Oracle to DB2 Warehouse on Cloud Migration

Introduction	. 1
Database schema / objects migration	1
Database data migration	1
Database Migration Tutorial	. 2
Schema migration	3
Create a project in DCW	3
Adding database connection	3
Source Schema Extraction	4
Schema Compatibility Evaluation and Conversion	5
Deploying schema to target Db2 Warehouse on Cloud	7
Data migration	9
Extracting source data	9
Loading data to target Db2 Warehouse on Cloud	11
Conclusion	15
Related links	16

Introduction

Migration from Oracle to DB2 on Cloud have never been easier. This tutorial shows the steps required to migrate an Oracle database to Db2 Warehouse on Cloud. The major steps in database migration are database schema/objects migration and database data migration.

Database schema / objects migration

This step involves migrating schema and objects such as Tables, Views, Stored procedures and any other database objects. While most of the schema from Oracle is compatible to Db2 Warehouse on cloud, it needs to be evaluated and converted to be able to successfully deploy on Db2 cloud.

Database data migration

This step involves moving data from source tables to target database. Data needs to be unloaded from source database and loaded to target database.

Database Migration Tutorial

As a part of tutorial, we are migrating a sample schema from Oracle on prem to Db2 Warehouse on cloud. We will show how easy it is to migrate using IBM tools.

This tutorial assumes that you already have an IBM Cloud account and have provisioned Db2 Warehouse on Cloud service. While provisioning Db2 Warehouse on Cloud, make sure you had requested the database to be created in Oracle compatibility mode.

Oracle Co	ompatibility Configuration:
Choose thi	s option if you require Oracle compatibility
O YES	⊖ NO

Log on to the console and review the database you have on cloud. Also note down the connection configuration of Db2 Warehouse on Cloud by navigating to CONNECT -> Connection Information. This information is required to connect to the database.

HOME	
✓ MONITOR	
✓ ADMINISTER	
RUN SQL	
✓ LOAD	
LIFT TO CLOUD	1
✓ HIGH AVAILABILITY	
✓ ANALYTICS	
✓ SETTINGS	
▲ CONNECT	
Connection Information	
Download Tools	
✓ HELP	
HELP BN Do Weekows Consection Records Records Records Records Records	Decover Connection configuration resources
HELP MA Dod Worknow Brange: to% Contentional Networknow f Contentional Networknow f Contentional Networknow f Contentional Network Contentional N	Discour Connection configuration resources Hort name: dx2-mp/sa bn.com Pre namedre: 800 Ore 0 Lasters Pauro:: Lasters Pauro:: Competition with DitU. Work: 11 or lary Wrens:: Competition with DitU. Work: 11 or lary
HELP MID 20 Workcare El Booge 5% Contest-Contes	Decorr Connection configuration resources More man
HELP MI DO Warkow Garges to: Garges to: Contestinae Data Planage Tomest Ing_data_server_data package_linext(.tar.gs free garges to garges	© Decore Connection configuration resources More name: d0-mp to bin com Port nuter: 8000 Declars name: 80
HELP MI 021 Workstow Dange, 50% Contestional State Processing Contestional State Contestind Contestiona State Contestin Contestio	Connection configuration resources Konnection configuration resources More memilie 6001 Deacher 900
HELP MO 00 Workson Strage: 0% Str	Connection configuration resources More mene: de orrespe brucon Docker More mene: de orrespe brucon Docker More information Compatible for Dockers More information Dockers More information Configuration for Dockers More information Configuration Configur

We are using IBM Database Conversion Workbench (DCW) tool to help us migrate from Oracle to Db2. This tool can be downloaded freely with IBM id.

For our tutorial, we have installed IBM DCW v4.0.35 on Windows.

This tutorial consists of two steps

- 1. Schema migration
- 2. Data migration

Schema migration

The schema from source database needs to be evaluated for any modifications needed before deployment to target database. Fortunately, as Db2 Warehouse on Cloud is running in Oracle Compatibility mode, most of the schema can be deployed with minimal modifications. To figure out exact modifications needed, use IBM's DCW tool to evaluate.

Create a project in DCW

Launch IBM Database Conversion Workbench and create a DCW project as shown. Give a name and make sure you have selected target as "IBM DB2 Warehouse"

		Search	Project	Run	Window He	lp			
	New				Alt+	5hift+N>	3	DCW Proje	ect
	Open File							Project	
	Close					Ctrl+W	C ²	Folder	
	Close All				Ctrl+S	ihift+W	Ľ	File	
	Save					Ctrl+S		Other	Ctrl+N
	Save As								
0	Save All				Ctrl+	Shift+S			
	Neven								
	Move					52			
s	Refresh					FS			
÷.	Convert Line De	limiters To				÷.,			
	Print					Ctrl+P			
-	Culture Manhana					- Current	Ŀ		
	Restart	ue .							
~	Import						1		
200 3.0	Export						1		
-	Properties					L. Enter	Ŀ		
	t de les les					-uker			
	1 dm.log (DCW)	_demo/Dat	a Movem	ient/lo	gs]				
	3 Demo rol (DC)	u Mu					H		
	4 Demo_convert	ed.sql [DC	w]						
	Fuit								
_	V U BLOOD		_						
	New DCM Res								
-	New DCW Proj	ect						- 1	×
San Cre	New DCW Proj	ect base Co	nversi	on Pi	roject		_	- 1	X
Cre Sp	New DCW Proj Pate a Datab recify the prope	ect base Co rties of the	nversie new pro	on Pr	roject			- 1	DCW
Sp	New DCW Proj sate a Datak ecify the prope	ect Dase Co rties of the	nversie e new pro	on Pr	roject			- 1	
Cre Sp Pr	New DCW Proj eate a Datat ecify the prope	ect case Co rties of the CW_	nversio e new pro	on Pr	roject			- 1	DCW
Cre Sp Pr	New DCW Proj Pate a Datat ecify the prope	ect base Co tties of the CW.]	nversi t new pro	on Pr	roject			-	
Sp Pr	New DCW Proj pate a Datat ecify the prope oject name: D Use default lo	ect base Co rties of the CW.] cation	nversii e new pro	on Project.	roject			-	
Sp Pr Lo	New DCW Proj eate a Datab ecify the prope oject name: D] Use default lo ication: Cr\Use	ect pase Co tries of the CW.] cation ers\Lorri-a	nversid e new pro	on Project.	roject	ull_Client	Win	- do Br	DCW)
Sp Pr Lo	New DCW Proj eate a Datab ecify the prope oject name: D] Use default lo ication: Cr/Use	ect pase Co ties of the CW.] cation trs\Lorri-a Oracle	nversi e new pro	on Project.	roject	ull_Client	Win	- do Br	
Pr Sp Lo So	New DCW Proj eate a Datab ecify the prope oject name: D guest default to ication: Ci\Use purce database:	ect pase Co rties of the CW.] cation ers\Lorri-a Oracle	nversie e new pro	on Project.	roject	ull_Client	Win	de Br	
Pr Pr Ecce Sp Cre Sp Cre Sp Cre Sp Ta	New DCW Proj sate a Datat secify the prope oject name: D] Use default lo kcation: C:\Use surce database: rget database:	ect pase Co rties of the CW.] cation trs\Lorri-a Oracle DB2 on C	nversie e new pro	on Project.	roject	ull_Client	Win	do Br	DCW DCW
Pr Sp Lo Ta	New DCW Proj pate a Datat pate	ect pase Co ties of the CW.] cation ers\Lorri-a Oracle DB2 on C	nversie e new pro	on Pr	roject s\IBM_DCW_F	ull_Client	Win	do Br	DCW)
Pr Pr Cre Sc Ta	New DCW Proj pate a Datat ecify the prope oject name: D } Use default lo castion: CAUse nurce database: rget database	ect pase Co ties of the CW.] cation ers\Lorri-a Oracle DB2 on C	nversie e new pro	on Project.	roject AIBM_DCW_F	ull_Client	Win	do Br	
Pr E Sc Ta	New DCW Proj pate a Datab ecify the prope oject name: D] Use default lo custion: CAUse surce database: rget database:	ect pase Co rties of the CW.] cation ers\Lorri-a Oracle DB2 on C	nversie nn\Down	on Project.	roject :\IBM_DCW_F	ull_Client	Win	do Br	
Pr Pr E Sc Ta	New DCW Proj pate a Datat ecify the proper oject name: D] Use detault lo kication: Cr\Use surce database:	ect pase Co rties of the CW.] cation ers\Lorri-a Oracle DB2 on C	nversi e new pro-	on Project.	roject s\IBM_DCW_F	ull_Client	Win	de Br	
Pr Sp Lo So Ta	New DCW Proj pate a Datab ecify the prope oject name: D j Use default b succession: CAUse nurce database:	ect pase Co rties of the CW.] cation ers\Lorri-a Oracle DB2 on C	nversie e new proven	on Project.	roject AIBM_DCW_F	ull_Client	Win	do Br	
Pr Sp Lo So Ta	New DCW Proj pate a Datat eccify the prope oject name: D 3 Use default lo Purce database: rget database	ect base Co cties of the CCW cation tes\Lorri-a Oracle DB2 on C	nversie e new proven	on Project.	roject	ull_Client	_Win	de Br	
Pr Sp Lc Sc Ta	New DCW Proj pate a Datat excity the prope oject name: D] Use default lo custion: CAUse surce database: rget database	ect Pase Co Cw] cation ers\Lorri-a DB2 on C	nversie e new pro-	on Project.	A/BM_DCW_F	v.	_Win	do Br	
Pr Pr Cre Sc Ta	New DCW Proj pate a Datat celfy the prope oject name: D j Use default lo incation: CAUse purce database:	ect Pase Co CW Cation Oracle DB2 on C	nversie e new pro- nn\Down Cloud	on Project.	roject	v.	Win	do Br	DCW DCW
Pr Sp Ltc Ta	New DCW Proj parte a Datati excity the prope oject name: D } Use default lo CAUse nurce database: rget database:	ect vase Coo CW] cation oracle DB2 on C	nversie en new pro- nn\Down	on Project.	noject	v Fin	Win	do Br	

Adding database connection

Add a connection to source database in Data Source Explorer. Right click on Database Connections and click New... The wizard will guide you on adding a connection. You may need to install proper drivers for successful connection. Refer to the included Cheat Sheet for detailed instructions.



Source Schema Extraction

You can use DCW's Extract DDL functionality to extract source schema or you can import the schema file using 'Import SQL Files..', if you had used third party tools to generate schema.



For this tutorial, we are extracting sample schema present in source database.



For simplicity, we will select just Tables as DDL objects for schema extraction.

🚤 Generate DDL			×
DDL Objects		P	
Select the objects to be extracted and the DDL .sql file name. Please use a file name containing alphanumeric characters.		U	
Generate:			1
Comments Clustered Indexes and Tables Database Links Dimensions Directories Functions Indexes Java Sources Ubraries Materialized Views Materialized Views Package and Package Bodies P Procedures Sequences Synonyms Tables Tablesaces Tiggers Types Views			
Select all [Deselect all		
Save DDL file in DCW project:			
Demo/Demo.sql		Brow	se
Extract storage and tablespace clauses for tables, indexes and Open DDL for editing Add NOT NULL to column with primary key constraint	materialized vi	ews	
Kext > Fin	nish	Cance	

The .sql file will now be available under your DCW project. You can open the sql file for editing.

Schema Compatibility Evaluation and Conversion

Now let's evaluate the schema for compatibility. Right click on the schema sql file and select Database Conversion -> Evaluate Compatibility.



This will generate a html report with details of compatibility.

91.3 [™]	Overall Summary	
Excellent	0 out of 0 PL/SQL statements are compatible.	
Oracle IBM Db2 Warehouse	 42 out of 46 (91.3 %) SQL statements are compatible. 2 SQL features not supported (See details) 	
Summary PL/SQL evaluation \$	QL evaluation BLU evaluation Unrecognized syntax Statistics	
SQL features not support 2 SQL features are not supported by the targe	ted	
Feature	Description	Count
CREATE DATABASE LINK NOT SUPPORTED	Create database link is not supported as it is, instead DB2 federation can be used to access remote database.	1
GRANT STATEMENTS ARE NOT SUPPORTED	GRANT statements have inconsistent behavior on DB2; thus grant statements are commented out.	3
SUPPORTED	9	

SQL features that can be converted automatically

Here we see the SQL file is about 91% compatible. Even though we had selected just tables before, few tables related objects are also extracted. However, if it's not fully compatible, it will show things which need attention. Look at the incompatibility's found.

In above case, we find that "Create Database Link" sqls and "Grant Statememt" sqls are incompatible. So, we open the sql file for edit and comment out the statements or take necessary steps to fix them. In this case the incompatible statements are commented out.

[DDL_EXTRACTION] OBJECT_TYPE "ROLE"
[DDL EXTRACTION] OBJECT TYPE "GRANT ROLE"
[DDL EXTRACTION] OBJECT TYPE "GRANT TABLE"
[DDL EXTRACTION] OBJECT TYPE "GRANT COLUMN"
[DDL EXTRACTION] OBJECT TYPE "GRANT SYSTEM PRIVILEGES"
GRANT CREATE TABLE TO "GGF21215";
GRANT UNLIMITED TABLESPACE TO "GGF21215";
GRANT CREATE SESSION TO "GGF21215";
[DDL_EXTRACTION] OBJECT_TYPE "TABLE COMMENT"
[DDL EXTRACTION] OBJECT TYPE "COLUMN COMMENT"
[DDL EXTRACTION] INFO "Additional Objects"
[DDL EXTRACTION] OBJECT TYPE "DIMENSION"
[DDL_EXTRACTION] OBJECT_TYPE "JAVA SOURCE"
[DDL_EXTRACTION] OBJECT_TYPE "DATABASE LINK"
CREATE PUBLIC DATABASE LINK "REMOTE.FYRE.IBM.COM" using 'nopassword' ;
[DDL EXTRACTION] OBJECT TYPE "DIRECTORY"

Then we re-run the evaluation again, you should get 100% compatible.

Compatibility Re	port			IBM.
1000.0% • Excellent oracle IBM Db2 Warehouse	Overall Summary o out of 0 PL/SQL staten 2 22 out of 22 (100.0 %) SC	ients are compatible. IL statements are comp	atible.	
Summary PL/SQL evaluation SQL eval	uation BLU evaluation Unr	ecognized syntax Stati	stics	
Summary for PL/SQL stateme	ents			
Object Type	Total Count	Requires Attention*	% Requires Attention	
Anonymous Blocks	0	0	0.0 %	
Package Heads	0	0	0.0 %	
Package Body	0	0	0.0 %	
Functions	0	0	0.0 %	
Procedures	0	0	0.0 %	
Triggers	0	0	0.0 %	
Total Objects	0	0	0.0 %	

The next step is to 'Convert code' which makes the code deployable.



Once you convert the code, a new file with _converted.sql extension is generated in the same project. Now, you are ready for schema deployment onto target.

Deploying schema to target Db2 Warehouse on Cloud

Add connection to the target, using same steps as before (See Add database connection). Here you will also need Db2 Warehouse on Cloud's service credentials. Once connection is successfully established, you can execute the schema sql on target using Run SQL.,.



Make sure you specify proper statement delimiter character (@ by default) and select connection to catalogued to Db2 Warehouse on Cloud.

Review selected files and choose the statement delimiter character.	۲	
elected SQL files		
/DCW/Demo_converted.sql		
		- 11
		- 11
		- 11
		- 11
		- 11
		- 11
		- 11
		- 11
		- 11
		- 11
		- 11
		-1
Ratement delimiter. 🔲 🗸		
atement delimiten 💿 🗸		

When the ddls from schema file executes, the results are shown in SQL Results view.

III SQL Results III 58 DB Obj	jects Explorer 🔲 Properties 👔	Problems				
Type query expression here				<u> </u>		
Status Operation II ✓ ✓ Succee Parent DispL. J ✓ Suc – [CODE].C J ✓ Suc CREATE TAB J ✓ Suc – DATA CA J ✓ Suc ALTER TABL J	Date Connectio km 22, 2020 db2 cloud km 22, 2020 db2 cloud					
SQL Results	s 🛛 🔂 DB Obj	jects Explorer	Properties	🖹 Problems 📃 🗱 🙀 🛅 🗋 🕌 🌞 🌣 🖳		
lype query exp	pression here				5.	•••
Status	Operation	Date	Connectio	^	1	•
🗸 🗸 Succee	Parent Displ J	lan 22, 2020	db2 cloud			
🗸 Suc	: [CODE_C]	lan 22, 2020	db2 cloud			
🗸 Suc	CREATE TAB J	lan 22, 2020	db2 cloud			
🗸 Suc	DATA CA J	lan 22, 2020	db2 cloud		18	
🗸 Suc	DATA CA J	lan 22, 2020	db2 cloud			
🗸 Suc	ALTER TABL J	lan 22, 2020	db2 cloud			1
 / c 			and areas	~		

In the Data Source Explorer view, right click on the DB2 Warehouse on Cloud connection you had created earlier, click Refresh. You verify that schema is successfully created in the target database.

> 📅 DSSHSV1
> 💀 DSWEB
> P DSWEBSECURITY
✓ 10 GGF21215
> 🛅 Dependencies
> 🧰 Sequences
> i Stored Procedures
🗸 🧰 Tables
> T COUNTRIES
> III DEPARTMENTS
> 🧮 EMP
> EMPLOYEES
> JOB_HISTORY
> 📰 JOBS
> III LOCATIONS
> E REGIONS
> i User-Defined Functions
> 🗀 User-Defined Types
> 🧰 Views
> 📅 HEALTHMETRICS

This completes the schema migration from Oracle to Db2 Warehouse on Cloud.

Data migration

Extracting source data

For moving data, DCW provides an easy mechanism to unload data from source. In the DCW project you just created, click Extract data and select Oracle database as source. You can select the schema and tables to be unloaded.

Follow through the Extract Data wizard, select Oracle connections as source. Select demo schema we had used before for DDL extract.

Image: Solution of the sector of	- 15	🚯 Demo		New			k -		
Scr Copy Ctrl+C Scr Paste Ctrl+V Import Export Scr Refresh F2 Import Export Refresh F3 Close Unrelated Projects Configure Data Sourc Database Conversion Conse Unrelated Projects Schema Selection Please Select all Configure Estreat Data Files Xisualize Object Dependencies Please Select all DesNUSSR DBSSNMP DP DP DVF DVF DVSVS GGSVS GSSVS GSMADMMN_INTERNAL Select all Output directory: Citurest Administrator/Downloads/UBM_DCW_Full_Client_Windows_4.0.3 Browse Finish	>	🕞 🗁 Dat		Golato					
Scr. Copy Cut+C Scr. Paste Cut+V Import. Delete Import Export Export F2 Refresh F3 Close Project Close Project Close Project Close Project Detug As > Team > Detug As > Team > Data Sourc Database Conversion Detug As > Team > Data Sourc Database Conversion Configure > DBK Properties Alt+Enter (): Extract Data Schema Selection Properties Please select at least one schema for data movement. Schema Selection: ANONYMOUS APAPQOSSYS AUDSYS CrXsys Select all Dus Output directory: C:\Users\Administraton\Downloads\UBM_DCW_Full_Client_Windows_40.: Browse V Select all Deselect all Output directory: C:\Users\Administraton\Downloads\UBM_DCW_Full_Client_		Scr Scr		do into					
Schema Selection: Pates Cut+V Detectation: Detectation: Detectation: Properties: Properties: Properties: Detascource: Database: Configure Database: Configure Properties: Detascource: Database: Configure Database: Configure Properties: Detascource: Database: Configure Configure: Detascource: Database:		Scr		Сору		Ctrl+C			
Image: Sector at the sector is a scheme of data movement. Project is it is a scheme of data movement. Image: Scheme is a scheme of data movement. Image: Scheme is a scheme of data movement. Image: Scheme is a scheme is		🚮 Scr	1	Paste		Ctrl+V			
Image: Scheme Rename F2 Image:	> 🖪	extrcat	×	Delete		Delete			
> Schem Refresh F2 Import Export Export Refresh F5 Close Project Close Project Debug As > Team > Restore from Local History > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > Database Conversion > > DB Properties Alt+Enter > Extract Data to Flat Files - > Schema Selection > > Please select at least one schema for data movement. > Schema Selection: _ ANONYMOUS APAPOQOSVS <td>> 🖪</td> <td>number</td> <td></td> <td>Move</td> <td></td> <td></td> <td></td> <td></td> <td></td>	> 🖪	number		Move					
Expert Expert Refresh Close Project Close Unrelated Projects Run As Debug As Team Restore from Local History Data Source Consequence Properties Alte-Enter Schema Selection Please select at least one schema for data movement. Schema Selection: ANONNMOUS ANONNMOUS ANONNMOUS ANONNMOUS ANONNMOUS Operations Output directory: CrXXvs CostRess	> 12	y schem		Rename		F2			
Export Refresh Close Project Close Unrelated Projects Run As Debug As Team Debug As Team Database Conversion Optabase Conversion Optabase Conversion Properties Alte-Enter Struct Data Extract Data Extract Data Extract Data Schema Selection Please select at least one schema for data movement. Schema selection: ANDNYMOUS APPQOSSYS AUDSYS CorXSYS Optabase GGF21215 GGSYS GGSYS Schema Last of State III Deselect all Output directory: C/Uput Administrator/Downloads/UBM_DCW_Full_Client_Windows_4.0.: Browse			è	Import					
Image: Section Section: Properties Image: Section: Alt+Enter Image: Section: Section: Image: Section: Section:			2	Export					
Close Project Close Unrelated Projects Run As Debug As Team Restore from Local History Database Compare With Debug As Debug As Team Restore from Local History Database Configure Properties Alt-Enter Extract Data to Flat Files Schema Selection Please select at least one schema for data movement. Schema Selection Please select at least one schema for data movement. Schema Selection Please select at least one schema for data movement. Schema Selection Please select at least one schema for data movement. Schema Selection Please Selection DIP DIP DIP DIP DIP DIP DIP SSNUMP DIP DIP DIP Select all Output directory: C:\Users\Administrato\Downloads\IBM_DCW_Full_Client_Windows_4.0.: Browse Pinish Cancel			æ	Refresh		F5	1		
Close Unrelated Projects Run As Debug As Team Restore from Local History Data Sourc Database Conversion Compare With Configure Properties Alt+Enter Kusalize Object Dependencies Properties Alt+Enter Kusalize Object Dependencies Comfigure Compare With Configure Con				Close Project					
Run As Debug As Team Restore from Local History Database Conversion Configure Properties Alt+Enter Schema Selection Please select at least one schema for data movement. Schema selection: ANDNYMOUS AppCOSSYS ANDNYMOUS AppCOSSYS ANDNYMOUS DBSNMUP DIP DVF DVF DVF DVF Schema selection: GSMADMIN_INTERNAL GSSMUSER Select all Deselect all Output directory: Clubers Administrator/Downloads/UBM_DCW_Full_Client_Windows_4.0.: Browse				Close Unrelated P	rojects				
Run As Debug As Team Restore from Local History Extract DOL Database: Conversion Data Sourc Configure Database: Conversion Data Sourc Configure Database: Conversion Database: Conversion Database: Configure Data Box: Configure DBt Configure DBt Configure Please Selection: Please selection: ANONYMOUS APRO20SSVS AUDSYS CTX3VS DBSNIMP DIP DVF Output directory: C:\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_40.: Browse Select all Output directory: C:\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_40.: Brok Pinish Cancel				D					
Dete Source Dete Source Data Source Deta Source Data Source Compare With Deta Source Properties Alt+ Enter Stract Data Schema Selection Please select at least one schema for data movement. Schema Selection: ANONYMOUS APPOQOSVS AUDSYS DSNIMP DIP DVF DVSYS GSSMUSER Select all Output directory: C:\Users\Administrator\Downloads\IBM_DCW_Full_Client_Windows_4.0.: Browse @ Sack Y Eack Prixt				Run As		,			
Image: Section From Local History Data Sourc Database Conversion Database Conversion Import SQL Files Description Import SQL Files Schema Selection Import SQL Files Please select at least one schema for data movement. Import SQL Files Schema selection: ANDNYMOUS ANDNYS Import SQL Files DBSNMAP DBP DVF DVFS DVF DVFS OVFS Select all Output directory: Clusers/Administrator/Downloads/IBM_DCW_Full_Client_Windows_4.0 @ Back Next>				Debug As		,			
Data Source Compare With Data Source Configure Stema Source Configure Schema Selection: Att-Enter Data Source Concertain Source Data Source Configure Output directory: Critics Schema selection: Anonymous DassNMP DiP DiP DiP DiP DiP Output directory: Cituers/Administrator/Downloads/UBM_DCW_Full_Client_Windows_4.0.: Select all Deselect all Output directory: Cituers/Administrator/Downloads/UBM_DCW_Full_Client_Windows_4.0.:				Reations for an Long	- Ulistan -	,			
Data Source Data Source Data Data Import SQL Files Import SQL Files Import SQL Files Struct Data Import SQL Files Import SQL Files Schema Selection Import SQL Files Please select at least one schema for data movement. Import SQL Files Schema Selection: APPOROSYS ANDNYMOUS APPOROSYS DBSNIMP DIP DVF DVSYS GSMADMIN_INTERNAL GSMACATUSER GSMADMIN_INTERNAL GSMADMIN_INTERNAL GSMADMIN_INTE			in.	Restore from Loca	ian History		1	Enter at DDI	
Configure Bataba Configure Site Configure	ð Di	ata Sourc	10	Caracase Convers	aon	,	99 00	Extract DDL	
Image ob. Compute Strustize Object Dependencies Properties Alte-Enter Extract Data Extract Data to Flat Files - X Schema Selection Please select at least one schema for data movement. Image: Schema Selection Please select at least one schema for data movement. Image: Schema Selection Image: Schema Selection Please select at least one schema for data movement. Image: Schema Selection Image: Schema Selection Dessex Optimize Select at least one schema for data movement. Image: Schema Selection Image: Schema Selection Dessex Optimize Select at least one schema for data movement. Image: Schema Selection Image: Schema Selection Display Display Image: Schema Select at least one schema for data movement. Image: Schema Select at least one schema for data movement. Image: Schema Select at least one schema for data movement. Display Display Image: Schema Select at least one schema for data movement. Image: Schema Select at least one schema for data movement. Image: Schema Select at least one schema Select one schema Select at least one schem	- 6	Databa		Compare with				Import SQL Files	_
Properties Alt-Enter Extract Data to Flat Files Schema Selection Please select at least one schema for data movement. Schema selection: ANONYMOUS APPQOSSYS AUDSYS CTXSYS DBSNMP DIP DVF DVF DVF DVF Schema Select all Output directory: C:\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_40.: Browse	>	b 😸 dbi		Configure		,	52	Visualize Object Dependencies	
Extract Data to Flat Files Schema Selection Please select at least one schema for data movement. Schema selection: ANDONYMOUS APPOOSSYS AUDSYS CTXSYS DBSNIMP DIP DVF DVSYS GGF21215 GGSVSS GSMADMIN_INTERNAL GSMADMIN_INTERNAL GSMUSER Select all Deselect all Output directory: C:\Users\Administrato\Downloads\IBM_DCW_Full_Client_Windows_4.0.: Browse		B IBN		Properties		Alt+Enter	6	Extract Data	
Schema selection: ANONYMOUS APPQOSSYS AUDSYS CTXSYS DBSFWUSER DBSNMP DIP DVF OVSYS GGSYS GSMADMIN_INTERNAL GSMADMIN_INTERNAL GSMALUSER V Select all Output directory: CI\Users\Administraton\Downloads\UBM_DCW_Full_Client_Windows_4.0.3 Browse ?	Si	Extract	Data Sele	to Flat Files				×	
ANONYMOUS APPCOSSYS AUDSYS AUDSYS CTXSYS DBSRWUSER DBSNMP DIP DVF DVSYS G6721215 G65YS G65YS G65YS G5MADMIN_INTERNAL G5MACATUSER Select all Deselect all Deselect all Output directory: C1\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.3] Browse @	Si F	Extract Chema Please sel	: Data Sele ect at	to Flat Files e ction least one schema	for data movemen	nt.		×	
APPQOSSYS AUDSYS CTXSYS DBSFWUSER DBSMMP DIP DVF DVSYS GGSYS GSMADMIN_INTERNAL GSMCATUSER Vertor Chyperson Select all Output directory: C\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.3 Browse	Si F	Extract Chema Please sel	Data Sele ect at	to Flat Files ection least one schema n:	for data movemer	nt.	_	×	
AUDSYS CTXSYS DBSNMP DBSNMP DVF DVSYS GSSTA GSSVAUSER OSMADMIN_INTERNAL GSMADMIN_INTERNAL GSMADMIN_INTERNAL GSMADMIN_INTERNAL GSMADMIN_INTERNAL GSMAUSER Select all Output directory: Cl\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.: Browse ?	Si Si	Extract chema Please sel chema se	Data Sele ect at ectio	to Flat Files ection least one schema n: DUS	for data movemer	nt.		×	
CTXSYS DBSFWUSER DBSFWUSER DBSFWUSER DVF DVF DVF DVF SG6721215 G6SYS GSMADMIN_INTERNAL GSMACATUSER GSMUSER V Select all Output directory: C\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.:] Browse	Si F	Extract chema Please sel chema se ANC APPe	Data Sele ect at ectio	to Flat Files ection least one schema n: OUS YS	for data movemer	nt.		×	
OBSRVUSER DBSNMP DIP DVF SGMADMIN_INTERNAL GSMADMIN_INTERNAL GSMACATUSER GSMUSER V Select all Output directory: C1/Users/Administrator/Downloads/UBM_DCW_Full_Client_Windows_4.0.:] Browse	SI SI SI	Extract chema Please sel chema se ANC APP AUD	Data Sele ect at ect at electio	to Flat Files action least one schema n: OUS /S	for data movemer	nt.		×	
ObsNMP DIP DVF DVSVS GGSVS GSMADMIN_INTERNAL GSMCATUSER GSMCATUSER V Select all Output directory: C\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.3 Browse ?	Si Si	Extract chema Please sel chema se ANC APP AUD CTXS	Data Sele ect at ect at NYM QOSS SYS	to Flat Files ection least one schema n: OUS /S	for data movemen	nt.		×	
OUP DVF DVSVS G GF21215 G GSVS G SMADMIN_INTERNAL G SMADMIN_INTERNAL G SSMUSER V Select all Output directory: Cl\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.: Browse	Si F	Extract chema Please sel chema se ANC AVD CTXS DBSF	Data Sele ect at ect at NYM QOSS ¹ SYS SYS	to Flat Files ection least one schema n: OUS (S ER	for data movemen	nt.		×	
Ovr DVSVS GGF21215 GGSVS GSMADMIN_INTERNAL GSMACATUSER GSMUSER Select all Output directory: C\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_40.:] Browse ? Back Next> Finish Cancel	Si Si	Extract chema Please sel chema se ANC AVD CTXS DBSF DBSF DBSF	E Data Sele ect at electio NYM QOSS ^T SYS SYS SYS SWUSI	to Flat Files ection least one schema n: OUS VS ER	for data movemen	nt.		×	
GoF21215 GGSVS GSMADMI_INTERNAL GSMACATUSER GSMUSER Output directory: C\Users\Administrator\Downloads\IBM_DCW_Full_Client_Windows_4.0.: Browse ? Cancel	SI SI	chema se chema se chema se ANC APPe CTXS DBSF DBSF DIP	Data Sele ect at electio NYM QOSS' SYS SYS SYS SYS WUSI	to Flat Files ection least one schema n: OUS /S	for data movemen	nt.		×	
GGSVS GSMADMIN_INTERNAL GSMCATUSER GSMCATUSER Output directory: C:\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.3 Browse ? Back Next> Finish Cancel	Si F	Chema sel Chema	Data Sele ect at NYM QOSS ¹ SYS SYS WUSI	to Flat Files action least one schema n: DUS (S ER	for data movemen	nt.		×	
GSMADMIN_INTERNAL GSMCATUSER GSMUSER Select all Output directory: C\Users\Administrato\Downloads\UBM_DCW_Full_Client_Windows_4.0.: @ Cancel	Si F	Extract Chema Please sel ANC APP AUD CTXS DBSI DBSI DIP DVS GG5	Data Sele ect at electio NYM QOSS' SYS SYS SYS SYS SYS SYS SYS SYS SYS	to Flat Files rction least one schema n: OUS SS SR	for data movemen	nt.		×	
GSMCATUSER GSMUSER V Select all Output directory: C\Users\Administrator\Downloads\IBM_DCW_Full_Client_Windows_4.0.:] Browse Image: Comparison of the second s	Si F	Extract Chema Please sel ANC APP AUD CTXS DBSF DBSF DBSF DVS VS GGSS	: Data Sele ect at ectio NYM QOSS ¹ SYS SYS SYS SYS SYS SYS SYS SYS SYS SY	to Flat Files ection least one schema n: OUS VS SR	for data movemen	nt.		×	
GSMUSER Select all Output directory: C\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_40.2] ⑦ < Back	Si F	Extract chema se chema se ANC AUD CTXS DBSF DIP DVF DVS GGF3 GGS3 GSM	E Data Sele ect at ect at UNYM QOSS SYS SYS SYS SYS SYS SYS SYS SYS SYS	to Flat Files ection least one schema n: OUS /S ER N_INTERNAL	for data movemen	nt.		×	
Select all Deselect all Output directory: C:\Users\Administrator\Downloads\UBM_DCW_Full_Client_Windows_4.0.3 Browse ? < Back	SI F	Extract chema see chema see ANCC ADD ADD CTX: DBS DIP DVS GGF: GSM GGSS GSM GSM	SPIE SPIE ect at Electio NYM QOSS' SYS SYS SYS SYS SYS SYS SYS SYS SYS	to Flat Files ction least one schema n: OUS SER N_INTERNAL SER	for data movemen	π.		×	
Output directory: C\Users\Administrator\Downloads\IBM_DCW_Full_Client_Windows_4.0.:] Browse ⑦ < Back	SI F	Extract Extra	Contraction Contra	to Flat Files rction least one schema DUS C/S ER N_INTERNAL SER	for data movemen	nt.		×	
Cancel	Si F	Extract Chema Second Sec	Sele ect at electio NVM QOSS SYS SYS SYS SYS SYS SYS SYS SYS SYS	to Flat Files Pection least one schema n: OUS SER N_INTERNAL SER Select all	for data movemen	n.		- C X	
	Si F	Extract chema chema see chema see chema see chema see chema c	I Data Sele ect at INVM QOSS' SYS SYS SYS SYS 2021215 YS ADMI CATU USER I I I I I I I I I I I I I I I I I I I	to Flat Files Pection least one schema n: OUS (S ER N_JINTERNAL SER Select all rys [C:\Users\Admin]	for data movemen	nt.	V_Full	Deselect all	

See Extract Data to Flat Files	_	
Table Selection		
At least one table should be calested		
At least one table should be selected.		L.
✓ GGF21215		
DEPARTMENTS		
EMP		
REGIONS		
Select all tables Deselect all tables		
(?) < Back Next > Finis	h	Cancel

Accept the defaults and click Finish. The data extraction happens, and the data is unloaded under selected project under directory called 'Data Movement/data'. Note down path to the directory by right-click on the project.





Loading data to target Db2 Warehouse on Cloud

Log on to IBM Cloud and navigate to your Db2 Warehouse on Cloud service. Click Open Console to open the console for you Db2.

Db2-DEMO Resource group: Dafault: Location: Dalas <u>Antitues</u> Dyen Consult		:
Cetting Started Were can if for expected all Der provi usersman and passender by during the "Sovice Cheberdals" Link to be land exclusion: "New Constraint". Cetting Started	Need Help? Upp 1391-004 Annuma to view recetling saked gapetiens or ask your own, 504 auxilies to fai an anaver? Subcrit a Bisannia Gegeen Tribert to our exam. ISM 604 Annumers. Sapport Tricket	1000
	Board groups (office) is location to blas <u>Anthene</u> Care server Care server	Exception Exception

You will see the dashboard indicating the health of your database.

IBM Db2 Warehouse 📑 Storage: 10%		Q Discover Ø 👱
Welcome, bluadmin!		BASELINE: • Classic 🛩
DATABASE AVAILABILITY	DATABASE RESPONSIVENESS	DATABASE THROUGHPUT
Last 1 hour	Last 1 hour	Last thour
Corrent Statute Prior of the statutes in the sta	5.0. Without the second	Orm Rochad
DATABASE RESOURCE USAGE	DATABASE CONTENTION	DATABASE TIME SPENT
Last thour 1% eq sherthon 32% Memory 32% Memory	Last their <u>Drate free and their 24 Concurrent Connections </u>	Last thour 39% SQL execution takes must of the time 10

From the burger menu, navigate to Schemas and Tables and see that the newly created schema and tables exist.

IBM Db2 Warehouse
HOME
✓ MONITOR
ADMINISTER
Tables
Views
MQTs
Remote Tables
Aliases
Schemas
 Application Objects
Privileges
Workloads
RUN SQL
✓ LOAD

Schema view:



Tables view: Click the funnel filter on top right corner



Enter the schema name as filter with contains and click Apply

Fil	lter				\otimes
Ma	atch: 🔿 All rules 🌘 Any r ichema 🗸 🗸	les	•	GG	$\oplus \ominus$
				Apply Clear	Cancel

You can see the schema and tables.

IBM Db2 Warehouse E Storage: 10%		Q Discover Ø 👤
TABLES		
Create		Filter by Name: 🚿 👻 🏹 🐼 🕩 🔿
TABLE	SCHEMA	ORGANIZATION
LOCATIONS	GGF21215	COLUMN
EMP	00F21216	COLUMN
COUNTRIES	GGF21215	COLUMN
JOBS	GGF21215	COLUMN
EMPLOYEES	GGF21215	COLUMN
REGIONS	00F21216	COLUMN
DEPARTMENTS	GGF21215	COLUMN
JOB_HISTORY	0GF21215	COLUMN

Navigate to LOAD -> Load from file

IBM Db2 Warehouse	E Storage: 10%	♀ Discover Ø
HOME		
MONTOR		
ADMINISTER		Filter by Name: 5 💙 🖓 🌘 🕁 i
RUN SQL	ICHEMA	 ORGANIZATION
1040	CHIEDI	COLUMN
Load Male	CHIED	COLUMN
Constrato	CWEDI	COLUMN
Load from Hee	CHIED	COLUMN
Load from S3	CHIED	COLUMN
Load Geospatial Data	CWEDI	COLUMN
Load Open Data	CHIEDI	COLUMN
LIFT TO CLOUD	CHIED	COLUMN
HIGH AVAILABILITY	CMEDI	COLUMN
ANNIVERS	CHIED	COLUMN
	CHIED	COLUMN
00110400	CWEDI	COUMN
CONNECT	CHIEDI	COLUMN
HELP	CHIEDI	COLUMN
	CWEDI	COUMN
	CHEDI	COLUMN
	CHIEDI	COLUMN
	007228	COLUMN
	0072015	COLUMN
	0072015	COLUMN
	0092236	COLUMN
	007226	COLUMN
	0072015	COLUMN
	008568	COLUMN
	0072015	COLUMN

This sets up you to load data action. In the Specify source file, click on 'Choose a file' and navigate to the directory where you unloaded files earlier. Select hr_locations.txt file.

Click on 'Drag a file here' from 'Data Movement/data' directory or unloaded files to this window. Select hr_locations.txt file and drop it into the browser window. Click next.



Specify the file characteristics such as delimiter. In our file the delimiter character is set to ~

Lead from file Label from file Label file	2 GB.
Lade brown Excelle or a definited text ffte, such as a comma-segurated wake (ES) (Bio, tilber on your client on the sarves. The maximum size of a client file that you updated by using hTTP Pro- Common Common Com	2 GB.
1. Oncore fra torget 1. Oncore fra torget 1. Oncore fra torget Fra torget Segment Segment Fra torget Segment Segment Or Operational Segment Segment Fra torget Segment Operational Segment Segment Operational Segment Segment Operational Segment Segment Operational Segment Segment	
Feb total: Test methylawid: Test methylawid: Test methylawid: O that methylawid: Test methylawid:	
Tender starting Department in an exemptioned Fails the Tender starting starting Image: Starting starting Constructioned Image: Starting starting For Advancement Image: Starting starting Code specify: Image: Image: Image: Starting Image: Ima	
Particular State S	
C typics consider a country Fiel detailed as a country	
Fite determination: Does not not contact the does manual to be the Code approx 0 100 Toronto the code of the code	
Code page (0) 1000 Sequentities	
Separator character:	
0 Tab	
Color	
ourse 0 4	
Does the file have columns that contain dates or times? Yes No	
Great	
	Proviou

This will show the preview contents of the file.

ISM DO2 WARHOUSE	E Storage: 10%				Y Discov	8 U
d from an Excel file or a delir m more	nited text file, such as a comma-s	separated value (CSV) file, either	on your client or on the server. Th	e maximum size of a client file th	at you upload by using HT	TP is 2 C
ipecity source file 2. Choose	e the target 3. Select a table	4. Load complete				
preview (first 10 rows): hr_locations.tx	±					
						B
000"	"1997 VM COLA DI RIE"	1008891	'R0MA'	COLUMN_4	101	
00	'93091 Calle della Testa'	'10834'	"Venice"		111	
200	"2017 Shinjuku-ku"	16801	"Tokyo"	"Tokyo Prefecture"	'spr	
900	"9450 Kamiya-cho"	'6823'	"Heoshima"		'JP'	
400	"2014 Jabberwocky Rd"	-20105.	"Southlake"	"Texas"	'US'	
500	"2011 Interiors Blud"	-99236'	"South San Francisco"	"California"	'US'	
300	"2007 Zagora St"	1909901	"South Brunswick"	"New Jersey"	'US'	
700	"2004 Cherade Rd"	1981991	"Seattle"	"Washington"	'U8'	
300	110' Spadina Ave'	"M9V 2L7"	"Toronto"	"Ontario"	'CA'	
300	'6092 Borwood St"	"YSW 9T2"	"Whitehorse"	"fukon"	'CA'	
000	'40-5-12 Laogianggen'	"190518"	'Beijing'		"ON"	
tal Rows: 10 / Selected: 0						
Zancel					Back	No

Next steps are to choose the target table.

≡	IBM Db2 Warehouse E Storage: 10%	♀ Discover đ	
Load	pad from file		
1.8p	1.8pecify source file 2. Choose the larget 3.8elect a table 4.Load complete		
• • 0 •	Load into an existing table O Create a new table and load		
Ca	Canod	flack	Next

As we are loading data into LOCATIONS table, select the respective schema and table as shown and click Finish. This will start the load and data is loaded into the target table.

When the load completes, the status and sample contents of the table are shown.

IBM Db2 Warehouse	Storage: 10%					Q Discover	0 2
Load from file							
1. Specify source file	2. Choose the target 3. Sele	st a table 4. Load complete					
		100%					
Loading table LOCATION	S in schema GGF21215 succ	eeded				L	oad more data
Quick Stats: Number of rows committed = 22 Number of rows deleted = 0 Number of rows loaded = 22 Number of rows read = 22 Number of rows rejected = 0 Number of rows rejected = 0						View the I	log for this load
					₮ ◙ ो, ८	View full table struct	ture and details
LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	any	STATE_PROVINCE	COUNTRY_ID		
1100	93091 Calle della Testa	10934	Venice		π^		
1200	2017 Shinjuku-ku	1689	Tokyo	Tokyo Prefecture	я.		
1300	9450 Kamiya-cho	6823	Hiroshima		"Р		
1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US		
1500	2011 Interiors Blvd	99236	South San Francisco	Galifornia	US		
1600	2007 Zagora St	50090	South Brunswick	New Jersey	US		
Total: 22 Selected: 0			1≻		10 25 50 *		

The LOCATIONS tables have been successfully migrated to Db2 on Cloud. Similarly, you can migrate for the rest of tables.

Conclusion

You have seen here how easy it is to move your Oracle workloads to Db2 Warehouse on Cloud using IBM tools such as DCW.

Related links

Db2 Warehouse on Cloud

https://www.ibm.com/cloud/db2-warehouse-on-cloud

IBM Database Conversion Workbench

https://community.ibm.com/community/user/hybriddatamanagement/communities/community-home?CommunityKey=582cbbdf-3409-4e35-b111-f1c05ee59b99