

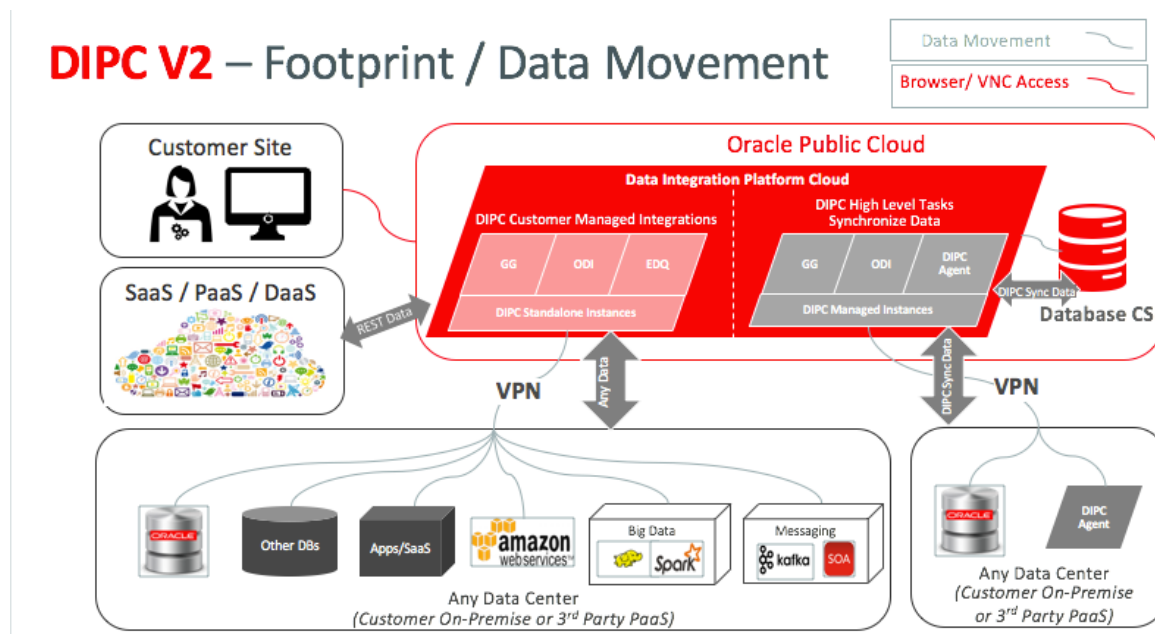


Data Integration Platform Cloud Hands On Lab



Architecture Overview

This Hands-on lab demonstrates the power and simplicity of the Data Integration Platform. For this Hands-on lab data will be sourced from an OLTP system made up of a 3NF schema, data will be extracted and synchronized in real time to an operational reporting schema, this data will then be mini batched to an analytical data warehouse. The goal of this lab to demonstrate how DIPC removes the complexity in creating a real-time operation reporting schema as well as a near real-time analytical data warehouse, enabling even novice users to perform the creation, initial load and real time synchronization of the operational reporting schema in just a couple of clicks. Historically these types of data integration tasks required expert ETL and DBA resources as well as a detailed understanding of the source schema. Built from the ground up on proven technologies, DIPC provides enterprise data integration and data governance features for today's enterprise.





Data Integration Platform Cloud: Hands On Lab

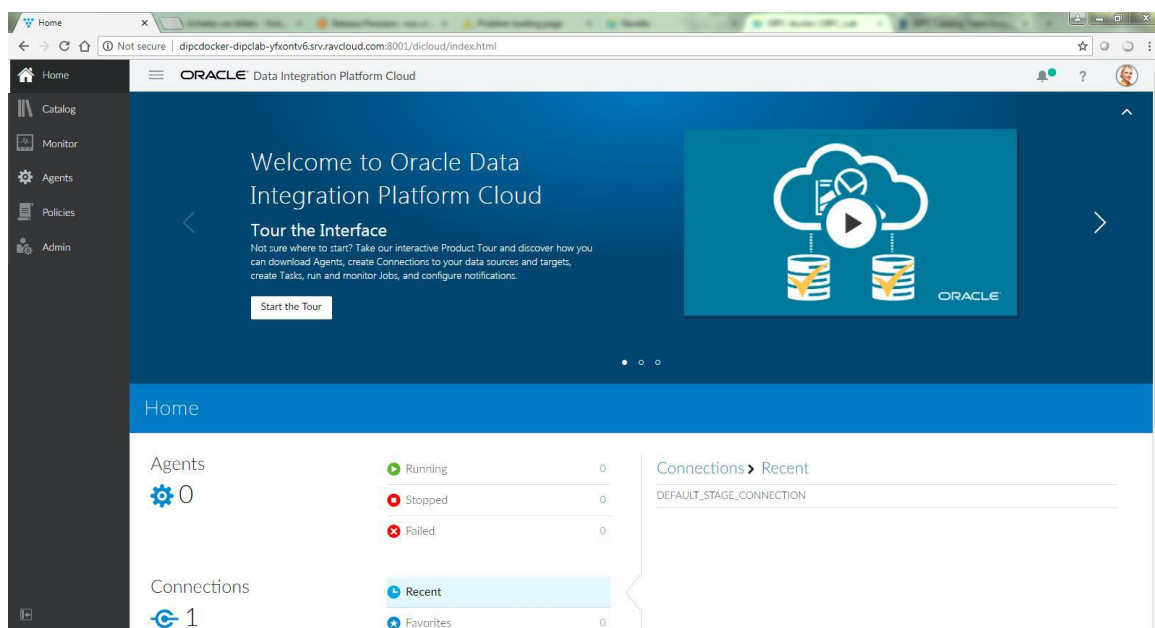
Task 1: Setup DIPC Connections

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

CDB User : C##GGSRC
Source Schema/User : DIPC_SRC
OLTP_Schema/User : DIPC_TGT
Passwords : welcome1
Server : DIPC
Port : 1521
Services :
 orclcdb.localdomain (CDB Connection)
 orclpdb1.localdomain (PDB Connections)

The next steps will walk you through how to setup each.

1. Log into Data Integration Platform Cloud
 - a. From your local laptop/desktop start Chrome (you can also continue to use Chrome on the Ravello instance)
 - b. Go to your <Ravello Instance hostname>:8001/dicloud/login.html
 - c. Login with weblogic/welcome1The following page should appear –

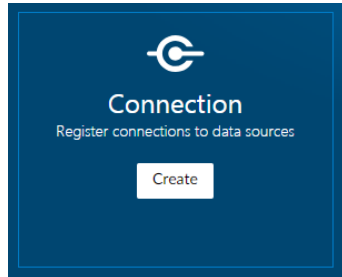




2. Click Home and click on the right arrow in the carousel



3. Create Oracle CDB Connection
 - a. Click Create under Connection



- b. Enter the following information:
 - i. Name: Oracle CDB
 - ii. Agent – DIPC.localdomain:7005
 - iii. Type - Oracle CDB – selecting Oracle will expand the Connection Settings
 - iv. Hostname: DIPC
 - v. Port: 1521
 - vi. Username: C##GGSRC
 - vii. Password: welcome1
 - viii. Service Name: orclcdb.localdomain

Connection

General Information

Name * Oracle CDB

Identifier * ORACLE_CDB

Description

Agent DIPC.localdomain:7005

Type * Oracle CDB

Connection Settings

Hostname * DIPC

Port * 1521

Username * C##GGSRC

Password *

Service Name * orclcdb.localdomain

Test Connection Cancel Save



- c. Review Connections settings.
 - d. Click Test Connection then Save
4. Create Sync Source Connection
 - a. In Catalog, click Create > Connection
 - b. Enter the following information
 - i. Name: Sync Source
 - ii. Description – Sales OLTP Source Data
 - iii. Agent – DIPC.localdomain:7005
 - iv. Type Oracle – selecting Oracle will expand the Connection Settings
 - v. Hostname: DIPC
 - vi. Port: 1521
 - vii. Username: DIPC_SRC
 - viii. Password: welcome1
 - ix. Service Name: dics12c
 - x. Schema: DIPC_SRC
 - xi. CDB Connection: ORACLE_CDB

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

- Identifier ***: SYNC_SOURCE
- Description**: Sales OLTP Source Data
- Agent**: DIPC.localdomain:7005
- Type ***: Oracle

Connection Settings

- Hostname ***: DIPC
- Port ***: 1521
- Username ***: DIPC_SRC
- Password ***: (masked with dots)
- Service ***: ☒ Service Name * orclpdb1.localdomain
☐ SID
- Schema Name**: DIPC_SRC [Default]
- CDB Connection**: ORACLE_CDB

Buttons at the bottom: ? (help), Test Connection, Cancel, Save.

- c. Review Connections settings.
 - d. Click Test Connection then Save



5. Create Sync Target Connection
 - a. In Catalog, click Create > Connection
 - b. Enter the following information
 - i. Name: Sync Target
 - ii. Description – Target Schema
 - iii. Agent – DIPC.localdomain:7005
 - iv. Type Oracle – selecting Oracle will expand the Connection Settings
 - v. Hostname: DIPC
 - vi. Port: 1521
 - vii. Username: DIPC_TGT
 - viii. Password: welcome1
 - ix. Service Name: dics12c
 - x. Schema: DIPC_SRC
 - xi. CDB Connection: ORACLE_CDB

Connection

Identifier * SYNC_TARGET

Description Target Schema

Agent DIPC.localdomain:7005

Type * Oracle

Connection Settings

Hostname * DIPC

Port * 1521

Username * DIPC_TGT

Password *

Service * ☒ Service Name * orclpdb1.localdomain
☐ SID

Schema Name DIPC_TGT [Default]

CDB Connection ORACLE_CDB

Test Connection Cancel Save

- c. Review Connections settings.
- d. Click Test Connection then Save



6. Review Catalog after saving –
7. 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 some time (5 minutes or so), the Catalog will show a message when new updates are available You can refresh the page manually to see the new Data Entities
8. Click an entity – SRC_ORDERS 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 and a list of data entities. The 'SRC_ORDERS' entity is selected, and its details are shown in the 'Summary' tab. The popularity score for 'SRC_ORDERS' is a full blue bar, indicating it is one of the most used entities in queries. The 'Tags' section has an 'Add Tags...' input field.

Category	Name	Type	Last Updated	Popularity
TRG_REGION	TRG_REGION	Oracle Table	3/20/2018, 1:44:58 PM	
TRG_EDW	TRG_EDW	Oracle Table	3/20/2018, 1:44:58 PM	
SRC_ORDER_LINES	SRC_ORDER_LINES	Oracle Table	3/20/2018, 1:44:58 PM	
SRC_AGE_GROUP	SRC_AGE_GROUP	Oracle Table	3/20/2018, 1:44:57 PM	
SRC_ORDERS	SRC_ORDERS	Oracle Table	3/20/2018, 1:44:57 PM	
TRG_CUSTOMER	TRG_CUSTOMER	Oracle Table	3/20/2018, 1:44:56 PM	

Property	Value
Name	SRC_ORDERS
Identifier	SRC_ORDERS
Resource Name	SRC_ORDERS
Description	
Type	Table
Namespace	DIPC_SRC
Contact	
Popularity	Full bar
Tags	Add Tags...

Notice the Popularity score calculated for SRC_ORDERS, 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

9. Click on the Attributes tab

Key	Attribute	Data Type	Sample Values
	ORDER_ID	NUMBER (10)	1,2,3,4,5
	STATUS	VARCHAR2 (3)	COM,CLO
	CUST_ID	NUMBER (10)	103,104,1002,105,1001
	ORDER_DATE	DATE (7)	1999-02-12 00:00:00.0,1990-03-23 00:00:00.0,2001-01-11 00:00:00.0,1998-05-10 00:00:00.0,1991-04-26 00:00:00.0
	CUSTOMER	VARCHAR2 (35)	



10. Click on an Attribute, ORDER_DATE for example

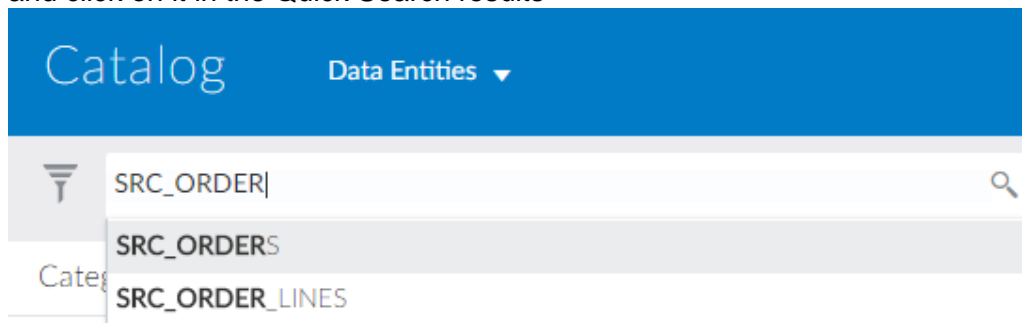
Key	Attribute	Data Type	Sample Values	Profile for ORDER_DATE	X
PK	ORDER_ID	NUMBER (10)	1,2,3,4,5	Total Rows	81
	STATUS	VARCHAR2 (3)	COM,CLO	Rows with Data	100.00%
	CUST_ID	NUMBER (10)	103,104,1002,105,1001	Rows with No Data	0.00%
	ORDER_DATE	DATE (7)	1999-02-12 00:00:00.0,1990-03-23 00:00:00.0,2001-01-11 00:00:00.0,1998-05-10 00:00:00.0,1991-04-26 00:00:00.0	Distinct Values	67
	CUSTOMER	VARCHAR2 (35)		Duplicate Values	14
				Minimum Value	18-FEB-90
				Maximum Value	15-SEP-01
				Average Length	8
				Density	1.49%

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

12. Click Data tab

ORDER_ID	STATUS	CUST_ID	ORDER_DATE	CUSTOMER
1	COM	1001	2001-01-11 00:00:00.0	
2	CLO	1002	1999-02-12 00:00:00.0	
3	CLO	103	1990-03-23 00:00:00.0	
4	CLO	104	1991-04-26 00:00:00.0	
5	COM	105	1998-05-10 00:00:00.0	
6	CLO	106	1998-06-23 00:00:00.0	

13. Go back to the main Catalog page – Search for Data Entity – SRC_ORDER_LINES and click on it in the Quick Search results



14. Click Attributes tab

Key	Attribute	Data Type	Sample Values
PK	ORDER_ID	NUMBER (10)	1,2,3,4
PK	LORDER_ID	NUMBER (10)	1,2,3
	PRODUCT_ID	NUMBER (10)	1,2,3,4,5
	QTY	NUMBER (10)	1689,1477,1829,549,1163
	AMOUNT	NUMBER (10, 2)	59292,146223,136809,20934,172840.5

15. Click on a column, for example column – QTY

16. Notice the Profiling statistics

Key	Attribute	Data Type	Sample Values	Profile for QTY	X
PK	ORDER_ID	NUMBER (10)	1,2,3,4	Total Rows	236
PK	LORDER_ID	NUMBER (10)	1,2,3	Rows with Data	100.00%
	PRODUCT_ID	NUMBER (10)	1,2,3,4,5	Rows with No Data	0.00%
	QTY	NUMBER (10)	1689,1477,1829,549,1163	Distinct Values	182
	AMOUNT	NUMBER (10, 2)	59292,146223,136809,20934,172840.5	Duplicate Values	54
				Minimum Value	1
				Maximum Value	5500
				Average Length	4
				Density	0.55%

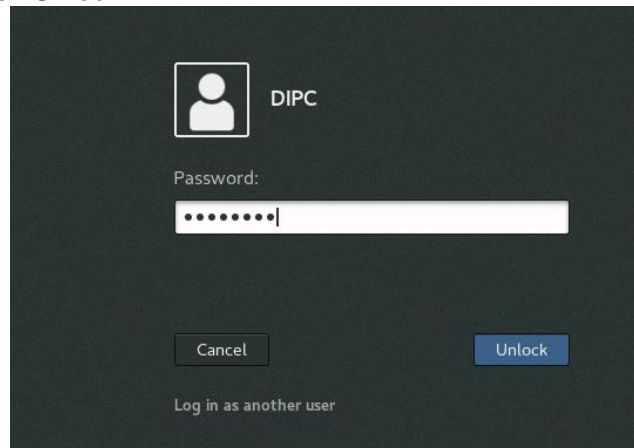
17. Click Data tab

18. Review other entities as needed

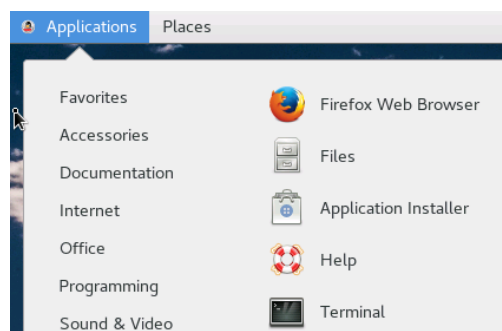


Task 2: Create DIPC Synchronize Data Task

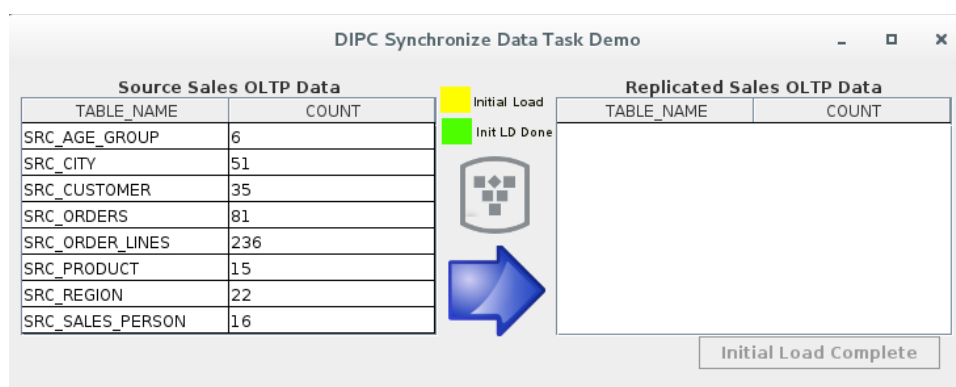
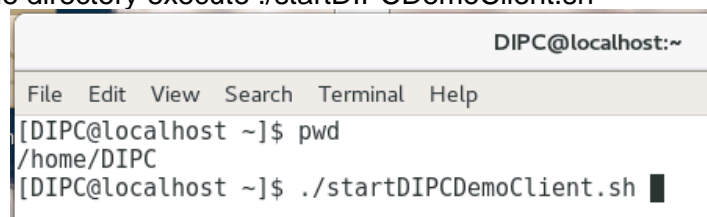
1. This hands-on lab uses a JDBC utility client that was built specifically for this demo. This client is **NOT** part of DIPC, however it does help visualize the Synchronize Data and ODI Execution Job process
2. To start this client open a terminal window in the Ravello Console. If needed press Enter to see the Login window, re-enter the DIPC user password (welcome1) and press Enter or click Unlock



3. Open a Terminal

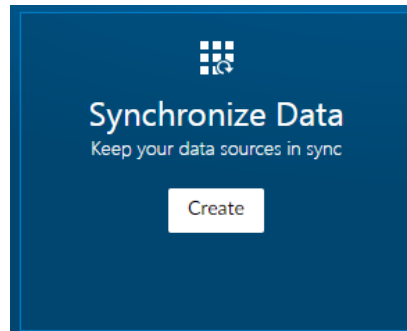


4. From the home directory execute `./startDIPCDemoClient.sh`







5. 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
6. Within the DIPC App Click Home
7. Click Create under Synchronize Data



8. Name your task –Sync Sales Data
9. 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



10. Select your source connection and schema
 - a. Connection: Sync Source
 - b. Schema: DIPC_SRC
11. Select your target connection and schema
 - a. Connection: Sync Target
 - b. Schema: DIPC_TGT
12. 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

Note: If you run into any issues when trying to select a Connection refresh the page manually. The Schemas may take some time to appear as well, this is expected.

Source Configuration ?

Connection *
Sync Source

Schema *
DIPC_SRC

Target Configuration ?

Connection *
Sync Target

Schema *
DIPC_TGT

Advanced Options

☒ Include Initial Load

☒ Include Replication

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

Cancel
Save
Configure Entities
Save & Run

14. The Configure Entities screen helps you create Include or Exclude rules to define precisely which database objects will be moved over 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

Configure Entities Sync Sales Data
Cancel
Save
Save & Run

Source Connection
Sync Source

Source Schema
DIPC_SRC

Available Data Entities
Filter available data entities

Data Entities (18)

OGG_CUSTOMER
+

SNP_CHECK_TAB
+

SRC_AGE_GROUP
+

SRC_CITY
+

SRC_CUSTOMER
+

SRC_ORDERS
+

SRC_ORDER_LINES
+

SRC_PRODUCT
+

SRC_REGION
+

SRC_SALES_PERSON
+

TRG_CITY
+

TRG_COUNTRY
+

TRG_CUSTOMER
+

TRG_EDW
+

TRG_PRODUCT
+

TRG_PROD_FAMILY
+

Selected Data Entities (18)

1
OGG_CUSTOMER

2
SNP_CHECK_TAB

3
SRC_AGE_GROUP

4
SRC_CITY

5
SRC_CUSTOMER

6
SRC_ORDERS

7
SRC_ORDER_LINES

8
SRC_PRODUCT

9
SRC_REGION

10
SRC_SALES_PERSON

11
TRG_CITY

12
TRG_COUNTRY

13
TRG_CUSTOMER

14
TRG_EDW

15
TRG_PRODUCT

16
TRG_PROD_FAMILY

17
TRG_REGION

18
TRG_SALES

Rules

#
Type
String

1
Include
+

Data Integration Platform Cloud: Hands On Lab



15. Leave the Configure Entities settings as-is and click Cancel to go back to the previous screen
16. To better view the Demo Client as well as the DIPC monitoring, try to setup your screen as follows with the Demo Client at the top and the DIPC App below or have the two side by side. It is recommended to use two screens if possible.

DIPC Synchronize Data Task Demo

Source Sales OLTP Data			Replicated Sales OLTP Data	
TABLE_NAME	COUNT		TABLE_NAME	COUNT
SRC_AGE_GROUP	6	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;"> <div style="width: 10px; height: 10px; background-color: yellow; border: 1px solid black;"></div> Initial Load <div style="width: 10px; height: 10px; background-color: green; border: 1px solid black; margin-top: 5px;"></div> Init LD Done </div> <div style="font-size: 2em;">➔</div> </div>		
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

dbSyncTask x Data Integrator Co x

localhost:7003/dicloud/app/dbSyncTask

Home

Agents

Catalog

Jobs

Policies

ORACLE Data Integration Platform Cloud

< Synchronize Data
Cancel Save Save & Run

General Information

Name *

Description

Source Configuration ?

OR

DIPC 18.2.3 | DIPC_18.2.3_JT

Applications Places DIPC Synchronize Data Task Demo

DIPC Synchronize Data Task Demo

Sales OLTP Source Data			Replicated Sales OLTP Source Data	
TABLE_NAME	COUNT		TABLE_NAME	COUNT
SRC_AGE_GROUP	6	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;"> <div style="width: 10px; height: 10px; background-color: yellow; border: 1px solid black;"></div> Initial Load <div style="width: 10px; height: 10px; background-color: green; border: 1px solid black; margin-top: 5px;"></div> Init LD Done </div> <div style="font-size: 2em;">➔</div> </div>		
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

TRG_CUSTOMER Oracle Table 3/20/2018, 12:44:56 PM

SRC_REGION Oracle Table 3/20/2018, 12:44:56 PM

DB Sync Task x Sign In

Not secure | dpc1823-dpc1823jt-2wh4c1gwaw.ravcloud.com:7003/dicloud/app/dbSyncTask#

ORACLE Data Integration Platform Cloud

< Configure Entities Sync Sale-
Cancel Save Save & Run

Configuration Edit

Source Connection Sync Source

Source Schema DIPC_SRC

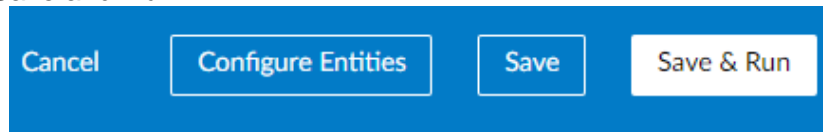
Rules ?

Type	Rule
0	Include SRC*



17. Run Synchronize Data Task

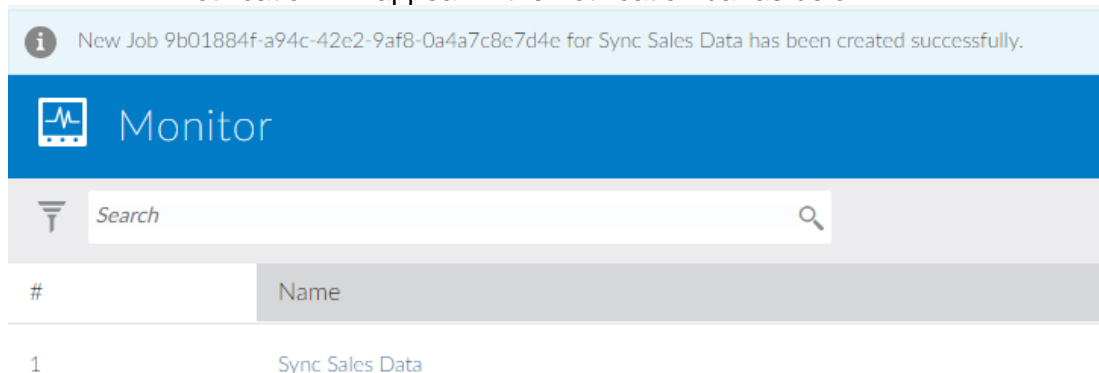
- Click Save and Run



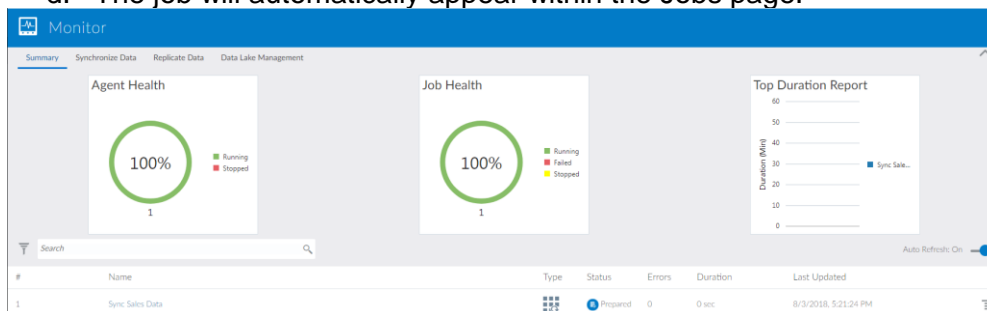
- A notification will appear that the job was saved.

- A new DIPC Job will be created to executed the task.

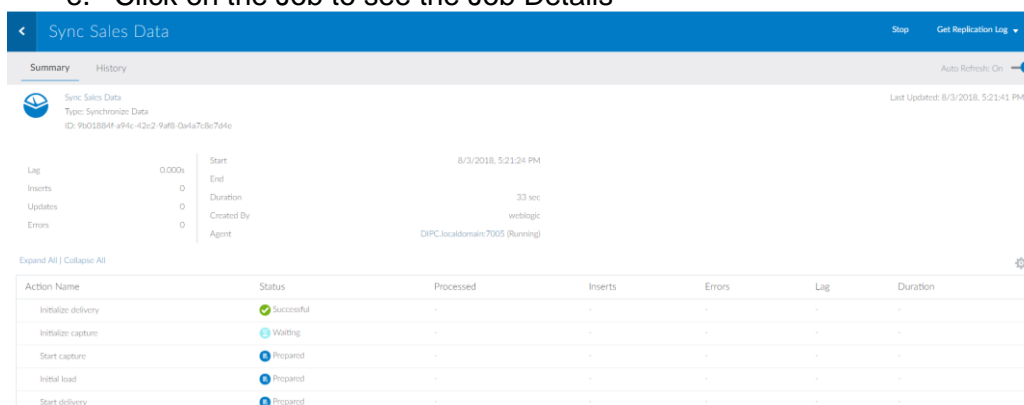
A notification will appear in the notification bar as below:



- The job will automatically appear within the Jobs page.



- Click on the Job to see the Job Details



- Auto-refresh is on, statuses will be updated frequently

- As the job executes, the Initial Load process is created in ODI while DIPC configures OGG for the Source Capture and Target Delivery



- h. As this job executes, the Replicated Sales OLTP Source Data table will be updated in the Demo Client. 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

DIPC Synchronize Data Task Demo

Source Sales OLTP Data		Initial Load	Replicated Sales OLTP Data	
TABLE_NAME	COUNT		TABLE_NAME	COUNT
SRC_AGE_GROUP	6	Initial Load	SRC_AGE_GROUP	0
SRC_CITY	51	Init LD Done	SRC_CITY	0
SRC_CUSTOMER	35		SRC_CUSTOMER	0
SRC_ORDERS	81		SRC_ORDERS	0
SRC_ORDER_LINES	236		SRC_ORDER_LINES	0
SRC_PRODUCT	15		SRC_PRODUCT	0
SRC_REGION	22		SRC_REGION	0
SRC_SALES_PERSON	16		SRC_SALES_PERSON	0

Initial Load Complete

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

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

DIPC Synchronize Data Task Demo

Source Sales OLTP Data		Initial Load	Replicated Sales OLTP Data	
TABLE_NAME	COUNT		TABLE_NAME	COUNT
SRC_AGE_GROUP	6	Initial Load	SRC_AGE_GROUP	6
SRC_CITY	51	Init LD Done	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

- j. 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		Initial Load	Replicated Sales OLTP Data	
TABLE_NAME	COUNT		TABLE_NAME	COUNT
SRC_AGE_GROUP	6	Initial Load	SRC_AGE_GROUP	6
SRC_CITY	51	Init LD Done	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

- k. 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 7 minutes or more)

Sync Sales Data

Summary History

Sync Sales Data
Type: Synchronize Data
ID: 9b01884f-a94c-42e2-9af8-0a4a7c8e7d4e

Last Updated: 8/3/2018, 5:28:52 PM

Lag: 0.000s

Start: 8/3/2018, 5:21:24 PM

End: -

Duration: 7 min 33 sec

Created By: weblogic

Agent: DIPC.localdomain:7005 (Running)

Action Name	Status	Processed	Inserts	Errors	Lag	Duration
Initialize delivery	Successful	-	-	-	-	-
Initialize capture	Successful	-	-	-	-	-
Start capture	Running	0	0	0	3.668s	-
Initial load	Successful	557	557	0	-	181s
Start delivery	Waiting	-	-	-	-	-



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

Initial load	Successful	557	557	0	-	181s
Initial load_PROC	Successful	557	557	0	-	181s
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	-	19s
Procedure:Initial load_PROC:DBLINK_DATAPUMP_ASYNC_METRICS	Successful	557	557	0	-	162s
Procedure:Initial load_PROC:TARGET_ODI_VARIABLE	Successful	0	0	0	-	0s
Procedure:Initial load_PROC:DROP DBLINK	Successful	0	0	0	-	0s

- m. 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

Lag

4,649s

Start

Inserts

462

End

Updates

0

Duration

Errors

0

Created By

Warnings

0

Agent

Expand All | Collapse All

Action Name

Initialize capture

Initialize delivery

Start capture

Initial load

Initial load_PROC

Procedure:Initial load_PROC:DROP DBLINK

Procedure:Initial load_PROC:CREATE DBLINK

Procedure:Initial load_PROC:ODI_VARIABLE

Procedure:Initial load_PROC:DBLINK_DATAPUMP

Procedure:Initial load_PROC:DBLINK_DATAPUMP_ASYNC_METRICS

Procedure:Initial load_PROC:DROP DBLINK

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_dbblink_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,

```

Done



Task 3: Validate DIPC data Synchronization Job

At this point DIPC has created and orchestrated the initial load and the data synchronization process for the OLTP source and operational data store. A new DIPC job is created and executed and can be monitored with the Jobs view.

1. You can also monitor the process by monitoring the DIPC Agent terminal window. You could also monitor the DIPC Managed Server, however there is a lot of detailed information here
2. Click Jobs and refresh until the newly created DIPC Job shows up.
 - a. You should see 5 Actions
3. The DIPC agent is orchestrating this process. Additional details can be seen in the GG logs as well as within ODI Studio.
4. Before doing anything else monitor GG and watch for extracts and replicats to be created and started and RUNNING
 - a. Open Terminal on DIPC host machine
 - b. `cd /home/DIPC`
 - c. Execute `./GGINFO_ALL.sh`
 - d. Ensure both Extract and Replicat are running

```
[DIPC@localhost ~]$ ./GGINFO_all.sh

Oracle GoldenGate Command Interpreter for Oracle
Version 12.2.0.1.170221 OGGCORE_12.2.0.1.00GGBP_PLATFORMS_170123.1033_FBO
Linux, x64, 64bit (optimized), Oracle 12c on Jan 23 2017 23:22:14
Operating system character set identified as UTF-8.

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```

```
GGSCI (localhost.localdomain) 1>
Program      Status      Group      Lag at Chkpt  Time Since Chkpt

MANAGER      RUNNING
JAGENT       STOPPED
EXTRACT       RUNNING      EXT0000    00:00:02     00:00:09
REPLICAT      RUNNING      REPL0000   00:00:00     00:00:06
```

```
GGSCI (localhost.localdomain) 2> [DIPC@localhost ~]$ █
```

5. Once all rows are green in the Demo Client, proceed to next step

Source Sales OLTP Data			Replicated Sales OLTP Data		
TABLE_NAME	COUNT		TABLE_NAME	COUNT	
SRC_AGE_GROUP	6	<div>Initial Load</div> <div>Init LD Done</div>	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



Task 4: Monitor Source Inserts/Updates/Deletes

1. Now that the initial load is complete and the extract/replicat 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.
2. Using the Demo Client click on the "Initial Load Complete" Button.
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. Once the synchronization is done, the target Sales DW schema is updated by a scenario that was created in the Standalone ODI Instance included with DIPC. DIPC and standalone ODI will work hand in hand to implement the end-to-end data flow.

Note: We will be using an ODI Execution Task in the next Lab to kick off the execution of that scenario

Note: If the window is too small through the Ravello Console you can also use VNC to log into the VM. Use your favorite VNC client and enter <Ravello Instance Hostname>:5901 as the URL to connect to.

When prompted enter the password: #DIPCR0CKS#

Note: If you are unable to connect to VNC, you can start vncserver manually on the host using the vncserver command.

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...	

Data Integration Platform Cloud: Hands On Lab




- 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.

DIPC Synchronize Data Task Demo

Source				
ORDE...	STATUS	CUST_ID	ORDER...	CUSTO...
✖ 3	COM	103	1990...	
✖ 4	CLO	104	1991...	
✖ 5	CLO	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				
ORDE...	STATUS	CUST_ID	ORDER...	CUSTO...
3	COM	103	1990-0...	
4	CLO	104	1991-0...	
5	CLO	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 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					Replicated Sales OLTP Data					Target Sales DW								
ORDER_ID	STATUS	CUST_ID	ORDER...	CUSTOM...	ORDER_ID	STATUS	CUST_ID	ORDER...	CUSTOMER	CUS...	PRO...	FIR...	FIR...	LAS...	LAS...	QTY	AM...	PR...
73	CLO	1055	2000-05...		73	CLO	1055	2000-05...										
74	CLO	106	1998-06...		74	CLO	106	1998-06...										
75	CLO	506	1998-07...		75	CLO	506	1998-07...										
76	CLO	507	2001-08...		76	CLO	507	2001-08...										
77	CLO	104	2000-09...		77	CLO	104	2000-09...										
78	CLO	105	2001-05...		78	CLO	105	2001-05...										
79	COM	106	1999-06...		79	COM	106	1999-06...										
80	CLO	107	2000-07...		80	CLO	107	2000-07...										
81	COM	201	2001-05...		81	COM	201	2001-05...										
82	CLO	402	2000-02...	null	82	CLO	402	2000-02...	null									

Replicated Row

ELT with DIPC ODI

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

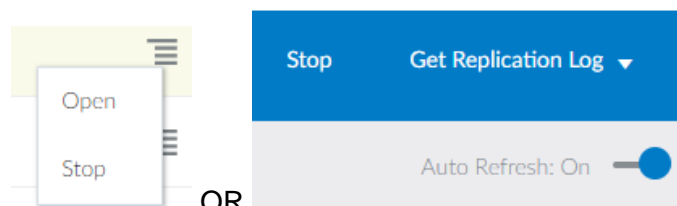
Target Sales DW								
CUS...	PRO...	FIR...	FIR...	LAS...	LAS...	QTY	AM...	PR...

Simulate Inserts

Simulate Updates

Simulate Both

- [Optional] Go to the Jobs page and click on the menu and Stop to stop the Capture and Delivery processes.





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.