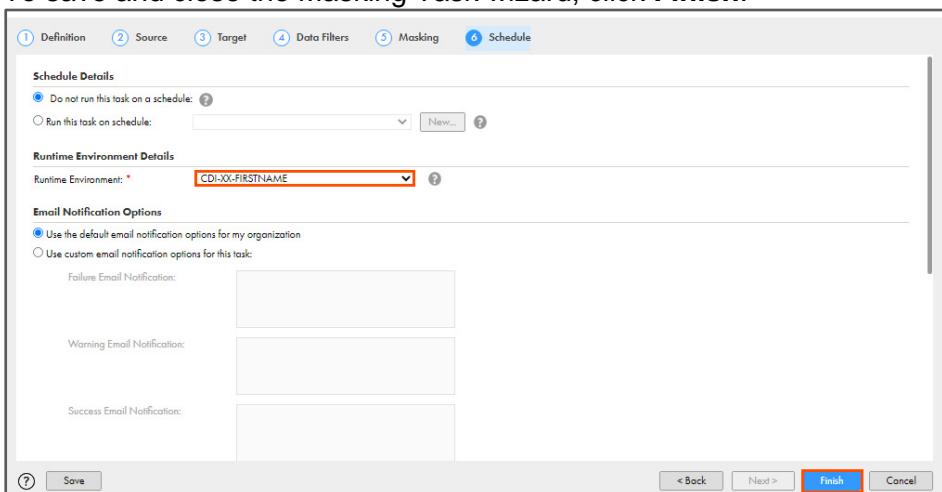


The screenshot shows the 'Masking Rule' configuration for the 'Phone' field. The 'Masking Rule' dropdown is set to 'Phone'. The 'Configure...' button is visible to the right of the dropdown.

23. Click **Next**.

24. From the Runtime Environment drop-down, select **INFA-SERVER**.

25. To save and close the Masking Task wizard, click **Finish**.



The screenshot shows the 'Schedule Details' section where 'Do not run this task on a schedule' is selected. The 'Runtime Environment' dropdown is set to 'CDI-XX-FIRSTNAME'. The 'Finish' button at the bottom is highlighted with a red box.

26. To run the Masking task, click **Run**.



Monitor the Status

27. To monitor the task, from the navigation pane, click **My Jobs**.

28. When the task completes, the status changes to **Success**.

Jobs (269)						
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
mask_XX_PhoneNumber_Masking-1	CDI<Month><Date>\...	1 task	Jul 30, 2023, 3:24 PM	Jul 30, 2023, 3:25 PM	17	Success

Note: The number of processed rows can change depending on the data in the Salesforce Account object.

29. Close the asset from the navigation pane.

Examine Results

30. Log in to your Salesforce Developer account using your credentials.

Note: You can use the below mentioned link to login into Salesforce:

<https://login.salesforce.com/>

31. On the Salesforce homepage, from the available tabs, select **Accounts**.



32. Observe the phone number for accounts noted earlier.

33. Verify that the phone numbers have been masked.

This concludes the lab.

Module 12: Masking Task

Lab 12-2: Using Data Masking Transformation in a Mapping

Overview:

Data Masking transformation changes the sensitive production data into realistic test data for non-production environments. The Data Masking transformation modifies source data based on masking rules that you configure for each column.

Objective:

- Configure a mapping using Data Masking transformation
- Mask the Surname, DOB, and State field values in the source data

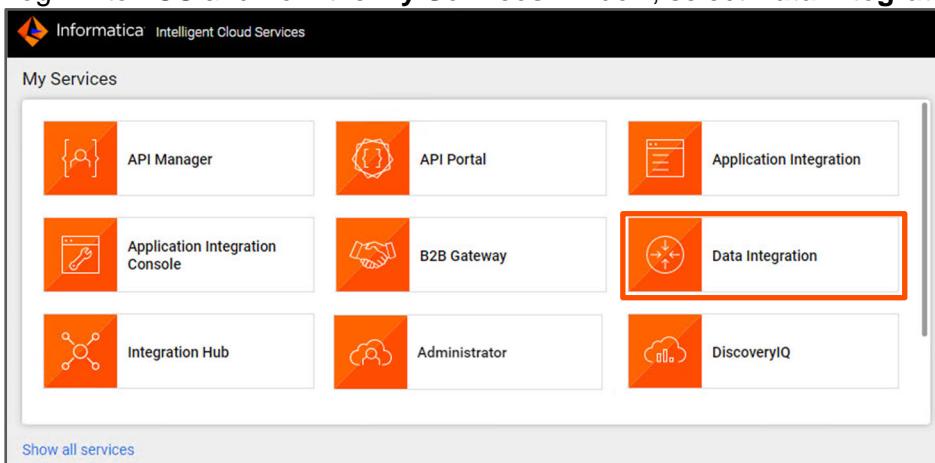
Duration:

10 minutes

Tasks

Create Mapping

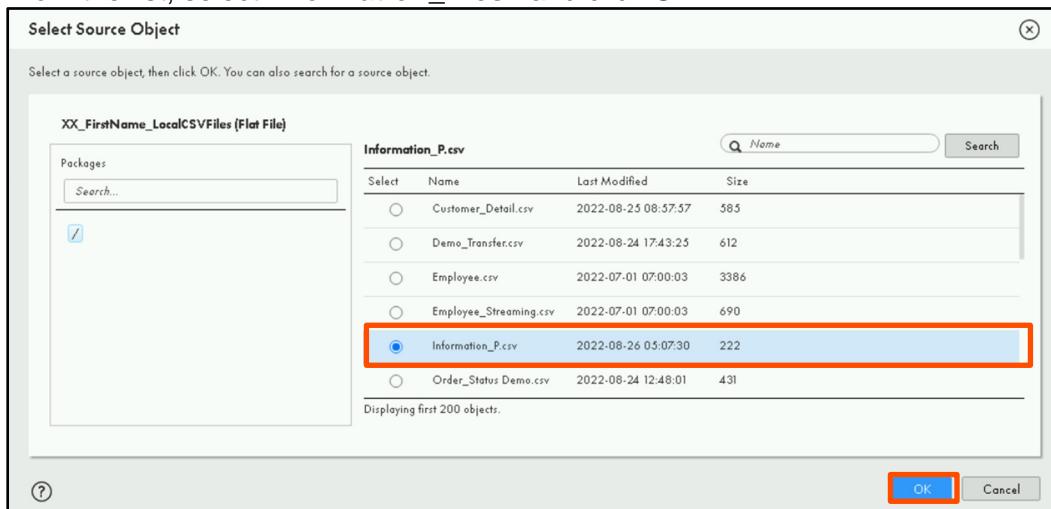
1. Login into IICS and from the **My Services** window, select **Data Integration**.



2. Create a new mapping and name it **m_XX_DataMaskTransform**.
3. To configure the source, from the mapping canvas, click the **Source** transformation.
4. In the **General** section of the Source properties, enter the Name as **Src_Info**.
5. From the properties pane, click **Source**.
6. From the Connection drop-down, select **FF_Source**.
7. To select the source object from the Object field, click **Select...**.

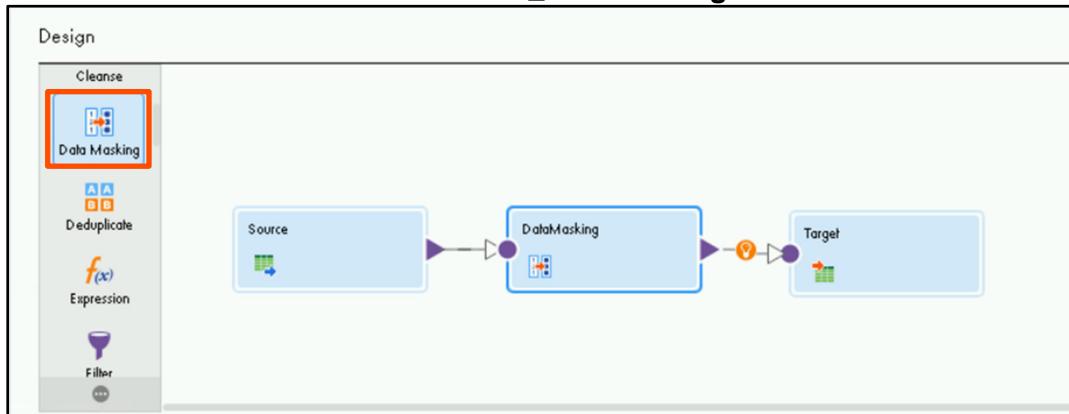


8. From the list, select **Information_P.csv** and click **OK**.



Add Data Masking Transformation

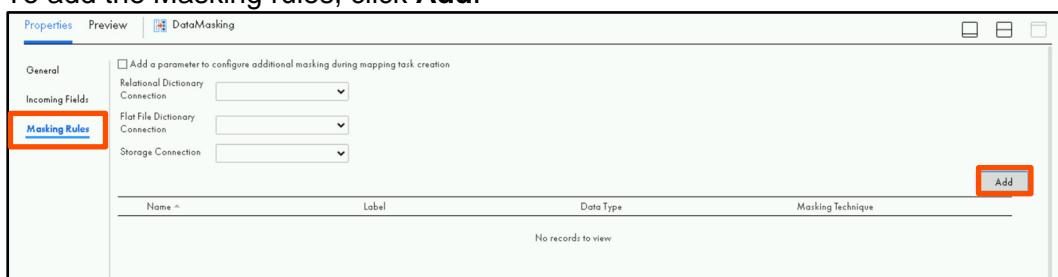
9. From the list of available transformations, drag and drop the **Data Masking transformation** on the link between **Src_Info** and **Target**.



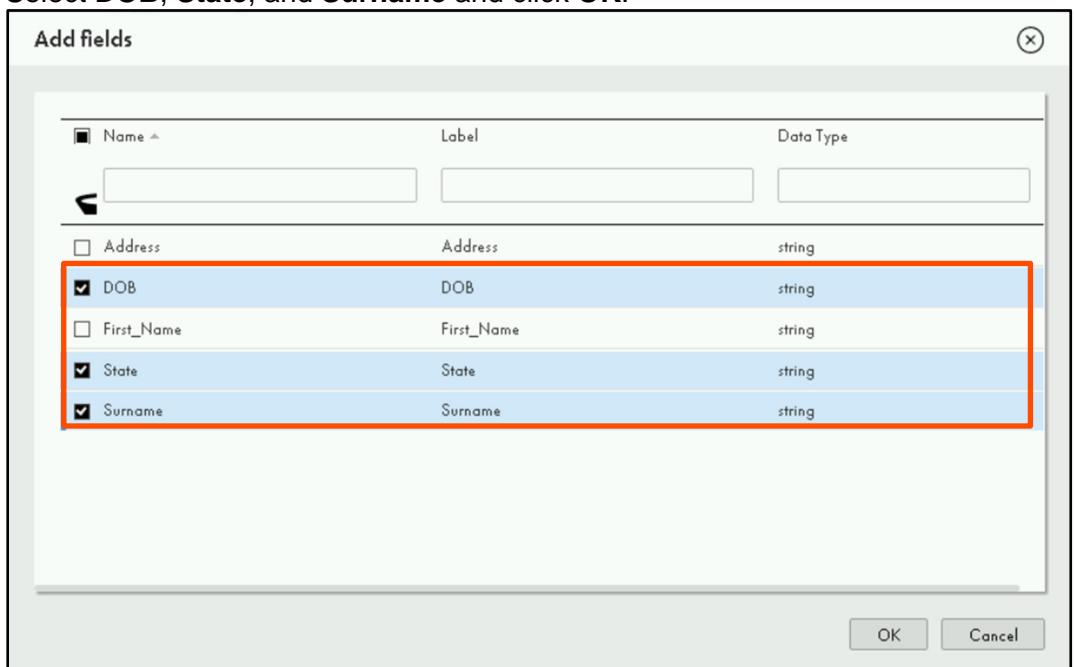
10. Select the **DataMasking** transformation from the mapping canvas.

11. From the properties pane, click **Masking Rules**.

12. To add the Masking rules, click **Add**.

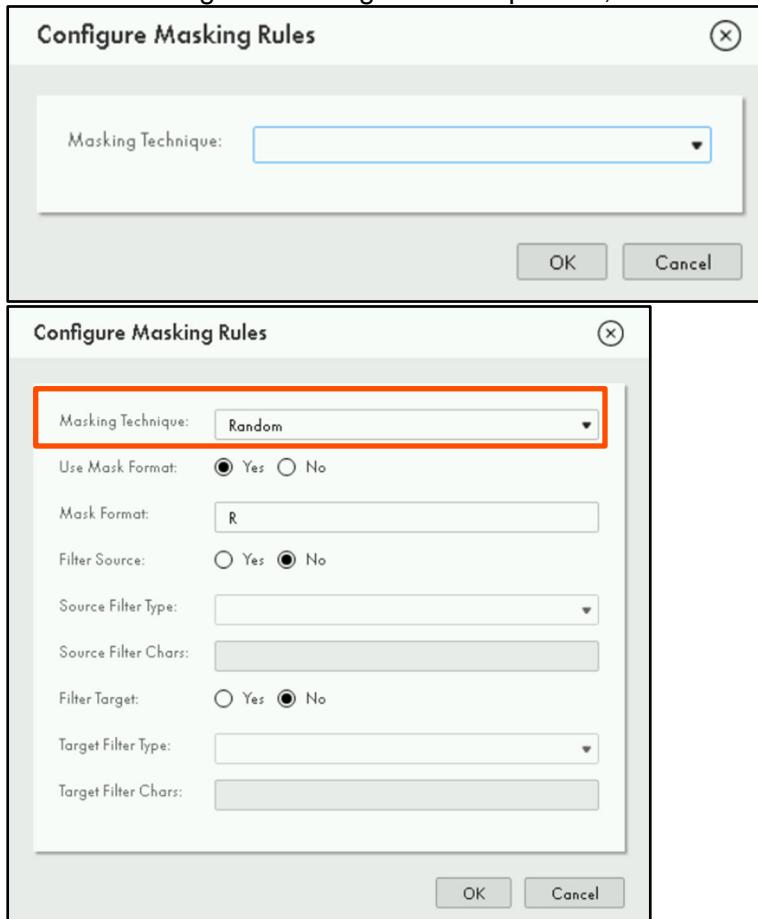


13. Select **DOB**, **State**, and **Surname** and click **OK**.



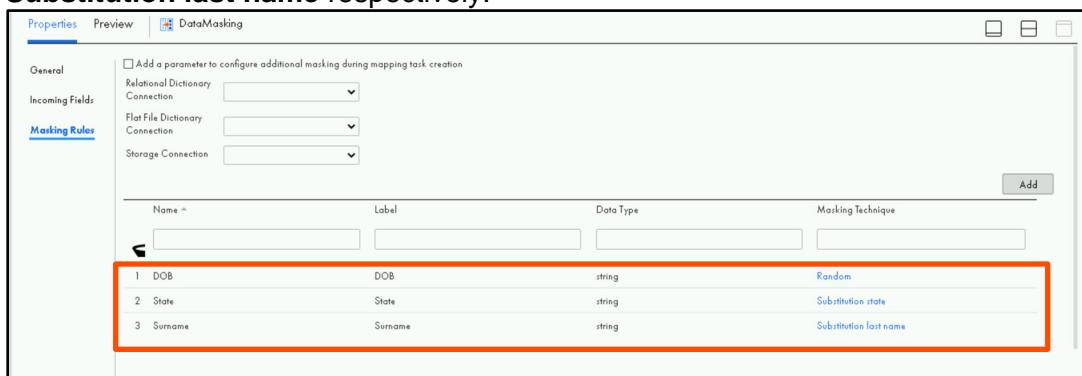
14. To configure the DOB, click **Configure**.

15. From the Configure Masking Rules drop down, select the **Random** option



16. Review all the other default settings and click **OK**.

17. Similarly, configure the **State** and **Surname** fields, by selecting **Substitution state** and **Substitution last name** respectively.

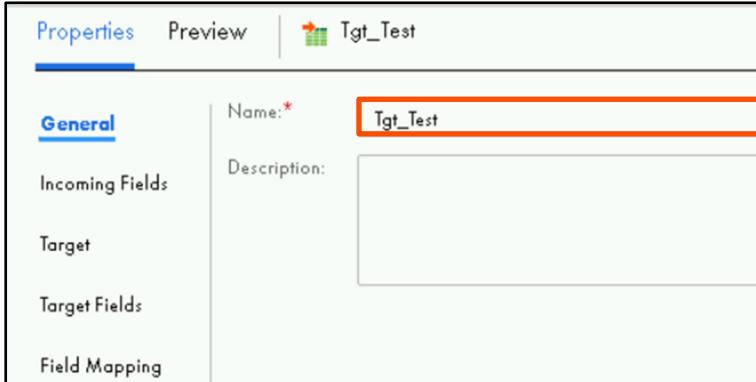


The image shows the 'Properties' window for a 'DataMasking' task. The 'Masking Rules' tab is selected. In the main pane, there is a table listing masking rules for three fields: 'DOB', 'State', and 'Surname'. The 'DOB' row has its 'Masking Technique' set to 'Random'. The 'State' and 'Surname' rows have their 'Masking Technique' set to 'Substitution state' and 'Substitution last name' respectively. A red box highlights the 'Masking Technique' column for the 'State' and 'Surname' rows.

Name	Label	Data Type	Masking Technique
1 DOB	DOB	string	Random
2 State	State	string	Substitution state
3 Surname	Surname	string	Substitution last name

Configure Target Transformation

18. Link the **Data Masking** transformation with the **Target** transformation if it is not linked.
19. Select the **Target** transformation from the mapping canvas.
20. In the General section of Target properties, enter Name as **Tgt_Test**.



21. From the properties pane, select **Target**.
22. From the Connection drop-down, select your **target Flat File** connection.
23. To choose an object, click **Select**.
24. In the Objects fields, select **Create New at Runtime**.
25. In the File Name, enter the name as **m_XX_Test_DataMask.csv** and click **OK**.
26. Save and run the mapping.



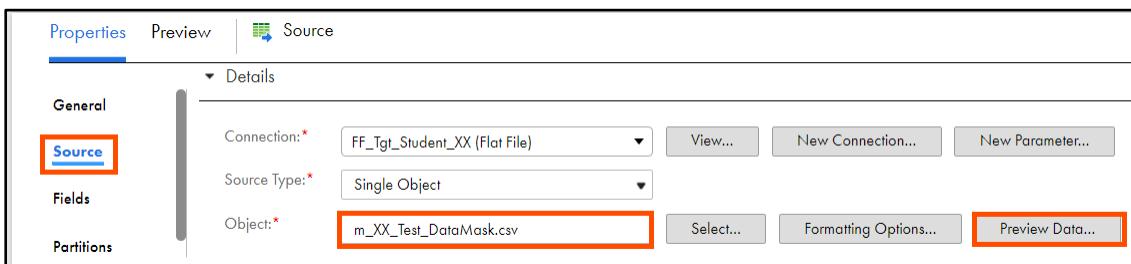
27. From the Runtime Environment drop-down, select **INFA-SERVER**.
28. Click **Run**.

Monitor Status

29. Monitor the task status from the **My Jobs** page.
30. When the task completes, the status changes to **Success**.

Jobs (270) (1) Updates available						
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
m_XX_DataMaskTransform-1	CDI<Month><Date>\...		Jul 30, 2023, 3:33 PM	Jul 30, 2023, 3:33 PM	4	✓ Success

31. Optionally, you can view results using your dummy mapping.

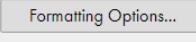


Data Preview

Connection: FF_Tgt_Student_XX **Object:** m_XX_Test_DataMask.csv

out_First_Name	out_Surname	out_DOB	out_Address	out_State
Uma	Millard	@^Y~YleZ\`v	24, Atkins Avenue	Arkansas
John	Brandewie	^@:BbOu&b	49, Wheeler Road	North Carolina
Keiko	Donohve	C-Bi5UD 6P	13, Draker Drive	Indiana
Isadora	Runzler	C*\$Mx?E`[20, Fountain Center	Arkansas

Display source fields in alphabetical order

32. Save and close all the assets from the navigation pane.
-

This concludes the lab.

Module 13: Taskflows

Lab 13-1: Creating a Linear Taskflow

Overview:

A Taskflow enables you to add multiple data integration tasks and run them in a specific sequence or in parallel.

In this lab, you will create Linear Taskflow to group multiple data integration tasks and run them in the order that is specified.

Objective:

- Create a Linear taskflow
- Configure email notifications for Linear taskflow

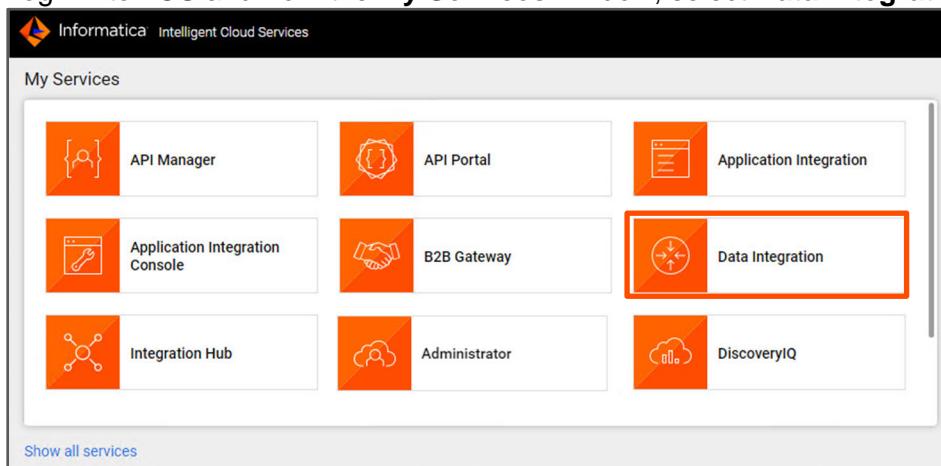
Duration:

20 minutes

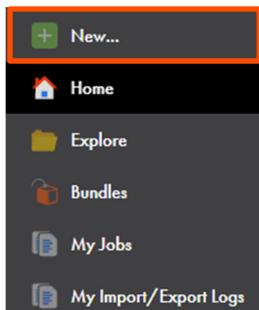
Tasks

Create Taskflow

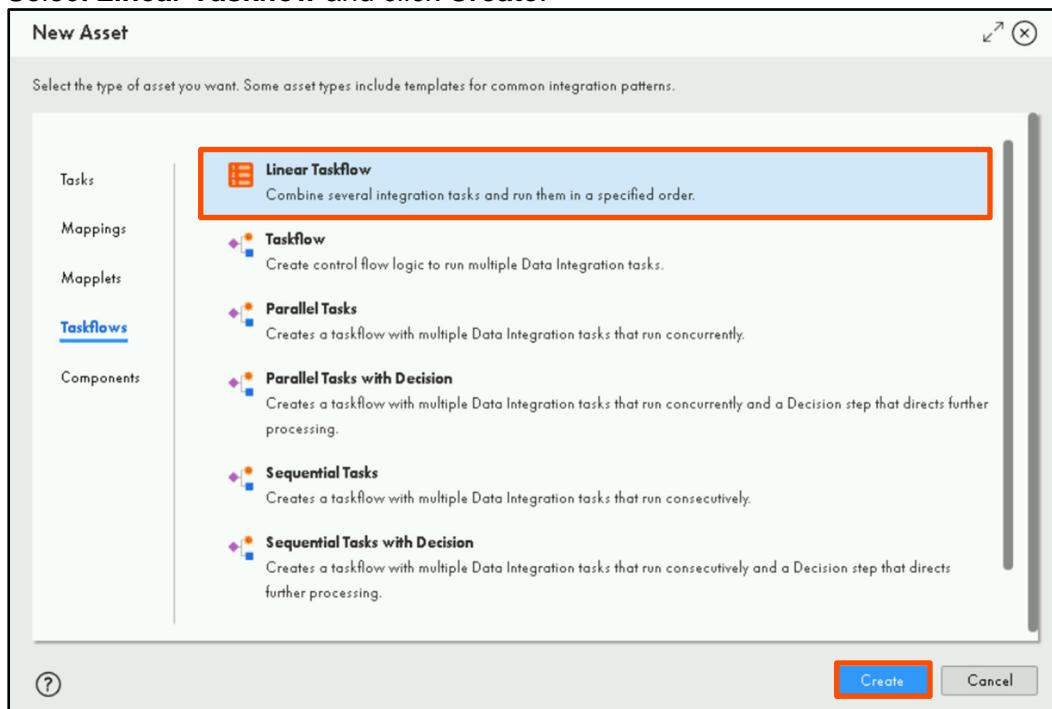
1. Login into IICS and from the **My Services** window, select **Data Integration**.



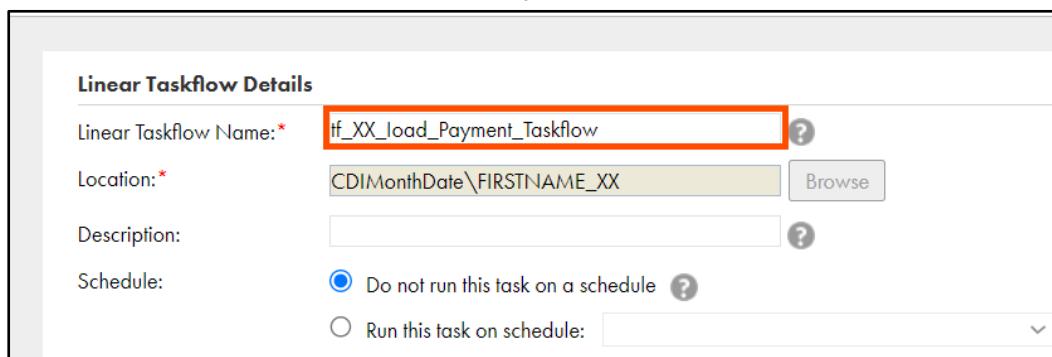
2. From the navigation pane, select **New**.



3. From the New Asset window, click the **Taskflows** tab.
 4. Select **Linear Taskflow** and click **Create**.



5. In the Name field, enter **tf_XX_load_Payment_Taskflow**.



Linear Taskflow Details	
Linear Taskflow Name:*	tf_XX_load_Payment_Taskflow
Location:*	CDIMonthDate\FIRSTNAME_XX
Description:	
Schedule:	<input checked="" type="radio"/> Do not run this task on a schedule <input type="radio"/> Run this task on schedule:

6. Verify that the asset Location is pointing to your working folder.

7. From the **List of Tasks** tab, click on **Add Task**.

Description:	<input type="text"/>	?
Schedule:	<input checked="" type="radio"/> Do not run this task on a schedule ? <input type="radio"/> Run this task on schedule: <input type="text"/>	
List of Tasks Add Task... Refresh		
There are no tasks associated with this linear taskflow. Click Add Task to add tasks to the linear taskflow.		

8. Go to your working folder. You will add the following pre-created mapping tasks from this folder:

- syn_XX_OutletsLoad
- syn_XX_Employee
- syn_XX_UPSERT_CUSTOMERS
- mask_XX_PhoneNumber_Masking

9. Select the task **syn_XX_OutletsLoad** and click **Select**.

10. Click on **Add Task** again and go to your working folder.

11. Select the task **syn_XX_Employee** and click **Select**.

12. Similarly, add other tasks – **syn_XX_UPSERT_CUSTOMERS** and **mask_XX_PhoneNumber_Masking**.

Sequence	Name	Type	Stop on Error	Stop on Warning	Delete
1	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_OutletsLoad	Synchronization	<input type="checkbox"/>	<input type="checkbox"/>	
2	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_Employee	Synchronization	<input type="checkbox"/>	<input type="checkbox"/>	
3	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_UPSERT_CUSTOMERS	Synchronization	<input type="checkbox"/>	<input type="checkbox"/>	
4	CDI<Month><Date>\FIRSTNAME_XX\mask_XX_PhoneNumber_Masking	Masking	<input type="checkbox"/>	<input type="checkbox"/>	

13. You can see the **Sequence** of the Mapping Task as 1,2, 3, and 4 respectively.

Sequence	Name	Type	Stop on Error	Stop on Warning	Delete
1	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_OutletsLoad	Synchronization	<input type="checkbox"/>	<input type="checkbox"/>	
2	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_Employee	Synchronization	<input type="checkbox"/>	<input type="checkbox"/>	
3	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_UPSERT_CUSTOMERS	Synchronization	<input type="checkbox"/>	<input type="checkbox"/>	
4	CDI<Month><Date>\FIRSTNAME_XX\mask_XX_PhoneNumber_Masking	Masking	<input type="checkbox"/>	<input type="checkbox"/>	

Note: You can change the Sequence number of the Mapping Tasks to any other order of your preference.

14. Check the **Stop on Error** checkboxes for all the 4 tasks.

15. Also, check the **Stop on Warning** checkboxes for all the tasks.

Sequence	Name	Type	Stop on Error	Stop on Warning	Delete
1	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_OutletsLoad	Synchronization	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_Employee	Synchronization	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	CDI<Month><Date>\FIRSTNAME_XX\syn_XX_UPSERT_CUSTOMERS	Synchronization	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	CDI<Month><Date>\FIRSTNAME_XX\mask_XX_PhoneNumber_Masking	Masking	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

16. From the Email Notification Options, select the **Use custom email notification options for this task** option.
17. Enter your valid email address in the **Failure Email Notification**, **Warning Email Notification**, and **Success Email Notification**.

Email Notification Options

Use the default email notification options for my organization

Use custom email notification options for this task:

Failure Email Notification:	abc@informatica.com
Warning Email Notification:	abc@informatica.com
Success Email Notification:	abc@informatica.com

18. Save and run the Linear Taskflow.

•  tf_XX_load_Payment_Taskflow	Save	Run
--	----------------------	---------------------

Monitor the Status

19. To monitor the task, from the navigation pane, click **My Jobs**.
20. It may take 1 to 2 minutes for the task to complete. When the task run is complete, you will see that the status of the job says **Failed**.

Jobs (244)							Updated 8:25:24 AM PDT				Find
Instance Name	Location	Subtasks	Start Time ▾	End Time	Rows Processed	Status					
 if_XX_load_Payment_T...	CDI<Month><...	4 tasks	Aug 2, 2023, 8:24 ...	Aug 2, 2023, ...	41	 Failed					

Note: You can refresh the page if the status does not change automatically.

21. To view which sub-task has failed, click on the instance name.

Jobs (244)							Updated 8:25:24 AM PDT				Find
Instance Name	Location	Subtasks	Start Time ▾	End Time	Rows Processed	Status					
 if_XX_load_Payment_T...	CDI<Month><...	4 tasks	Aug 2, 2023, 8:24 ...	Aug 2, 2023, ...	41	 Failed					

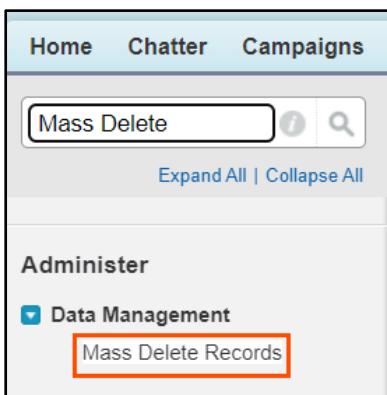
22. Scroll down and observe that the error has occurred because of loading duplicate records into the salesforce object **Contact** (as you have previously run the task and loaded data into the Contact object). Also, note that, as you selected the checkbox – **Stop on Error**, the taskflow did not execute all the upcoming tasks as sequenced.

Individual Task Results							
#	Task Name	End Time	Status	Success Rows	Errors	Error Message	Recommendation
1	syn_XX_OutletsLoad	Aug 2, 2023 8:24:26 AM	Success	8	0		
2	syn_XX_Employee	Aug 2, 2023 8:24:52 AM	Warning	0	33	Error loading into target [Contact] : Error received from salesforce.com. Fields [], Status code [DUPLICATES_DETECTED]. Message [Use one of these records?].	For details about the error rows, review the error file.
3	syn_XX_UPSERT_CUSTOMERS		Not Started				
4	mask_XX_PhoneNumber_Masking		Not Started				
Account		Aug 2, 2023 8:24:52 AM	Not Started				

23. To troubleshoot the issue, you need to clear all the contacts records from Salesforce. Login into your Salesforce account and go to the **Setup** page.



24. From the Search box on your left, enter Mass Delete and click the **Mass Delete Records** section.



25. Click on the **Mass Delete Contacts** link.

Mass Delete Records

<u>Mass Delete Accounts</u>	Delete multiple accounts at one time
<u>Mass Delete Leads</u>	Delete multiple leads at one time
<u>Mass Delete Activities</u>	Delete multiple activities at one time
<u>Mass Delete Contacts</u>	Delete multiple contacts at one time
<u>Mass Delete Cases</u>	Delete multiple cases at one time
<u>Mass Delete Solutions</u>	Delete multiple solutions at one time
<u>Mass Delete Products</u>	Delete multiple products at one time
<u>Mass Delete Reports</u>	Delete multiple reports at one time

26. Scroll down and click **Search**.

▼ Step 3: Find Contacts that match the following criteria:

--None--	▼	--None--	▼	AND
--None--	▼	--None--	▼	AND
--None--	▼	--None--	▼	AND
--None--	▼	--None--	▼	AND
--None--	▼	--None--	▼	

Filter By Additional Fields (Optional):

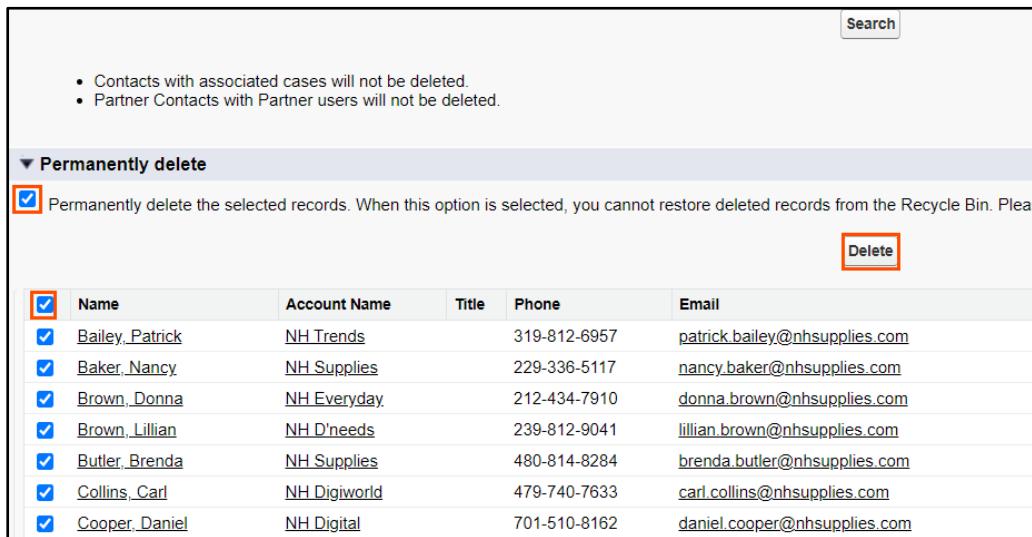
- You can use "or" filters by entering multiple items in the third column, separated by commas.
- For date fields, enter the value in following format: 3/5/2023
- For date/time fields, enter the value in following format: 3/5/2023 1:37 PM

Search

▼ Permanently delete

Permanently delete the selected records. When this option is selected, you cannot restore deleted records from the Recycle

27. Now you will see all the records that belong to Contacts. Select all the records including the permanent delete checkbox and click **Delete**.



The screenshot shows a modal dialog box with the following content:

- Contacts with associated cases will not be deleted.
- Partner Contacts with Partner users will not be deleted.

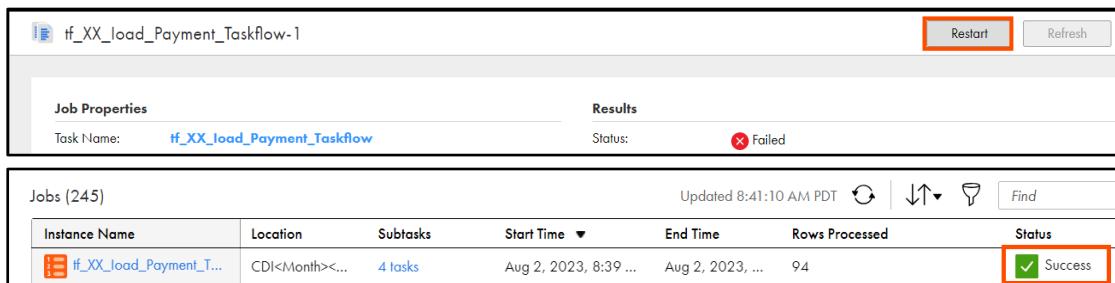
Permanently delete

Permanently delete the selected records. When this option is selected, you cannot restore deleted records from the Recycle Bin. Please be sure to click Delete.

Delete

Name	Account Name	Title	Phone	Email
Bailey, Patrick	NH Trends	319-812-6957	patrick.bailey@nhsupplies.com	
Baker, Nancy	NH Supplies	229-336-5117	nancy.baker@nhsupplies.com	
Brown, Donna	NH Everyday	212-434-7910	donna.brown@nhsupplies.com	
Brown, Lillian	NH D'needs	239-812-9041	lillian.brown@nhsupplies.com	
Butler, Brenda	NH Supplies	480-814-8284	brenda.butler@nhsupplies.com	
Collins, Carl	NH Digiworld	479-740-7633	carl.collins@nhsupplies.com	
Cooper, Daniel	NH Digital	701-510-8162	daniel.cooper@nhsupplies.com	

28. Back in Data Integration service window, restart the job and view the results.



The screenshot shows the Data Integration service window with the following details:

Job Properties

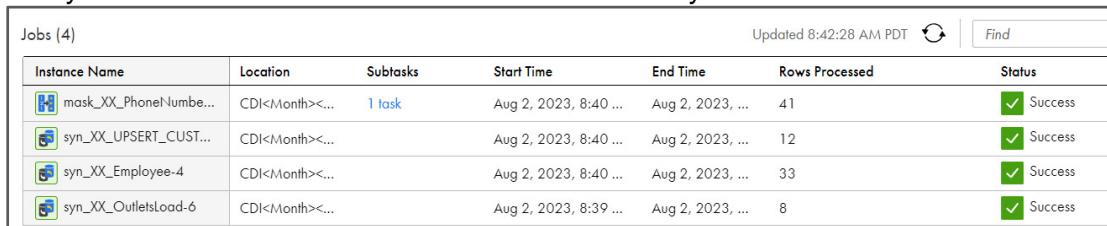
- Task Name: **if_XX_load_Payment_Taskflow**
- Status: Failed

Jobs (245)

Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
if_XX_load_Payment_T...	CDI<Month><...	4 tasks	Aug 2, 2023, 8:39 ...	Aug 2, 2023, ...	94	Success

29. To view the status of the subtask, click on **4 tasks**.

30. Verify that all the four tasks are executed successfully.



The screenshot shows the Data Integration service window with the following details:

Jobs (4)

Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
mask_XX_PhoneNumber...	CDI<Month><...	1 task	Aug 2, 2023, 8:40 ...	Aug 2, 2023, ...	41	Success
syn_XX_UPSERT_CUST...	CDI<Month><...		Aug 2, 2023, 8:40 ...	Aug 2, 2023, ...	12	Success
syn_XX_Employee-4	CDI<Month><...		Aug 2, 2023, 8:40 ...	Aug 2, 2023, ...	33	Success
syn_XX_OutletsLoad-6	CDI<Month><...		Aug 2, 2023, 8:39 ...	Aug 2, 2023, ...	8	Success

31. Open your email inbox and check the task notification emails. It may take 2 to 3 minutes for the email notifications to initiate.

32. Close the assets from the navigation pane.

This concludes the lab.

Module 13: Taskflows

Lab 13-2: Creating a Taskflow with Conditional Logic

Overview:

A Taskflow enables you to add multiple data integration tasks and run them in a specific sequence or in parallel.

Use a taskflow to control the execution sequence of a data transfer task, dynamic mapping task, mapping task, PowerCenter task, or synchronization task based on the output of the previous task.

Objective:

- Create a taskflow to run the Task.
- Get an email notification.
- Use conditional logic and take decision based on output of the task.

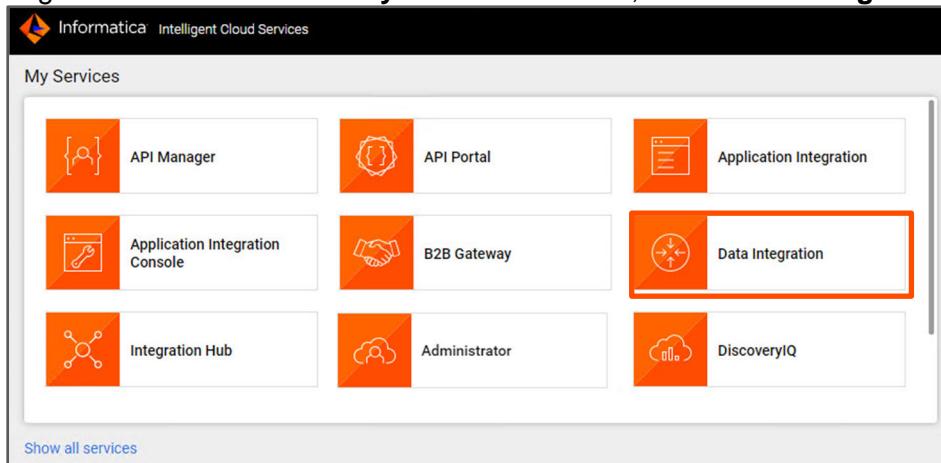
Duration:

40 minutes

Tasks

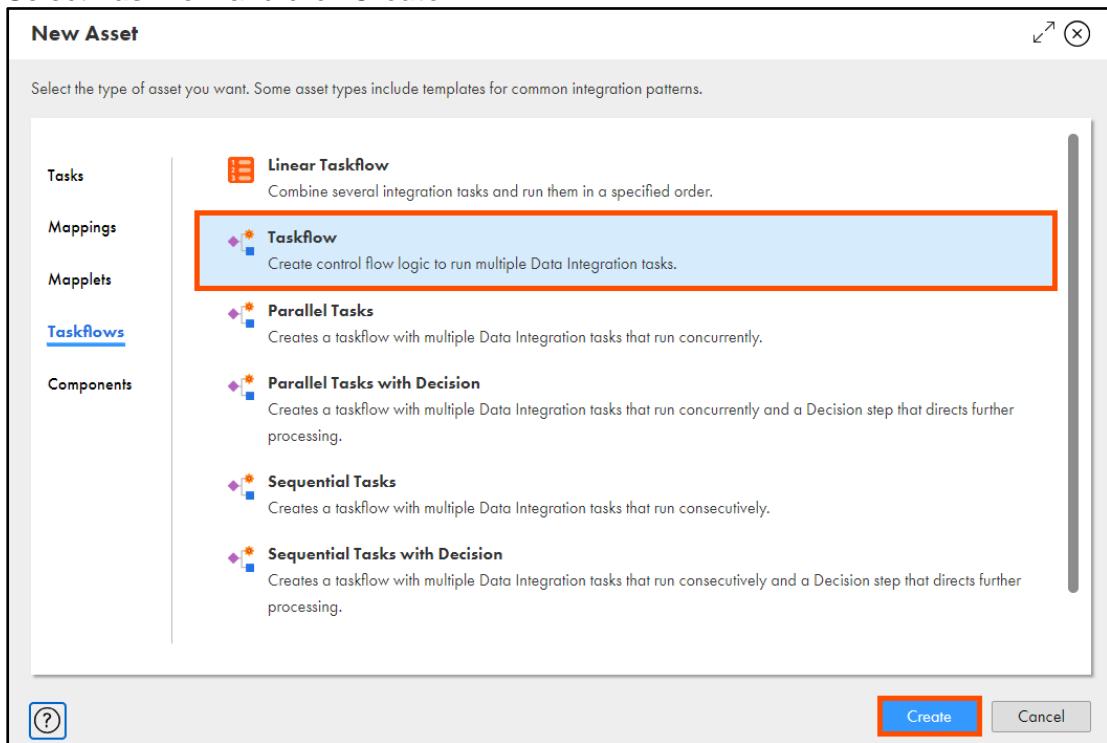
Create Taskflow

1. Login to IICS and from the **My Services** window, select **Data Integration**.

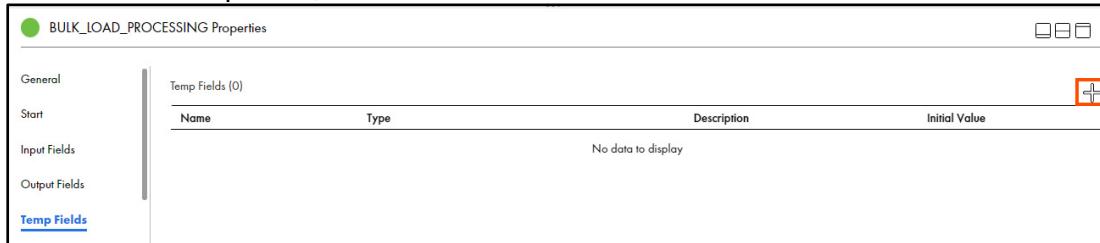


2. From the navigation pane, select **New**.
3. From the New Asset window, click the **Taskflows** tab.

4. Select **Taskflow** and click **Create**.



5. From the Taskflow properties pane, select **General**.
 6. In the Name field, enter **tf_XX_BULK_LOAD_PROCESSING**.
 7. From the properties pane, navigate to **Temp Fields**.
 8. To add new Temp Field, click .



9. Enter the details as shown in table below.

Name	ROW_ERRORS
Type	Integer
Description	Total row level load errors in the first three tasks
Initial Value	0 (click the edit icon and enter the value)

10. To add another Temp Field, click .

11. Enter the details as shown in table below.

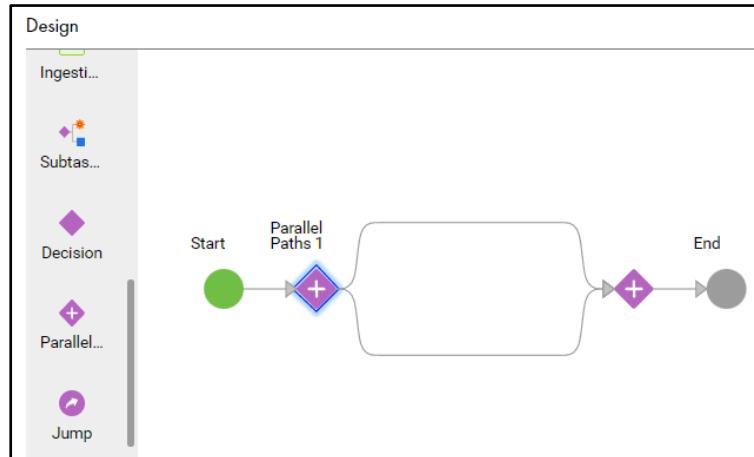
Name	INITIAL_TASK_STATUS
Type	Integer
Description	Will be zero if the first three tasks succeed
Initial Value	0

12. Similarly add another Temp field with the following configurations:

Name	INITIAL_LOAD_SUCCESS
Type	Integer
Description	Will be zero if both ROW_ERRORS and INITIAL_TASK_STATUS are zero
Initial Value	0

Temp Fields (3)				
Name	Type	Description	Initial Value	
ROW_ERRORS	Integer	Total row level load errors in the first three ...	0	
INITIAL_TASK_STATUS	Integer	Will be zero if the first three tasks succeed	0	
INITIAL_LOAD_SUCCESS	Integer	Will be zero if both ROW_ERRORS and I...	0	

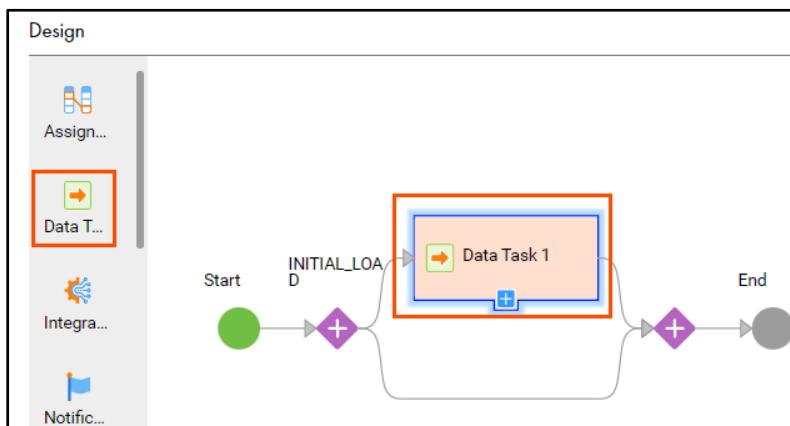
13. From the Design pane, drag and drop the **Parallel Paths** step onto the link between Start and End steps.



14. Name the Parallel Paths step as **INITIAL_LOAD**.

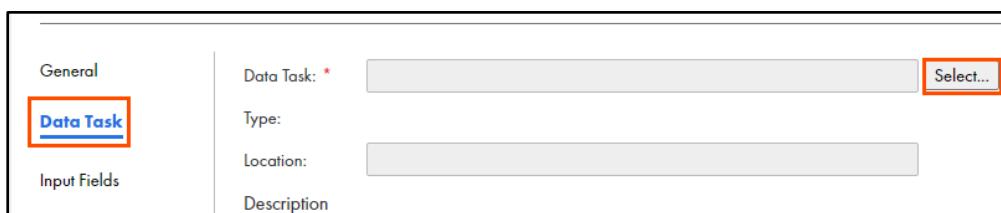


15. Drag and drop the Data task onto to the first path of the Parallel Paths step.



16. In the General properties section, enter **OutletsLoad** as the name of the Data task.

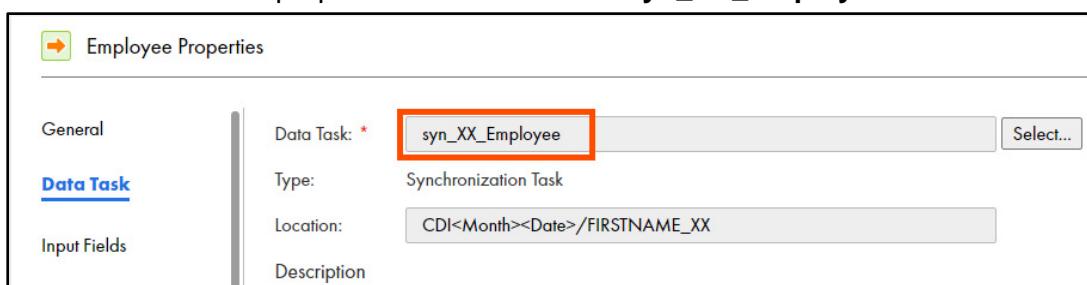
17. With the Data task being selected, navigate to the **Data Task** properties tab. To choose the task, click **Select**.



18. Navigate to your working folder and select the **syn_XX_OutletsLoad** task.

19. Drag and drop another data task onto the 2nd Parallel path and name it as **Employee**.

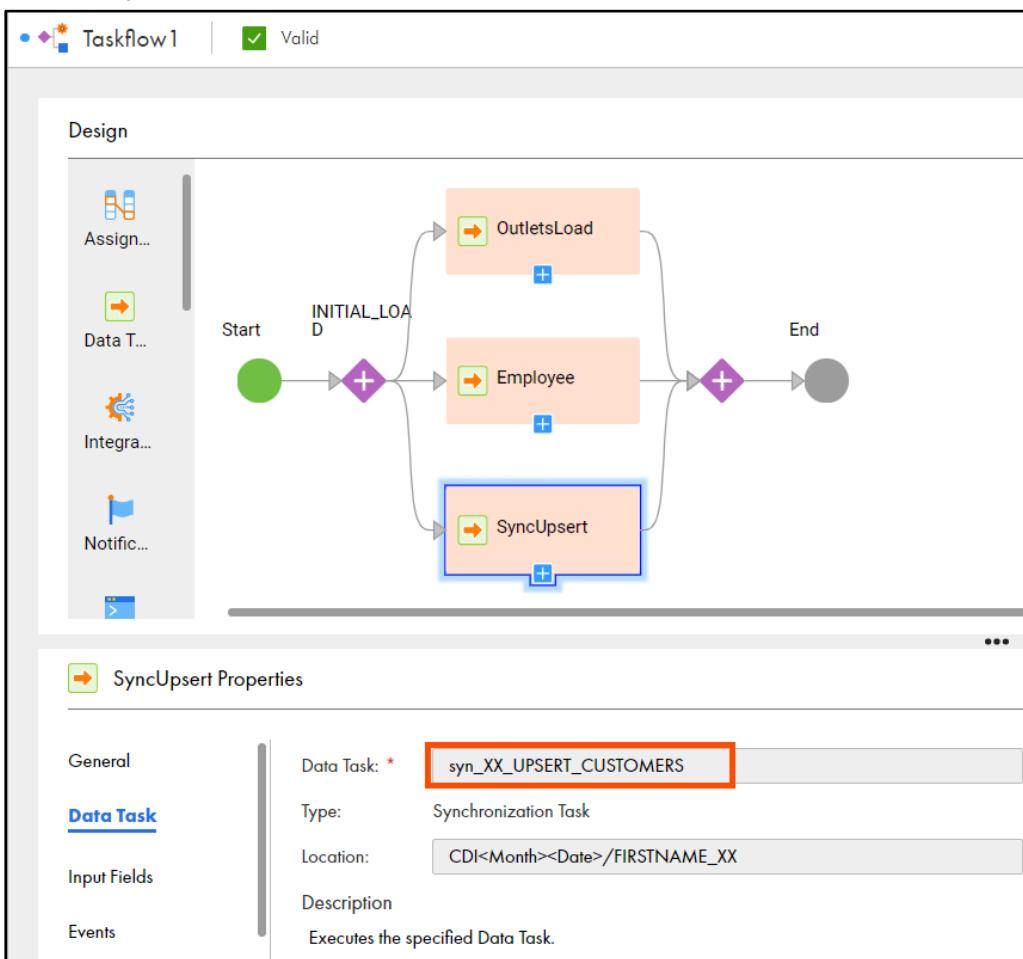
20. Go to the Data Task properties tab and add the **syn_XX_Employee** task.



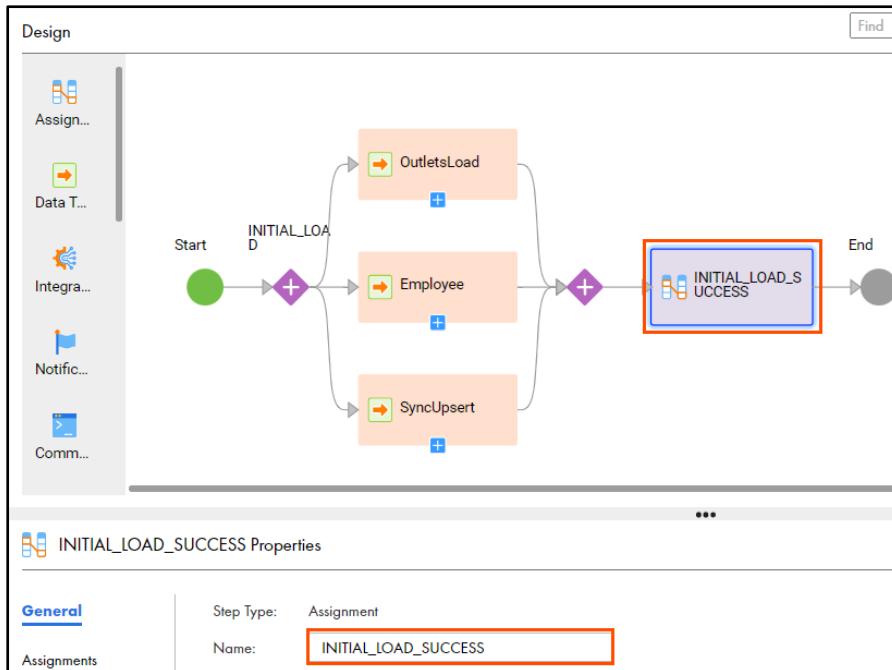
21. Select the Parallel Paths step from the canvas and navigate to the Parallel Paths tab. You can view 2 default paths. Click the plus icon to add the 3rd path to it.



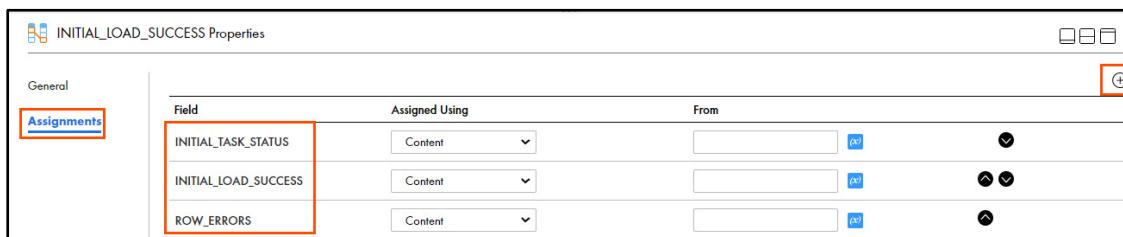
22. Drag and drop another Data task step onto the 3rd parallel path and name it as **SyncUpsert**.
23. Navigate to the Data Task properties tab and from your working directory, select and add the **syn_XX_UPSERT_CUSTOMERS** task.



24. Save your work.
25. Drag and drop an Assignment step from the Design panel and place it right after the Parallel Paths step. Name it as **INITIAL_LOAD_SUCCESS**.



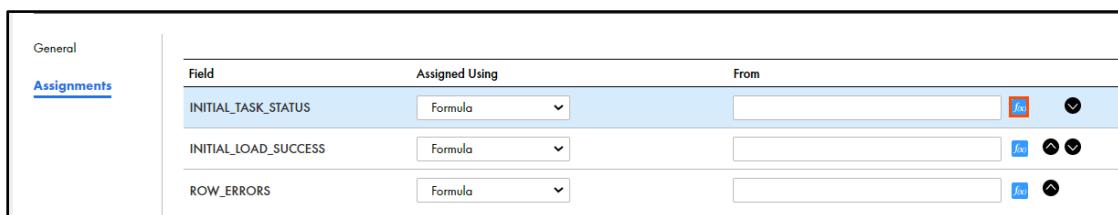
26. Go to the Assignments properties tab and using the plus icon, add **INITIAL_TASK_STATUS**, **ROW_ERRORS**, and **INITIAL_LOAD_SUCCESS** fields.



Field	Assigned Using	From
INITIAL_TASK_STATUS	Content	
INITIAL_LOAD_SUCCESS	Content	
ROW_ERRORS	Content	

27. Change the **Assigned Using** column property for all the three fields to **Formula**.

28. Click the Formula Editor icon for the **INITIAL_TASK_STATUS** field.

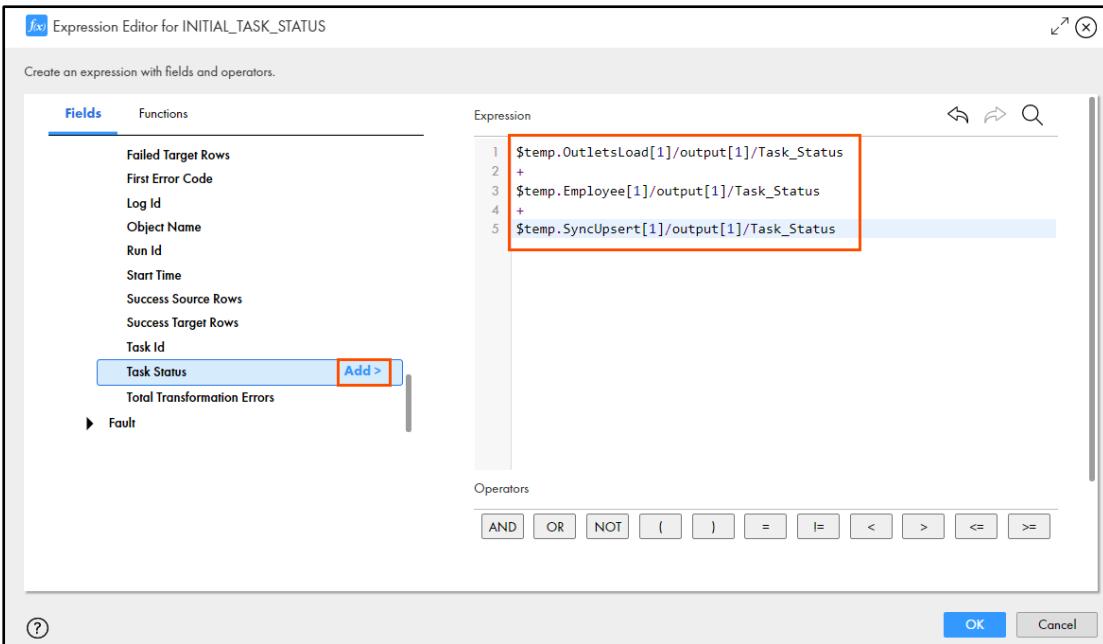


Field	Assigned Using	From
INITIAL_TASK_STATUS	Formula	
INITIAL_LOAD_SUCCESS	Formula	
ROW_ERRORS	Formula	

29. Set the Expression as shown below:

```
$temp.OutletsLoad[1]/output[1]/Task_Status
+
$temp.Employee[1]/output[1]/Task_Status
+
$temp.SyncUpsert[1]/output[1]/Task_Status
```

Tip: To configure the expression, from the Fields section, expand each of the Object's **Output Parameters** section and add the **Task Status** (From all thee 3 tasks).



30. Click **OK**.

Note: Using the up and down arrows next to the fields, keep the **INITIAL_LOAD_SUCCESS** field to the last.

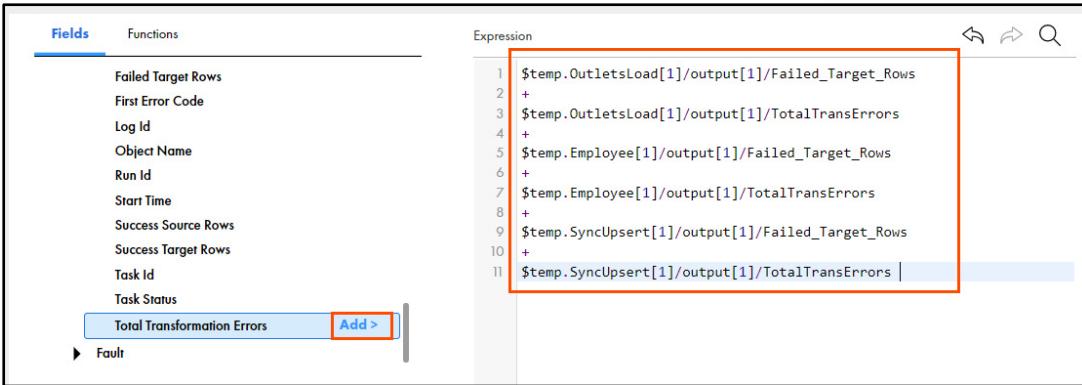
Field	Assigned Using	From
INITIAL_TASK_STATUS	Formula	\$temp.OutletsLoad[1]/output[1]/Task_Status
ROW_ERRORS	Formula	
INITIAL_LOAD_SUCCESS	Formula	

31. Similarly, for the **ROW_ERRORS** field, go to the expression editor and set the following expression using the Output Parameters:

```

$temp.OutletsLoad[1]/output[1]/Failed_Target_Rows
+
$temp.OutletsLoad[1]/output[1]/TotalTransErrors
+
$temp.Employee[1]/output[1]/Failed_Target_Rows
+
$temp.Employee[1]/output[1]/TotalTransErrors
+
$temp.SyncUpsert[1]/output[1]/Failed_Target_Rows
+
$temp.SyncUpsert[1]/output[1]/TotalTransErrors

```



The screenshot shows the Expression builder interface. On the left, under the 'Fields' tab, several fields are listed: Failed Target Rows, First Error Code, Log Id, Object Name, Run Id, Start Time, Success Source Rows, Success Target Rows, Task Id, Task Status, and Total Transformation Errors. The 'Total Transformation Errors' field is selected and highlighted with a red box. An 'Add >' button is located next to it. On the right, the 'Expression' tab displays the generated expression:

```

1 $temp.OutletsLoad[1]/output[1]/Failed_Target_Rows
2 +
3 $temp.OutletsLoad[1]/output[1]/TotalTransErrors
4 +
5 $temp.Employee[1]/output[1]/Failed_Target_Rows
6 +
7 $temp.Employee[1]/output[1]/TotalTransErrors
8 +
9 $temp.SyncUpsert[1]/output[1]/Failed_Target_Rows
10 +
11 $temp.SyncUpsert[1]/output[1]/TotalTransErrors |

```

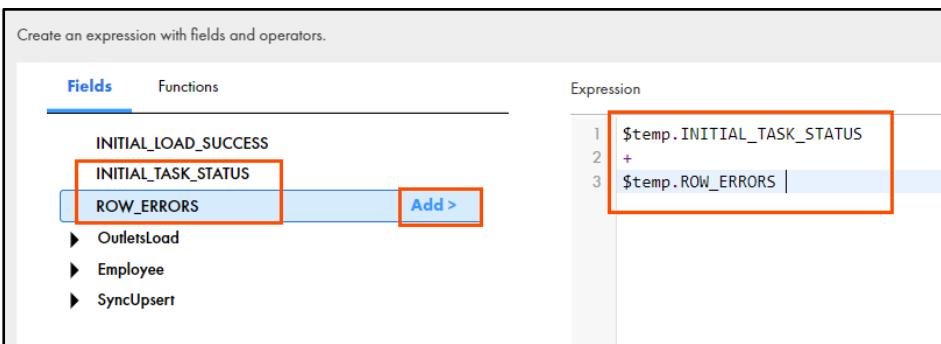
32. Click **OK**.

33. Similarly, for **INITIAL_LOAD_SUCCESS**, set the following expression:

\$temp.INITIAL_TASK_STATUS

+

\$temp.ROW_ERRORS



The screenshot shows the Expression builder interface. On the left, under the 'Fields' tab, several fields are listed: INITIAL_LOAD_SUCCESS, INITIAL_TASK_STATUS, and ROW_ERRORS. The 'ROW_ERRORS' field is selected and highlighted with a red box. An 'Add >' button is located next to it. On the right, the 'Expression' tab displays the generated expression:

```

1 $temp.INITIAL_TASK_STATUS
2 +
3 $temp.ROW_ERRORS |

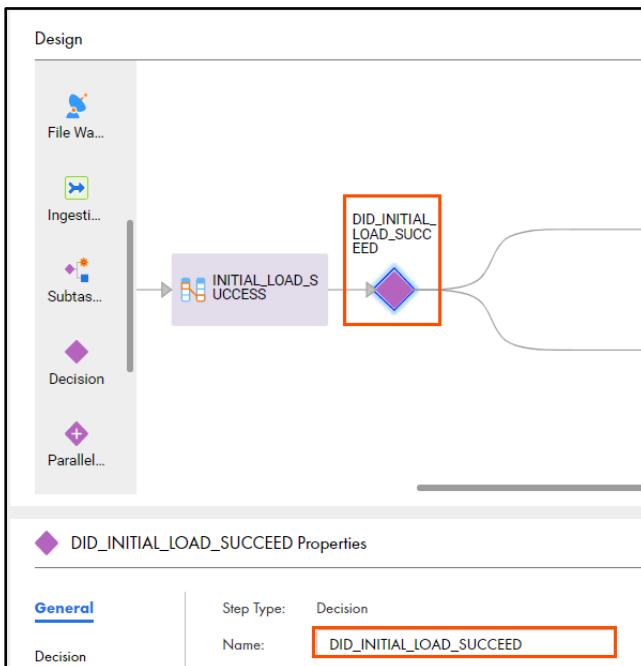
```

34. Click **OK**.

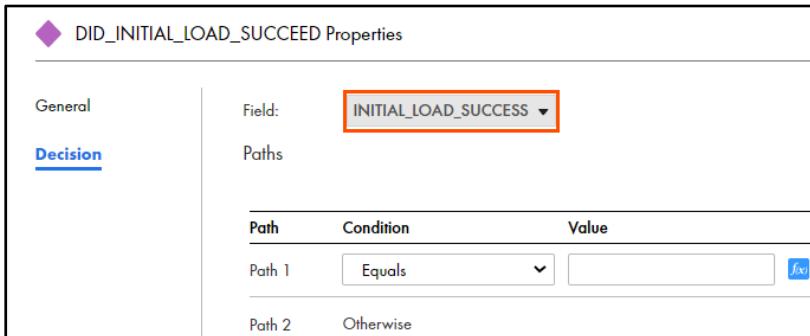
35. Save your work.

36. Drag and drop a Decision step onto the canvas and place it next to the Assignment step.

37. Name the Decision step as **DID_INITIAL_LOAD_SUCCEED**.

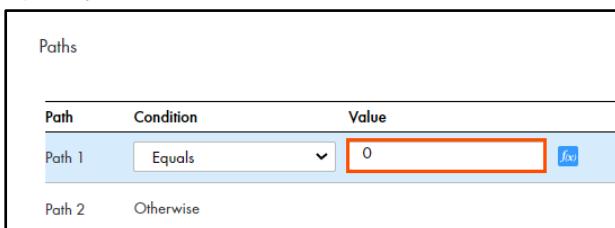


38. Navigate to the Decision properties tab and select the decision field as **INITIAL_LOAD_SUCCESS**.



The screenshot shows the 'Decision' properties tab. It has sections for 'General' and 'Decision'. Under 'General', the 'Field:' dropdown is set to 'INITIAL_LOAD_SUCCESS' (highlighted with a red box). Under 'Decision', there is a table with columns 'Path', 'Condition', and 'Value'. It contains two rows: 'Path 1' with 'Condition: Equals' and 'Value: ' (empty), and 'Path 2' with 'Condition: Otherwise'.

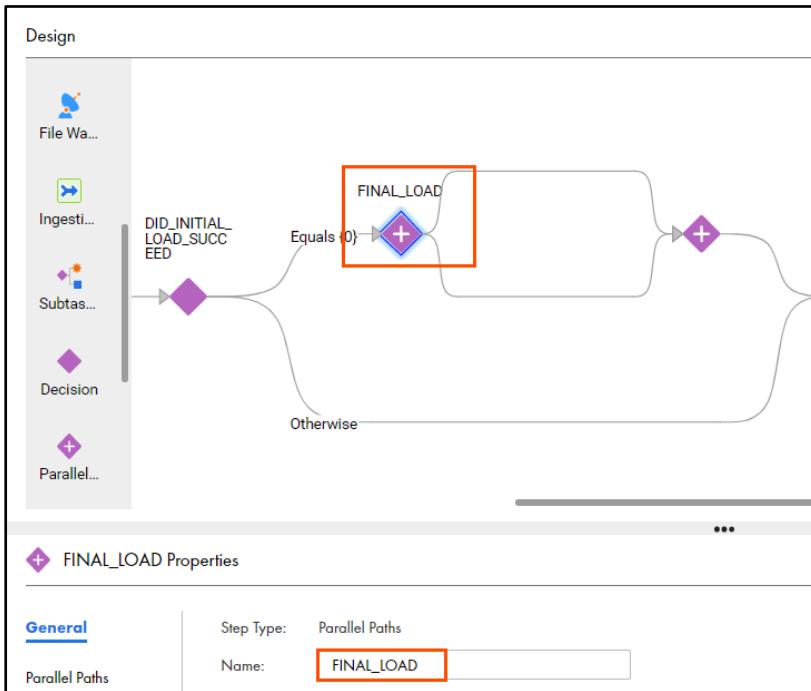
39. Specify the Value for Path 1 as **0**.



The screenshot shows the 'Paths' table under the 'Decision' properties tab. It has columns 'Path', 'Condition', and 'Value'. The first row, 'Path 1', has 'Condition: Equals' and 'Value: 0' (highlighted with a red box). The second row, 'Path 2', has 'Condition: Otherwise'.

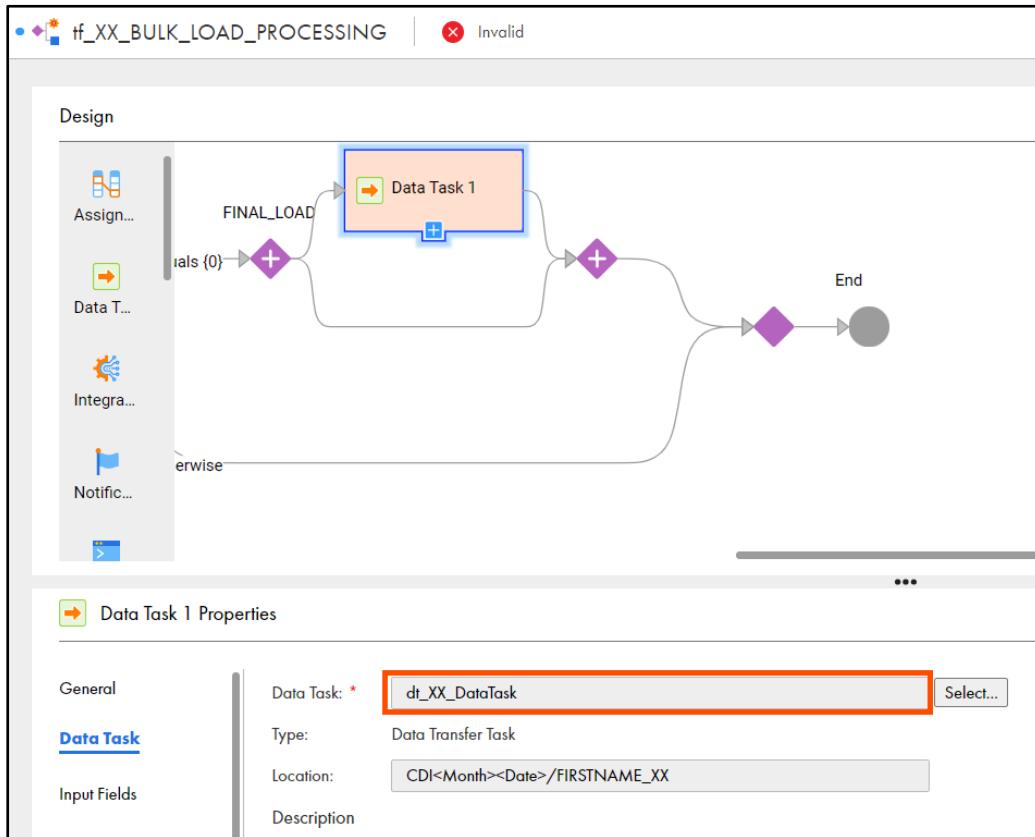
40. In the path 1 of decision step (value = 0 path), drag and drop a Parallel Paths step.

41. Name the Parallel Paths step as **FINAL_LOAD**.

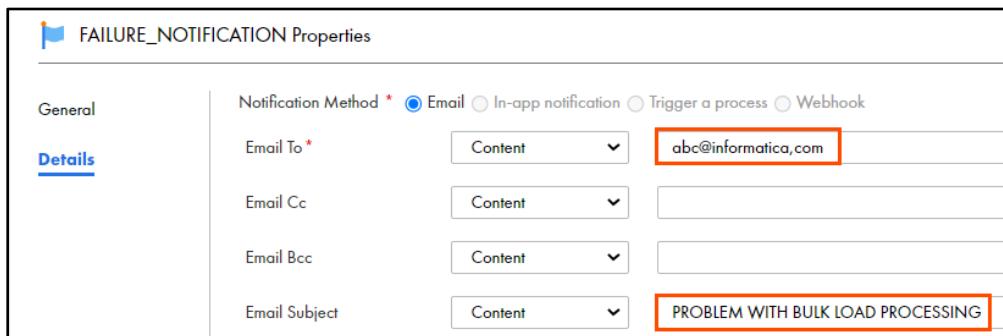


42. Save your work. To the first parallel path, add a Data task step and retain the default name.

43. From the Data Task properties tab, navigate to your working folder and select the **dt_XX_DataTask** task.



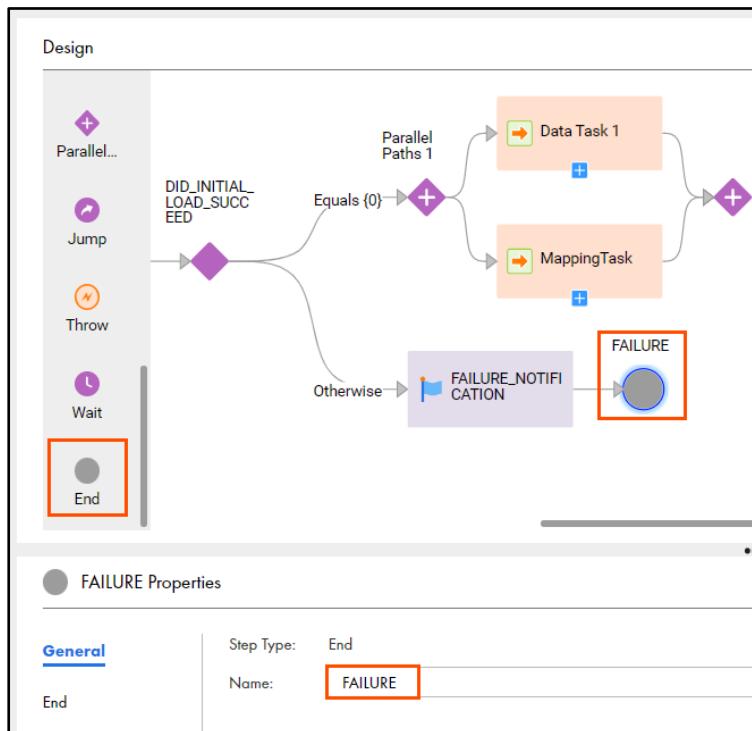
44. Onto the second parallel path, add another data task step and name it as **MappingTask**.
 45. From its Data Task properties tab, select the **mt_XX_MappingTask** task from your working folder.
 46. Onto the Otherwise path of Decision step, drag and drop a Notification step and name it as **FAILURE_NOTIFICATION**.
 47. Go to the Details properties tab of the Notification step.
 48. Provide a valid email Id for the Email To property field and Email Subject as **PROBLEM WITH BULK LOAD PROCESSING**.



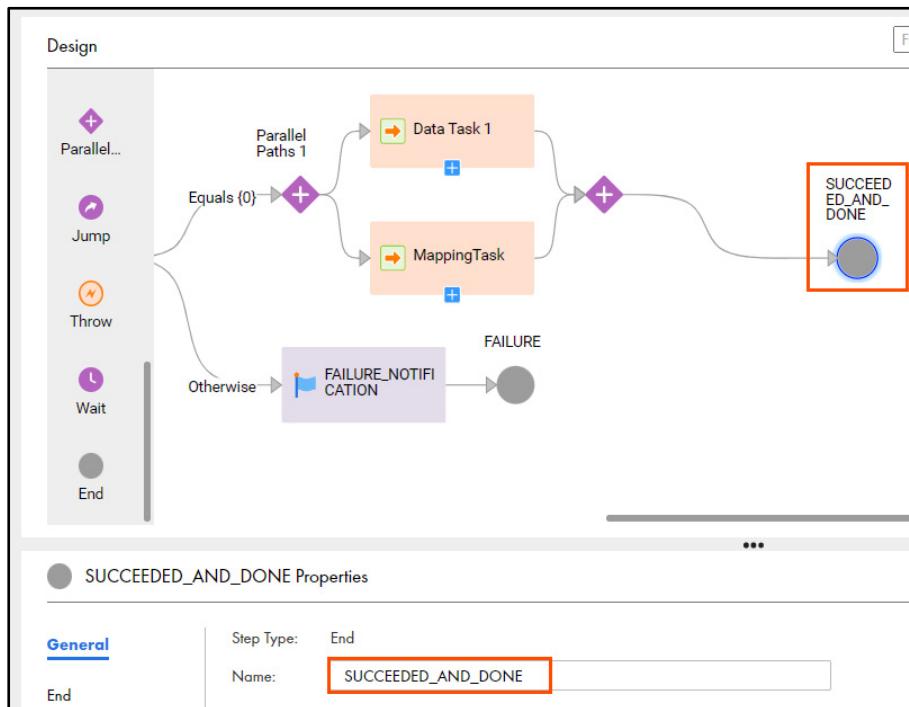
General	Notification Method * <input checked="" type="radio"/> Email <input type="radio"/> In-app notification <input type="radio"/> Trigger a process <input type="radio"/> Webhook
Details	Email To * Content <input type="text" value="abc@informatica.com"/>
	Email Cc Content <input type="text"/>
	Email Bcc Content <input type="text"/>
	Email Subject Content <input type="text" value="PROBLEM WITH BULK LOAD PROCESSING"/>

49. Save your work at regular intervals.

50. After the Notification step, drag and drop an **End** step and name it as **FAILURE**.

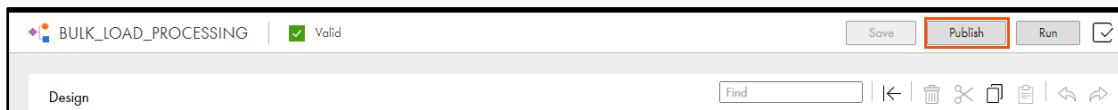


51. Rename the End step following Decision path to **SUCCEEDED_AND_DONE**.

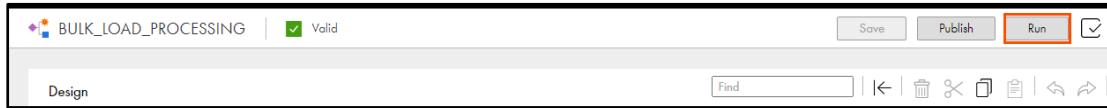


52. **Save** the Taskflow.

53. Publish the Taskflow by clicking on the **Publish** option next to Save.



54. Run the Taskflow.



Monitor Status

55. To monitor the task, from the navigation pane, click **My Jobs**.

56. When the task completes, the status changes to **Success**.

Note: You can refresh the page if the status does not change automatically.

57. To view the status of the subtask, click **View Subtasks**.

Jobs (245) <input checked="" type="checkbox"/> Up to date							Updated 3:34:21 PM PST	↻	↓↑	Filter	Find
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status					
BULK_LOAD_PROCESSING-8171777957...	CDI ILT Development\CDI STUDENT 02	3 tasks	Mar 5, 2023, 3:...	Mar 5, 202...	View Subtasks	Success					

58. Observe that you see a warning status for 1 task, and it is expected. This is the same duplication error that was observed in the previous lab exercise. In this case, you will receive an email alert informing about the task failure.

Jobs (3) <input checked="" type="checkbox"/> Up to date							Updated 3:37:57 PM PST	↻	Find	
Instance Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status				
SyncUpsert-9	CDI ILT Development\CDI STUDENT 02		Mar 5, 2023, 3:...	Mar 5, 202...	10	Success				
Employee-6	CDI ILT Development\CDI STUDENT 02		Mar 5, 2023, 3:...	Mar 5, 202...	33	Warning				
OutletsLoad-9	CDI ILT Development\CDI STUDENT 02		Mar 5, 2023, 3:...	Mar 5, 202...	10	Success				

PROBLEM WITH BULK LOAD PROCESSING



admin@informaticacloud.com

To

Retention Policy Exchange online 3 Years delete (3 years)

This concludes the lab.

Module 14: IICS REST APIs

Lab 14-1: Creating a Mapping Using a REST V2 Connector

Overview:

REST is a web standards-based architecture that uses HTTP Protocol for data communication. These commonly used APIs allow you to create web-based applications.

In this lab, you will use the REST V2 Connector to connect to OpenWeather API and to get the current weather information.

Objective:

- Create a REST connection using the REST V2 connector
- Get the JSON message and write it to a Flat File

Scenario:

John receives a request to implement weather information for requested location. He uses a REST V2 Connector to connect to the OpenWeather API. He uses the unique API key to fetch the current weather information for the city specified in the request message. After the information is received from the API in the JSON format, he creates a target file at runtime to write the output.

Duration:

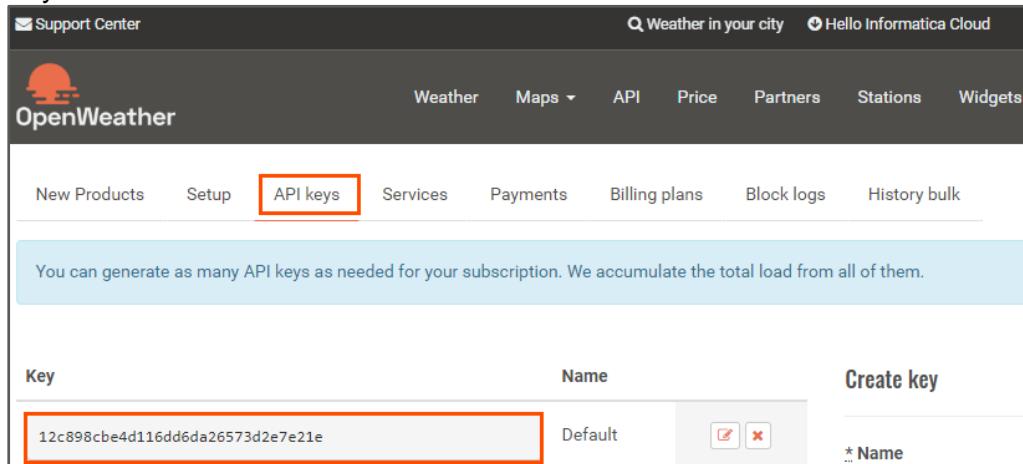
30 minutes

Tasks

Sign up to Access OpenWeatherAPI

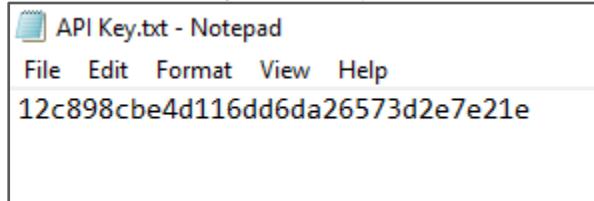
1. Open a web browser and enter the following URL in a new tab:
https://home.openweathermap.org/users/sign_up
Note: You can bookmark this link for future use.
2. Create a new account in OpenWeather using the link provided.
Note: After you create an account, you can access your unique API key.

3. To access your unique API Key, select the **API Keys** tab, and copy the API key from the Key field.



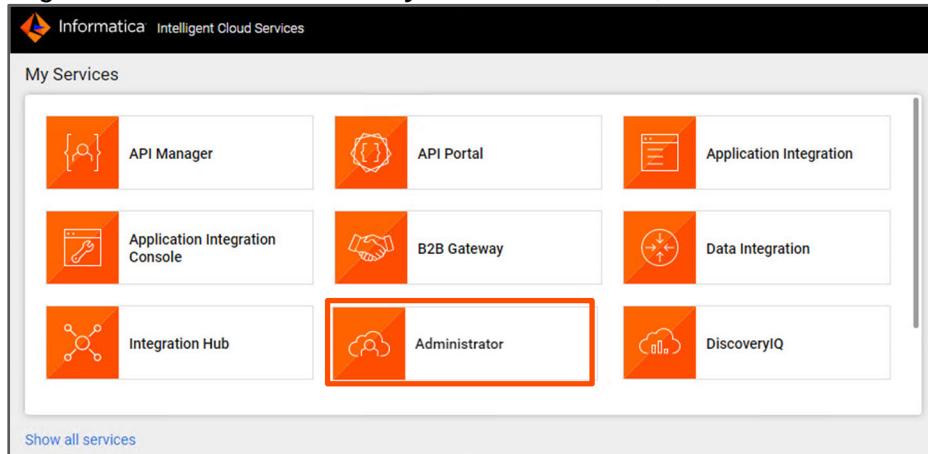
The screenshot shows the OpenWeather API Keys page. At the top, there are tabs for Support Center, Weather in your city, Hello Informatica Cloud, Weather, Maps, API, Price, Partners, Stations, and Widgets. Below these, there are more tabs for New Products, Setup, API keys (which is highlighted with a red box), Services, Payments, Billing plans, Block logs, and History bulk. A message states: "You can generate as many API keys as needed for your subscription. We accumulate the total load from all of them." Below this, there is a table with columns for Key, Name, and Create key. The first row shows a key value "12c898cbe4d116dd6da26573d2e7e21e" in the Key column, which is also highlighted with a red box. The Name column contains "Default" and the Create key column has buttons for creating and deleting the key.

4. Paste the API key in a notepad and save the notepad file on your system.



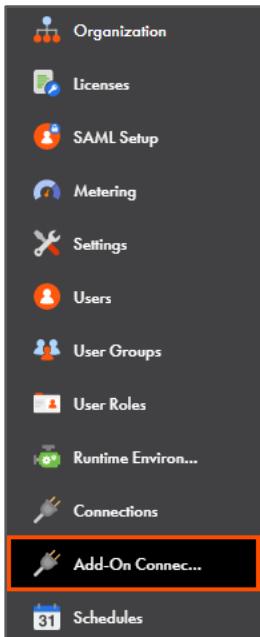
Enable REST V2 Connector

5. Login into IICS and from the **My Services** window, select **Administrator**.

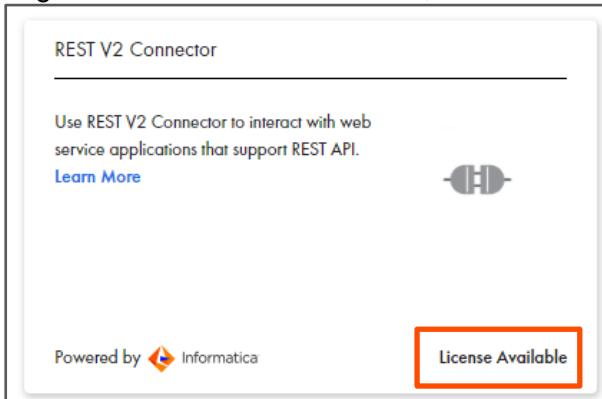


The screenshot shows the "My Services" window in IICS. It displays various services in a grid: API Manager, API Portal, Application Integration, Application Integration Console, B2B Gateway, Data Integration, Integration Hub, Administrator (which is highlighted with a red box), and DiscoveryIQ. At the bottom left, there is a link to "Show all services".

6. From the navigation pane, select **Add-On Connectors**.



7. Locate the **REST V2 Connector** and check if the REST V2 connector is available for the Org. If the connector is available, its status shows as '**License Available**'.



REST V2 Connector

Use REST V2 Connector to interact with web service applications that support REST API.

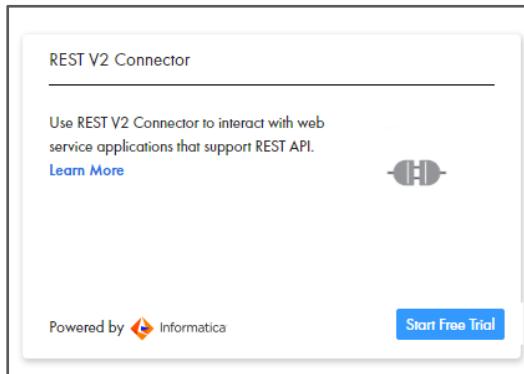
[Learn More](#)

Powered by  Informatica

License Available

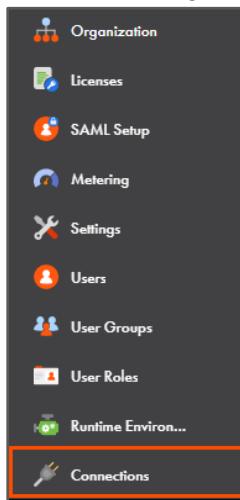
Note: If the connector is already available for the org, you can skip the steps to enable the connector.

- If the REST V2 Connector is not available, click **Start Free Trial** to enable the connector.



Create a REST Connection

- From the navigation pane, select **Connections**.



- Create a new connection.
- In the Name field, enter **XX_FirstName_OpenWeather_RESTv2**.
- From the Type drop-down, select **REST V2 (Informatica Cloud)**.

Connection Details	
Connection Name: [*]	XX_FirstName_OpenWeather_RESTv2
Description:	
Type: [*]	REST V2 (Informatica Cloud)

- From the **Runtime Environment** drop-down, select **INFA-SERVER**.
- From the Authentication drop-down, select **Standard**.
- Verify that the Authentication Type is set to **NONE**.
- In the Swagger File Path field, enter the following path of the json file:
C:\IICSLabFiles\SrcFiles\Swagger_api_openweathermap_org_072248.json

17. Verify that Proxy Type is selected as **Platform Proxy**.

Standard Connection Properties ?

Authentication Type:	NONE
Auth User ID:	<input type="text"/>
Auth Password:	<input type="password"/>
OAuth Consumer Key:	<input type="text"/>
OAuth Consumer Secret:	<input type="text"/>
OAuth Token:	<input type="text"/>
OAuth Token Secret:	<input type="text"/>
Swagger File Path:*	C:\IICSLabFiles\Swagger_api_openweathermap_
TrustStore File Path:	<input type="text"/>
TrustStore Password:	<input type="password"/>
KeyStore File Path:	<input type="text"/>
KeyStore Password:	<input type="password"/>
Proxy Type:	Platform Proxy
Proxy Configuration:	<host>:<port>

18. Test the connection.

XX_FirstName_OpenWeather_RESTv2 Test Connection Save

The test for this connection was successful.

Connection Details

Connection Name:*	XX_FirstName_OpenWeather_RESTv2
Description:	<input type="text"/>
Type:*	REST V2 (Informatica Cloud)

REST V2 Connection Properties ?

Runtime Environment:*	CDI-XX-FIRSTNAME
-----------------------	------------------

19. Save the connection.

XX_FirstName_OpenWeather_RESTv2 Test Connection Save

The test for this connection was successful.

Connection Details

Connection Name:*	XX_FirstName_OpenWeather_RESTv2
Description:	<input type="text"/>
Type:*	REST V2 (Informatica Cloud)

REST V2 Connection Properties ?

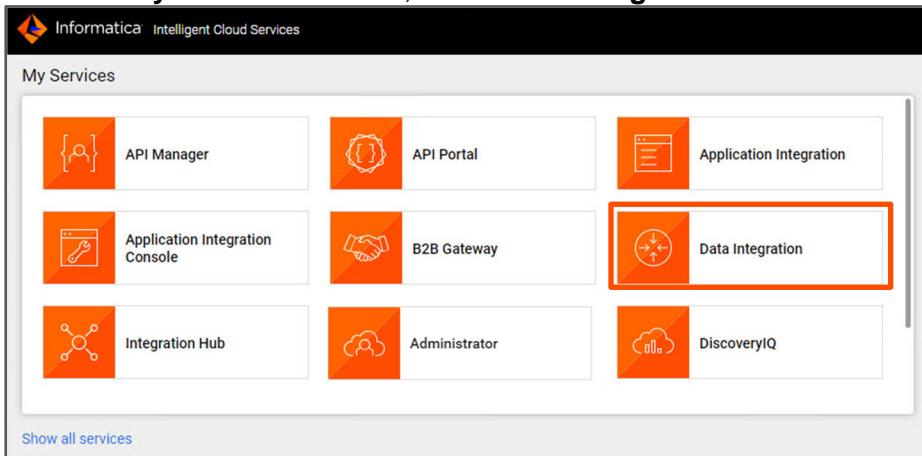
Runtime Environment:*	CDI-XX-FIRSTNAME
-----------------------	------------------

Create a Mapping

20. To switch between the available services, from the toolbar, select the current service **Administrator**.



21. From the **My Services** window, select **Data Integration**.



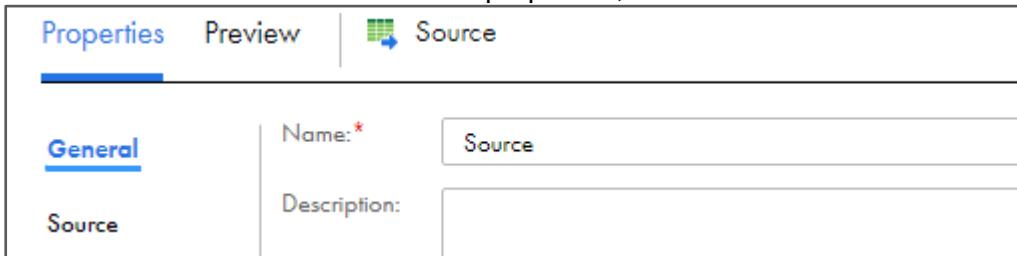
22. Create a new Mapping.

23. In the Name field, enter **m_XX_REST_GetWeather_By_City**.

24. Verify that the asset Location is pointing to your working directory.

25. To configure the source, from the mapping canvas, click the **Source** transformation.

26. In the **General** section of the Source properties, retain the Name as **Source**.



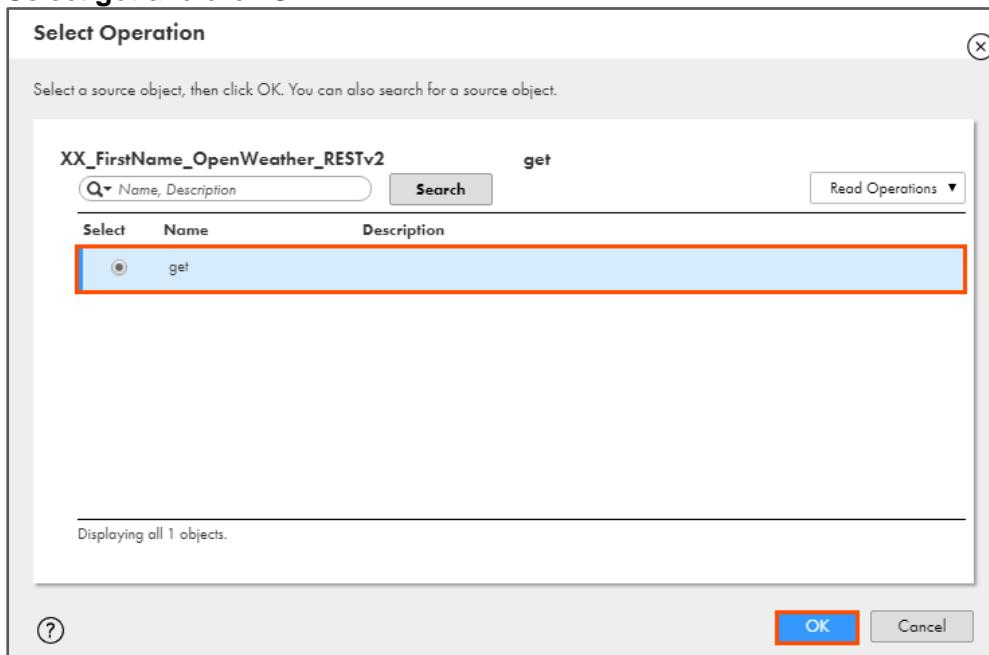
27. From the properties pane, click **Source**.

28. From the Connection drop-down, select **XX_FirstName_OpenWeather_RESTv2**.

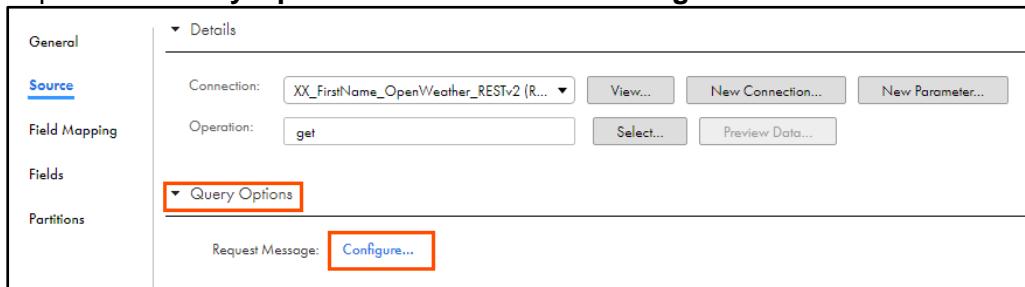
29. For the Operation field, click **Select**.



30. Select **get** and click **OK**.

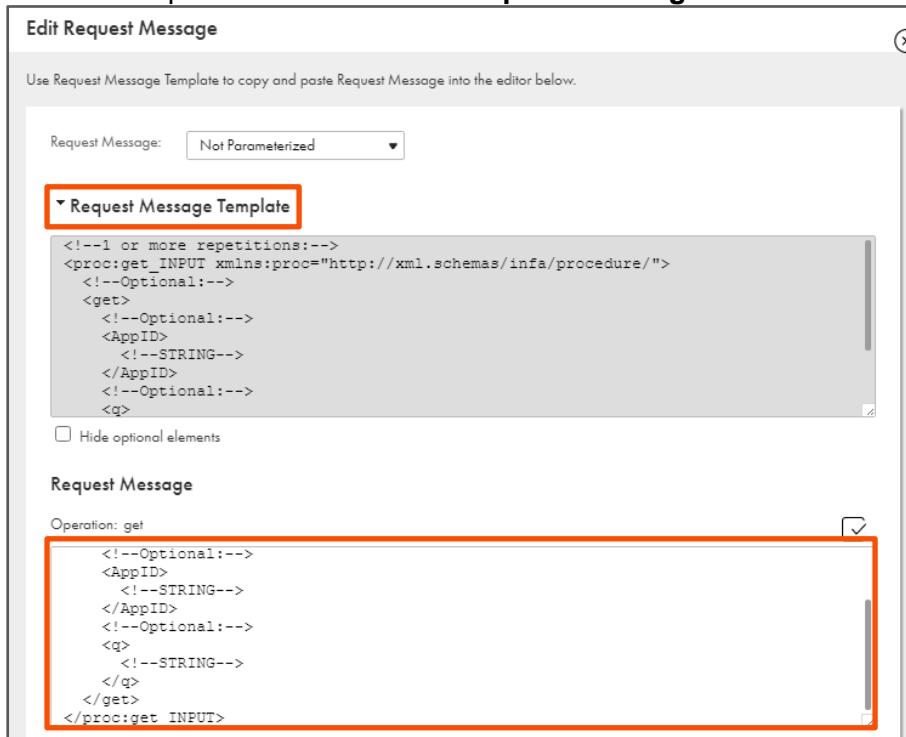


31. Expand the **Query Options** section and click **Configure**.



32. Expand the **Request Message Template** section and copy all the contents from the field.

33. Paste the copied contents into the **Request Message** field.



34. In the Request Message field, in between **<AppID> </AppID>**, enter the unique API Key saved earlier.

35. In the Request Message field, in between **<q> </q>**, enter **London**.

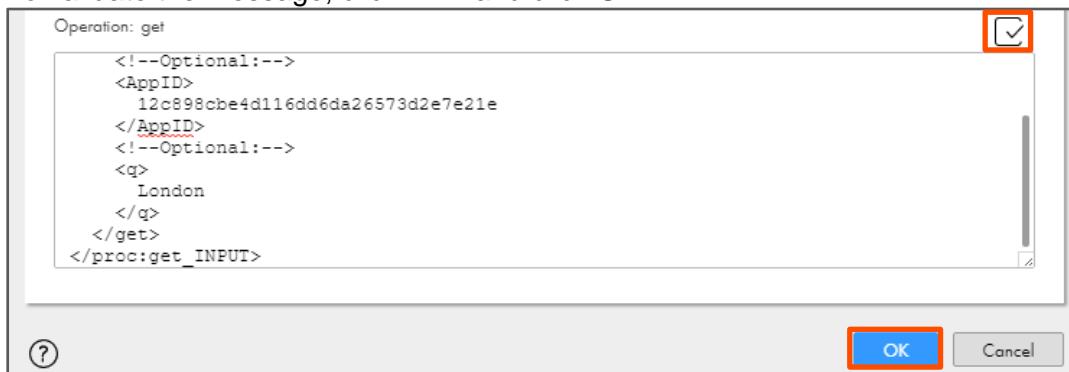
Example:

```

<AppID>
  12c898cbe4d116dd6da26573d2e7e21e
</AppID>
<q>
  London
</q>

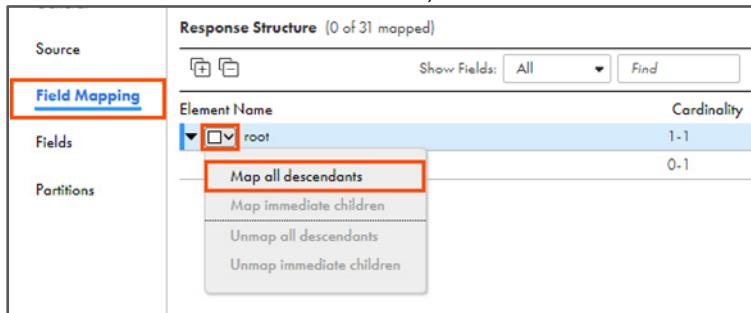
```

36. To validate the message, click and click **OK**.



37. From the properties pane, click **Field Mapping**.

38. From the Element Name section, select **root** and select **Map all descendants**.

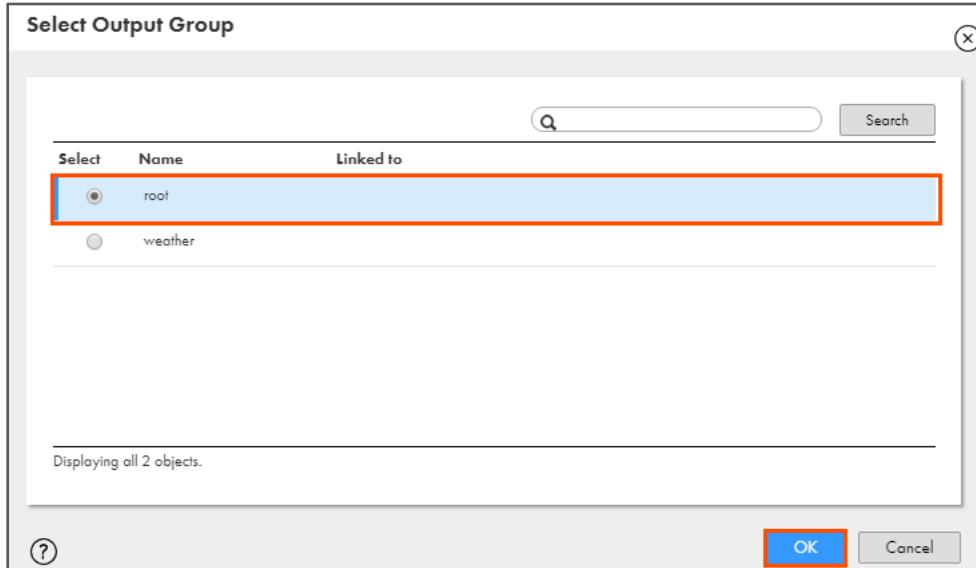


The screenshot shows the 'Field Mapping' tab in the Informatica interface. In the 'Response Structure' pane, there is one mapped element named 'root'. A context menu is open over this element, with the option 'Map all descendants' highlighted.

39. Link **Source** to **Target**.



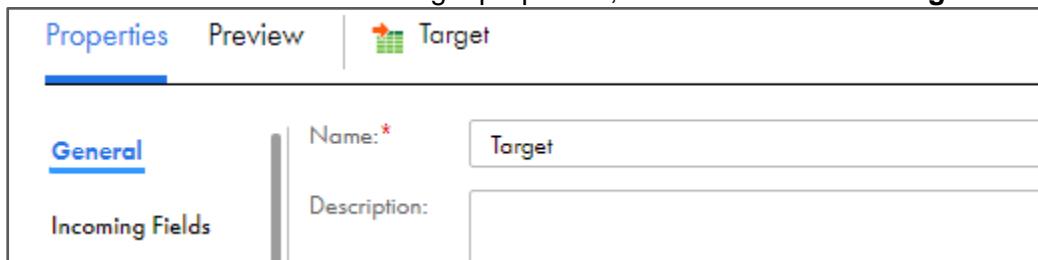
40. Select **root** and click **OK**.



The screenshot shows the 'Select Output Group' dialog box. It lists two objects: 'root' and 'weather'. The 'root' object is selected and highlighted with a red border. At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

41. To configure the target, from the mapping canvas, click the **Target** transformation.

42. In the **General** section of the Target properties, retain the Name as **Target**.



The screenshot shows the 'Properties' pane for the 'Target' transformation. Under the 'General' tab, the 'Name:' field is set to 'Target'. The 'Incoming Fields' tab is also visible.

43. From the properties pane, click **Target**.

44. From the Connection drop-down, select your **target Flat File** connection.

45. To select the target object, from the Object field, click **Select**.

46. In the Target Object window, select **Create New at Runtime**.

47. Enter **s_XX_WeatherByCity.csv** as Static File Name.

48. Click **OK**.

49. Save and run the mapping.



50. From the Runtime Environment drop-down, select INFA-SERVER.

51. Click **Run**.

Monitor Status

52. To monitor the mapping status, from the navigation pane, click **My Jobs**.

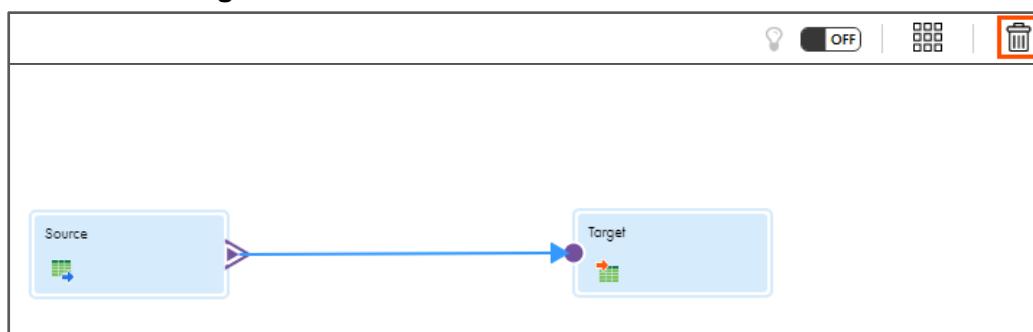
53. When the task completes, the status changes to **Success**.

Note:

- If the task completes with 0 processed rows, click on the Instance Name, and check the error message.

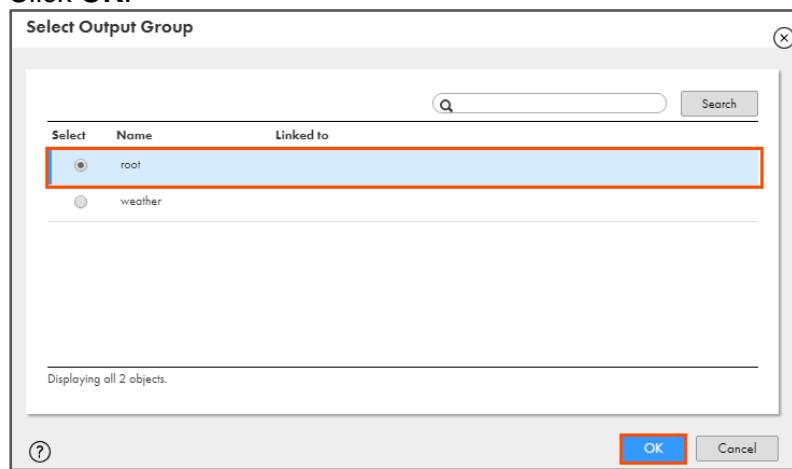
Jobs (1 of 28) ✓ Up to date		Updated 12:21:23 PM PDT				
Asset Name: XX_FirstName_REST_G...		Subtasks	Start Time	End Time	Rows Processed	State
-XX_FirstName_REST_GetWeather_By_City-2			Aug 4, 2019, ...	Aug 4, 2019, ...	1	✓ Success

- If you see the following error message, perform the below mentioned steps:
[ERROR] log4j:ERROR A "org.apache.log4j.ConsoleAppender" object is not assignable to a "org.apache.log4j.Appender" variable,
 then, open the REST_GetWeather_By_City mapping and delete the link between **Source** and **Target**.



- Again, link Source to Target.
- In the **Select Output Group** window, select **root**.

v. Click OK.



vi. Save and run the mapping again.

54. Close the asset from the navigation pane.

55. Optionally, you can preview the target data records using your dummy mapping.

This concludes the lab.

Module 14: IICS REST APIs

Lab 14-2: Using Web Services Transformation in a Mapping

Overview:

A web service is a system software that enables machine-to-machine interaction over a network. It makes applications platform-and-technology independent.

In this lab, you will create a business service. You will also create a mapping that calls the business service in a mapping using web service transformation.

Objective:

- Create a Business Service
- Use Web Services transformation in a mapping

Scenario:

Ruby wants to change the format of billing for NH Retail outlets. She wants to convert the price information from numbers to words. So, John suggests using a business service to convert numbers to words.

In this lab, John creates a business service that connects to the NumberToDollars web service. He also creates a mapping in IICS and calls the business service in the mapping using the web service transformation. The transformation converts a list of numbers received as input into words to generate a flat file output.

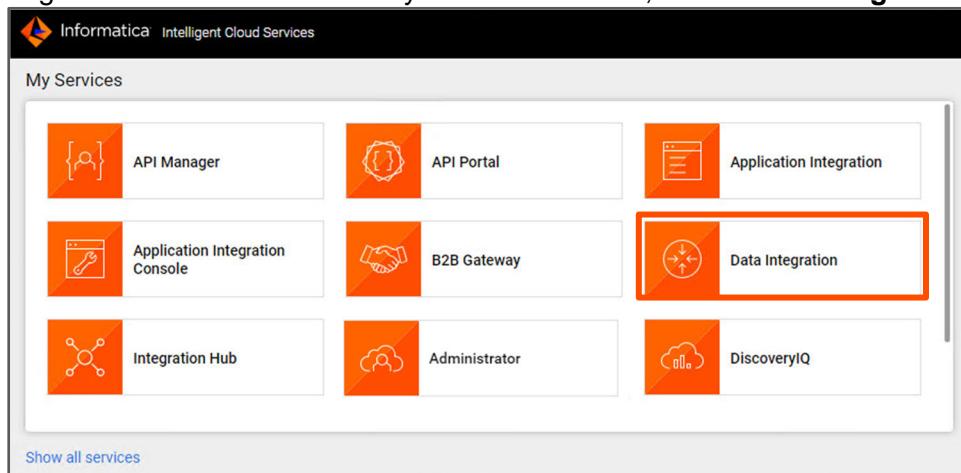
Duration:

25 minutes

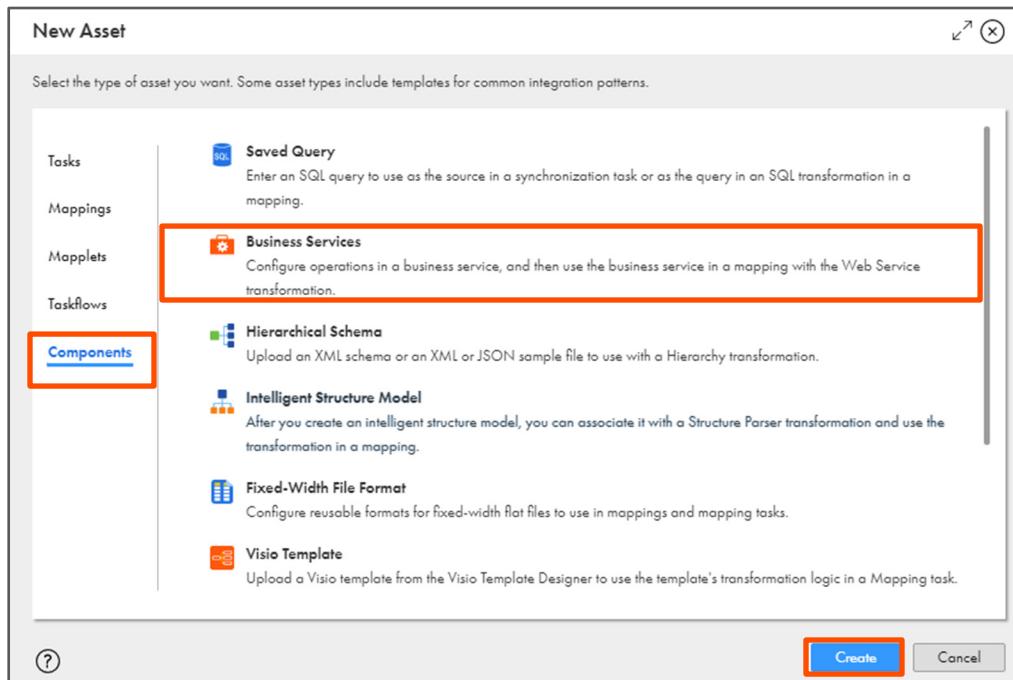
Tasks

Create Business Service

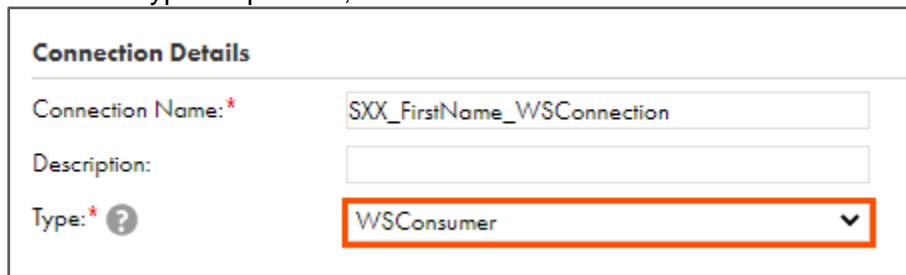
1. Login into IICS and from the My Services window, select **Data Integration**.



2. From the navigation pane, select **New**.
3. From the New Asset window, click the **Components** tab.
4. Select **Business Services** and click **Create**.



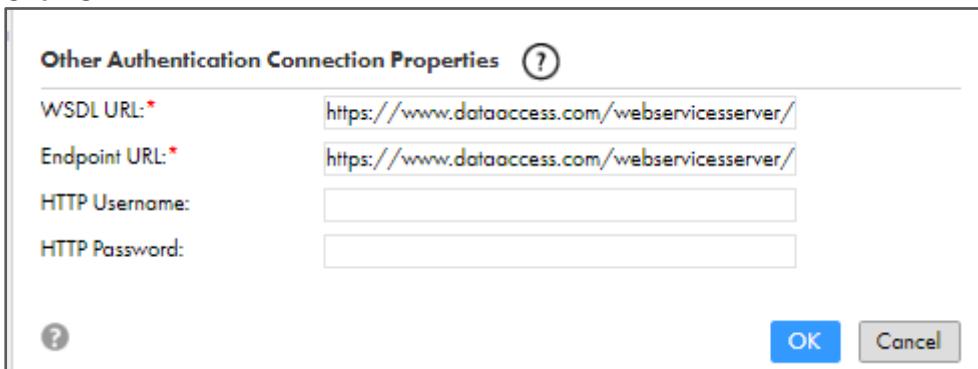
5. In the Name field, enter **bs_XX_NumberConversion**.
6. To create a new connection, click **New**.
7. In the Name field, enter **SXX_FirstName_WSConnection**.
8. From the Type drop-down, select **WSConsumer**.



The screenshot shows the 'Connection Details' dialog box. It has fields for 'Connection Name:' (set to 'SXX_FirstName_WSConnection'), 'Description:' (empty), and 'Type:' (set to 'WSConsumer', which is highlighted with a red box). There is also a question mark icon next to the 'Type:' label.

9. From the Runtime Environment drop-down, select INFA-SERVER.
10. From the Authentication drop-down, select **Other Authentication**.
11. In the WSDL URL field, enter the following URL:
<https://www.dataaccess.com/webservicesserver/numberconversion.wso?WSDL>
12. In the Endpoint URL field, enter the following URL:
<https://www.dataaccess.com/webservicesserver/numberconversion.wso>

13. Click **OK**.



Other Authentication Connection Properties

WSDL URL: *

Endpoint URL: *

HTTP Username:

HTTP Password:

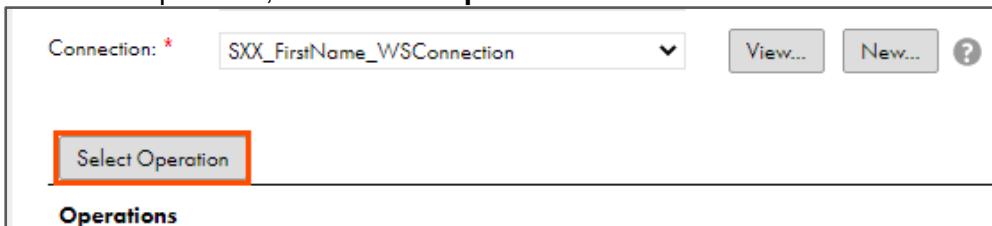
?

OK Cancel

14. From the Connection drop-down, select **SXX_FirstName_WSConnection**.

Note: Skip this step if the created connection is already selected.

15. To add an operation, click **Select Operation**.



Connection: * View... New... ?

Select Operation

Operations

16. To select source operation, click **Select**.



Select Operation

Source Operation: *

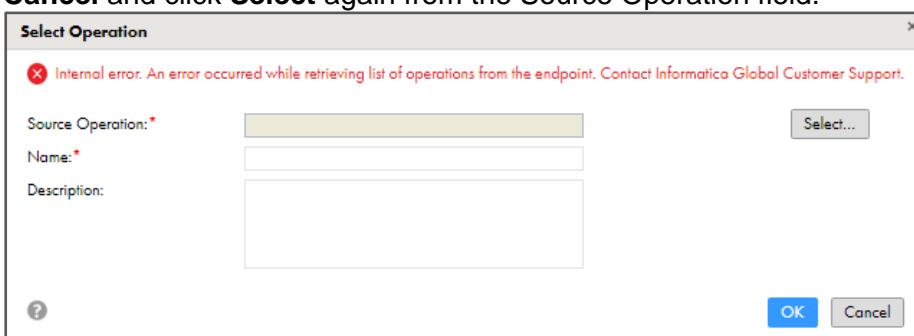
Name: *

Description:

?

OK Cancel

Note: If you get the Internal error message as shown in the screenshot below, click **Cancel** and click **Select** again from the Source Operation field.



Select Operation

✖ Internal error. An error occurred while retrieving list of operations from the endpoint. Contact Informatica Global Customer Support.

Source Operation: *

Name: *

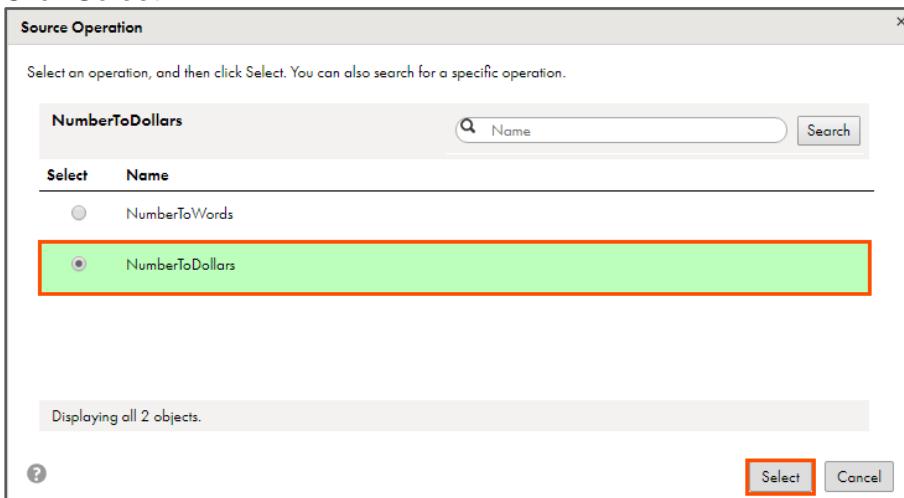
Description:

?

OK Cancel

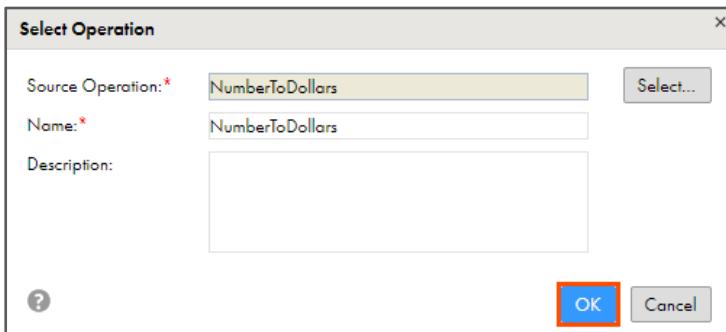
17. From the list, select **NumberToDollars**.

18. Click **Select**.



Note: This action redirects you to the Select Operation window.

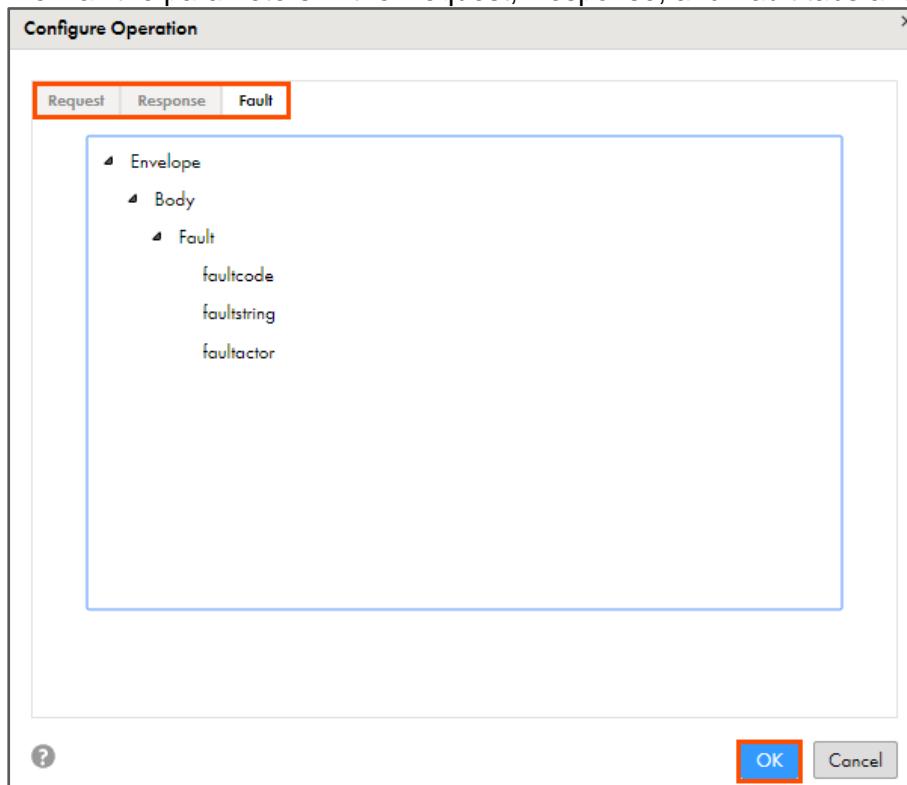
19. Click **OK**.



20. Click **Configure** to set the request, response, and fault parameters.



21. View all the parameters in the Request, Response, and Fault tabs and click **OK**.

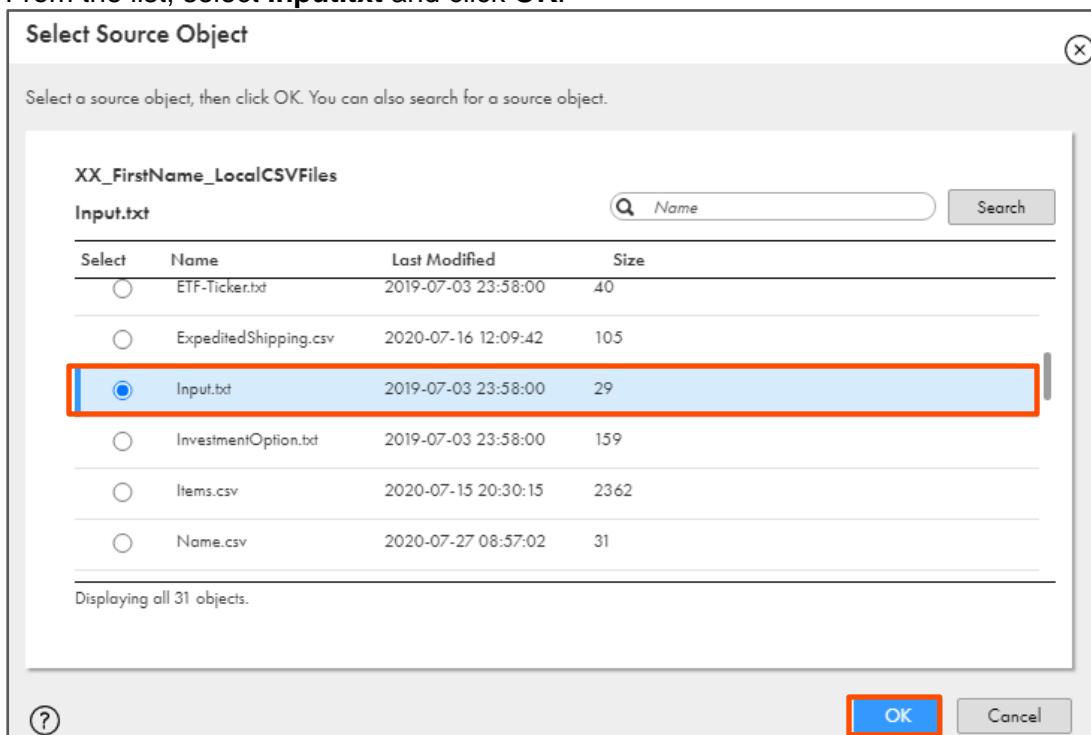


22. Save the business service.

Create a Mapping

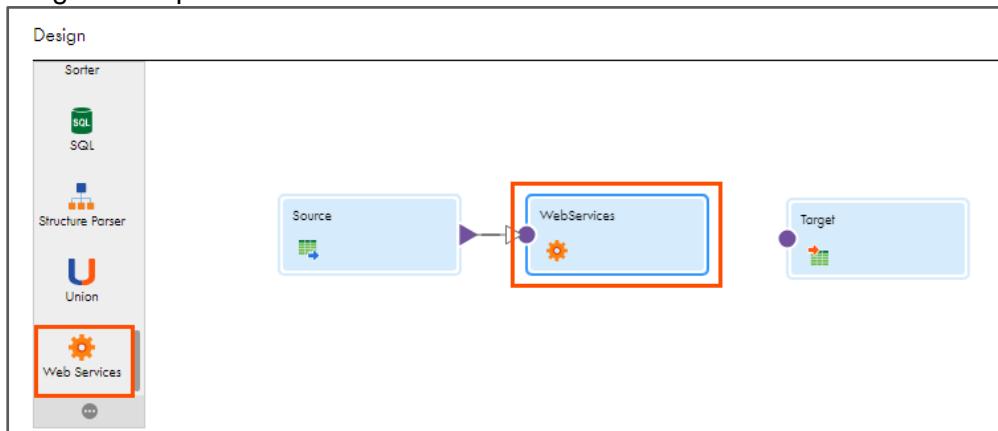
23. Create a new Mapping.
24. In the Name field, enter **m_XX_WebServices**. Verify the asset location.
25. To configure the source, from the mapping canvas, click the **Source** transformation.
26. From the properties pane, click **Source**.
27. From the Connection drop-down, select **FF_Source**.
28. To select the source object from the Object field, click **Select**.

29. From the list, select **Input.txt** and click **OK**.



Add Web Services Transformation

30. Drag and drop a **Web Services** transformation between the source and the target.



Note: The Source transformation gets linked to the Web Service transformation.

31. Select the **WebServices** transformation on the mapping canvas.

32. In the **General** section of the WebServices properties, retain the Name as **WebServices**.



The screenshot shows the Informatica Properties pane. The top navigation bar has tabs for 'Properties' and 'Preview', with 'WebServices' selected. Below the tabs, there are two main sections: 'General' and 'Incoming Fields'. The 'General' section contains fields for 'Name:' (set to 'WebServices') and 'Description:'.

33. From the properties pane, click **Web Service**.

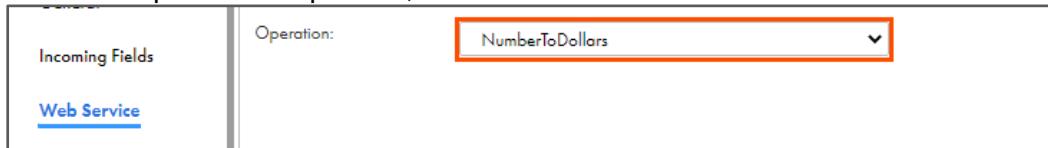
34. To select the business service, click **Select**.



The screenshot shows the Informatica Properties pane with the 'Web Service' tab selected. On the left, there is a sidebar with tabs: 'General', 'Incoming Fields', 'Web Service' (selected), and 'Request Mapping'. On the right, there is a 'Business Service:' dropdown with a 'Select...' button next to it, which is highlighted with a red box.

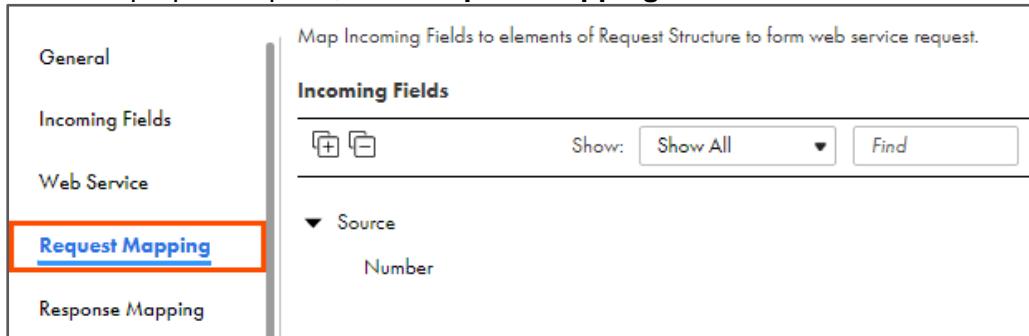
35. Navigate to your working directory and select the **bs_XX_NumberConversion** business service.

36. From the Operation drop-down, select **NumberToDollars**.



The screenshot shows the Informatica Properties pane with the 'Web Service' tab selected. On the left, there is a sidebar with tabs: 'Incoming Fields' and 'Web Service' (selected). On the right, there is an 'Operation:' dropdown containing 'NumberToDollars', which is highlighted with a red box.

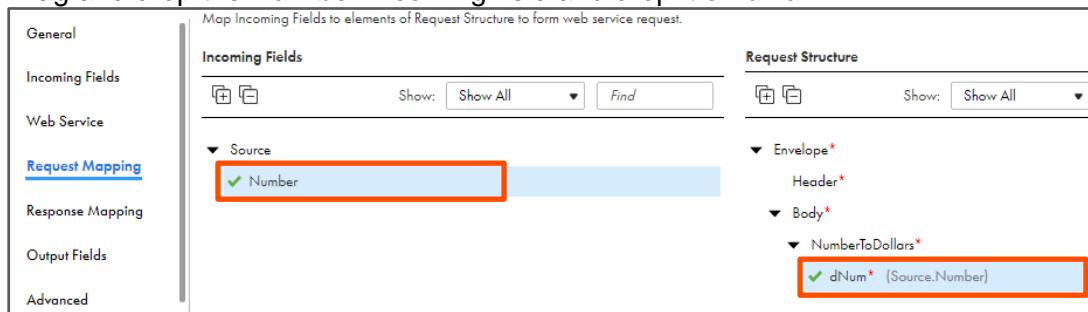
37. From the properties pane, click **Request Mapping**.



The screenshot shows the Informatica Properties pane with the 'Request Mapping' tab selected. On the left, there is a sidebar with tabs: 'General', 'Incoming Fields', 'Web Service', 'Request Mapping' (selected), and 'Response Mapping'. On the right, there is a panel titled 'Map Incoming Fields to elements of Request Structure to form web service request.' It shows the 'Incoming Fields' section with a 'Source' field containing 'Number'.

38. From the Request Structure section, drill-down to **Body > NumberToDollars > dNum**.

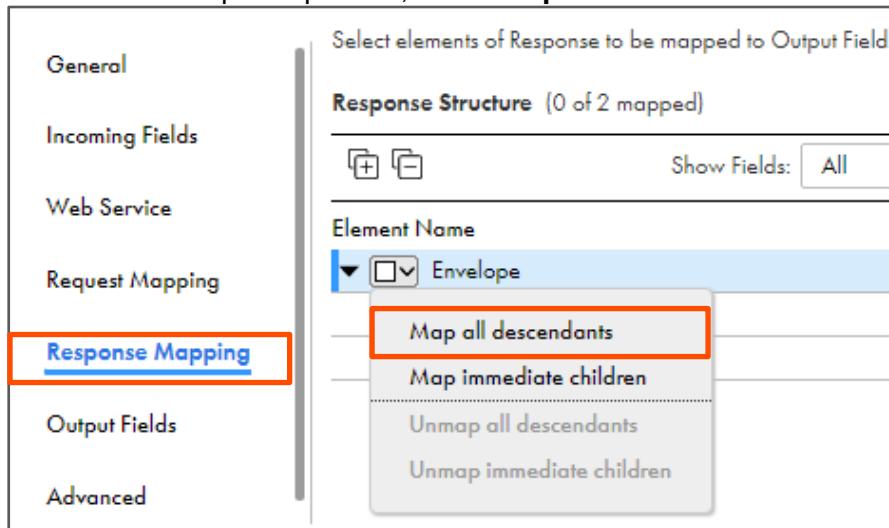
39. Drag and drop the **Number** incoming field and drop it on **dNum**.



The screenshot shows the Request Mapping pane. On the left, under the Request Mapping section, the 'Source' field contains the 'Number' entry, which is highlighted with a red box. On the right, under the 'Request Structure' section, the 'Body' field contains the 'dNum' entry, which is also highlighted with a red box. Both entries have a green checkmark.

40. From the properties pane, click **Response Mapping**.

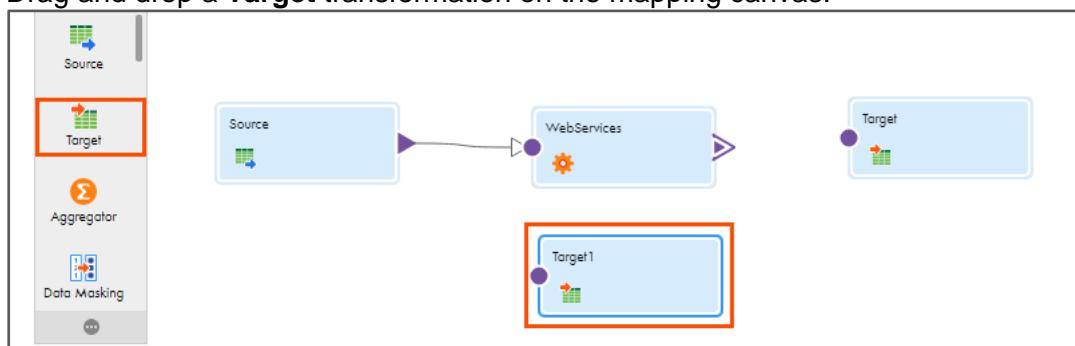
41. From the Envelope drop-down, select **Map all descendants**.



The screenshot shows the Response Mapping pane. Under the 'Element Name' section, the 'Envelope' entry has a dropdown menu open. The 'Map all descendants' option is highlighted with a red box. Other options include 'Map immediate children', 'Unmap all descendants', and 'Unmap immediate children'. The 'Show Fields' button is set to 'All'.

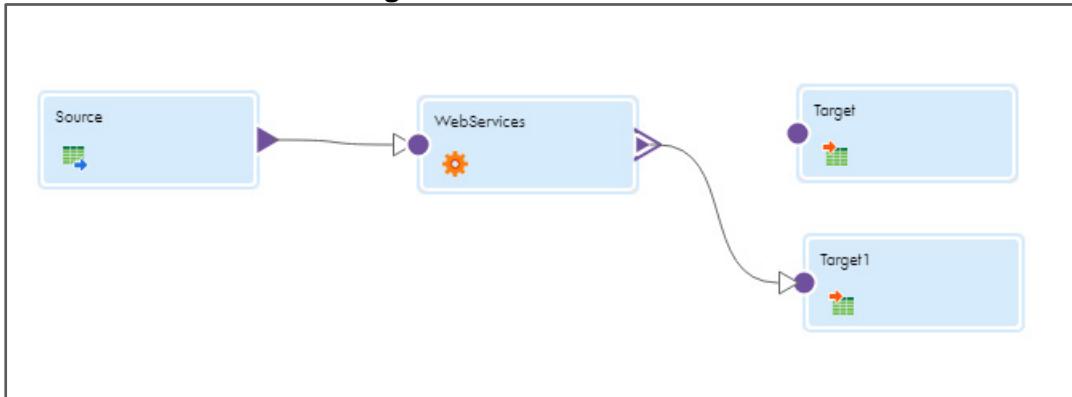
Add a Target Transformation

42. Drag and drop a **Target** transformation on the mapping canvas.



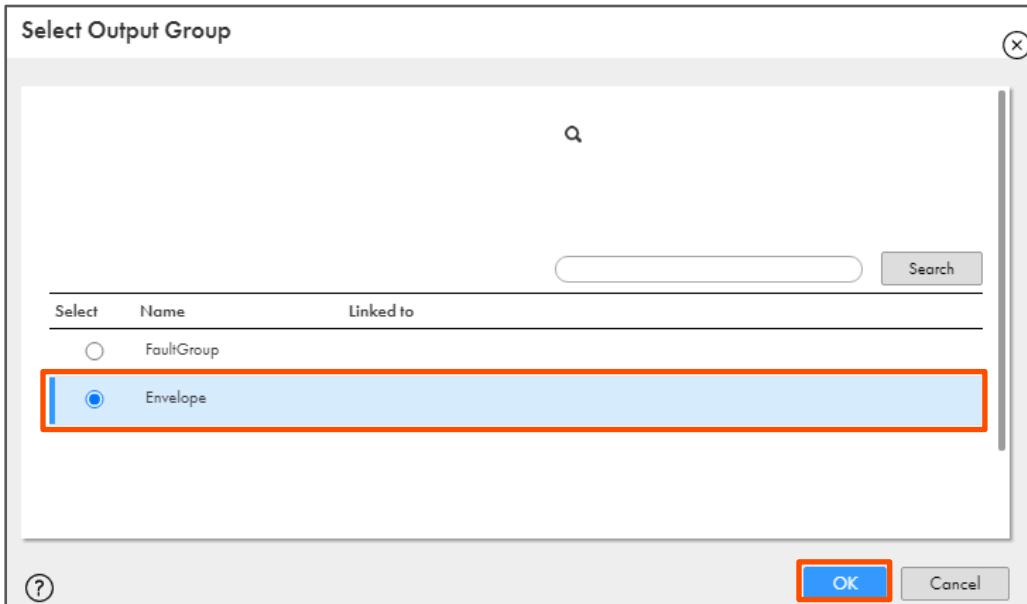
43. Select the added Target transformation (**Target 1**) on the mapping canvas.

44. Link the **WebServices** to **Target1**.



45. From the list, select **Envelope**.

46. Click **OK**.



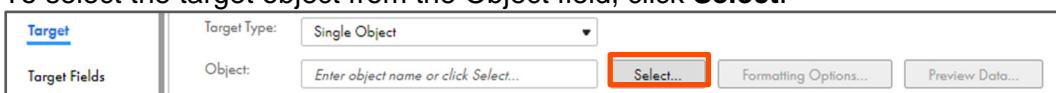
47. In the **General** section of the Target 1 properties, enter Name as **SuccessTarget**.



48. From the properties pane, click **Target**.

49. From the Connection drop-down, select your **target Flat File** connection.

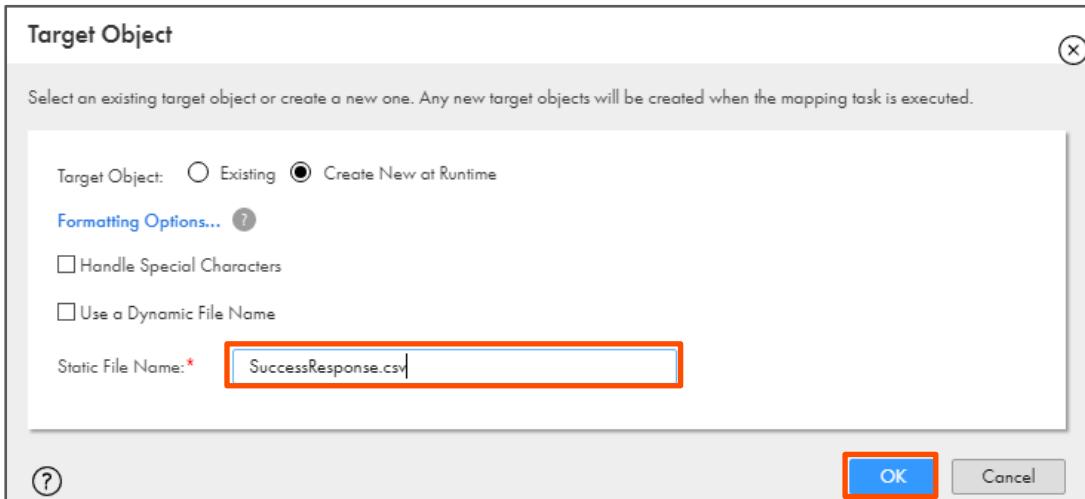
50. To select the target object from the Object field, click **Select**.



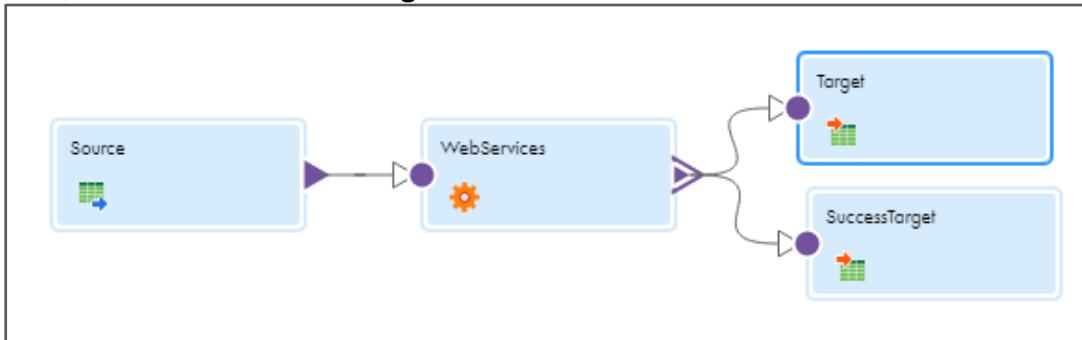
51. In the Target Object window, select **Create New at Runtime**.

52. Enter **SuccessResponse.csv** as Static File Name.

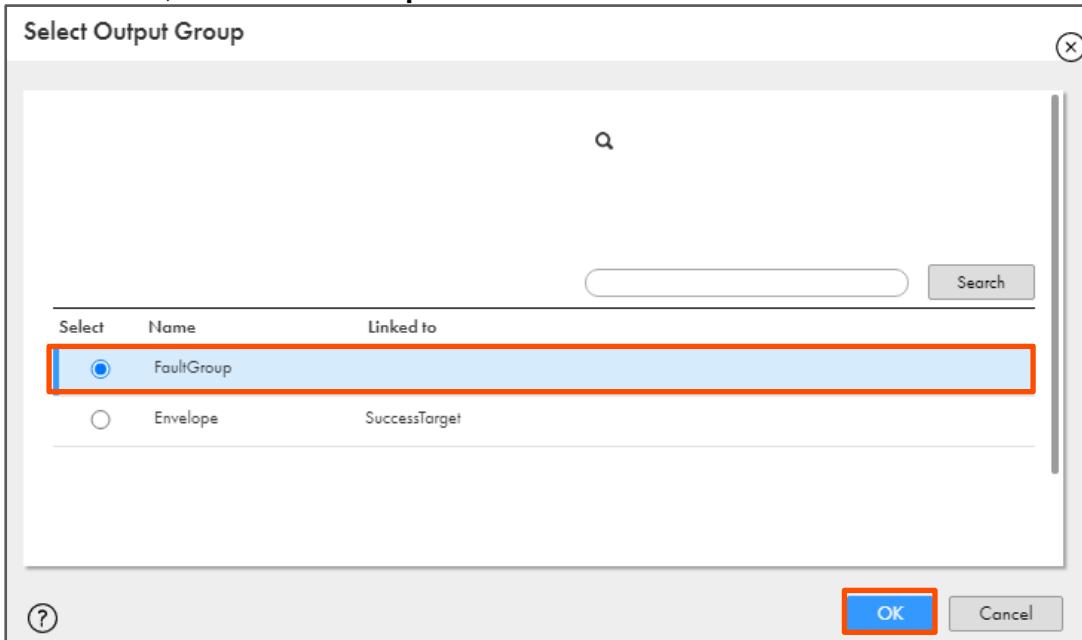
53. Click **OK**.



54. Now, link **WebServices** to **Target**.

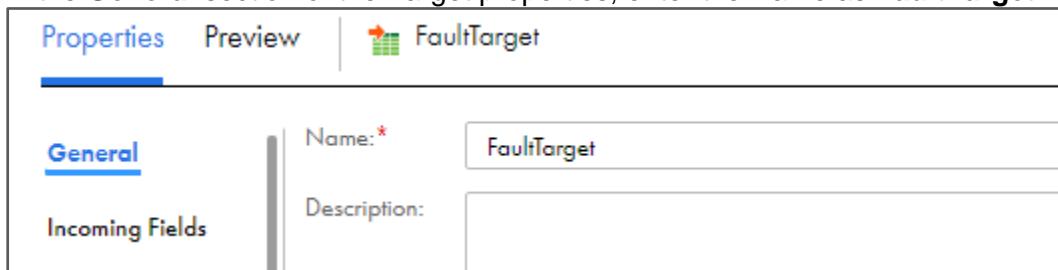


55. From the list, select **FaultGroup** and click **OK**.



56. Select the Target transformation on the mapping canvas.

57. In the **General** section of the Target properties, enter the Name as **FaultTarget**.



Properties		Preview	FaultTarget
General	Name: *	FaultTarget	
Incoming Fields	Description:		

58. From the properties pane, click **Target**.

59. From the Connection drop-down, select your **target Flat File** connection.

60. To select the target object from the Object field, click **Select**.



Target	Target Type: Single Object
Target Fields	Object: Enter object name or click Select... Select...
	Formatting Options... Preview Data...

61. In the Target Object window, select **Create New at Runtime**.

62. Enter **m_XX_FaultResponse.csv** as Static File Name.

63. Click **OK**.

64. Save and run the mapping.



Save	Run
------	------------

65. From the Runtime Environment drop-down, select INFA-SERVER.

66. Click **Run**.

Monitor Status

67. To monitor the mapping status, from the navigation pane, click **My Jobs**. When the task is complete, the status changes to **Success**.
68. Close the asset from the navigation pane.
69. Optionally, you can preview data in the dummy mapping.

This concludes the lab.

Module 14: IICS REST APIs

Lab 14-3: Running a Mapping Task Using REST API

Overview:

An API Connector uses the REST API to access programs and activities in Informatica Cloud and perform various tasks like logging into IICS, running a task, and much more.

In this lab, you will use the REST API to log in to your Org and run tasks.

Objective:

- Use a REST client application to call the login resource and obtain a session ID
- Start a Mapping task
- Log out of the Informatica Cloud API session

Scenario:

John demonstrates to Ruby how she can use REST APIs to log in and run tasks in IICS. He uses the Postman client to log in to the Org and obtain a session ID. He will use the session ID to run a mapping task using the REST API and then log out from the Org.

Duration:

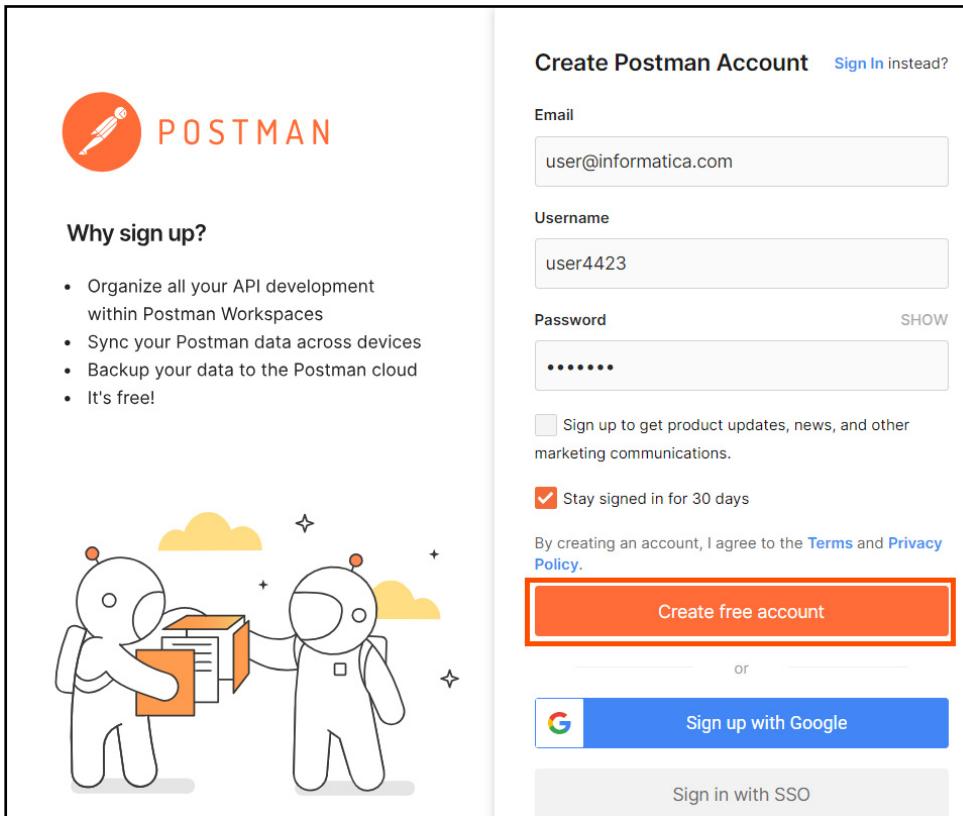
25 minutes

Tasks

Create a Postman Account

1. Open a web browser and enter the following link to open Postman:
<https://identity.getpostman.com/>
2. Click **Create Account**.

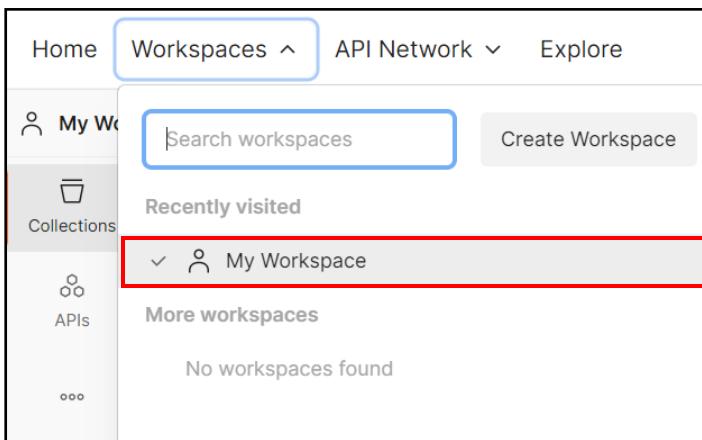
3. Provide a valid email Id and fill in all the required details. Click **Create free account**.



The screenshot shows the 'Create Postman Account' form. On the left, there's a 'Why sign up?' section with a bullet-point list: 'Organize all your API development within Postman Workspaces', 'Sync your Postman data across devices', 'Backup your data to the Postman cloud', and 'It's free!'. Below this is a cartoon illustration of two astronauts in space, one handing a briefcase to the other. On the right, the form fields are displayed:

- Email: user@informatica.com
- Username: user4423
- Password: (redacted)
- Show Password link: SHOW
- Checkboxes:
 - Sign up to get product updates, news, and other marketing communications.
 - Stay signed in for 30 days
- By creating an account, I agree to the [Terms](#) and [Privacy Policy](#).
- Buttons: 'Create free account' (highlighted with a red border), 'Sign up with Google', and 'Sign in with SSO'.

4. You will get an account confirmation email to the registered email id. Confirm your postman account.
 5. Now you will be logged into Postman. If not, login into Postman using your credentials.
 6. From the Workspace drop-down, select **My Workspace**.



The screenshot shows the Postman interface with the 'Workspaces' tab selected in the top navigation bar. The main area displays a list of workspaces under 'Recently visited'. The first item, 'My Workspace', is highlighted with a red box. Other items include 'More workspaces' and 'No workspaces found'. On the left sidebar, there are links for 'Home', 'Collections', 'APIs', and 'More'.

Send a Login Request

7. Click on a new tab in the workspace section and from the drop-down, select **POST**.
8. Enter the URL in the request URL field in the following format:
https://<Informatica URL>/ma/api/v2/user/login

Note: The Informatica URL can change based on the POD (Point of Deployment) region of your IICS Org. Your POD region is based on the location of your Informatica Intelligent Cloud Services data center. Use one of the following POD regions

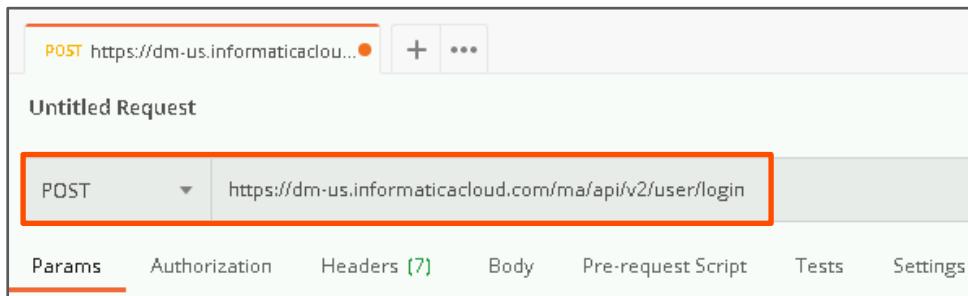
- For North America, use **us**
- For Europe, use **em**
- For Asia, use **ap**

You can identify the Informatica URL from the IICS login page, as shown in the image below:



9. For the screenshot below, following is the URL (you must modify the URL based on your IICS Account link):

https://dm-us.informaticacloud.com/ma/api/v2/user/login

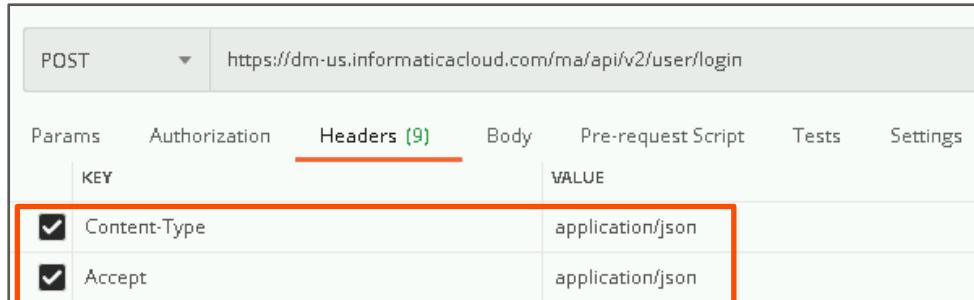


Note: Make sure to remove extra space from the URL after pasting the URL into the request field.

10. Select the **Headers** tab.

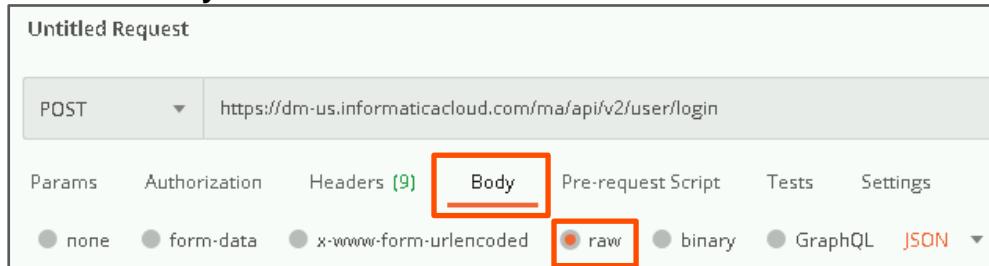
11. Enter Key and Value, as shown in the table below:

Key	Value
Content-Type	application/json
Accept	application/json



The screenshot shows the Postman interface with a POST request to <https://dm-us.informaticacloud.com/ma/api/v2/user/login>. The Headers tab is selected, displaying two entries: Content-Type: application/json and Accept: application/json. Both entries have a checked checkbox next to them.

12. Select the **Body** tab and select **raw**.

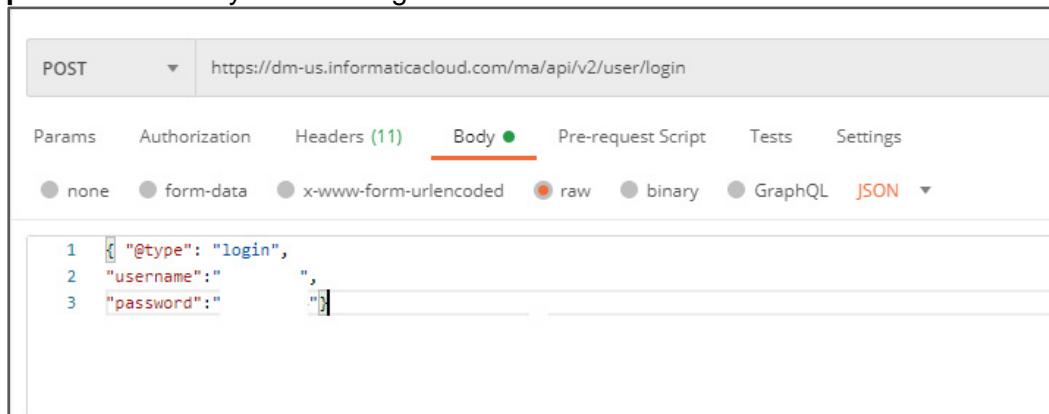


The screenshot shows the Postman interface with a POST request to <https://dm-us.informaticacloud.com/ma/api/v2/user/login>. The Body tab is selected. Below the tabs, there is a radio button group for selecting the body type: none, form-data, x-www-form-urlencoded, raw, binary, GraphQL, and JSON. The 'raw' radio button is selected and highlighted with a red box.

13. Enter the following syntax:

```
{ "@type": "login",
  "username": "< Informatica Cloud username> ",
  "password": "< Informatica Cloud password>"}
```

14. In the syntax, replace < Informatica Cloud username> and < Informatica Cloud password> with your IICS Org credentials.

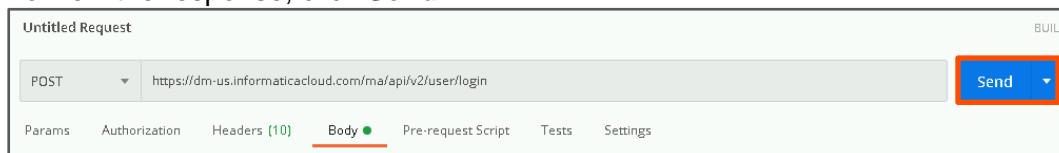


The screenshot shows the Postman interface with a POST request to <https://dm-us.informaticacloud.com/ma/api/v2/user/login>. The Body tab is selected and has a green dot indicating it is active. Below the tabs, there is a radio button group for selecting the body type: none, form-data, x-www-form-urlencoded, raw, binary, GraphQL, and JSON. The 'raw' radio button is selected. The body content area contains the following JSON syntax:

```
1 { "@type": "login",
2   "username": "",
3   "password": ""}
```

Note: For this lab, we have masked the username and password in the screenshot.

15. To view the response, click **Send**.



The screenshot shows the Postman interface with a POST request to <https://dm-us.informaticacloud.com/ma/api/v2/user/login>. The Body tab is selected. At the bottom right, there is a blue 'Send' button with a dropdown arrow. This button is highlighted with a red box.

16. The status of the response is **200 OK**.

17. From the response, note down the values for **ServerUrl** and **icSessionId** in a notepad.



```

Body Cookies Headers (16) Test Results
Pretty Raw Preview Visualize JSON ↻
18
19 "serverUrl": "https://na1.dm-us.informaticacloud.com/saas",
20 "icSessionId": "anUJQAncBRihY7osYioMQH",
21 "securityQuestion": "In what city was your first job?",
22 "securityAnswer": "*****",
23 "uuid": "bZZngePyraJl5A07mmZiwr",
24 "forceChangePassword": false,

```

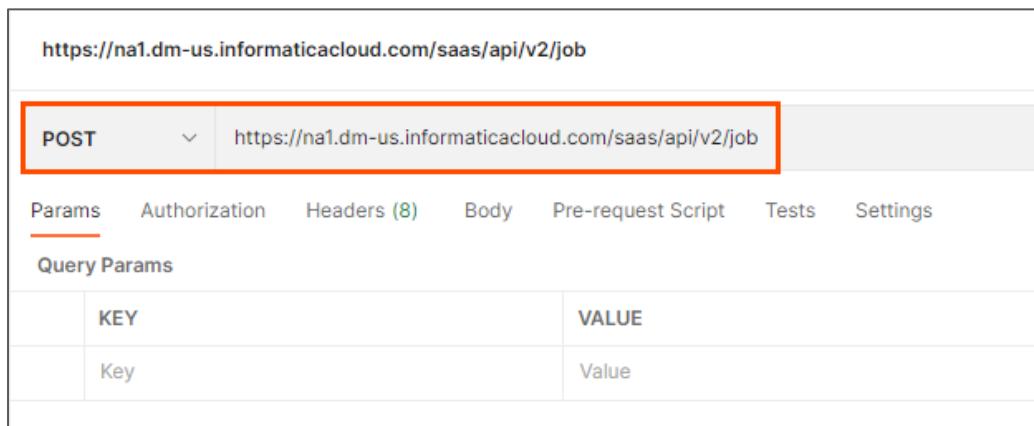
Send Request to Run a Job

18. To add a new tab, click .

19. From the drop-down, select **POST**.

20. Enter the URL in the request URL field in the following format:

<Copied ServerUrl>/api/v2/job



https://na1.dm-us.informaticacloud.com/saas/api/v2/job

POST https://na1.dm-us.informaticacloud.com/saas/api/v2/job

Params	Authorization	Headers (8)	Body	Pre-request Script	Tests	Settings
Query Params						
		KEY	VALUE			
		Key	Value			

Note: Make sure to remove extra space from the URL after pasting the URL in the request field.

21. Select the **Headers** tab.

22. Enter Key and Value, as shown in the table below:

Key	Value
Accept	application/json
Content-Type	application/json
icSessionId	Enter the icSessionId noted earlier

https://na1.dm-us.informaticacloud.com/saas/api/v2/job

POST https://na1.dm-us.informaticacloud.com/saas/api/v2/job

Headers (11)

KEY	VALUE
<input checked="" type="checkbox"/> Accept	application/json
<input checked="" type="checkbox"/> Content-Type	application/json
<input checked="" type="checkbox"/> icSessionId	anUJQAncBRihY7osYioMQH

23. Select the **Body** tab and select **raw**.

24. Enter the following syntax:

Note: In this syntax, use the exact asset name you have used while creating this request.

```
{
  "@type": "job",
  "taskName": "mt_XX_MappingTask",
  "taskType": "MTT"
}
```

25. Ensure that the **taskName** is same as the task name in IICS.

Params Authorization Headers (7) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```

1  {
2    "@type": "job",
3    "taskName": "mt_XX_MappingTask",
4    "taskType": "MTT"
5  }
6

```

Note: The task name shown in the screenshot is for demonstration purposes and you must specify your exact task name as a value to the **taskName** parameter.

26. To view the response, click **Send**.

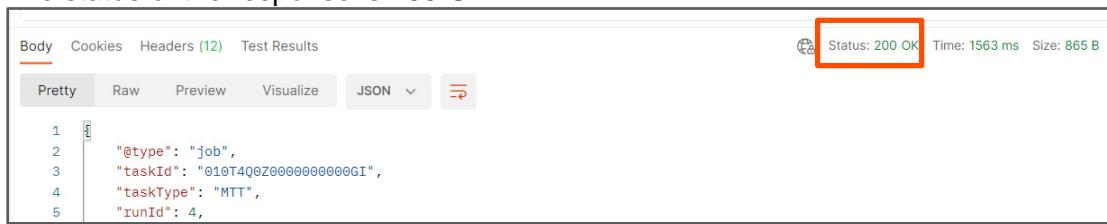
https://na1.dm-us.informaticacloud.com/saas/api/v2/job

POST https://na1.dm-us.informaticacloud.com/saas/api/v2/job

Body

Send

27. The status of the response is **200 OK**.



The screenshot shows a REST API response in a browser. At the top right, it says "Status: 200 OK" with a red box around it. Below that, it says "Time: 1563 ms" and "Size: 865 B". The main content area shows a JSON response with the following data:

```

1
2   "@type": "job",
3   "taskId": "010T4Q0Z0000000000GI",
4   "taskType": "MTT",
5   "runId": 4,

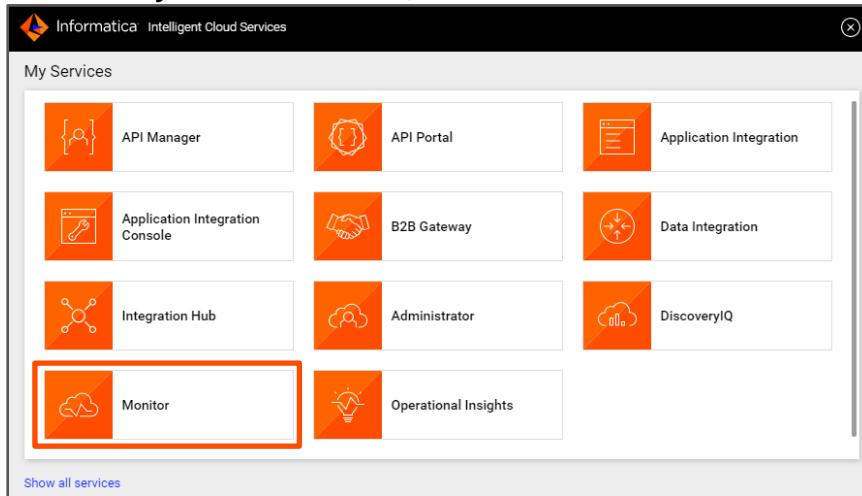
```

28. Open the IICS Login page from the Bookmarks bar.

29. Log in to your IICS Org.

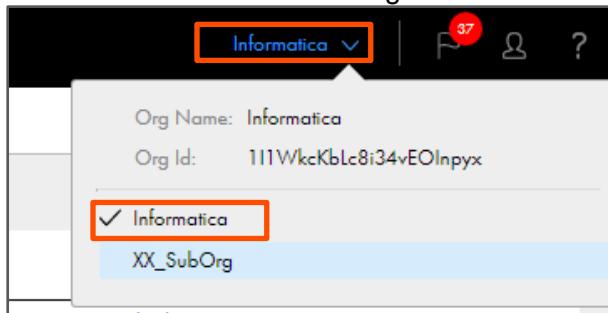
Note: If you are already logged in, log out and log in again.

30. From the **My Services** window, select **Monitor**.



Note: Ensure that you are accessing the service from the main org.

Important: If you are in the sub-org, click on the Org name available on the top right corner of the screen and navigate back to main Org.



31. From the navigation pane, select **All Jobs**.

32. Open the **mt_XX_MappingTask** and verify that the task is started by API.



The screenshot shows a table titled "All Jobs" with one row. The table has columns: Name, Location, Subtasks, Start Time, End Time, Rows Processed, and Status. The single row contains the following data:

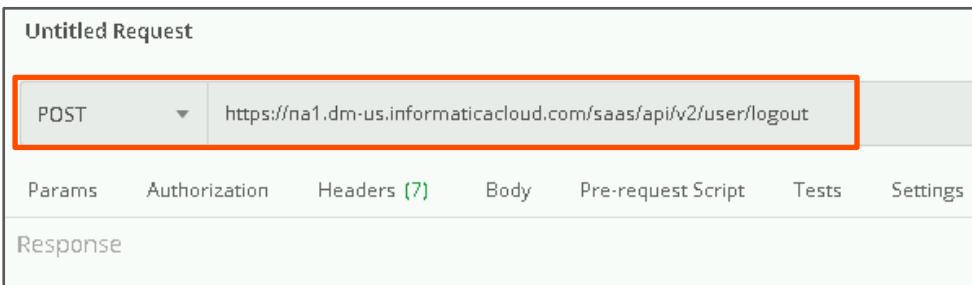
Name	Location	Subtasks	Start Time	End Time	Rows Processed	Status
MappingTask-4	CDI ILT Development\CDI...		Jan 27, 2023, 12:35 AM	Jan 27, 2023, 12:35 AM	4	Success

Instance ID:	4	Success Rows:	4
Task Type:	Mapping Task	Errors:	0
Started By:	cdiuser through API	Session Log:	Download Session Log
Start Time:	Jan 27, 2023 12:35:44 AM		
End Time:	Jan 27, 2023 12:35:57 AM		
Duration:	13 seconds		
Runtime Environment:	IICS-XX-FIRSTNAME		
Secure Agent:	IICS-XX-FIRSTNAME		

Send a Request to Logout

33. In Postman, to add a new tab, click .
34. From the drop-down, select **POST**.
35. Enter the following URL in the request URL field:

<Copied ServerUrl>/api/v2/user/logout

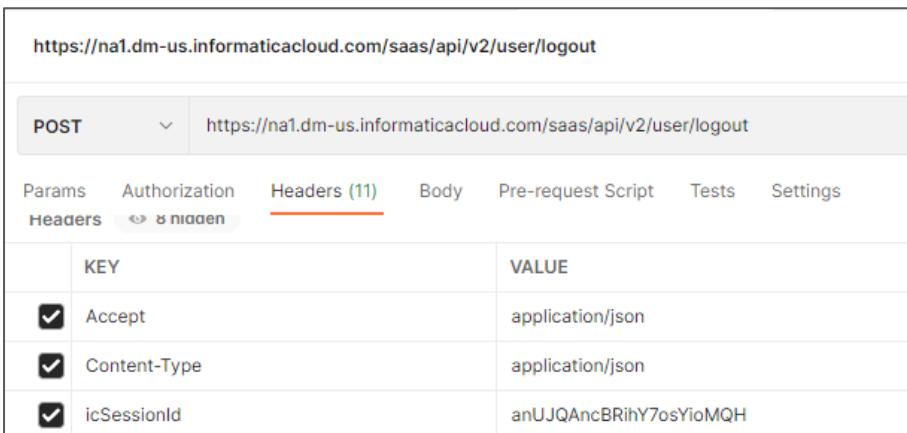


The screenshot shows the Postman interface with an "Untitled Request". The method is set to "POST" and the URL is "https://na1.dm-us.informaticacloud.com/saas/api/v2/user/logout". Below the request area, there are tabs for "Params", "Authorization", "Headers (7)", "Body", "Pre-request Script", "Tests", and "Settings". The "Headers" tab is currently selected.

Note: Make sure to remove extra space from the URL after pasting the URL in the request field.

36. Select the **Headers** tab.
37. Enter Key and Value, as shown in the table below:

Key	Value
Accept	application/json
Content-Type	application/json
icSessionId	Enter the icSessionId noted earlier

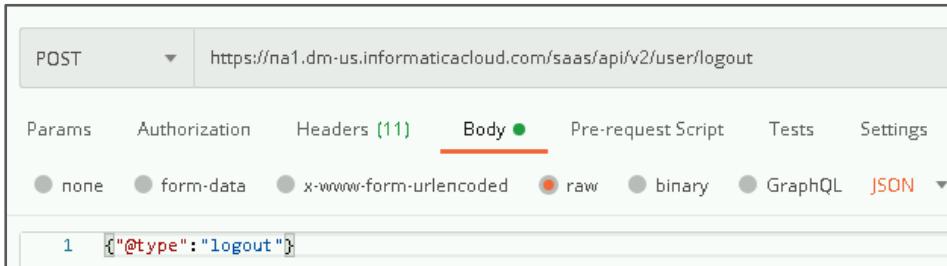


The screenshot shows the Postman interface with the "Headers" tab selected. There are three entries listed: "Accept" with value "application/json", "Content-Type" with value "application/json", and "icSessionId" with value "anUJQAncBRihY7osYioMQH".

38. Select the **Body** tab and select **raw**.

39. Enter the following syntax:

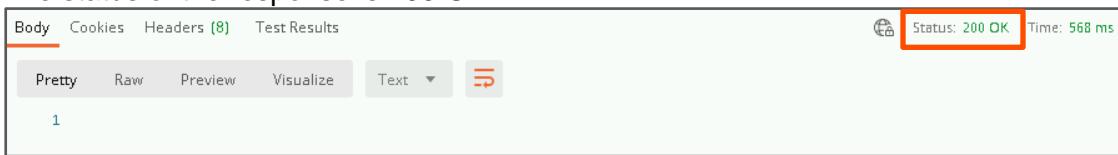
```
{"@type":"logout"}
```



The screenshot shows a Postman interface with a POST request to `https://na1.dm-us.informaticacloud.com/saas/api/v2/user/logout`. The Body tab is selected, showing a JSON payload: `1 {"@type": "logout"}`.

40. To view the response, click **Send**.

41. The status of the response is **200 OK**.



The screenshot shows the Postman response details. The status is **200 OK** and the time taken is **568 ms**. The body of the response is empty.

Note: There is no response in body for log out request.

This concludes the lab.

Module 14: IICS REST APIs

Lab 14-4: Monitoring Tasks Using REST API

Overview:

Informatica Intelligent Cloud Services supports the platform REST API version 2 and version 3 resources, and service-specific resources.

In this lab, you will use the REST API to request log information for running jobs from the Monitor service.

Objective:

- Use a REST client application to call the login resource and obtain a session ID
- Get the log information about the running jobs

Duration:

15 minutes

Tasks

Open Postman

1. Navigate to the web Postman application.
2. Click  to open a new tab.

Send a Login Request

3. From the drop-down, select **POST**.
4. Enter the URL in the request URL field in the following format:
https://<Informatica URL>/ma/api/v2/user/login

Note: The Informatica URL can change based on the POD (Point of Deployment) region of your IICS Org. Your POD region is based on the location of your Informatica Intelligent Cloud Services data center. Use one of the following POD regions

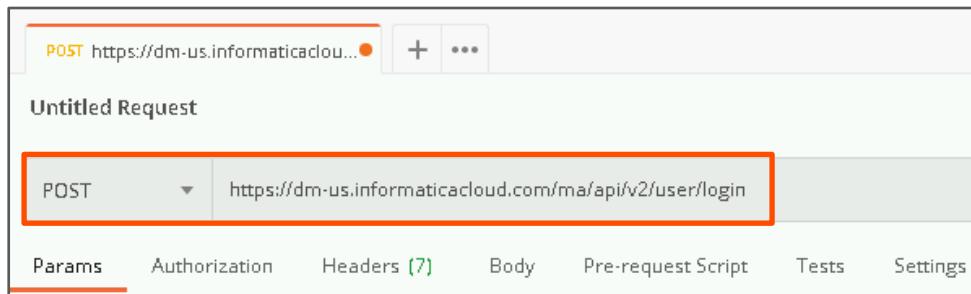
- For North America, use **us**
- For Europe, use **em**
- For Asia, use **ap**

You can identify the Informatica URL from the IICS login page, as shown in the image below:



5. For the screenshot provided below, the following is the URL (you must enter your IICS Account URL details):

<https://dm-us.informaticacloud.com/ma/api/v2/user/login>



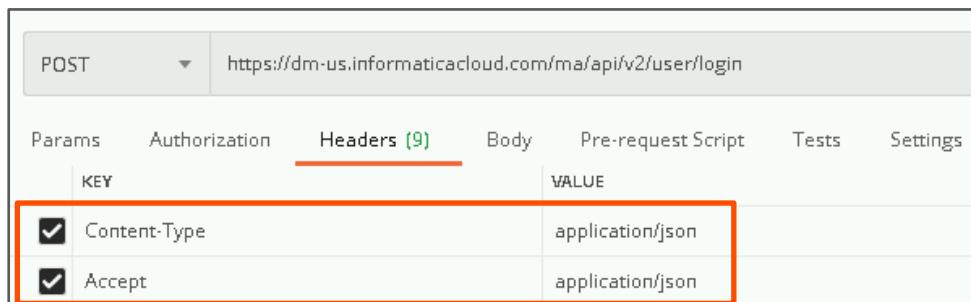
The screenshot shows the Postman interface with the URL field highlighted in orange. The URL is set to <https://dm-us.informaticacloud.com/ma/api/v2/user/login>. Below the URL field, there are tabs for Params, Authorization, Headers (7), Body, Pre-request Script, Tests, and Settings. The Headers tab is currently selected.

Note: Make sure to remove extra space from the URL after pasting the URL in the request field.

6. Select the **Headers** tab.

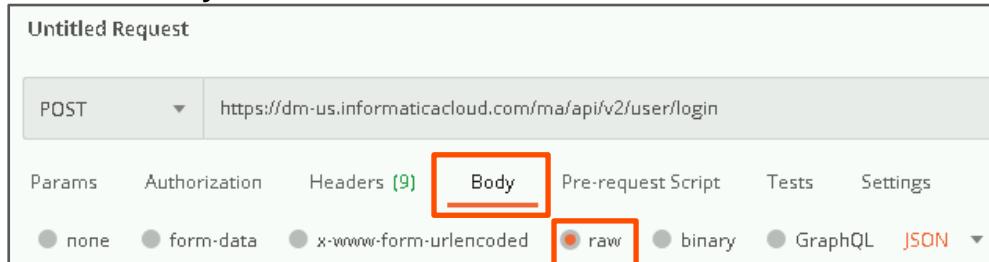
7. Enter Key and Value, as shown in the table below:

Key	Value
Content-Type	application/json
Accept	application/json



The screenshot shows the Postman interface with the Headers tab selected. Two entries are highlighted in orange: Content-Type with a value of application/json and Accept with a value of application/json.

8. Select the **Body** tab and select **raw**.

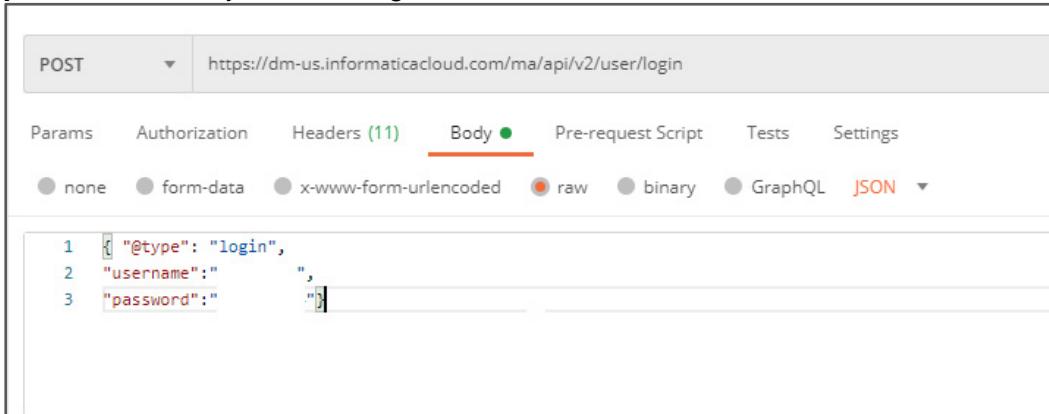


The screenshot shows the Postman interface with the Body tab selected. The raw radio button is highlighted in orange among other options like none, form-data, x-www-form-urlencoded, binary, and GraphQL.

9. Enter the following syntax:

```
{ "@type": "login",
  "username": "< Informatica Cloud username> ",
  "password": "< Informatica Cloud password>"}
```

10. In the syntax, replace <Informatica Cloud username> and <Informatica Cloud password> with your IICS Org credentials.



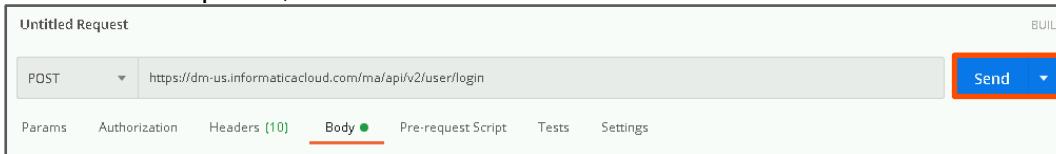
```

1  { "@type": "login",
2   "username": "<Informatica Cloud username>",
3   "password": "<Informatica Cloud password>"}

```

Note: For this lab, we have masked the username and password in the screenshot.

11. To view the response, click **Send**.



12. The status of the response is **200 OK**.

13. From the response, note down the values for **ServerUrl** and **icSessionId** in a notepad.



```

18  "timezone": null,
19  "serverUrl": "https://na1.dm-us.informaticacloud.com/saas",
20  "icSessionId": "j9pBuFwvF20b3ZPHxmJPWk",
21  "securityQuestion": "In what city was your first job?",
22  "securityAnswer": "*****",
23  "uuid": "bZZngePyraJlsA07mmZIwr",
24  "forceChangePassword": false,
25  "roles": [
26    {
27      "name": "Data Viewer",

```

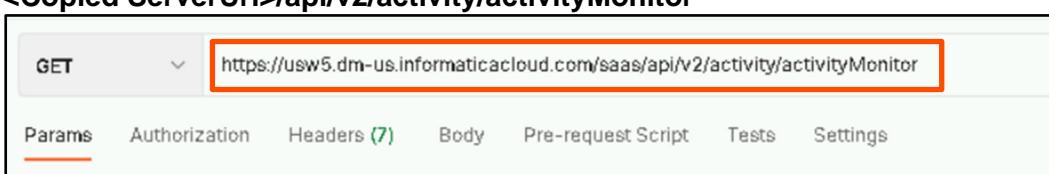
Request the information from the activity monitor

14. To add a new tab, click 

15. From the drop-down, select **GET**.

16. Enter the URL in the request URL field in the following format:

<Copied ServerUrl>/api/v2/activity/activityMonitor



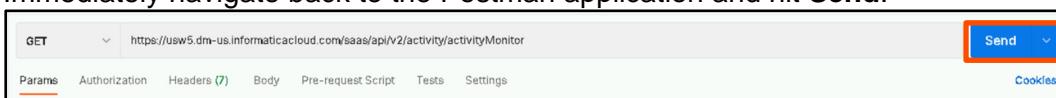
17. Select the **Headers** tab.

18. Enter Key and Value, as shown in the table below:

Key	Value
Accept	application/json
Content-Type	application/json
icSessionId	<enter the copied session ID>

Before you send the request, you must ensure that at least 1 job is running in the DI service. This API will then fetch the details of the running jobs. Let us start a job in DI and view the results in Postman.

19. Navigate back to IICS > Data Integration service and open your working folder.
20. Locate the task **tf_XX_BULK_LOAD_PROCESSING** and run it (you can right-click on the task to view the Run option).
21. Immediately navigate back to the Postman application and hit **Send**.



The screenshot shows the Postman interface for a GET request. The URL is https://usw5.dn-us.informaticacloud.com/saas/api/v2/activity/activityMonitor. The 'Send' button is highlighted with a red box.

Note: You will view the results in the Body response tab only if you send the request as soon as you hit the run button in DI. Because, the ActivityMonitor API will only fetch the details of running jobs.

22. The status of the response is **200 OK**. Observe the job details.



The screenshot shows the Postman response screen. The status bar indicates Status: 200 OK, Time: 280 ms, Size: 1.15 KB. The Body tab is selected, showing a JSON response with one entry:

```

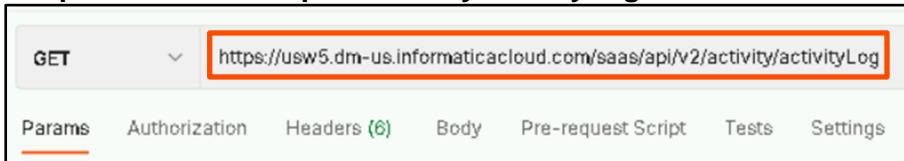
1 [ 
2   {
3     "@type": "activityMonitorEntry",
4     "id": "010T4Q0E00000000014A7",
5     "type": "WORKFLOW",
6     "taskId": "010T4Q0N000000000009",

```

Retrieve the entries from the activityLog REST API resource.

23. To add a new tab, click .
24. From the drop-down, select **GET**.
25. Enter the URL in the request URL field in the following format:

<Copied ServerUrl>/api/v2/activity/activityLog



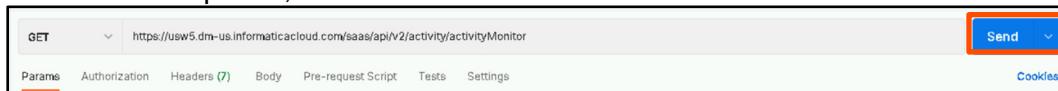
The screenshot shows the Postman interface for a GET request. The URL is https://usw5.dn-us.informaticacloud.com/saas/api/v2/activity/activityLog. The 'Headers' tab is highlighted with a red box.

26. Select the **Headers** tab.

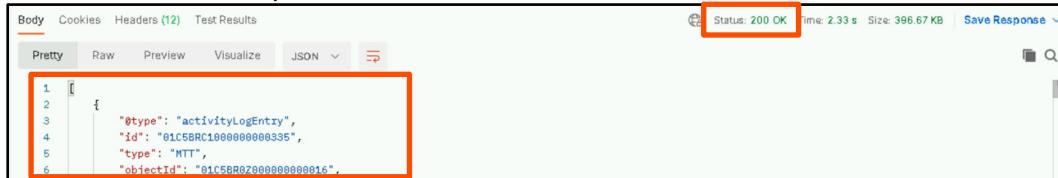
27. Enter Key and Value, as shown in the table below:

Key	Value
Accept	Application/json
Content-Type	application/json
icSessionId	<enter the copied session ID>

28. To view the response, click **Send**.



29. The status of the response is **200 OK**. Observe the results.



```

1  [
2   {
3     "@type": "activityLogEntry",
4     "id": "01C5BRC1000000000335",
5     "type": "MTT",
6     "objectId": "01CEBB0Z000000000016"
}

```

This concludes the lab.