

IICS: Cloud Data Integration Services

OnDemand Lab Guide

Version: IICS-R41-Cloud-DIS-OD-202212



(This page intentionally left blank)

IICS: Cloud Data Integration Services (onDemand)

Version: IICS-R41-Cloud-DIS-OD-202212

December 2022

Copyright (c) 1998–2022 Informatica LLC. All rights reserved.

This educational service, materials, documentation, and related software contain proprietary information of Informatica LLC and are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright law. Reverse engineering of the software is prohibited. No part of the materials and documentation may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica LLC. The related software is protected by U.S. and/or international Patents and other Patents Pending.

Use, duplication or disclosure of the related software by the U.S. Government is subject to the restrictions set forth in the applicable software license agreement and as provided in DFARS 227.7202-1(a) and 227.7702-3(a) (1995), DFARS 252.227-7013(c)(1)(ii) (OCT 1988), FAR 12.212(a) (1995), FAR 52.227-19, or FAR 52.227-14 (ALT III), as applicable.

The information in this educational service, materials, and documentation is subject to change without notice. If you find any problems in this educational service, materials, or documentation, please report them to us in writing.

Informatica, Informatica Platform, Informatica Data Services, PowerCenter, PowerCenterRT, PowerCenter Connect, PowerCenter Data Analyzer, PowerExchange, PowerMart, Metadata Manager, Informatica Data Quality, Informatica Data Explorer, Informatica B2B Data Transformation, Informatica B2B Data Exchange Informatica On Demand, Informatica Identity Resolution, Informatica Application Information Lifecycle Management, Informatica Complex Event Processing, Ultra Messaging, and Informatica Master Data Management are trademarks or registered trademarks of Informatica LLC in the United States and in jurisdictions throughout the world. All other company and product names may be trade names or trademarks of their respective owners.

Portions of this educational service, materials, and/or documentation are subject to copyright held by third parties, including without limitation: Copyright © Adobe Systems Incorporated. All rights reserved. Copyright © Microsoft. All rights reserved. Copyright © Oracle. All rights reserved. Copyright @ the CentOS Project.

This Software is protected by U.S. Patent Numbers 5,794,246; 6,014,670; 6,016,501; 6,029,178; 6,032,158; 6,035,307; 6,044,374; 6,092,086; 6,208,990; 6,339,775; 6,640,226; 6,789,096; 6,820,077; 6,823,373; 6,850,947; 6,895,471; 7,117,215; 7,162,643; 7,243,110; 7,254,590; 7,281,001; 7,421,458; 7,496,588; 7,523,121; 7,584,422; 7,720,842; 7,721,270; and 7,774,791, international Patents and other Patents Pending.

DISCLAIMER: Informatica LLC provides this educational services, materials, and documentation “as is” without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of non-infringement, merchantability, or use for a particular purpose. Informatica LLC does not warrant that this educational service, materials, documentation, or related software is error free. The information provided in this educational service, materials, documentation, and related software may include technical inaccuracies or typographical errors. The information in this educational service, materials, documentation and related software is subject to change at any time without notice.

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>

(This page intentionally left blank)

Table of Contents

Module 0: Getting Started

Lab 0-1: Creating an IICS Trial Account.....	1
Lab 0-2: Setting up Lab Environment.....	7
Lab 0-3: Configure Oracle	13
Lab 0-4: Prerequisite: Configure Kafka Setup.....	23

Module 1: Informatica Cloud Overview

Lab 1-1: Navigating the IICS Interface	37
--	----

Module 2: Runtime Environments and Connections

Lab 2-1: Installing IICS Secure Agent	45
Lab 2-2: Creating a Salesforce Connection	57
Lab 2-3: Creating a Flat File Connection.....	63
Lab 2-4: Creating an Oracle Connection	65

Module 3: Synchronization and Data Transfer Task

Lab 3-1: Creating a Synchronization Task	69
Lab 3-2: Using Filter, Expression, and Lookup in a Synchronization Task	77
Lab 3-3: Creating a Data Transfer Task	89

Module 5: Cloud Mapping Designer – Transformations

Lab 5-1: Using Query in a Mapping.....	97
Lab 5-2: Using Normalizer, Aggregator, and Rank Transformations in a Mapping	115
Lab 5-3: Creating a Mapping Using Unconnected Lookup Transformation	137
Lab 5-4: Using Mapplet Transformation in a Mapping	153

Module 6: Mapping Parameters

Lab 6-1: Performing Complete Parameterization	167
Lab 6-2: Using Parameter File in a Mapping Task	185
Lab 6-3: Using In-Out Parameters for Incremental Data Loading	195

Module 7: Expression Macro and Dynamic Linking

Lab 7-1: Using Expression Macro in a Mapping.....	207
Lab 7-2: Using Dynamic Linking in a Mapping	223

Module 10: Mass Ingestion

Lab 10-1: Creating a Streaming Ingestion Task.....	231
--	-----

Module 11: Taskflows

Lab 11-1: Passing In-out Parameters in a Taskflow.....	243
Lab 11-2: Invoking a Taskflow through a File Listener.....	249

Module 12: Hierarchical Connectivity

Lab 12-1: Creating a Mapping Using a REST V2 Connector.....	263
Lab 12-2: Using Web Services Transformation in a Mapping	275
Lab 12-3: Creating a Mapping Using Hierarchy Parser and Hierarchy Builder Transformation	289

Module 13: Intelligent Structure Model

Lab 13-1: Creating an Intelligent Structure Model	305
Lab 13-2: Using Structure Parser Transformation in a Mapping	309

Module 15: Exception Handling

Lab 15-1: Creating a Mapping to Handle Non-fatal Errors	319
---	-----

Module 16: Administration

Lab 16-1: Creating a Sub-Organization and Configure Administrative Settings.....	339
--	-----

Module 17: Automating and Monitoring Tasks

Lab 17-1: Creating a Schedule.....	357
------------------------------------	-----

Module 18: IICS APIs

Lab 18-1: Running a Mapping Task Using REST API	361
---	-----

Appendix 1: Module 8: Replication Task

Appendix 1: Replacing Data to a Flat File	369
---	-----

Appendix 2: Module 9: Masking Task

Appendix 2: Creating a Masking Task.....	375
--	-----

Appendix 3: Additional Exercise

Appendix 3: Asset Dependency and Org Cleanup.....	383
---	-----

Module 0: Getting Started

Lab 0-1: Creating an 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:

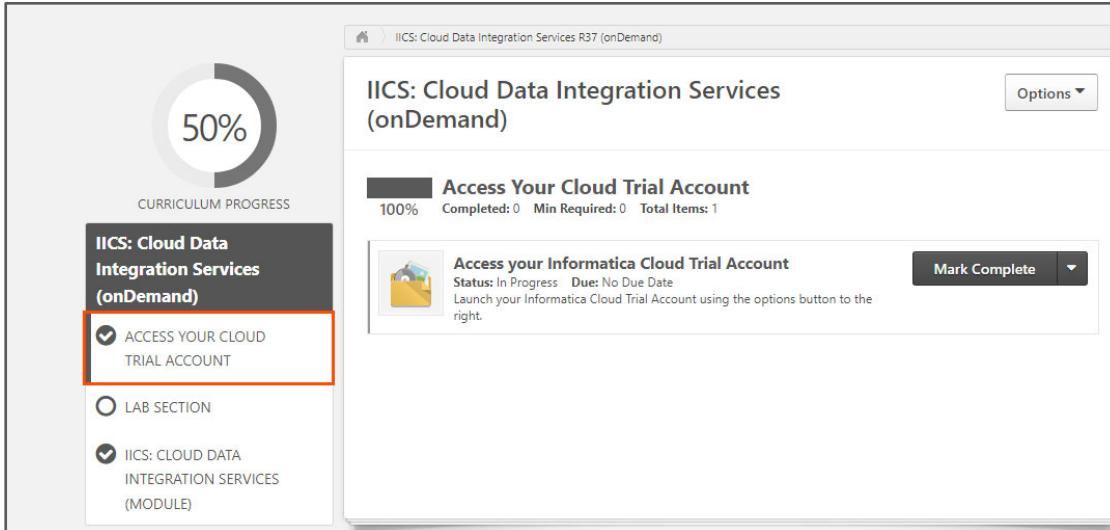
- Create an IICS trial account

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

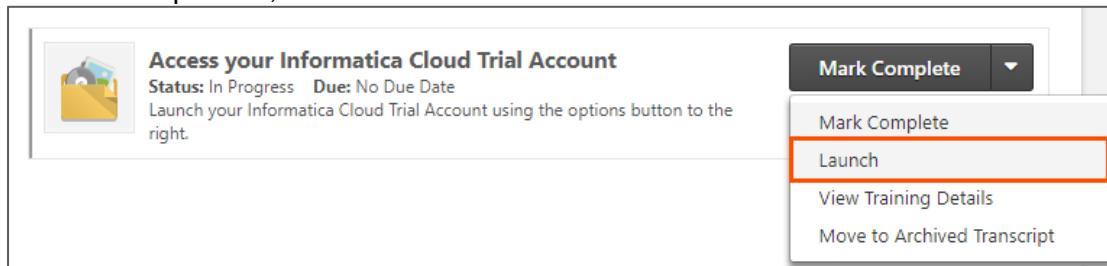
1. From CSOD (the page where you accessed the course), click on the **ACCESS YOUR CLOUD TRIAL ACCOUNT** option.



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, there are three options: 'ACCESS YOUR CLOUD TRIAL ACCOUNT' (with a checked checkbox and a red border around the button), 'LAB SECTION' (with an unchecked radio button), and 'IICS: CLOUD DATA INTEGRATION SERVICES (MODULE)' (with a checked checkbox). On the right, there's a main content area titled 'Access Your Cloud Trial Account' with a status of 'Completed: 0 Min Required: 0 Total Items: 1'. It contains a task card for 'Access your Informatica Cloud Trial Account' with a status of 'In Progress' and 'No Due Date'. A 'Mark Complete' button is visible next to the task card.

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

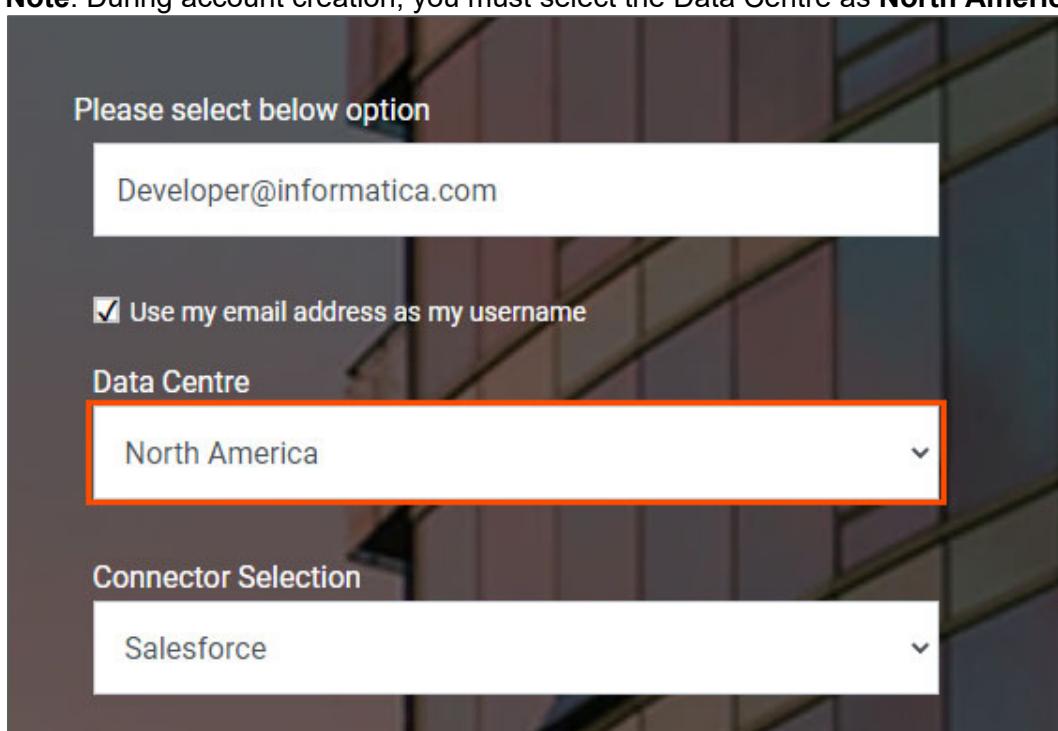
2. From the drop-down, click **Launch**.



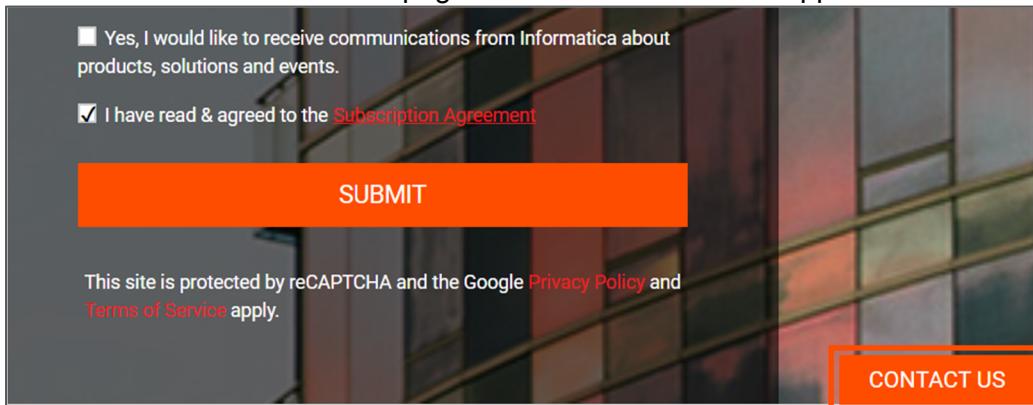
Note: If the option menu is labeled anything other than **Launch**, click the down arrow to the right and click **Launch**.

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**.



- 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.

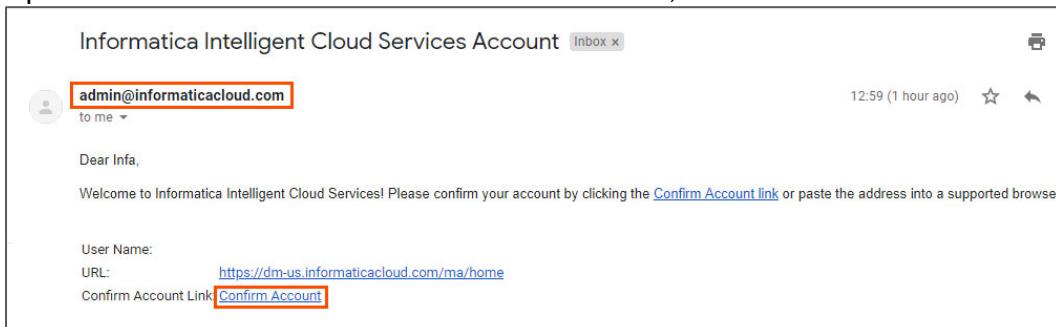
I have read & agreed to the [Subscription Agreement](#)

SUBMIT

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

CONTACT US

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

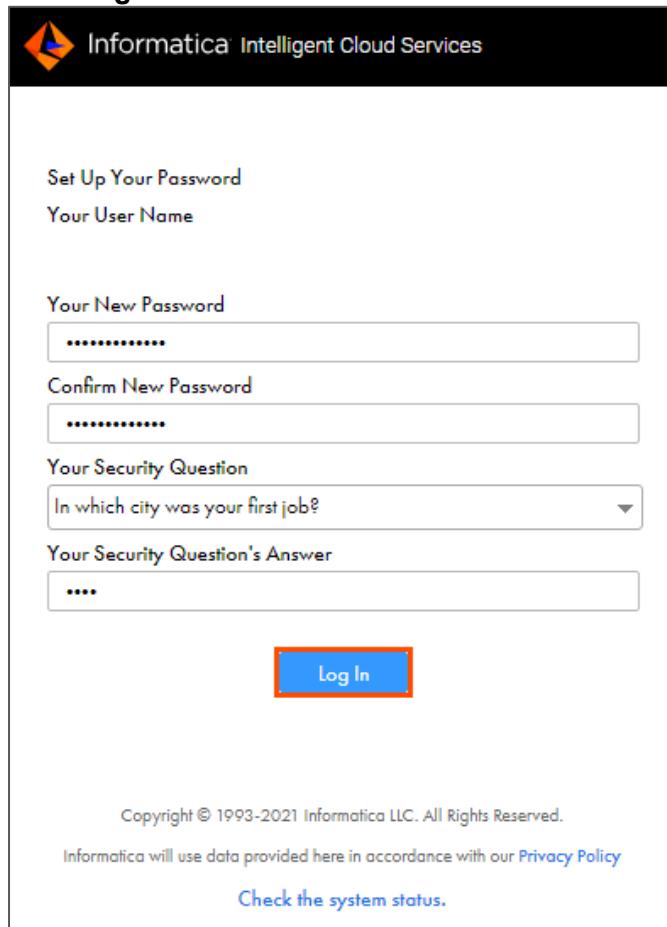


Note: You can bookmark the URL link to access the IICS login page for future access.

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



10. Click **Log In**.



The screenshot shows the "Set Up Your Password" step of the Informatica Intelligent Cloud Services login process. It includes fields for "Your User Name", "Your New Password", "Confirm New Password", "Your Security Question" (set to "In which city was your first job?"), "Your Security Question's Answer", and a "Log In" button. A red box highlights the "Log In" button.

Set Up Your Password

Your User Name

Your New Password
.....

Confirm New Password
.....

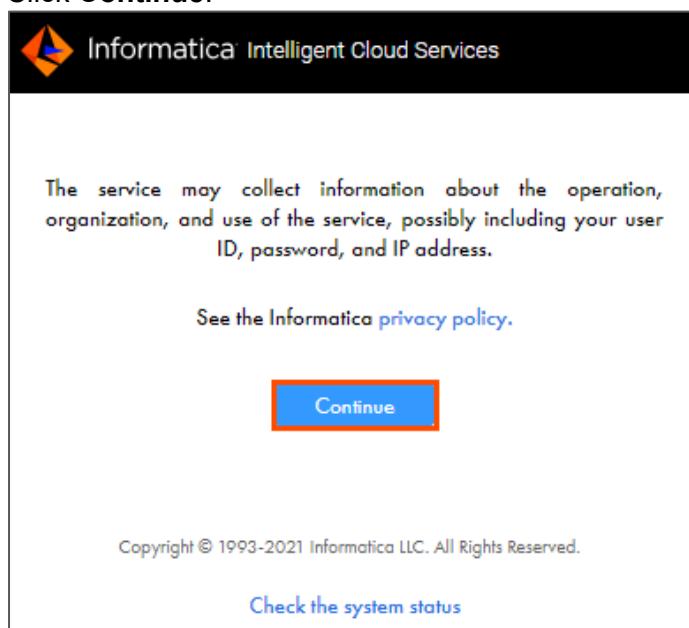
Your Security Question
In which city was your first job?

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 the privacy policy continuation step. It displays a statement about data collection and a link to the "Informatica privacy policy", followed by a "Continue" button with a red border. A red box highlights the "Continue" button.

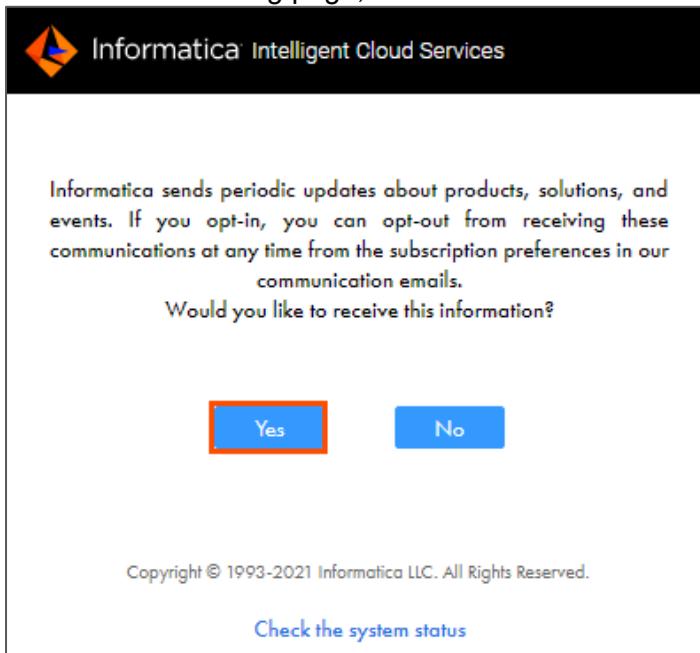
The service may collect information about the operation, organization, and use of the service, possibly including your user ID, password, and IP address.

[See the Informatica privacy policy.](#)

Continue

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

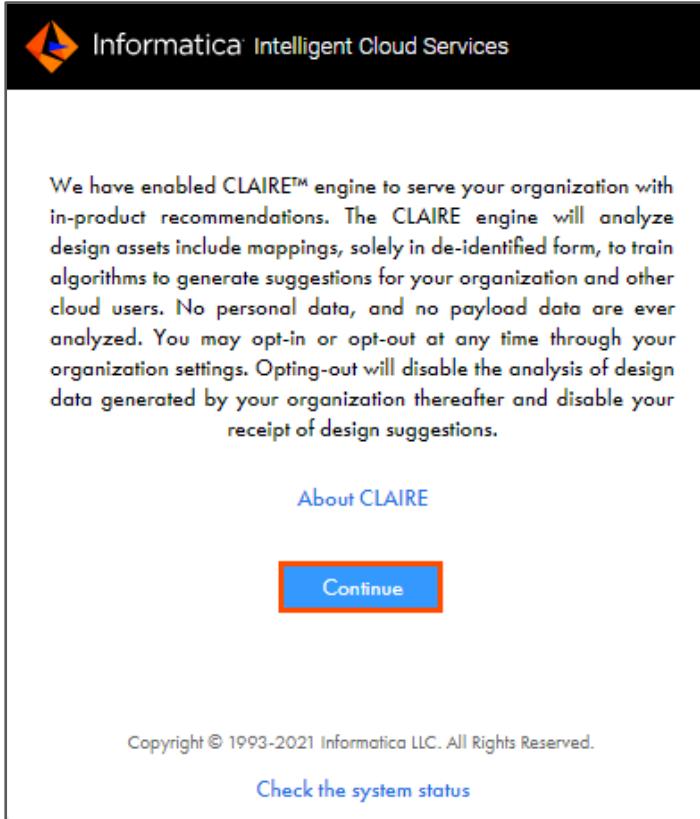
12. In the User Marketing page, select **Yes** or **No** based on your preference.



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 of the page, there is copyright information: "Copyright © 1993-2021 Informatica LLC. All Rights Reserved." and a link "Check the system status".

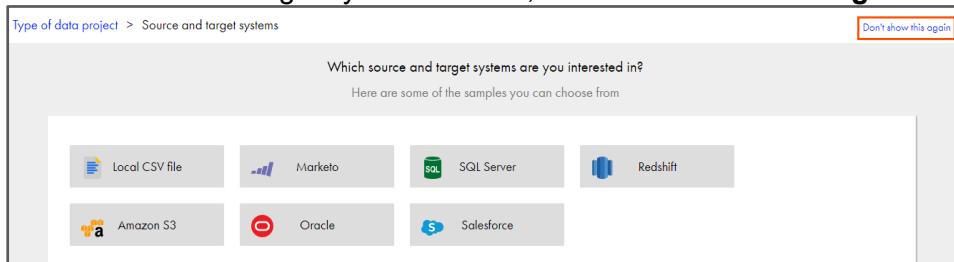
Note: It is recommended to select Yes to receive regular updates about product and other related information.

13. Click **Continue**.

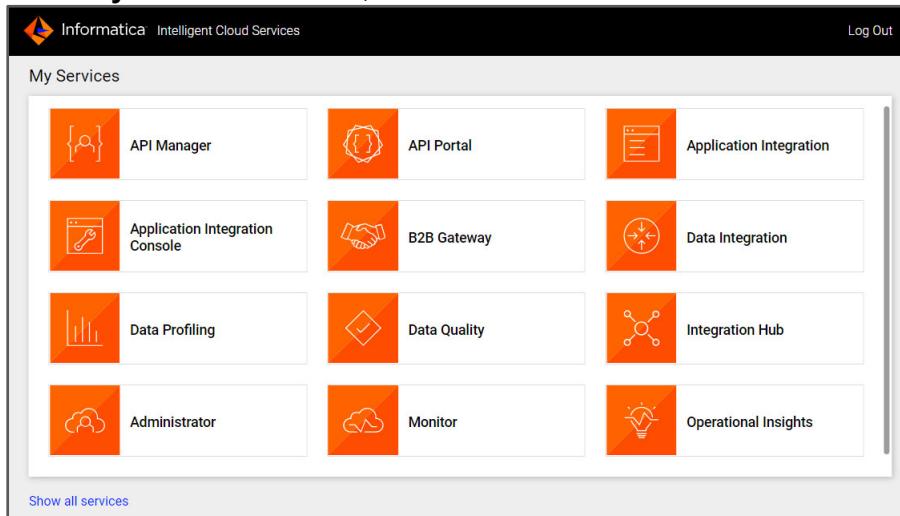


The screenshot shows a page about the CLAIRE™ engine. At the top, the Informatica Intelligent Cloud Services logo is displayed. The main content area contains a detailed explanation of the CLAIRE engine's function: "We have enabled CLAIRE™ engine to serve your organization with in-product recommendations. 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 of the page, there is copyright information: "Copyright © 1993-2021 Informatica LLC. All Rights Reserved." and a link "Check the system status".

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

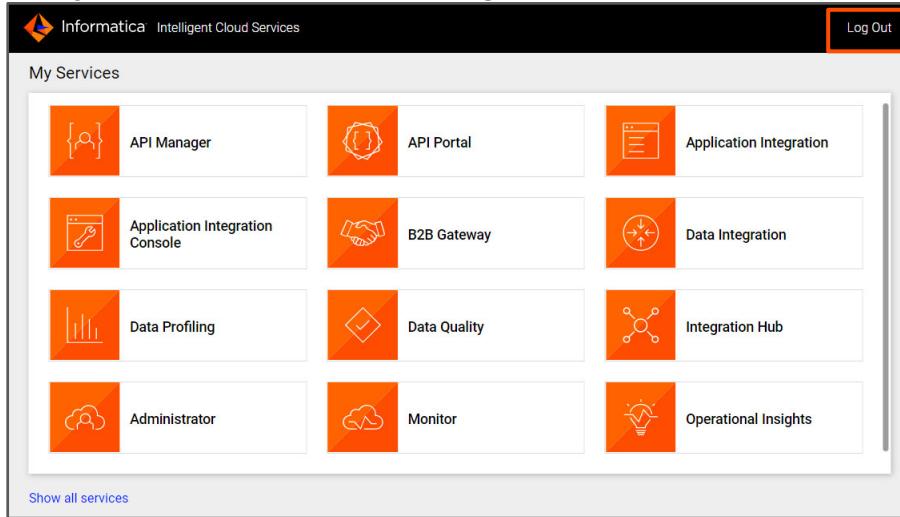


15. In the **My Services** window, notice the list of available services.



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 concludes the lab.

Module 0: Getting Started

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 provide steps to setup the lab environment for performing the lab exercises of this course.

Objective:

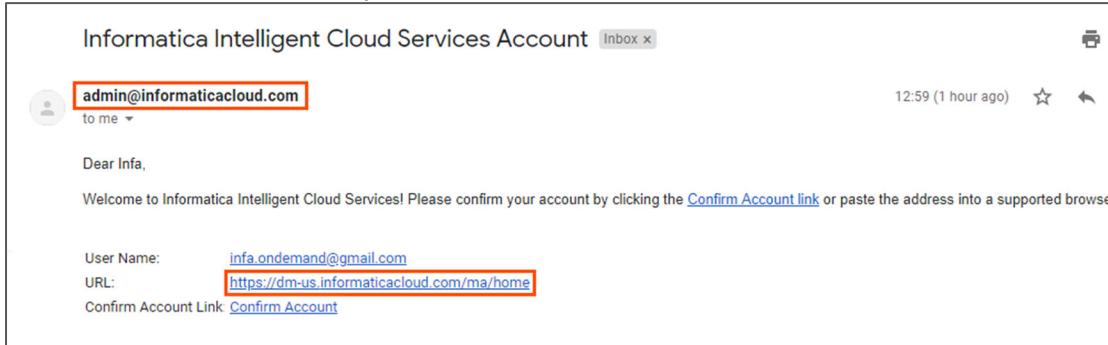
- Enable Connector
- Install Postman
- Copy Lab Prep Files

Duration:

20 minutes

Enable Connector

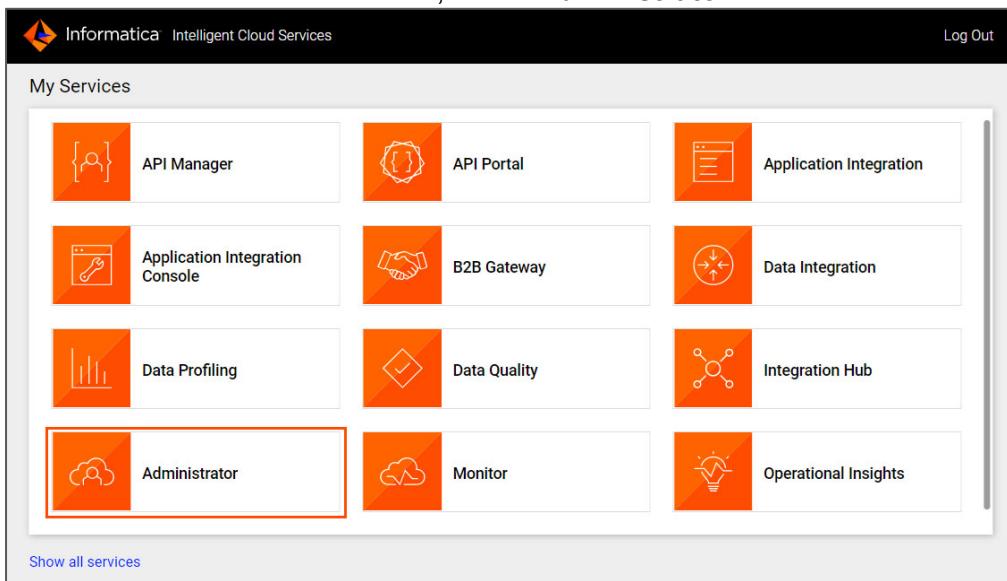
1. For accessing the IICS login page, open the email from **admin@informaticacloud.com** in your mailbox.
2. Use the URL link to access your IICS account.



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**.

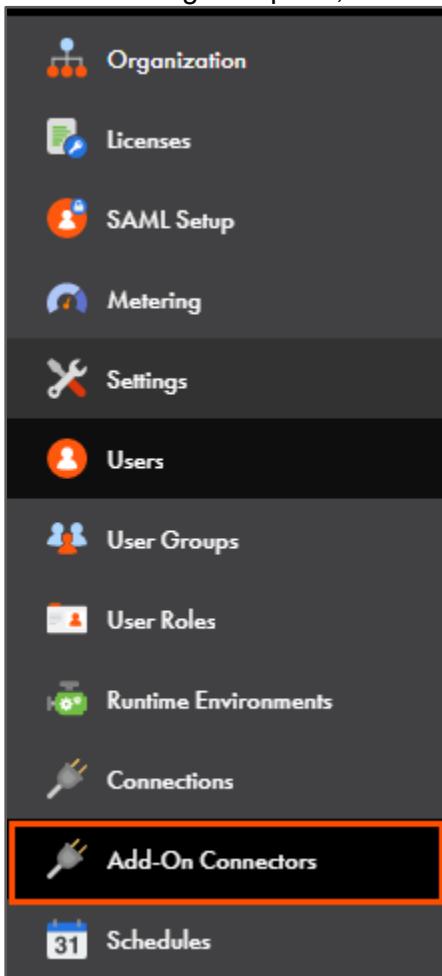


The screenshot shows the 'My Services' section of the Informatica Intelligent Cloud Services interface. It displays a grid of service icons and names:

Icon	Service Name
{}	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.

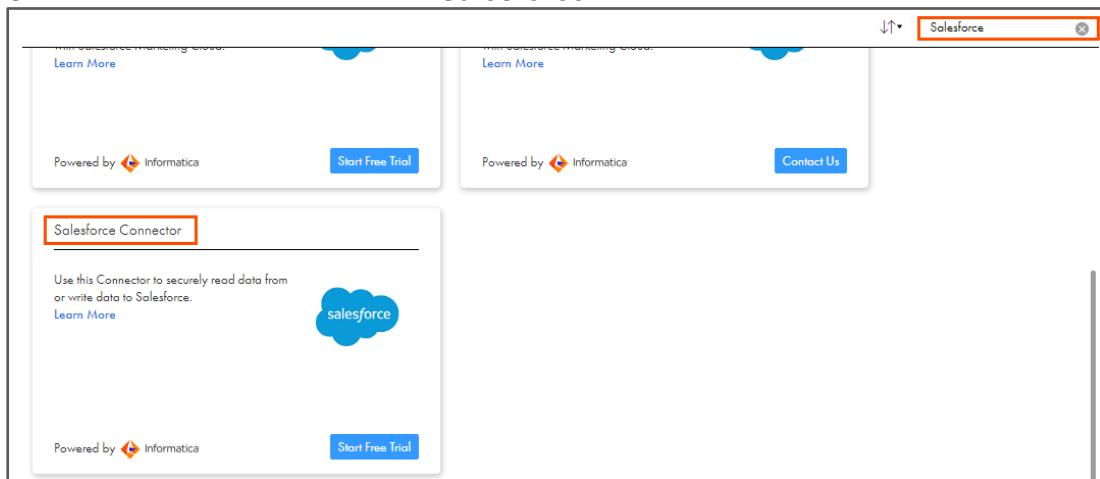


The screenshot shows the navigation pane of the Informatica Intelligent Cloud Services interface. The tabs listed vertically are:

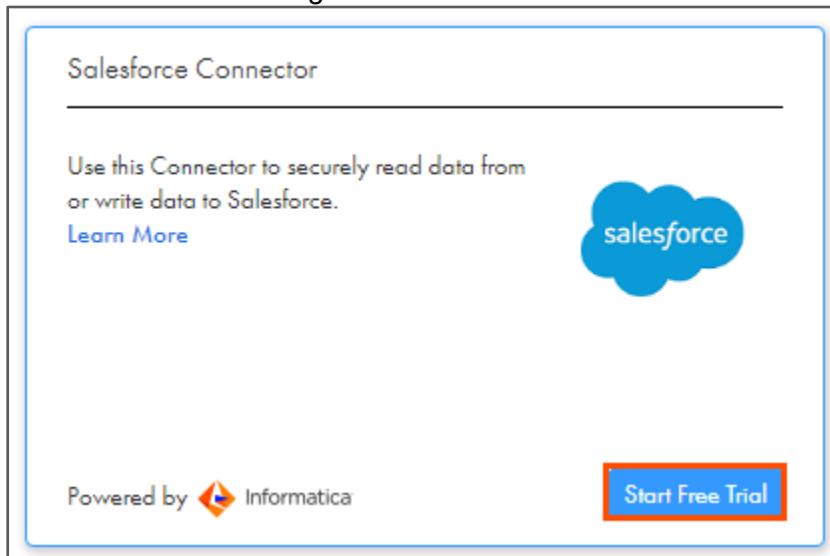
- Organization
- Licenses
- SAML Setup
- Metering
- Settings
- Users
- User Groups
- User Roles
- Runtime Environments
- Connections
- Add-On Connectors
- Schedules

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

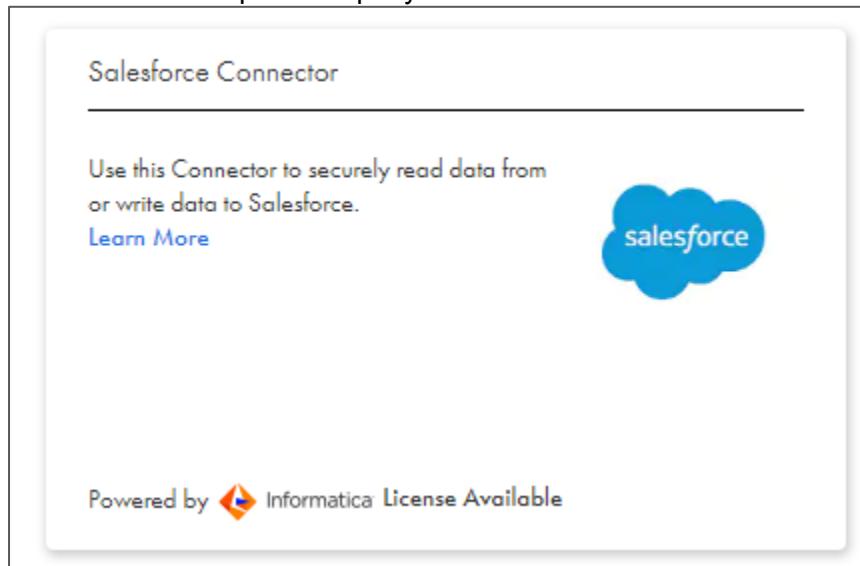
6. Use the find section to locate the **Salesforce** connector.



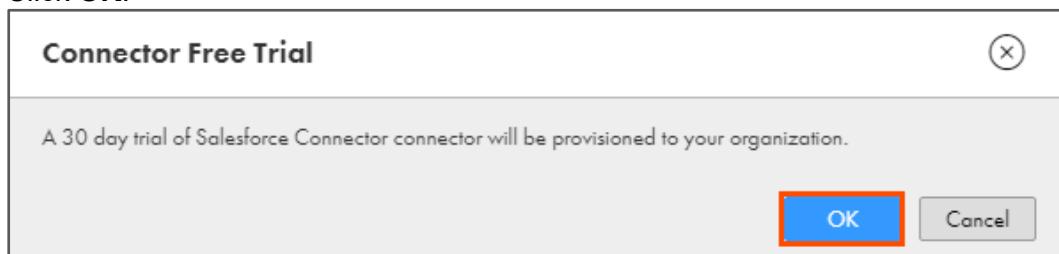
7. Click **Start Free Trial** for the Salesforce Connector. This enables you to view the connector when creating a Salesforce connection in later lab.



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



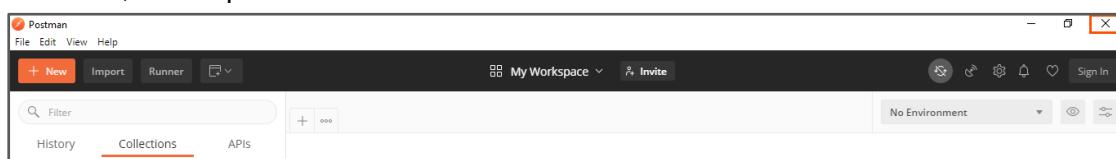
8. Click **OK**.



9. Log out of the IICS Org.

Install Postman

10. Open a web browser and enter the following URL:
<https://www.postman.com/downloads/>
11. Select the **Download the App** option, and select the win32 or win64 bit file as per your system configuration.
12. After the file is downloaded, install the postman application on your secure agent machine.
13. Once the installation is complete, close the postman application.
Note: We will use this application later in the course to run tasks in IICS using REST API. The UI of postman may differ slightly since the postman versions may differ. However, the steps still remain the same.



Copy Lab Prep Files

14. From the Informatica training portal, download the **Lab Prep Files**.
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.
15. On the desktop of your secure agent machine, create a new folder and name it as **CDI Lab Prep Files**.
16. Copy the prep files downloaded from the training portal in the newly created **CDI Lab Prep Files** folder.
17. Similarly, download the **notepad command files** from the Informatica training portal.
18. Create **Students\Commands** directory in the **C:** drive of your local machine.
19. Save the downloaded notepad files in this location **C:\Students\Commands**.
Note: The notepad command file contains the complex expressions or commands required to perform the lab exercises. You can use these notepad files to copy the commands for a specific lab to avoid any typing errors while executing the labs.

Important note regarding lab exercises

- a. The lab guide follows the **SXX_Firstname_AssetName** naming format. However, you can name asset as per your requirement.
- b. In the naming format, XX refers to your initials, and FIRSTNAME refers to your First Name.
- c. In the lab guide, all the assets are saved in **CDI ILT Development\XX_Firstname** (working directory) location. As a best practice, you must save all your assets in one location and provide unique names to the assets to avoid naming conflict issues.

This concludes the lab.

Module 0: Getting Started

Lab 0-3: Configure Oracle

Overview:

Oracle, also known as Oracle Database, 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 Oracle database for performing lab exercises for this course.

Objective:

- Create User
- Create Tables

Duration:

10 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 Oracle database. We therefore recommend that you have Oracle database installed on your system (Secure Agent machine) to execute the labs.

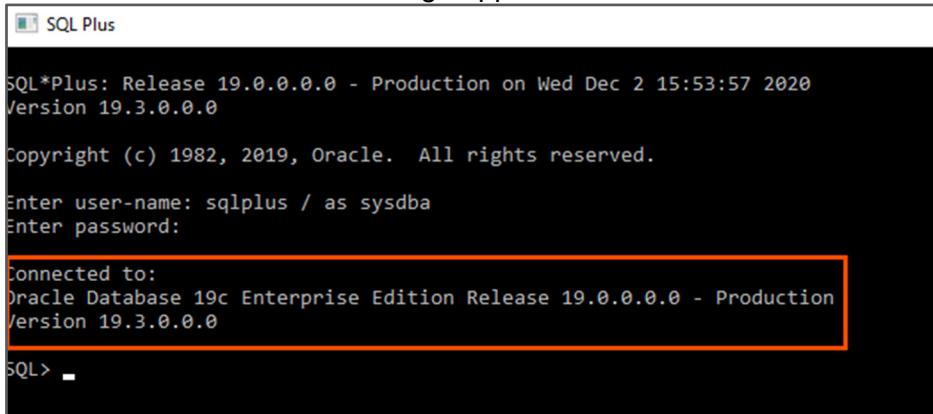
List of Oracle Dependent Labs
Lab 2-4: Creating an Oracle connection
Lab 3-3: Creating a Data Transfer Task
Lab 5-1: Using Query in a Mapping
Lab 5-3: Creating a mapping using Unconnected Lookup Transformation
Lab 6-3: Using In-Out Parameters for Incremental Data Loading
Lab 11-1: Passing in-out Parameters in a Taskflow

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

3. The labs for this course are created on Oracle version 19c Release 3. You can also use Oracle version 11g or higher.

Create User in SQL Plus

1. From the windows **Start** menu, navigate to **SQL Plus**.
Note: The SQL Plus command prompt appears.
2. To log into SQL Plus, enter user-name as **sqlplus / as sysdba**.
3. Press **Enter**.
4. In the Enter Password prompt, **press Enter** to log in without a password.
Note: The Connected to: message appears.



```
SQL*Plus: Release 19.0.0.0.0 - Production on Wed Dec 2 15:53:57 2020
Version 19.3.0.0.0

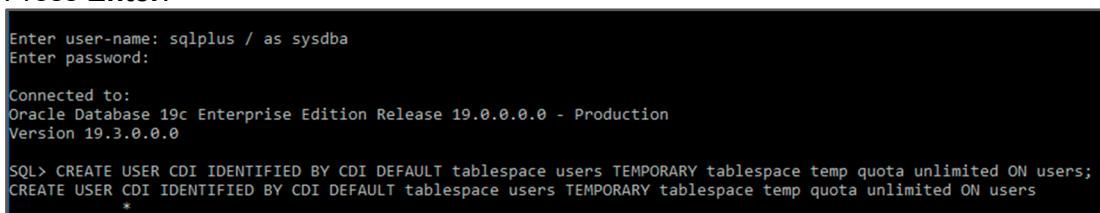
Copyright (c) 1982, 2019, Oracle. All rights reserved.

Enter user-name: sqlplus / as sysdba
Enter password:

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

SQL> -
```

5. To create a user, enter the following command in the SQL> field:
CREATE USER CDI IDENTIFIED BY CDI DEFAULT tablespace users TEMPORARY tablespace temp quota unlimited ON users;
6. Press **Enter**.



```
Enter user-name: sqlplus / as sysdba
Enter password:

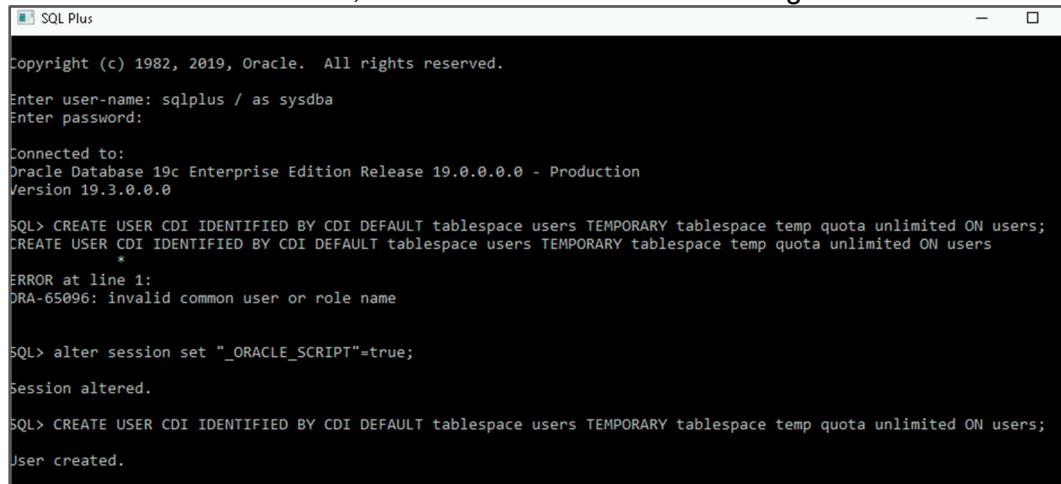
Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

SQL> CREATE USER CDI IDENTIFIED BY CDI DEFAULT tablespace users TEMPORARY tablespace temp quota unlimited ON users;
CREATE USER CDI IDENTIFIED BY CDI DEFAULT tablespace users TEMPORARY tablespace temp quota unlimited ON users
*
```

Note: User created message appears.

- a. If you get **ORA-65096: invalid common user or role name** error while creating a user, then run the following command to reset the session:
alter session set “_ORACLE_SCRIPT”=true;

- b. After the session is altered, run the **create user** command again to create the user.



```

SQL*Plus: Release 19.0.0.0.0 - Production
Copyright (c) 1982, 2019, Oracle. All rights reserved.

Enter user-name: sqlplus / as sysdba
Enter password:

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

SQL> CREATE USER CDI IDENTIFIED BY CDI DEFAULT tablespace users TEMPORARY tablespace temp quota unlimited ON users;
CREATE USER CDI IDENTIFIED BY CDI DEFAULT tablespace users TEMPORARY tablespace temp quota unlimited ON users
*
ERROR at line 1:
ORA-65096: invalid common user or role name

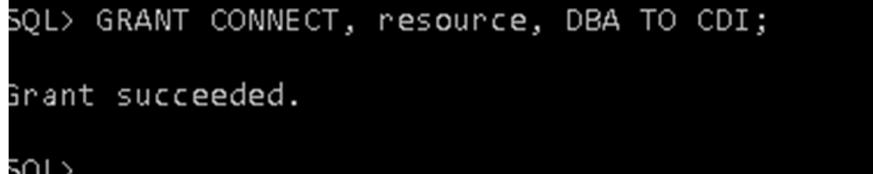
SQL> alter session set "_ORACLE_SCRIPT"=true;
Session altered.

SQL> CREATE USER CDI IDENTIFIED BY CDI DEFAULT tablespace users TEMPORARY tablespace temp quota unlimited ON users;
User created.

```

7. To grant access to the created user, enter the following command in the SQL> field:
GRANT CONNECT, resource, DBA TO CDI;

8. Press **Enter**.



```

SQL> GRANT CONNECT, resource, DBA TO CDI;

Grant succeeded.

SQL>

```

Note: Grant succeeded message appears.

9. Close the SQL Plus application.

Finding Oracle SID

10. From the windows **Start** menu, open **SQL Plus** again.

11. To log into SQL Plus, enter the user-name and password as **CDI**.

Note: The Oracle SID/Service name changes from user to user. Thus, to create a connection for CDI user, you must log in with CDI user to find the SID.

12. Press **Enter**.

Note: The “Connected to:” message appears.

```
SQL*Plus: Release 19.0.0.0.0 - Production on Thu Dec 3 11:25:25 2020
Version 19.3.0.0.0

Copyright (c) 1982, 2019, Oracle. All rights reserved.

Enter user-name: CDI
Enter password:

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

SQL> -
```

13. To know the service name, enter the following command in the SQL> field:

select value from v\$parameter where name like '%service_name%';

```
SQL> select value from v$parameter where name like '%service_name%';

VALUE
-----
orcl1

SQL> -
```

Note:

- Here, the service name is **orcl1**. The service name can vary from user to user.
- You must use this service name while creating Oracle Connection in IICS for lab exercise **2-4: Creating an Oracle connection**.

Create a connection in Oracle

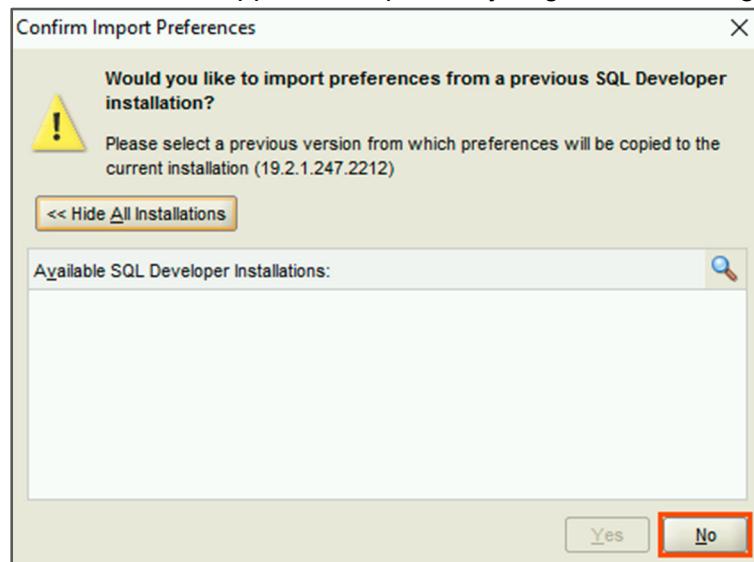
14. To create a connection in Oracle, open **sqldeveloper**.

Note:

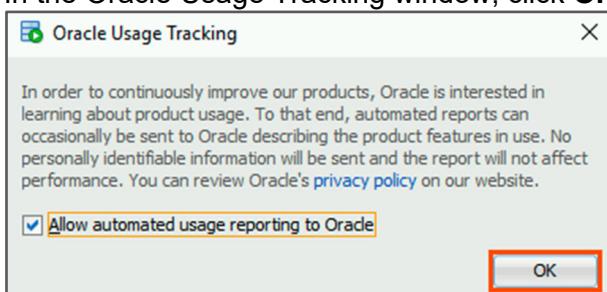
- i. In some versions of Oracle, sqldeveloper is part of Oracle installation. For newer versions of Oracle (19 version onwards) you must download and install sqldeveloper separately.
- ii. When the Oracle SQL Developer opens, it displays the following window



Note: While the application opens, if you get the following window, click **No**.

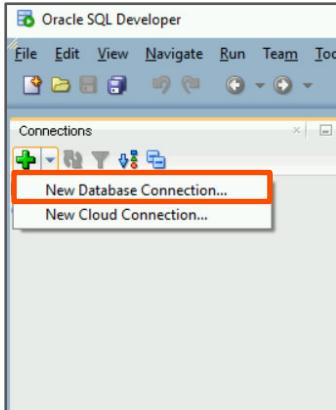


15. In the Oracle Usage Tracking window, click **OK**.





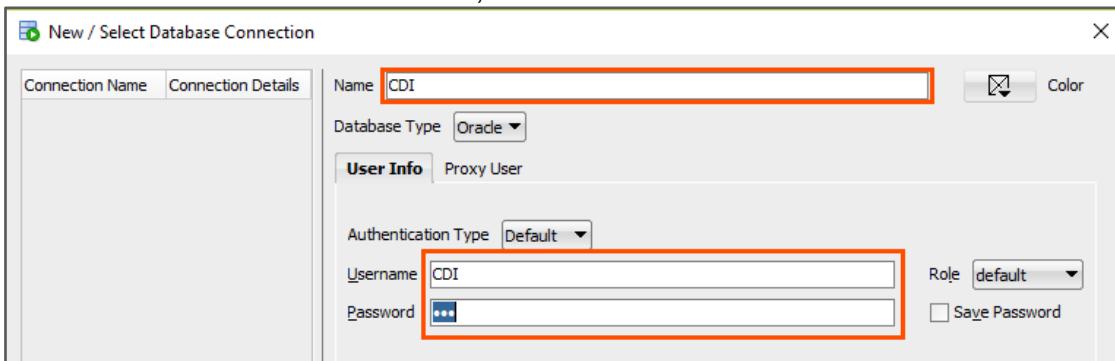
16. To create a new connection, click the drop-down next to  and select **New Database Connection**.



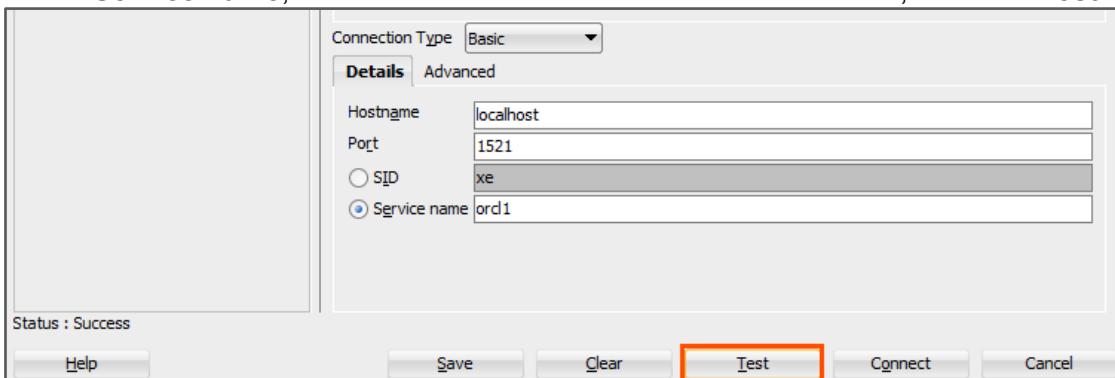
Note: The New/Select Database Connection window appears.

17. In the Name field, enter **CDI**.

18. In the Username and Password field, enter **CDI**.



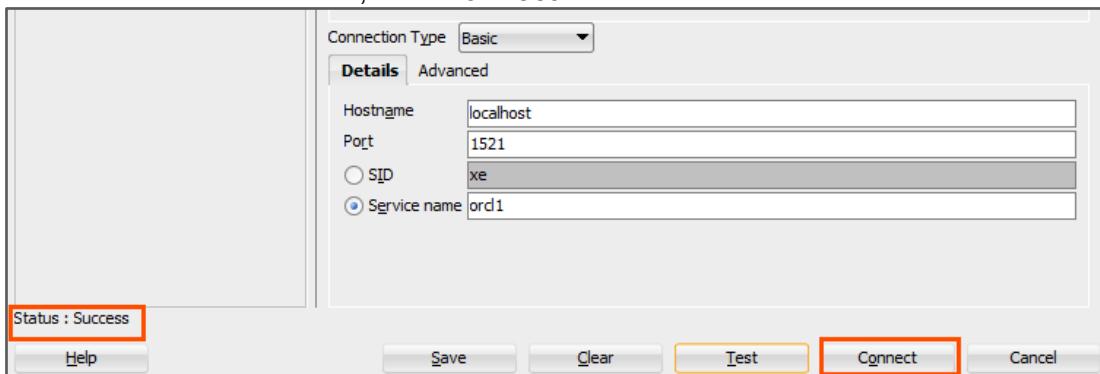
19. Select **Service name**, enter the oracle service name identified earlier, and click **Test**.



Notes:

- The service name can change from one user to another.
- If the port number is not valid, then check to see if Oracle is already set up on your system.

20. When the test is successful, click **Connect**.

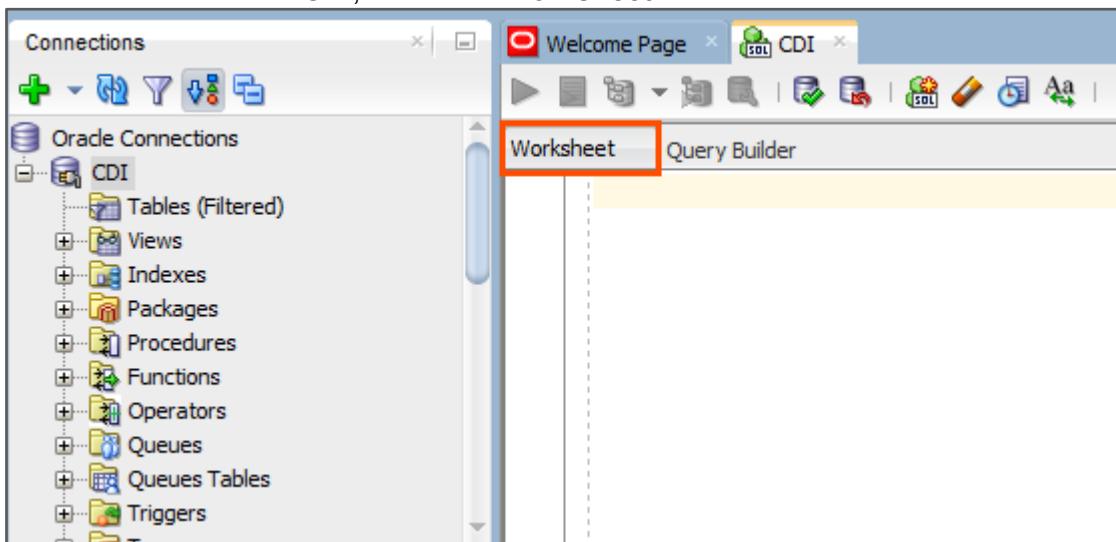


Create Table

21. From the Oracle Connections section, expand **CDI**.

Note: If you are prompted to provide credentials, enter **CDI/CDI**.

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

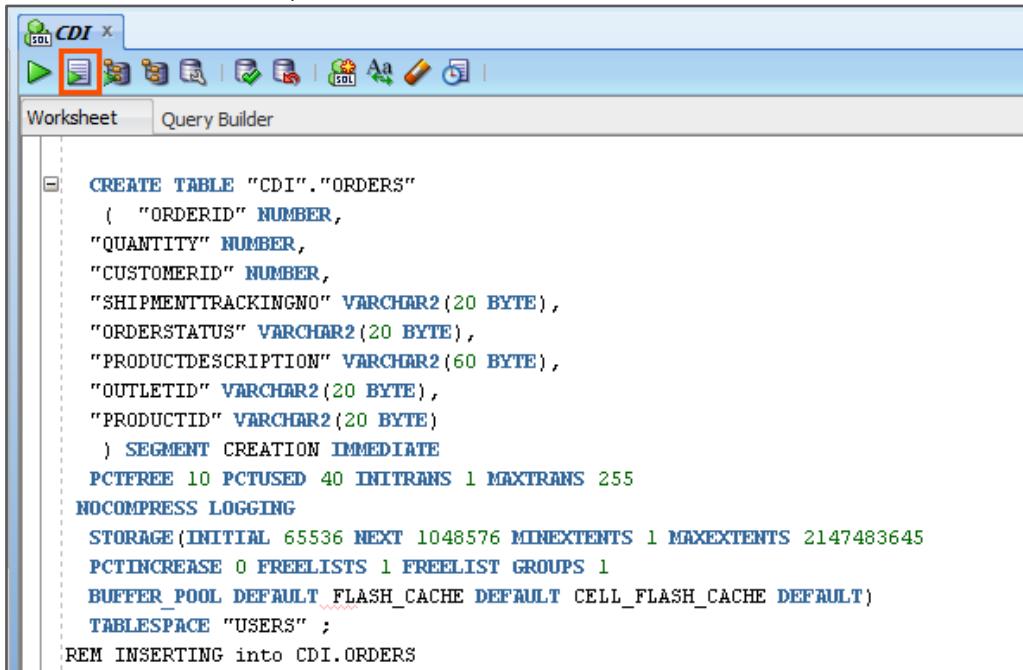


23. Open the **ORDERS.sql** prep file provided with this lab and copy the commands from the file.

Note: To easily copy the commands, open the file in notepad.

24. Paste the commands under Worksheet section.

25. To run the commands, click .

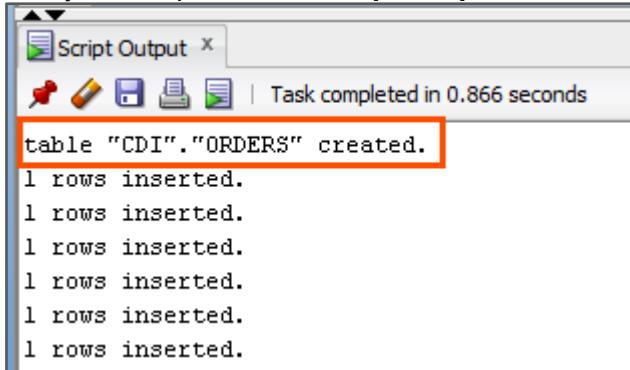


```

CREATE TABLE "CDI"."ORDERS"
(
    "ORDERID" NUMBER,
    "QUANTITY" NUMBER,
    "CUSTOMERID" NUMBER,
    "SHIPMENTTRACKINGNO" VARCHAR2(20 BYTE),
    "ORDERSTATUS" VARCHAR2(20 BYTE),
    "PRODUCTDESCRIPTION" VARCHAR2(60 BYTE),
    "OUTLETID" VARCHAR2(20 BYTE),
    "PRODUCTID" VARCHAR2(20 BYTE)
) SEGMENT CREATION IMMEDIATE
PCTFREE 10 PCTUSED 40 INITTRANS 1 MAXTRANS 255
NOCOMPRESS LOGGING
STORAGE (INITIAL 65536 NEXT 1048576 MINEXTENTS 1 MAXEXTENTS 2147483645
PCTINCREASE 0 FREELISTS 1 FREELIST GROUPS 1
BUFFER_POOL DEFAULT FLASH_CACHE DEFAULT CELL_FLASH_CACHE DEFAULT)
TABLESPACE "USERS" ;
REM INSERTING into CDI.ORDERS

```

26. Verify the output, under **Script Output** section.



```

table "CDI"."ORDERS" created.
1 rows inserted.

```

Note: Follow the above steps to create the **CUSTOMER** and **TOTALAMOUNT** tables.
You can use the following files to create the required tables:

Files
CUSTOMER.sql
TOTALAMOUNT.sql

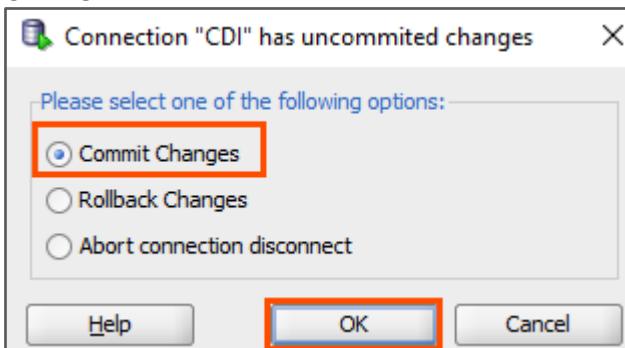
Note: Before creating a new table, use  to clear the content from the Worksheet and Script Output sections.

27. To close the SQL Developer, click .

Note: A Connection CDI has uncommitted changes window appears.

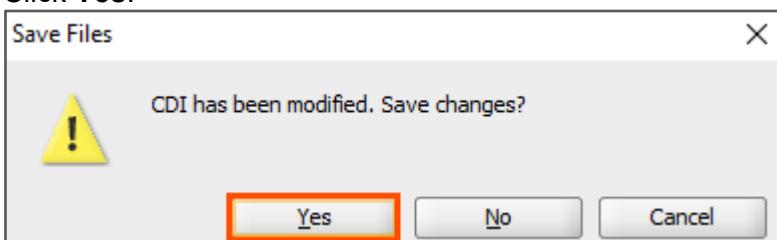
28. If you see the following window, retain **Commit Changes**.

29. Click **OK**.

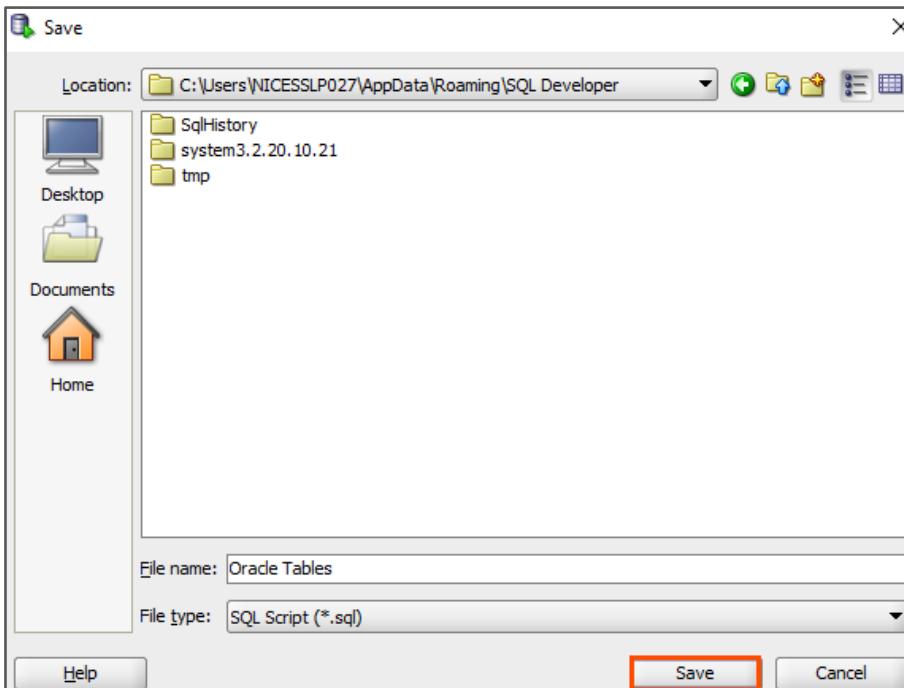


Note: The Save Files window appears.

30. Click **Yes**.



31. Provide a suitable name and click **Save**.



Note: SQL Developer window will close.

This concludes the lab.

Module 0: Getting Started

Lab 0-4: Prerequisite: Configure Kafka Setup

Overview:

Kafka is a distributed publish-subscribe messaging system that is fast, scalable, and durable. It stores messages in the form of topics. Producers write data to a topic and consumers read data from the topic. Kafka topics are partitioned and replicated across multiple nodes thereby allowing distributed processing. Kafka uses ZooKeeper to manage the Kafka cluster.

In this lab, you will install Apache ZooKeeper and Kafka in your machine and configure them to use the Kafka connector in a process to read and write data.

Objectives:

- Install and configure Java
- Create folders for the Kafka directory
- Download Apache ZooKeeper and Kafka for windows
- Set Environment Variables
- Modify the configuration files

Notes:

- Ensure that you have the **WinRAR** setup installed in your machine.

Duration:

30 Minutes

Tasks:

Install and Configure Java

1. In a web browser, enter the following URL:
<https://java.com/en/download/>

2. Click Download Java.

Download Java for Windows

Version 8 Update 351 (filesize: 2.16 MB) [Why is Java 8 recommended?](#)

Release date: October 18, 2022

Important Oracle Java License Information

The Oracle Java License changed for releases starting April 16, 2019.

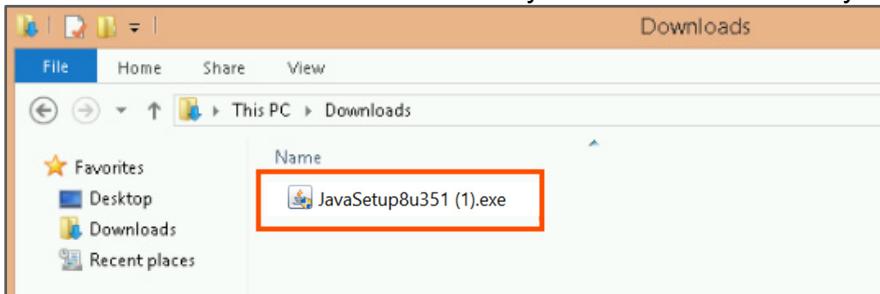
The Oracle Technology Network License Agreement for Oracle Java SE is substantially different from prior Oracle Java licenses. This license permits certain uses, such as personal use and development use, at no cost -- but other uses authorized under prior Oracle Java licenses may no longer be available. Please review the terms carefully before downloading and using this product. An FAQ is available [here](#).

Commercial license and support is available with a low cost [Java SE Subscription](#).

[Download Java](#)

By downloading Java you acknowledge that you have read and accepted the terms of the [Oracle Technology Network License Agreement for Oracle Java SE](#)

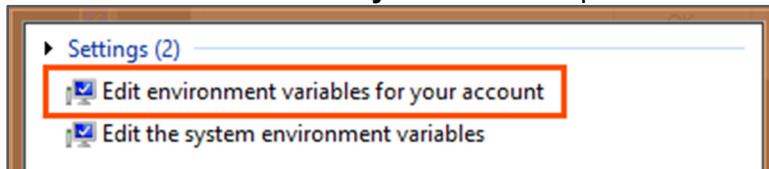
3. Run the downloaded Java installer from your Downloads directory.

4. In the Java Setup window, click **Install**.

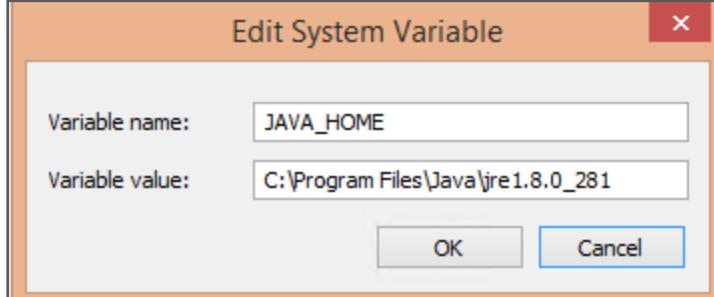
Note: You can skip the Java installation if it is already installed on your machine.

5. Once the Java is installed, you must setup the **JAVA_HOME** environment variable.

6. In the Windows search menu, search for Environment Variables, and select the **Edit environment variables for your account** option.



7. In the Environment Variables window, under **System Variables**, click **New**.
8. In the Variable Name field, enter **JAVA_HOME**.
9. In the Variable Value field, enter the path to the **jre<version>** directory.

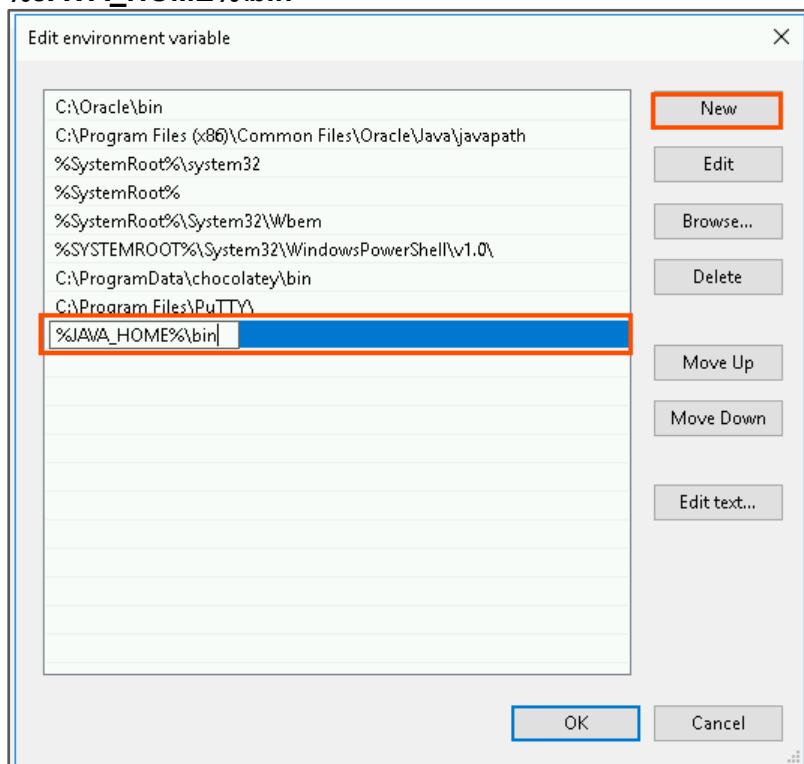


Note: This path can change based on the location and version of Java installed on your machine. Verify the location and jre version of machine and update the Variable Value field accordingly. In the above screenshot, the jre version is 1.8.0_281.

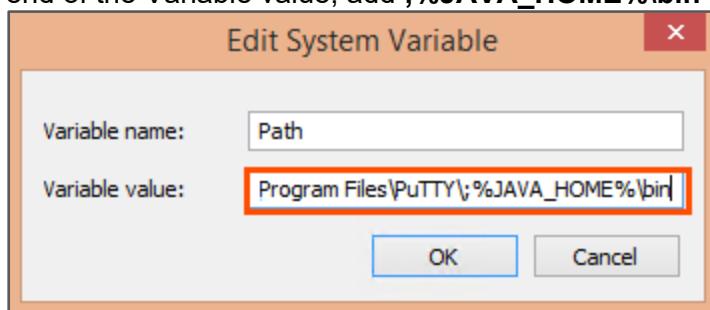
10. Click **OK**.
11. Under the System Variables section, select the **Path** environment variable, and click **Edit**.

12. Click **New** and add the following value:

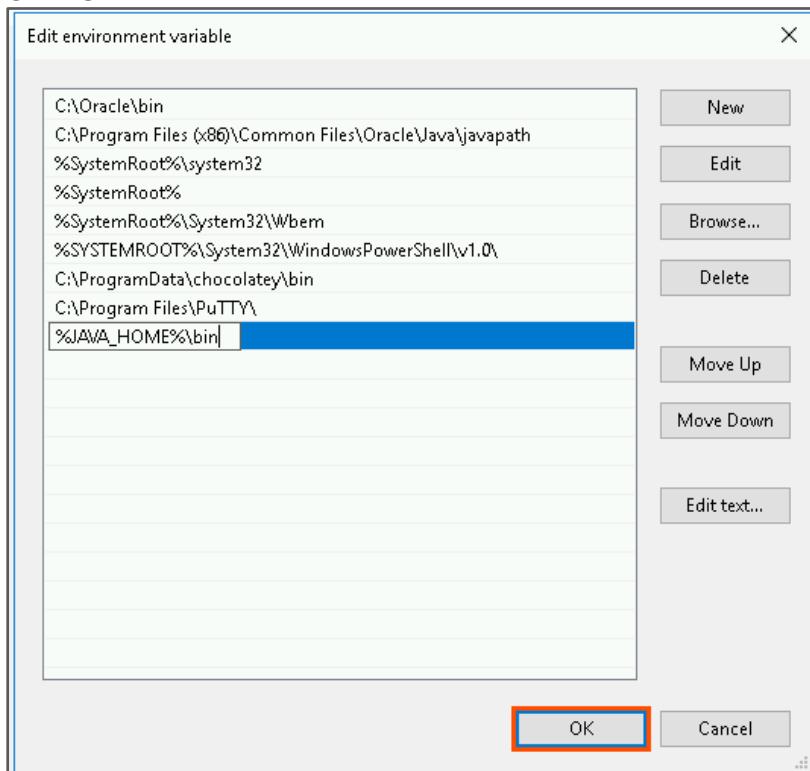
%JAVA_HOME%\bin



Note: If you see the Edit System Variable window as shown in the image below, at the end of the Variable value, add ;%JAVA_HOME%\bin



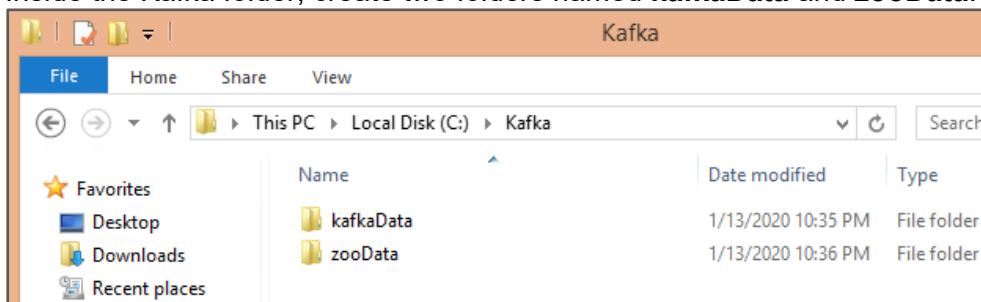
13. Click **OK**.



14. For the Environment Variable window, click **OK**.

Create folders for the Kafka directory

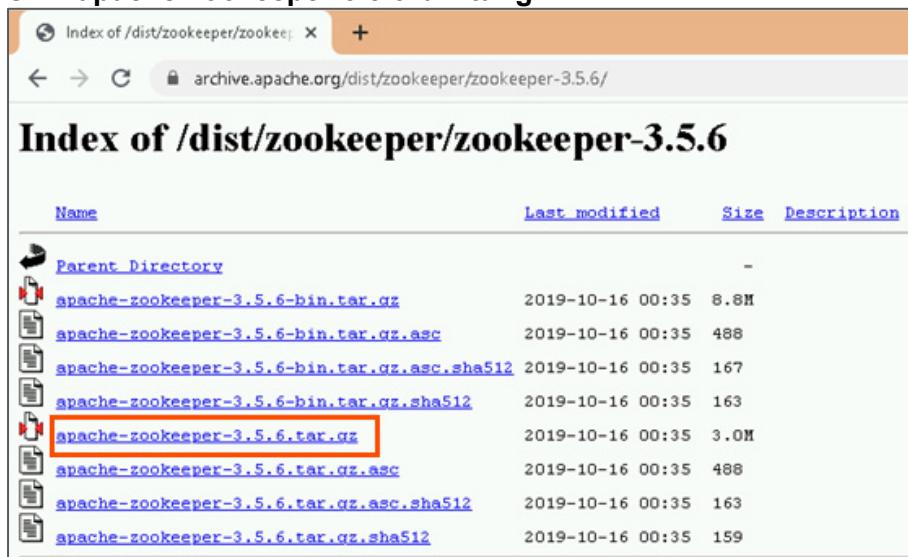
15. In your machine, in the **C:** drive create a folder named **Kafka**.
16. Inside the Kafka folder, create two folders named **kafkaData** and **zooData**.



Download Apache Zookeeper for Windows

17. In a web browser, enter the following URL:
<https://archive.apache.org/dist/zookeeper/zookeeper-3.5.6/>

18. Click **apache-zookeeper-3.5.6-bin.tar.gz**.

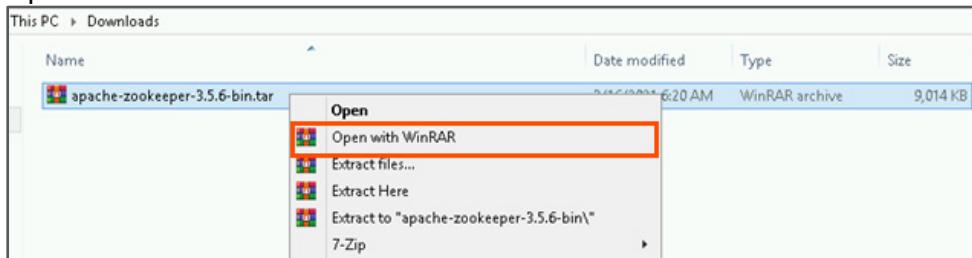


The screenshot shows a web browser window with the URL archive.apache.org/dist/zookeeper/zookeeper-3.5.6/. The page title is "Index of /dist/zookeeper/zookeeper-3.5.6". Below the title is a table with columns: Name, Last modified, Size, and Description. The table lists several files, including the main tarball and its associated checksum files. The file "apache-zookeeper-3.5.6-bin.tar.gz" is highlighted with a red box.

Name	Last modified	Size	Description
Parent Directory		-	
apache-zookeeper-3.5.6-bin.tar.gz	2019-10-16 00:35	8.8M	
apache-zookeeper-3.5.6-bin.tar.gz.asc	2019-10-16 00:35	488	
apache-zookeeper-3.5.6-bin.tar.gz.asc.sha512	2019-10-16 00:35	167	
apache-zookeeper-3.5.6-bin.tar.gz.sha512	2019-10-16 00:35	163	
apache-zookeeper-3.5.6-bin.tar.gz	2019-10-16 00:35	3.0M	
apache-zookeeper-3.5.6-bin.tar.gz.asc	2019-10-16 00:35	488	
apache-zookeeper-3.5.6-bin.tar.gz.asc.sha512	2019-10-16 00:35	163	
apache-zookeeper-3.5.6-bin.tar.gz.sha512	2019-10-16 00:35	159	

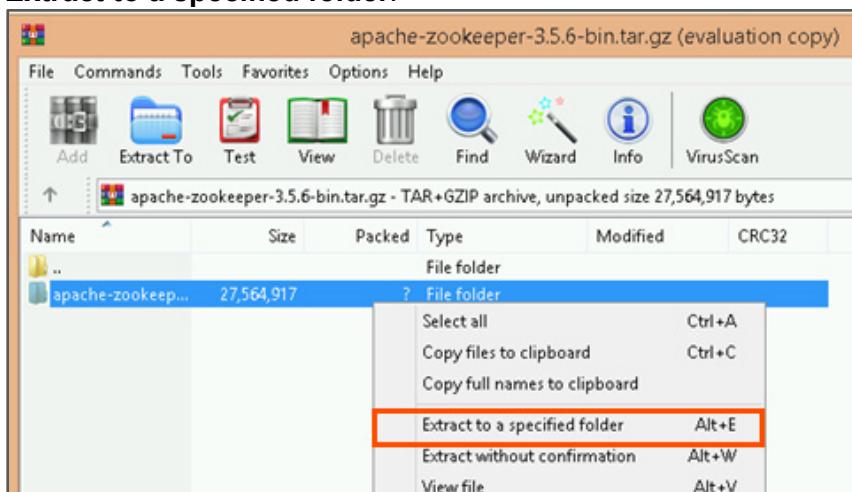
Note: This downloads the Apache Zookeeper setup file.

19. Open the downloaded file with **WinRAR**.



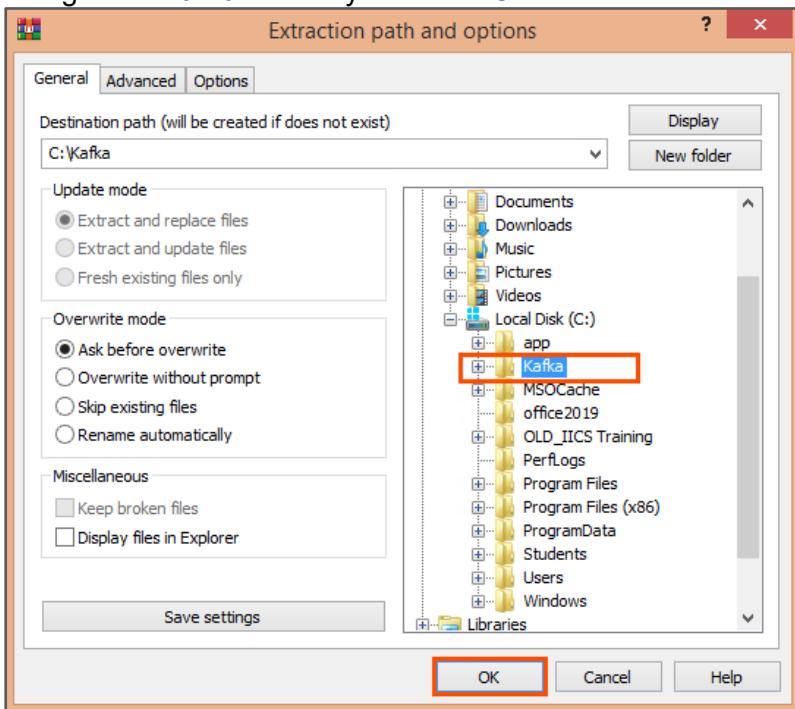
The screenshot shows a Windows context menu for a file named "apache-zookeeper-3.5.6-bin.tar" in a "Downloads" folder. The menu options are: Open, Open with WinRAR (highlighted with a red box), Extract files..., Extract Here, Extract to "apache-zookeeper-3.5.6-bin\" (highlighted with a red box), and 7-Zip.

20. In the **WinRAR** window, right-click the **apache-zookeeper-3.5.6** folder and select **Extract to a specified folder**.



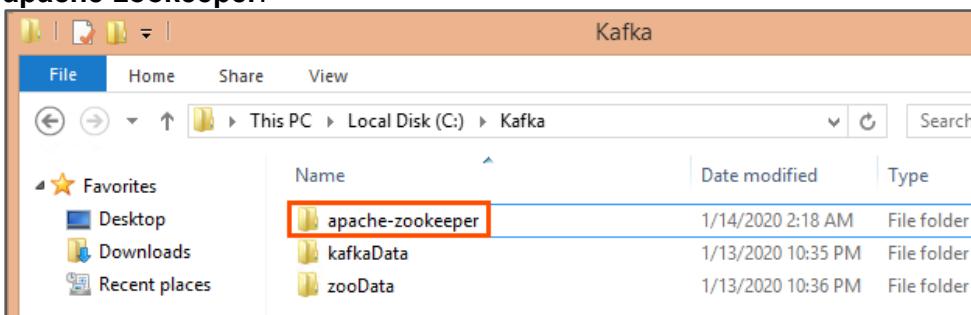
The screenshot shows the WinRAR interface with the title bar "apache-zookeeper-3.5.6-bin.tar.gz (evaluation copy)". The main window displays the contents of the archive, including a folder named "apache-zookeeper-3.5.6". A context menu is open over this folder, showing options: Select all (Ctrl+A), Copy files to clipboard (Ctrl+C), Copy full names to clipboard, Extract to a specified folder (highlighted with a red box), Extract without confirmation (Alt+W), and View file (Alt+V).

21. Navigate to **Kafka** directory and click **OK**.



Note: Confirm that the folder is copied to the Kafka directory.

22. In the C: drive, in the Kafka directory, rename the apache-zookeeper-3.5.6-bin file to **apache-zookeeper**.



Download Kafka for Windows

23. In a web browser, enter the following URL:

<https://kafka.apache.org/downloads>

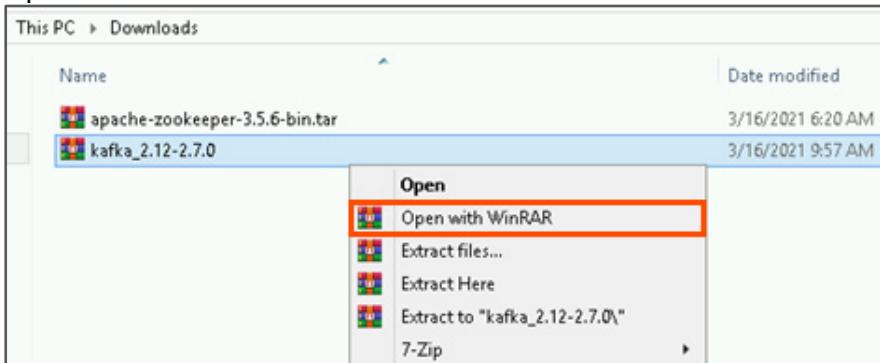
24. Scroll down to 2.7.0 section and download the **Scala 2.12 - kafka_2.12-2.7.0.tgz** file.

2.7.0

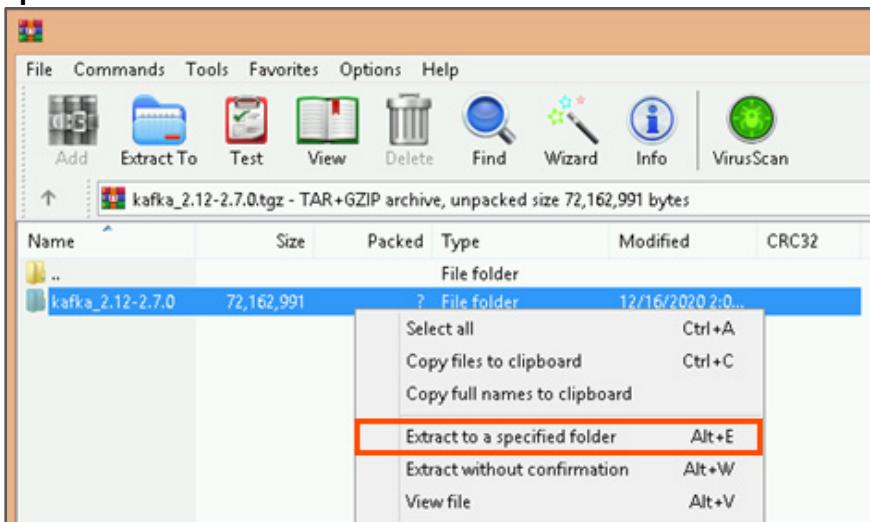
- Released Dec 21, 2020
- [Release Notes](#)
- Source download: [kafka-2.7.0-src.tgz \(asc, sha512\)](#)
- Binary downloads:
 - [Scala 2.12 - kafka_2.12-2.7.0.tgz \(asc, sha512\)](#)
 - [Scala 2.13 - kafka_2.13-2.7.0.tgz \(asc, sha512\)](#)

Note: This downloads the Kafka setup file.

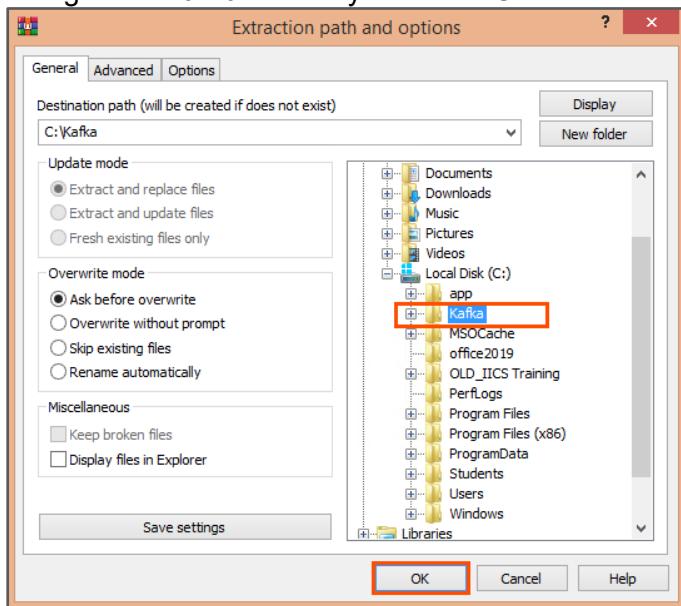
25. Open the downloaded file with **WinRAR**.



26. In the WinRAR window, right-click the Kafka_2.12-2.7.0 folder and select **Extract to a specified folder**.

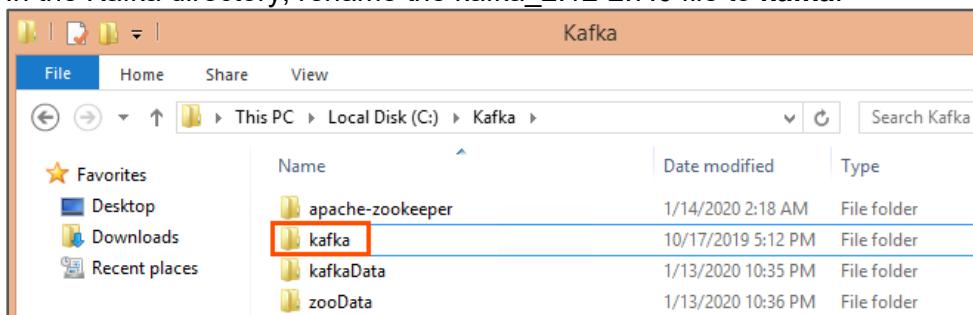


27. Navigate to **Kafka** directory and click **OK**.



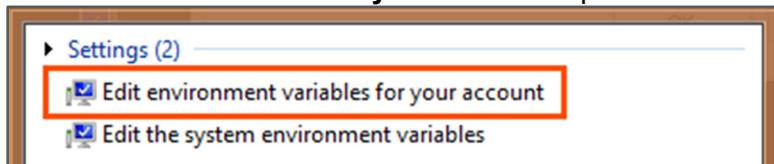
Note: Confirm that the folder is copied to the Kafka directory.

28. In the Kafka directory, rename the **kafka_2.12-2.7.0** file to **kafka**.



Set Environment Variable for Apache Zookeeper

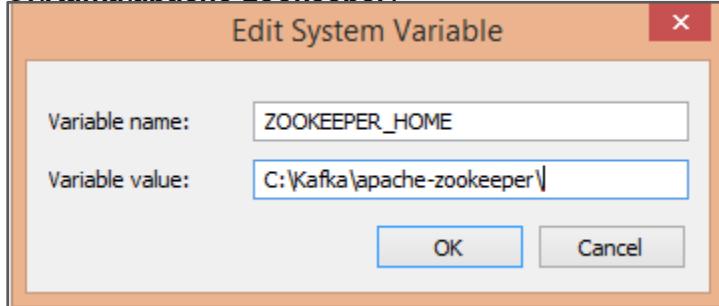
29. In the Windows search menu, search for **Environment Variables**, and select the **Edit environment variables for your account** option.



30. In the Environment Variables window, under **System Variables**, click **New**.

31. In the Variable Name field, enter **ZOOKEEPER_HOME**.

32. In the Variable Value field, enter the following Apache Zookeeper folder path:
C:\Kafka\apache-zookeeper

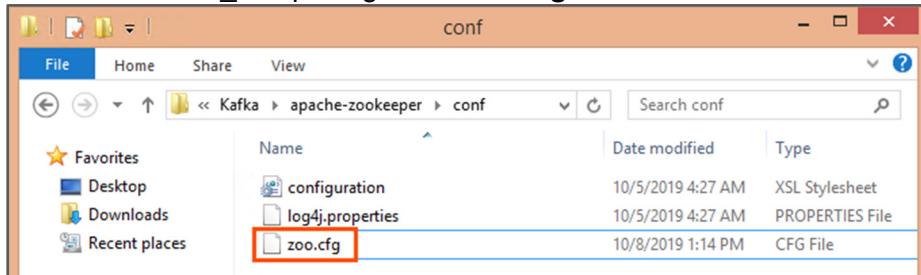


33. Click **OK**.
34. For the Environment Variable window, click **OK**.

Modify the configuration files

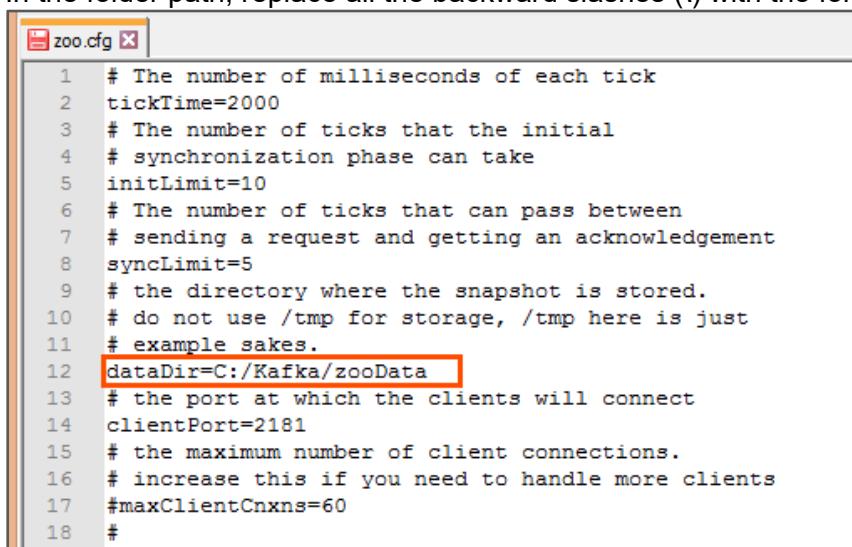
35. In the following location, locate the **zoo_sample.cfg** file.
C:\Kafka\apache-zookeeper\conf

36. Rename the **zoo_sample.cfg** file to **zoo.cfg**.



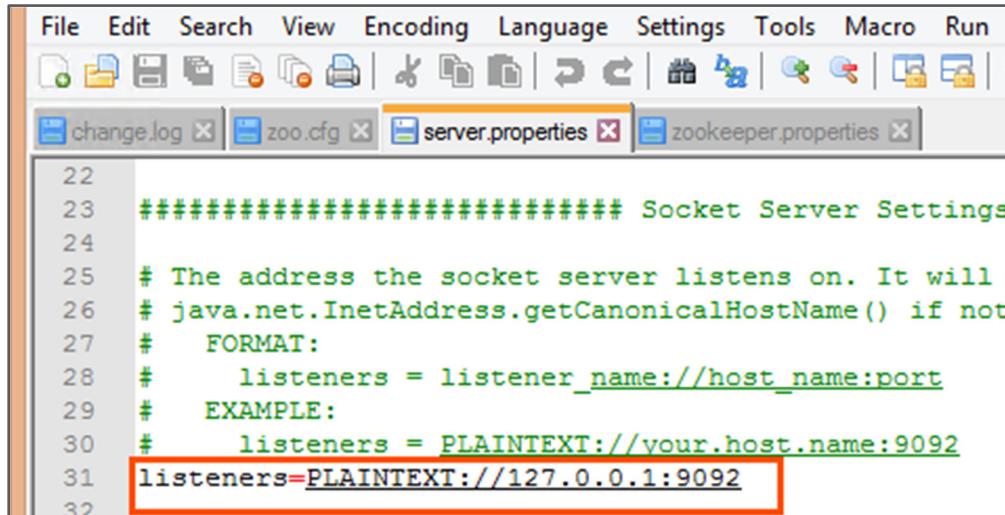
37. Open the **zoo.cfg** file.
38. In the **dataDir** field, update the path of the **zooData** folder present in the Kafka Directory:
C:\Kafka\zooData
Note: This is the same Kafka directory that you created in the C: drive.

39. In the folder path, replace all the backward slashes (\) with the forward slashes (/).



40. Save the file.

41. In the following location, open the **server.properties** file:
C:\Kafka\kafka\config
42. In the **#listeners** field, enter the value as **#listeners=PLAINTEXT://127.0.0.1:9092**, and remove **#**.



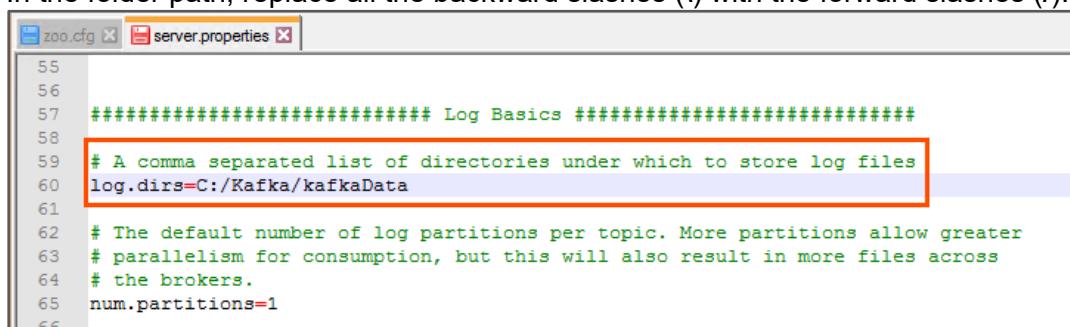
```

File Edit Search View Encoding Language Settings Tools Macro Run
change.log zoo.cfg server.properties zookeeper.properties

22
23 ##### Socket Server Settings
24
25 # The address the socket server listens on. It will
26 # java.net.InetAddress.getCanonicalHostName() if not
27 # FORMAT:
28 #   listeners = listener_name://host_name:port
29 # EXAMPLE:
30 #   listeners = PLAINTEXT://your.host.name:9092
31 listeners=PLAINTEXT://127.0.0.1:9092
32

```

43. Scroll down and in the **log.dirs** field, update the path of the kafkaData folder present in the Kafka Directory:
C:\Kafka\kafkaData
Note: This is the same Kafka directory that you created in the C: drive.
44. In the folder path, replace all the backward slashes (\) with the forward slashes (/).



```

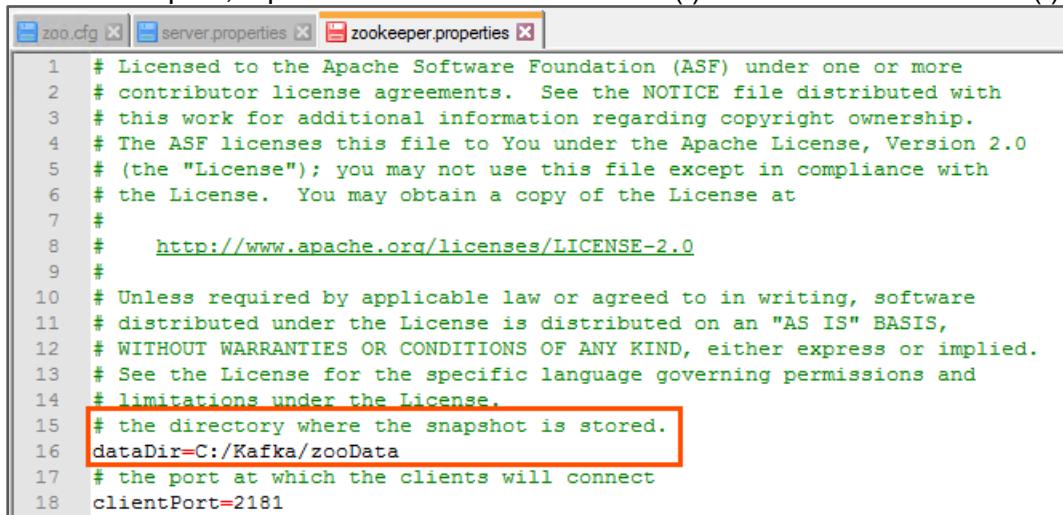
zoo.cfg server.properties

55
56
57 ##### Log Basics #####
58
59 # A comma separated list of directories under which to store log files
60 log.dirs=C:/Kafka/kafkaData
61
62 # The default number of log partitions per topic. More partitions allow greater
63 # parallelism for consumption, but this will also result in more files across
64 # the brokers.
65 num.partitions=1
66

```

45. Save the file.
46. In the following location, open the **zookeeper.properties** file:
C:\Kafka\kafka\config
47. In the **dataDir** field, update the path of the zooData folder present in the Kafka Directory:
C:\Kafka\zooData

48. In the folder path, replace all the backward slashes (\) with the forward slashes (/).



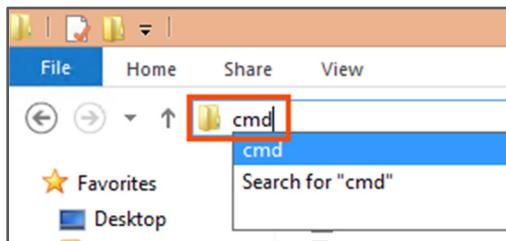
```

1  # Licensed to the Apache Software Foundation (ASF) under one or more
2  # contributor license agreements. See the NOTICE file distributed with
3  # this work for additional information regarding copyright ownership.
4  # The ASF licenses this file to You under the Apache License, Version 2.0
5  # (the "License"); you may not use this file except in compliance with
6  # the License. You may obtain a copy of the License at
7  #
8  #     http://www.apache.org/licenses/LICENSE-2.0
9  #
10 # Unless required by applicable law or agreed to in writing, software
11 # distributed under the License is distributed on an "AS IS" BASIS,
12 # WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
13 # See the License for the specific language governing permissions and
14 # limitations under the License.
15 # the directory where the snapshot is stored.
16 dataDir=C:/Kafka/zooData
17 # the port at which the clients will connect
18 clientPort=2181

```

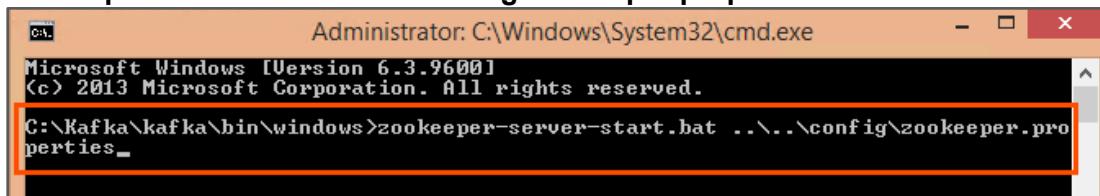
49. Save the file.

50. From the C:\Kafka\kafka\bin\windows folder, open a command prompt.



51. To execute the ZooKeeper server internally, enter the following command:

zookeeper-server-start.bat ..\..\config\zookeeper.properties



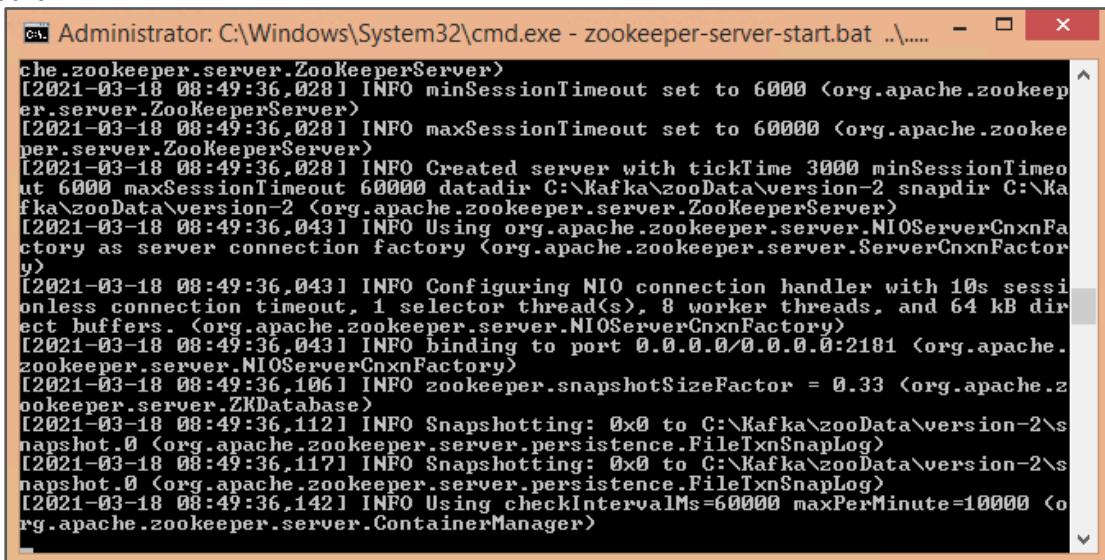
```

Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(C) 2013 Microsoft Corporation. All rights reserved.

C:\Kafka\kafka\bin\windows>zookeeper-server-start.bat ..\..\config\zookeeper.properties_

```

Result:



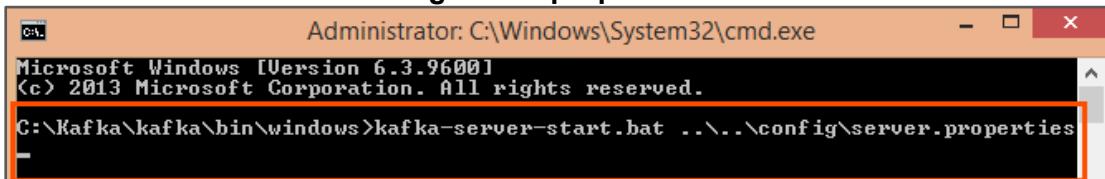
```

Administrator: C:\Windows\System32\cmd.exe - zookeeper-server-start.bat ..\..\config\server.properties
[2021-03-18 08:49:36,028] INFO minSessionTimeout set to 6000 <org.apache.zookeeper.server.ZooKeeperServer>
[2021-03-18 08:49:36,028] INFO maxSessionTimeout set to 60000 <org.apache.zookeeper.server.ZooKeeperServer>
[2021-03-18 08:49:36,028] INFO Created server with tickTime 3000 minSessionTimeout 6000 maxSessionTimeout 60000 datadir C:\Kafka\zooData\version-2 snapdir C:\Kafka\zooData\version-2 <org.apache.zookeeper.server.ZooKeeperServer>
[2021-03-18 08:49:36,043] INFO Using org.apache.zookeeper.server.NIOServerCnxnFactory as server connection factory <org.apache.zookeeper.server.ServerCnxnFactory>
[2021-03-18 08:49:36,043] INFO Configuring NIO connection handler with 10s sessionless connection timeout, 1 selector thread(s), 8 worker threads, and 64 kB direct buffers. <org.apache.zookeeper.server.NIOServerCnxnFactory>
[2021-03-18 08:49:36,043] INFO binding to port 0.0.0.0/0.0.0.0:2181 <org.apache.zookeeper.server.NIOServerCnxnFactory>
[2021-03-18 08:49:36,106] INFO zookeeper.snapshotSizeFactor = 0.33 <org.apache.zookeeper.server.ZKDatabase>
[2021-03-18 08:49:36,112] INFO Snapshotting: 0x0 to C:\Kafka\zooData\version-2\snapshot.0 <org.apache.zookeeper.server.persistence.FileTxnSnapLog>
[2021-03-18 08:49:36,117] INFO Snapshotting: 0x0 to C:\Kafka\zooData\version-2\snapshot.0 <org.apache.zookeeper.server.persistence.FileTxnSnapLog>
[2021-03-18 08:49:36,142] INFO Using checkIntervalMs=60000 maxPerMinute=10000 <org.apache.zookeeper.server.ContainerManager>
  
```

Important: Do not close any of the command prompt to keep the server running.

52. In the same folder, open another command prompt, and enter the following command to start the kafka server:

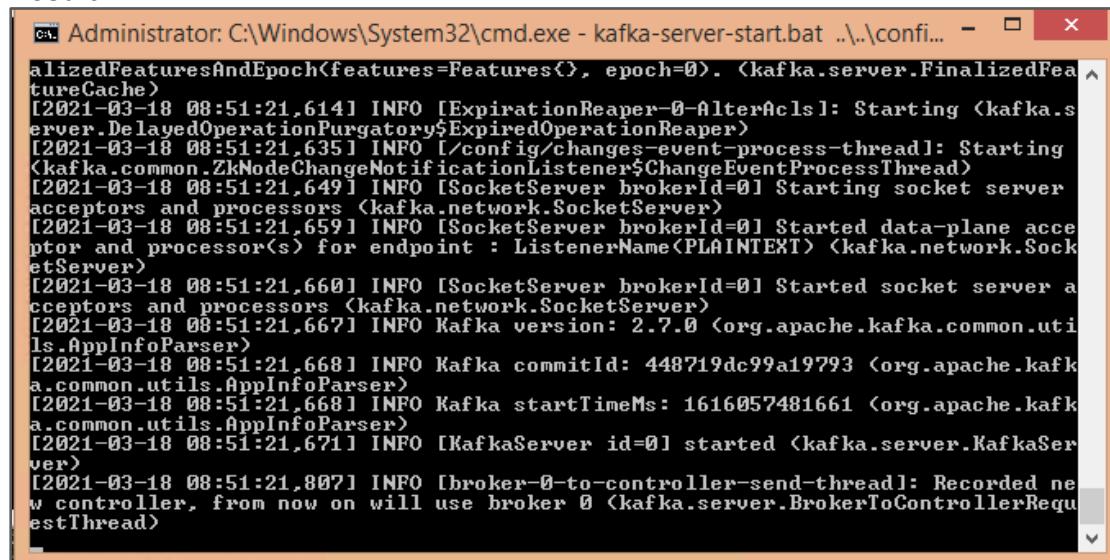
kafka-server-start.bat ..\..\config\server.properties



```

Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Kafka\kafka\bin\windows>kafka-server-start.bat ..\..\config\server.properties
  
```

Result:

```
Administrator: C:\Windows\System32\cmd.exe - kafka-server-start.bat ..\..\confi...
alizedFeaturesAndEpoch(features=Features{}, epoch=0). <kafka.server.FinalizedFeatureCache>
[2021-03-18 08:51:21.614] INFO [ExpirationReaper-0-AlterAcls]: Starting <kafka.server.DelayedOperationPurgatory$ExpiredOperationReaper>
[2021-03-18 08:51:21.635] INFO [/config/changes-event-process-thread]: Starting <kafka.common.ZkNodeChangeNotificationListener$ChangeEventProcessThread>
[2021-03-18 08:51:21.649] INFO [SocketServer brokerId=0] Starting socket server acceptors and processors <kafka.network.SocketServer>
[2021-03-18 08:51:21.659] INFO [SocketServer brokerId=0] Started data-plane acceptor and processor(s) for endpoint : ListenerName<PLAINTEXT> <kafka.network.SocketServer>
[2021-03-18 08:51:21.660] INFO [SocketServer brokerId=0] Started socket server acceptors and processors <kafka.network.SocketServer>
[2021-03-18 08:51:21.667] INFO Kafka version: 2.7.0 <org.apache.kafka.common.utils.AppInfoParser>
[2021-03-18 08:51:21.668] INFO Kafka commitId: 448719dc99a19793 <org.apache.kafka.common.utils.AppInfoParser>
[2021-03-18 08:51:21.668] INFO Kafka startTimeMs: 1616057481661 <org.apache.kafka.common.utils.AppInfoParser>
[2021-03-18 08:51:21.671] INFO [KafkaServer id=0] started <kafka.server.KafkaServer>
[2021-03-18 08:51:21.807] INFO [broker-0-to-controller-send-thread]: Recorded new controller, from now on will use broker 0 <kafka.server.BrokerToControllerRequestThread>
```

Important: Do not close any of the command prompt to keep the server running.

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, IICS platform provides Data Integration, Administrator, and Monitor services.

The Data Integration service synchronizes data between a heterogeneous source and 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 with 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 IICS interface and access the online help option. Ruby will also explore various IICS services.

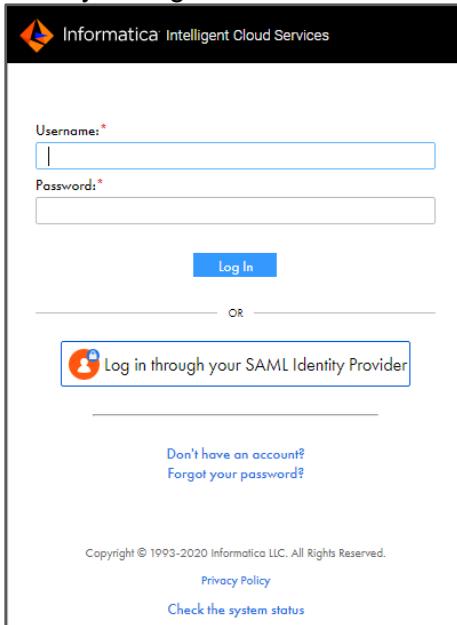
Duration:

10 minutes

Tasks

Access IICS Interface

1. Open a web browser and select **Informatica Cloud** from the bookmarks bar.
2. Enter your login credentials and click **Log In**.



Username*:

Password*:

Log In

OR

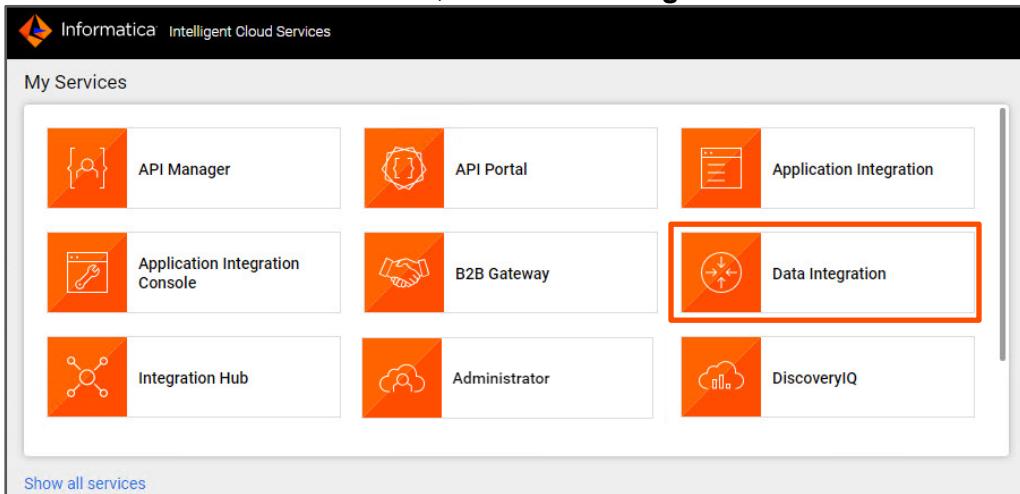
 Log in through your SAML Identity Provider

[Don't have an account?](#)
[Forgot your password?](#)

Copyright © 1993-2020 Informatica LLC. All Rights Reserved.
[Privacy Policy](#)
[Check the system status](#)

The **My Services** window appears.

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



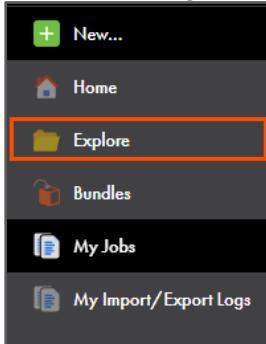
My Services

 API Manager	 API Portal	 Application Integration
 Application Integration Console	 B2B Gateway	 Data Integration
 Integration Hub	 Administrator	 DiscoveryIQ

Show all services

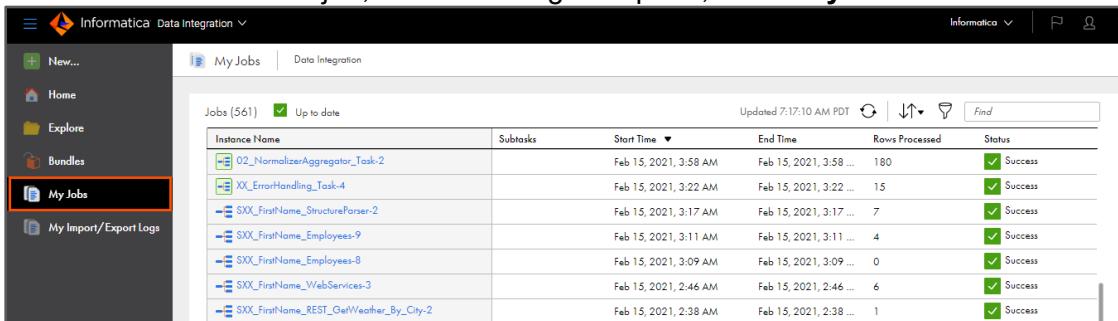
Note: The number of services that you can see in the list vary from Org to Org depending upon the licenses and configuration.

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



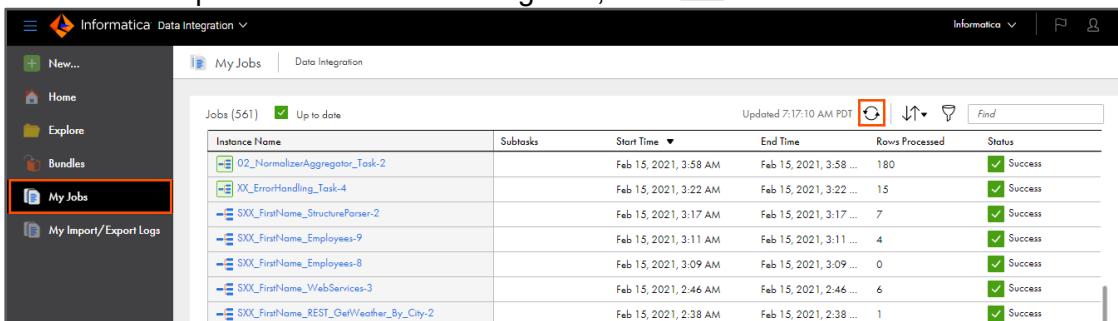
Note: The Explore page shows all the projects and assets built using IICS.

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



Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
O2_NormalizerAggregator_Task-2		Feb 15, 2021, 3:58 AM	Feb 15, 2021, 3:58 ...	180	✓ Success
XXX_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_Employee-9		Feb 15, 2021, 3:11 AM	Feb 15, 2021, 3:11 ...	4	✓ Success
SXX_FirstName_Employee-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

6. To check the updated status of a running task, click .



Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
O2_NormalizerAggregator_Task-2		Feb 15, 2021, 3:58 AM	Feb 15, 2021, 3:58 ...	180	✓ Success
XXX_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_Employee-9		Feb 15, 2021, 3:11 AM	Feb 15, 2021, 3:11 ...	4	✓ Success
SXX_FirstName_Employee-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

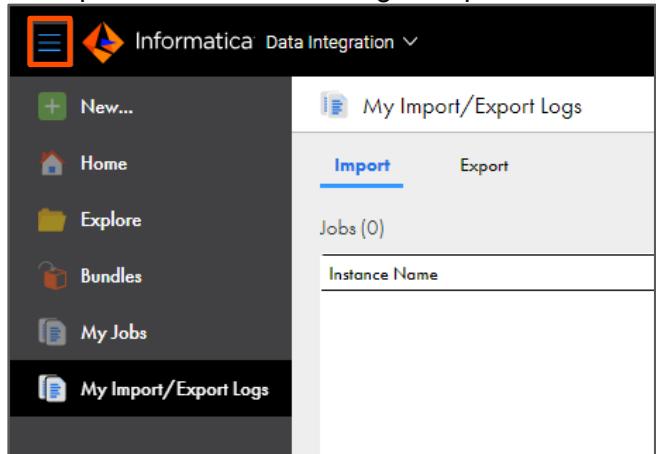
7. To list import/export tasks started by current user, from the navigation pane, select **My Import/Export Logs**.



Instance Name	Start Time	Status
(0)		

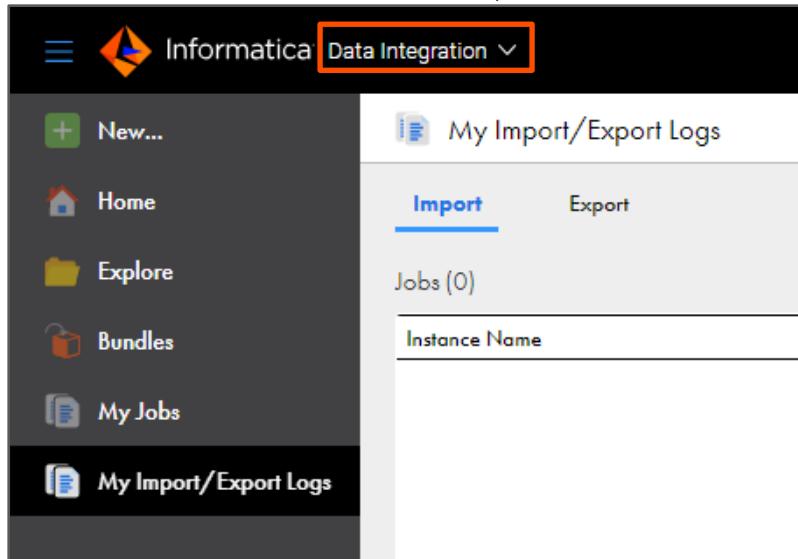
Note: The **Import** tab lists all the import jobs, while the **Export** tab shows the export job started by the user.

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



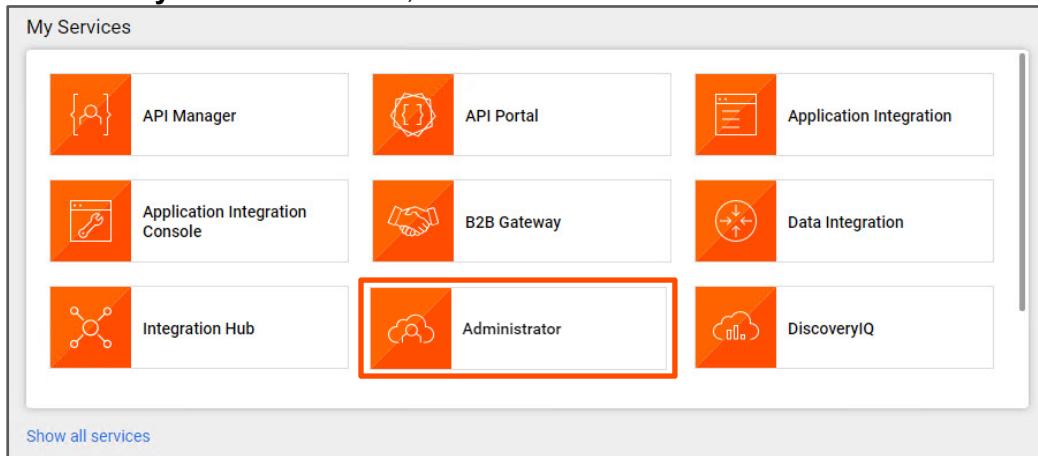
Switching Between Services

9. 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**.

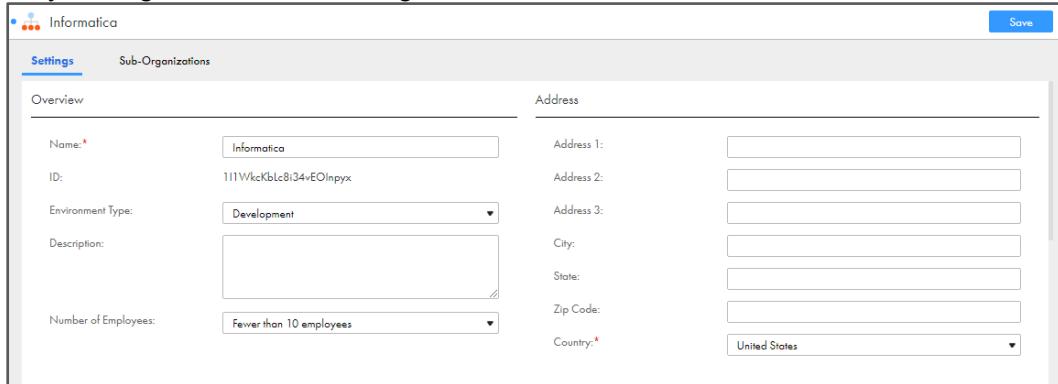


Note: You can select any available service at the time of login as well.

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



11. 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.

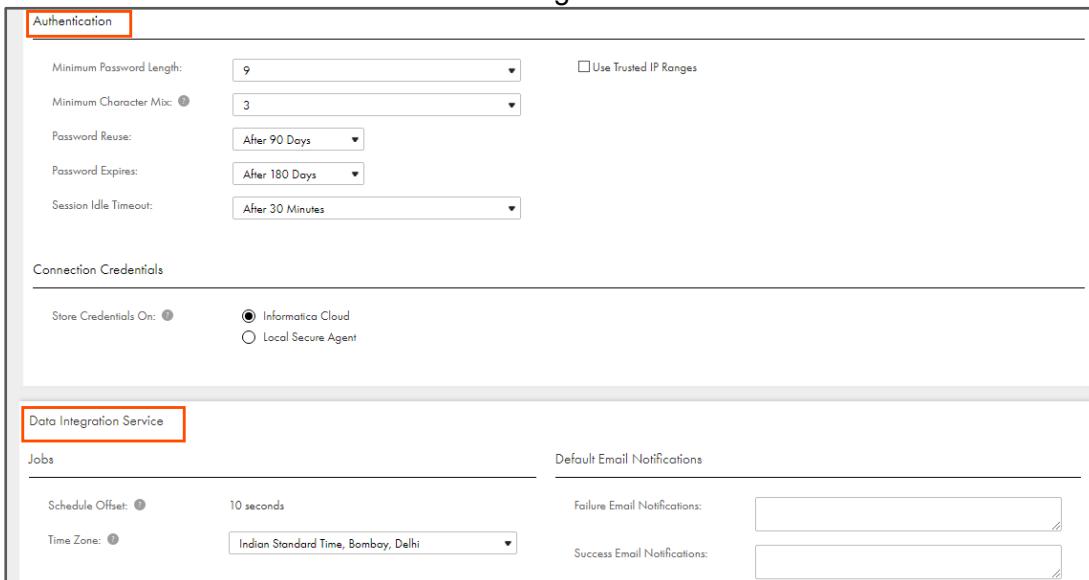


Overview		Address	
Name: *	Informatica	Address 1:	
ID:	111WkckLc8i34vEOInpx	Address 2:	
Environment Type:	Development	Address 3:	
Description:		City:	
Number of Employees:	Fewer than 10 employees	State:	
		Zip Code:	
		Country: *	United States

Note: For this lab exercise, keep the Organization settings as default.

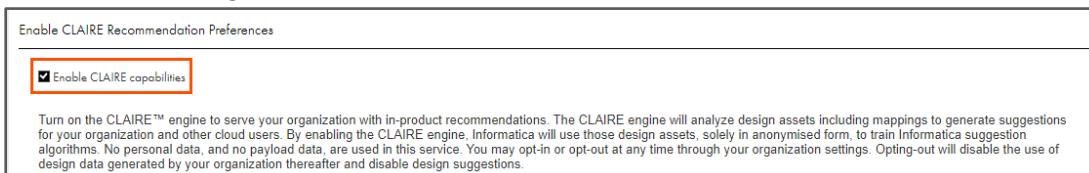
12. The **Authentication** section is used to update password policies for your Org and connection properties storage.

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



The screenshot shows the 'Data Integration Service' settings page. The 'Authentication' section is at the top, with fields for Minimum Password Length (9), Minimum Character Mix (3), Password Reuse (After 90 Days), Password Expires (After 180 Days), and Session Idle Timeout (After 30 Minutes). Below it is the 'Connection Credentials' section, which has a radio button for 'Informatica Cloud' selected. The 'Data Integration Service' section is highlighted with a red box. It contains a 'Jobs' tab and a 'Default Email Notifications' tab. Under 'Jobs', there are fields for Schedule Offset (10 seconds) and Time Zone (Indian Standard Time, Bombay, Delhi). Under 'Default Email Notifications', there are fields for Failure Email Notifications, Success Email Notifications, and Warning Email Notifications, each with a text input field.

14. Scroll down to the **Enable CLAIRE Recommendation Preferences** section and observe that the CLAIRE recommendations are enabled.

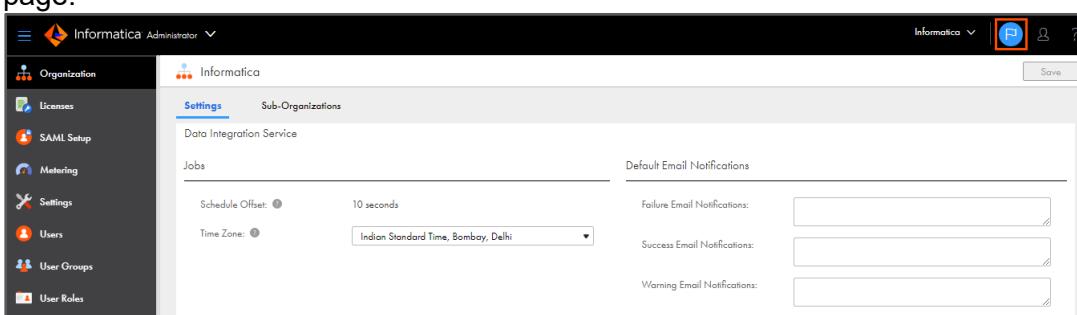


The screenshot shows the 'Enable CLAIRE Recommendation Preferences' section. It has a checkbox labeled 'Enable CLAIRE capabilities' which is checked. Below the checkbox is a descriptive text: 'Turn on the CLAIRE™ engine to serve your organization with in-product recommendations. The CLAIRE engine will 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.'

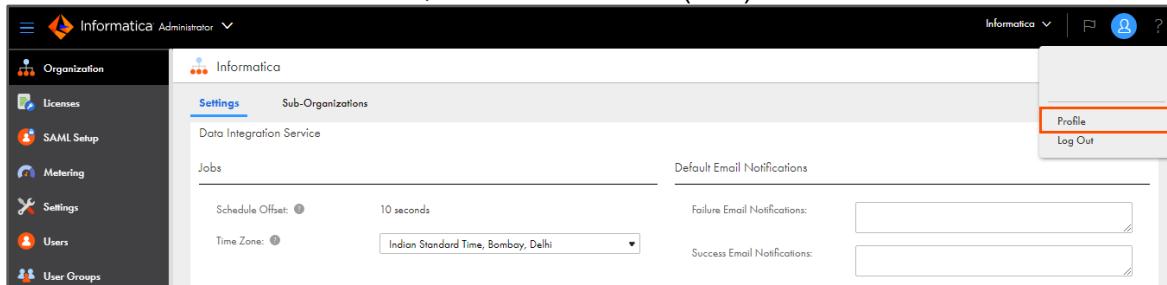
Note: By default, CLAIRE recommendation is enabled. For this course, do not make any changes in the Administrator service unless stated in the labs.

Accessing Notifications, User details, and Online Help

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



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

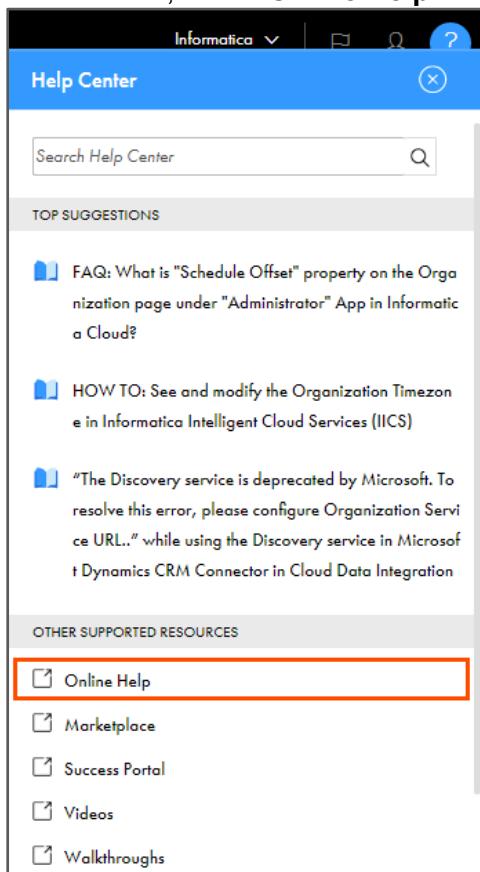


The screenshot shows the Informatica Administrator application interface. On the left, there's a sidebar with icons for Organization, Licenses, SAML Setup, Metering, Settings, Users, and User Groups. The main area has tabs for 'Settings' and 'Sub-Organizations'. Under 'Settings', there are sections for 'Data Integration Service' (with 'Jobs' and 'Default Email Notifications' sub-sections) and 'Failure Email Notifications' and 'Success Email Notifications' fields. In the top right corner, there's a user profile icon with a dropdown menu containing 'Profile' and 'Log Out'. The 'Profile' option is highlighted with a red box.

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 has been masked.

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

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



The screenshot shows the Help Center interface. At the top, there's a search bar labeled 'Search Help Center' with a magnifying glass icon. Below it is a 'TOP SUGGESTIONS' section with three items: 'FAQ: What is "Schedule Offset" property on the Organization page under "Administrator" App in Informatica Cloud?', 'HOW TO: See and modify the Organization Timezone in Informatica Intelligent Cloud Services (IICS)', and 'The Discovery service is deprecated by Microsoft. To resolve this error, please configure Organization Service URL.' while using the Discovery service in Microsoft Dynamics CRM Connector in Cloud Data Integration. At the bottom, there's an 'OTHER SUPPORTED RESOURCES' section with five items: 'Online Help' (which is highlighted with a red box), 'Marketplace', 'Success Portal', 'Videos', and 'Walkthroughs'.

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

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

Organization properties - Google Chrome
network.informatica.com/onlinehelp/IICS/prod/admin/en/index.htm#page/cc-iics-orgadmin/Organization_properties.html

Informatica | Online Help

Organization Administration > Organizations > Organization properties

What's New
 > Administrator What's New

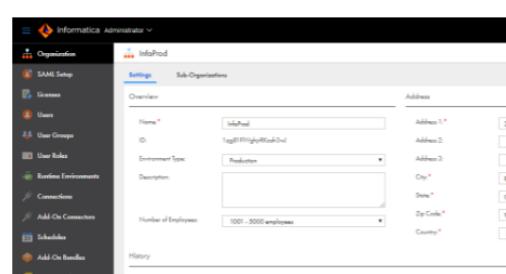
Administrator

- < Organization Administration
 - Introducing Administrator
- < Organizations
 - Setting up an organization
- < **Organization properties**
 - Organization general properties
 - Authentication properties
 - Connection properties storage
 - Data Integration service properties
 - CLAIRE recommendation preferences
 - Enterprise Data Catalog integration properties
- > Sub-organizations
- > Licenses
- > Metering
- > Source control and service upgrade settings

Organization properties

Configure properties for your organization or sub-organizations on the Organization page. To access the Organization page, in Administrator, select **Organization**.

The following image shows the Organization page:



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

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

Organization properties - Google Chrome
network.informatica.com/onlinehelp/IICS/prod/admin/en/index.htm#page/cc-iics-orgadmin/Organization_properties.html

Informatica | Online Help

Search Results Filter

Taskflow

workflow
 Use this resource to request the details of a linear **taskflow** or the details of all linear **taskflows** in the organization. You can also create, update, or ...
[REST API Reference](#)

activityLog
 ... Synchronization task. MTT. Mapping task. PCS. PowerCenter task. WORKFLOW. Linear **taskflow**. objectID String Task ID. objectName String Name of the task. runID Long ID ...
[REST API Reference](#)

Using the RunAJob utility
 ... utility command: cli.bat runAJobCli For each job, you must specify the task or **taskflow** to run. The syntax that you use to run a Data Integration **taskflow** is slightly ...
[REST API Reference](#)

Schedules
 ... the end time for the schedule to 12:00:10 p.m., and the last hourly task or **taskflow** starts at 12:00:10 p.m. To see the schedule offset for your organization, check ...
[Organization Administration](#)

job
 ... String Required if taskName or taskFederatedId is not included. Task or linear **taskflow** ID. Use taskId or taskName in the URI. You can include this task ID when the ...
[REST API Reference](#)

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.

21. Close the online help.

This concludes the lab.

Module 2: Runtime Environments and Connections

Lab 2-1: Installing IICS 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:

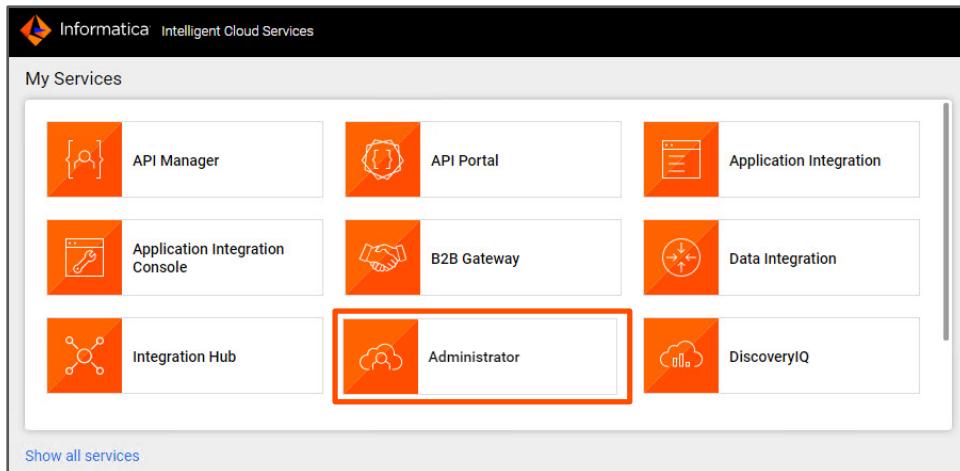
You can install the Secure Agent on any machine that has internet connectivity and can access Informatica Intelligent Cloud Services.

- 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.

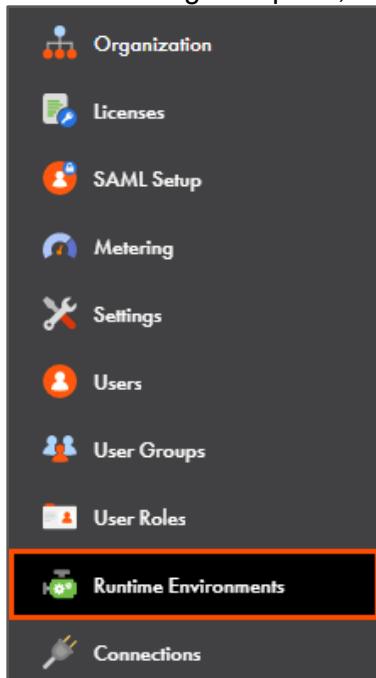
Tasks

Download the IICS Secure Agent

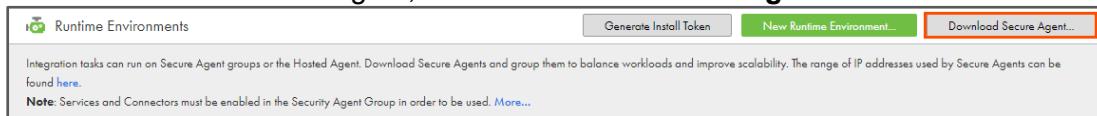
1. Enter your IICS login credentials and click **Log In**.
2. From the **My Services** window, select **Administrator**.



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

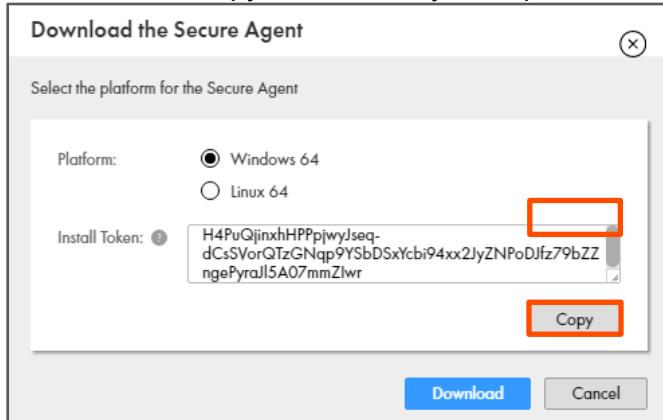


4. To download the Secure Agent, click **Download Secure Agent**.



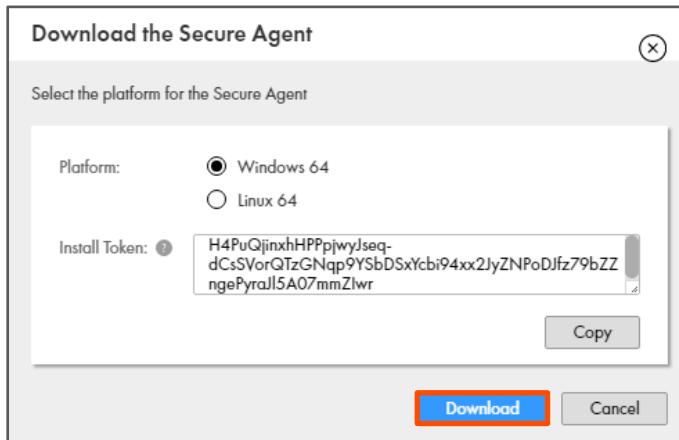
- From the Download the Secure Agent window, select **Windows 64**, and from the Install Token field, click **Copy**.

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.

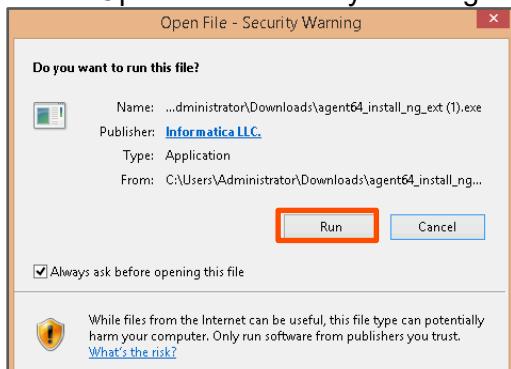
- Paste the copied token in a text file.
- Click **Download**.



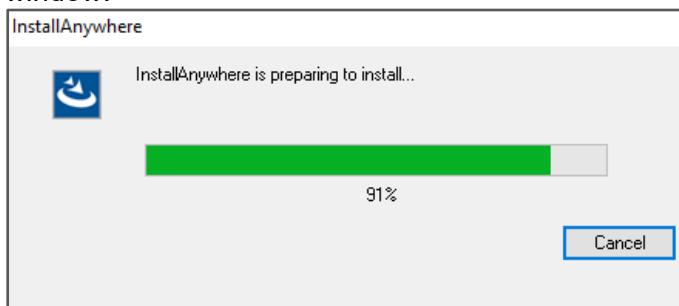
Install the Secure Agent

- Go to the download directory on your machine and locate the agent installation file.
- To install the Secure Agent, run the executable file **agent64_install_ng_ext.exe**.

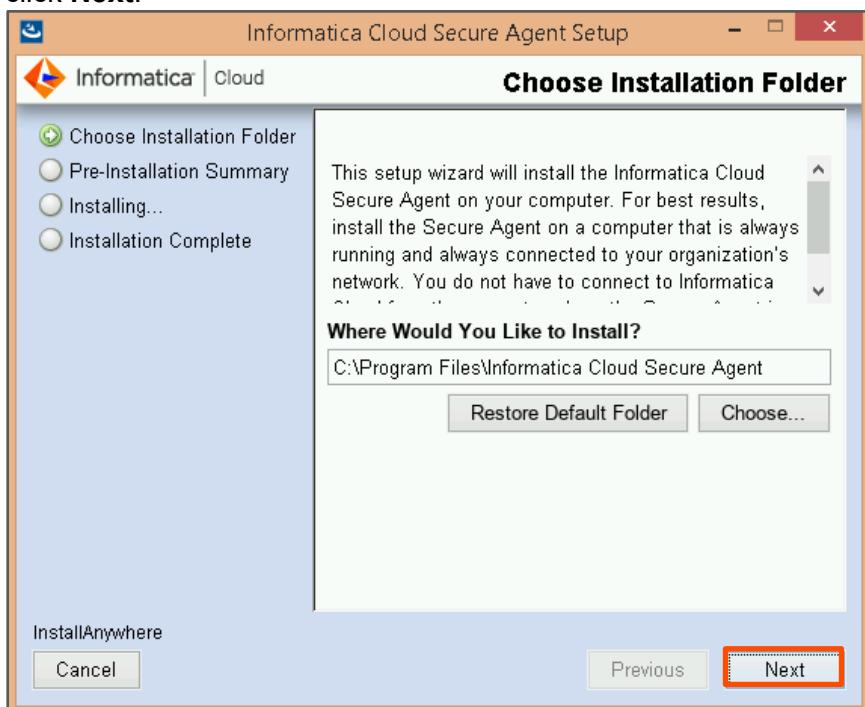
10. In the "Open File – Security Warning" window, click **Run**.



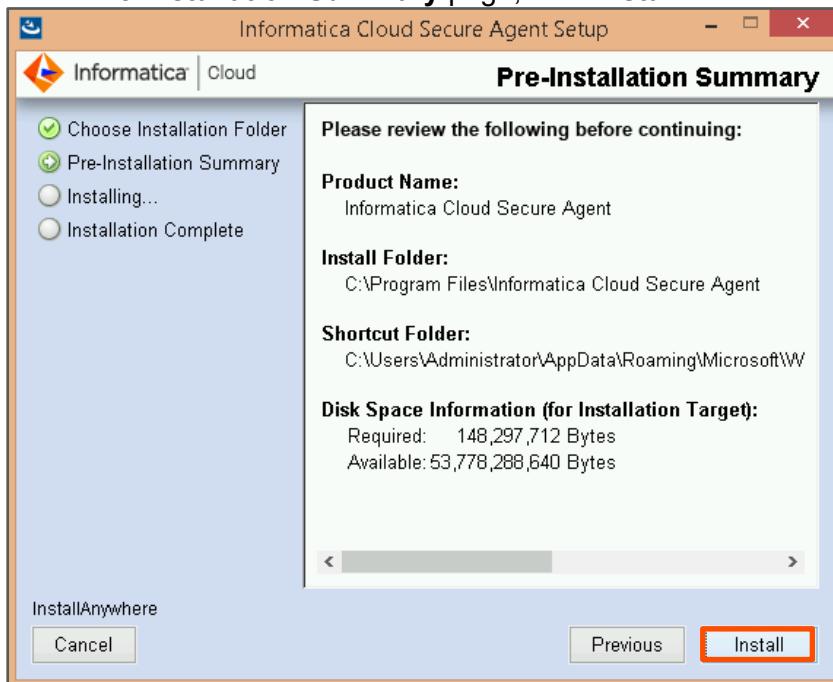
Note: When the Secure Agent initiates the installation, it displays the **InstallAnywhere** window.



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

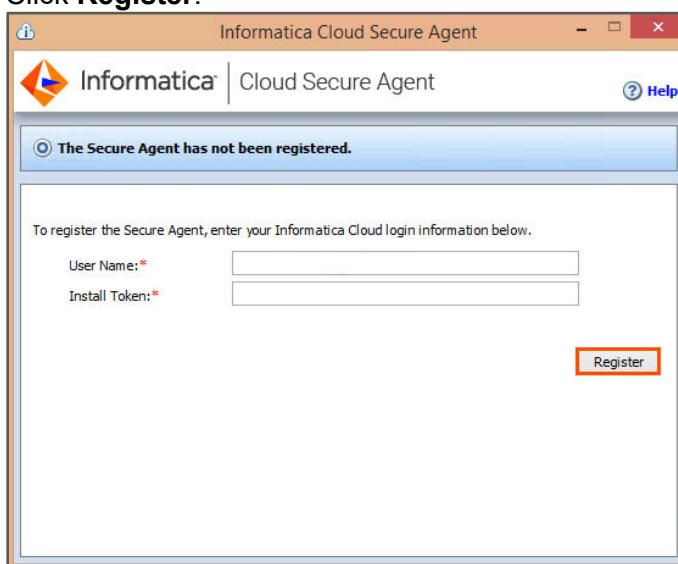


12. In the **Pre-Installation Summary** page, click **Install**.



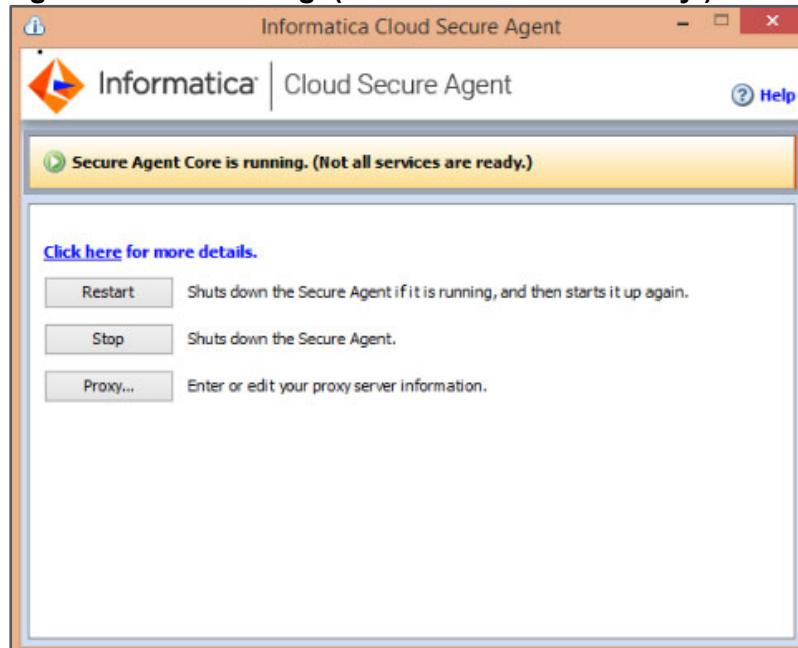
Note: After the installation process is complete, the Secure Agent registration page appears with the message **The Secure Agent has not been registered**.

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.

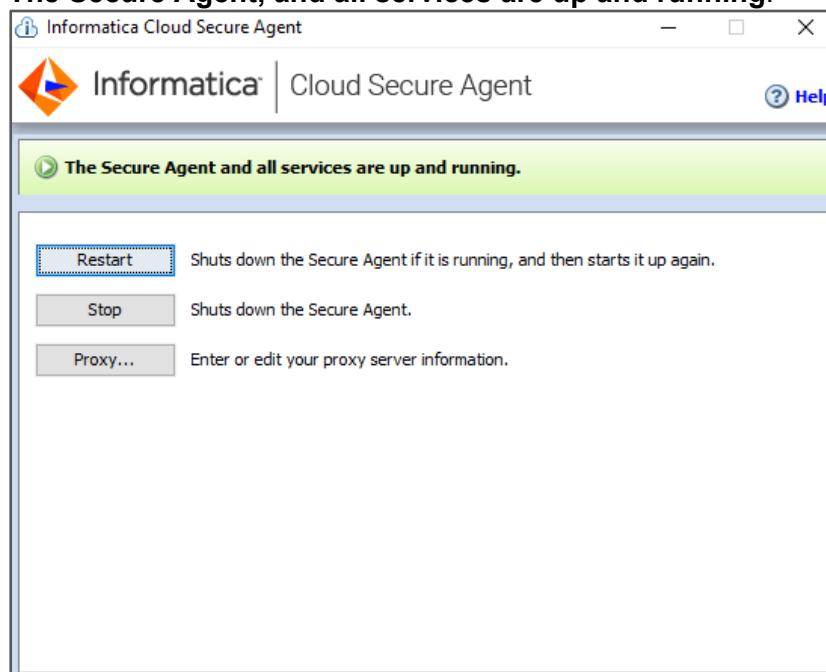
15. When the configuration of the Secure Agent services is in progress, it displays “**Secure Agent Core is running. (Not all services are ready.)**” message.



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

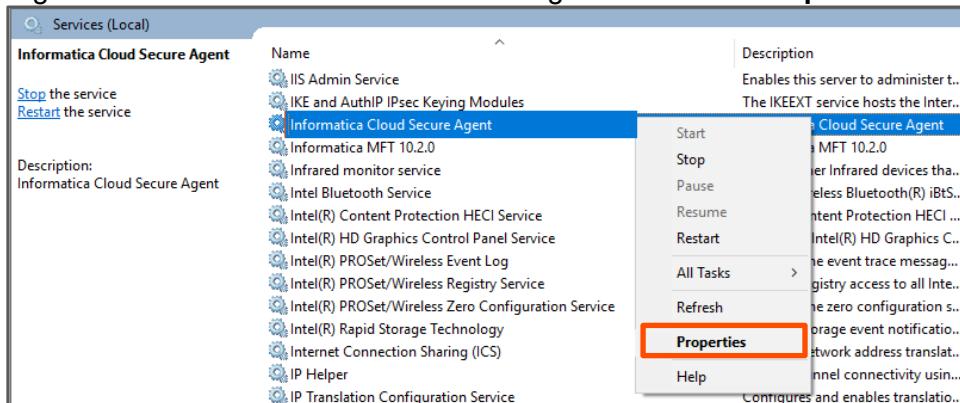
When you install Secure Agent on Windows platform, you need to assign Administrative rights to the Secure Agent service. This allows the Secure Agent to access files and directories present on the machine on which the Secure Agent is installed. This feature is useful when you configure connections or 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.

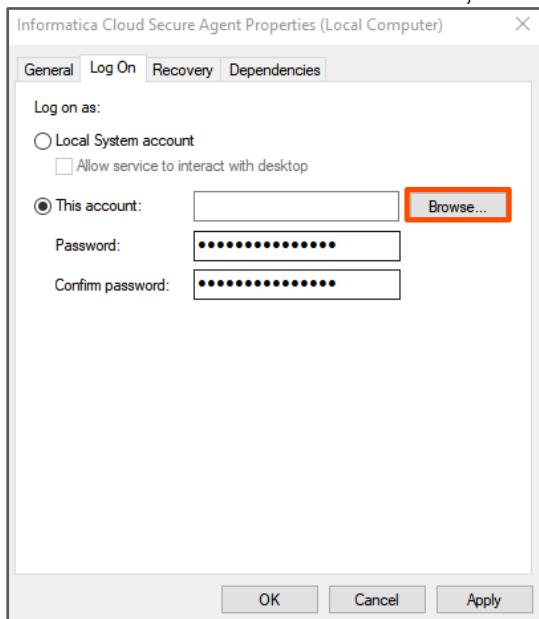
20. In the services page, from the list of services, select **Informatica Cloud Secure Agent**.

21. Right-click on Informatica Cloud Secure Agent and select **Properties**.

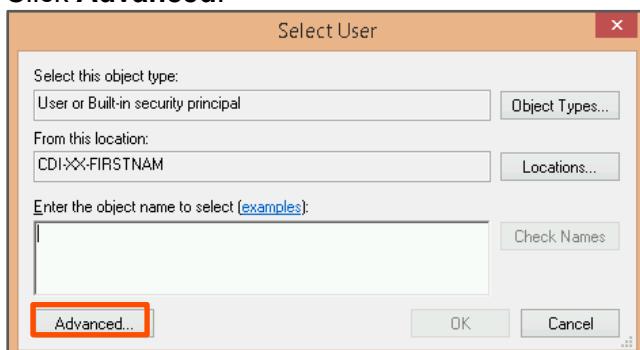


22. Go to **Log On** tab and select **This account**.

23. To select the Administrator account, click **Browse**.

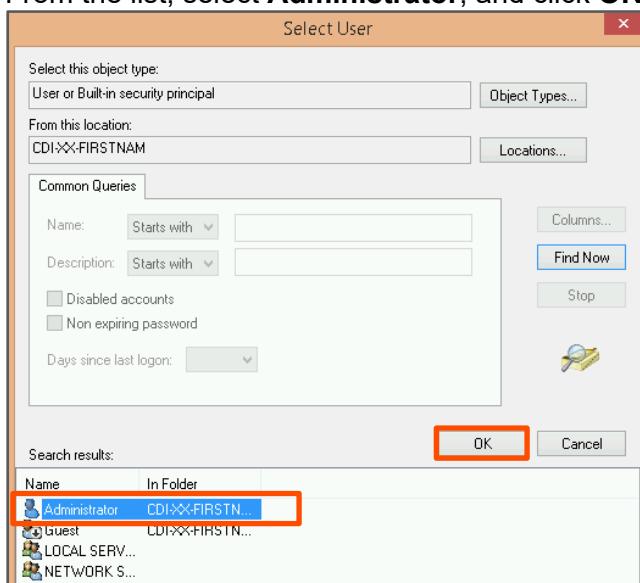


24. Click **Advanced**.

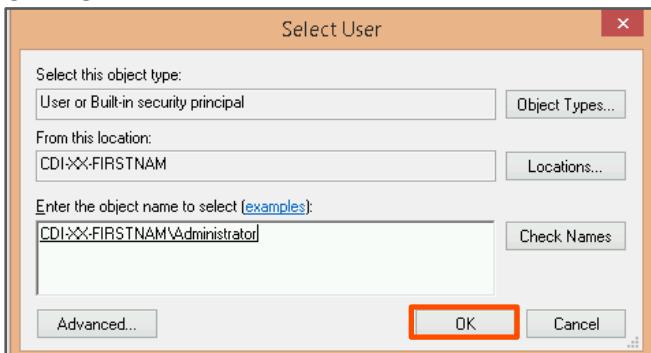


25. In the Select User window, select **Find Now**.

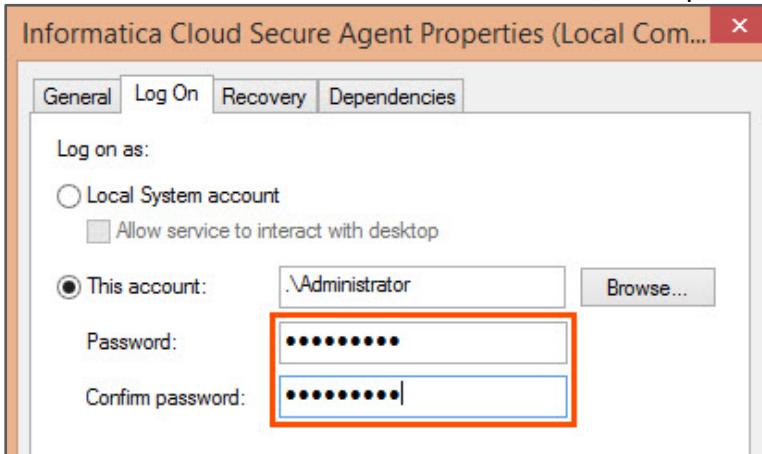
26. From the list, select **Administrator**, and click **OK**.



27. Click **OK**.

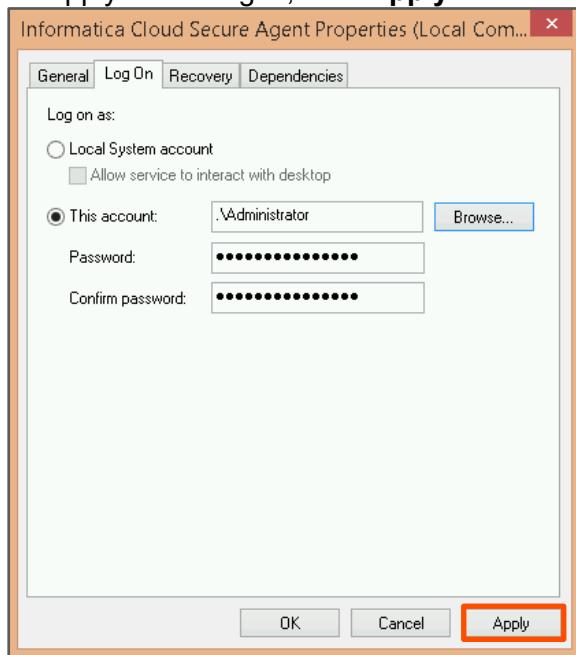


28. In the Password and Confirm Password fields, enter password as **Infa@1234**.

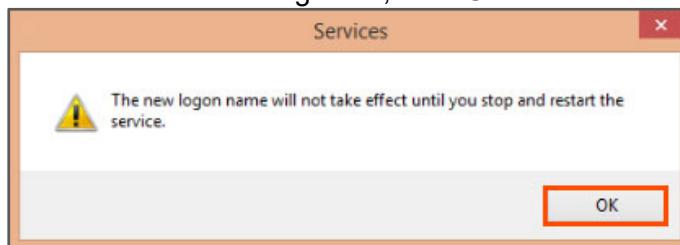


Note: This is the password of Windows user used to log in to the machine on which the Secure Agent is installed. For the lab environment provided by the instructor, enter password as **Infa@1234**. If you are installing the agent on your local machine, use your Windows user password in the Password and Confirm Password fields.

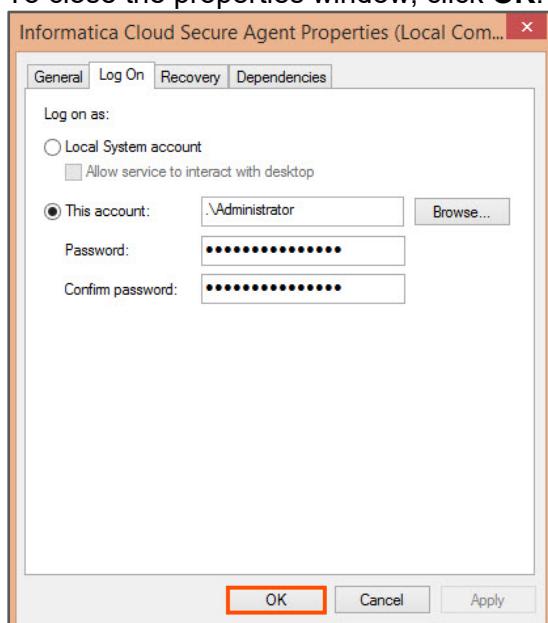
29. To apply the changes, click **Apply**.



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

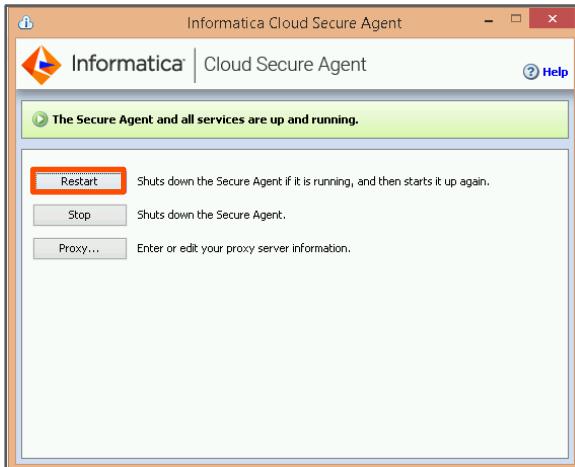


31. To close the properties window, click **OK**.



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.

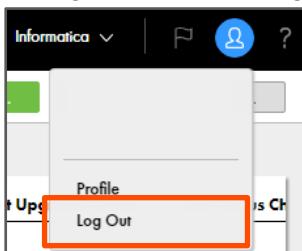
View the Secure Agent in IICS

35. Navigate back to the browser, and from the Administrator service navigation pane, select **Runtime Environments**.
36. Observe that the Secure Agent CDI-XX-FIRSTNAME status is **Up and Running**.

Actions	Environment Name	Status	Enabled Services
	Informatica Cloud Hosted Agent	✓ Up and Running	Data Integration Server
▼	CDI-XX-FIRSTNAME (1)		
▼	CDI-XX-FIRSTNAME	✓ Up and Running	Common Integration Components, Data Integration Server,

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



This concludes the lab.

Module 2: Runtime Environments and Connections

Lab 2-2: Creating a Salesforce Connection

Overview:

In IICS, a connection allows you to gain access to data which 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>

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

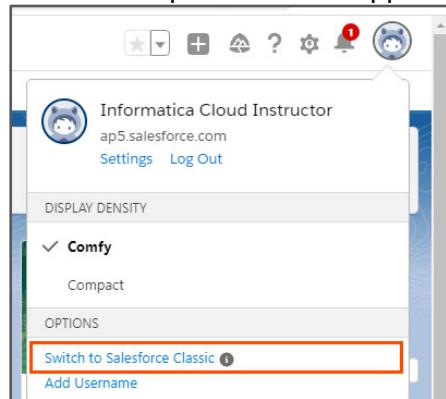
Reset your Security Token in Salesforce.com

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

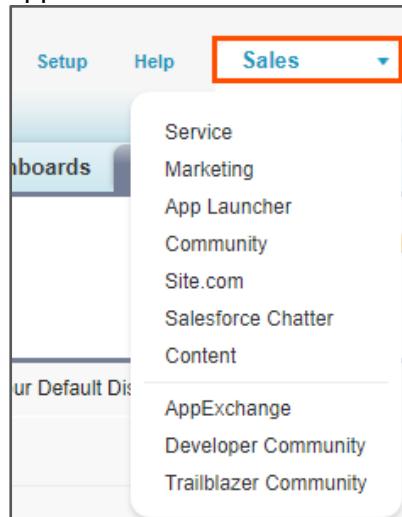
<https://login.salesforce.com/?locale=in>

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

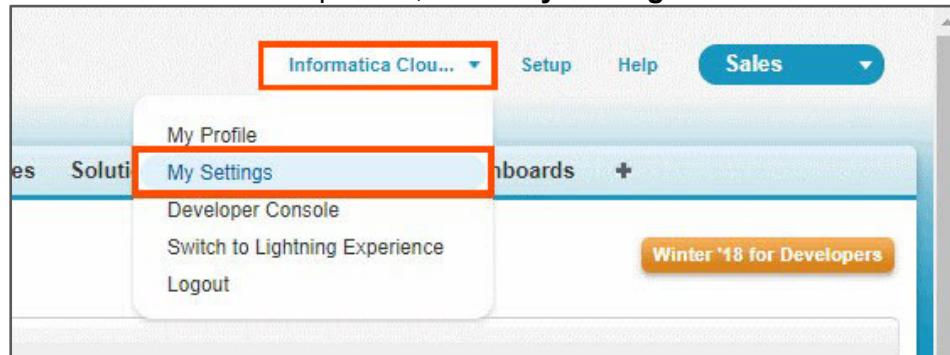
3. This lab is based on the Classic version of Salesforce. If you are using the Lightning version, switch to the Classic version. The option to switch versions is available under the User drop-down in the upper right corner of the user interface.



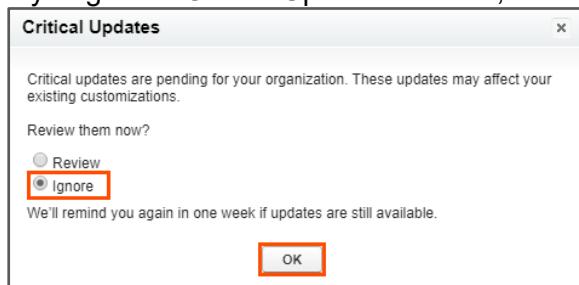
Note: For better visibility of tabs in Salesforce, you must select **Sales** from Salesforce app menu.



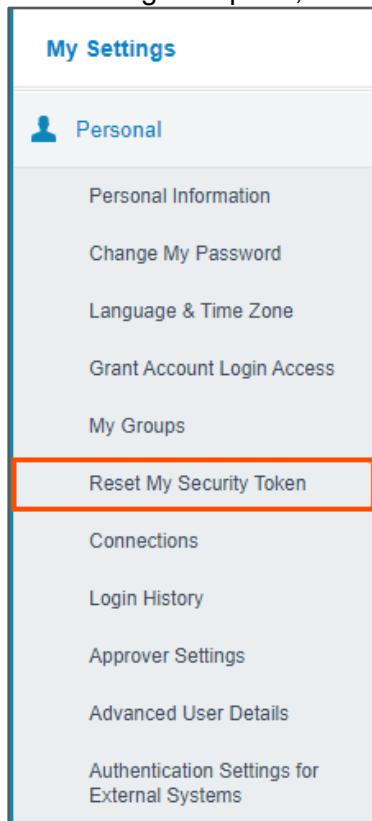
4. From the Username drop-down, select **My Settings**.



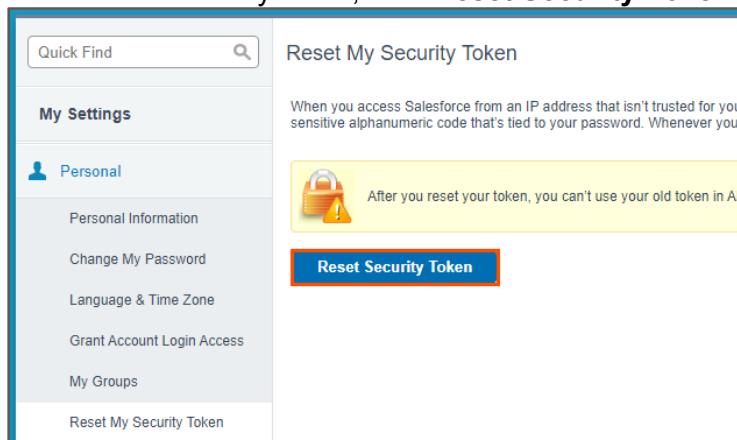
5. If you get the Critical Updates window, select **Ignore** and click **OK**.



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**.

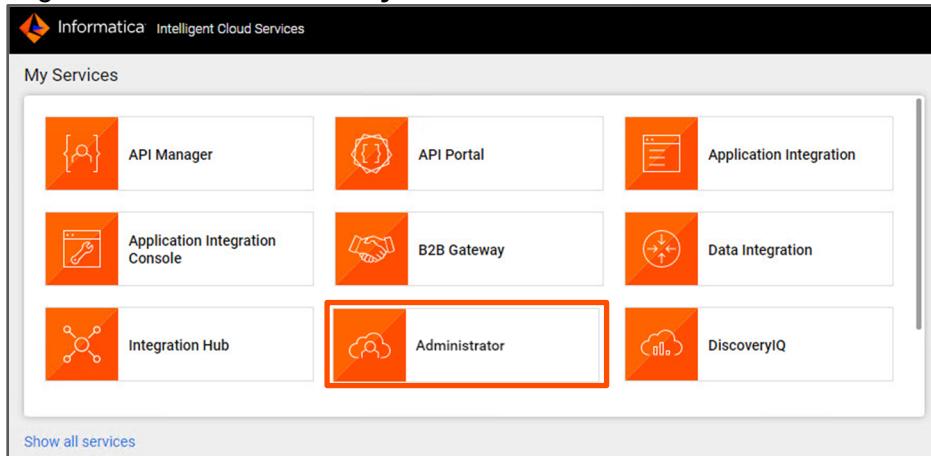


Copy Security Token

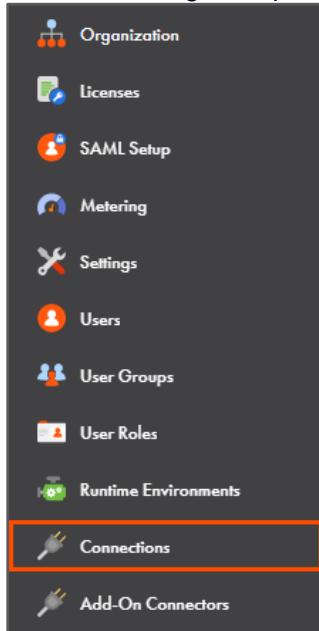
9. After you reset the security token, you will receive an email in your email id registered with Salesforce.
10. Open the email from **support@salesforce.com** from your mailbox.
11. Copy your security token and paste it in a text file.

Create a Salesforce Connection

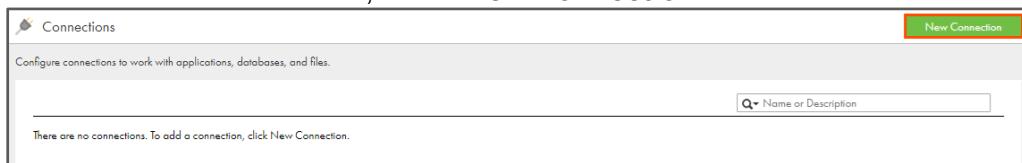
12. Login to IICS and from the **My Services** window, select **Administrator**.



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

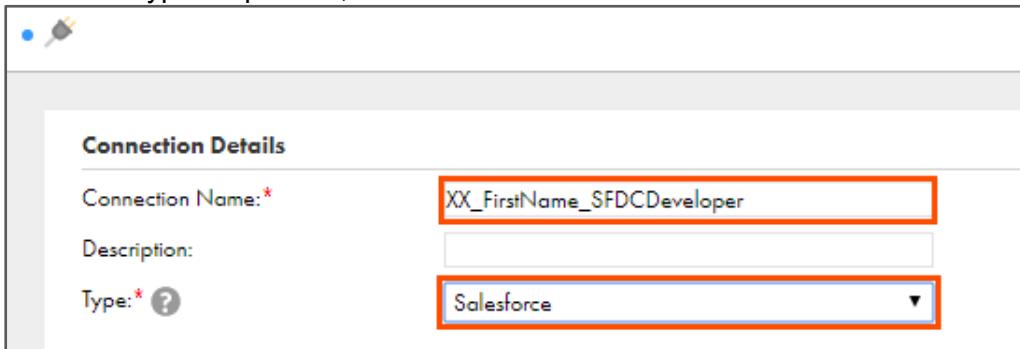


14. To create a new connection, select **New Connection**.



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

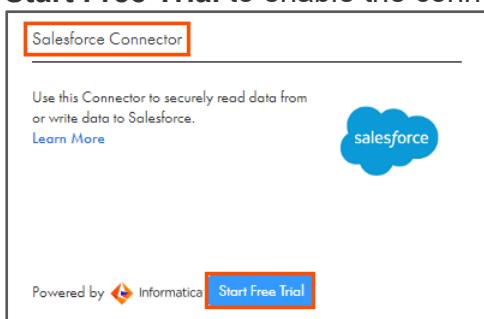
16. From the Type drop-down, select **Salesforce**.



The screenshot shows the 'Connection Details' section of a configuration interface. It includes fields for 'Connection Name' (containing 'XX_FirstName_SFDCDeveloper'), 'Description' (empty), and 'Type' (set to 'Salesforce'). The 'Type' field is highlighted with a red border.

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 your secure agent group.

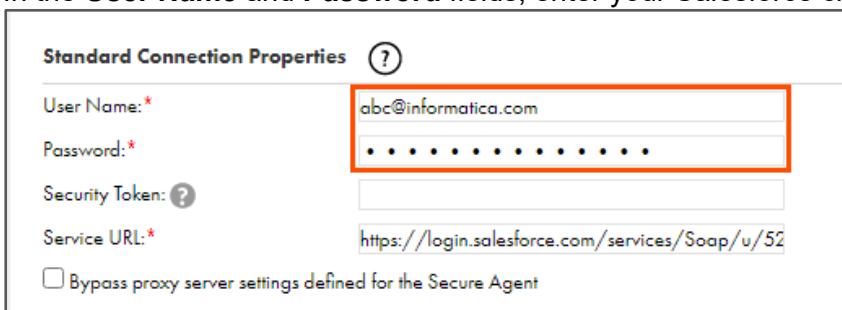
Note: This was created in the Installing IICS Secure Agent lab. The Runtime Environment name will be in format CDI-XX-FIRSTNAME.

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



The screenshot shows the 'Salesforce Connection Properties' page. It displays the 'Runtime Environment' dropdown set to 'CDI-XX-FIRSTNAME' and the 'Salesforce Connection Type' dropdown set to 'Standard'.

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



The screenshot shows the 'Standard Connection Properties' page. The 'User Name' field contains 'abc@informatica.com' and the 'Password' field contains a masked value ('*****'). Both fields are highlighted with a red border.

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:
abc@informatica.com

Password:

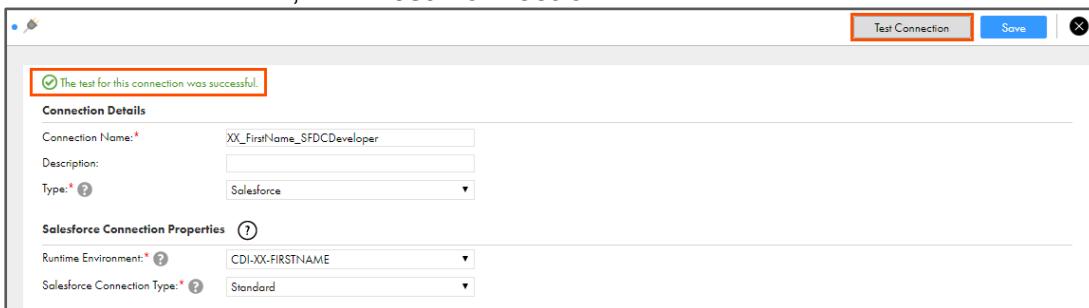
Security Token:

Service URL:
<https://login.salesforce.com/services/Soap/u/52>

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.

Connection Details

Connection Name:
XX_FirstName_SFDCDeveloper

Description:

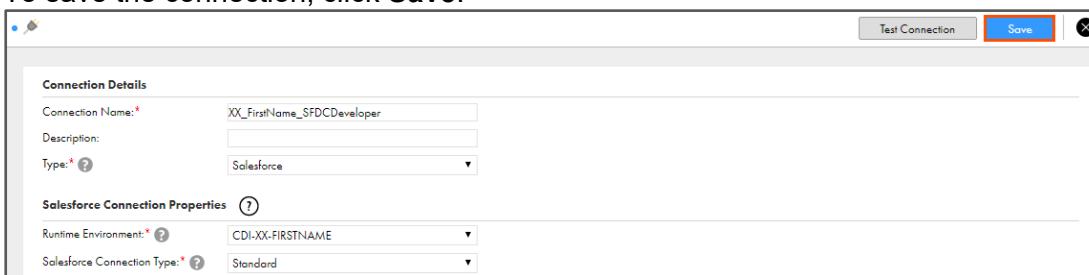
Type:
Salesforce

Salesforce Connection Properties

Runtime Environment:
CDI-XX-FIRSTNAME

Salesforce Connection Type:
Standard

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



Connection Details

Connection Name:
XX_FirstName_SFDCDeveloper

Description:

Type:
Salesforce

Salesforce Connection Properties

Runtime Environment:
CDI-XX-FIRSTNAME

Salesforce Connection Type:
Standard

This concludes the lab.

Module 2: Runtime Environments and Connections

Lab 2-3: Creating a Flat File Connection

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 a flat file connection

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.

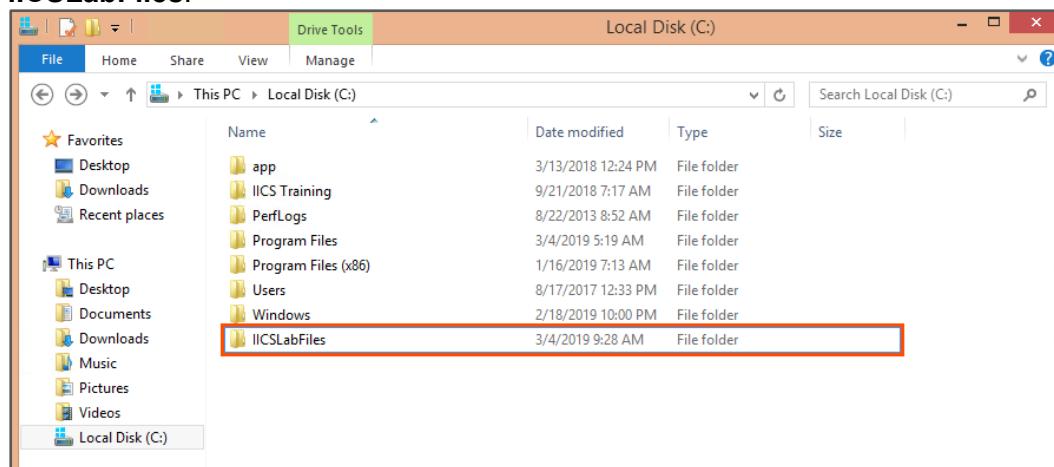
Duration:

5 minutes

Tasks

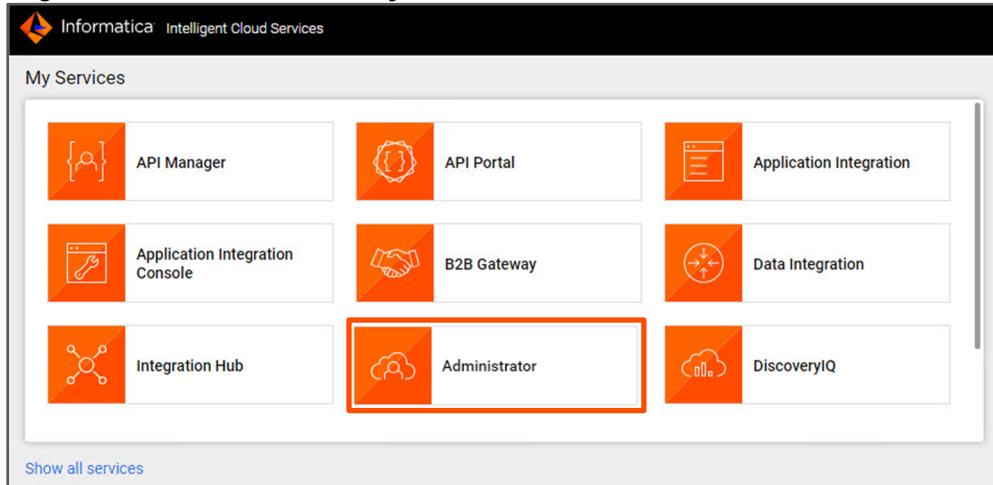
Create a Flat File Directory on your Local Computer

1. In the C drive of your secure agent machine, create a new directory named **IICSLabFiles**.



Create a Flat File Connection in IICS

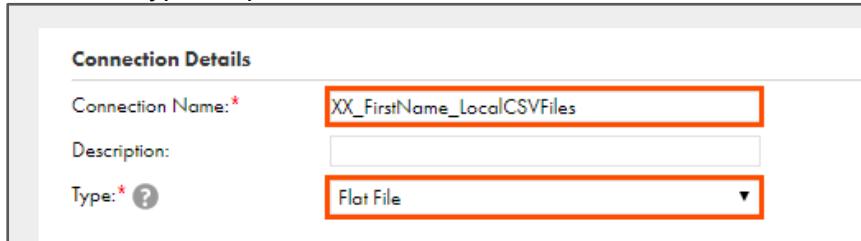
2. Log in to IICS and from the **My Services** window, select **Administrator**.



3. From the navigation pane, select **Connections**.
4. To create a new connection, select **New Connection**.



5. Enter the Connection Name as **XX_FirstName_LocalCSVFiles**.
6. From the Type drop-down, select **Flat File**.



Connection Details

Connection Name: [*]	XX_FirstName_LocalCSVFiles
Description:	(empty)
Type: [*]	Flat File

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



Flat File Connection Properties

Runtime Environment: [*]	CDI-XX-FIRSTNAME
Directory: [*]	C:\IICSLabFiles
Date Format: [*]	MM/dd/yyyy HH:mm:ss
Code Page: [*]	MS Windows Latin1

10. Test and save the connection.

This concludes the lab.

Module 2: Runtime Environments and Connections

Lab 2-4: Creating an Oracle Connection

Overview:

In IICS, you can connect to Oracle Database Cloud Service through an Oracle connection.

In this lab, you will create an Oracle Connection in IICS.

Objective:

- Create an oracle connection

Scenario:

The Alaska outlet of NH suppliers uses Oracle database to manage the sales data. So, to integrate data from oracle database, Ruby must create an Oracle Connection.

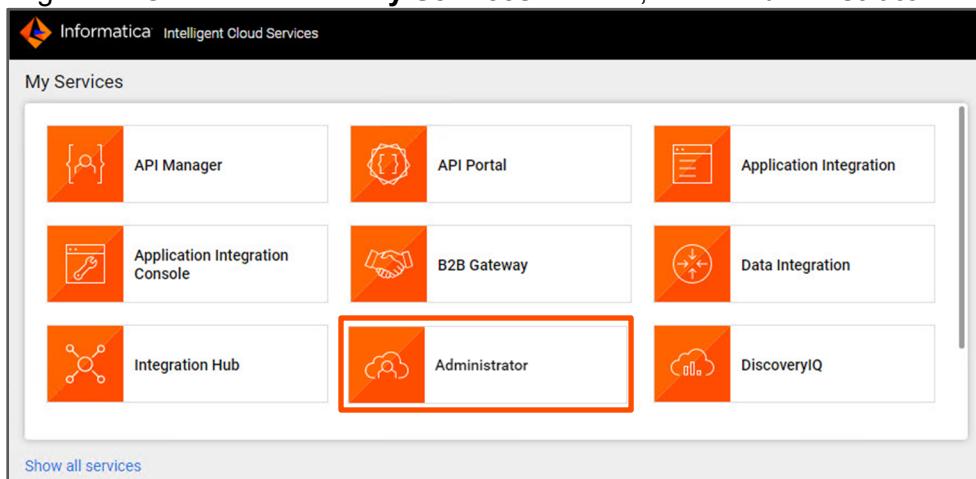
Duration:

5 minutes

Tasks:

Create Oracle Connection

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

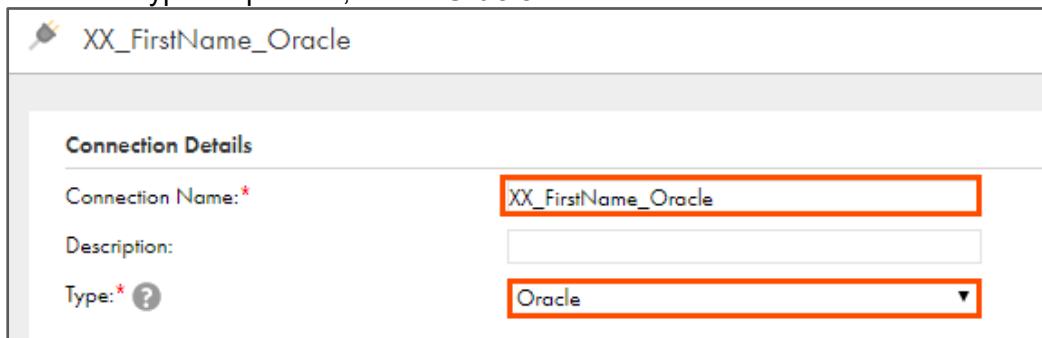


2. From the **Connections** tab create a new connection.



3. In the Name field, enter **XX_FirstName_Oracle**.

4. From the Type drop-down, select **Oracle**.



Connection Details

Connection Name: * XX_FirstName_Oracle

Description:

Type: * Oracle

5. From the **Runtime Environment** drop-down, select your secure agent group.
 6. In the Username and Password fields, enter **CDI**.
Note: The Password is case-sensitive.

7. In the Host field, enter **localhost**, and retain the Port as **1521**.



Oracle Connection Properties

Runtime Environment: * CDI-XX-FIRSTNAME

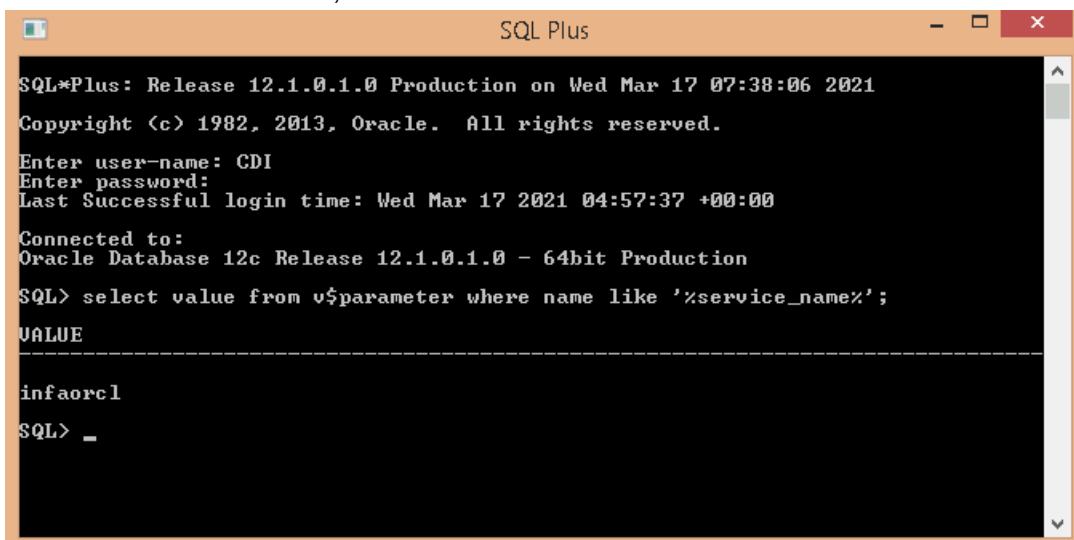
User Name: CDI

Password: *

Host: * localhost

Port: * 1521

8. In the Service Name field, enter **infaorcl**.



```
SQL*Plus: Release 12.1.0.1.0 Production on Wed Mar 17 07:38:06 2021
Copyright (c) 1982, 2013, Oracle. All rights reserved.

Enter user-name: CDI
Enter password:
Last Successful login time: Wed Mar 17 2021 04:57:37 +00:00

Connected to:
Oracle Database 12c Release 12.1.0.1.0 - 64bit Production

SQL> select value from v$parameter where name like '%service_name%';
VALUE

infaorcl
SQL> _
```

Note: The service name varies in different oracle instances. To verify the service name for your oracle instance, perform the following steps:

- From the windows Start menu, open **SQL Plus**.
- To login to SQL Plus, enter the username and password as **CDI**.

- c. Enter the following command in the SQL> field:
select value from v\$parameter where name like '%service_name%';
9. From the Code Page drop-down, select **MS Windows Latin 1**.

Host:*	localhost
Port:*	1521
Service Name:*	infaorcl
Schema:	
Code Page:*	MS Windows Latin1

10. Test and save the connection.

XX_FirstName_Oracle

Test Connection
Save

The test for this connection was successful.

Connection Details

Connection Name:*	XX_FirstName_Oracle
Description:	
Type:*	Oracle

This concludes the lab.

Module 3: Synchronization and Data Transfer Task

Lab 3-1: 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

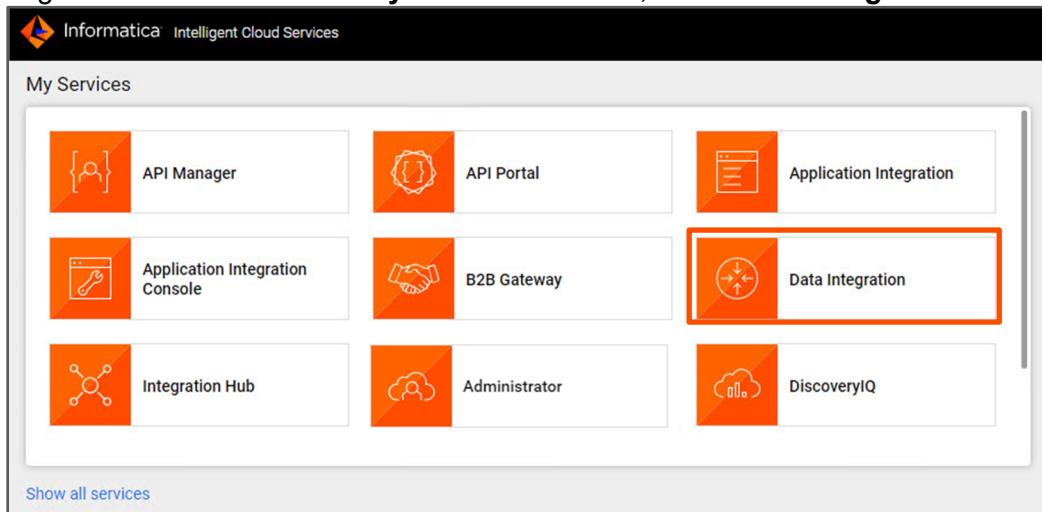
Copy Source Files

1. Copy the **Outlets.csv** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).
2. Open the Outlets.csv file and note the number of records in the file. Also, note some of the outlet names in the file.

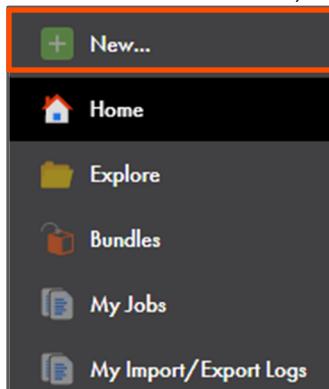
Note: You must close the **Outlets.csv** file before running the task to avoid job failure.

Create a Synchronization Task in IICS

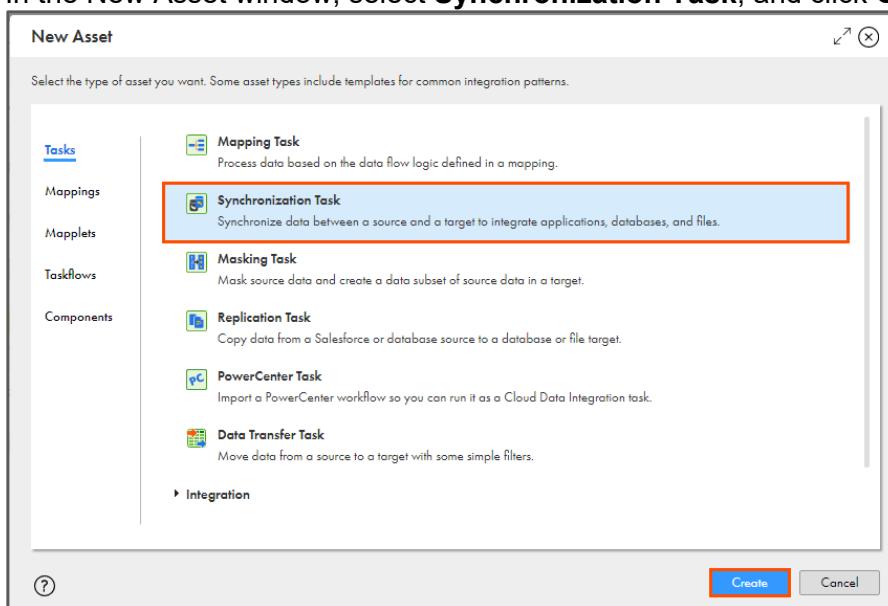
3. Log in to IICS and from the **My Services** window, select **Data Integration**.



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



5. In the New Asset window, select **Synchronization Task**, and click **Create**.



Specify Definition Information

6. In the Task Name field, enter **SXX_FirstName_OutletsLoad**.
7. Use the **Browse** option to save the asset in your working directory.
Note: You must save all your assets in your working directory to avoid naming conflict issues.
8. From the Task Operation drop-down, select **Insert**.

New Synchronization Task1

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

Task Details

Task Name*	SXX_FirstName_OutletsLoad	?
Location*	CDI ILT Development\XX_Firstname	Browse
Description:	?	
Task Operation*	Insert	?

9. Click **Next**.

Specify Source Information

10. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
11. From the Source Object drop-down, select **Outlets.csv**.

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

Source Details

Connection*	XX_FirstName_LocalCSVFiles (Flat File)	View... New... Sample... ?
Source Type*	<input checked="" type="radio"/> Single <input type="radio"/> Multiple <input type="radio"/> Saved Query	
Source Object*	Outlets.csv	Select... Formatting Options... ?
<input type="checkbox"/> Display source fields in alphabetical order		

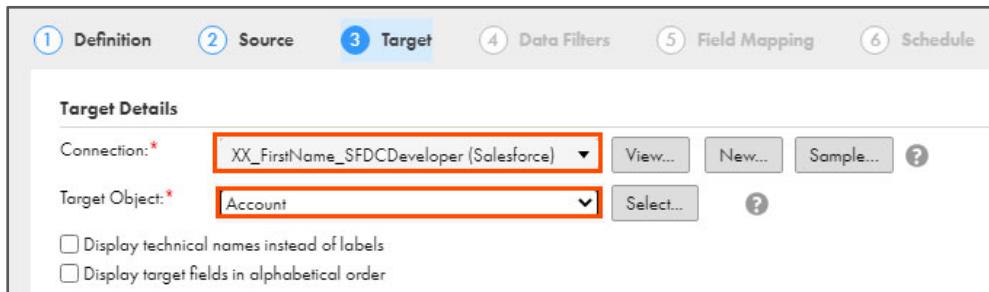
Note: The Data Preview section appears. It shows the first ten rows of the first five columns in the object and also displays the total number of columns in the object.

12. Click **Next**.

Specify Target Information

13. From the Connection drop-down, select **XX_FirstName_SFDCDeveloper**.

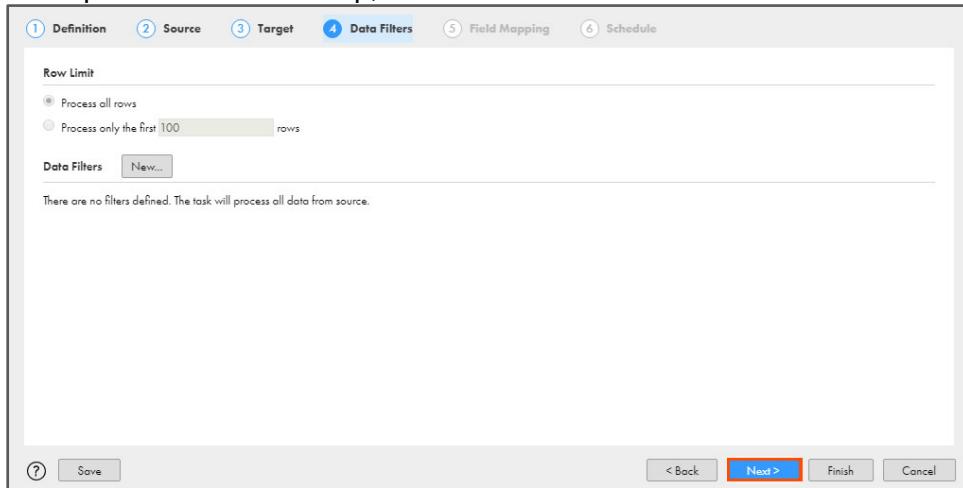
14. From the Target Object drop-down, select **Account**.



The screenshot shows the 'Target Details' section of the Informatica interface. At the top, there are tabs for Definition, Source, Target (which is selected), Data Filters, Field Mapping, and Schedule. Under 'Target Details', the 'Connection' dropdown is set to 'XX_FirstName_SFDCDeveloper (Salesforce)'. The 'Target Object' dropdown is set to 'Account' and is highlighted with a red box. Below these are two checkboxes: 'Display technical names instead of labels' and 'Display target fields in alphabetical order'. There are also 'View...', 'New...', 'Sample...', and a help (?) button.

15. Click **Next**.

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



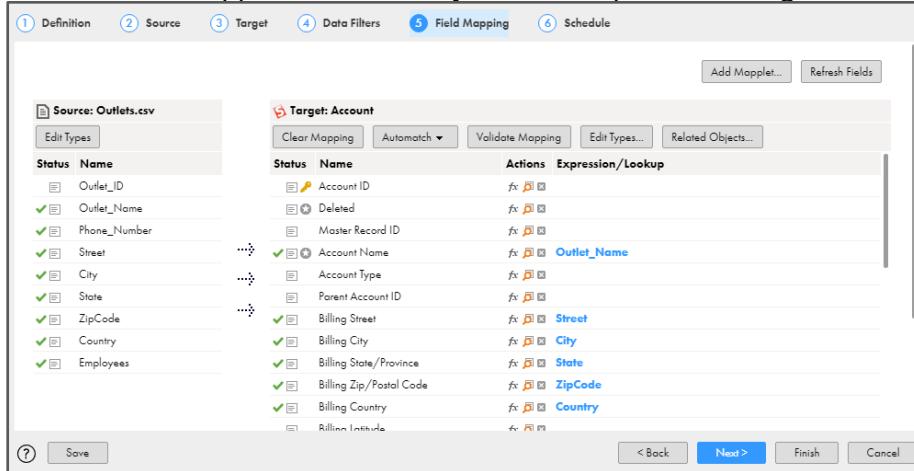
The screenshot shows the 'Data Filters' step. The 'Data Filters' tab is selected. In the 'Row Limit' section, there are two radio buttons: 'Process all rows' (selected) and 'Process only the first 100 rows'. Below this is a 'Data Filters' button. A message below the row limit says 'There are no filters defined. The task will process all data from source.' At the bottom are buttons for '?', 'Save', '< Back', 'Next >' (highlighted with a red box), 'Finish', and 'Cancel'.

Define Field Mappings

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

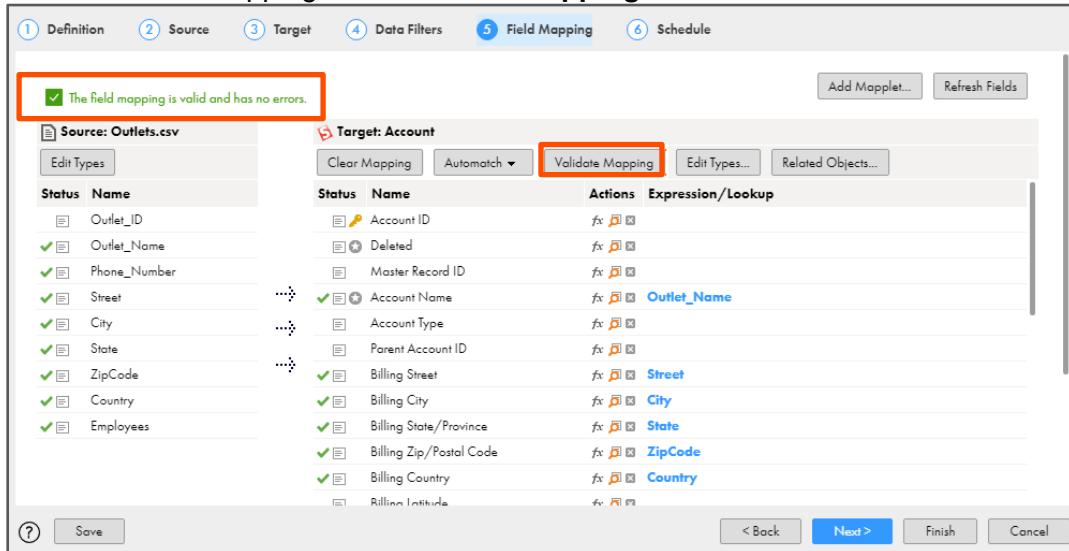
Source Field Name	Target Field Name
Outlet_Name	Account Name
Phone_Number	Account Phone
Street	Billing Street
City	Billing City
State	Billing State/Province
ZipCode	Billing Zip/Postal Code
Country	Billing Country
Employees	Employees

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.



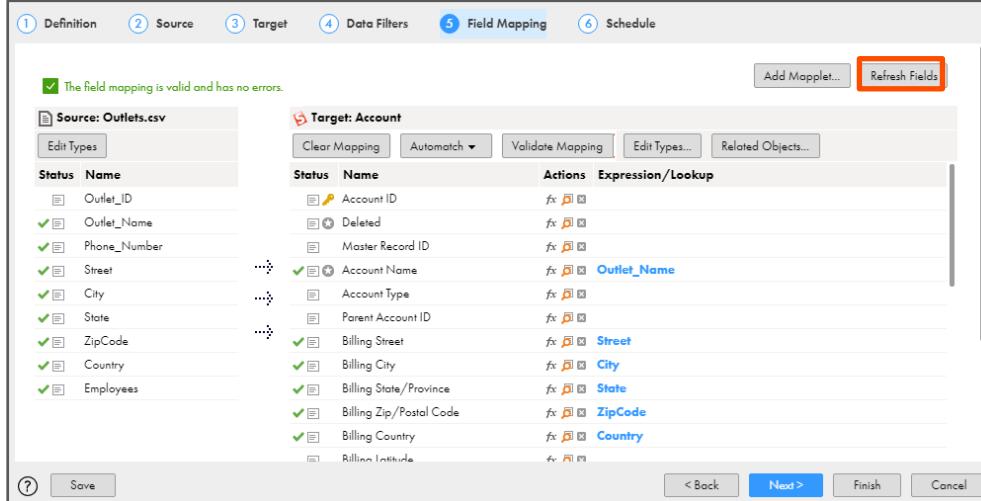
Source: Outlets.csv	Target: Account	
Status	Status	
Name	Name	
Outlet_ID	Account ID	
Outlet_Name	Deleted	
Phone_Number	Master Record ID	
Street	Account Name	fx
City	Account Type	fx
State	Parent Account ID	fx
ZipCode	Billing Street	fx
Country	Billing City	fx
Employees	Billing State/Province	fx
	Billing Zip/Postal Code	fx
	Billing Country	fx
	Rilling Latitude	fx

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



Source: Outlets.csv	Target: Account	
Status	Status	
Name	Name	
Outlet_ID	Account ID	
Outlet_Name	Deleted	
Phone_Number	Master Record ID	
Street	Account Name	fx
City	Account Type	fx
State	Parent Account ID	fx
ZipCode	Billing Street	fx
Country	Billing City	fx
Employees	Billing State/Province	fx
	Billing Zip/Postal Code	fx
	Billing Country	fx
	Rilling Latitude	fx

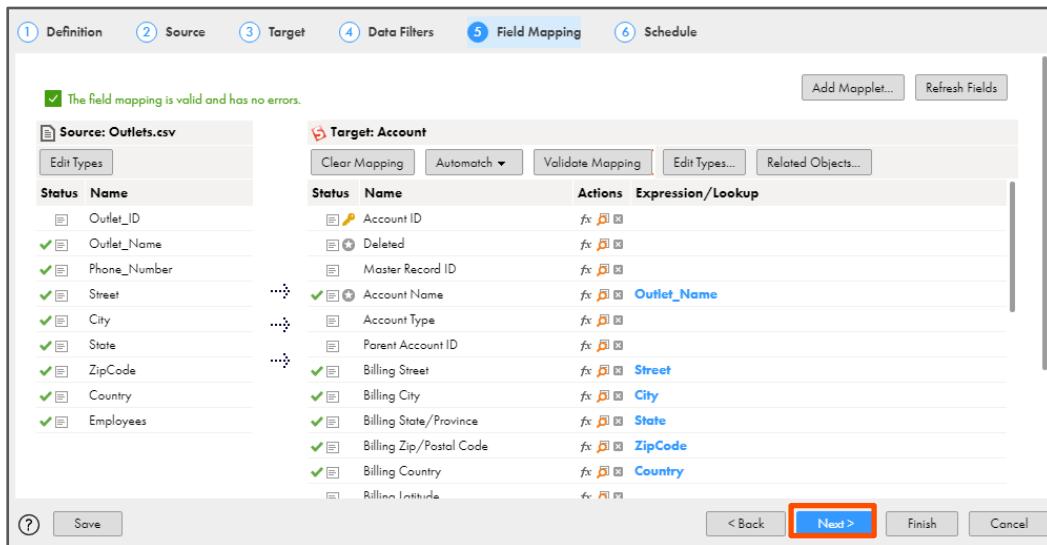
19. If the validation fails, click **Refresh Fields** and try to validate the mapping again.



Source: Outlets.csv	Target: Account	
Status	Status	
Name	Name	
Outlet_ID	Account ID	
Outlet_Name	Deleted	
Phone_Number	Master Record ID	
Street	Account Name	fx
City	Account Type	fx
State	Parent Account ID	fx
ZipCode	Billing Street	fx
Country	Billing City	fx
Employees	Billing State/Province	fx
	Billing Zip/Postal Code	fx
	Billing Country	fx
	Rilling Latitude	fx

Note: Refresh Fields option updates the data integration cache and shows the latest field attributes.

20. Click **Next**.



The field mapping is valid and has no errors.

Source: Outlets.csv

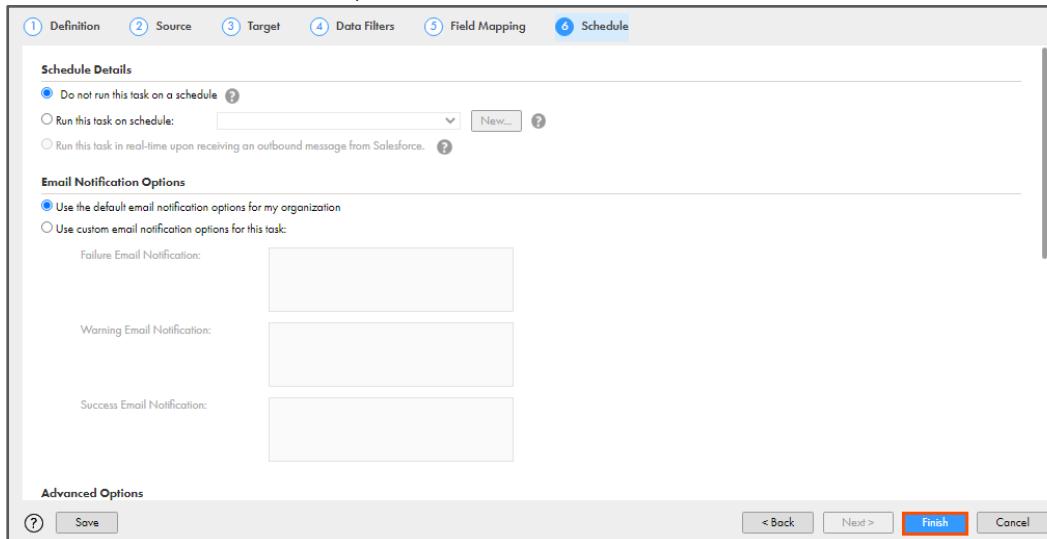
Status	Name
	Outlet_ID
✓	Outlet_Name
✓	Phone_Number
✓	Street
✓	City
✓	State
✓	ZipCode
✓	Country
✓	Employees

Target: Account

Status	Name	Actions	Expression/Lookup
	Account ID	fx	
	Deleted	fx	
	Master Record ID	fx	
✓	Account Name	fx	
	Account Type	fx	
	Parent Account ID	fx	
✓	Billing Street	fx	
✓	Billing City	fx	
✓	Billing State/Province	fx	
✓	Billing Zip/Postal Code	fx	
✓	Billing Country	fx	
	Rollback Institute	fx	

Note: In this lab, you will not define a Schedule.

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



Schedule Details

Do not run this task on a schedule [?](#)

Run this task on schedule: [New...](#) [?](#)

Run this task in real-time upon receiving an outbound message from Salesforce. [?](#)

Email Notification Options

Use the default email notification options for my organization

Use custom email notification options for this task:

Failure Email Notification:

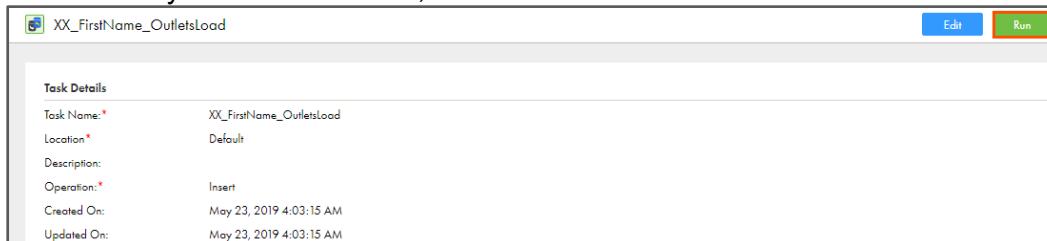
Warning Email Notification:

Success Email Notification:

Advanced Options

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

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



Task Details

Task Name: **XX_FirstName_OutletsLoad**

Location: Default

Description:

Operation: Insert

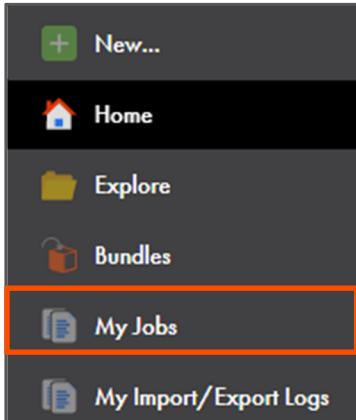
Created On: May 23, 2019 4:03:15 AM

Updated On: May 23, 2019 4:03:15 AM

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

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



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

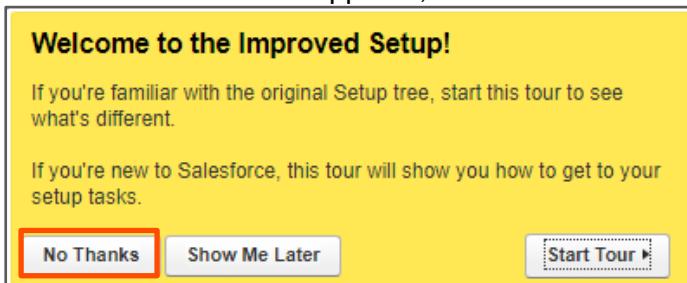
Jobs (415) <input checked="" type="checkbox"/> Up to date		Updated 11:25:09 PM PST     Find				
Instance Name	Location	Subtasks	Start Time ▾	End Time	Rows Processed	Status
SXX_FirstName_OutletsLoad-1	Default		Nov 12, 2020, 11:...	Nov 12, 2020, ...	9	<input checked="" type="checkbox"/> Success

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

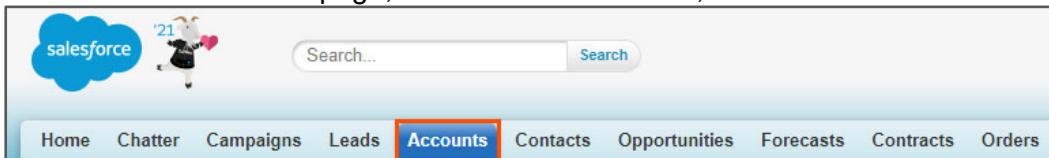
25. Close the asset from the navigation pane.

Verify the Results

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



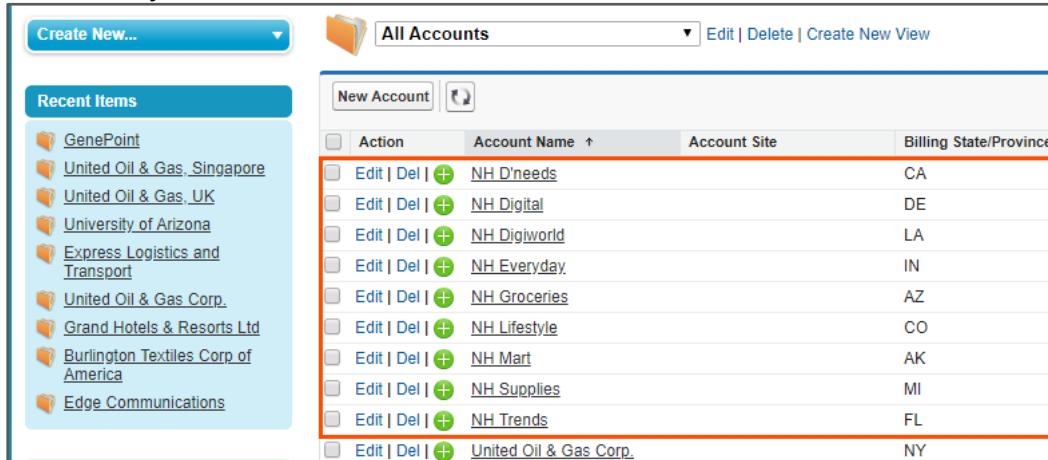
28. On the Salesforce homepage, from the available tabs, select **Accounts**.



29. From the drop-down, select **All Accounts**.
 30. Click **Go!**.



31. 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
Edit Del +	NH D'needs	CA	
Edit Del +	NH Digital	DE	
Edit Del +	NH Digiworld	LA	
Edit Del +	NH Everyday	IN	
Edit Del +	NH Groceries	AZ	
Edit Del +	NH Lifestyle	CO	
Edit Del +	NH Mart	AK	
Edit Del +	NH Supplies	MI	
Edit Del +	NH Trends	FL	
Edit Del +	United Oil & Gas Corp.	NY	

This concludes the lab.

Module 3: Synchronization and Data Transfer Task

Lab 3-2: 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 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 IICS synchronization task to transform the data and load it in Salesforce.

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

Duration:

20 minutes

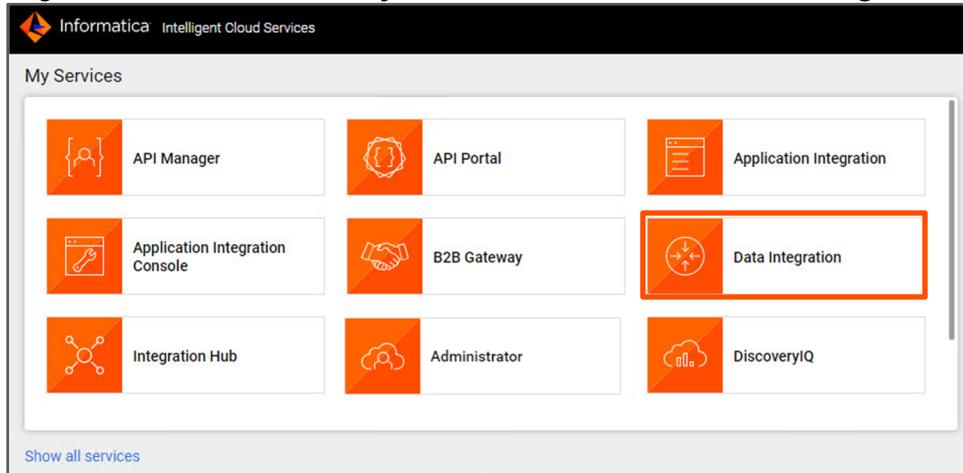
Tasks:

Copy Source Files

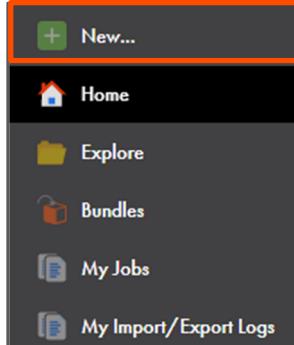
1. Copy the **Employee.csv** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).
2. Open the Employee.csv file and note the names of contacts with department as Sales.
Note: You must close the file before running the task to avoid job failure.

Create a Synchronization Task in IICS

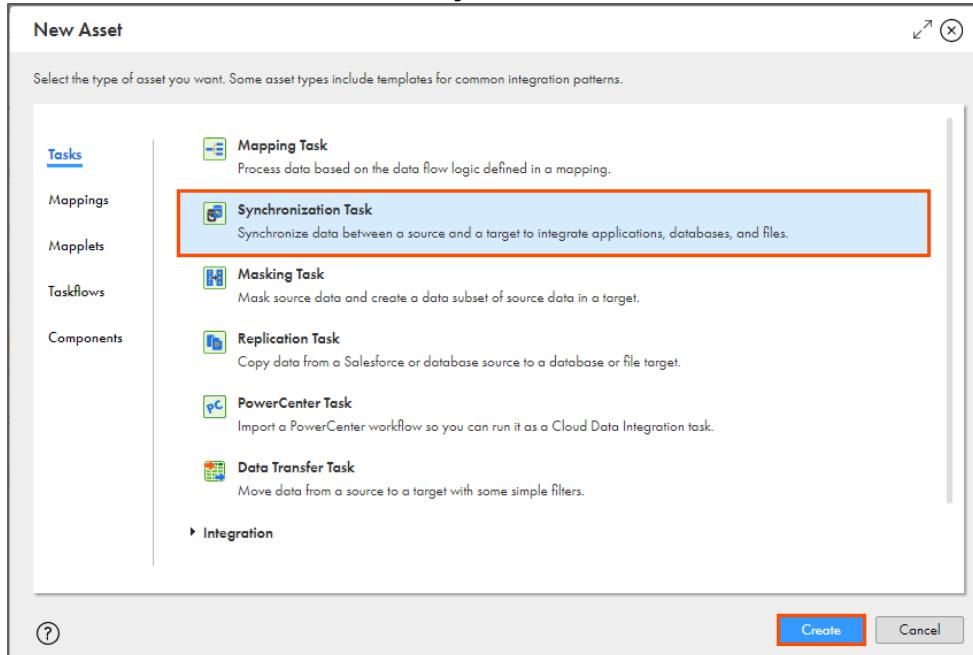
3. Login to IICS and from the **My Services** window, select **Data Integration**.



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

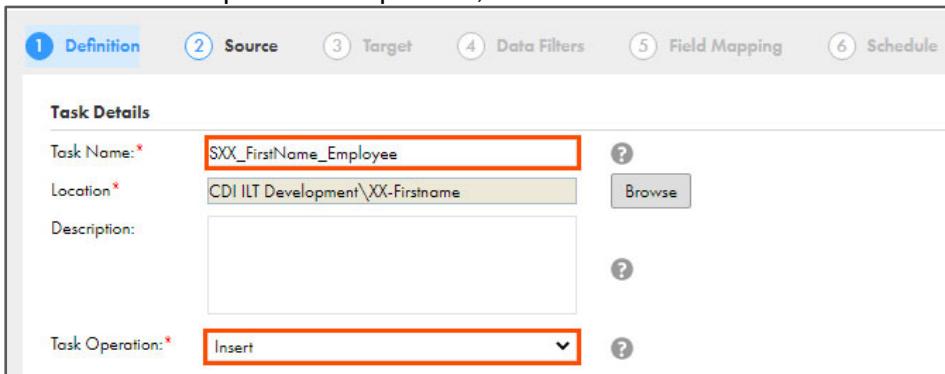


5. In the New Asset window, select **Synchronization Task**, and click **Create**.



Specify Definition Information

6. In the Task Name field, enter **SXX_FirstName_Employee**.
7. From the Task Operation drop-down, select **Insert**.



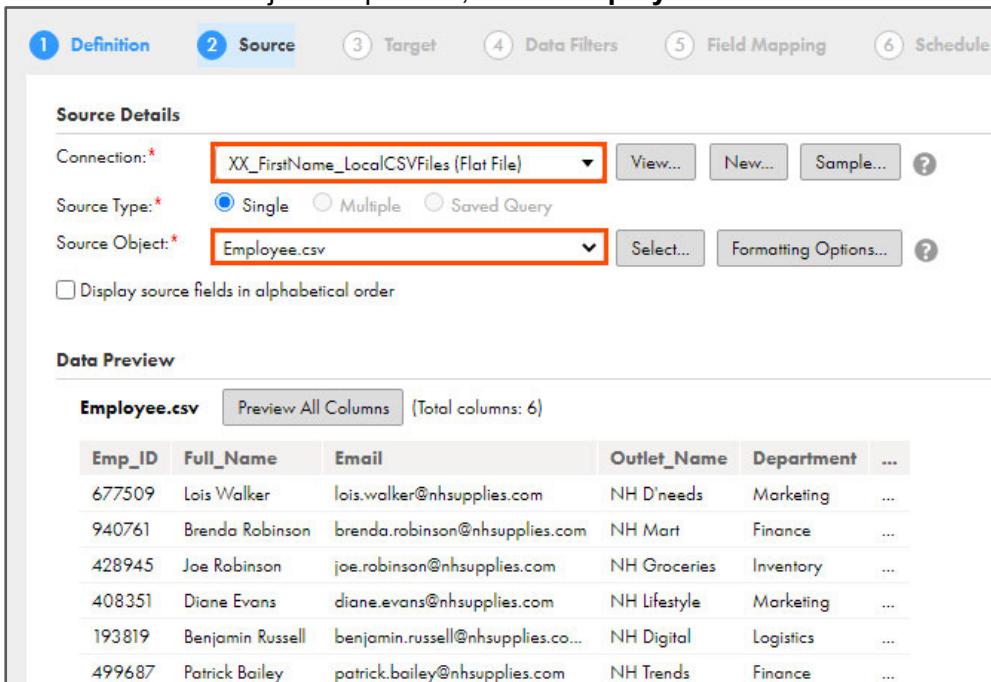
The screenshot shows the 'Definition' step of a task configuration. The 'Task Details' section contains fields for 'Task Name' (set to 'SXX_FirstName_Employee'), 'Location' (set to 'CDI ILT Development\XX-Firstname'), and 'Task Operation' (set to 'Insert'). The 'Task Operation' field is highlighted with a red box.

Note: Verify that the asset Location is your working directory.

8. Click **Next**.

Specify Source Information

9. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
10. From the Source Object drop-down, select **Employee.csv**.



The screenshot shows the 'Source' step of a task configuration. The 'Source Details' section includes fields for 'Connection' (set to 'XX_FirstName_LocalCSVFiles (Flat File)'), 'Source Type' (set to 'Single'), and 'Source Object' (set to 'Employee.csv'). The 'Source Object' field is highlighted with a red box. Below this is a 'Data Preview' section showing a preview of the 'Employee.csv' file with 6 columns. The preview table has columns: Emp_ID, Full_Name, Email, Outlet_Name, Department, and The data rows are as follows:

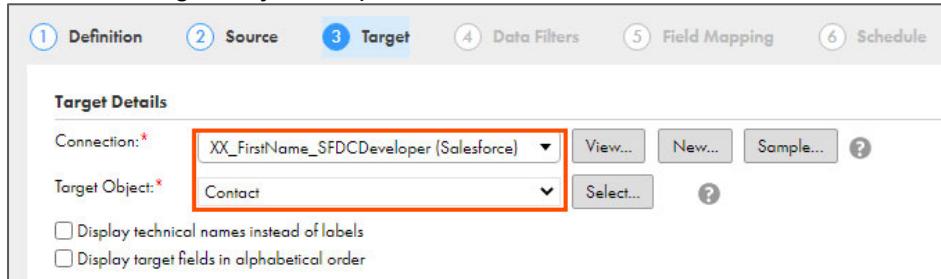
Emp_ID	Full_Name	Email	Outlet_Name	Department	...
677509	Lois Walker	lois.walker@nhsupplies.com	NH D'needs	Marketing	...
940761	Brenda Robinson	brenda.robinson@nhsupplies.com	NH Mart	Finance	...
428945	Joe Robinson	joe.robinson@nhsupplies.com	NH Groceries	Inventory	...
408351	Diane Evans	diane.evans@nhsupplies.com	NH Lifestyle	Marketing	...
193819	Benjamin Russell	benjamin.russell@nhsupplies.co...	NH Digital	Logistics	...
499687	Patrick Bailey	patrick.bailey@nhsupplies.com	NH Trends	Finance	...

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.

11. Click **Next**.

Specify Target Information

12. From the Connection drop-down, select **XX_FirstName_SFDCDeveloper**.
13. From the Target Object drop-down, select **Contact**.

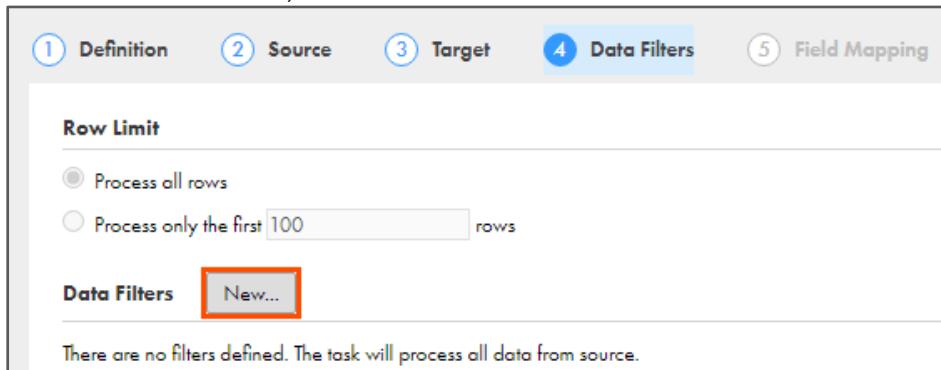


The screenshot shows the 'Target' step configuration screen. At the top, there are six tabs: 1 Definition, 2 Source, 3 Target (which is selected), 4 Data Filters, 5 Field Mapping, and 6 Schedule. Below the tabs, under 'Target Details', the 'Connection' dropdown is set to 'XX_FirstName_SFDCDeveloper (Salesforce)' and the 'Target Object' dropdown is set to 'Contact'. Both dropdowns have a red box around them. There are also two checkboxes at the bottom: 'Display technical names instead of labels' and 'Display target fields in alphabetical order'.

14. Click **Next**.

Define Data Filters to Skip Contacts with Department as Sales

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

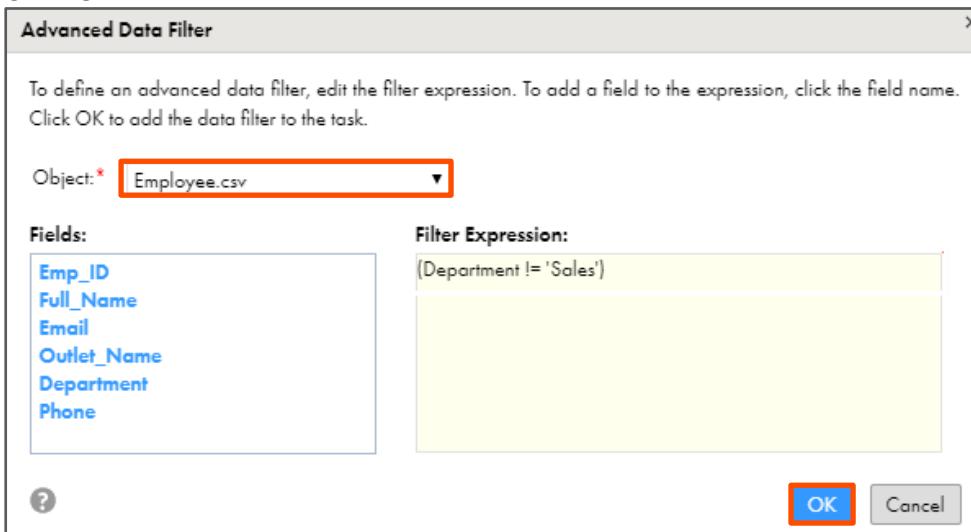


The screenshot shows the 'Data Filters' step configuration screen. At the top, there are five tabs: 1 Definition, 2 Source, 3 Target, 4 Data Filters (which is selected), and 5 Field Mapping. Under 'Row Limit', there are two radio buttons: 'Process all rows' (selected) and 'Process only the first 100 rows'. Below this, there is a 'Data Filters' section with a 'New...' button, which has a red box around it. A note below the section states: '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.

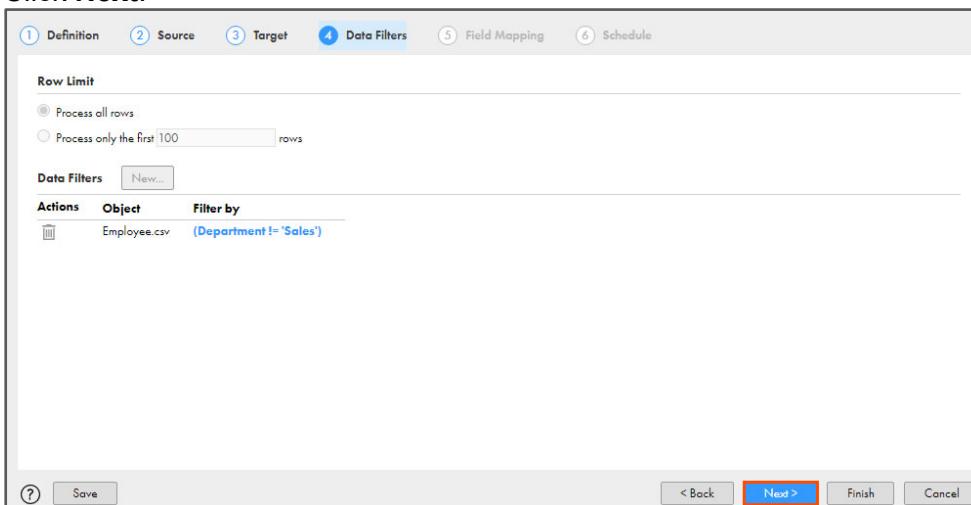
16. From the Object drop-down, select **Employee.csv**.
 17. In the Filter Expression field, enter the following expression. This expression filters out all the entries that have Department as Sales in the Employee.csv file.
(Department != 'Sales')
- OR
- Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingFiltersExpressionAndLookup_3-2**. Copy the command mentioned under **Step A** and paste it in the Filter Expression field.

18. Click **OK**.



Note: If you copy and paste the above filter expression, you must verify the expression to avoid getting an apostrophe error.

19. Click **Next**.



Define Field Mappings

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

Source Field Name	Target Field Name
Emp_ID	Contact ID
Email	Email
Department	Department
Phone	Business Phone

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.

Source: Employee.csv		Target: Contact	
Status	Name	Status	Name
<input checked="" type="checkbox"/>	Emp_ID	<input checked="" type="checkbox"/>	Contact ID
	Full_Name		Deleted
<input checked="" type="checkbox"/>	Email		Master Record ID
	Outlet_Name		Account ID
<input checked="" type="checkbox"/>	Department		Last Name
	Phone		First Name
			Salutation
			Full Name

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.

21. To define a lookup condition, from the Target: Contact section, select  for **Account ID**.

Source: Employee.csv		Target: Contact	
Status	Name	Status	Name
<input checked="" type="checkbox"/>	Emp_ID	<input checked="" type="checkbox"/>	Contact ID
	Full_Name		Deleted
<input checked="" type="checkbox"/>	Email		Master Record ID
	Outlet_Name		Account ID
<input checked="" type="checkbox"/>	Department		Last Name
	Phone		First Name
			Salutation
			Full Name

22. From the **Lookup Connection** drop-down, select **XX_FirstName_SFDCDeveloper**.

23. From the **Lookup Object** drop-down, select **Account**.

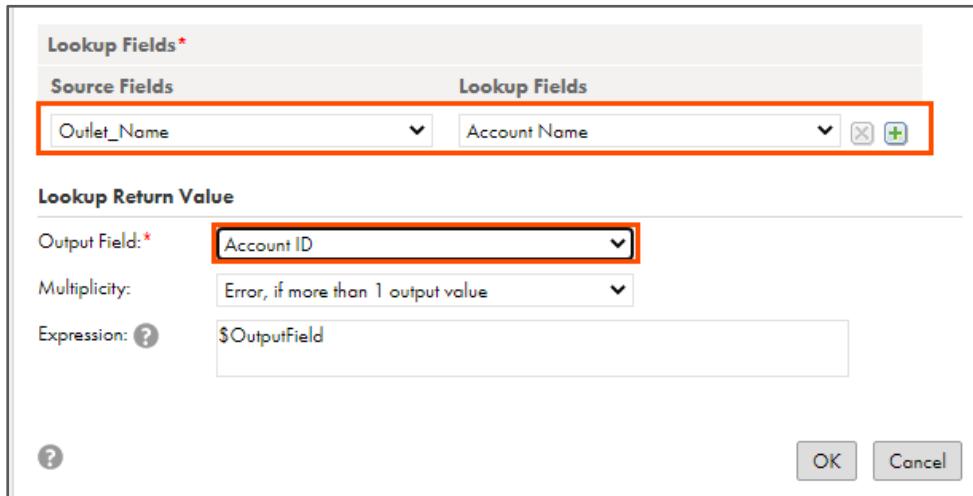
Lookup

Lookup Connection:*	XX_FirstName_SFDCDeveloper
Lookup Object:*	Account
<input type="checkbox"/> Display technical names instead of labels <input type="checkbox"/> Display fields in alphabetical order	

24. In the **Source Fields** drop-down, select **Outlet_Name**.

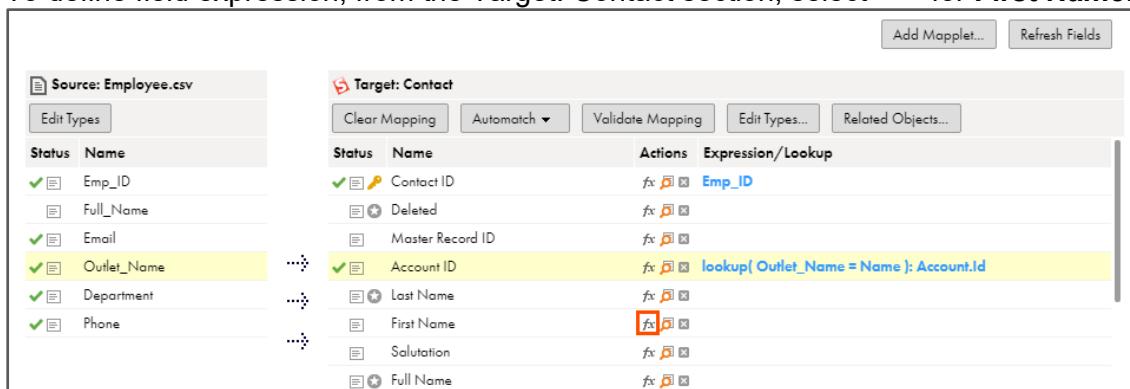
25. In the **Lookup Fields** drop-down, select **Account Name**.

26. 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

27. To define field expression, from the Target: Contact section, select  for **First Name**.

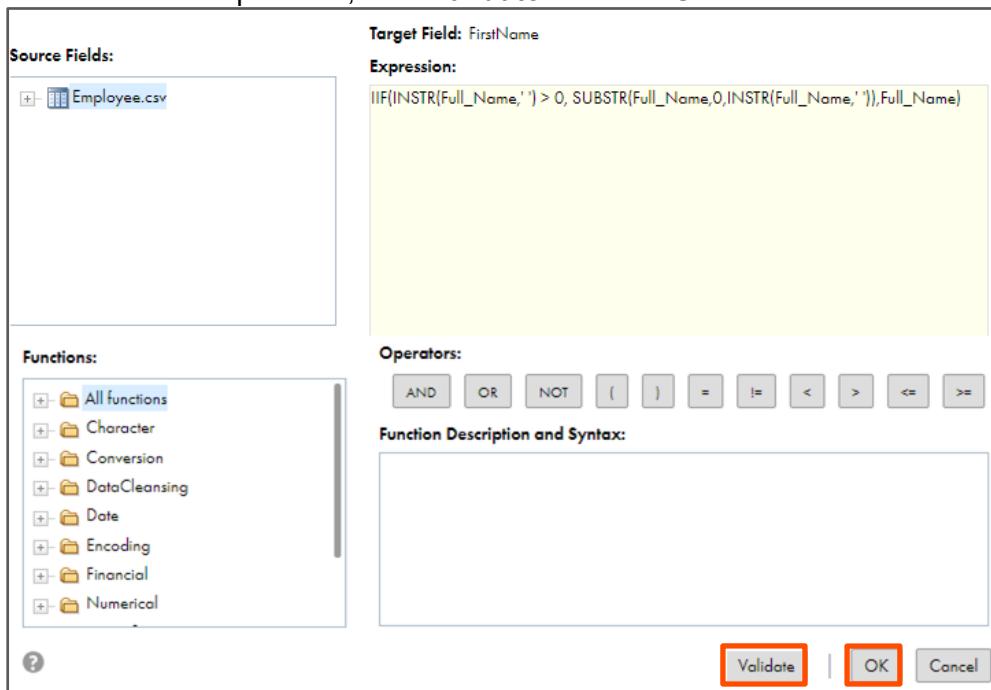


28. In the **Expression** field, enter the following expression:
IIF(INSTR(Full_Name, ' ') > 0, SUBSTR(Full_Name,0,INSTR(Full_Name, ' ')),Full_Name)

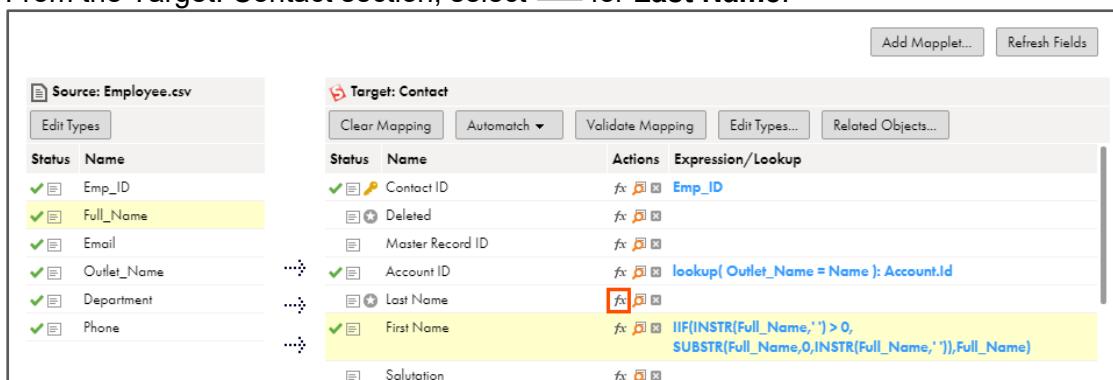
OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingFiltersExpressionAndLookup_3-2**. Copy the command mentioned under **Step B** and paste it in the Filter Expression field.

29. To validate the expression, click **Validate** and then **OK**.



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



The screenshot shows the Mapplet configuration window. On the left is the 'Source: Employee.csv' pane, showing fields: Status, Name, Emp_ID, Full_Name, Email, Outlet_Name, Department, Phone. On the right is the 'Target: Contact' pane, showing fields: Status, Name, Actions, Expression/Lookup. The 'Last Name' field in the target has its expression set to 'IIF(INSTR(Full_Name, ' ') > 0, SUBSTR(Full_Name,0,INSTR(Full_Name, ' ')),Full_Name)'. The 'OK' button at the bottom right is highlighted with a red box.

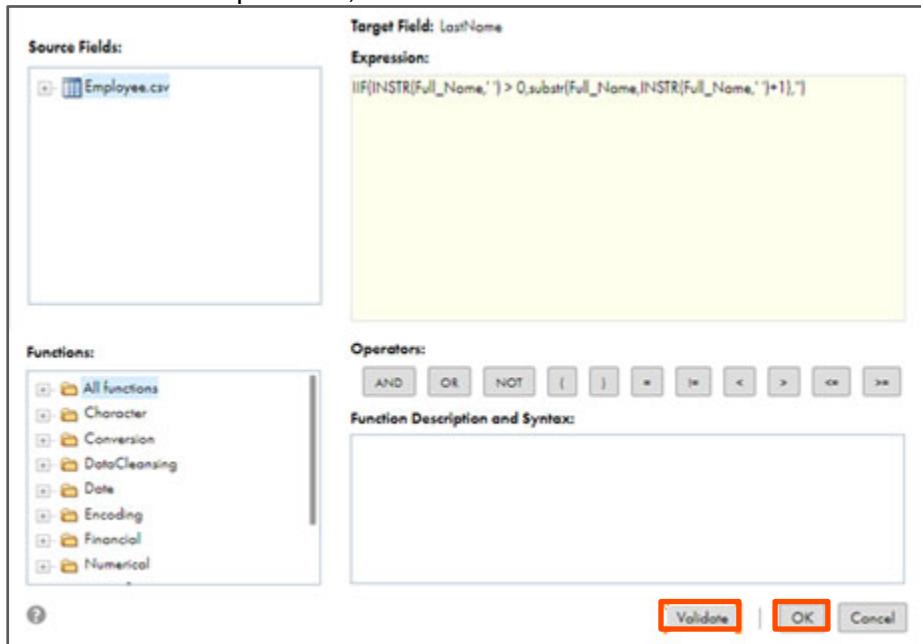
31. In the **Expression** field, enter the following expression:

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

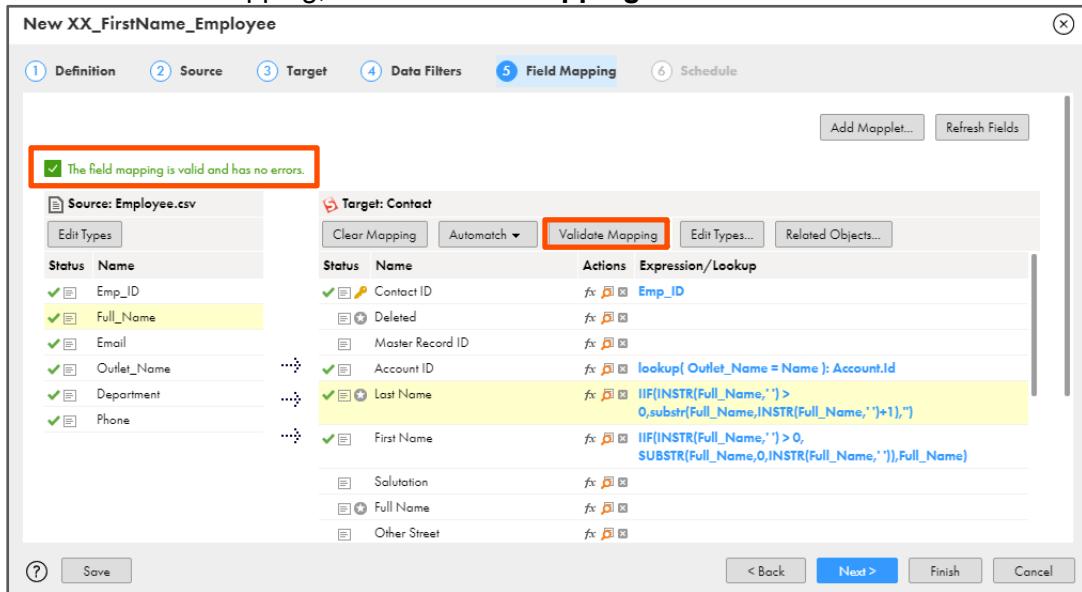
OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingFiltersExpressionAndLookup_3-2**. Copy the command mentioned under **Step C** and paste it in the Filter Expression field.

32. To validate the expression, click **Validate** and then **OK**.

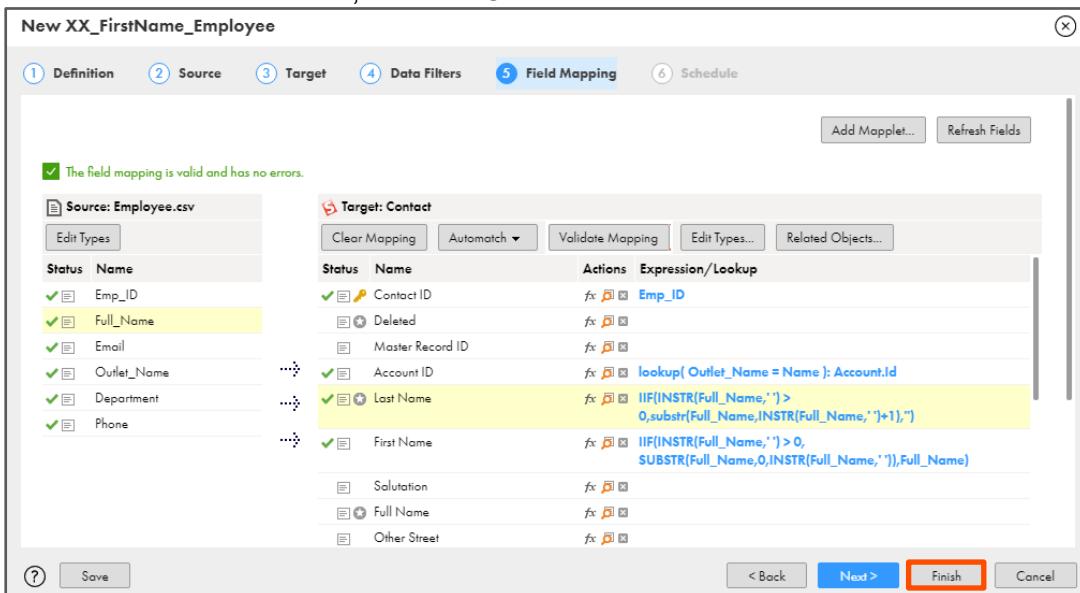


33. To validate the mapping, click **Validate Mapping**.



Status	Name	Actions	Expression/Lookup
✓	Contact ID	fx	Emp_ID
✓	Deleted	fx	
✓	Master Record ID	fx	
✓	Account ID	fx	lookup(Outlet_Name = Name):Account.Id
✓	Last Name	fx	IIF(INSTR(Full_Name, ',') > 0, substr(Full_Name, INSTR(Full_Name, ',')+1), '')
✓	First Name	fx	IIF(INSTR(Full_Name, ',') > 0, SUBSTR(Full_Name, 0, INSTR(Full_Name, ',')), Full_Name)
	Salutation	fx	
	Full Name	fx	
	Other Street	fx	

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



The field mapping is valid and has no errors.

Source: Employee.csv

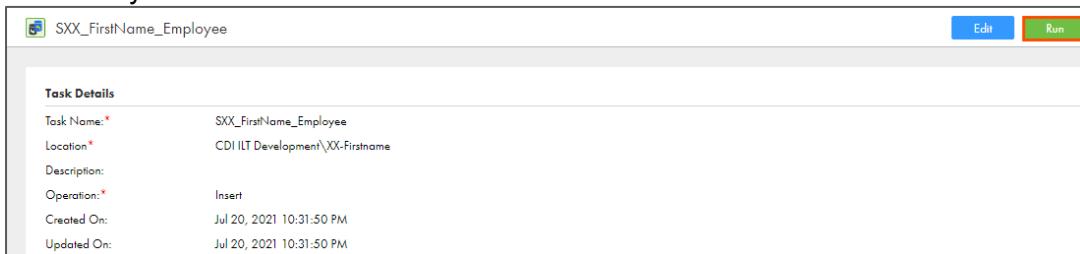
Status	Name
✓	Emp_ID
✓	Full_Name
✓	Email
✓	Outlet_Name
✓	Department
✓	Phone

Target: Contact

Status	Name	Actions	Expression/Lookup
✓	Contact ID	fx	Emp_ID
	Deleted	fx	
	Master Record ID	fx	
...	Account ID	fx	lookup(Outlet_Name = Name); Account.Id
...	Last Name	fx	IIF(INSTR(Full_Name,'>0,substr(Full_Name,INSTR(Full_Name,'>)+1),".")
...	First Name	fx	IIF(INSTR(Full_Name,'>0,substr(Full_Name,INSTR(Full_Name,'>)+1),".")
	Salutation	fx	
	Full Name	fx	
	Other Street	fx	

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

35. Run the synchronization task.



SXX_FirstName_Employee

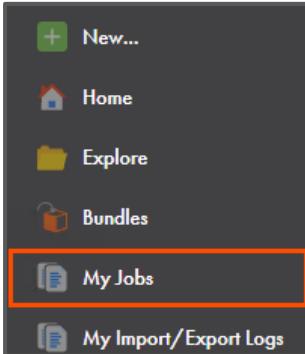
Task Details

Task Name:*	SXX_FirstName_Employee
Location:*	CDI ILT Development\XX-Firstname
Description:	
Operation:*	Insert
Created On:	Jul 20, 2021 10:31:50 PM
Updated On:	Jul 20, 2021 10:31:50 PM

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

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



- + New...
- Home
- Explore
- Bundles
- My Jobs**
- My Import/Export Logs

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

Jobs (416)		Up to date	Updated 11:43:01 PM PST			
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status	
 SXX_FirstName_Employee-1		Nov 12, 2020, 11:42 PM	Nov 12, 2020, 11:4...	33	 Success	

Note:

- i. 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.
- ii. If the job fails with the following error, close the **Employee.csv** file and try running the job again.

Error opening file [C:\IICSLabFiles\Employee.csv]. Operating system error message [The process cannot access the file because it is being used by another process.]

38. Close the asset from the navigation pane.

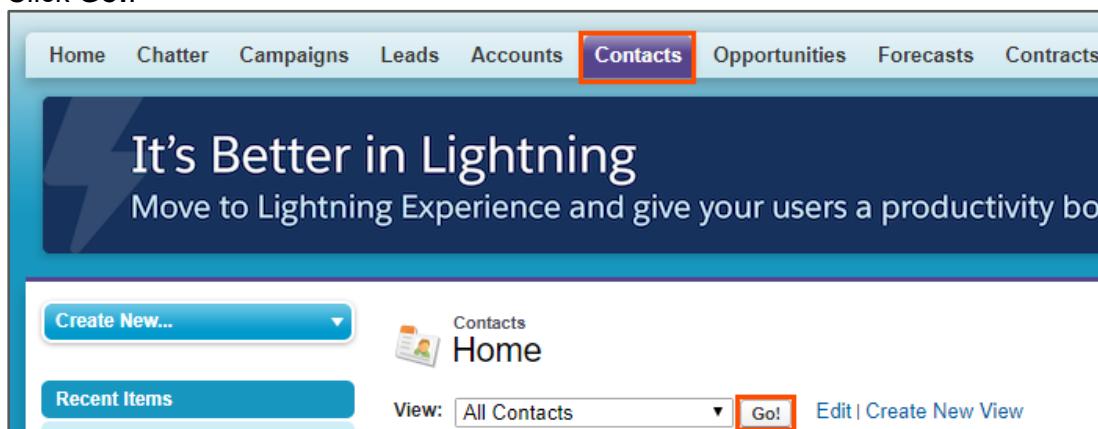
Verify the Results

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

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

Note: Verify that the View field is set to All Contacts.

41. Click **Go!**.



42. 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	
<input type="checkbox"/>	Action	Name 	Account Name	Title
<input type="checkbox"/>	  	Bailey, Patrick	NH Trends	319-812-6957
<input type="checkbox"/>	  	Baker, Nancy	NH Supplies	229-336-5117
<input type="checkbox"/>	  	Barr, Tim	Grand Hotels & Resorts Ltd	SVP, Administration and Fi... (312) 596-1000
<input type="checkbox"/>	  	Bond, John	Grand Hotels & Resorts Ltd	VP, Facilities (312) 596-1000
<input type="checkbox"/>	  	Boyle, Lauren	United Oil & Gas Corp.	SVP, Technology (212) 842-5500
<input type="checkbox"/>	  	Brown, Donna	NH Everyday	212-434-7910

43. 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	

44. Click **Cancel**.

Contact Edit

Contact Information

Contact Owner	Informatica Training
Salutation	--None--

45. Search for a contact that you noted in step 2 and verify that the contact is not loaded to salesforce.

Note: In Salesforce, you can search for contacts alphabetically. In this case, the contact **Ralph Flores** should not be present in Salesforce.

46. From the All Contacts window, select **F**.

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	
<input type="checkbox"/>	Action	Name ↑	Account Name	Title	Phone Email
<input type="checkbox"/>	Edit Del	+ King, Melissa	NH Groceries		216-605-3731 melissa.king@nhsupplies..
<input type="checkbox"/>	Edit Del	+ Lee, Theresa	NH Everyday		319-553-8919 theresa.lee@nhsupplies.c..
<input type="checkbox"/>	Edit Del	+ Levy, Barbara	Express Logistics and T...	SVP, Operations	(503) 421-7800 b.levy@expressl&t.net

47. Observe that **Ralph Flores** is not present in the list.

All Contacts			Edit Delete Create New View	A B C D E F G H I J K L M N O P Q R S
<input type="checkbox"/>	Action	Name ↑	Account Name	Title
<input type="checkbox"/>	Edit Del	+ Forbes, Sean	Edge Communications	CFO
<input type="checkbox"/>	Edit Del	+ Frank, Edna	GenePoint	VP, Technology

This concludes the lab.

Module 3: Synchronization and Data Transfer Task

Lab 3-3: Creating a Data Transfer Task

Overview:

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 oracle to flat-file

Scenario:

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

Duration:

10 minutes

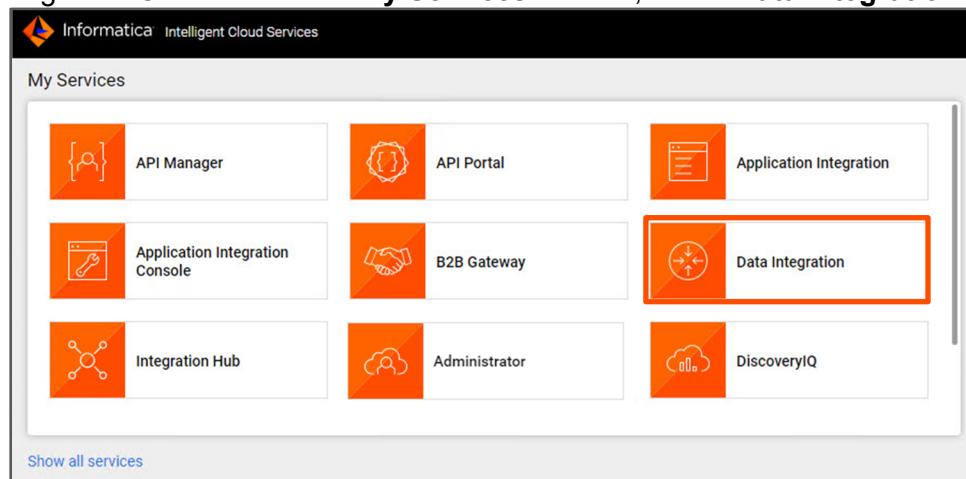
Tasks:

Copy Source Files

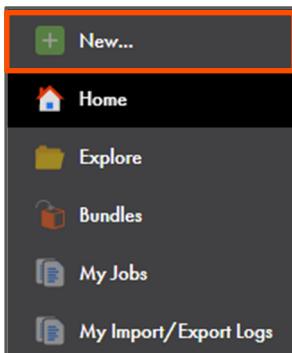
1. Copy the **Order_Status.csv** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles):

Create a Data Transfer in IICS

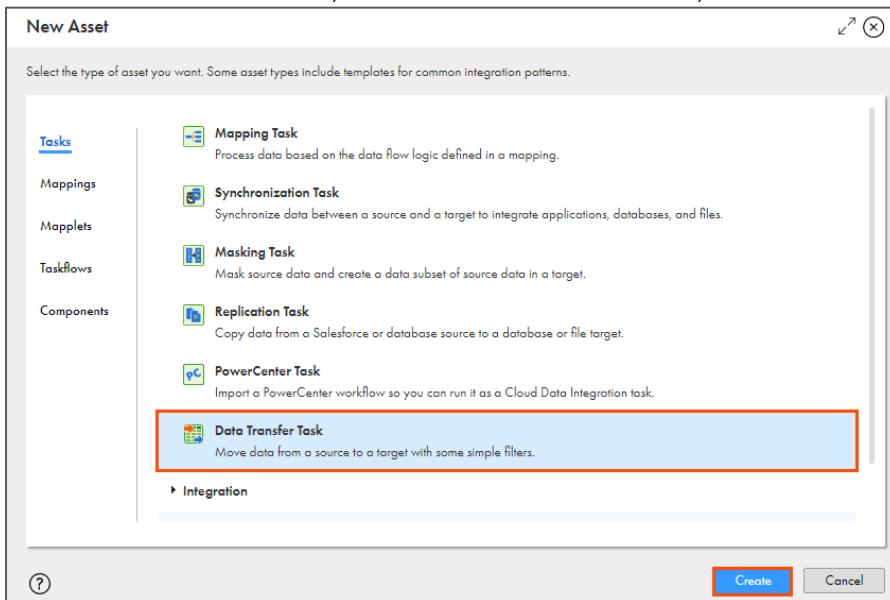
2. Login to IICS and from the **My Services** window, select **Data Integration**.



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



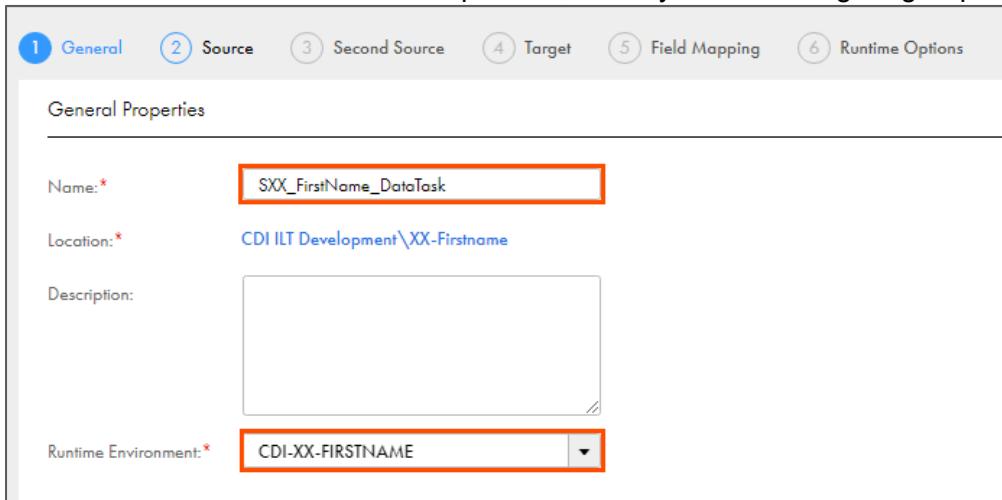
4. In the New Asset window, select **Data Transfer Task**, and click **Create**.



5. In the Task Name field, enter **SXX_FirstName_DataTask**.

Note: Verify that the asset Location is your working directory.

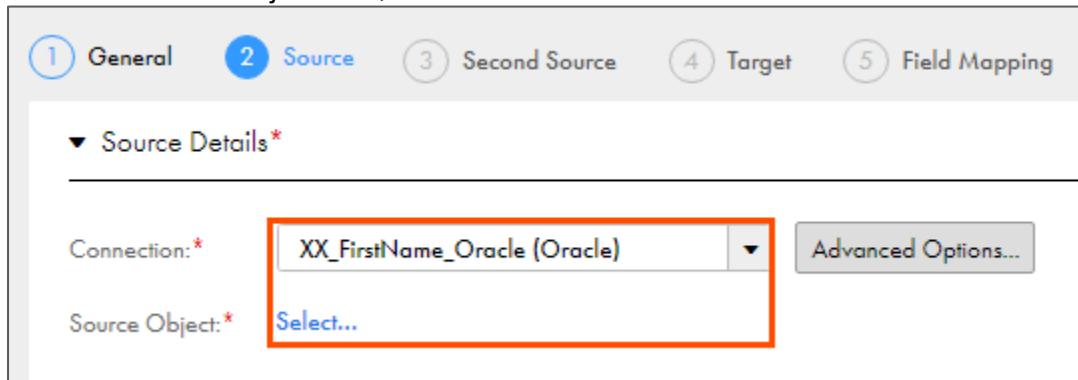
6. From the Runtime Environment drop-down, select your secure agent group.



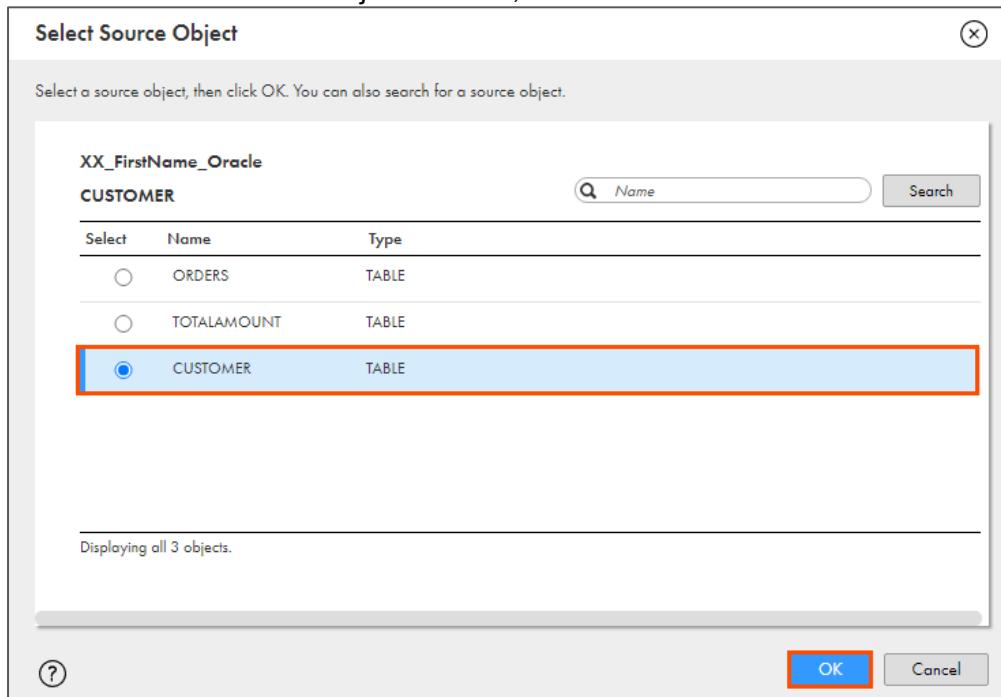
General	Source	Second Source	Target	Field Mapping	Runtime Options
General Properties <hr/> <div style="display: flex; justify-content: space-between;"> <div>Name:[*]</div> <div><input type="text" value="SXX_FirstName_DataTask"/></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Location:[*]</div> <div>CDI ILT Development\XX-Firstname</div> </div> <div>Description:</div> <div style="border: 1px solid #ccc; height: 100px; margin-top: 10px;"></div> <div>Runtime Environment:[*]</div> <div style="border: 1px solid #ccc; width: 150px; padding: 2px;">CDI-XX-FIRSTNAME</div>					

7. Click **Next**.

8. From the Connection drop-down, select **XX_FirstName_Oracle**.
9. From the Source Object field, click **Select**.



10. From the Select Source Object window, click **CUSTOMER** and **OK**.



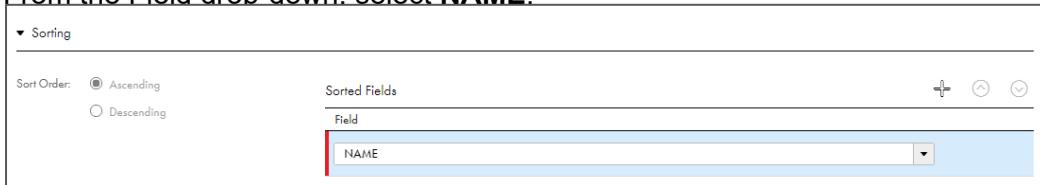
11. To apply a filter, expand the **Filters** section and click  to add a filter condition.
12. Enter the filter condition, as shown in the table below:

Master	Operator	Detail
TIER	Not Equals	0

▼ Filters		
Field	Operator	Value
TIER	Not Equals	0

13. To sort the fields, expand the **Sorting** section click  to add sort condition.

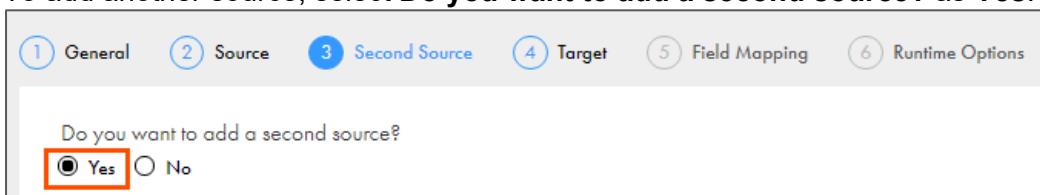
14. From the Field drop-down, select **NAME**.



The screenshot shows the 'Sorting' configuration window. Under 'Sort Order', 'Ascending' is selected. In the 'Sorted Fields' section, there is a single item: 'Field' with 'NAME' selected.

15. Click **Next**.

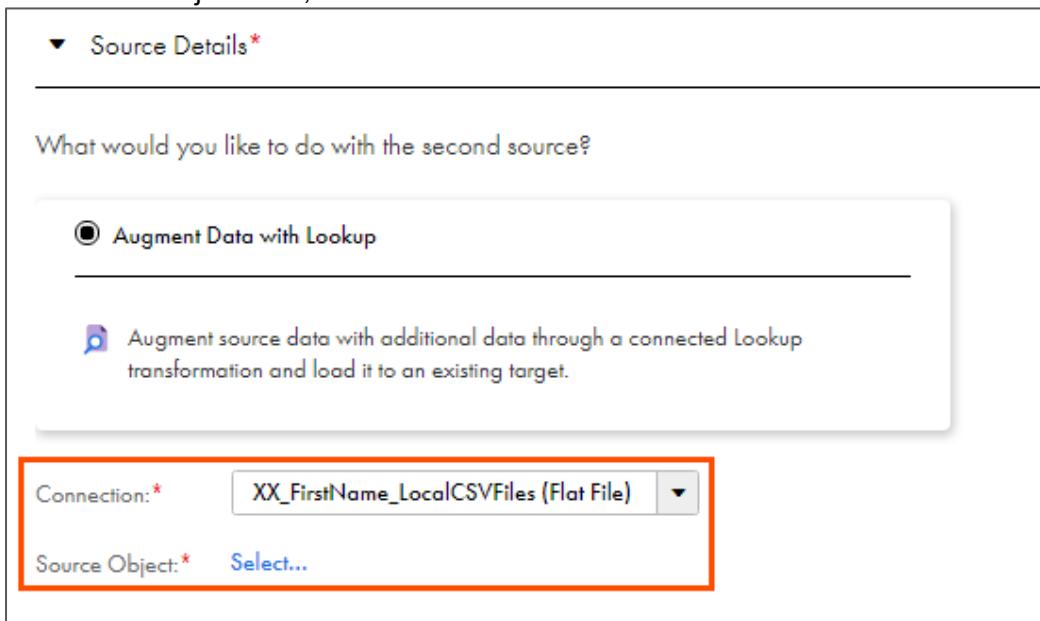
16. To add another source, select **Do you want to add a second source?** as **Yes**.



The screenshot shows the 'Second Source' step of the wizard. A question 'Do you want to add a second source?' is displayed with two options: 'Yes' (selected) and 'No'.

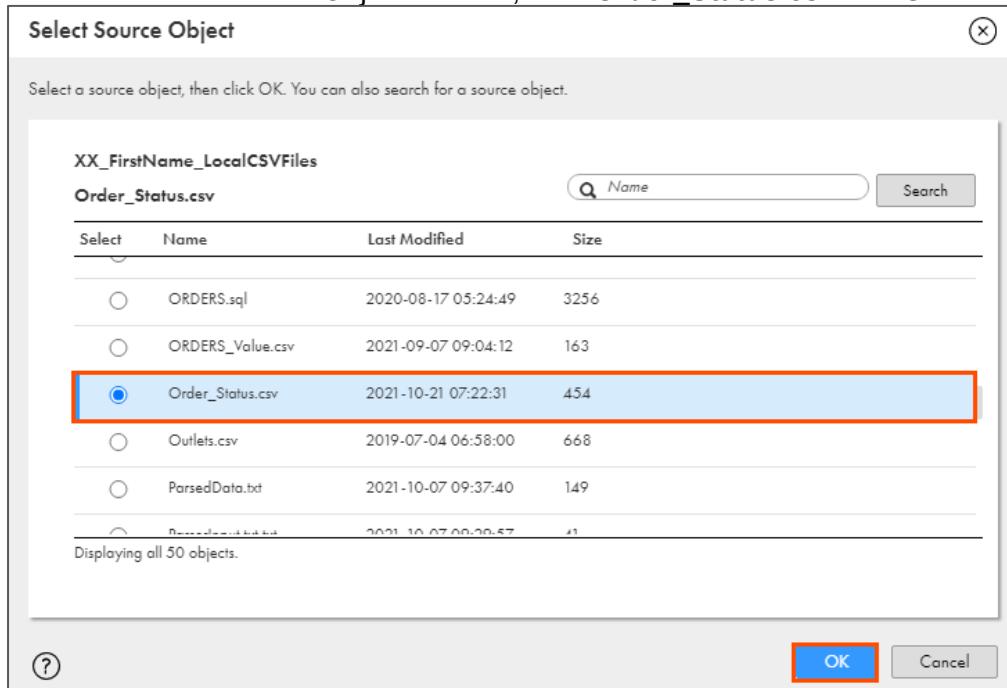
17. In the Source Details section, from the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

18. For Source Object field, click **Select**.



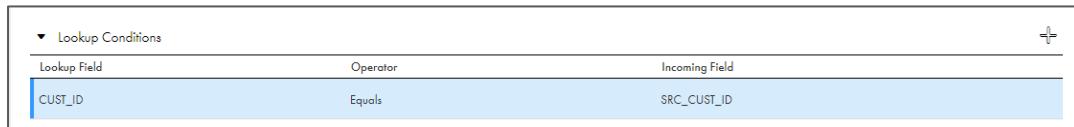
The screenshot shows the 'Source Details' section. It includes a question 'What would you like to do with the second source?' and an option 'Augment Data with Lookup'. Below this, a detailed description of the lookup transformation is provided. At the bottom, there are fields for 'Connection:' (set to 'XX_FirstName_LocalCSVFiles (Flat File)') and 'Source Object:' (with a 'Select...' button), which are both highlighted with a red box.

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



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

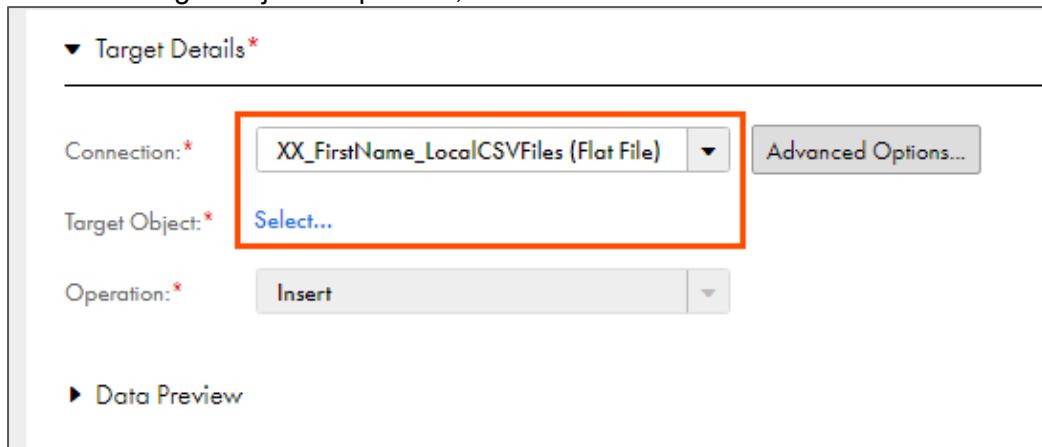
Lookup Field	Operator	Incoming Field
CUST_ID	Equals	SRC_CUST_ID



The screenshot shows the 'Lookup Conditions' section. It displays a table with three columns: 'Lookup Field', 'Operator', and 'Incoming Field'. There are two rows in the table. The first row has 'CUST_ID' in the 'Lookup Field' column, 'Equals' in the 'Operator' column, and 'SRC_CUST_ID' in the 'Incoming Field' column. The second row is partially visible. A plus sign icon is located at the top right of the table area.

21. Click **Next**.

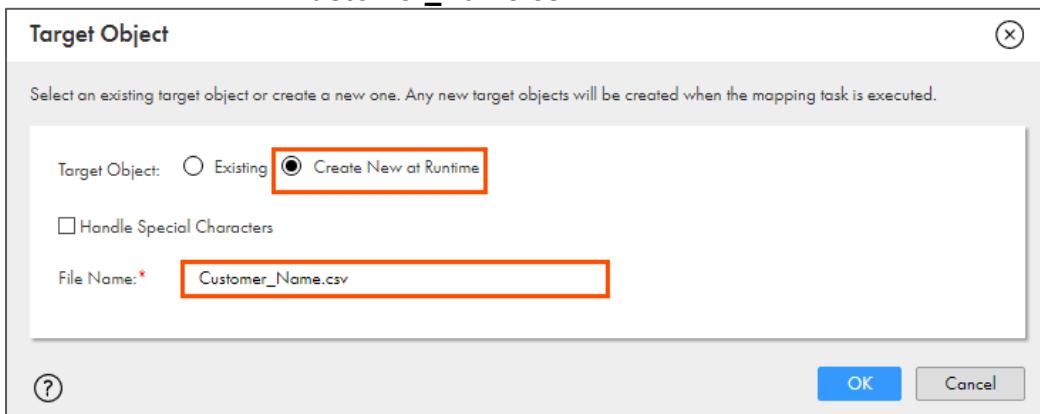
22. From the Target Object drop-down, click **Select**.



The screenshot shows the 'Target Details' configuration window. It includes fields for 'Connection' (set to 'XX_FirstName_LocalCSVFiles (Flat File)'), 'Target Object' (with a dropdown menu open, showing 'Select...' highlighted with a red border), and 'Operation' (set to 'Insert').

23. In the Target Object window, click **Create New at Runtime**.

24. Enter the filename as **Customer_Name.csv**.

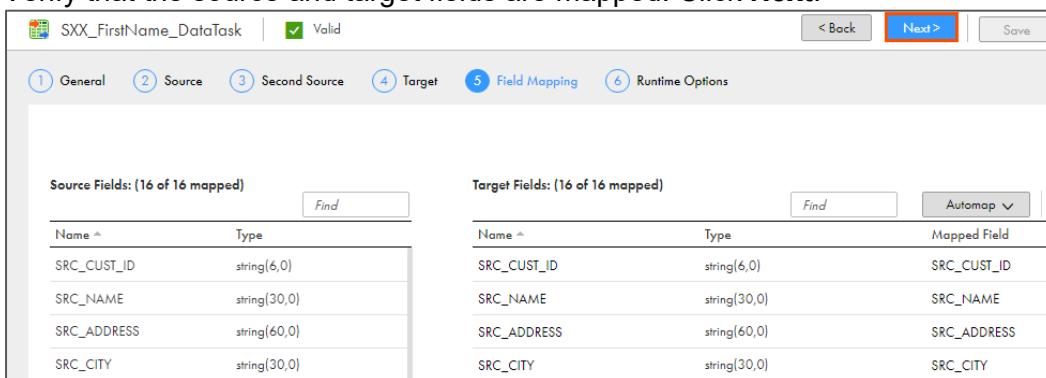


25. Click **OK**.

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's retain the default option and click **Save**.

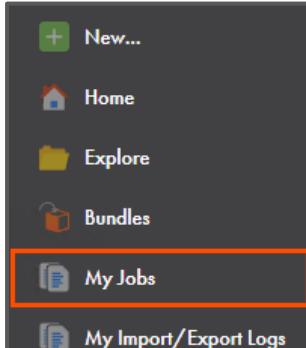


30. Click **Run** to run the task.



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 (4 of 89)						Updated 12:55:57 AM PDT	↻	↓↑	✖	Find
Asset Name: SXX_FirstName_DataTask		Add Field	Subtasks	Start Time	End Time	Rows Processed	Status			
Instance Name	SXX_FirstName_DataTask-2			Oct 21, 2021, 12:54 AM	Oct 21, 2021, 12:5...	5	✓ Success			

33. Close the asset from the navigation pane.

Verify the Results

34. On your local machine, go to **C:\IICSLabFiles**.
35. Verify that 5 rows are written to **Customer_Name.csv** and the SRC_TIER value is greater than 0.

O2	F	6/24/2018	A	B	C	D	E	F	G	H	I	J	K	L
1	SRC_NAME	SRC_CUST_ID	SRC_ADDRESS	SRC_CITY	SRC_STATE	SRC_POSTALCODE	SRC_COUNTRY	SRC_PHONE	SRC_LAST_ORDER_DATE	SRC_STATUS	SRC_TIER	SRC_MODIFIED_DATE		
2	Paul Somogyi	1096	3130 Broadway Street	Kansas City	MO	64111	US	(816) 756-1060	6/8/2009 0:00	LIVE	3	6/24/2019 0:00		
3	Ray Ruybalid	1104	6625 The Corners Parkway	Norcross	GA	30092	US	(770) 448-5210	3/2/2008 0:00	LIVE	3	6/22/2019 0:00		
4	Richard Coleman	1105	2505 Piedra Drive	Plano	TX	75023	US	(972) 758-9343	1/2/2008 0:00	LIVE	1	6/24/2019 0:00		
5	Robert Cori	1107	6625 The Corners Parkway	Norcross	GA	30092	US	(770) 448-5210	3/1/2008 0:00	Inactive	3	6/29/2019 0:00		
6	Ronald Orbach	1103	1 Mobay Road	Pittsburgh	PA	15205		4127772439	1/4/2008 0:00	LIVE	2	6/30/2019 0:00		

This concludes the lab.

Module 5: Cloud Mapping Designer – Transformations

Lab 5-1: Using Query in a Mapping

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 in Mapping Designer
- Use Query to fetch selected rows from the source

Scenario:

NH Suppliers recently started offering express delivery to their customers with order value of more than 1000 dollars. 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 fulfil 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:

30 minutes

Tasks

Copy Source Files

1. Copy the following files from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles):

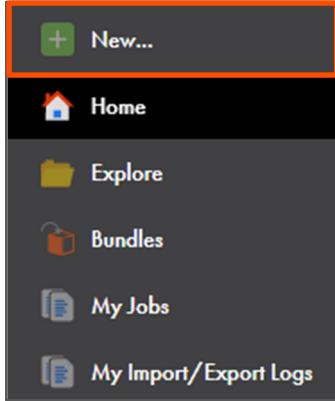
Files
ExpeditedShipping.csv
NormalShipping.csv
Products.csv

2. Open the source files and observe its content.

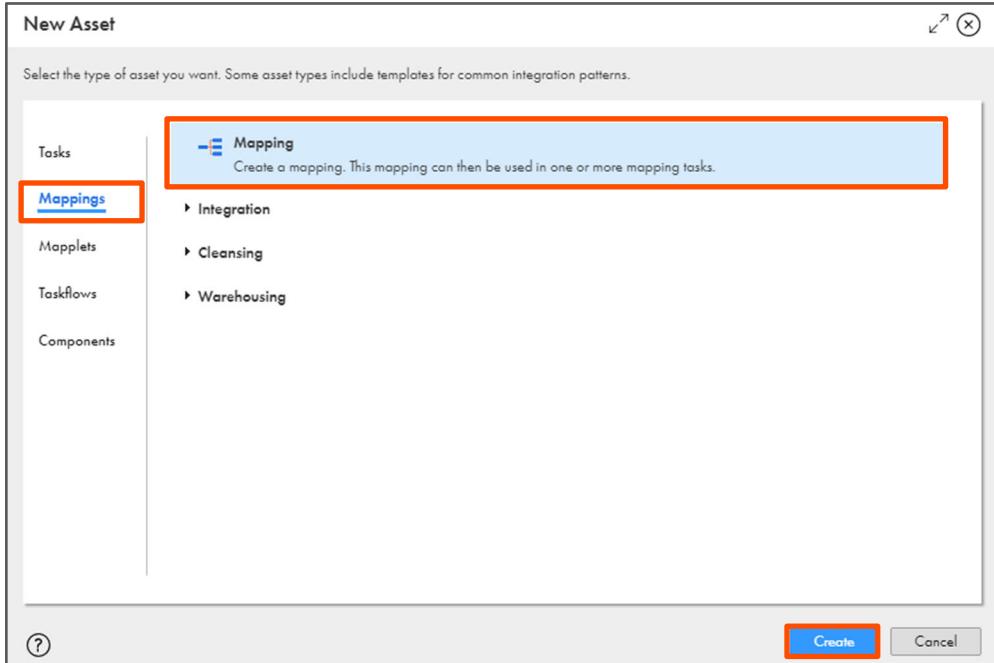
Note: You must close the files before running the task to avoid job failure.

Create Mapping

3. Log in to IICS and from the My Services window, select **Data Integration**.

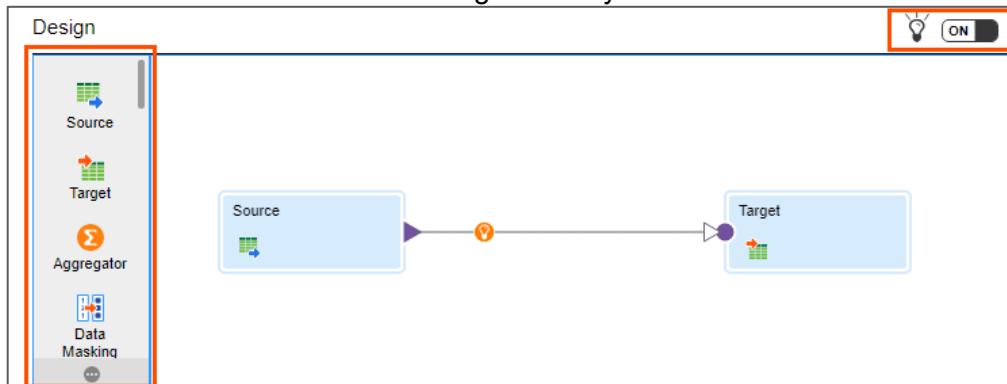
4.  , select **New**.

5. From the New Asset window, click the **Mappings** tab, and select **Mapping**.
6. 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.

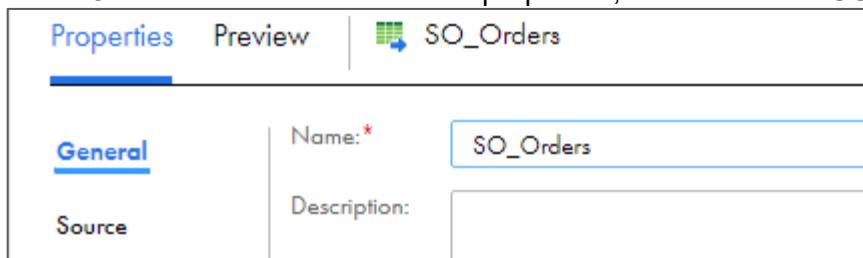


7. In the Name field, enter **SXX_FirstName_ShippingFiles**.



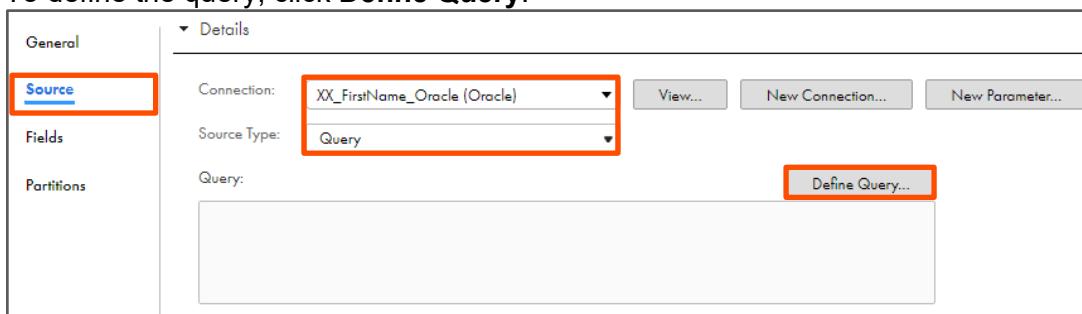
Name:*	SXX_FirstName_ShippingFiles
Location:*	CDI ILT Development\XX-Firstname

8. To configure the source, from the mapping canvas, click the **Source** transformation.
9. In the General section of the Source properties, enter Name as **SO_Orders**.



General	Name:*	SO_Orders
Source	Description:	

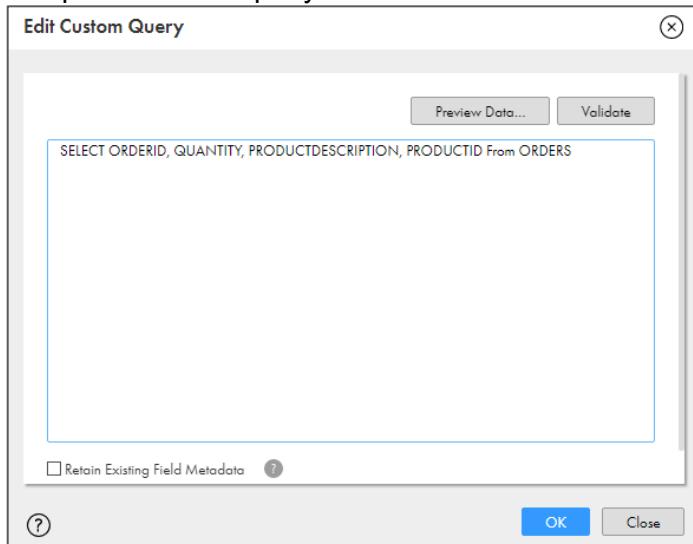
10. From the properties pane, click **Source**.
11. From the Connection drop-down, select **XX_FirstName_Oracle**.
12. From Source Type field, select **Query**.
13. To define the query, click **Define Query**.



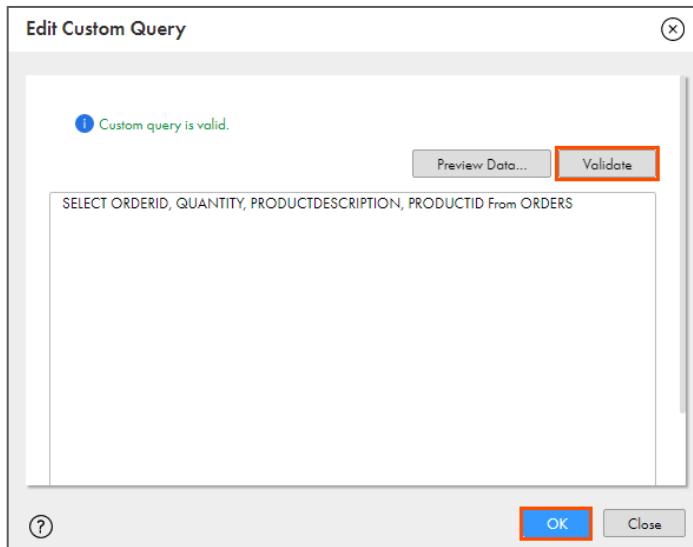
General	Source	Connection: XX_FirstName_Oracle (Oracle)	View...	New Connection...	New Parameter...
	Fields	Source Type: Query	Define Query...		
	Partitions	Query:			

14. Enter the following query. The following query is used to select only the few rows from the ORDERS table.
**SELECT ORDERID, QUANTITY, PRODUCTDESCRIPTION, PRODUCTID From ORDERS
OR**

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingQueryInMapping_5-1**. Copy the command mentioned under **Step A** and paste it in the query field.



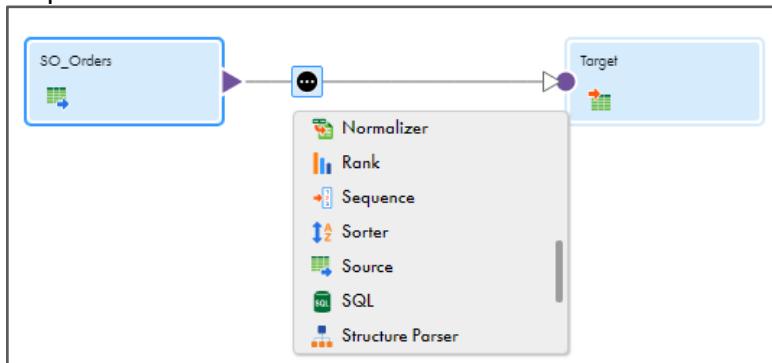
15. Click **Validate** and then **OK**.



Add Source Transformation

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

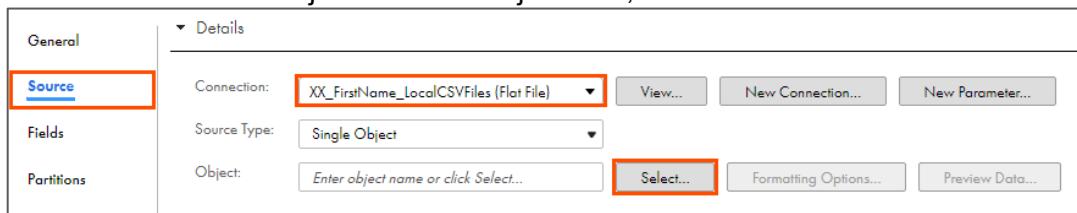
Note: You can also use the Add Transformation icon  to add transformations to a mapping directly on the mapping canvas. The Add Transformation icon appears when you hover over the link between the transformations only when the CLAIRE recommendations is enabled for the mapping. For this lab, you will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



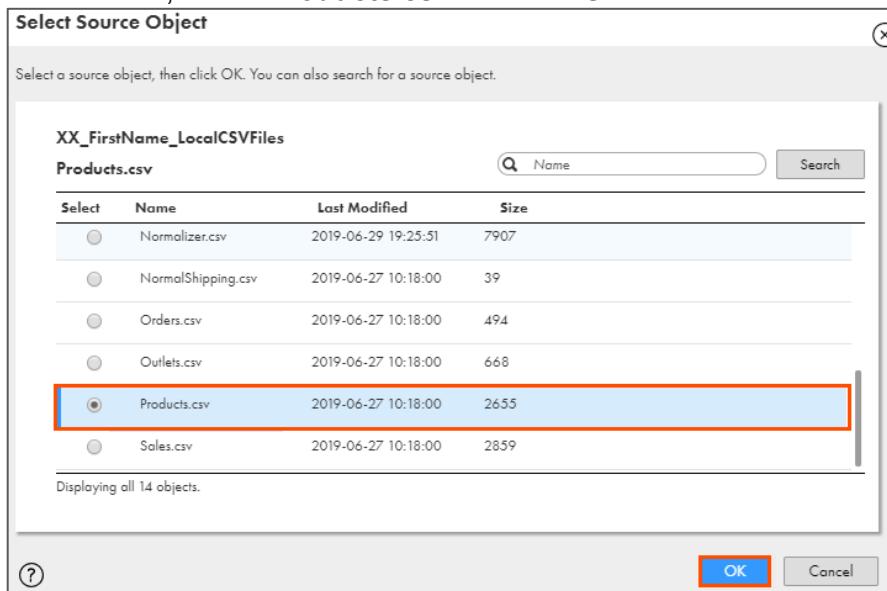
17. Select **Source** from the mapping canvas.
18. In the General section of Source properties, enter Name as **SO_Products**.



19. From the properties pane, click **Source**.
20. From Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
21. Retain Source Type as **Single Object**.
22. To select the source object from the Object field, click **Select...**.



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

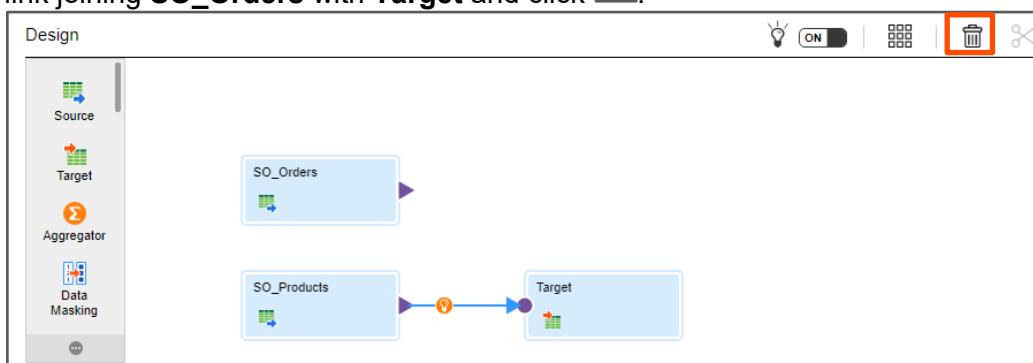


Add Joiner Transformation

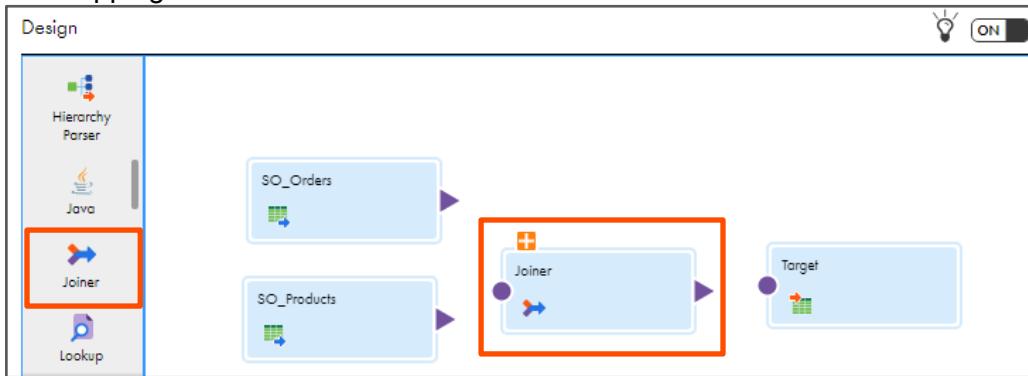
To join data from Orders table and Products csv file, use the Joiner transformation. The Joiner transformation joins data based on the join conditions and the join type. A join condition matches fields between the two sources. Here, you will join the data using the Product ID value for both the sources.

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 .

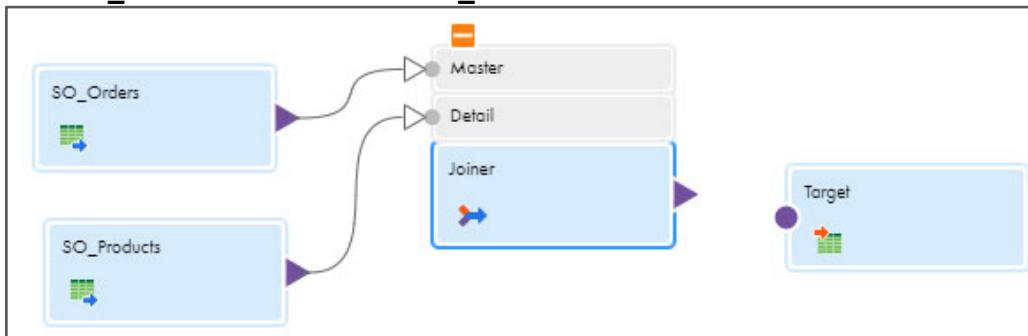


25. From the list of available transformations, drag and drop a **Joiner** transformation on to the mapping canvas.



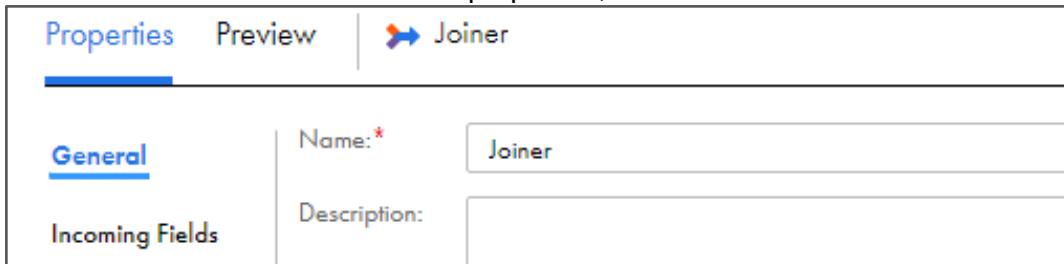
26. To expand the join options, click .

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 .

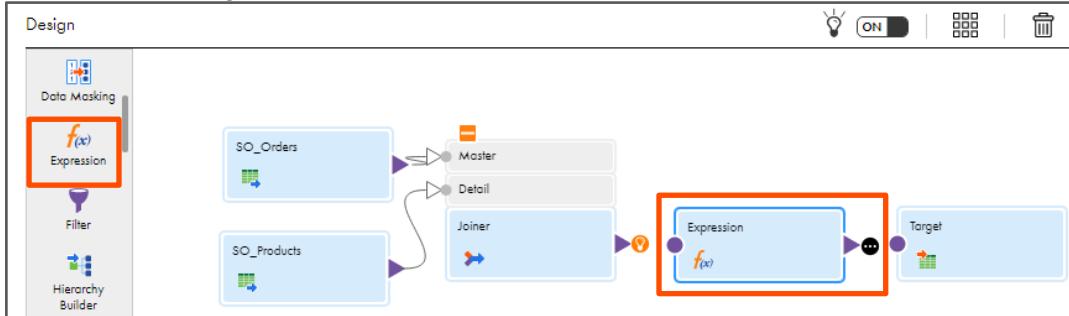
32. Enter the join condition, as shown in the table below:

General	Join Type: <input type="button" value="Normal"/>	Master:  SO_Orders	Detail:  SO_Products
Incoming Fields	Join Condition: <input type="button" value="Simple"/>		
Join Condition		Join Conditions	
Master		Operator	Detail
PRODUCTID = Product_ID			

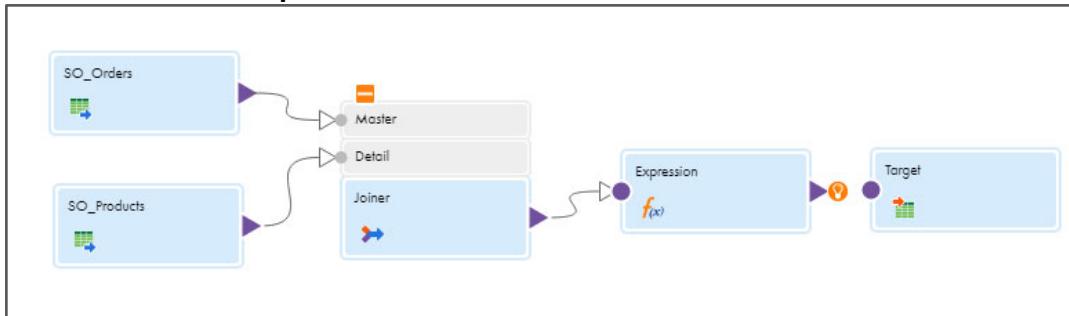
Master	Operator	Detail
PRODUCTID	=	Product_ID

Add Expression Transformation to calculate order total

33. From the list of available transformations, drag and drop an **Expression** transformation on to 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**.



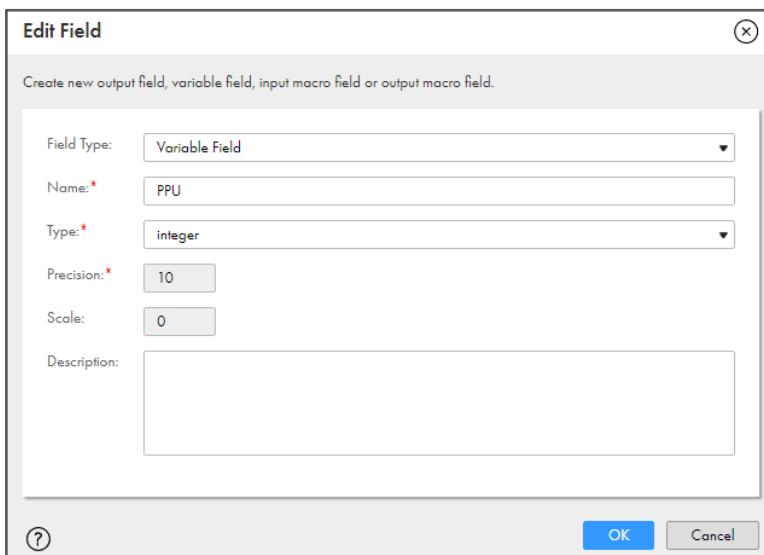
Note: You must create two variable expressions to convert the incoming fields (UnitPrice and Quantity) to integers before you can use them in the output field to calculate the Order Total.

37. From the properties pane, click **Expression**.

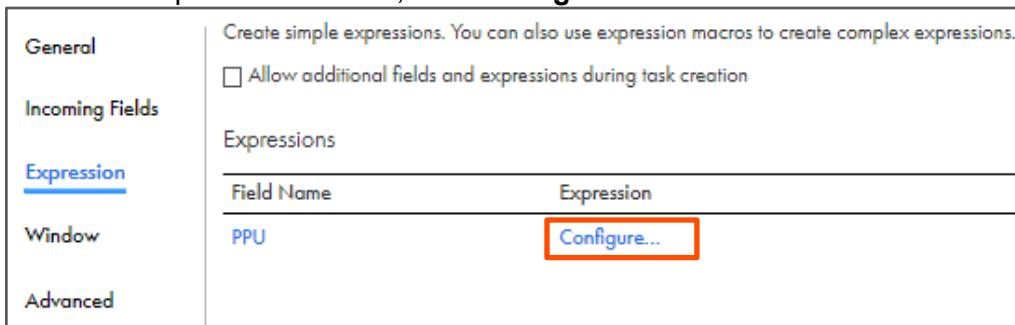
38. To add a new expression, click .

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

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



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



Field Name	Expression
PPU	Configure...

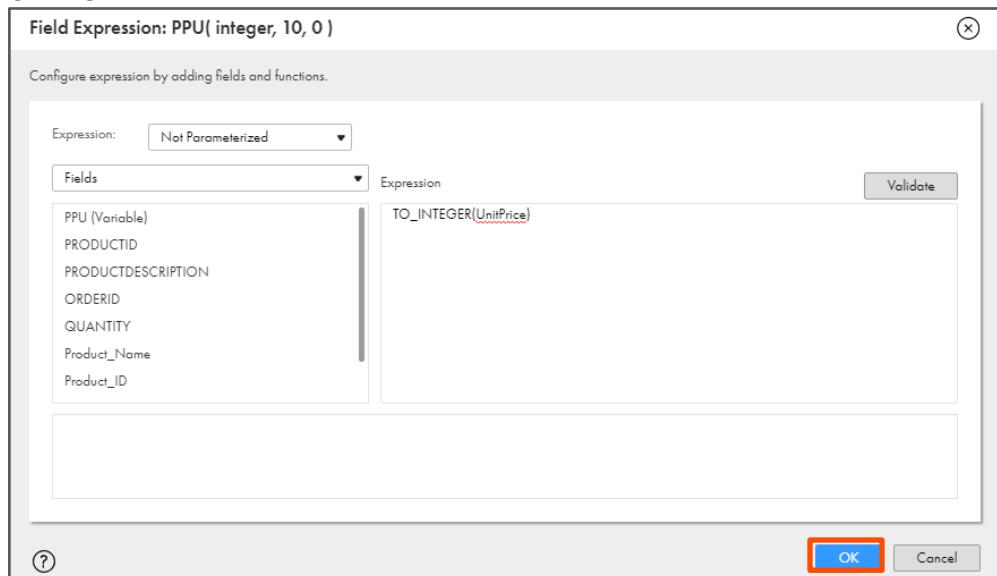
41. In expression window, enter the following expression:

TO_INTEGER(UnitPrice)

OR

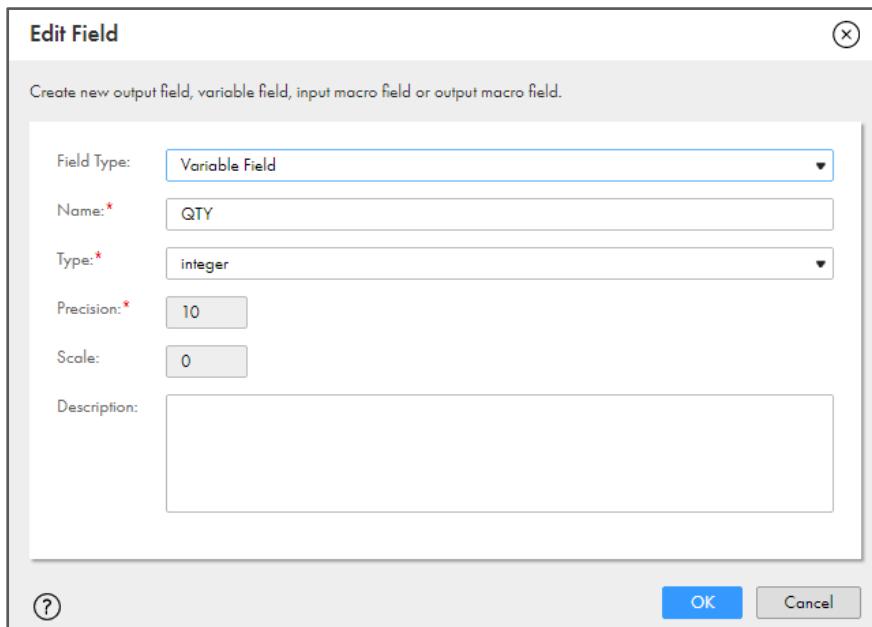
Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingQueryInMapping_5-1**. Copy the command mentioned under **Step B** and paste it in the Expression field.

42. Click **OK**.



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

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



44. Click **Configure** for QTY.

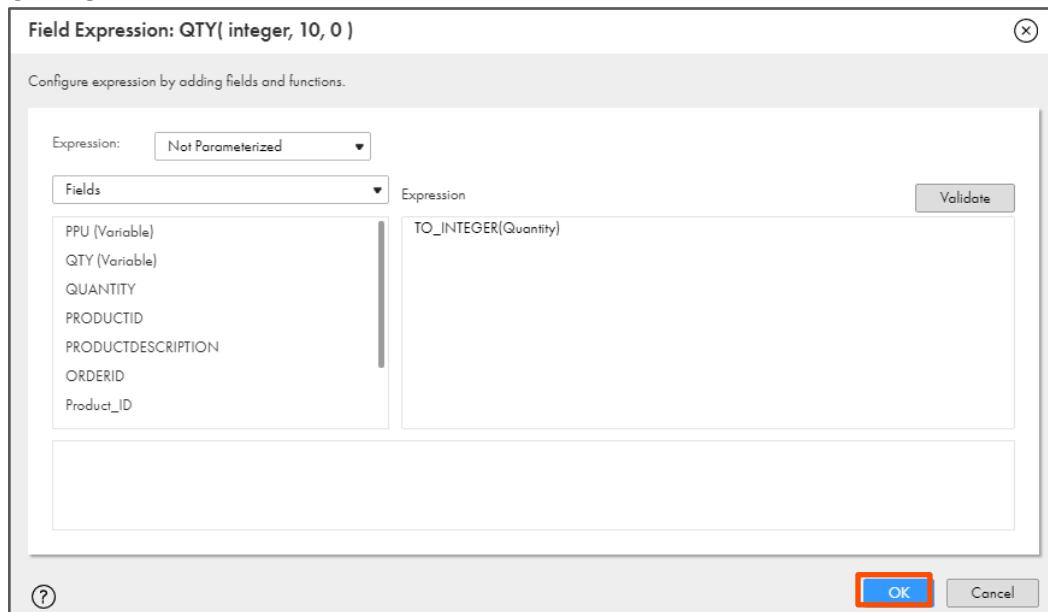
45. In expression window, enter the following expression:

TO_INTEGER(Quantity)

OR

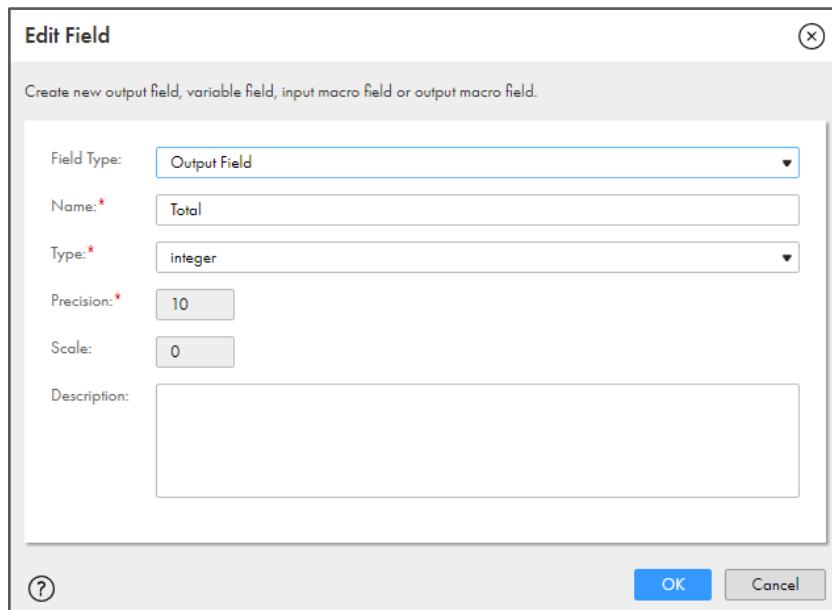
Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingQueryInMapping_5-1**. Copy the command mentioned under **Step C** and paste it in the Expression field.

46. Click **OK**.



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

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



48. Click **Configure** for Total.

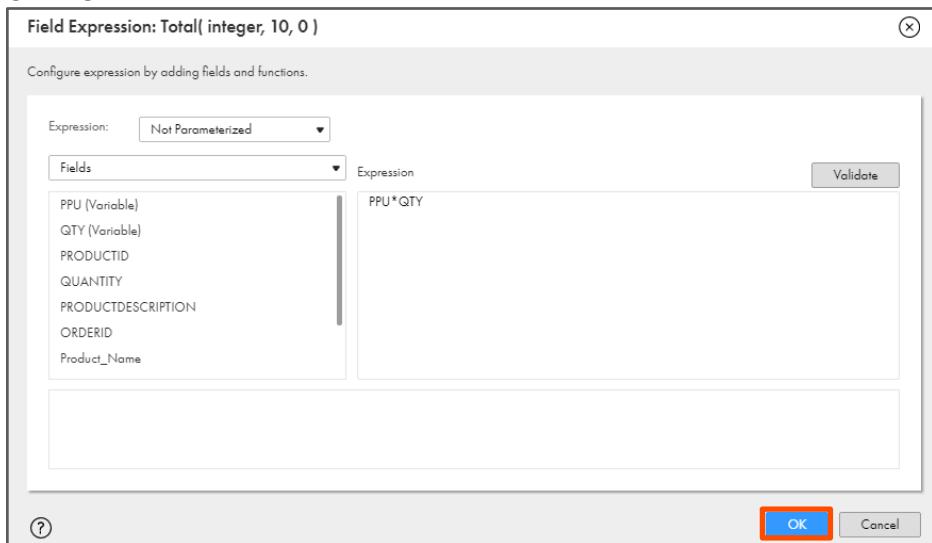
49. In the expression window, enter the following expression:

PPU*QTY

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingQueryInMapping_5-1**. Copy the command mentioned under **Step D** and paste it in the Expression field.

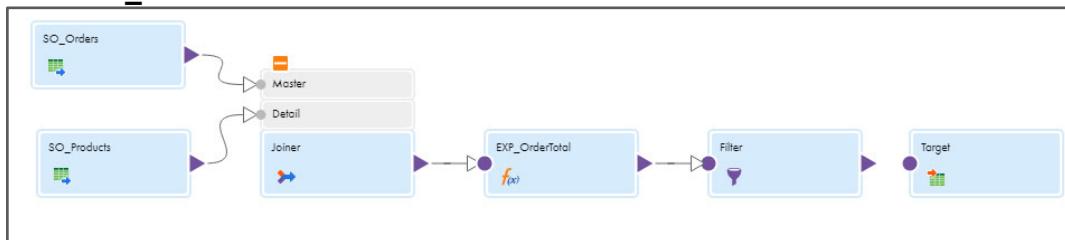
50. Click **OK**.



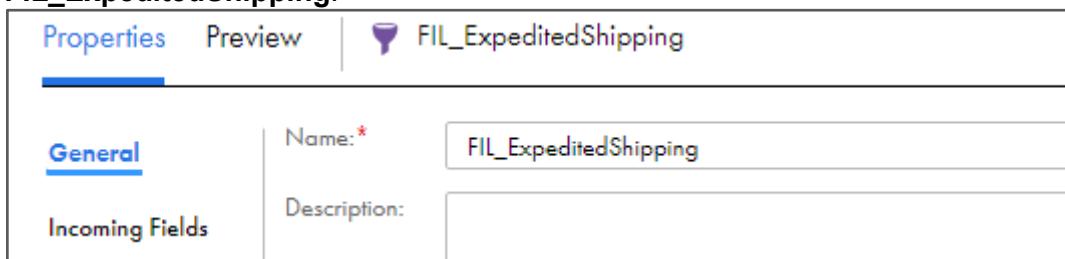
Add Filter Transformation

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.

51. From the list of available transformations, drag and drop a **Filter** transformation on to the mapping canvas.
52. Link **EXP_OrderTotal** to the **Filter** transformation.



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



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

55. To add a new filter, click .

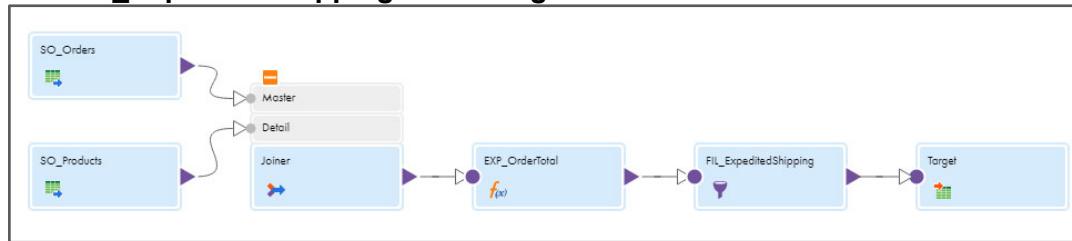
56. Enter filter condition as shown in the table below:

Field Name	Operator	Value
Total	\geq (Greater than or equals)	1000

General								
Filter Condition: Simple								
Incoming Fields								
Filter <input type="button" value="Add"/> <input type="button" value="Advanced"/>								
Filter Conditions <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						

Configure Target Transformation

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



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

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

Properties		Preview
 TG_ExpeditedShipping		
General Name: * TG_ExpeditedShipping		
Incoming Fields Description:		

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

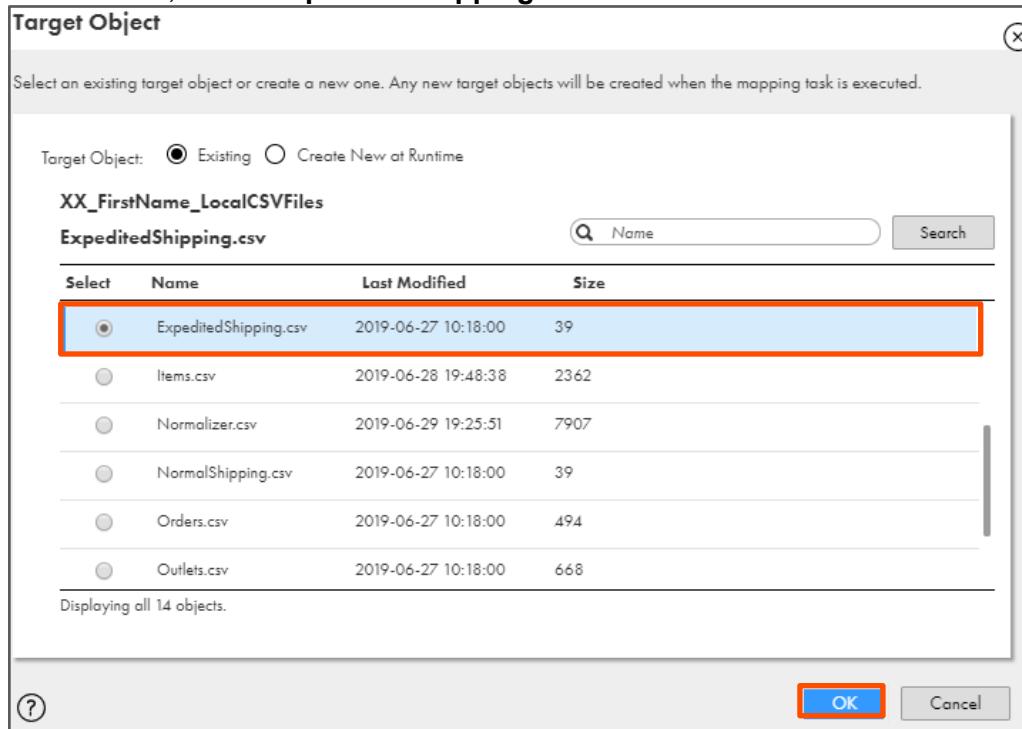
61. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

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

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

General		Details	
Incoming Fields		Connection: XX_FirstName_LocalCSVFiles (Flat File) <input type="button" value="View..."/> <input type="button" value="New Connection..."/> <input type="button" value="New Parameter..."/>	
Target		Target Type: Single Object <input type="button" value="Select..."/>	
Target Fields		Object: Enter object name or click Select... <input type="button" value="Select..."/> <input type="button" value="Formatting Options..."/> <input type="button" value="Preview Data..."/>	

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



65. 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.

66. Match the fields as shown in 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

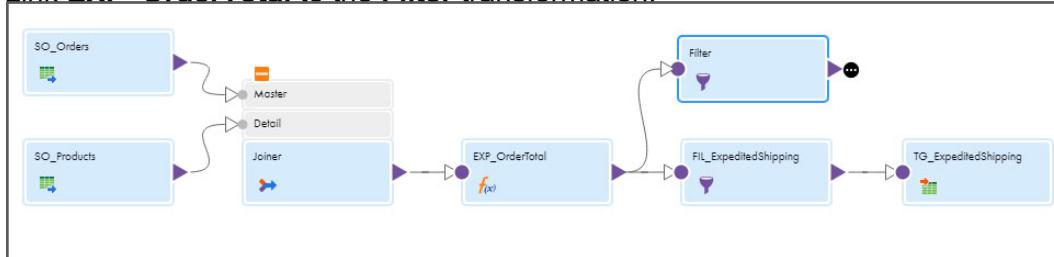
The properties pane has tabs: General, Incoming Fields, Target, Target Fields, and Field Mapping (which is selected). On the left, there's a sidebar with 'General', 'Incoming Fields', 'Target', 'Target Fields', and 'Field Mapping'. The 'Field Mapping' tab is highlighted with a red border.

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

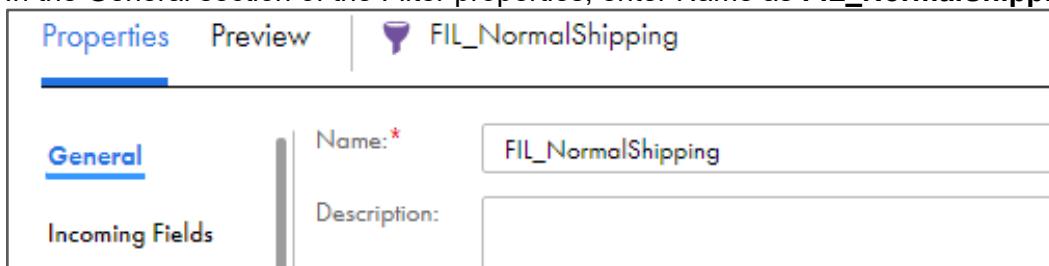
67. From the list of available transformations, drag and drop a **Filter** transformation on to the mapping canvas.

68. Link **EXP_OrderTotal** to the **Filter** transformation.



69. Select the **Filter** transformation from the mapping canvas.

70. In the General section of the Filter properties, enter Name as **FIL_NormalShipping**.



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

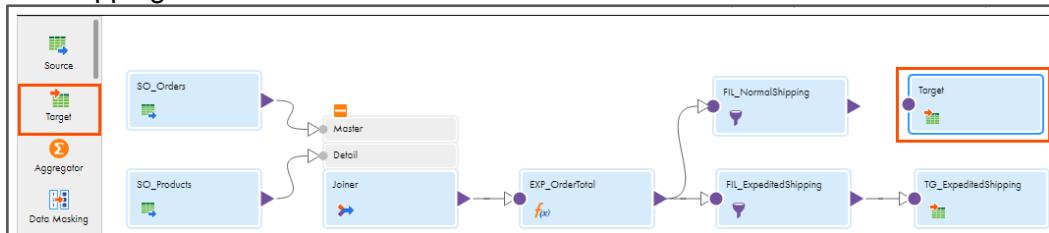
72. To add a new filter, click .

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

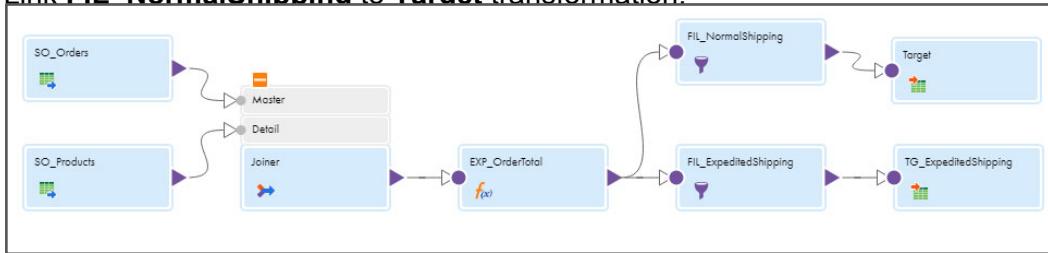
Field Name	Operator	Value	
Total	< (Less than)	1000	
General		Filter Condition: Simple	
Incoming Fields		Filter Conditions	
<u>Filter</u>	Field Name	Operator	
Advanced	Total	<	1000

Configure Target Transformation

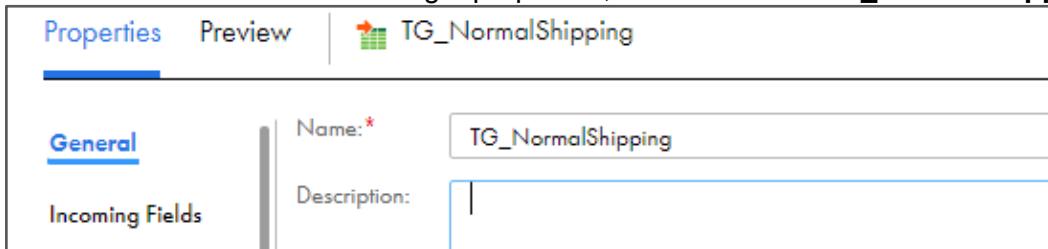
74. From the list of available transformations, drag and drop a **Target** transformation on to the mapping canvas.



75. Link **FIL_NormalShipping** to **Target** transformation.



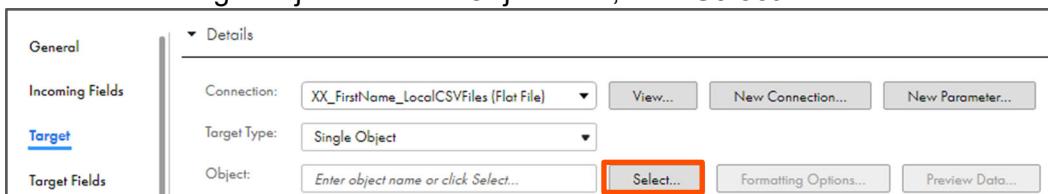
76. In the General section of the Target properties, enter Name as **TG_NormalShipping**.



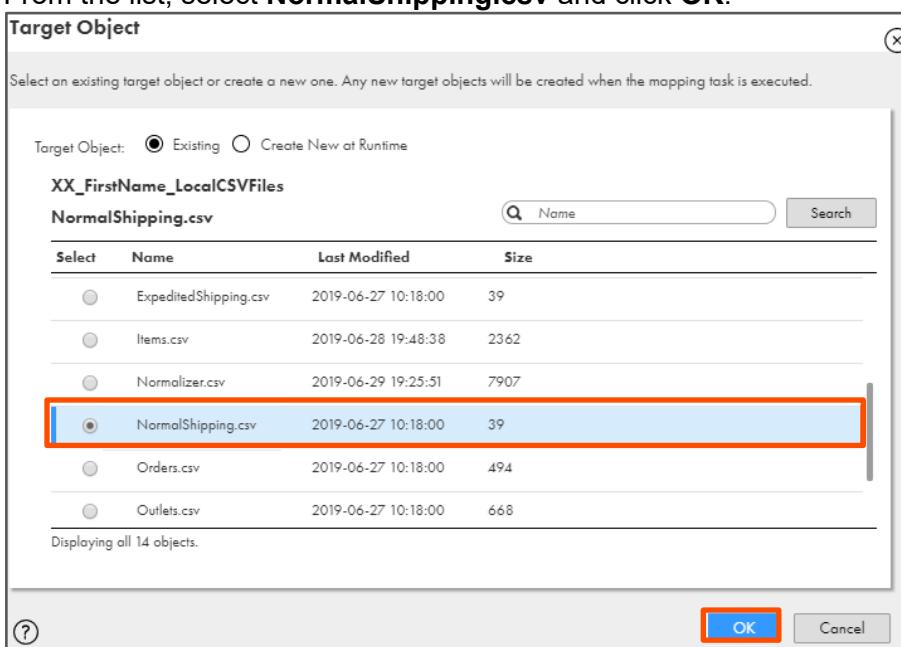
77. From the properties pane, click **Target**.

78. From Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

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

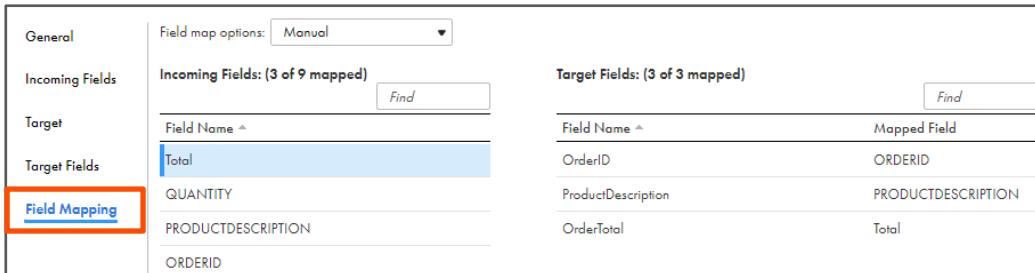


80. From the list, select **NormalShipping.csv** and click **OK**.



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

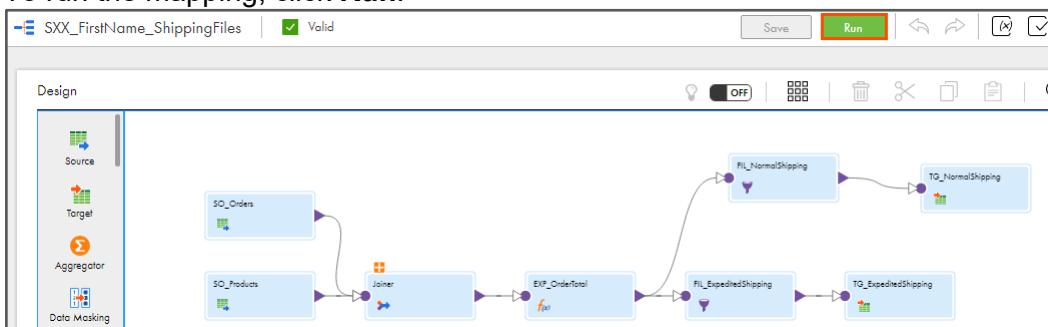
Incoming Field	Target Field
ORDERID	OrderID
PRODUCTDESCRIPTION	ProductDescription
Total	OrderTotal



The screenshot shows the 'Field Mapping' tab in the Informatica Cloud Mapping Designer. The 'Incoming Fields' section lists 'Total', 'QUANTITY', 'PRODUCTDESCRIPTION', and 'ORDERID'. The 'Target Fields' section lists 'OrderID', 'ProductDescription', and 'OrderTotal'. A red box highlights the 'Field Mapping' tab.

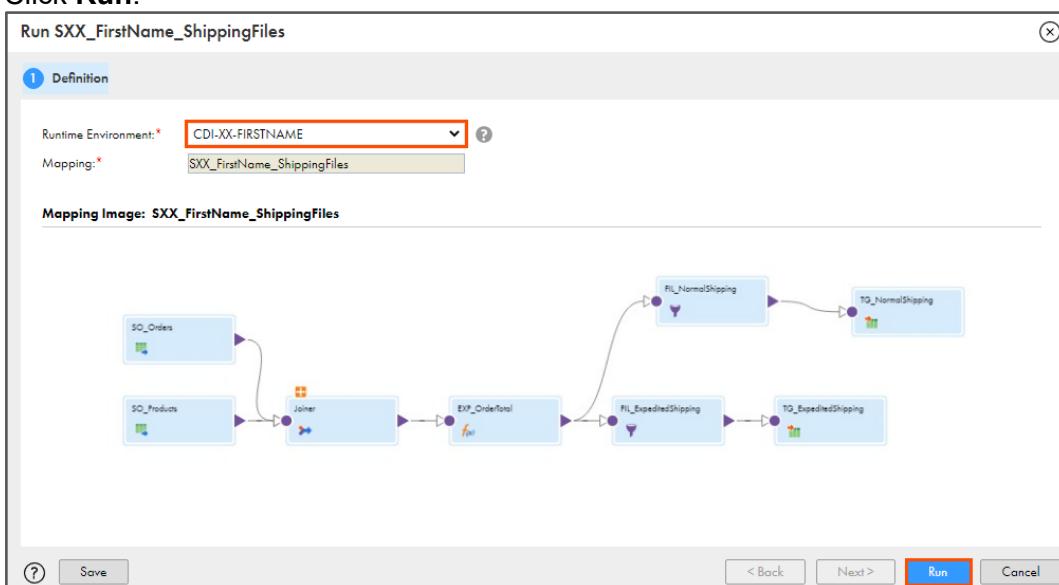
82. To save the mapping, click **Save**.

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



84. From the Runtime Environment drop-down, select your secure agent group.

85. Click **Run**.



The screenshot shows the 'Run SXX_FirstName_ShippingFiles' dialog box. It has a 'Definition' tab where 'Runtime Environment' is set to 'CDI-XX-FIRSTNAME' and 'Mapping' is set to 'SXX_FirstName_ShippingFiles'. Below this is a 'Mapping Image' showing the mapping flow. At the bottom are 'Save', 'Run', and 'Cancel' buttons. A red box highlights the 'Run' button.

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

Monitor Status

86. Monitor the task status from the **My Jobs** page.
87. When the task completes, the status changes to **Success**.

My Jobs		Data Integration
Jobs (2 of 437)		
Asset Name: SXK_FirstName_Shippi...		Find
Instance Name	Subtasks	Start Time ▾
SXK_FirstName_ShippingFiles-3		Nov 13, 2020, 12:20 AM
		End Time
		Nov 13, 2020, 12:2...
		Rows Processed
		6
		Status
		Success

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

88. Close the asset from the navigation pane.
89. On your local machine, go to **C:\IICSLabFiles**.
90. Verify that the correct entries are written to the following files.

ExpeditedShipping.csv:

	A	B	C	D	E	F
1	OrderID	ProductDescription	OrderTotal			
2	1	Apple MacBook Pro	12390			
3	5	JBL Link 500	3980			
4						
5						

NormalShipping.csv:

	A	B	C	D	E
1	OrderID	ProductDescription	OrderTotal		
2	4	Wilson Evolution Game Basketball	300		
3	6	Redemption	180		
4	3	Xbox 360 Slim	75		
5	2	Samsonite Winfield Luggage	178		
6					

This concludes the lab.

Module 5: Cloud Mapping Designer – Transformations

Lab 5-2: Using Normalizer, Aggregator, and Rank Transformations in a Mapping

Overview:

A Normalizer transformation represents the data in a smarter and organized manner. The Aggregator transformation performs aggregate calculations on groups of data. These calculations can be average, sum, count, and so on. A Rank transformation selects the top or bottom range of data. You can use it to find the largest or smallest numeric values in a group.

Objective:

- Configure a mapping in Informatica Cloud
- Use Normalizer, Rank, and Aggregator transformations in the mapping
- Create Mapping Task

Scenario:

Ruby wants to find the list of top performers in the store for the last four quarters. So, she asks John to help her with this.

John will use the Informatica Cloud Mapping Designer to calculate the sales percentage for each employee for NH suppliers in the last four quarters. He will use the Rank transformation to list the top twenty performers based on the overall sales percentage.

Duration:

30 minutes

Tasks

Copy Source Files

1. Copy the following files from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles):

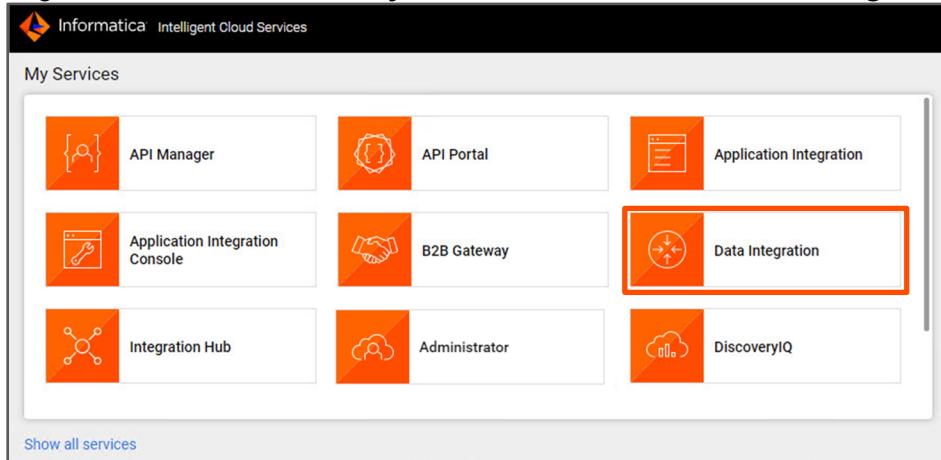
Files
Sales.csv
Normalizer.csv
Aggregated.csv

2. Open the source files and observe its contents.

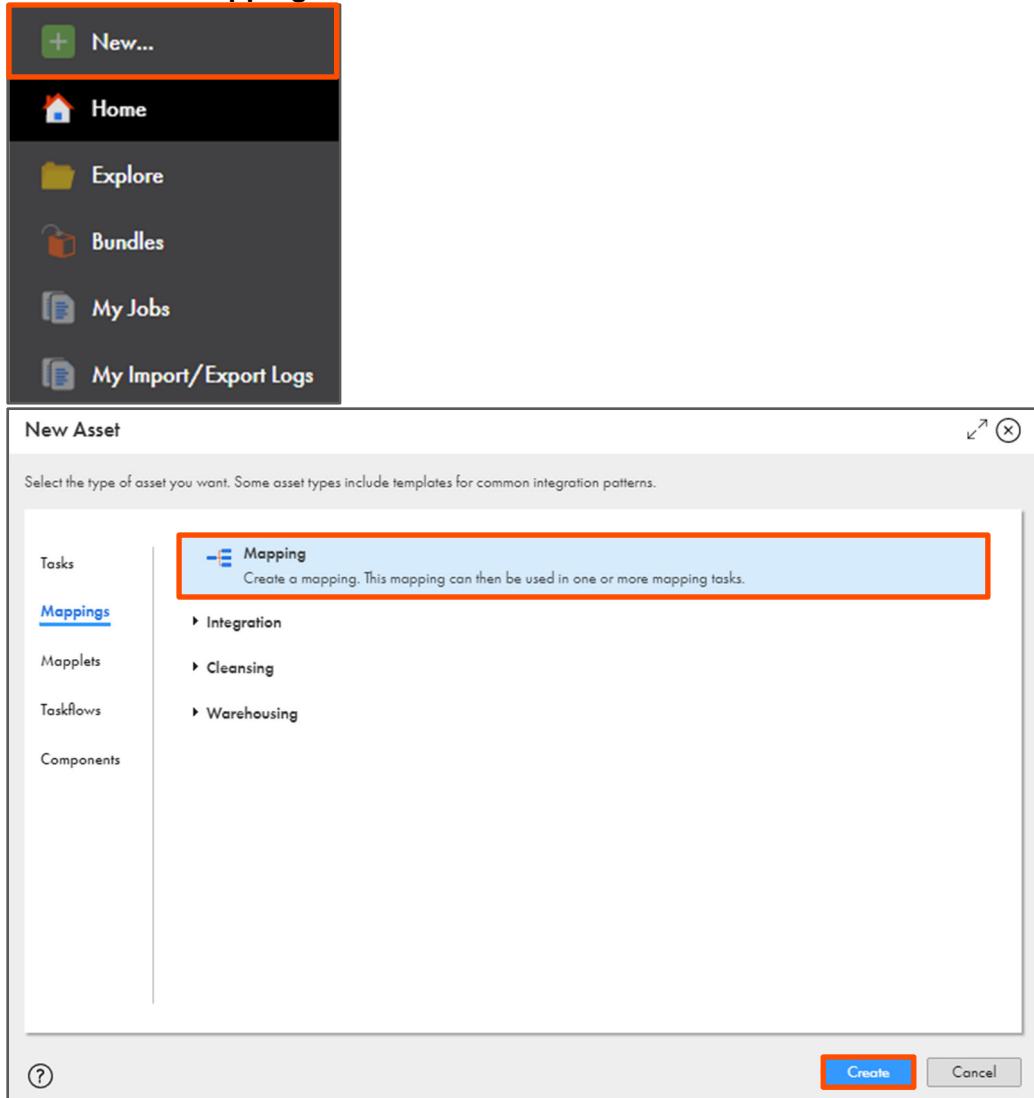
Note: You must close the files before running the task to avoid job failure.

Create Mapping

3. Log in to IICS and from the **My Services** window, select **Data Integration**.

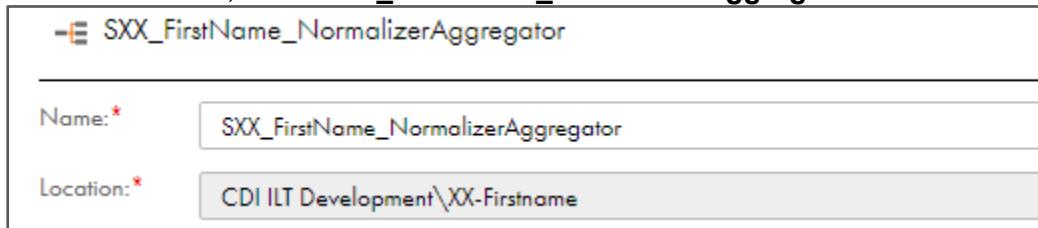


4. Create a new **Mapping**.



The screenshot shows the 'New Asset' dialog box in the Informatica Designer. The left sidebar lists 'Tasks', 'Mappings' (which is currently selected and highlighted with a blue background), 'Mapplets', 'Taskflows', and 'Components'. The main pane displays a list of asset types: 'Mapping' (with a sub-note: 'Create a mapping. This mapping can then be used in one or more mapping tasks.'), 'Integration', 'Cleansing', and 'Warehousing'. The 'Mapping' item is also highlighted with a red rectangular border. At the bottom right of the dialog are 'Create' and 'Cancel' buttons.

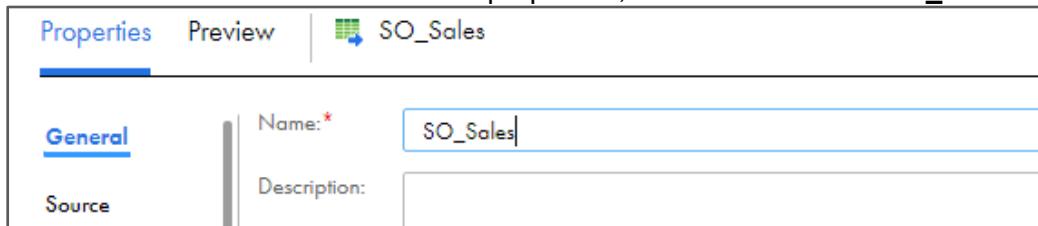
5. In the Name field, enter **SXX_FirstName_NormalizerAggregator**.



Name:*	SXX_FirstName_NormalizerAggregator
Location:*	CDI ILT Development\XX-Firstname

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

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

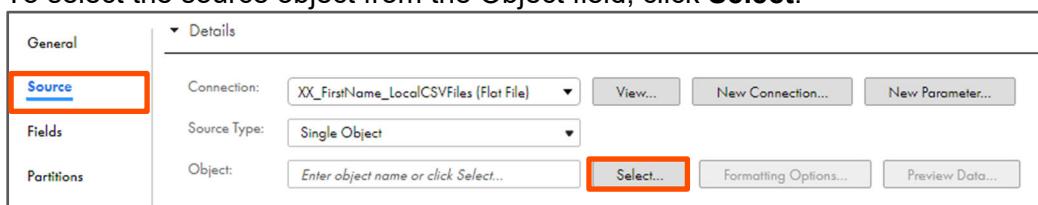


Properties	Preview	SO_Sales
General	Name:*	SO_Sales
Source	Description:	

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

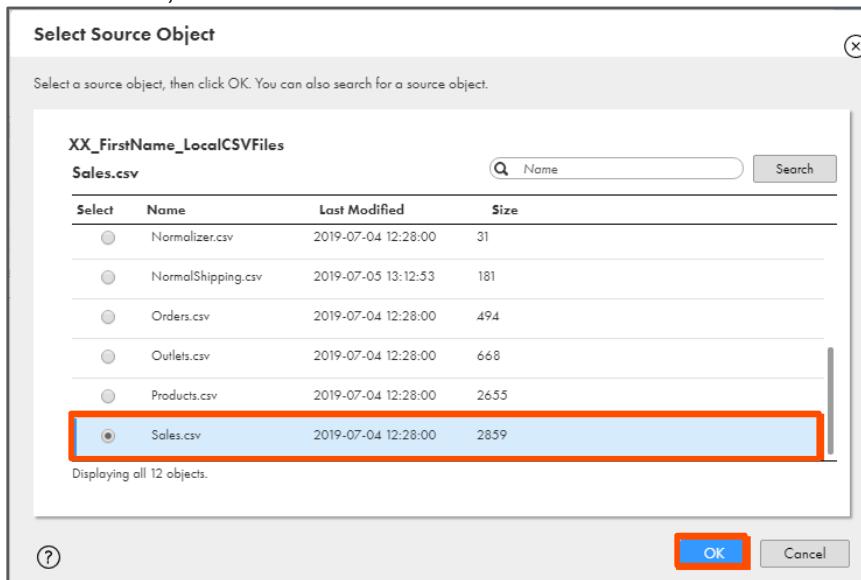
9. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

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



General	Details
Source	Connection: XX_FirstName_LocalCSVFiles (Flat File) View... New Connection... New Parameter...
Fields	Source Type: Single Object
Partitions	Object: Enter object name or click Select... Select... Formatting Options... Preview Data...

11. From the list, select **Sales.csv** and click **OK**.



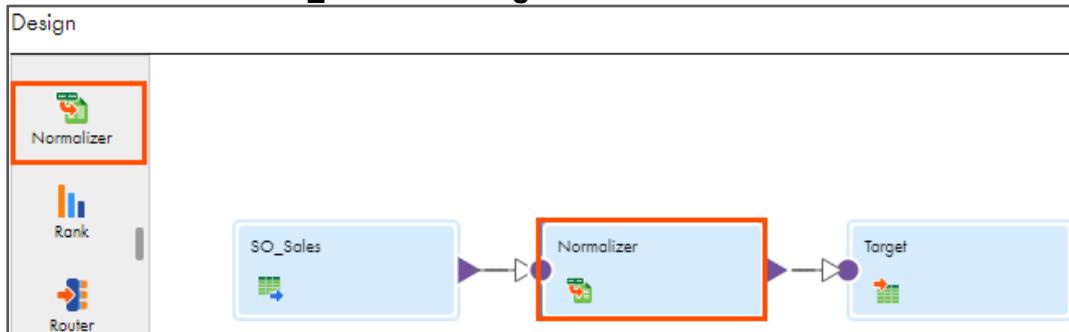
Select	Name	Last Modified	Size
<input type="radio"/>	Normalizer.csv	2019-07-04 12:28:00	31
<input type="radio"/>	NormalShipping.csv	2019-07-05 13:12:53	181
<input type="radio"/>	Orders.csv	2019-07-04 12:28:00	494
<input type="radio"/>	Outlets.csv	2019-07-04 12:28:00	668
<input type="radio"/>	Products.csv	2019-07-04 12:28:00	2655
<input checked="" type="radio"/>	Sales.csv	2019-07-04 12:28:00	2859

Displaying all 12 objects.

(?) OK Cancel

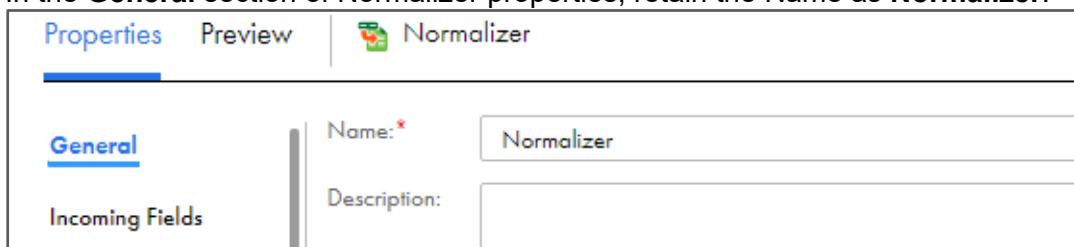
Add Normalizer Transformation

12. From the list of available transformations, drag and drop the **Normalizer** transformation on the link between **SO_Sales** and **Target**.



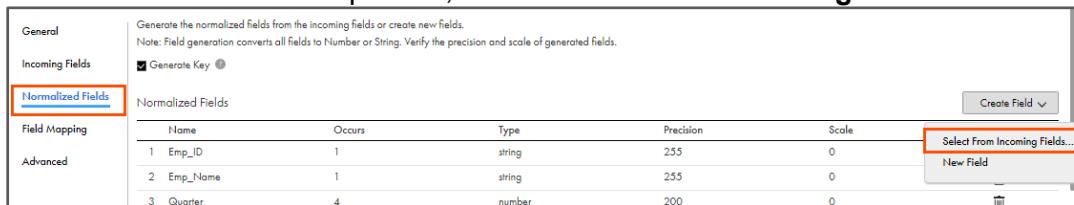
13. Select the **Normalizer** transformation from the mapping canvas.

14. In the **General** section of Normalizer properties, retain the Name as **Normalizer**.

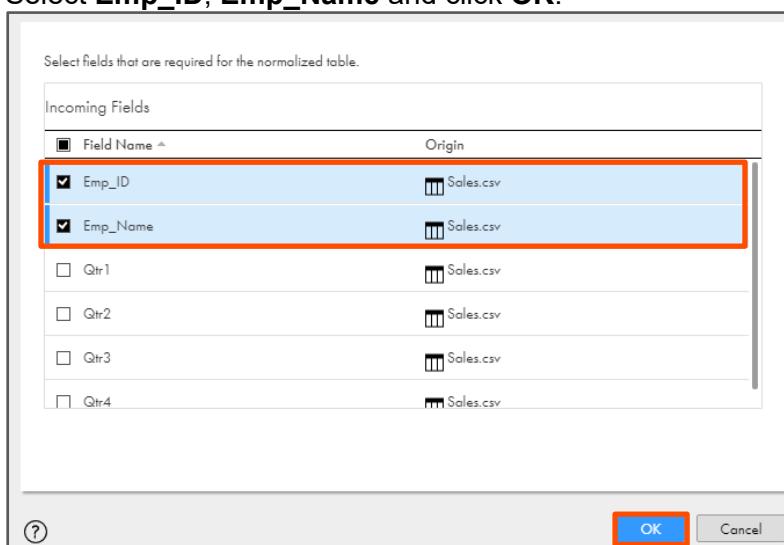


15. From the properties pane, click **Normalized Fields**.

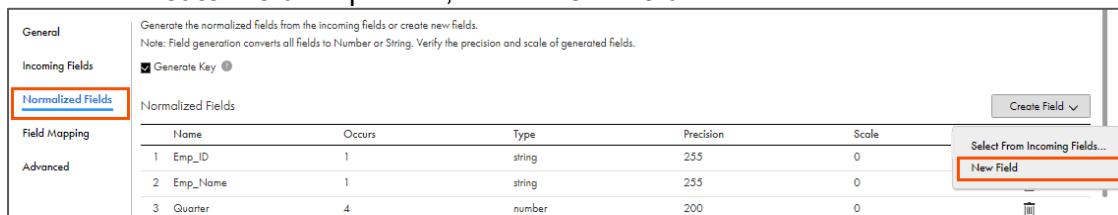
16. From the **Create Field** drop-down, select **Select From Incoming Fields**.



17. Select **Emp_ID**, **Emp_Name** and click **OK**.



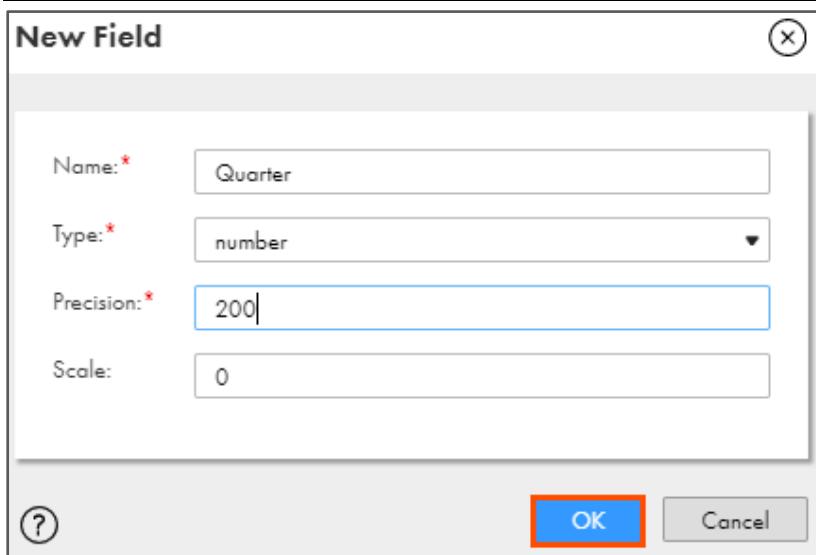
18. From the **Create Field** drop-down, select **New Field**.



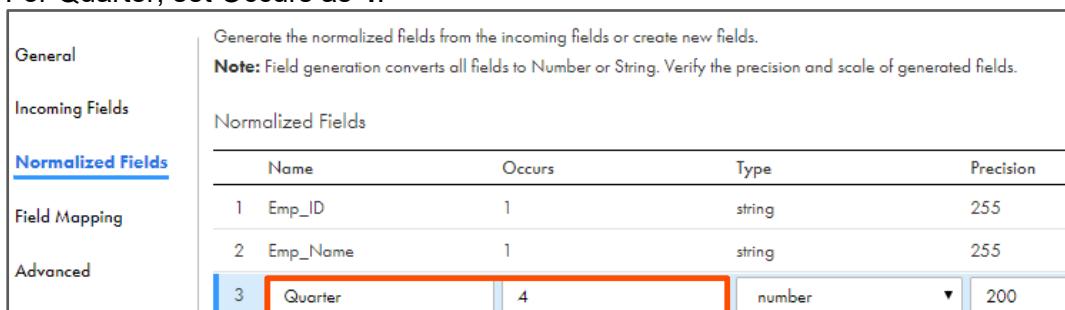
Name	Occurs	Type	Precision	Scale
1 Emp_ID	1	string	255	0
2 Emp_Name	1	string	255	0
3 Quarter	4	number	200	0

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

Name	Type	Precision	Scale
Quarter	number	200	0



20. For Quarter, set Occurs as 4.



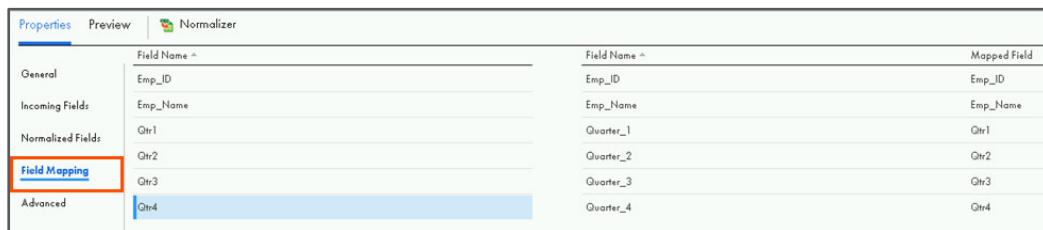
Name	Occurs	Type	Precision
1 Emp_ID	1	string	255
2 Emp_Name	1	string	255
3 Quarter	4	number	200

Note: Occurs define the number of instances the field occurs in incoming data.

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

22. Map the fields, as shown in the following table:

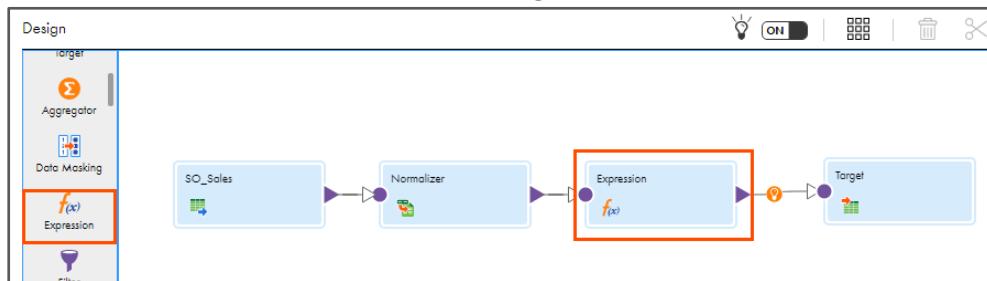
Incoming Fields	Normalized Fields
Emp_ID	Emp_ID
Emp_Name	Emp_Name
Qtr1	Quarter_1
Qtr2	Quarter_2
Qtr3	Quarter_3
Qtr4	Quarter_4



Field Name	Mapped Field
Emp_ID	Emp_ID
Emp_Name	Emp_Name
Qtr1	Quarter_1
Qtr2	Quarter_2
Qtr3	Quarter_3
Qtr4	Quarter_4

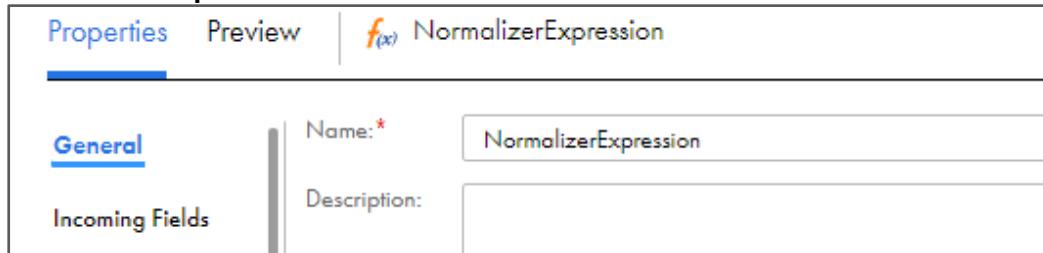
Add Expression Transformation

23. From the list of available transformations, drag and drop the **Expression** transformation on the link between **Normalizer** and **Target**.



24. Select the **Expression** transformation from the mapping canvas.

25. In the **General** section of Normalizer properties, enter the Name as **NormalizerExpression**.



Properties	Preview	f_(x) NormalizerExpression
General	Name: *	NormalizerExpression
Incoming Fields	Description:	

26. From the properties pane, click **Expression** and click .

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

Field Type	Name	Type	Precision	Scale
Output Field	QuarterSales	string	255	0

Edit Field

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

Field Type:	<input type="text" value="Output Field"/>
Name:*	<input type="text" value="QuarterSales"/>
Type:*	<input type="text" value="string"/>
Precision:*	<input type="text" value="255"/>
Scale:	<input type="text" value="0"/>
Description:	

?
OK
Cancel

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

- [General](#)
- [Incoming Fields](#)
- [Expression](#)
- [Window](#)
- [Advanced](#)

Create simple expressions. You can also use expression macros to create complex expressions.

Allow additional fields and expressions during task creation

Expressions

Field Name	Expression
QuarterSales	Configure...

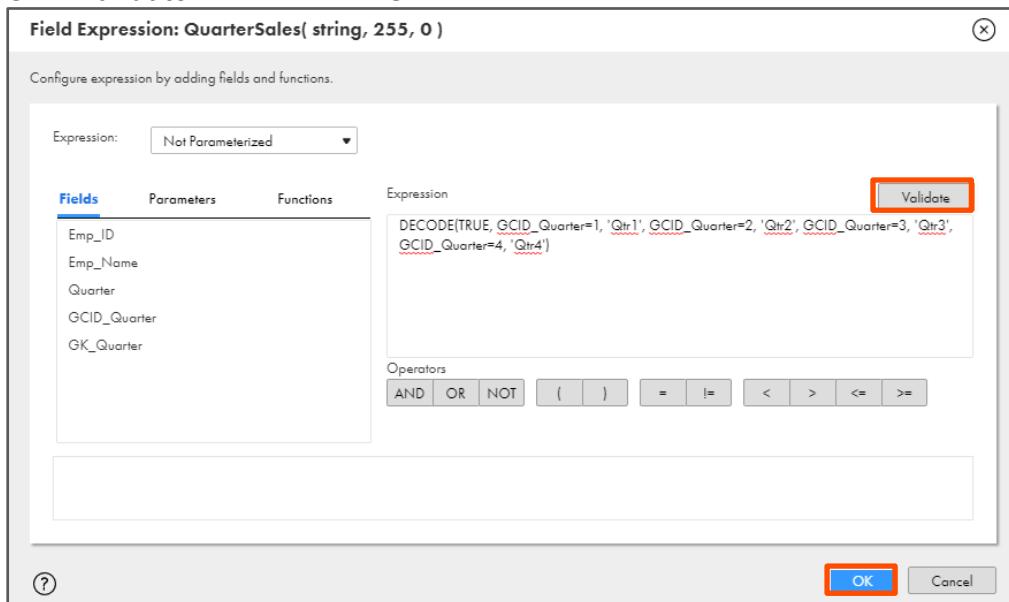
29. In the Expression field, copy and paste the following expression:

DECODE(TRUE, GCID_Quarter=1, 'Qtr1', GCID_Quarter=2, 'Qtr2', GCID_Quarter=3, 'Qtr3', GCID_Quarter=4, 'Qtr4')

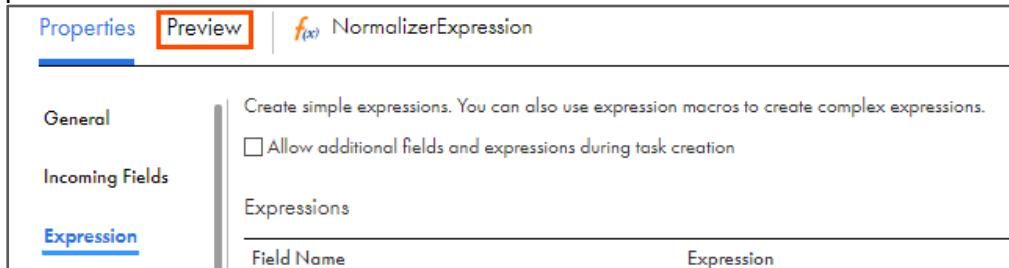
OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingNormalizerAggregatorRankTransformations_5-2**. Copy the command mentioned under **Step A** and paste it in the Expression field.

30. Click **Validate** and then click **OK**.



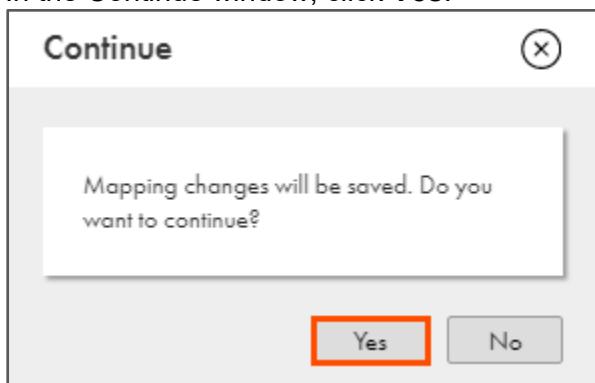
31. To run the data preview for NormalizerExpression transformation, click on the **Preview** panel.



32. Click **Run Preview**.

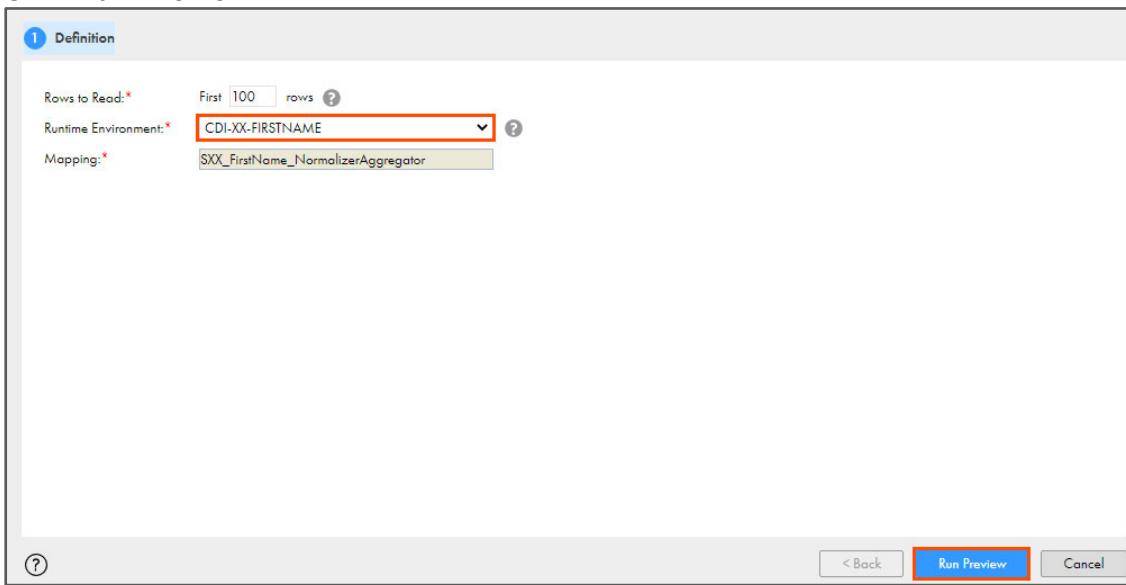


33. In the Continue window, click **Yes**.



34. In the Run Preview window, select your secure agent group if not already selected.

35. Click **Run Preview**.



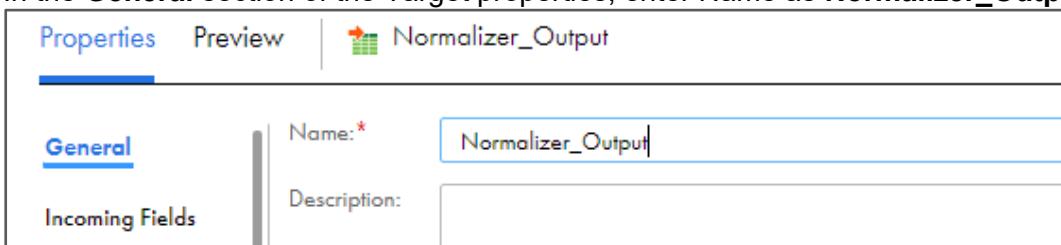
Note: A new job is created.

36. When the job completes, the data transformed by the selected transformation is visible in the Preview panel.

NormalizerExpression					
Run Preview					
Rows					
Emp_ID	Emp_Name	Quarter	GK_Quarter	GCID_Quarter	QuarterSales
677509	Lois Walker	32	1	1	Qtr1
677509	Lois Walker	534	2	2	Qtr2
677509	Lois Walker	746	3	3	Qtr3

37. To configure the target, from the mapping canvas, click the **Target** transformation.

38. In the **General** section of the Target properties, enter Name as **Normalizer_Output**.



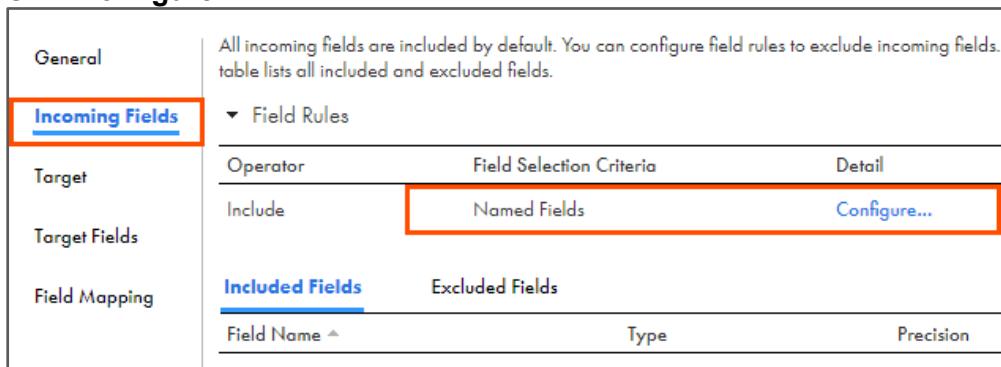
Properties		Preview	Normalizer_Output
General	Name:*	<input type="text" value="Normalizer_Output"/>	
Incoming Fields	Description:	<input type="text"/>	

39. From the properties pane, click **Incoming Fields**.

40. 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.

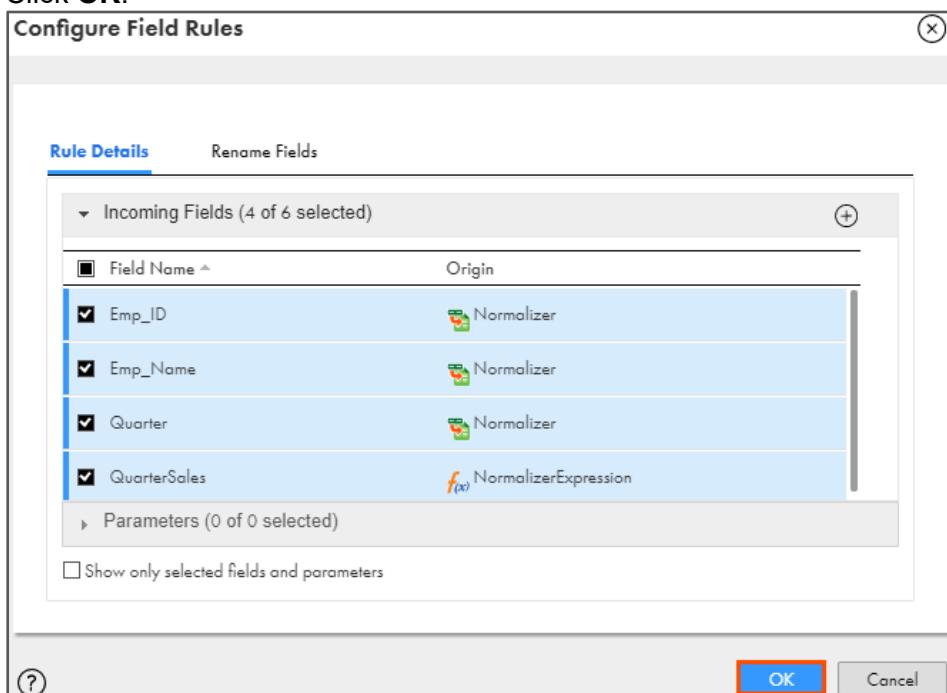
41. Click **Configure**.



Operator	Field Selection Criteria	Detail
Include	Named Fields	Configure...

42. Select **Emp_ID**, **Emp_Name**, **Quarter**, and **QuarterSales**.

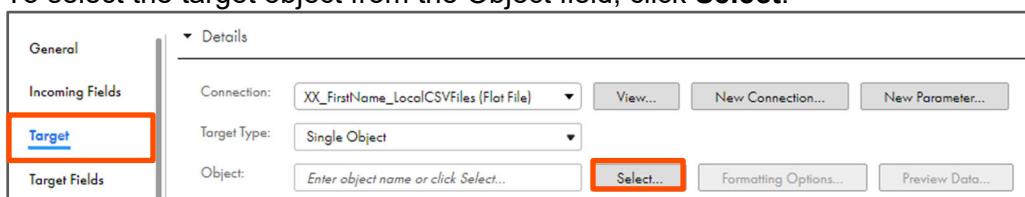
43. Click **OK**.



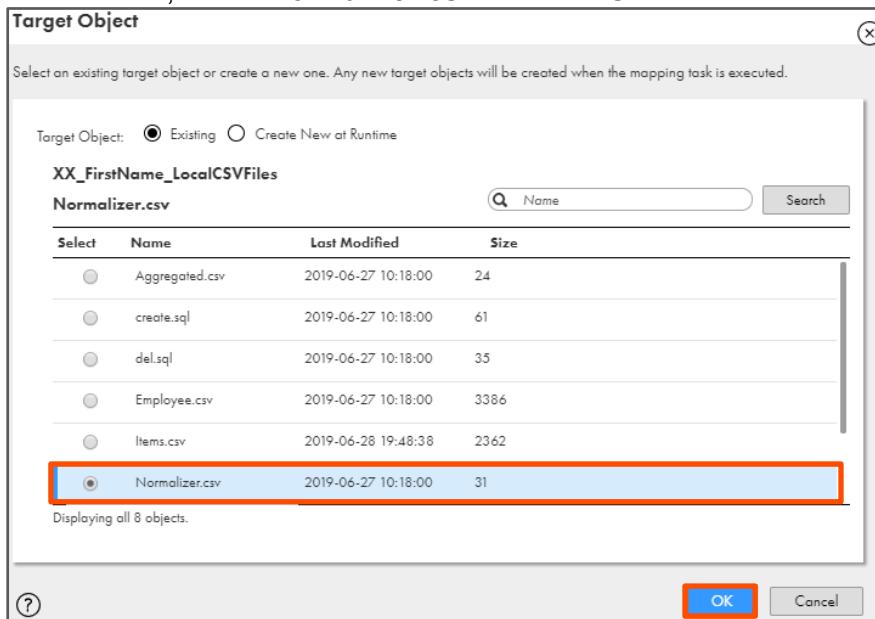
44. From the properties pane, click **Target**.

45. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

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



47. From the list, select **Normalizer.csv** and click **OK**.

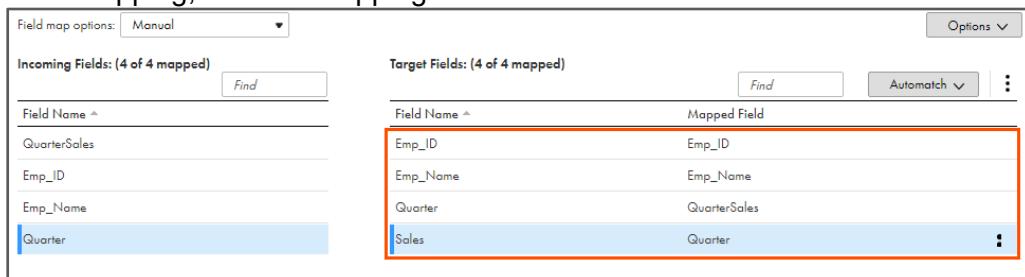


48. From the properties pane, click **Field Mapping**.

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

Incoming Field	Target Field
QuarterSales	Quarter
Emp_ID	Emp_ID
Emp_Name	Emp_Name
Quarter	Sales

50. After mapping, the field mapping looks as shown below:

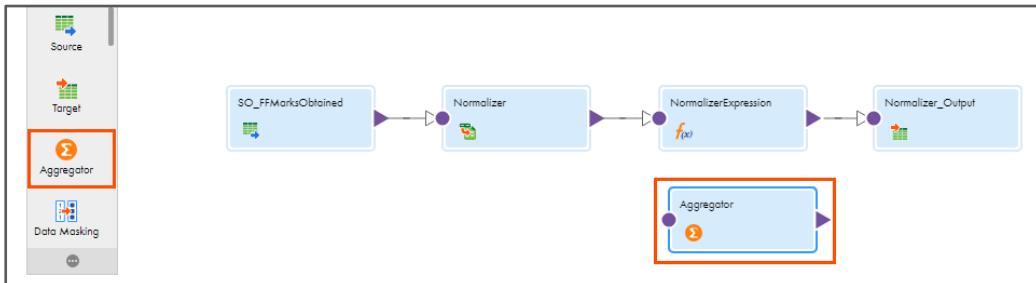


The screenshot shows the 'Field map options: Manual' dialog box. It has two main sections: 'Incoming Fields: (4 of 4 mapped)' and 'Target Fields: (4 of 4 mapped)'. Both sections have 'Find' and 'Automatch' buttons. The 'Incoming Fields' section lists 'QuarterSales', 'Emp_ID', 'Emp_Name', and 'Quarter'. The 'Target Fields' section lists 'Emp_ID', 'Emp_Name', 'QuarterSales', and 'Quarter'. A table in the center maps incoming fields to target fields:

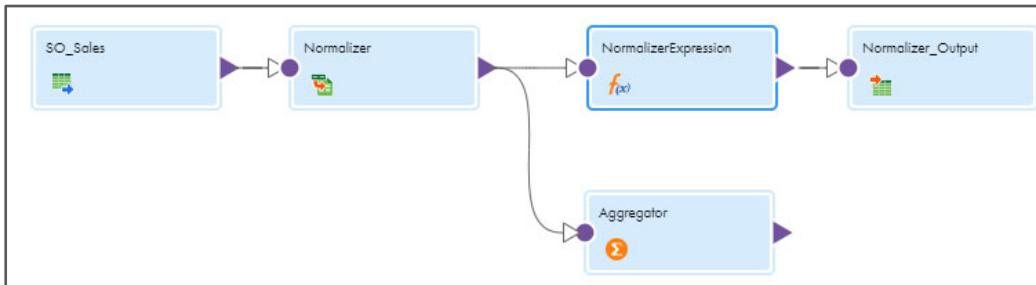
Field Name	Mapped Field
Emp_ID	Emp_ID
Emp_Name	Emp_Name
Quarter	QuarterSales
Sales	Quarter

Add Aggregator Transformation

51. From the list of available transformations, drag and drop the **Aggregator** transformation on the mapping canvas.



52. Link the **Normalizer** transformation with the **Aggregator** transformation.



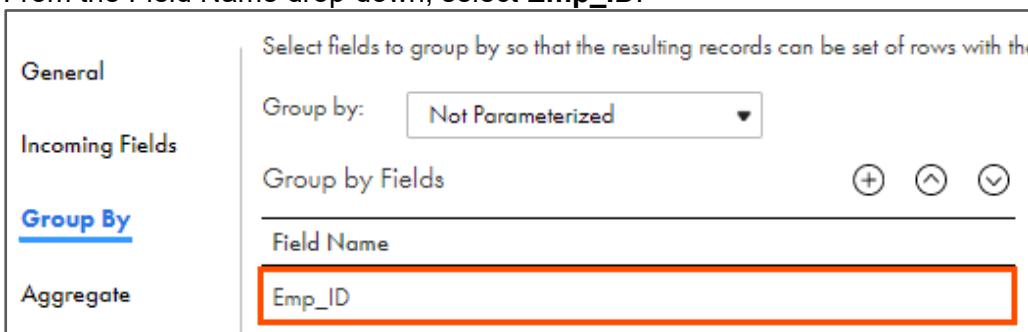
53. Select the **Aggregator** transformation from the mapping canvas.

54. In the **General** section of Aggregator properties, retain the Name as **Aggregator**.



55. From the properties pane, click **Group By** and click .

56. From the Field Name drop-down, select **Emp_ID**.



57. From the properties pane, click **Aggregate**.

58. To add a new aggregate condition, click .

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

Field Type	Name	Type	Precision	Scale
Output Field	Percentage	double	15	0

Edit Field

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

Field Type:	Output Field
Name:*	Percentage
Type:*	double
Precision:*	15
Scale:	0
Description:	

?
OK
Cancel

60. To configure the aggregator, click **Configure**.

- General** Create simple aggregate expressions. You can also use expression macros to create
 Allow additional fields and expressions during task creation
- Incoming Fields**
- Group By**
- Aggregate**

Field Name	Expression
Percentage	Configure...
- Advanced**

61. In the Expression field, enter the following expression:

(SUM(Quarter) /400)*100

OR

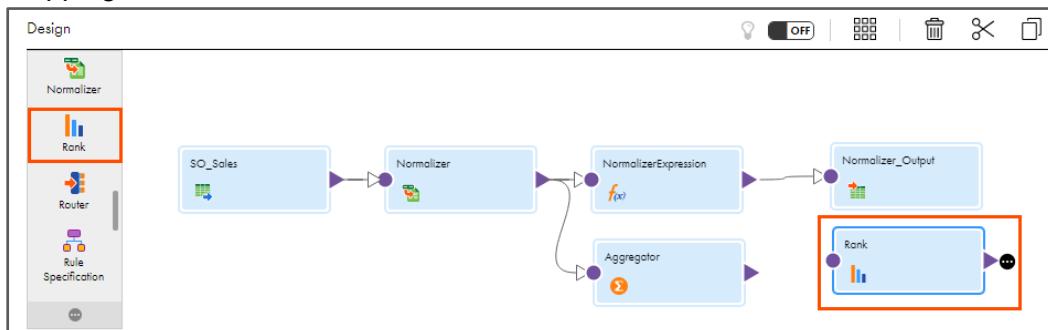
Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingNormalizerAggregatorRankTransformations_5-2**. Copy the command mentioned under **Step B** and paste it in the Expression field.

62. Click **Validate** and then click **OK**.

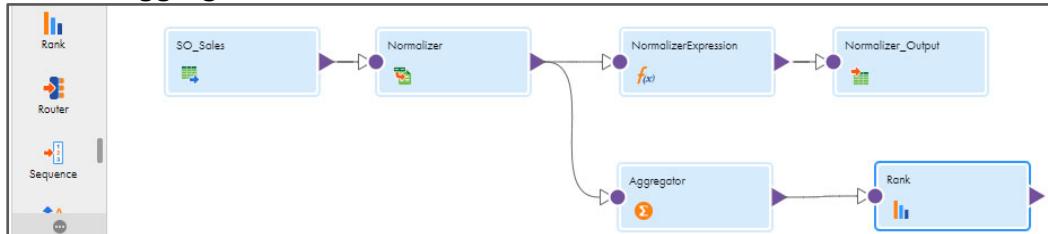


Add Rank Transformation

63. From the list of available transformations, drag and drop **Rank** transformation on the mapping canvas.

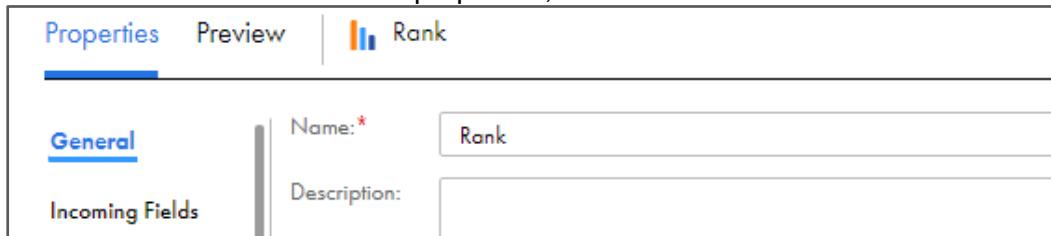


64. Link the **Aggregator** with **Rank** transformation.



65. Select the **Rank** transformation from the mapping canvas.

66. In the **General** section of Rank properties, retain the Name as **Rank**.

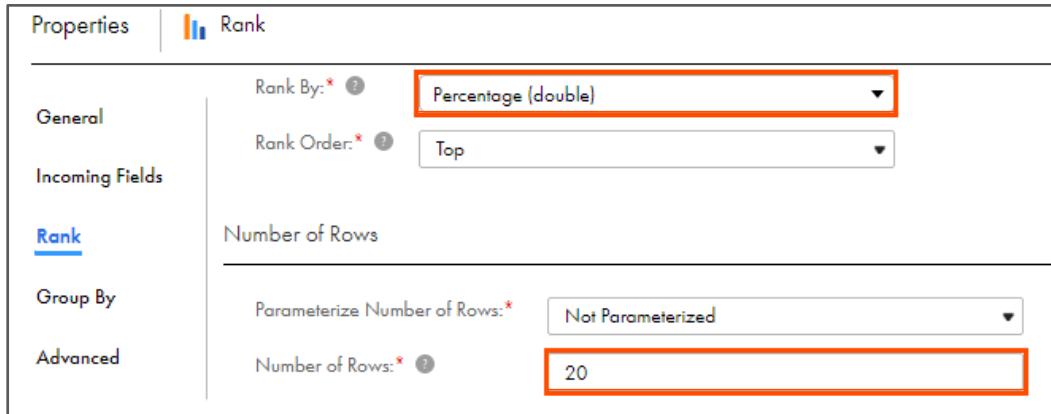


67. From the properties pane, click **Rank**.

68. From the Rank By drop-down, select **Percentage**.

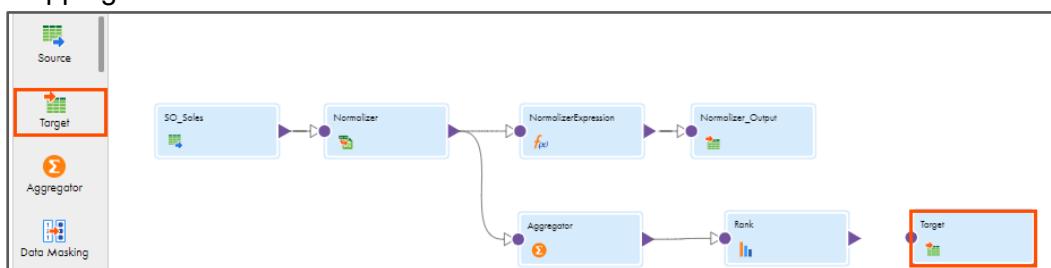
69. Retain the Rank Order as **Top**.

70. In the Number of Rows section, in the Number of Rows field, enter **20**.

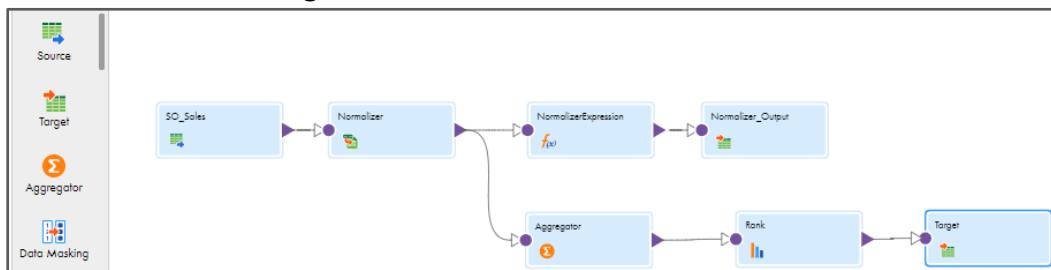


Add Target Transformation

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

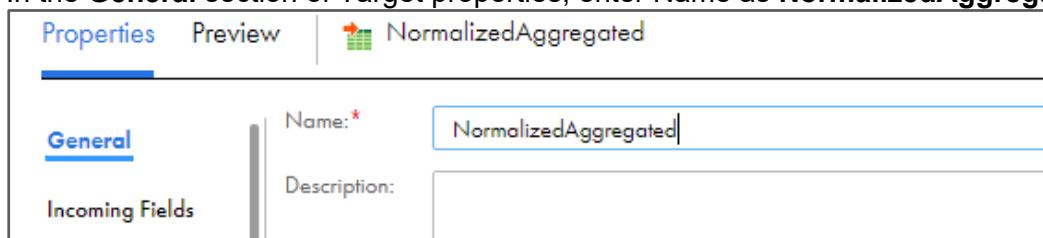


72. Link the **Rank** with **Target** transformation.



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

74. In the **General** section of Target properties, enter Name as **NormalizedAggregated**.

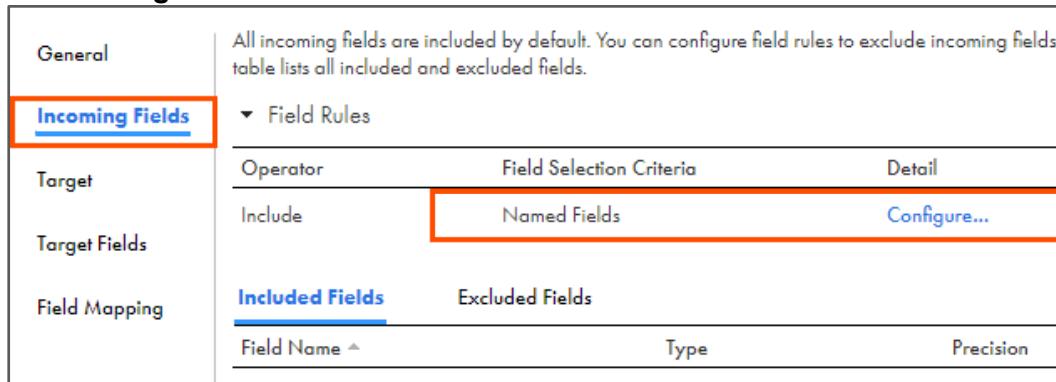


Properties		Preview	NormalizedAggregated
General	Name: *	NormalizedAggregated	
Incoming Fields	Description:		

75. From the properties pane, click **Incoming Fields**.

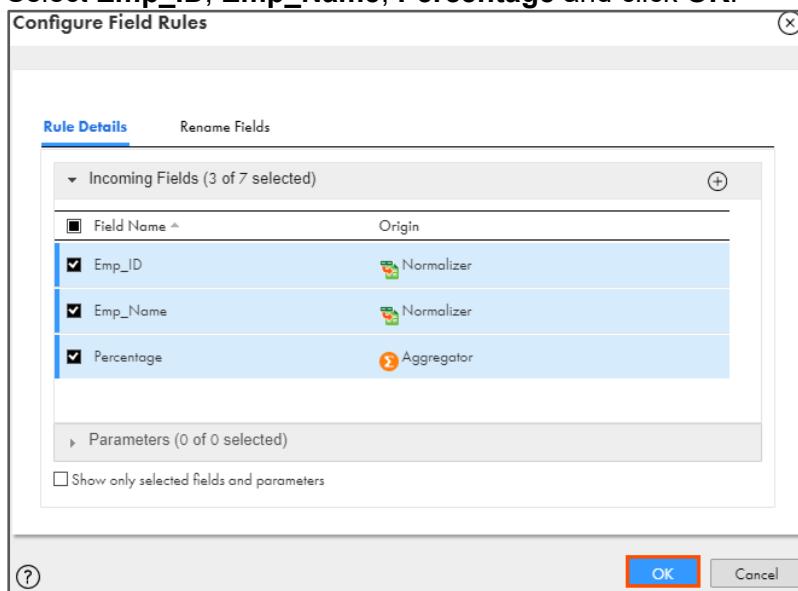
76. In the Field Rules section, from the Field Selection Criteria drop-down, select **Named Fields**.

77. Click **Configure**.



All incoming fields are included by default. You can configure field rules to exclude incoming fields. table lists all included and excluded fields.		
Field Rules		
Operator	Field Selection Criteria	Detail
Include	Named Fields	Configure...
Included Fields		Excluded Fields
Field Name	Type	Precision

78. Select **Emp_ID**, **Emp_Name**, **Percentage** and click **OK**.

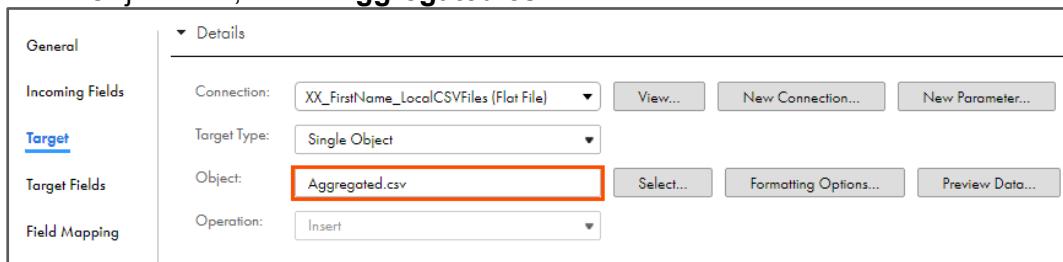


Rule Details		Rename Fields
Incoming Fields (3 of 7 selected)		
Field Name	Origin	
<input checked="" type="checkbox"/> Emp_ID	Normalizer	
<input checked="" type="checkbox"/> Emp_Name	Normalizer	
<input checked="" type="checkbox"/> Percentage	Aggregator	
Parameters (0 of 0 selected)		
<input type="checkbox"/> Show only selected fields and parameters		
?		OK

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

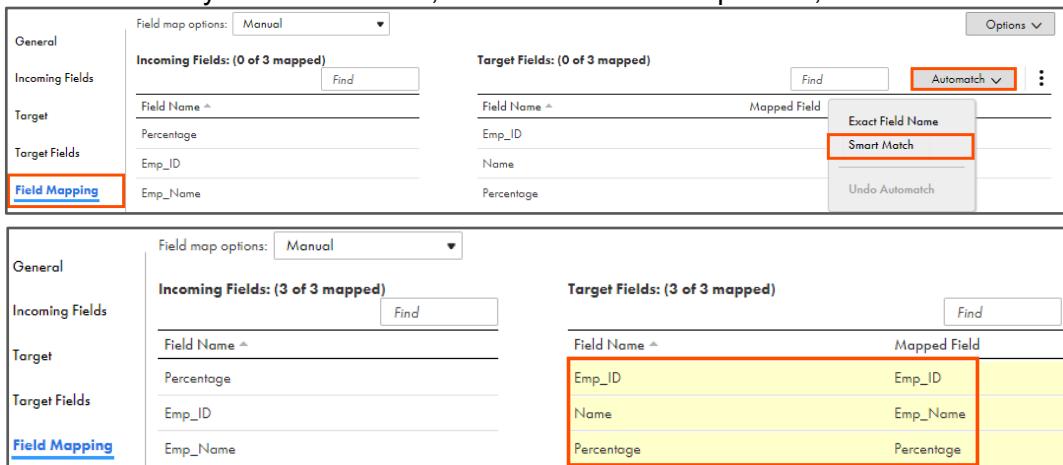
80. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

81. In the Object field, select **Aggregated.csv**.

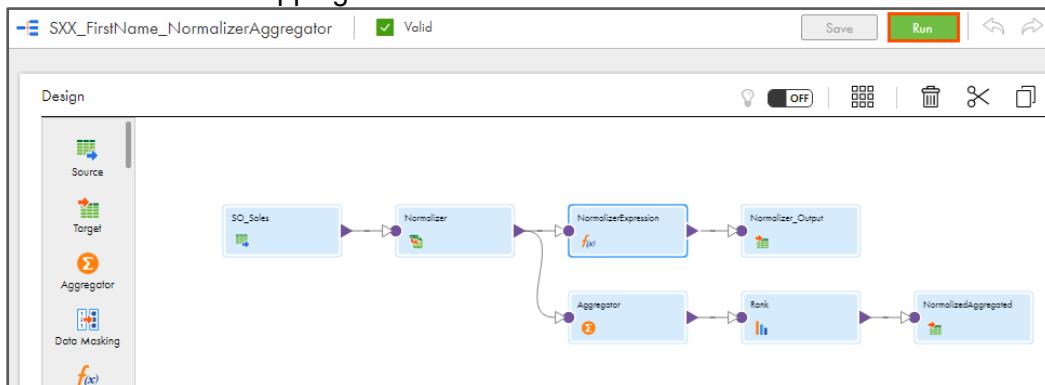


82. From the properties pane, click **Field Mapping**.

83. To automatically match the fields, from **Automatch** drop-down, select **Smart Match**.

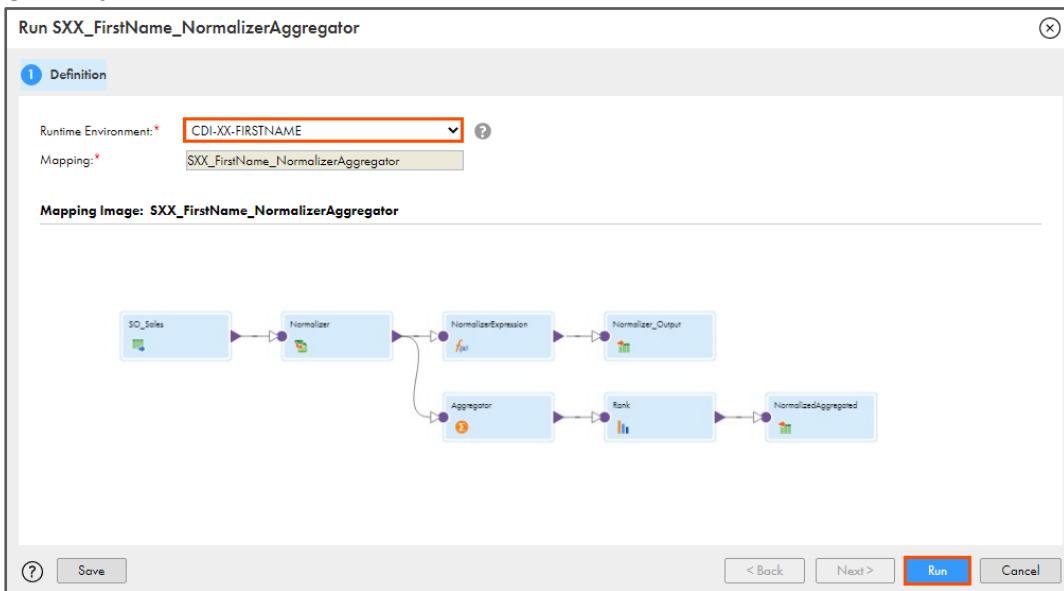


84. Save and run the mapping.



85. From the Runtime Environment drop-down, select your secure agent group.

86. Click Run.



87. Close the asset from the navigation pane.

Monitor Status

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

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

Jobs (4 of 87)							Updated 10:07:50 PM PDT	↻	↓↑	✖	Find
Asset Name: SXX_FirstName_Norm...		Add Field	Subtasks	Start Time	End Time	Rows Processed	Status				
Instance Name	SXX_FirstName_NormalizerAggregator-1			Oct 20, 2021, 10:07 PM	Oct 20, 2021, 10:0...	396	Success				

90. On your local machine, go to **C:\IICSLabFiles**.

91. Verify the contents of **Normalizer.csv** and **Aggregated.csv** files.

Aggregated.csv:

	A	B	C	D
1	Emp_ID	Name	Percentage	
2	408351	Diane Evans	648270.5625	
3	329752	Lillian Brown	398179.175	
4	560455	Carolyn Hayes	372914.875	
5	218791	Aaron Price	340174.4375	
6	677509	Lois Walker	331643.835	
7	683826	Roger Roberts	310265.955	
8	278556	Richard Mitchell	305248.1875	
9	153989	Jack Alexander	293972.4625	
10	333476	Mary Wilson	285219.9725	
11	766610	Joyce Jenkins	283025.7625	
12	890290	Julia Scott	275545.9925	
13	428945	Joe Robinson	273309.165	
14	214352	Theresa Lee	266351.05	
15	979607	Carol Edwards	261438.025	
16	386158	Melissa King	223895.9	
17	969580	Matthew Turner	211216.35	
18	621833	Gregory Edwards	211049.475	

Aggregated



Normalizer.csv:

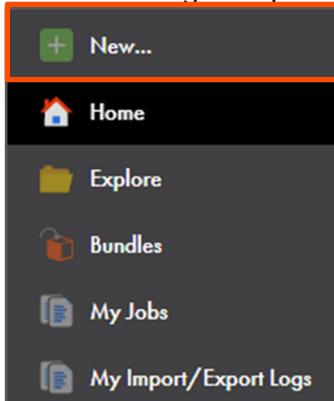
	A	B	C	D	E
1	Emp_ID	Emp_Name	Quarter	Sales	
2	677509	Lois Walker	Qtr1	32670	
3	677509	Lois Walker	Qtr2	534450	
4	677509	Lois Walker	Qtr3	746707.5	
5	677509	Lois Walker	Qtr4	12747.84	
6	940761	Brenda Robinson	Qtr1	13320	
7	940761	Brenda Robinson	Qtr2	645300	
8	940761	Brenda Robinson	Qtr3	76507.2	
9	940761	Brenda Robinson	Qtr4	30693.6	
10	428945	Joe Robinson	Qtr1	37050	
11	428945	Joe Robinson	Qtr2	36340	
12	428945	Joe Robinson	Qtr3	2508.66	
13	428945	Joe Robinson	Qtr4	1017338	
14	408351	Diane Evans	Qtr1	529550	
15	408351	Diane Evans	Qtr2	962500	
16	408351	Diane Evans	Qtr3	114221.25	
17	408351	Diane Evans	Qtr4	986811	
18	193819	Benjamin Russell	Qtr1	13815	

Normalizer

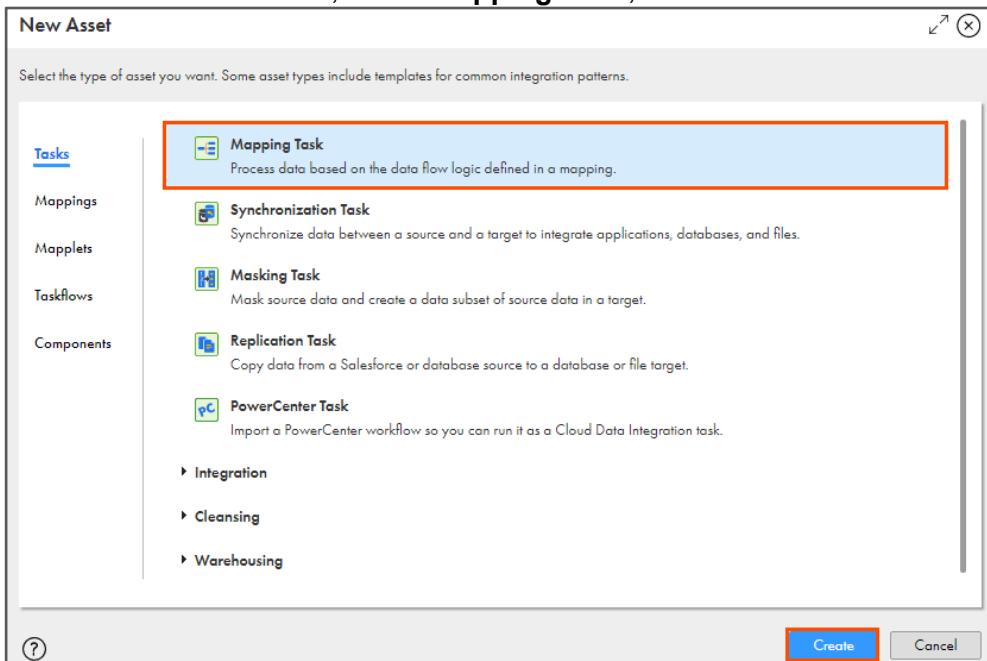


Create Mapping Task:

92. From the navigation pane, select **New**.

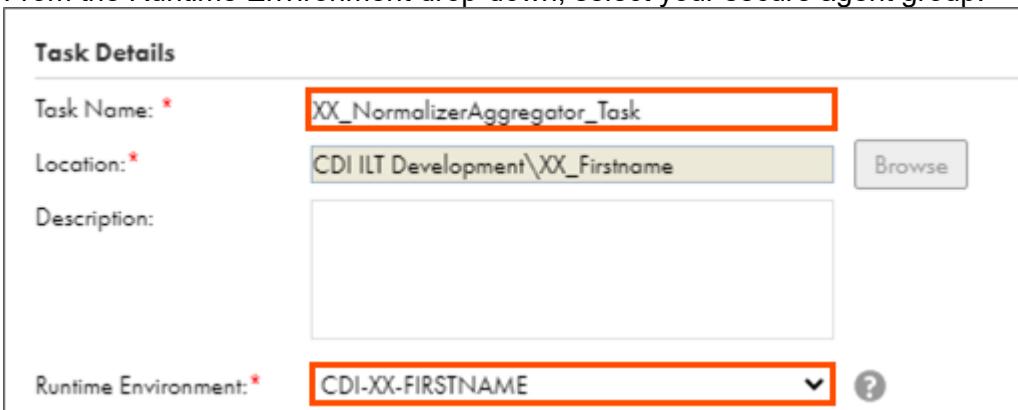


93. In the New Asset window, select **Mapping Task**, and click **Create**.



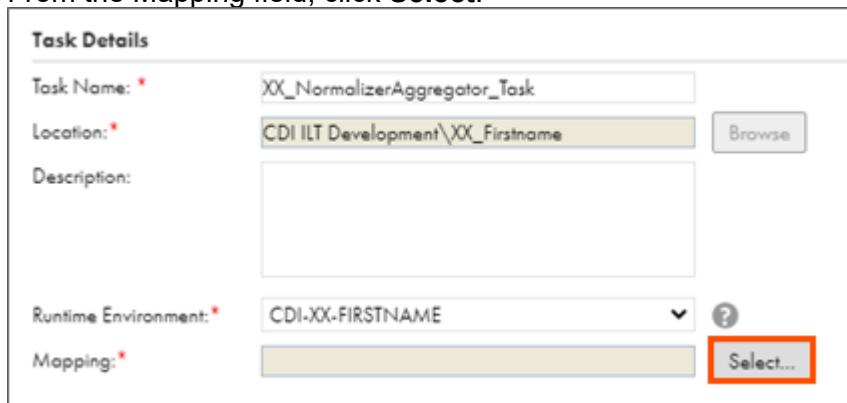
94. In the Task Name field, enter **XX_NormalizerAggregator_Task**.

95. From the Runtime Environment drop-down, select your secure agent group.



Task Details	
Task Name: *	<input type="text" value="XX_NormalizerAggregator_Task"/>
Location: *	<input type="text" value="CDI ILT Development\XX_Firstname"/> <input type="button" value="Browse"/>
Description:	<input type="text"/>
Runtime Environment: *	<input type="dropdown" value="CDI-XX-FIRSTNAME"/> *

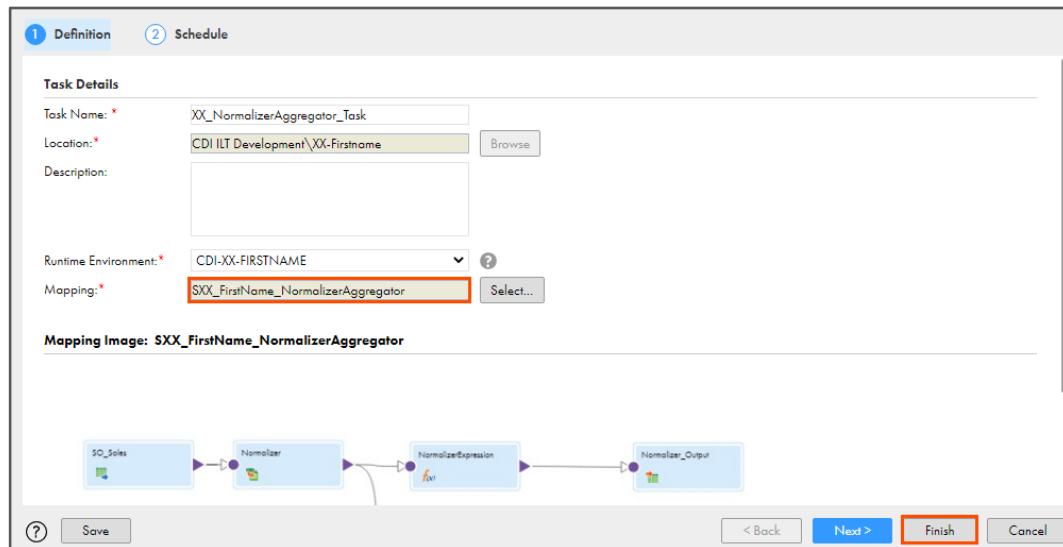
96. From the Mapping field, click **Select**.



The screenshot shows the 'Task Details' dialog. The 'Mapping' field is highlighted with a red box, and the 'Select...' button is visible next to it.

97. Navigate to your working directory and select **SXX_FirstName_NormalizerAggregator**.

98. Click **Finish**.



The screenshot shows the 'Task Details' dialog. The 'Mapping' field contains the value 'SXX_FirstName_NormalizerAggregator', which is highlighted with a red box. Below the dialog, a 'Mapping Image' is displayed, showing a flow from 'SO_Sales' to 'Normalize', then to 'NormalizeExpression', and finally to 'Normalize_Output'. The 'Finish' button is highlighted with a red box at the bottom right of the dialog.

Note: You will use this Mapping task in the later lab exercise for this course.

This concludes the lab.

Module 5: Cloud Mapping Designer – Transformations

Lab 5-3: Creating a Mapping Using Unconnected Lookup Transformation

Overview:

An unconnected Lookup transformation is not connected to other transformations in a mapping. It returns one column to the calling transformation.

Objective:

- Use Unconnected Lookup transformations in the mapping

Scenario:

John explains to Ruby about various transformations used in IICS. In this lab, John will use the Informatica Cloud Mapping Designer's Unconnected Lookup transformation to lookup values from two source files ETF and Stock ticker. He will use these values in an Expression transformation to calculate the total account value for the specified users.

Duration:

20 minutes

Tasks

Copy Source Files

1. Copy the following files from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles):

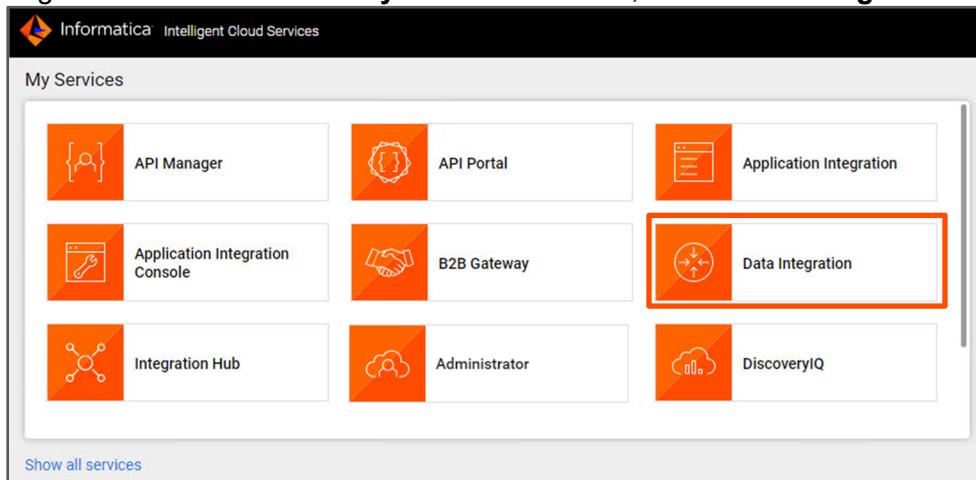
Files
ETF-Ticker.txt
InvestmentOption.txt
StockTicker.txt

2. Open the source files and observe its contents.

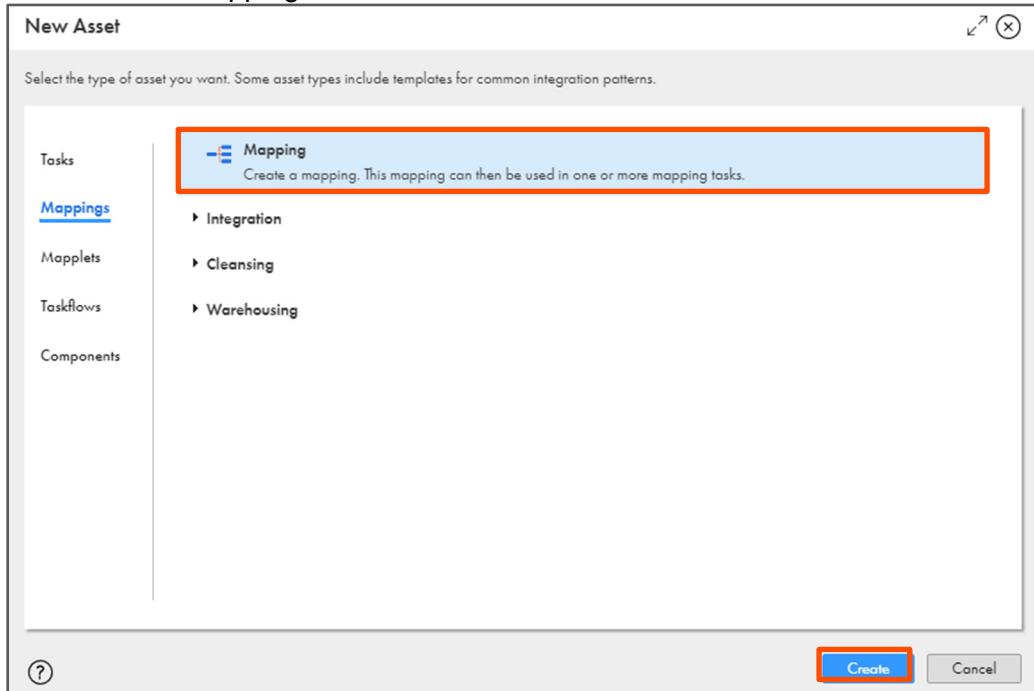
Note: You must close the files before running the task to avoid job failure.

Create Mapping

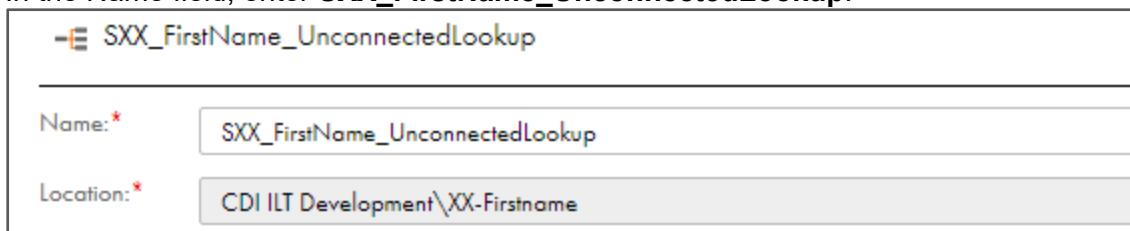
3. Login to IICS and from the **My Services** window, select **Data Integration**.



4. Create a new Mapping.



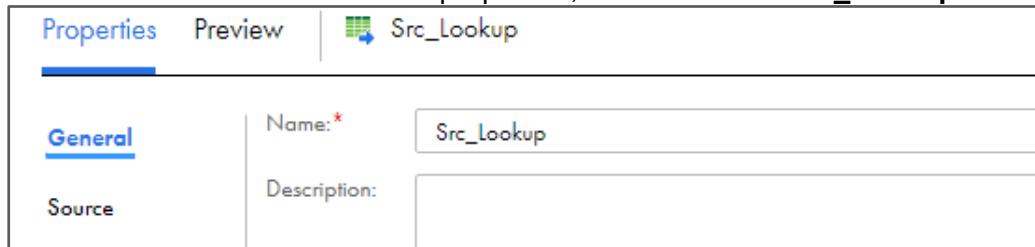
5. In the Name field, enter **SXX_FirstName_UnconnectedLookup**.



The screenshot shows the 'Create Mapping' dialog box. The 'Name:' field is populated with 'SXX_FirstName_UnconnectedLookup'. The 'Location:' field is populated with 'CDI ILT Development\XX-Firstname'.

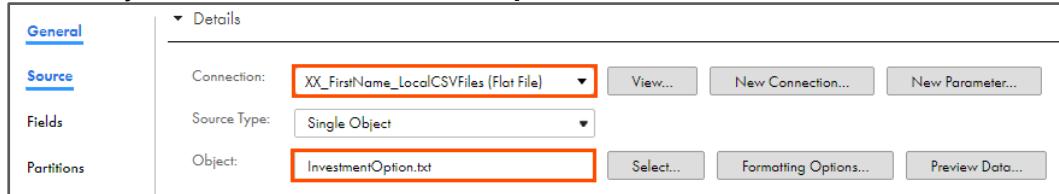
6. To configure the source, from the mapping canvas, click the **Source** transformation.

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



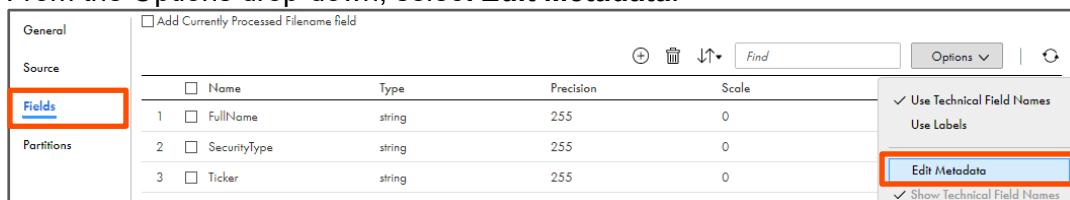
Properties		Preview	Src_Lookup
General	Name: *	Src_Lookup	
Source	Description:		

8. From the properties pane, click **Source**.
 9. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
 10. In the Object field, select **InvestmentOption.txt**.



General		Details			
Source	Connection:	XX_FirstName_LocalCSVFiles (Flat File)		View...	New Connection...
Fields	Source Type:	Single Object		Formatting Options...	Preview Data...
Partitions	Object:	InvestmentOption.txt		Select...	

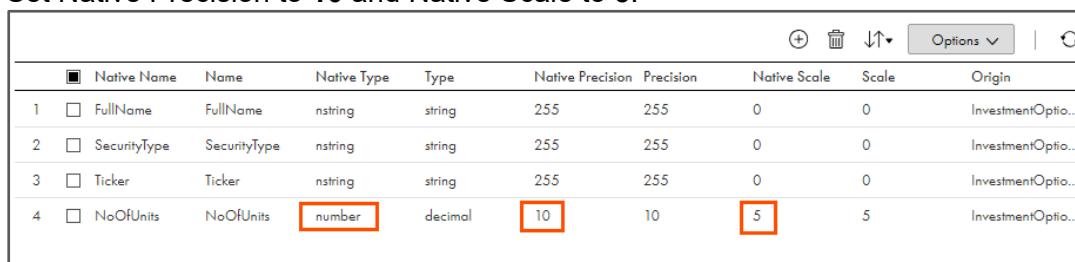
11. From the properties pane, click **Fields**.
 12. From the Options drop-down, select **Edit Metadata**.



General		Fields				Partitions	
Source	<input type="checkbox"/> Add Currently Processed Filename field + - ↑↓ Find Options ↻						
Fields	<input type="checkbox"/> Name	Type	Precision	Scale	<input checked="" type="checkbox"/> Use Technical Field Names <input checked="" type="checkbox"/> Use Labels Edit Metadata <input checked="" type="checkbox"/> Show Technical Field Names		
Partitions	1 <input type="checkbox"/> FullName	string	255	0			
	2 <input type="checkbox"/> SecurityType	string	255	0			
	3 <input type="checkbox"/> Ticker	string	255	0			

Note: You can use Edit Metadata option to edit the data type of fields.

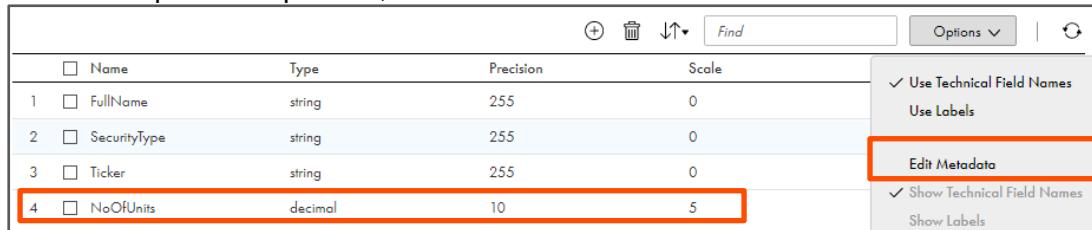
13. For **NoOfUnits** field, set Native Type as **number**.
 14. Set Native Precision to **10** and Native Scale to **5**.



	<input type="checkbox"/> Native Name	Name	Native Type	Type	Native Precision	Precision	Native Scale	Scale	Origin
1	<input type="checkbox"/> FullName	FullName	nstring	string	255	255	0	0	InvestmentOpt...
2	<input type="checkbox"/> SecurityType	SecurityType	nstring	string	255	255	0	0	InvestmentOpt...
3	<input type="checkbox"/> Ticker	Ticker	nstring	string	255	255	0	0	InvestmentOpt...
4	<input type="checkbox"/> NoOfUnits	NoOfUnits	number	decimal	10	10	5	5	InvestmentOpt...

Note: To enable the native scale click the blank area.

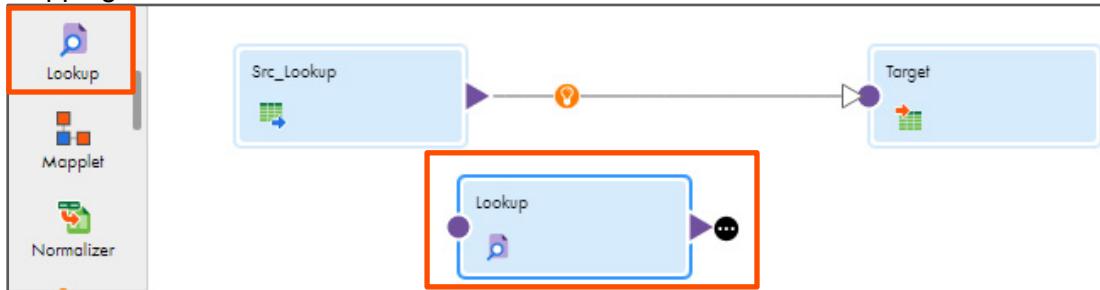
15. From the Options drop-down, uncheck **Edit Metadata**.



	<input type="checkbox"/> Native Name	Name	Native Type	Type	Native Precision	Precision	Native Scale	Scale	Origin
1	<input type="checkbox"/> FullName	FullName	nstring	string	255	255	0	0	InvestmentOpt...
2	<input type="checkbox"/> SecurityType	SecurityType	nstring	string	255	255	0	0	InvestmentOpt...
3	<input type="checkbox"/> Ticker	Ticker	nstring	string	255	255	0	0	InvestmentOpt...
4	<input type="checkbox"/> NoOfUnits	NoOfUnits	decimal	decimal	10	10	5	5	InvestmentOpt...

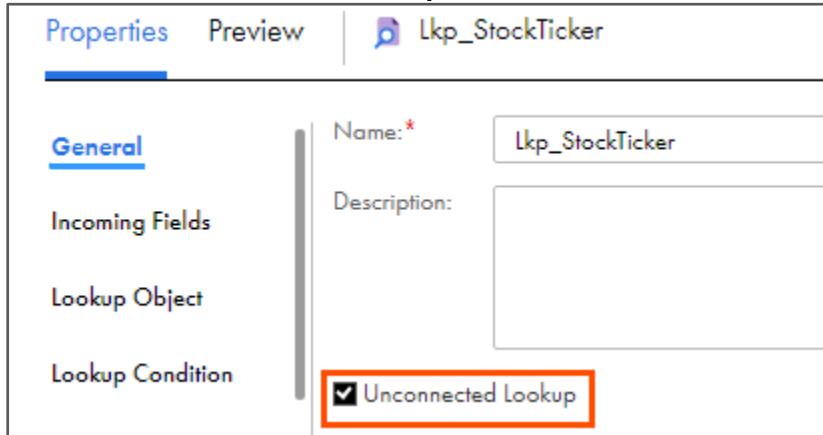
Add Lookup Transformation

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

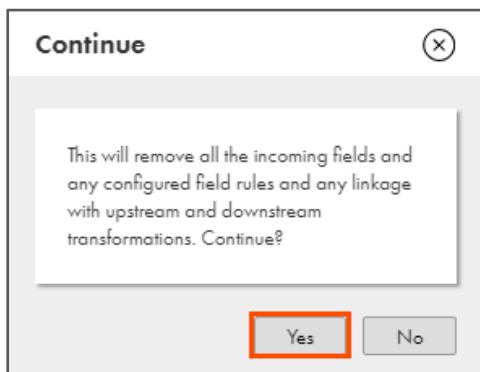


17. Select the **Lookup** transformation on the mapping canvas.

18. In the **General** section of Lookup properties, enter Name as **Lkp_StockTicker**.
 19. Select the **Unconnected Lookup** checkbox.



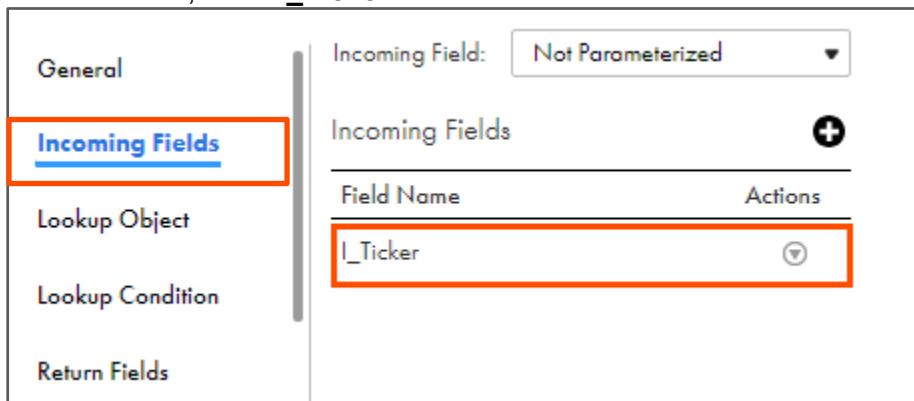
20. In the **Continue** window, select **Yes**.



21. From the properties pane, click **Incoming Fields**.

22. To add a new incoming field, click .

23. In Field Name, enter **I_Ticker**.

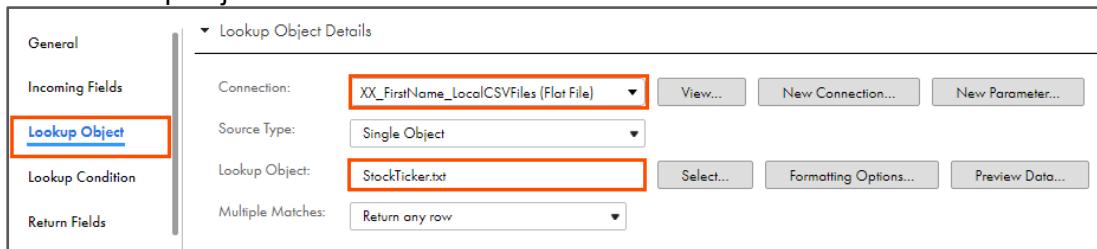


The screenshot shows the 'Incoming Fields' pane. On the left, there is a vertical navigation bar with tabs: General, Incoming Fields (which is highlighted with a red border), Lookup Object, Lookup Condition, and Return Fields. The main area displays a table with two columns: 'Field Name' and 'Actions'. A single row contains the value 'I_Ticker' in the 'Field Name' column. The entire row is highlighted with a red border.

24. From the properties pane, click **Lookup Object**.

25. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

26. Select lookup object as **StockTicker.txt**.



The screenshot shows the 'Lookup Object Details' pane. On the left, there is a vertical navigation bar with tabs: General, Incoming Fields, Lookup Object (which is highlighted with a red border), Lookup Condition, and Return Fields. The main area displays several configuration options. Under 'Connection', the dropdown is set to 'XX_FirstName_LocalCSVFiles (Flat File)'. Under 'Source Type', it is set to 'Single Object'. Under 'Lookup Object', the input field contains 'StockTicker.txt'. Below these, 'Multiple Matches' is set to 'Return any row'. There are also buttons for 'View...', 'New Connection...', 'New Parameter...', 'Select...', 'Formatting Options...', and 'Preview Data...'.

27. From the properties pane, click **Lookup Condition**.

28. To add a new lookup condition, click .

29. Enter the lookup condition, as shown in the table below:

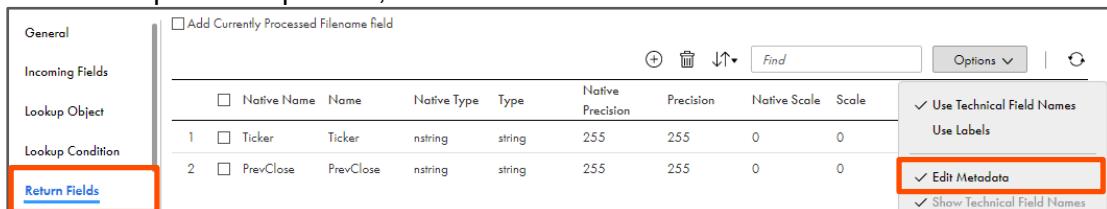
Lookup Field	Operator	Incoming Field
Ticker	=	I_Ticker



The screenshot shows the 'Lookup Conditions' pane. On the left, there is a vertical navigation bar with tabs: General, Incoming Fields, Lookup Object, Lookup Condition (which is highlighted with a red border), and Return Fields. The main area displays a table with three columns: 'Lookup Field', 'Operator', and 'Incoming Field'. The first row shows 'Ticker' in the 'Lookup Field' column, '= (Equals)' in the 'Operator' column, and 'I_Ticker' in the 'Incoming Field' column. The entire row is highlighted with a red border.

30. From the properties pane, click **Return Fields**.

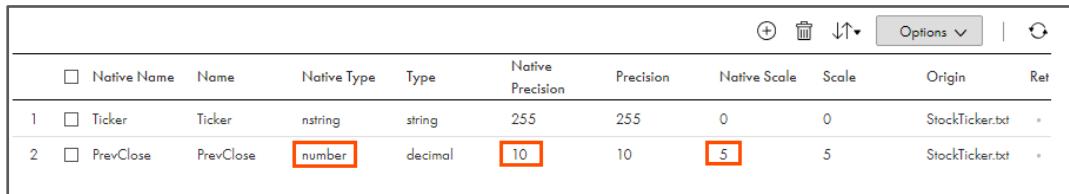
31. From the Options drop-down, select **Edit Metadata**.



The screenshot shows the 'Return Fields' pane. On the left, there is a vertical navigation bar with tabs: General, Incoming Fields, Lookup Object, Lookup Condition, and Return Fields (which is highlighted with a red border). The main area displays a table with columns: Native Name, Name, Native Type, Type, Native Precision, Precision, Native Scale, and Scale. Two rows are listed: '1 Ticker' and '2 PrevClose'. At the bottom right of the table, there is a group of checkboxes under the heading 'Edit Metadata'. One checkbox, 'Edit Metadata', is checked and highlighted with a red border. Other checkboxes include 'Use Technical Field Names', 'Use Labels', and 'Show Technical Field Names'.

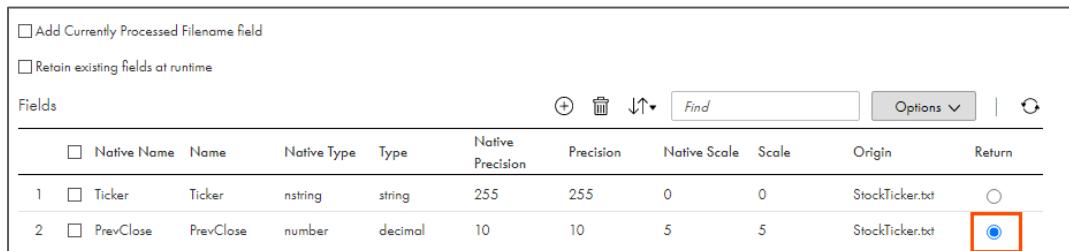
32. For the **PrevClose**, set Native Type as **number**.

33. Set Native Precision to 10 and Native Scale to 5.



	Native Name	Name	Native Type	Type	Native Precision	Precision	Native Scale	Scale	Origin	Ref
1	<input type="checkbox"/> Ticker	Ticker	nstring	string	255	255	0	0	StockTicker.txt	...
2	<input type="checkbox"/> PrevClose	PrevClose	number	decimal	10	10	5	5	StockTicker.txt	...

34. Select Return.

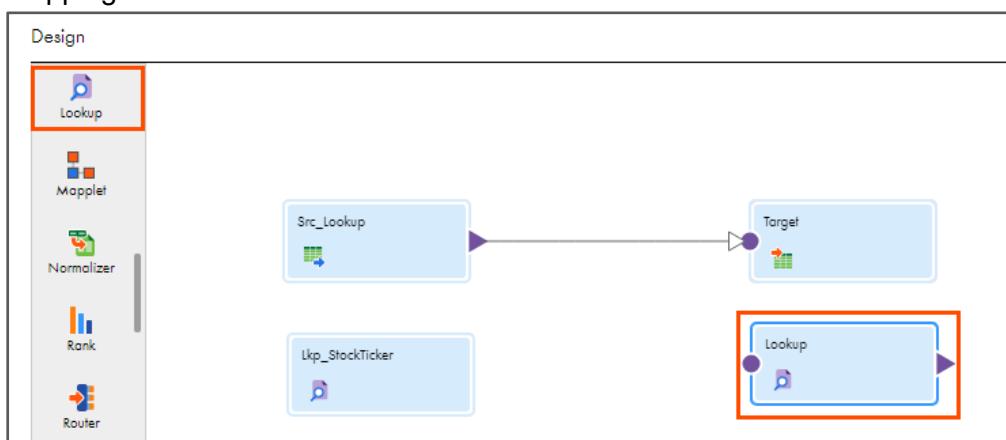


	Native Name	Name	Native Type	Type	Native Precision	Precision	Native Scale	Scale	Origin	Return
1	<input type="checkbox"/> Ticker	Ticker	nstring	string	255	255	0	0	StockTicker.txt	...
2	<input type="checkbox"/> PrevClose	PrevClose	number	decimal	10	10	5	5	StockTicker.txt	<input checked="" type="radio"/>

Note: The lookup will check if the **PrevClose** value of the **Ticker**, which is equal to **I_Ticker**.

Add Second Lookup Transformation

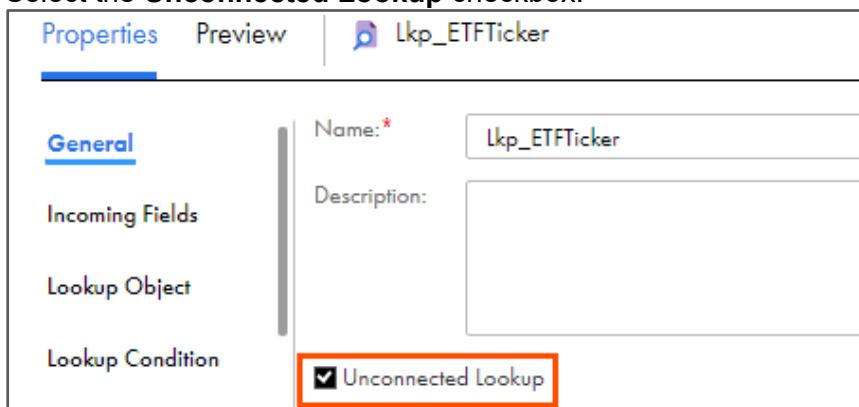
35. From the list of available transformations, drag and drop a **Lookup** transformation on the mapping canvas.



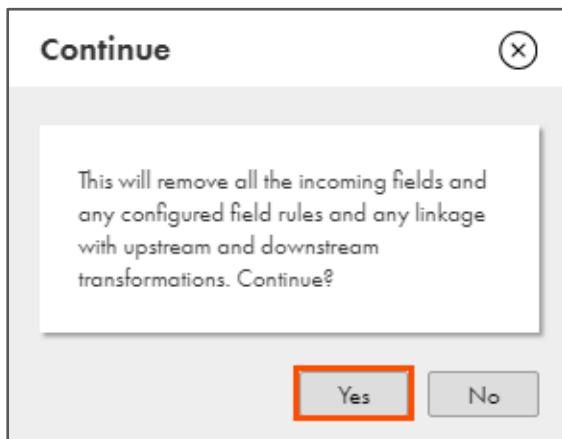
36. Select the **Lookup** transformation on the mapping canvas.

37. In the **General** section of the **Lookup** properties, enter the Name as **Lkp_ETFTicker**.

38. Select the **Unconnected Lookup** checkbox.



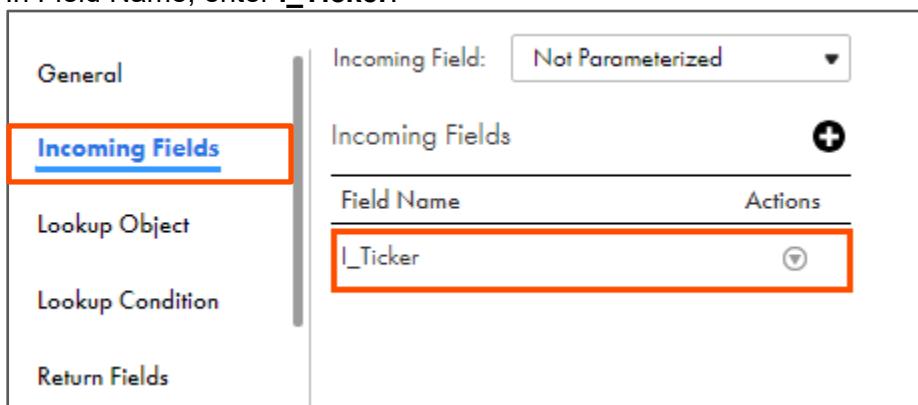
39. In the **Continue** window, click **Yes**.



40. From the properties pane, click **Incoming Fields**.

41. To add a new incoming field, click .

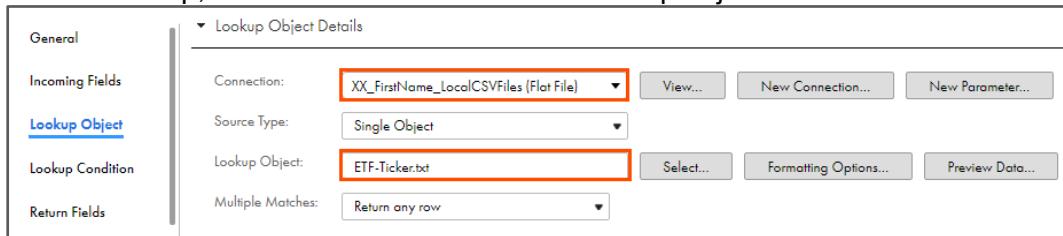
42. In Field Name, enter **I_Ticker**.



43. From the properties pane, click **Lookup Object**.

44. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

45. For this lookup, select **ETF-Ticker.txt** as the lookup object.



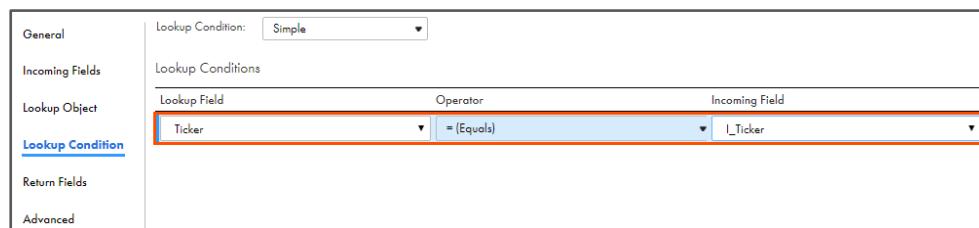
The screenshot shows the 'Lookup Object Details' pane. The 'Lookup Object' field is highlighted with a red box and contains the value 'ETF-Ticker.txt'. Other fields include 'Connection' (XX_FirstName_LocalCSVFiles (Flat File)), 'Source Type' (Single Object), 'Multiple Matches' (Return any row), and buttons for 'View...', 'New Connection...', 'New Parameter...', 'Select...', 'Formatting Options...', and 'Preview Data...'.

46. From the properties pane, click **Lookup Condition**.

47. To add a new lookup condition, click .

48. Enter the lookup condition as shown in the table below:

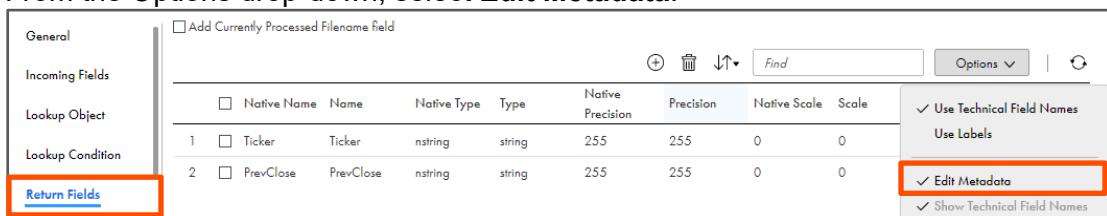
Lookup Field	Operator	Incoming Field
Ticker	=	I_Ticker



The screenshot shows the 'Properties' pane with the 'Lookup Condition' section selected. It displays a single condition: 'Ticker' = [Equals] I_Ticker. The 'Incoming Fields' section is also visible.

49. From the properties pane, click **Return Fields**.

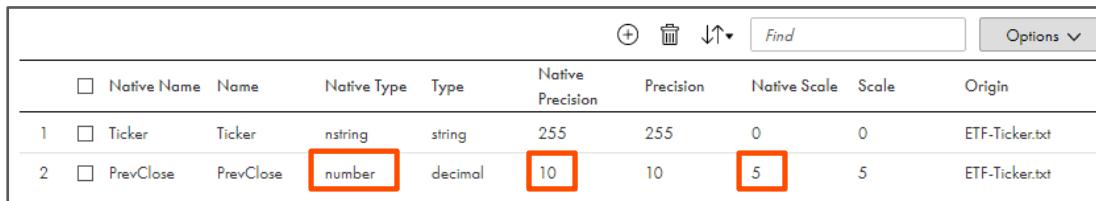
50. From the Options drop-down, select **Edit Metadata**.



The screenshot shows the 'Return Fields' pane. The 'Edit Metadata' checkbox is highlighted with a red box and is checked. Other options like 'Use Technical Field Names' and 'Show Technical Field Names' are also present.

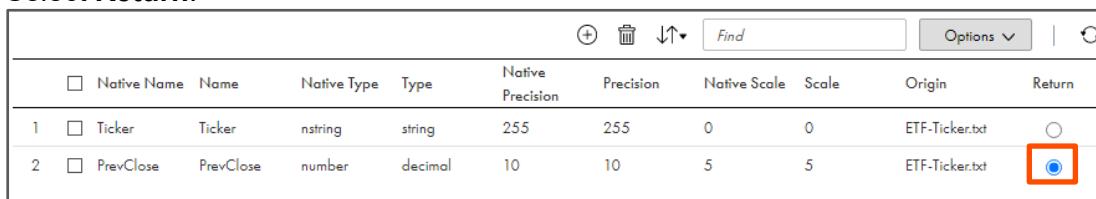
51. For the **PrevClose** field, set Native Type as select **number**.

52. Set Native Precision to **10** and Native Scale to **5**.



The screenshot shows the 'Return Fields' pane with two rows. Row 1 has 'Native Name' Ticker and 'Native Type' nstring. Row 2 has 'Native Name' PrevClose and 'Native Type' number. The 'Precision' column for Row 2 is highlighted with a red box and contains the value 10. The 'Scale' column for Row 2 is also highlighted with a red box and contains the value 5.

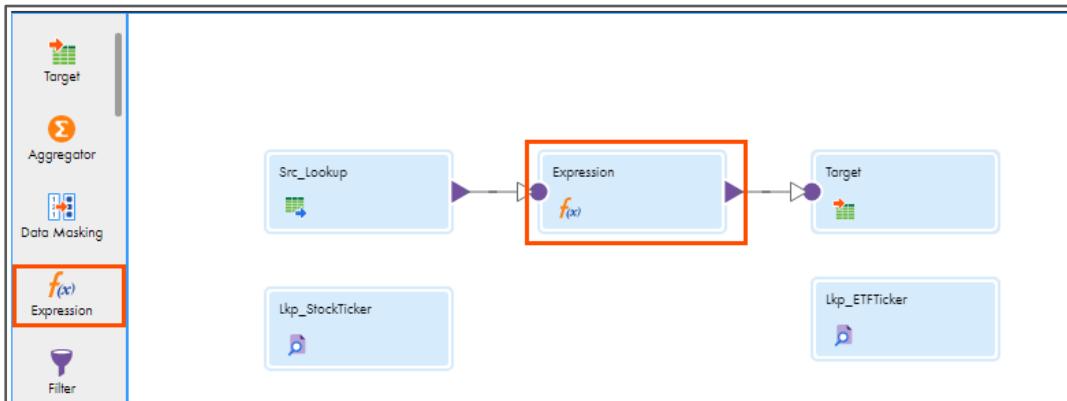
53. Select **Return**.



The screenshot shows the 'Return Fields' pane with the same two rows. The 'Return' column for Row 2 is highlighted with a red box and contains a blue circle, indicating it is selected.

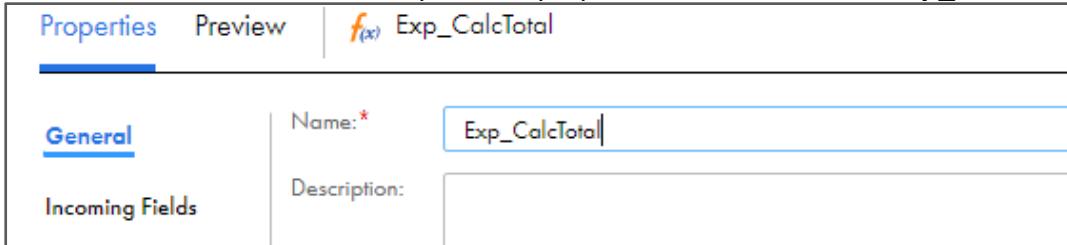
Add Expression Transformation

54. From the list of available transformations, drag and drop the **Expression** transformation on the link between **Src_Lookup** and **Target**.



55. Select **Expression** transformation from the mapping canvas.

56. In the **General** section of the Expression properties, enter Name as **Exp_CalcTotal**.

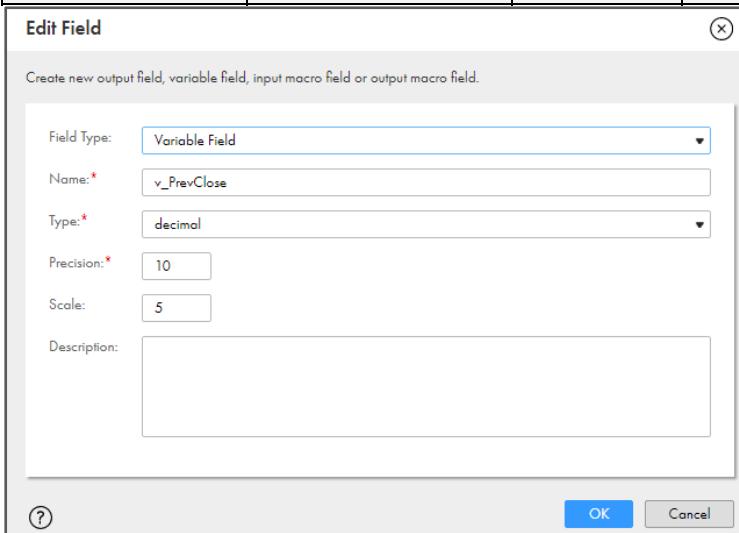


57. From the properties pane, click **Expression**.

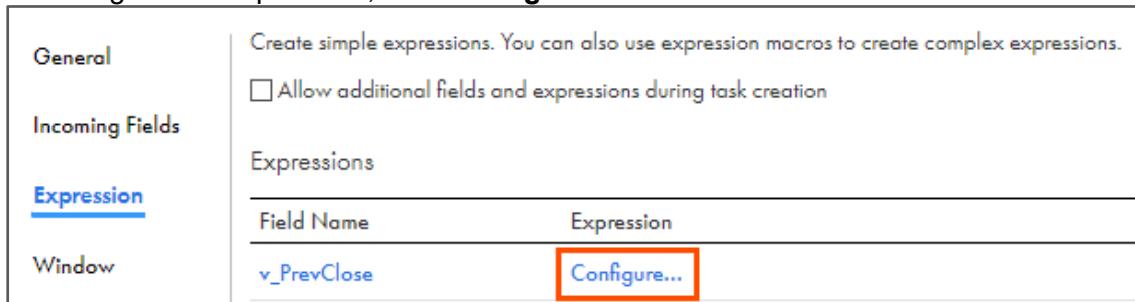
58. To add a new expression, click .

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

Field Type	Name	Type	Precision	Scale
Variable Field	v_PrevClose	decimal	10	5



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



The screenshot shows the 'Expression' tab selected in the left sidebar. The right pane contains a table with one row. The 'Field Name' column has 'v_PrevClose'. The 'Expression' column has a blue link labeled 'Configure...'. This link is highlighted with a red rectangular box.

Field Name	Expression
v_PrevClose	Configure...

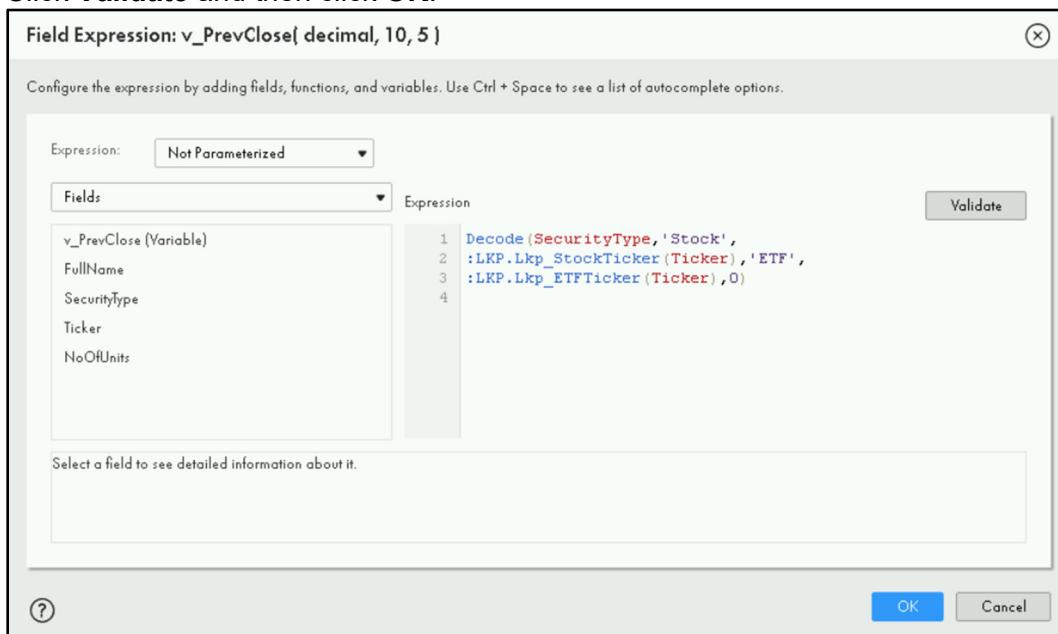
61. In the Expression field, copy and paste the following expression:

```
Decode(SecurityType,'Stock',
:LKP.Lkp_StockTicker(Ticker),'ETF',
:LKP.Lkp_ETFTicker(Ticker),0)
```

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingUnconnectedLookupTransformations_5-3**. Copy the command mentioned under **Step A** and paste it in the Expression field.

62. Click **Validate** and then click **OK**.



The screenshot shows the 'Field Expression' dialog with the following details:

- Field Expression:** v_PrevClose{ decimal, 10, 5 }
- Expression:** Not Parameterized
- Fields:** Fields dropdown is set to 'Fields'. The list includes: v_PrevClose (Variable), FullName, SecurityType, Ticker, and NoOfUnits.
- Expression Text:**

```
1 Decode(SecurityType,'Stock',
2 :LKP.Lkp_StockTicker(Ticker),'ETF',
3 :LKP.Lkp_ETFTicker(Ticker),0)
```
- Buttons:** Validate (button), OK (button), Cancel (button).

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

Field Type	Name	Type	Precision	Scale
Output Field	TotalValue	decimal	10	5

Edit Field (x)

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

Field Type: **Output Field**

Name: **TotalValue**

Type: **decimal**

Precision: **10**

Scale: **5**

Description:

(?) OK Cancel

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

General Create simple expressions. You can also use expression macros to create complex expressions.
 Allow additional fields and expressions during task creation

Incoming Fields

Expression

Window

Advanced

Field Name	Expression	Field Description
v_PrevClose	Decode(SecurityType,'Stock', :LKP.Lkp_StockTicker(Ticker),'ETF', :LKF)	
TotalValue	Configure...	

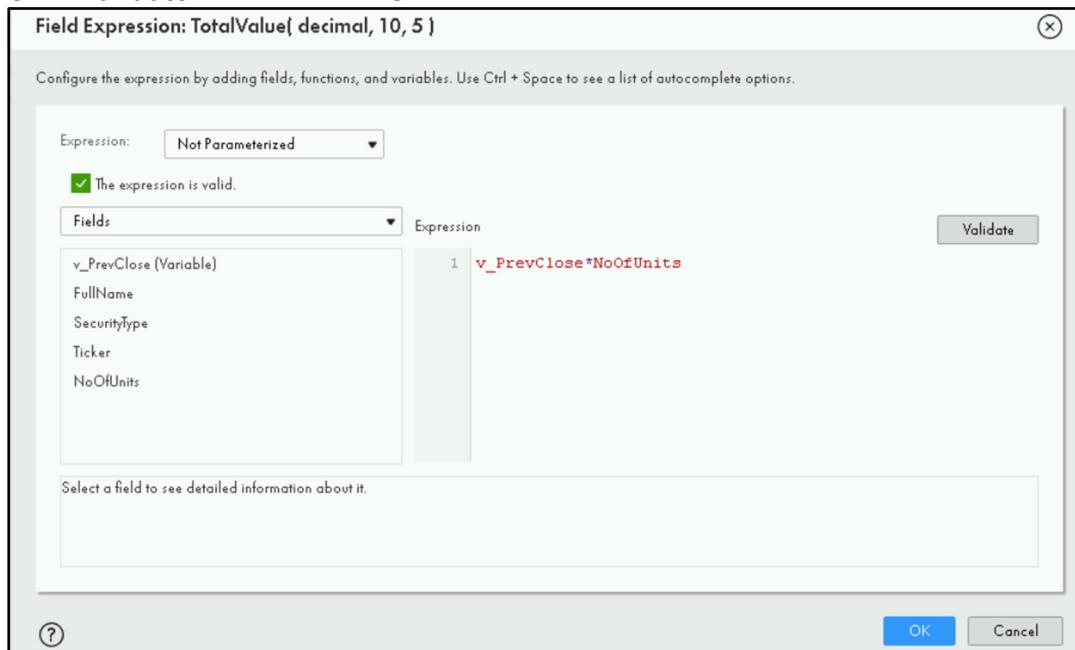
65. In the Expression field, enter the following expression:

v_PrevClose*NoOfUnits

OR

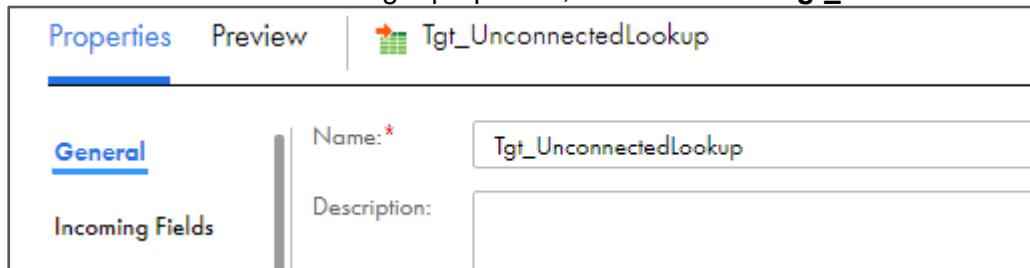
Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingUnconnectedLookupTransformations_5-3**. Copy the command mentioned under **Step B** and paste it in the Expression field.

66. Click **Validate** and then click **OK**.



67. To configure the target, from the mapping canvas, click the **Target** transformation.

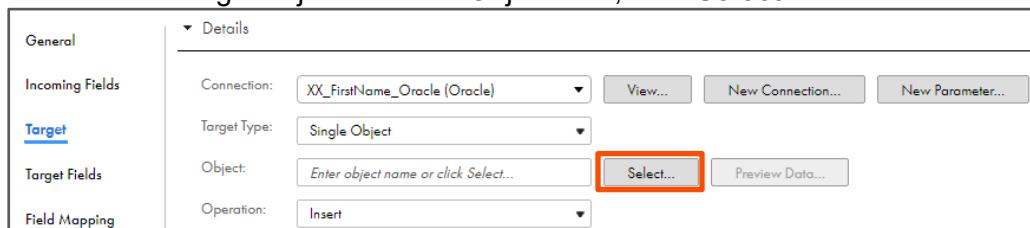
68. In the **General** section of Target properties, enter Name as **Tgt_UnconnectedLookup**.



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

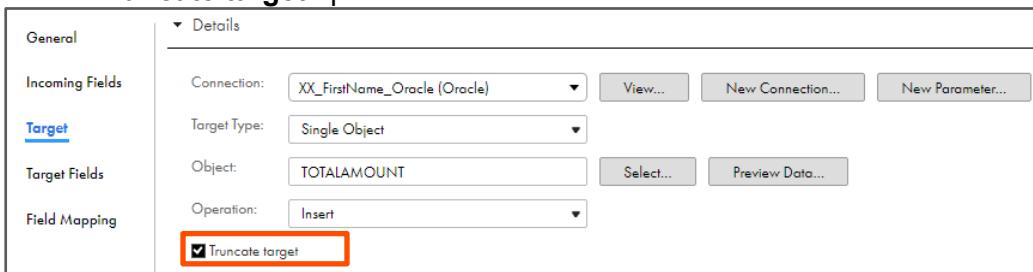
70. From the Connection drop-down, select **XX_FirstName_Oracle**.

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



72. From the list, select **TOTALAMOUNT** and click **OK**.

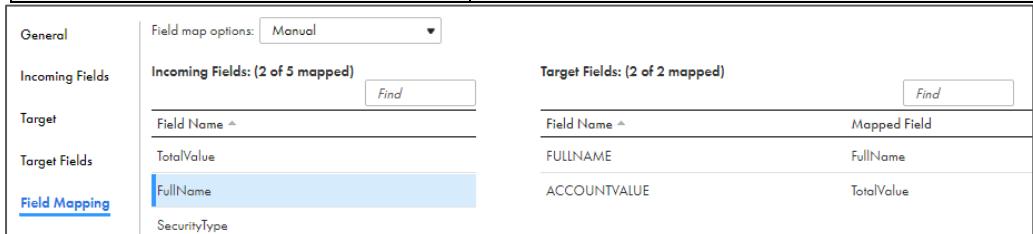
73. Select **Truncate target** option.



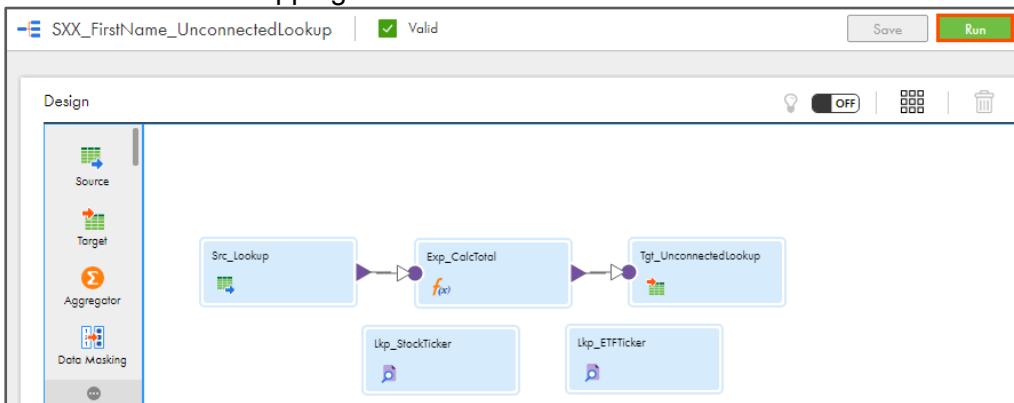
74. From the properties pane, click **Field Mapping**.

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

Incoming Field	Target Field
TotalValue	AccountValue
FullName	FullName

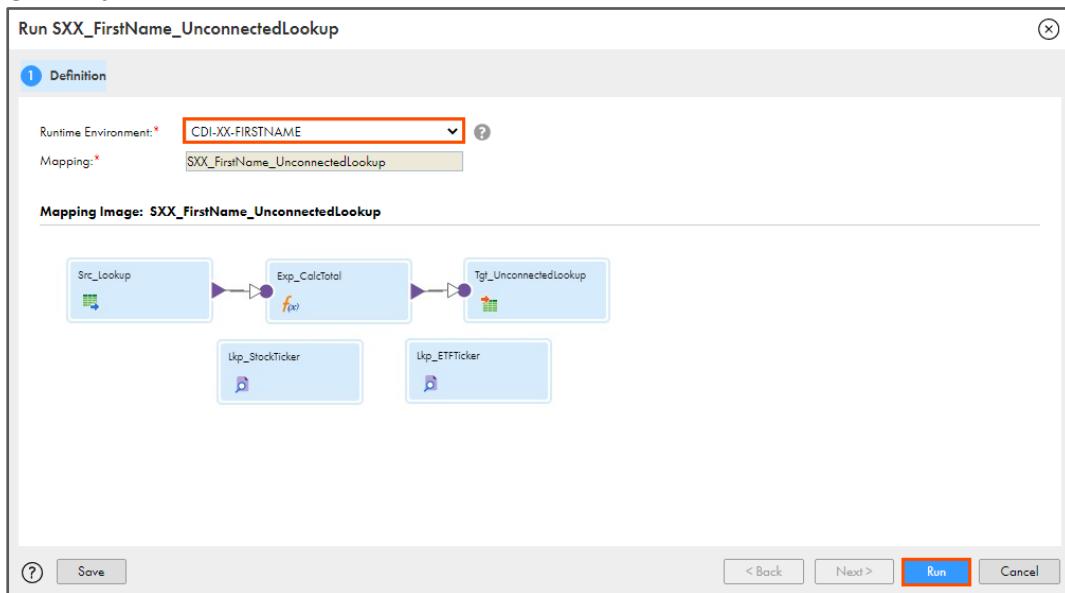


76. Save and run the mapping.



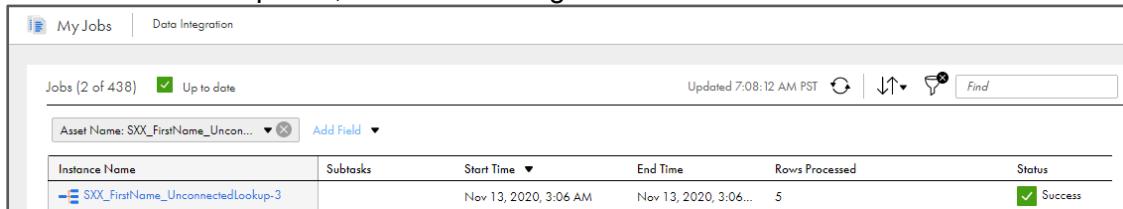
77. From the Runtime Environment drop-down, select your secure agent group.

78. Click Run.



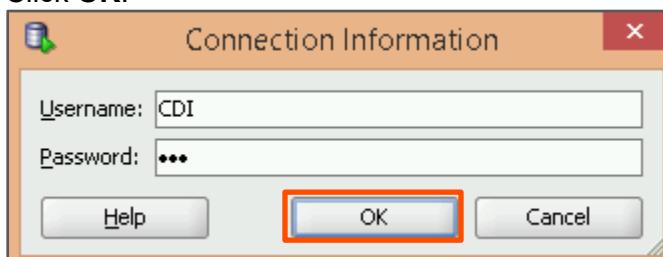
Monitor Status

79. Monitor the task status from the **My Jobs** page.
 80. When the task completes, the status changes to **Success**.



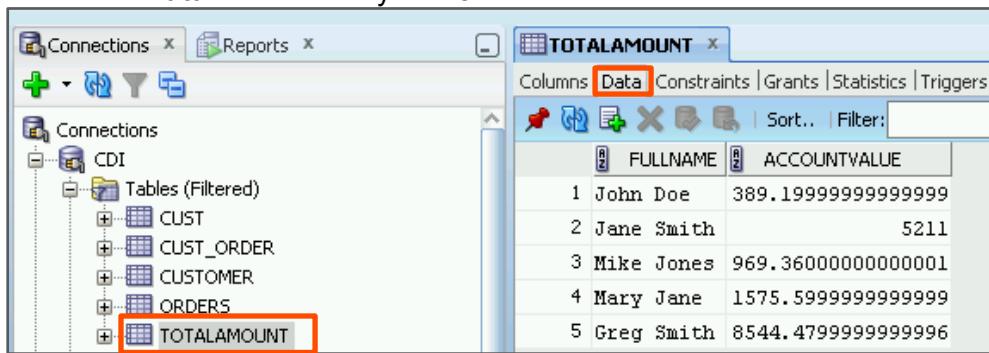
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_FirstName_UnconnectedLookup-3	1	Nov 13, 2020, 3:06 AM	Nov 13, 2020, 3:06 AM	5	Success

81. Close the asset from the navigation pane.
 82. From your desktop, open **Sql Developer** 
Note: Close the Tip of the day window.
 83. From the Connections section, expand **CDI** and enter password as **CDI**.
 84. Click **OK**.



85. Expand the **Tables** section and click on **TOTALAMOUNT** table.

86. Select the **Data** tab and verify that 5 rows are written in the table.



	FULLNAME	ACCOUNTVALUE
1	John Doe	389.19999999999999
2	Jane Smith	5211
3	Mike Jones	969.36000000000001
4	Mary Jane	1575.5999999999999
5	Greg Smith	8544.479999999996

This concludes the lab.

Module 5: Cloud Mapping Designer – Transformations

Lab 5-4: 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 name, id, and its cost 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 for the maplet. He will also use this maplet in a mapping.

Duration:

20 minutes

Tasks

Copy Source File

1. Copy the following files from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles):

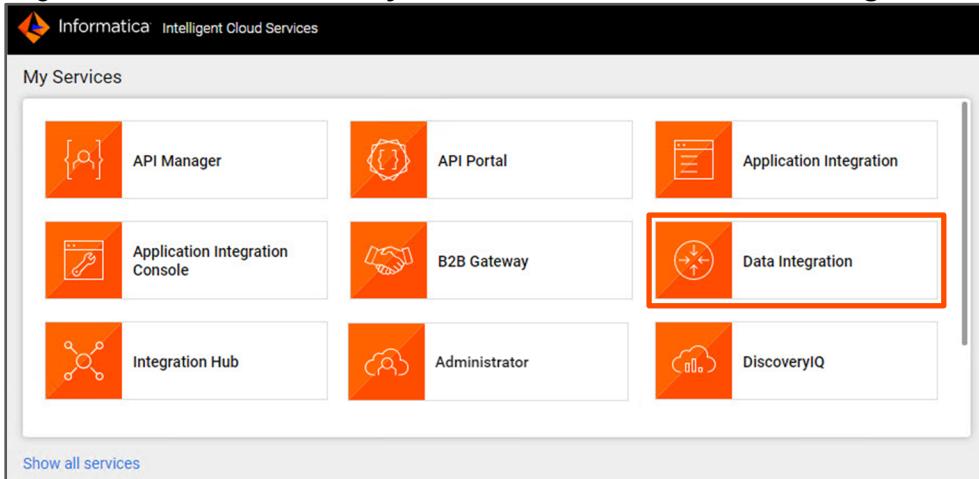
Files
Product_List.csv
OrderCost.csv

2. Open the source files and observe its content.

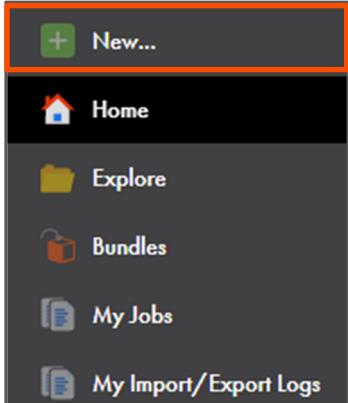
Note: You must close the files before running the task to avoid job failure.

Create Maplet

3. Log in to IICS and from the **My Services** window, select **Data Integration**.

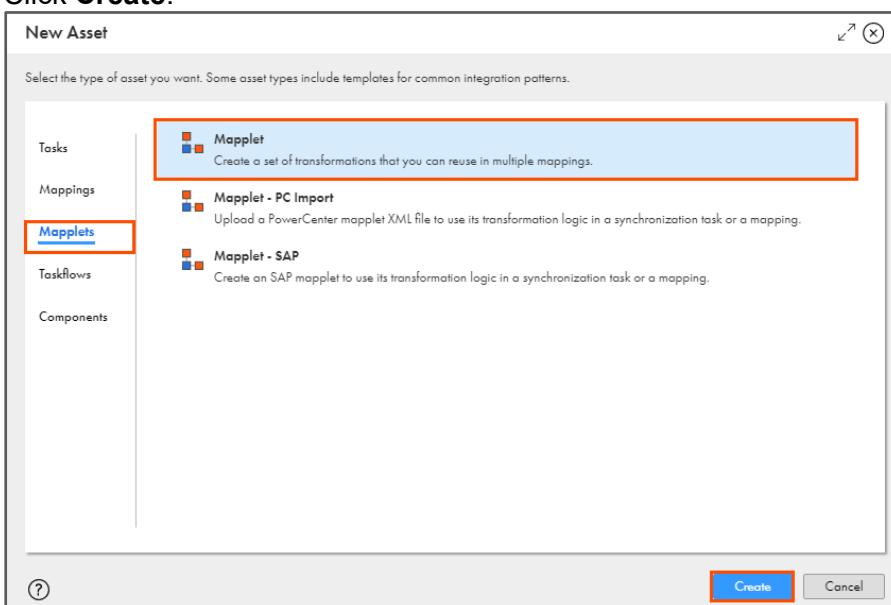


4. From the navigation pane, select **New**.

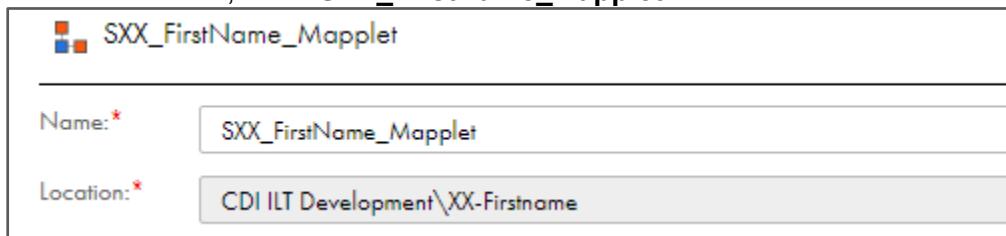


5. From the New Asset window, click the **Mapplets** tab, and select **Maplet**.

6. Click **Create**.



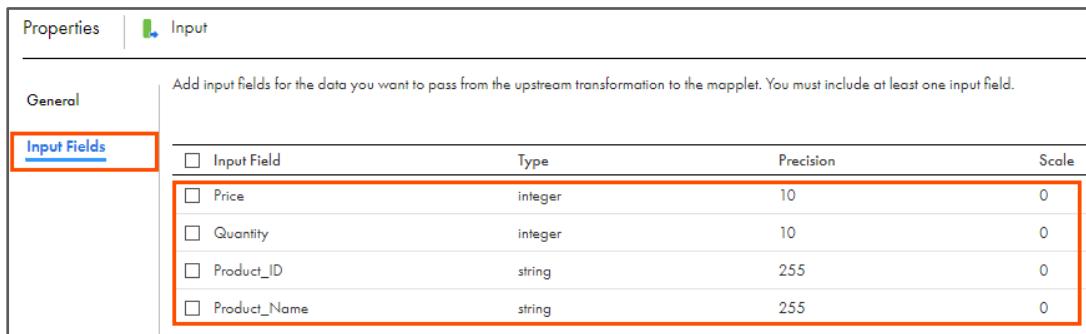
7. In the Name field, enter **SXX_FirstName_Mapplet**.



Name:	SXX_FirstName_Mapplet
Location:	CDI ILT Development\XX-Firstname

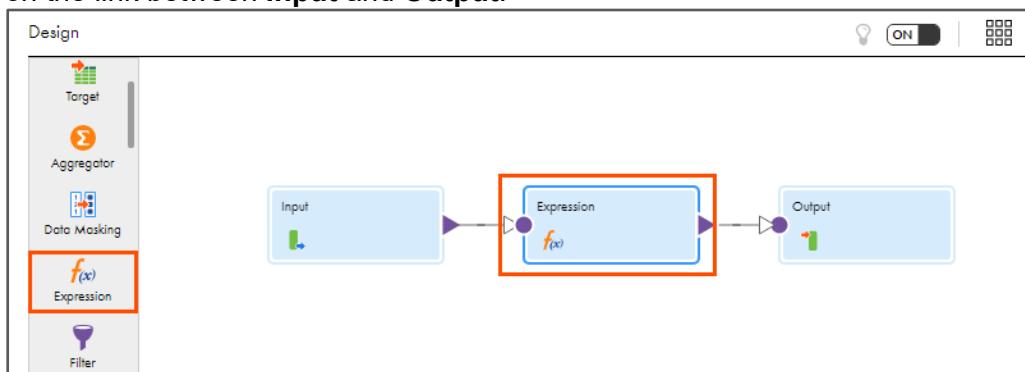
8. To configure the Input, from the mapplet canvas, click the **Input** transformation.
 9. From the properties pane, click **Input Fields**.
 10. To add input fields, click .
 11. Define the input fields, as shown in the table below:

Name	Type	Precision	Scale
Price	integer	10	0
Quantity	integer	10	0
Product_ID	string	255	0
Product_Name	string	255	0



The Properties pane shows the **Input** tab selected. Under **General**, it says "Add input fields for the data you want to pass from the upstream transformation to the mapplet. You must include at least one input field." The **Input Fields** section is highlighted with a red box. It contains a table with four rows, each representing an input field: Price (integer, precision 10, scale 0), Quantity (integer, precision 10, scale 0), Product_ID (string, precision 255, scale 0), and Product_Name (string, precision 255, scale 0).

12. From the list of available transformations, drag and drop an **Expression** transformation on the link between **Input** and **Output**.



13. Select the **Expression** transformation from the mapplet canvas.
 14. From the properties pane, click **Expression**.

15. To add a new expression, click .

16. Enter the details as shown in 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:

OK **Cancel**

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

- [General](#)
- [Incoming Fields](#)
- [**Expression**](#)
- [Window](#)
- [Advanced](#)

Create simple expressions. You can also use expression macros to create complex expressions.

Allow additional fields and expressions during task creation

Expressions

Field Name	Expression
Total	Configure...

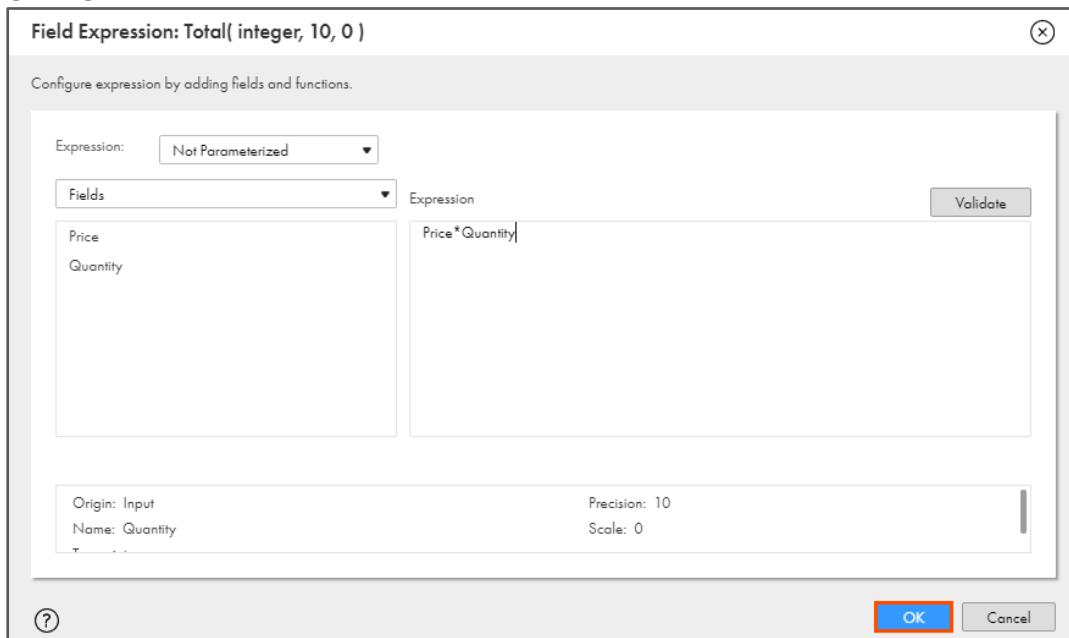
18. In the Expression field, copy and paste the following expression:

Price*Quantity

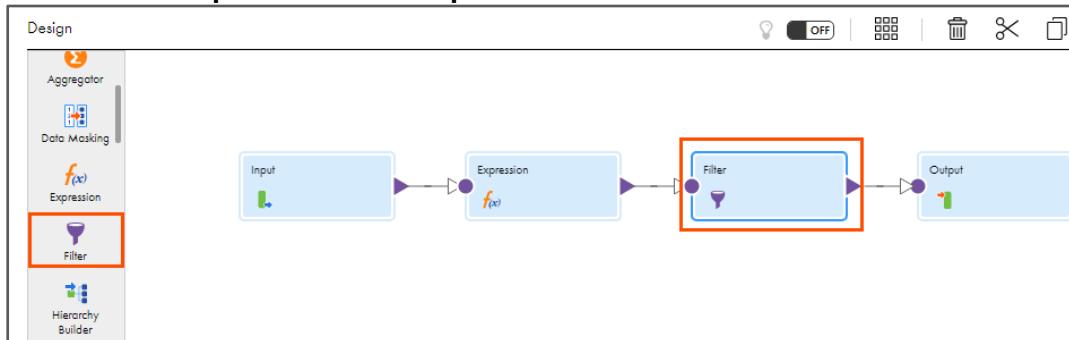
OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingMapletTransformation_5-4**. Copy the command mentioned under **Step A** and paste it in the Expression field.

19. Click **OK**.



20. From the list of available transformations, drag and drop a **Filter** transformation on the link between **Expression** and **Output**.



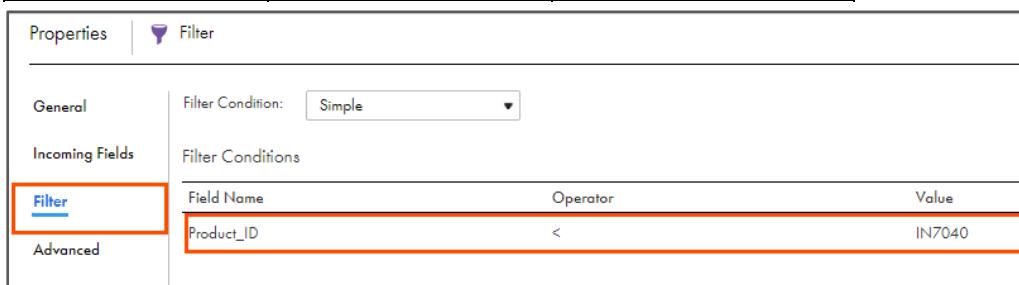
21. Select the **Filter** transformation from the mapplet canvas.

22. From the properties pane, select **Filter**.

23. To add filter condition, click .

24. Define the filter as shown in the table below:

Field Name	Operator	Value
Product_ID	< (Less Than)	IN7040



Properties |  Filter

General Filter Condition: Simple

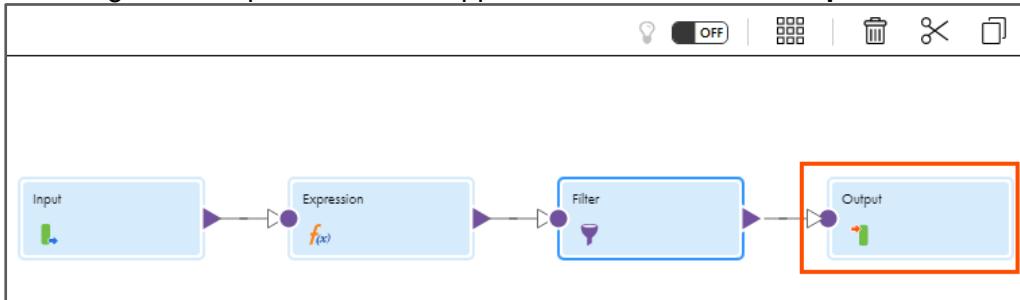
Incoming Fields

Filter

Advanced

Field Name	Operator	Value
Product_ID	<	IN7040

25. To configure the Input, from the mapplet canvas, select the **Output** transformation.

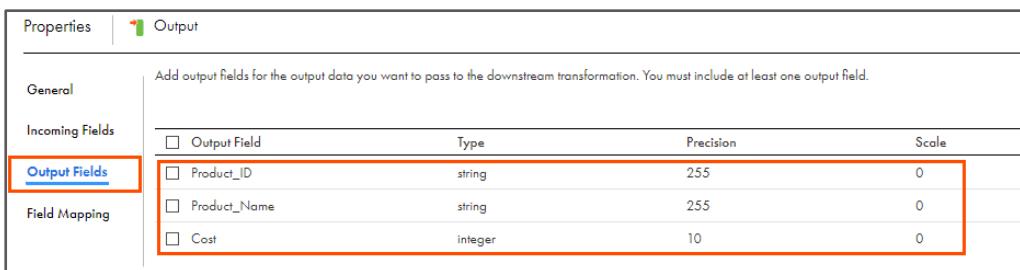


26. From the properties pane, select **Output Fields**.

27. To add output fields, click .

28. 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



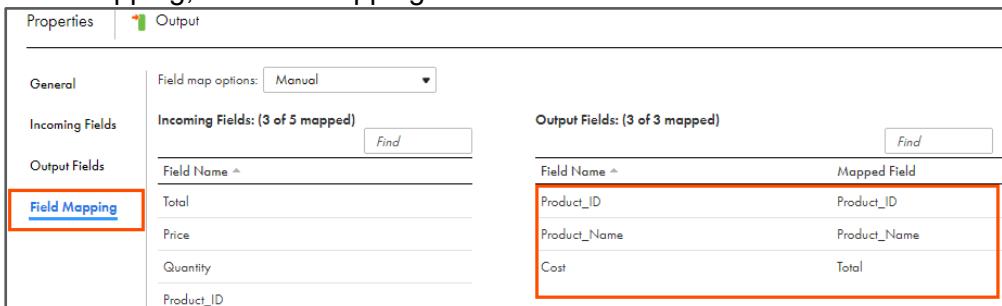
Output Field	Type	Precision	Scale
Product_ID	string	255	0
Product_Name	string	255	0
Cost	integer	10	0

29. From the properties pane, select **Field Mapping**.

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

Incoming Field	Target Field
Product_ID	Product_ID
Product_Name	Product_Name
Total	Cost

31. After mapping, the field mapping looks as shown below:

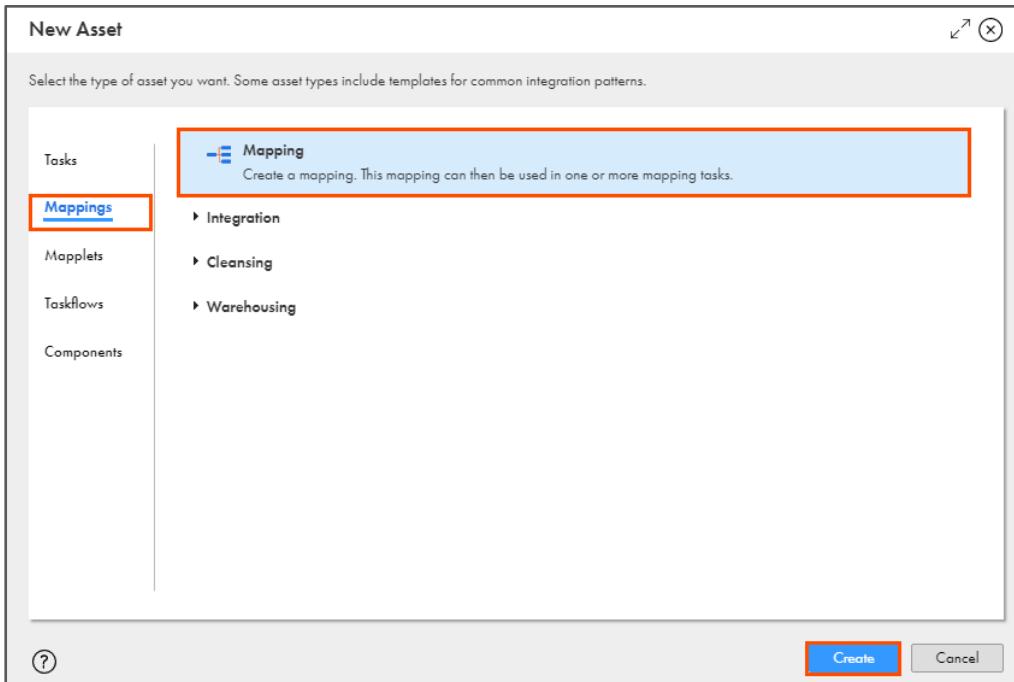


Field Name	Mapped Field
Product_ID	Product_ID
Product_Name	Product_Name
Cost	Total

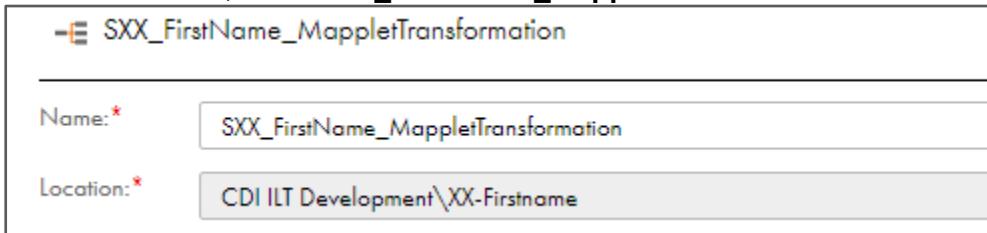
32. Save the mapplet.

Create Mapping

33. From the Data Integration service, create a new **Mapping**.

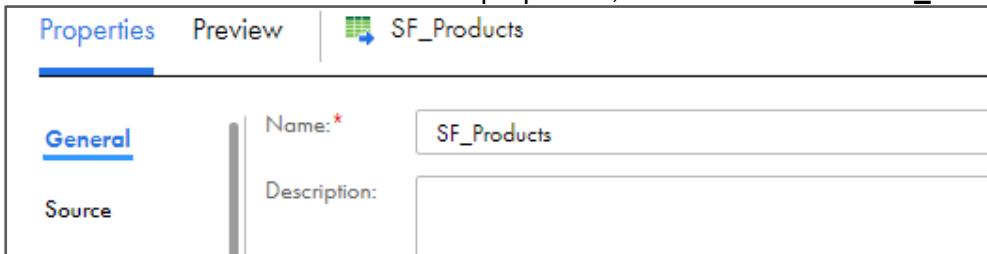


34. In the Name field, enter **SXX_FirstName_MapletTransformation**.



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

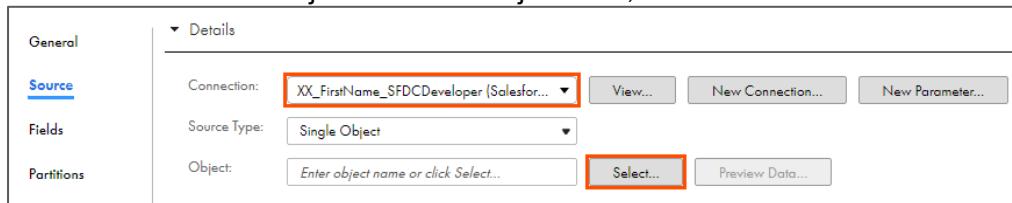
36. In the General section of the Source properties, enter the Name as **SF_Products**.



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

38. From the Connection drop-down, select **XX_FirstName_SFDCDeveloper**.

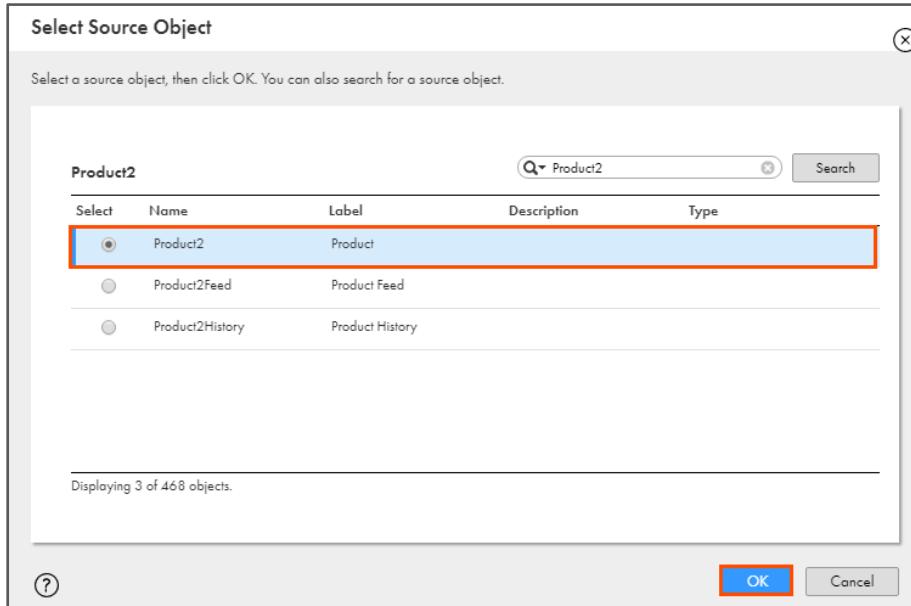
39. To select the source object from the Object field, click **Select**.



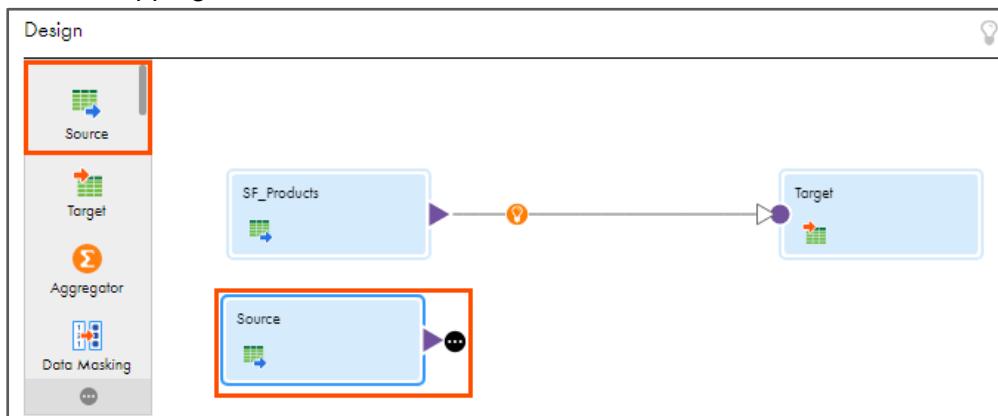
40. From the list, select **Product2**.

Note: You can use the search option to locate the object.

41. Click **OK**.



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



43. Select the newly added transformation from the mapping canvas.

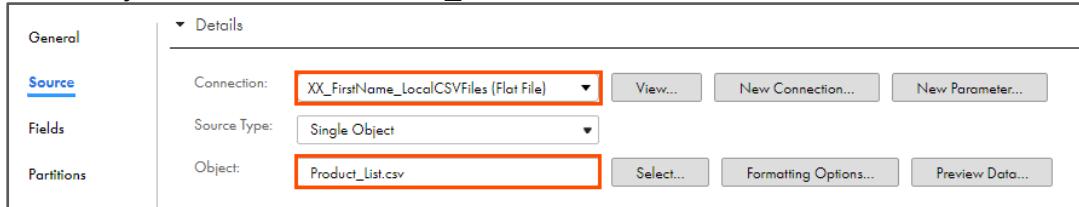
44. In the General section of the Source properties, enter the Name as **FF_Product**.



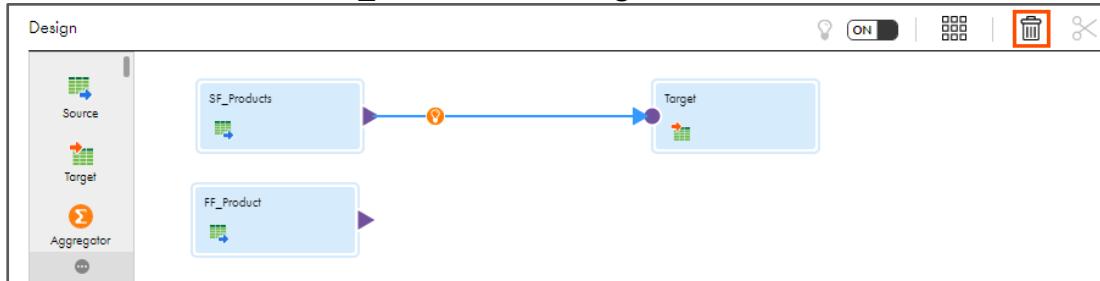
45. From the properties pane, click **Source**.

46. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

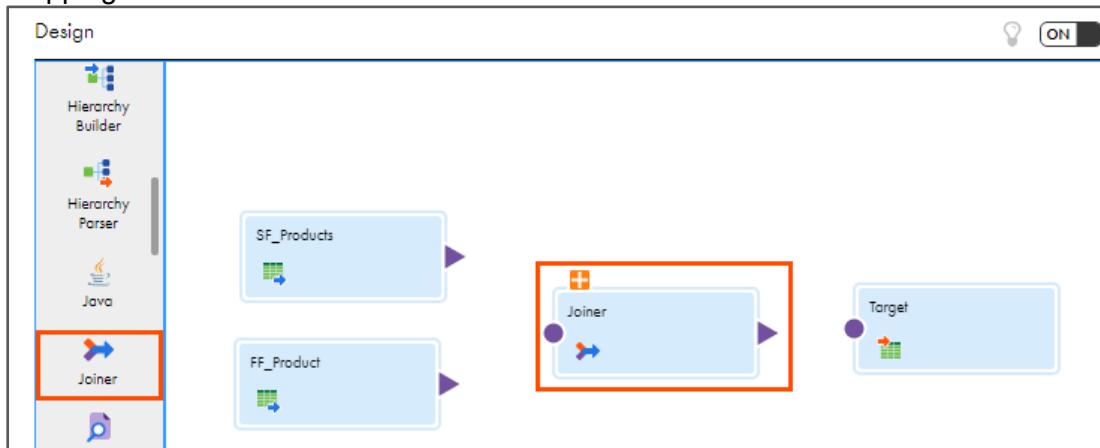
47. In the Object field, select **Product_List.csv**.



48. Delete the link between **SF_Products** and **Target**.

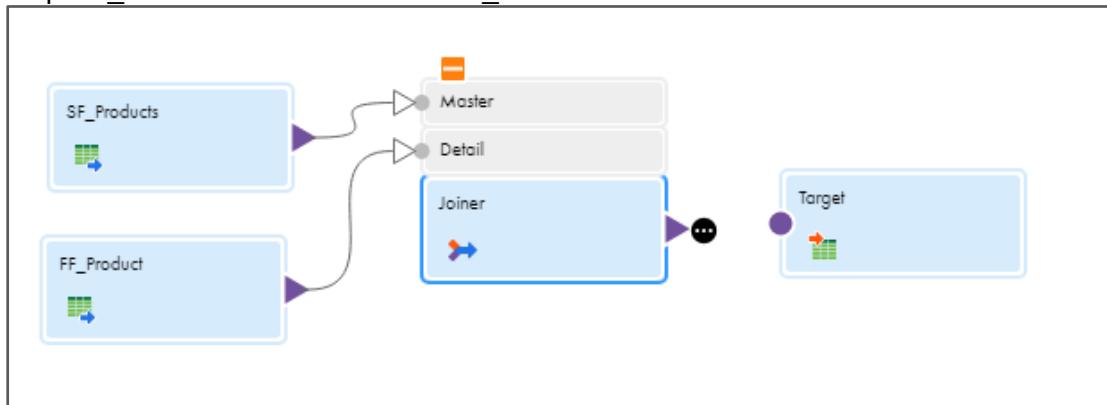


49. From the list of available transformations, drag and drop a **Joiner** transformation on the mapping canvas.



50. Select the Joiner transformation and click .

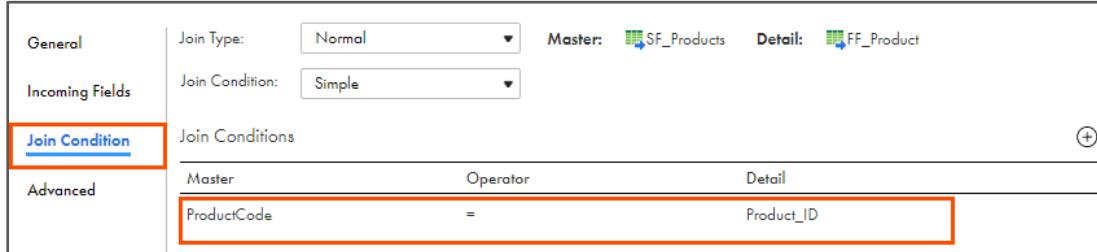
51. Map SF_Products as **Master** and FF_Product as **Detail**.



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

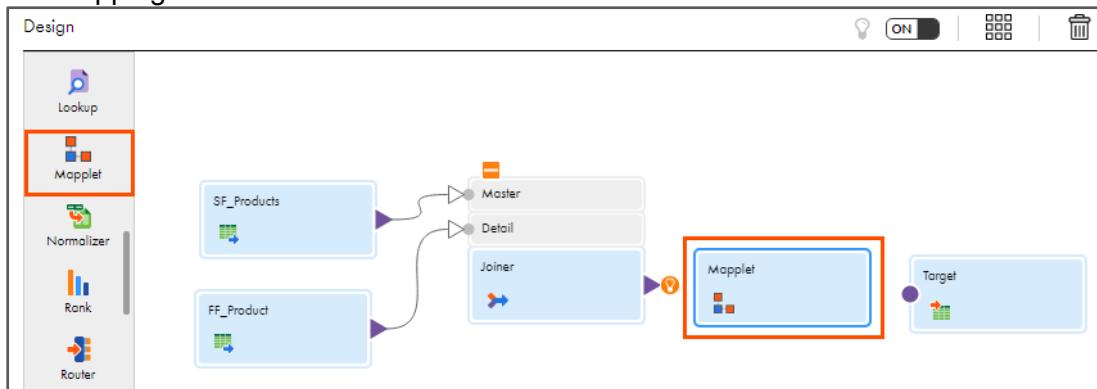
53. Add the condition as shown in the table below:

Master	Operator	Detail
ProductCode	= (Equals)	Product_ID



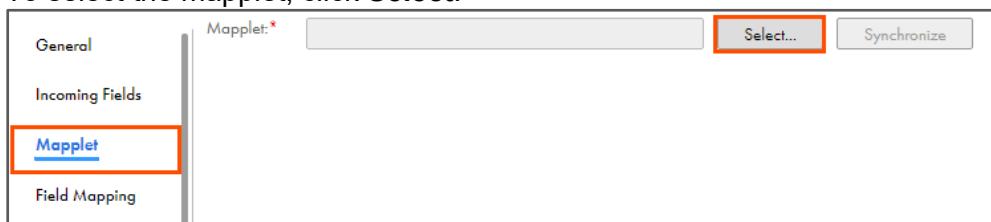
Master	Operator	Detail
ProductCode	=	Product_ID

54. From the list of available transformations, drag and drop a **Mapplet** transformation on the mapping canvas.



55. From the properties pane, select **Mapplet**.

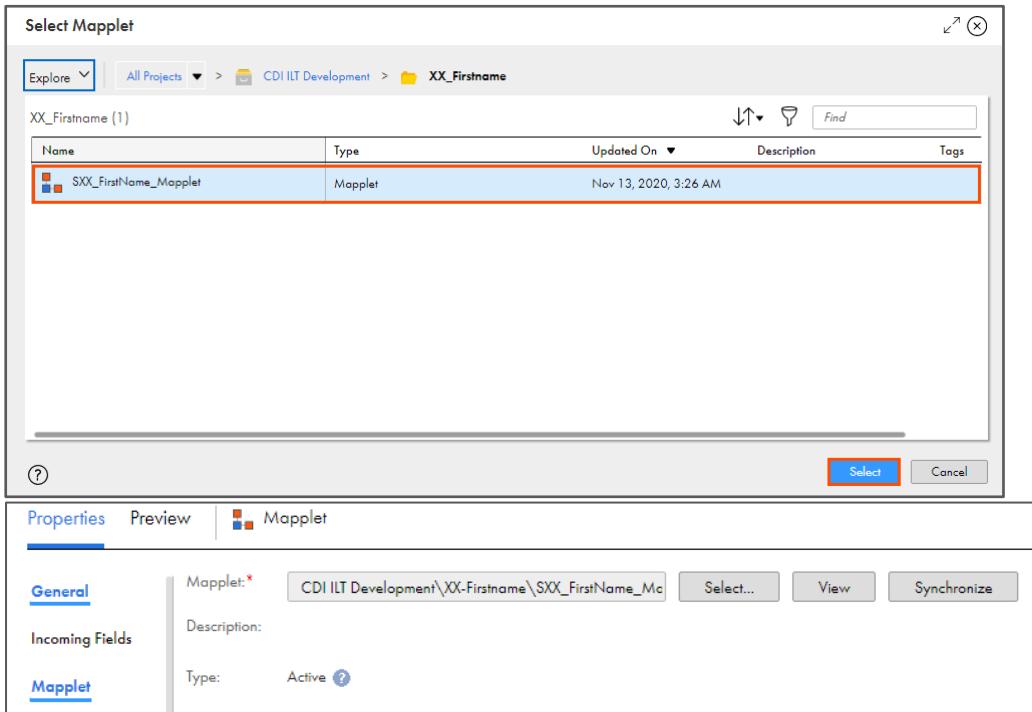
56. To select the mapplet, click **Select**.



General	Maplet: Mapplet	Select...	Synchronize
Incoming Fields			
Maplet			
Field Mapping			

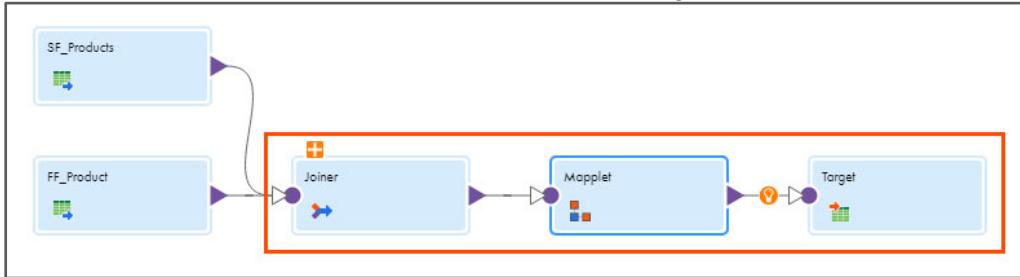
57. Navigate to your working directory and select **SXX_FirstName_Maplet**.

58. Click **Select**.



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 change in the Mapplet, use the **Synchronize** option to update the mapplet changes in the mapping.

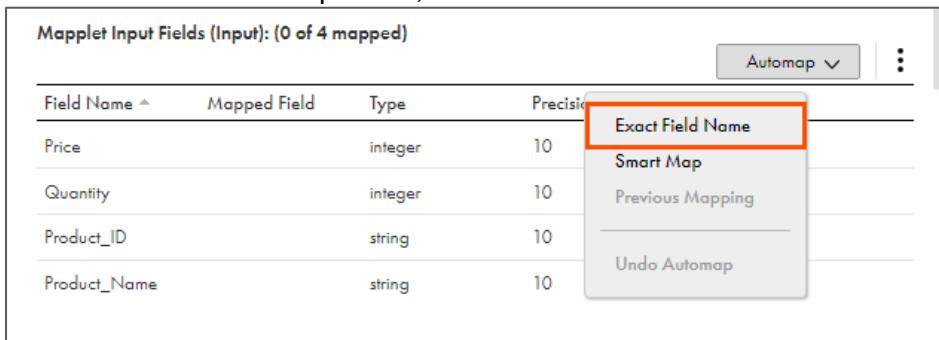
59. Link the Maplet transformation with Joiner and Target transformations.



60. Select the Maplet transformation from the mapping canvas.

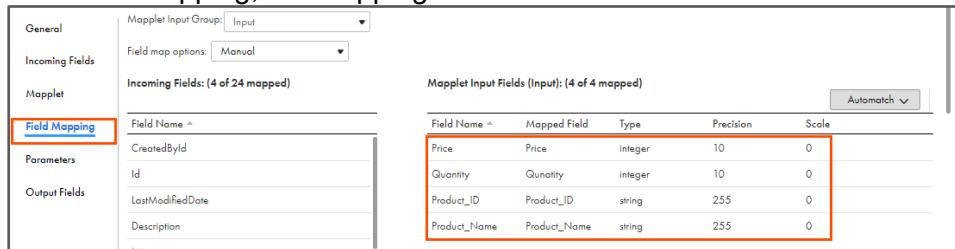
61. From the properties pane, click **Field Mapping**.

62. From the Automatch drop-down, select **Exact Field Name**.



Maplet Input Fields (Input): (0 of 4 mapped)			
Field Name	Mapped Field	Type	Precision
Price		integer	10
Quantity		integer	10
Product_ID		string	10
Product_Name		string	10

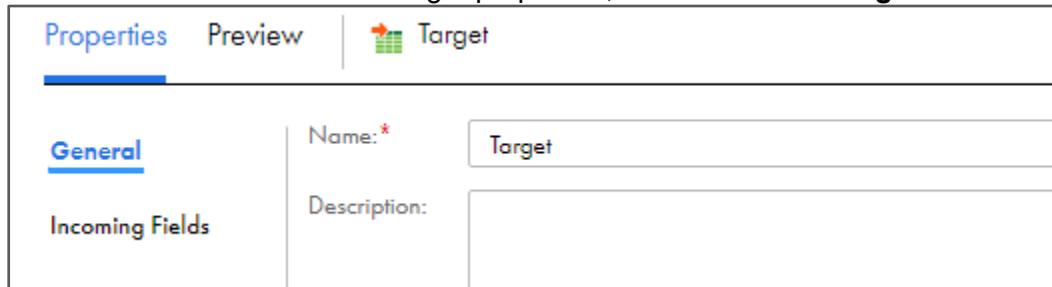
63. After field mapping, the mapping looks as shown below:



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

64. To configure the target, from the mapping canvas, click the **Target** transformation.

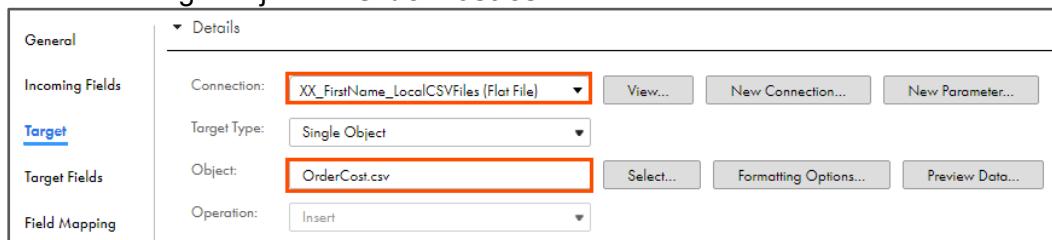
65. In the General section of the Target properties, retain Name as **Target**.



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

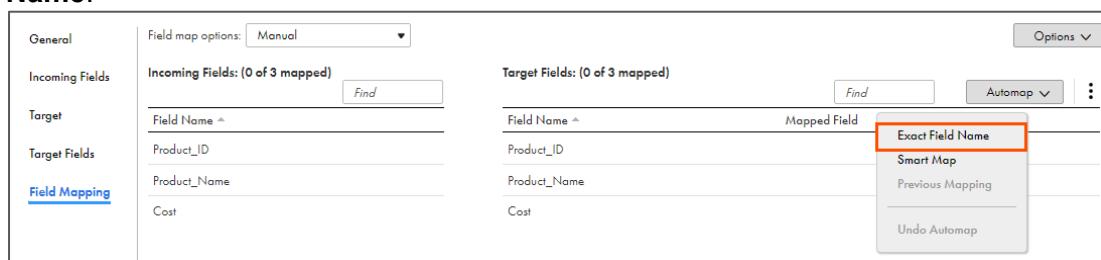
67. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

68. Select the target object as **OrderCost.csv**.

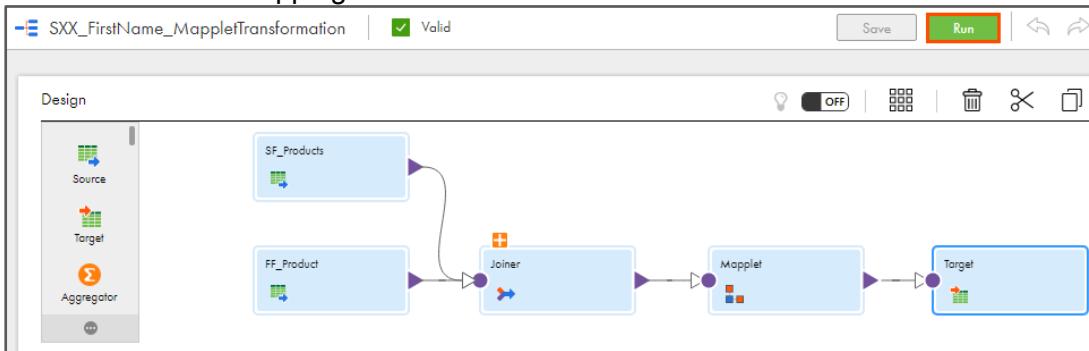


69. From the properties pane, click **Field Mapping**.

70. To match the fields automatically, from the Automatch drop-down, select **Exact Field Name**.

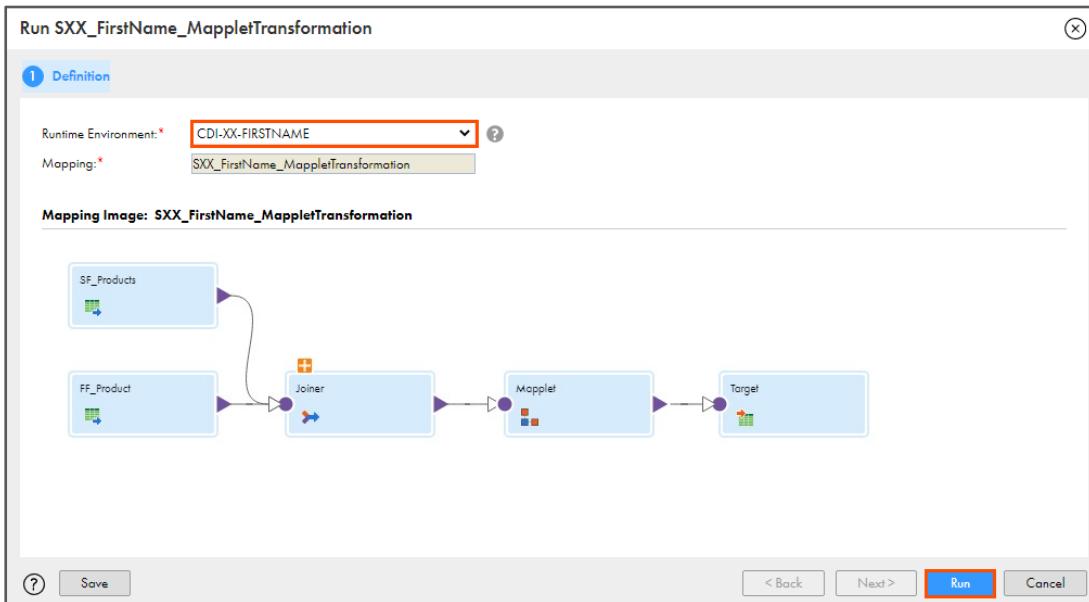


71. Save and run the mapping.



72. From the Runtime Environment drop-down, select your secure agent group.

73. Click **Run**.



Monitor Status

74. To monitor the mapping status, navigate to **My Jobs** page.

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

My Jobs					
Jobs (1 of 438)					
Asset Name: SXX_FirstName_Mappl...	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_FirstName_MappletTransformation-2		Nov 13, 2020, 3:48 AM	Nov 13, 2020, 3:48...	10	Success

76. Close the mapplet and mapping assets from the navigation pane.

77. On your local machine, go to **C:\IICSLabFiles**.

78. Verify that the correct cost is written in **OrderCost.csv**.

A	B	C	D
Product_ID	Product_Name	Cost	
GC1040	RALPH LAUREN Polo Classic Full-Zip Fleece Hooded Sweatshirt	67	
GC1020	Essential Oil Diffuser Bracelet	75	
GC3040	Tommy Hilfiger Men's Classic V-Neck Shirt	410	
GC3020	Pro Impact Cricket Set	2950	
GC3060	Microsoft Surface Pro	11085	
GC1060	Pureology Hydrate Moisturizing Shampoo	108	
GC5040	Gourmia GAF645 Digital Stainless Steel Air Fryer	9900	
IN7020	Skechers Women's Glide Ultra-Playa Boat Shoe	850	
GC5020	Wilson Energy XL Tennis Racket	880	
GC5060	Google Chromecast 3rd Generation	408	

This concludes the lab.

Module 6: Mapping Parameters

Lab 6-1: 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 the probability. However, creating a mapping every time an opportunity is added is time consuming. When she explains this concern to John, he recommends creating a completely parameterized mapping.

Duration:

30 minutes

Tasks

Copy Source Files

1. Copy the following files from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (**C:\IICSLabFiles**):

Files
LowProbabilityOpportunities.csv
HighProbabilityOpportunities.csv

2. Open the source files and observe its content.

Note: You must close the files before running the task to avoid job failure.

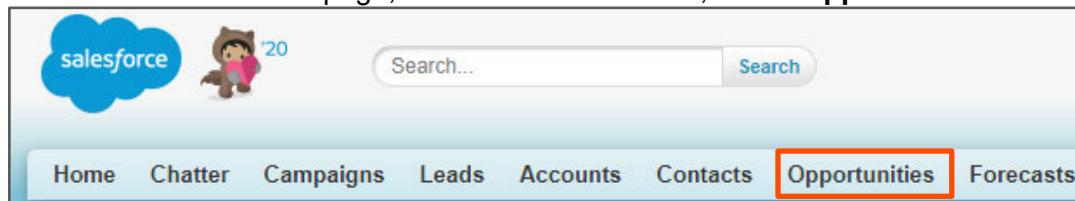
Create Opportunities in Salesforce

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

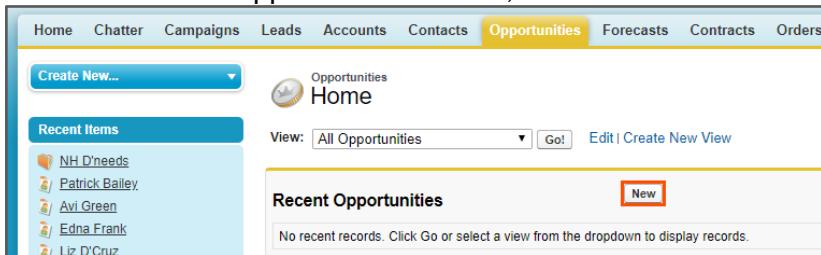
Note: You can use the below mentioned link to log in:

<https://login.salesforce.com/>

4. On the Salesforce homepage, from the available tabs, select **Opportunities**.



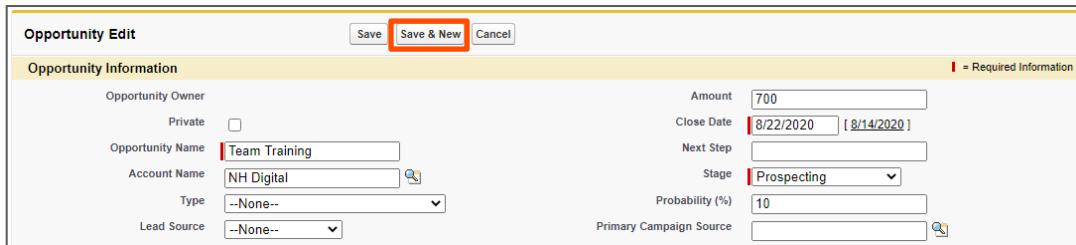
5. From the Recent Opportunities section, select **New**.



6. 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

7. Click **Save & New**.



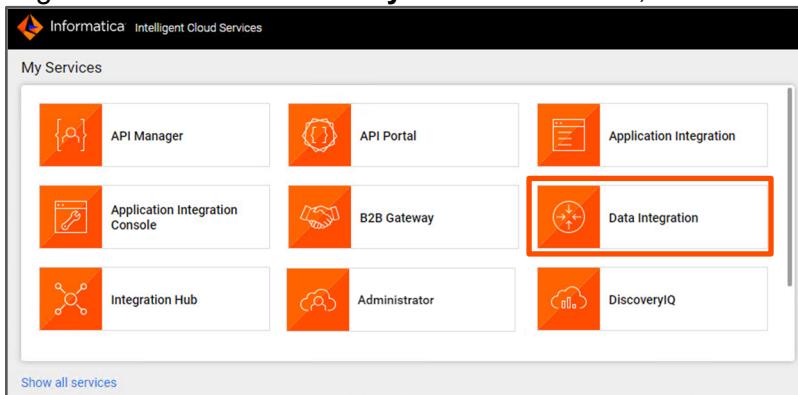
8. Similarly, create three or more opportunities in Salesforce.

Note: To create opportunities in Salesforce, you can refer to the **Salesforce_Opportunities.csv** file provided in CDI Lab Prep Files folder available on your desktop.

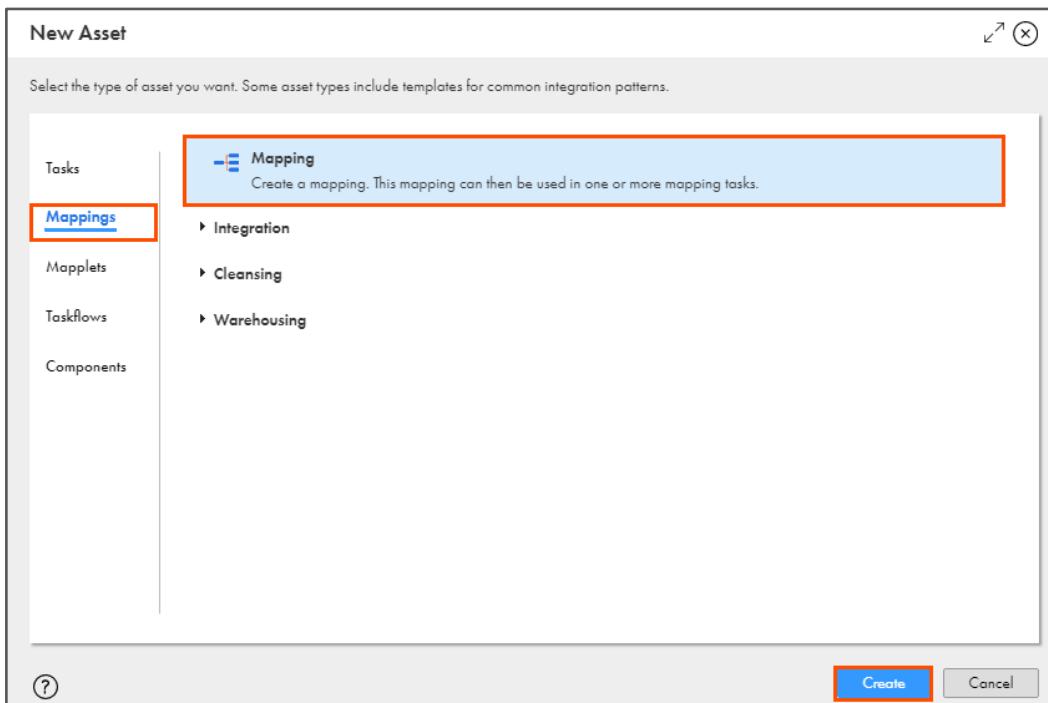
9. After the last opportunity is added, click **Save**.

Create Mapping

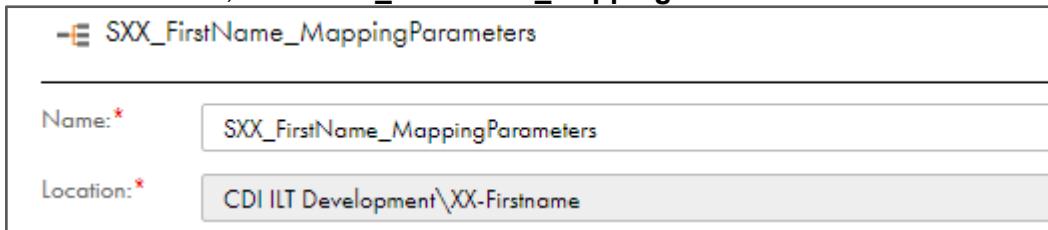
10. Log in to IICS and from the **My Services** window, select **Data Integration**.



11. Create a new Mapping.



12. In the Name field, enter **SXX_FirstName_MappingParameters**.



Name: *	SXX_FirstName_MappingParameters
Location: *	CDI ILT Development\XX-Firstname

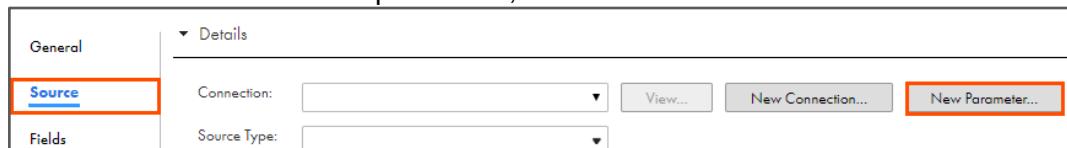
13. To configure the source, from the mapping canvas, click the **Source** transformation.

14. In the General section of the Source properties, enter Name as **SO_Salesforce**.



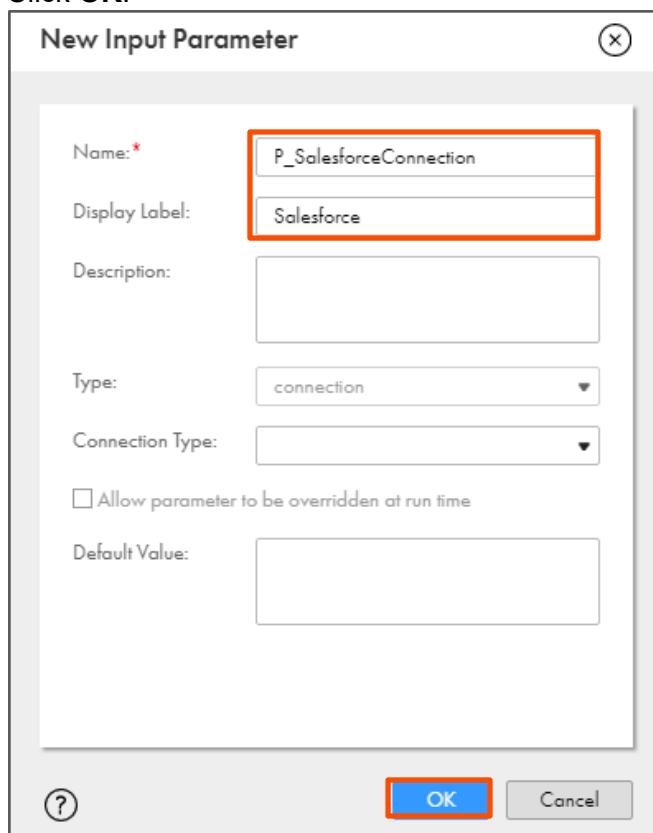
15. From the properties pane, click **Source**.

16. To create a new connection parameter, click **New Parameter**.

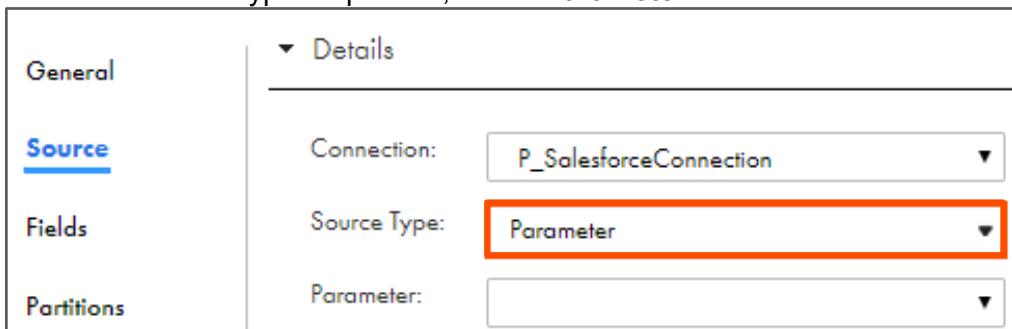


17. Enter Name as **P_SalesforceConnection**, and Display Label as **Salesforce**.

18. Click **OK**.

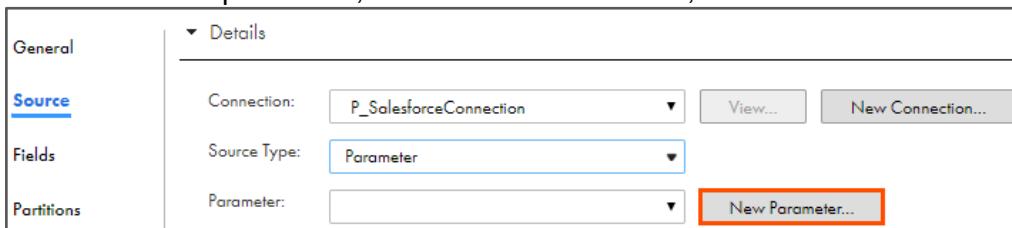


19. From the Source Type drop-down, select **Parameter**.



General	▼ Details
Source	Connection: P_SalesforceConnection
Fields	Source Type: Parameter
Partitions	Parameter:

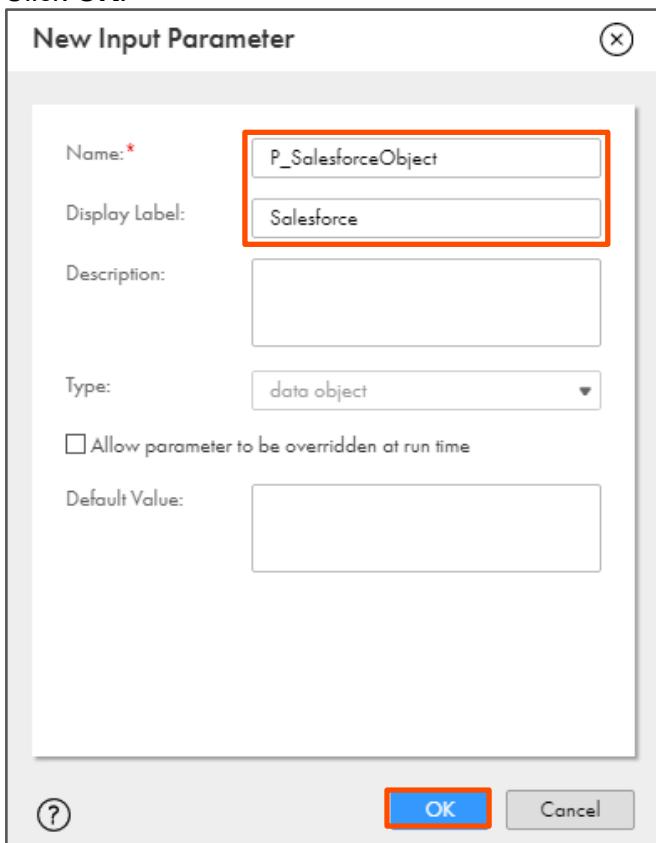
20. To create a new parameter, from the Parameter field, click **New Parameter**.



General	▼ Details
Source	Connection: P_SalesforceConnection
Fields	Source Type: Parameter
Partitions	Parameter: New Parameter...

21. Enter Name as **P_SalesforceObject**, and the Display Label as **Salesforce**.

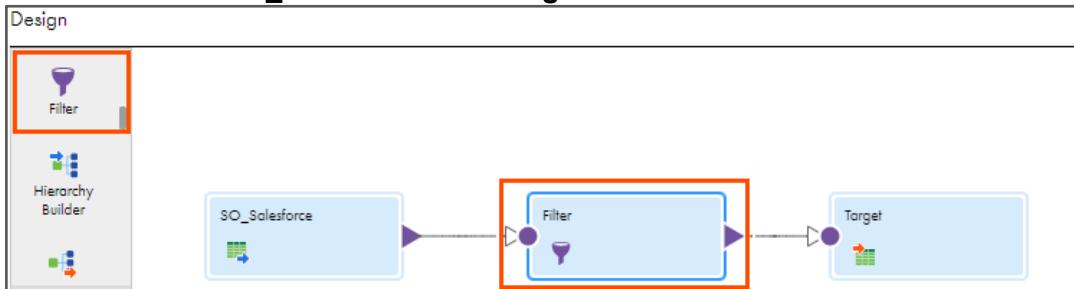
22. Click **OK**.



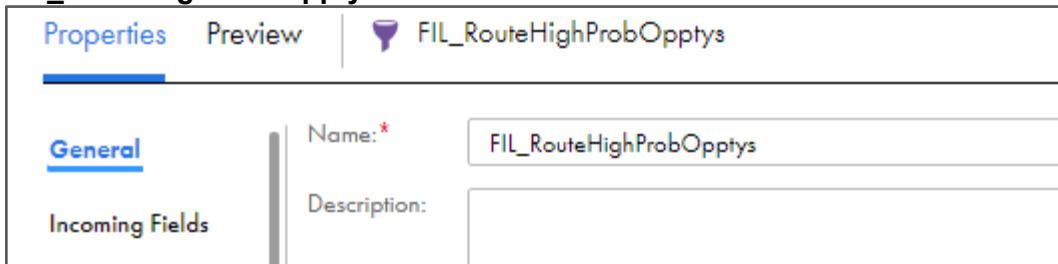
New Input Parameter

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 type="button" value="?"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/>	

23. From the list of available transformations, drag and drop a **Filter** transformation on to the link between **SO_Salesforce** and **Target**.



24. In the General section of the Filter properties, enter the Name as **FIL_RouteHighProbOpptys**.



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

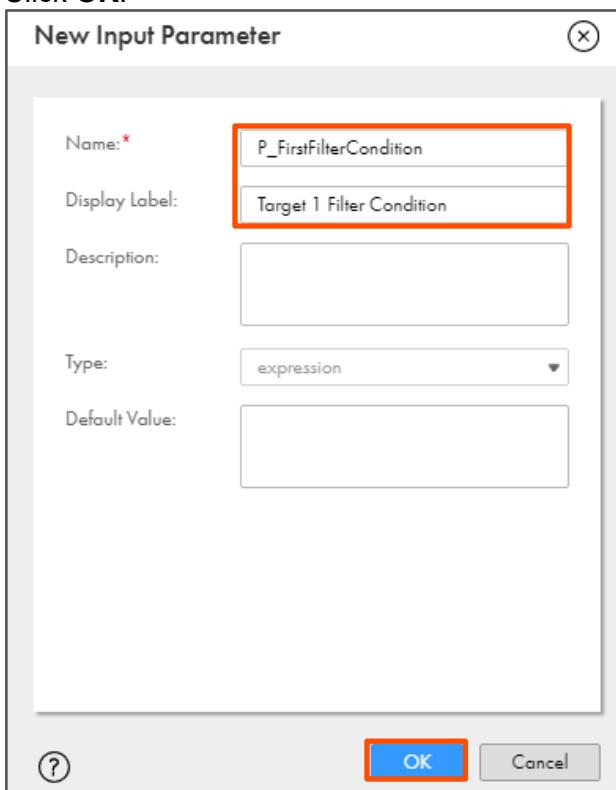
26. From the Filter Condition drop-down, select **Completely Parameterized**.

27. To create a new filter parameter, click **New Parameter**.



28. Enter Name as **P_FirstFilterCondition**, and Display Label as **Target 1 Filter Condition**.

29. Click **OK**.



30. To configure the target, from the mapping canvas, click the **Target** transformation.

31. In the General section of the Target properties, enter the Name as

TG_HighProbOpptys.



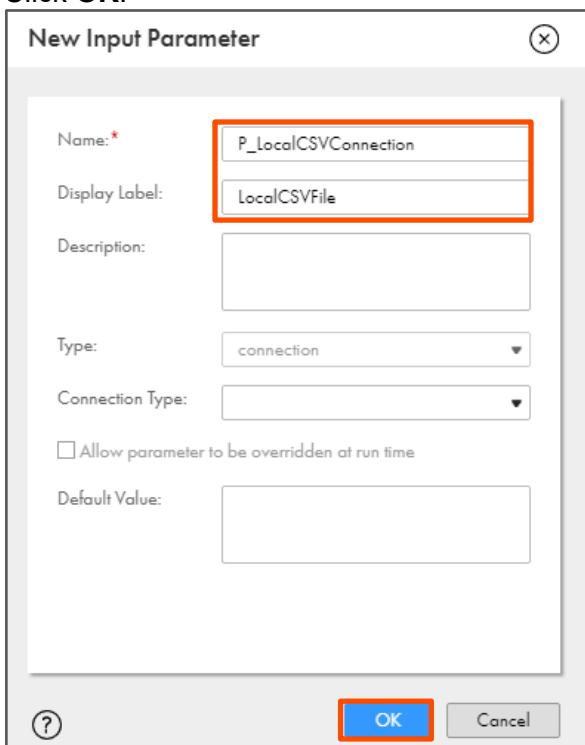
32. From the properties pane, click **Target**.

33. To create a new connection parameter, click **New Parameter**.



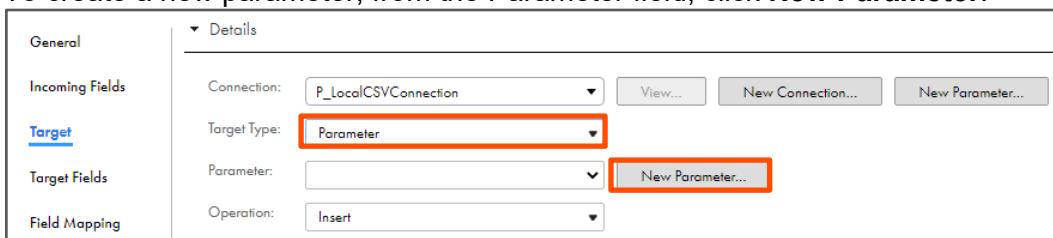
34. Enter Name as **P_LocalCSVConnection**, and Display Label as **LocalCSVFile**.

35. Click **OK**.



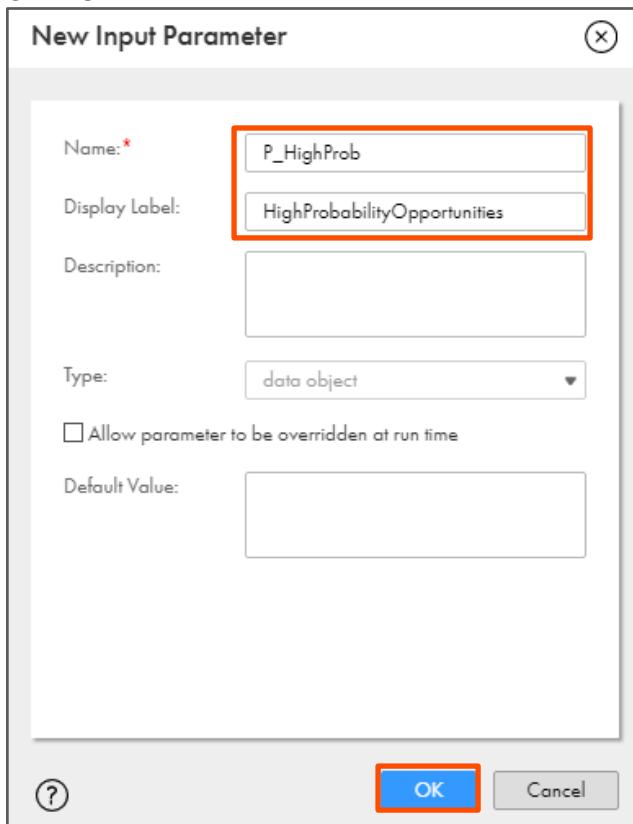
36. From the Target Type drop-down, select **Parameter**.

37. To create a new parameter, from the Parameter field, click **New Parameter**.



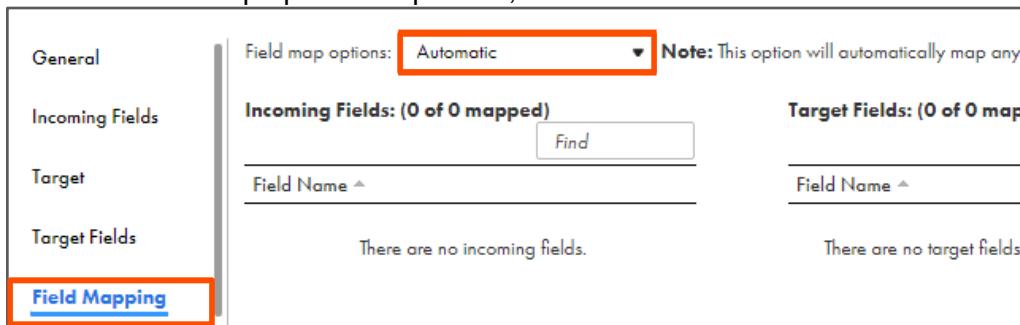
38. Enter Name as **P_HighProb**, and the Display Label as **HighProbabilityOpportunities**.

39. Click **OK**.

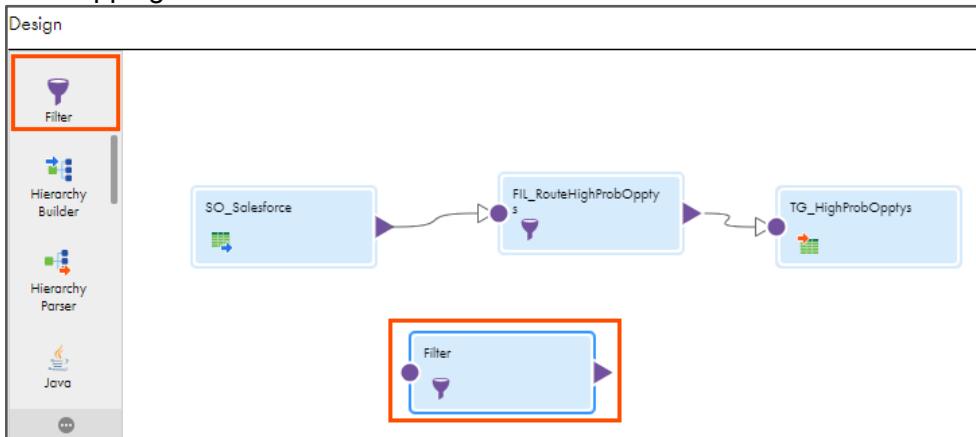


40. From the properties pane, click **Field Mapping**.

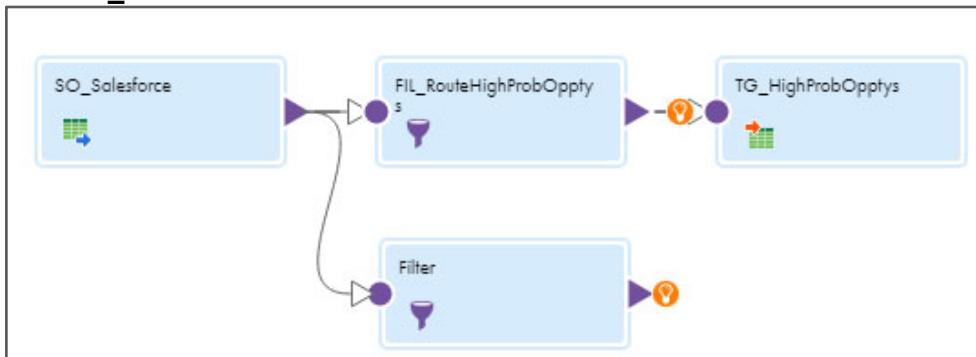
41. From the Field map options drop-down, select **Automatic**.



42. From the list of available transformations, drag and drop a **Filter** transformation on to the mapping canvas.

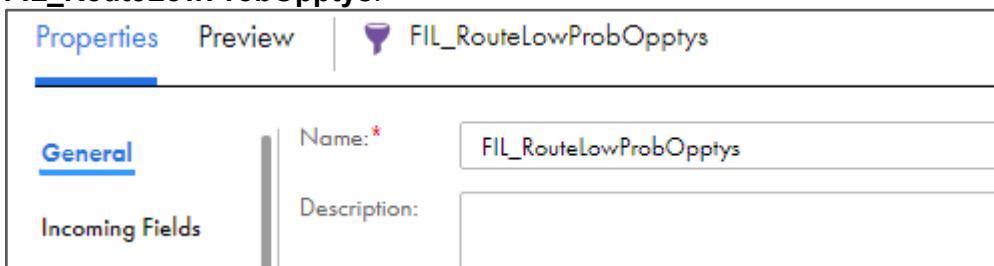


43. Link **SO_Salesforce** to the **Filter** transformation.



44. Select the **Filter** transformation from the mapping canvas.

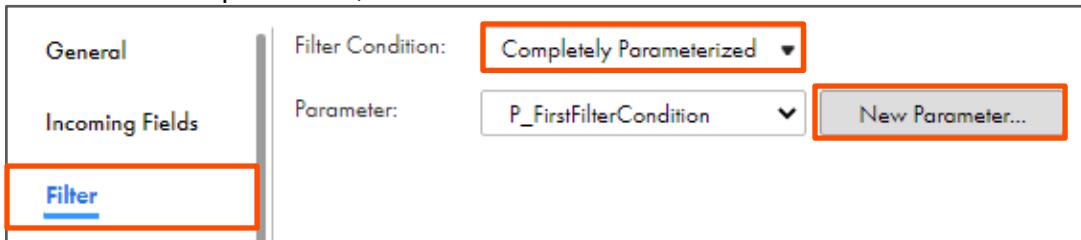
45. In the General section of the Filter properties, enter the Name as **FIL_RouteLowProbOpptys**.



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

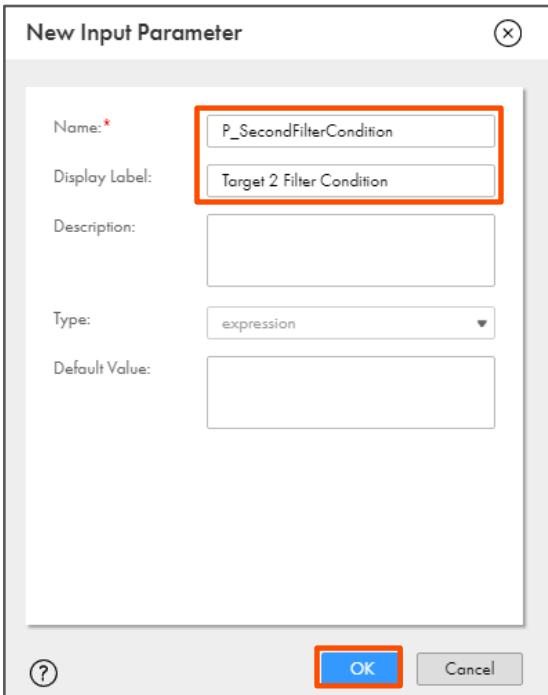
47. From the Filter Condition drop-down, select **Completely Parameterized**.

48. To create a new parameter, click **New Parameter...**

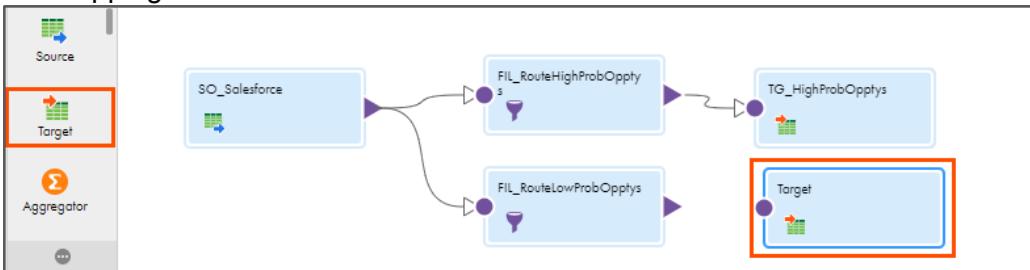


49. Enter Name as **P_SecondFilterCondition**, and Display Label as **Target 2 Filter Condition**.

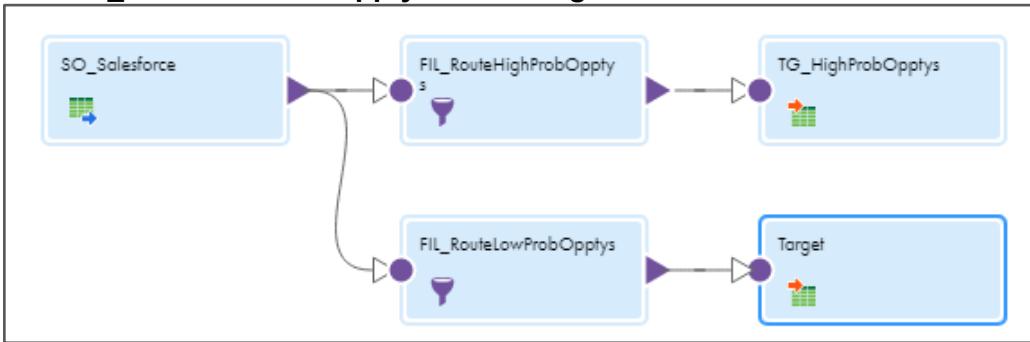
50. Click **OK**.



51. From the list of available transformations, drag and drop a **Target** transformation on to the mapping canvas.



52. Link **FIL_RouteLowProbOpptys** to the **Target** transformation.



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

54. In the General section of Target properties, enter Name as **TG_LowProbOpptys**.

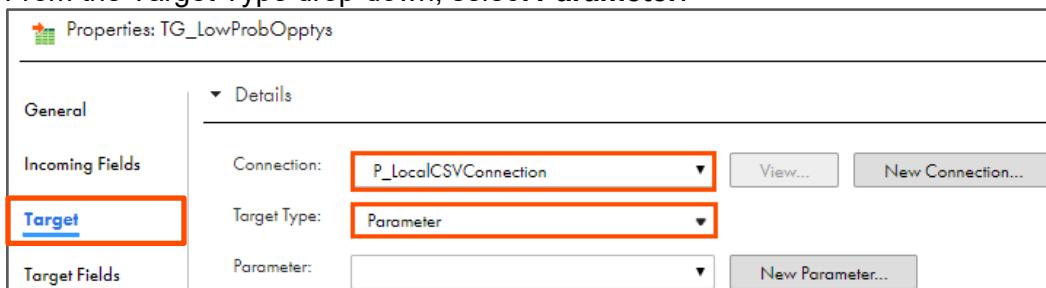


Properties		Preview	TG_LowProbOpptys
General	Name: *	TG_LowProbOpptys	
Incoming Fields	Description:		

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

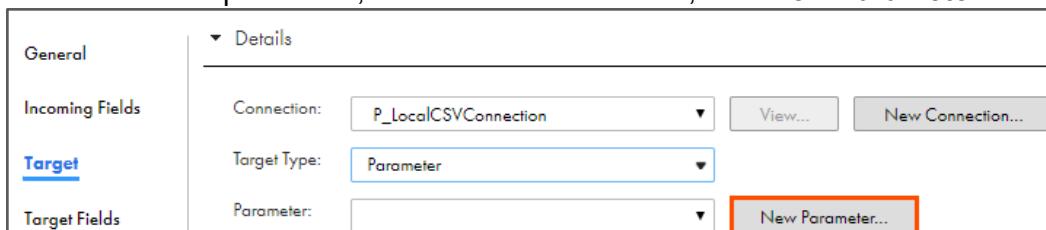
56. From the Connection drop-down, select **P_LocalCSVConnection**.

57. From the Target Type drop-down, select **Parameter**.



Properties: TG_LowProbOpptys			
General	▼ Details		
Incoming Fields	Connection:	P_LocalCSVConnection	<input type="button" value="View..."/> <input type="button" value="New Connection..."/>
Target	Target Type:	Parameter	<input type="button" value="New Parameter..."/>
Target Fields	Parameter:	<input type="button" value="New Parameter..."/>	

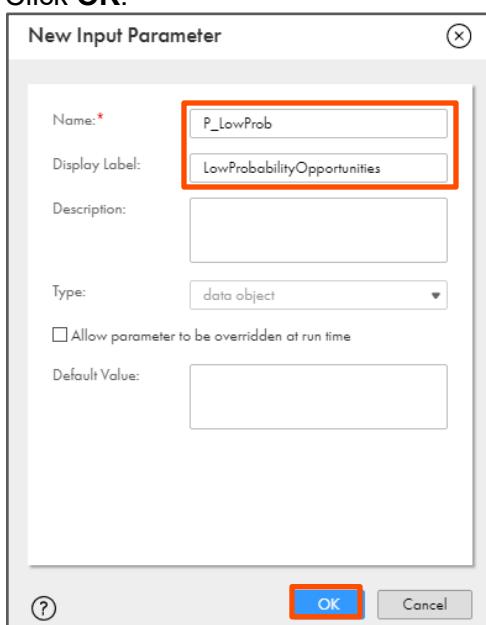
58. To create a new parameter, from the Parameter field, click **New Parameter**.



Properties: TG_LowProbOpptys			
General	▼ Details		
Incoming Fields	Connection:	P_LocalCSVConnection	<input type="button" value="View..."/> <input type="button" value="New Connection..."/>
Target	Target Type:	Parameter	<input type="button" value="New Parameter..."/>
Target Fields	Parameter:	<input type="button" value="New Parameter..."/>	

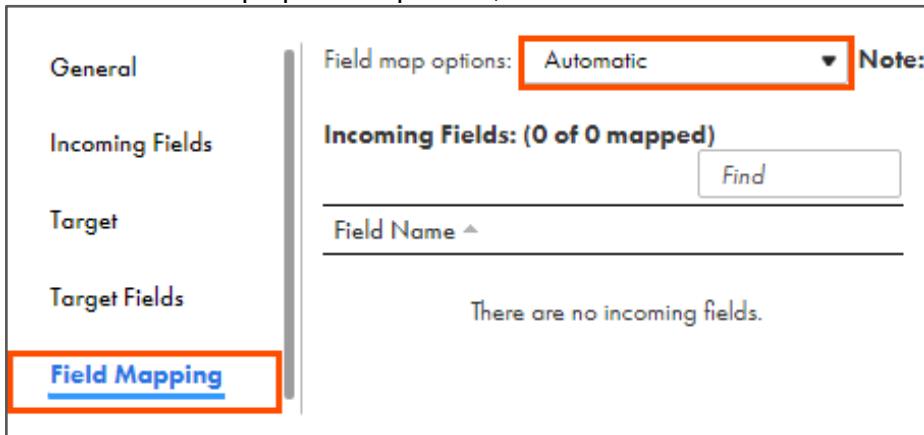
59. Enter Name as **P_LowProb**, and the Display Label as **LowProbabilityOpportunities**.

60. Click **OK**.

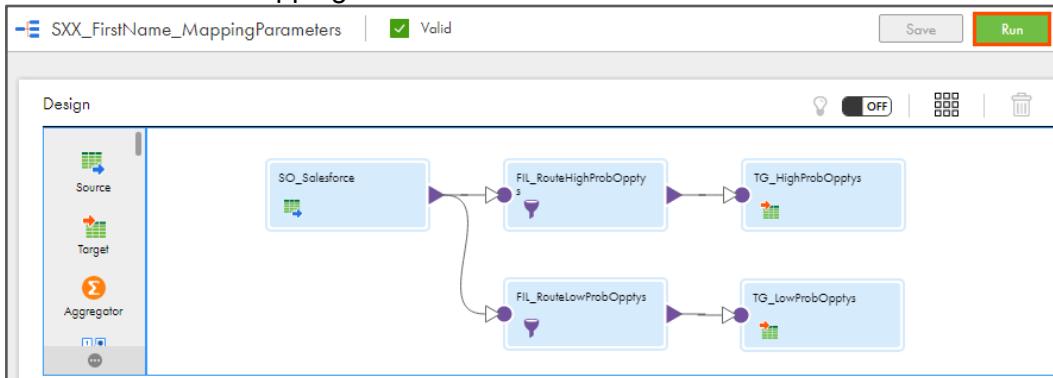


New Input Parameter	
Name: *	<input type="text" value="P_LowProb"/>
Display Label:	<input type="text" value="LowProbabilityOpportunities"/>
Description:	
Type:	<input type="text" value="data object"/>
<input type="checkbox"/> Allow parameter to be overridden at run time	
Default Value:	
<input type="button" value="?"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/>	

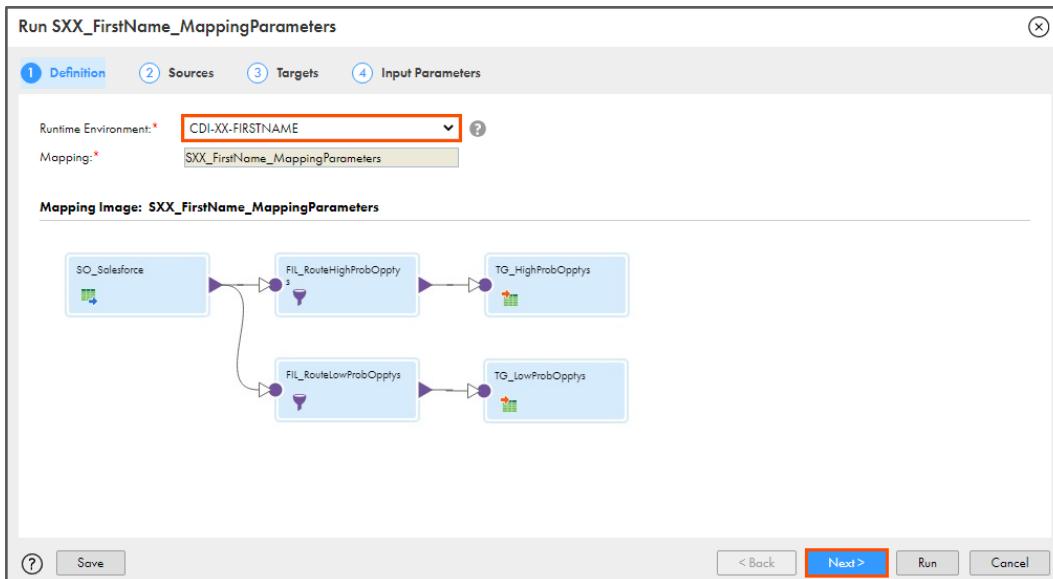
61. From the properties pane, click **Field Mapping**.
 62. From the Field map option drop-down, select **Automatic**.



63. Save and run the mapping.



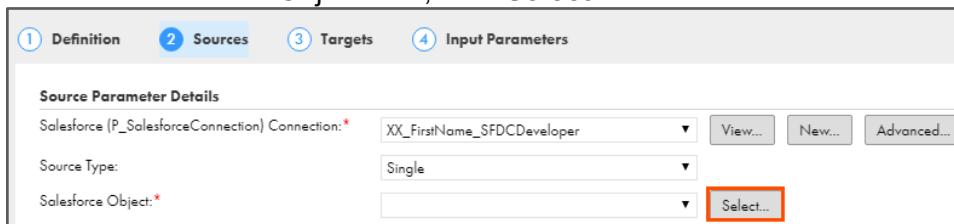
64. From Runtime Environment drop-down, select your secure agent group.
 65. Click **Next**.



The screenshot shows the "Run SXX_FirstName_MappingParameters" dialog. It has tabs for Definition, Sources, Targets, and Input Parameters. The "Definition" tab is active. Under "Runtime Environment:", "CDI-XX-FIRSTNAME" is selected, highlighted with a red box. Below that, "Mapping:" is set to "SXX_FirstName_MappingParameters". The "Mapping Image" section shows the same flow diagram as the previous screenshot. At the bottom, there are buttons for "?", "Save", "< Back", "Next >" (highlighted with a red box), "Run", and "Cancel".

66. From the Salesforce (P_SalesforceConnection) Connection drop-down, select **XX_FirstName_SFDCDeveloper**.

67. From the Salesforce Object field, click **Select**.



Source Parameter Details

Salesforce (P_SalesforceConnection) Connection: * XX_FirstName_SFDCDeveloper View... New... Advanced...

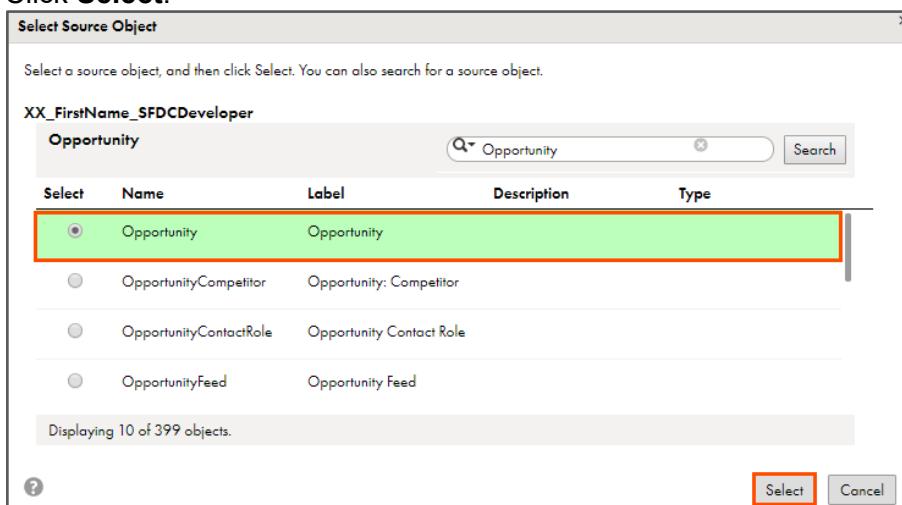
Source Type: Single

Salesforce Object: **Select...**

68. From the list, select **Opportunity**.

Note: You can also use the search feature.

69. Click **Select**.



Select Source Object

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

XX_FirstName_SFDCDeveloper

Opportunity

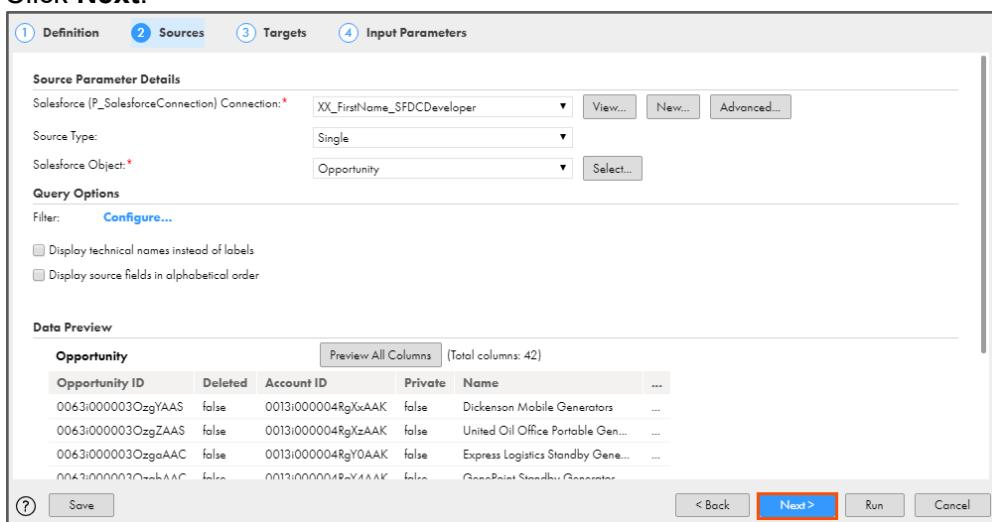
Select	Name	Label	Description	Type
<input checked="" type="radio"/>	Opportunity	Opportunity		
<input type="radio"/>	OpportunityCompetitor	Opportunity: Competitor		
<input type="radio"/>	OpportunityContactRole	Opportunity Contact Role		
<input type="radio"/>	OpportunityFeed	Opportunity Feed		

Displaying 10 of 399 objects.

?

Select Cancel

70. Click **Next**.



Source Parameter Details

Salesforce (P_SalesforceConnection) Connection: * XX_FirstName_SFDCDeveloper View... New... Advanced...

Source Type: Single

Salesforce Object: * Opportunity **Select...**

Query Options

Filter: [Configure...](#)

Display technical names instead of labels

Display source fields in alphabetical order

Data Preview

Opportunity

Opportunity ID	Deleted	Account ID	Private	Name	...
0063i000003OzgYAAS	false	0013i000004RgXxAK	false	Dickenson Mobile Generators	...
0063i000003OzgZAAS	false	0013i000004RgXxAK	false	United Oil Office Portable Gen...	...
0063i000003OzgaAAC	false	0013i000004RgY0AAK	false	Express Logistics Standby Gene...	...
0043i000003OzbhAAC	false	0013i000004RgY0AAK	false	Generalist Standby Generator	...

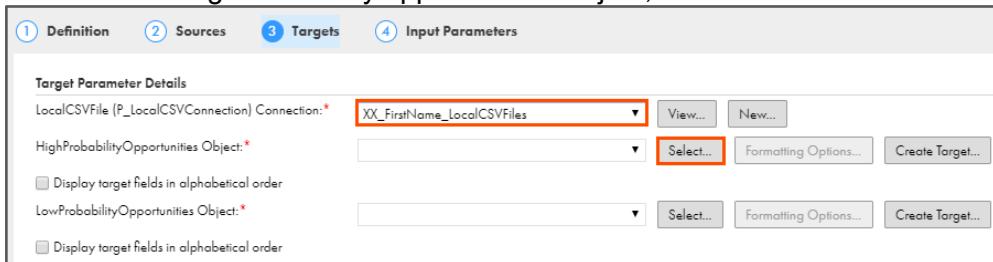
?

Save

< Back Next > Run Cancel

71. From the LocalCSVFile (P_LocalCSVConnection) Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

72. To select the HighProbabilityOpportunities Object, click **Select**.



Target Parameter Details

LocalCSVFile (P_LocalCSVConnection) Connection: **XX_FirstName_LocalCSVFiles**

HighProbabilityOpportunities Object: **Select...**

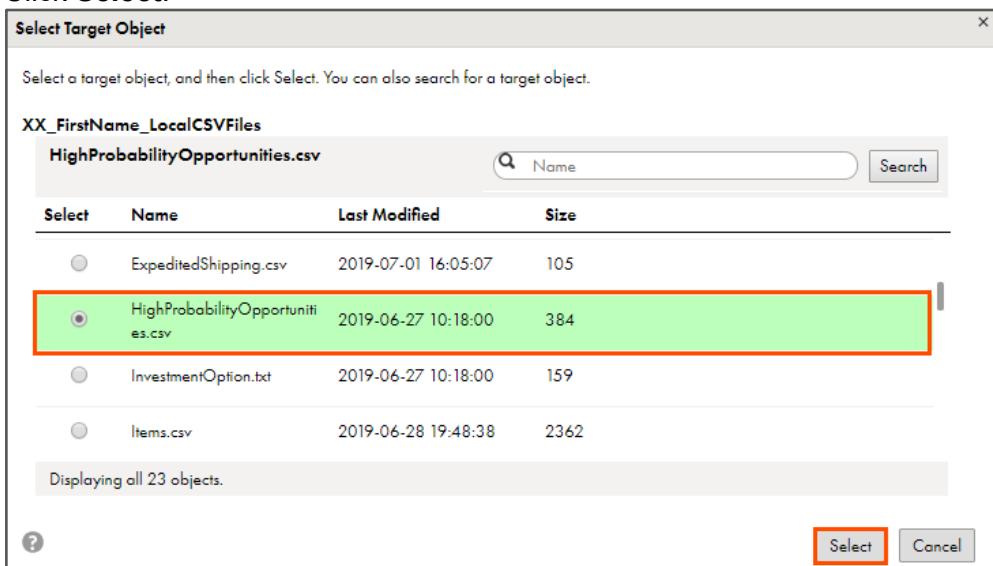
Display target fields in alphabetical order

LowProbabilityOpportunities Object: **Select...**

Display target fields in alphabetical order

73. From the list, select **HighProbabilityOpportunities.csv** file.

74. Click **Select**.



Select Target Object

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

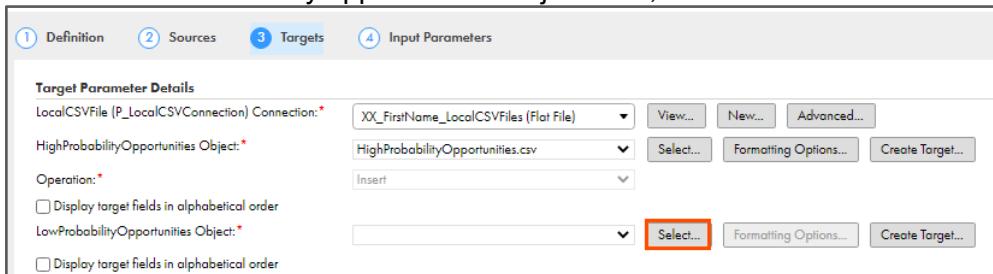
XX_FirstName_LocalCSVFiles

Select	Name	Last Modified	Size
<input type="radio"/>	ExpeditedShipping.csv	2019-07-01 16:05:07	105
<input checked="" type="radio"/>	HighProbabilityOpportunities.csv	2019-06-27 10:18:00	384
<input type="radio"/>	InvestmentOption.txt	2019-06-27 10:18:00	159
<input type="radio"/>	Items.csv	2019-06-28 19:48:38	2362

Displaying all 23 objects.

Select **Cancel**

75. From the LowProbabilityOpportunities Object field, click **Select**.



Target Parameter Details

LocalCSVFile (P_LocalCSVConnection) Connection: **XX_FirstName_LocalCSVFiles (Flat File)**

HighProbabilityOpportunities Object: **HighProbabilityOpportunities.csv**

Operation: **Insert**

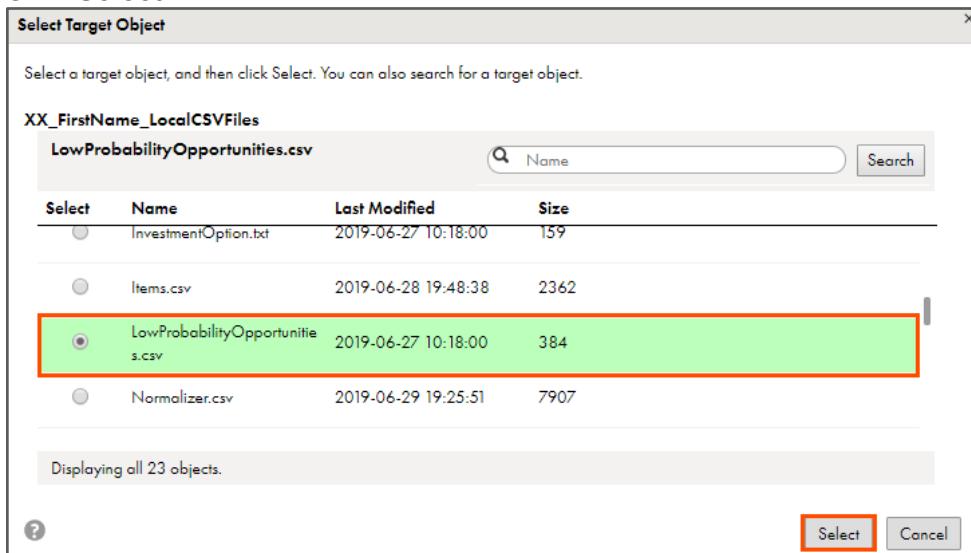
Display target fields in alphabetical order

LowProbabilityOpportunities Object: **Select...**

Display target fields in alphabetical order

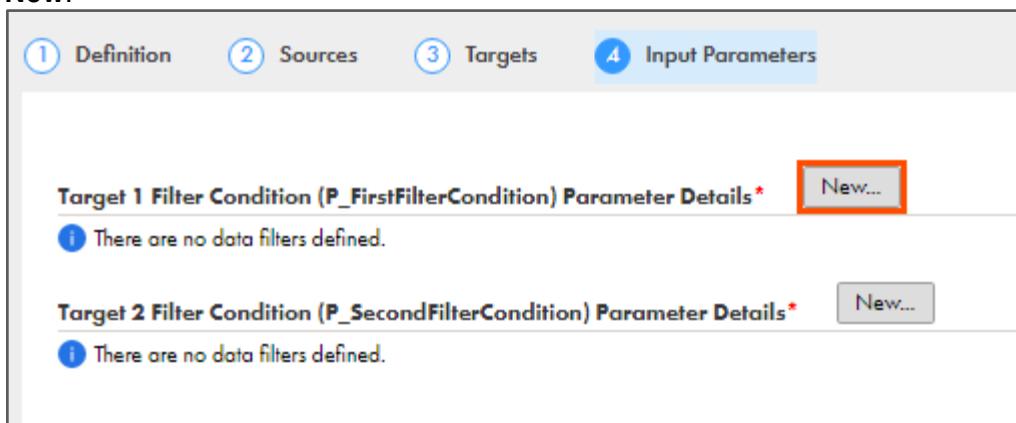
76. From the list, select **LowProbabilityOpportunities.csv** file.

77. Click **Select**.



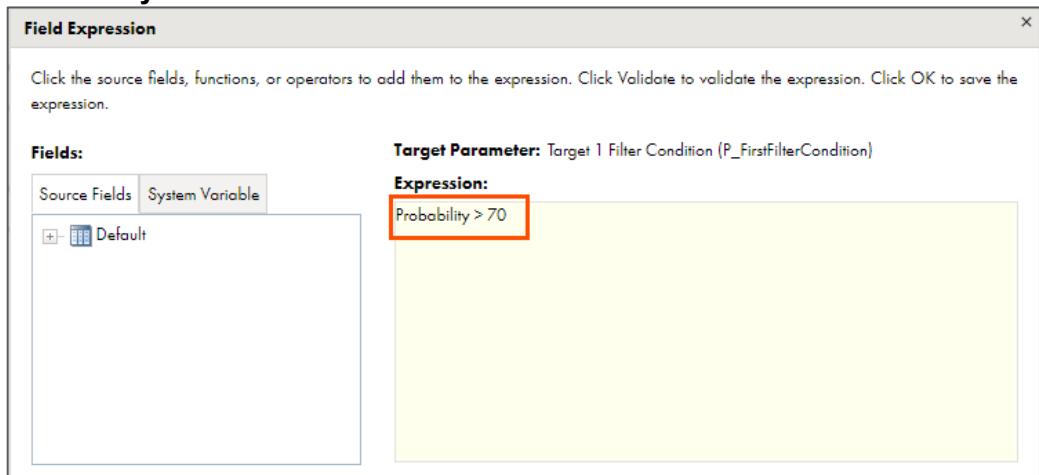
78. Click **Next**.

79. To define Target 1 Filter Condition (P_FirstFilterCondition) Parameter Details, click **New**.

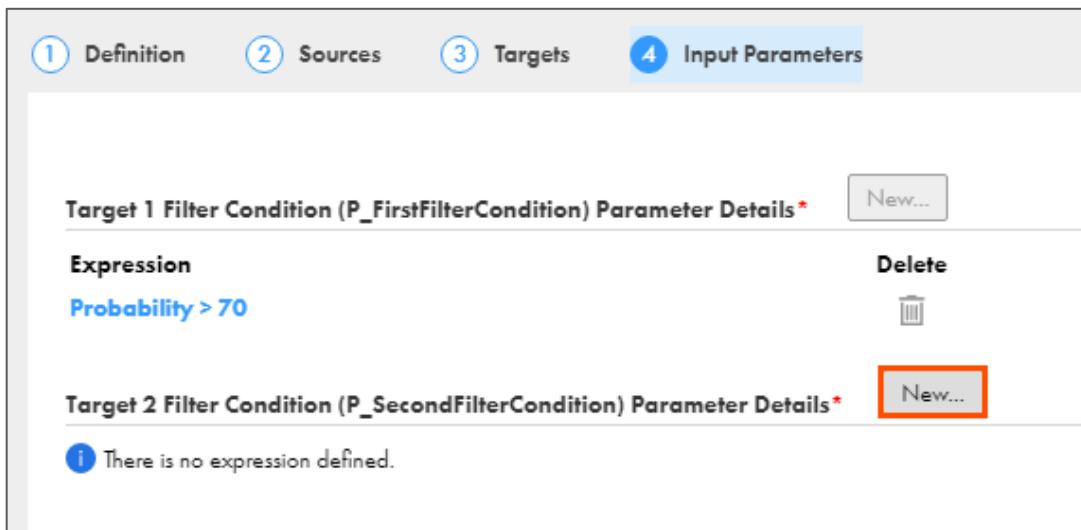


80. Enter the filter condition as shown below and click **OK**.

Probability > 70



81. For Target 2 Filter Condition (P_SecondFilterCondition) Parameter Details, click **New**.



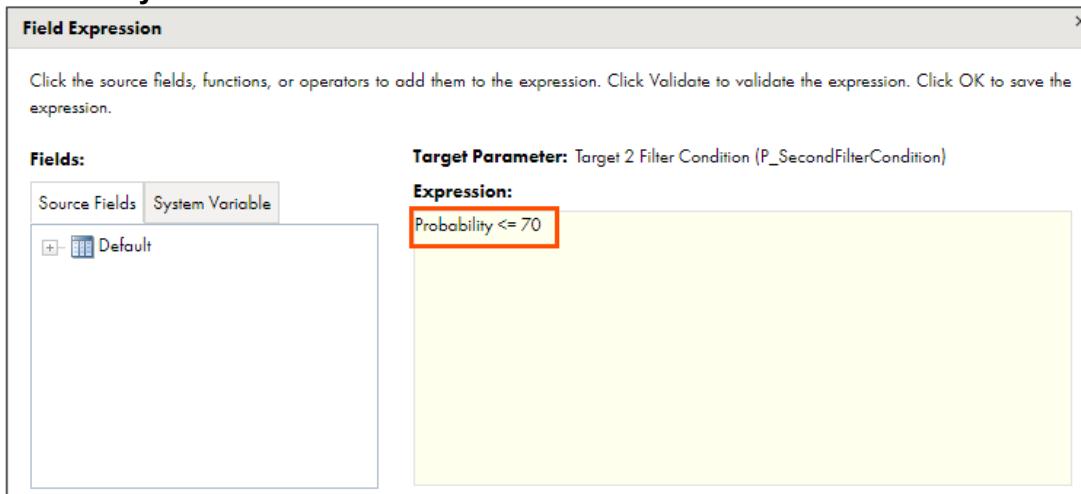
The screenshot shows the 'Input Parameters' tab of a mapping configuration. At the top, there are four tabs: 1 Definition, 2 Sources, 3 Targets, and 4 Input Parameters (which is selected). Below the tabs, there are two sections for filter conditions:

- Target 1 Filter Condition (P_FirstFilterCondition) Parameter Details***: An expression 'Probability > 70' is listed with a 'Delete' button.
- Target 2 Filter Condition (P_SecondFilterCondition) Parameter Details***: A 'New...' button is highlighted with a red box.

A tooltip message 'There is no expression defined.' is visible below the second section.

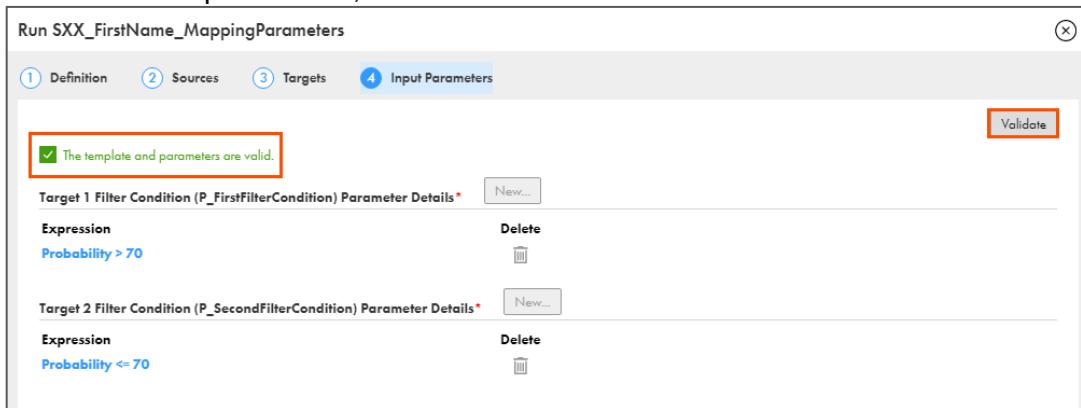
82. Enter the filter condition as shown below and click **OK**.

Probability <= 70



The screenshot shows the 'Field Expression' dialog box. It has a title bar 'Field Expression' and a message 'Click the source fields, functions, or operators to add them to the expression. Click Validate to validate the expression. Click OK to save the expression.' Below this is a 'Fields:' section with tabs for 'Source Fields' (selected) and 'System Variable'. Under 'Source Fields', there is a 'Default' entry. To the right, under 'Target Parameter: Target 2 Filter Condition (P_SecondFilterCondition)', the 'Expression:' field contains 'Probability <= 70', which is also highlighted with a red box.

83. To validate the parameters, click **Validate**.



The screenshot shows the 'Run SXX_FirstName_MappingParameters' dialog box. It has tabs for 1 Definition, 2 Sources, 3 Targets, and 4 Input Parameters (selected). A message box at the top says 'The template and parameters are valid.' A 'Validate' button is highlighted with a red box. Below are two sections for filter conditions:

- Target 1 Filter Condition (P_FirstFilterCondition) Parameter Details***: An expression 'Probability > 70' is listed with a 'Delete' button.
- Target 2 Filter Condition (P_SecondFilterCondition) Parameter Details***: An expression 'Probability <= 70' is listed with a 'Delete' button.

84. Click **Run**.

Monitor Status

85. To monitor the task status, navigate to **My Jobs** page.

86. The task status changes to **Success**.

Jobs (1 of 423)					Updated 4:40:03 AM PST	↻	▼	✖	Find	
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status					
SIXX_FirstName_MappingParameters-2		Nov 13, 2020, 4:39 AM	Nov 13, 2020, 4:39...	28	✓ Success					

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

87. Close the asset from the navigation pane.

88. On your local machine, go to **C:\IICSLabFiles**.

89. Verify that the correct probabilities are written to the following files:

HighProbabilityOpportunities.csv

ID	ISDELETED	ACCOUNT ISPRIVATE NAME	DESCRIPTION	STAGE	NAME	AMOUNT	PROBABILITY	EXPECTED	TOTAL	OPEN
0062v000C	0	0 0012v000C	0 Stock Supply	Proposal/	1000000	75	750000			
0062v000C	0	0 0012v000C	0 Annual Maintenance	Negotiatin	50000	90	45000			
0062v000C	0	0 0012v000C	0 United Oil Office Portable Generators	Negotiatin	125000	90	112500			
0062v000C	0	0 0012v000C	0 Express Logistics Standby Generator	Closed W/	220000	100	220000			
0062v000C	0	0 0012v000C	0 GenePoint Standby Generator	Closed W/	85000	100	85000			
0062v000C	0	0 0012v000C	0 United Oil Refinery Generators	Proposal/	270000	75	202500			
0062v000C	0	0 0012v000C	0 United Oil SLA	Closed W/	120000	100	120000			
0062v000C	0	0 0012v000C	0 Edge Emergency Generator	Closed W/	75000	100	75000			
0062v000C	0	0 0012v000C	0 University of AZ Portable Generators	Closed W/	50000	100	50000			
0062v000C	0	0 0012v000C	0 GenePoint SLA	Closed W/	30000	100	30000			
0062v000C	0	0 0012v000C	0 United Oil Installations	Negotiatin	270000	90	243000			
0062v000C	0	0 0012v000C	0 Edge Installation	Closed W/	50000	100	50000			
0062v000C	0	0 0012v000C	0 Edge SLA	Closed W/	60000	100	60000			
0062v000C	0	0 0012v000C	0 United Oil Installations	Closed W/	270000	100	270000			
0062v000C	0	0 0012v000C	0 Grand Hotels Generator Installations	Closed W/	350000	100	350000			
0062v000C	0	0 0012v000C	0 United Oil Refinery Generators	Closed W/	915000	100	915000			
0062v000C	0	0 0012v000C	0 University of AZ Installations	Proposal/	100000	75	75000			
0062v000C	0	0 0012v000C	0 Express Logistics SLA	Perceptio	120000	70	84000			
0062v000C	0	0 0012v000C	0 University of AZ SLA	Closed W/	90000	100	90000			
0062v000C	0	0 0012v000C	0 Burlington Textiles Weaving Plant Generator	Closed W/	235000	100	235000			
0062v000C	0	0 0012v000C	0 United Oil Installations	Closed W/	235000	100	235000			
0062v000C	0	0 0012v000C	0 United Oil Emergency Generators	Closed W/	440000	100	440000			

LowProbabilityOpportunities.csv

ID	ISDELETED	ACCOUNT ISPRIVATE NAME	DESCRIPTION	STAGE	NAME	AMOUNT	PROBABILITY	EXPECTED	TOTAL	OPEN
0062v000C	0	0 0012v000C	0 Team Training	Prospecti	700	10	70			
0062v000C	0	0 0012v000C	0 Service Contract Renewal	Id. Decisi	95000	60	57000			
0062v000C	0	0 0012v000C	0 Dickenson Mobile Generators	Qualificat	15000	10	1500			
0062v000C	0	0 0012v000C	0 Grand Hotels Kitchen Generator	Id. Decisi	15000	60	9000			
0062v000C	0	0 0012v000C	0 Grand Hotels Guest Portable Generators	Value Pro	250000	50	125000			
0062v000C	0	0 0012v000C	0 Pyramid Emergency Generators	Prospecti	100000	10	10000			
0062v000C	0	0 0012v000C	0 Express Logistics Portable Truck Generators	Value Pro	80000	50	40000			
0062v000C	0	0 0012v000C	0 GenePoint Lab Generators	Id. Decisi	60000	60	36000			
0062v000C	0	0 0012v000C	0 United Oil Plant Standby Generators	Needs An	675000	20	135000			
0062v000C	0	0 0012v000C	0 Edge Emergency Generator	Id. Decisi	35000	60	21000			

Note: The number of fields written in each file may vary depending upon the Opportunities in your Salesforce account.

This concludes the lab.

Module 6: Mapping Parameters

Lab 6-2: Using Parameter File in a Mapping Task

Overview:

Parameterized mapping allows adding inputs to the configuration point at runtime. You can also use Informatica Cloud REST API to create, modify, and run parameterized tasks from a third-party application.

In this lab, you will use a user-defined parameter file to provide values to a parameterized mapping at runtime.

Objective:

- Use parameter file to provide input at runtime

Scenario:

In the previous lab, John created a mapping to filter orders based on the order value. As the number of orders are increasing in NH Retails, Ruby wants John to design a mapping that will help her filter the orders for different users depending upon the facilities they avail from NH Retails. So, John decides to use the parameter file feature of IICS that will enable Ruby to define the filter value at runtime.

In this lab, John will use a parameter file to provide values to a mapping at runtime.

Duration:

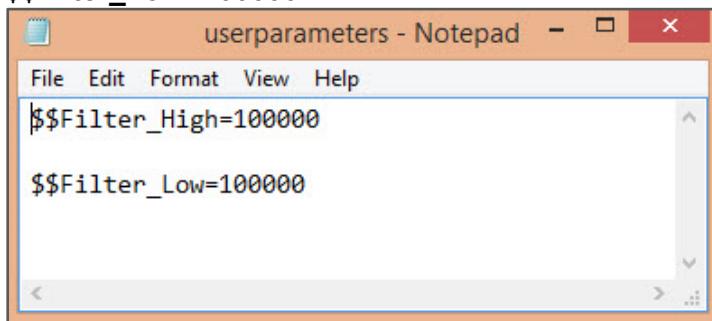
20 minutes

Tasks

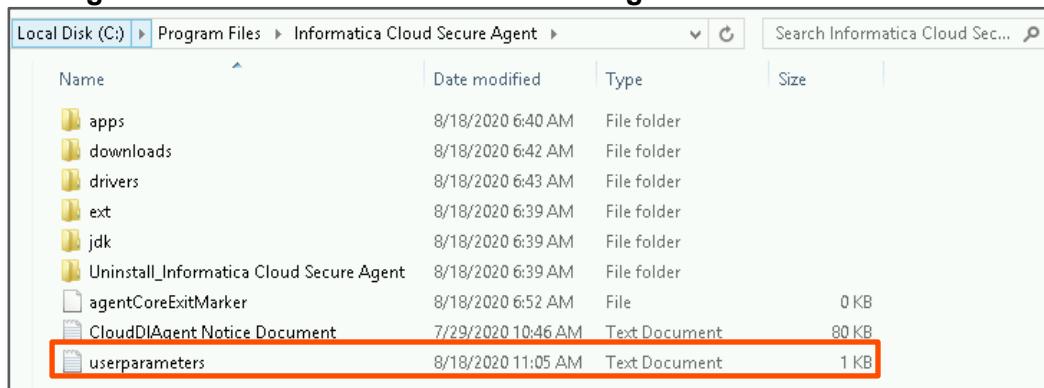
Create a Parameter File

1. Create a text file with name **userparameters** and add the following content to it:

```
 $$Filter_High=100000
 $$Filter_Low=100000
```



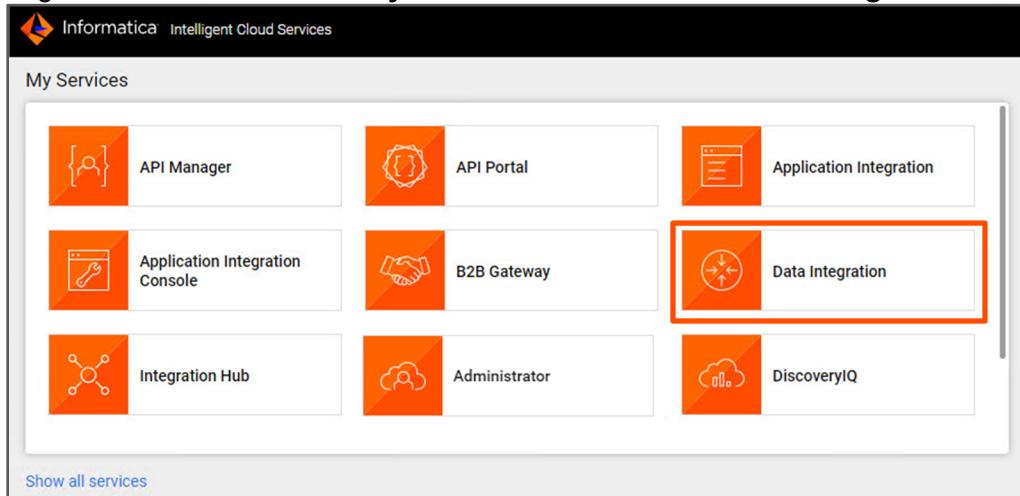
2. Copy the **userparameters** file in the following location:
C:\Program Files\Informatica Cloud Secure Agent



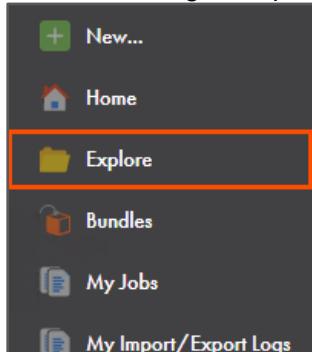
Name	Date modified	Type	Size
apps	8/18/2020 6:40 AM	File folder	
downloads	8/18/2020 6:42 AM	File folder	
drivers	8/18/2020 6:43 AM	File folder	
ext	8/18/2020 6:39 AM	File folder	
jdk	8/18/2020 6:39 AM	File folder	
Uninstall_Informatica Cloud Secure Agent	8/18/2020 6:39 AM	File folder	
agentCoreExitMarker	8/18/2020 6:52 AM	File	0 KB
CloudDIAgent Notice Document	7/29/2020 10:46 AM	Text Document	80 KB
userparameters	8/18/2020 11:05 AM	Text Document	1 KB

Create Mapping Task

3. Log in to IICS and from the **My Services** window, select **Data Integration**.



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



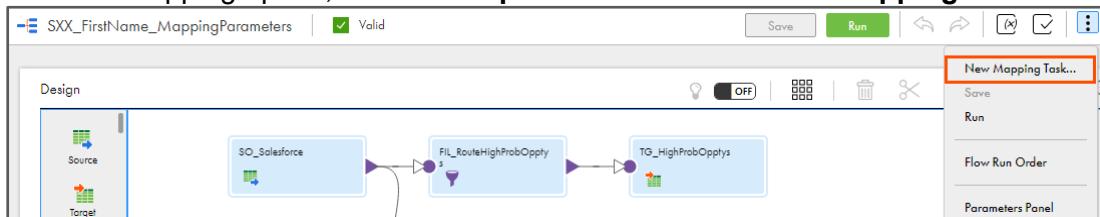
5. Go to your working directory and locate the **SXX_FirstName_MappingParameters** asset.

6. Click the **Ellipsis** icon and select **Edit**.



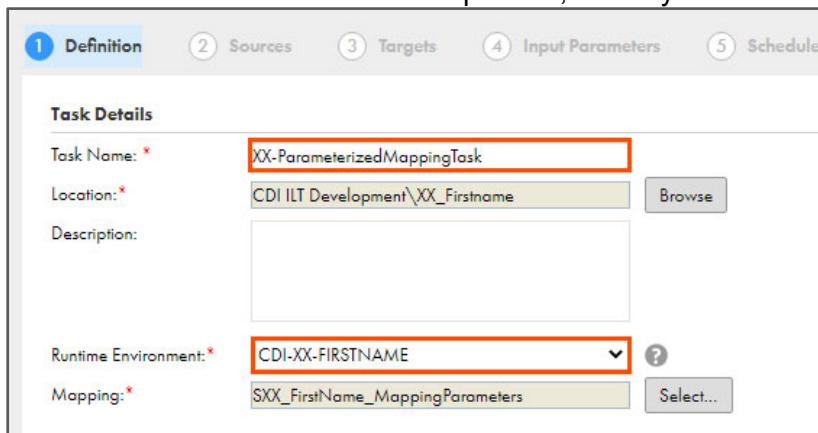
Name	Type	Updated On	Status	
SXX_FirstName_MappingParameters	Mapping	Nov 16, 2020, 7:33 AM	Valid	
SXX_FirstName_MapletTransformation	Mapping	Nov 16, 2020, 7:13 AM	Valid	
SXX_FirstName_Maplet	Maplet	Nov 16, 2020, 7:10 AM	Valid	
SXX_FirstName_UnconnectedLookup	Mapping	Nov 16, 2020, 7:04 AM	Valid	

7. After the mapping opens, click the **Ellipsis** icon and select **New Mapping Task**.



8. In the Task Name field, enter **XX-ParameterizedMappingTask**.

9. From the Runtime Environment drop-down, select your secure agent group.



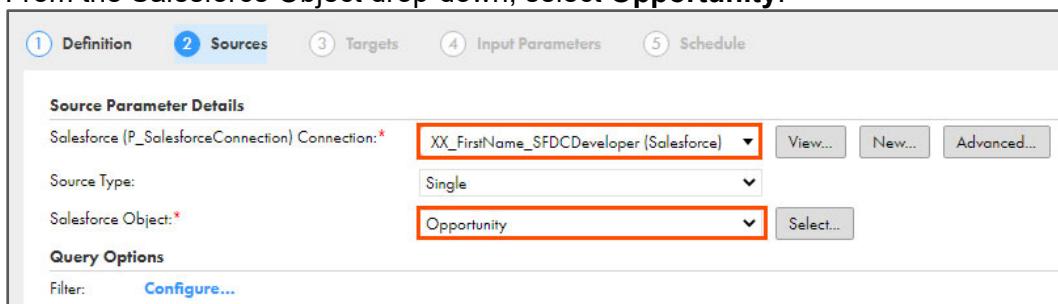
Task Details

- Task Name: **XX-ParameterizedMappingTask**
- Location: **CDI ILT Development\XX_Firstname**
- Description:
- Runtime Environment: **CDI-XX-FIRSTNAME**
- Mapping: **SXX_FirstName_MappingParameters**

10. Click **Next**.

11. From the Salesforce (P_SalesforceConnection) Connection drop-down, select **XX_FirstName_SFDCDeveloper**.

12. From the Salesforce Object drop-down, select **Opportunity**.



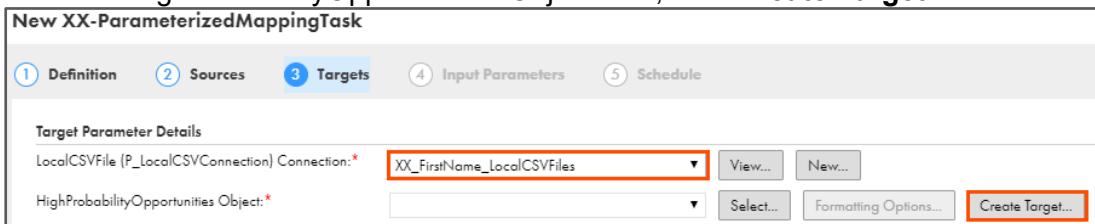
Source Parameter Details

- Salesforce (P_SalesforceConnection) Connection: **XX_FirstName_SFDCDeveloper (Salesforce)**
- Source Type: **Single**
- Salesforce Object: **Opportunity**
- Query Options
- Filter: [Configure...](#)

13. Click **Next**.

14. From the LocalCSVFile (P_LocalCSVConnection) Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

15. From the HighProbabilityOpportunities Object field, click **Create Target**.



New XX-ParameterizedMappingTask

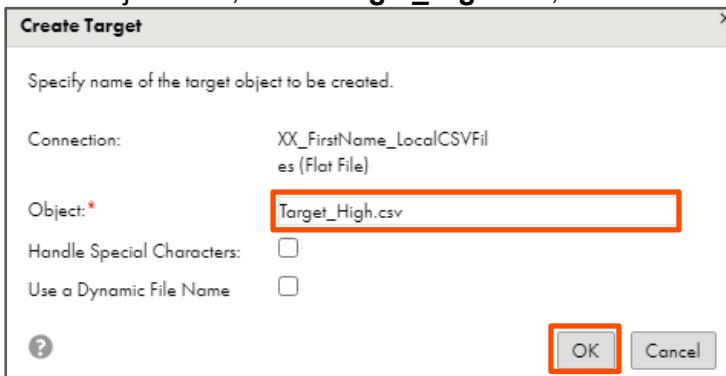
① Definition ② Sources ③ Targets ④ Input Parameters ⑤ Schedule

Target Parameter Details

LocalCSVFile (P_LocalCSVConnection) Connection: **XX_FirstName_LocalCSVFiles**

HighProbabilityOpportunities Object:

16. In the Object field, enter **Target_High.csv**, and click **OK**.



Create Target

Specify name of the target object to be created.

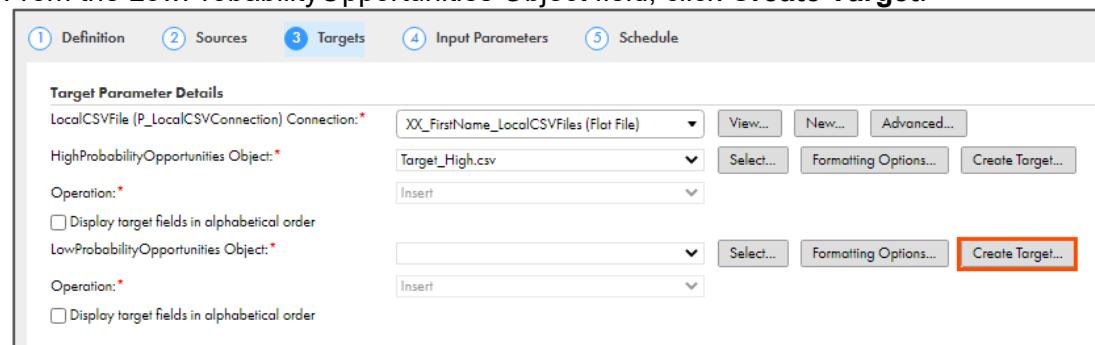
Connection: XX_FirstName_LocalCSVFiles (Flat File)

Object: **Target_High.csv**

Handle Special Characters:

Use a Dynamic File Name:

17. From the LowProbabilityOpportunities Object field, click **Create Target**.



New XX-ParameterizedMappingTask

① Definition ② Sources ③ Targets ④ Input Parameters ⑤ Schedule

Target Parameter Details

LocalCSVFile (P_LocalCSVConnection) Connection: **XX_FirstName_LocalCSVFiles (Flat File)**

HighProbabilityOpportunities Object: **Target_High.csv**

Operation: **Insert**

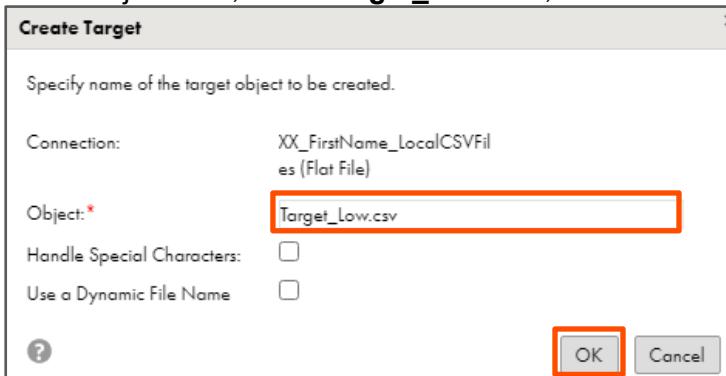
Display target fields in alphabetical order

LowProbabilityOpportunities Object: **Target_Low.csv**

Operation: **Insert**

Display target fields in alphabetical order

18. In the Object field, enter **Target_Low.csv**, and click **OK**.



Create Target

Specify name of the target object to be created.

Connection: XX_FirstName_LocalCSVFiles (Flat File)

Object: **Target_Low.csv**

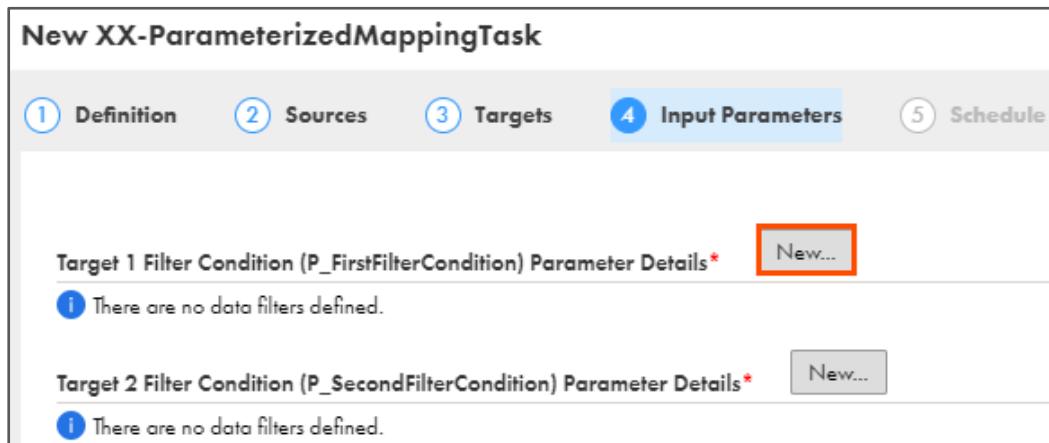
Handle Special Characters:

Use a Dynamic File Name:

Note: When you set up the target parameters, ensure that the target directory does not contain files with the same names for HighProbabilityOpportunities Object and LowProbabilityOpportunities Object parameters.

19. Click **Next**.

20. From the Target 1 Filter Condition (P_FirstFilterCondition) Parameter Details field, click **New...**.



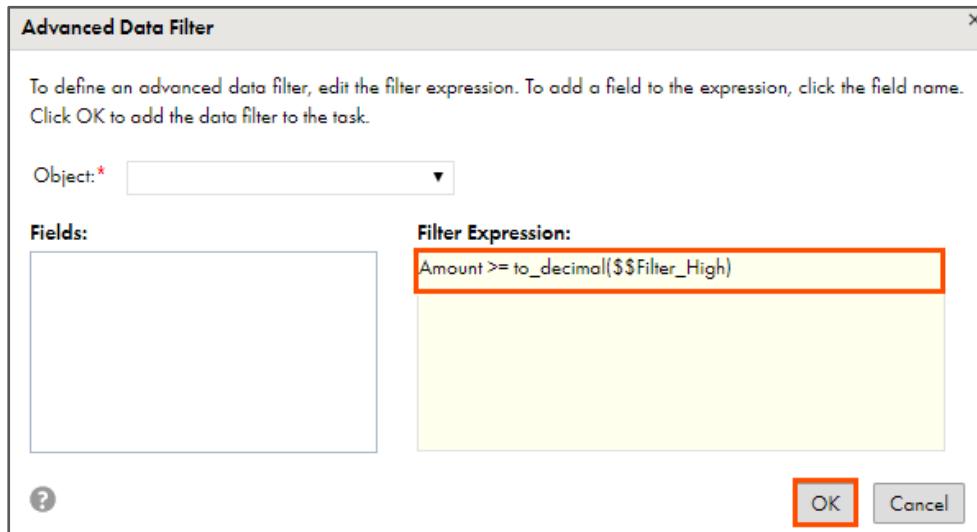
21. In the Filter Expression field, enter the following expression:

Amount >= to_decimal(\$\$Filter_High)

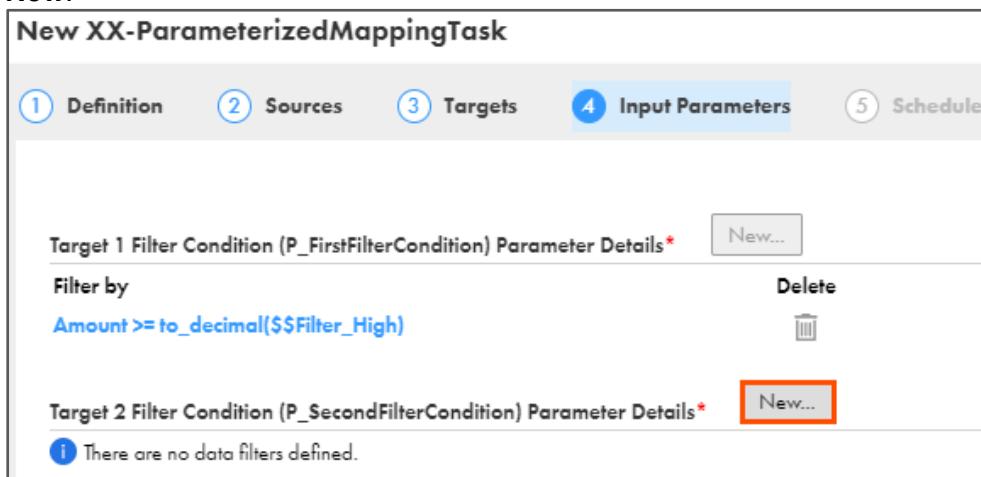
OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingParameterFile_6-2**. Copy the command mentioned under **Step A** and paste it in the Expression field.

22. Click **OK**.



23. In the Target 2 Filter Condition (P_SecondFilterCondition) Parameter Details field, click **New...**.



New XX-ParameterizedMappingTask

1 Definition 2 Sources 3 Targets 4 **Input Parameters** 5 Schedule

Target 1 Filter Condition (P_FirstFilterCondition) Parameter Details*

Filter by
Amount >= to_decimal(\$\$Filter_High)

Delete

Target 2 Filter Condition (P_SecondFilterCondition) Parameter Details*

New... New...

There are no data filters defined.

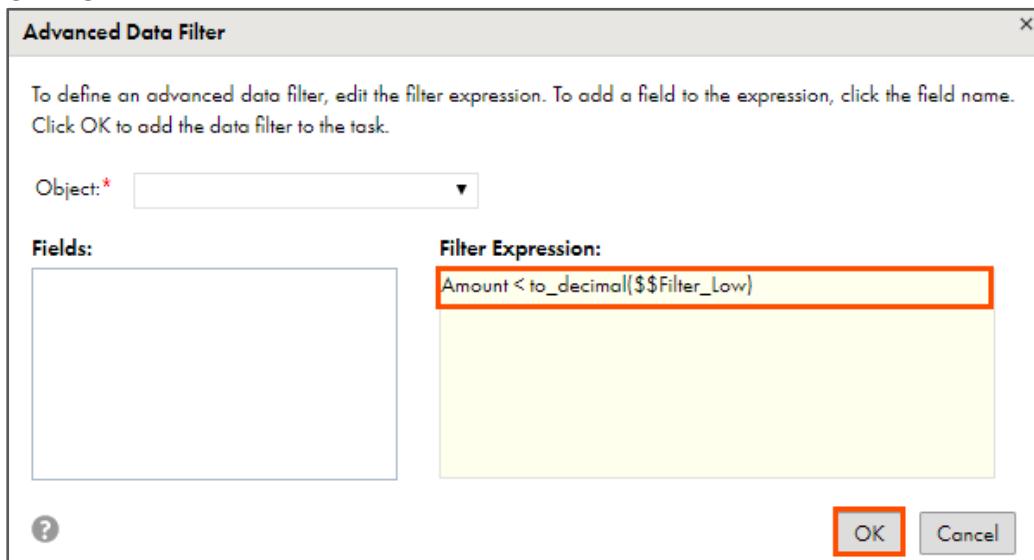
24. In the Filter Expression field, enter the following expression:

Amount < to_decimal(\$\$Filter_Low)

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingParameterFile_6-2**. Copy the command mentioned under **Step B** and paste it in the Expression field.

25. Click **OK**.



Advanced Data Filter

To define an advanced data filter, edit the filter expression. To add a field to the expression, click the field name. Click OK to add the data filter to the task.

Object:*

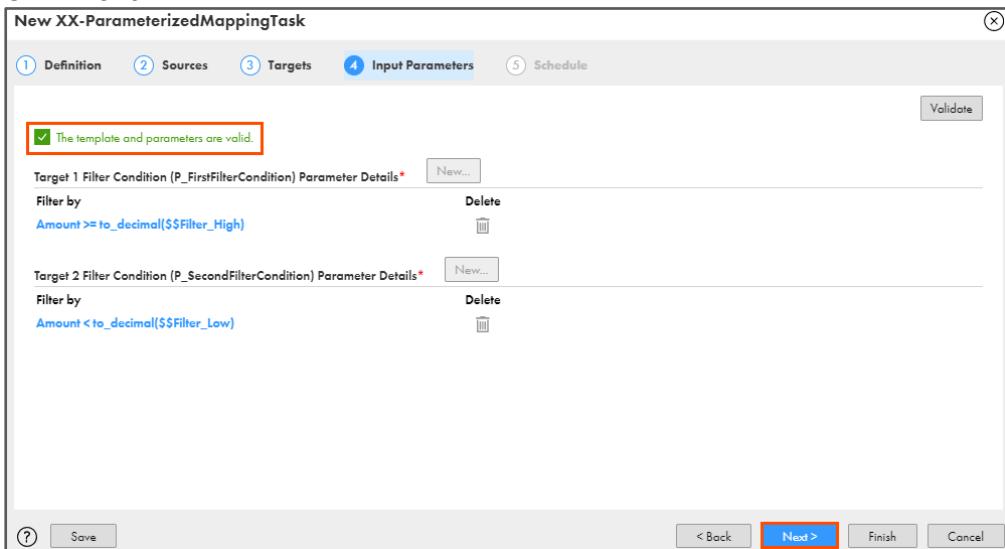
Fields:

Filter Expression:
Amount < to_decimal(\$\$Filter_Low)

?

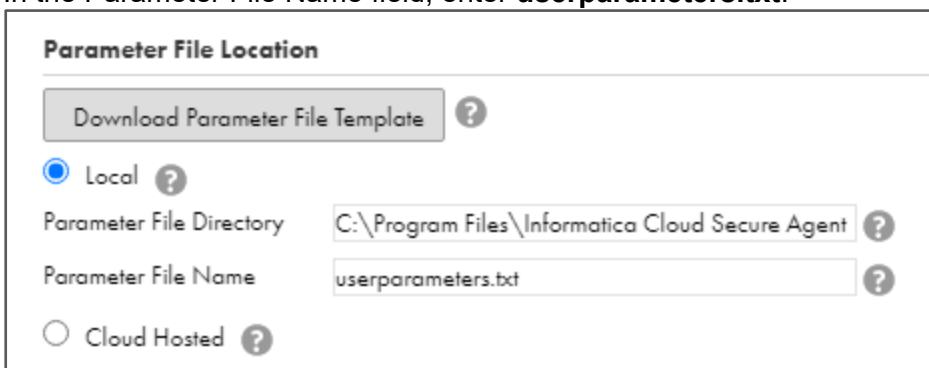
OK OK Cancel

26. Click **Next**.



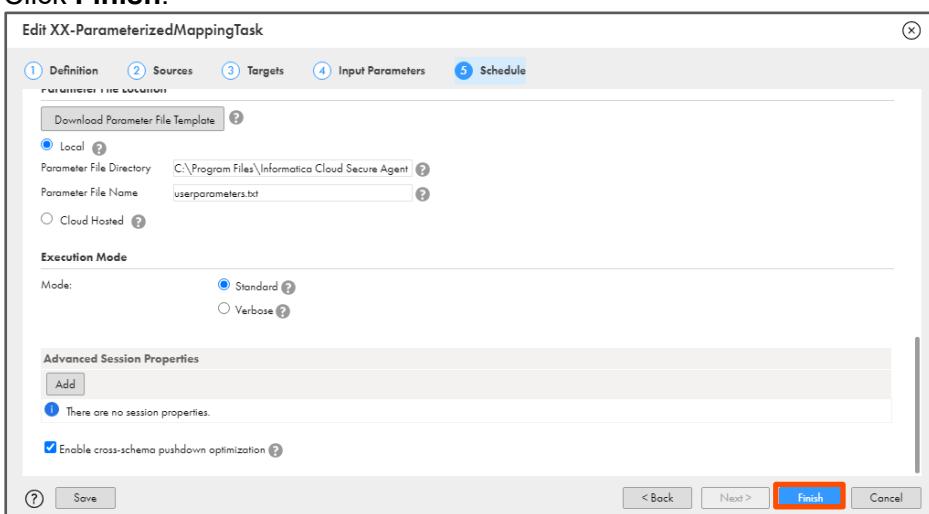
27. Scroll down to the Parameter File Directory section, and in the Parameter File Directory enter **C:\Program Files\Informatica Cloud Secure Agent**.

28. In the Parameter File Name field, enter **userparameters.txt**.



Note: Verify that the file name is exactly the same as the created parameter file name, or else the task will fail.

29. Click **Finish**.



30. Run the mapping task.



Task Details

Task Name: XX-ParameterizedMappingTask

Run

Monitor Status

31. After the task completes, the status changes to **Success**.

Note: The number of rows processed may vary depending upon the number of rows present in your source that is the Opportunity object in Salesforce.



Jobs (1 of 27) Up to date Updated 3:33:16 AM PDT

Add Field

Asset Name: XX-ParameterizedMap... ▾

Instance Name Subtasks Start Time End Time Rows Processed State

XX-ParameterizedMappingTask-1 Aug 1, 2019, ... Aug 1, 2019, ... 29 Success

32. Close the asset from the navigation pane.

33. On your local machine, go to **C:\IICSLabFiles**.

34. Verify that correct entries are written to **Target_High.csv** and **Target_Low.csv** files.

Target_High.csv:

Id	IsDeleted	AccountId	IsPrivate	Name	Descriptor	StageName	Amount	Probability
0062v000C	0	0012v000C	0	Stock Supply	Proposal/	1000000	75	
0062v000C	0	0012v000C	0	United Oil Office Portable Generators	Negotiation	125000	90	
0062v000C	0	0012v000C	0	Express Logistics Standby Generator	Closed Won	220000	100	
0062v000C	0	0012v000C	0	United Oil Refinery Generators	Proposal/	270000	75	
0062v000C	0	0012v000C	0	United Oil SLA	Closed Won	120000	100	
0062v000C	0	0012v000C	0	Grand Hotels Guest Portable Generators	Value Proposition	250000	50	
0062v000C	0	0012v000C	0	Pyramid Emergency Generators	Potential	100000	10	
0062v000C	0	0012v000C	0	United Oil Installations	Negotiation	270000	90	
0062v000C	0	0012v000C	0	United Oil Installations	Closed Won	270000	100	
0062v000C	0	0012v000C	0	Grand Hotels Generator Installations	Closed Won	350000	100	
0062v000C	0	0012v000C	0	United Oil Refinery Generators	Closed Won	915000	100	
0062v000C	0	0012v000C	0	University of AZ Installations	Proposal/	100000	75	
0062v000C	0	0012v000C	0	Express Logistics SLA	Perception	120000	70	
0062v000C	0	0012v000C	0	Burlington Textiles Weaving Plant Generator	Closed Won	235000	100	
0062v000C	0	0012v000C	0	United Oil Installations	Closed Won	235000	100	
0062v000C	0	0012v000C	0	United Oil Emergency Generators	Closed Won	440000	100	
0062v000C	0	0012v000C	0	United Oil Standby Generators	Closed Won	120000	100	
0062v000C	0	0012v000C	0	Grand Hotels Emergency Generators	Closed Won	210000	100	
0062v000C	0	0012v000C	0	United Oil Plant Standby Generators	Needs Attention	675000	20	

Target_Low.csv:

Id	IsDeleted	AccountId	IsPrivate	Name	Descriptive	StageName	Amount	Probability
						Closed Won		
0062v0000	0	0012v0000	0	Team Training	Prospecting	700	10	
0062v0000	0	0012v0000	0	Service Contract Renewal	Id. Decision	95000	60	
0062v0000	0	0012v0000	0	Annual Maintenance	Negotiation	50000	90	
0062v0000	0	0012v0000	0	Dickenson Mobile Generators	Qualification	15000	10	
0062v0000	0	0012v0000	0	GenePoint Standby Generator	Closed Won	85000	100	
0062v0000	0	0012v0000	0	Grand Hotels Kitchen Generator	Id. Decision	15000	60	
0062v0000	0	0012v0000	0	Edge Emergency Generator	Closed Won	75000	100	
0062v0000	0	0012v0000	0	University of AZ Portable Generators	Closed Won	50000	100	
0062v0000	0	0012v0000	0	Express Logistics Portable Truck Generators	Value Proposition	80000	50	
0062v0000	0	0012v0000	0	GenePoint Lab Generators	Id. Decision	60000	60	
0062v0000	0	0012v0000	0	GenePoint SLA	Closed Won	30000	100	
0062v0000	0	0012v0000	0	Edge Installation	Closed Won	50000	100	
0062v0000	0	0012v0000	0	Edge SLA	Closed Won	60000	100	
0062v0000	0	0012v0000	0	University of AZ SLA	Closed Won	90000	100	
0062v0000	0	0012v0000	0	Grand Hotels SLA	Closed Won	90000	100	
0062v0000	0	0012v0000	0	Edge Emergency Generator	Id. Decision	35000	60	

Note: The number of rows written in both the files may vary depending upon the Opportunities in your Salesforce account.

This concludes the lab.

Module 6: Mapping Parameters

Lab 6-3: 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 keep based on the order id. 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.

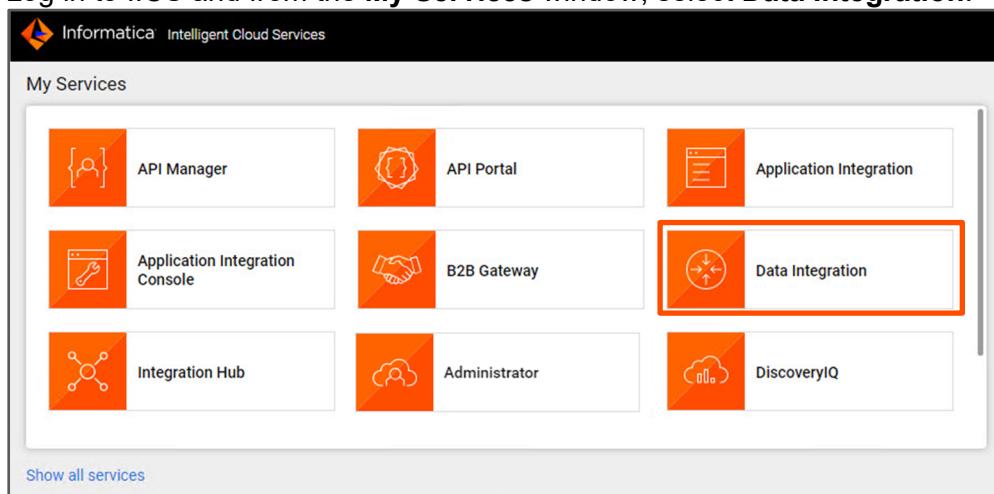
Duration:

15 minutes

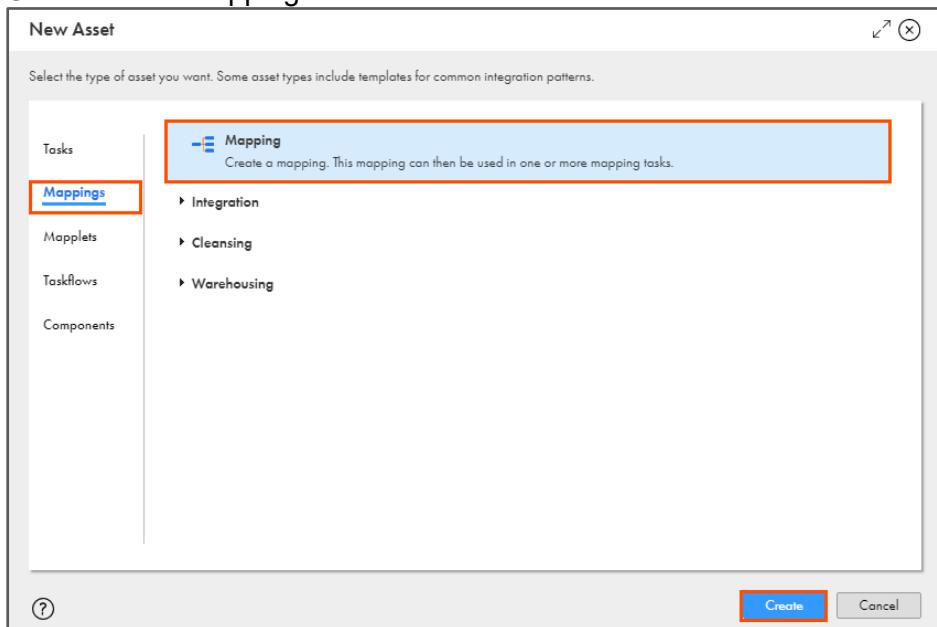
Tasks

Create Mapping

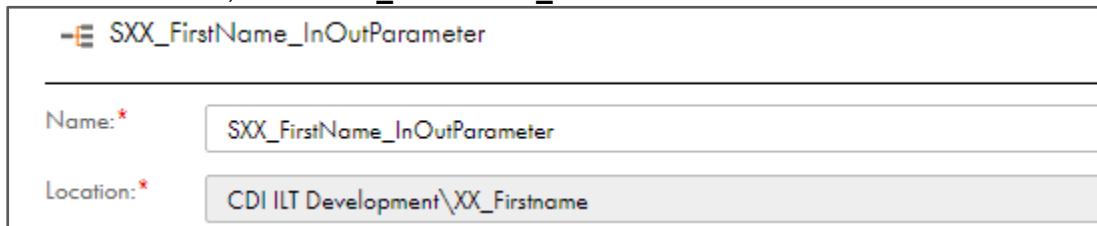
1. Log in to IICS and from the **My Services** window, select **Data Integration**.



2. Create a new Mapping.



3. In the Name field, enter **SXX_FirstName_InOutParameter**.

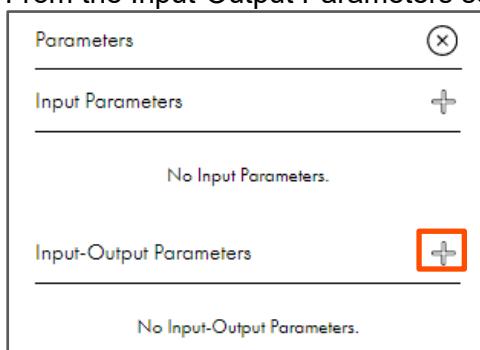


Name:*	SXX_FirstName_InOutParameter
Location:	CDI ILT Development\XX_Firstname

4. To create an input-output parameter, click .



5. From the Input-Output Parameters section, click .

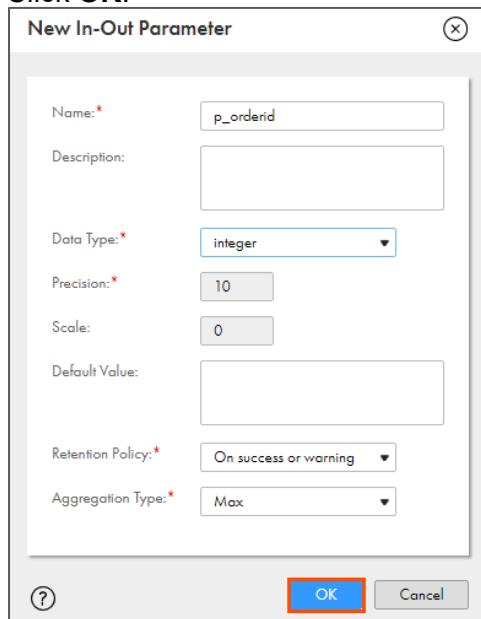


Parameters	(x)
Input Parameters	+
No Input Parameters.	
Input-Output Parameters	+
No Input-Output Parameters.	

6. Create the field as shown in the table below:

Name	Data Type	Precision	Default Value
p_orderid	integer	10	0

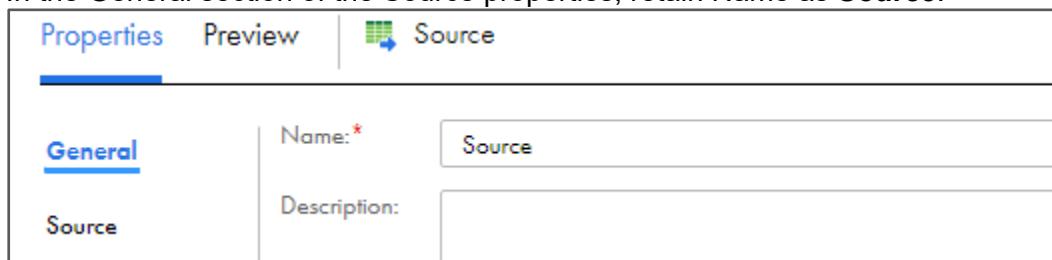
7. Click **OK**.



8. Close the Parameters window.

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

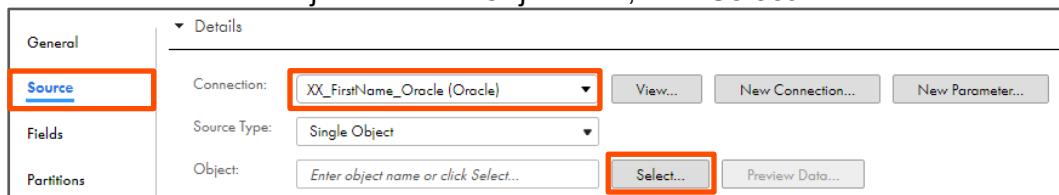
10. In the General section of the Source properties, retain Name as **Source**.



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

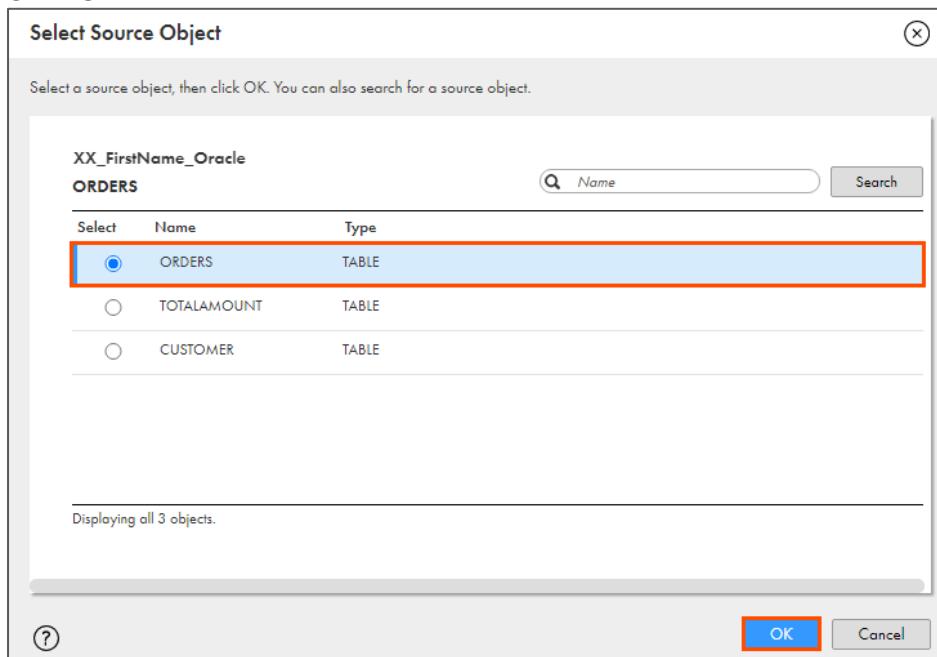
12. From the Connection drop-down, select **XX_FirstName_Oracle**.

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



14. From the list, select **ORDERS**.

15. Click **OK**.

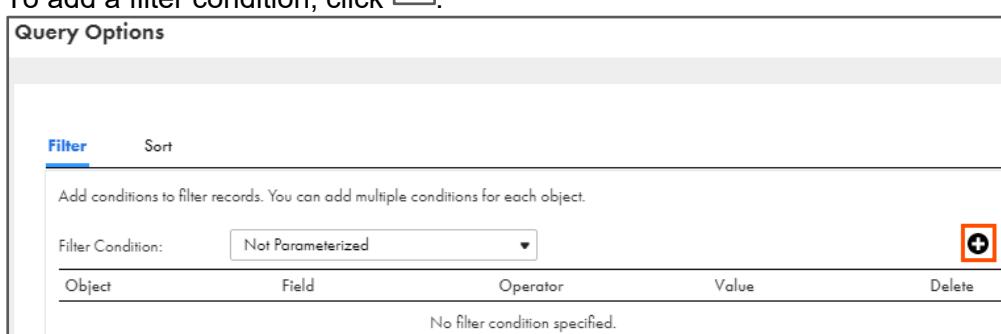


16. From the Source pane, expand **Query Options**.

17. To apply filter to select rows from the ORDERS table, click **Configure**.

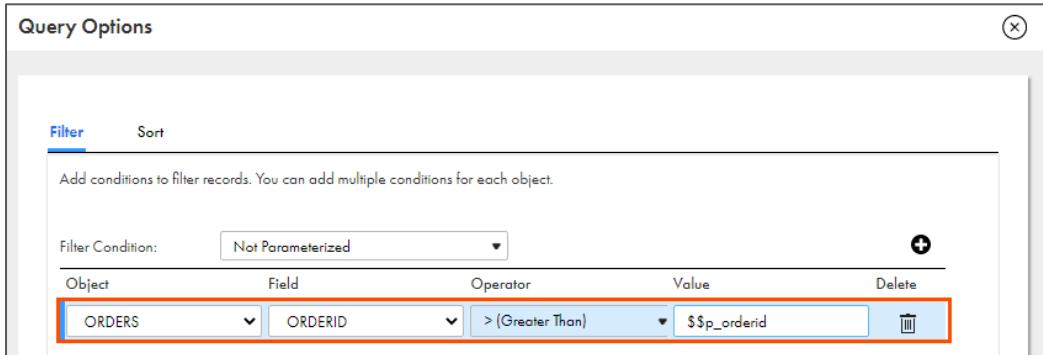


18. To add a filter condition, click .



19. Enter the details as shown in table below:

Object	Field	Operator	Value
ORDERS	ORDERID	Greater Than (>)	\$\$p_orderid



20. To configure the sort condition, select the **Sort** tab.

21. To add a sort condition, click .

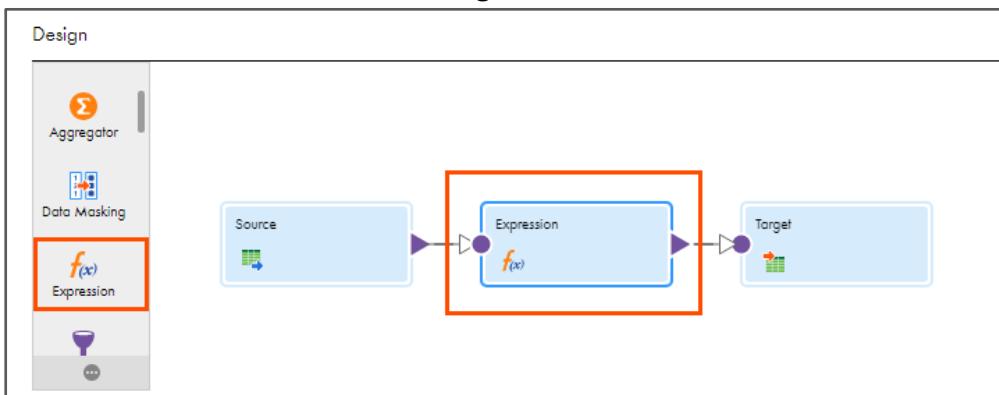
22. Enter the details as shown in the table below:

Object	Field
ORDERS	ORDERID



23. Click **OK**

24. From the list of available transformations, drag and drop an **Expression** transformation on the link between **Source** and **Target**.

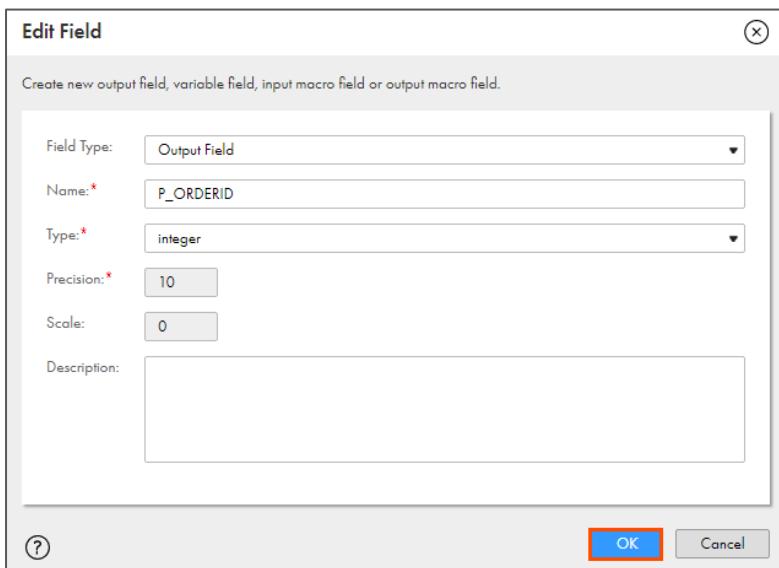


25. Select the **Expression** transformation from the mapping canvas.

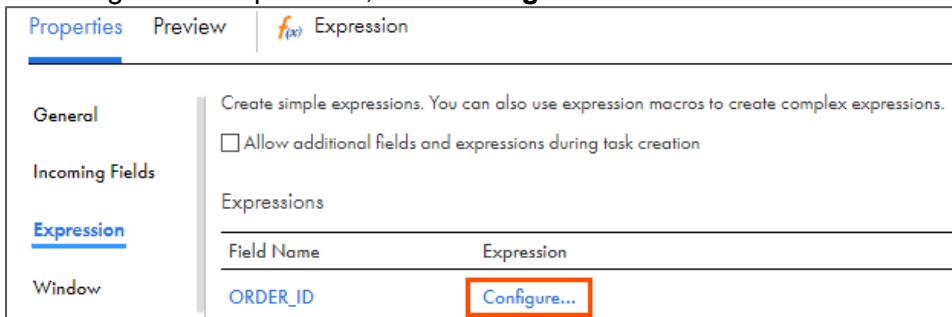
26. From the properties pane, click **Expression**.

27. To add a new expression, click .
28. 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



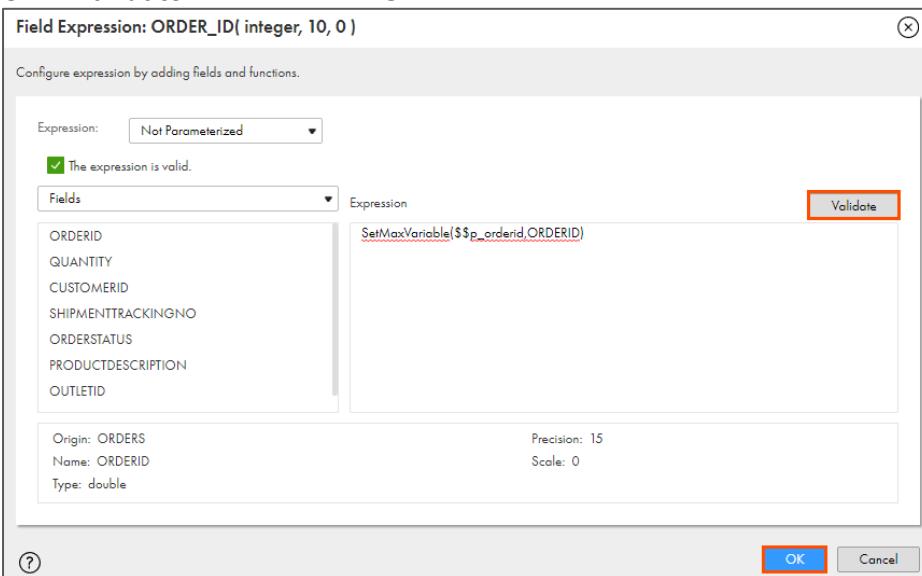
29. To configure the expression, click **Configure**.



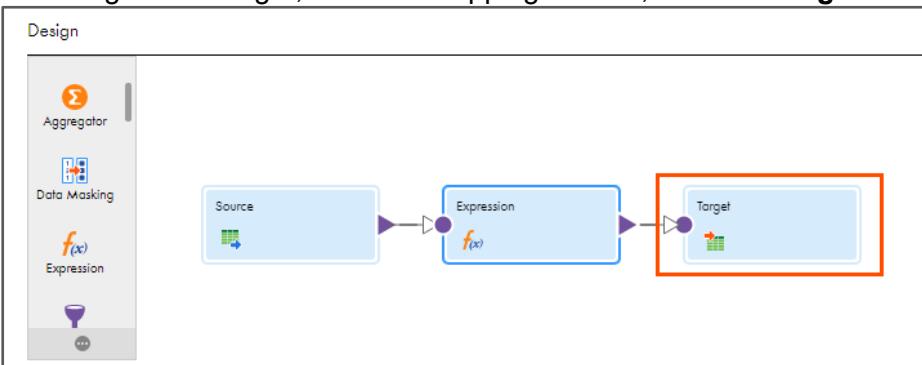
Field Name	Expression
ORDER_ID	Configure...

30. In the Expression field, copy and paste the following expression:
SetMaxVariable(\$\$p_orderid,ORDERID)
OR
Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingInOutParameter_6-3**. Copy the command mentioned under **Step A** and paste it in the Expression field.

31. Click **Validate** and then click **OK**.



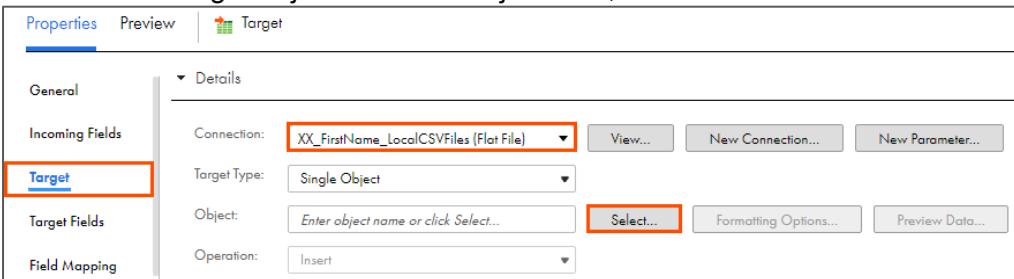
32. To configure the target, from the mapping canvas, click the **Target** transformation.



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

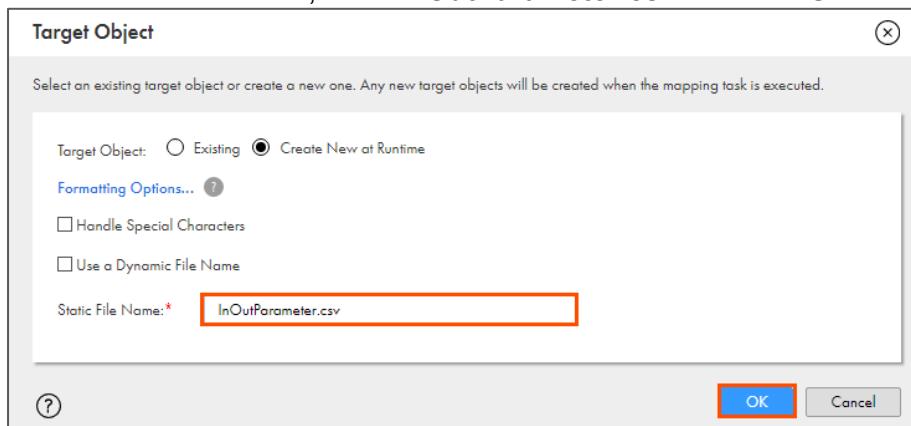
34. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

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



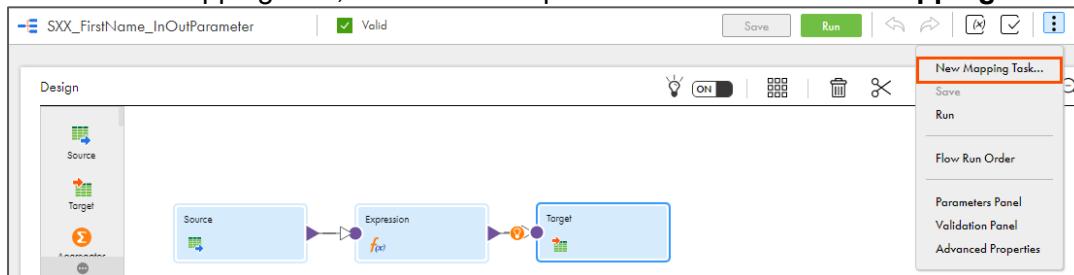
36. In the Target Object window, select **Create New at Runtime**.

37. In the Table Name field, enter **InOutParameter.csv** and click **OK**.



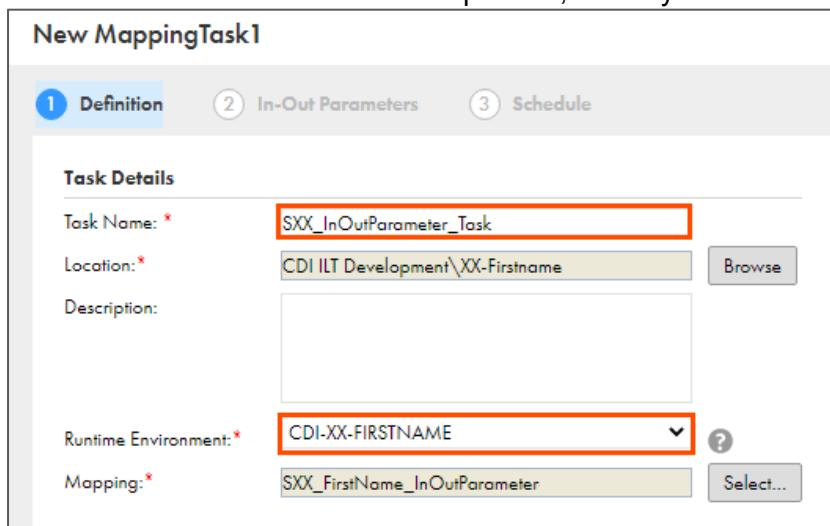
38. Save the mapping.

39. To create a mapping task, click on the ellipsis icon and select **New Mapping Task**.



40. In the Task Name field, enter **SXX_InOutParameter_Task**.

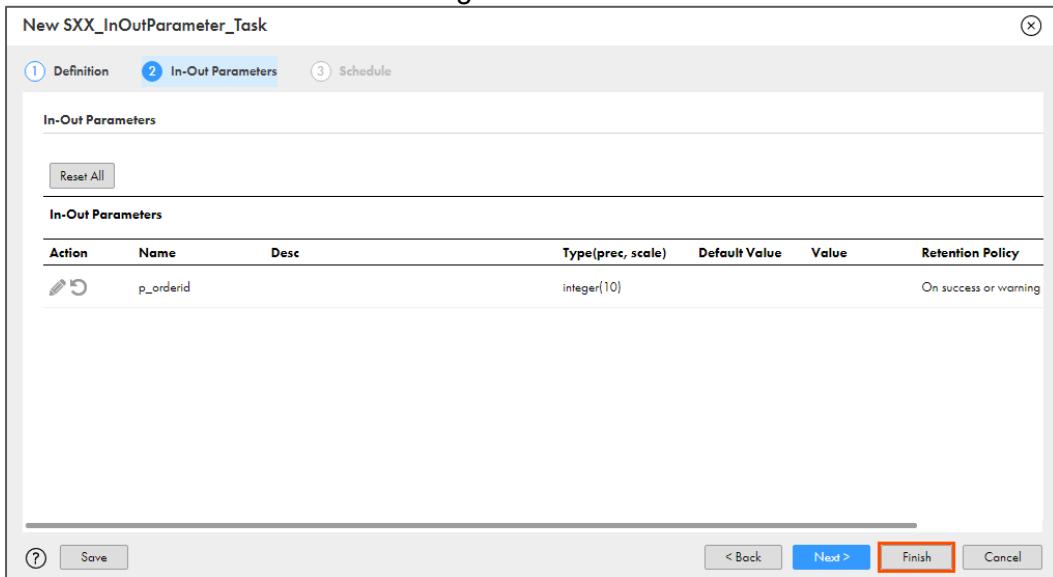
41. From the Runtime Environment drop-down, select your secure agent group.



Task Name: *	SXX_InOutParameter_Task
Location: *	CDI ILT Development\XX-Firstname
Runtime Environment: *	CDI-XX-FIRSTNAME
Mapping: *	SXX_FirstName_InOutParameter

42. Click **Next**.

43. Retain the In-Out Parameters configuration and click **Finish**.

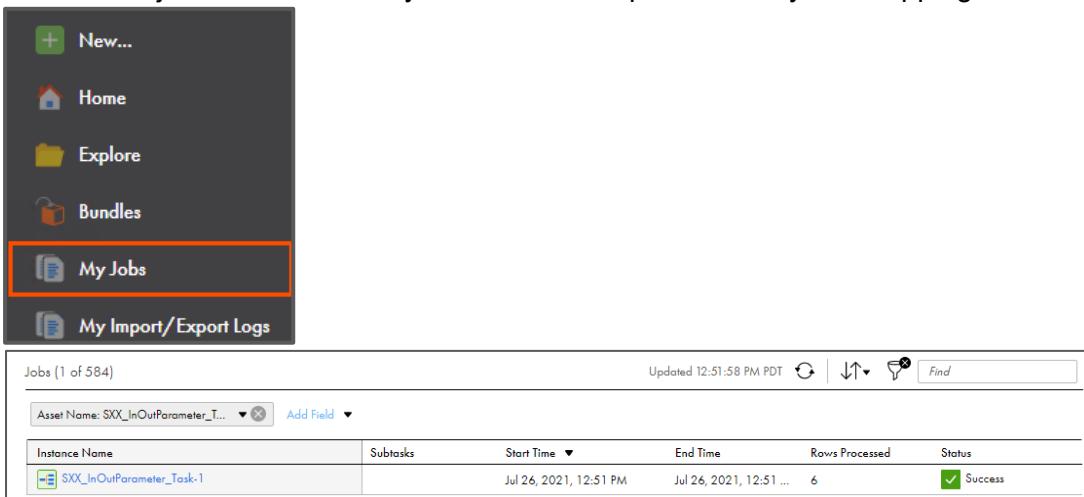


44. Click **Run**.



Monitor Status

45. Monitor the job status and verify that 6 rows are processed by the mapping.



Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_InOutParameter_Task-1		Jul 26, 2021, 12:51 PM	Jul 26, 2021, 12:51 ...	6	Success

46. Close both the asset from the navigation pane.

47. On your local machine, go to **C:\IICSLabFiles**.

48. Verify the contents of **InOutParameter.csv**.

A	B	C	D	E	F	G	H	I
ORDERID	QUANTITY	CUSTOMERID	SHIPMENTTRACKINGNO	ORDERSTATUS	PRODUCTDESCRIPTION	OUTLETID	PRODUCTID	P_ORDERID
1	10	185032	1Z1Y2A990254347812	Shipped	Apple MacBook Pro	5	109	1
2	2	2	1K2R2A986722347812	Delivered	Samsonite Winfield Luggage	9	140	2
3	1	969964	9KJH7899867234HJ8Y	In Progress	Xbox 360 Slim	5	136	3
4	5	158666	K98NJ899867234P009	In Progress	Wilson Evolution Game Basketball	7	127	4
5	20	489424	876POIU672234712H5	Delivered	JBL Link 500	5	122	5
6	12	639892	1K2347812GY78J90IO	Shipped	Redemption	1	130	6

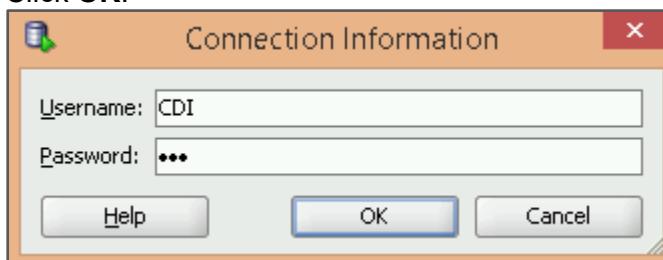
49. Close the file.

50. To verify incremental load of orders data, from the start menu open **Sql Developer** .

Note: Close the Tip of the day window.

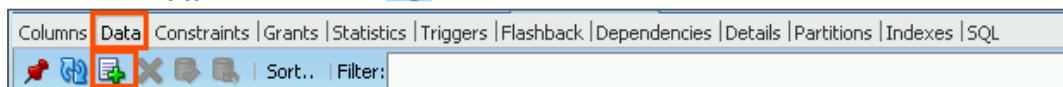
51. From **Connections** section, expand **CDI** and enter password as **CDI**.

52. Click **OK**.



53. Expand the **Tables** section and double click on **ORDERS** table.

54. Select the **Data** tab and click  to add a new row in the table as shown below:



ORDER ID	QUANTITY	CUSTOMER ID	SHIPMENT TRACKING NO	ORDER STATUS	PRODUCT DESCRIPTION	OUTLET ID	PRODUCT ID
7	15	657984	1K2357812GY78J90IO	Processing	Mackbook Air	2	150

Columns	Data	Constraints	Grants	Statistics	Triggers	Flashback	Dependencies	Details	Partitions	Indexes	SQL
	Add	Remove	Save	Import	Export	Sort..	Filter..				
ORDERID	QUANTITY	CUSTOMERID	SHIPMENTTRACKINGNO	ORDERSTATUS	PRODUCTDESCRIPTION	OUTLETID	PRODUCTID				
1	1	10	185032 1Z1Y2A990254347812	Shipped	Apple MacBook Pro	5	109				
2	2	2	2 1K2R2A986722347812	Delivered	Samsonite Winfield Luggage	9	140				
3	3	1	969964 9KJH7899867234HJ8Y	In Progress	Xbox 360 Slim	5	136				
4	4	5	158666 K98NJ899867234P009	In Progress	Wilson Evolution Game Basketball	7	127				
5	5	20	489424 876POIU672234712H5	Delivered	JBL Link 500	5	122				
6	6	12	639892 1K2347812GY78J90IO	Shipped	Redemption	1	130				
+7	7	15	657984 1K2357812GY78J90IO	Processing	Mackbook Air	2	150				

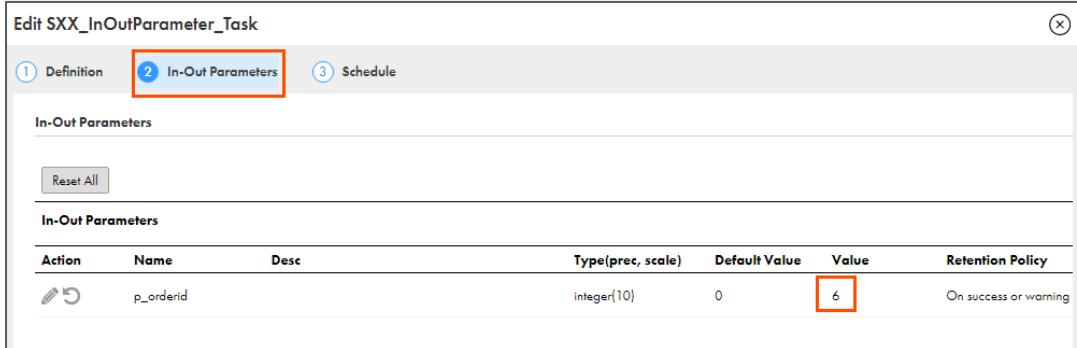
Note: To copy the value to add in ORDERS table, you can refer to the **ORDERS_Value.csv** file provided in CDI Lab Prep Files folder available on your desktop.

55. Click **Save All** to commit the changes.



56. Close the SQL Developer.

57. Navigate back to IICS, from your working directory, edit the **SXX_InOutParameter_Task** asset.
58. 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

59. Click **Cancel** to close the edit window and run the task again.
60. Go to **My Jobs** page to verify the task status. Notice that only 1 row is processed in second run of the task.

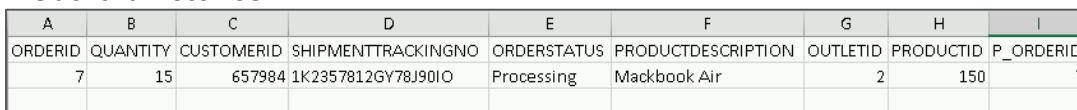


SXX_InOutParameter_Task-2	Jul 26, 2021, 9:33 PM	Jul 26, 2021, 9:33 PM	1	Success
SXX_InOutParameter_Task-1	Jul 26, 2021, 12:51 PM	Jul 26, 2021, 12:51 ...	6	Success

Note:

- a. If the second run of the task fails with following error, ensure that **InOutParameter.csv** file is closed before you re-run the task.
WRT_8004 Writer initialization failed [Error opening session output file [C:\IICSLabFiles\InOutParameter.csv] [error=The process cannot access the file because it is being used by another process.]]. Writer terminating.

61. On your local machine, go to **C:\IICSLabFiles**.
62. Verify that only the newly added row in the ORDERS table is updated in **InOutParameter.csv**.



A	B	C	D	E	F	G	H	I
ORDERID	QUANTITY	CUSTOMERID	SHIPMENTTRACKINGNO	ORDERSTATUS	PRODUCTDESCRIPTION	OUTLETID	PRODUCTID	P_ORDERID
7	15	657984	1K2357812GY78J90IO	Processing	Mackbook Air	2	150	7

This concludes the lab.

Module 7: Expression Macro and Dynamic Linking

Lab 7-1: Using Expression Macro in a Mapping

Overview:

An expression macro is a macro that you use to create repetitive or complex expressions in mappings. You can use an expression macro to perform calculations across a set of fields or constants. For example, you might use an expression macro to replace null values in a set of fields or to label items based on a set of sales ranges. In an expression macro, one or more input fields represent source data for the macro. An expression represents the calculations that you want to perform. And an output field represents the results of the calculations. At run time, the task expands the expression to include all of the input fields and constants, and then writes the results to the output fields.

Objective:

- Use an Expression Macro in a mapping

Scenario:

In one of her review meetings, Ruby observed that the date format for NH Digital sales data was different from other outlets. Due to this reason, the quarterly sales report was showing incorrect results. So, Ruby asks John to use the NH Digital data and convert the data to the MM/DD/YYYY format.

In this lab, John uses the IICS expression macros to define an expression to convert the dates into the correct format.

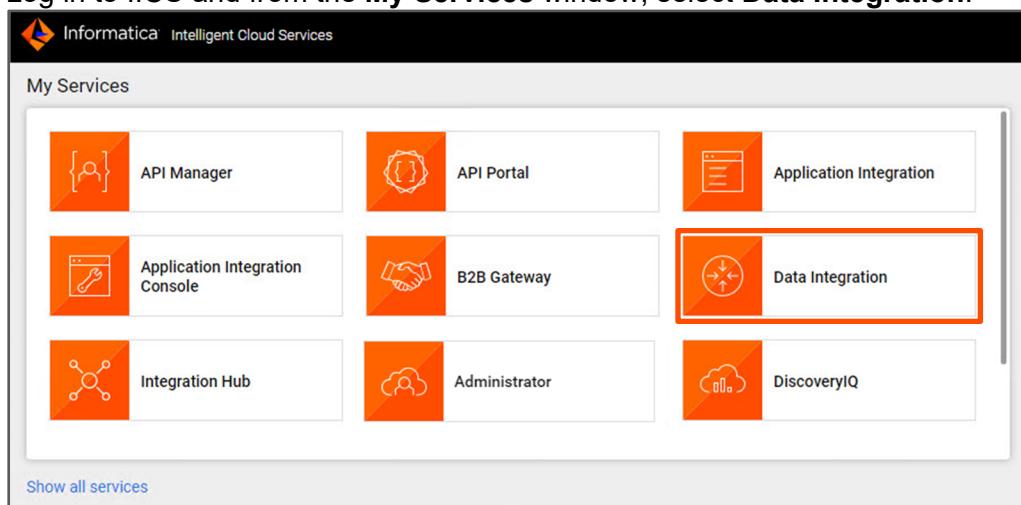
Duration:

20 minutes

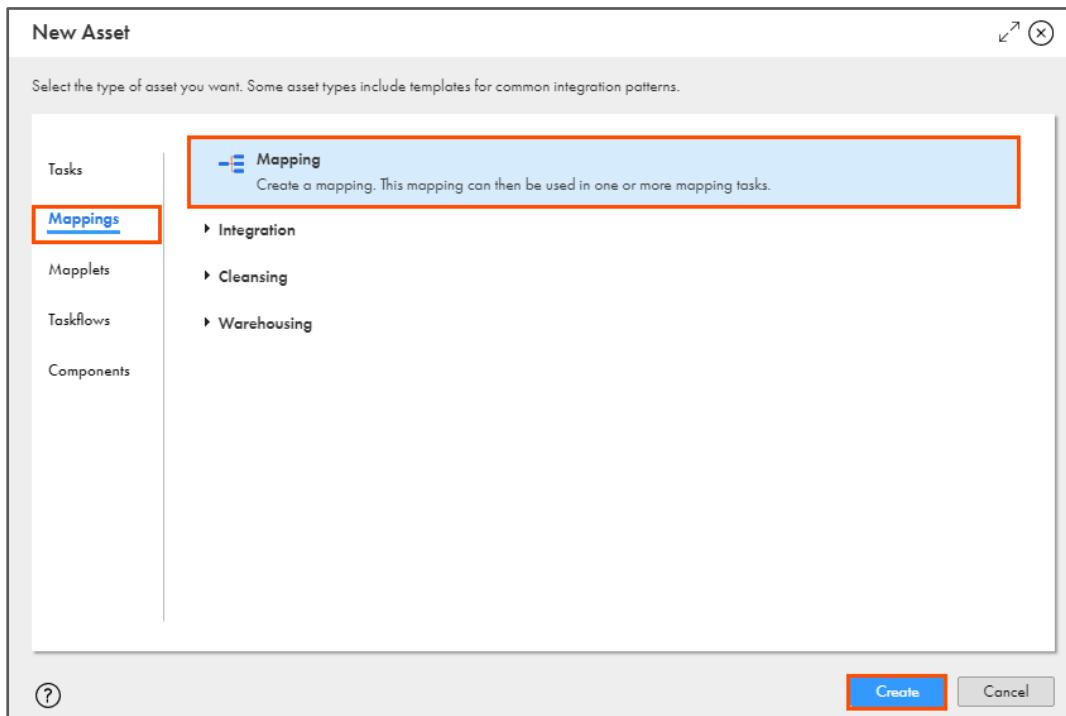
Tasks

Create Mapping

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



2. Create a new Mapping.



3. In the Name field, enter **SXX_FirstName_MacroDateFormat**.

SXX_FirstName_MacroDateFormat	
Name:*	SXX_FirstName_MacroDateFormat
Location:*	CDI ILT Development\XX_Firstname

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

5. In the General section of the **Source** properties, retain the Name as **Source**.

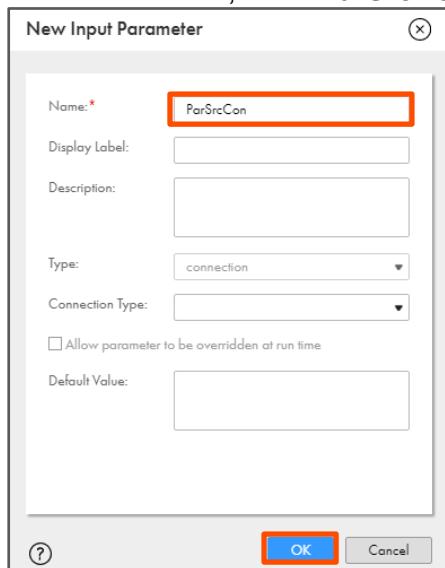
Properties Preview Source	
General Source	Name: * Source Description:

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

7. Click **New Parameter**.

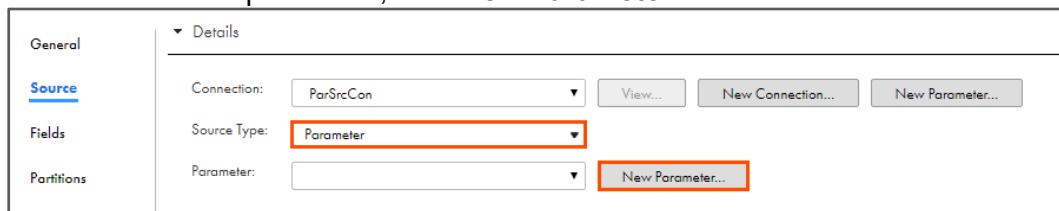
General Source Fields Partitions	Details Connection: <input type="button" value="View..."/> <input type="button" value="New Connection..."/> New Parameter... Source Type: <input type="button" value="Query Options"/>
--	---

8. In the Name field, enter **ParSrcCon** and click **OK**.

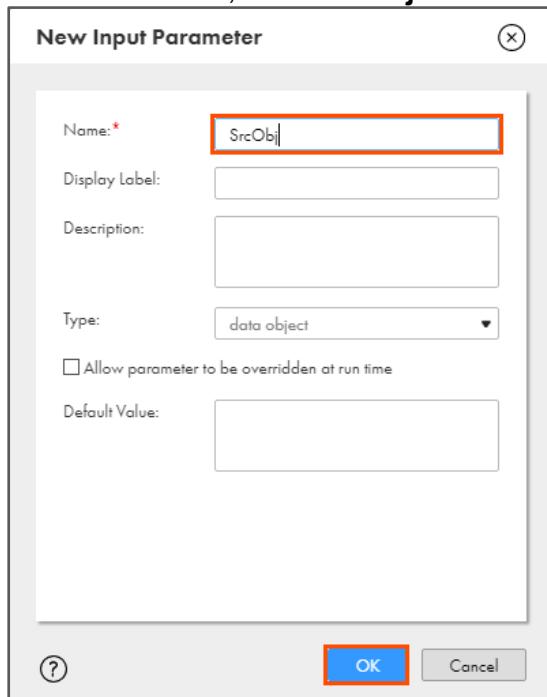


9. Select the Source Type as **Parameter**.

10. To create another parameter, click **New Parameter**.

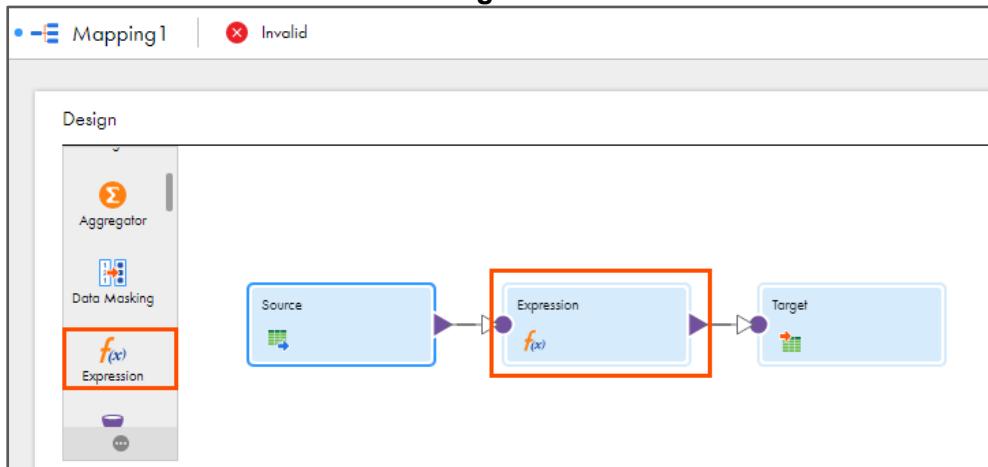


11. In the Name field, enter **SrcObj** and click **OK**.



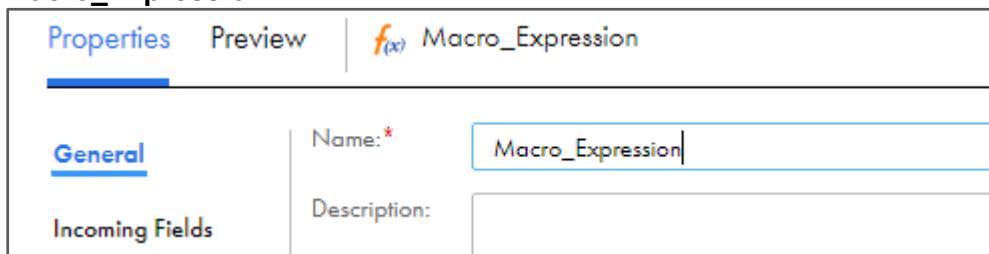
Add Expression Transformation

12. From the list of available transformations, drag and drop an **Expression** transformation on the link between **Source** and **Target**.



13. Select the **Expression** transformation from the mapping canvas.

14. In the **General** section of the Expression properties, enter the Name as **Macro_Expression**.

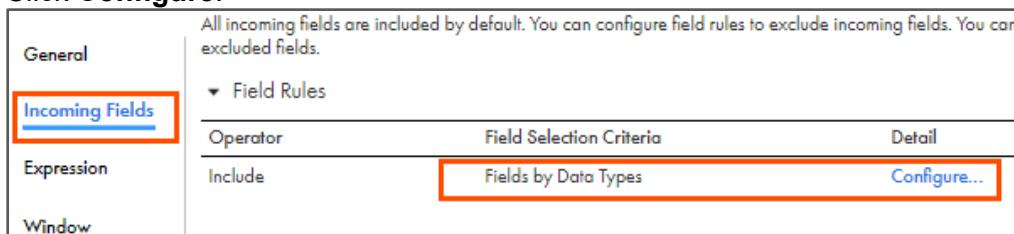


15. From the properties pane, click **Incoming Fields**.

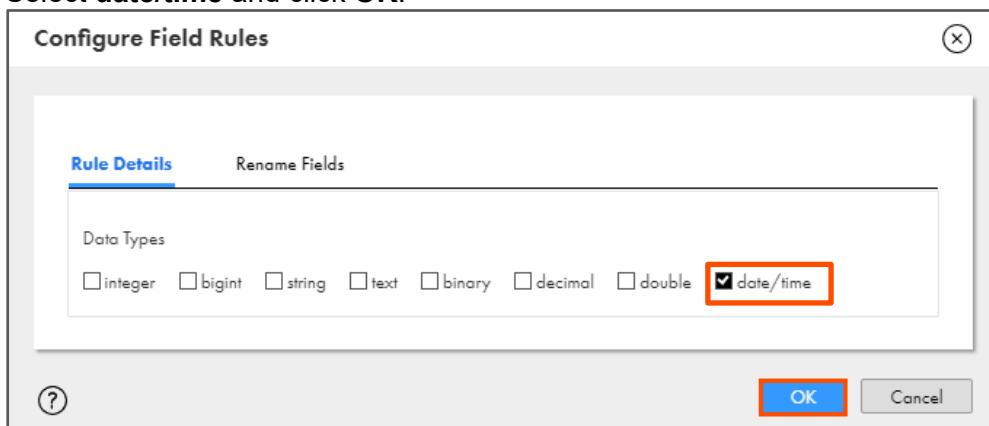
16. In the Field Rules section, from Field Selection Criteria drop-down, select **Fields by Data Types**.

Note: You might need to click outside of Fields by Data Types drop-down, in a black space to enable the Configure option.

17. Click **Configure**.



18. Select **date/time** and click **OK**.

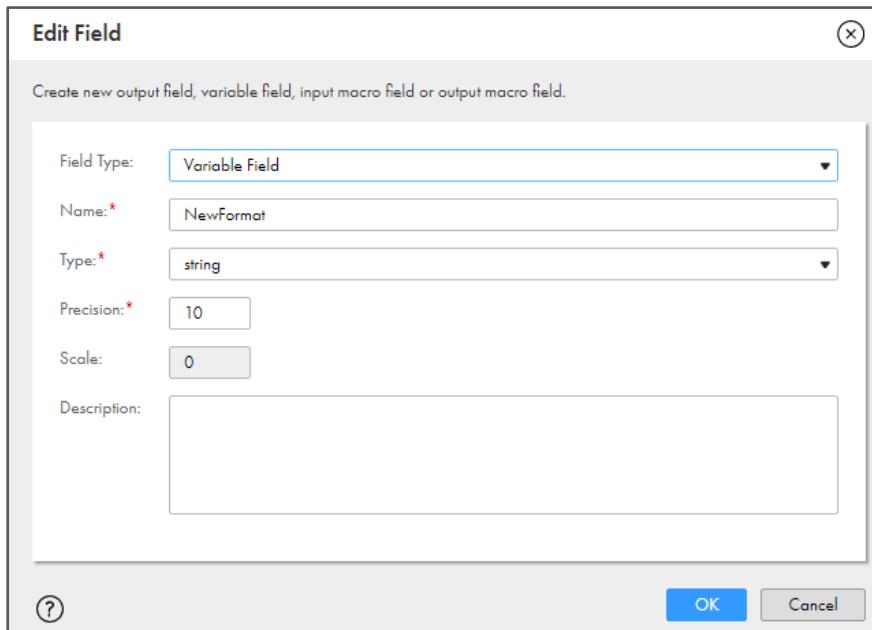


19. From the properties pane, click **Expression**.

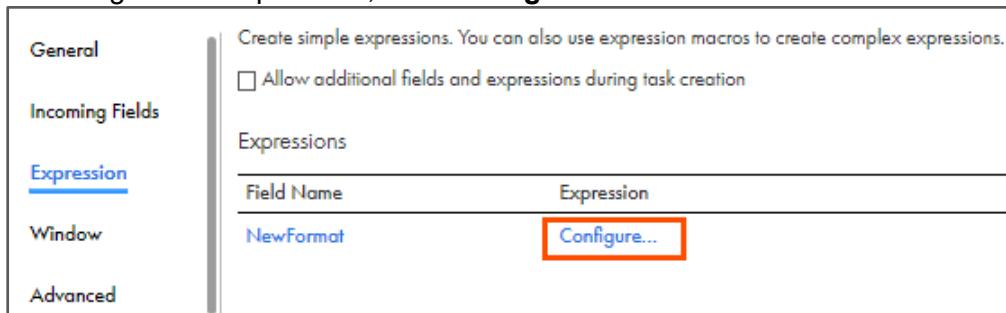
20. To add a new expression, click .

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

Field Type	Name	Type	Precision	Scale
Variable Field	NewFormat	string	100	0



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



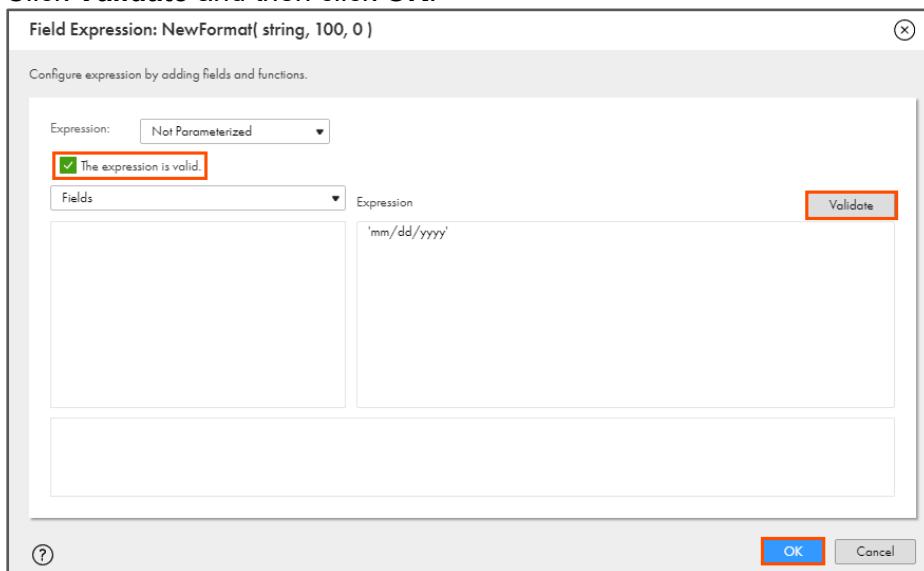
23. In the Expression field, enter the following expression:

'mm/dd/yyyy'

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingExpressionMacroInMapping_7-1**. Copy the command mentioned under **Step A** and paste it in the Expression field.

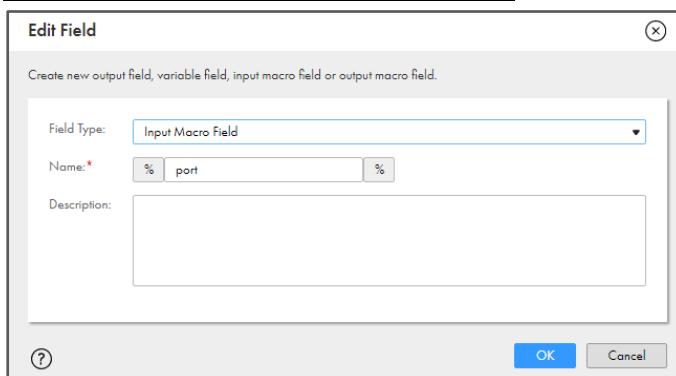
24. Click **Validate** and then click **OK**.



Note: If you copy and paste the above expression, you need to verify the expression to avoid getting an apostrophe error.

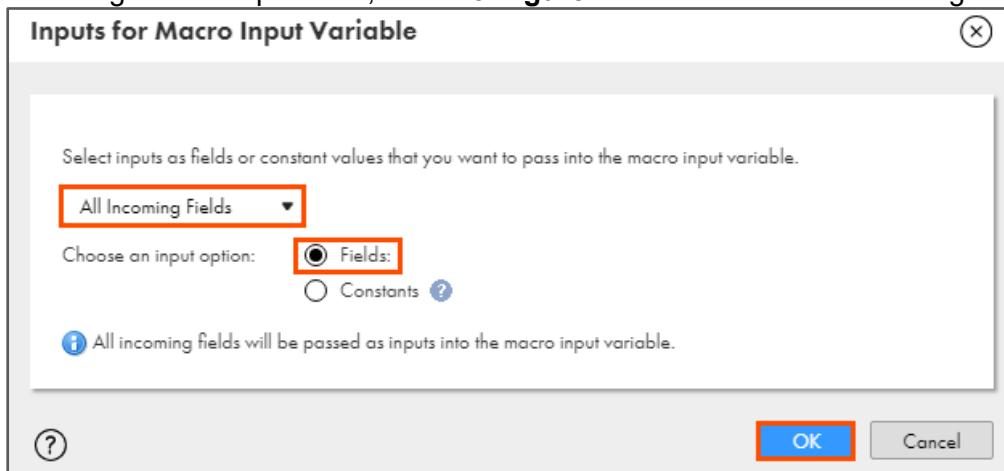
25. Add another expression as shown in the table below and click **OK**.

Field Type	Name
Input Macro Field	port



Note: A macro input field is a field that represents input that you want to use in the expression macro.

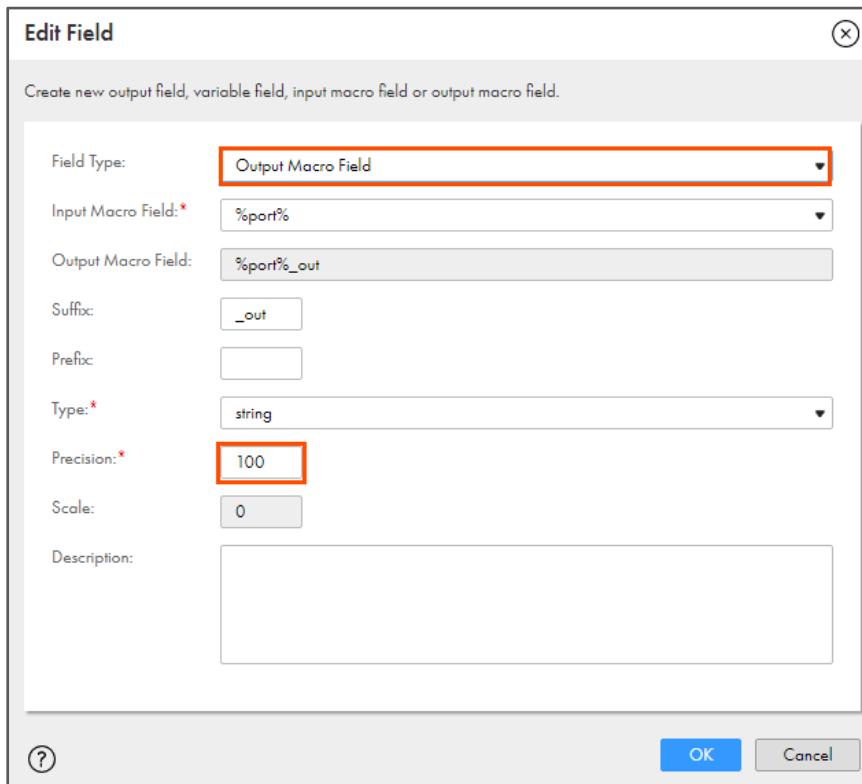
26. To configure the expression, click **Configure** and retain the default settings.



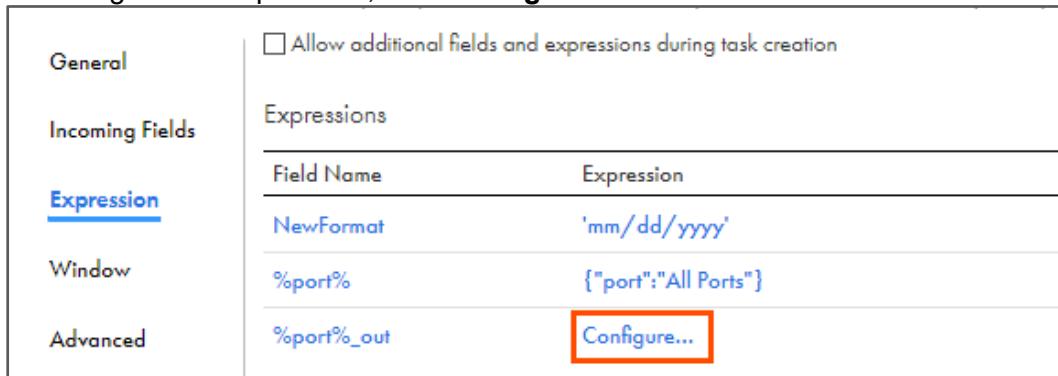
27. To create a new macro output field, click .

28. From the Field Type drop-down, select **Output Macro Field**.

29. Set Precision to **100** and click **OK**.



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



Field Name	Expression
NewFormat	'mm/dd/yyyy'
%port%	{"port":"All Ports"}
%port%_out	Configure...

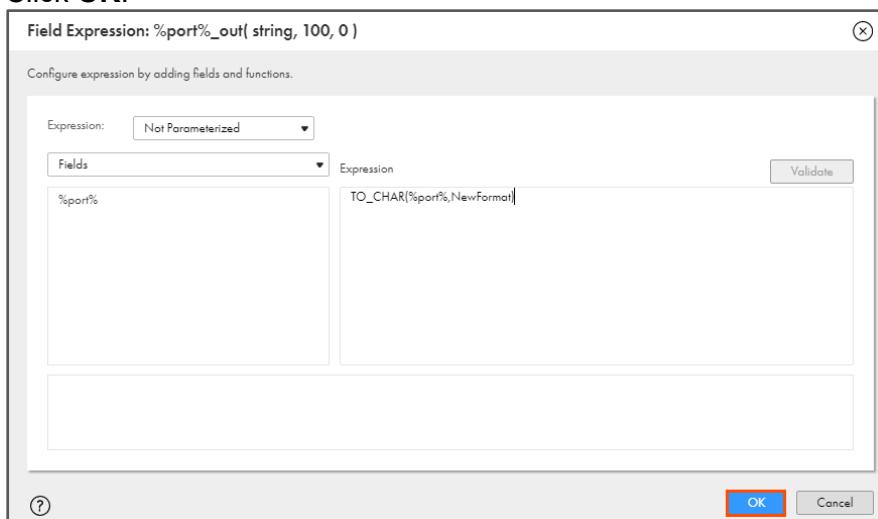
31. In the Expression field, enter the following expression:

TO_CHAR(%port%,NewFormat)

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingExpressionMacroInMapping_7-1**. Copy the command mentioned under **Step B** and paste it in the Expression field.

32. Click **OK**.

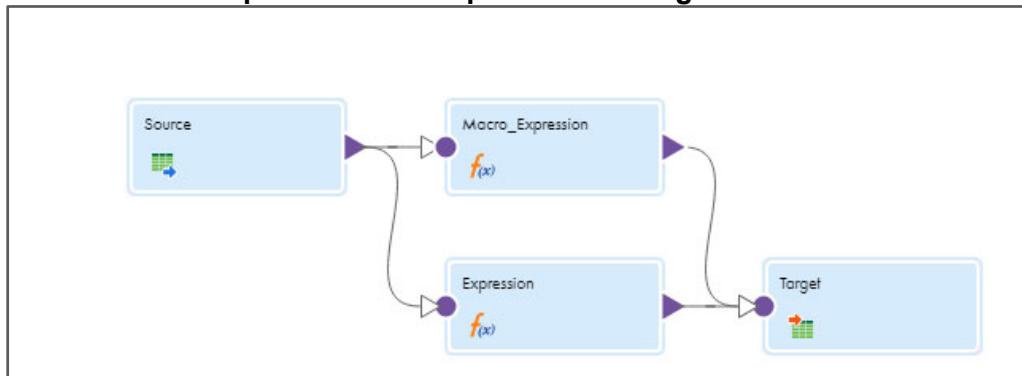


Note: As the field is macro field, the Validate option is disabled.

Add Expression Transformation

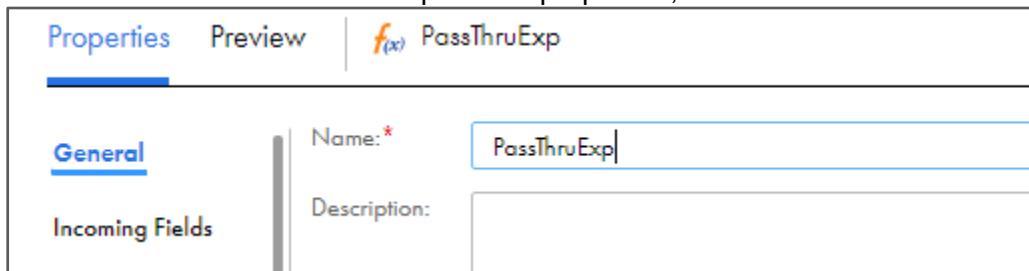
33. From the list of available transformations, drag and drop an **Expression** transformation on to the mapping canvas.

34. Link Source to Expression and Expression to Target.



35. Select the **Expression** transformation from the mapping canvas.

36. In the **General** section of the Expression properties, enter Name as **PassThruExp**.



Properties	Preview
General	Name: PassThruExp
Incoming Fields	Description:

37. From the properties pane, click **Incoming Fields**.

38. To create a new Field Rule, click .

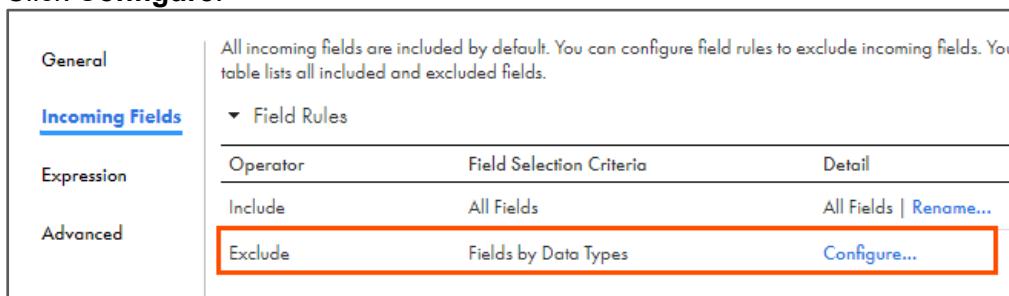


General	All incoming fields are included by default. You can configure field rules to exclude incoming fields. You can also rename incoming fields to avoid field name conflicts. The Preview Fields table lists all included and excluded fields.
Incoming Fields	Field Rules Operator Field Selection Criteria Detail Actions Include All Fields All Fields Rename... 
Expression	
Advanced	

39. From the Operator drop-down, select **Exclude**.

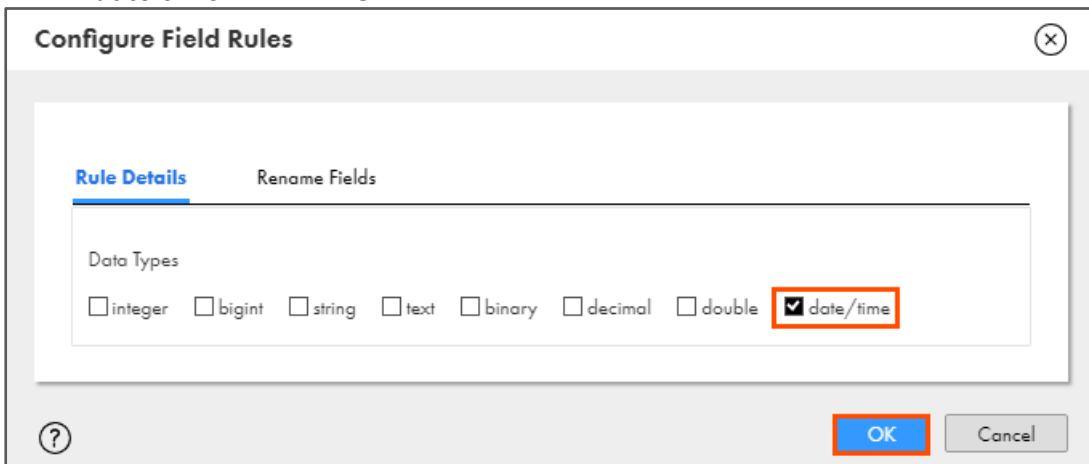
40. From the Field Selection Criteria drop-down, select **Fields By Data Types**.

41. Click **Configure**.



General	All incoming fields are included by default. You can configure field rules to exclude incoming fields. You can also rename incoming fields to avoid field name conflicts. The Preview Fields table lists all included and excluded fields.
Incoming Fields	Field Rules Operator Field Selection Criteria Detail Actions Include All Fields All Fields Rename...  Exclude Fields by Data Types Configure...
Expression	
Advanced	

42. Select **date/time** and click **OK**.

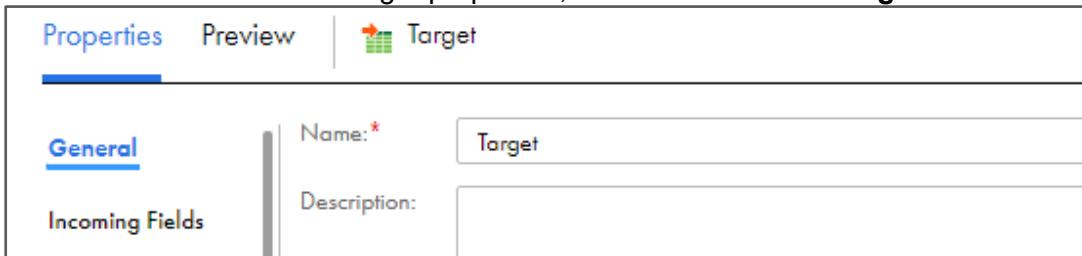


43. Ensure that the **Field Selection Criteria** for the **Include** operator is set to **All Fields**.



44. To configure the target, from the mapping canvas, click the **Target** transformation.

45. In the **General** section of Target properties, retain the Name as **Target**.

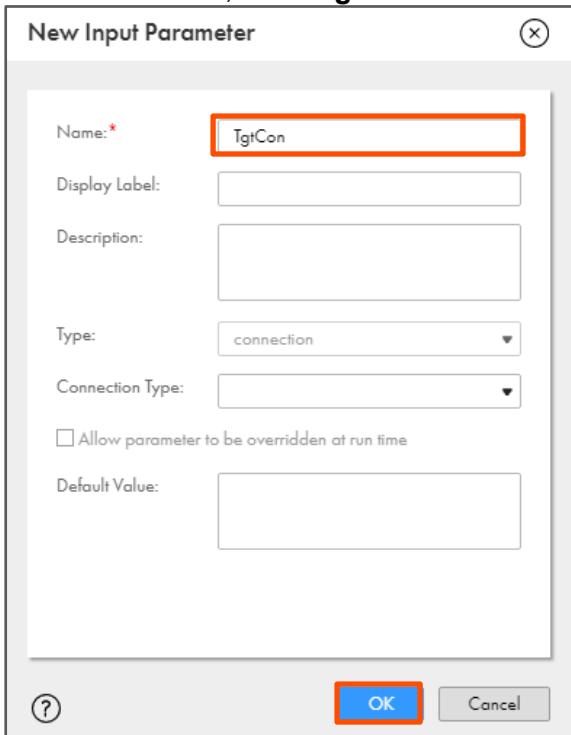


46. From the properties pane, click **Target**.

47. Click **New Parameter**.

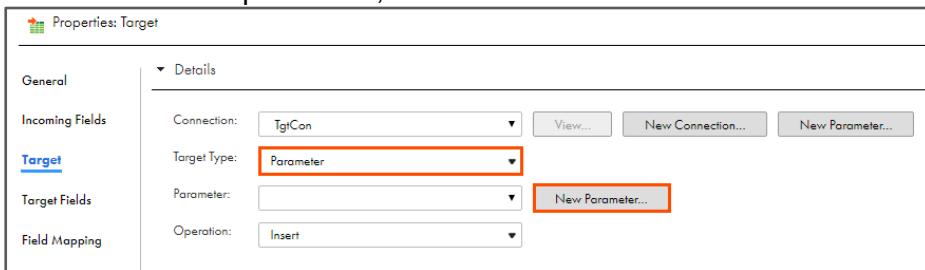


48. In the Name field, enter **TgtCon** and click **OK**.

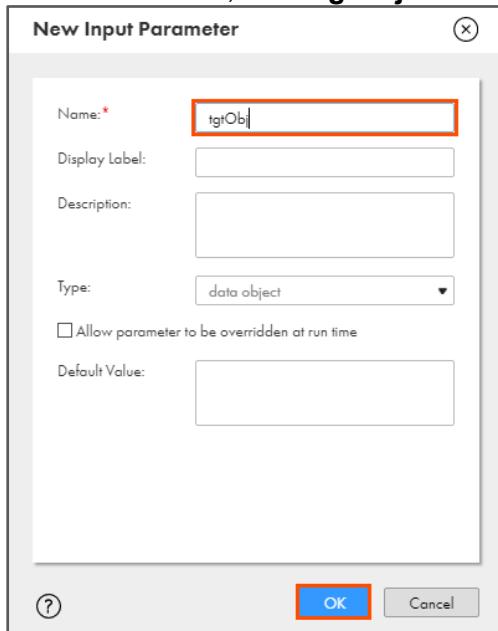


49. Select Target Type as **Parameter**.

50. To create another parameter, select **New Parameter**.

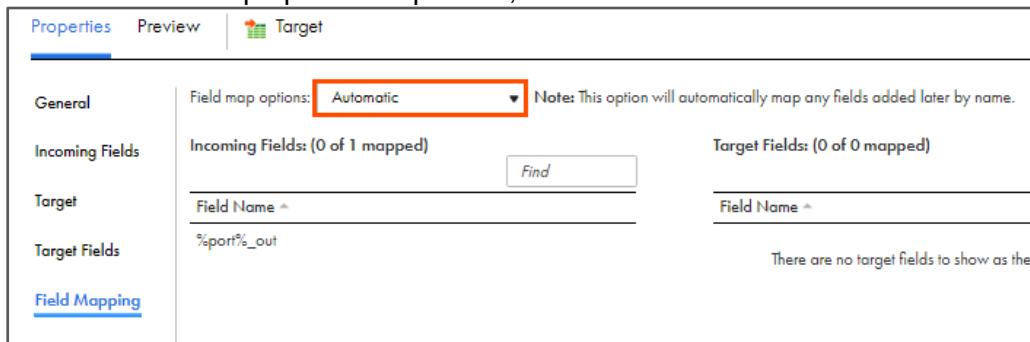


51. In the Name field, enter **tgtObj** and click **OK**.

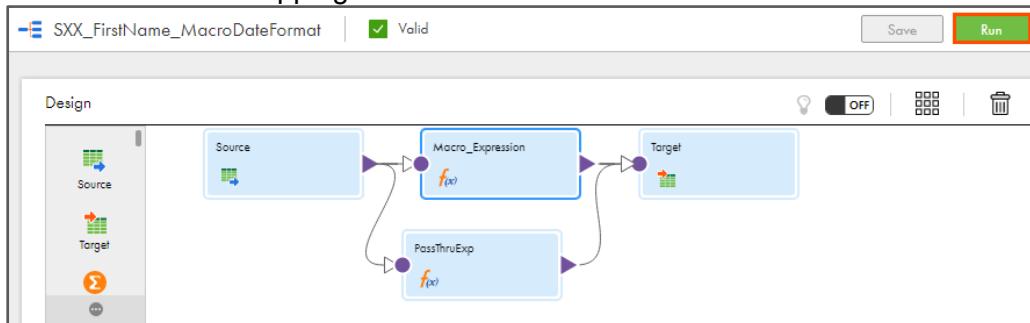


52. From the properties pane, click **Field Mapping**.

53. From the Field map options drop-down, select **Automatic**.



54. Save and run the mapping.



55. From the Runtime Environment drop-down, select your secure agent group.

56. Click **Next**.

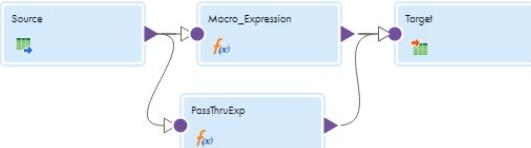
Run SXX_FirstName_MacroDateFormat

① Definition ② Sources ③ Targets

Runtime Environment: * CDI-XX-FIRSTNAME

Mapping: * SXX_FirstName_MacroDateFormat

Mapping Image: SXX_FirstName_MacroDateFormat



?

Save

< Back Next > Run Cancel

57. From the ParSrcCon Connection drop-down, select **XX_FirstName_SFDCDeveloper**.

Source Parameter Details

ParSrcCon Connection: * XX_FirstName_SFDCDeveloper

Source Type: Single

SrcObj Object: * Use the Select button

Select...

58. From the SrcObj Object drop-down, select **Account**.

① Definition ② Sources ③ Targets

Source Parameter Details

ParSrcCon Connection: * XX_FirstName_SFDCDeveloper (Salesforce)

Source Type: Single

SrcObj Object: * Account

59. Click **Next**.

60. From the TgtCon Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

61. To select the target object, from tgtObj Object, click **Create Target**.

① Definition ② Sources ③ Targets

Target Parameter Details

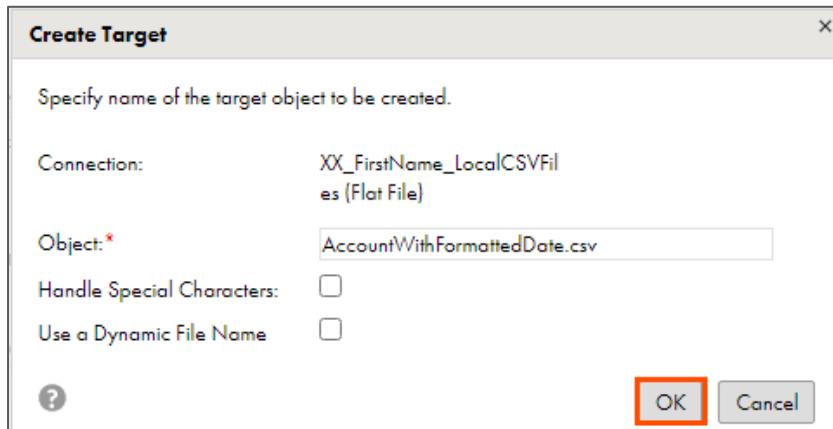
TgtCon Connection: * XX_FirstName_LocalCSVFiles

tgtObj Object: *

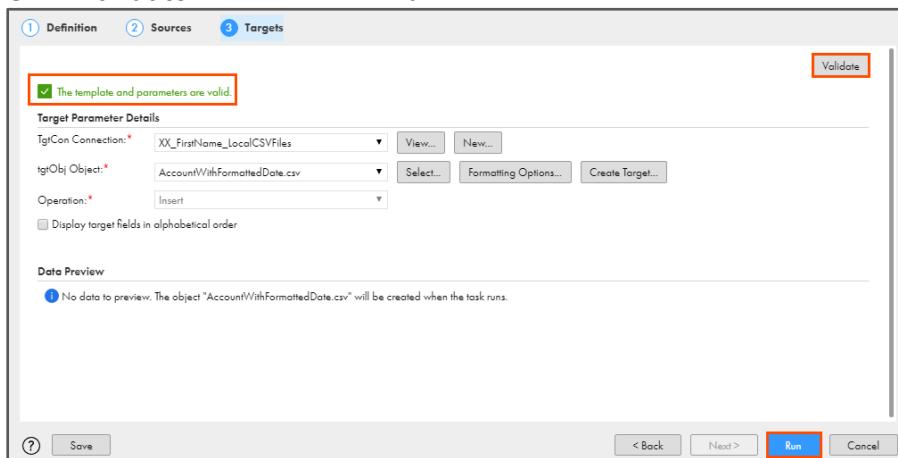
Display target fields in alphabetical order

62. In the Object field, enter **AccountWithFormattedDate.csv**.

63. Click **OK**.



64. Click **Validate** and then click **Run**.



Monitor Status

65. To monitor the mapping status, from the navigation pane, click **My Jobs**.

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

Jobs (1 of 441)					
Updated 8:25:05 AM PST					
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_FirstName_MacroFormat-5		Nov 16, 2020, 8:24 AM	Nov 16, 2020, 8:24...	18	<input checked="" type="checkbox"/> Success

Note: The number of rows processed may change depending upon the data in the Salesforce Account object.

67. Close the asset from the navigation pane.

68. On your local machine, go to **C:\IICSLabFiles**.

69. Verify that the dates are written in the “MM/DD/YYYY” format in **AccountWithFormattedDate.csv** file.

70. **Note:** If you see the data in excel sheet as ##, you must select the column and double click on the field to view the data in correct format.

CreatedDate	LastModifiedDate	SystemModstamp	LastAc	LastView	LastReferencedDate	SLAExpirationDate_c	CreatedDate_out	LastModifiedDate_out	SystemModstamp_out
6/27/2019 13:42	6/27/2019 13:42	6/27/2019 13:42			7/2/2019 10:39		6/27/2019	6/27/2019	6/27/2019
6/27/2019 13:42	6/27/2019 13:42	6/27/2019 13:42			7/2/2019 10:39		6/27/2019	6/27/2019	6/27/2019
6/27/2019 13:42	6/27/2019 13:42	6/27/2019 13:42			7/2/2019 10:40		6/27/2019	6/27/2019	6/27/2019
6/27/2019 13:42	6/27/2019 13:42	6/27/2019 13:42			7/2/2019 10:40		6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				1/22/2020 0:00	6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				7/22/2019 0:00	6/27/2019	6/27/2019	6/27/2019
6/27/2019 13:42	6/27/2019 13:42	6/27/2019 13:42					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				7/22/2019 0:00	6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				1/22/2020 0:00	6/27/2019	6/27/2019	6/27/2019
6/27/2019 13:42	6/27/2019 13:42	6/27/2019 13:42					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				7/22/2019 0:00	6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				1/22/2020 0:00	6/27/2019	6/27/2019	6/27/2019
6/27/2019 13:42	6/27/2019 13:42	6/27/2019 13:42					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				1/22/2020 0:00	6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06					6/27/2019	6/27/2019	6/27/2019
6/27/2019 12:06	6/27/2019 12:06	6/27/2019 12:06				1/22/2020 0:00	6/27/2019	6/27/2019	6/27/2019

This concludes the lab.

Module 7: Expression Macro and Dynamic Linking

Lab 7-2: Using Dynamic Linking in a Mapping

Overview:

In IICS, the Dynamic Linking creates a new target file at run time. In this lab, you will create a mapping to sort the data and load it to the target using Dynamic Linking.

Objective:

- Use Dynamic Linking by creating a Flat File at runtime
- Append time stamp in the name of the file

Scenario:

Ruby has a list of all the NH Retail customers, and she wants to sort the customer data in alphabetical order. To achieve this business requirement, John creates a mapping in IICS.

In this lab, John uses a sorter transformation to sort the customer data in ascending order of the first name. He uses the “create new at runtime” feature of IICS to generate a new target file with the time stamp appended in the file name.

Duration:

10 minutes

Tasks

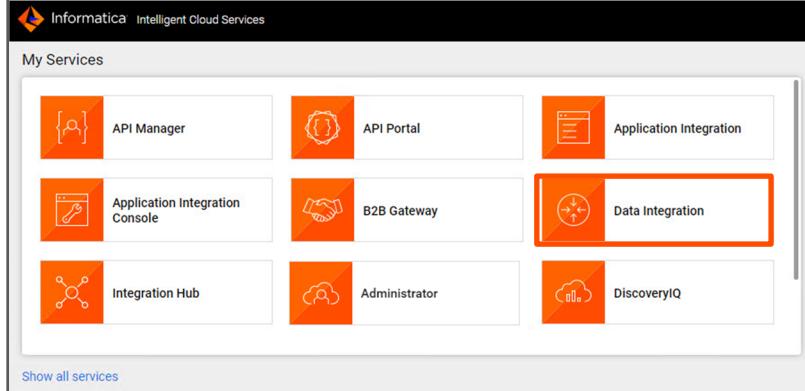
Copy Source File

1. Copy the **Customer_Detail.csv** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).
2. Open the file and observe its content.

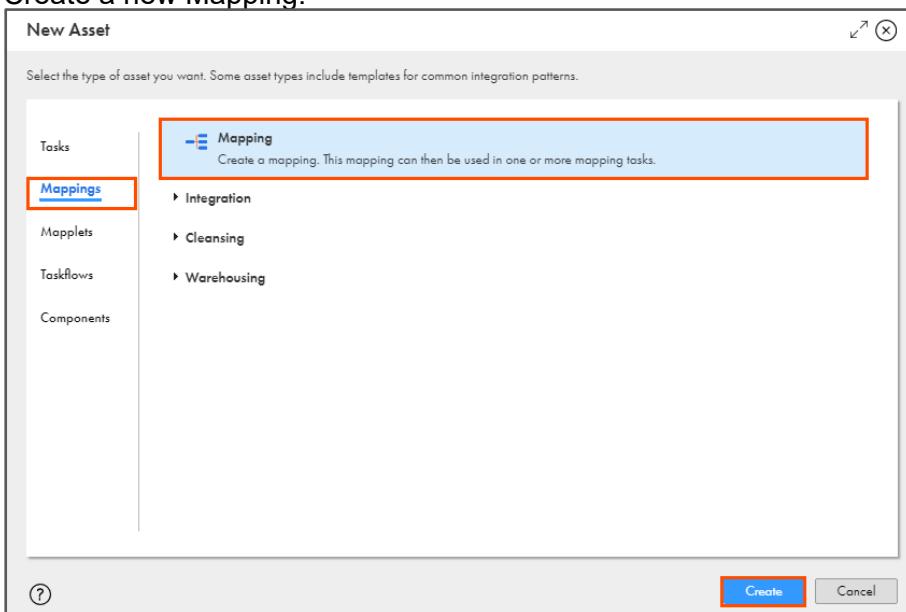
Note: You must close the files before running the task to avoid job failure.

Create Mapping

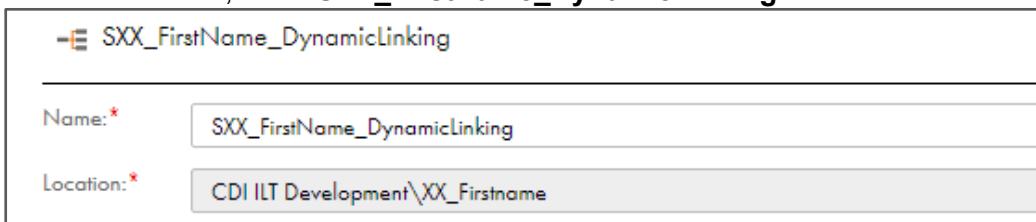
3. Log in to IICS and from the My Services window, select **Data Integration**.



4. Create a new Mapping.

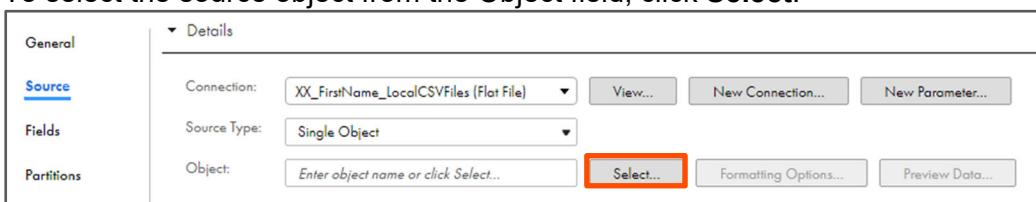


5. In the Name field, enter **SXX_FirstName_DynamicLinking**.



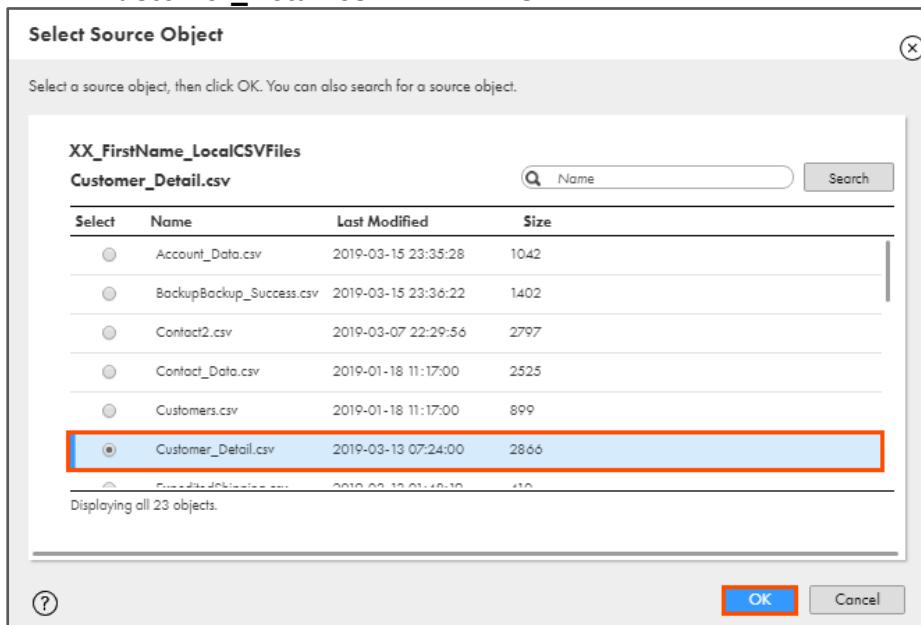
Name:	SXX_FirstName_DynamicLinking
Location:	CDI ILT Development\XX_Firstname

6. To configure the source, from the mapping canvas, click the **Source** transformation.
7. From the properties pane, click **Source**.
8. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
9. To select the source object from the Object field, click **Select**.



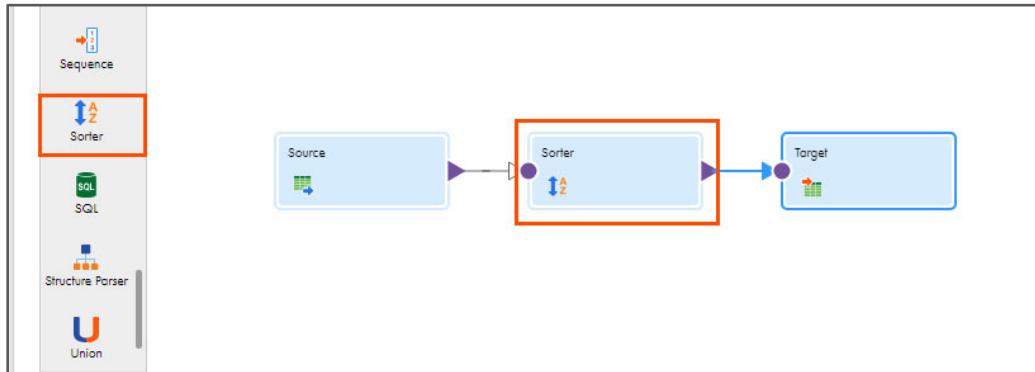
General	Details
Source	Connection: XX_FirstName_LocalCSVFiles (Flat File) View... New Connection... New Parameter...
Fields	Source Type: Single Object
Partitions	Object: Enter object name or click Select... Select... Formatting Options... Preview Data...

10. Select **Customer_Detail.csv** and click **OK**.



Add Sorter Transformation

11. Drag and drop the **Sorter** transformation on the link between the Source and Target transformations.



Note: Sorter transformation reads the first names of customers from the source and sorts them alphabetically.

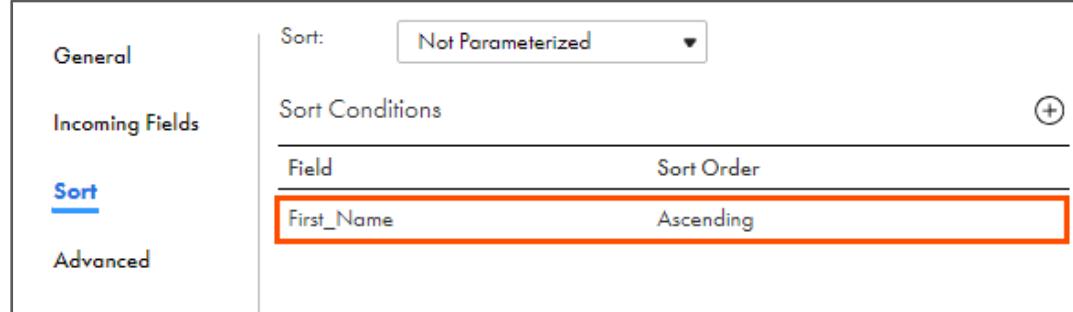
12. Select the **Sorter** transformation from the mapping canvas.

13. From the properties pane, click **Sort**.

14. To add a new sort condition, click .

15. Enter the condition as shown in the table below:

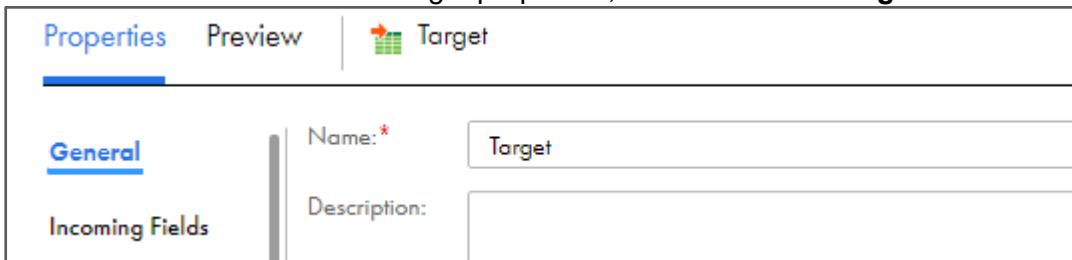
Field Name	Sort Order
First_Name	Ascending



The screenshot shows the 'Sort' configuration for a transformation. The 'Sort' tab is selected. A condition for 'First_Name' is set to 'Ascending'. The 'Sort Conditions' section shows a single row with 'Field' 'First_Name' and 'Sort Order' 'Ascending'.

16. To configure the target, from the mapping canvas, click the **Target** transformation.

17. In the **General** section of the Target properties, retain Name as **Target**.

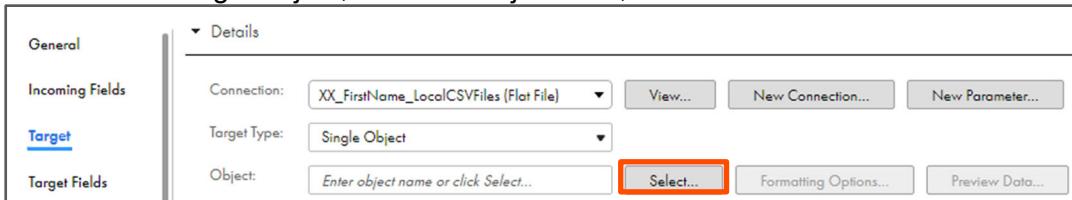


The screenshot shows the 'Target' transformation properties pane. The 'General' tab is selected. The 'Name:' field is set to 'Target'.

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

19. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

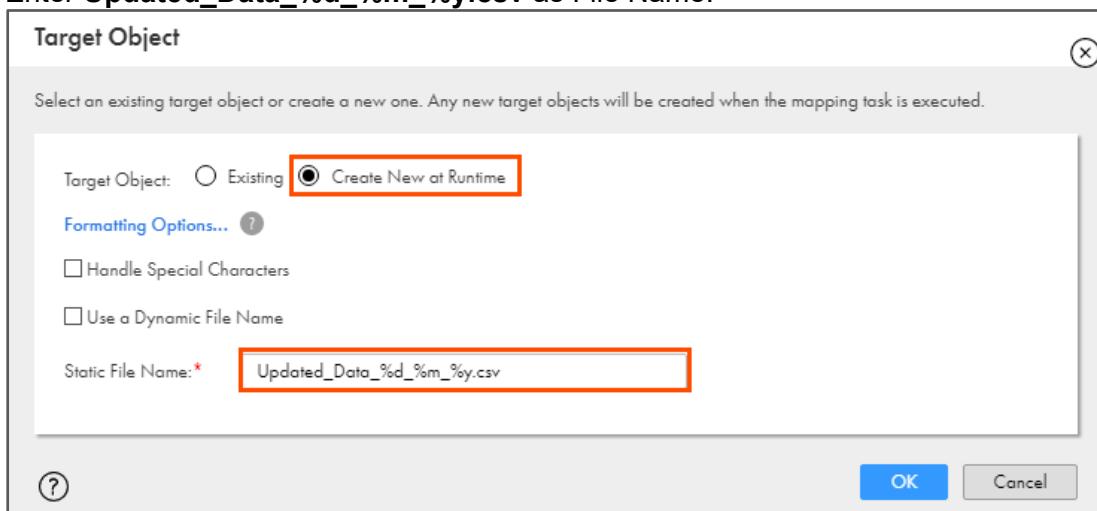
20. To select the target object, from the Object field, click **Select**.



The screenshot shows the 'Target Object' window. The 'Select...' button is highlighted with a red box.

21. In the Target Object window, select **Create New at Runtime**.

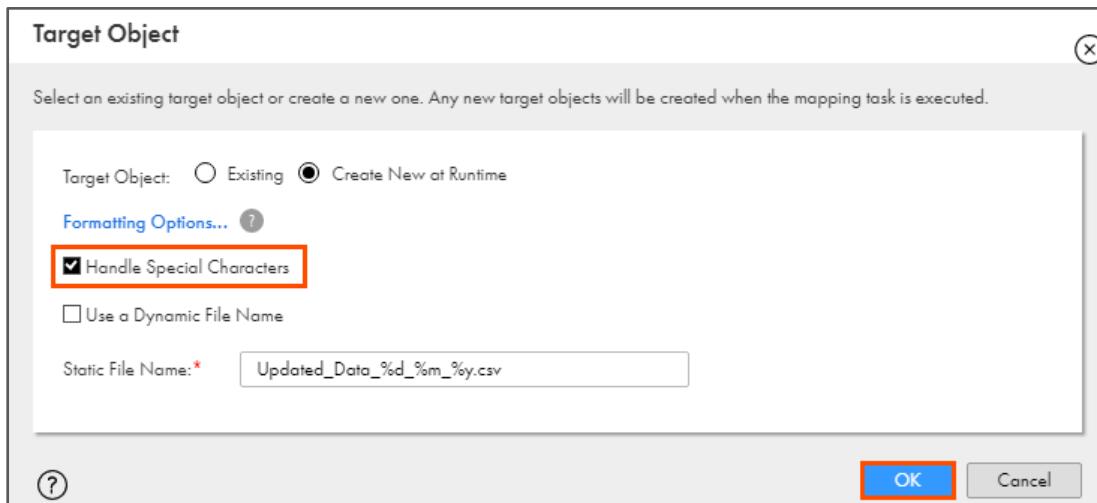
22. Enter **Updated_Data_%d_%m_%y.csv** as File Name.



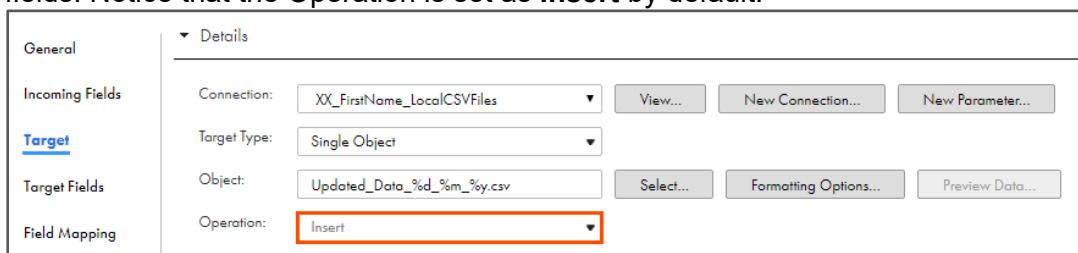
Note: The %d, %m, and %y will determine the date, month, and year respectively. This timestamp also determines when the file is created.

23. To enable the time stamp feature, select **Handle Special Characters**.

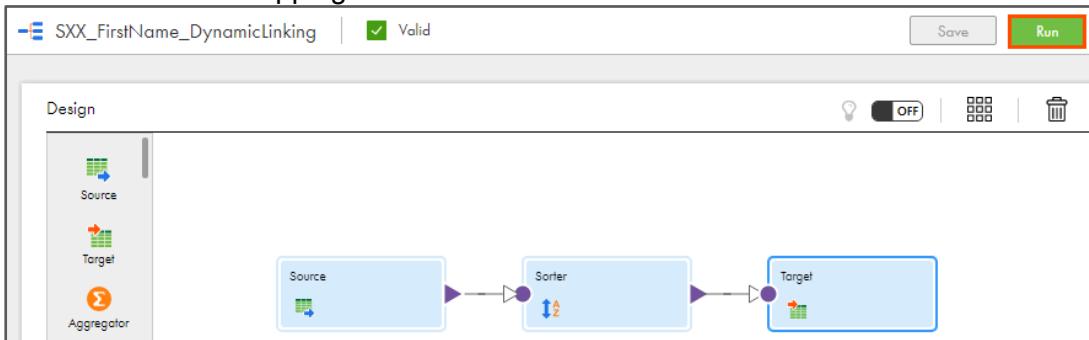
24. Click **OK**.



Note: As you create a blank new file, you do not need to map the source and target fields. Notice that the Operation is set as **Insert** by default.



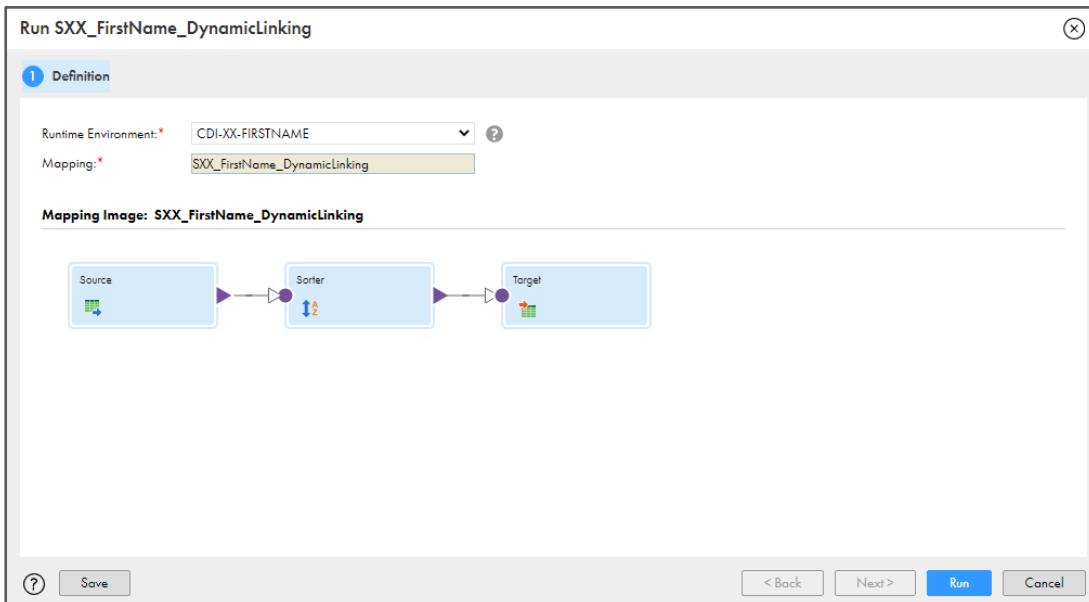
25. Save and run the mapping.



Note: After you save the mapping, the mapping status (Valid or Invalid) is automatically displayed next to the mapping name.

26. From the Runtime Environment drop-down, select your secure agent group.

27. Click **Run**.



Monitor Status

28. Monitor that the job status.

Jobs (427)		Up to date	Updated 2:34:55 AM PST			
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status	
SXX_FirstName_DynamicLinking-2		Nov 15, 2020, 2:34 AM	Nov 15, 2020, 2:34...	15	Success	

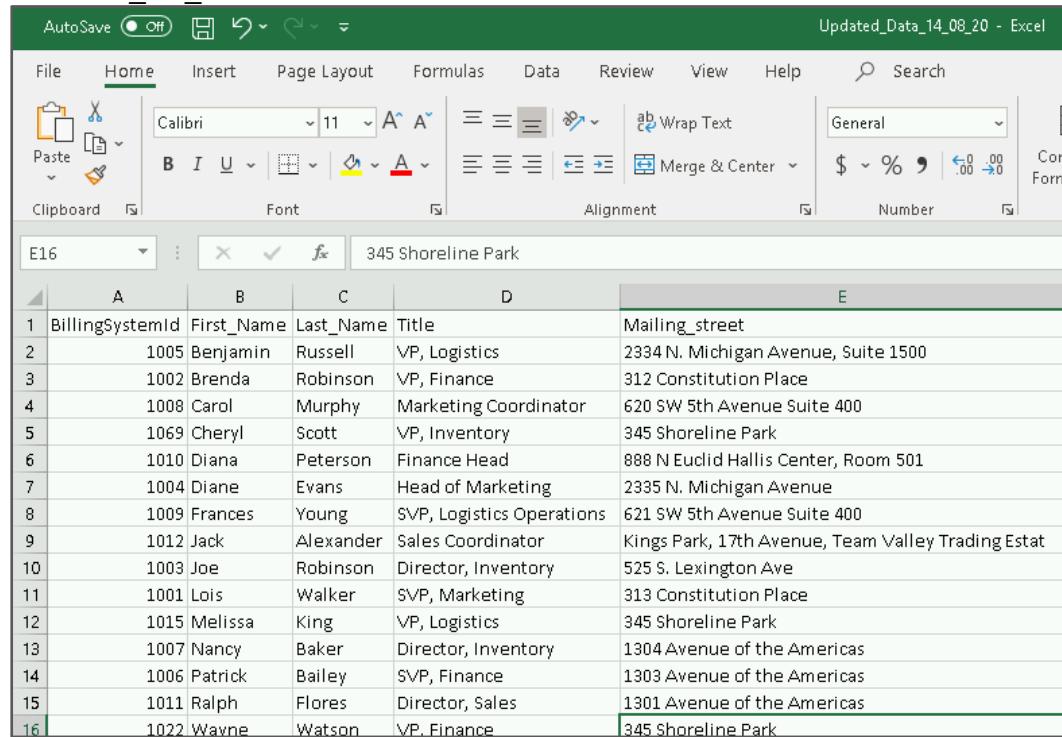
29. Close the asset from the navigation pane.

30. On your local machine, go to **C:\IICSLabFiles**.

31. Verify that the **Updated_Data_XX_XX_XX.csv** file consists of 15 rows sorted according to the First Name.

Note: XX_XX_XX is the file creation date.

Updated_Data_14_08_20 - Excel



The screenshot shows a Microsoft Excel spreadsheet titled "Updated_Data_14_08_20 - Excel". The ribbon menu is visible at the top, and the formula bar shows the cell reference "E16" and the value "345 Shoreline Park". The main content is a table with columns A through E. Column A contains row numbers from 1 to 16. Column B contains "BillingSystemId", "First_Name", "Last_Name", and "Title" headers. Columns C through E contain address details. Row 16 is highlighted in green.

	A	B	C	D	E
1	BillingSystemId	First_Name	Last_Name	Title	Mailing_street
2	1005	Benjamin	Russell	VP, Logistics	2334 N. Michigan Avenue, Suite 1500
3	1002	Brenda	Robinson	VP, Finance	312 Constitution Place
4	1008	Carol	Murphy	Marketing Coordinator	620 SW 5th Avenue Suite 400
5	1069	Cheryl	Scott	VP, Inventory	345 Shoreline Park
6	1010	Diana	Peterson	Finance Head	888 N Euclid Hallis Center, Room 501
7	1004	Diane	Evans	Head of Marketing	2335 N. Michigan Avenue
8	1009	Frances	Young	SVP, Logistics Operations	621 SW 5th Avenue Suite 400
9	1012	Jack	Alexander	Sales Coordinator	Kings Park, 17th Avenue, Team Valley Trading Estat
10	1003	Joe	Robinson	Director, Inventory	525 S. Lexington Ave
11	1001	Lois	Walker	SVP, Marketing	313 Constitution Place
12	1015	Melissa	King	VP, Logistics	345 Shoreline Park
13	1007	Nancy	Baker	Director, Inventory	1304 Avenue of the Americas
14	1006	Patrick	Bailey	SVP, Finance	1303 Avenue of the Americas
15	1011	Ralph	Flores	Director, Sales	1301 Avenue of the Americas
16	1022	Wayne	Watson	VP, Finance	345 Shoreline Park

This concludes the lab.

Module 10: Mass Ingestion

10-1: Creating a Streaming Ingestion Task

Overview:

A Streaming Ingestion task is used to ingest data at scale from any streaming data sources, such as logs, clickstream, social media, and IoT sources. You can use Mass Ingestion Streaming to combine or separate data from streaming sources in real-time.

Objective:

- Start Apache ZooKeeper and Kafka server
- Create Kafka connection
- Create a streaming ingestion task to read data from flat-file

Scenario:

Ruby want to read employee data in real-time and ingest that data a streaming source for analytics purposes. So, John creates a Streaming Ingestion task to read data from flat-file and write that data to a kafka topic.

In this lab, you will read real-time data from a flat-file source and write it to a kafka topic in real-time.

Important: Your must have Cloud Unified Mass Ingestion Subscription enabled in your Org to access Mass Ingestion service and run Mass Ingestion tasks.

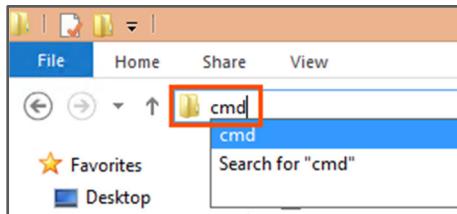
Duration:

20 minutes

Tasks:

Start Apache ZooKeeper and Kafka server

1. From the **C:\Kafka\kafka\bin\windows** folder, open a command prompt.

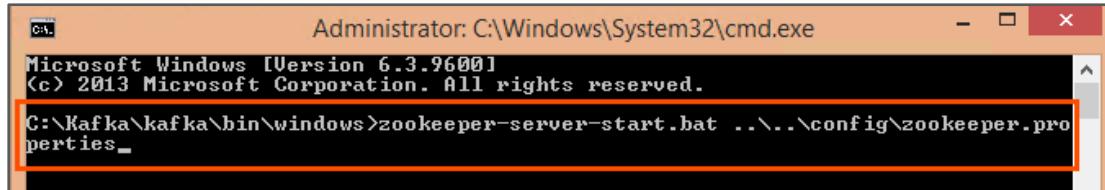


2. To execute the ZooKeeper server internally, enter the following command:

zookeeper-server-start.bat ..\..\config\zookeeper.properties

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **StreamingIngestion_10-1**. Copy the command mentioned under **Step A** and paste it in the command prompt.



```
Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

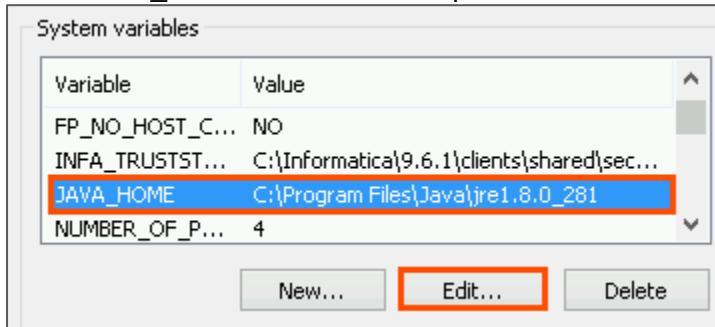
C:\Kafka\kafka\bin\windows>zookeeper-server-start.bat ..\..\config\zookeeper.properties
```

Note: If you get “**The system cannot find the path specified**” error after you run the command to start Zookeeper, then perform the following steps:

- Go to Windows search menu, search for Environment Variables, and select the **Edit the system environment variables** option.

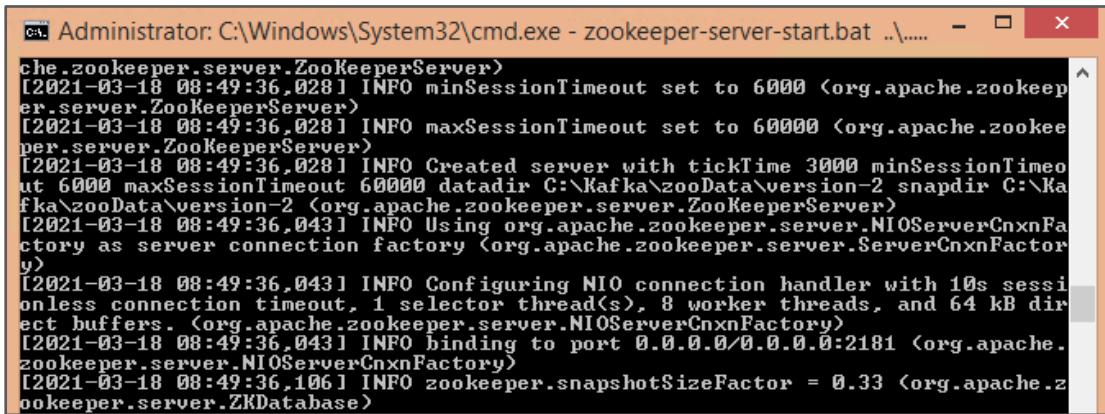


- In the System Properties window, click **Environment Variables**.
- Under the System variables option, select the JAVA_HOME variable and click **Edit**. If the JAVA_HOME variable is not present, click **New** to create it.



- Ensure that the Variable Name is **JAVA_HOME**.
- In the Variable Value field, enter the path to the **jre<version>** directory.
Note: This path can change based on the location and version of Java installed on your machine. Verify the location and jre version of machine and update the Variable Value field accordingly. In the above screenshot, the jre version is 1.8.0_281.
- After updating the JAVA_HOME variable, click **OK** for all the opened windows. Ensure that the System properties window is closed for the changes to take effect.
- Close the existing command prompt window and open a new cmd window from **C:\Kafka\kafka\bin\windows** folder.
- Re-run the command to start the Zookeeper.

Result:



```

Administrator: C:\Windows\System32\cmd.exe - zookeeper-server-start.bat ..\.... - 
che.zookeeper.server.ZooKeeperServer)
[2021-03-18 08:49:36,028] INFO minSessionTimeout set to 6000 <org.apache.zookeeper.server.ZooKeeperServer>
[2021-03-18 08:49:36,028] INFO maxSessionTimeout set to 60000 <org.apache.zookeeper.server.ZooKeeperServer>
[2021-03-18 08:49:36,028] INFO Created server with tickTime 3000 minSessionTimeout 6000 maxSessionTimeout 60000 datadir C:\Kafka\zooData\version-2 snapdir C:\Kafka\zooData\version-2 <org.apache.zookeeper.server.ZooKeeperServer>
[2021-03-18 08:49:36,043] INFO Using org.apache.zookeeper.server.NIOServerCnxnFactory as server connection factory <org.apache.zookeeper.server.ServerCnxnFactory>
[2021-03-18 08:49:36,043] INFO Configuring NIO connection handler with 10s sessionless connection timeout, 1 selector thread(s), 8 worker threads, and 64 kB direct buffers. <org.apache.zookeeper.server.NIOServerCnxnFactory>
[2021-03-18 08:49:36,043] INFO binding to port 0.0.0.0/0.0.0.0:2181 <org.apache.zookeeper.server.NIOServerCnxnFactory>
[2021-03-18 08:49:36,106] INFO snapshotSizeFactor = 0.33 <org.apache.zookeeper.server.ZKDatabase>
  
```

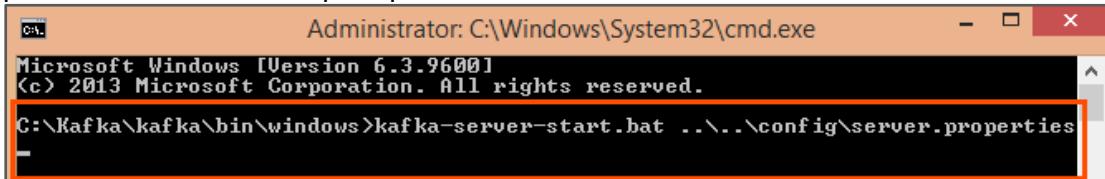
Important: Do not close any of the command prompts till the end of this lab.

- In the same folder, open another command prompt, and enter the following command to start the kafka server:

kafka-server-start.bat ..\..\config\server.properties

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **StreamingIngestion_10-1**. Copy the command mentioned under **Step B** and paste it in the command prompt.

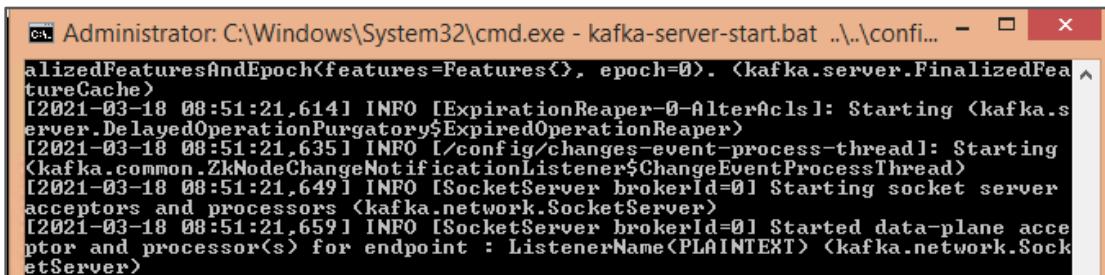


```

Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Kafka\kafka\bin\windows>kafka-server-start.bat ..\..\config\server.properties
  
```

Result:



```

Administrator: C:\Windows\System32\cmd.exe - kafka-server-start.bat ..\..\config...
alizedFeaturesAndEpoch(features=Features<>, epoch=0). <kafka.server.FinalizedFeatureCache>
[2021-03-18 08:51:21.614] INFO [ExpirationReaper-0-AlterAcls]: Starting <kafka.server.DelayedOperationPurgatory$ExpiredOperationReaper>
[2021-03-18 08:51:21.635] INFO [/config/changes-event-process-thread]: Starting <kafka.common.ZkNodeChangeNotificationListener$ChangeEventProcessThread>
[2021-03-18 08:51:21.649] INFO [SocketServer brokerId=0] Starting socket server acceptors and processors <kafka.network.SocketServer>
[2021-03-18 08:51:21.659] INFO [SocketServer brokerId=0] Started data-plane acceptor and processor(s) for endpoint : ListenerName<PLAINTEXT> <kafka.network.SocketServer>
  
```

Important: Do not close any of the command prompts till the end of this lab.

Create a topic

- In the same folder, open another command prompt, and enter the following command:
kafka-topics.bat --create --zookeeper localhost:2181 --replication-factor 1 --partitions 1 --topic S-XX-KafkaDemo

Note: Replace XX with your unique student number.

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **StreamingIngestion_10-1**. Copy the command mentioned under **Step C** and paste it in the command prompt.

Administrator: C:\Windows\System32\cmd.exe

```
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Kafka\kafka\bin\windows>kafka-topics.bat --create --zookeeper localhost:2181
--replication-factor 1 --partitions 1 --topic S-XX-KafkaDemo
```

Result:

Administrator: C:\Windows\System32\cmd.exe

```
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Kafka\kafka\bin\windows>kafka-topics.bat --create --zookeeper localhost:2181
--replication-factor 1 --partitions 1 --topic S-XX-KafkaDemo
Created topic S-XX-KafkaDemo.

C:\Kafka\kafka\bin\windows>
```

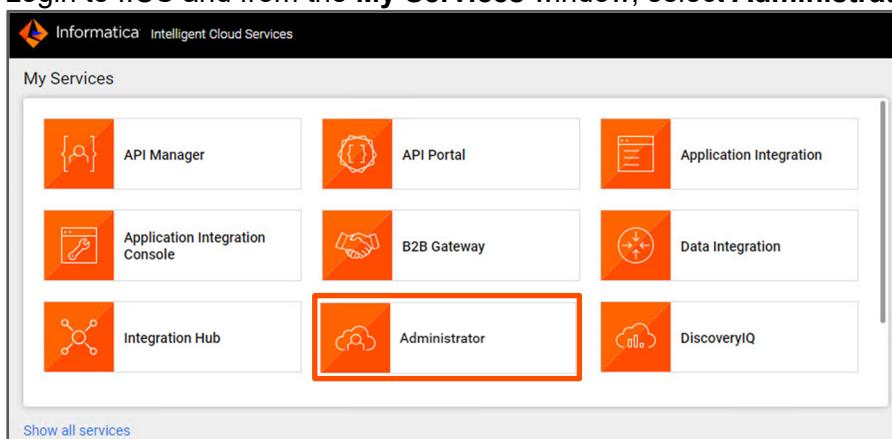
Important: Do not close any of the command prompts till the end of this lab.

Copy Source Files

5. Copy the **Employee_Streaming.csv** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles):
 6. Open the source file and observe its contents.
- Note:** You must close the files before running the task to avoid job failure.

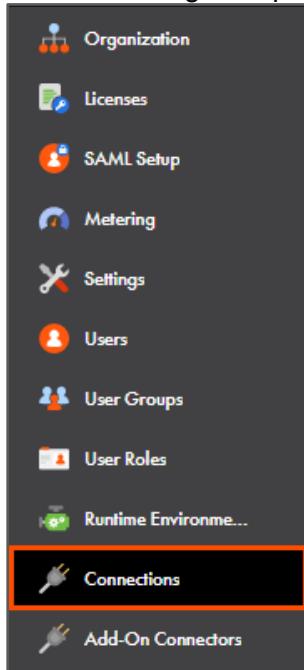
Create Streaming Ingestion Task

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

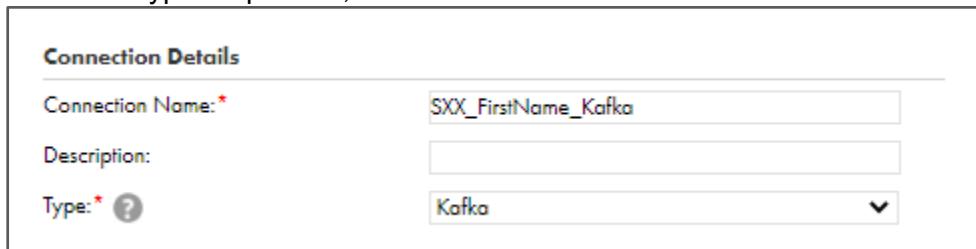


Note: If you are already logged in to your IICS Org, click on the current service name (Data Integration) to open the My Services window and select **Administrator**.

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



9. Create a new connection.
 10. In the new connection window, in the Connection Name field, enter **SXX_FirstName_Kafka**.
 11. From the Type drop-down, select **Kafka**.


 A screenshot of the 'Connection Details' window. It has a header 'Connection Details'. Below it are three input fields: 'Connection Name:' with the value 'SXX_FirstName_Kafka', 'Description:' with an empty text area, and 'Type:' with a dropdown menu showing 'Kafka'.

Note: If you do not see Kafka in the Type drop-down, navigate to the Add-on Connectors tab of Administrator service and enable the Kafka connector.

12. From the Runtime Environment drop-down, select your secure agent group.
 13. In the Kafka Broker list field, enter **localhost:9092**.

14. Ensure that the **Additional Connection Properties** field is blank.



Kafka Properties

Runtime Environment: * CDI-XX-FIRSTNAME

Connection Section

Kafka Broker List: * localhost:9092

Retry Timeout: 180

Kafka Broker Version: Apache 0.10.1.1 & above

Additional Connection Properties:

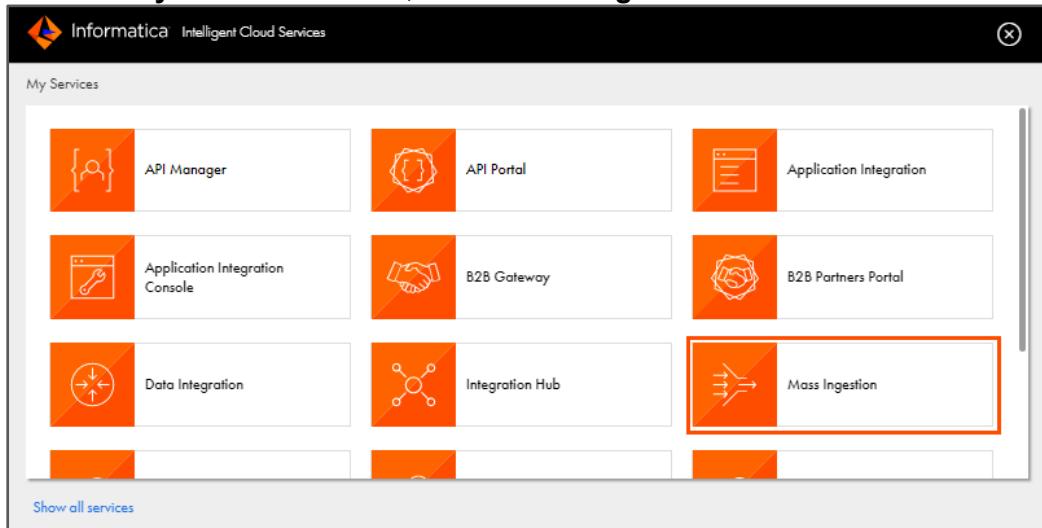
Note: Verify that SSL Mode is set to **Disabled** and all the other Security Configuration Section fields are blank.

15. Test and save the connection.

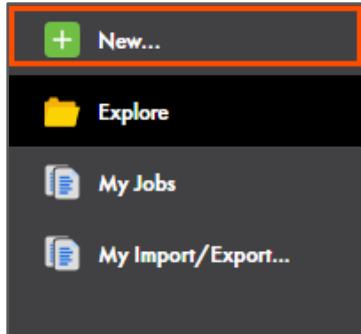
16. To switch between the available services, from the toolbar, select the drop-down next to **Administrator**.



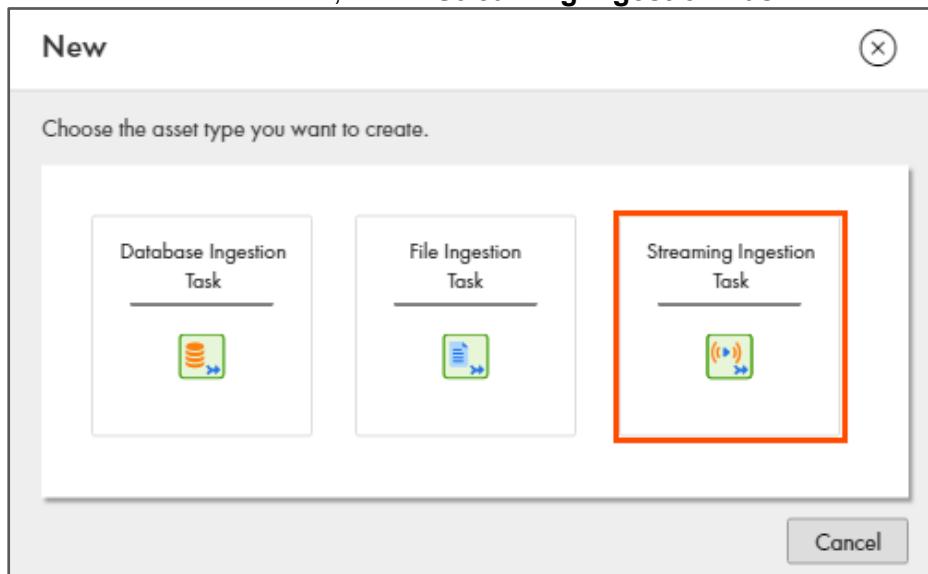
17. From the **My Services** window, select **Mass Ingestion**.



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



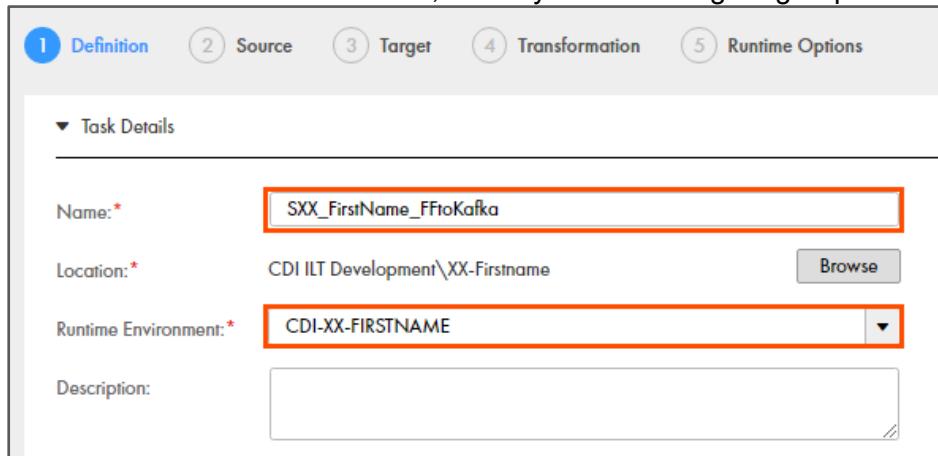
19. In the New Asset window, select **Streaming Ingestion Task**.



20. In the Task Name field, enter **SXX_FirstName_FFtoKafka**.

Note: Use the **Browse** option to change the Location to your working directory.

21. In the Runtime Environment field, select your secure agent group.



Name:*	SXX_FirstName_FFtoKafka
Location:*	CDI ILT Development\XX-Firstname
Runtime Environment:*	CDI-XX-FIRSTNAME
Description:	

22. Click **Next**.

23. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

24. In the File field, enter **Employee_Streaming.csv**.

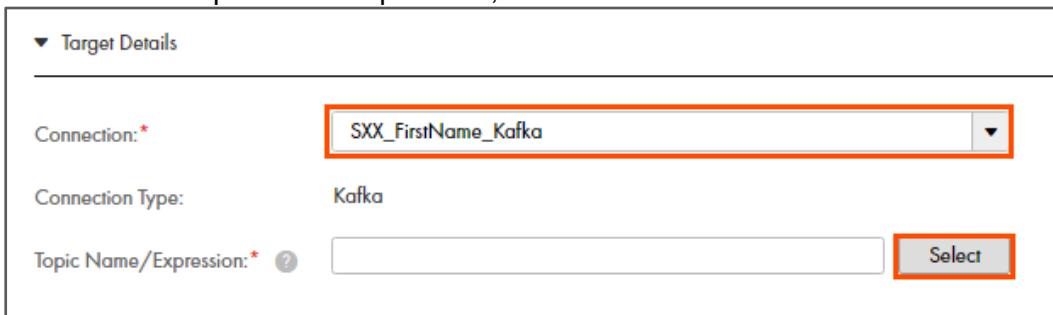


Connection:*	XX_FirstName_LocalCSVFiles
File:*	Employee_Streaming.csv
Initial Start Position:	Current Time
Tailing Mode:	Single File

25. Click **Next**.

26. In the Connection drop-down, select **SXX_FirstName_Kafka**.

27. To select the Topic Name/Expression, click **Select**.



Target Details

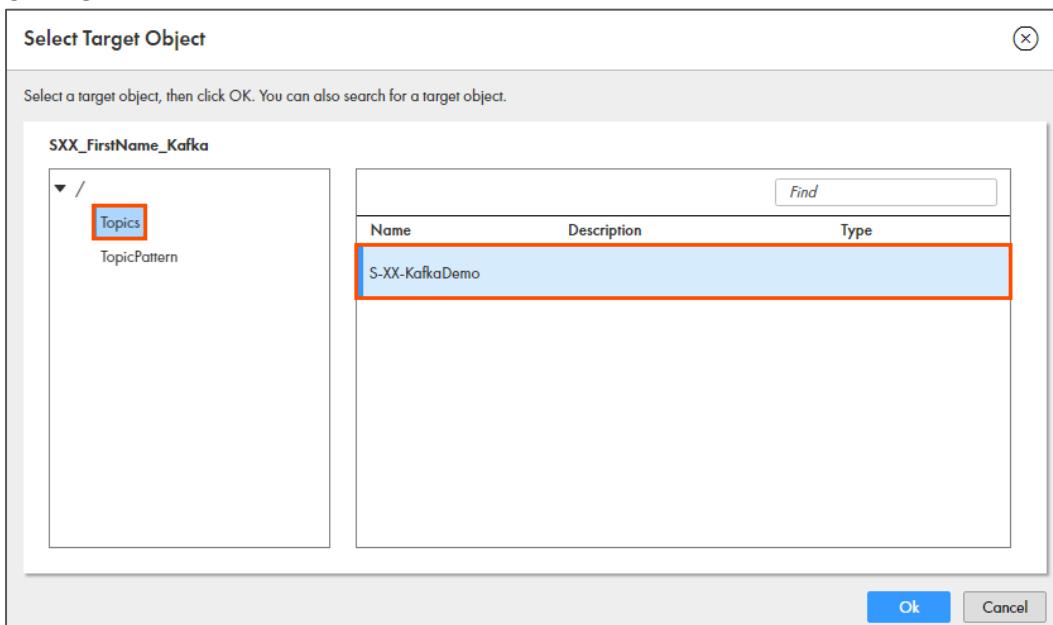
Connection: * SXX_FirstName_Kafka

Connection Type: Kafka

Topic Name/Expression: * Select

28. In the Select Target Object window, select **Topics**, and select **S-XX-KafkaDemo** topic.

29. Click **Ok**.



Select Target Object

Select a target object, then click OK. You can also search for a target object.

SXX_FirstName_Kafka

/ Topics TopicPattern

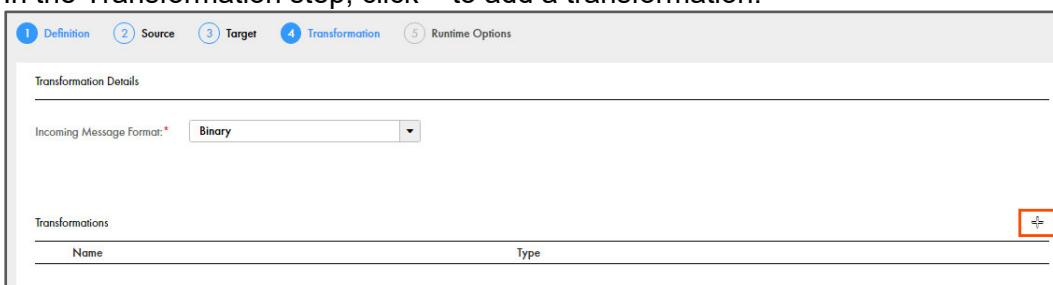
Name	Description	Type
S-XX-KafkaDemo		

Find

Ok Cancel

30. Click **Next**.

31. In the Transformation step, click **+** to add a transformation.



1 Definition 2 Source 3 Target 4 Transformation 5 Runtime Options

Transformation Details

Incoming Message Format: * Binary

Transformations

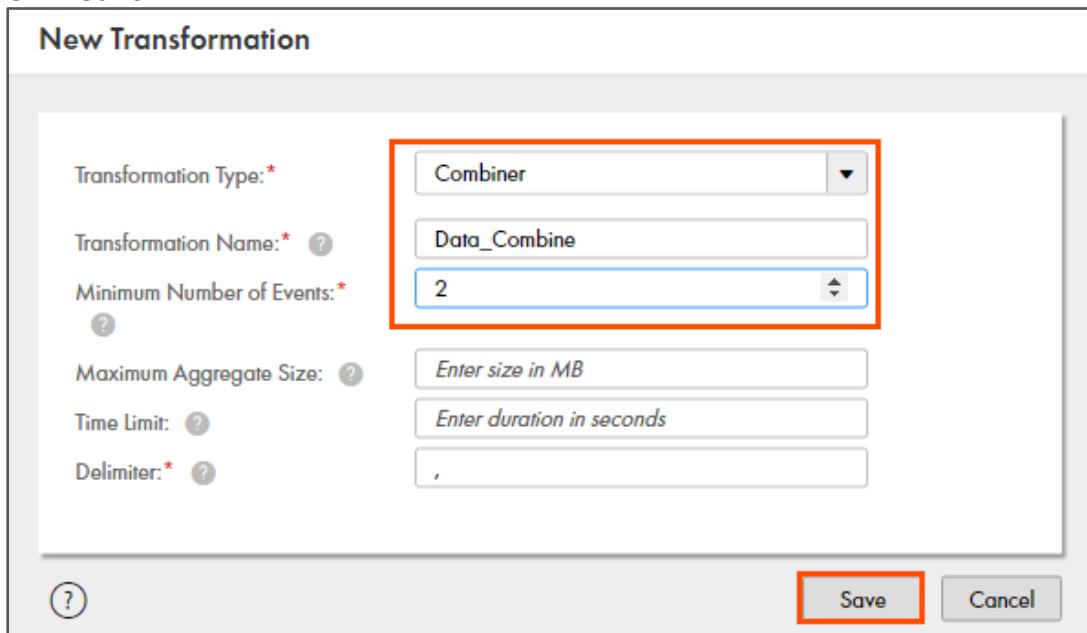
Name	Type
------	------

32. In the New Transformation window, select **Combiner**.

33. Enter the transformation name as **Data_Combine**.

34. Set the Minimum Number of Events as **2**.

35. Click **Save**.



New Transformation

Transformation Type: * Combiner

Transformation Name: * Data_Combine

Minimum Number of Events: * 2

Maximum Aggregate Size: Enter size in MB

Time Limit: Enter duration in seconds

Delimiter: ,

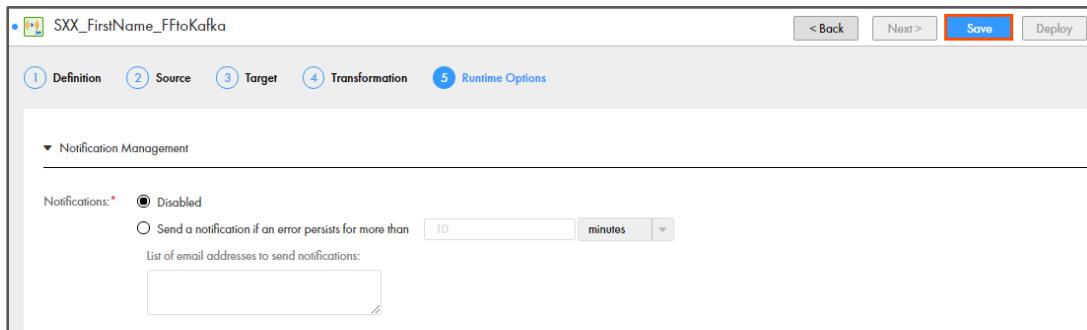
?

Save Cancel

36. Click **Next**.

37. In the Runtime Options step, you can set the email notification and other advanced settings for the task. For this lab, retain the default settings.

38. Click **Save**.



SXX_FirstName_FToKafka

< Back Next > Save Deploy

① Definition ② Source ③ Target ④ Transformation ⑤ Runtime Options

▼ Notification Management

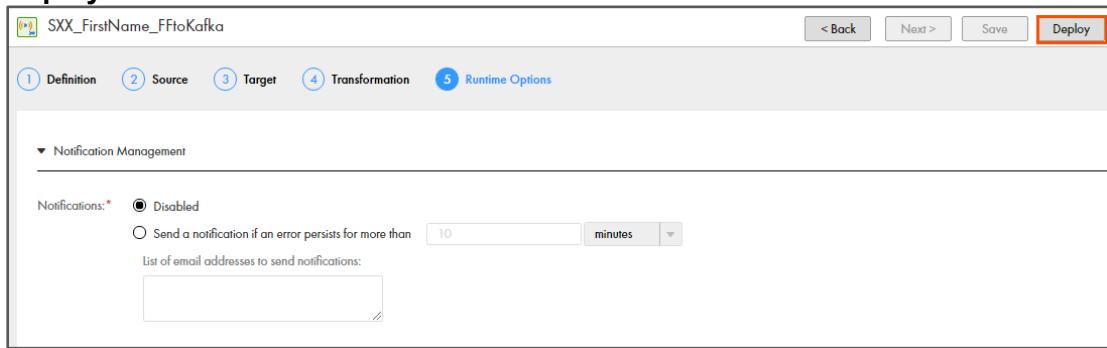
Notifications: * Disabled
 Send a notification if an error persists for more than 10 minutes

List of email addresses to send notifications:

?

Save Deploy

39. To run the task as a job in IICS, you must deploy it on the secure agent. For that, click **Deploy**.



SXX_FirstName_FToKafka

< Back Next > Save Deploy

① Definition ② Source ③ Target ④ Transformation ⑤ Runtime Options

▼ Notification Management

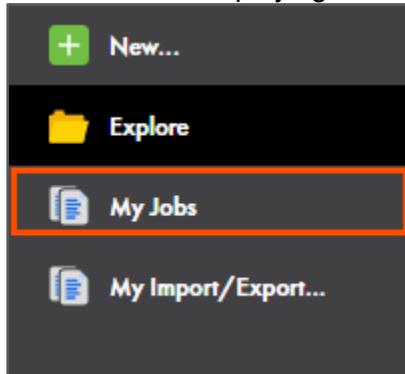
Notifications: * Disabled
 Send a notification if an error persists for more than 10 minutes

List of email addresses to send notifications:

?

Save Deploy

40. To monitor the deploying status of the task, click **My Jobs**.



Note: It takes 1-2 minutes for the task to deploy. To check the updated deploying status, refresh the browser. After the task is deployed successfully, its status changes to Up and Running.

Jobs (5)					Updated 1:35:39 AM	Find	Grid View
Instance Name	Task Type	Start Time	Duration	State			
SXX_FirstName_FrioKafka...	Streaming Ingestion Task	Jul 22, 2021, 12:58:54 AM	00:36:45	 Up and Running			

41. On your local machine, go to **C:\IICSLabFiles**.
 42. Open the **Employee_Streaming.csv** file.
 43. Copy the first two rows of data from the file and paste it at the end of the same file.

A	B	C	D	E
1	Emp ID	Full Name	Email	Department Phone
2	677509	Lois Walker	lois.walker@logistics.com	Marketing 303-572-8492
3	940761	Brenda Robinson	brenda.robinson@logistics.com	Finance 225-945-4954
4	428945	Joe Robinson	joe.robinson@logistics.com	Inventory 219-904-2161
5	408351	Diane Evans	diane.evans@logistics.com	Marketing 215-793-6791
6	193819	Benjamin Russell	benjamin.russell@logistics.com	Logistics 262-404-2252
7	499687	Patrick Bailey	patrick.bailey@logistics.com	Finance 319-812-6957
8	539712	Nancy Baker	nancy.baker@logistics.com	Inventory 229-336-5117
9	380086	Carol Murphy	carol.murphy@logistics.com	Marketing 216-336-0009
10	477616	Frances Young	frances.young@logistics.com	Logistics 210-819-9765
11	677509	Lois Walker	lois.walker@logistics.com	Marketing 303-572-8492
12	940761	Brenda Robinson	brenda.robinson@logistics.com	Finance 225-945-4954

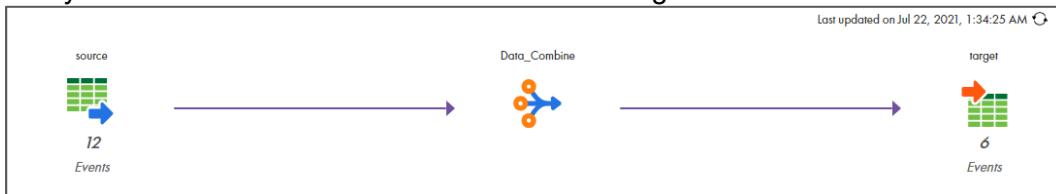
44. Save the file in the same location (**C:\IICSLabFiles**) and close the file.

Examine Results

45. Navigate to **My Jobs** page of Mass Ingestion service.
 46. To check the task status, click on the Streaming Ingestion task Instance Name.

Jobs (5)					Updated 1:35:39 AM	Find	Grid View
Instance Name	Task Type	Start Time	Duration	State			
 SXX_FirstName_FrioKafka...	Streaming Ingestion Task	Jul 22, 2021, 12:58:54 AM	00:36:45	 Up and Running			

47. Verify the number of events in the Source and Target.



Note: As we have used a Combiner transformation to combine 2 events as 1 event. The number of events in Target is half the number of events in the Source.

48. Close the window.

Undeploy and Export Task

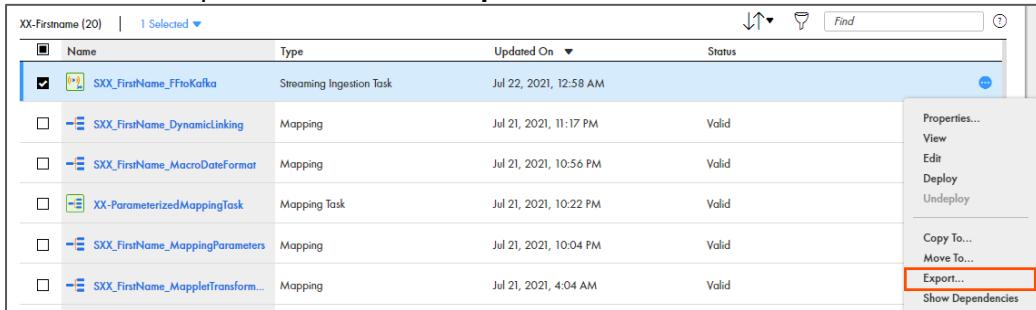
49. To undeploy the Streaming Ingestion task, from the My Jobs page of Mass Ingestion service, click the ellipsis icon.

50. Click **Undeploy**.

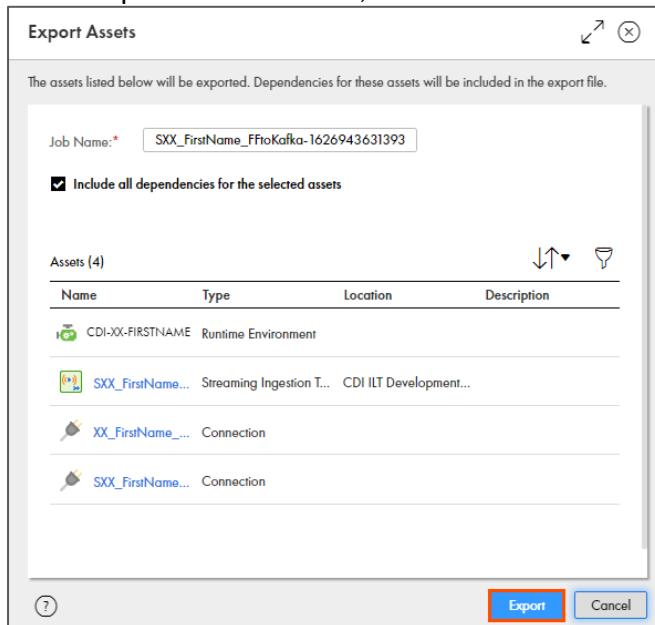


51. Navigate to **Explore** page of Mass Ingestion service, and from your working directory, select the **SXX_FirstName_FToKafka** asset.

52. Click on the ellipsis icon and click **Export**.

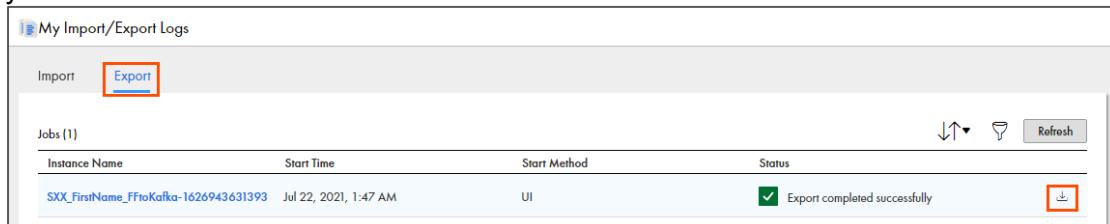


53. In the Export Asset window, retain the default settings and click **Export**.



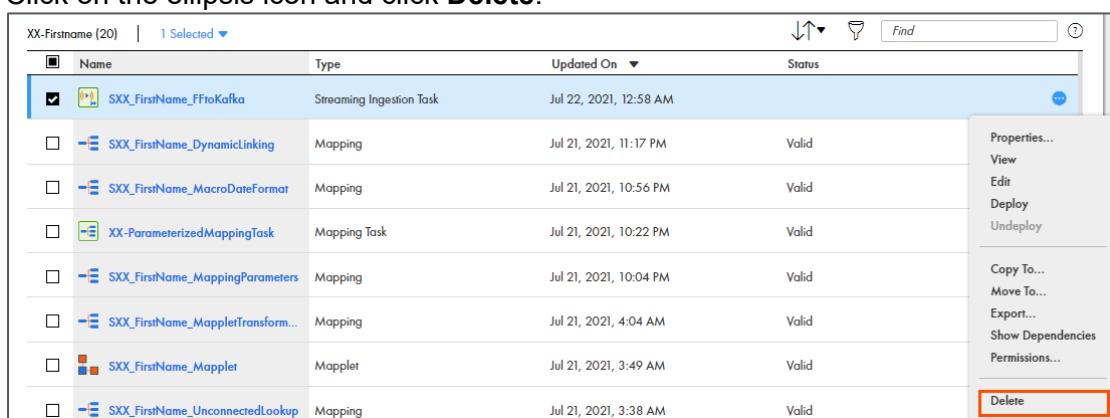
54. From the Navigation pane, select **My Import/Export Logs**.

55. From the **Export** tab, click on the download icon to download the asset and save it on your local machine.



56. Once the asset is exported, navigate back to your working directory and select the asset.

57. Click on the ellipsis icon and click **Delete**.



This concludes the lab.

Module 11: Taskflows

Lab 11-1: Passing in-out Parameters in a 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 pass a value to the in-out parameter in taskflow.

Objective:

- Create a taskflow
- Pass value to in-out parameter

Scenario:

Previously, John created a mapping with an in-out parameter for incremental data load. However, the order id specified in the in-out parameter needs to be changed frequently. As John is the only employee with access to the mapping, he creates a mapping task in IICS so that other employees can also pass a value to the in-out parameter.

In this lab, John will use the mapping task in a taskflow to pass a value to the in-out parameter in taskflow.

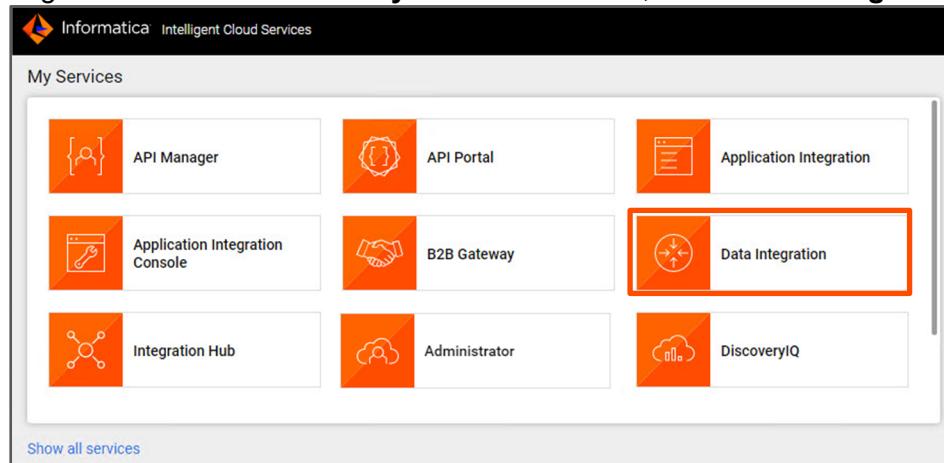
Duration:

10 minutes

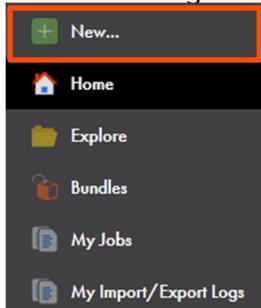
Tasks

Create Taskflow

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

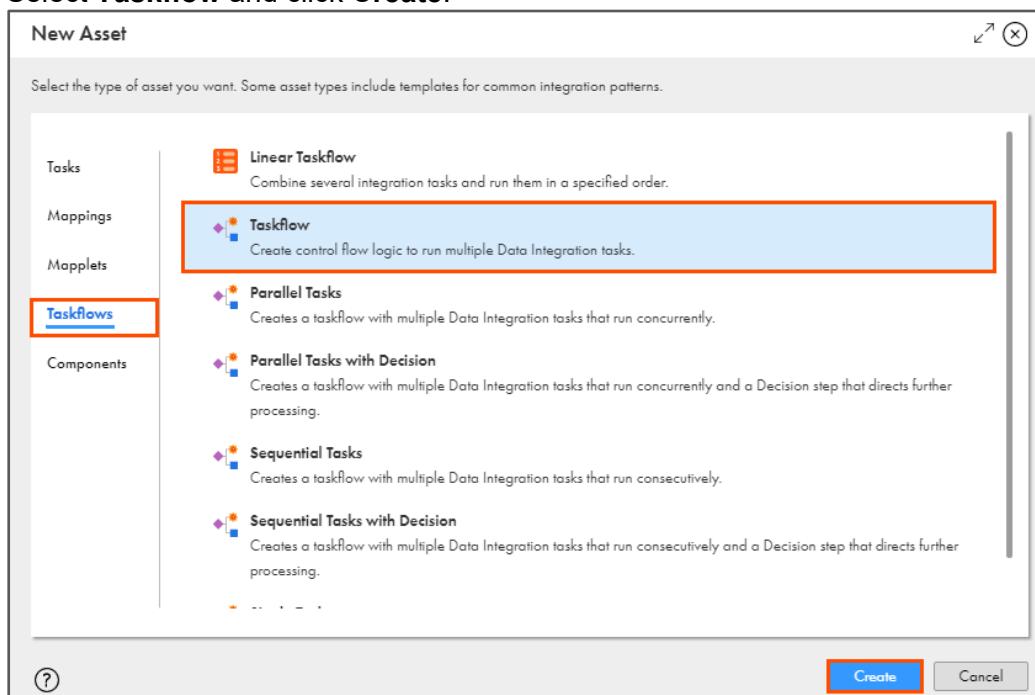


2. From the navigation pane, select **New**.



3. From the New Asset window, click the **Taskflows** tab.

4. Select **Taskflow** and click **Create**.

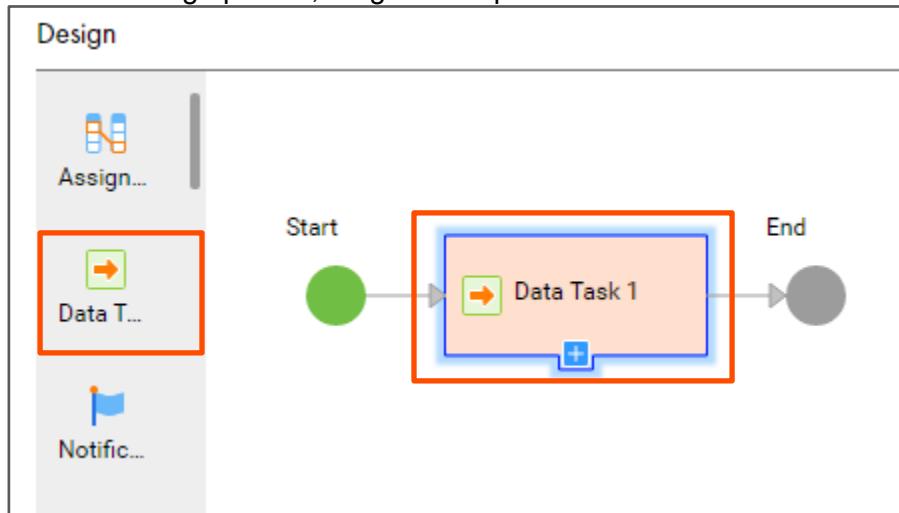


5. From the Taskflow properties pane, select **General**.

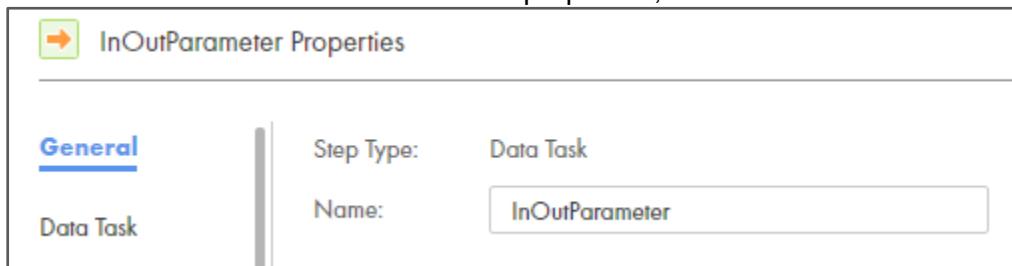
6. In the Name field, enter **SXX_InOut_Taskflow**.



7. From the Design palette, drag and drop **Data Task** on the link between Start and End.

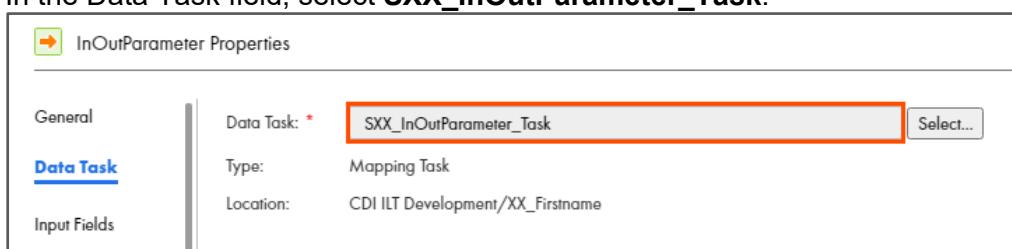


8. In the General section of the Data Task properties, enter the Name as **InOutParameter**.



9. From the properties pane, click **Data Task**.

10. In the Data Task field, select **SXX_InOutParameter_Task**.



11. From the properties pane, click **Input Fields**.

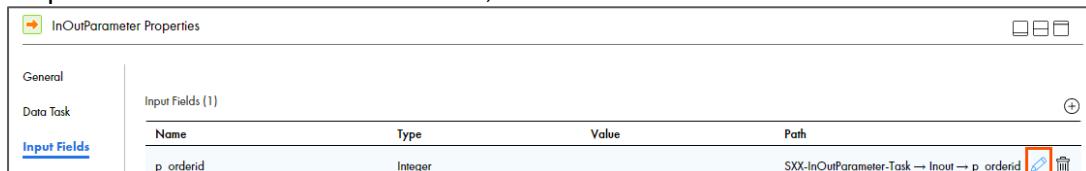
12. To add an Input Field, click .

13. From the InOut Parameters drop-down, select **p_orderid**.



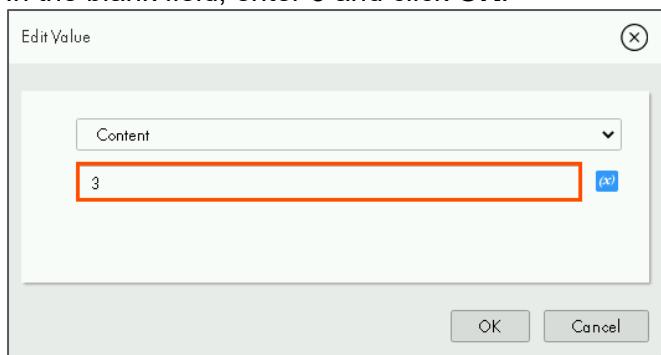


14. To provide value for IncludeMaxDate, select the field and click .

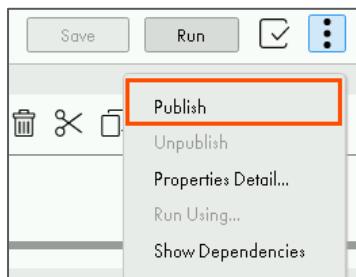


Name	Type	Value	Path
p_orderid	Integer		SXX-InOutParameter-Task --> Inout --> p_orderid

15. In the blank field, enter **3** and click **OK**.



16. Save the taskflow. Click on the ellipsis icon and click **Publish**.

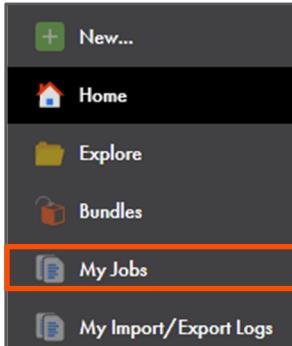


17. Run the taskflow.



Monitor Status

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



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

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

20. To view the status of the subtask, click **View Subtasks**.

Jobs (11 of 371) ✓ Up to date						Updated 5:21:26 AM PDT	↻	↑↓	🔍	Find
Asset Name: SXX_InOut_Taskflow ✓ X						Add Field				
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status					
SXX_InOut_Taskflow-604649456404901888	1 task	Jul 27, 2021, 5:21 AM	Jul 27, 2021, 5:21...	View Subtasks	✓ Success					

21. Verify that 4 rows are processed by the task and the task executed successfully.

Jobs (1) ✓ Up to date						Updated 5:22:18 AM PDT	↻	↑↓	🔍	Find
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status					
SXX_InOutParameter_Task-B		Jul 27, 2021, 5:21 AM	Jul 27, 2021, 5:21...	4	✓ Success					

22. To navigate back to My Jobs page, click on **Data Integration**.

Jobs (1) ✓ Up to date						Updated 5:22:18 AM PDT	↻	↑↓	🔍	Find
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status					
SXX_InOutParameter_Task-B		Jul 27, 2021, 5:21 AM	Jul 27, 2021, 5:21...	4	✓ Success					

23. Close the assets from the navigation pane.

24. On your local machine, go to **C:\IICSLabFiles**.

25. Verify that only the newly added row in the ORDERS table is updated in **InOutParameter.csv**.

A	B	C	D	E	F	G	H	I
ORDERID	QUANTITY	CUSTOMERID	SHIPMENTTRACKINGNO	ORDERSTATUS	PRODUCTDESCRIPTION	OUTLETID	PRODUCTID	P_ORDERID
4	5	158666 K90NJ899867234P009	In Progress	Wilson Evolution Game Basketball	7	127	4	
5	20	489424 876POIU672234712H5	Delivered	JBL Link 500	5	122	5	
6	12	639892 1K2347812GY78J90IO	Shipped	Redemption	1	130	6	
7	15	657984 1K2357812GY78J90IO	Processing	Mackbook Air	2	150	7	

This concludes the lab.

Module 11: Taskflows

Lab 11-2: Invoking a Taskflow through a File Listener

Overview:

A file listener listens to the files on a defined location. A Taskflow uses the file listener to monitor specific folders and receive notifications through a call-back API when a file event occurs.

In this lab, you will invoke a Taskflow through a File Listener.

Objective:

- Create a Synchronization Task
- Create a File Listener
- Create a Taskflow

Scenario:

Ruby asks John if he can help her in setting up an email notification every time the Salesforce Accounts object is modified. John suggests using the IICS File Listener to monitor the Accounts object for modification. He also proposes using a taskflow notification step to configure the email notification.

In this lab, John creates a Synchronization task with insert operation on the Salesforce Accounts objects. He then creates a file listener that listens to the target of the synchronization task for any new arrivals. If the rules for the file listener are met, IICS automatically runs a taskflow that sends an email notification to Ruby about the number of rows updated by the task.

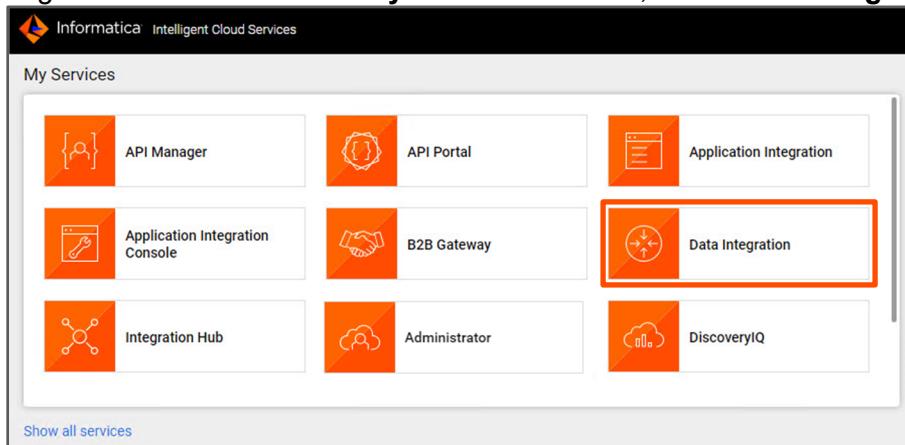
Duration:

20 minutes

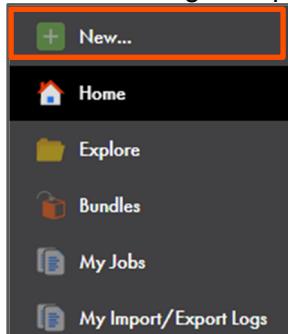
Tasks

Create Synchronization Task

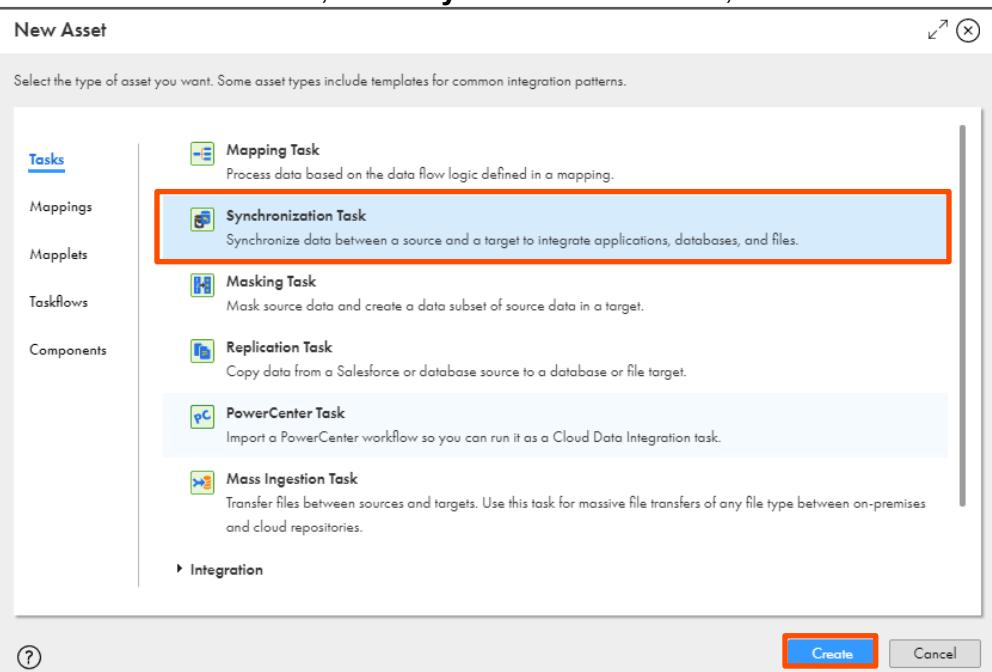
1. Log in to IICS and from the **My Services** window, select **Data Integration**.



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

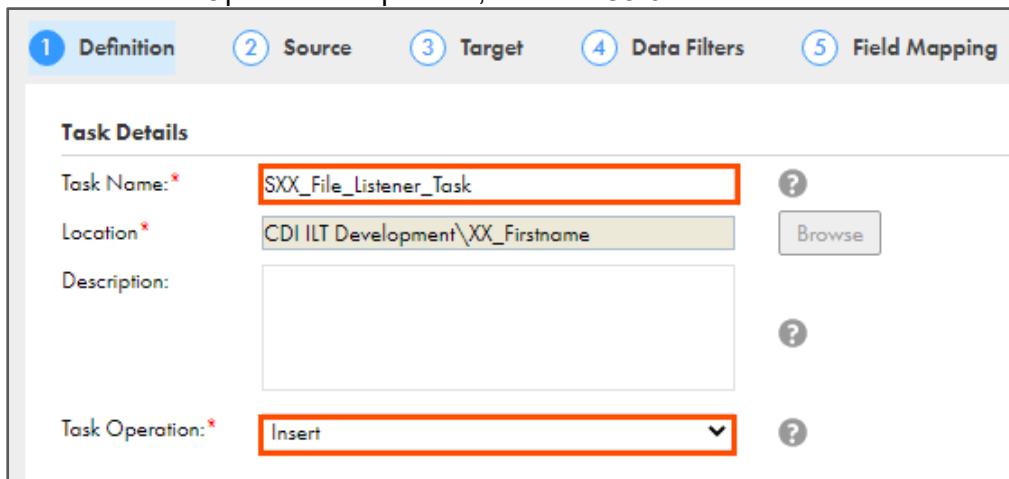


3. In the New Asset window, select **Synchronization Task**, and click **Create**.



4. In the Task Name field, enter **SXX_File_Listener_Task**.

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



Step	Description
1 Definition	Task Name: SXX_File_Listener_Task
2 Source	Location: CDI ILT Development\XX_Firstname
3 Target	Description: (empty)
4 Data Filters	(empty)
5 Field Mapping	(empty)

6. Click **Next**.

7. From the Connection drop-down, select **XX_FirstName_SFDCDeveloper**.
8. From the Source Object drop-down, select **Account**.

Source Details

Connection: **XX_FirstName_SFDCDeveloper (Salesforce)** View... New... Sample... ?

Source Type: **Single** Single Multiple Saved Query

Source Object: **Account** Select... ?

Display technical names instead of labels

9. Click **Next**.

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

Source Details

Connection: **XX_FirstName_SFDCDeveloper (Salesforce)** View... New... Sample... ?

Source Type: **Single** Single Multiple Saved Query

Source Object: **Account** Select... ?

Display technical names instead of labels
 Display source fields in alphabetical order
 Include archived and deleted rows in the source

Data Preview

Account Preview All Columns (Total columns: 64)

Account ID	Deleted	Master Record ID	Account Name	Account Type	...
0012w00000FcA1DAAV	false		NH D'needs		...
0012w00000FcA1EAAV	false		NH Mart		...
0012w00000FcA1FAAV	false		NH Groceries		...
0012w00000FcA1GAAV	false		NH Lifestyle		...
0012w00000FcA1HAAV	false		NH Digital		...

?

Save < Back **Next >** Finish Cancel

10. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
11. For the Target Object field, click **Create Target**.

Target Details

Connection: **XX_FirstName_LocalCSVFiles (Flat File)** View... New... Sample... ?

Target Object: **Account** Select... Formatting Options... **Create Target...** ?

Display target fields in alphabetical order

12. In the File Name field, add **FlatFile_** before Account.csv.

13. Click **OK**.

Connection: **XX_FirstName_LocalCSVFil es (Flat File)**

Source Object: **Account**

File Name: **FlatFile_Account.csv**

Source Fields:

- Billing Latitude
- Billing Longitude
- Billing Geocode Accuracy
- Shipping Street
- Shipping City
- Shipping State/Province
- Shipping Zip/Postal Code
- Shipping Country

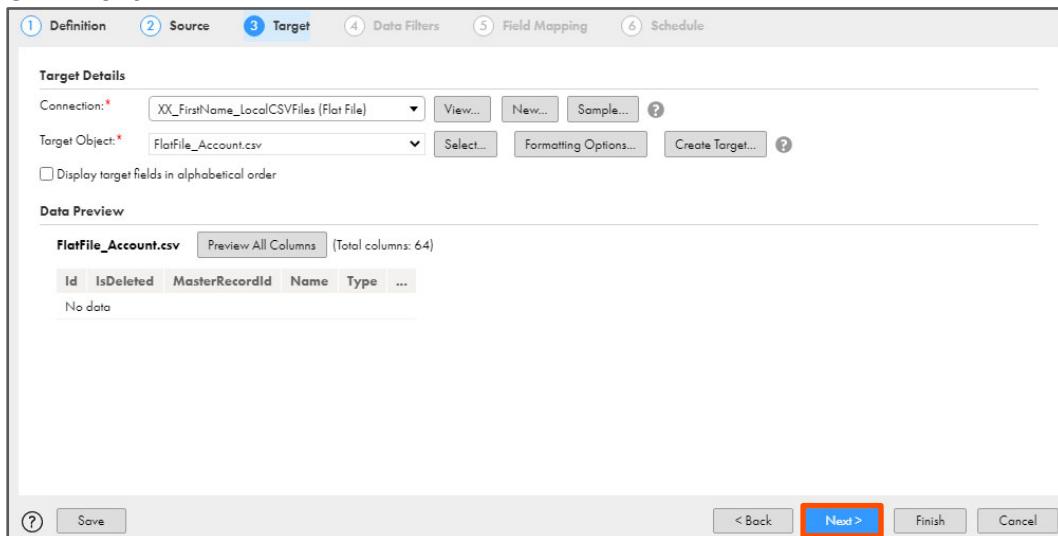
Target Fields:

- Shipping Zip/Postal Code
- Shipping Country
- Shipping Latitude
- Shipping Longitude
- Shipping Geocode Accuracy
- Account Phone
- Account Fax
- Account Number

?

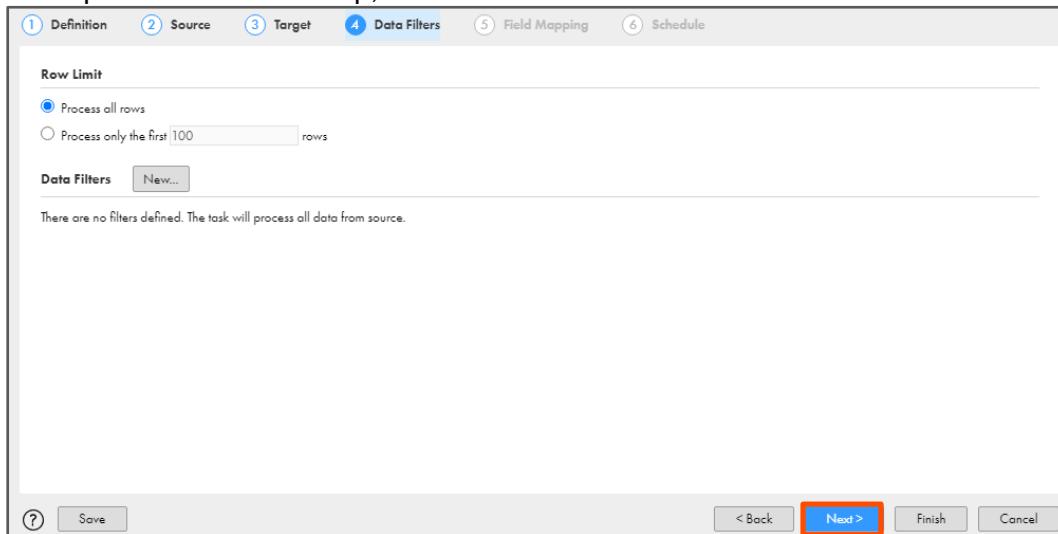
OK Cancel

14. Click Next.



The screenshot shows the 'Target Details' step of the Informatica Taskflow wizard. The 'Connection' dropdown is set to 'XX_FirstName_LocalCSVFiles (Flat File)'. The 'Target Object' dropdown is set to 'FlatFile_Account.csv'. The 'Data Preview' section shows the schema for 'FlatFile_Account.csv' with columns: Id, IsDeleted, MasterRecordId, Name, Type, and an ellipsis (...). A note says 'No data'.

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

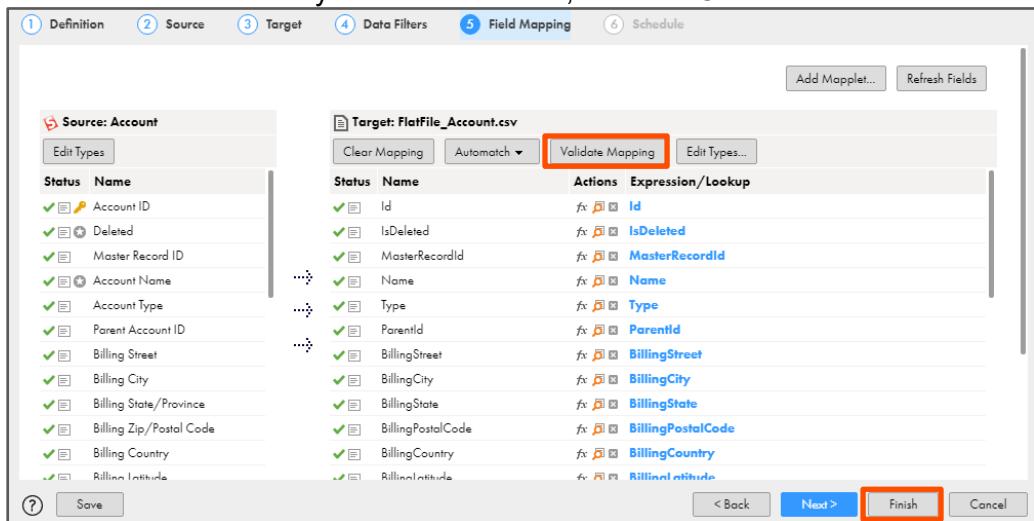


The screenshot shows the 'Data Filters' step of the Informatica Taskflow wizard. The 'Row Limit' section has 'Process all rows' selected. A note below says 'There are no filters defined. The task will process all data from source.'

16. Verify that all the source fields are mapped with target fields.

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

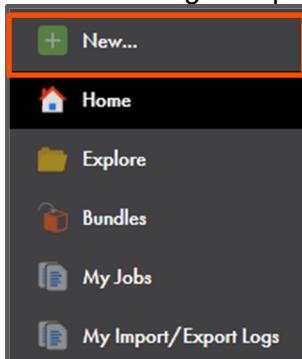
18. To save and close the synchronization task, click **Finish**.



Create File Listener

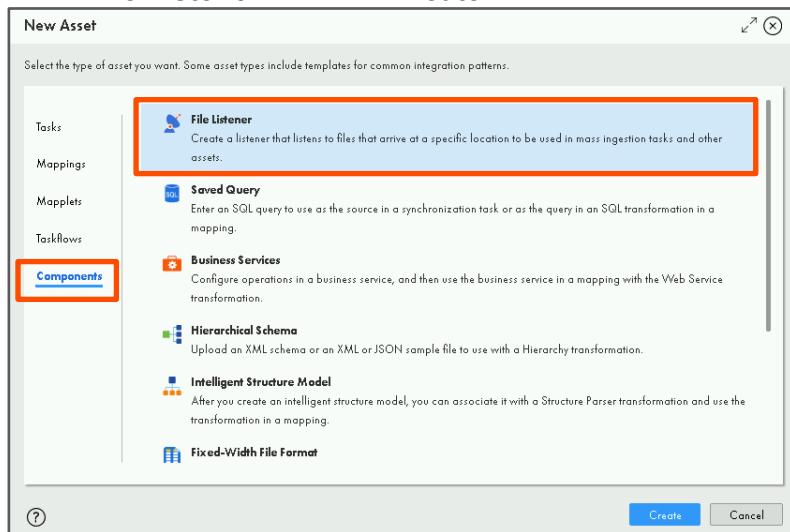
The file listener will listen to the secure agent flat-file directory for any file with .csv extension.

19. From the navigation pane, select **New**.



20. From the New Asset window, click the **Components** tab.

21. Select **File Listener** and click **Create**.



22. In the File Listener Name field, enter **SXX_File_Listener**.



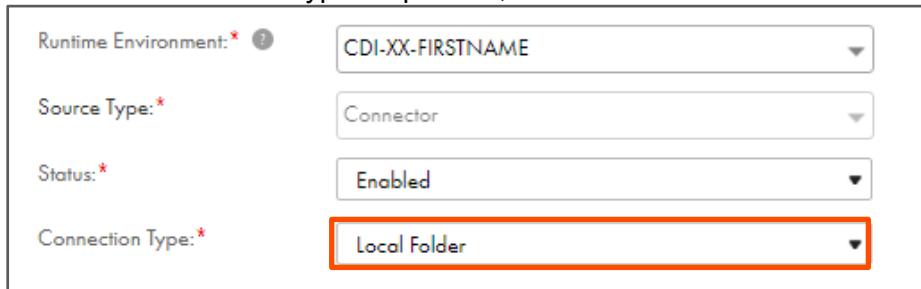
The screenshot shows the 'File Listener Details' configuration screen. It has two fields: 'File Listener Name:' with a red asterisk containing the value 'SXX_File_Listener', and 'Location:' with a red asterisk containing the value 'CDI ILT Development\XX_Firstname' and a 'Browse' button next to it.

23. From the Runtime Environment drop-down, select your secure agent group.

24. From the Source Type drop-down, select **Connector**.

25. Retain the Status as **Enabled**.

26. From the Connection Type drop-down, select **Local Folder**.



The screenshot shows a configuration screen with four dropdown fields: 'Runtime Environment:' set to 'CDI-XX-FIRSTNAME', 'Source Type:' set to 'Connector', 'Status:' set to 'Enabled', and 'Connection Type:' set to 'Local Folder'. The 'Connection Type:' field is highlighted with a red box.

27. In the Listener Rules section, enter the details as shown in the table below:

Folder Path	Pattern Type	File Pattern
C:\IICSLabFiles	Wildcard	*.csv

Note:

28. In the “Notify when file” field, select the **Arrives** and **Is updated** checkboxes.

Listener Rules*

Folder Path	Pattern Type	File Pattern
C:\IICSLabFiles	Wildcard	*.csv

Notify when file:
 Arrives Is updated Is deleted

29. To stop listening to the configured folder when the rules are met, select **Stop checking if rules are met**.

Notify when file:
 Arrives Is updated Is deleted

Stop checking if rules are met

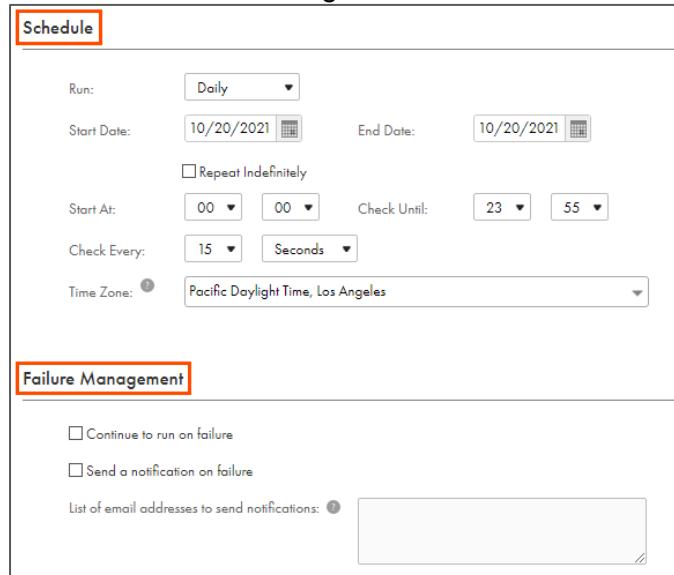
Check file stability Stability Check Interval:

Notify if files exist on the first run
 Exclude events when the file listener is not running

Note:

- a. The Stop checking if rules are met option, stops the File Listener to stop listening to the folder when the listener rules are met. If this option is not selected, the file listener notifies the registered application on events and continues to listen for subsequent events.

- b. You can use the **Schedule** to configure the schedule by which the file listener runs. Under **Failure Management**, you can configure File Listener to retry and run in case of a failure, such as a temporary network disruption, or receive a notification if the file listener fails on the configure email address.



The screenshot shows two sections of a configuration interface:

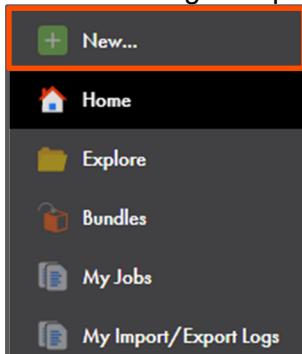
- Schedule:** Set to "Daily". Start Date: 10/20/2021. End Date: 10/20/2021. Repeat indefinitely: unchecked. Start At: 00:00. Check Until: 23:55. Check Every: 15 Seconds. Time Zone: Pacific Daylight Time, Los Angeles.
- Failure Management:** Continue to run on failure: unchecked. Send a notification on failure: unchecked. List of email addresses to send notifications: empty input field.

30. Save the file listener.

Create Taskflow

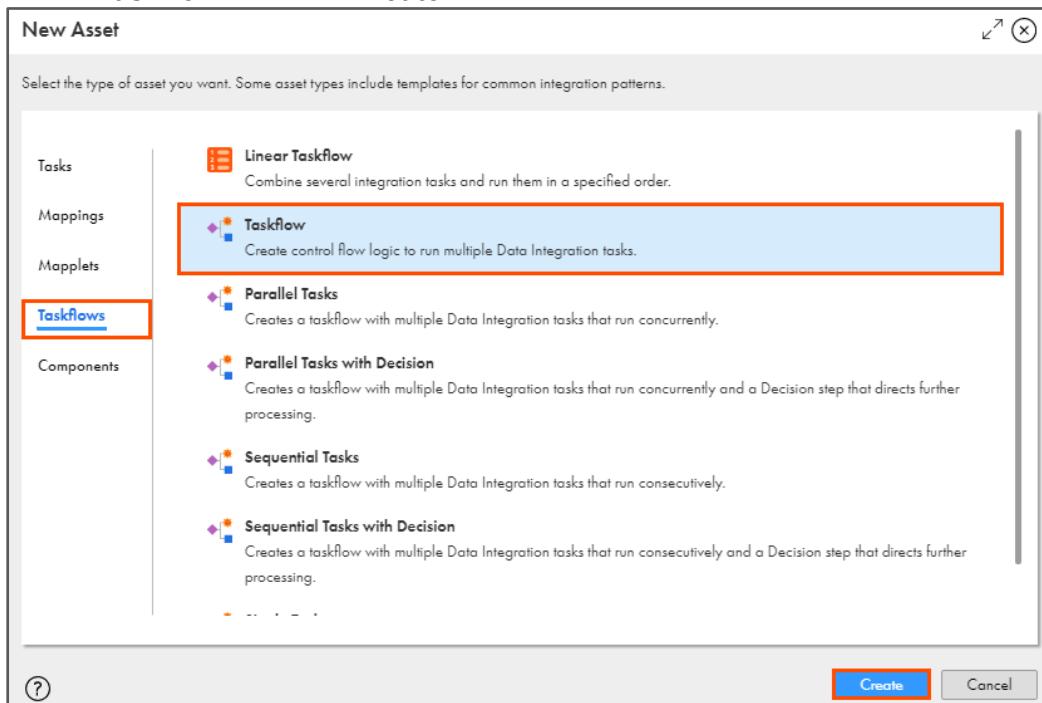
Once the file listener is invoked with the file arrival event. To invoke the file listener, you will run the XX_NormalizerAggregator_Task created earlier. This task updates the existing csv file which triggers the file listener. The file listener, then runs the taskflow, which will execute the synchronization task called using the Data Task step of taskflow. The taskflow will also send an email notification on the mentioned email address with the details of success rows executed by the task.

31. From the navigation pane, select **New**.



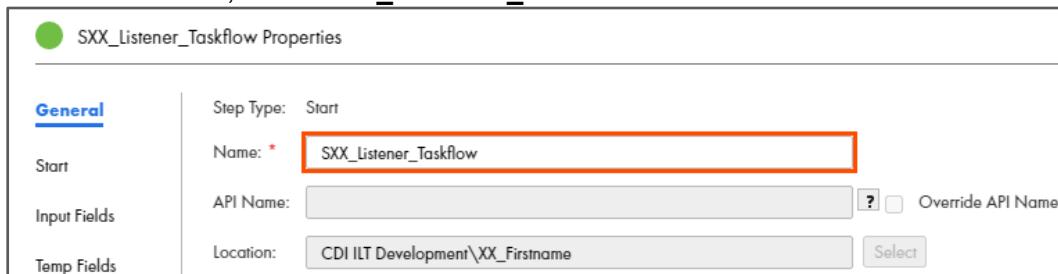
32. From the New Asset window, click the **Taskflows** tab.

33. Select **Taskflow** and click **Create**.



34. From the Taskflow properties pane, select **General**.

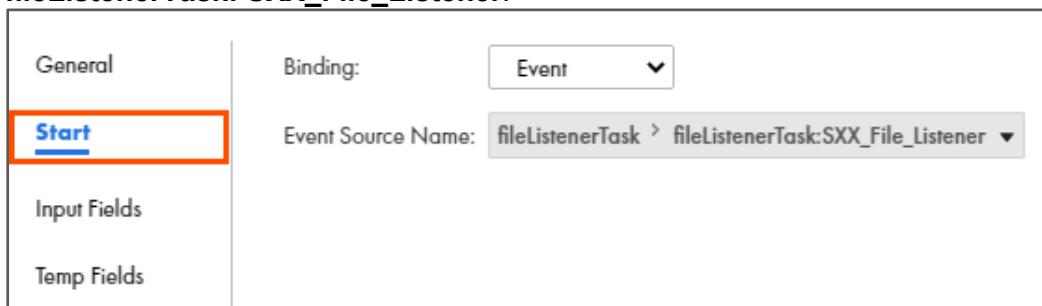
35. In the Name field, enter **SXX_Listener_Taskflow**.



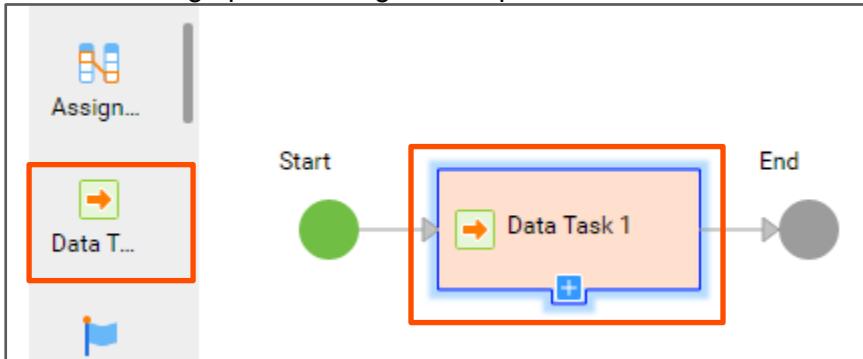
36. From the Taskflow properties pane, select **Start**.

37. From the Binding drop-down, select **Event**.

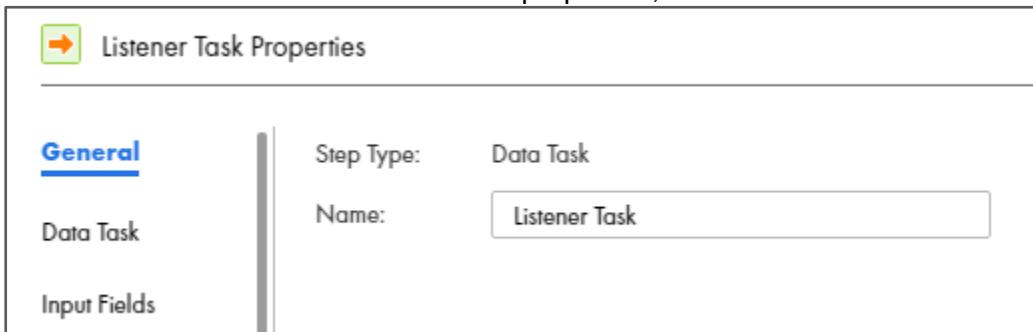
38. From the Event Source Name field drop-down, select **fileListenerTask > fileListenerTask: SXX_File_Listener**.



39. From the Design palette, drag and drop a **Data Task** on the link between Start and End.



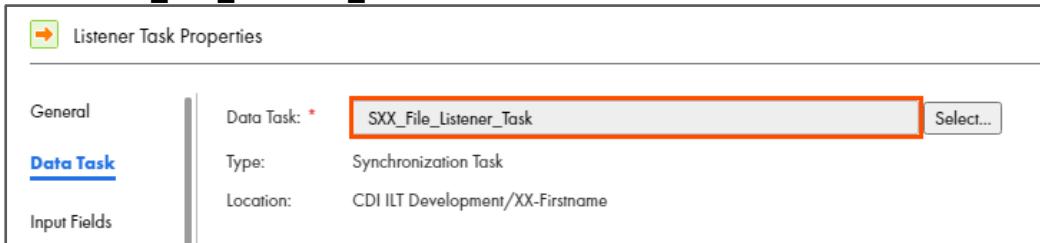
40. In the General section of the Data Task properties, enter Name as **Listener Task**.



Listener Task Properties	
General	Step Type: Data Task
Data Task	Name: <input type="text" value="Listener Task"/>
Input Fields	

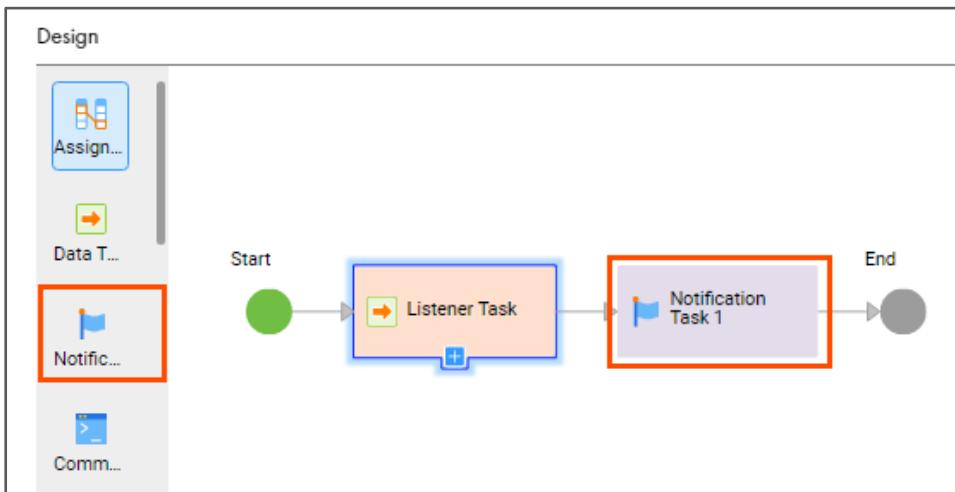
41. From the properties pane, click **Data Task**.

42. Select **SXX_File_Listener_Task** as Data Task.

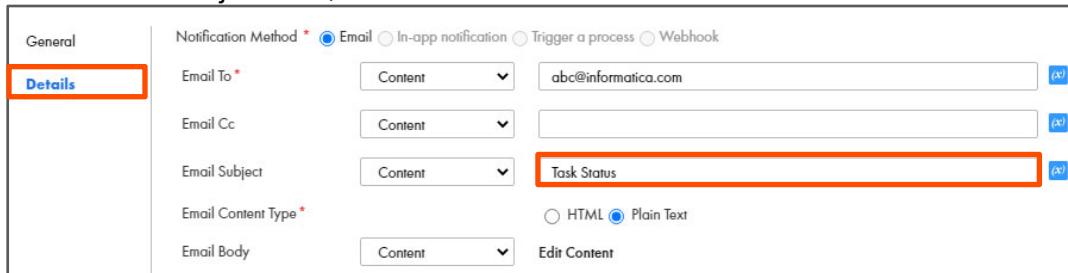


Listener Task Properties	
General	Data Task: * <input type="text" value="SXX_File_Listener_Task"/> <input type="button" value="Select..."/>
Data Task	Type: Synchronization Task
Input Fields	Location: CDI ILT Development/XX-Firstname

43. From the Design palette, drag and drop a **Notification** step on the link between Listener Task and End.

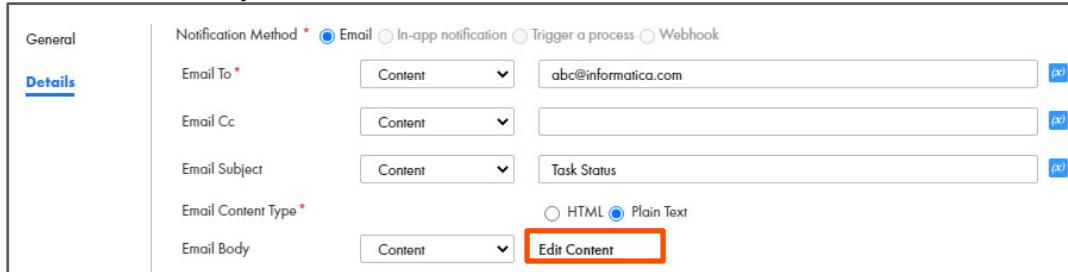


44. From the properties pane, click **Details**.
 45. In the Email To field, enter your email address.
 46. In the Email Subject field, enter **Task Status**.



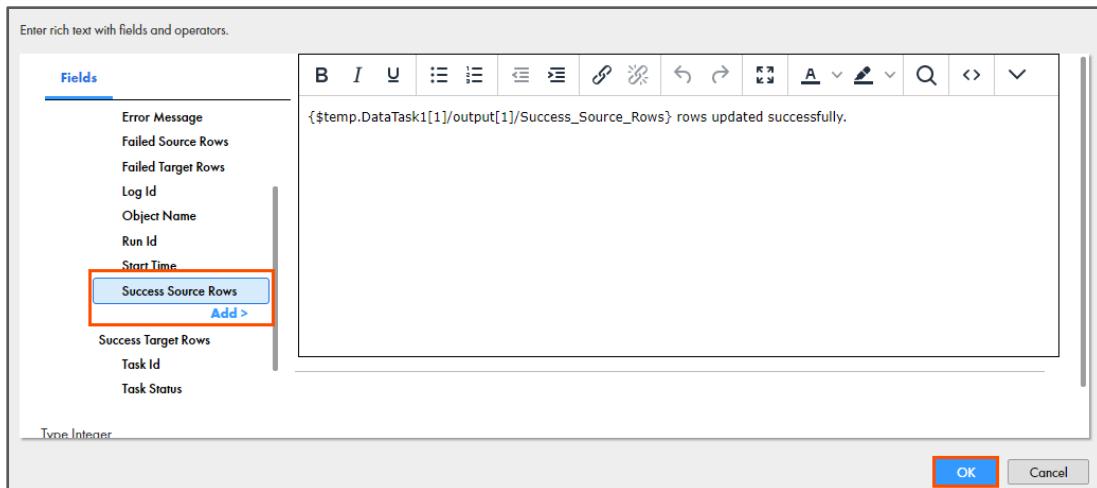
General	Notification Method *	<input checked="" type="radio"/> Email <input type="radio"/> In-app notification <input type="radio"/> Trigger a process <input type="radio"/> Webhook
Details	Email To *	Content abc@informatica.com
	Email Cc	Content
	Email Subject	Content Task Status
	Email Content Type *	<input type="radio"/> HTML <input checked="" type="radio"/> Plain Text
	Email Body	Content Edit Content

47. For the Email Body field, click **Edit Content**.



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 abc@informatica.com
	Email Cc	Content
	Email Subject	Content Task Status
	Email Content Type *	<input type="radio"/> HTML <input checked="" type="radio"/> Plain Text
	Email Body	Content Edit Content

48. From the Fields section, expand **Listener Task > Output Parameters**.
 49. Select **Success Source Rows** and click **Add**.
 50. Press space on your keyboard and enter “rows updated successfully.”.
 51. Click **OK**.



Enter rich text with fields and operators.

Fields

- Error Message
- Failed Source Rows
- Failed Target Rows
- Log Id
- Object Name
- Run Id
- Start Time
- Success Source Rows**
- Add >
- Success Target Rows
- Task Id
- Task Status

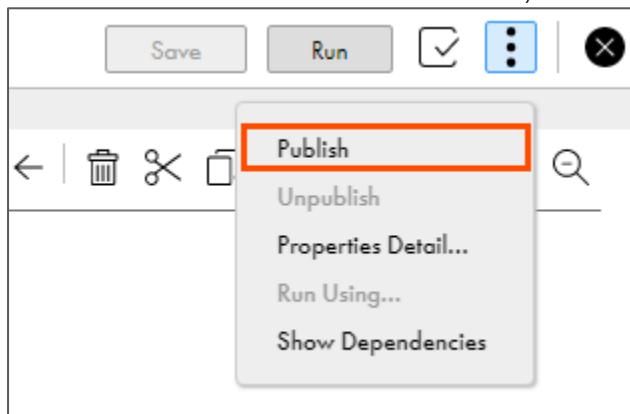
Type: Integer

OK Cancel

`\${tempDataTask1[1]/output[1]/Success_Source_Rows} rows updated successfully.

52. Save the taskflow.

53. To bind the file listener with the taskflow, click  and select **Publish**.

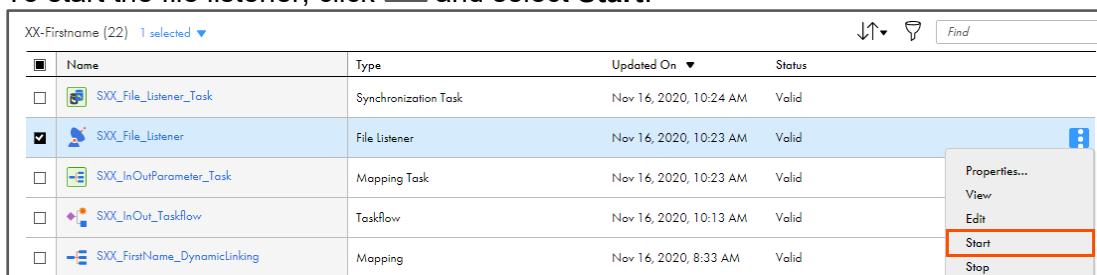


Start the File Listener

54. To start the file listener, from the navigation pane, click **Explore**.

55. Navigate to your working directory and select **SXX_File_Listener**.

56. To start the file listener, click  and select **Start**.



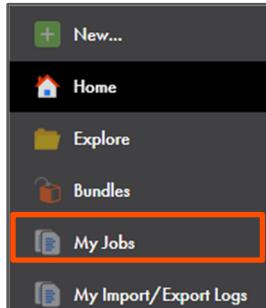
57. To run the synchronization task, from the list, select **XX_NormalizerAggregator_Task**.

58. Click  and select **Run**.



Monitor status

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



60. When the XX_NormalizerAggregator_Task completes, the status changes to **Success**.

61. The file listener automatically starts the taskflow (SXX_Listener_Taskflow).

Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_Listener_Taskflow-635398944396251136	1 task	Oct 20, 2021, 1:48 AM	Oct 20, 2021, 1:48 ...	View Subtasks	Success
XX_NormalizerAggregator_Task-7		Oct 20, 2021, 1:48 AM	Oct 20, 2021, 1:48 ...	396	Success

62. To verify that the taskflow is started by file listener, click on **SXX_Listener_Taskflow**.

Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_Listener_Taskflow-635398944396251136	1 task	Oct 20, 2021, 1:48 AM	Oct 20, 2021, 1:48 ...	View Subtasks	Success
XX_NormalizerAggregator_Task-7		Oct 20, 2021, 1:48 AM	Oct 20, 2021, 1:48 ...	396	Success

63. From the XX_Listener_Taskflow (Start) Properties section, select **Input Fields**.

64. Verify that the input for taskflow is **SXX_File_Listener**.

SXX_Listener_Taskflow(Start) Properties

Current Run	Input Fields						
Input Fields	<table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>+ INTERNALB2BFILELISTENER1565084895</td> <td>+ updatedFiles path : C:\IICSLabFiles\Aggregated.csv name : Aggregated.csv size : 1041 lastModified : 1634719687922</td> </tr> <tr> <td>SXX_File_Listener</td> <td>+ updatedFiles path : C:\IICSLabFiles\Normalizer.csv name : Normalizer.csv size : 11489 lastModified : 1634719687917</td> </tr> </tbody> </table>	Name	Value	+ INTERNALB2BFILELISTENER1565084895	+ updatedFiles path : C:\IICSLabFiles\Aggregated.csv name : Aggregated.csv size : 1041 lastModified : 1634719687922	SXX_File_Listener	+ updatedFiles path : C:\IICSLabFiles\Normalizer.csv name : Normalizer.csv size : 11489 lastModified : 1634719687917
Name	Value						
+ INTERNALB2BFILELISTENER1565084895	+ updatedFiles path : C:\IICSLabFiles\Aggregated.csv name : Aggregated.csv size : 1041 lastModified : 1634719687922						
SXX_File_Listener	+ updatedFiles path : C:\IICSLabFiles\Normalizer.csv name : Normalizer.csv size : 11489 lastModified : 1634719687917						

65. Verify that following email notification is received on the mentioned email address after task completion.

Task Status

① Label: Exchange online 3 Years delete (3 years) Expires: Sat 19-10-2024 14:18

A admin@informaticacloud.com
Wed 20-10-2021 14:18
To:
<p>19 rows updated successfully.</p>

Are the suggestions above helpful? Yes No

Note: The number of rows updated can change according to number to records in your Salesforce Account object.

66. Close the assets from the navigation pane.
-

This concludes the lab.

Module 12: Hierarchical Connectivity

Lab 12-1: Creating a Mapping Using a REST V2 Connector

Overview:

REST is a web standards-based architecture and 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 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

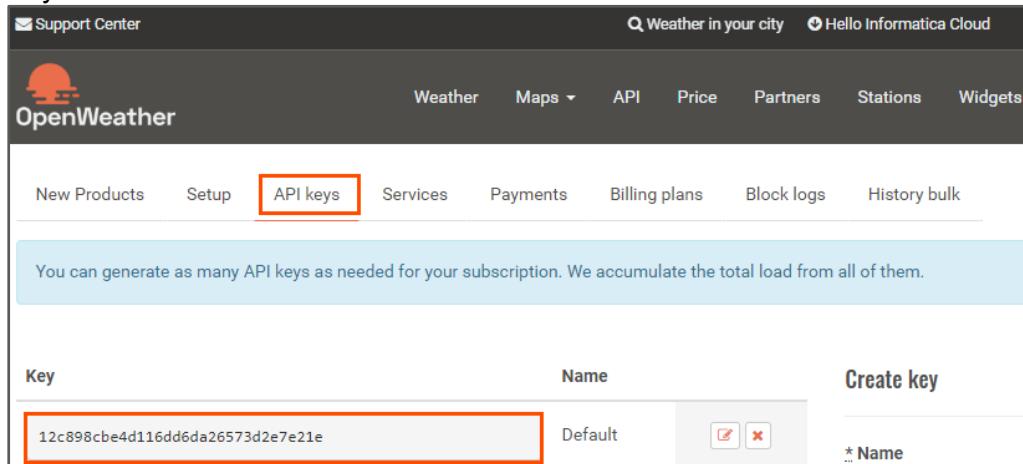
Copy Source File

1. Copy the **Swagger_api_openweathermap_org_072248.json** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).
2. Open the source file and observe its content.
Note: You must close the files before running the task to avoid job failure.

Sign up to Access OpenWeatherAPI

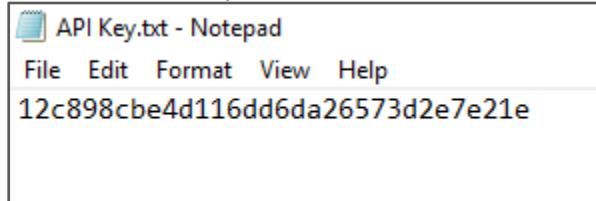
3. Open a web browser and enter the following URL in a new tab:
https://home.openweathermap.org/users/sign_up
Note: You can bookmark this link for future use.
4. Create a new account in OpenWeather using the link provided.
Note: After you create an account, you can access your unique API key.

5. To access your unique API Key, select **API Keys** tab, and copy the API key from the Key field.



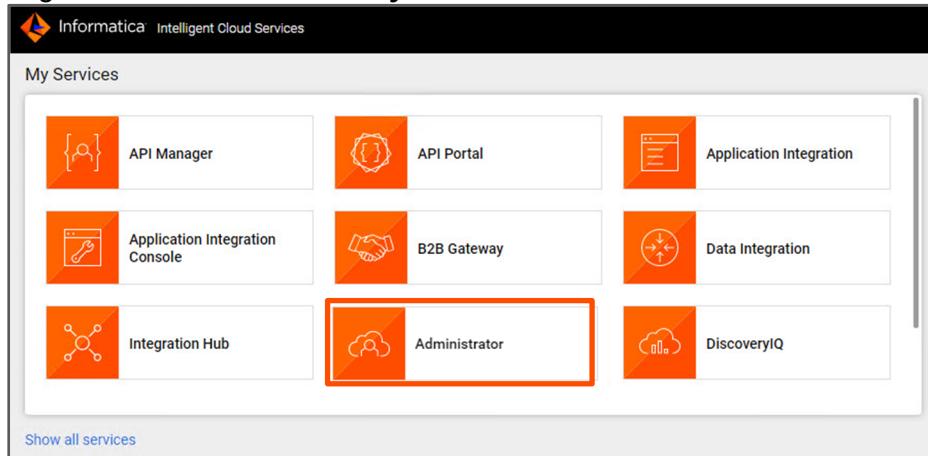
The screenshot shows the OpenWeather API Keys page. At the top, there are tabs for New Products, Setup, API keys (which is highlighted with a red box), Services, Payments, Billing plans, Block logs, and History bulk. Below the tabs, a message says "You can generate as many API keys as needed for your subscription. We accumulate the total load from all of them." A table lists an API key with the value "12c898cbe4d116dd6da26573d2e7e21e" in the "Key" column. The "Name" column shows "Default". There are checkboxes for "Edit" and "Delete" and a "Create key" button. A note at the bottom says "* Name".

6. Paste the API key in a notepad and save the notepad file on your system.



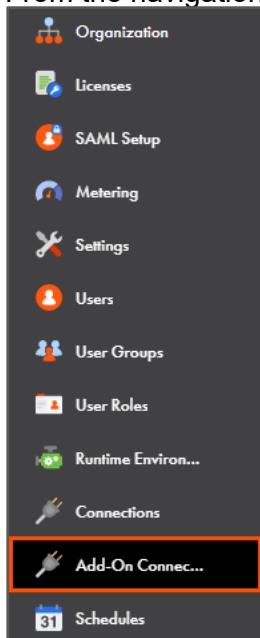
Enable REST V2 Connector

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

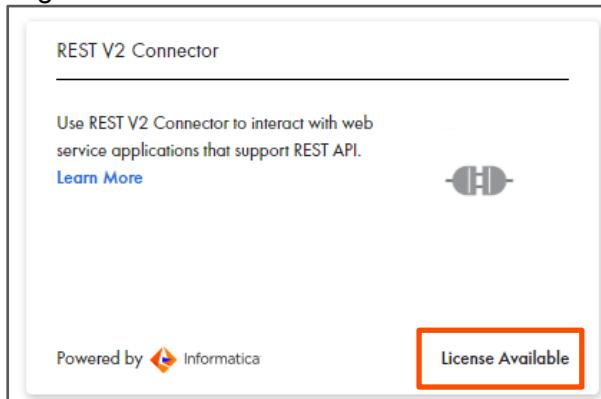


The screenshot shows the "My Services" window in IICS. It displays various services in a grid: API Manager, API Portal, Application Integration, Application Integration Console, B2B Gateway, Data Integration, Integration Hub, Administrator (which is highlighted with a red box), and DiscoveryIQ. At the bottom left, there is a link "Show all services".

8. From the navigation pane, select **Add-On Connectors**.



9. Locate the **REST V2 Connector** and check if 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.

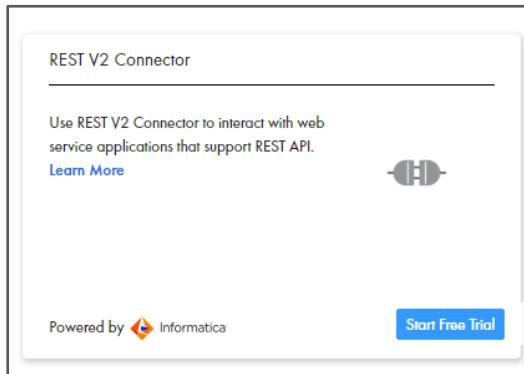
[Learn More](#)

Powered by  Informatica

License Available

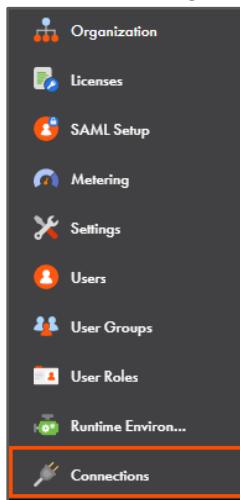
Note: If the connector is already available for the org, you can skip the steps to enable the connector.

10. If the REST V2 Connector is not available, click **Start Free Trial** to enable the connector.



Create REST Connection

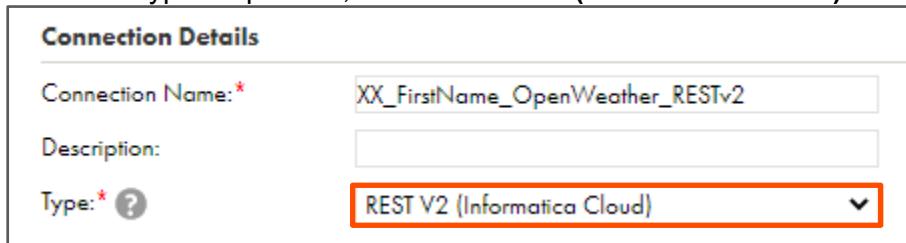
11. From the navigation pane, select **Connections**.



12. Create a new connection.

13. In the Name field, enter **XX_FirstName_OpenWeather_RESTv2**.

14. From the Type drop-down, select **REST V2 (Informatica Cloud)**.



Connection Details	
Connection Name: [*]	XX_FirstName_OpenWeather_RESTv2
Description:	
Type: [*]	REST V2 (Informatica Cloud)

15. From the **Runtime Environment** drop-down, select your secure agent group.

16. From the Authentication drop-down, select **Standard**.



REST V2 Connection Properties

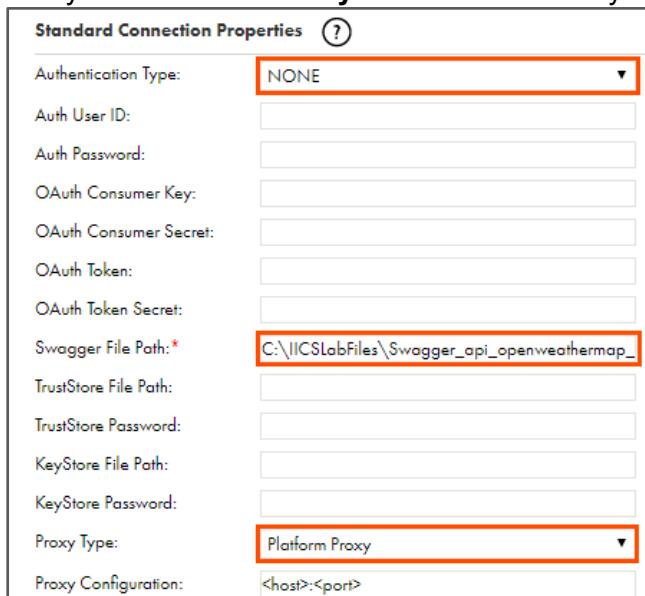
Runtime Environment: CDI-XX-FIRSTNAME

Authentication: Standard

17. Verify that the Authentication Type is set to **NONE**.

18. In the Swagger File Path field, enter the following path of the json file:
C:\IICSLabFiles\Swagger_api_openweathermap_org_072248.json

19. Verify that **Platform Proxy** is selected as Proxy Type.



Standard Connection Properties

Authentication Type: NONE

Auth User ID:

Auth Password:

OAuth Consumer Key:

OAuth Consumer Secret:

OAuth Token:

OAuth Token Secret:

Swagger File Path: C:\IICSLabFiles\Swagger_api_openweathermap_

TrustStore File Path:

TrustStore Password:

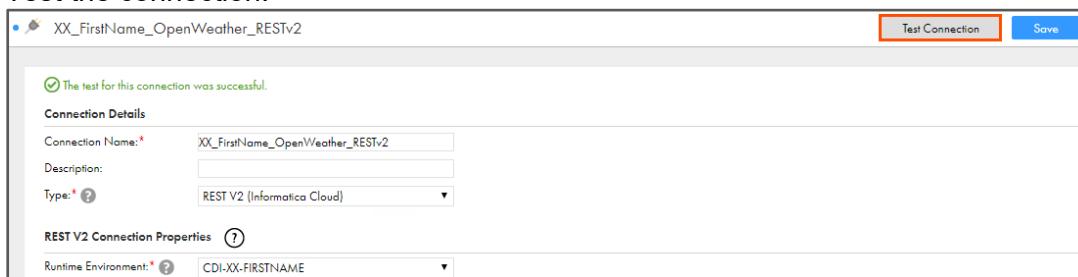
KeyStore File Path:

KeyStore Password:

Proxy Type: Platform Proxy

Proxy Configuration: <host>:<port>

20. Test the connection.



XX_FirstName_OpenWeather_RESTv2

The test for this connection was successful.

Connection Details

Connection Name: XX_FirstName_OpenWeather_RESTv2

Description:

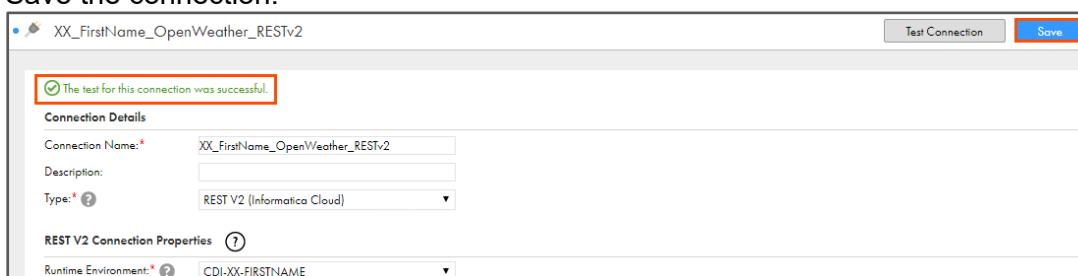
Type: REST V2 (Informatica Cloud)

REST V2 Connection Properties

Runtime Environment: CDI-XX-FIRSTNAME

Test Connection Save

21. Save the connection.



XX_FirstName_OpenWeather_RESTv2

The test for this connection was successful.

Connection Details

Connection Name: XX_FirstName_OpenWeather_RESTv2

Description:

Type: REST V2 (Informatica Cloud)

REST V2 Connection Properties

Runtime Environment: CDI-XX-FIRSTNAME

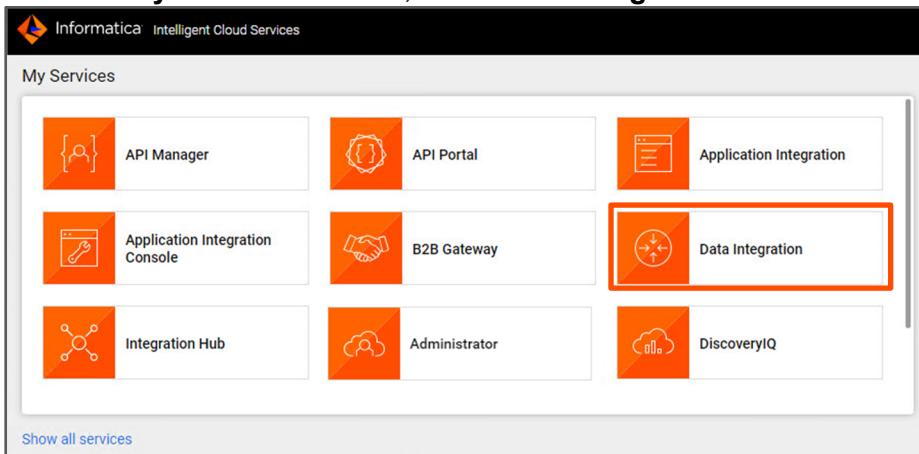
Test Connection Save

Create Mapping

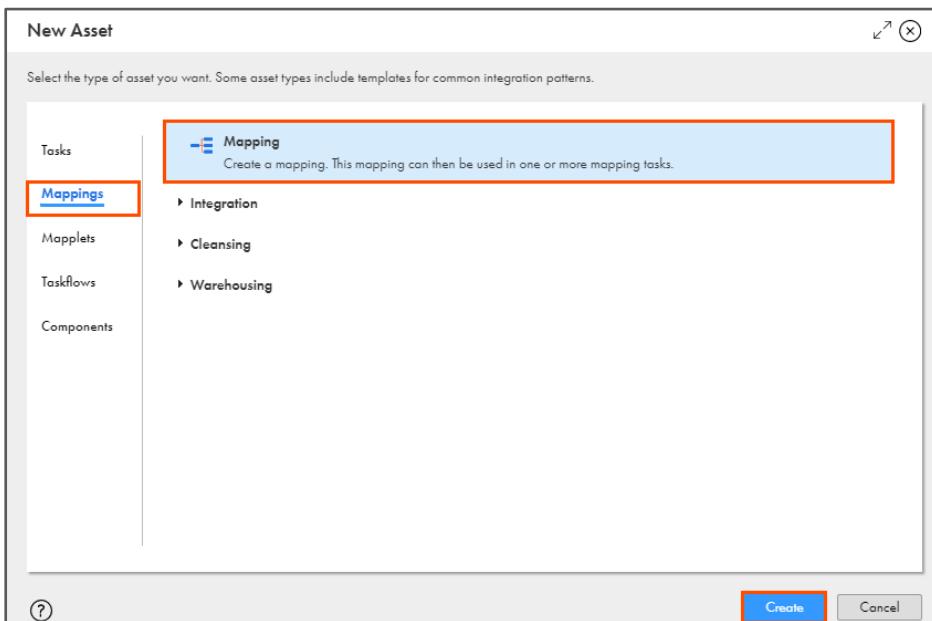
22. To switch between the available services, from the toolbar, select the current service **Administrator**.



23. From the **My Services** window, select **Data Integration**.



24. Create a new Mapping.

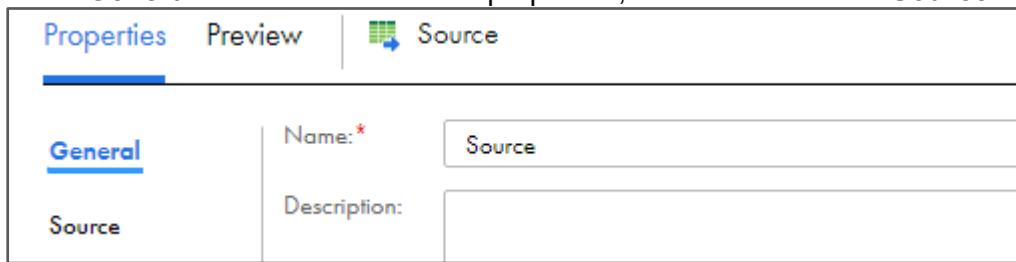


25. In the Name field, enter **SXX_FirstName_REST_GetWeather_By_City**.

SXX_FirstName_REST_GetWeather_By_City	
Name:*	SXX_FirstName_REST_GetWeather_By_City
Location:*	CDI ILT Development\XX-Firstname

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

27. In the **General** section of the Source properties, retain the Name as **Source**.



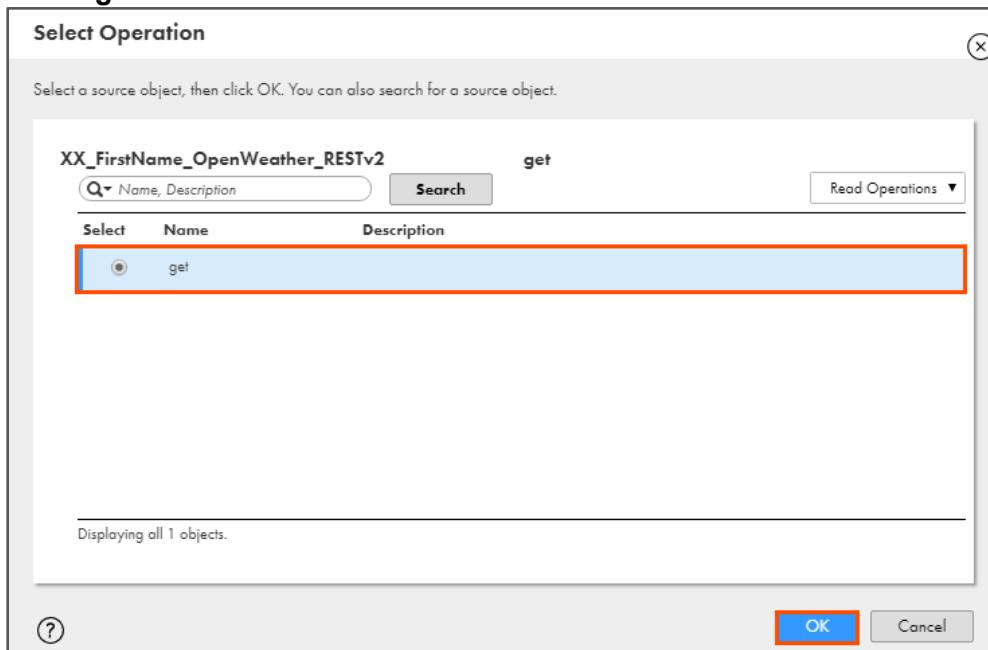
28. From the properties pane, click **Source**.

29. From the Connection drop-down, select **XX_FirstName_OpenWeather_RESTv2**.

30. For the Operation field, click **Select**.



31. Select **get** and click **OK**.

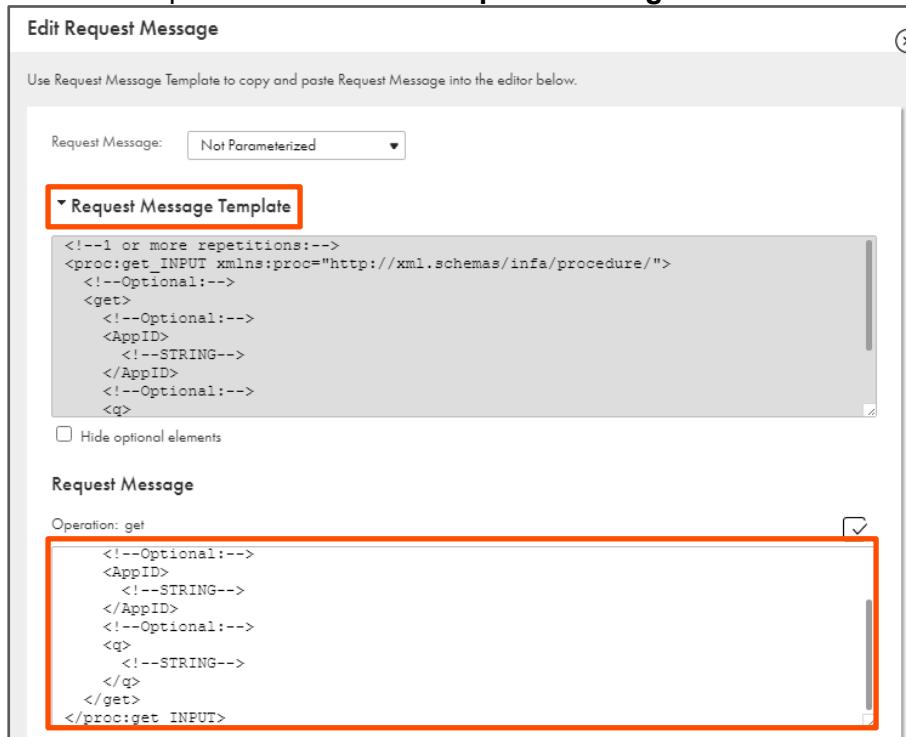


32. Expand the **Query Options** section and click **Configure**.



33. Expand the **Request Message Template** section and copy all the contents from the field.

34. Paste the copied contents in the **Request Message** field.



35. In the Request Message field, in between **<AppID> </AppID>**, enter the unique API Key saved earlier.

36. In the Request Message field, in between **<q> </q>**, enter **London**.

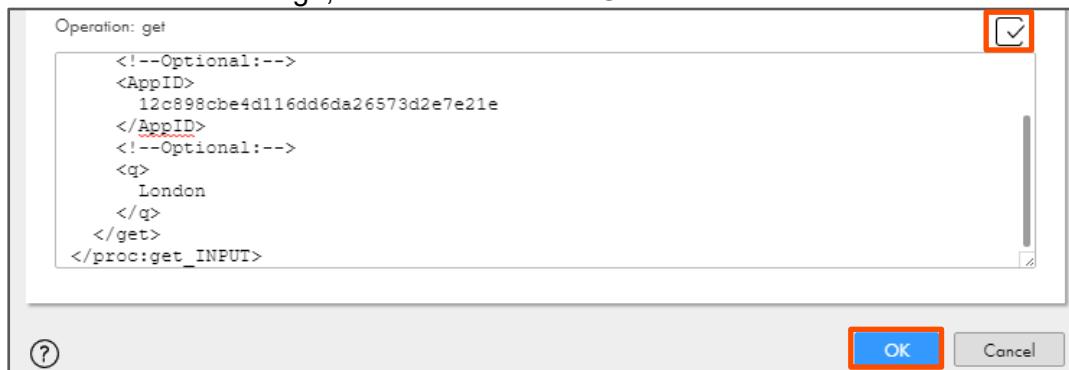
Example:

```

<AppID>
  12c898cbe4d116dd6da26573d2e7e21e
</AppID>
<q>
  London
</q>

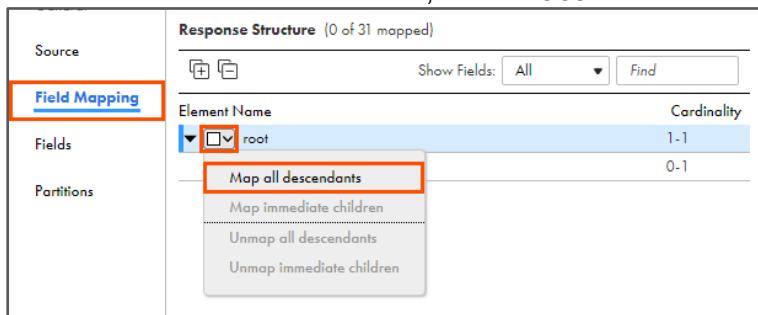
```

37. To validate the message, click and click **OK**.



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

39. From the Element Name section, select **root** and select **Map all descendants**.

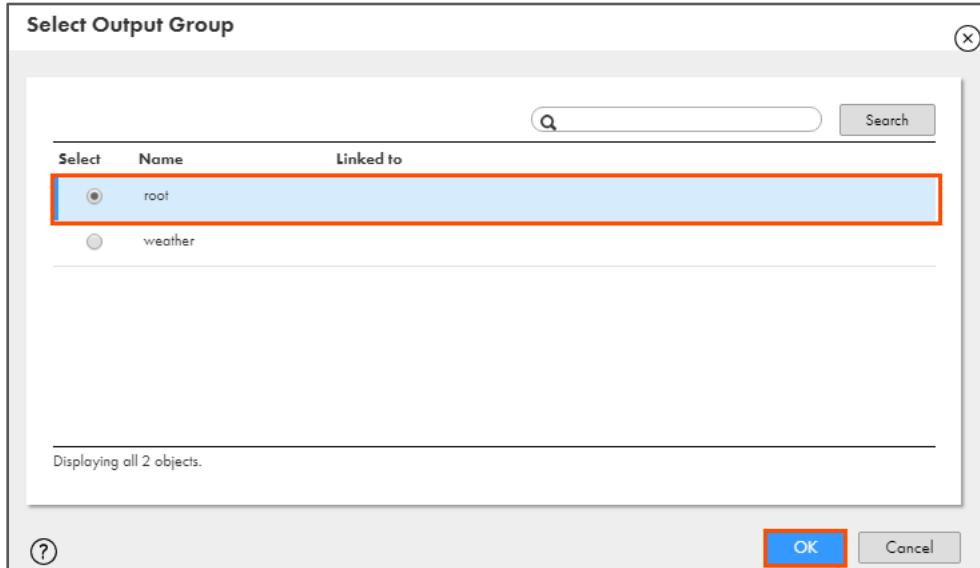


The screenshot shows the 'Field Mapping' tab selected in the left sidebar. In the main area, there's a 'Response Structure' pane titled '(0 of 31 mapped)'. It lists an element named 'root' with a cardinality of '1..1'. A context menu is open over the 'root' entry, with the option 'Map all descendants' highlighted.

40. Link Source to Target.



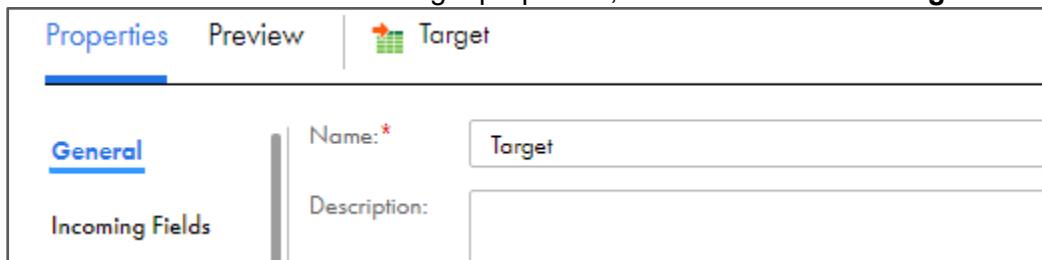
41. Select **root** and click **OK**.



The screenshot shows a 'Select Output Group' dialog box. It has a search bar at the top with a magnifying glass icon and a 'Search' button. Below the search bar is a table with two rows. The first row, containing the text 'root', is highlighted with a red box. The second row contains the text 'weather'. At the bottom of the dialog, it says 'Displaying all 2 objects.' and has 'OK' and 'Cancel' buttons at the bottom right.

42. To configure the target, from the mapping canvas, click the **Target** transformation.

43. In the **General** section of the Target properties, retain the Name as **Target**.

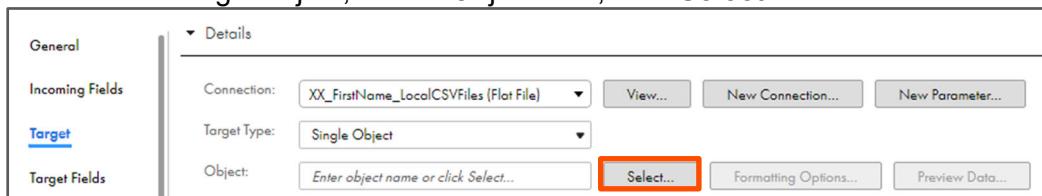


The screenshot shows the 'Properties' pane for a 'Target' transformation. The 'General' tab is selected. In the 'Name:' field, the value 'Target' is entered. There is also a 'Description:' field below it.

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

45. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

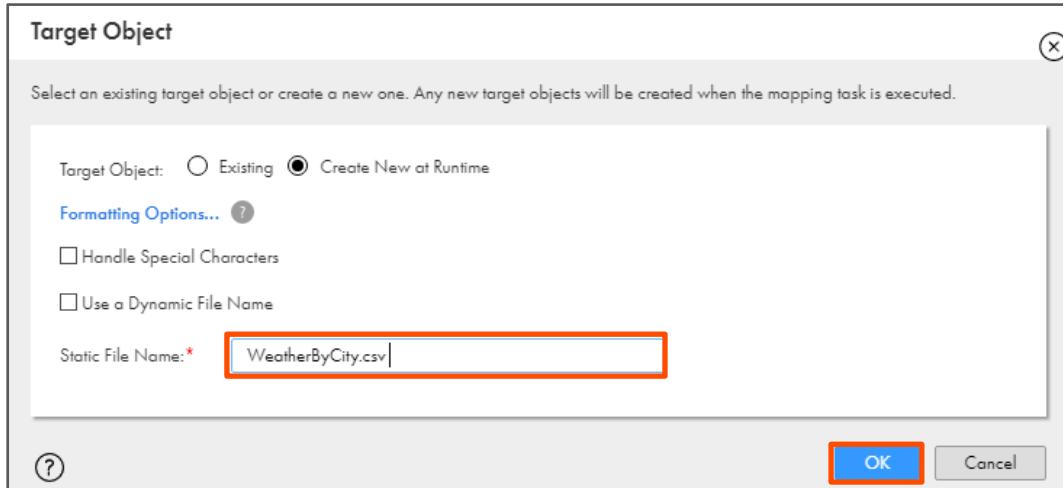
46. To select the target object, for the Object field, click **Select**.



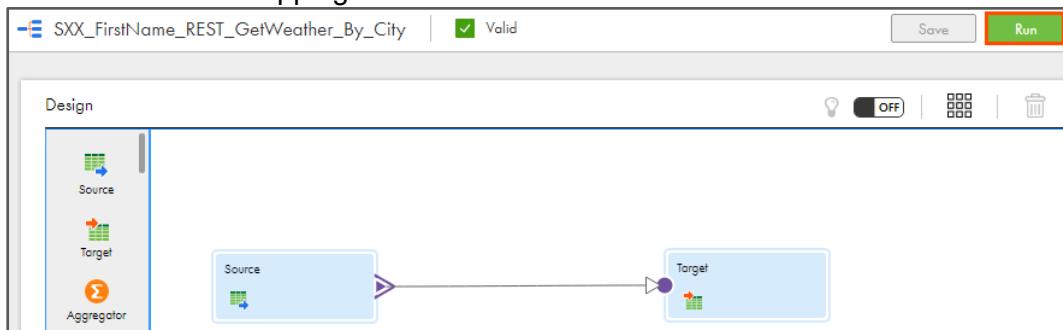
47. In the Target Object window, select **Create New at Runtime**.

48. Enter **WeatherByCity.csv** as Static File Name.

49. Click **OK**.

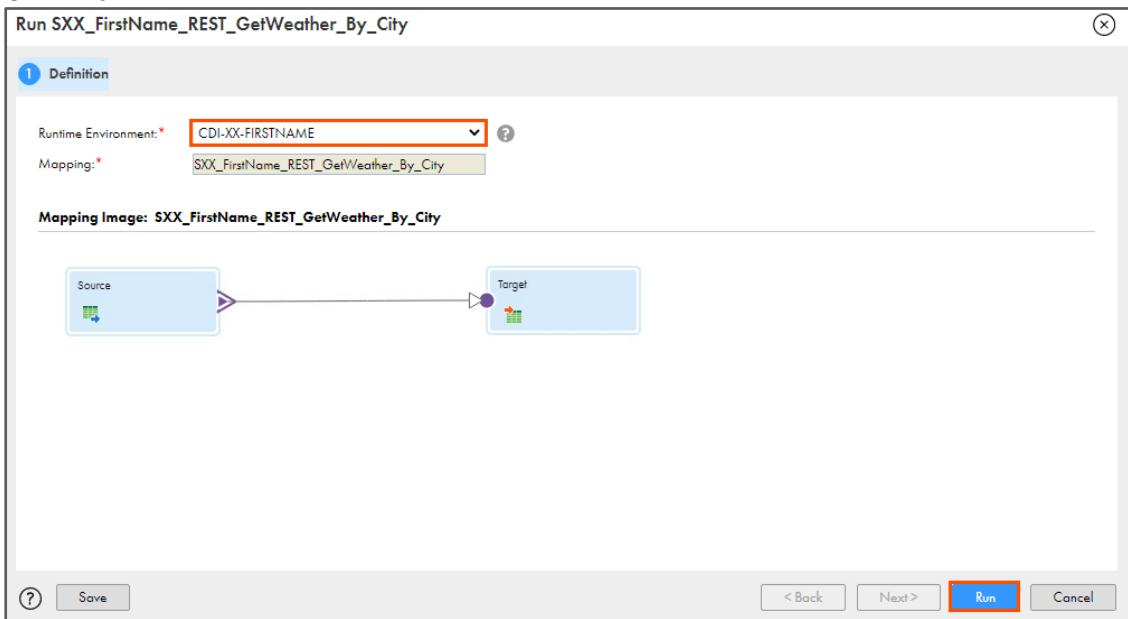


50. Save and run the mapping.



51. From Runtime Environment drop-down, select your secure agent group.

52. Click Run.



Monitor Status

53. To monitor the mapping status, from the navigation pane, click **My Jobs**.

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

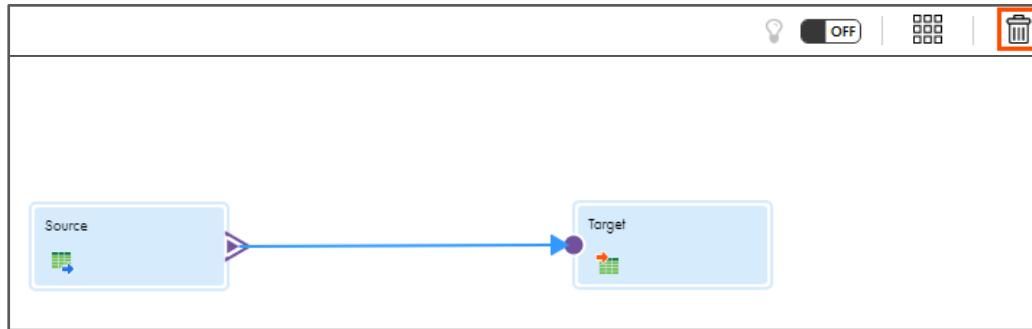
Jobs (1 of 455)						Updated 10:52:05 AM PST	Find
Asset Name: SXX_FirstName_REST_...	Add Field	Subtasks	Start Time	End Time	Rows Processed	Status	
SXX_FirstName_REST_GetWeather_By_C...			Nov 16, 2020, 10:51 AM	Nov 16, 2020, 10:5...	1	Success	

Note:

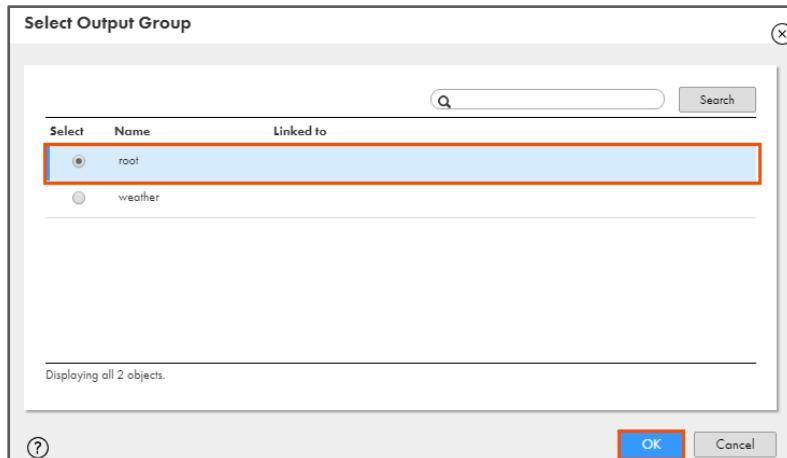
- i. If the task completes with 0 processed rows, click on the Instance Name and check the error message.

Jobs (1 of 28)						Updated 12:21:23 PM PDT	Find
Asset Name: XX_FirstName_REST_G...	Add Field	Subtasks	Start Time	End Time	Rows Processed	Status	
XX_FirstName_REST_GetWeather_By_City-2			Aug 4, 2019, ...	Aug 4, 20...	1	Success	

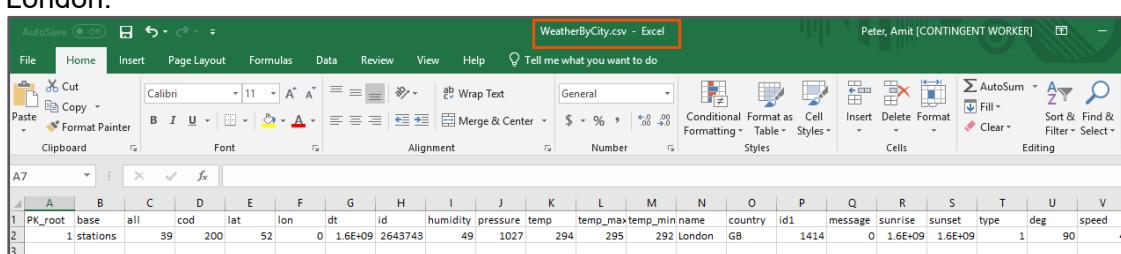
- ii. If you see the following error message, perform the below mentioned steps:
[ERROR] log4j:ERROR A "org.apache.log4j.ConsoleAppender" object is not assignable to a "org.apache.log4j.Appender" variable,
then, open the XX_FirstName_REST_GetWeather_By_City mapping and delete the link between **Source** and **Target**.



- iii. Again, link Source to Target.
iv. In the **Select Output Group** window, select **root**.
v. Click **OK**.



- vi. Save and run the mapping again.
55. Close the asset from the navigation pane.
56. On your local machine, go to **C:\IICSLabFiles**.
57. Verify that the **WeatherByCity.csv** file contains 1 row and the weather details of London.



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
PK_root	base	all	cod	lat	lon	dt	id	humidity	pressure	temp	temp_max	temp_min	name	country	id1	message	sunrise	sunset	type	deg	speed
1	stations	39	200	52	0	1.6E+09	2643743	49	1027	294	295	292	London	GB	1414	0	1.6E+09	1.6E+09	1	90	4
3																					

This concludes the lab.

Module 12: Hierarchical Connectivity

Lab 12-2: 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 Business Service
- Use Web Services transformation in a mapping

Scenario:

Ruby wants to change the format of billing for NH Retails outlets. She wants to convert the price information from number 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:

20 minutes

Tasks

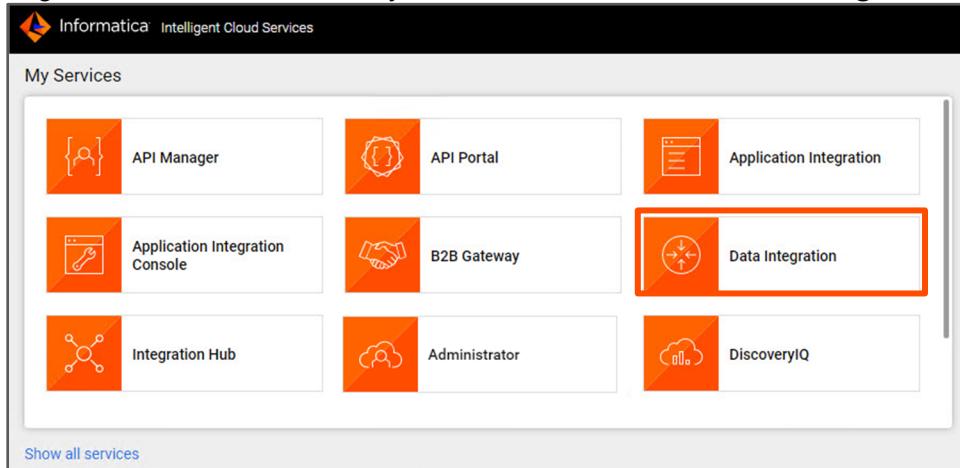
Copy Source File

1. Copy the **Input.txt** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).
2. Open the source file and observe its content.

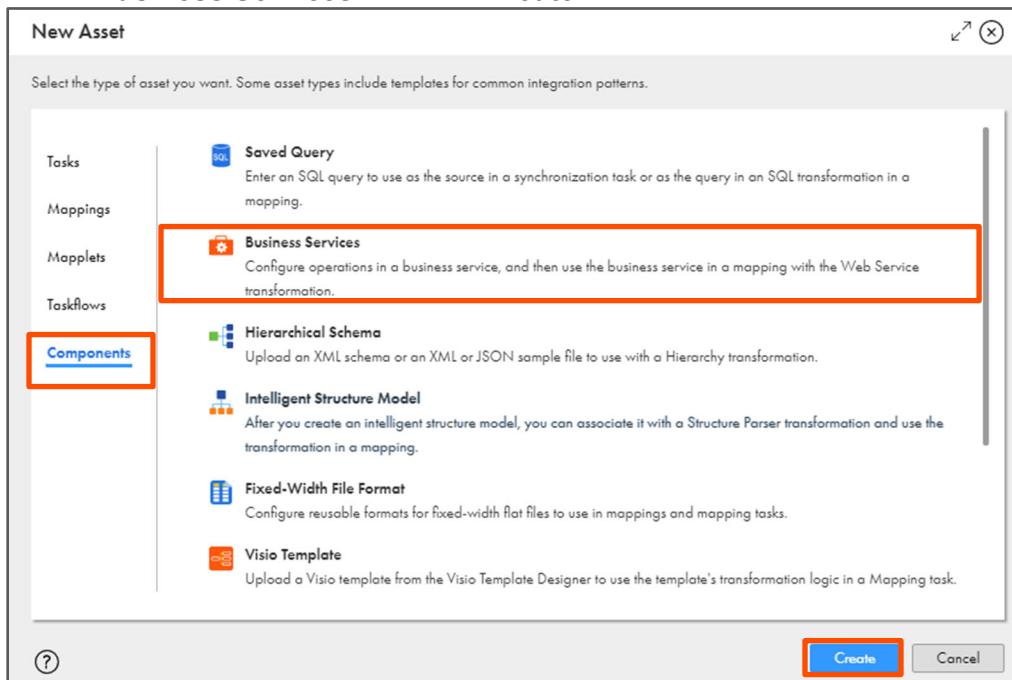
Note: You must close the files before running the task to avoid job failure.

Create Business Service

3. Log in to IICS and from the My Services window, select **Data Integration**.



4. From the navigation pane, select **New**.
 5. From the New Asset window, click the **Components** tab.
 6. Select **Business Services** and click **Create**.



7. In the Name field, enter **SXX_FirstName_NumberConversion**.

8. To create a new connection, click **New**.

Business Service Details

Name:*	SXX_FirstName_NumberConversion
Location:*	CDI ILT Development\XX-Firstname
Description:	
Connection:*	<input type="text"/> View... New... 

9. In the Name field, enter **SXX_FirstName_WSConnection**.

10. From the Type drop-down, select **WSConsumer**.

Connection Details

Connection Name:*	SXX_FirstName_WSConnection
Description:	
Type:*	WSConsumer

11. From the Runtime Environment drop-down, select your secure agent group.

12. From the Authentication drop-down, select **Other Authentication**.

WSConsumer Connection Properties 

Runtime Environment:*	CDI-XX-FIRSTNAME
Authentication:*	Other Authentication

13. In the WSDL URL field, enter the following URL:

<https://www.dataaccess.com/webservicesserver/numberconversion.wso?WSDL>
OR

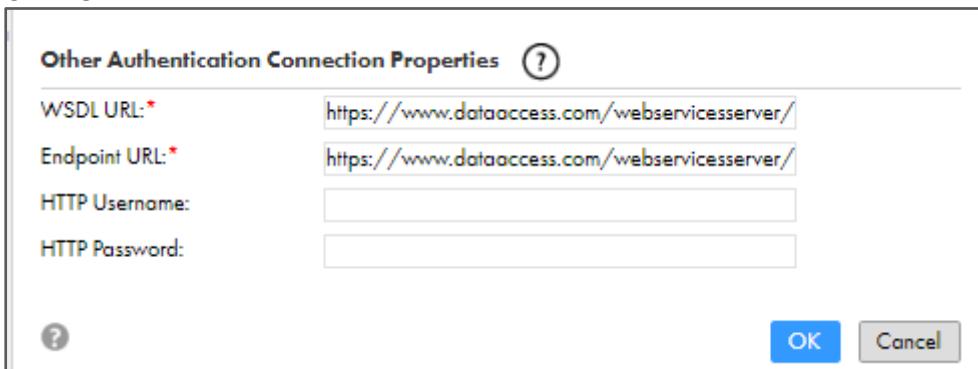
Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingWebServicesTransformation_12-2**. Copy the URL mentioned under **Step A** and paste it in the WSDL URL field.

14. In the Endpoint URL field, enter the following URL:

<https://www.dataaccess.com/webservicesserver/numberconversion.wso>
OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **UsingWebServicesTransformation_12-2**. Copy the URL mentioned under **Step B** and paste it in the Endpoint URL field.

15. Click **OK**.



Other Authentication Connection Properties

WSDL URL: *

Endpoint URL: *

HTTP Username:

HTTP Password:

OK Cancel

16. From the Connection drop-down, select **SXX_FirstName_WSConnection**.

Note: Skip this step if the created connection is already selected.

17. To add an operation, click **Select Operation**.



Connection: *

Select Operation

Operations

18. To select source operation, click **Select**.



Select Operation

Source Operation: *

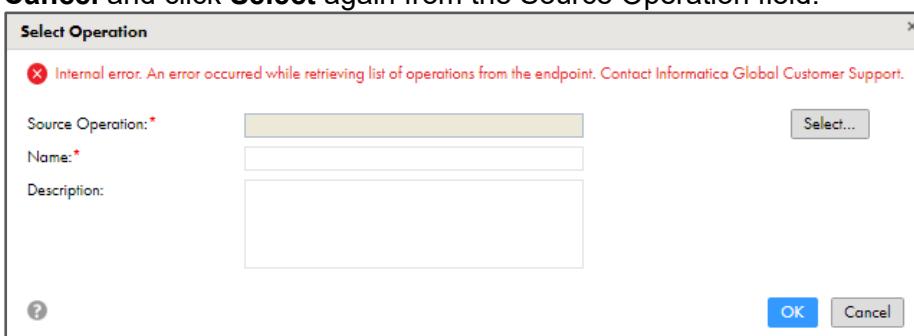
Name: *

Description:

Select...

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: *

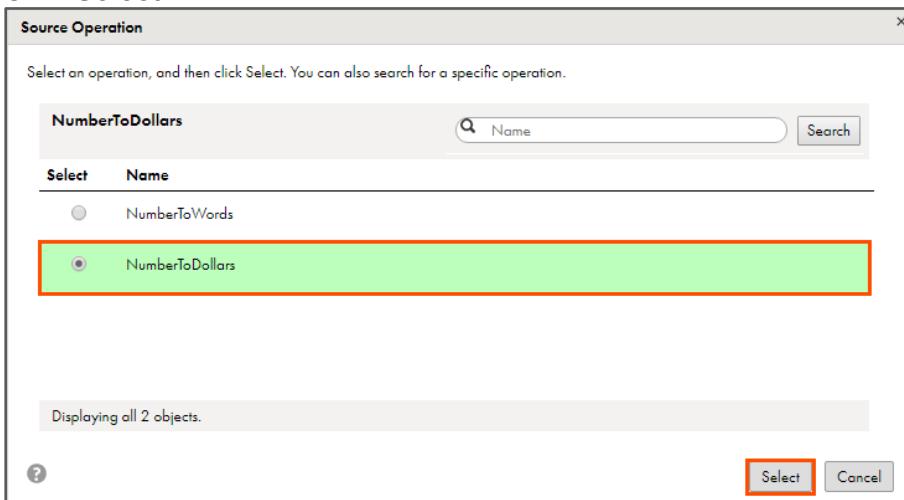
Name: *

Description:

OK Cancel

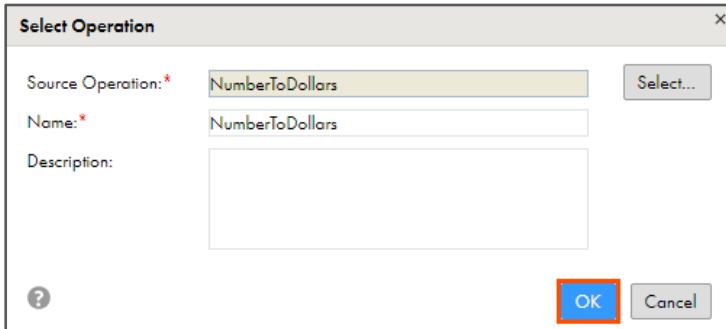
19. From the list, select **NumberToDollars**.

20. Click **Select**.



Note: This action redirects you to Select Operation window.

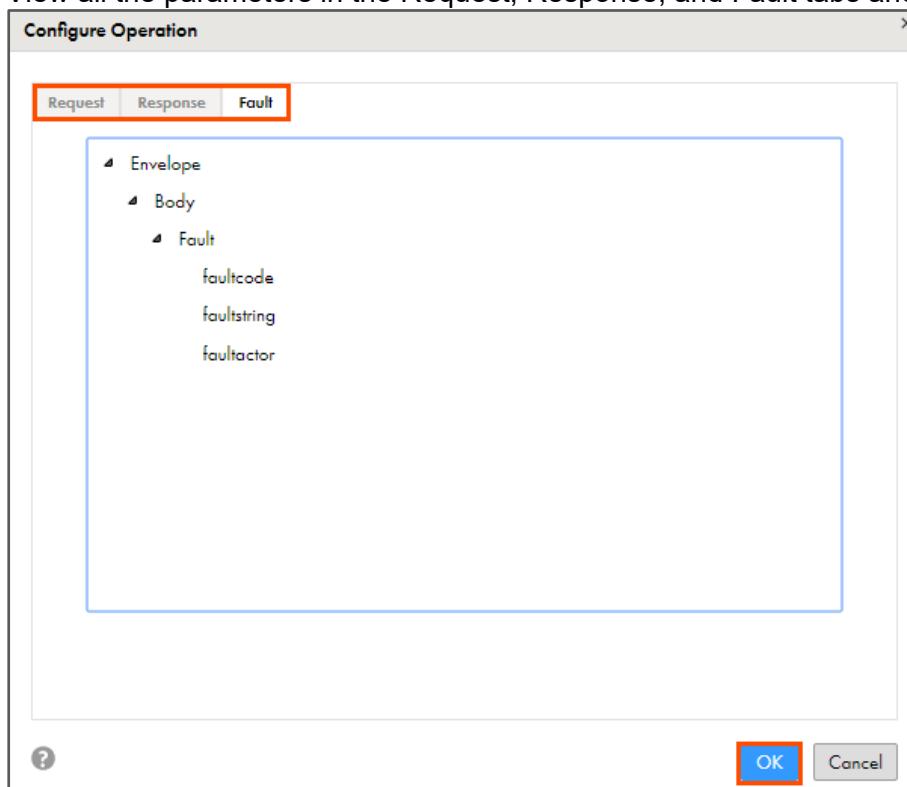
21. Click **OK**.



22. Click **Configure** to set the request, response, and fault parameters.



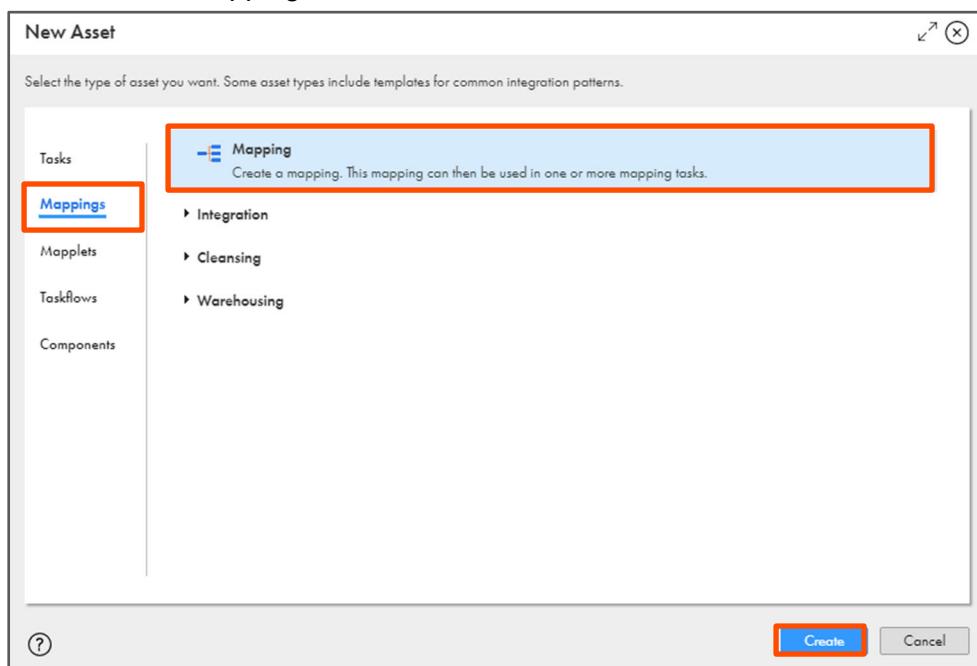
23. View all the parameters in the Request, Response, and Fault tabs and click **OK**.



24. Save the business service.

Create Mapping

25. Create a new Mapping.



26. In the Name field, enter **SXX_FirstName_WebServices**.



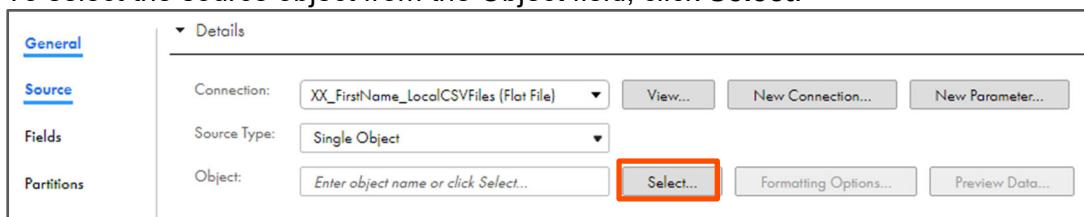
Name:*	SXX_FirstName_WebServices
Location:*	CDI ILT Development\XX-Firstname

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

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

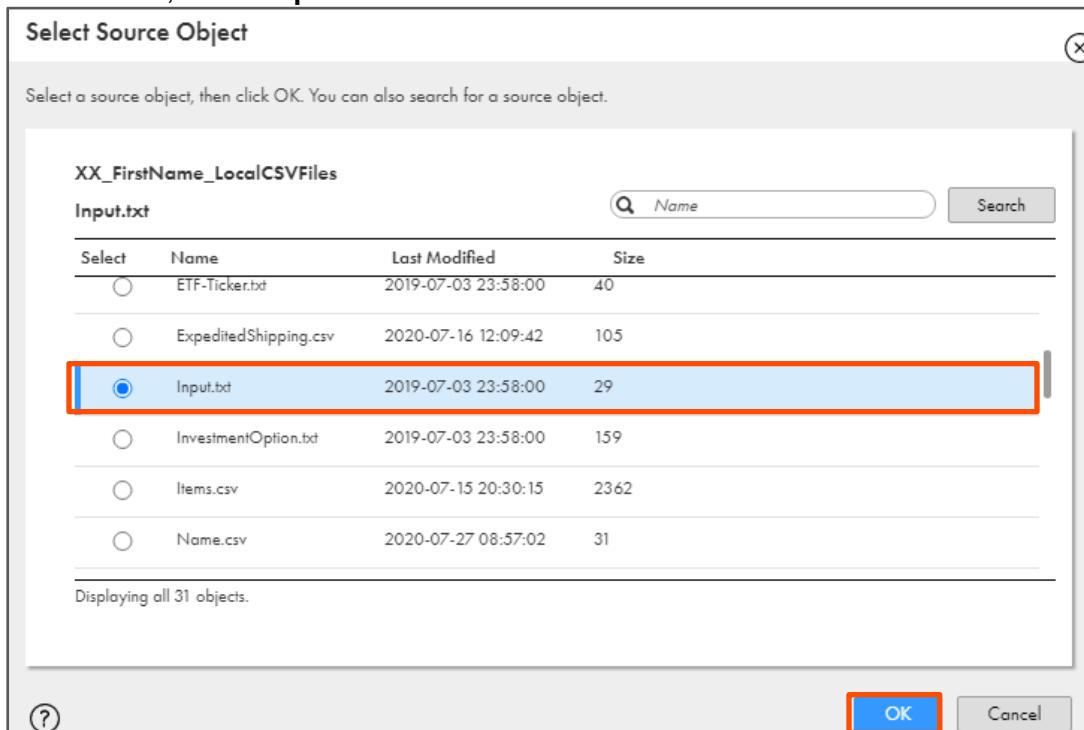
29. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

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



General	▼ Details
Source	Connection: XX_FirstName_LocalCSVFiles (Flat File) <input type="button" value="View..."/> <input type="button" value="New Connection..."/> <input type="button" value="New Parameter..."/> Source Type: Single Object <input type="button" value="Formatting Options..."/> <input type="button" value="Preview Data..."/>
Fields	
Partitions	

31. From the list, select **Input.txt** and click **OK**.



Select Source Object

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

XX_FirstName_LocalCSVFiles

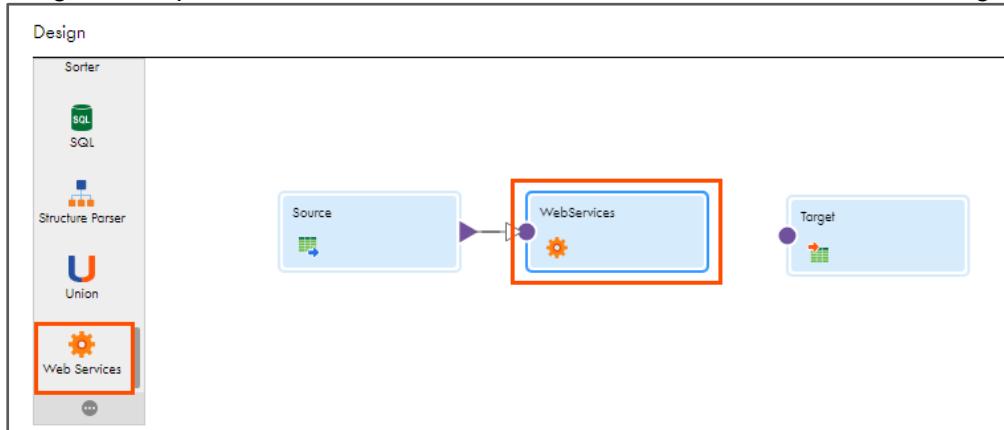
Select	Name	Last Modified	Size
<input type="radio"/>	ETF-Ticker.txt	2019-07-03 23:58:00	40
<input type="radio"/>	ExpeditedShipping.csv	2020-07-16 12:09:42	105
<input checked="" type="radio"/>	Input.txt	2019-07-03 23:58:00	29
<input type="radio"/>	InvestmentOption.txt	2019-07-03 23:58:00	159
<input type="radio"/>	Items.csv	2020-07-15 20:30:15	2362
<input type="radio"/>	Name.csv	2020-07-27 08:57:02	31

Displaying all 31 objects.

(?)

Add Web Services Transformation

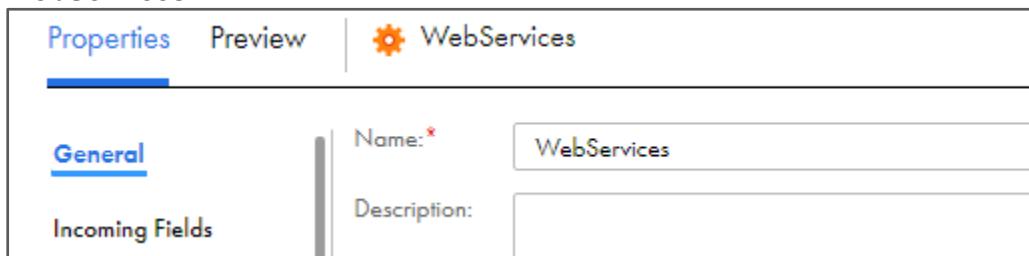
32. Drag and drop a **Web Services** transformation between the source and target.



Note: The Source transformation gets linked to the Web Service transformation.

33. Select the **WebServices** transformation on the mapping canvas.

34. In the **General** section of the WebServices properties, retain the Name as **WebServices**.



35. From the properties pane, click **Web Service**.

36. To select the business service, click **Select**.



37. Navigate to your working directory and select the **SXX_FirstName_NumberConversion** business service.

38. From the Operation drop-down, select **NumberToDollars**.



39. From the properties pane, click **Request Mapping**.



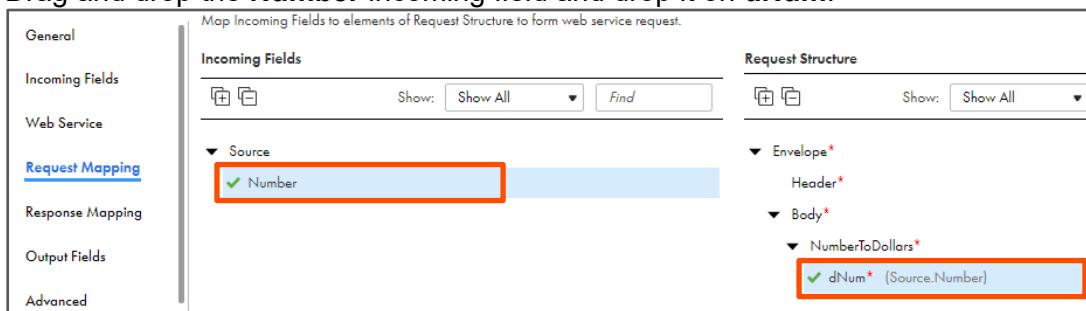
The screenshot shows the properties pane with the following structure:

- General
- Incoming Fields
- Web Service
- Request Mapping** (highlighted with a red box)
- Response Mapping

On the right, under "Map Incoming Fields to elements of Request Structure to form web service request.", there is a section titled "Incoming Fields" with "Source" expanded, showing "Number".

40. From the Request Structure section, drill-down to **Body > NumberToDollars > dNum**.

41. Drag and drop the **Number** incoming field and drop it on **dNum**.



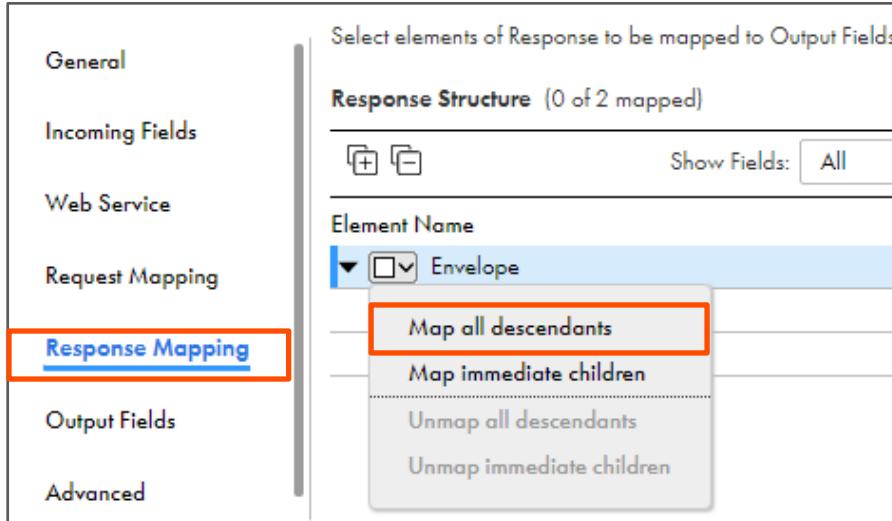
The screenshot shows the properties pane with the following structure:

- General
- Incoming Fields
- Web Service
- Request Mapping**
- Response Mapping
- Output Fields
- Advanced

On the right, under "Map Incoming Fields to elements of Request Structure to form web service request.", there is a section titled "Request Structure" with "Envelope*" expanded, showing "Header*" and "Body*". Under "Body*", "NumberToDollars*" is expanded, showing "dNum* {Source.Number}" which is highlighted with a red box.

42. From the properties pane, click **Response Mapping**.

43. From the Envelope drop-down, select **Map all descendants**.



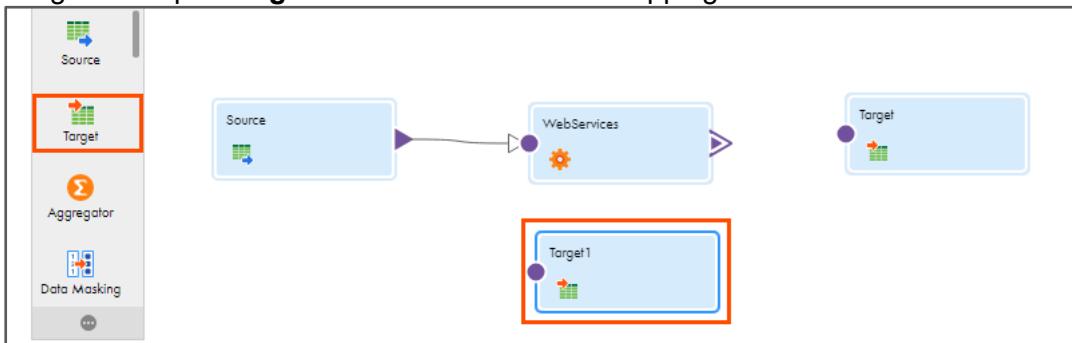
The screenshot shows the properties pane with the following structure:

- General
- Incoming Fields
- Web Service
- Request Mapping
- Response Mapping** (highlighted with a red box)
- Output Fields
- Advanced

On the right, under "Select elements of Response to be mapped to Output Fields.", there is a section titled "Response Structure (0 of 2 mapped)" with "Element Name" expanded, showing "Envelope". A dropdown menu is open next to "Envelope", with "Map all descendants" highlighted with a red box. Other options include "Map immediate children", "Unmap all descendants", and "Unmap immediate children".

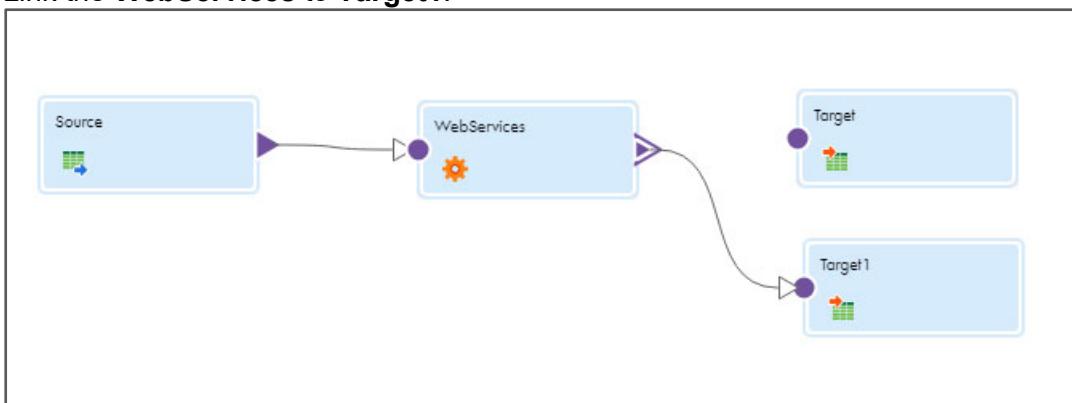
Add a Target Transformation

44. Drag and drop a **Target** transformation on the mapping canvas.



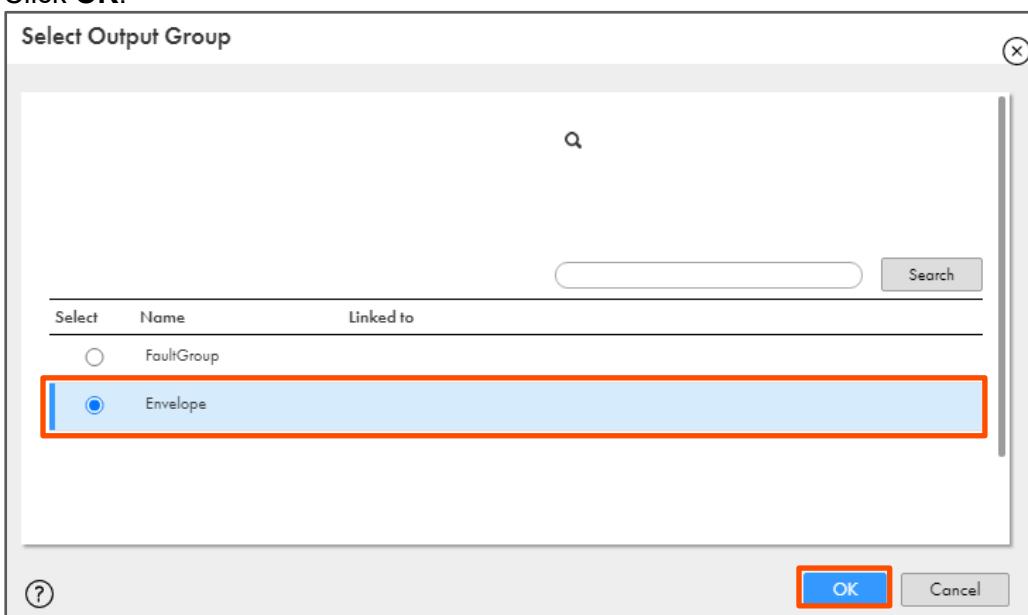
45. Select the added Target transformation (**Target 1**) on the mapping canvas.

46. Link the **WebServices** to **Target1**.



47. From the list, select **Envelope**.

48. Click **OK**.



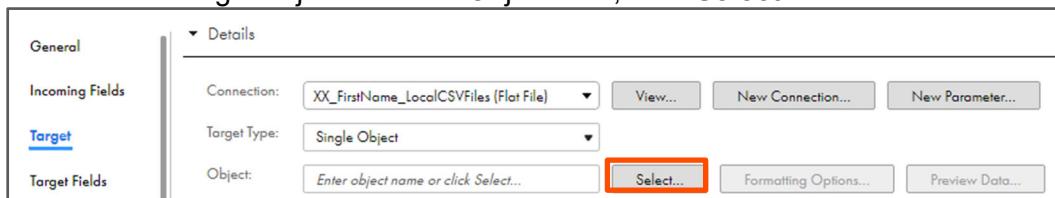
49. In the **General** section of the Target 1 properties, enter Name as **SuccessTarget**.



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

51. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

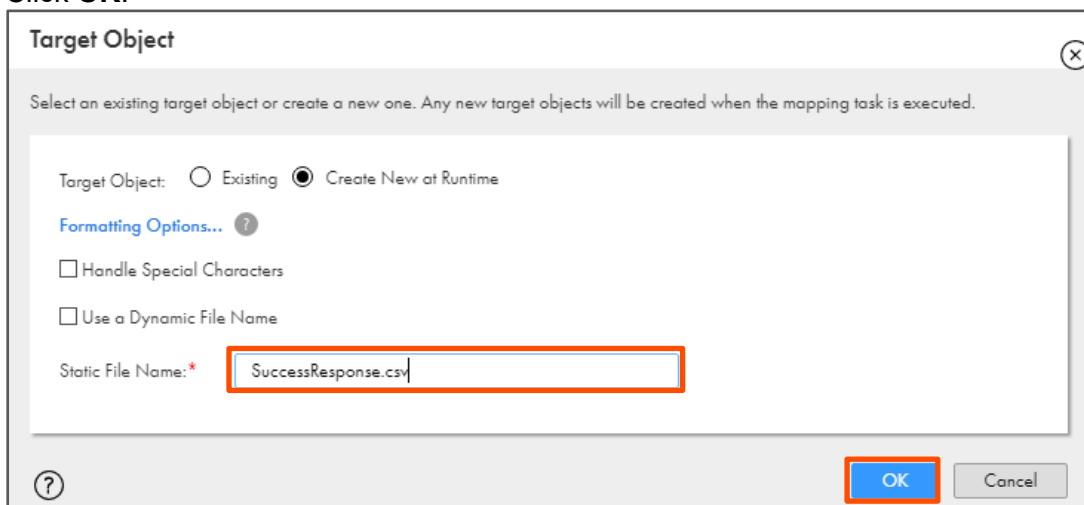
52. To select the target object from the Object field, click **Select**.



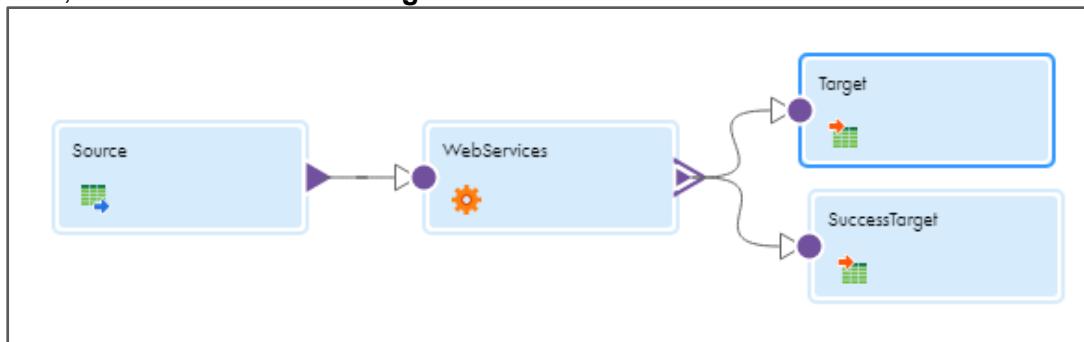
53. In the Target Object window, select **Create New at Runtime**.

54. Enter **SuccessResponse.csv** as Static File Name.

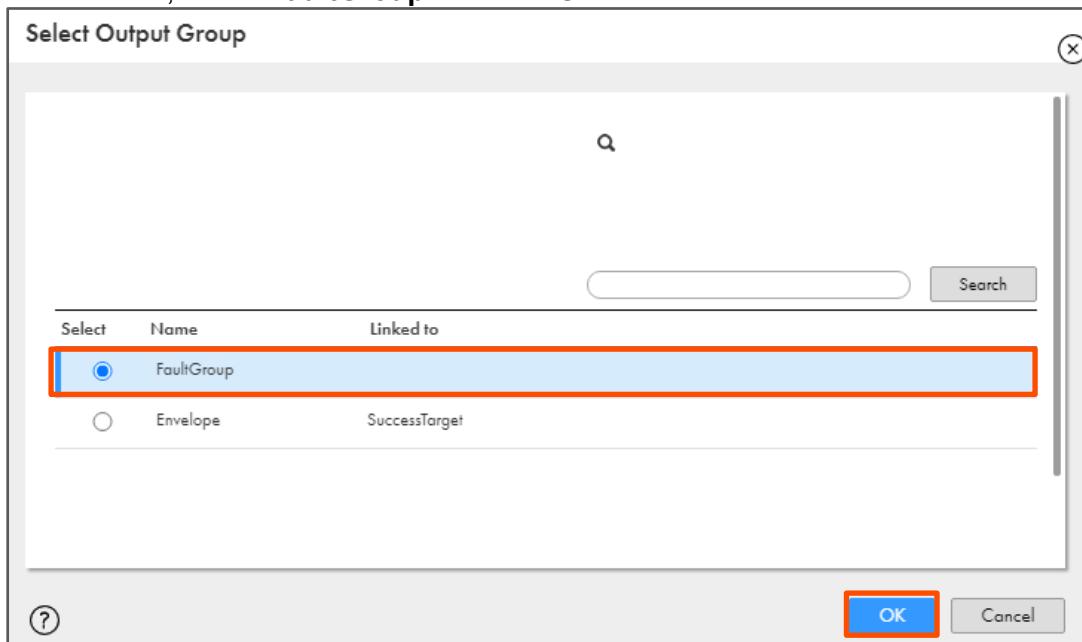
55. Click **OK**.



56. Now, link **WebServices** to **Target**.

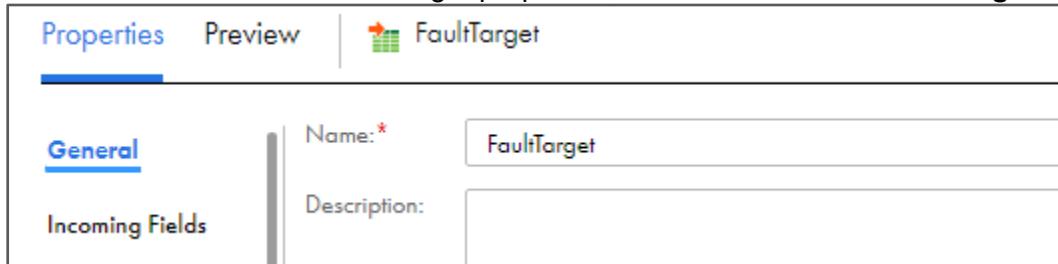


57. From the list, select **FaultGroup** and click **OK**.



58. Select the Target transformation on the mapping canvas.

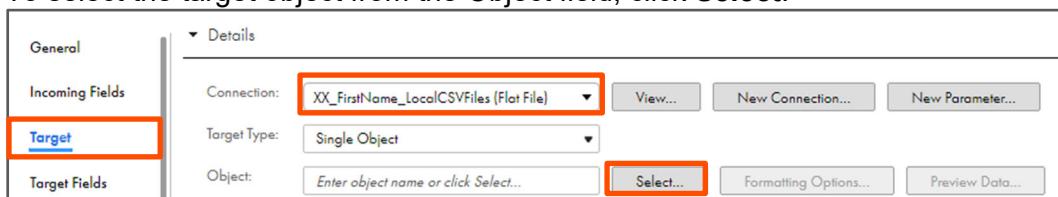
59. In the **General** section of the Target properties, enter the Name as **FaultTarget**.



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

61. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

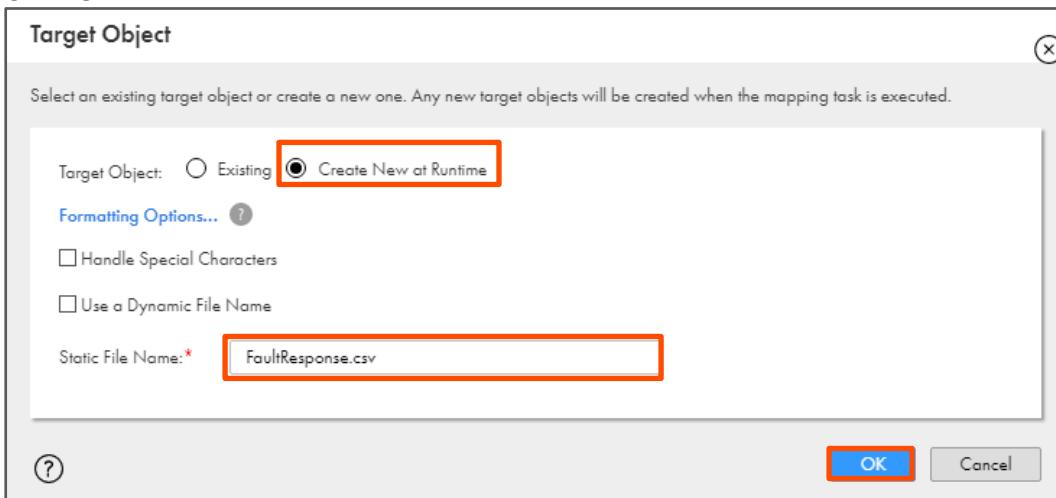
62. To select the target object from the Object field, click **Select**.



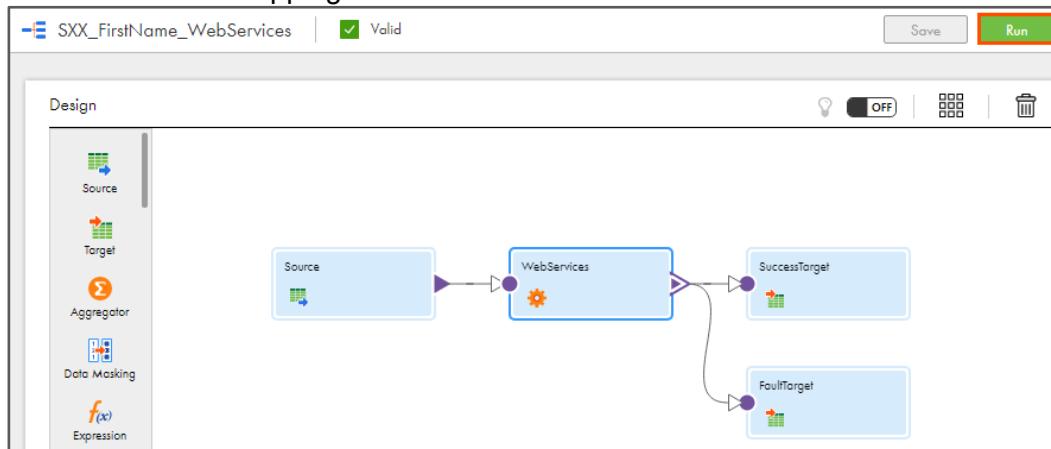
63. In the Target Object window, select **Create New at Runtime**.

64. Enter **FaultResponse.csv** as Static File Name.

65. Click **OK**.

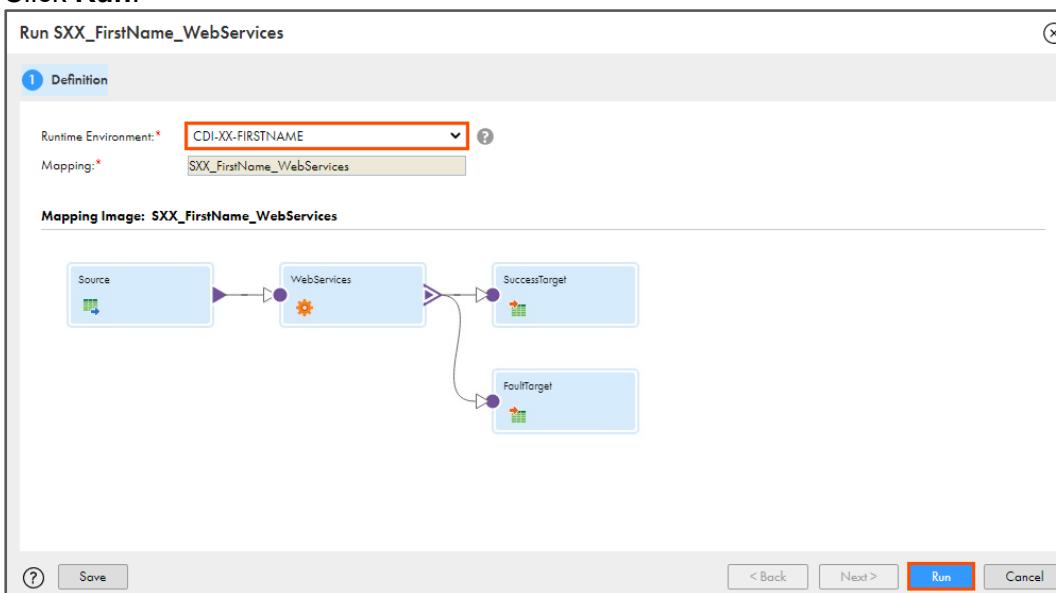


66. Save and run the mapping.



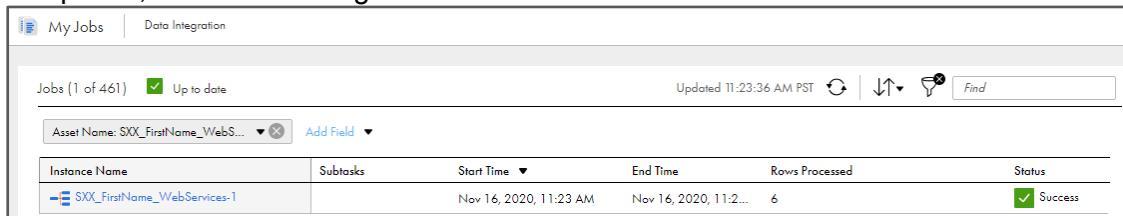
67. From the Runtime Environment drop-down, select your secure agent group.

68. Click **Run**.



Monitor Status

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

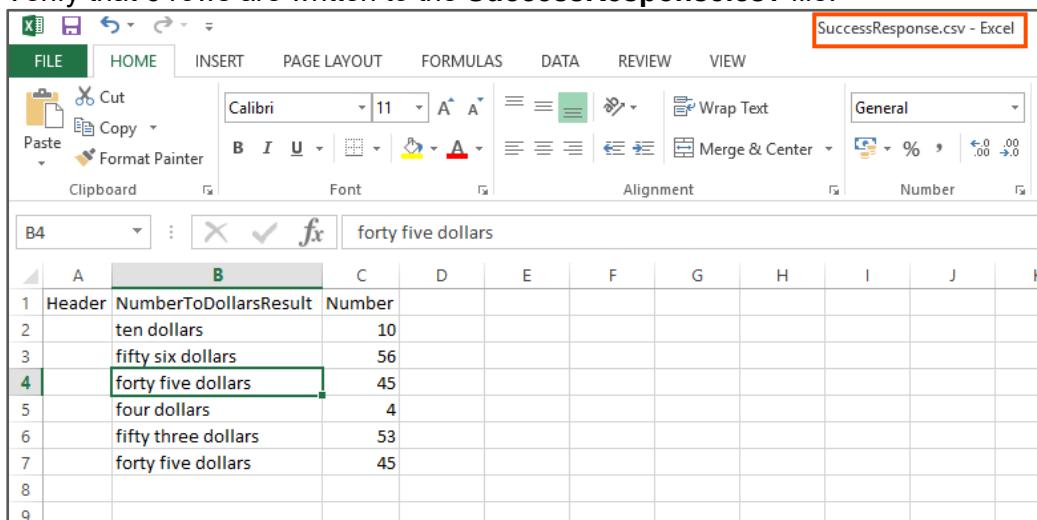


Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_FirstName_WebServices-1		Nov 16, 2020, 11:23 AM	Nov 16, 2020, 11:23 AM	6	Success

70. Close the asset from the navigation pane.

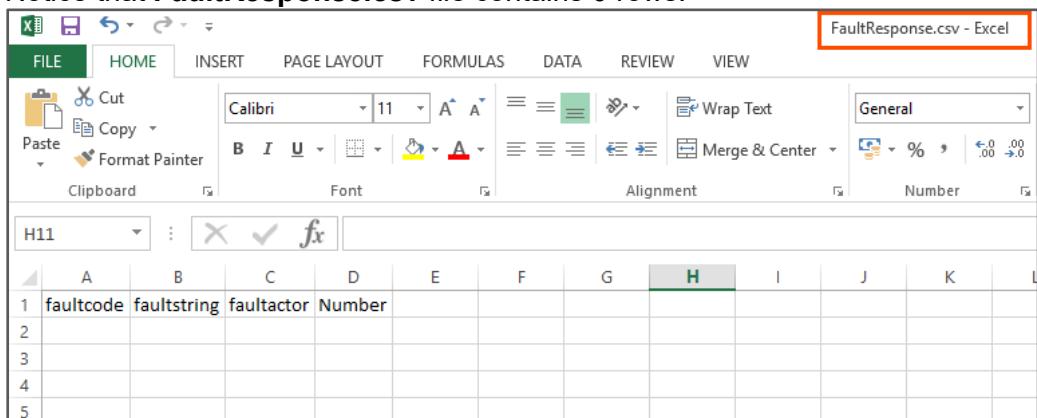
71. On your local machine, go to **C:\IICSLabFiles**.

72. Verify that 6 rows are written to the **SuccessResponse.csv** file.



A	B
Header	NumberToDollarsResult
ten dollars	10
fifty six dollars	56
forty five dollars	45
four dollars	4
fifty three dollars	53
forty five dollars	45

73. Notice that **FaultResponse.csv** file contains 0 rows.



A	B	C	D	E	F	G	H	I	J	K	L
faultcode	faultstring	faultactor	Number								

This concludes the lab.

Module 12: Hierarchical Connectivity

Lab 12-3: Creating a Mapping Using Hierarchy Parser and Hierarchy Builder Transformation

Overview:

The Hierarchy Parser transformation converts hierarchical input into a relational output. The Hierarchy Builder transformation converts input data into a hierarchical output using a schema file.

In this lab, you will create a mapping using hierarchy parser and hierarchy builder transformation.

Objective:

- Import a hierarchical schema
- Use Hierarchy Parser transformation
- Use Hierarchy Builder transformation

Scenario:

John uses the employee data to create a hierarchical schema. He also creates a mapping in IICS to transform the hierarchical input into relation output and write the output in a flat file. He also uses the hierarchy builder transformation to convert the relation output generated by hierarchy parser transformation into XML format data.

Duration:

30 minutes

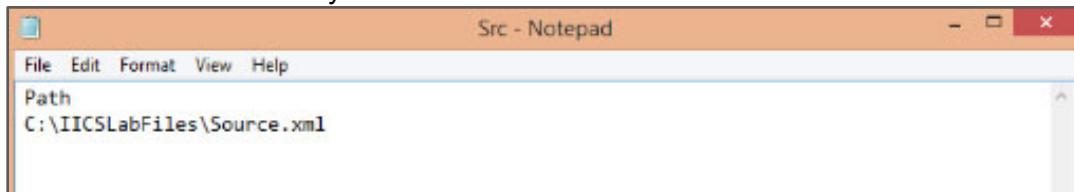
Tasks

Copy Source Files

1. Copy the **emp.xsd** and **Source.xml** files from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).

Create File

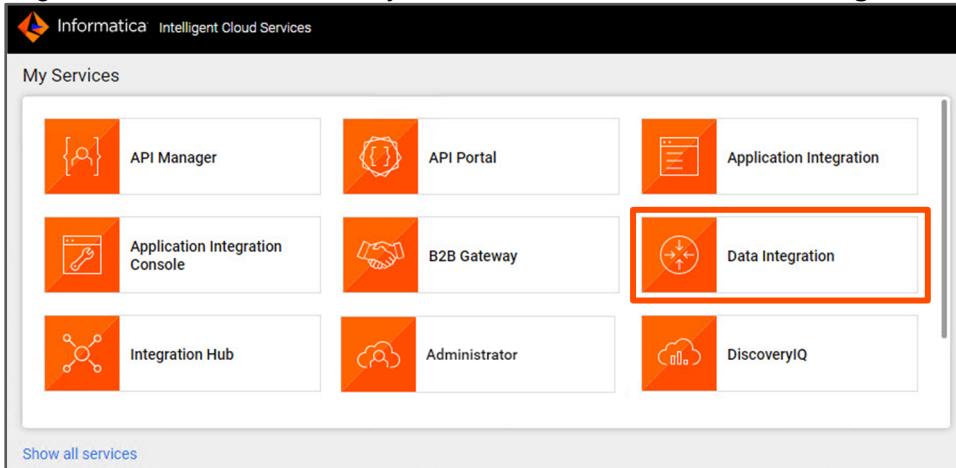
2. Create a text file named **Src** in C:\IICSLabFiles directory, and in that text file, type **Path** and enter the location of your Source XML file in the format shown below:



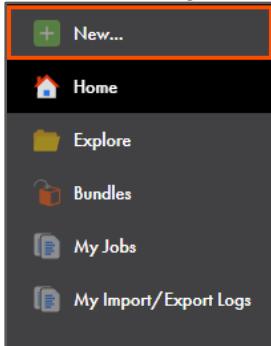
3. Save and close the file.

Create Hierarchical Schema

4. Log in to IICS and from the My Services window, select **Data Integration**.

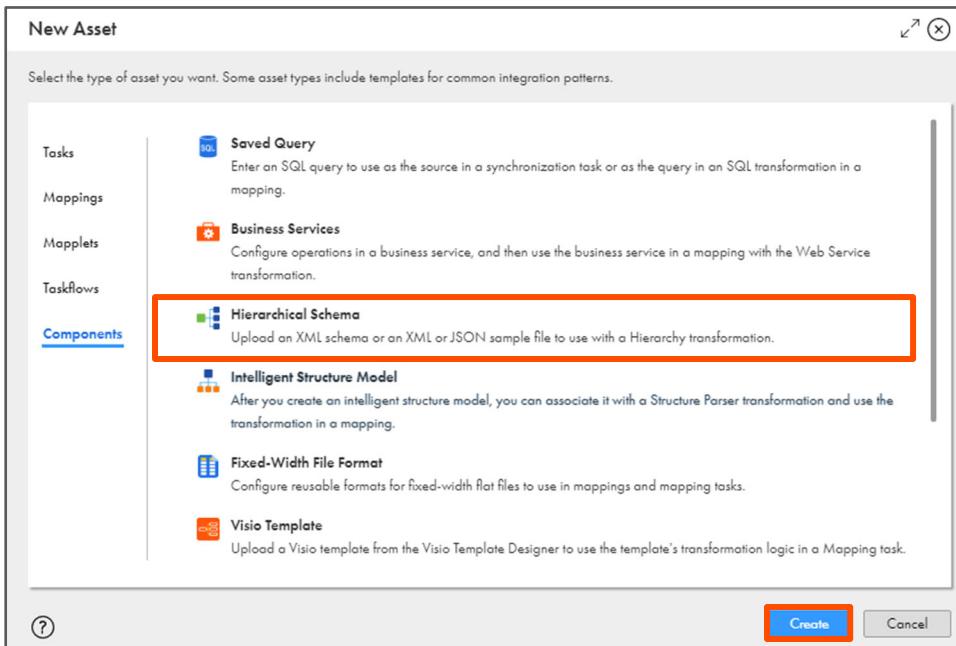


5. From the navigation pane, select **New**.



6. From the New Asset window, click the **Components** tab.

7. Select **Hierarchical Schema** and click **Create**.



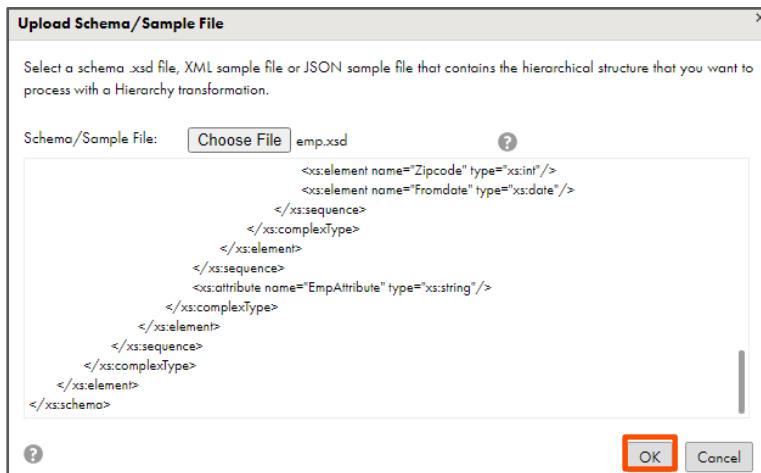
8. In the Name field, enter **SXX_FirstName_Emp**.
9. To upload the schema file, click **Upload**.

Hierarchical Schema Details

Name:*	<input type="text" value="SXX_FirstName_Emp"/>
Location	CDI ILT Development\\XX-Firstname <input type="button" value="Browse"/>
Description:	<input type="text"/>
Schema/Sample File:*	<input type="text"/> <input type="button" value="Upload..."/>

10. To navigate to xsd file, click **Choose File**, and select **emp.xsd** from your flat file directory.

11. Click **OK**.



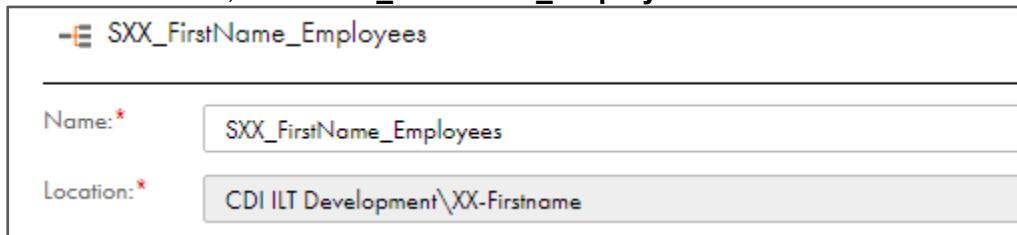
12. In the Schema Root drop-down, retain **root** and save the schema.

Hierarchical Schema Details

Name:*	<input type="text" value="SXX_FirstName_Emp"/>
Location	CDI ILT Development\\XX-Firstname <input type="button" value="Browse"/>
Description:	<input type="text"/>
Schema/Sample File:*	<input type="text" value="emp.xsd"/> <input type="button" value="Upload..."/>
Schema Root: *	<input type="text" value="root"/> <input type="button" value="?"/>

Create a Mapping

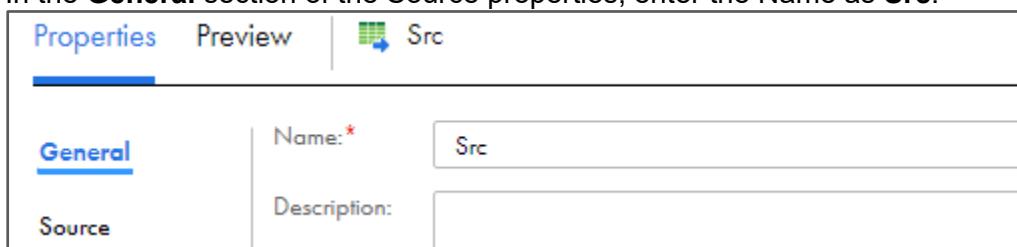
13. Create a new **Mapping** asset.
14. In the Name field, enter **SXX_FirstName_Employees**.



The screenshot shows a mapping canvas with a single mapping asset named "SXX_FirstName_Employees". The asset has two properties defined:

- Name:** SXX_FirstName_Employees
- Location:** CDI ILT Development\XX-Firstname

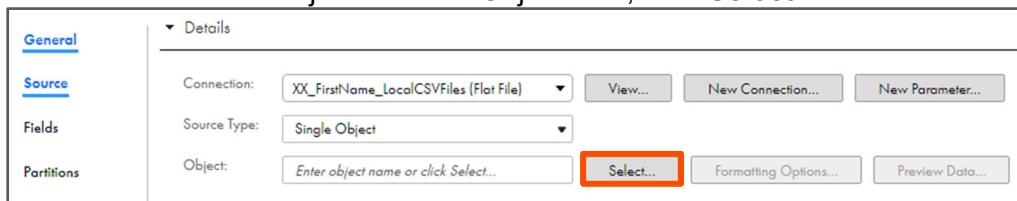
15. To configure the source, from the mapping canvas, click the **Source** transformation.
16. In the **General** section of the Source properties, enter the Name as **Src**.



The screenshot shows the properties pane for the "Src" transformation. The "General" tab is selected, displaying the following configuration:

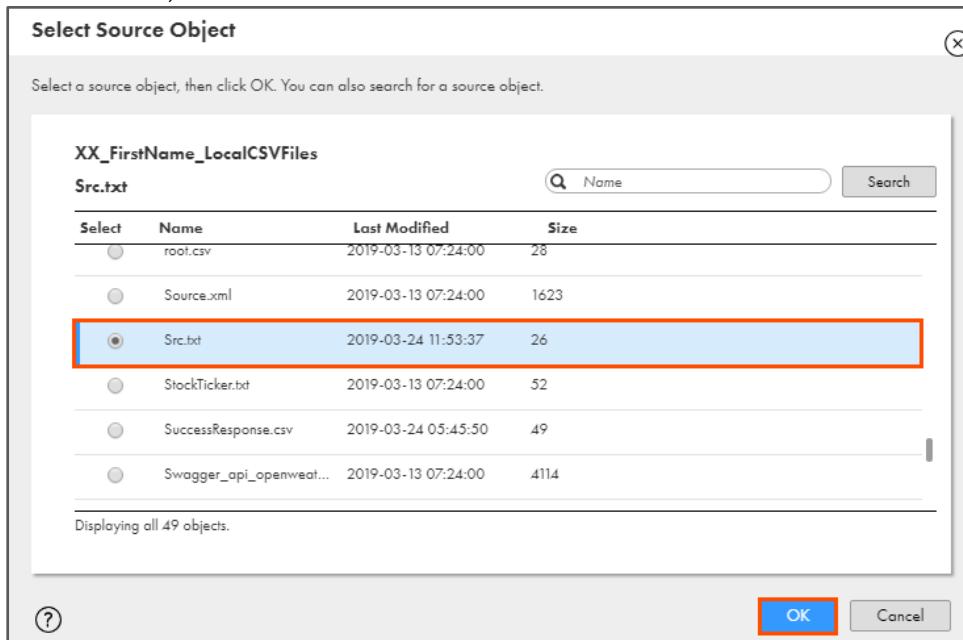
- Name:** Src
- Description:** (empty)

17. From the properties pane, click **Source**.
18. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
19. To select the source object from the Object field, click **Select**.



The screenshot shows the properties pane with the "Source" tab selected. The "Object" field contains the placeholder "Enter object name or click Select...". A red box highlights the "Select..." button, which is used to open the "Select Source Object" dialog.

20. From the list, select **Src.txt** and click **OK**.



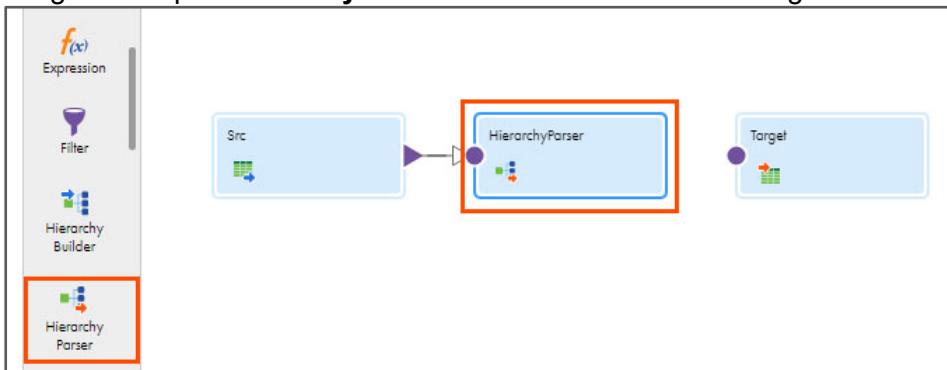
The screenshot shows the "Select Source Object" dialog. The list of objects under "XX_FirstName_LocalCSVFiles" includes:

Select	Name	Last Modified	Size
<input type="radio"/>	root.csv	2019-03-13 07:24:00	28
<input type="radio"/>	Source.xml	2019-03-13 07:24:00	1623
<input checked="" type="radio"/>	Src.txt	2019-03-24 11:53:37	26
<input type="radio"/>	StockTicker.txt	2019-03-13 07:24:00	52
<input type="radio"/>	SuccessResponse.csv	2019-03-24 05:45:50	49
<input type="radio"/>	Swagger_api_openweat...	2019-03-13 07:24:00	4114

A red box highlights the "Src.txt" row. At the bottom right of the dialog, the "OK" button is also highlighted with a red box.

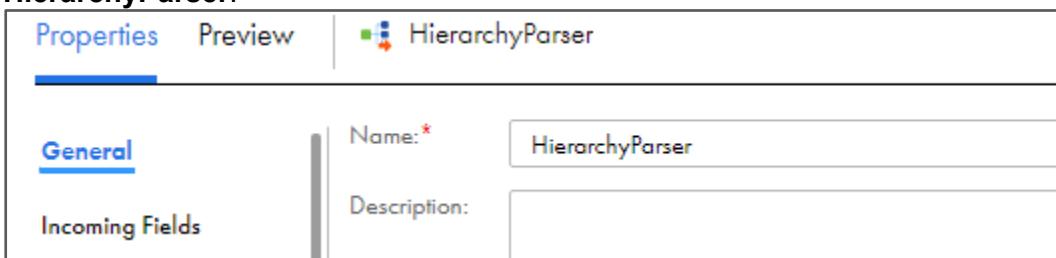
Add a Hierarchy Parser Transformation

21. Drag and drop a **Hierarchy Parser** between the Src and Target transformations.



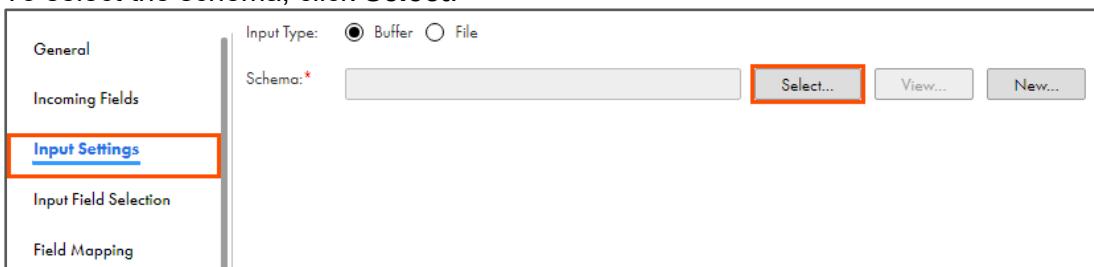
22. Select **Hierarchy Parser** transformation on the mapping canvas.

23. In the **General** section of the Hierarchy Parser properties, retain the Name as **HierarchyParser**.



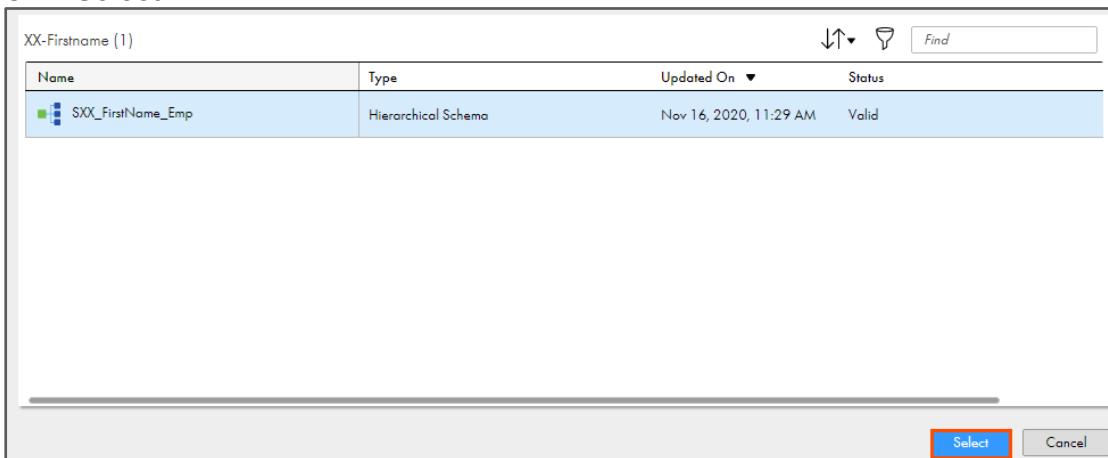
24. From the properties pane, click **Input Settings**.

25. To select the schema, click **Select**.

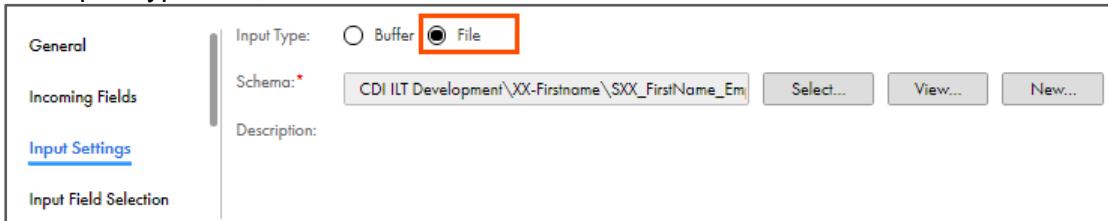


26. Navigate to your working directory and select **SXX_FirstName_Emp**.

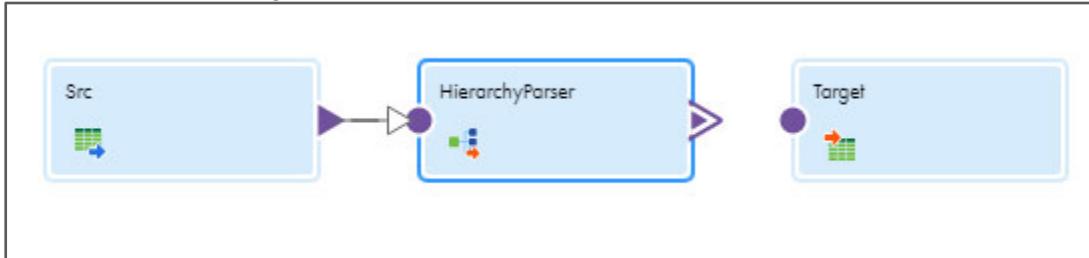
27. Click **Select**.



28. For Input Type field, select **File**.



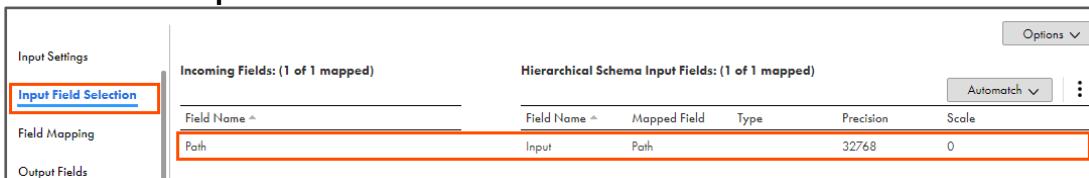
29. Link **Src** to **HierarchyParser**.



30. Select **HierarchyParser** transformation on the mapping canvas.

31. From the properties pane, click **Input Field Selection**.

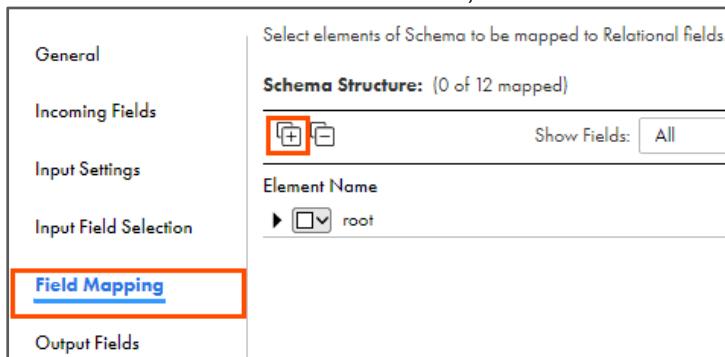
32. To map the Incoming field with the Hierarchical Schema Input field, drag and drop the **Path** onto the **Input** field.



Field Name	Mapped Field	Type	Precision	Scale
Path	Path		32768	0

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

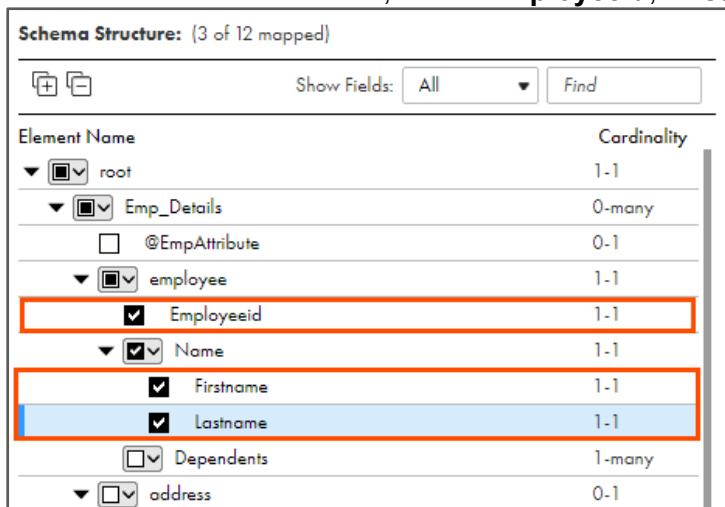
34. From the Schema Structure section, click .



The screenshot shows the Schema Structure section with the following interface:

- General**: A tab on the left.
- Incoming Fields**: A tab on the left.
- Input Settings**: A tab on the left.
- Input Field Selection**: A tab on the left.
- Field Mapping**: A tab on the left, highlighted with a red border.
- Output Fields**: A tab on the left.
- Schema Structure: (0 of 12 mapped)**: A title at the top right.
- Select elements of Schema to be mapped to Relational fields.**: A descriptive text.
- Show Fields: All**: A dropdown menu.
- Element Name**: A list with a root item: **root**.
- Add (+) Remove (-) Find**: Buttons at the bottom of the list.

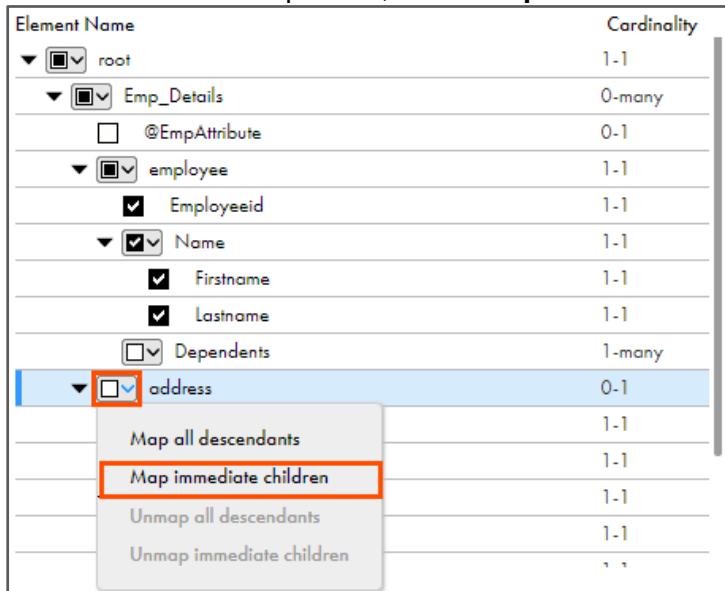
35. From the Element Name lists, select **Employeeid**, **Firstname**, and **Lastname**.



The screenshot shows the Schema Structure section with the following interface:

- Schema Structure: (3 of 12 mapped)**: A title at the top.
- Show Fields: All**: A dropdown menu.
- Find**: A button.
- Element Name**: A column.
- Cardinality**: A column.
- root**: Cardinality 1-1.
- Emp_Details**: Cardinality 0-many.
- @EmpAttribute**: Cardinality 0-1.
- employee**: Cardinality 1-1.
- Employeeid**: Selected (checked), Cardinality 1-1.
- Name**: Selected (checked), Cardinality 1-1.
- Firstname**: Selected (checked), Cardinality 1-1.
- Lastname**: Selected (checked), Cardinality 1-1.
- Dependents**: Cardinality 1-many.
- address**: Cardinality 0-1.

36. From the address drop-down, select **Map immediate children**.

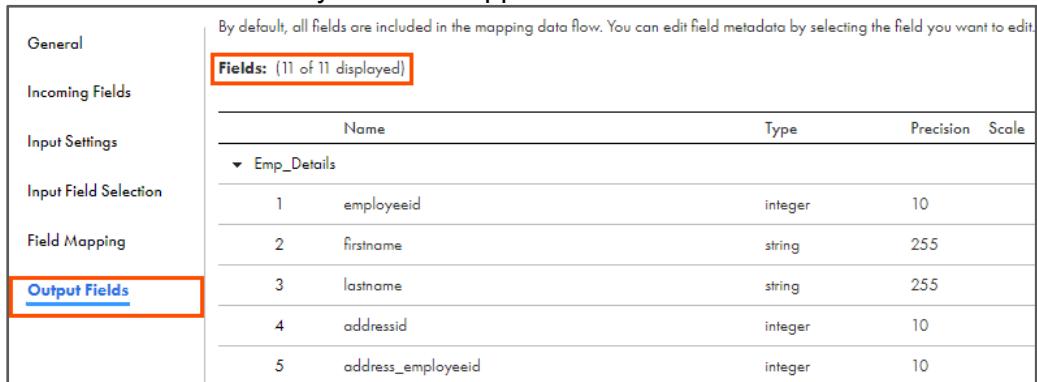


The screenshot shows the Schema Structure section with the following interface:

- Element Name**: A column.
- Cardinality**: A column.
- root**: Cardinality 1-1.
- Emp_Details**: Cardinality 0-many.
- @EmpAttribute**: Cardinality 0-1.
- employee**: Cardinality 1-1.
- Employeeid**: Selected (checked), Cardinality 1-1.
- Name**: Selected (checked), Cardinality 1-1.
- Firstname**: Selected (checked), Cardinality 1-1.
- Lastname**: Selected (checked), Cardinality 1-1.
- Dependents**: Cardinality 1-many.
- address**: Cardinality 0-1.
- A context menu is open over the **address** node, listing the following options:
 - Map all descendants
 - Map immediate children**
 - Unmap all descendants
 - Unmap immediate children

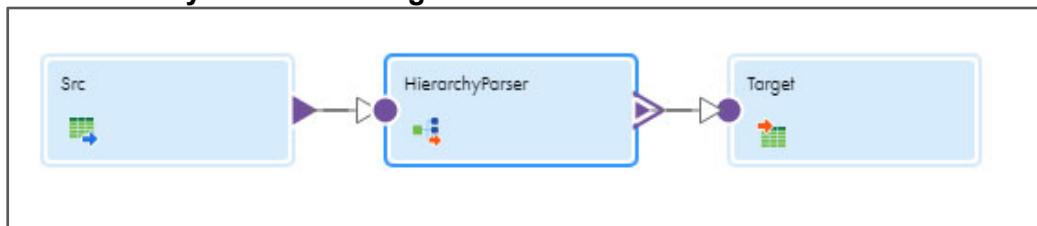
Note: Observe that the Relational table Fields are populated with the automatically generated fields.

37. From the properties pane, click **Output Fields** and verify that 11 fields are present based on the fields that you have mapped.

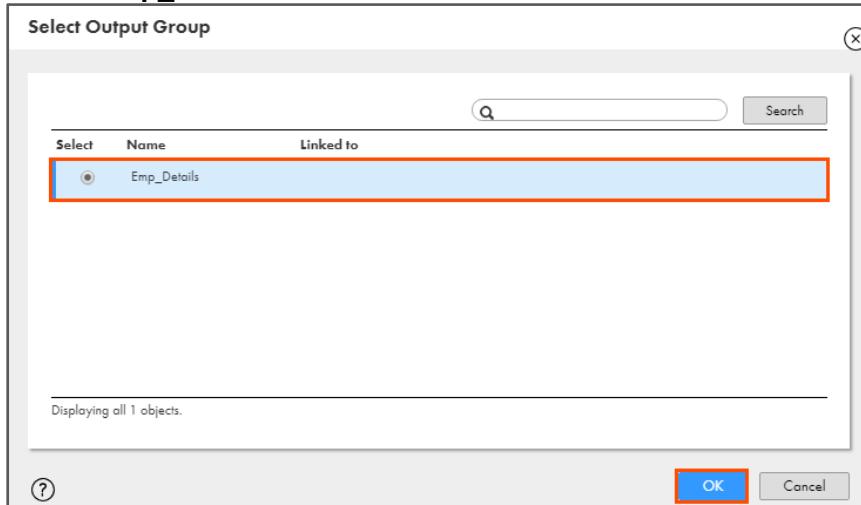


By default, all fields are included in the mapping data flow. You can edit field metadata by selecting the field you want to edit.				
	Name	Type	Precision	Scale
▼ Emp_Details				
1	employeeid	integer	10	
2	firstname	string	255	
3	lastname	string	255	
4	addressid	integer	10	
5	address_employeeid	integer	10	

38. Link **HierarchyParser** with **Target**.

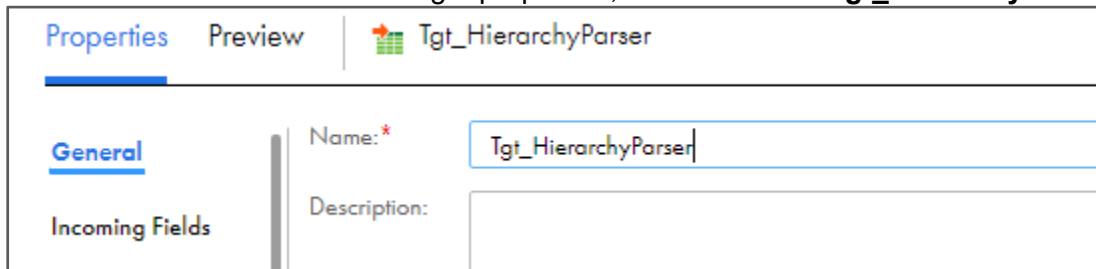


39. Select **Emp_Details** and click **OK**.



40. To configure the target, from the mapping canvas, click the **Target** transformation.

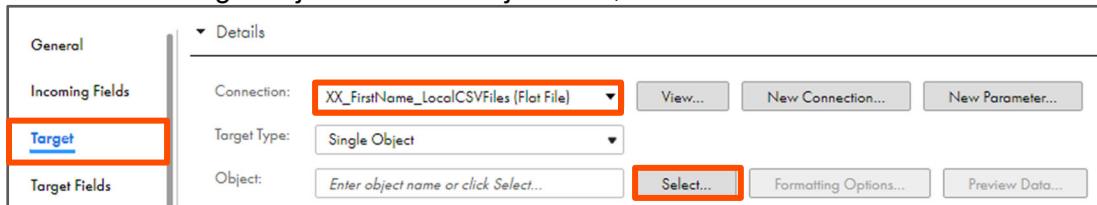
41. In the **General** section of the Target properties, enter Name as **Tgt_HierarchyParser**.



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

43. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

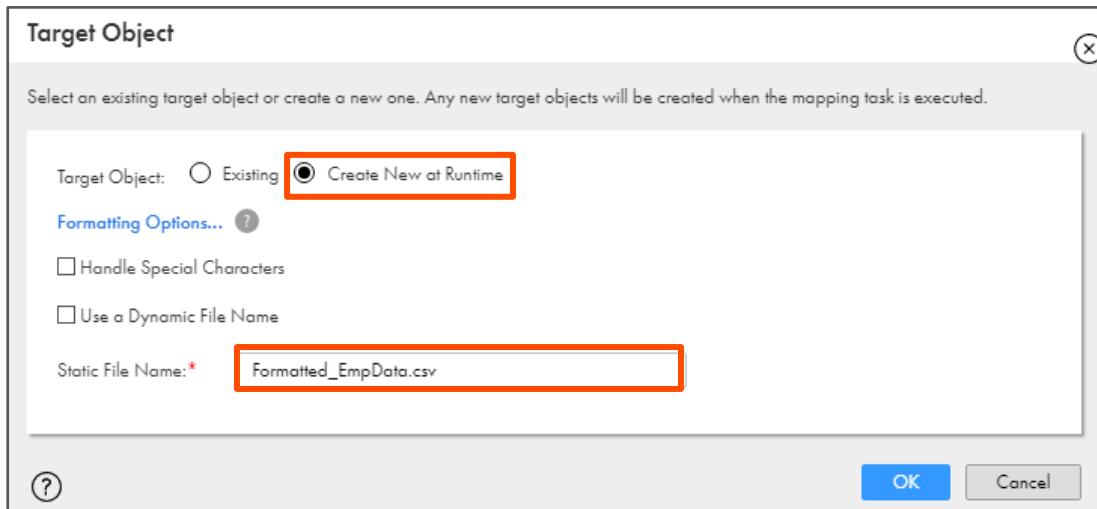
44. To select the target object from the Object field, click **Select**.



45. On the Target Object window, select **Create New at Runtime**.

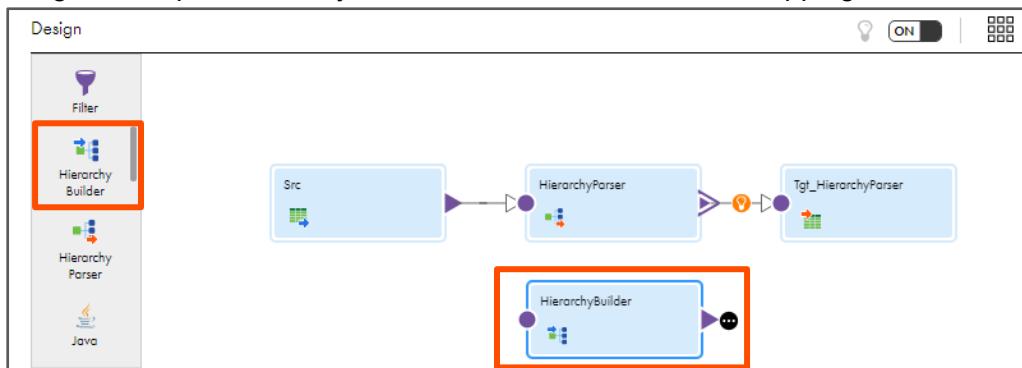
46. Enter **Formatted_EmpData.csv** as Static File Name.

47. Click **OK**.



Add a Hierarchy Builder Transformation

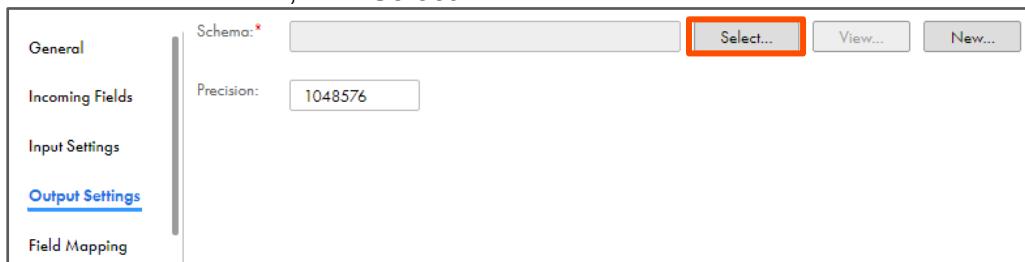
48. Drag and drop a Hierarchy Builder transformation on the mapping canvas.



49. Select the Hierarchy Builder transformation from the mapping canvas.

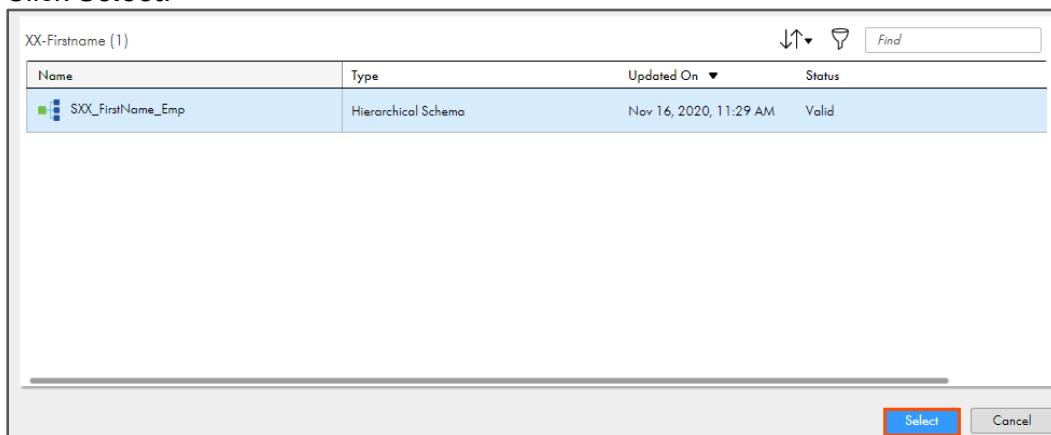
50. From the properties pane, click **Output Settings**.

51. To select the Schema, click **Select**.



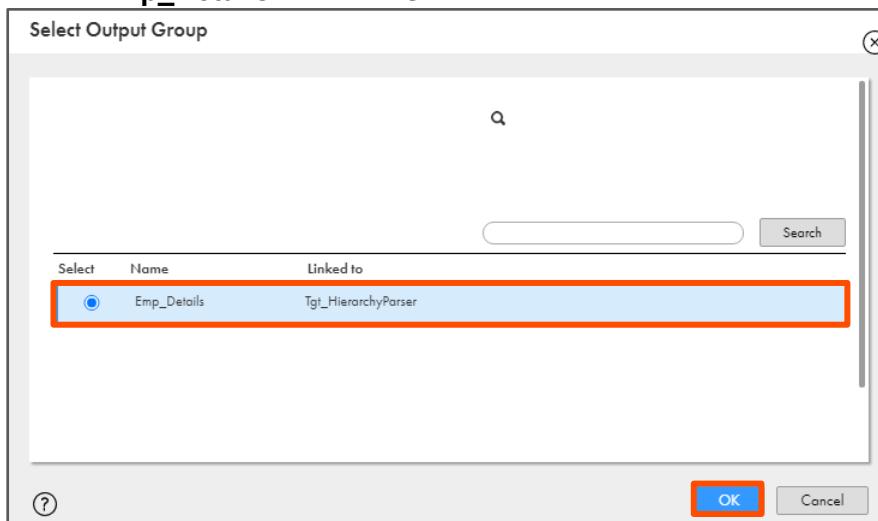
52. Navigate to your working directory and select **SXX_FirstName_Emp**.

53. Click **Select**.



54. Link **Hierarchy Parser** transformations with **Hierarchy Builder** transformation.

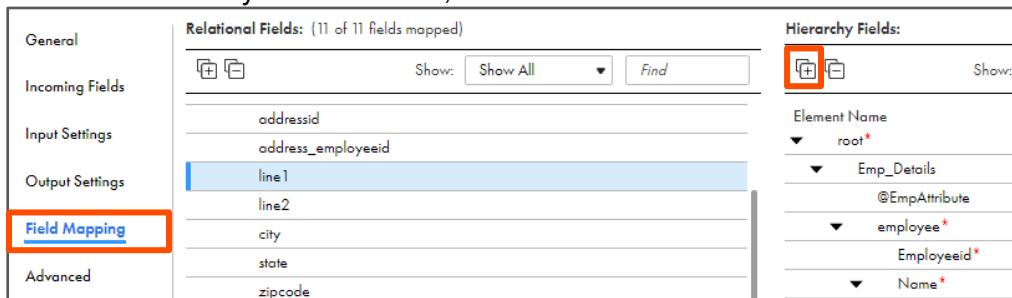
55. Select **Emp_Details** and click **OK**.



56. Select the Hierarchy Builder transformation from the mapping canvas.

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

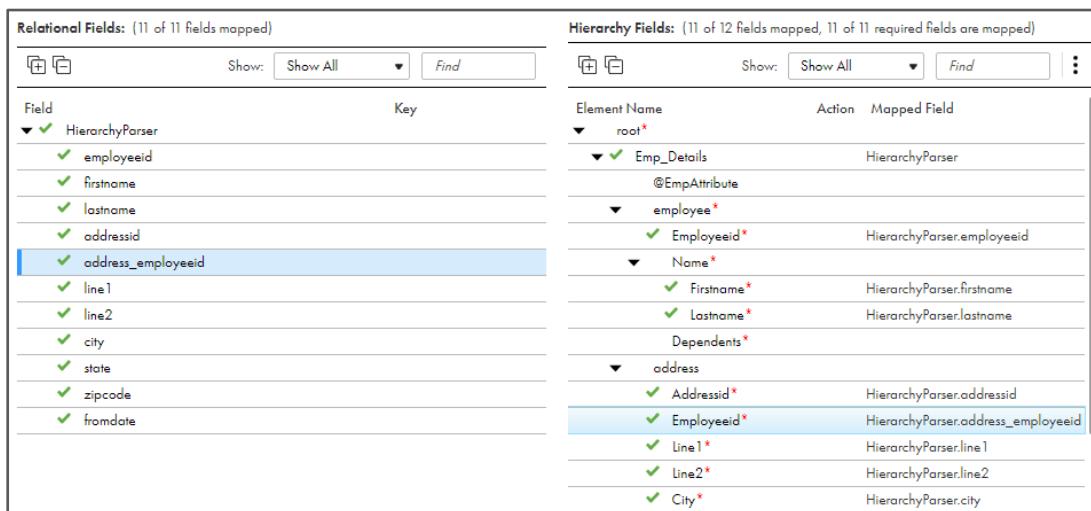
58. From the Hierarchy Fields section, click .



The screenshot shows the Informatica Mappings Editor interface. On the left, there's a sidebar with tabs: General, Incoming Fields, Input Settings, Output Settings, **Field Mapping** (which is selected), and Advanced. The main area has two sections: "Relational Fields: (11 of 11 fields mapped)" and "Hierarchy Fields:". The "Relational Fields" section contains fields like addressid, address_employeeid, line1, line2, city, state, and zipcode. The "Hierarchy Fields" section shows a hierarchical mapping starting from "root" which maps to "Emp_Details", which in turn maps to "@EmpAttribute", "employee", "Employeeid", and "Name". Both sections have "Show:" dropdowns and "Find" buttons.

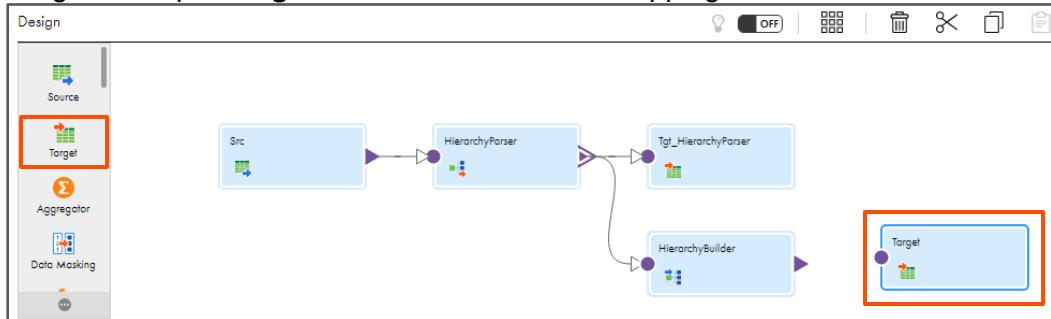
59. Map the fields, as shown in the table below:

Relational Fields	Hierarchy Fields
HierarchyParser	root > Emp_Details
Employeeid	root > Emp_Details > employee > Employeeid
Firstname	root > Emp_Details > employee > Name > Firstname
Lastname	root > Emp_Details > employee > Name > Lastname
Addressed	root > Emp_Details > employee > address > Addressid
address_employeeid	root > Emp_Details > employee > address > Employeeid
line 1	root > Emp_Details > employee > address > Line 1
line 2	root > Emp_Details > employee > address > Line 2
City	root > Emp_Details > employee > address > City
State	root > Emp_Details > employee > address > State
Zipcode	root > Emp_Details > employee > address > Zipcode
Fromdate	root > Emp_Details > employee > address > Fromdate

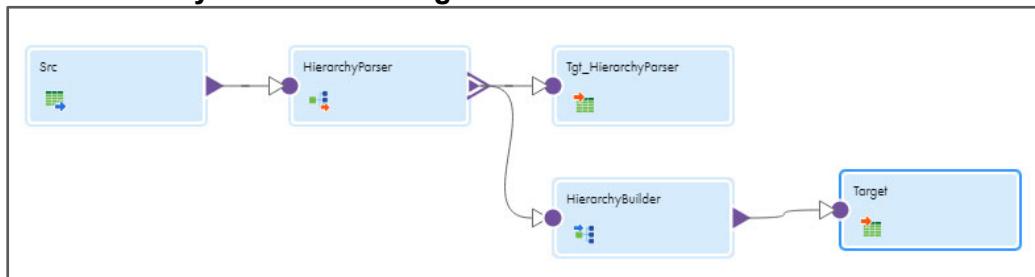


This screenshot shows the same Informatica Mappings Editor interface after field mapping. The "Relational Fields" section now lists fields with green checkmarks and their corresponding keys. The "Hierarchy Fields" section shows the detailed mapping structure with "Action" and "Mapped Field" columns. The "Employeeid" field in the relational section maps to "Employeeid*" in the hierarchy section. The "address_employeeid" field maps to "HierarchyParser.address_employeeid". The "line1" and "line2" fields map to "HierarchyParser.line1" and "HierarchyParser.line2" respectively. The "City" field maps to "HierarchyParser.city".

60. Drag and drop a **Target** transformation on the mapping canvas.

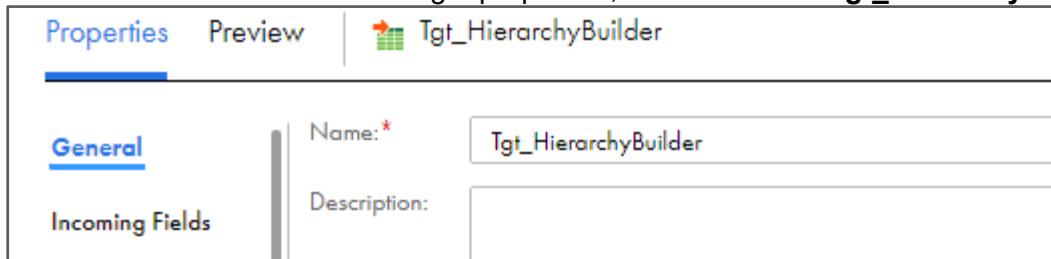


61. Link **Hierarchy Builder** with **Target**.



62. To configure the target, from the mapping canvas, click the **Target** transformation.

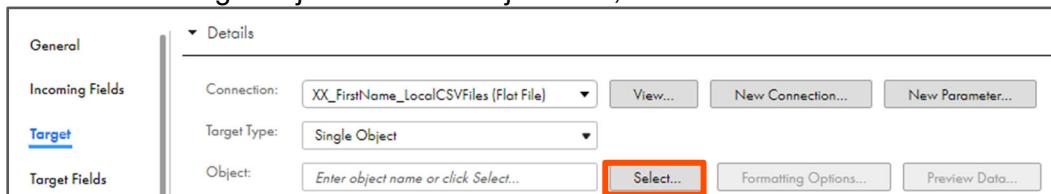
63. In the **General** section of the Target properties, enter Name as **Tgt_HierarchyBuilder**.



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

65. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

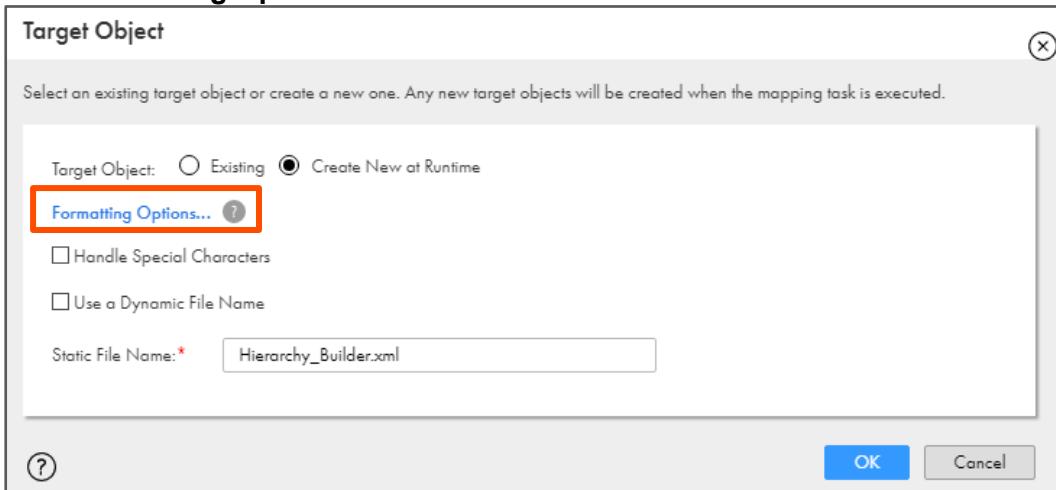
66. To select the target object from the Object field, click **Select...**.



67. On the Target Object window, select **Create New at Runtime**.

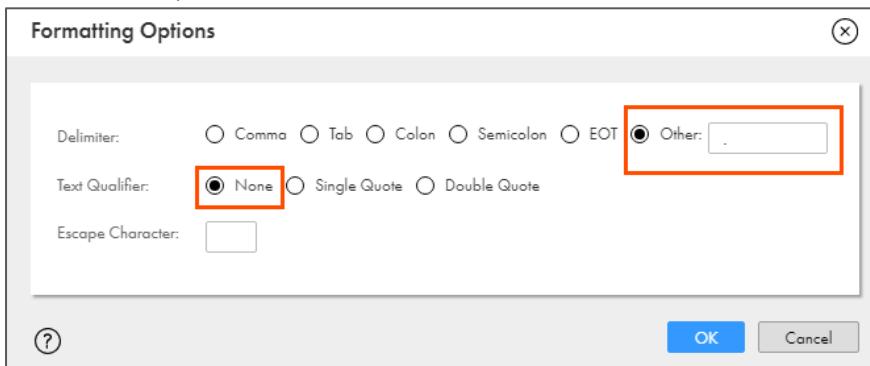
68. Enter **Hierarchy_Builder.xml** as Static File Name.

69. Click **Formatting Options**.

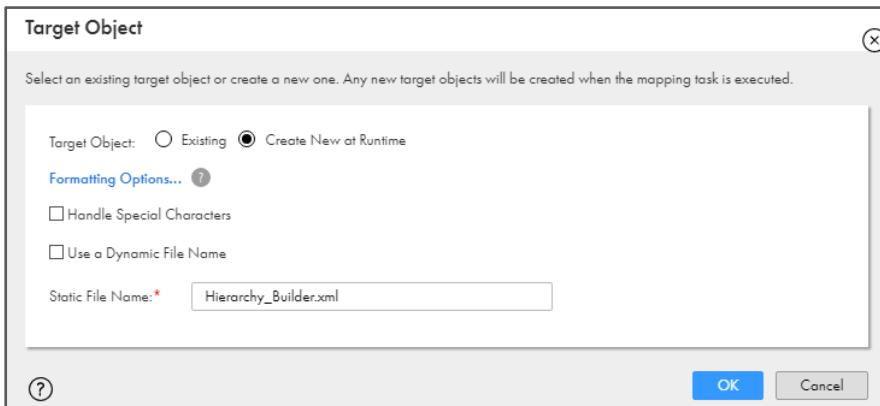


70. For the Delimiter field, select **other**, and enter a period (.)

71. Select Text Qualifier as **None** and click **OK**.

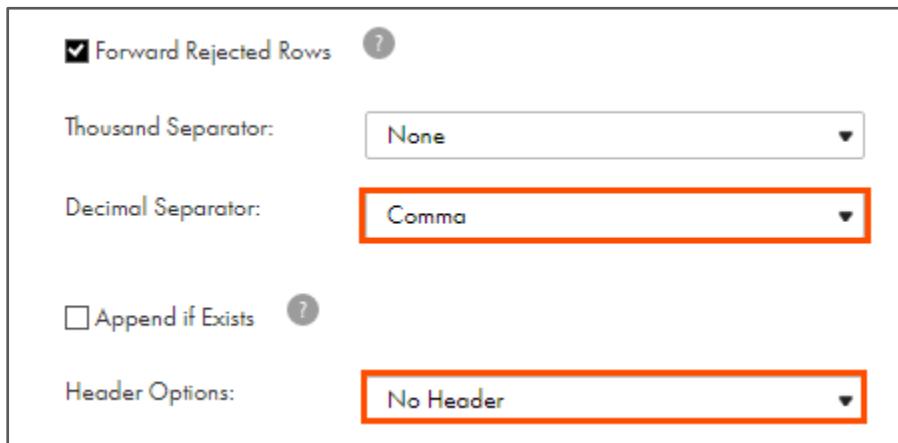


72. Click **OK**.

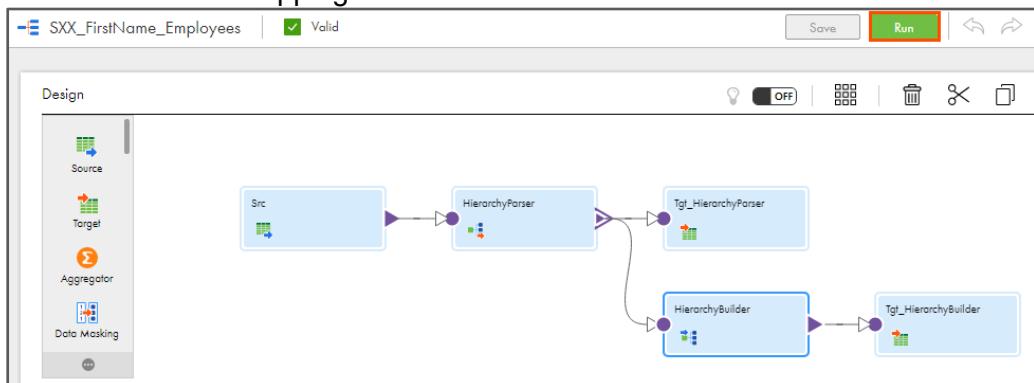


73. From the target properties, expand the **Advanced** section.

74. From the Decimal Separator drop-down, select **Comma** and set Header Options as **No Header**.

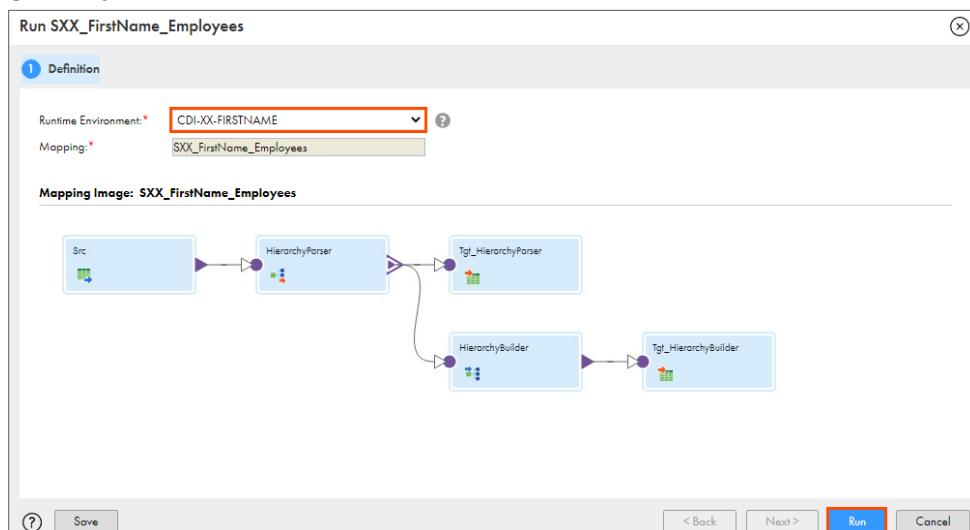


75. Save and run the mapping.



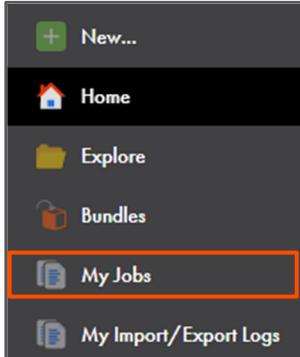
76. From the Runtime Environment drop-down, select your secure agent group.

77. Click **Run**.



Monitor Status

78. To monitor the mapping status, from the navigation pane, click **My Jobs**.



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

Jobs (3 of 465)						Up to date	Updated 11:46:39 AM PST	↻	↑↓	✖	Find
Asset Name: SXX_FirstName_Emplo...		Subtasks	Start Time	End Time	Rows Processed	Status					
SXX_FirstName_Employees	-5		Nov 16, 2020, 11:44 AM	Nov 16, 2020, 11:44 AM	4	Success					

80. Close the asset from the navigation pane.

81. Navigate to **C:\IICSLabFiles** and verify that 2 rows are written in following files.

Formatted_EmpData.csv.

Formatted_EmpData - Excel											
File	Home	Insert	Page Layout	Formulas	Data	Review	View	Help	Search	Conditional	Format as
Formatting Table Styles											
K8	A	B	C	D	E	F	G	H	I	J	K
1	employeeid	firstname	lastname	addressid	address_employeeid	line1	line2	city	state	zipcode	fromdate
2	1	Arjun	Reddy	2	1	Bagmane Tech Park	CV Raman Nagar	Bangalore	KA	560029	9/29/2008 0:00
3	2	Ankit	Tiwari	2	1	22nd Main Road	HSR Layout	Bangalore	KA	560102	9/29/2008 0:00
4											

Hierarchy_Builder.xml

Hierarchy_Builder - WordPad

```
<?xml version="1.0" encoding="UTF-8"?>
<root xmlns="http://www.w3schools.com"
      xmlns:infans="www.informatica.com/CDET/XSD/mappingName_Hierarchy
Builder_r2h_udt_bckxg_ONLY_R2H"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Emp_Details>
    <employee>
      <Employeeid>1</Employeeid>
      <Name>
        <Firstname>Arjun</Firstname>
        <Lastname>Reddy</Lastname>
      </Name>
      <Dependents></Dependents>
    </employee>
    <address>
      <Addressid>2</Addressid>
      <Employeeid>1</Employeeid>
      <Line1>Bagmane Tech Park</Line1>
      <Line2>CV Raman Nagar</Line2>
      <City>Bangalore</City>
      <State>KA</State>
      <Zipcode>560029</Zipcode>
      <Fromdate>2008-09-29</Fromdate>
    </address>
  </Emp_Details>
</root>
```

This concludes the lab.

Module 13: Intelligent Structure Model

Lab 13-1: Creating an Intelligent Structure Model

Overview:

An Intelligent Structure Model is a service that determines the underlying patterns of the sample file and creates a model to transform, parse, and generate output groups.

In this lab, you will create an Intelligent Structure Model for a flat file.

Objective:

- Create Intelligent Structure Model

Scenario:

Different outlets of NH Retails manage their data on different data sources. Ruby wants to convert data from all the outlets into the same format to use it for business analysis. However, manual transformation is not a feasible solution. John uses the Intelligent Structure Model feature of IICS to determine a file pattern for all the data sources.

Duration:

5 minutes

Tasks

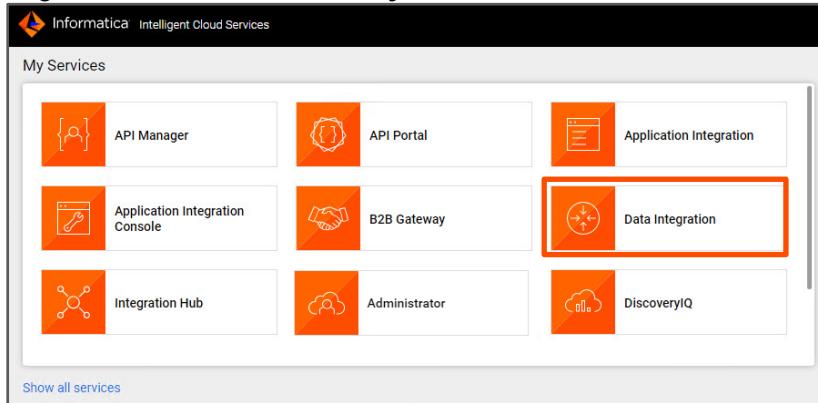
Copy Source Files

1. Copy the **StructureModel.txt** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).
2. Open the source file and observe its contents.

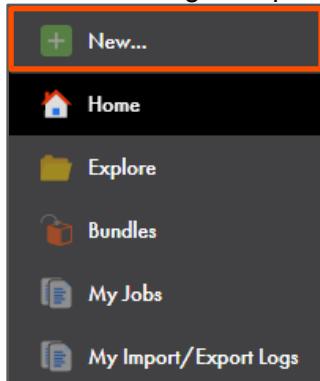
Note: You must close the files before running the task to avoid job failure.

Create Intelligent Structure Model

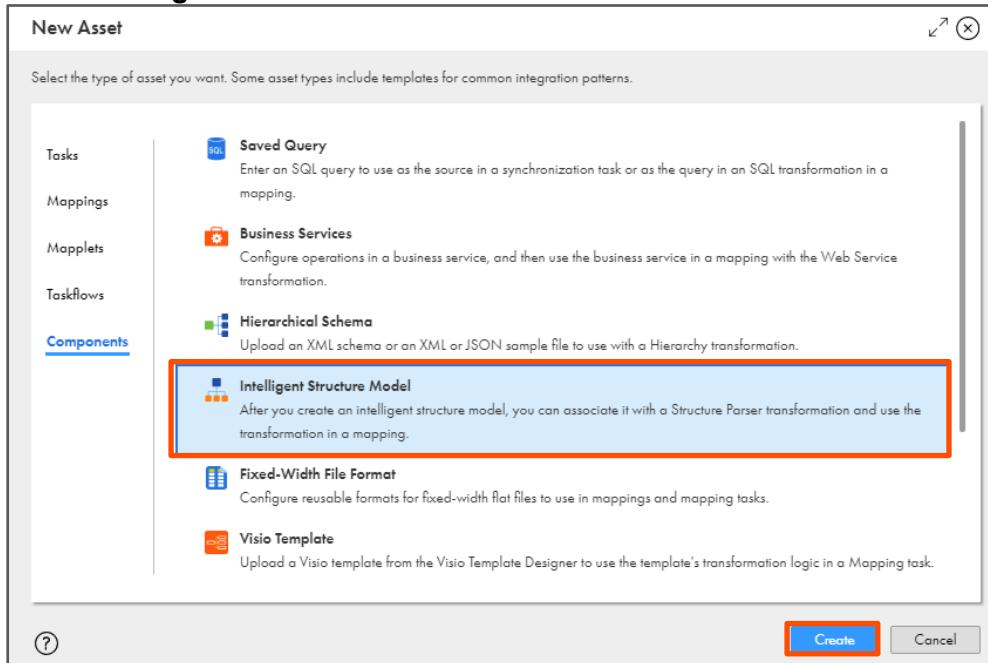
3. Log in to IICS and from the **My Services** window, select **Data Integration**.



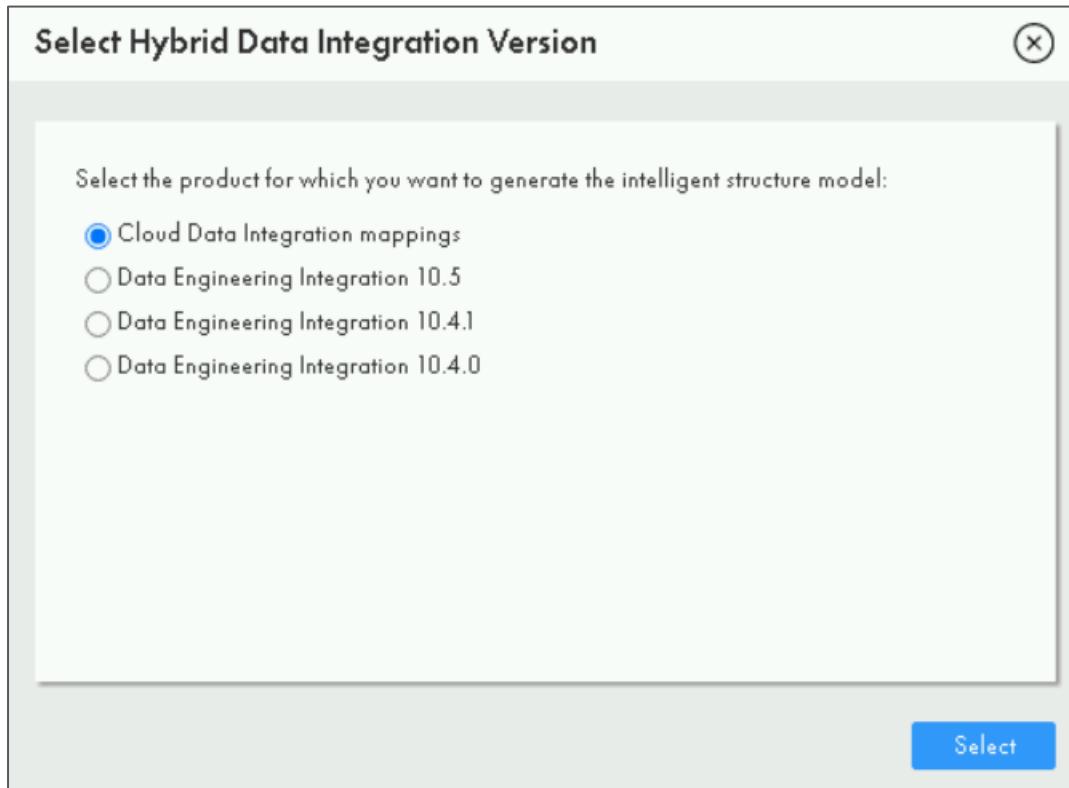
4. From the navigation pane, select **New**.



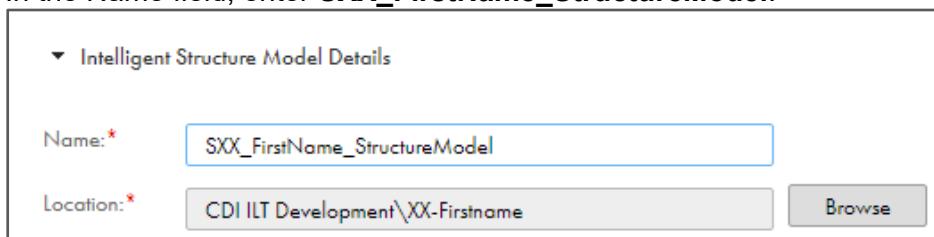
5. From the New Asset window, click the **Components** tab.
 6. Select **Intelligent Structure Model** and click **Create**.



7. If you see Select Hybrid Data Integration version window, retain the default option and click **Select**.



8. In the Name field, enter **SXX_FirstName_StructureModel**.

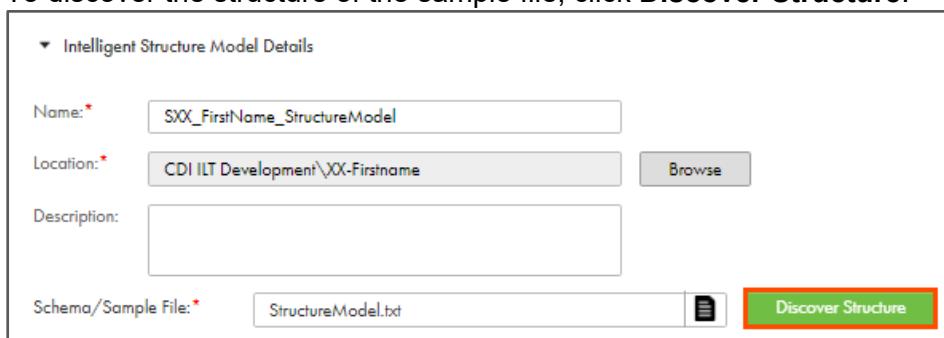


Intelligent Structure Model Details

Name: * SXX_FirstName_StructureModel

Location: * CDI ILT Development\XX-Firstname

9. To upload a sample file, from the Sample File section, click .
10. Navigate and select the **StructureModel.txt** file that you copied into your flat file directory.
11. To discover the structure of the sample file, click **Discover Structure**.



Intelligent Structure Model Details

Name: * SXX_FirstName_StructureModel

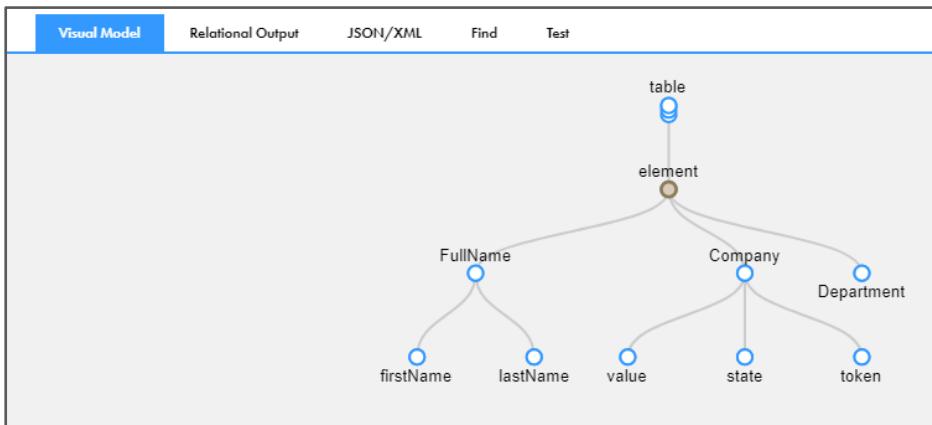
Location: * CDI ILT Development\XX-Firstname

Description:

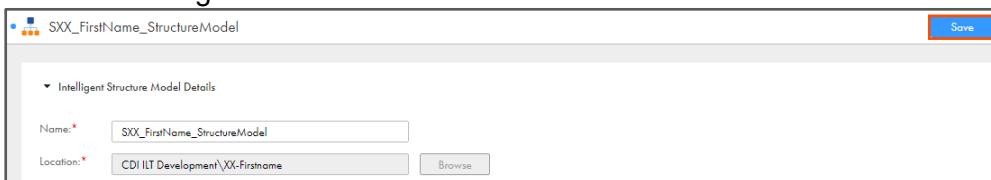
Schema/Sample File: * StructureModel.txt

Note: You must wait for the structure discovery process to complete.

12. View all the representations of the discovered model.



13. Save the Intelligent Structure Model.



14. Close the asset from the navigation pane.

This concludes the lab.

Module 13: Intelligent Structure Model

Lab 13-2: Using Structure Parser Transformation in a Mapping

Overview:

The Structure Parser transforms input data into a user-defined structure format that is based on an intelligent structure model.

In this lab, you will create a mapping that uses the intelligent structure model that you created earlier in the structure parser transformation to separate the valid and invalid entries from the input file.

Objective:

- Create a mapping using Structure Parser transformation

Scenario:

John re-uses the intelligent structure model created in the previous lab. He creates a mapping that reads the input values from a flat file source and separates parsed and unparsed values in different targets based on the structure identified by the intelligent structure discovery process.

Duration:

10 minutes

Tasks

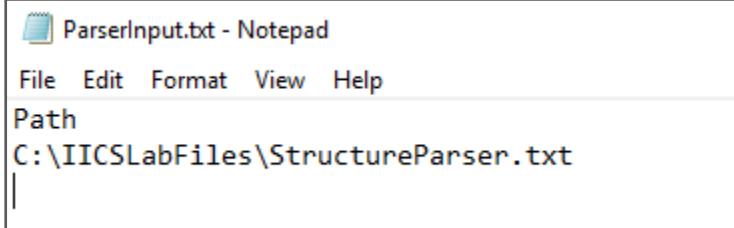
Copy Source Files

1. Copy the **StructureParser.txt** file from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles).
2. Open the source file and observe its contents.

Note: You must close the files before running the task to avoid job failure.

Create File

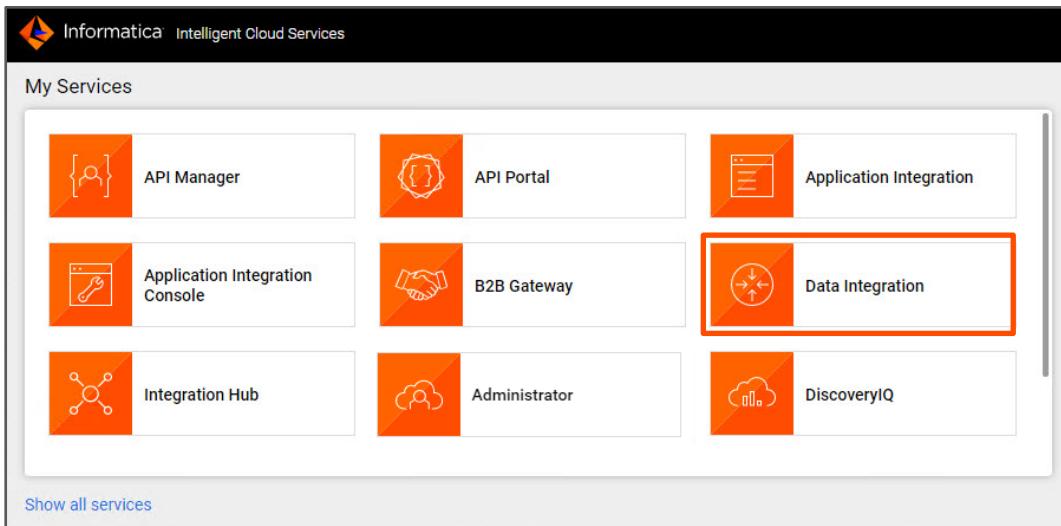
3. Create a text file (**ParserInput.txt**) in your flat file directory, and in that text file, type **Path** and enter the location of your source file (**C:\IICSLabFiles\StructureParser.txt**) in the format shown below:



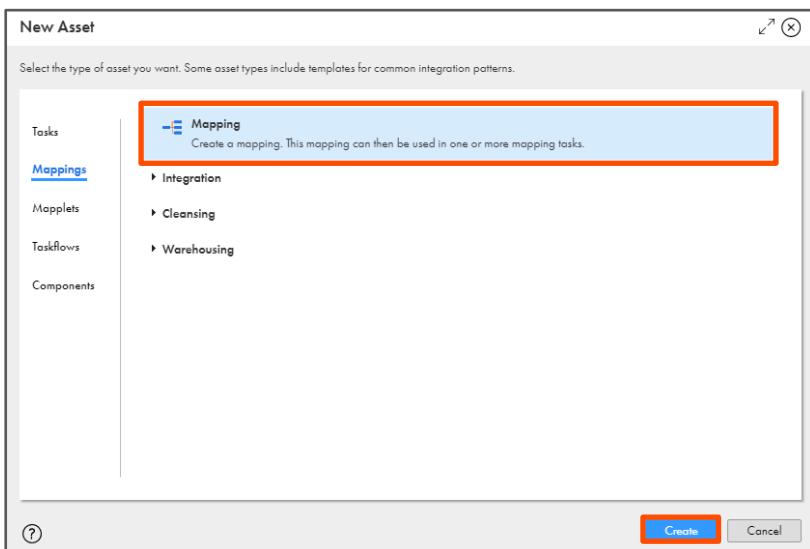
4. Save and close the ParserInput.txt file.

Create Mapping

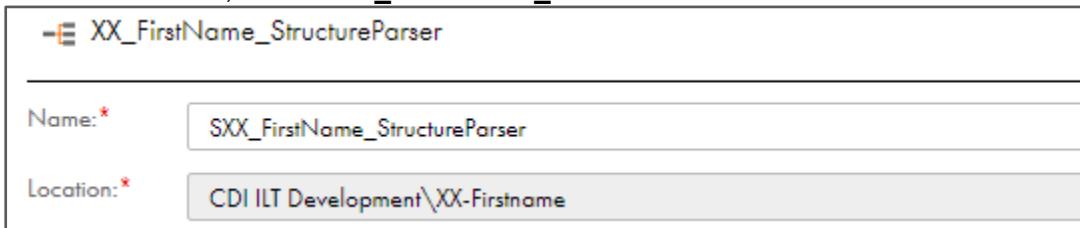
5. Log in to IICS and from the **My Services** window, select **Data Integration**.



6. Create a new Mapping.



7. In the Name field, enter **SXX_FirstName_StructureParser**.



XX_FirstName_StructureParser	
Name:*	SXX_FirstName_StructureParser
Location:*	CDI ILT Development\XX-Firstname

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

9. In the **General** section of Source properties, enter the Name as **Src**.

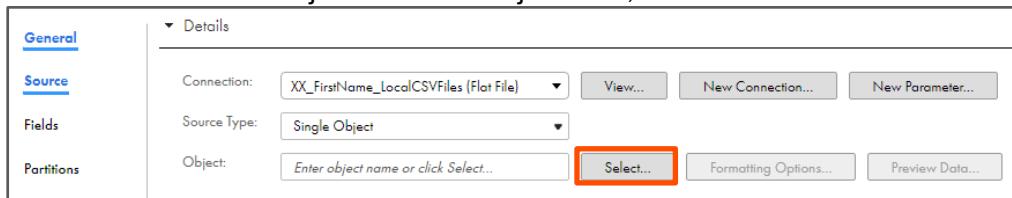


10. From the properties pane, click **Source**.

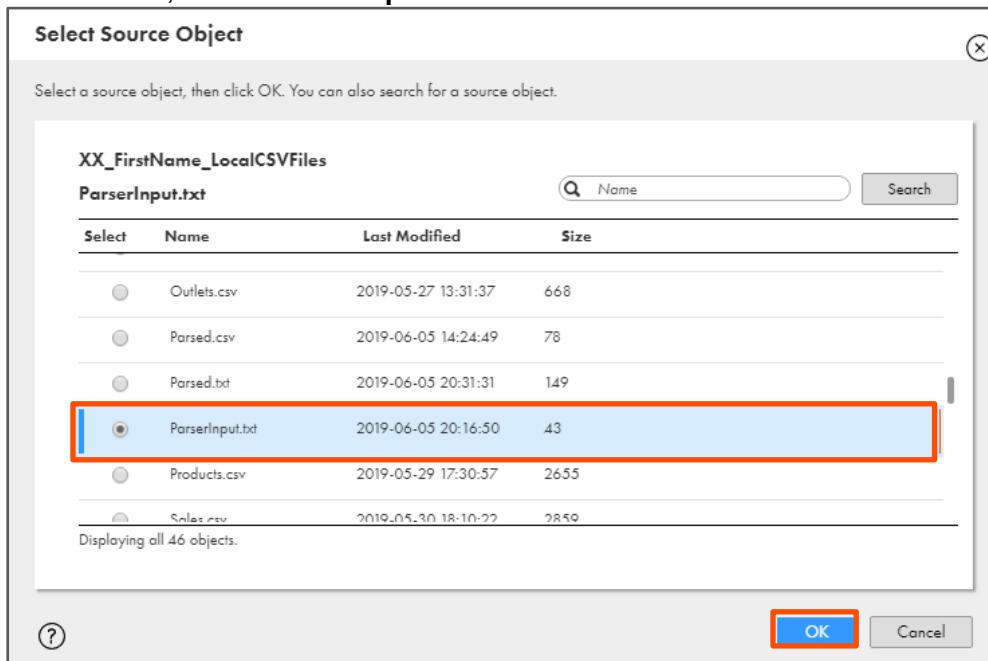
11. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

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

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

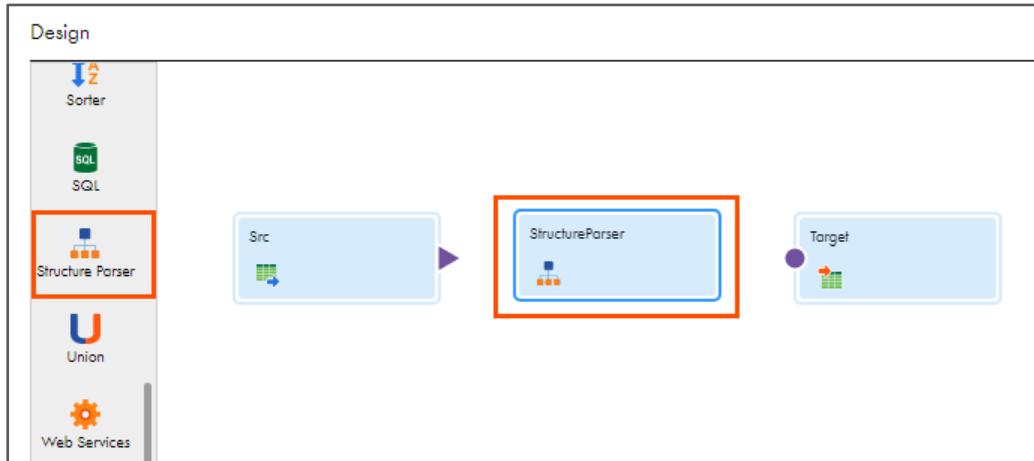


14. From the list, select **ParserInput.txt** and click **OK**.



Add Structure Parser Transformation

15. Drag and drop a **Structure Parser** transformation on the link between Src and Target transformations.



Note: The link between Src and Target deletes automatically after you drop the Structure Parser transformation on the link.

16. Select the **Structure Parser** transformation on the mapping canvas.

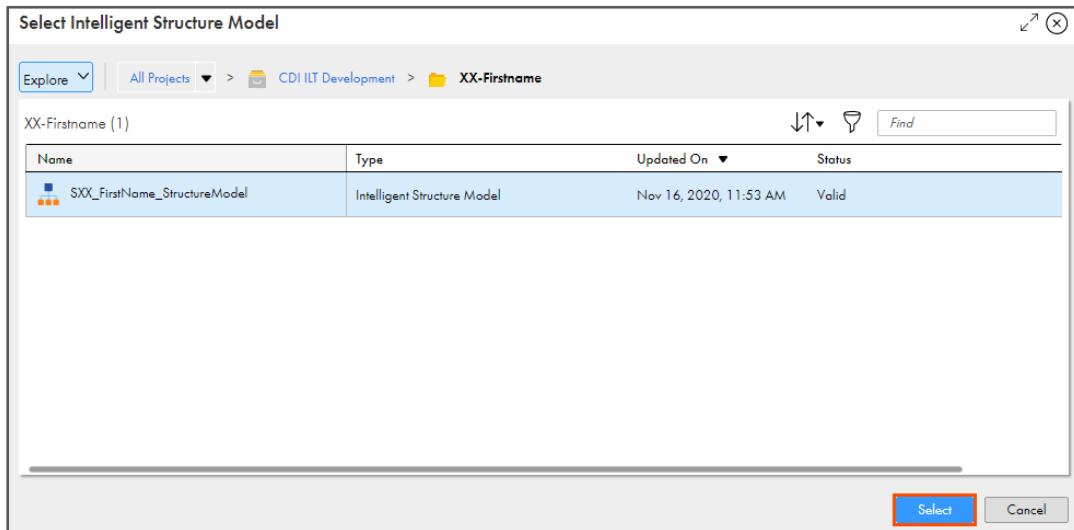
17. From the properties pane, click **Structure Parser**.

18. To select the Intelligent Structure Model, click **Select**.



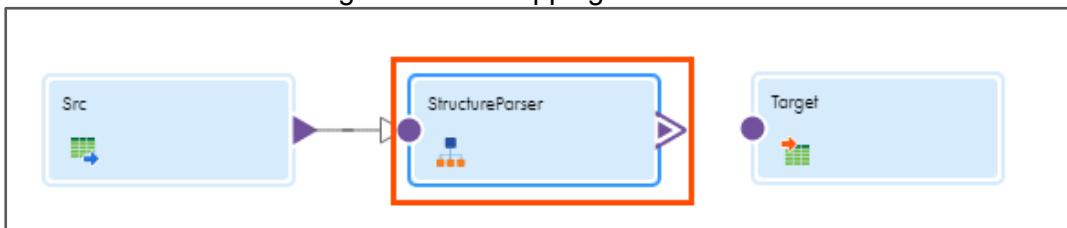
Note: The Structure Parser transformation output is Relational, JSON, XML, Avro, Parquet, and ORC format. For the purpose of this lab, the output format will be Relational.

19. Navigate to your working directory and select **SXX_FirstName_StructureModel** structure model.



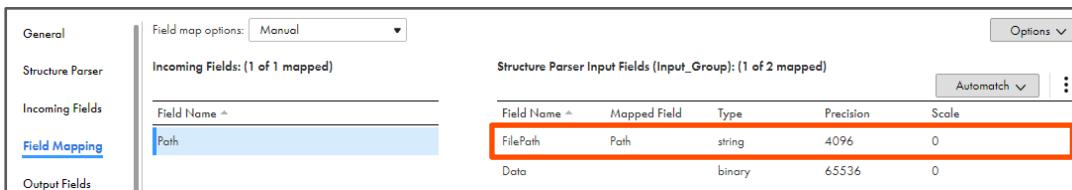
20. Link **Src** to **StructureParser**.

21. Select **StructureParser** again on the mapping canvas.



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

23. To map the Incoming field with the Structure Parser Input field, drag and drop the **Path** field onto the **FilePath** field.

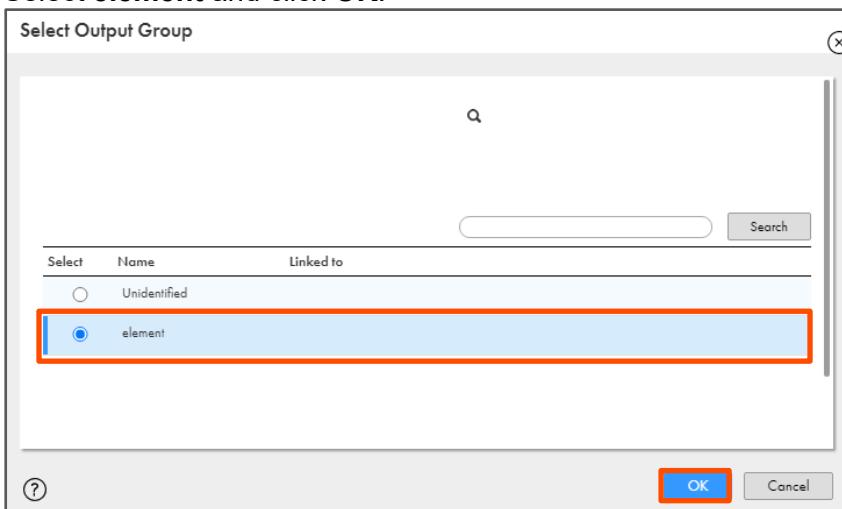


Field Name	Mapped Field	Type	Precision	Scale
Path	FilePath	string	4096	0
	Data	binary	65536	0

Note: Skip this step if the field is already mapped.

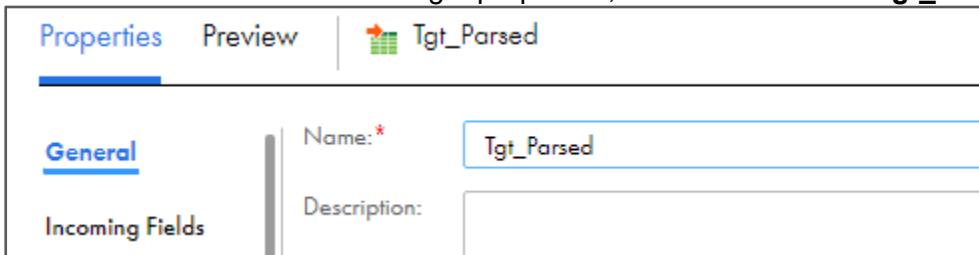
24. Link **StructureParser** with **Target**.

25. Select **element** and click **OK**.



26. To configure the target, from the mapping canvas, click the **Target** transformation.

27. In the **General** section of the Target properties, enter the Name as **Tgt_Parsed**.

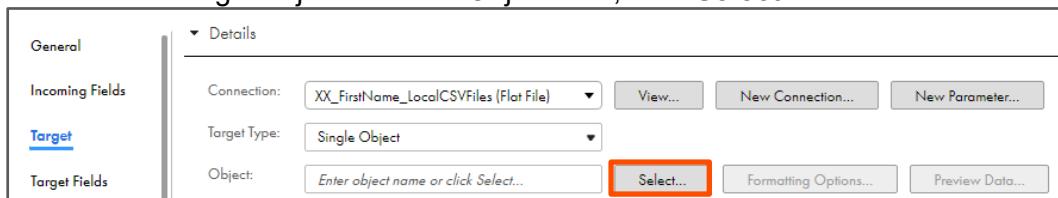


General	Name:
	Tgt_Parsed

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

29. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

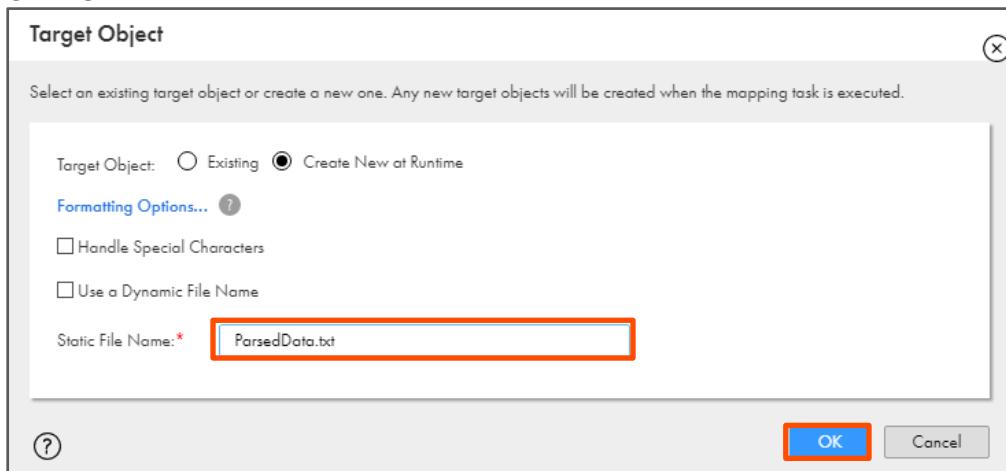
30. To select the target object from the Object field, click **Select**.



31. On the Target Object window, select **Create New at Runtime**.

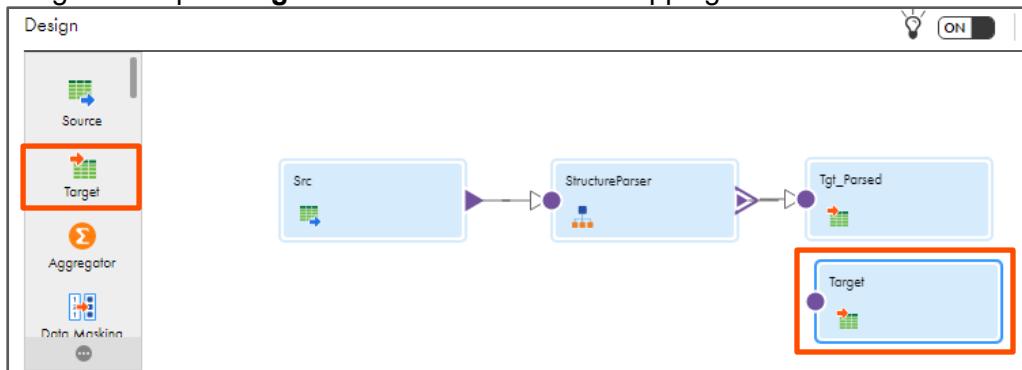
32. Enter **ParsedData.txt** as Static File Name.

33. Click **OK**.



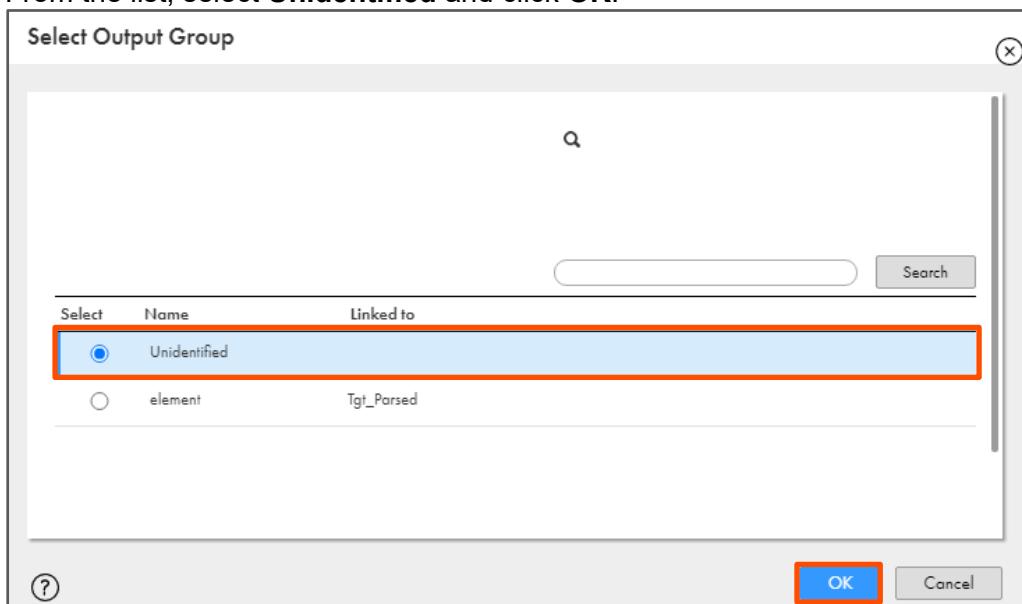
Add Target Transformation

34. Drag and drop a **Target** transformation on the mapping canvas.



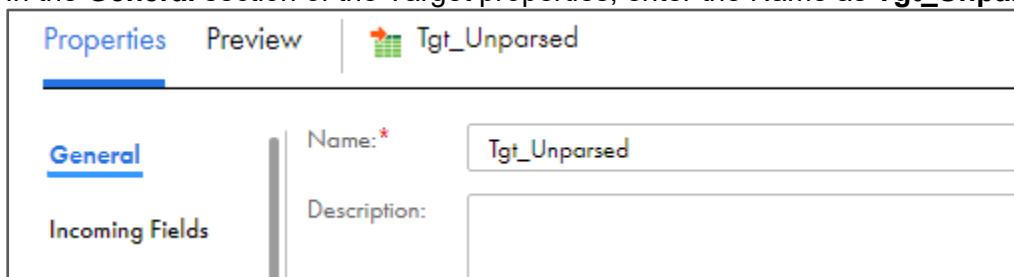
35. Link **StructureParser** to **Target**.

36. From the list, select **Unidentified** and click **OK**.



37. Select the added Target transformation on the mapping canvas.

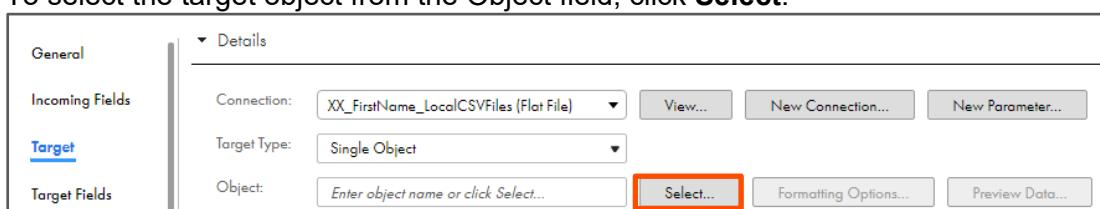
38. In the **General** section of the Target properties, enter the Name as **Tgt_Unparsed**.



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

40. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

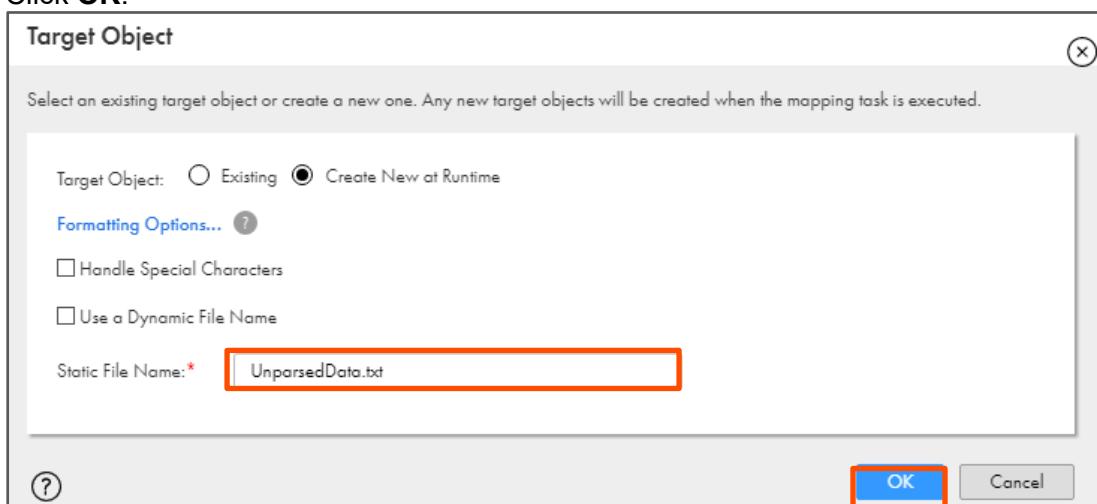
41. To select the target object from the Object field, click **Select**.



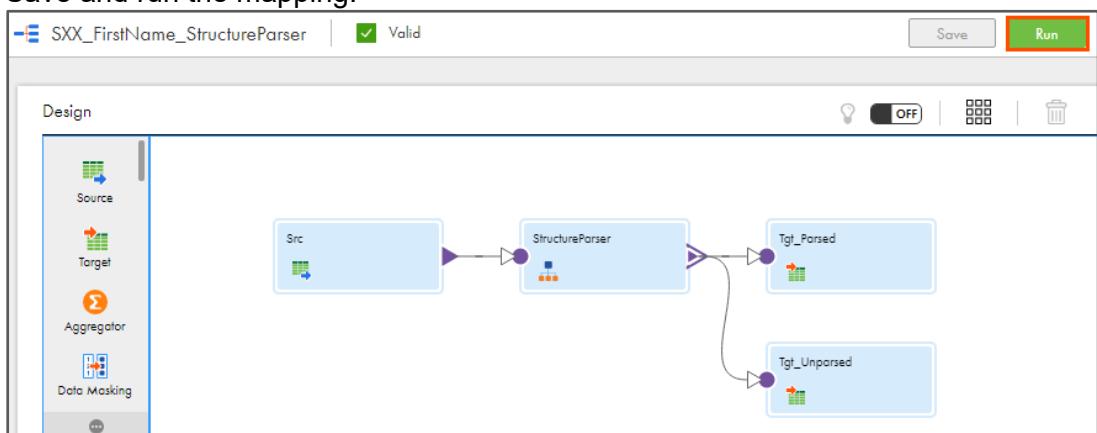
42. In the Target Object window, select **Create New at Runtime**.

43. Enter the Static File Name as **UnparsedData.txt**.

44. Click OK.

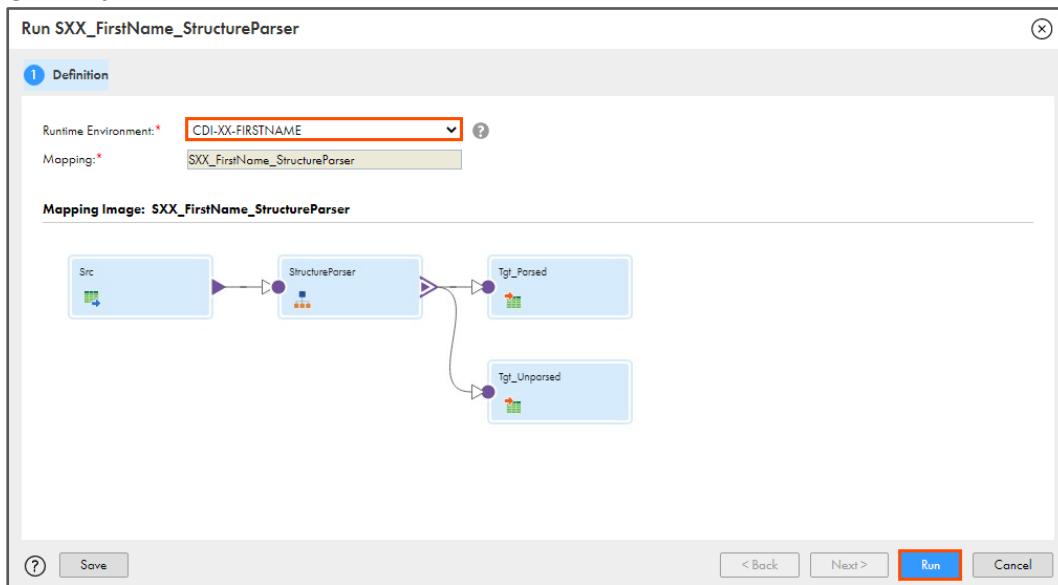


45. Save and run the mapping.



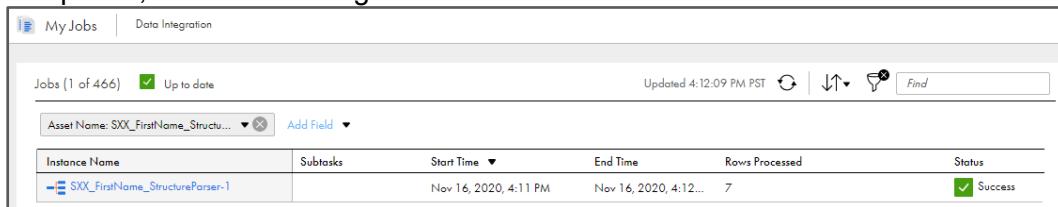
46. From the Runtime Environment drop-down, select your secure agent group.

47. Click **Run**.



Monitor Status

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

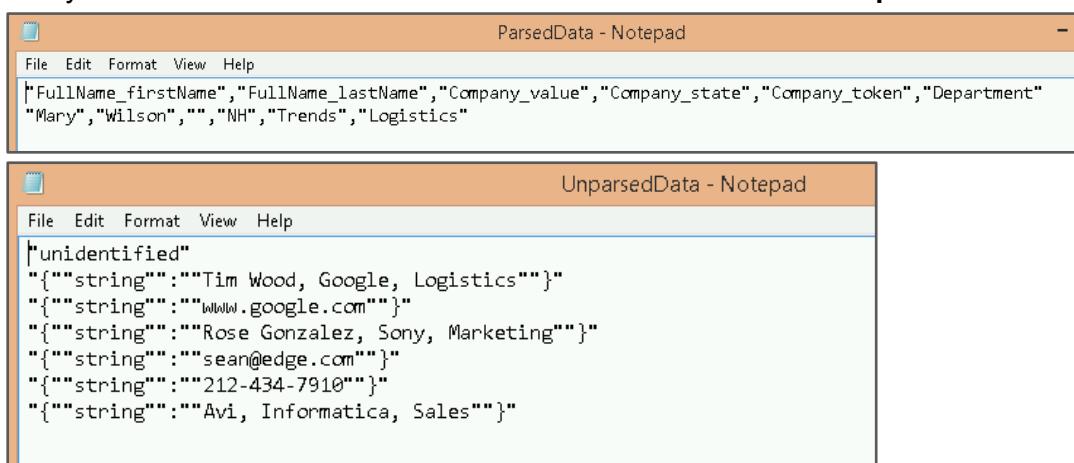


Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_FirstName_StructureParser		Nov 16, 2020, 4:11 PM	Nov 16, 2020, 4:12...	7	✓ Success

49. Close the asset from the navigation pane.

50. Go to **C:\IICSLabFiles**.

51. Verify that correct entries are written to the **ParsedData.txt** and **UnparsedData.txt** files.



```

ParsedData - Notepad
File Edit Format View Help
"FullName(firstName", "FullName(lastName", "Company_value", "Company_state", "Company_token", "Department"
"Mary", "Wilson", "", "NH", "Trends", "Logistics"

UnparsedData - Notepad
File Edit Format View Help
"unidentified"
"string": "Tim Wood, Google, Logistics"
"string": "www.google.com"
"string": "Rose Gonzalez, Sony, Marketing"
"string": "sean@edge.com"
"string": "212-434-7910"
"string": "Avi, Informatica, Sales"

```

This concludes the lab.

Module 15: Exception Handling

Lab 15-1: Creating a Mapping to Handle Non-fatal Errors

Overview:

IICS allows you to use the Advance Session Properties in mapping task to define error handling methods.

In this lab, you will use the advance session properties to define the error log type for the mapping.

Objective:

- Configure a mapping to handle non-fatal errors

Scenario:

John creates parameterized mapping that routes the employee information to different target files. The router transformation routes the employee information based on the condition defined for each output group. John also creates a mapping task and uses the advanced session properties to generate flat file error logs for the mapping.

Duration:

25 minutes

Tasks**Copy Source Files**

- Copy the following files from the CDI Lab Prep Files folder available on your desktop and paste it in your flat file directory (C:\IICSLabFiles):

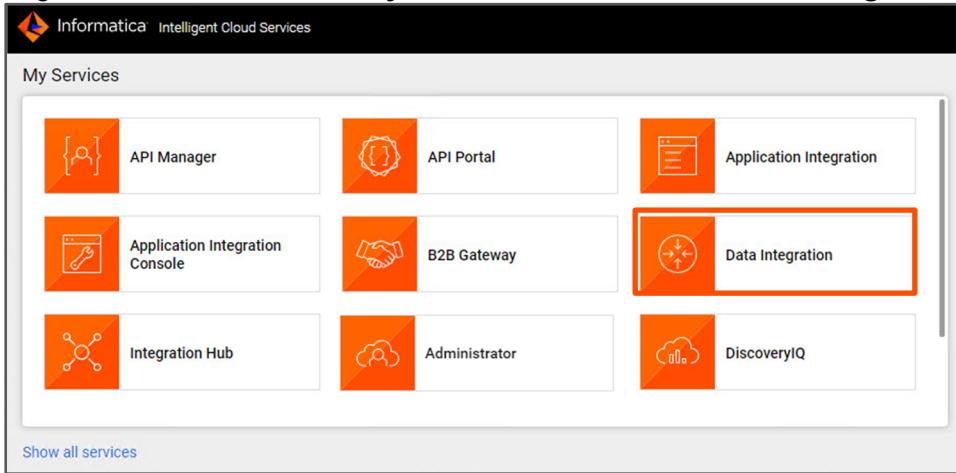
Files
Error Handling.csv
Valid_Data.csv
Invalid_Data.csv

- Open the source files and observe its contents.

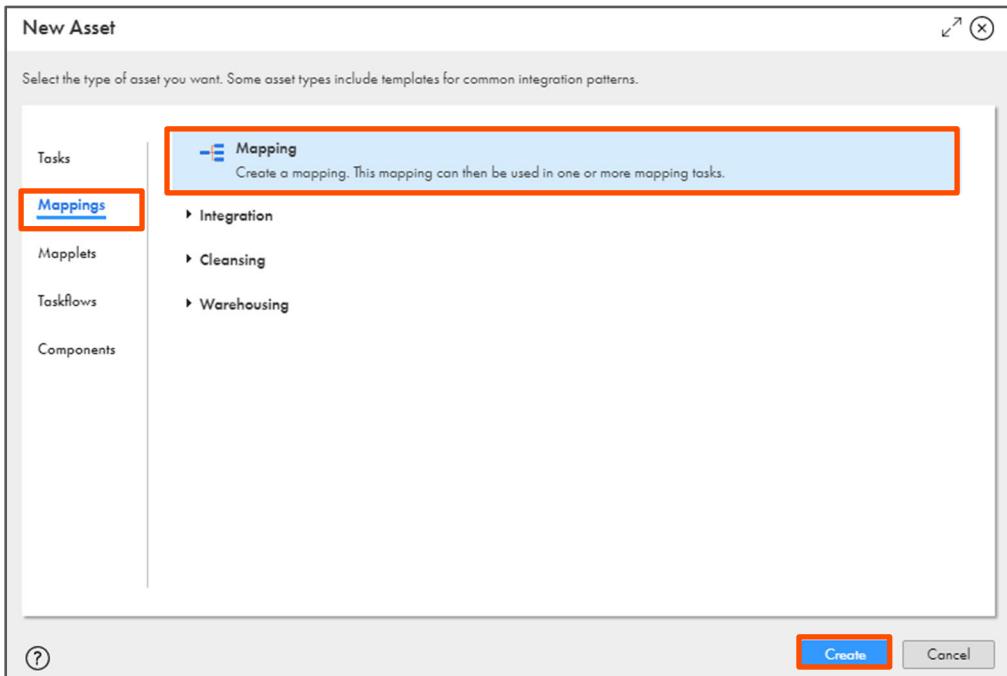
Note: You must close the files before running the task to avoid job failure.

Create Mapping

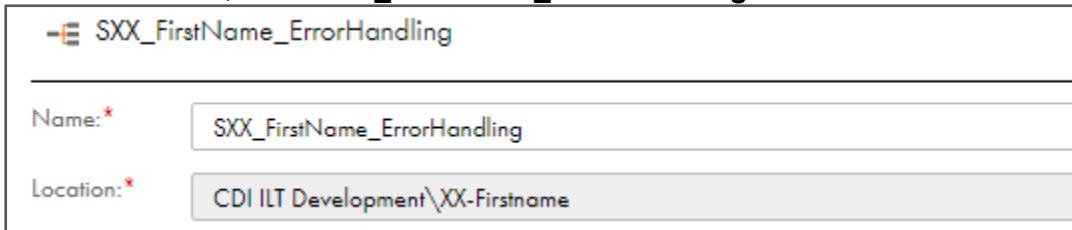
3. Log in to IICS and from the **My Services** window, select **Data Integration**.



4. Create a new Mapping.



5. In the Name field, enter **SXX_FirstName_ErrorHandling**.



SXX_FirstName_ErrorHandling	
Name:*	SXX_FirstName_ErrorHandling
Location:*	CDI ILT Development\XX-Firstname

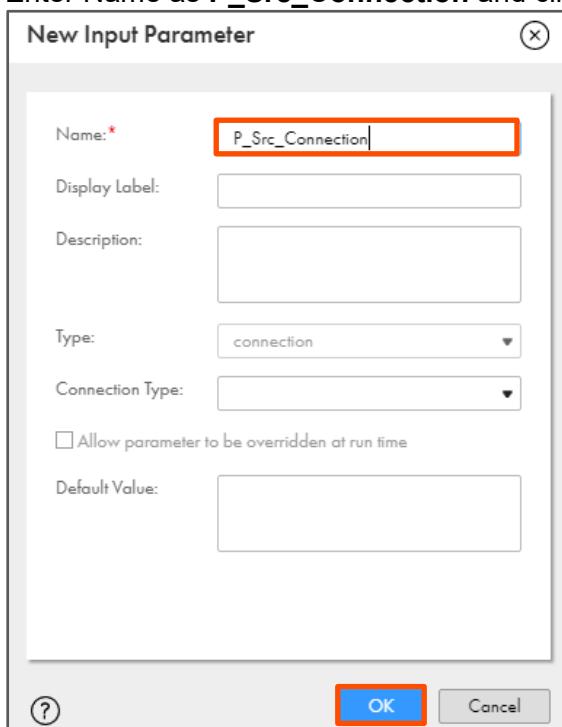
6. To configure the source, from the mapping canvas, click the **Source** transformation.
 7. From the properties pane, click **Source**.

8. To create a new connection parameter, click **New Parameter**.



The screenshot shows the 'Source' tab selected in the left sidebar. In the main panel, there is a 'Details' section with a 'Connection:' dropdown, a 'View...' button, a 'New Connection...' button, and a 'New Parameter...' button. The 'New Parameter...' button is highlighted with a red box.

9. Enter Name as **P_Src_Connection** and click **OK**.

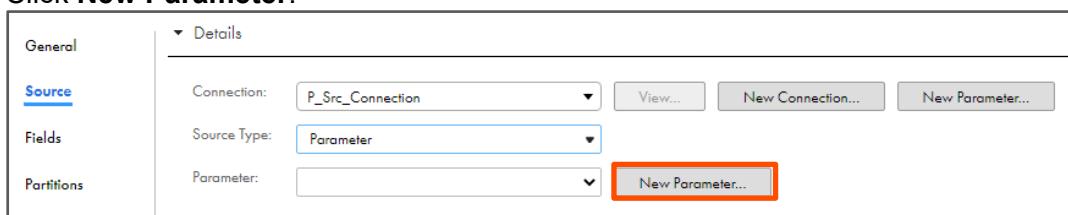


The screenshot shows the 'New Input Parameter' dialog box. The 'Name:' field is filled with 'P_Src_Connection'. The 'OK' button at the bottom is highlighted with a red box.

Name:*	P_Src_Connection
Display Label:	
Description:	
Type:	connection
Connection Type:	
<input type="checkbox"/> Allow parameter to be overridden at run time	
Default Value:	
<input style="border: none; padding: 0; margin-right: 10px;" type="button" value="?"/> <input style="border: 2px solid #0070C0; background-color: #0070C0; color: white; font-weight: bold; padding: 5px 10px; border-radius: 5px; margin-right: 10px;" type="button" value="OK"/> <input style="border: none; padding: 0;" type="button" value="Cancel"/>	

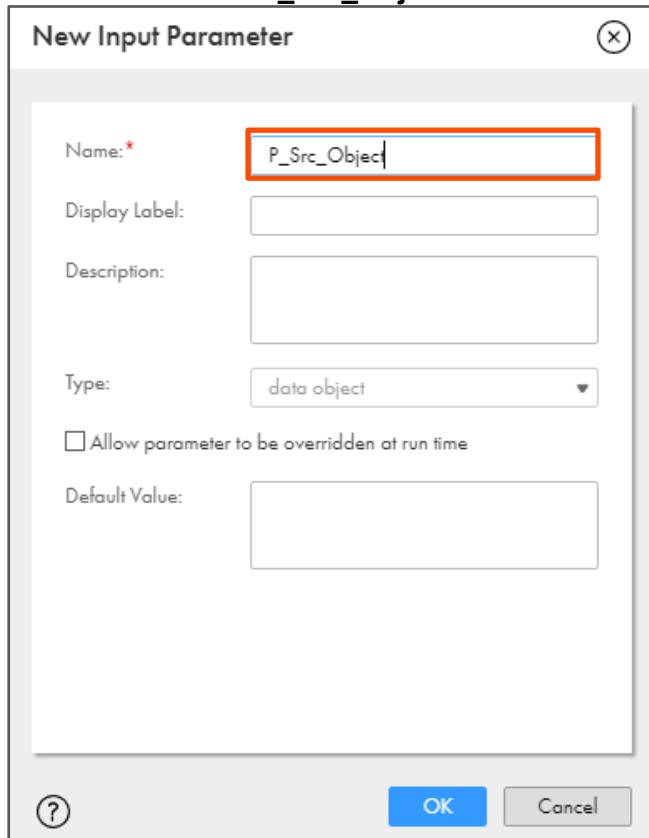
10. From the Source Type drop-down, select **Parameter**.

11. Click **New Parameter**.



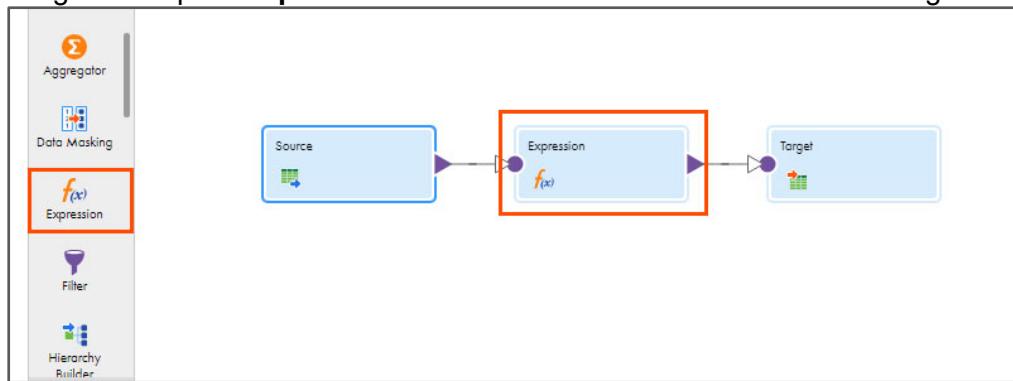
The screenshot shows the 'Source' tab selected in the left sidebar. In the main panel, there is a 'Details' section with a 'Connection:' dropdown set to 'P_Src_Connection', a 'View...' button, a 'New Connection...' button, and a 'New Parameter...' button. Below these, a 'Source Type:' dropdown is set to 'Parameter', and a 'Parameter:' dropdown is open, showing 'New Parameter...'. The 'New Parameter...' button in the 'Parameter:' dropdown is highlighted with a red box.

12. Enter the Name as **P_Src_Object** and click **OK**.



Add Expression Transformation

13. Drag and drop an **Expression** transformation between Source and Target.



14. From the mapping canvas, select **Expression** transformation.

15. In the **General** section of the Expression properties, enter the Name as **Exp_Validation**.

Properties	Preview	Exp_Validation
General	Name: *	Exp_Validation
Incoming Fields	Description:	

16. From the properties pane, click **Expression** and click .

17. In the New Field window, enter the details as shown in table below and click **OK**.

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

Edit Field

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

Field Type: **Output Field**

Name: **Valid_Not_Valid**

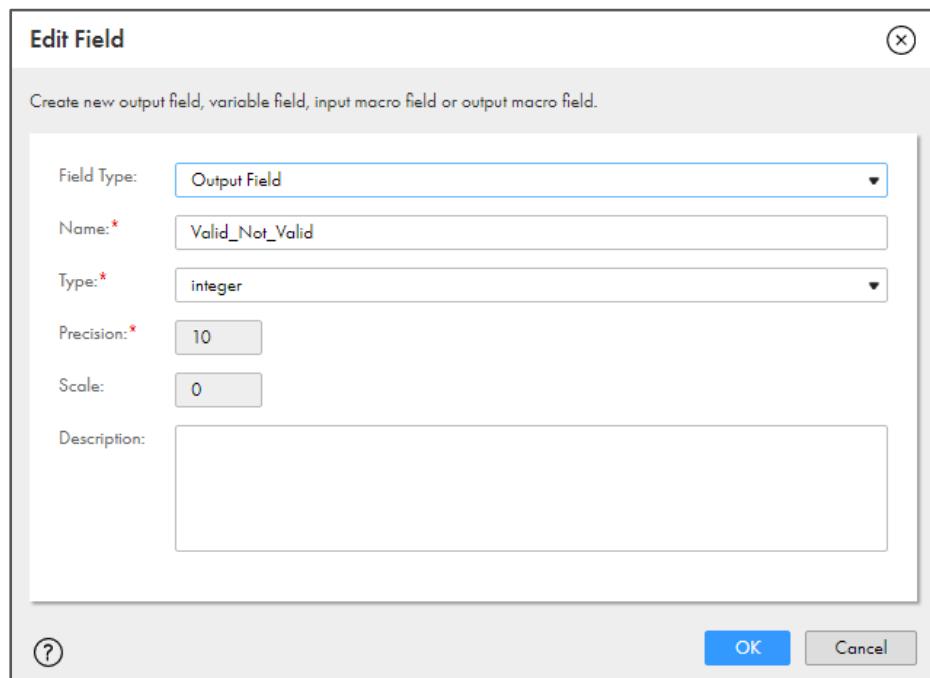
Type: **integer**

Precision: **10**

Scale: **0**

Description:

(?) **OK** **Cancel**



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

General Create simple expressions. You can also use expression macros to create complex expressions.

Allow additional fields and expressions during task creation

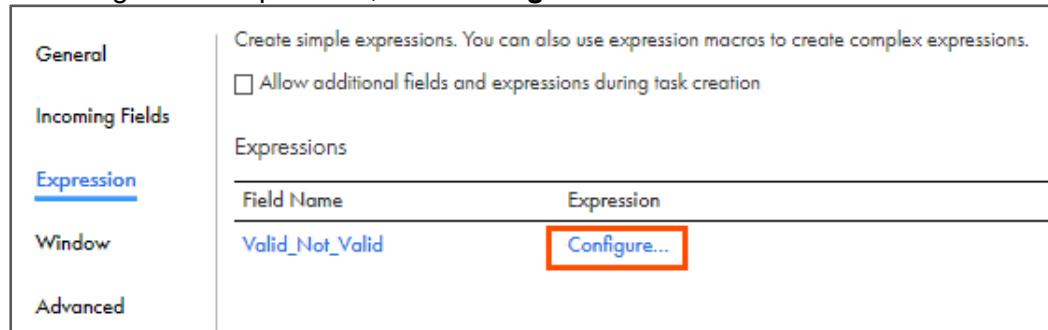
Incoming Fields

Expression

Field Name	Expression
Valid_Not_Valid	Configure...

Window

Advanced



19. From the Expression drop-down, select **Parameterized**.

20. Click **New Parameter**.

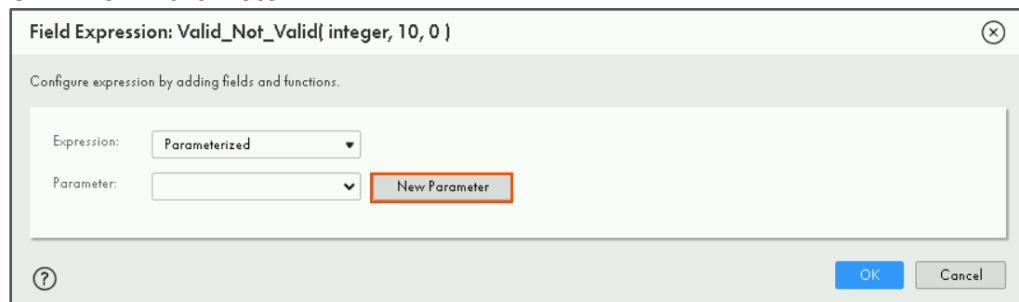
Field Expression: **Valid_Not_Valid{ integer, 10, 0 }**

Configure expression by adding fields and functions.

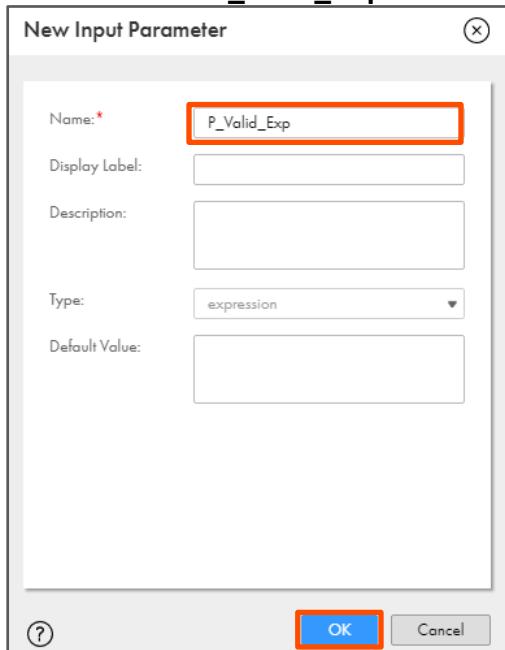
Expression: **Parameterized**

Parameter: **New Parameter**

(?) **OK** **Cancel**

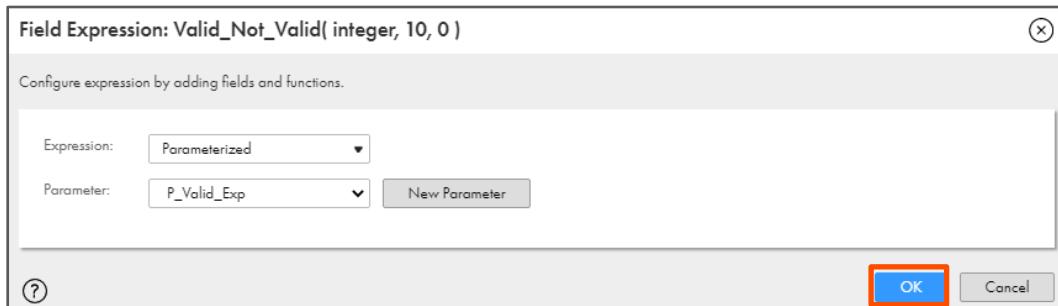


21. Enter Name as **P_Valid_Exp** and click **OK**.



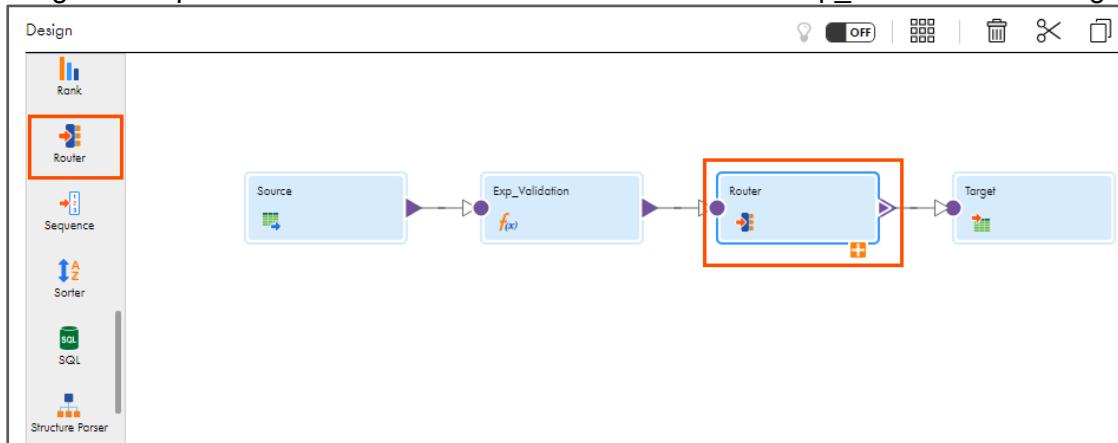
Note: This action redirects you to the Field Expression window

22. Click **OK**.

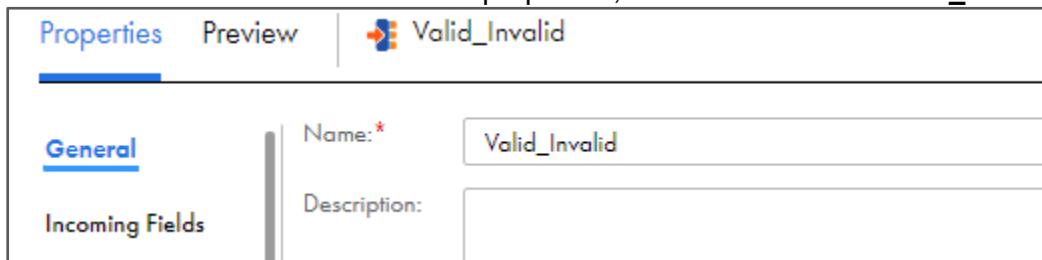


Add a Router Transformation

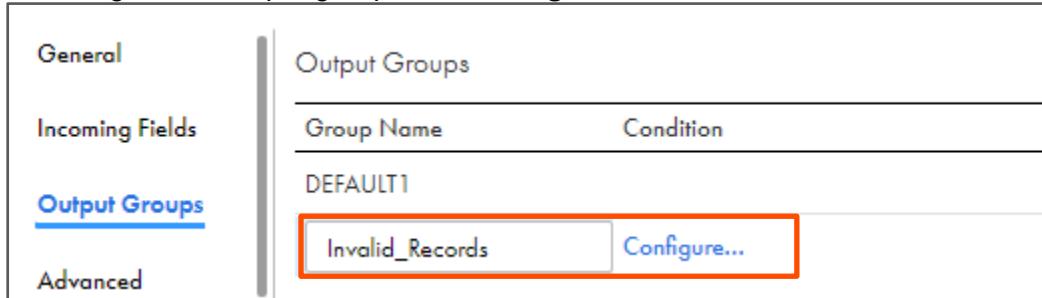
23. Drag and drop a **Router** transformation on the link between **Exp_Validation** and **Target**.



24. From the mapping canvas, select **Router** transformation.
 25. In the **General** section of the Router properties, enter the Name as **Valid_Invalid**.



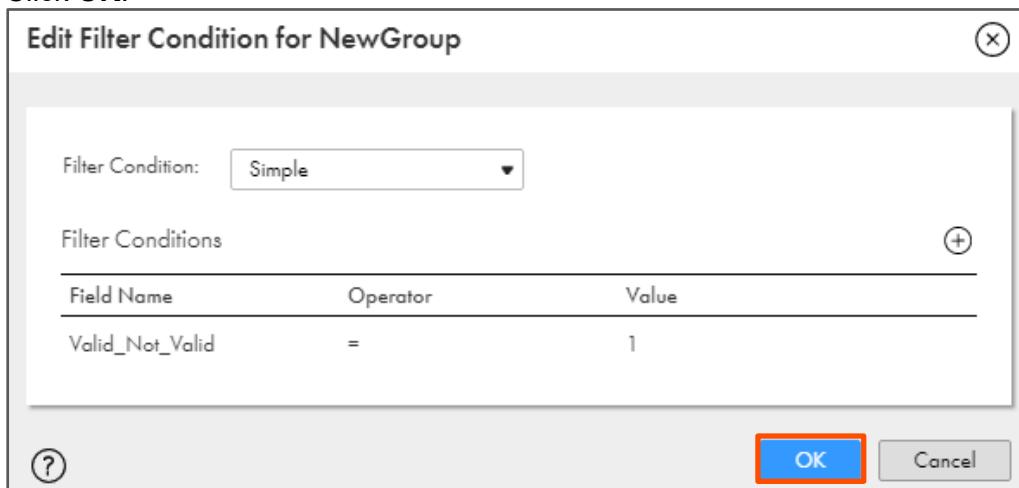
26. From the properties pane, click **Output Groups** and click .
27. In the Group Name field, enter the name as **Invalid_Records**.
Note: You cannot edit the DEFAULT1 group
28. To configure the output group, click **Configure**.



29. Retain the Filter Condition as **Simple**.
30. To add a filter condition, click .
31. Enter the filter condition, as shown in the table below:

Field Name	Operator	Value
Valid_Not_Valid	=	1

32. Click **OK**.



33. Add another output group.
 34. In the Group Name field, enter another group name as **Valid_Records**.

35. To configure the output group, click **Configure**.

General	Output Groups	
Incoming Fields	Group Name	Condition
Output Groups		DEFAULT1
Invalid_Records		Valid_Not_Valid='1'
Valid_Records		Configure...

36. Retain the Filter Condition as **Simple**.

37. To add a filter condition, click .

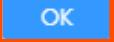
38. Enter the filter condition, as shown in the table below:

Field Name	Operator	Value
Valid_Not_Valid	!=	1

39. Click **OK**.

Edit Filter Condition for Valid_Records 

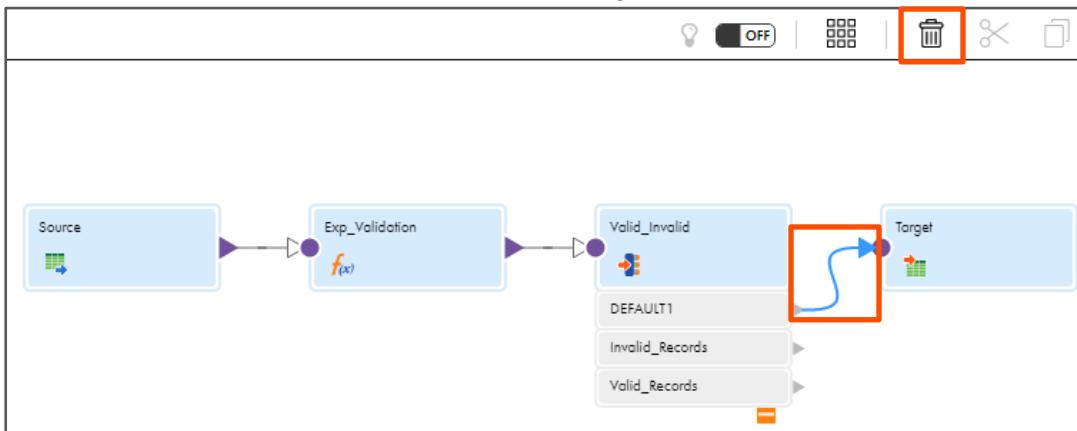
Filter Condition:	Simple	
Filter Conditions		
Field Name	Operator	Value
Valid_Not_Valid	!=	1

40. In the mapping canvas, for the router transformation, click .

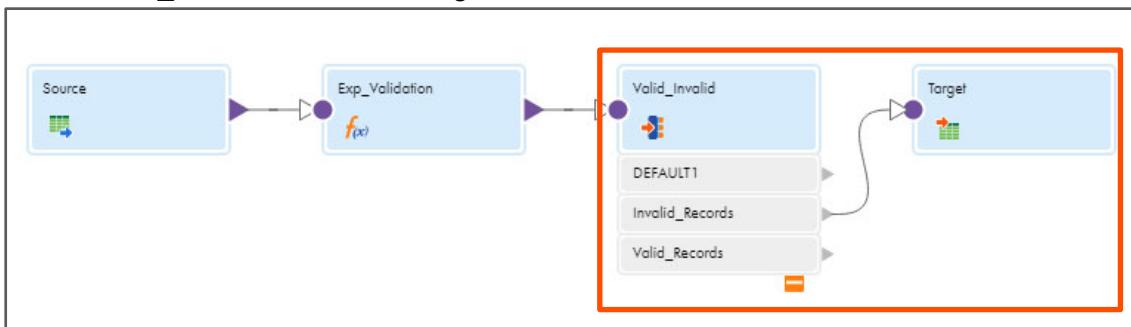


41. To delete the link between DEFAULT1 and Target, select the link, and click .



Note: Skip this step, if the link between DEFAULT1 and Target is already deleted.

42. Link **Invalid_Records** with the Target transformation.



43. To configure the target, from the mapping canvas, click the **Target** transformation.

44. In the General section of the Target properties, enter Name as **Tgt_Invalid**.

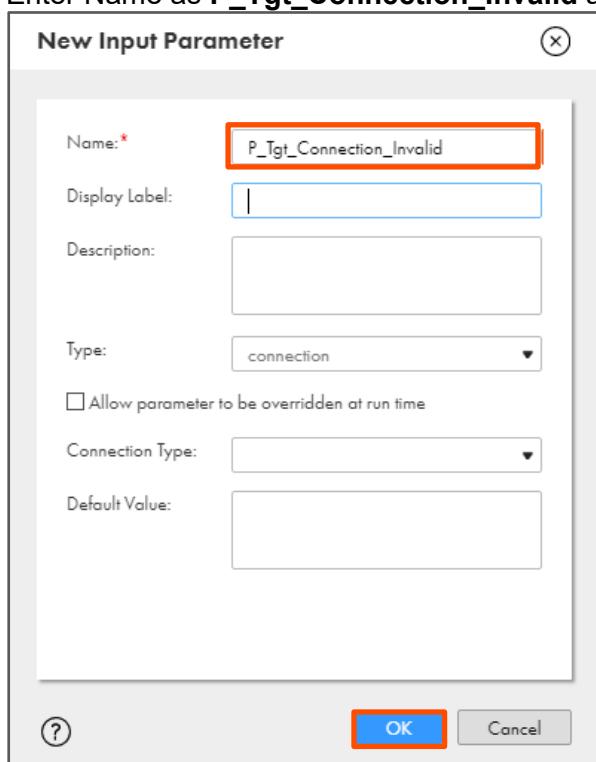
Properties	Preview	Tgt_Invalid				
General <table border="1"> <tr> <td>Name:*</td> <td>Tgt_Invalid</td> </tr> <tr> <td>Description:</td> <td></td> </tr> </table>			Name:*	Tgt_Invalid	Description:	
Name:*	Tgt_Invalid					
Description:						
Incoming Fields						

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

46. Click **New Parameter**.

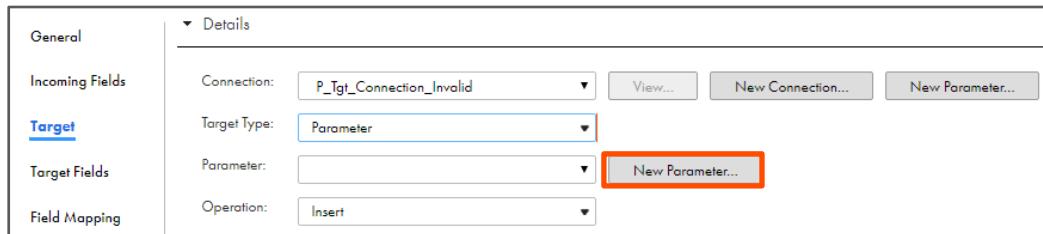
General	▼ Details
Incoming Fields	Connection: <input type="button" value="View..."/> <input type="button" value="New Connection..."/> <input style="outline: none; border: 2px solid red; background-color: #f0f0f0; color: black; font-weight: bold;" type="button" value="New Parameter..."/>
Target	Target Type: <input type="button"/>
Target Fields	

47. Enter Name as **P_Tgt_Connection_Invalid** and click **OK**.

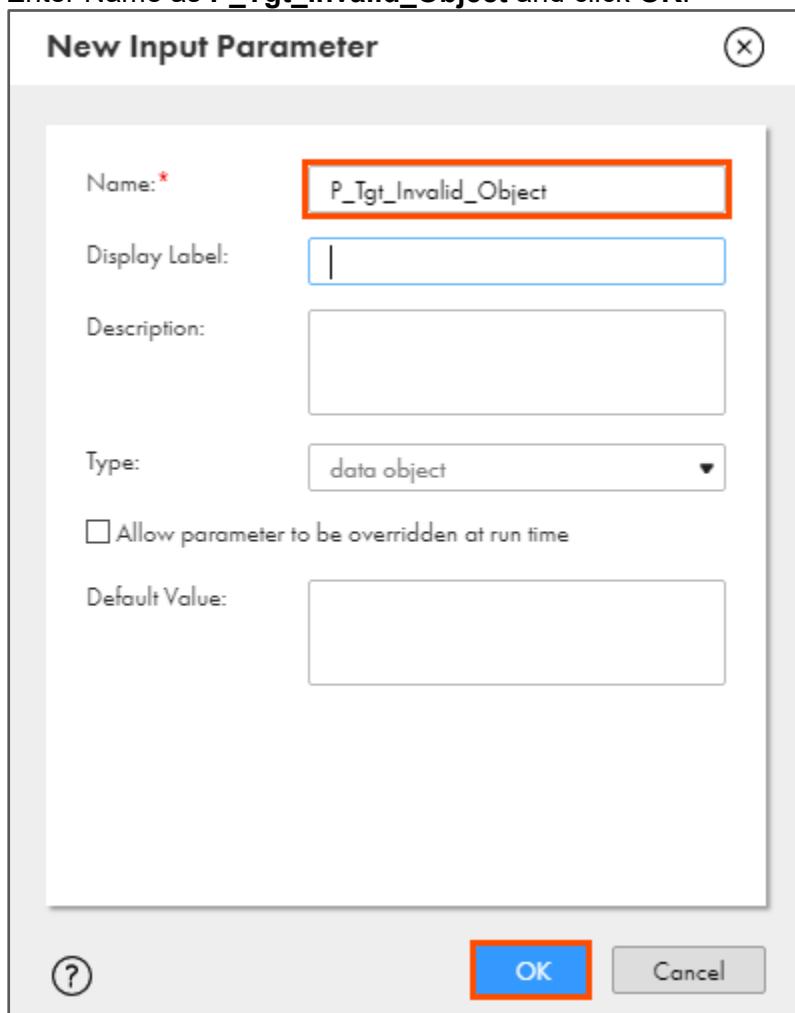


48. From the Target Type drop-down, select **Parameter**.

49. Click **New Parameter**.



50. Enter Name as **P_Tgt_Invalid_Object** and click **OK**.



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

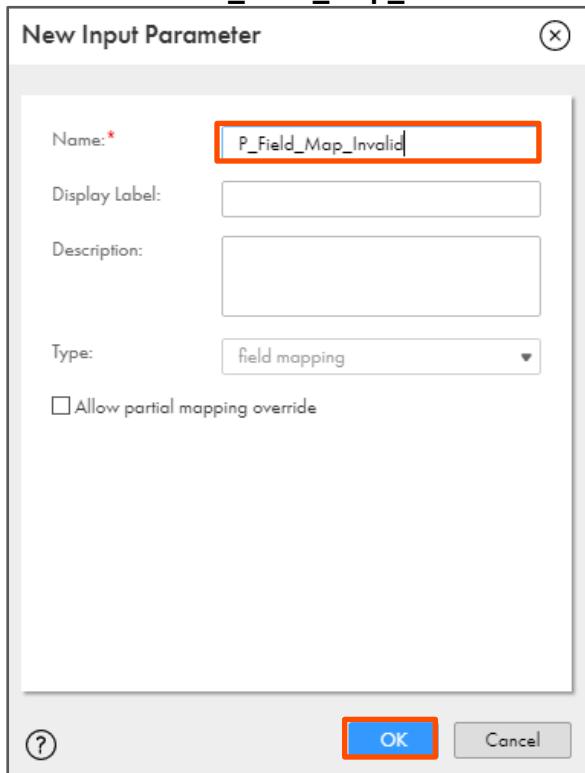
52. From the Field map options drop-down, select **Completely Parameterized**.



53. Click **New Parameter**.

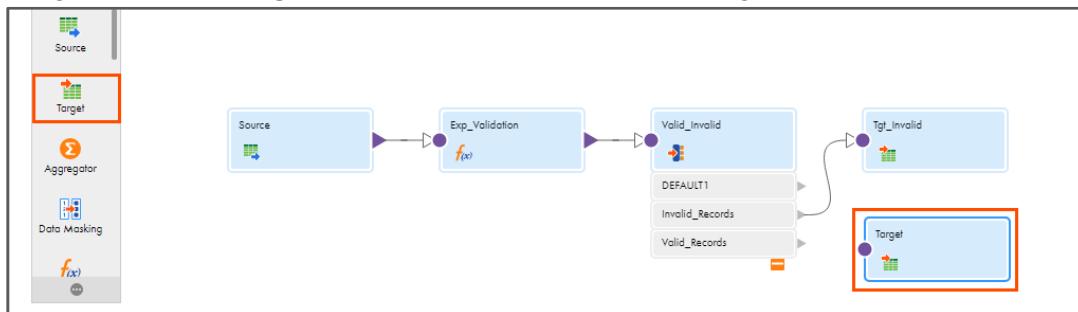


54. Enter Name as **P_Field_Map_Invalid** and click **OK**.



Add Target Transformation

55. Drag and drop a **Target** transformation on to the mapping canvas.



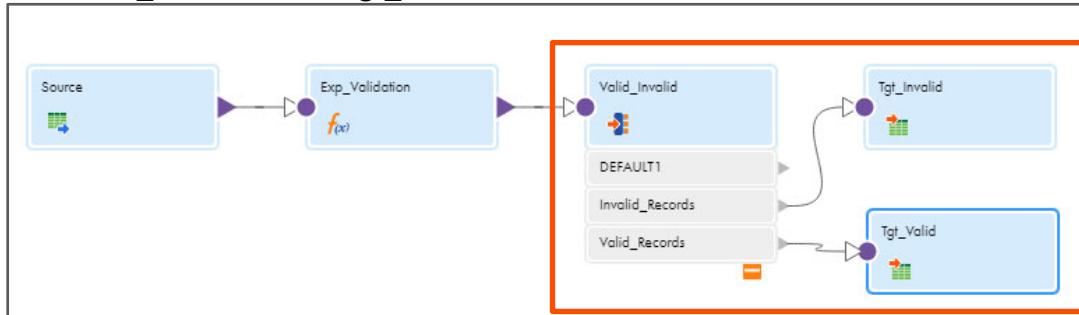
56. To configure the target, from the mapping canvas, click the **Target** transformation.

57. In the General section of the Target properties, enter Name as **Tgt_Valid**.



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

58. Link **Valid_Records** with **Tgt_Valid**.



59. To configure the target, from the mapping canvas, click the **Tgt_Valid** transformation.

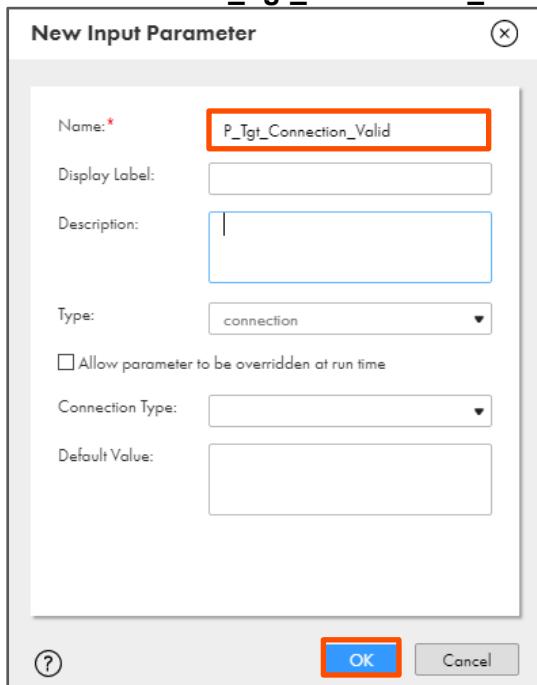
60. From the properties pane, click **Target**.

61. Click **New Parameter**.



General		Details	
Incoming Fields		Connection:	<input type="button" value="View..."/> <input type="button" value="New Connection..."/> <input style="border: 2px solid red;" type="button" value="New Parameter..."/>
<u>Target</u>		Target Type:	<input type="button"/>
Target Fields			

62. Enter Name as **P_Tgt_Connection_Valid** and click **OK**.



New Input Parameter

Name: *

Display Label:

Description:

Type:

Allow parameter to be overridden at run time

Connection Type:

Default Value:

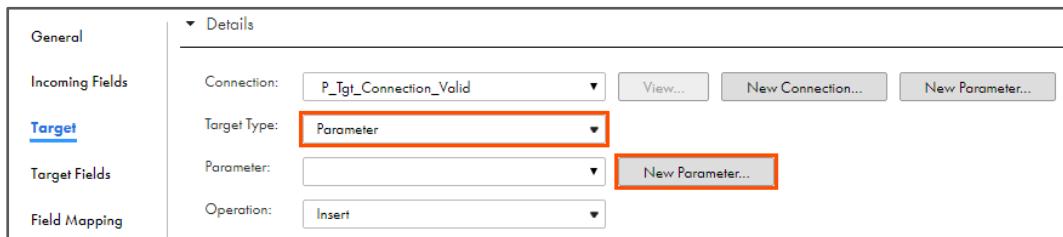
?

OK

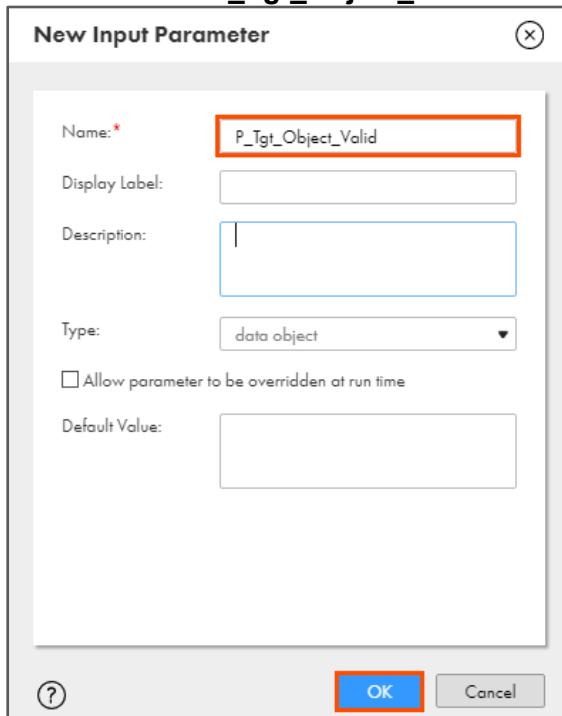
Cancel

63. From the Target Type drop-down, select **Parameter**.

64. Click **New Parameter**.

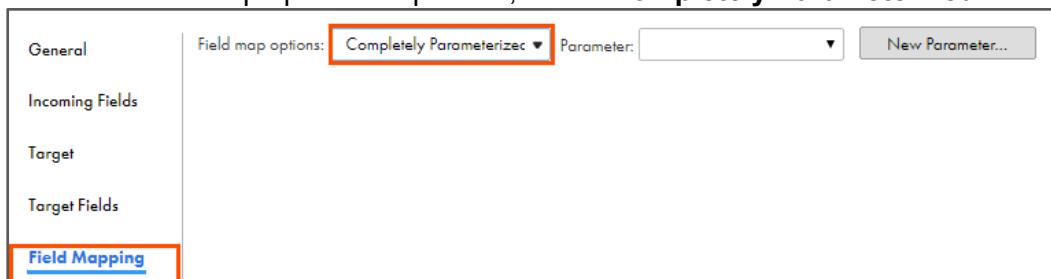


65. Enter Name as **P_Tgt_Object_Valid** and click **OK**.



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

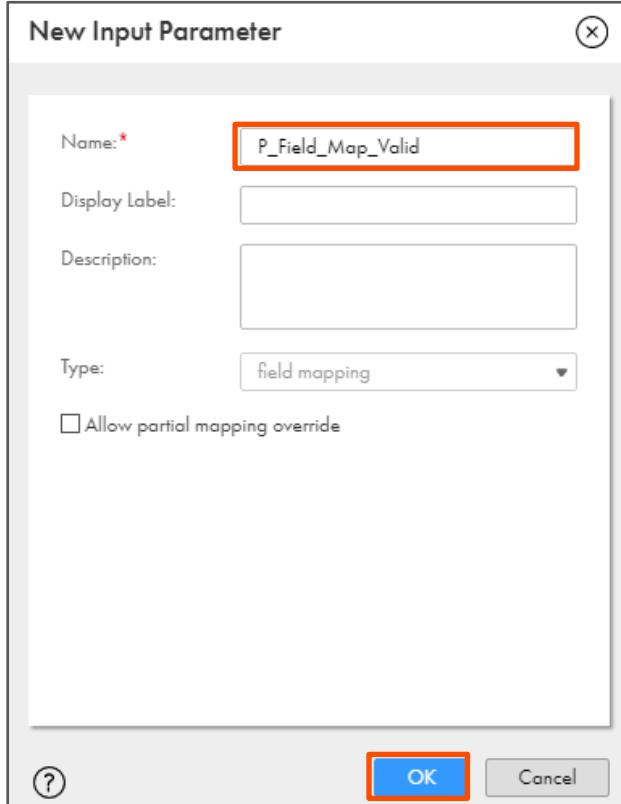
67. From the Field map options drop-down, select **Completely Parameterized**.



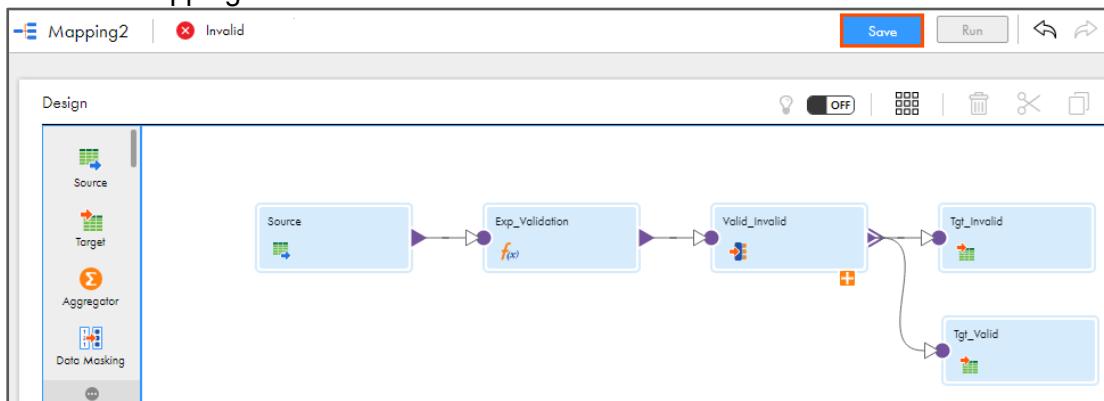
68. Click **New Parameter**.



69. Enter Name as **P_Field_Map_Valid** and click **OK**.



70. Save the mapping.



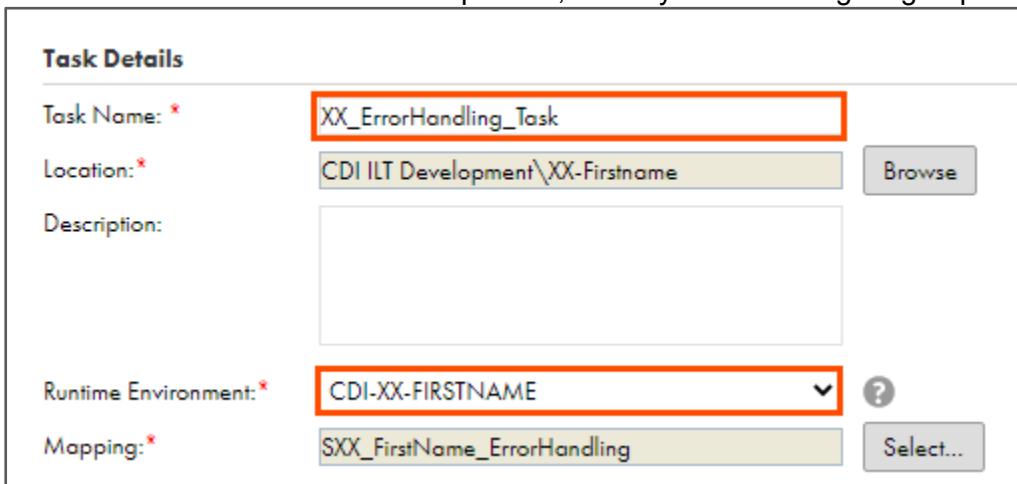
Create Mapping Task

71. To create a mapping task, click  and select **New Mapping Task**.



72. In the Task Name field, enter **XX_ErrorHandling_Task**.

73. From the Runtime Environment drop-down, select your secure agent group.

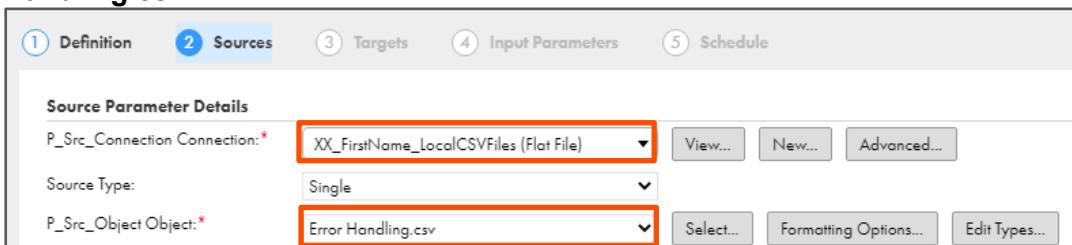


Task Name:	XX_ErrorHandling_Task
Location:	CDI ILT Development\XX-Firstname
Description:	(empty)
Runtime Environment:	CDI-XX-FIRSTNAME
Mapping:	SXX_FirstName_ErrorHandling

74. Click **Next**.

75. From the P_Src_Connection Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

76. To select a source object, from the P_Src_Object Object drop-down, select **Error Handling.csv**.

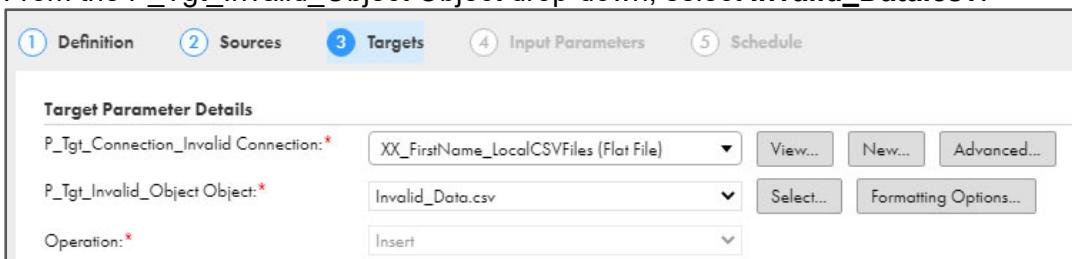


P_Src_Connection Connection:	XX_FirstName_LocalCSVFiles (Flat File)
Source Type:	Single
P_Src_Object Object:	Error Handling.csv

77. Click **Next**.

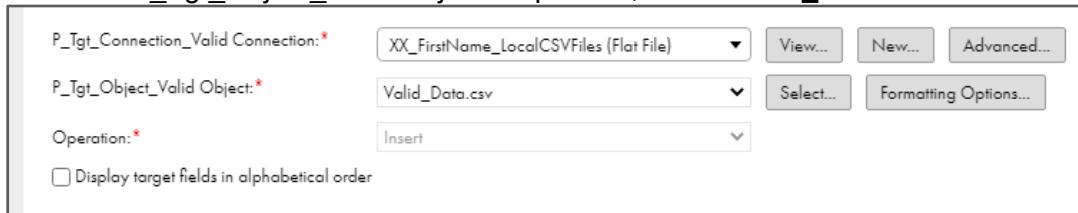
78. From the P_Tgt_Connection_Invalid Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

79. From the P_Tgt_Invalid_Object Object drop-down, select **Invalid_Data.csv**.



P_Tgt_Connection_Invalid Connection:	XX_FirstName_LocalCSVFiles (Flat File)
P_Tgt_Invalid_Object Object:	Invalid_Data.csv
Operation:	Insert

80. From the P_Tgt_Connection_Valid Connection drop-down, select **XX_FirstName_LocalCSVFiles**.
81. From the P_Tgt_Object_Valid Object drop-down, select **Valid_Data.csv**.



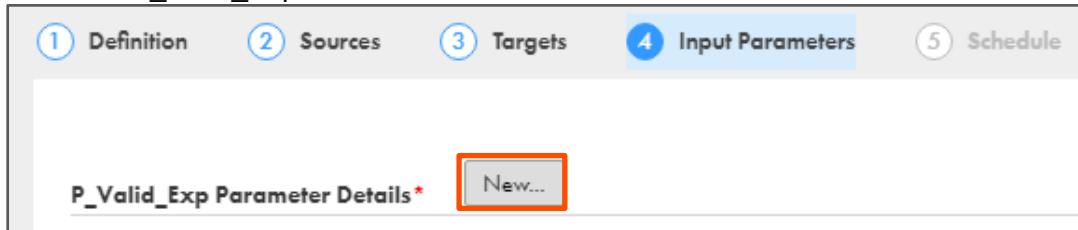
P_Tgt_Connection_Valid Connection: * XX_FirstName_LocalCSVFiles (Flat File) View... New... Advanced...

P_Tgt_Object_Valid Object: * Valid_Data.csv Select... Formatting Options...

Operation: * Insert

Display target fields in alphabetical order

82. Click **Next**.
83. From the P_Valid_Exp Parameter Details section, click **New**.



① Definition ② Sources ③ Targets ④ Input Parameters ⑤ Schedule

P_Valid_Exp Parameter Details * **New...**

84. In the expression field, enter the following expression:
IIF(ISNULL(Salary), 1, 0)
OR
Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **MappingToHandleNonFatalErrors_15-1**. Copy the command mentioned under **Step A** and paste it in the Expression field.
85. To validate the expression, click **Validate** and click **OK**.



The expression is valid.

Click the source fields, functions, or operators to add them to the expression. Click Validate to validate the expression. Click OK to save the expression.

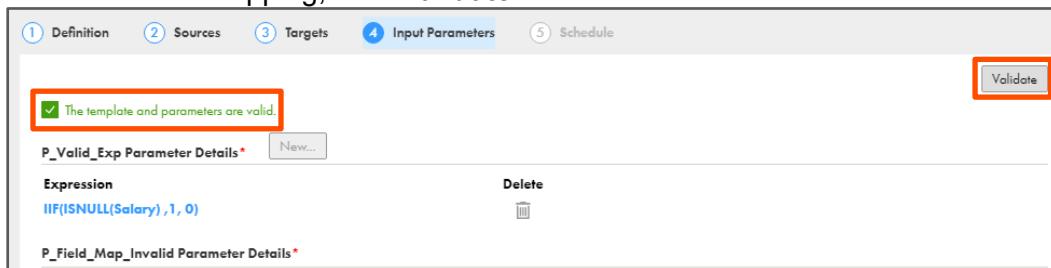
Fields: Source Fields System Variable Default

Target Parameter: P_Valid_Exp

Expression: IIF(ISNULL(Salary), 1, 0)

Functions: **Operators:** Validate OK Cancel

86. To validate the mapping, click **Validate**.

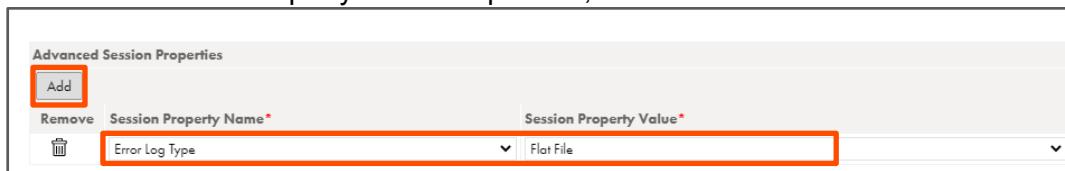


87. Click **Next**.

88. To enable error logging, in the Advanced Session Properties section, click **Add**.

89. From the Session Property Name drop-down, select **Error Log Type**.

90. From the Session Property Value drop-down, select **Flat File**.



Note: By default, there is no error log file created in IICS. The error log files are generated in **C:\Program Files\Informatica Cloud Secure Agent\apps\Data_Integration_Server\data\error** directory.

91. To save and close the mapping task, click **Finish**.

92. Run the mapping task.



Monitor Status

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

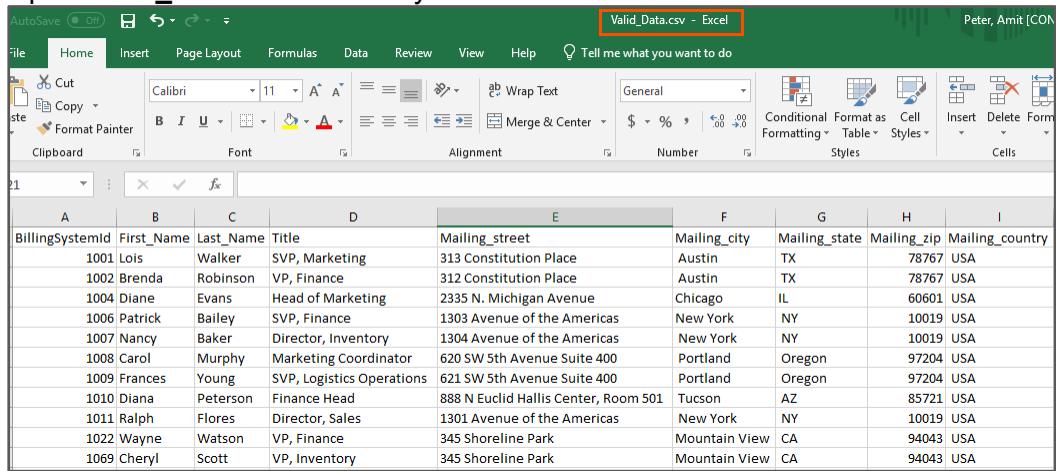


Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
XX_ErrorHandling_Task-1		Nov 16, 2020, 4:23 PM	Nov 16, 2020, 4:23...	15	Success

94. Close the assets from the navigation pane.

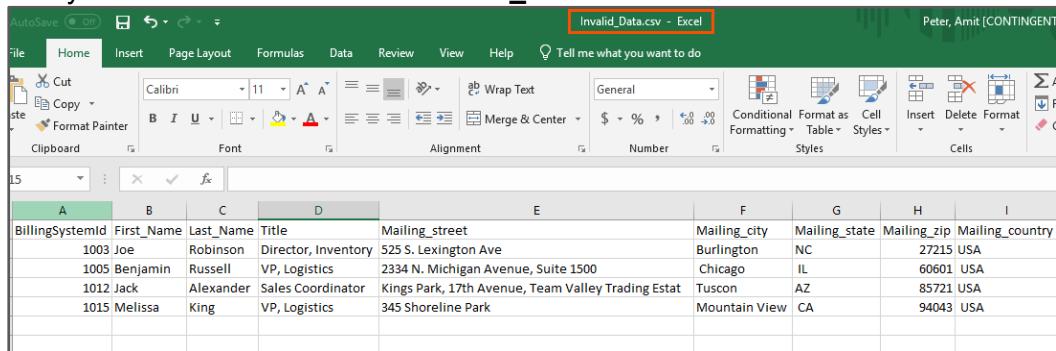
95. On your local machine, navigate to **C:\IICSLabFiles**.

96. Open **Valid_Data.csv** and verify that 11 rows are written in the file.



BillingSystemId	First_Name	Last_Name	Title	Mailing_street	Mailing_city	Mailing_state	Mailing_zip	Mailing_country
1001	Lois	Walker	SVP, Marketing	313 Constitution Place	Austin	TX	78767	USA
1002	Brenda	Robinson	VP, Finance	312 Constitution Place	Austin	TX	78767	USA
1004	Diane	Evans	Head of Marketing	2335 N. Michigan Avenue	Chicago	IL	60601	USA
1006	Patrick	Bailey	SVP, Finance	1303 Avenue of the Americas	New York	NY	10019	USA
1007	Nancy	Baker	Director, Inventory	1304 Avenue of the Americas	New York	NY	10019	USA
1008	Carol	Murphy	Marketing Coordinator	620 SW 5th Avenue Suite 400	Portland	Oregon	97204	USA
1009	Frances	Young	SVP, Logistics Operations	621 SW 5th Avenue Suite 400	Portland	Oregon	97204	USA
1010	Diana	Peterson	Finance Head	888 N Euclid Hallis Center, Room 501	Tucson	AZ	85721	USA
1011	Ralph	Flores	Director, Sales	1301 Avenue of the Americas	New York	NY	10019	USA
1022	Wayne	Watson	VP, Finance	345 Shoreline Park	Mountain View	CA	94043	USA
1069	Cheryl	Scott	VP, Inventory	345 Shoreline Park	Mountain View	CA	94043	USA

97. Verify that 4 rows are written in **Invalid_Data.csv**.



BillingSystemId	First_Name	Last_Name	Title	Mailing_street	Mailing_city	Mailing_state	Mailing_zip	Mailing_country
1003	Joe	Robinson	Director, Inventory	525 S. Lexington Ave	Burlington	NC	27215	USA
1005	Benjamin	Russell	VP, Logistics	2334 N. Michigan Avenue, Suite 1500	Chicago	IL	60601	USA
1012	Jack	Alexander	Sales Coordinator	Kings Park, 17th Avenue, Team Valley Trading Estate	Tuscon	AZ	85721	USA
1015	Melissa	King	VP, Logistics	345 Shoreline Park	Mountain View	CA	94043	USA

This concludes the lab.

Module 16: Administration

16-1: Creating a Sub-Organization and Configure Administrative Settings

Overview:

The Administrator service of IICS provides organization management capabilities across the Organization. You can use the Administrator service to manage users, user groups, user roles, and permissions in IICS.

IICS supports the creation of one or more Sub-Organizations within your organization. You can create Sub-Organizations to represent different business environments within your company. For example, you may create separate Sub-Organizations to represent your development, testing, and production environments.

Objectives:

- Create a Sub-Organization
- Configure Administrative settings for the Org
- Disable and Reset a user
- Assign Services to a user
- Export/Import Asset
- Assign Permission to asset

Scenario:

Ruby informs John that there is a new Developer hired at NH Retails. She wants to create a different for testing of assets. She also wants the new user added to the Sub-Org and assign the required permissions and role to the user.

In this lab, John creates a Sub-Org and adds a user in the Sub-Org with Admin privileges. He also walks Ruby through the other IICS administration capabilities like user reset, service assignment, export/import and permissions.

Important:

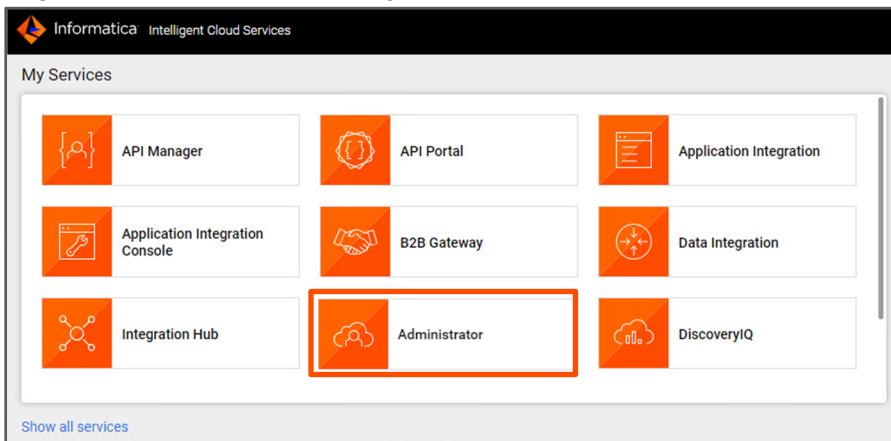
You must have the Organization Hierarchy license enabled in your Org to create a Sub-Organization.

Duration:

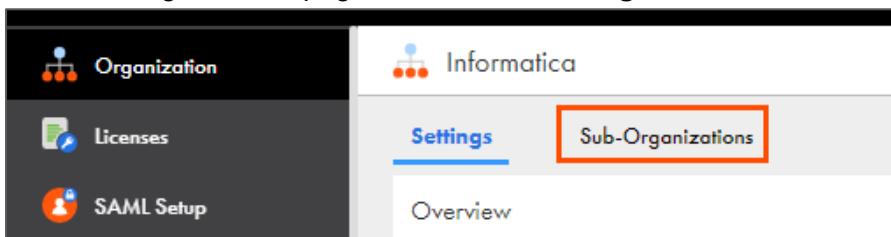
35 Minutes

Tasks:
Create a Sub Org for Testing Environment

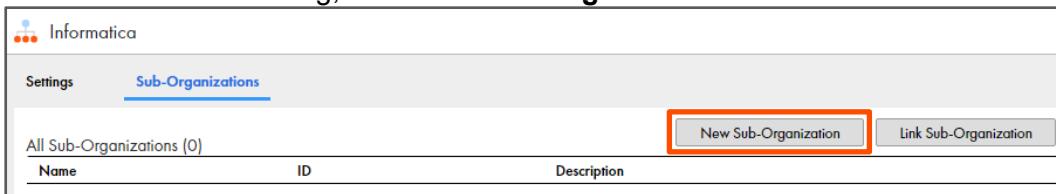
1. Log in to IICS and from the **My Services** window, select **Administrator**.



2. From the Organization page, select the **Sub-Organizations** tab.



3. To create a new Sub-Org, click **New Sub-Organization**.

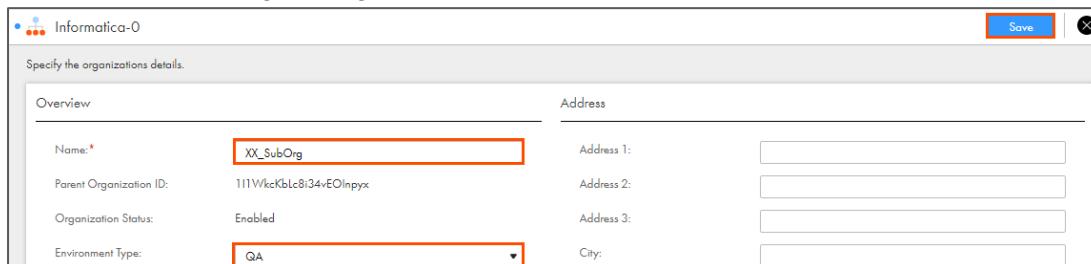


You can configure the following details for a sub-organization:

Property	Description
Name	Name of the organization.
Parent Organization Id	When you view a sub-organization, this property displays the ID assigned to the parent organization. You cannot change an organization ID.
Organization Status	When you view a sub-organization, this property indicates whether the sub-organization is enabled or disabled.

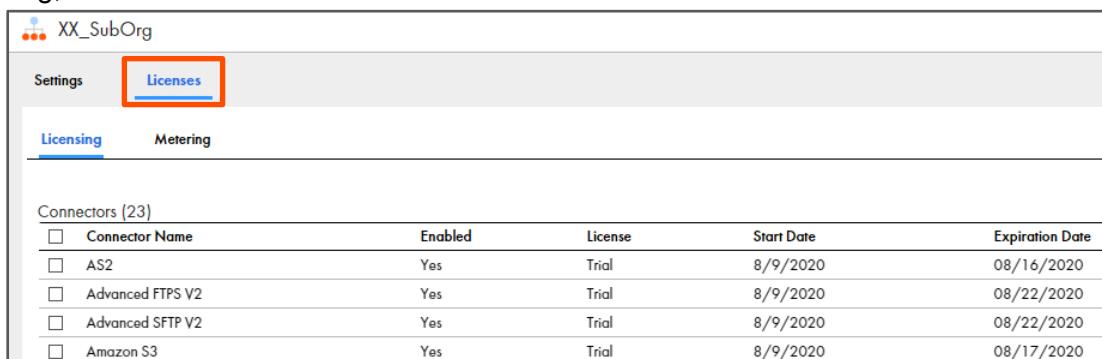
Environment Type	Optional property that identifies the environment type for the organization. You can select Development, Production, QA, or Sandbox.
Deny parent organization access to this sub-organization	<p>When this option is checked, users in the parent organization cannot switch from the parent organization to the sub-organization. Users in the parent organization with the appropriate privileges can make only the following changes to the sub-organization:</p> <ul style="list-style-type: none"> -Enable and disable the sub-organization -Update the sub-organization licenses -Edit the sub-organization properties such as the organization description and CLAIRE recommendation preferences <p>This option is unchecked by default.</p>

4. In the Name field, enter **XX_SubOrg**.
5. From the Environment Type drop-down, select **QA**.
6. Retain the remaining settings as default and click **Save**.



The screenshot shows the 'Specify the organizations details' window. The 'Overview' tab is selected. The 'Name' field contains 'XX_SubOrg'. The 'Environment Type' dropdown is set to 'QA'. The 'Save' button is highlighted with a red box.

7. Close the Sub-Organization window.
8. To view the Connectors and Custom Licenses available for the sub-org, select the Sub-Org, click on **Licenses** tab.



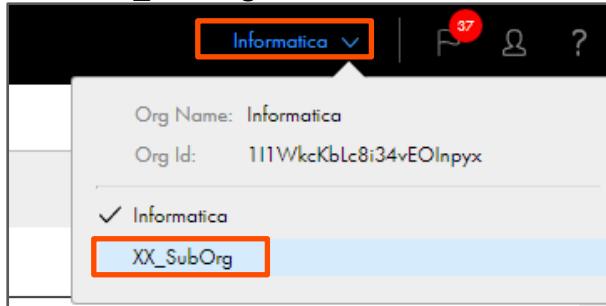
Connector Name	Enabled	License	Start Date	Expiration Date
AS2	Yes	Trial	8/9/2020	08/16/2020
Advanced FTPS V2	Yes	Trial	8/9/2020	08/22/2020
Advanced SFTP V2	Yes	Trial	8/9/2020	08/22/2020
Amazon S3	Yes	Trial	8/9/2020	08/17/2020

Note: The list of connector available changes based on the connector licenses in the parent Org. As, a sub-organization inherit all connector licenses from the parent organization.

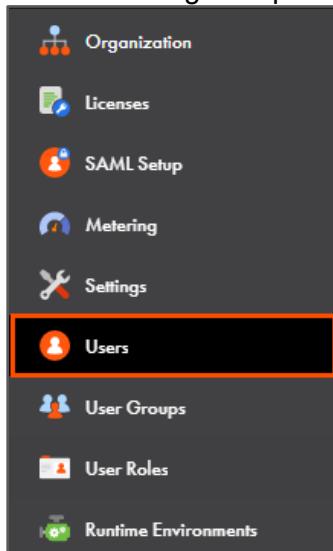
9. To close the window, click .

Create a New User in Sub-Org

3. To create a new user in the Sub-Org, you must change the current Org to Sub-Org.
4. Click the Org name available on the top right corner of the screen.
5. Select **XX_SubOrg**.



11. From the navigation pane, select **Users**.



12. By default, the list of Users appear in a **List view** (). You can also switch to **Chart view** by click  icon.

13. To create a new user, click **Add User**.



14. In the New User page, enter the details as shown in the table below:

Field Name	Value
First Name	Your first name
Last Name	Your last name
Job title	Your job title of the user
Phone Number	Your contact number

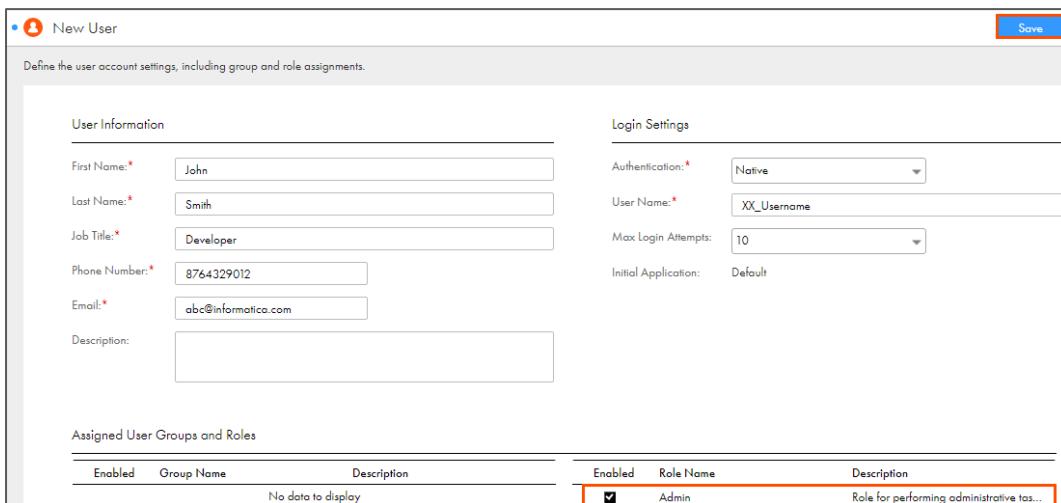
Email	Your valid email address This email address is used for user account creation. All validation emails will be sent to this address.
Authentication	Native
User name	XX_Username Here, XX refers to your initials and Username refers to your First Name.

Note: For the purpose of this lab, a user named XX_Username is created. You can use any other username as per your requirement.

15. Assign the **Admin** role to the user.

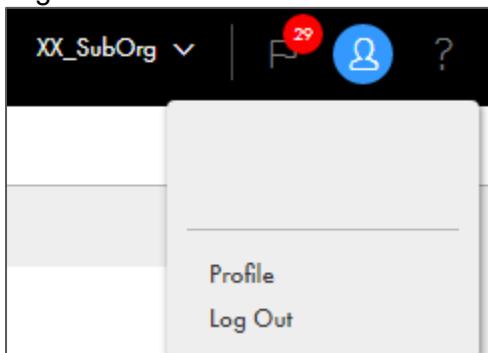
Note: You can assign other roles to a user as per your requirement.

16. Save the user.



Enabled	Group Name	Description	Enabled	Role Name	Description
<input checked="" type="checkbox"/>		No data to display	<input checked="" type="checkbox"/>	Admin	Role for performing administrative tasks

17. Log out from the current account.



18. Log in to the email account that you specified in the email field for the new user.

19. Open the email that you received from admin@informaticacloud.com and click **Confirm Account**.

Informatica Intelligent Cloud Services Account

Dear John,

Welcome to Informatica Intelligent Cloud Services! Please confirm your account by clicking the [Confirm Account link](#) or paste the address into a supported browser.

User Name: XX_Username
URL: <https://dm-us.informaticacloud.com/ma/home>
Confirm Account Link: [Confirm Account](#)

20. **Note:**

- If you do not see the mail in Inbox, check the Spam folder.
- If you do not receive the email in the specified email address, perform the following steps in the created Sub-Org:
 - Navigate to Users tab.
 - From the Users section, select the newly created user and click **Reset**.
 - Log out of current user account.

User Name	Full Name	Phone Number	Status	Groups	Roles	Last Login
XX_Firstname	John Smith	7834219041	Pending Activation	No Groups	Admin	

Reset
 Delete
 Reassign Scheduled Jobs
 Disable
 Assign Services

21. Set the password and other security configuration.

22. Click **Log In**.

Informatica Intelligent Cloud Services

Set Up Your Password

Your User Name
XX_Username

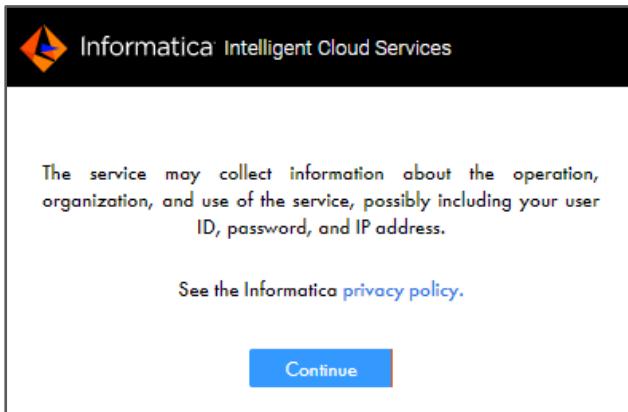
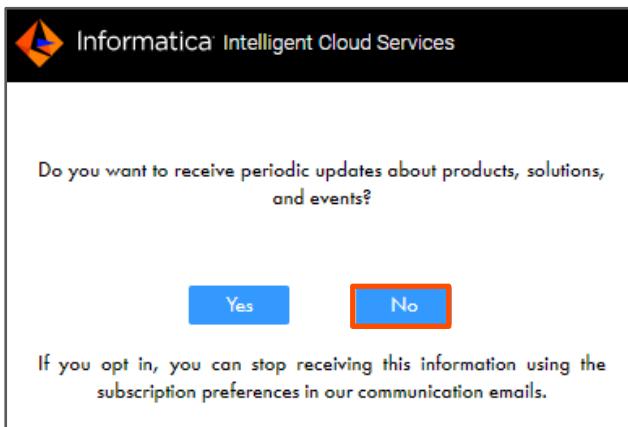
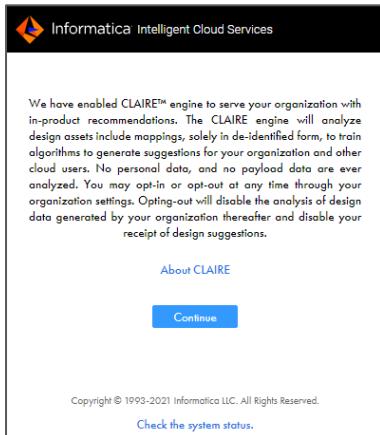
Your New Password
.....

Confirm New Password
.....

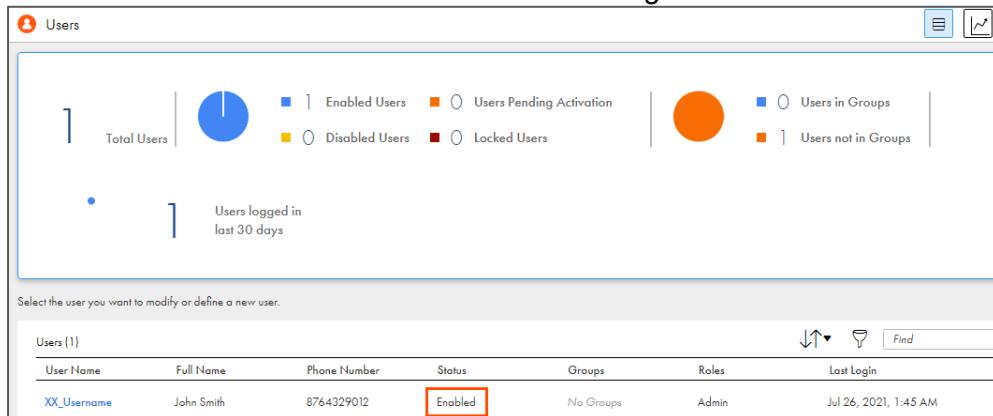
Your Security Question
In which city was your first job?

Your Security Question's Answer
....

Log In

23. Click **Continue**.24. Click **No**.25. Click **Continue**.26. From the **My Services** window, select **Administrator**.27. From the navigation pane, select **Users**.

28. Observe that the status of the new user has changed to **Enabled**.



29. Log out from the newly created user account and login to your initial IICS account.

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

Note: Switch to the newly created Sub-Org if you login to the Main Org.

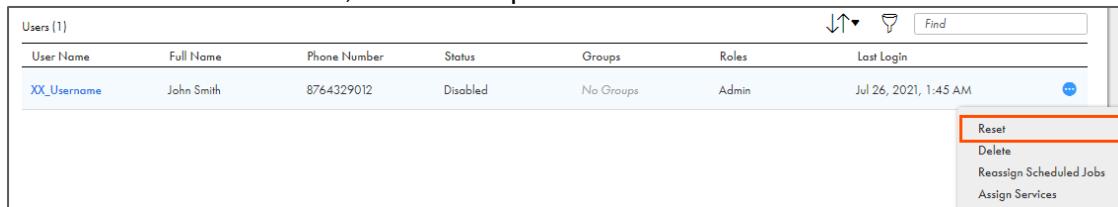
31. From the navigation pane, select **Users**.

32. To disable the newly created user, click the ellipsis icon and select **Disable**.



33. In the Warning window, click **OK**.

34. To reset the disabled user, click the ellipsis icon and select **Reset**.



Note: After reset, the user status is set to **Pending Activation**.

35. After you reset the user, you will again receive an email from admin@informaticacloud.com.

Note: You can follow the steps performed earlier to setup the account after reset. For the purpose of this lab, you can skip reconfiguring the user account after reset. .

Assign Services to a User

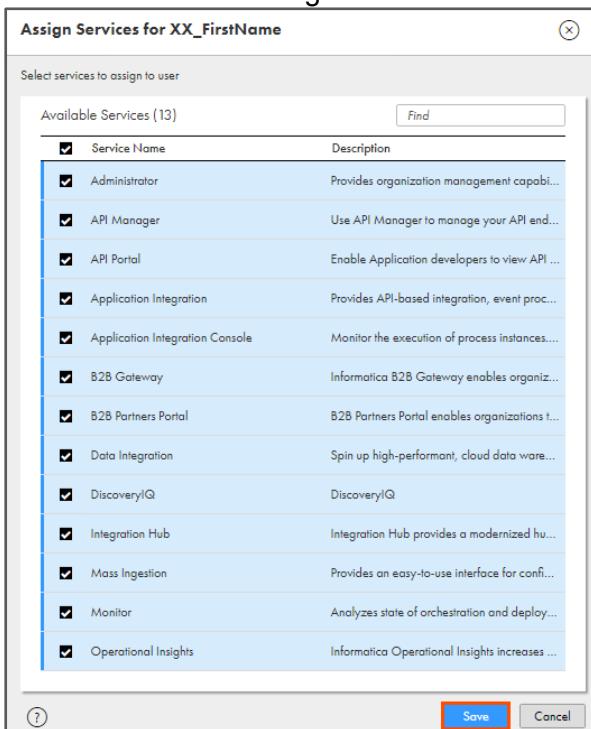
36. To assign service to the user, click the ellipsis icon and select **Assign Services**.



37. From the list, select a service that you want to assign to the user. This restricts the lists of services a user see in the My Services window when they log in to IICS.

Note: For the purpose of this lab, select all the available services.

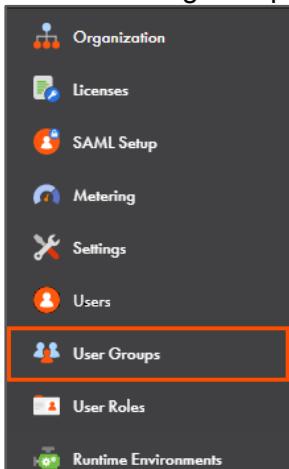
38. Save the services configuration.



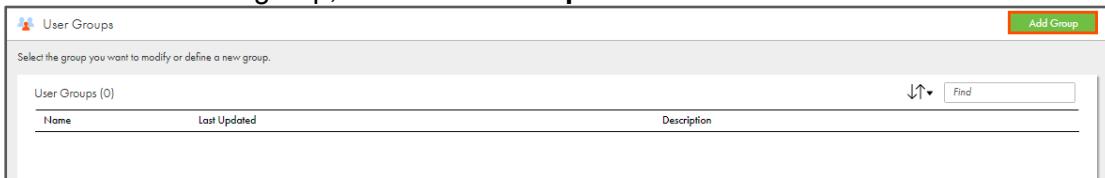
Note: The list of services in Assign service window changes depending upon the services enabled in your IICS Org.

Create a new User Group

39. From the navigation pane, select **User Groups**.

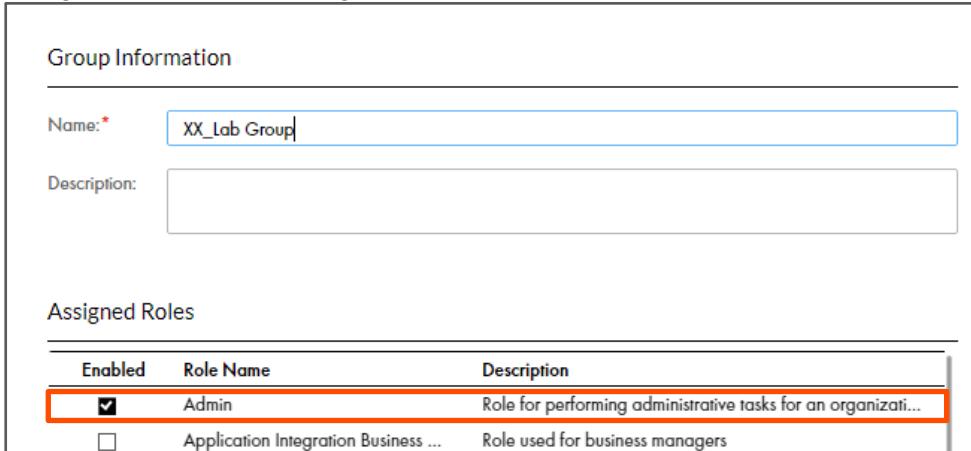


40. To add a new user group, select **Add Group**.


 A screenshot of the 'User Groups' page. At the top right is a red-bordered 'Add Group' button. Below it is a table header with columns: Name, Last Updated, and Description. There are no rows in the table body.

41. In the Name field, enter **XX_Lab Group**.

42. Assign **Admin** role to the group.


 Two screenshots of the 'Group Information' and 'Assigned Roles' sections.
 - The 'Group Information' section shows a 'Name:' field with 'XX_Lab Group' entered and a 'Description:' field with an empty text area.
 - The 'Assigned Roles' section shows a table with two rows:

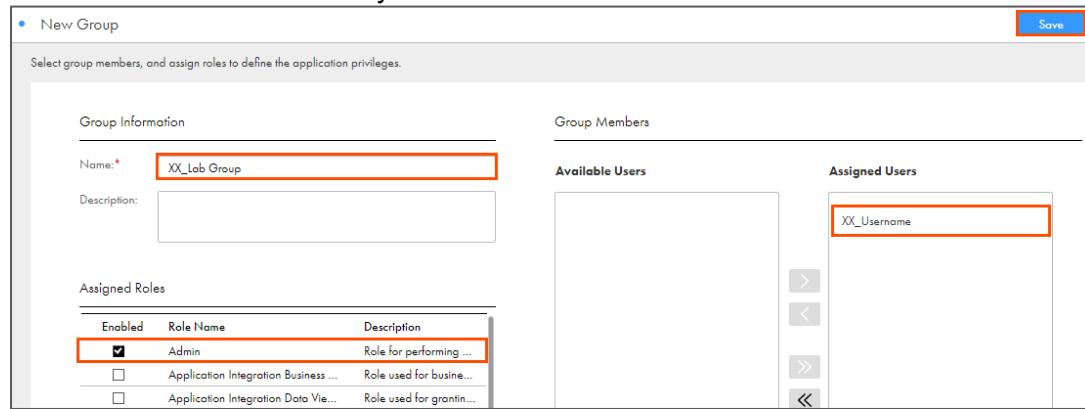
Enabled	Role Name	Description
<input checked="" type="checkbox"/>	Admin	Role for performing administrative tasks for an organization...
<input type="checkbox"/>	Application Integration Business ...	Role used for business managers

 The 'Admin' row is highlighted with a red box.

Note: You can assign multiple roles to a group.

43. From Available Users add the XX_Username user to the Assigner Users section.

Note: You can add the user you created earlier.

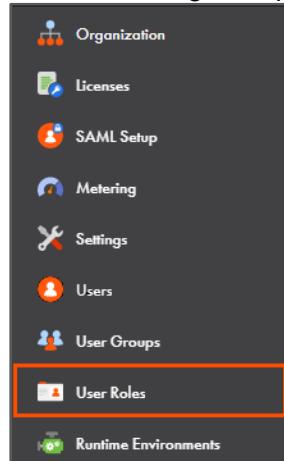


Enabled	Role Name	Description
<input checked="" type="checkbox"/>	Admin	Role for performing ...
<input type="checkbox"/>	Application Integration Business ...	Role used for busine...
<input type="checkbox"/>	Application Integration Data Vie...	Role used for grantin...

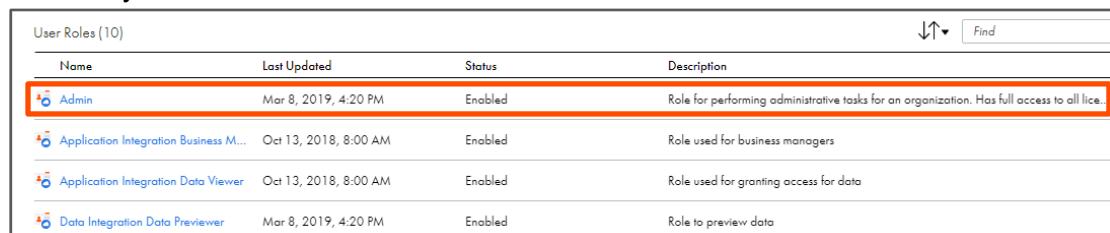
44. Save the user group and close the window.

Change the Configuration of a Role

45. From the navigation pane, select **User Roles**.



46. To modify the admin user role, click **Admin**.



Name	Last Updated	Status	Description
Admin	Mar 8, 2019, 4:20 PM	Enabled	Role for performing administrative tasks for an organization. Has full access to all lic...
Application Integration Business M...	Oct 13, 2018, 8:00 AM	Enabled	Role used for business managers
Application Integration Data Viewer	Oct 13, 2018, 8:00 AM	Enabled	Role used for granting access for data
Data Integration Data Previewer	Mar 8, 2019, 4:20 PM	Enabled	Role to preview data

47. From the Services drop-down, select the services for which you want to configure the privileges.

Note: For this lab, select **Administrator**.

48. To modify the privileges granted to the specific user role for various assets and features, select or deselect the checkbox.

Role Information

Role Name: Admin

Description: Role for performing administrative tasks for an organization. Has full access to all licensed services.

Services: **Administrator**

Asset Type	Create	Read	Update	Delete	Run	Set Permission
Connection	✓	✓	✓	✓	□	✓
Folder	✓	✓	✓	✓	□	✓
Group	✓	✓	✓	✓	□	□
Organization	□	✓	✓	□	□	□
Privilege	□	✓	□	□	□	□
Project	✓	✓	✓	✓	□	✓
Role	□	✓	□	□	□	□
Schedule	✓	✓	✓	✓	□	✓
Scheduler Blackout	✓	✓	✓	□	□	□

Note: For this lab, do not make any changes in the Administrator service.

49. Close the window.

Perform Asset Export/Import and Set up Permissions at the Asset Level

50. To switch between the available services, from the toolbar, select the drop-down next to Administrator.



51. From the **My Services** window, select **Data Integration**.

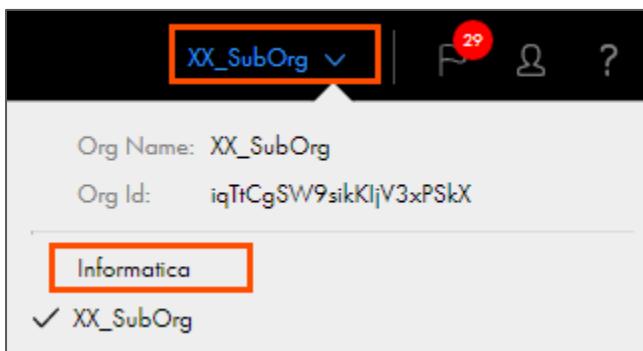
My Services

 API Manager	 API Portal	 Application Integration
 Application Integration Console	 B2B Gateway	 Data Integration
 Integration Hub	 Administrator	 DiscoveryIQ

Show all services

52. Click the Org name available on the top right corner of the screen.

53. Select **Informatica**.



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

55. Navigate to your working directory, and select the **SXX_FirstName_Employee** (synchronization task) asset.



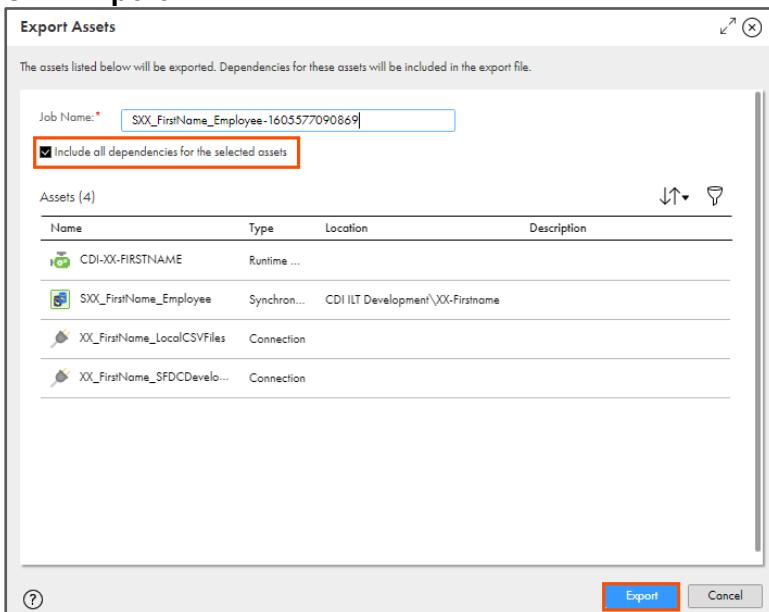
XX-Firstname (26) 1 selected ▾				
	Name	Type	Updated On	Status
<input type="checkbox"/>	SXX_FirstName_ShippingFiles	Mapping	Jul 21, 2021, 12:05 AM	Valid
<input checked="" type="checkbox"/>	SXX_FirstName_Employee	Synchronization Task	Jul 20, 2021, 10:31 PM	Valid
<input type="checkbox"/>	SXX_FirstName_OutletsLoad	Synchronization Task	Jul 20, 2021, 6:31 AM	Valid
<input type="checkbox"/>	SXX_FirstName_StructureParser	Mapping	Jul 12, 2021, 1:58 AM	Valid
<input type="checkbox"/>	SXX_FirstName_StructureModel	Intelligent Structure Model	Jul 12, 2021, 1:52 AM	Valid
<input type="checkbox"/>	SXX_Listener_Taskflow	Taskflow	Jul 12, 2021, 1:03 AM	Valid
<input type="checkbox"/>	SXX_File_Listener	File Listener	Jul 12, 2021, 12:57 AM	Valid
<input type="checkbox"/>	SXX_File_Listener_Task	Synchronization Task	Jul 12, 2021, 12:55 AM	Valid

Note: You can follow the same steps to export any other existing IICS asset.

56. Retain the default name of the asset.

57. To export all the required assets and configuration, ensure that “**Include all dependencies for the selected assets**” is selected.

58. Click **Export**.



Export Assets

The assets listed below will be exported. Dependencies for these assets will be included in the export file.

Job Name: * SXX_FirstName_Employee-1605577090869

Include all dependencies for the selected assets

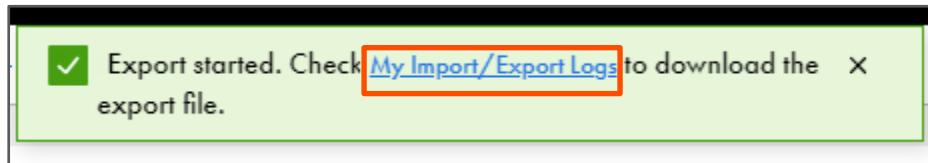
Assets (4)

Name	Type	Location	Description
CDI-XX-FIRSTNAME	Runtime ...		
SXX_FirstName_Employee	Synchron...	CDI ILT Development\XX-Firstname	
XX_FirstName_LocalCSVFiles	Connection		
XX_FirstName_SFDCDevelo...	Connection		

?

Export Cancel

59. A pop-up message will be displayed. To download the xml file, click the **My Import/Export Logs** link in the message.



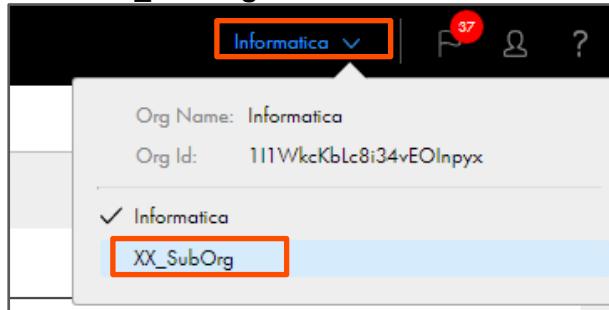
Note: You can also navigate to the My Import/Export Logs page by selecting the **My Import/Export Logs** option from the navigation pane.

60. To view the exported asset list, click the **Export** tab.
 61. After the status displays Export completed successfully, hover over the status message, and click the **Download** to download the asset.

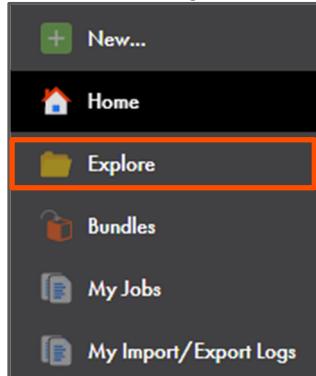
Instance Name	Start Time	Start Method	Status
SXX_FirstName_Employee-162729534763	Jul 26, 2021, 2:42 AM	UI	Export completed successfully

Note: It downloads to your system's Downloads directory.

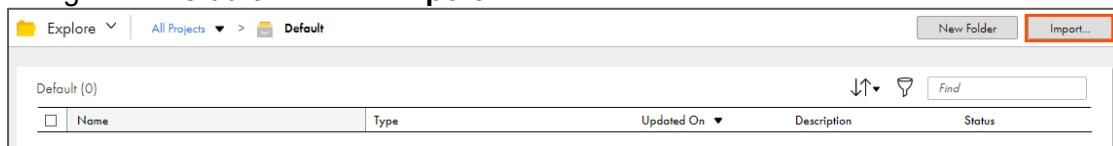
62. To import the downloaded file in the Sub Org, you must change the current Org to Sub-Org.
 63. Click the Org name available on the top right corner of the screen.
 64. Select **XX_SubOrg**.



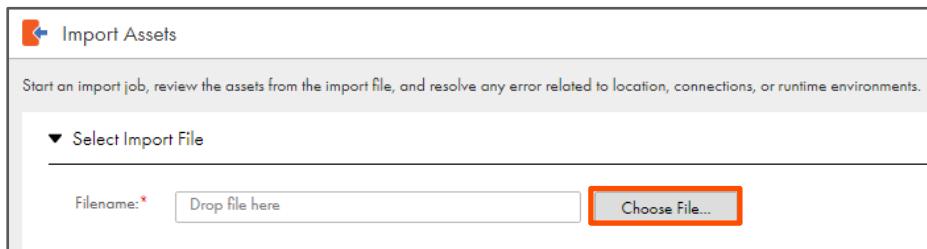
65. From the navigation pane, click **Explore**.



66. Navigate to **Default** and click **Import**.

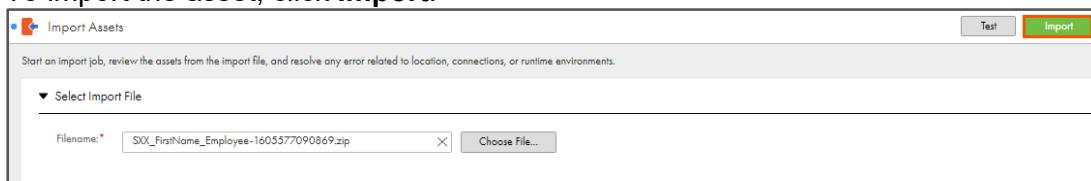


67. Click **Choose File**.

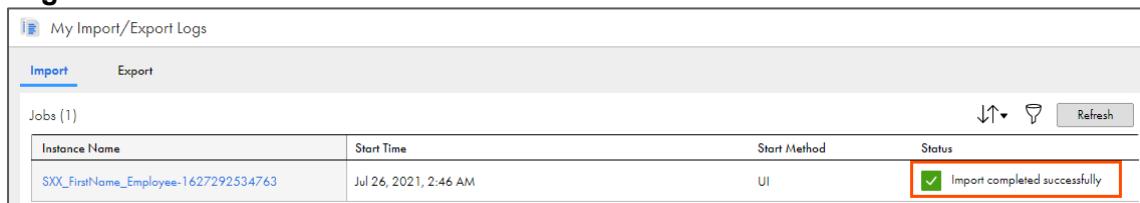


68. Navigate to your system's Downloads directory, select the asset you exported earlier.

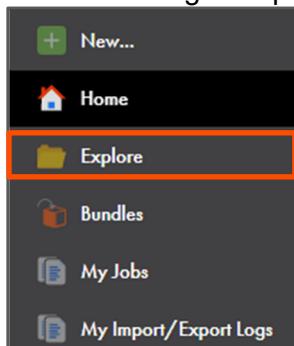
69. To import the asset, click **Import**.



70. To view the status of the job, from the navigation pane, click the **My Import/Export Logs**.



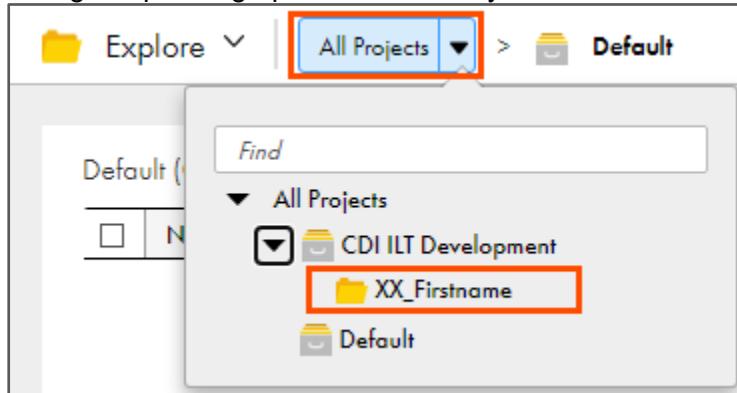
71. From the navigation pane, click **Explore**.



72. From the All Projects drop-down, select your working directory.

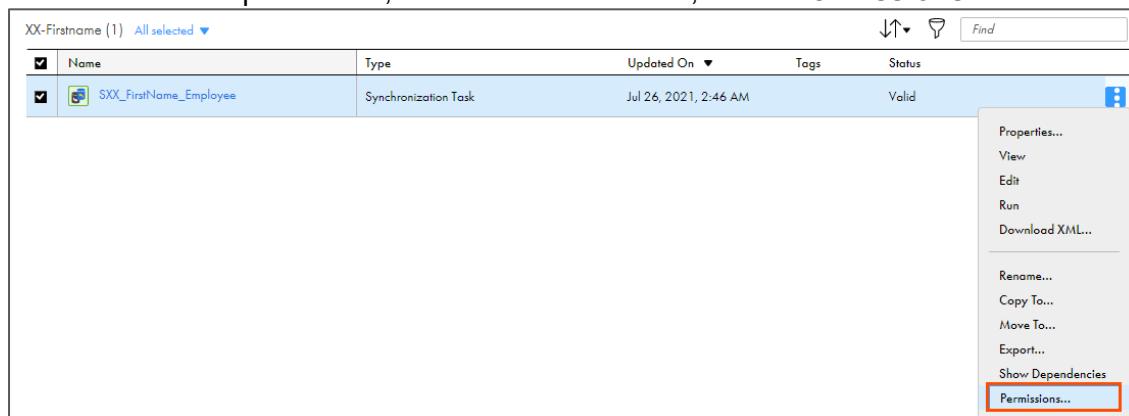
Note: In this case, it is CDI ILT Development > XX_Firstname. The working directory can

change depending upon the location you save the assets.



73. Verify that you can view the newly imported asset.

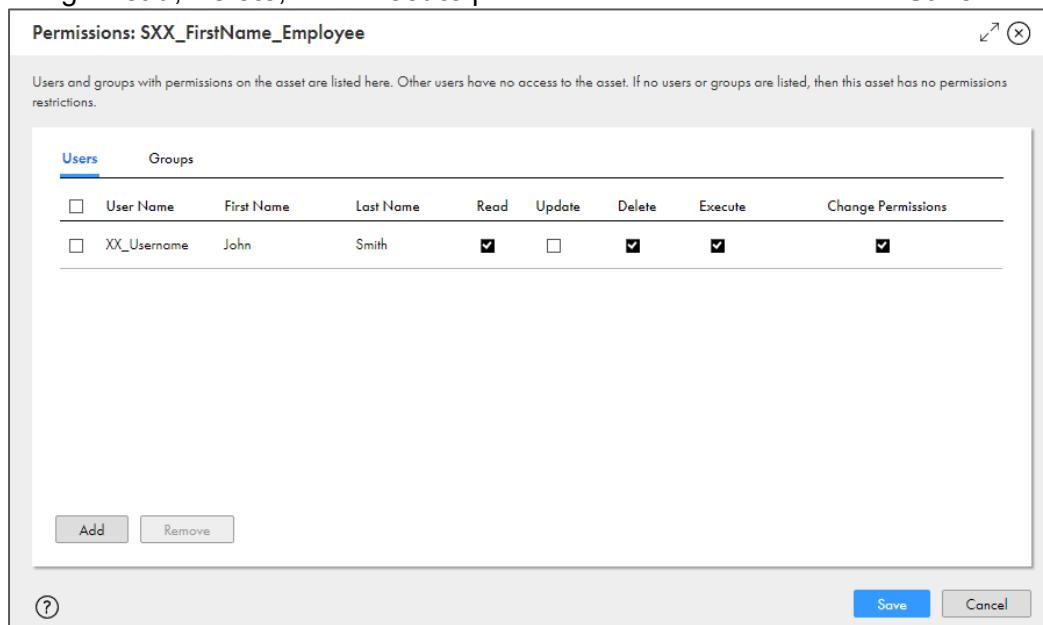
74. To set asset level permission, from the actions menu, select **Permissions**.



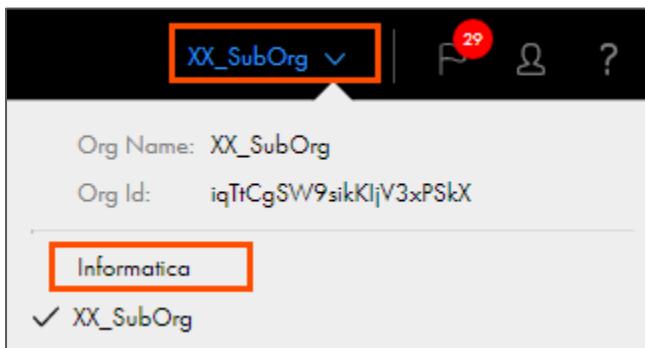
75. From the permissions window, to add the required user, click **Add**.

76. In the Add user window, select the XX_Username user created earlier.

77. Assign **Read**, **Delete**, and **Execute** permissions to the user and click **Save**.



78. To navigate back to the main Org, click the Org name available on the top right corner of the screen and select **Informatica**.



This concludes the lab.

Module 17: Automating and Monitoring Tasks

Lab 17-1: Creating a Schedule

Overview:

In IICS, you can run tasks manually, or you can use schedules to run them at a specific time or interval.

In this lab, you will create a reusable schedule in your IICS org and associate it with an existing asset.

Objective:

- Create a schedule

Scenario:

Ruby wants some existing tasks in her IICS org to run at a specific time. In this lab, John will create a schedule to fulfill this requirement.

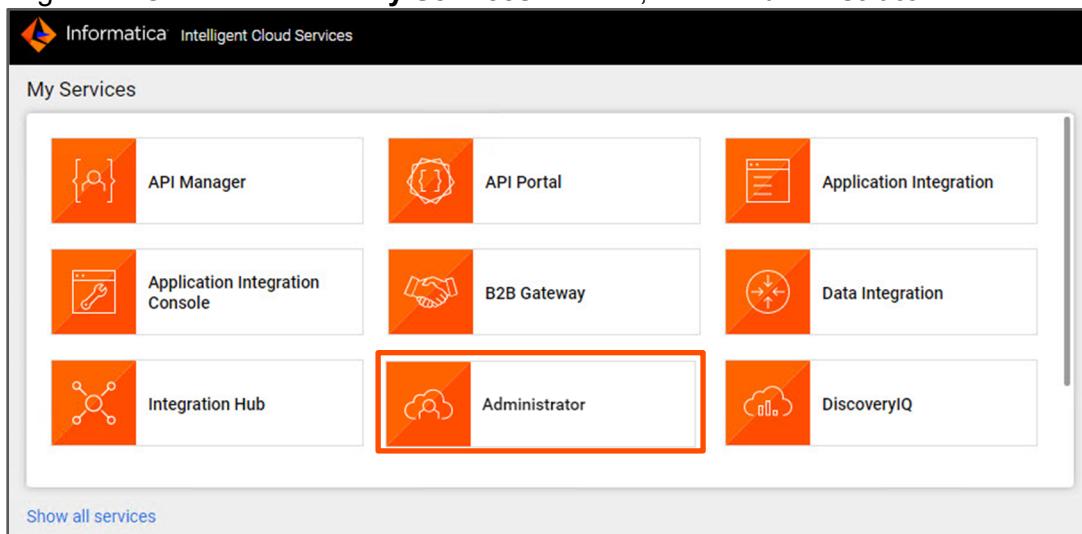
Duration:

5 minutes

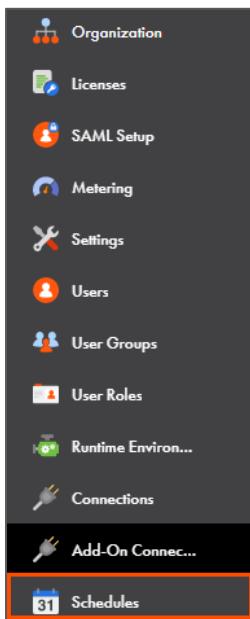
Tasks

Create Schedule

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



2. To create a schedule, from the navigation pane, select **Schedules**.



3. To create a new schedule, click **New Schedule**.



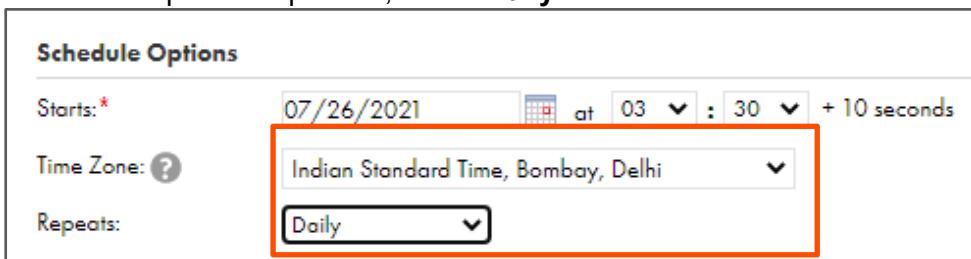
4. In the Schedule Name field, enter **XX_FirstName_Daily**.



Schedule Details	
Schedule Name:	<input type="text" value="XX_FirstName_Daily"/>
Description:	<input type="text"/>

5. From the Time zone drop-down, select your time zone.

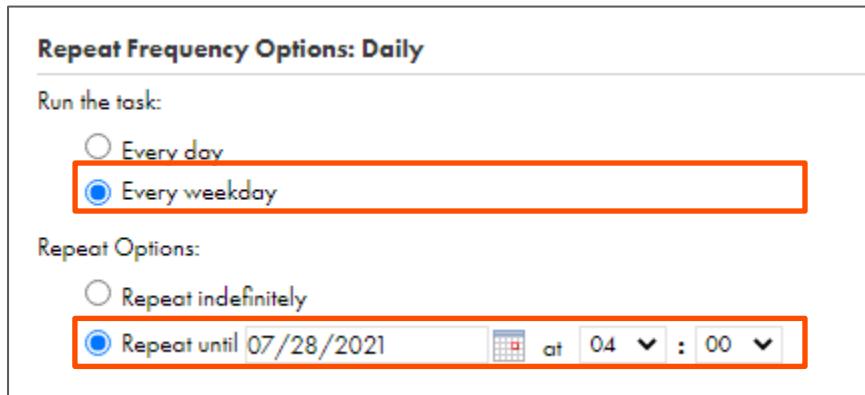
6. From the Repeats drop-down, select **Daily**.



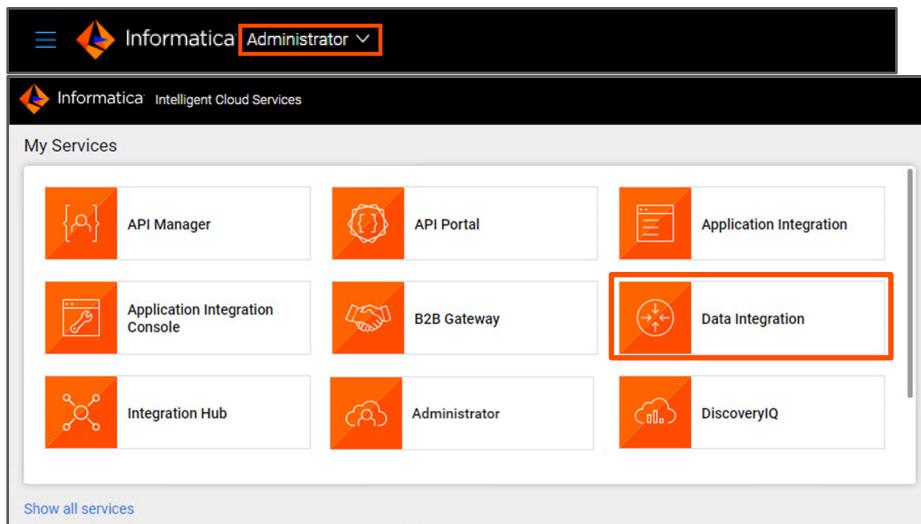
Schedule Options	
Starts:	07/26/2021 <input type="button" value="Calendar"/> at 03 : 30 + 10 seconds
Time Zone:	<input type="button" value="Indian Standard Time, Bombay, Delhi"/>
Repeats:	<input type="button" value="Daily"/>

7. From the Run the task section, select **Every weekday**.

8. In the Repeat Options section, select **Repeat until**, and select the date that is two days after the current date.



9. Save the schedule.
 10. To associate the schedule with an existing task, navigate to the **Data Integration** service.

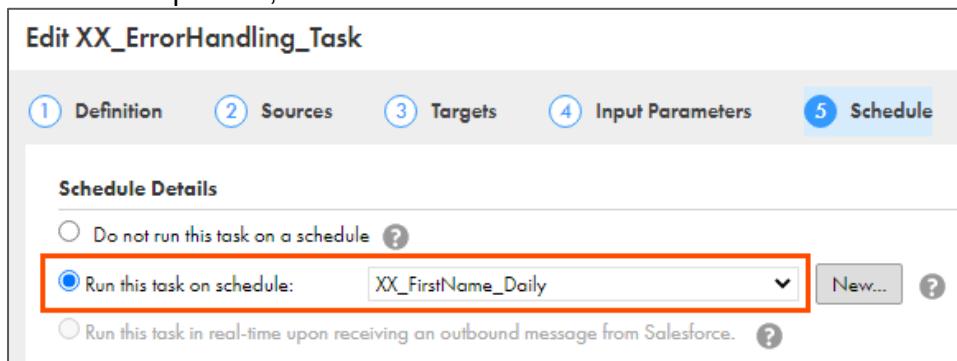


11. From the navigation pane, select **Explore**.
 12. Navigate to your working directory and edit the **XX_ErrorHandling_Task** asset.

XX-Firstname (26) 1 selected ▾						Find
	Name	Type	Updated On	Tags	Status	
<input checked="" type="checkbox"/>	XX_ErrorHandling_Task	Mapping Task	Jul 22, 2021, 6:23 AM	Valid		Properties... View
<input type="checkbox"/>	SXX_FirstName_ErrorHandling	Mapping	Jul 22, 2021, 6:17 AM	Valid		Edit
<input type="checkbox"/>	SXX_FirstName_Employees	Mapping	Jul 22, 2021, 6:16 AM	Valid		Run Download XML...
<input type="checkbox"/>	XX_NormalizerAggregator_Task	Mapping Task	Jul 22, 2021, 3:19 AM	Valid		

13. Go to **Schedule** step.
 14. Select **Run this task on schedule** option.

15. From the drop-down, select the schedule created earlier.



The screenshot shows the 'Edit XX_ErrorHandling_Task' dialog box. The 'Schedule' tab is selected. Under 'Schedule Details', there are three options: 'Do not run this task on a schedule', 'Run this task on schedule:' (which is selected and has a dropdown menu showing 'XX_FirstName_Daily'), and 'Run this task in real-time upon receiving an outbound message from Salesforce.' A note at the bottom states: 'Note: You can also use the New option to create a new schedule on the fly.'

Note: You can also use the **New** option to create a new schedule on the fly.

16. Click **Finish** to save the changes.

17. Close the asset from the navigation pane.

This concludes the lab.

Module 18: IICS APIs

Lab 18-1: 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 to IICS, running a task, and much more.

In this lab, you will use 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 REST API and then to log out from the Org.

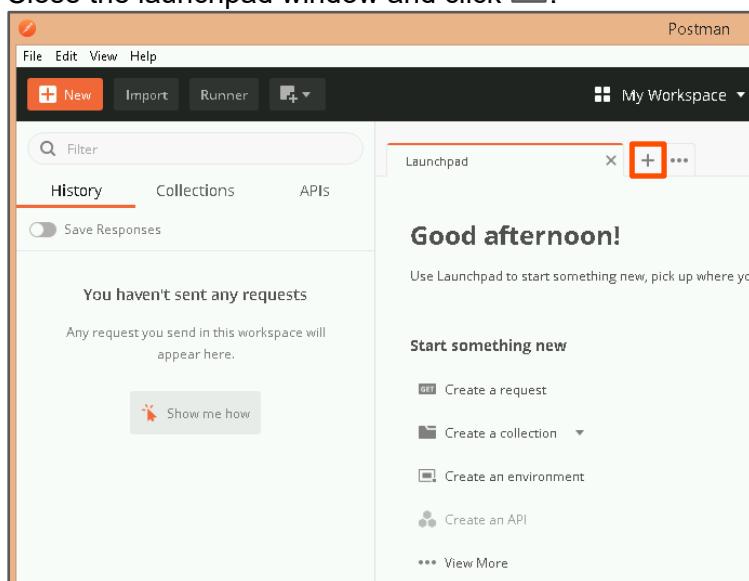
Duration:

20 minutes

Tasks

Open Postman

1. From the windows start menu, open the Postman () application.
2. Close the launchpad window and click .



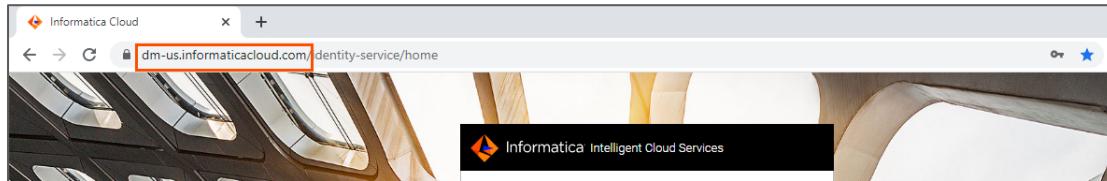
Send Login Request

3. From the drop-down, select **POST**.
4. Enter the URL in the request URL field in following format:
https://<Informatica URL>/ma/api/v2/user/login

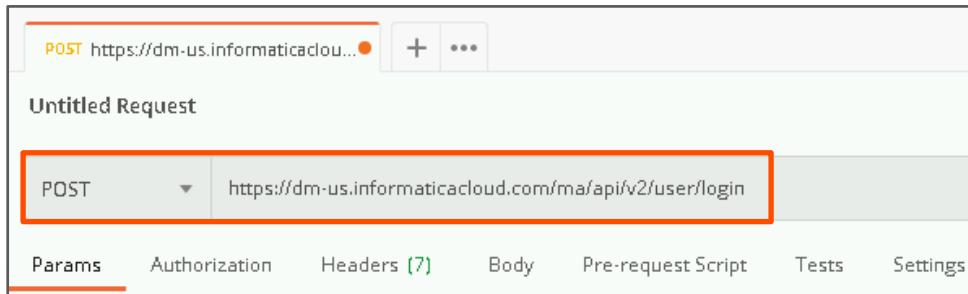
Note: The Informatica URL can change based on the POD (Point of Deployment) region of your IICS Org. Your POD region is based on the location of your Informatica Intelligent Cloud Services data center. Use one of the following POD regions

- 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 lab environment provided by the instructor, enter the following URL:
https://dm-us.informaticacloud.com/ma/api/v2/user/login

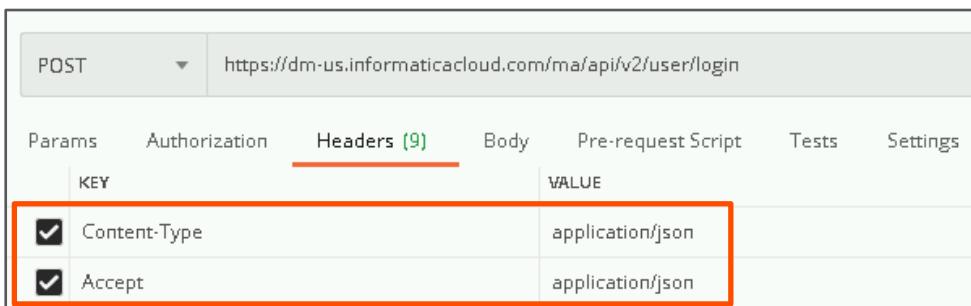


Note: Make sure to remove extra space from the URL after pasting the URL in the request field.

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 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 their checkboxes checked and are highlighted with a red box.

8. 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 it, a radio button for "raw" is selected and highlighted with a red box, while other options like "none", "form-data", "x-www-form-urlencoded", "binary", and "GraphQL" are shown with unselected radio buttons.

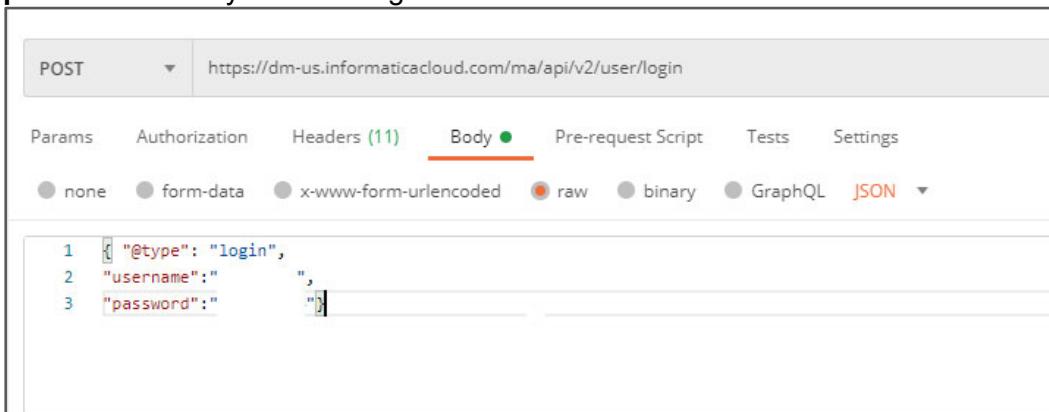
9. Enter the following syntax:

```
{ "@type": "login",
  "username": "< Informatica Cloud username> ",
  "password": "< Informatica Cloud password>"}
```

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **RunningMappingTaskUsingRESTAPI_18-1**. Copy the syntax mentioned under **Step A** and paste it in the Body field.

10. In the syntax, replace **< Informatica Cloud username>** and **< Informatica Cloud password>** with your IICS Org credentials.

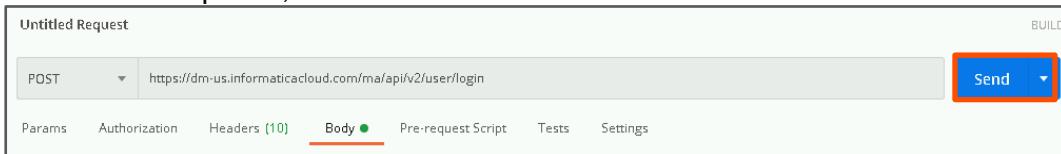


The screenshot shows the Postman interface with a POST request to <https://dm-us.informaticacloud.com/ma/api/v2/user/login>. The Body tab is selected and set to "raw". The raw JSON syntax is visible in the body field:

```
1 { "@type": "login",
2   "username": "",
3   "password": ""}
```

Note: For this lab, we have masked the username and password in the screenshot.

11. To view the response, click **Send**.



The screenshot shows the Postman interface with an 'Untitled Request' tab. The method dropdown is set to 'POST' and the URL is 'https://dm-us.informaticacloud.com/ma/api/v2/user/login'. The 'Body' tab is selected. At the top right, there is a 'Send' button which is highlighted with a red box.

12. The status of the response is **200 OK**.

13. From the response, note down the value for **ServerUrl** and **icSessionId** in a notepad.



The screenshot shows the Postman interface displaying the response body in JSON format. Line 19 contains the key 'serverUrl' with the value 'https://na1.dm-us.informaticacloud.com/saas'. Line 20 contains the key 'icSessionId' with the value 'anUJQAncBRihY7osYioMQH'. Both these lines are highlighted with a red box.

```

18   "timezone": null,
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": "bZZngePyraJ15A07mmZIwr",
24   "forceChangePassword": false,
  
```

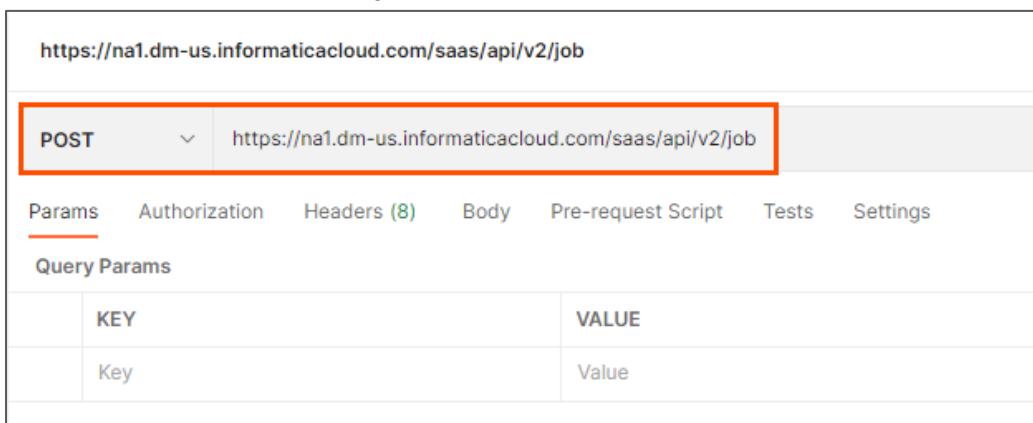
Send Request to Run a Job

14. To add a new tab, click .

15. From the drop-down, select **POST**.

16. Enter the URL in the request URL field in the following format:

<Copied ServerUrl>/api/v2/job



The screenshot shows the Postman interface with a new request tab. The method dropdown is set to 'POST' and the URL is 'https://na1.dm-us.informaticacloud.com/saas/api/v2/job'. The 'Body' tab is selected. The 'Headers' tab is also visible. Below the URL field, there is a table for 'Query Params' with one row containing 'Key' and 'Value' columns.

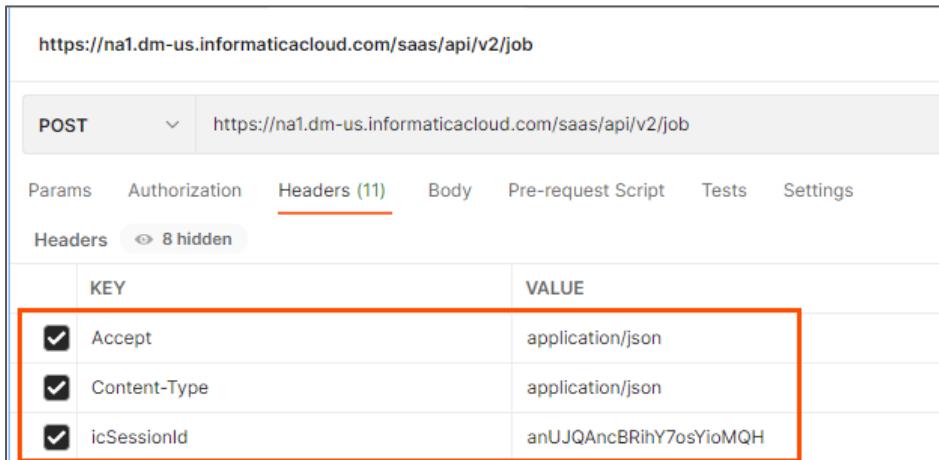
	KEY	VALUE
	Key	Value

Note: Make sure to remove extra space from the URL after pasting the URL in the request field.

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 icSessionId noted earlier



The screenshot shows the Postman interface with a POST request to <https://na1.dm-us.informaticacloud.com/saas/api/v2/job>. The Headers tab is selected, displaying three key-value pairs:

KEY	VALUE
<input checked="" type="checkbox"/> Accept	application/json
<input checked="" type="checkbox"/> Content-Type	application/json
<input checked="" type="checkbox"/> icSessionId	anUJQAncBRihY7osYioMQH

19. Select the **Body** tab and select **raw**.

20. Enter the following syntax:

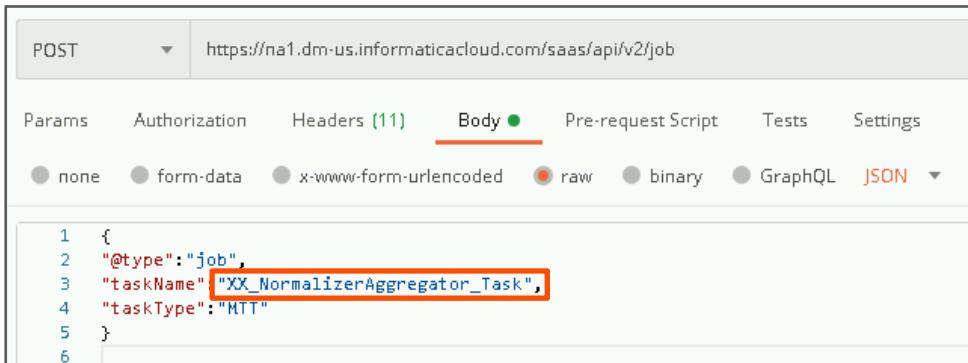
Note: In this syntax, the XX in `taskName` refers to your initials.

```
{
  "@type": "job",
  "taskName": "XX_NormalizerAggregator_Task",
  "taskType": "MTT"
}
```

OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **RunningMappingTaskUsingRESTAPI_18-1**. Copy the syntax mentioned under **Step B** and paste it in the Body field.

21. Ensure that the **taskName** is same as the task name in IICS.



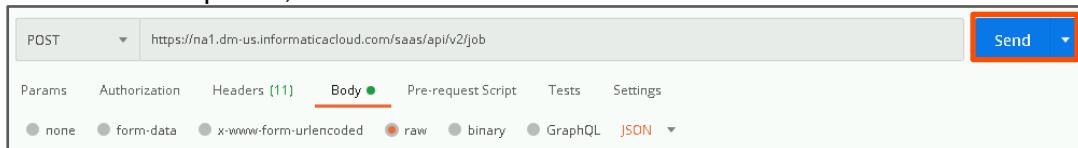
The screenshot shows the Postman interface with a POST request to <https://na1.dm-us.informaticacloud.com/saas/api/v2/job>. The Body tab is selected, and the raw JSON syntax is pasted into the body field:

```

1  {
2    "@type": "job",
3    "taskName": "XX_NormalizerAggregator_Task",
4    "taskType": "MTT"
5  }

```

22. To view the response, click **Send**.



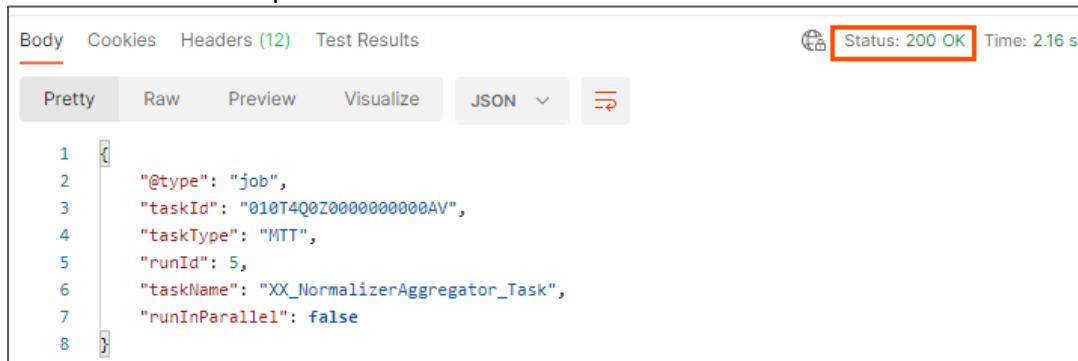
The screenshot shows the Postman interface with a POST request to the URL `https://na1.dm-us.informaticacloud.com/saas/api/v2/job`. The 'Send' button at the top right is highlighted with a red box. Below it, the 'Body' tab is selected, showing the raw JSON payload:

```

1 {
2   "@type": "job",
3   "taskId": "010T4Q0Z0000000000AV",
4   "taskType": "MTT",
5   "runId": 5,
6   "taskName": "XX_NormalizerAggregator_Task",
7   "runInParallel": false
8 }

```

23. The status of the response is **200 OK**.



The screenshot shows the Postman interface displaying the response details. The status is **200 OK** and the time taken is **2.16 s**. The response body is shown in JSON format:

```

1 {
2   "@type": "job",
3   "taskId": "010T4Q0Z0000000000AV",
4   "taskType": "MTT",
5   "runId": 5,
6   "taskName": "XX_NormalizerAggregator_Task",
7   "runInParallel": false
8 }

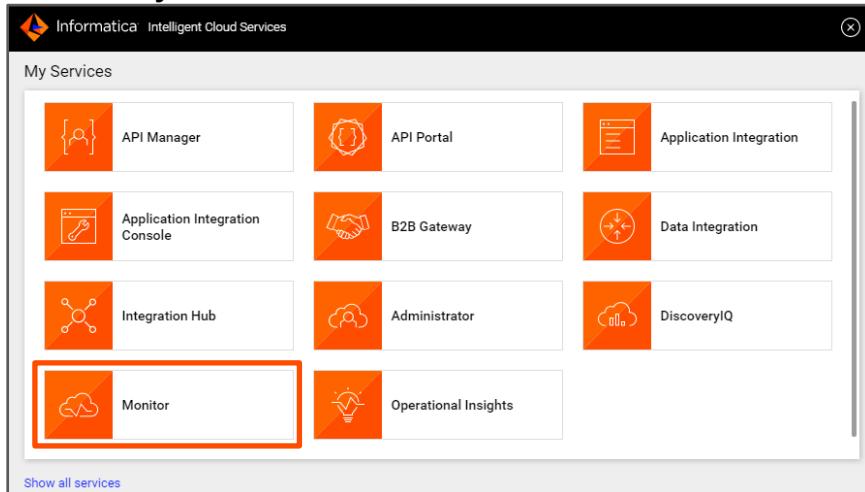
```

24. Open the IICS Login page from the Bookmarks bar.

25. Log in to your IICS Org.

Note: If you are already logged in logout and log in again.

26. From the **My Services** window, select **Monitor**.



The screenshot shows the 'My Services' window in the Informatica Intelligent Cloud Services interface. The 'Monitor' service is highlighted with a red box. Other services visible include API Manager, API Portal, Application Integration, Application Integration Console, B2B Gateway, Data Integration, Integration Hub, Administrator, and DiscoveryIQ.

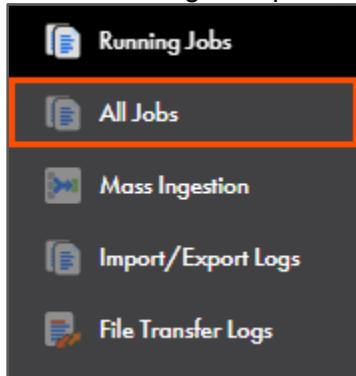
Note: Ensure that you are accessing the service from the main org.

27. 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.

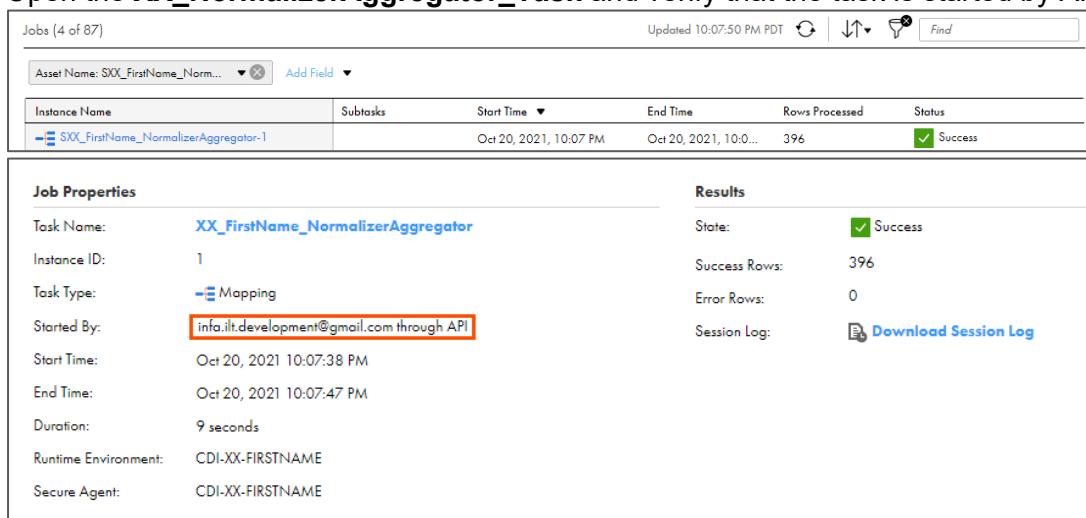


The screenshot shows the Informatica Intelligent Cloud Services login screen. The 'Org Name' dropdown is open, showing two options: 'Informatica' and 'XX_SubOrg'. The 'Informatica' option is selected and highlighted with a red box. Above the dropdown, the 'Org Name' field displays 'Informatica' and the 'Org Id' field displays '111WkcKbLc8i34vEOlnpyx'. A notification badge with the number '37' is visible in the top right corner.

28. From the navigation pane, select **All Jobs**.



29. Open the **XX_NormalizerAggregator_Task** and verify that the task is started by API.



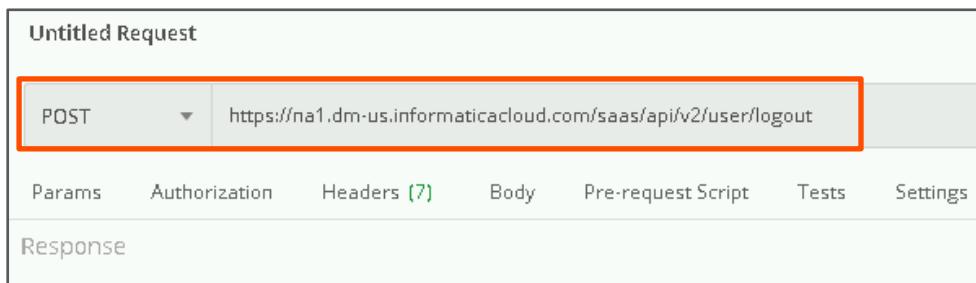
Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
- SXX_FirstName_NormalizerAggregator-1		Oct 20, 2021, 10:07 PM	Oct 20, 2021, 10:07 PM	396	Success

Job Properties		Results	
Task Name:	XX_FirstName_NormalizerAggregator	State:	Success
Instance ID:	1	Success Rows:	396
Task Type:	Mapping	Error Rows:	0
Started By:	info.ilt:development@gmail.com through API	Session Log:	Download Session Log
Start Time:	Oct 20, 2021 10:07:38 PM		
End Time:	Oct 20, 2021 10:07:47 PM		
Duration:	9 seconds		
Runtime Environment:	CDI-XX-FIRSTNAME		
Secure Agent:	CDI-XX-FIRSTNAME		

Send Request to Logout

30. In Postman, to add a new tab, click **[+]**.
31. From the drop-down, select **POST**.
32. Enter the following URL in the request URL field:

<Copied ServerUrl>/api/v2/user/logout



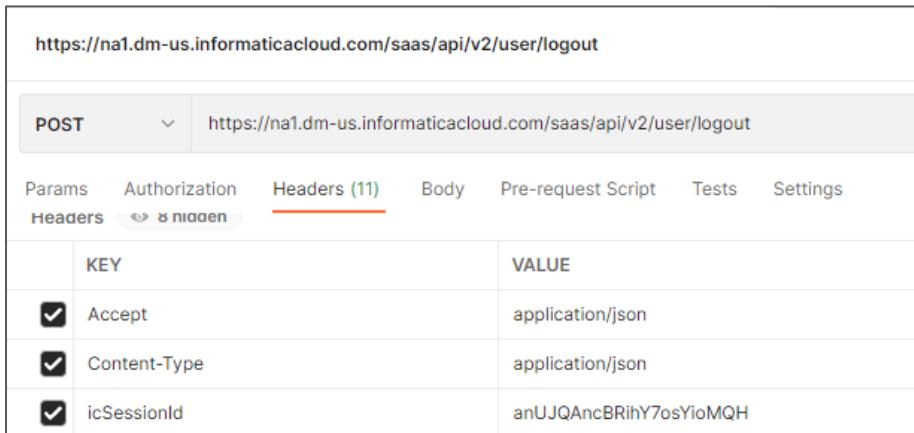
POST	https://na1.dm-us.informaticacloud.com/saas/api/v2/user/logout					
Params	Authorization	Headers (7)	Body	Pre-request Script	Tests	Settings

Note: Make sure to remove extra space from the URL after pasting the URL in the request field.

33. Select the **Headers** tab.

34. 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



KEY	VALUE
Accept	application/json
Content-Type	application/json
icSessionId	anUJQAncBRihY7osYioMQH

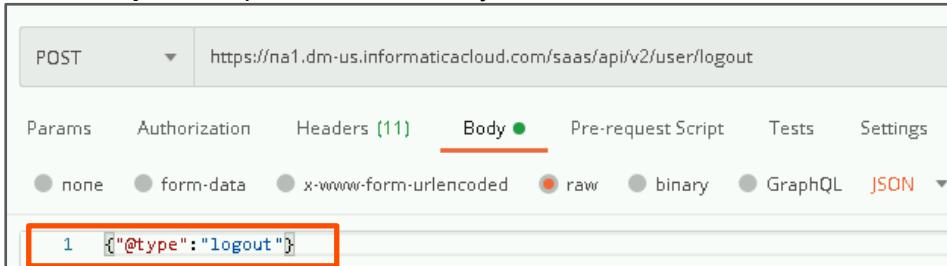
35. Select the **Body** tab and select **raw**.

36. Enter the following syntax:

```
{"@type":"logout"}
```

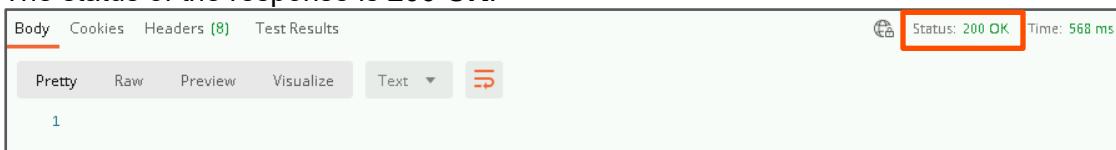
OR

Navigate to the **C:\Students\Commands** directory on your local machine and open the file named **RunningMappingTaskUsingRESTAPI_18-1**. Copy the syntax mentioned under **Step C** and paste it in the Body field.



37. To view the response, click **Send**.

38. The status of the response is **200 OK**.



Note: There is no response in body for logout request.

This concludes the lab.

Module 8: Replication Task

Appendix 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 flat file.

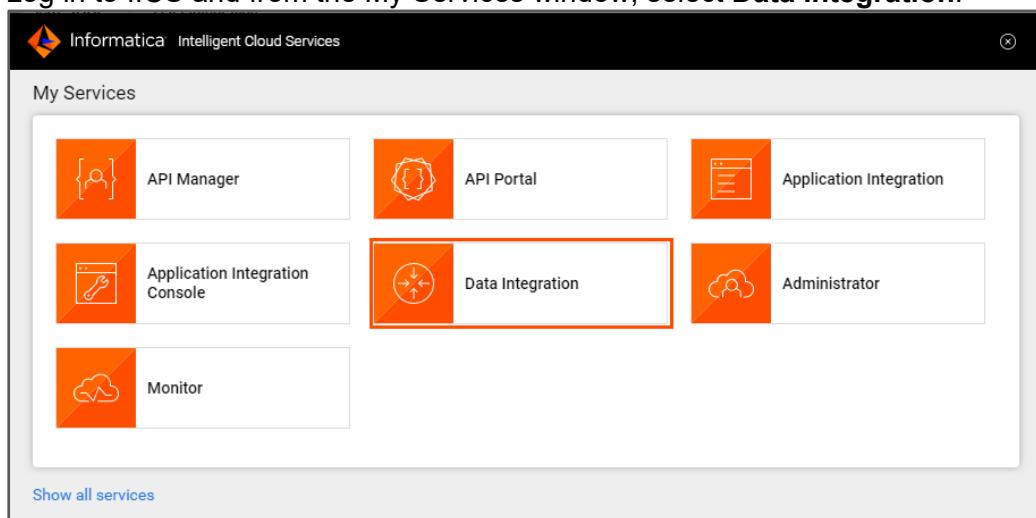
Duration:

10 minutes

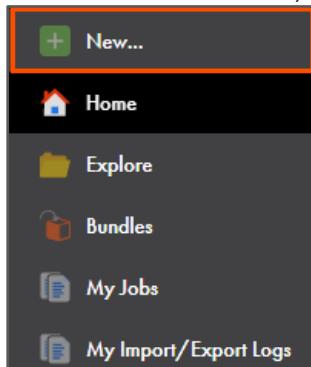
Tasks:

Create Replication Task

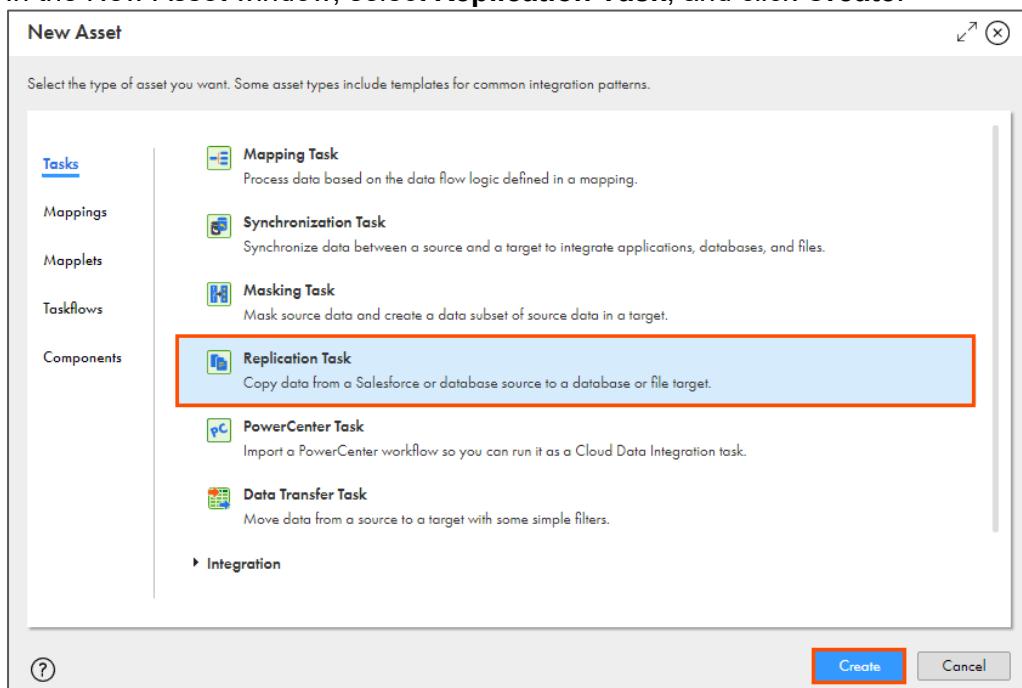
1. Log in to IICS and from the My Services window, select **Data Integration**.



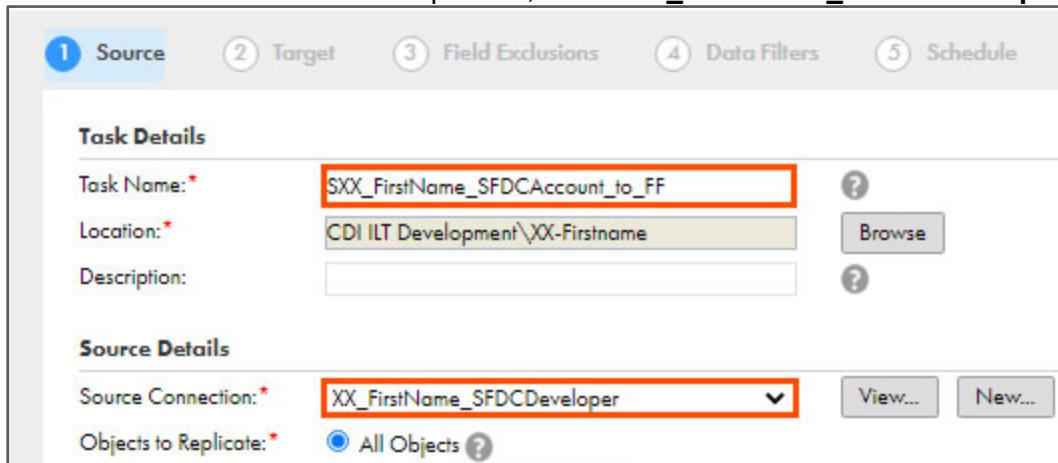
2. To create a new asset, from the navigation pane, select **New**.



3. In the New Asset window, select **Replication Task**, and click **Create**.



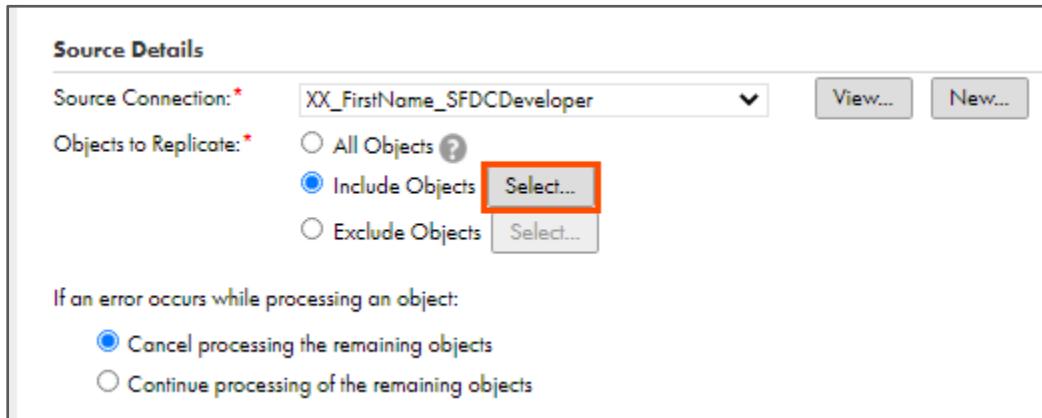
4. In the Task Name field, enter **SXX_FirstName_SFDCAccount_to_FF**.
 5. From the Source Connection drop-down, select **XX_FirstName_SFDCDeveloper**.



Task Name: SXX_FirstName_SFDCAccount_to_FF	Location: CDI ILT Development\XX-Firstname	Browse
Source Connection: XX_FirstName_SFDCDeveloper		
Objects to Replicate: All Objects		

6. From Objects to Replicate field, select **Include Objects**.

7. Click **Select**.



Source Details

Source Connection: XX_FirstName_SFDCDeveloper

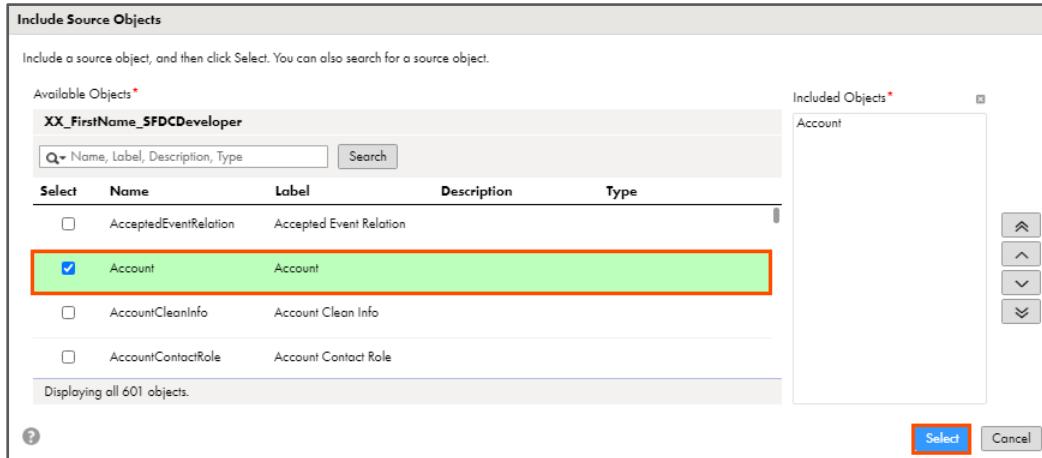
Objects to Replicate: All Objects Include Objects Exclude Objects

If an error occurs while processing an object:

- Cancel processing the remaining objects
- Continue processing of the remaining objects

8. From the list, select **Account**.

9. Click **Select**.



Include Source Objects

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

Available Objects: XX_FirstName_SFDCDeveloper

Select	Name	Label	Description	Type
<input type="checkbox"/>	AcceptedEventRelation	Accepted Event Relation		
<input checked="" type="checkbox"/>	Account	Account		
<input type="checkbox"/>	AccountCleanInfo	Account Clean Info		
<input type="checkbox"/>	AccountContactRole	Account Contact Role		

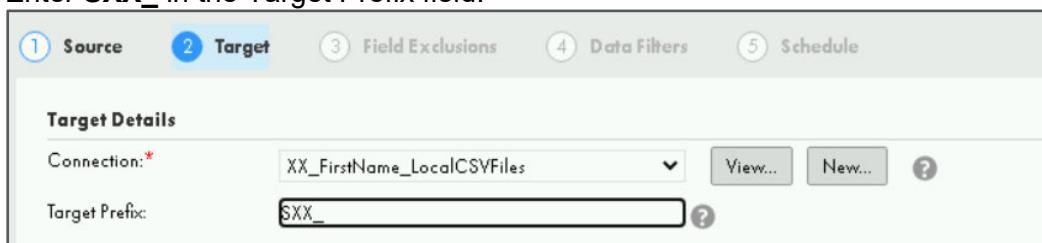
Included Objects: Account

Displaying all 601 objects.

10. Select **Next**.

11. From the Connection drop-down, select **XX_FirstName_LocalCSVFiles**.

12. Enter **SXX_** in the Target Prefix field.



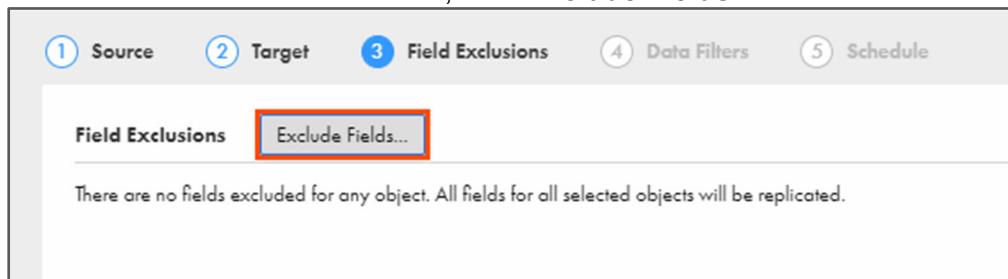
Target Details

Connection: XX_FirstName_LocalCSVFiles

Target Prefix: SXX_

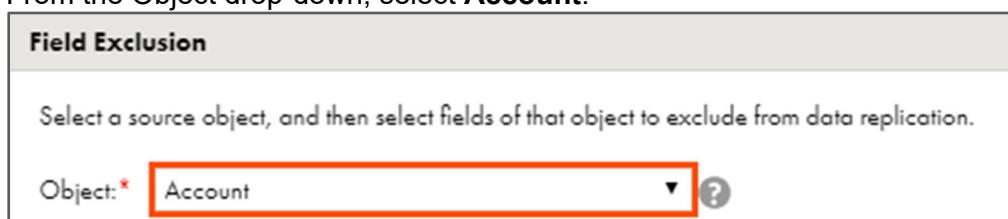
13. Click **Next**.

14. From the Field Exclusions section, click **Exclude Fields**.



The Field Exclusion window appears.

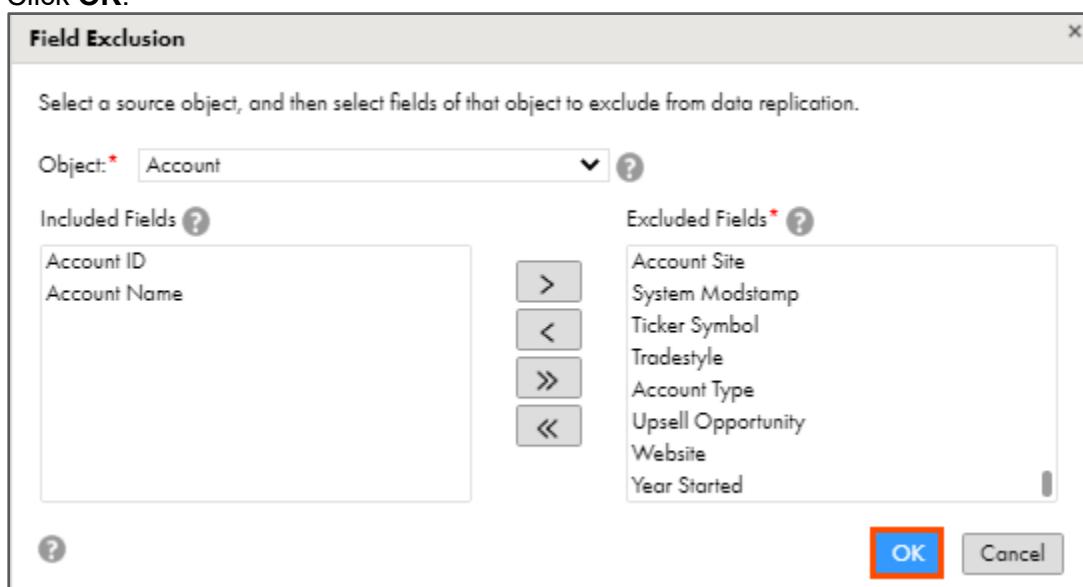
15. From the Object drop-down, select **Account**.



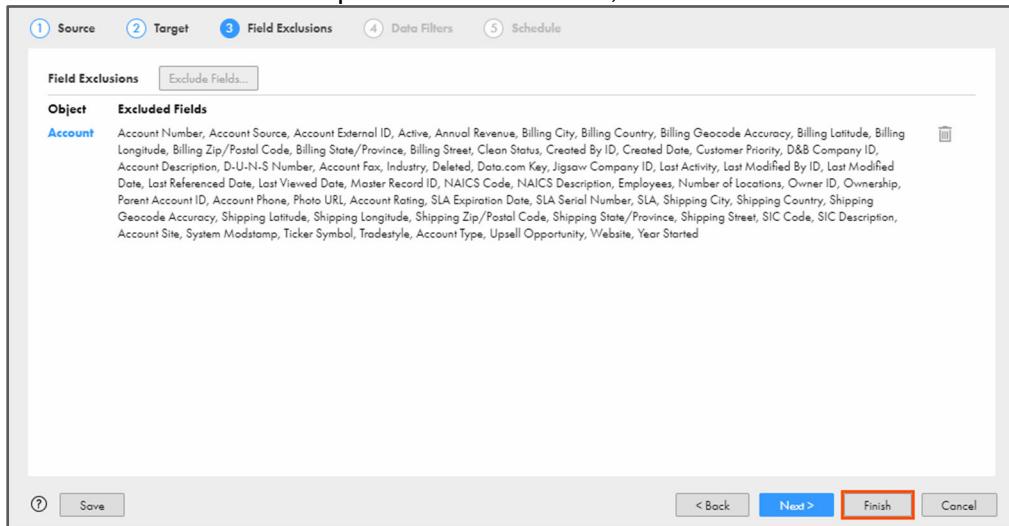
16. In the Included Fields section, retain only **Account Name** and **Account ID**.

Note: To retain Account Name and Account ID, select rest of the fields, and click .

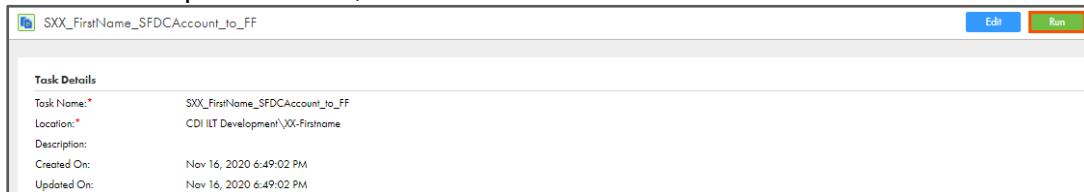
17. Click **OK**.



18. To save and close the Replication Task wizard, click **Finish**.

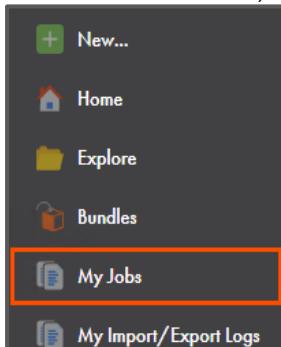


19. To run the Replication task, click **Run**.



Monitor Task

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



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

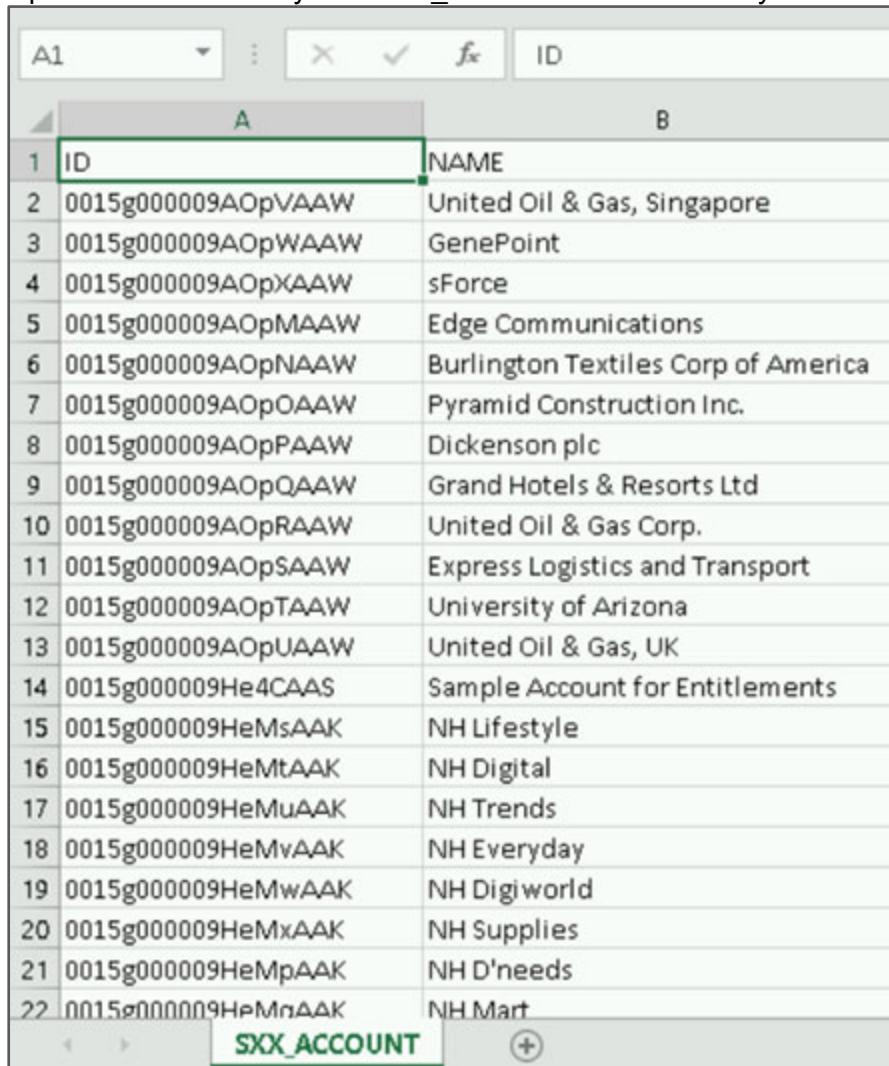
My Jobs		Data Integration					
		Jobs (472)				Updated 6:50:18 PM PST	
		Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
	SXX_FirstName_SFDCAccount_to_FF-1	1 task		Nov 16, 2020, 6:49 PM	Nov 16, 2020, 6:50...	18	 Success

Note: The number of processed rows can change depending upon the data in the Salesforce Account object.

22. Close the asset from the navigation pane.

Examine Results

23. To locate the created files, go to **C:\IICSLabFiles**.
24. Observe that the file **SXX_ACCOUNT** is created.
25. Open the file and verify that SXX_ACCOUNT contains only two columns.



A	B
1 ID	NAME
2 0015g000009AOpVAAW	United Oil & Gas, Singapore
3 0015g000009AOpWAAW	GenePoint
4 0015g000009AOpXAAW	sForce
5 0015g000009AOpMAAW	Edge Communications
6 0015g000009AOpNAAW	Burlington Textiles Corp of America
7 0015g000009AOpOAAW	Pyramid Construction Inc.
8 0015g000009AOpPAAW	Dickenson plc
9 0015g000009AOpQAAW	Grand Hotels & Resorts Ltd
10 0015g000009AOpRAAW	United Oil & Gas Corp.
11 0015g000009AOpSAAW	Express Logistics and Transport
12 0015g000009AOpTAAW	University of Arizona
13 0015g000009AOpUAAW	United Oil & Gas, UK
14 0015g000009He4CAAS	Sample Account for Entitlements
15 0015g000009HeMsAAK	NH Lifestyle
16 0015g000009HeMtAAK	NH Digital
17 0015g000009HeMuAAK	NH Trends
18 0015g000009HeMvAAK	NH Everyday
19 0015g000009HeMwAAK	NH Digiworld
20 0015g000009HeMxAAK	NH Supplies
21 0015g000009HeMpAAK	NH D'needs
22 0015g000009HePmAAK	NH Mart

This concludes the lab.

Module 9: Masking Task

Appendix 2: 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 phone number

Scenario:

Ruby wants to use the customer data for development and testing purposes. However, as the customer information is sensitive data, John suggests using Masking task to mask customer phone number details.

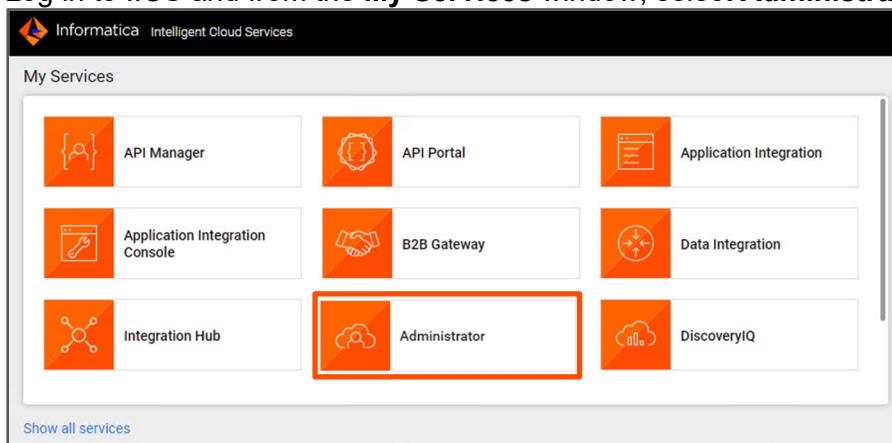
Duration:

10 minutes

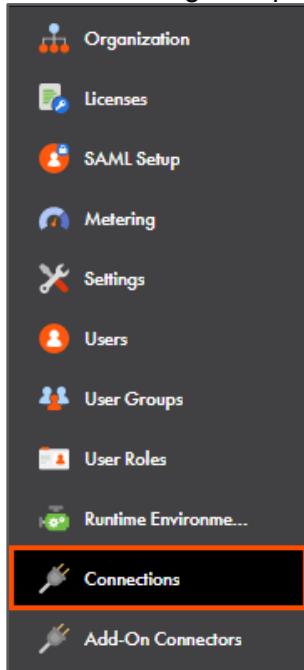
Tasks:

Create Masking Task

1. Open the **Outlets.csv** file used in creating a Synchronization Task lab and note the phone numbers for some of the accounts.
2. Log in to IICS and from the **My Services** window, select **Administrator**.



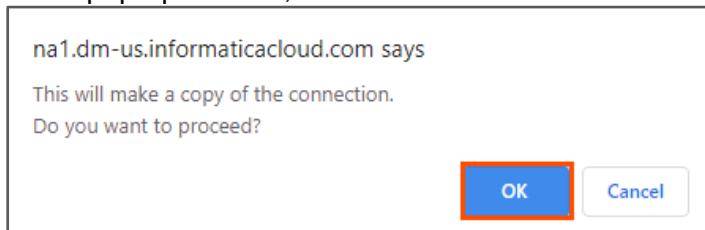
3. From the navigation pane, select **Connections**.



4. Select the **XX_FirstName_SFDCDeveloper** connection and click on  to make a copy of the connection.

Connections			
Configure connections to work with applications, databases, and files.			
Actions	Name	Type	Runtime Environment
	XX_FirstName_SFDCDeveloper	Salesforce	CDI-XX-FIRSTNAME

5. In the pop-up window, click **OK**.



6. Edit the **XX_FirstName_SFDCDeveloper_2** connection.

Connections			
Configure connections to work with applications, databases, and files.			
Actions	Name	Type	Runtime Environment
	XX_FirstName_SFDCDeveloper_2	Salesforce	CDI-XX-FIRSTNAME

7. Update the connection name to **SXX_SFDCDeveloper** and save the connection.

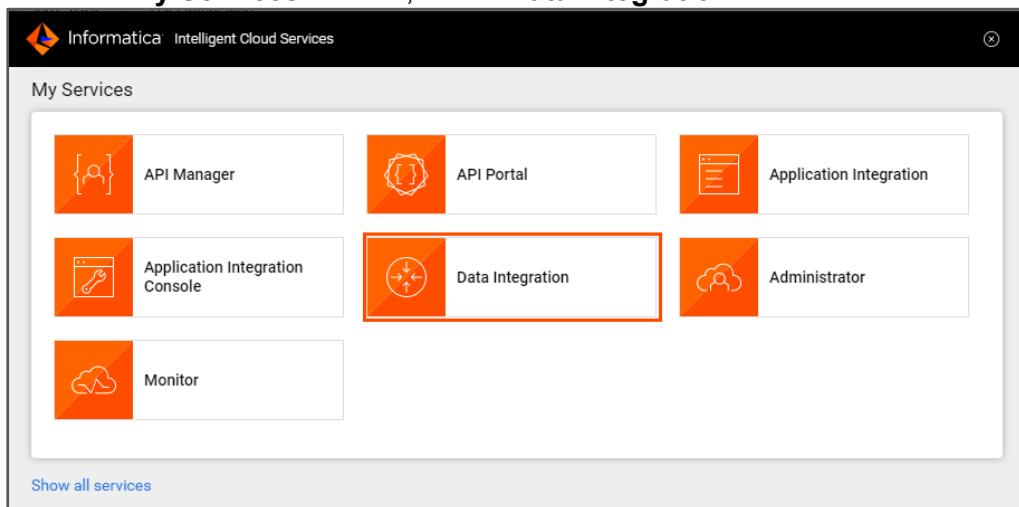


Note: When you create a Masking Task, the connection name cannot start with a number. So, you must update the connection name to use it in the Masking task.

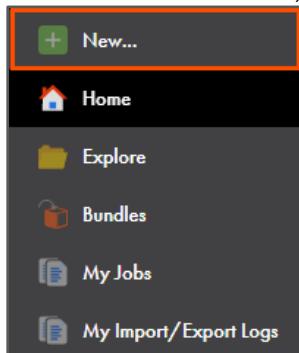
8. To switch between the available services, from the toolbar, select the drop-down next to **Administrator**.



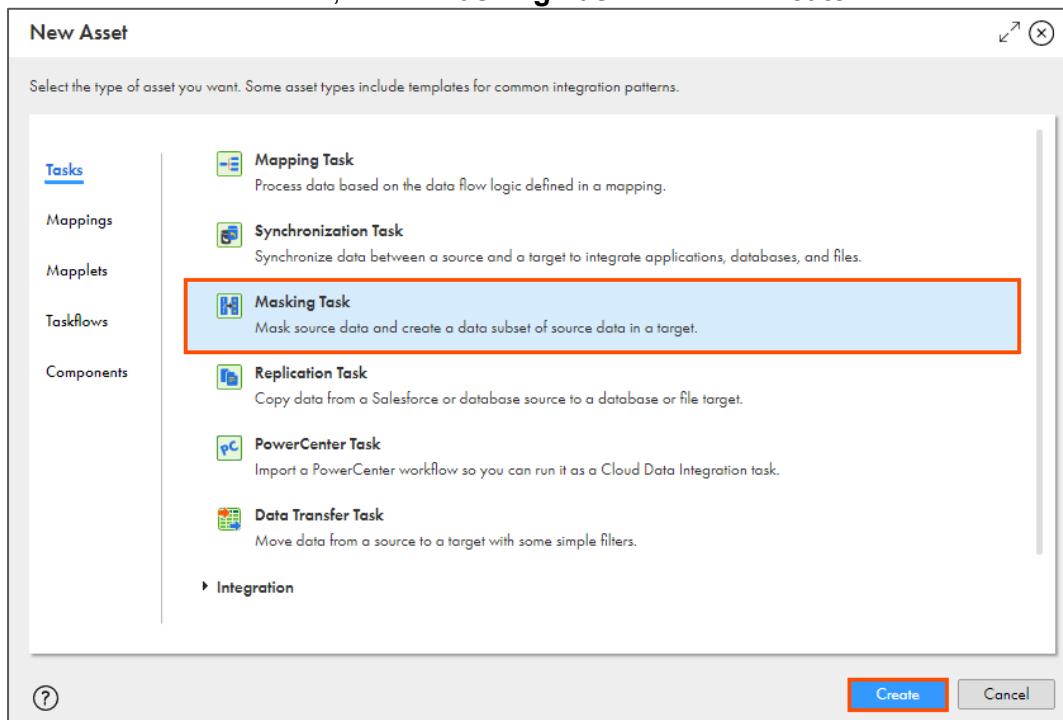
9. From the **My Services** window, select **Data Integration**.



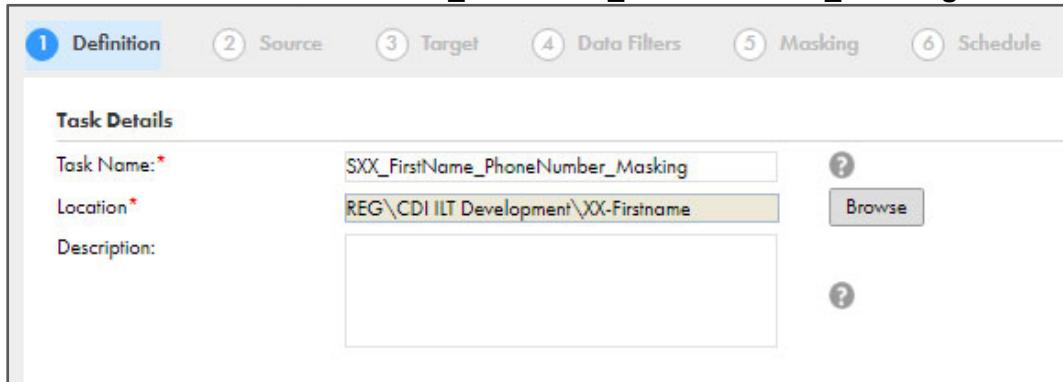
10. To create a new asset, from the navigation pane, select **New**.



11. In the New Asset window, select **Masking Task** and click **Create**.



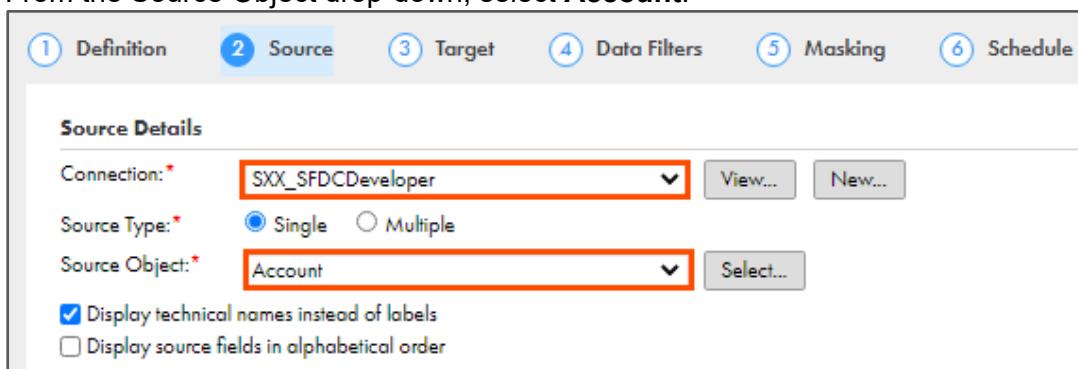
12. In the Task Name field, enter **SXX_FirstName_PhoneNumber_Masking**.



13. Click **Next**.

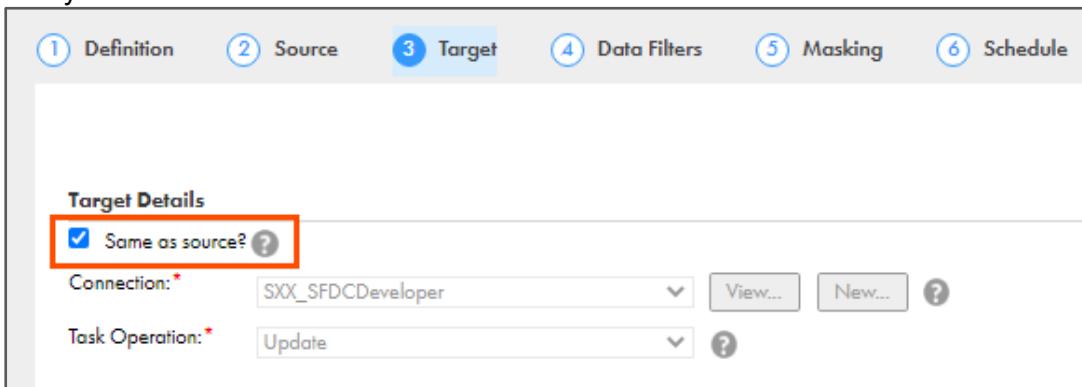
14. From the Source Connection drop-down, select **SXX_SFDCDeveloper**.

15. From the Source Object drop-down, select **Account**.



16. Click **Next**.

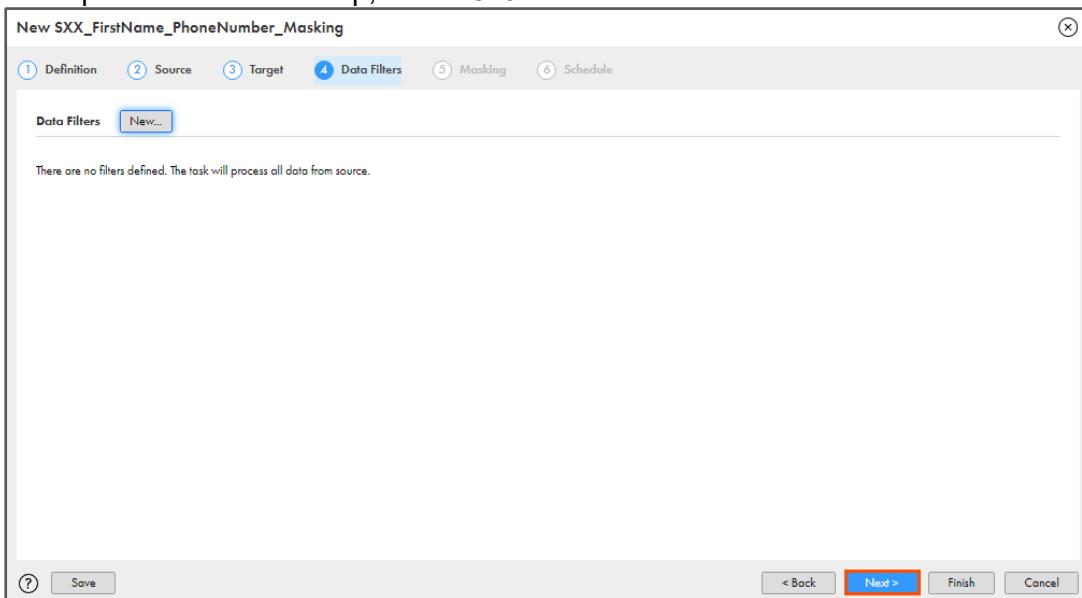
17. Verify that the **Same as source?** field is selected.



The screenshot shows the 'Target Details' step of the Informatica Masking Task wizard. The 'Target' tab is selected. Under 'Target Details', there is a checkbox labeled 'Same as source?' which is checked and highlighted with a red box. Below it are fields for 'Connection:' set to 'SXX_SFDCDeveloper' and 'Task Operation:' set to 'Update'. There are also 'View...' and 'New...' buttons.

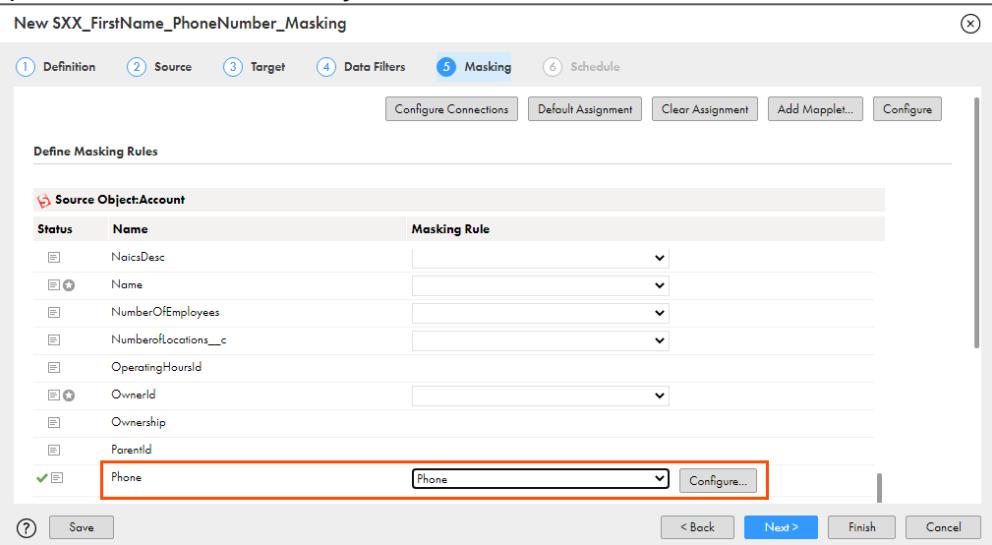
18. Click **Next**.

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



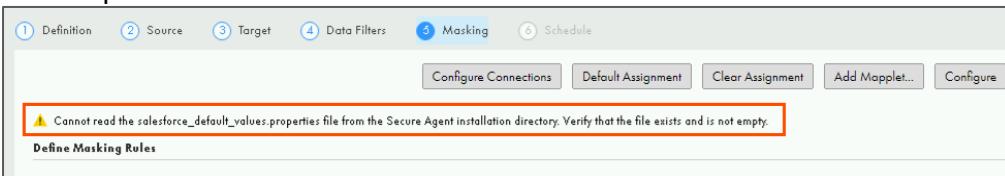
The screenshot shows the 'Data Filters' step of the Informatica Masking Task wizard. The 'Data Filters' tab is selected. It displays a message: 'There are no filters defined. The task will process all data from source.' At the bottom, there are buttons for '?', 'Save', '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a blue box.

20. 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.



Note:

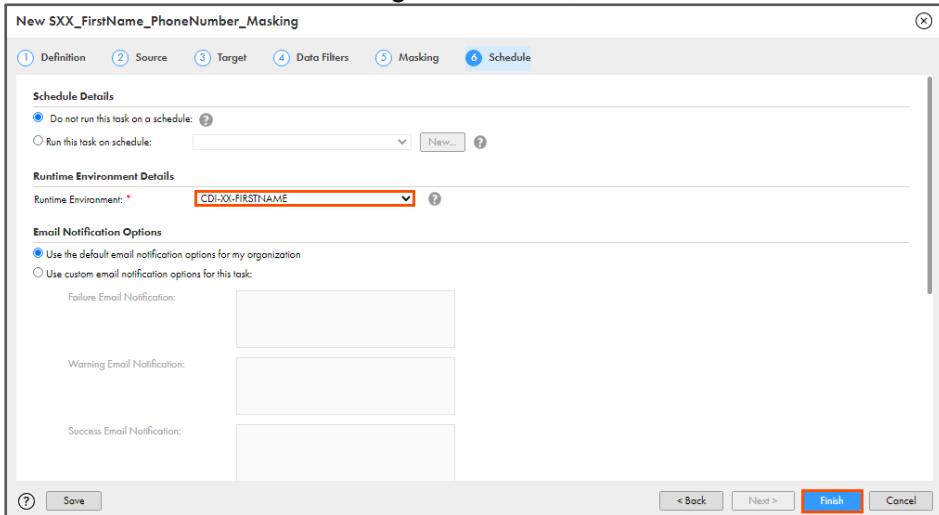
- a. Phone Masking masks a phone number with random numbers in the same format as the original number.
- b. If you see the following warning message, ignore the message and proceed with the next steps.



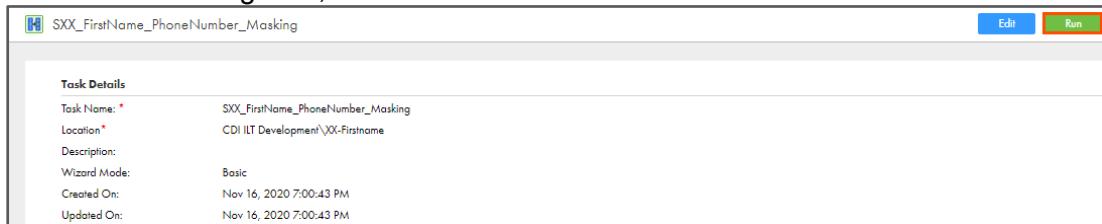
21. Click **Next**.

22. From the Runtime Environment drop-down, select your secure agent group.

23. To save and close the Masking Task wizard, click **Finish**.



24. To run the Masking task, click **Run**.

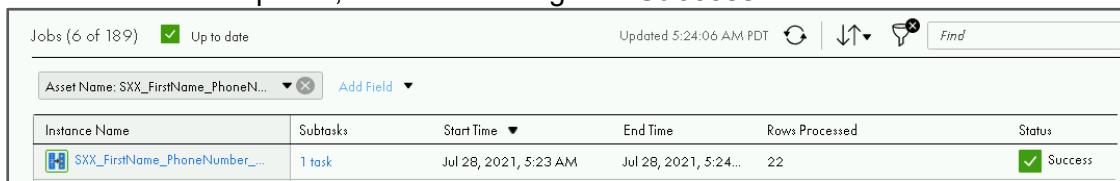


The screenshot shows the 'Task Details' section of a task configuration. The task name is 'SXX_FirstName_PhoneNumber_Masking'. The location is 'CDI IIT Development\XX-Firstname'. The wizard mode is 'Basic'. The task was created on Nov 16, 2020 at 7:00:43 PM and updated on Nov 16, 2020 at 7:00:43 PM. There are 'Edit' and 'Run' buttons at the top right.

Monitor the Status

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

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



The screenshot shows the 'My Jobs' page with 6 of 189 jobs. One job is listed:

Instance Name	Subtasks	Start Time	End Time	Rows Processed	Status
SXX_FirstName_PhoneNumber_Mask...	1 task	Jul 28, 2021, 5:23 AM	Jul 28, 2021, 5:24...	22	✓ Success

Note: The number of processed rows can change depending upon the data in Salesforce Account object.

27. Close the asset from the navigation pane.

Examine Results

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

Note: You can use the below mentioned link to login to Salesforce:

<https://login.salesforce.com/>

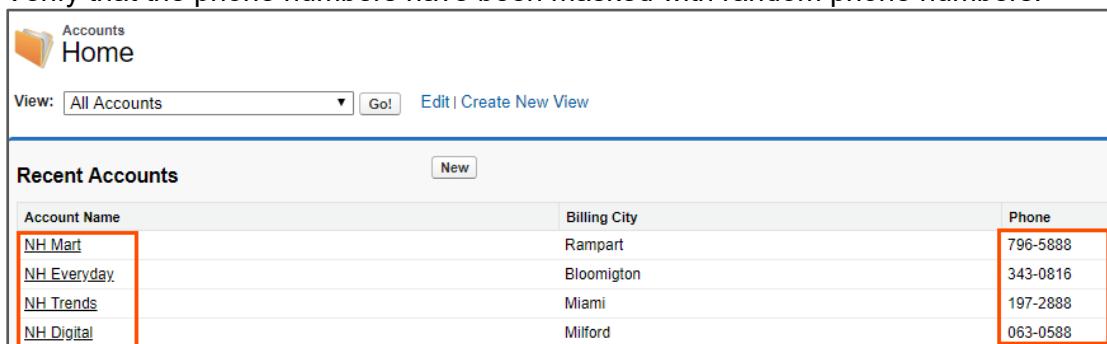
29. On the Salesforce homepage, from the available tabs, select **Accounts**.



The screenshot shows the Salesforce homepage with the 'Accounts' tab selected. Other tabs include Home, Chatter, Campaigns, Leads, Contacts, Opportunities, Forecasts, Contracts, Orders, Cases, Solutions, Products, Reports, and Dashboards.

30. Observe the phone number for accounts noted earlier.

31. Verify that the phone numbers have been masked with random phone numbers.



The screenshot shows the 'Recent Accounts' list in the Salesforce Accounts view. The table has columns for Account Name, Billing City, and Phone. The 'Account Name' column shows accounts: NH Mart, NH Everyday, NH Trends, and NH Digital. The 'Phone' column shows masked numbers: 796-5888, 343-0816, 197-2888, and 063-0588. All entries in both columns are highlighted with a red box.

Account Name	Billing City	Phone
NH Mart	Rampart	796-5888
NH Everyday	Bloomington	343-0816
NH Trends	Miami	197-2888
NH Digital	Milford	063-0588

This concludes the lab.

Additional Exercise

Appendix 3: Asset Dependency and Org Cleanup

Overview:

After you complete the training, as a good practice it is recommended to export the assets on your location machine for future reference.

In this lab, you will export asset from your working directory on your local machine and use the asset dependency feature of IICS to delete assets from the Org and perform a cleanup.

Objective:

- Export asset
- Check asset dependency
- Delete asset from IICS

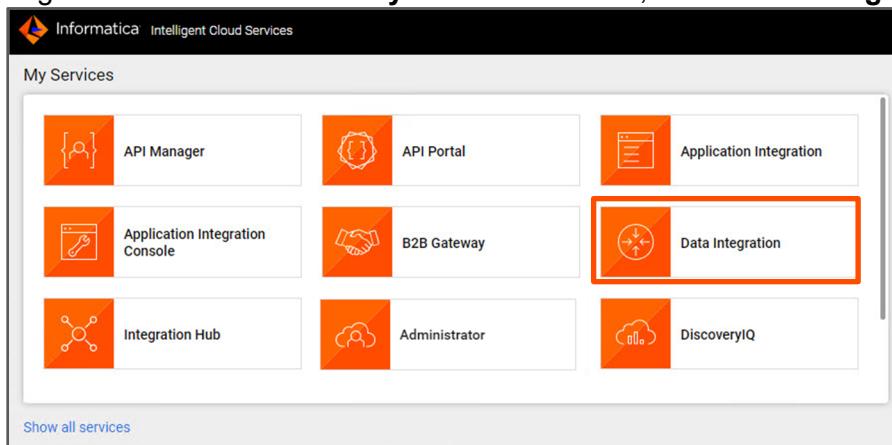
Duration:

20 - 30 minutes

Tasks:

Export Assets

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



2. From the navigation pane, select **Explore** and go to your working directory.

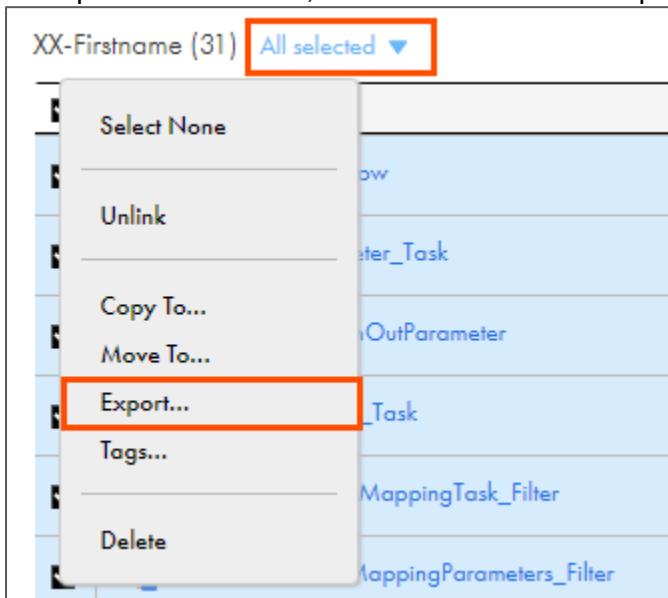
3. To export all the assets present in your working directory, click **Select All** icon next to the Name column.



XX-Firstname (31) All selected ▾					
	Name	Type	Updated On	Tags	Status
<input checked="" type="checkbox"/>	XX-Firstname_StructMappingLines	Mapping	Jul 21, 2021, 12:03 AM		Valid
<input checked="" type="checkbox"/>	SXX_FirstName_Employee	Synchronization Task	Jul 20, 2021, 10:31 PM		Valid
<input checked="" type="checkbox"/>	SXX_FirstName_OutletsLoad	Synchronization Task	Jul 20, 2021, 6:31 AM		Valid
<input checked="" type="checkbox"/>	SXX_FirstName_StructParser	Mapping	Jul 12, 2021, 1:58 AM		Valid
<input checked="" type="checkbox"/>	SXX_FirstName_StructModel	Intelligent Structure Model	Jul 12, 2021, 1:52 AM		Valid
<input checked="" type="checkbox"/>	SXX_Listener_Taskflow	Taskflow	Jul 12, 2021, 1:03 AM		Valid

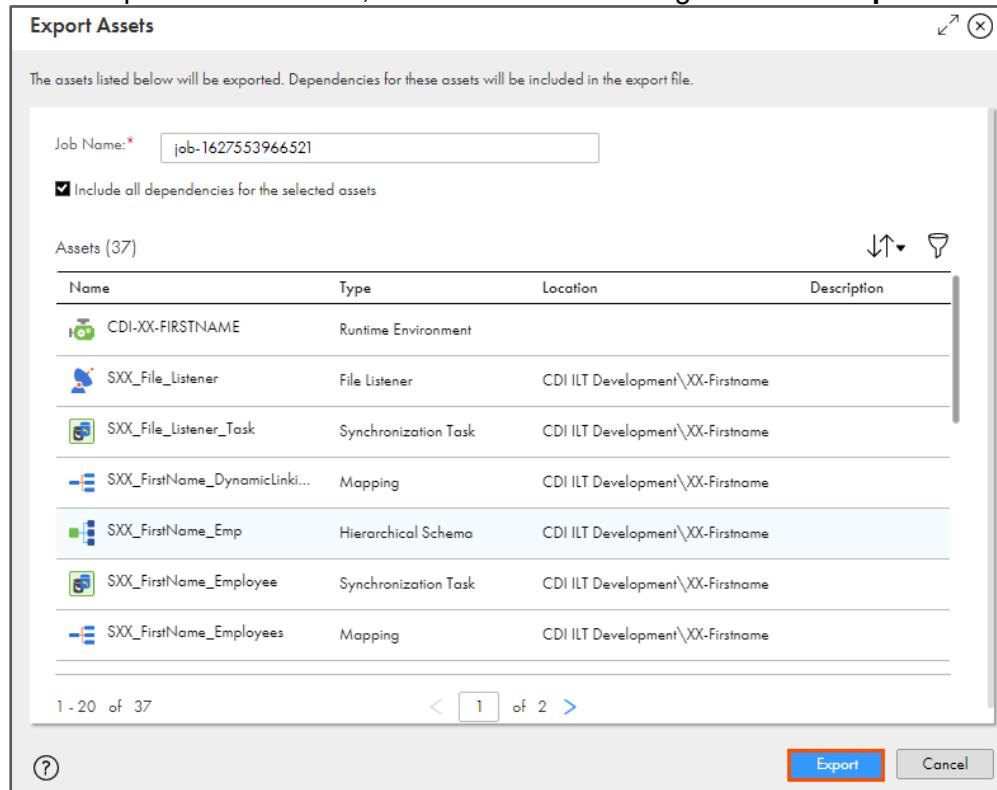
Note: If you see page 1 of total page  at the bottom of your working directory, you use the **Select All** icon from the all the pages.

4. To export all the assets, from the All selected drop-down, click **Export**.



Note: You must export all the assets from each of the pages.

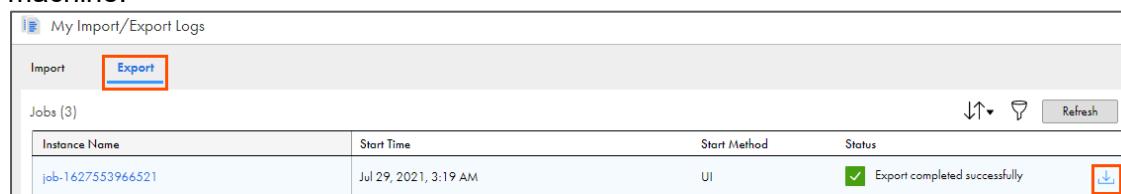
5. In the Export Asset window, retain the default settings and click **Export**.



6. In the Export started pop-up window, click the **My Import/Export Logs** link to get the export status. You can also use the My Import/Export Logs tab from the navigation pane.



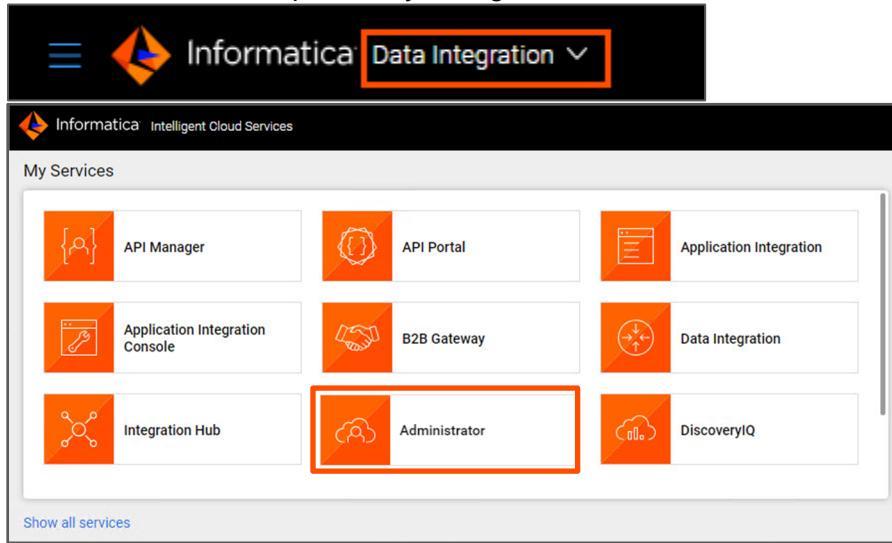
7. Go to **Export** tab and click the download icon to download the assets on your local machine.



Note: By default, the assets are downloaded in the Downloads directory on your local machine. You can use the exported assets to import in your own org or for reference.

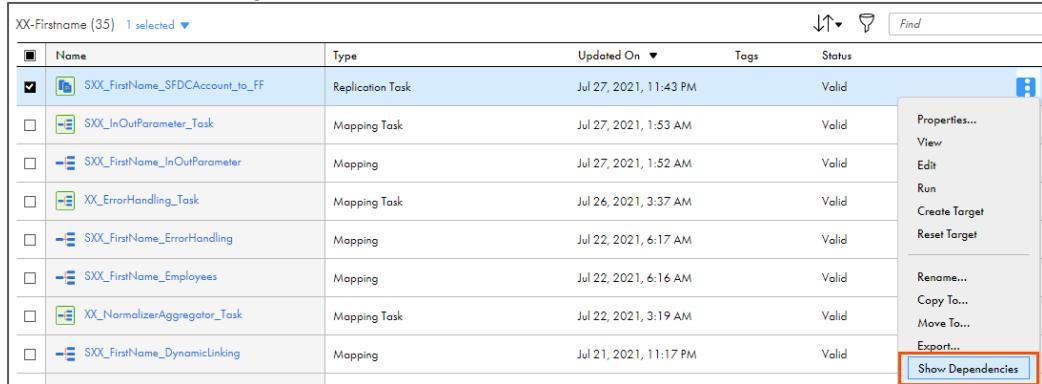
Check dependency and delete assets

8. To check the asset dependency, navigate to **Administrator** service.



The screenshot shows the Informatica Intelligent Cloud Services dashboard. At the top, there's a navigation bar with the Informatica logo and 'Data Integration'. Below it is a section titled 'My Services' containing nine service icons arranged in a 3x3 grid. The 'Administrator' service icon, which is orange with a white cloud and gear, is highlighted with a red box. Other services include API Manager, API Portal, Application Integration, Application Integration Console, B2B Gateway, Data Integration, Integration Hub, DiscoveryIQ, and Administrator.

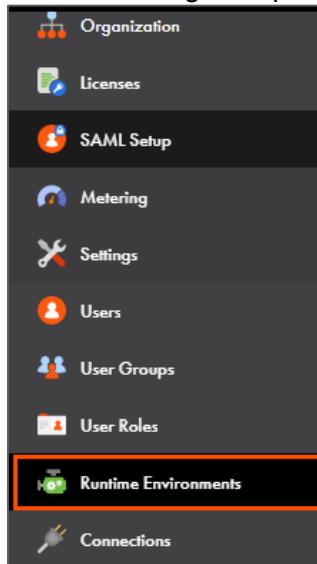
Note: You can also check an asset dependency by selecting the asset and use the ellipsis icon to using **Show Dependencies** option.



The screenshot shows a table of selected assets. The first asset, 'SXX_FirstName_SFDCAccount_to_FF', is selected (indicated by a checked checkbox). A context menu is open over this asset, with the 'Show Dependencies' option highlighted with a red box. The menu also includes options like Properties..., View, Edit, Run, Create Target, Reset Target, Rename..., Copy To..., Move To..., Export..., and Show Dependencies.

	Name	Type	Updated On	Tags	Status
<input checked="" type="checkbox"/>	SXX_FirstName_SFDCAccount_to_FF	Replication Task	Jul 27, 2021, 11:43 PM		Valid
<input type="checkbox"/>	SXX_InOutParameter_Task	Mapping Task	Jul 27, 2021, 1:53 AM		Valid
<input type="checkbox"/>	SXX_FirstName_InOutParameter	Mapping	Jul 27, 2021, 1:52 AM		Valid
<input type="checkbox"/>	XX_ErrorHandling_Task	Mapping Task	Jul 26, 2021, 3:37 AM		Valid
<input type="checkbox"/>	SXX_FirstName_ErrorHandling	Mapping	Jul 22, 2021, 6:17 AM		Valid
<input type="checkbox"/>	SXX_FirstName_Employees	Mapping	Jul 22, 2021, 6:16 AM		Valid
<input type="checkbox"/>	XX_NormalizerAggregator_Task	Mapping Task	Jul 22, 2021, 3:19 AM		Valid
<input type="checkbox"/>	SXX_FirstName_DynamicLinking	Mapping	Jul 21, 2021, 11:17 PM		Valid

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



The screenshot shows the navigation pane on the left side of the interface. It includes links for Organization, Licenses, SAML Setup, Metering, Settings, Users, User Groups, User Roles, Runtime Environments, and Connections. The 'Runtime Environments' link is highlighted with a red box.

10. From the drop-down next to your secure agent group, select **Show Dependencies**.

Actions	Environment Name	Status	Enabled Services
	Informatica Cloud Hosted Agent	<input checked="" type="checkbox"/> Up and Running	Data Integration Server
	CDI-XX-FIRSTNAME (1)		
(1)			
	Rename Secure Agent Group...	<input checked="" type="checkbox"/> Up and Running	File Integration Service, Process Server, B2B Processor,
	Enable or Disable Services...		
	Add or Remove Secure Agents...		
	Delete Secure Agent Group...		
	Share Secure Agent Group...		
	Show Dependencies		
	Permissions...		

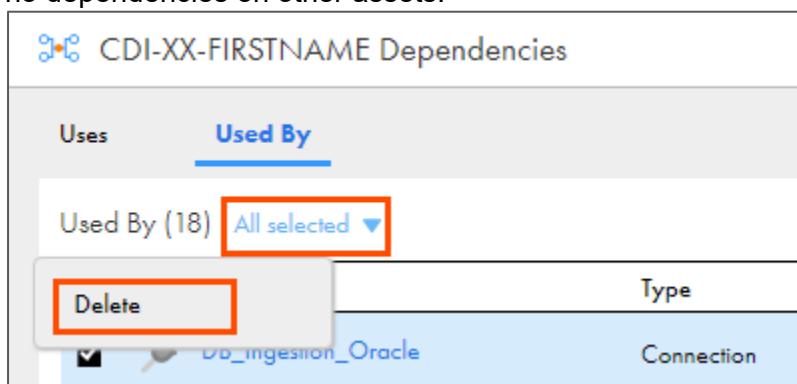
11. Select the **Used By** tab to see the list of assets associated with your secure agent group.
12. Click the check box next to Name field to select all the assets present in the Used By tab.



Name	Type	Location	Status
DB_Ingestion_Oracle	Connection		
S01_FirstName_Kafka	Connection		
SXK_File_Listener	File Listener	CDI ILT Development\XX-Firstname	Valid
SXK_FirstName_DataTask		CDI ILT Development\XX-Firstname	Valid

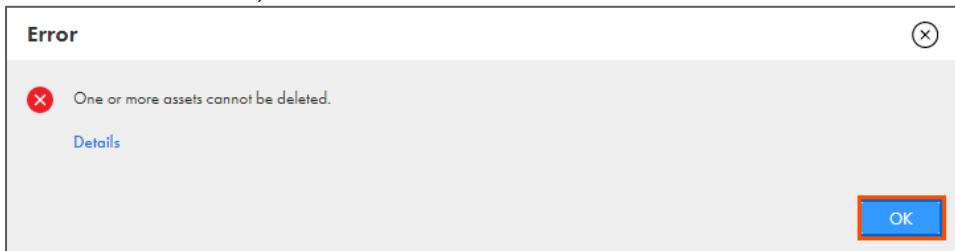
Note: The total number of assets changes according to the assets your secure agent is associated with.

13. From the **All selected** drop-down, click **Delete**. This will delete all the assets that have no dependencies on other assets.



Name	Type	Location	Status
DB_Ingestion_Oracle	Connection		

14. In the Error window, click **OK**.



15. Now, for the remaining assets or connection, you need to check the asset dependency and delete the dependent asset first.

16. To check the dependency, select any one of the asset or connection and from the ellipsis icon, click **Show Dependencies**.

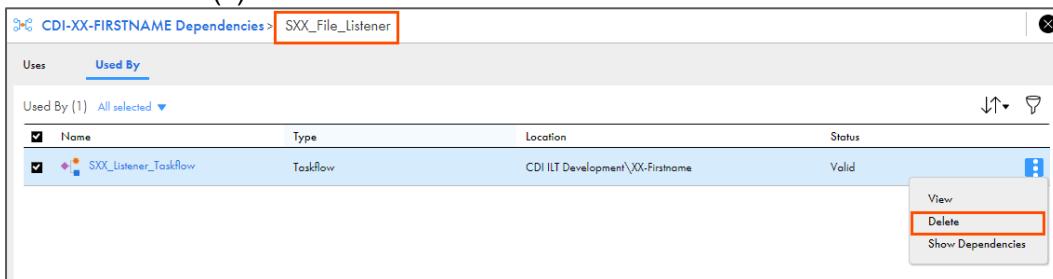


Name	Type	Location	Status
D8_Ingestion_Oracle	Connection		
S01_FirstName_Kafka	Connection		
SXX_File_Listener	File Listener	CDI ILT Development\XX-Firstname	Valid
SXX_InOutParameter_Task	Mapping Task	CDI ILT Development\XX-Firstname	Valid
SXX_R37_WSConnection	Connection		
XX_DBIngestion_Oracle	Connection		

Note: For the purpose of the lab, the steps are demonstrated using the File Listener asset (SXX_File_Listener). You must perform the same steps for all the assets remaining after step 13.

17. In the SXX_File_Listener dependencies window, again go to **Used By** tab.

18. Select the asset(s) and click **Delete**.

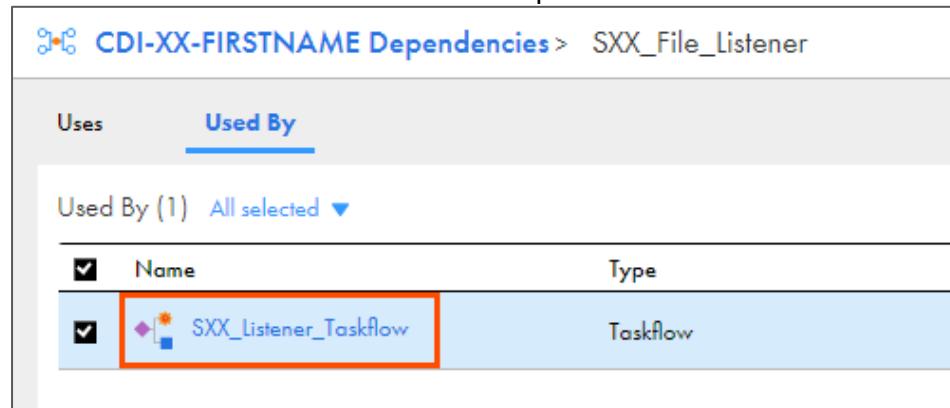


Name	Type	Location	Status
SXX_Listener_Taskflow	Taskflow	CDI ILT Development\XX-Firstname	Valid

Note:

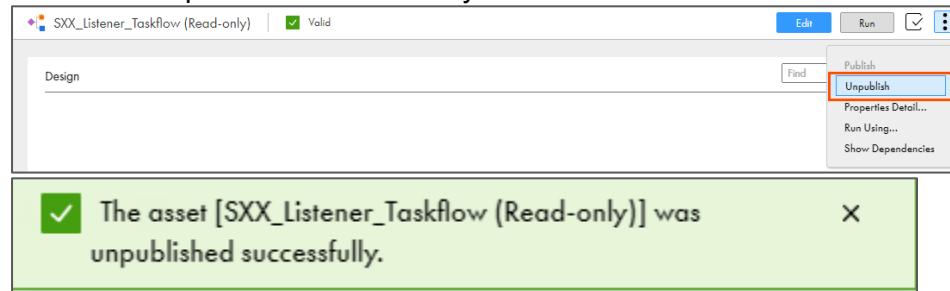
- If this asset is also dependent on other asset you need to delete the dependent asset first.
- In case of taskflow, you must **Unpublish** the taskflow before you can delete it. To unpublish a taskflow, perform the following steps:

- i. Click on the name of the taskflow. This opens the taskflow in a new tab.



Used	Used By
All selected	Used By (1)
<input checked="" type="checkbox"/>	 SXX_Listener_Taskflow Taskflow

- ii. From the ellipsis icon, click **Unpublish**. Wait for the message to confirm that the taskflow is unpublished successfully.



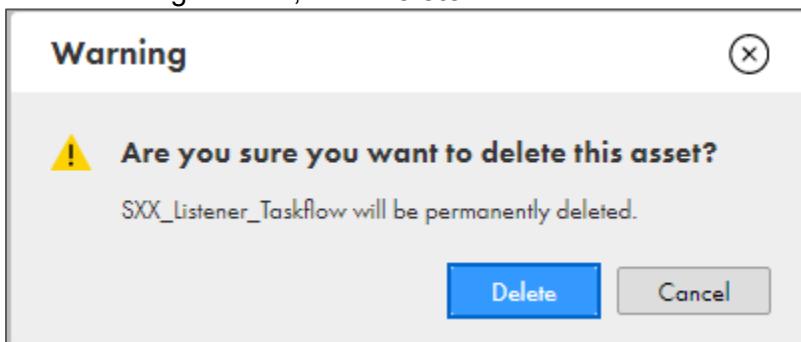
 The asset [SXX_Listener_Taskflow (Read-only)] was
unpublished successfully.

- iii. After the taskflow is unpublished close the browser tab.
iv. Navigate back to dependencies page, select the asset(s) and click **Delete**.



Used	Used By
All selected	Used By (1)
<input checked="" type="checkbox"/>	 SXX_Listener_Taskflow Taskflow

19. In the warning window, click **Delete**.



Warning

! Are you sure you want to delete this asset?

SXX_Listener_Taskflow will be permanently deleted.

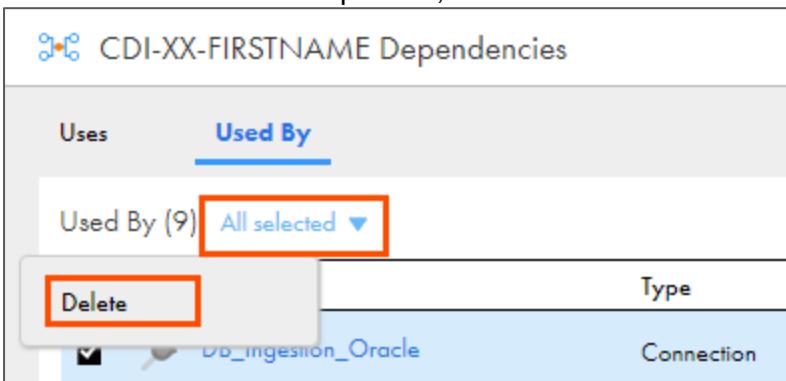
Delete **Cancel**

20. Navigate back to your secure agent group dependencies page by clicking on your secure agent group name.



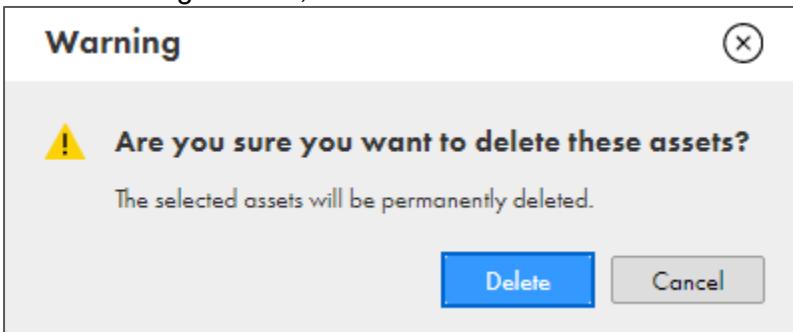
The screenshot shows the 'CDI-XX-FIRSTNAME Dependencies' page. At the top, there is a breadcrumb navigation: 'CDI-XX-FIRSTNAME Dependencies > SX_Listener'. Below the breadcrumb, there are two tabs: 'Uses' and 'Used By'. The 'Used By' tab is highlighted with a blue underline. The main content area displays the 'Used By' section, which includes a sub-section 'Used By (9)' with a dropdown menu labeled 'All selected ▾'. A red box highlights the 'All selected' dropdown. Below this, there is a 'Delete' button with a red border, and a table showing asset types: 'Db_Ingestion_Oracle' under 'Type' and 'Connection' under 'Connection'.

21. Select the **Used By** tab and perform the same steps for the remaining assets or connections.
 22. Once all the dependent assets are deleted, in the secure agent group Used By tab, select all the assets.
 23. From the All selected drop-down, click **Delete**.



This screenshot is identical to the one above, showing the 'Used By' tab selected. The 'All selected' dropdown is highlighted with a red box. The 'Delete' button is also highlighted with a red box.

24. In the warning window, click **Delete**.



The screenshot shows a 'Warning' dialog box. It contains a yellow exclamation mark icon and the text 'Are you sure you want to delete these assets?'. Below that, it says 'The selected assets will be permanently deleted.' At the bottom, there are two buttons: 'Delete' (highlighted with a red box) and 'Cancel'.

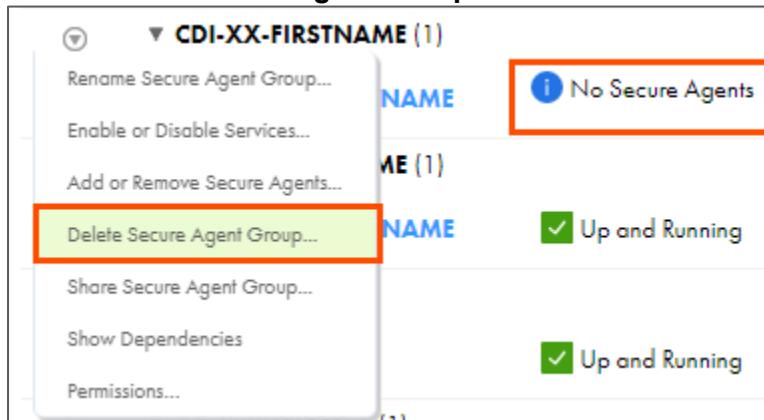
25. After all the assets are deleted close the secure agent group dependencies window.
 26. From the Runtime Environments page, select the drop-down next to your secure agent and click **Delete Secure Agent**.



The screenshot shows the 'Runtime Environments' page. It lists a single secure agent named 'CDI-XX-FIRSTNAME'. To the right of the agent name, there is a green checkmark icon followed by the status 'Up and Running'. Below the agent name, there are three options: 'Edit Secure Agent...', 'Delete Secure Agent...', and 'Permissions...'. The 'Delete Secure Agent...' option is highlighted with a red box.

27. Once the secure agent is deleted you see **No Secure Agents** next to your secure agent group name.

28. After the secure agent is deleted, click on the drop-down next to secure agent group and select **Delete Secure Agent Group**.



The screenshot shows a dropdown menu for a secure agent group named "CDI-XX-FIRSTNAME (1)". The "Delete Secure Agent Group..." option is highlighted with a green box. To the right, a table lists one secure agent named "AE (1)". The "NAME" column shows "AE (1)" and the status column shows "Up and Running" with a green checkmark. A red box highlights the status cell for "No Secure Agents" under the first group.

NAME	STATUS
AE (1)	<input checked="" type="checkbox"/> Up and Running

This concludes the lab.