



## Data Integration Platform Cloud Hands-on Lab

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## Hands on Lab - Data Integration Platform Cloud – Synchronize Data

The rapid adoption of enterprise cloud-based solutions brings with it a new set of challenges. Data Integration becomes one of the greatest challenges of any enterprise cloud-based solution. Join this hands-on lab to have firsthand experience of the power and simplicity of Oracle Data Integration Platform Cloud. See how DIPC simplifies the end to end creation/execution of the historically arduous DI tasks of instantiating, loading, as well as real-time synchronization of a cloud database from an on-premise database in just a few of clicks.

The following lessons will walk us through various steps that are needed to create the Data Integration Platform Cloud Data Synchronization connections, task and job to load and synchronize data between a source OLTP system and a target data warehouse.

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## Overview

### Time to Complete

Perform all tasks – 60 Minutes

### Prerequisites

Before you begin this tutorial, you should

- Have a general understanding of RDBMS and data integration concepts
- Have a general understanding of ETL and data synchronization concepts

### Lab Environment

For this lab, the Data Integration Platform Cloud and the client environment are contained within one environment for simplicity. Most user interactions with Data Integration Platform Cloud will be through a browser installed on your local machine (Chrome preferred, Firefox is also supported).

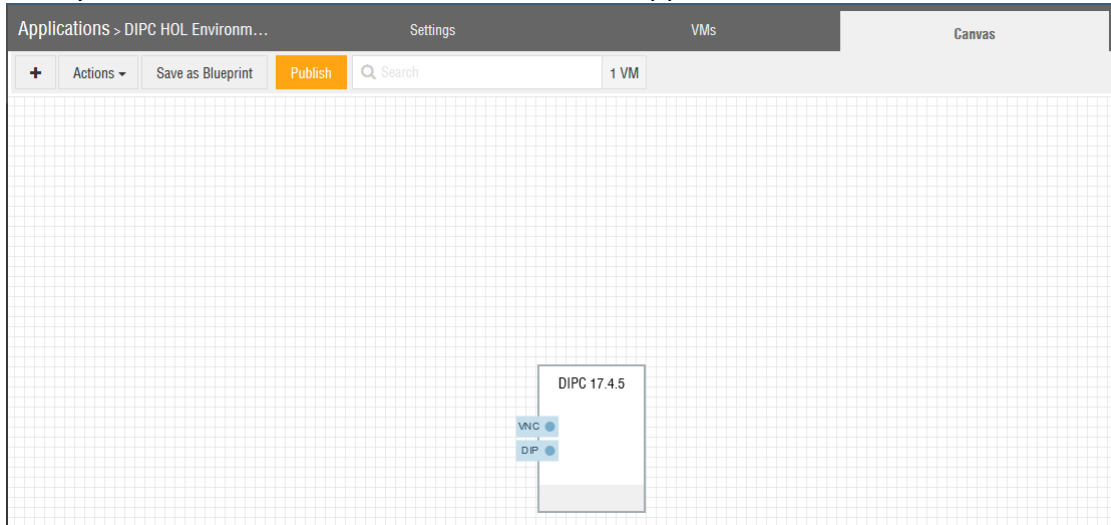
### Ravello Setup

1. Log into Ravello and click on Applications then click on '+Create Application'

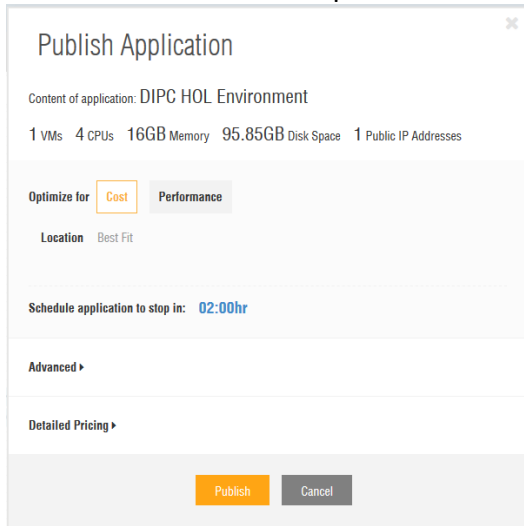


2. Enter a Name and pick the DIPC Blueprint that was shared with you

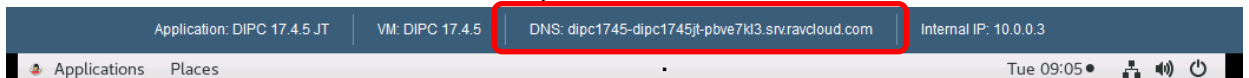
3. Next you should land in the Canvas for this new Application, click Publish



4. Enter the information required and click Publish



5. You will need to get the hostname of the Ravello Application you have started. When the VM shows as Started on the Canvas, go to Console to get access to the VM and write down the hostname listed at the top of the screen:



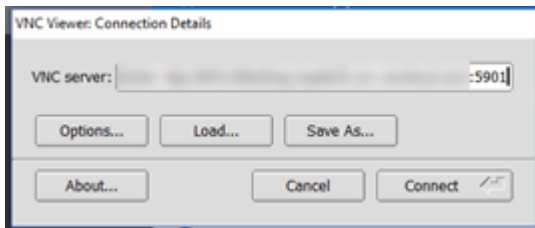
There will also be tasked that will be performed within the VM as the Data Integration Platform Cloud administrator.

### Task 0: Preparation Steps

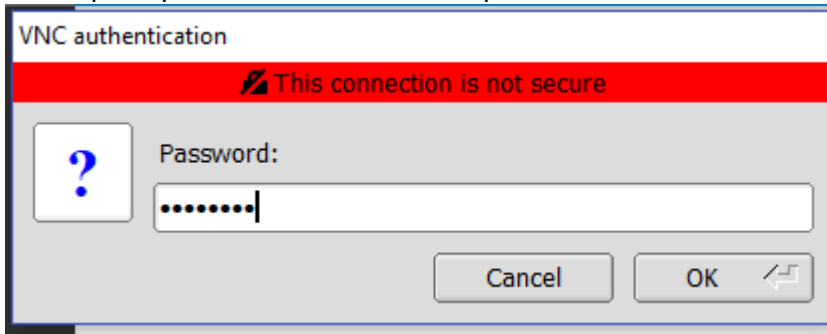
*In these steps you will clean up and setup the environment for this exercise*

## Data Integration Platform Cloud: Hands-on Lab

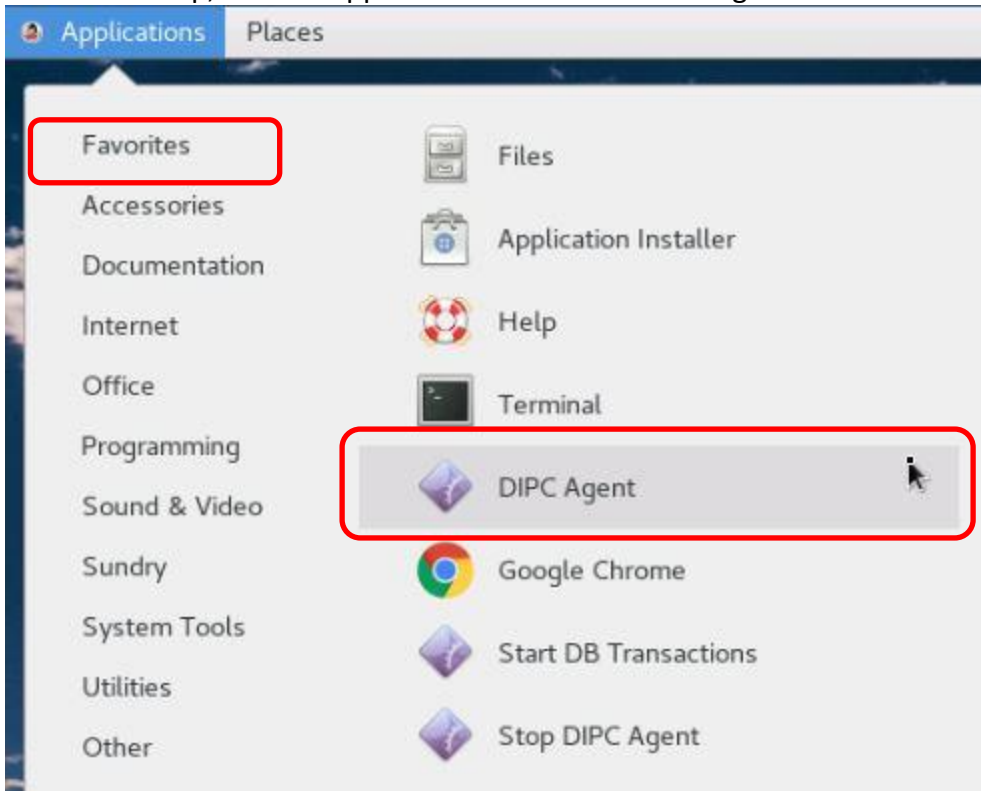
1. Using your favorite VNC Client enter the URL (<ravello hostname>:5901) and click Connect



2. When prompted enter welcome1 as password



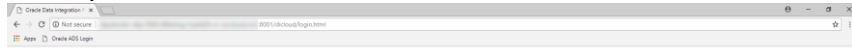
3. On the Desktop, click on Applications then select DIPC Agent under Favorites



4. A window will appear and will track the DIPC Agent startup. An Agent will be used by DIPC to access the different sources and targets, it will be fully started in a minute or so **DO NOT CLOSE THIS WINDOW, you can minimize it if needed**
5. Now you can log into Data Integration Platform Cloud
  - a. On your laptop, open Chrome (Firefox works too)

## Data Integration Platform Cloud: Hands-on Lab

- b. Go to your <hostname>:8001/dicloud



ORACLE Data Integration Platform Cloud

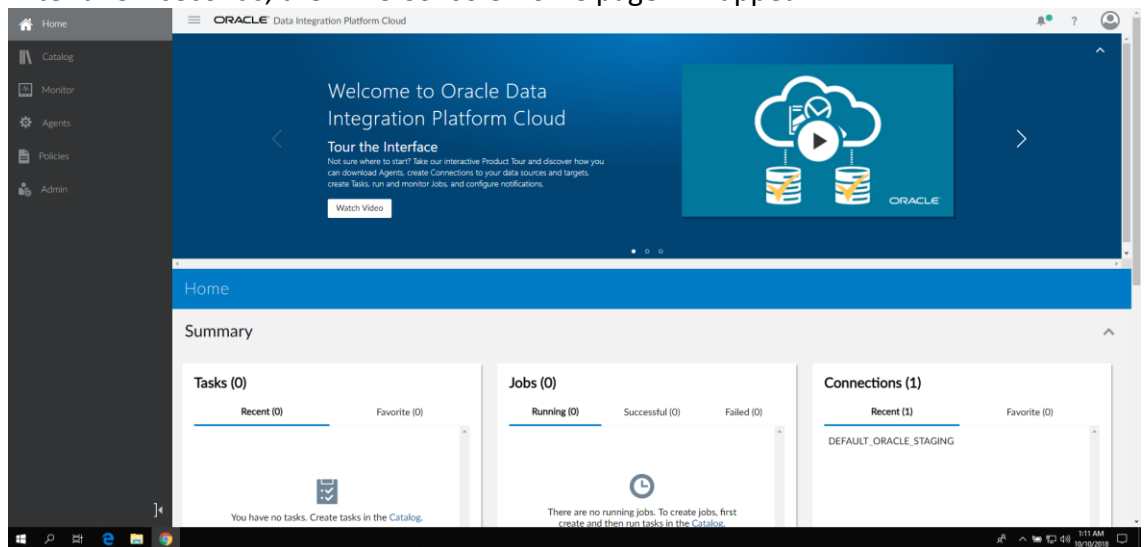
Username \*

Password \*

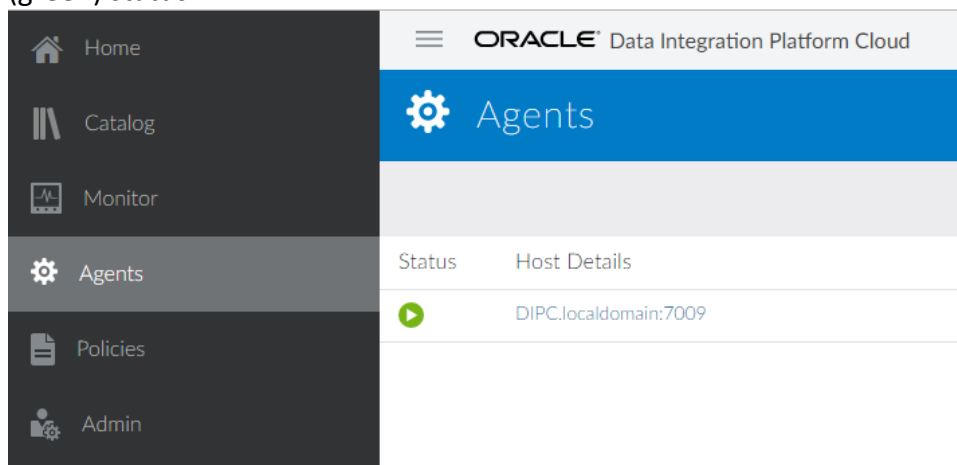
Login

- c. Login with **weblogic/welcome1**

After a few seconds, the DIPC Console Home page will appear –



6. Click on Agents to display the list of Agents available in this environment. The Agent (DIPC.localdomain:7009) we just started will be displayed and should be in Running (green) status



## Task 1: Setup DIPC Connections

1. The connectivity information for this hand-on lab is as follows:

CDB User: C##GGSRC

Source Schema/User: DIPC\_SRC

Target Schema/User: DIPC\_TGT

Passwords: welcome1

Server: DIPC

Port: 1521

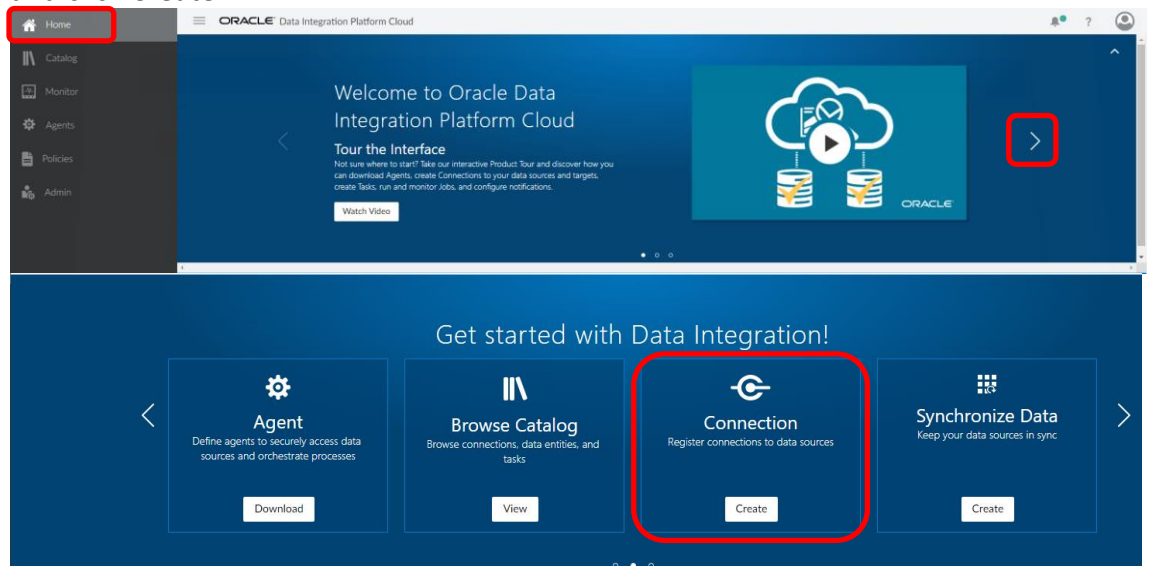
Services:

orcle.us.oracle.com (CDB Connection)

orclpdb.us.oracle.com (PDB Connections)

Let us first create a new Oracle CDB Connection

- a. Click on Home then click on > in the carousel at the top to locate Connection and click Create



- b. Enter the following information
  - Name: Oracle CDB
  - Identifier: use default
  - Agent – DIPC.localdomain:7009
  - Type Oracle Database
  - Subtype: Oracle CDB
  - Hostname: DIPC
  - Port: 1521
  - Username: C##GGSRC
  - Password: welcome1
  - Service Name: orcle.us.oracle.com

Connection

✓ Connection test succeeded

### General Information

Name \* Oracle CDB

Identifier \* ORACLE\_CDB

Description

Agent \* DIPC.localdomain:7009

Type \* Oracle Database

Subtype \* Oracle CDB

### Connection Settings

Hostname \* DIPC

Port \* 1521

Username \* C##GGSRC

Password \* .....

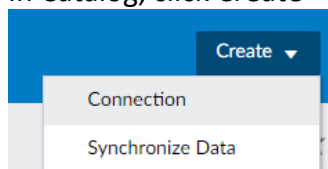
Service Name \* oracle.us.oracle.com

Test Connection Cancel Save

c. Click Test Connection and Save if successful

## 2. Create Sync Source Connection

- In Catalog, click Create > Connection



- Enter the following information
  - Name: Sync Source
  - Identifier: use default
  - Description: Sales OLTP Data
  - Agent: DIPC.localdomain:7009
  - Type Oracle Database
  - Subtype: Oracle
  - Hostname: DIPC



- Port: 1521
- Username: DIPC\_SRC
- Password: welcome1
- Service Name: orclpdb.us.oracle.com
- Schema: DIPC\_SRC
- CDB Connection: ORACLE\_CDB

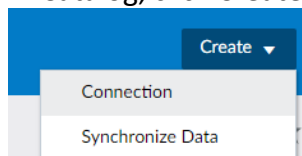
The screenshot shows the 'Connection' dialog box with the following fields and values:

- Name: Sync Source
- Identifier: SYNC\_SOURCE
- Description: Sales OLTP Data
- Agent: DIPC.localdomain:7009
- Type: Oracle Database
- Subtype: Oracle
- Hostname: DIPC
- Port: 1521
- Username: DIPC\_SRC
- Password: (masked with dots)
- Service: ☒ Service Name \* orclpdb.us.oracle.com
- ☐ SID
- Schema Name: DIPC\_SRC [Default]
- CDB Connection: ORACLE\_CDB

Buttons at the bottom: Test Connection, Cancel, Save.

### 3. Create Sync Target Connection

- In Catalog, click Create > Connection



- Enter the following information
  - Name: Sync Target
  - Identifier: use default
  - Description – Target Schema
  - Agent – DIPC.localdomain:7009
  - Type Oracle Database
  - Subtype: Oracle

- Hostname: DIPC
- Port: 1521
- Username: DIPC\_TGT
- Password: welcome1
- Service Name: orclpdb.us.oracle.com
- Schema: DIPC\_TGT
- CDB Connection: leave blank

Connection

Name \* Sync Target

Identifier \* SYNC\_TARGET

Description Target Schema

Agent \* DIPC.localdomain:7009

Type \* Oracle Database

Subtype \* Oracle

Connection Settings

Hostname \* DIPC

Port \* 1521

Username \* DIPC\_TGT

Password \* .....

Service \* ☒ Service Name \* orclpdb.us.oracle.com

☐ SID

Schema Name DIPC\_TGT [Default]

CDB Connection Associate CDB for a PDB to support Replication as Source

? Test Connection Cancel Save

- Click Test Connection and Save if successful
4. Review Catalog after saving –
  5. Data Entities are harvested and profiled at Connection creation, their popularity is also calculated by reviewing the DB query logs  
Note: This process may take a little bit of time
  6. Click an entity – SRC\_CITY  
You can browse the Catalog pages to find it or you can use the Search bar (search for SRC\_ for example)

## Data Integration Platform Cloud: Hands-on Lab

The screenshot shows the Data Catalog interface. At the top, there's a header with 'Catalog' and 'Data Entities'. Below it, a search bar contains 'SRC\_'. A table lists three data entities: SRC\_CITY, SRC\_REGION, and SRC\_ORDER\_LINES. SRC\_CITY is highlighted. Below the table, a detailed view for SRC\_CITY is shown. It includes tabs for Summary, Attributes, Data, and History. The Summary tab is active, displaying metadata for SRC\_CITY, including Name, Identifier, Resource Name, Description, Type, Namespace, Contact, Popularity (a full bar), and Tags.

Category	Name	Type	Last Updated	Popularity
	SRC_CITY	Table	10/12/2018, 12:46:17 PM	<div><div></div></div>
	SRC_REGION	Table	10/12/2018, 12:46:19 PM	<div><div></div></div>
	SRC_ORDER_LINES	Table	10/12/2018, 1:31:57 PM	<div><div></div></div>

SRC_CITY	
Summary	Attributes
Name	SRC_CITY
Identifier	SRC_CITY
Resource Name	SRC_CITY
Description	
Type	Table
Namespace	DIPC_SRC
Contact	
Popularity	<div><div></div></div>
Tags	<input type="text" value="Add Tags..."/>

Notice the Popularity score calculated for SRC\_CITY, a full bar means that this is one of the Data Entities that has been used the most in queries. Tags can be added as well to group objects together

### 7. Click on the Attributes tab

The screenshot shows the 'Attributes' tab for SRC\_CITY. It displays a table with columns: Key, Attribute, Data Type, and Sample Values. The 'Attributes' tab is highlighted with a red box.

Key	Attribute	Data Type	Sample Values
	CITY_ID	NUMBER (10)	11,12,13,14,10
	CITY	VARCHAR2 (50)	San Francisco,San Diego,Los Angeles,Dallas,I louston
	REGION_ID	NUMBER (10)	22,23,20,21
	POPULATION	NUMBER (10)	840689,743113,822416,743878,157574

### 8. Click on an Attribute, REGION\_ID for example

## Data Integration Platform Cloud: Hands-on Lab

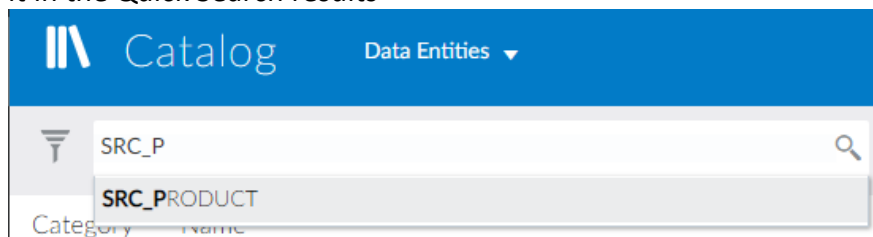
Key	Attribute	Data Type	Sample Values	Profile for REGION_ID	
PK	CITY_ID	NUMBER (10)	11,12,13,14,10	Total Rows	51
	CITY	VARCHAR2 (50)	San Francisco,San Diego,Los Angeles,Dallas,Houston	Rows with Data	100.00%
	REGION_ID	NUMBER (10)	22,23,20,21	Rows with No Data	0.00%
	POPULATION	NUMBER (10)	840689,743113,822416,743878,157574	Distinct Values	24
				Duplicate Values	27
				Minimum Value	20
				Maximum Value	404
				Average Length	4
				Density	4.17%

9. Notice the Profiling statistics appearing in the right-hand side drawer

10. Click on the Data tab

SRC_CITY			
Refresh Data Profile Delete Edit			
Summary	Attributes	Data	History
CITY_ID	CITY	REGION_ID	POPULATION
10	Houston	20	743113
11	Dallas	20	822416
12	San Francisco	21	157574
13	Los Angeles	21	743878
14	San Diego	21	840689
15	Chicago	23	616472
16	Memphis	23	580075
107	New York City	22	124434

11. Go back to the main Catalog page – Search for Data Entity – SRC\_PRODUCT and click on it in the Quick Search results



12. Click Attributes tab

Summary	Attributes	Data	History
Key	Attribute	Data Type	Sample Values
PK	PRODUCT_ID	NUMBER (10)	1,2,3,4,5
	PRODUCT	VARCHAR2 (50)	Silver Watch,Earrings,Gold Watch,Gold Bracelet,Silver Collar
	PRICE	NUMBER (10, 2)	110,105,90,20,120
	FAMILY_NAME	VARCHAR2 (50)	Equipment,Watches,Sportswear,Jewels

13. Click on a column, for example column – FAMILY\_NAME

## 14. Notice the Profiling statistics

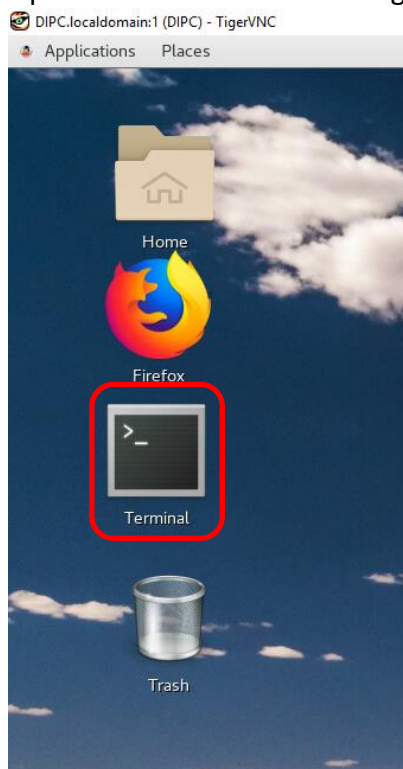
Key	Attribute	Data Type	Sample Values	Profile for FAMILY_NAME	
?	PRODUCT_ID	NUMBER (10)	1,2,3,4,5	Total Rows	15
	PRODUCT	VARCHAR2 (50)	Silver Watch,Earrings,Gold Watch,Gold Bracelet,Silver Collar	Rows with Data	100.00%
	PRICE	NUMBER (10, 2)	110,105,90,20,120	Rows with No Data	0.00%
	FAMILY_NAME	VARCHAR2 (50)	Equipment,Watches,Sportswear,Jewels	Distinct Values	5
				Duplicate Values	10
				Minimum Value	Equipment
				Maximum Value	Watches
				Average Length	9
				Density	20.00%

15. Click Data tab

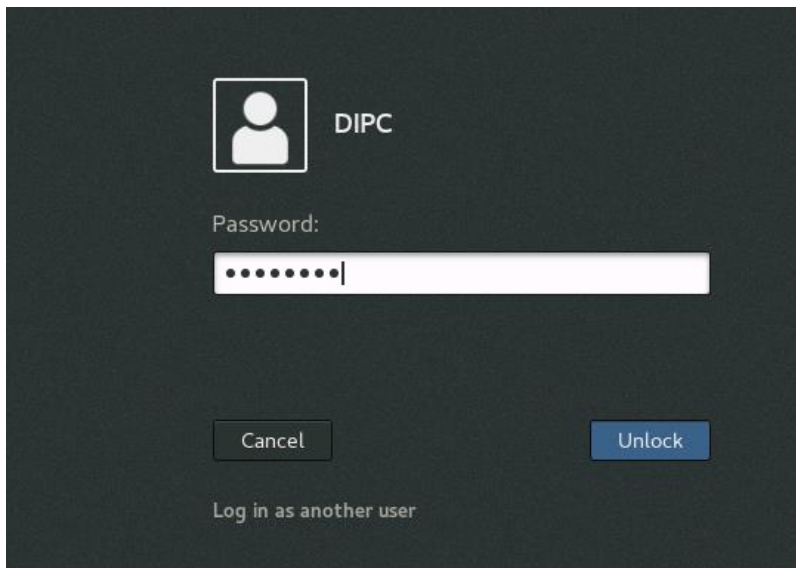
16. Review other entities as needed

## Task 2: Create DIPC Synchronize Data Task

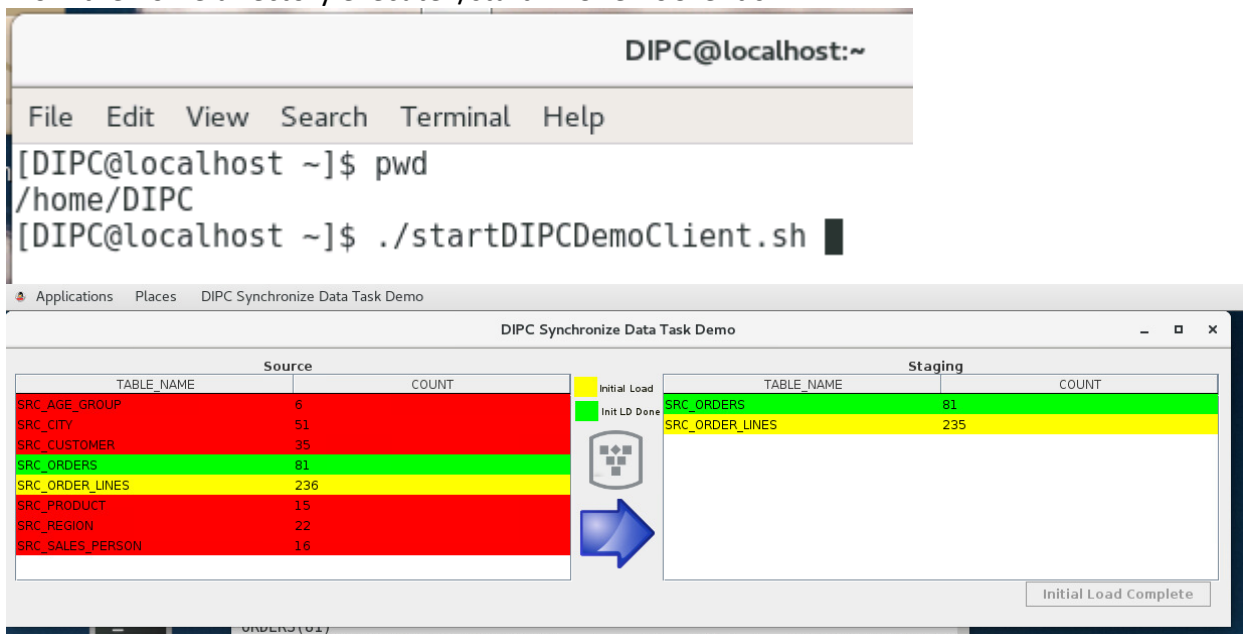
1. This hands-on lab uses a JDBC utility client that was built specifically for this demo. This client is **NOT** part of DIPC, however it does help visualize the Synchronize Data and ODI Execution Job process.
2. Go back to the VNC window that should still be opened
3. Open a terminal window using the Terminal shortcut on the Desktop



If needed press Enter to see the Login window, re-enter the DIPC user password (welcome1) and press Enter or click Unlock



4. From the home directory execute `./startDIPCDemoClient.sh`

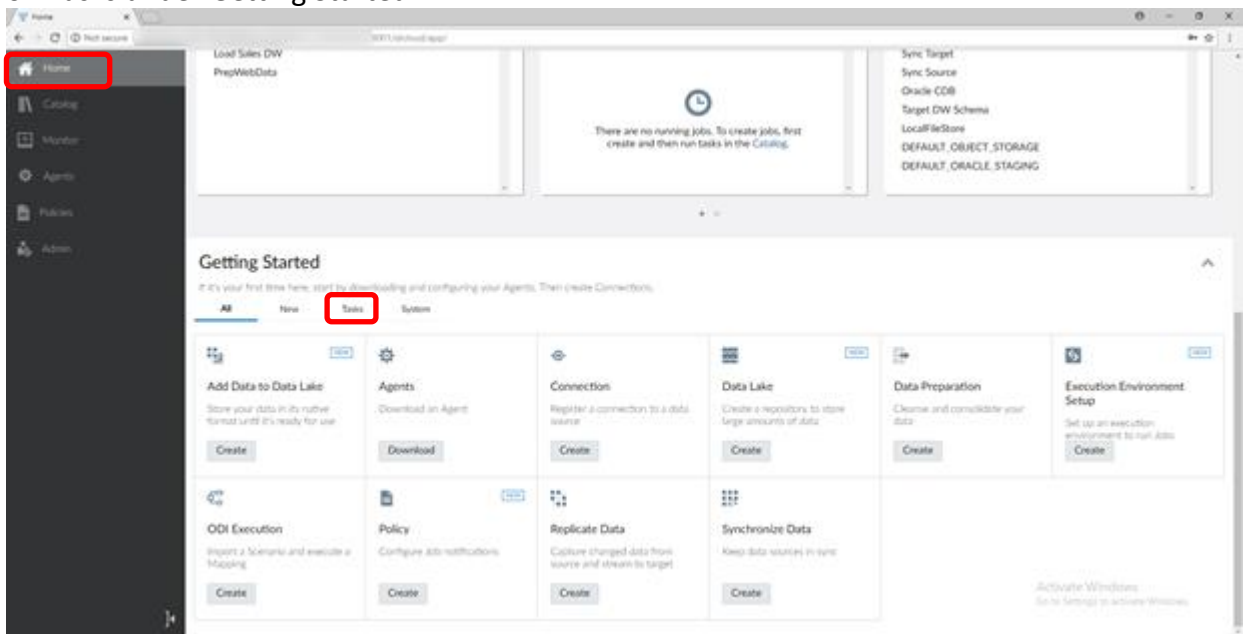


**Note:** The Staging schema is not empty as it is also being used by another hands-on lab, this is expected and the Synchronize Data Job will first clean up the schema before loading the data

Once the Synchronize Data task is saved and executed this client will be used to visually monitor the Replicated Schema, the tables and their row counts

## Data Integration Platform Cloud: Hands-on Lab

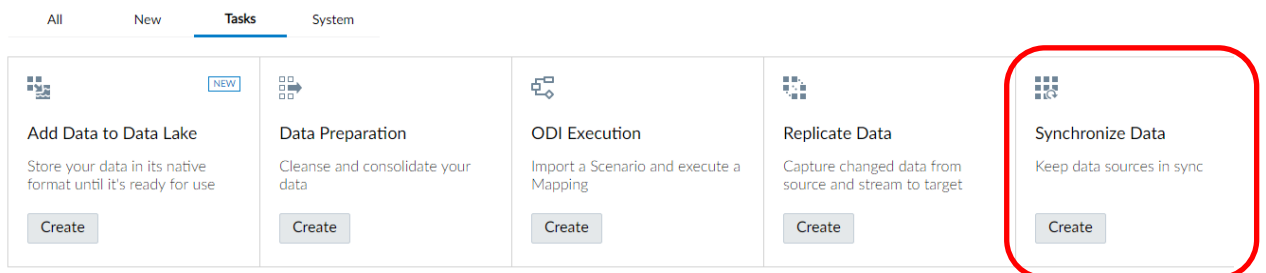
- Go back to Chrome, click Home in the DIPC Console, scroll all the way down and click on Tasks under Getting Started





- Click Create under Synchronize Data

### Getting Started

If it's your first time here, start by downloading and configuring your Agents. Then create Connections.



- Name your task –Sync Sales Data
- Description: Sync Schemas - DIPC\_SRC to DIPC\_TGT

  Create Synchronize Data

---

### General Information

Name \*

Sync Sales Data

Identifier \*

SYNC\_SALES\_DATA

Description


Sync Schemas - DIPC\_SRC to DIPC\_TGT

---

### Source Configuration


Connection \*

Sync Source



Schema \*

DIPC\_SRC




---

### Target Configuration


Connection \*

Sync Target



Schema \*

DIPC\_TGT



---

### Advanced Options

☒ Include Initial Load

☒ Include Replication

9. Select your source connection and schema
  - a. Connection: Sync Source
  - b. Schema: DIPC\_SRC
10. Select your target connection and schema
  - a. Connection: Sync Target
  - b. Schema: DIPC\_TGT
11. Leave 'Include Initial Load' and 'Include Replication' checked under Advanced Options. These options allow you to optionally enable or disable the initial load and/or the on-going schema replication



## Source Configuration ?

Connection \* Sync Source

Schema \* DIPC\_SRC

## Target Configuration ?

Connection \* Sync Target

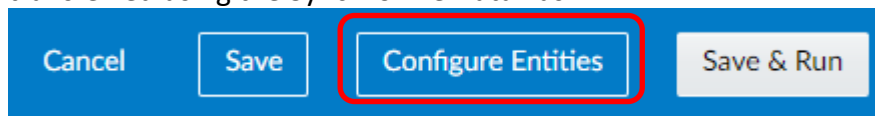
Schema \* DIPC\_TGT

## Advanced Options

☒ Include Initial Load

☒ Include Replication

12. Next click on Configure Entities. This page allows you to filter the objects that will be transferred using the Synchronize Data Task



13. The Configure Entities screen helps you create Include or Exclude rules to define precisely which database objects will be transferred to the target schema. By default all Data Entities are transferred with the rule: Include \*

**Note:** The list of Data Entities may take a few seconds to show up

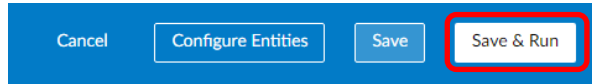
#	Type	String
1	Include	*

14. Click on < to go back to the main Synchronize Data Task screen

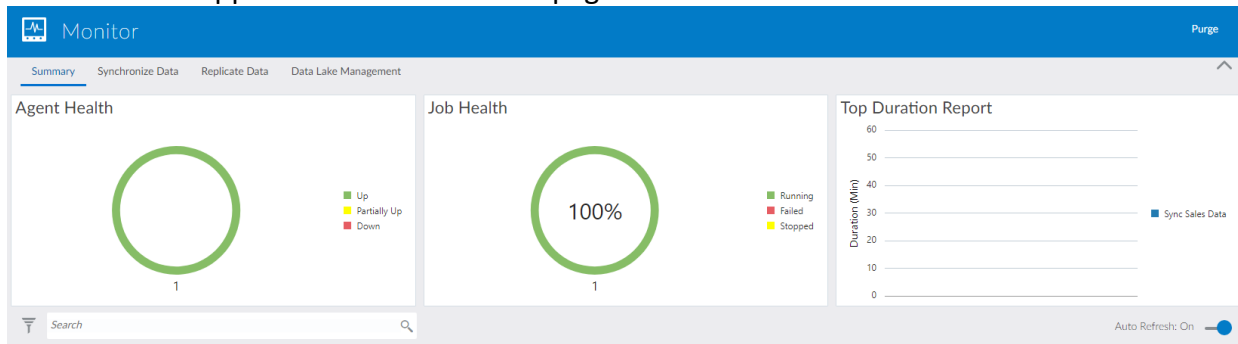


## Data Integration Platform Cloud: Hands-on Lab

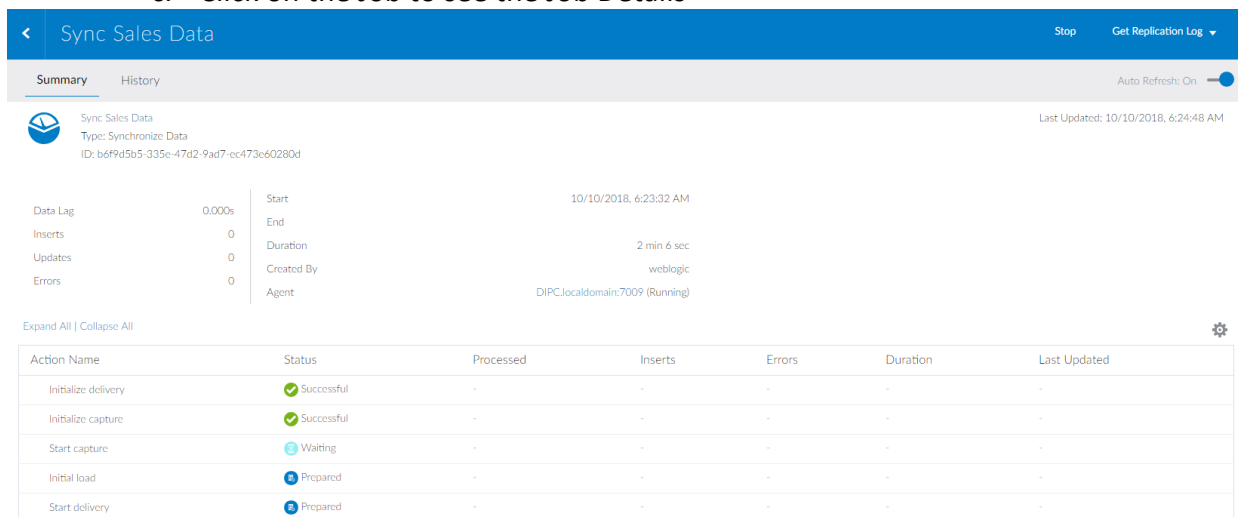
### 15. Click on Save & Run to start the execution



- A notification will appear mentioning that the job was saved
- A new DIPC Job will be created to execute the Task.  
A notification will appear in the notification bar and the job will automatically appear within the Monitor page.



### c. Click on the Job to see the Job Details



- Auto-refresh is on, status will be updated frequently
- As the job executes, the Initial Load process is created in Oracle Data Integrator (ODI) while DIPC configures Oracle GoldenGate (OGG) for the Source Capture and Target Delivery
- As this job executes, the Replicated Sales OLTP Source Data table will be updated in the Demo Client (in TigerVNC window). As new tables are created they will show up as yellow, when the row counts of the source and replicated schemas match the rows will turn green

## Data Integration Platform Cloud: Hands-on Lab

**DIPC Synchronize Data Task Demo**

TABLE_NAME	COUNT
SRC_AGE_GROUP	6
SRC_CITY	51
SRC_CUSTOMER	35
SRC_ORDERS	81
SRC_ORDER_LINES	236
SRC_PRODUCT	15
SRC_REGION	22
SRC_SALES_PERSON	16

TABLE_NAME	COUNT
SRC_ORDERS	81
SRC_ORDER_LINES	235

Initial Load Complete

**Note:** It may take several minutes (10+) for the Replicated Sales OLTP Data side to show anything. This is normal.

g. As the row counts of each table match the rows will turn green

**DIPC Synchronize Data Task Demo**

TABLE_NAME	COUNT
SRC_AGE_GROUP	6
SRC_CITY	51
SRC_CUSTOMER	35
SRC_ORDERS	81
SRC_ORDER_LINES	236
SRC_PRODUCT	15
SRC_REGION	22
SRC_SALES_PERSON	16

TABLE_NAME	COUNT
SRC_AGE_GROUP	6
SRC_CITY	51
SRC_CUSTOMER	35
SRC_ORDERS	81
SRC_ORDER_LINES	236
SRC_PRODUCT	15
SRC_REGION	22
SRC_SALES_PERSON	16

Initial Load Complete

h. Once the row counts match and the Initial Load process is complete the “Initial Load Complete” button within the Demo Client will be enabled.

**DIPC Synchronize Data Task Demo**

TABLE_NAME	COUNT
SRC_AGE_GROUP	6
SRC_CITY	51
SRC_CUSTOMER	35
SRC_ORDERS	81
SRC_ORDER_LINES	236
SRC_PRODUCT	15
SRC_REGION	22
SRC_SALES_PERSON	16

TABLE_NAME	COUNT
SRC_AGE_GROUP	6
SRC_CITY	51
SRC_CUSTOMER	35
SRC_ORDERS	81
SRC_ORDER_LINES	236
SRC_PRODUCT	15
SRC_REGION	22
SRC_SALES_PERSON	16

Initial Load Complete

i. Go back to the Job Details in the DIPC App. to review the status there. The Initial load Action will show Successful after a little while (may take 10 minutes or more).

**Sync Sales Data**

Summary History

Sync Sales Data  
Type: Synchronize Data  
ID: b6f9d5b5-335e-47d2-9ad7-ec473e60280d

Data Lag: 2.607s  
Inserts: 462  
Updates: 0  
Errors: 0

Start: 10/10/2018, 6:23:32 AM  
End: 10/10/2018, 6:30:37 AM  
Duration: 7 min 11 sec  
Created By: weblogic  
Agent: DIPC.localdomain:7009 (Running)

Action Name	Status	Processed	Inserts	Errors	Duration	Last Updated
Initialize delivery	Successful	-	-	-	-	-
Initialize capture	Successful	-	-	-	-	-
Start capture	Running	0	0	0	-	10/10/2018, 6:30:37 AM
Initial load	Successful	462	462	0	165s	10/10/2018, 6:37:41 AM
Start delivery	Running	-	-	-	-	10/10/2018, 6:30:37 AM

- j. Once done, the Initial load Action can be expanded to review the various Steps underneath

Initial load	Successful	462	462	0	165s	10/10/2018, 6:37:41 AM
Initial load_PROC	Successful	462	462	0	165s	-
Procedure:Initial load_PROC:DROP DBLINK	Warning	0	0	0	0s	-
Procedure:Initial load_PROC:CREATE DBLINK	Successful	0	0	0	0s	-
Procedure:Initial load_PROC:SOURCE_ODI_VARIABLE	Successful	0	0	0	0s	-
Procedure:Initial load_PROC:DBLINK_DATAPUMP	Successful	0	0	0	18s	-
Procedure:Initial load_PROC:DBLINK_DATAPUMP_ASYNC_METRICS	Successful	462	462	0	147s	-
Procedure:Initial load_PROC:TARGET_ODI_VARIABLE	Successful	0	0	0	0s	-

- k. Click on Procedure:Initial load\_PROC:DBLINK\_DATAPUMP to review the Code generated by DIPC for the Initial Load. Click Done when you've completed the code review

Data Lag2.594s  
Inserts462  
Updates0  
Errors0

Start  
End  
Duration8 min 51 sec

10/10/2018, 6:23:32 AM

Expand All | Collapse All

Action Name

Initialize delivery

Initialize capture

Start capture

Initial load

Initial load\_PROC

Procedure:Initial load\_PROC:DROP DBLINK

Procedure:Initial load\_PROC:CREATE DBLINK

Procedure:Initial load\_PROC:SOURCE\_ODI\_VARIABLE

Procedure:Initial load\_PROC:DBLINK\_DATAPUMP

Procedure:Initial load\_PROC:DBLINK\_DATAPUMP\_ASYNC\_METRICS

Information Notification

Procedure:Initial load\_PROC:DBLINK\_DATAPUMP

```

declare
l_dp_job_name varchar2(400);

--local functions/procedures
FUNCTION add_quotes(p_str varchar2)
return varchar2 is begin
return "" || p_str || "";
end add_quotes;

function import_dblink_job_async
(
param_src_schema in varchar2 default 'SCOTT',
param_src_table_filter_expr in varchar2 default null,
param_src_table_exclude_expr in varchar2 default null,
param_src_dblink in varchar2 default 'connect_to_onprem_prod',

```

Done

## Task 3: Monitor Source Inserts/Updates/Deletes

- Now that the initial load is complete and the capture and delivery processes have been created and are running, we can simulate insert/updates and deletes on the source and monitor the replicated data through the Demo Client
- Using the Demo Client opened in TigerVNC click on the "Initial Load Complete" Button.

## Data Integration Platform Cloud: Hands-on Lab

DIPC Synchronize Data Task Demo














Source Sales OLTP Data		Replicated Sales OLTP Data	
TABLE_NAME	COUNT	TABLE_NAME	COUNT
SRC_AGE_GROUP	6	SRC_AGE_GROUP	6
SRC_CITY	51	SRC_CITY	51
SRC_CUSTOMER	35	SRC_CUSTOMER	35
SRC_ORDERS	81	SRC_ORDERS	81
SRC_ORDER_LINES	236	SRC_ORDER_LINES	236
SRC_PRODUCT	15	SRC_PRODUCT	15
SRC_REGION	22	SRC_REGION	22
SRC_SALES_PERSON	16	SRC_SALES_PERSON	16

Initial Load  
Init LD Done


Initial Load Complete


3. The following screen will appear. NOTE – the current refresh of the client is 10 seconds.

DIPC Synchronize Data Task Demo

Source					Staging					Target										
	ORDE...	STATUS	CUST_ID	ORDER...	CUSTO...		ORDER...	STATUS	CUST_ID	ORDER...	CUSTO...	CU...	PR...	FIR...	FIR...	LA...	LA...	QTY	AM...	PR...
	3	CLO	103	1990...			3	CLO	103	1990-0...										
	4	CLO	104	1991...			4	CLO	104	1991-0...										
	5	COM	105	1998...			5	COM	105	1998-0...										
	6	CLO	106	1998...			6	CLO	106	1998-0...										
	7	COM	107	2001...			7	COM	107	2001-0...										
	8	CLO	201	2000...			8	CLO	201	2000-0...										
	9	COM	202	2001...			9	COM	202	2001-0...										
	11	CLO	204	1990...			11	CLO	204	1990-0...										
	12	CLO	205	2000...			12	CLO	205	2000-0...										
	13	COM	206	1998...			13	COM	206	1998-0...										
	15	COM	301	2001...			15	COM	301	2001-0...										
	16	CLO	302	2000...			16	CLO	302	2000-0...										
	17	COM	303	2001...			17	COM	303	2001-0...										

Replicated Row





Simulate Inserts

Simulate Updates

Simulate Both

The demo client shows the source Sales OLTP data, the replicated Sales OLTP data, and the target Sales DW. As data is updated, inserted or deleted from the source the data will be automatically synchronized with the replicated schema by the Sync Sales Data Job we created in DIPC.

4. Perform a simple update of the source table by editing the data directly within the table grid. Update the first row's status which contains ORDER\_ID=1 from COM to CLO, clicking enter will commit the update and turn the column yellow –

Source Sales OLTP Data					
ORDER_ID	STATUS	CUST_ID	ORDER...	CUSTOM...	
1	COM	1001	2001-01...		
2	CLO	1002	1999-02...		
3	CLO	103	1990-03...		
4	CLO	104	1991-04...		
5	COM	105	1998-05...		
6	CLO	106	1998-06...		
7	COM	107	2001-07...		
8	CLO	201	2000-08...		
9	COM	202	2001-09...		
10	CLO	203	1999-05...		

→

Source Sales OLTP Data					
ORDER_ID	STATUS	CUST_ID	ORDER...	CUSTOM...	
1	CLO	1001	2001-01...		
2	CLO	1002	1999-02...		
3	CLO	103	1990-03...		
4	CLO	104	1991-04...		
5	COM	105	1998-05...		
6	CLO	106	1998-06...		
7	COM	107	2001-07...		
8	CLO	201	2000-08...		
9	COM	202	2001-09...		
10	CLO	203	1999-05...		

5. This row will be automatically update on the replicated schema as the DIPC Job picks up the change. The Demo Client is set to refresh at 10 seconds, so it will at least take 10 seconds for the replicated table grid to update. Once the Demo Client finds the change both rows will be updated to yellow.

## Data Integration Platform Cloud: Hands-on Lab

DIPC Synchronize Data Task Demo

Source

	ORDER_ID	STATUS	CUST_ID	ORDER_DATE	CUSTOMER
1	CLO	1001	2001-01-11 ...		
2	CLO	1002	1999-02-12 ...		
3	CLO	103	1990-03-23 ...		
4	CLO	104	1991-04-26 ...		
5	COM	105	1998-05-10 ...		
6	CLO	106	1998-06-23 ...		
7	COM	201	2001-07-30 ...		
8	CLO	201	2000-08-18 ...		
9	COM	202	2001-09-15 ...		
10	CLO	203	1999-05-20 ...		
11	CLO	204	1990-06-11 ...		

Replicated Row

4

5

6

7

8

9

10

11

Staging

	ORDER_ID	STATUS	CUST_ID	ORDER_DATE	CUSTOMER
1	CLO	1001	2001-01-11 ...		
2	CLO	1002	1999-02-12 ...		
3	CLO	103	1990-03-23 ...		
4	CLO	104	1991-04-26 ...		
5	COM	105	1998-05-10 ...		
6	CLO	106	1998-06-23 ...		
7	COM	201	2001-07-30 ...		
8	CLO	201	2000-08-18 ...		
9	COM	202	2001-09-15 ...		
10	CLO	203	1999-05-20 ...		
11	CLO	204	1990-06-11 ...		

Target

	CUST_ID	PROD...	FIRST...	FIRST...	LAST...	LAST...	QTY	AMOUNT	PROD...
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Simulate Inserts

Simulate Updates

Simulate Both

- The yellow highlights will automatically expire within the client.
- To perform an insert click on the “Simulate Inserts” Button once.  
This will perform an insert and the demo client will scroll to the row that was inserted.

DIPC Synchronize Data Task Demo

Source Sales OLTP Data				
ORDER_ID	STATUS	CUST_ID	ORDER...	CUSTOM...
73	CLO	1055	2000-05...	
74	CLO	106	1998-06...	
75	CLO	506	1998-07...	
76	CLO	507	2001-08...	
77	CLO	104	2000-09...	
78	CLO	105	2001-05...	
79	COM	106	1999-06...	
80	CLO	107	2000-07...	
81	COM	201	2001-05...	
82	CLO	402	2000-02...	null

Replicated Row

Replicated Sales OLTP Data				
ORDER_ID	STATUS	CUST_ID	ORDER...	CUSTOMER
73	CLO	1055	2000-05...	
74	CLO	106	1998-06...	
75	CLO	506	1998-07...	
76	CLO	507	2001-08...	
77	CLO	104	2000-09...	
78	CLO	105	2001-05...	
79	COM	106	1999-06...	
80	CLO	107	2000-07...	
81	COM	201	2001-05...	
82	CLO	402	2000-02...	null


ELT with DIPC ODI

Target Sales DW								
CUS...	PRO...	FIR...	FIR...	LAS...	LAS...	QTY	AM...	PR...

Simulate Inserts

Simulate Updates

Simulate Both

- Depending on the refresh, the row may directly be replicated to the replicated schema or appear in the next refresh by the Demo Client.  
Both rows should show as yellow
- To perform a delete click last row and click on the  icon. Notice this record will be delete from the replicated schema as well.

DIPC Synchronize Data Task Demo

Source Sales OLTP Data				
ORDER_ID	STATUS	CUST_ID	ORDER_...	CUSTOM...
1	CLO	1001	2001-01...	
2	CLO	1002	1999-02...	
3	CLO	103	1990-03...	
5	COM	105	1998-05...	
6	CLO	106	1998-06...	
7	COM	107	2001-07...	
8	CLO	201	2000-08...	
9	COM	202	2001-09...	
10	CLO	203	1999-05...	
11	CLO	204	1990-06...	

Replicated Row

Replicated Sales OLTP Data				
ORDER_ID	STATUS	CUST_ID	ORDER_...	CUSTOMER
1	CLO	1001	2001-01...	
2	CLO	1002	1999-02...	
3	CLO	103	1990-03...	
5	COM	105	1998-05...	
6	CLO	106	1998-06...	
7	COM	107	2001-07...	
8	CLO	201	2000-08...	
9	COM	202	2001-09...	
10	CLO	203	1999-05...	
11	CLO	204	1990-06...	

ELT with DIPC ODI

Target Sales DW								
CUS...	PRO...	FIR...	FIR...	LAS...	LAS...	QTY	AM...	PR...

Simulate Inserts

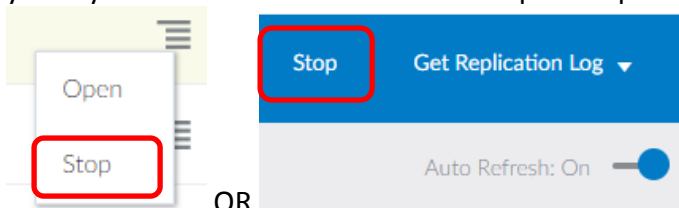
Simulate Updates

Simulate Both

- In Chrome the Job Details page gets updated in real-time as new data is captured and synchronized into the target

Action Name	Status	Processed	Inserts	Errors	Duration	Last Updated
Initialize delivery	Successful	-	-	-	-	-
Initialize capture	Successful	-	-	-	-	-
Start capture	Running	1	0	0	-	10/10/2018, 6:36:28 AM
Initial load	Successful	462	462	0	165s	10/10/2018, 6:37:41 AM
Start delivery	Running	1	0	0	-	10/10/2018, 6:36:28 AM

- [Optional]** Go to the Monitor page or Jobs Details page and click on the menu next to your Synchronize Data Job and click Stop to stop the overall process.



## Summary

You have now successfully completed the Hands on Lab, and have successfully performed an end-to-end data synchronization task through Oracle's Data Integration Platform Cloud.