

Autonomous Data Warehouse Cloud

Updated: May 23, 2018

Lab 9: Using Oracle Data Sync

Oracle Data Sync is a client tool that uploads data from files, relational tables, and OTBI (Oracle Transactional Business Intelligence) to a variety of Oracle Cloud Services including ADWC.

Oracle Data Sync can connect to over 20 different Databases and other sources, and load data into any Oracle Cloud Service.

Use Data Sync when you want to:

- Load data from a variety of data sources, such as CSV, XLSX, Oracle databases and non-Oracle sources.
- Perform incremental data loads into ADWC.
- Merge data from multiple sources during loading.
- Transform data while loading.
- Schedule the data loads.
- Perform insert-only or append strategies.

In this lab you will use **Data Sync** to load data from an Oracle Database to ADWC.

Objectives

- Configure connection to ADWC using Data Sync
- · Load a table residing in an Oracle Database to ADWC
- Perform incremental data loads into ADWC

Required Artifacts

- The Lab requires an Oracle Autonomous Data Warehouse Cloud subscription.
 - Locate your Cloud Account Name, Username, and Password.
- Access to the Lab VM.
 - Locate the Lab VM's IP Address, User Name and Password
- Connection to a source Oracle Database
 - Locate the Oracle Database User ID and Password provided to you by the instructor for the Data Sync Lab.

Lab Steps

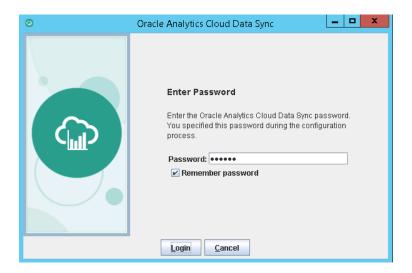
Step 1: Start Data Sync

- Sign in to the Lab VM using the credentials provided to you by the instructor.
- Start Data Sync by clicking on DataSync.bat on the desktop.

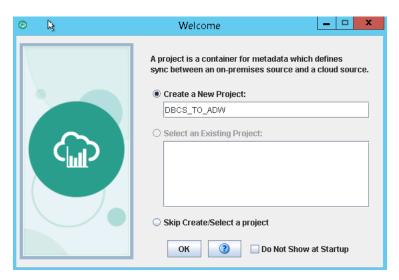


If starting Data Sync for the first time, it will create a **Repository** and will prompt for a Repository Name and a Password. In the Lab environment the Repository is pre-created and the password is saved.

• On the Enter Password pop-up, note that the password has been already entered and saved. Click Login.



• Select Create a New Project, enter DBCS_TO_ADW as the project name and Click OK.



Step 2: Create Connection to ADWC (Target)

In Data Sync, use the **Sources/Targets** dialog in the Connections view to specify connections details for your target database and your source databases. Data Sync loads data from these sources to the target location.

Note: If you're loading data only from data files, for example XLSX or CSV format, then you don't need a connection in Data Sync.

You need to create two connections for this Lab, one for the **Source** Oracle Database, and one for the **Target** Autonomous Data Warehouse Cloud Service Database.

- Create the connection to ADWC which will be the Target.
- Click **Connections** and then click **New**.

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Projects Views To	ols <u>H</u> elp
Connections Pro	oject Jobs
Sources/Targets	
🎦 Ne[3] 🖬 Save	🔂 Undo 📋
Create new n	ecord Co

- In the **New Connection** window enter the following:
 - Name: ADW
 - Type: Oracle (Thin)

	New Connection		x
Name:	ADW		
Туре:	DB2	-	
Option: O Known O Help wi	Generic JDBC MSSQL MySQL Oracle (BICS) Oracle (OCI8) Oracle (Thin) Oracle BI Connector Oracle Service Cloud (RightNow) OK Cancel		

• Do not select any of the **Options** presented. Click **OK**. This will add the ADW Connection.

New Connection X
Name: ADW
Type: Oracle (Thin)
Option: Content of the second
OK Cancel

- Ensuring that ADW is selected in the upper half, enter the following in Edit tab in the lower half:
 - User: ADMIN
 - Password: Enter the **Password** for ADMIN specified earlier
 - Schema/Table Owner (Optional): **ADMIN** (Uppercase)
 - Click on JDBC Driver and enter the following in the pop-up and click OK:

oracle.jdbc.driver.OracleDriver

• This is how your Edit tab should look so far:

Edit Description Advance	d Properties Refresh Dates	
Name:	Connection Type:	User:
Password:	Connection Name:	URL:
JDBC Driver: oracle.jdbc.driver.Oracle ☑	Schema/Table Owner (Optional): ADMIN	Catalog (Optional):
Time Zone:	Source Priority:	

• Next, browse to the following folder in ORACLE_HOME in the Lab VM:

C:\12c_client\product\12.2.0\client_1\network\admin

• View the contents of the tnsnames.ora file.

-) 💿 👻 🛧 🚹 « Windows (C:) 🕨	12c_client ▶ product ▶ 12.2.0 ▶ client_1	▶ network ▶ admin	V C Search ad	min	
	Name	Date modified	Туре	Size	
Favorites Esktop	R	5/1/2018 5:21 PM	File folder		
Downloads	sample	5/2/2018 11:00 PM	SSO File	7 KB	
Recent places	cwallet.sso.lck	5/4/2018 12:02 AM	LCK File	0 KB	
in receive places	wallet.p12	5/2/2018 11:00 PM	Personal Informati	7 KB	
🖳 This PC	ewallet.p12.lck	5/4/2018 12:02 AM	LCK File	0 KB	
E Desktop	keystore.jks	5/2/2018 11:00 PM	JKS File	4 KB	
Documents	jdbc.properties	5/2/2018 11:00 PM	PROPERTIES File	1 KB	
〕 Downloads	sqlnet.ora	5/2/2018 11:01 PM	ORA File	1 KB	
🜗 Music	sqinet1805015PM2546.bak	5/1/2018 5:25 PM	BAK File	1 KB	
崖 Pictures	tnsnames.ora	5/2/2018 11:00 PM	ORA File	37 KB	
📔 Videos	truststore.jks	5/2/2018 11:00 PM	JKS File	4 KB	
🚢 Windows (C:)					

• You may see many connections defined in this file. For each individual ADWC database end point, there should be 3 entries, with each entry corresponding to the database service name for ADWC.

• Locate the service name entries for your ADWC Database, and more specifically the service name that ends with Low. Copy the text starting from "(DESCRIPTION" to the end of connect string.

🔓 tnsnames.ora - Notepad 📃 🗖 🔀	
le Edit Format View Help	
artners_high = (description= (address=(protocol=tcps)(port=1522)(host=adwc.oraclecloud.com))(connect_data=(servi "CN=adwc.uscom-east-1.oraclecloud.com,OU=Oracle BMCS US,O=Oracle Corporation,L=Redwood City,ST=California	^
<pre>artners_Low = (description= (address=(protocol=tcps)(port=1522)(host=adwc.oraclecloud.com))(connect_data=(servic "CN=adwc.uscom-east=1.oraclecloud.com,OU=Oracle BMCS US,O=Oracle Corporation,L=Redwood City,ST=California</pre>	
artners_medium = (description= (address=(protocol=tcps)(port=1522)(host=adwc.oraclecloud.com))(connect_data=(ser "CN=adwc.uscom-east-1.oraclecloud.com,OU=Oracle BMCS US,O=Oracle Corporation,L=Redwood City,ST=California	
	_
00 (S)	<u> </u>
li bi	н

• We need to add the connect string you just copied to the URL text box in the **Edit** tab. Click on **URL** and enter the following in the pop-up:

```
jdbc:oracle:thin:@
```

 Next to the "@" sign, paste the contents that you copied earlier. Your constructed connect string should like below.

Click **OK** to close the URL dialog.

⊙ URL X
Image: Construction of the second s
OK Cancel

• Since the ADWC service requires the use of Wallets, we need to add the location of Wallet Credentials Zip

file to the connection. Click the Advanced Properties tab.

Edit Description	Advanced Prop	erties Refresh Date	S	
Name: ADW		nection Type: de (Thin)	•	User: ADMIN
Password:	Conr	nection Name:		URL:
JDBC Driver: oracle.jdbc.driver.Or		ema/Table Owner (Optic IN	nal): 🛃	Catalog (Optional):
Time Zone:	Sour	ce Priority:		

• Click on Advanced JDBC dirver Properties as below:

Edit Description Advanced Properties Refresh Dates Save Cold to Description Search Agreena 3 2 of 6 2 2 2 3				
Name	Value			
Enclose object names				
Additional JDBC driver Properties				
Number of records to read at a time	5000 🗄			
Use database merge for upsert	true			
Number of rows for triggering database merge	1000000			
Use global temporary tables for merge	true			

 In the pop-up window, enter the location of cwallet.sso, which in our case is %ORACLE_HOME%/network/admin (from Lab 2). Enter the following in the pop up box:

oracle.net.wallet_location=file:C:\12.1_client\network\admin

• Enter OK.

Value				
oracle.net.wallet_location=file:C:\12.1_client\network\admin				
OK Cancel				

• Click **Save** to save the changes.

Edit	De	scription	Advanced P	roperties	Refre	sh Dates
🖬 S	ave	🗗 Undo	>> Search	D Refres	h 🕐	

• Test the connection. Click on the Edit tab and click Test Connection.

Edit Description Advance	d Properties Refresh Dates		
Name:	Connection Type: Oracle (Thin)	-	User: ADMIN
Password:	Connection Name:		URL: idbc:oracle:thin:@(descri 🗹
JDBC Driver: oracle.jdbc.driver.Oracle 🗹	Schema/Table Owner (Optional): ADMIN		Catalog (Optional):
Time Zone:	Source Priority:		
Save	Test Connection		Undo

• You should get a Connection Successful! message. Click OK.

Q	Connection Successful!
	Connectivity Information: Database: Oracle Database 18c Enterprise Edition Release 12.2.0.1.0 - 64bit Production JDBC Driver: Oracle JDBC driver Version: 12.2.0.1.0
	ОК

Step 3: Create Connection to the Oracle Database (Source)

The **Source** Database used in this lab resides on an preconfigured **Oracle Database Cloud Service** (DBCS) instance in the Oracle Cloud. The schema used as the source for this lab has been prepopulated with sample data. The connection to the DBCS source has been preconfigured as **DBCS**.

• From the **Connections** tab, click on **DBCS** in the **Sources/Targets** section.

Connections	ct Jobs			
Sources/Targets				
🎦 New 🗖 Save 🦌	🕽 Undo 📺 Delete 🎾 Searc	ch 🔮 Refresh 🔇		
Name	Connection Type	User	Connection Name	URL
ADW	Oracle (Thin)	ADMIN		jdbc:oracle:thin:@(description= (a 🛃
DBCS	Oracle (Thin)	USER_XX		jdbc:oracle:thin:@(DESCRIPTION 🛃
File source	File source			
TARGET	Oracle (BICS)			

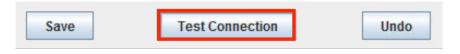
- Click the Edit tab towards the bottom half of the window and enter the following:
 - User: User ID (Supplied to you by the instructor)
 - Schema/Table Owner (Optional): User ID (same as above)
 - Do not change the password as the password has been saved already
- In the screenshot below, observe that the User ID used is USER_02 (Replace this with your own).

	}		
Edit Description Advance	d Properties Refresh Dates		
Name:	Connection Type: Oracle (Thin)	User:	
Password:	Connection Name:	URL: idbc:oracle:thin:@(DESCR]	
JDBC Driver: oracle.jdbc.driver.Oracle 🛃	Schema/Table Owner (Optional): USER_02	Catalog (Optional):	
Time Zone:	Source Priority:		
Save	Test Connection	Undo	

• Click Save.

Sources/	Targets						
🎦 New	🖬 Save	卢 Undo	Delete	🞾 Search	😰 Refresh	?	

• Click **Test Connection** to validate your connection.



0	Connection Successful!
D 0 W a JI 0 V	Connectivity Information: Database: Dracle Database 12c EE Extreme Perf Release 12.1.0.2.0 - 64bit Production Vith the Partitioning, Automatic Storage Management, OLAP, Advanced Analytics and Real Application Testing options DBC Driver: Dracle JDBC driver (ersion: 2.2.0.1.0
,	ОК

• You have now successfully configured the connections to both the Source DBCS and the Target ADWC.

Step 4: Configure Data Load Options on the Source Tables

 First we need to add tables from the Source database. Select the Project tab and click on DBCS_TO_ADW project that was created in Step 1.

Projects Views	<u>T</u> ools <u>I</u>	lelp				
Connections	Project	Jobs		DBCS_TO_ADW	-	🕑 Run Job
Source Data	Target Ob	jects	P	DBCS_TO_ADW		ing Parameters

If you do not see the **DBCS_TO_ADW** Project, you need to create it by clicking on **Projects -> New**. Enter the details specified in **Step 1** of this Lab.

• Under Source Data click on Data from Object(s).

Source Data	Target C	bjects Pre/Post SQL Processing Parameters		ameters	Project Su	mmary		
🗐 Data From (🖹 Data From Object(s) 🕻 Manual Entry 📑 New Target Object 📳 Update Definition		🖬 Save					
	Import d	lata from	objects					1

• In the pop-up box choose **DBCS** as the source. Click **OK**.

(Ð
	Projects, Views Tools Help
0000000000	Connections Project Jobs DBCS_to_ADW Run Job
ſ	Source Data Target Objects Pre/Post SQL Processing Parameters Project Summary
	🖹 Data From Object(s) 🏂 Manual Entry 😭 New Target Object 👔 Update Definition 🖬 Save
	Select Source
	Select Source DBCS ▼
	OK Cancel

- Select Discover objects by listing. Click OK.
- In the **Import Definitiion** pop-up, click **Search** to get a listing of all tables in the Schema.
- All tables in the schema will be listed. Click **Select All** and then **Import**. This will import the table definitions to the Data Sync repository.

Import Definition into DBCS_TO_ADW	X
Source Filter	
Name	Import Definition
WORKSHOP_BIG1	V
WORKSHOP_DUP	V
WORKSHOP_SMALL	V
Output Format: Relational	
Search Select All Invert Import Cancel	

• Click **OK** when prompted with the below message:

Message	x
DATA EXTRACT:	
Source Objects may contain a lot of attributes, not all of the attributes will be needed for analysis.It is advised that only those attributes that are needed for analysis are loaded into target.	
You should consider defining indexes as necessary for relational type targets to improve the performance of reporting.	=

* Object	

	-
ОК	

• Wait for the tables to be imported.

Import Definition into DBCS_TO_ADW	x
Source Filter DBCS List	
Importing Objects	Import Definition
WORKS Please wait	N N
Output Format: Relational Search Select All Invert Import Cancel	

• All the 3 tables will appear in Data From Object(s).

Oracle Analytics Cloud Data Sync (Workshop_repository)
Projects Views Tools Help
Connections Project Jobs DBCS_TO_ADW V IN Run Job
Source Data Target Objects Pre/Post SQL Processing Parameters Project Summary
📄 Data From Object(s) 💉 Manual Entry 😭 New Target Object 🔀 Update Definition 🖬 Save
PluggableObject.WORKSHOP_BIG1
PluggableObject.WORKSHOP_DUP
PluggableObject.WORKSHOP_SMALL
Edit Description Columns Targets Attributes
Name:
ableObject.WORKSHOP_BIG1
· · · · · · · · · · · · · · · · · · ·
Save Undo

- Next, set the strategy for loading duplicate rows. Let the strategy be that we eliminate duplicate rows during the load and insert only unique rows based on **User Keys** column **OBJECT_ID**.
- Click on **WORKSHOP_DUP** table and then the **Target** tab in the lower half of the window.
- Double click on Load Strategy.
- Check Remove duplicates, Update table, add new records and Update existing records as show below:



• The Update table option selected earlier allows incremental loading on the table.

Incremental loads are based on a date/timestamp filter column. **Data Sync** records the time of the previous run and filters on a date column to pick rows that are greater than the recorded time.

- Click OK.
- Configure the incremental load options on the Incremental Settings pop-up. Under the User Keys tab, choose OBJECT_ID and click ">>". OBJECT_ID will be the unique id based on which duplicate columns will be removed.

0	Incremental Settings	x		
User Keys Filters Columns: CREATED DATA_OBJECT_ID EDITIONABLE EDITION_NAME GENERATED LAST_DDL_TIME NAMESPACE OBJECT_NAME OBJECT_TYPE ORACLE_MAINTAINED OWNER SECONDARY SHARING STATUS SUBOBJECT_NAME TEMPORARY TIMESTAMP	User Key Column(s): OBJECT_ID			
OK Cancel				

• Click the **Filters** tab, choose **LAST_DDL_TIME** and click >> . If rows are updated on the source table, Data from the table will move be loaded to Target if the **Filter** column is updated as well.

© Incr	remental Settings	x
User Keys Filters		_
Columns:	Filter Column(s):	
CREATED	LAST_DDL_TIME	
	>>	
	<<	
	· · · · · · · · · · · · · · · · · · ·	
	OK Cancel	

- Click OK.
- A pop-up will suggest that building additional indexes can improve performance of incremental loads. Click **Ignore** to ignore the suggestion for now.

Message
An index on user key columns can help in improving incremental load performance. Would you like to register such an index?
WORKSHOP_DUP_AU1 UNIQUE: true BITMAP: faise NUM UNIQUE COLUMNS: 1 COLUMNS:
OBJECT_ID:1:Asc
Create Index Ignore

• Similarly, you can navigate to the other tables and investigate the load stratergy.. By default all tables will

have a replace data in table option set.

Step 5: Run the Initial Load

• Create a new **Job** that will load the tables you have just defined. Click on **Run Job** at the top.

Projects Views	Tools H	elp			
Connections	Project	Jobs	DBCS_TO_ADW	•	▶ Run Job

- Since this is the first Job we like to run, a **New Job** window will pop-up.
- Uncheck the Drop/Create Indexes checkbox. Checking this column will attempt to create a unique index to speed up de-duplication. Click Next.

0	New Job	x
Job name:	DBCS_TO_ADW-Job1	
Number of Retries		
Number of Parallel Tasks	10	
Cloud Connection		-
Drop/Create Indexes		
🗌 Analyze Objects		
[Next> Cancel (2)	

IMPORTANT If you forget to uncheck this option, Data Sync will try to create an unique index in Target ADWC to speedup incremental loading. However since ADWC currently does not support the creation of indexes, You will see an error in the **Job Details**

• For the Target datasource, choose your ADW connection. Click Finish.

0	New Job	x
For any or all of the data sources	, select a data source as an override for the instar	ice.
Data Source	Override With	
DBCS		
TARGET		•
	ADW	
	DBCS	
	File source	
	TARGET	
<back< td=""><td>Finish Cancel 3</td><td></td></back<>	Finish Cancel 3	
-bach		

• Your first job is being compiled and run.

0	Oracle Ar	nalytics Cloud Data Sync (W	orkshop_reposi	tory)		_ 🗆 X
Projects Views Tools Help						
Connections Project Jobs DBCS_TO_ADW V L Run Job						
Jobs Schedules Runs						
🕑 Restart 🧔 Abort 🖬 Save 🏹 Un	to 🎾 Search 🔮 Refresh 🗿					1 of 1
Process ID Execution Plan Name	#Completed/Failed/Total	Duration	Run Status	Start Timestamp	End Timestamp	Status Description
25446182 DBCS_TO_ADW-Job1		10 sec(s) Running	5/19/18 11:01:34 PM		Executing steps. 🛃
Edit Description Tasks Audit Trai		•				0 of 3
Depth Name	Mode Duration Stage	Rows Successful Rows Fa	iled Rows Tas	k Status Status Des	scription Start Tir	mestamp End Timestamp
0 CR_WORKSHOP_DUP_FROM_D		0	0 Runni		5/19/18 11	
0 CR_WORKSHOP_BIG1_FROM_D		0	0 Runni		5/19/18 11	
0 CR_WORKSHOP_SMALL_FROM	Source : FULL T 5 sec(s)	0	0 Runni	ng	5/19/18 11	1:01:40 PM

• In a few seconds, your Job will complete and you will observe the following three tasks in the lower **Tasks** tab:

	s <u>H</u> elp										
onnections Proje	ect Jobs DBCS_T	TO_ADW 👻 🕨	Run Job								🏟 (0) 🔫
s Schedules	Runs										
Restart 🙆 Abor	t 🖬 Save 🛃 Undo) 🎾 Search	过 Refresi	1 3							1 of
ocess ID	Execution Plan Name	#0	Completed/i	ailed/Total	Du	ration	Run Status	Start Timestam	p End Timestar	np Statu:	Description
25446182 DBCS	TO ADW-Job1			3 (100%) / 0 (0%	6)/3 2	min(s), 12 sec(s)	Completed	5/19/18 11:01:34 PM	5/19/18 11:03:47	PM	Finished
th	Name	Mode	Duration	Stage Rows	Successful Rows	Failed Rows	Task Status	Status Description	Start Timestamp	End Timestamp	Source Data
0 CR_WORKSHO	P_DUP_FROM_D S	ource : FULL T	2 min(s),	3512997	3512997	0 0	Completed S	Successfully comple	5/19/18 11:01:40 PM	5/19/18 11:03:42.	DBCS
	P_BIG1_FROM_D S			3512998	3512998				5/19/18 11:01:40 PM		
			42 cac(c)	87825		00	Completed S	Successfully comple	E/10/10 11:01:40 DM		
0 CR_WORKSHO	DP_DUP_FROM_D S	ource : FULL T	2 min(s), 2 min(s),	3512997	3512997	0 0	Completed S Completed S	Successfully comple	5/19/18 11:01:40 PM	5/19/18 11:03:4 5/19/18 11:03:4	42 47

- You have now successfully loaded the 3 tables.
 - WORKSHOP_BIG1 has about 3.5 million rows and is about 500 MB in size.
 - WORSHOP_SMALL is a small table with about 87K rows.
 - **WORKSHOP_DUP** has about 3.5 million rows in the source, but only about 87K rows in target as we had opted to eliminate duplicate rows.

Edit Description Audit Trail						
🖬 Save 🕢 Undo 🎾 Search 🔮 Refresh 💷 Details ③ 🛛 All 🔍						
Depth	Name	Mode	Duration	Successful Rows		
0	0 CR_WORKSHOP_BIG1_FROM_DBCS-Pluggab Source : FULL Target : FULL 2 min(s), 51 351027					
0	CR_WORKSHOP_SMALL_FROM_DBCS-Plugg	Source : FULL Target : FULL	29 sec(s)	87757 :		
0	CR_WORKSHOP_DUP_FROM_DBCS-Pluggab	Source : FULL Target : FULL	1 min(s), 41	87757		

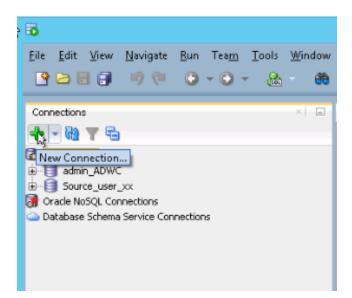
A single project can have multiple jobs. Usually, you would configure a single project to load a single Target, but the Sources can be multiple.

Step 6: Run the Incremental Load

One of the use cases for **Data Sync** is to keep the ADWC service in sync with on-prem or other cloud services.

In the previous step, the **Load Strategy** for **WORKSHOP_DUP** table was set to support incremental loads. We will load additional rows on the WORKSHOP_DUP table and use Data Sync to replicate the new rows to ADWC.

• Start **Oracle SQL Developer** and Click on **New Connection** to create a new Connection to the Oracle Database.



- In the **New/Select Database Connection** pop-up click on the previously saved **Source_User_XX** connection in the left pane.
- Change the username from USER_XX to your assigned User name. Keep the same password.
- Click Test. If the connection is successful, Status : Success will appear on the lower left of the pop-up.
- Click Save and confirm Yes to overwrite the connection.

6	N	ew / Select Dat	abase Conn	lection			x
Connection Name	Connection Details	Connection Name	Source_user_xx	<			
admin_ADWC	admin@partners_low		USER_04				
Source_user_xx	USER_01@//129.146	Password		Connec	ction Name	in use	
		Save Passwor Oracle	1	Connection Name	already used. C	Confirm to ove	erwrite
		Connection Type		<u>Y</u> e:	5	No	Cancel
		Port SID	1521				
			adw_wkshop.b	aremetalcloud.net	vork.com		
Status : Success		OS Authentic	ation 🗌 Kerbe	ros Authentication	Advanced.		
Help		Save	⊆lear	∐est	Connect		Iancel

- Next, Click Connect and new SQL Workheet will open.
- Run the script below to update and commit the rows.

```
UPDATE WORKSHOP_DUP
SET LAST_DDL_TIME=SYSDATE
WHERE OBJECT_ID BETWEEN 300 AND 400;
```

COMMIT;

3 Start Page × Amin_ADWC × Amin_Source_user_xx ×	
📡 📃 🗃 👻 🎘 🗟 🔯 🗟 🏦 🏈 🗔 🔩 0.64600003 seconds	
Worksheet Query Builder	
UPDATE WORKSHOP_DUP SET LAST_DDL_TIME=SYSDATE WHERE OBJECT_ID BETWEEN 300 A COMMIT;	ND 400;
Script Output ×	
4,040 rows updated.	
Commit complete.	

- We have now simulated some incremental data change in the source. The source table has about 3.5 million rows. The update modifies about 4K rows.
- Now switch to **Data Sync** and click on **Jobs** then on **Run Job**.
- Click OK on Run Job pop-up.

0	Oracle
Projects Views Tools Help	
Connections Project Jobs D	BCS_TO_ADW 👻 🕨 Run Job
Jobs Schedulęs Runs	
New 🖬 Save 🞝 Undo 🏢 D	Run Job
Name	Po you want to run the job "DBCS_TO_ADW-Job1"?
DBCS_TO_ADW-Job1	
	OK Cancel

• Wait for your Job to Complete.

Projects Views Tools Help Connections Project Jol Jobs Schedules Runs	s DBCS_TO_ADW V	🕨 Run Job]							
Jobs Schedules Runs	s DBCS_TO_ADW -	🕨 Run Job								
										🏟 (0) 🔫
🕑 Restart 🥑 Abort 🗖 Sa	ve 👩 Undo 🎾 Searc	:h 🔮 Refresl	h 🕐							10
Process ID Execution	Plan Name	#Completed/I	Failed/Total	Du	ration	Run Status	Start Timestamp	End Timestan	np Status	Description
25446221 DBCS_TO_ADV	Job1				27 sec(s)	Running	5/19/18 11:40:32 PM		E	xecuting steps.
25446182 DBCS_TO_ADV	Job1		3 (100%) / 0 (09	6)/3 2	min(s), 12 sec(s)	Completed	5/19/18 11:01:34 PM	5/19/18 11:03:47	PM	Finished
🖬 Save 🧑 Undo 🎾 Sear	:h 🔁 Refresh 📑 Deta	nils 🕐 All	-							0 0
Depth Name	Mode	Duration	Stage Rows	Successful Rows	Failed Rows	Task Status	Status Description	Start Timestamp	End Timestamp	Source Data
0 CR_WORKSHOP_SMAL	_FROM Source : FULL	T 23 sec(s)		0	0 F	tunning	E	5/19/18 11:40:37 PM		DBCS
0 CR_WORKSHOP_DUP				0	0 F	tunning		5/19/18 11:40:37 PM		DBCS
0 CR_WORKSHOP_BIG1	FROM_D Source : FULL	T 23 sec(s)	0	0	0 F	tunning		5/19/18 11:40:37 PM		DBCS

• Ensure that the **Tasks** tab is selected on the lower half of the window and observe 4040 rows were updated in the **Incremental** mode. The other two tables were appended with additional rows as the incremental settings were not in effect.

0				Oracle An	alytics Cloud Da	ata Sync (Worl	shop_reposit	ory)			- 🗆 X
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• Click on the row that was loaded with Increamental Target Mode and click on Details.

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• Observe other details on the Import Job, including **Duration**, **Throughput** and **Errors**.

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• You have successfully moved data from source DB to ADWC and configured the Job to do incremental loads to ADWC.