



## Data Integration Platform Cloud Hands-on Lab

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## HOL6277 - Introduction to Data Integration Platform Cloud

The rapid adoption of enterprise cloud-based solutions brings with it a new set of challenges. Data integration remains one of the greatest challenges of any enterprise cloud-based solution. Join this hands-on lab to gain firsthand experience with the power and simplicity of Oracle Data Integration Platform Cloud powered by Oracle Data Integrator, Oracle Enterprise Data Quality solutions, and Oracle GoldenGate. See how Oracle Data Integration Platform Cloud simplifies the end-to-end creation and execution of the historically arduous data integration tasks of ingesting, loading, preparing, and transforming data as well as performing a real-time synchronization between an on-premises and a cloud database in just a few clicks.

The following lessons will walk us through various steps that are needed to create Data Integration Platform Cloud connections, a Data Preparation task, an ODI Execution Task, and run Jobs to prepare and load data into a target data warehouse.

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## Overview

### Time to Complete

Perform all tasks – 60 Minutes

### Prerequisites

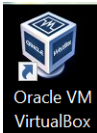
Before you begin this tutorial, you should

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

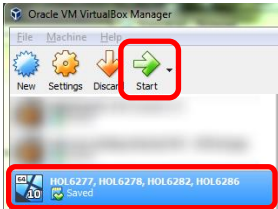
## Task 0: Preparation Steps

For this lab, the Data Integration Platform Cloud and the sources and targets are contained within one environment for simplicity. This environment is hosted in the Cloud. All user interactions with Data Integration Platform Cloud will be through a browser (Chrome) and VNC Client (TigerVNC) installed in a VirtualBox image on your machine.

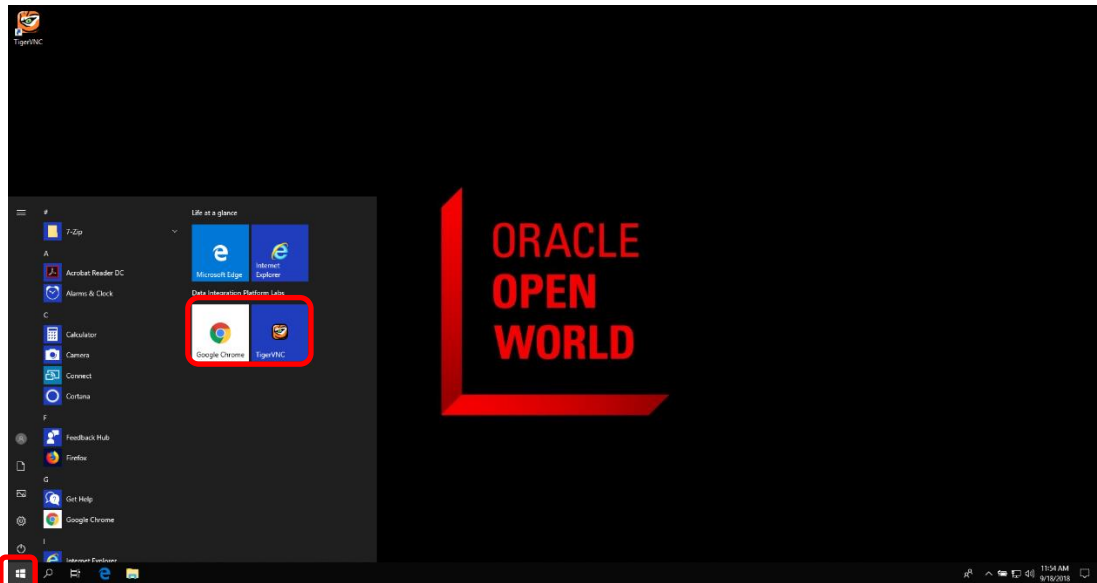
1. Log into your machine and open up Oracle VM VirtualBox from the Desktop



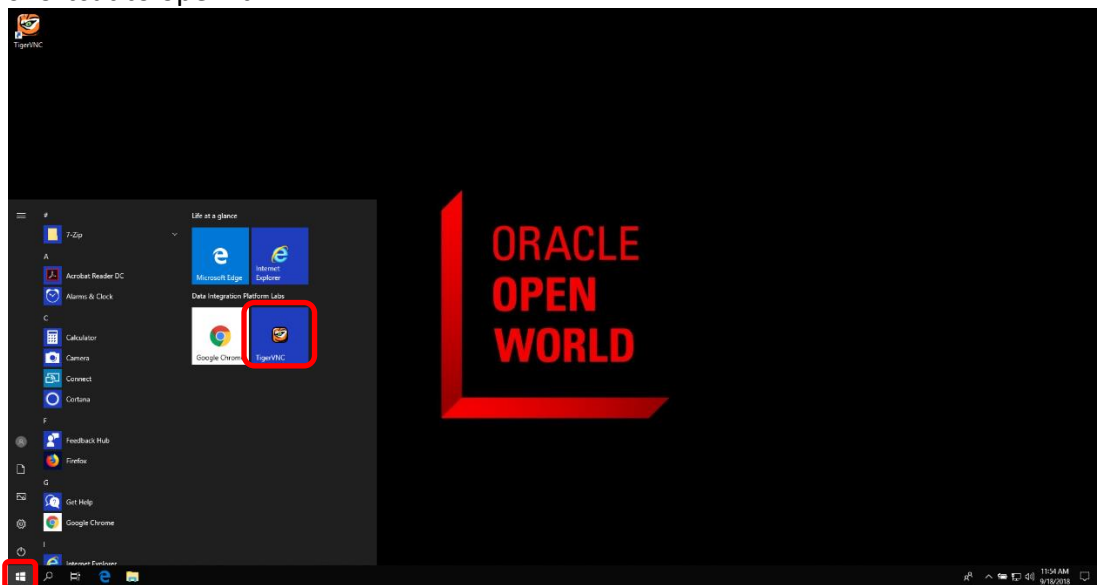
2. Click on HOL6277, HOL6278, HOL6282, HOL6286 and click on Start



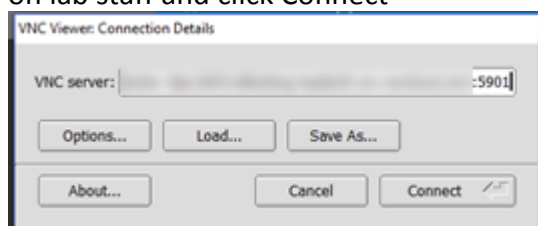
- When the VirtualBox Image is started, you will be logged into a Windows 10 machine. The Start Menu contains shortcuts to access Chrome and TigerVNC that will be used throughout this lab



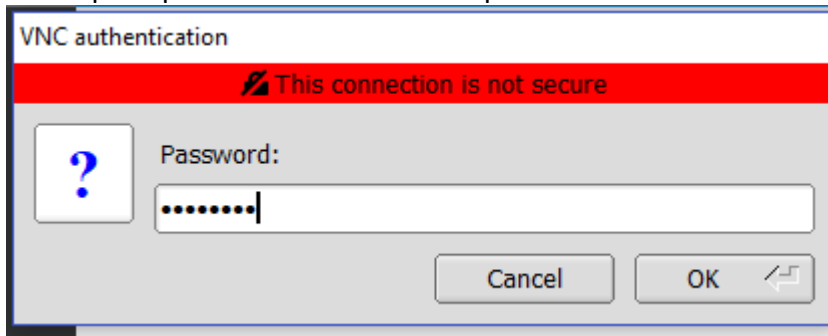
3. A URL will be assigned to you by the hands-on lab staff, make a note of it as it will be your environment for the entire lab:
  - a. <hostname>:8001/dicloud (URL for Chrome)
  - b. <hostname>:5901 (URL for TigerVNC)
4. We will start with connecting to the DIPC host and starting a DIPC Agent. Open the Windows 10 Start menu running in the VirtualBox VM and click on TigerVNC shortcut to open it



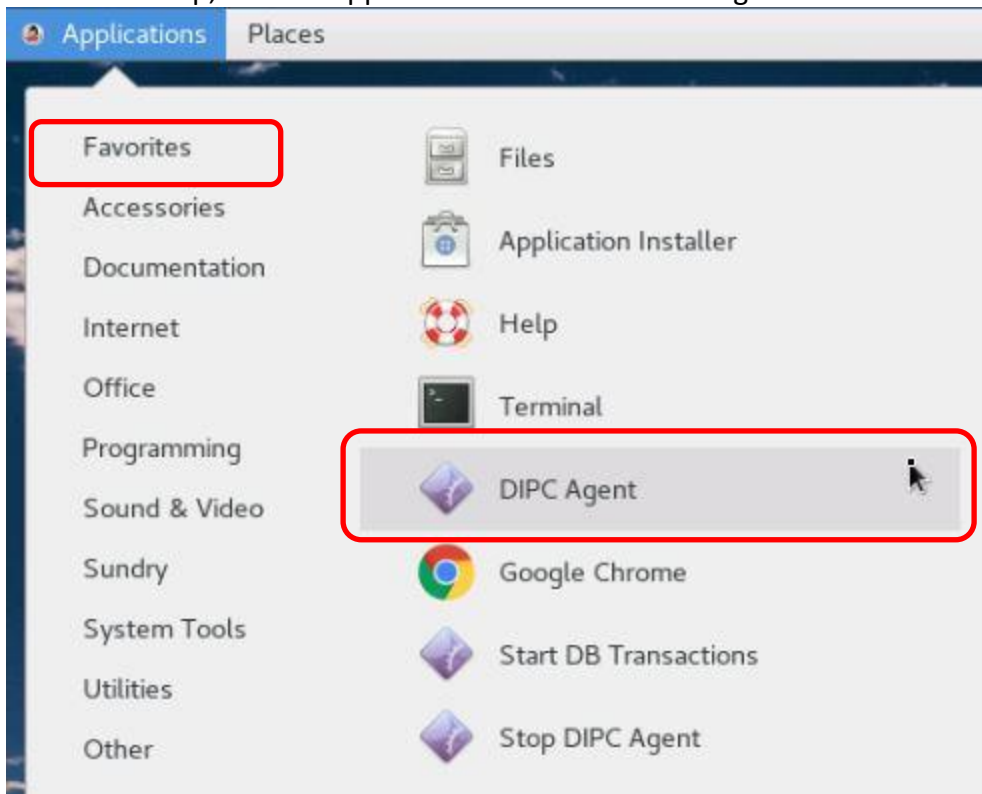
5. In the TigerVNC window enter the URL (<hostname>:5901) given to you by the hands-on lab staff and click Connect



6. When prompted enter welcome1 as password



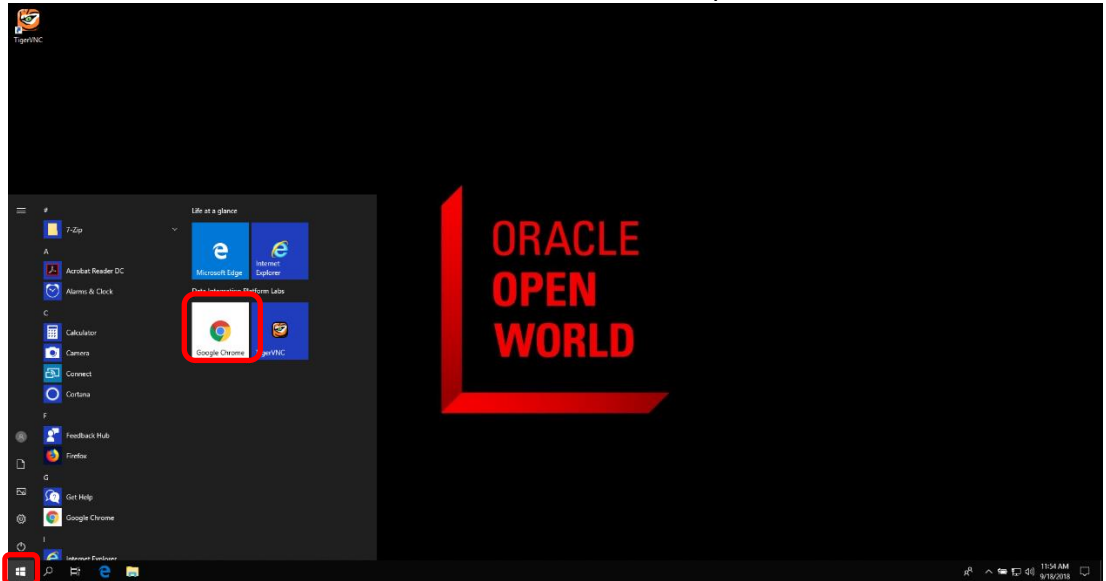
7. On the Desktop, click on Applications then select DIPC Agent under Favorites



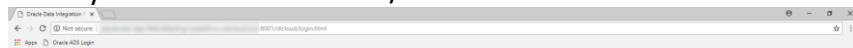
8. A window will appear and will track the DIPC Agent startup. An Agent will be used by DIPC to access the different sources and targets, it will be fully started in a minute or so  
**DO NOT CLOSE THIS WINDOW, you can minimize it if needed**
9. Log into Data Integration Platform Cloud

## Data Integration Platform Cloud: Hands-on Lab

- a. Go back to Windows 10, click on the Start menu and open Chrome

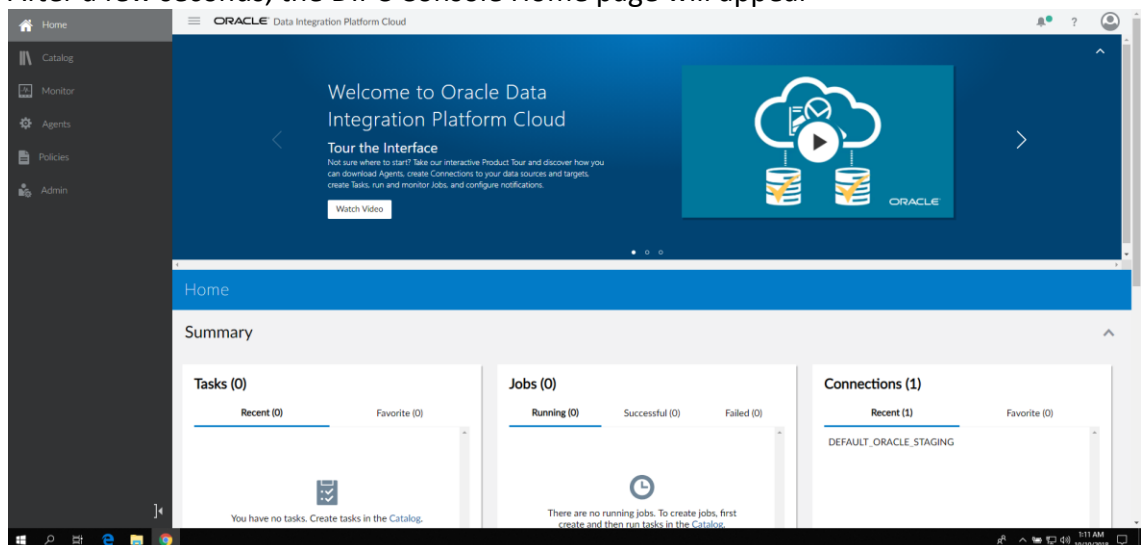


- b. Go to your <hostname>:8001/dicloud



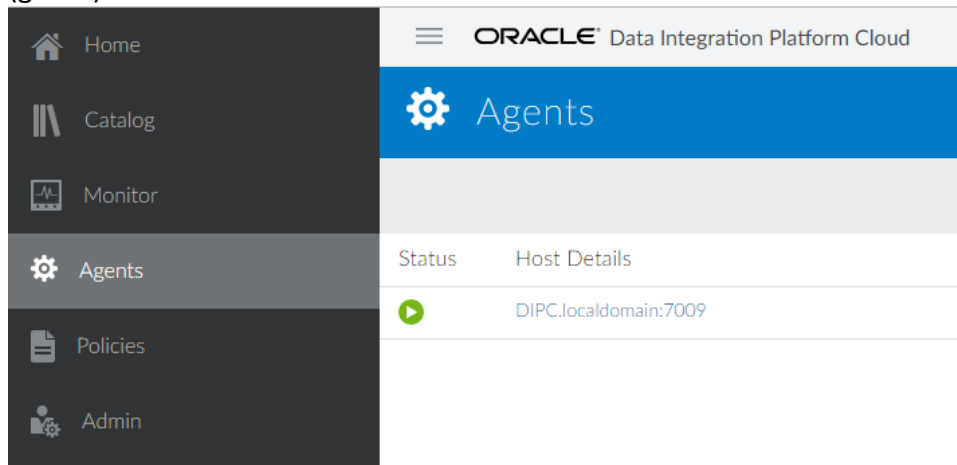
- c. Login with **weblogic/welcome1**

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



## Data Integration Platform Cloud: Hands-on Lab

- 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

- 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

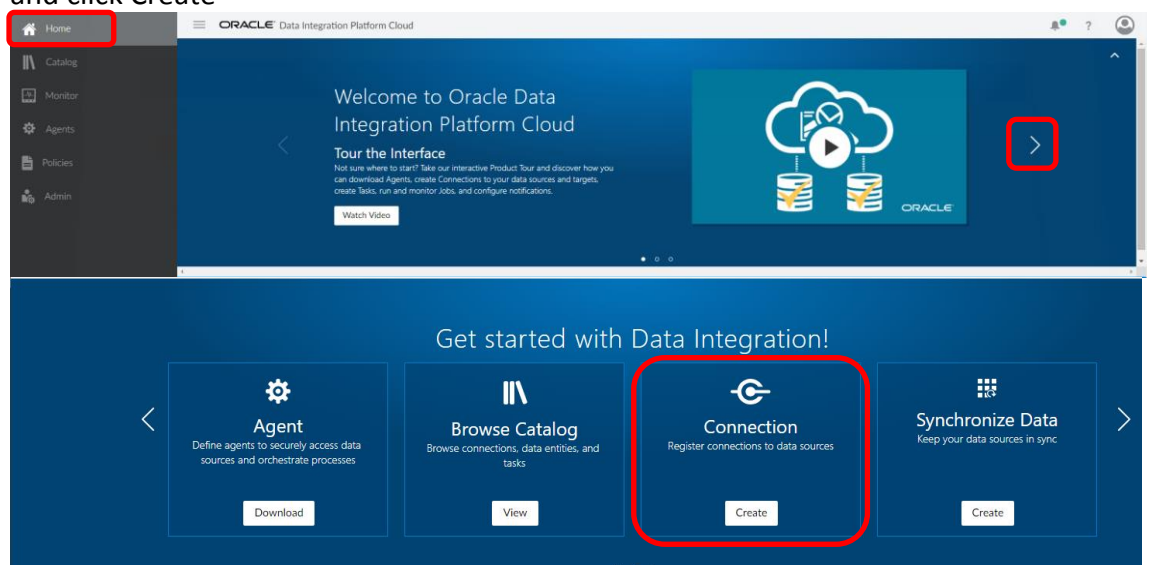
Services:

oracle.us.oracle.com (CDB Connection)

orclpdb.us.oracle.com (PDB Connections)

Let us first create a new Oracle CDB Connection

- 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 – DIPCLocaldomain:7009
- Type Oracle Database
- Subtype: Oracle CDB
- Hostname: DIPCL
- Port: 1521
- Username: C##GGSRC
- Password: welcome1
- Service Name: orcle.us.oracle.com

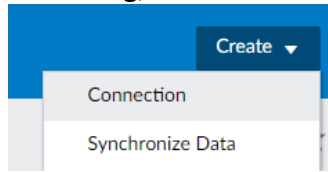
The screenshot shows a 'Connection' dialog box with a green success banner at the top stating 'Connection test succeeded'. Below this, the 'General Information' section contains fields for Name (Oracle CDB), Identifier (ORACLE\_CDB), Description (empty), Agent (DIPCLocaldomain:7009), Type (Oracle Database), and Subtype (Oracle CDB). The 'Connection Settings' section contains fields for Hostname (DIPCL), Port (1521), Username (C##GGSRC), Password (masked with dots), and Service Name (orcle.us.oracle.com). At the bottom right, there are buttons for 'Test Connection', 'Cancel', and 'Save'. A help icon (?) is located at the bottom left.

c. Click Test Connection and Save if successful

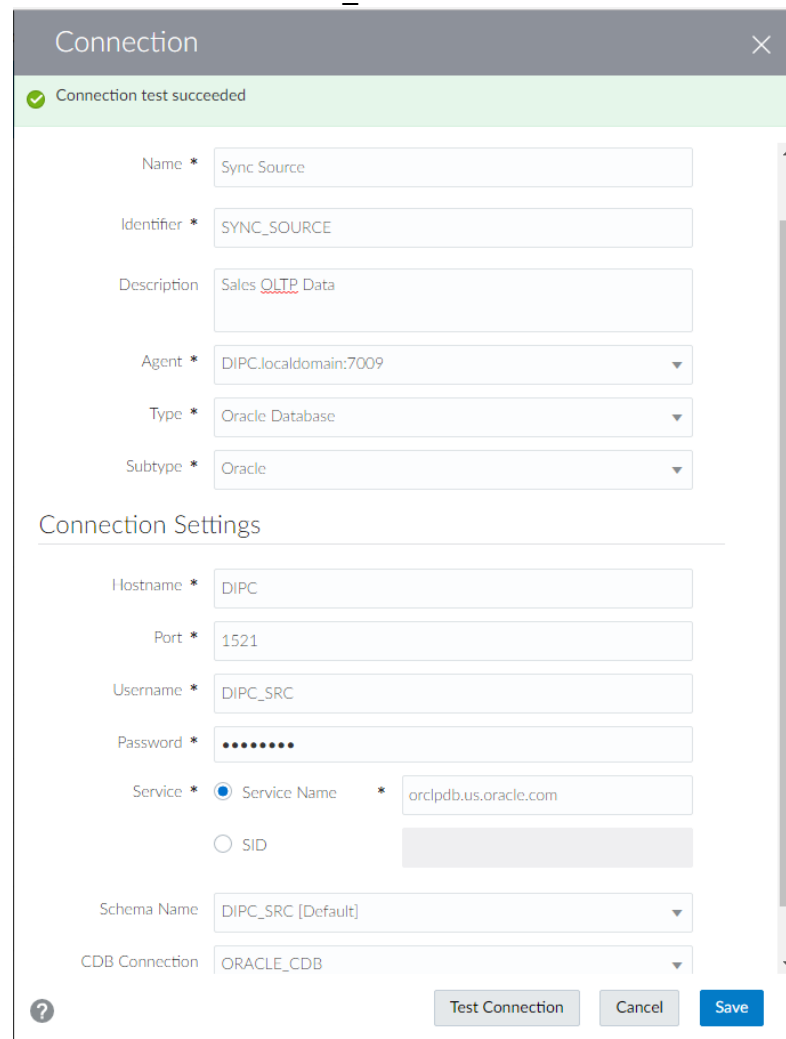
## 2. Create Sync Source Connection



- In Catalog, click Create > Connection

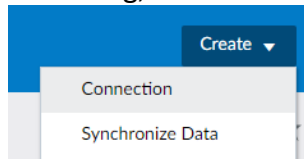


- Enter the following information
  - Name: Sync Source
  - Identifier: use default
  - Description: Sales OLTP Data
  - Agent: DIPC.localdomain:7009
  - Type Oracle Database
  - Subtype: Oracle
  - Hostname: DIPC
  - Port: 1521
  - Username: DIPC\_SRC
  - Password: welcome1
  - Service Name: orclpdb.us.oracle.com
  - Schema: DIPC\_SRC
  - CDB Connection: ORACLE\_CDB

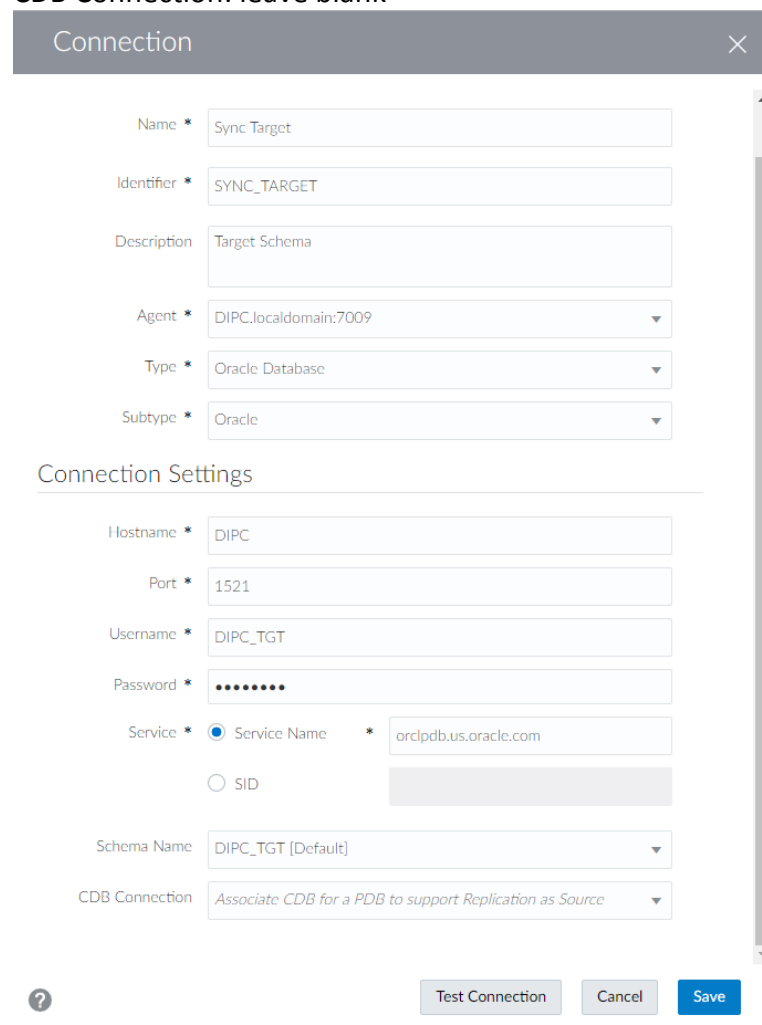
A screenshot of a 'Connection' configuration dialog box. At the top, a green banner indicates 'Connection test succeeded'. The dialog contains several input fields and dropdown menus. The 'Name' field is 'Sync Source', 'Identifier' is 'SYNC\_SOURCE', 'Description' is 'Sales OLTP Data', 'Agent' is 'DIPC.localdomain:7009', 'Type' is 'Oracle Database', and 'Subtype' is 'Oracle'. Under the 'Connection Settings' section, 'Hostname' is 'DIPC', 'Port' is '1521', 'Username' is 'DIPC\_SRC', 'Password' is masked with dots, 'Service' is 'Service Name' with value 'orclpdb.us.oracle.com', 'Schema Name' is 'DIPC\_SRC [Default]', and 'CDB Connection' is 'ORACLE\_CDB'. At the bottom right are buttons for 'Test Connection', 'Cancel', and '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

A screenshot of a 'Connection' configuration dialog box. The dialog has a title bar 'Connection' with a close button. It contains several input fields and dropdown menus. The 'Name' field is 'Sync Target', 'Identifier' is 'SYNC\_TARGET', 'Description' is 'Target Schema', 'Agent' is 'DIPC.localdomain:7009', 'Type' is 'Oracle Database', and 'Subtype' is 'Oracle'. Below these is a section titled 'Connection Settings' with fields for 'Hostname' (DIPC), 'Port' (1521), 'Username' (DIPC\_TGT), 'Password' (masked with dots), 'Service' (radio buttons for 'Service Name' and 'SID', with 'Service Name' selected and value 'orclpdb.us.oracle.com'), 'Schema Name' (DIPC\_TGT [Default]), and 'CDB Connection' (Associate CDB for a PDB to support Replication as Source). At the bottom are buttons for '?', 'Test Connection', 'Cancel', and 'Save'.

## Data Integration Platform Cloud: Hands-on Lab

- 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)

The screenshot shows the 'Catalog' page with a search bar containing 'SRC\_'. Below the search bar, a table lists three data entities: SRC\_CITY, SRC\_REGION, and SRC\_ORDER\_LINES. Each row includes a category icon, the entity name, its type (Table), the last updated timestamp, and a popularity bar chart. SRC\_CITY has the highest popularity, indicated by a full blue bar.

Category	Name	Type	Last Updated	Popularity
	SRC_CITY	Table	10/12/2018, 12:46:17 PM	[Full Bar]
	SRC_REGION	Table	10/12/2018, 12:46:19 PM	[Partial Bar]
	SRC_ORDER_LINES	Table	10/12/2018, 1:31:57 PM	[Partial Bar]

The screenshot shows the 'SRC\_CITY' entity details page, specifically the 'Summary' tab. It displays various metadata fields: Name, Identifier, Resource Name, Description, Type, Namespace, Contact, Popularity (with a bar chart), and Tags. The Popularity bar is full, indicating high usage.

Field	Value
Name	SRC_CITY
Identifier	SRC_CITY
Resource Name	SRC_CITY
Description	
Type	Table
Namespace	DIPC_SRC
Contact	
Popularity	[Full Bar]
Tags	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 'SRC\_CITY' entity details page, specifically the 'Attributes' tab. It displays a table of attributes 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 Houston
	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

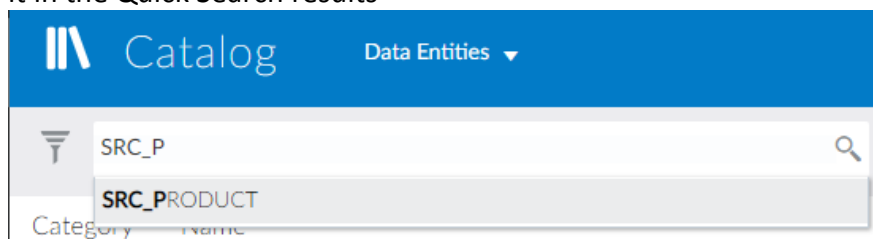
Key	Attribute	Data Type	Sample Values	Profile for REGION_ID	×
?	CITY_ID	NUMBER (10)	11,12,13,14,10	Total Rows	51
	CITY	VARCHAR2 (50)	San Francisco,San Diego,Los Angeles,Dallas,Houston	Rows with Data	100.00%
	REGION_ID	NUMBER (10)	22,23,20,21	Rows with No Data	0.00%
	POPULATION	NUMBER (10)	840689,743113,822416,743878,157574	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 <span>Delete</span> <span>Edit</span>				
Summary Attributes <b>Data</b> 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 <b>Attributes</b> Data History			
Key	Attribute	Data Type	Sample Values
?	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%

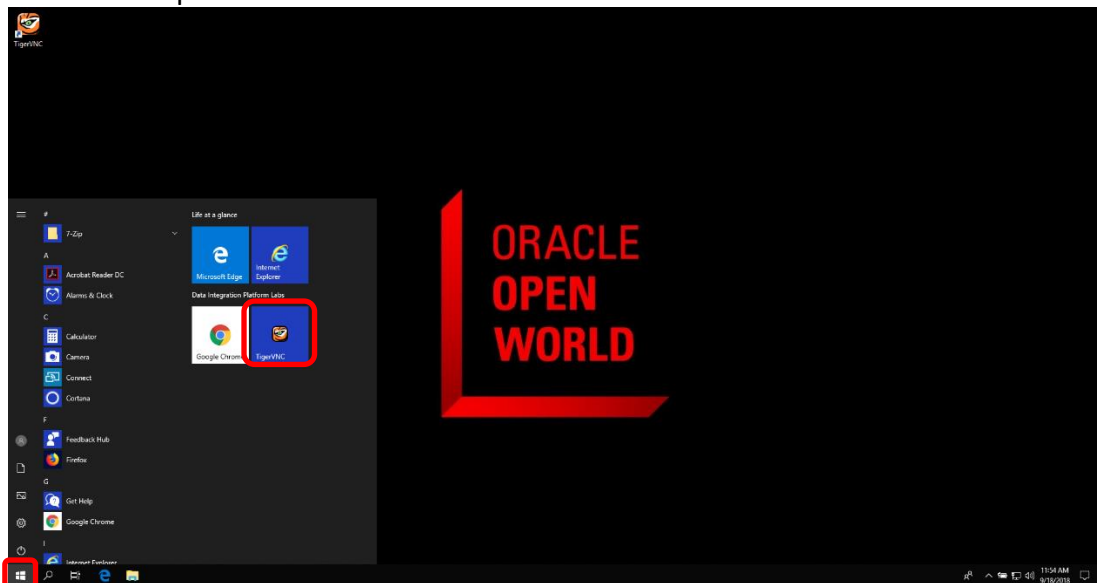
15. Click Data tab

16. Review other entities as needed

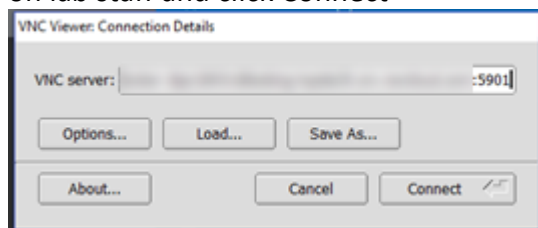
## Task 2: Create DIPC Synchronize Data Task

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 TigerVNC window that should still be opened in Windows 10.

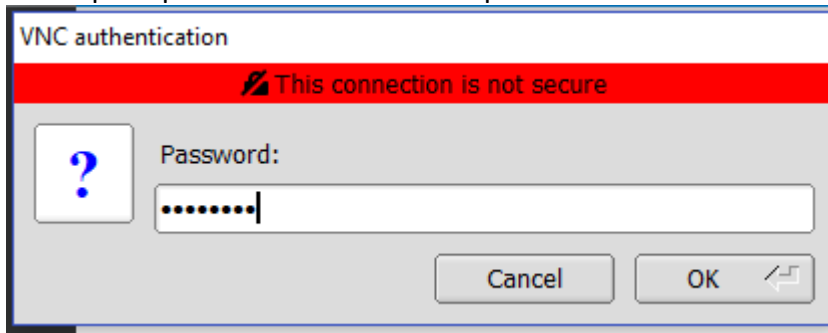
If you need to start it again: click on the Windows 10 Start menu and click on TigerVNC shortcut to open it



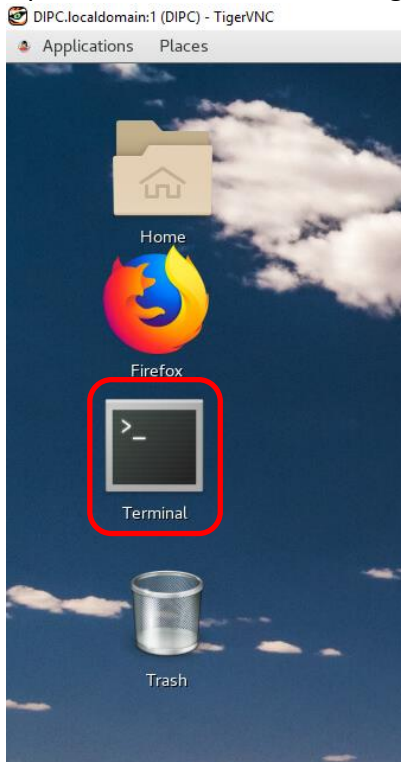
In the TigerVNC window enter the URL (<hostname>:5901) given to you by the hands-on lab staff and click Connect



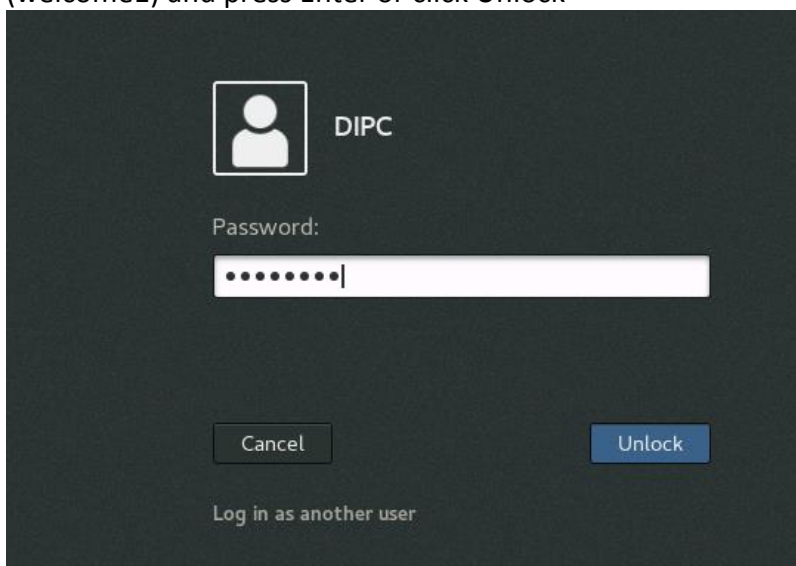
When prompted enter welcome1 as password



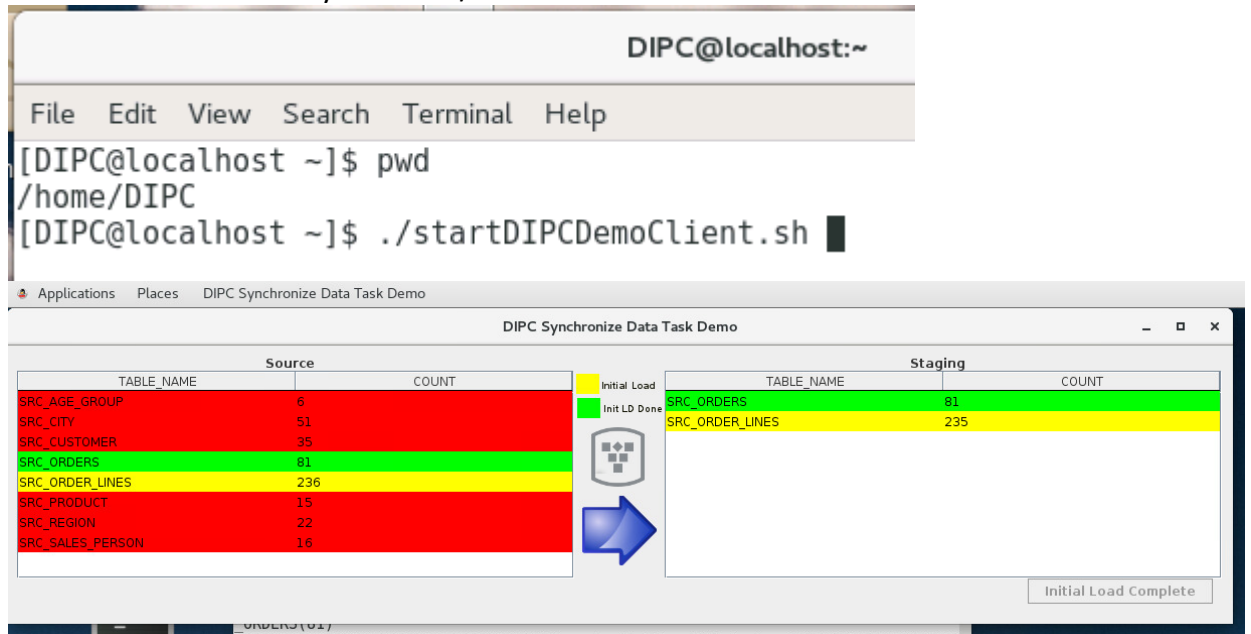
3. Open a terminal window using the Terminal shortcut on the Desktop



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



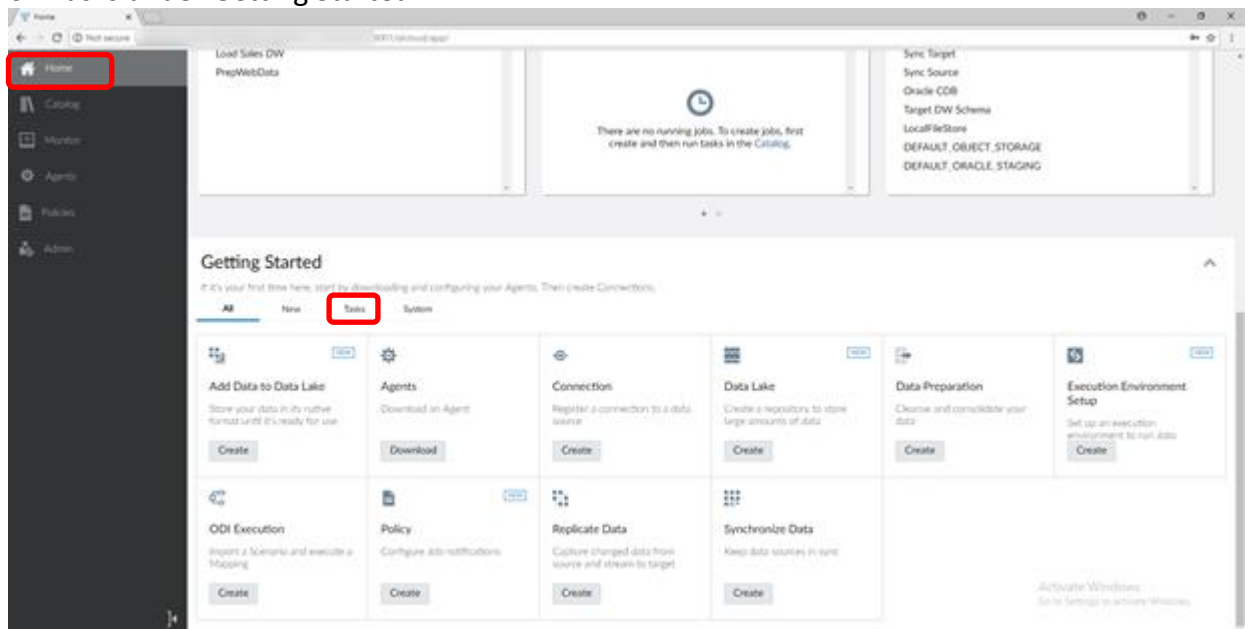
- From the home directory execute `./startDIPCDemoClient.sh`



**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

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








## Data Integration Platform Cloud: Hands-on Lab

### 6. Click Create under Synchronize Data



#### Getting Started

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

All	New	Tasks	System
 <b>Add Data to Data Lake</b> Store your data in its native format until it's ready for use <a href="#">Create</a>	 <b>Data Preparation</b> Cleanse and consolidate your data <a href="#">Create</a>	 <b>ODI Execution</b> Import a Scenario and execute a Mapping <a href="#">Create</a>	 <b>Replicate Data</b> Capture changed data from source and stream to target <a href="#">Create</a>
			 <b>Synchronize Data</b> Keep data sources in sync <a href="#">Create</a>

### 7. Name your task –Sync Sales Data

### 8. Description: Sync Schemas - DIPC\_SRC to DIPC\_TGT

  **Create Synchronize Data**

---

#### General Information


Name \*

Identifier \*

Description

---


#### Source Configuration ?

Connection \*  

Schema \*

---

#### Target Configuration ?

Connection \*  

Schema \*

---

#### Advanced Options

☒ Include Initial Load

☒ Include Replication

### 9. Select your source connection and schema

- Connection: Sync Source
- Schema: DIPC\_SRC

### 10. Select your target connection and schema

- Connection: Sync Target
- 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

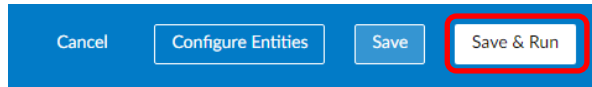
#	Type	String
1	Include	*

## Data Integration Platform Cloud: Hands-on Lab

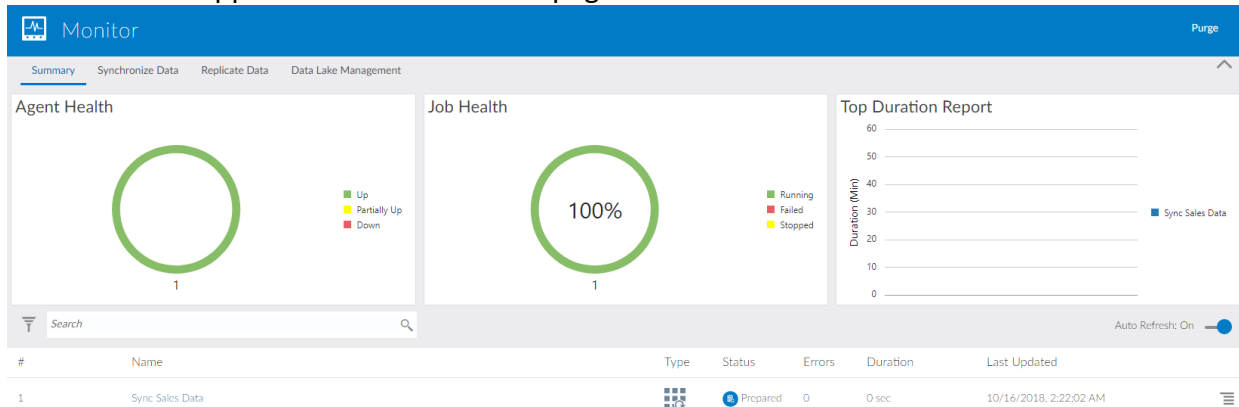
14. Click on < to go back to the main Synchronize Data Task screen



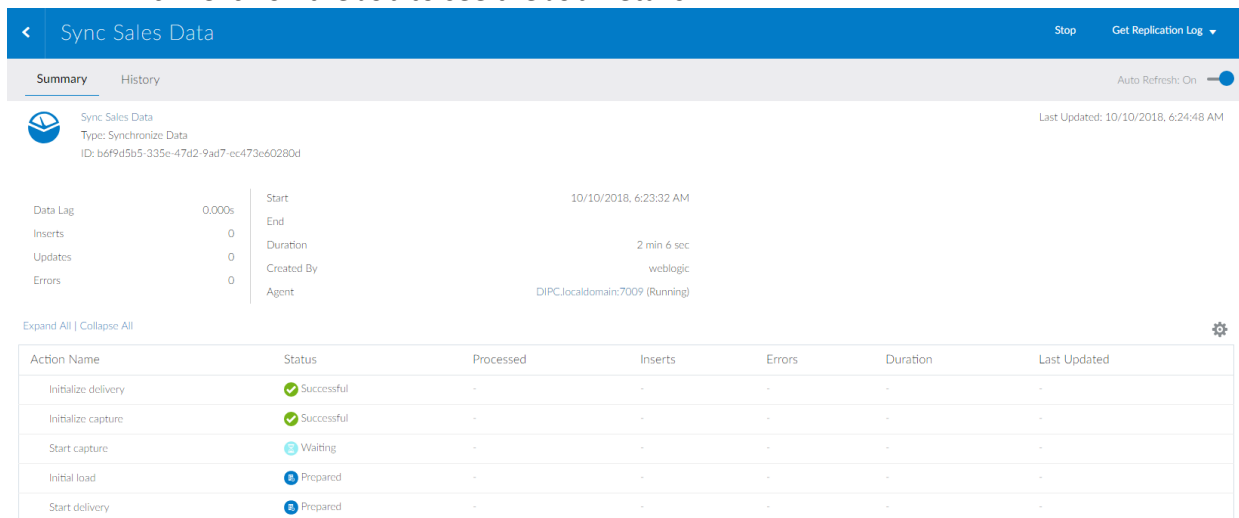
15. Click on Save & Run to start the execution



- 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**

Source		Staging	
TABLE_NAME	COUNT	TABLE_NAME	COUNT
SRC_AGE_GROUP	6	SRC_ORDERS	81
SRC_CITY	51	SRC_ORDER_LINES	235
SRC_CUSTOMER	35		
SRC_ORDERS	81		
SRC_ORDER_LINES	236		
SRC_PRODUCT	15		
SRC_REGION	22		
SRC_SALES_PERSON	16		

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**

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 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**

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 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**

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: -  
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				
ORDE...	STATUS	CUST_ID	ORDER...	CUSTO...
3	CLO	103	1990...	
4	CLO	104	1991...	
5	COM	105	1998...	
6	CLO	106	1998...	
7	COM	107	2001...	
8	CLO	201	2000...	
9	COM	202	2001...	
11	CLO	204	1990...	
12	CLO	205	2000...	
13	COM	206	1998...	
15	COM	301	2001...	
16	CLO	302	2000...	
17	COM	303	2001...	

Replicated Row

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

Target									
CU...	PR...	FIR...	FIR...	LA...	LA...	QTY	AM...	PR...	

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

全行複製

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...
--	---------	---------	----------	----------	---------	---------	-----	--------	---------

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

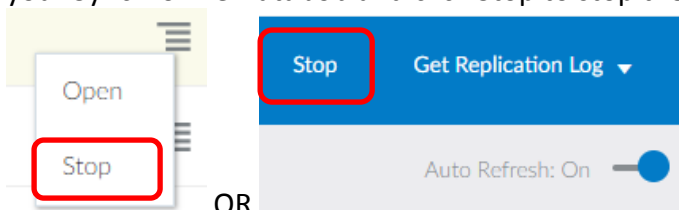
Simulate Updates

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.