

Autonomous Data Warehouse Cloud

Updated: May 20, 2018

ADWC Lab 8: Advanced Data Loading Techniques

You load data into Autonomous Data Warehouse Cloud using Oracle Database tools, and Oracle or other 3rd party data integration tools. In general you load data from files local to your client computer or from files stored in a cloud-based object store.

For the fastest data loading experience Oracle recommends uploading the source files to a cloud-based object store, such as Oracle Cloud Infrastructure (OCI) Object Storage, before loading the data into ADWC.

Oracle provides support for loading files that are located locally in your data center, but you should factor in the transmission speeds across the Internet which may be significantly slower than loading data directly from the OCI object storage.

This lab has the following parts:

- Part 1: Loading Data From Local Files Using SQL*Loader
- Part 2: Importing Data Using Oracle Data Pump

Part 1: Loading Data From Local Files Using Oracle SQL*Loader

You can use Oracle SQL*Loader to load data from local files in your client machine to ADWC.

Note: SQL*Loader may be suitable for loading small amounts of data, as the load performance depends on the network bandwidth between your client and ADWC. For large amounts of data Oracle

recommends loading data from the Cloud Object Storage.

Objectives

- Generate SQL*Loader scripts using SQL Developer
- Load a Local CSV file to ADWC using SQL*Loader scripts
- Validate the load using SQL Developer

Required Artifacts

- Access to the Lab VM.
 - Locate the Lab VM's IP Address, User Name and Password
- The following artifacts of the Lab VM are utilized:
 - Installed software: Oracle SQL Developer and Oracle Database Client (includes Oracle SQL*Loader)
 - Sample comma separated file (CSV)
 - Wallet files configured in Oracle Client's home directory

Lab Steps

Loading data using SQL*Loader can be accomplished in 2 steps.

- Generate SQL*Loader scripts using SQL Developer
- Run the generated SQL*Loader scripts

Step 1: Generate SQL*Loader Scripts Using SQL Developer

You may manually create SQL*Loader control files or use SQL Developer to generate them for you. We will use the latter method for this lab.

- Sign in to the Lab VM using the credentials provided to you by the instructor.
- Start SQL Developer and connect to the ADWC connection you have defined in the previous labs.



Note: If you had an existing connection open, you may need to reconnect as your session may have timed-out due to the database IDLE_TIME resource limit that is in effect for the session.



• In the left pane, click Tables and Right-Click and select Import Data.

DataSync_ADW_AD	MIN	
Index (Filtered I	Image: New Table Open	
Indexes Packages Procedures	Import Data Import Using Oracle SQL Connector for HDFS	
	 № <u>R</u>efresh ✓ Apply Filter <u>C</u>lear Filter 	Ctrl-R
Find Database Object	Help	
DBA + 60 =		
🛱 Connections		

• The Data Import wizard will pop-up. Click Browse and locate the CSV file which is saved as C:\Labs\SampleData1.csv. Click Open.

10	Import Data File:
Location:	: 📴 C: YLabs 🔹 🖸 🖸 📴 🧮 🖽
	parfile.txt SampleData1.csv
Desktop	
Downloads	
opc	
Home	
Desktop	
	Elle Name: SampleData1.csv
<u> </u>	File Type: Excel 95-2003 (.xls), Excel 2003+ (.xlsx), CSV (.csv), Text (.tsv or .txt) and DS 🔻
Help	Open Cancel

• Uncheck the **Preview Row Limit** and ensure the delimter is ",". Click **Next**.

bata Preview Data Preview Import Method Import Data File: C1(Labs)(SampleData1.csv @ Brows: @ Brows:				Data Ir	mport Wizard	l - Step 1 o	f 5				
Data Preview	ata Preview										
Import Method Import Data File: C:\Labs\SampleData1.csv Import Data File: C:\Labs\SampleData1.csv Import Data File: C:\Labs\SampleData1.csv Column Definition File Format Import Data File: C:\Labs\SampleData1.csv Import Data File: C:\Labs\SampleData1.csv Import Data File: C:\Labs\SampleData1.csv File Format Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv File Contents Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Perview Row Linkt: Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Delimiter: Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Perview Row Linkt: Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Delimiter: Import Pata File: Import Pata File: C:\Labs\SampleData1.csv Import Pata File: C:\Labs\SampleData1.csv Import Pata Fi	Data Preview	_								Restore :	State
Choose Columns Column Definition Finish Finish Finish Finish File Format: Exercise Demmat: Exercise Demmat: Exercise Demmat: Exercise Delimiter: Line Terminator: Standard: CR LF, CR or LF • Left Enclosure: Encoding: ORDER_KEY ORDER_KEY ORDER_ST UNITS DISCNT_VA COST_VARI REVENUE TIME_PAIL_DT TIME_PAIL_DT 14239 Standard: Cost_rysa ORDER_KEY ORDER_ST UNITS DISCNT_VA COST_VARI REVENUE TIME_PAIL_DT TIME_PAIL_OT 1463100 2-Fuffiled 8 18.3 94.60 76.75 60.61 27.65	Import Method	Import Data File	e: C:\Labs\Sam	pleData1.csv						- Brow	lse
Column Definition Finish File Format Image: Provide Row Limit: 0 Image: Provide Row Limit: 0 Image: Provide Row Limit: 100 Image: Provide Row Limit: 111 Image: Provide Row Limit: 1111 Image: Prow Hold	Choose Columns										
Column Definition The Latinus Pinish Image: Preview Row Limit: 0 Eormat: cv Preview Row Limit: 100 Encoding: 01252 Preview Row Limit: 100 Encoding: 01252 Preview Row Limit: 100 File Contents Enclosure: * File Contents Discint Yu Cost Fibre Cost YaRL Revenue Time_Bill_0T Time_PAID File Contents Discint Yu Cost Fibre Cost YaRL Revenue Time_Bill_0T Time_PAID File Contents Discint Yu Cost Fibre Cost YaRL Revenue Time_Bill_0T Time_PAID File Contents Discint Yu Cost Fibre Cost YaRL Revenue Time_Bill_0T Time_PAID File Contents Discint Yu Cost Fibre Cost YaRL Revenue Time_Bill_0T Time_PAID File Contents Discint Yu Cost Fibre Cost YaRL Revenue Time_Bill_0T Time_PAID File Contents Discint Yu Cost Yu Cost YaRL Re		File Format									
Finish Image: After Skip Image: Skip Rows: 0 0 Eormat: csv Image: Preview Row Linit: 100 Image: Preview Row Linit: 100 Encoding: Cp1252 Image: Preview Row Linit: 100 Image: Preview Row Linit: 100 Delimiter: Image: Preview Row Linit: 100 Image: Preview Row Linit: 100 Image: Preview Row Linit: 100 File Contents Image: Preview Row Linit: 100 Image: Preview Row Linit: 100 Image: Preview Row Linit: 100 File Contents Image: Preview Row Linit: 100 File Contents Image: Preview Row Linit: 100 File Contents Image: Preview Row Linit: 100 File Contents Image: Preview Row Linit: 100 File Contents Image: Preview Row Linit: 100 File Contents				_				r			
Eormat: csv Preview Row Linit: 10 Encoding: Cp1252 Delimiter: Line Terminator: standard: CR LF, CR or LF Delimiter: Bight Enclosure: * File Contents * * PRDER_KEY ORDER_ST UNITS DISCNT_VA COST_VARI RVENUE TIME_BILL_DT TIME_PAID 14929 S-Paid 4 27.47 66.32 400.76 418.57 13-Jan-11 I-Mar-11 14929 S-Paid 4 27.47 66.32 400.76 418.57 13-Jan-11 I-Mar-11 14929 S-Paid 4 27.47 66.32 400.76 418.57 13-Jan-13 1-Mar-11 14929 S-Paid 4 27.47 66.32 400.76 418.57 13-Jan-13 1-Mar-11 2468516 4-Billed 6 17.65 99.46 76.75 627.58 30-Dec-12 10-Jan-13 246829 9-On Hold <td>Finish</td> <td>Header</td> <td>After Skip</td> <td>•</td> <td>Skip Rows:</td> <td>0</td> <td>-</td> <td>5</td> <td></td> <td></td> <td></td>	Finish	Header	After Skip	•	Skip Rows:	0	-	5			
File Contents ORDER_KEY ORDER_ST UNITS DISCNT_VA COST_FIXED COST_VARI REVENUE TIME_BILL_DT TIME_PAID 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 1403180 2-Fulfilled 8 18.83 94.74 67.58 472.09 8-Dec-12 10-Jan-13 2408516 4-Billed 6 17.65 99.46 76.75 62.78 30-Dec-11 1-Mar-11 2640829 9-On Hold 10 106.64 246.2 993.87 2845.42 13-Jun-12 1-Aug-12 274985 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13 3017318 3-Shipped 12 </td <td></td> <td>Format:</td> <td>csv 🔻</td> <td></td> <td>Preview R</td> <td>ow Limit: 100</td> <td>(^</td> <td>Ţ</td> <td></td> <td></td> <td></td>		Format:	csv 🔻		Preview R	ow Limit: 100	(^	Ţ			
Encoding: Cp1252 Delimiter: Image: Cp1252 File Contents Image: Cp1252 ORDER_KEY ORDER_ST UNITS DiscNT_VA COST_FIXED Cost_VARI REVENUE TIME_BILL_DT TIME_PAID 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 4163180 2-Fulfilled 8 18.83 94.74 67.58 472.09 8-Dec-12 10-Jan-13 2468516 4-Billed 6 17.65 99.46 76.75 62.75 60.30-24Mar-13 21-Apr-13 22-4Mar-13 21-Apr-13 22-4Mar-13 22-4Mar-13 22-4Mar-13 22-4Mar-14 1-Aug-12 1-Aug-12		-			E Bononn	JIO0					
Delimiter: Image: Construction of the standard: CR LF, CR or LF (CR or LF (C		Encoding:	Cp1252	•							
Delimiter: Image: CR LF, CR or LF, CR or LF Left Enclosure: Bight Enclosure: File Contents Time_Pail Pride Contents Discnt_VA COST_FIXED COST_VARI Right Enclosure: File Contents ORDER_KEY ORDER_ST UNITS DISCNT_VA COST_FIXED COST_VARI Revenue Time_Bill_DT Time_PAID 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 14929 5-Paid 4 27.47 66.32 400.76 418.57 13-Jan-11 1-Mar-11 14929 5-Paid 6 17.65 99.46 76.75 627.58 30-Dec-12 10-Jan-13 2468516 4-Billed 6 17.65 99.46 76.77 723.88 30-Dec-13 21-Apr-13 2640829 9-On Hold 10 106.84 246.2 93.87											
Left Enclosure: Bight Enclosure: File Contents ORDER_KEY ORDER_ST UNITS DISCNT_VA COST_FIXED COST_VARI REVENUE TIME_BILL_DT TIME_PAID 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 4163180 2-Fulfilled 8 18.83 94.74 67.58 472.09 8-Dec-12 10-Jan-13 2488516 4-Billed 6 17.65 99.46 76.75 627.58 30-Dec-11 1-Feb-12 944877 9-On Hold 9 4.04 8.06 42.67 108.05 2-Mar-13 21-Apr-13 2640829 9-On Hold 10 106.84 246.2 983.87 2845.42 13-Jun-12 1-Aug-12 274995 2-Fulfilled 9 18.18 76.7 273.8 880.21 18-Feb-11 8-Apr-11 4198007 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13		Delimiter:	,	•	Line Terminat	or: stan	idard: CR LF, CF	or LF 💌			
File Contents DISCNT_VA COST_FIXED COST_VARL REVENUE TIME_BILL_DT TIME_PAID 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 4163180 2-Fulfilled 8 18.83 94.74 67.58 472.09 8-Dec-12 10-Jan-13 2468516 4-Billed 6 17.65 99.46 76.75 627.58 30-Dec-11 11-Feb-12 944877 9-On Hold 9 4.04 8.06 42.67 108.05 2-Mar-13 21-Apr-13 2640829 9-On Hold 10 106.84 246.2 983.87 2845.42 13-Jun-12 1-Aug-12 274985 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36 14		Left Enclosure	:		Right Enclosu	e:	-				
File Contents ORDER_KEY ORDER_ST UNITS DISCNT_VA COST_FIXED COST_VARI REVENUE TIME_BILL_DT TIME_PAID 14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 4163180 2-Fulfilled 8 18.83 94.74 67.58 472.09 8-Dec-12 10-Jan-13 2488516 4-Billed 6 17.65 99.46 76.75 627.58 30-Dec-11 11-Feb-12 944877 9-On Hold 9 4.04 8.06 42.67 108.05 2-Mar-13 21-Apr-13 2640829 9-On Hold 10 106.84 246.2 983.87 2645.42 13-Jun-12 1-Aug-12 274985 2-Fulfilled 9 18.16 76.7 273.8 880.21 18-Feb-11 8-Apr-11 4196007 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13 3017318 3-Shipped </th <th></th>											
14929 5-Paid 4 27.47 66.32 400.78 418.57 13-Jan-11 1-Mar-11 1453160 2-Fulfilled 8 18.83 94.74 67.58 472.09 8-Dec-12 10-Jan-13 2488516 4-Billed 6 17.65 99.46 76.75 627.58 30-Dec-11 11-Feb-12 944877 9-On Hold 9 4.04 8.06 42.67 108.05 2-Mar-13 21-Apr-13 2640829 9-On Hold 10 106.84 246.2 93.87 2945.42 13-Jun-12 1-Aug-12 274965 2-Fulfilled 9 18.18 76.7 273.8 880.21 18-Feb-11 8-Apr-11 4196007 2-Fulfilled 13 2.48 29.18 31.19 202.74 26-Dec-12 30-Jan-13 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36		-File Contents	ORDER ST	LINITS	DISCNT VA	COST FIXED	COST VARI	REVENUE	TIME BILL DT	TIME PAID	PR
4163180 2-Fulfilled 8 18.83 94.74 67.58 472.09 8-Dec-12 10-Jan-13 2486516 4-Billed 6 17.65 99.46 76.75 627.58 30-Dec-11 11-Feb-12 944877 9-On Hold 9 4.04 8.06 42.67 108.05 2-Mar-13 21-Apr-13 2460829 9-On Hold 10 106.84 246.2 983.87 2845.42 13-Jun-12 1-Aug-12 27965 2-Fulfilled 9 18.18 76.7 227.8 800.21 18-Feb-11 8-Apr-11 4196007 2-Fulfilled 9 18.18 76.7 237.8 800.21 18-Feb-11 8-Apr-11 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12		14929	5-Paid	4	27.47	66.32	400.78	418.57	13-Jan-11	1-Mar-11	11
2488516 4-Billed 6 17.65 99.46 76.75 627.58 30-Dec-11 11-Feb-12 944877 9-On Hold 9 4.04 8.06 42.67 108.05 24Mar-13 21-Apr-13 2640829 9-On Hold 10 106.84 246.2 983.87 2845.42 13-Jun-12 13-Jun-12 17-Apr-13 21-Apr-13 21-Apr-13 21-Apr-13 21-Apr-13 21-Apr-13 21-Apr-13 21-Apr-13 21-Apr-13 21-Apr-14 19-Dec-12 21-Apr-13 21-Apr-13 21-Apr-14 19-Dec-12 21-Apr-13 21-Apr-13 21-Apr-13 21-Apr-14 19-Dec-12 21-Apr-13 21-Apr-14 19-Dec-12 30-Jap-14 19-Dec-12 30-Jap-13 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12 29-Nov-12		4163180	2-Fulfilled	8	18.83	94.74	67.58	472.09	8-Dec-12	10-Jan-13	66
944877 9-On Hold 9 4.04 8.06 42.67 108.05 2-Mar-13 21-Apr-13 2640829 9-On Hold 10 106.84 246.2 983.87 2845.42 13-Jun-12 1-Aug-12 27995 2-Fulfilled 9 18.18 76.7 273.8 880.21 18-Feb-11 8-Apr-11 4196007 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12		2488516	4-Billed	6	17.65	99.46	76.75	627.58	30-Dec-11	11-Feb-12	66
2640829 9-On Hold 10 106.84 246.2 99.87 2845.42 13-Jun-12 1-Aug-12 274985 2-Fulfilled 9 18.18 76.7 273.8 880.21 18-Feb-11 8-Apr-11 419807 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12		944877	9-On Hold	9	4.04	8.06	42.67	108.05	2-Mar-13	21-Apr-13	83
274985 2-Fulfilled 9 18.18 76.7 273.8 880.21 18-Feb-11 8-Apr-11 4198007 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960866 3-Shipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12		2640829	9-On Hold	10	106.84	246.2	983.87	2845.42	13-Jun-12	1-Aug-12	12
4198007 2-Fulfilled 13 2.48 29.18 31.19 202.74 28-Dec-12 30-Jan-13 3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12		274985	2-Fulfilled	9	18.18	76.7	273.8	880.21	18-Feb-11	8-Apr-11	15
3017318 3-Shipped 12 6.37 123.51 505.44 615.54 14-Jul-12 1-Sep-12 3960836 3-Shipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12		4198007	2-Fulfilled	13	2.48	29.18	31.19	202.74	28-Dec-12	30-Jan-13	12
3960836 3-5hipped 8 57.83 283.96 1080.36 1465.19 27-Oct-12 29-Nov-12		3017318	3-Shipped	12	6.37	123.51	505.44	615.54	14-Jul-12	1-Sep-12	65
		3960836	3-Shipped	8	57.83	283.96	1080.36	1465.19	27-Oct-12	29-Nov-12	11
)							►
							< Back	Bloyt >	Finish	C 20	and the first state of the second state of the

• In the **Import Method** choose **SQL*Loder Utility**. Enter a table name where you like the data to be loaded, e.g. **LOAD_LDR**.

Note: The Database Table need not be precreated in ADWC. The Create Table DDL will be generated as a part of this process and you can run it to create the table.

• Ensure that Send Create Script to SQL Worksheet is Checked. Click Next.

B			Data Ir	nport Wizard	d - Step 2 o	f 5				x
Import Method										
Data Preview Import Method Choose Columns Column Definition Finish	Select the me External Table created and t Import Method Table Name:	thod for importin e method, an ex he data is impor : SQL* LOAD V Limit: 100 ORDER_ST 5-Paid 2-Fulfilled 9-On Hold	ng data. For E ternal table wi ted. Loader Utility LDR nd Create Scri UNITS 4 8 6 9	External Table me ill be created as a pit to SQL Worksh DISCNT_VA 27.47 18.83 17.65 4.04	thod, an extern staging table fr neet COST_FIXED 66.32 94.74 99.46 8.06	COST_VARI 400.78 67.58 76.75	REVENUE 418.57 472.09 627.58 108.05	TIME_BILL_DT 13-Jan-11 8-Dec-12 30-Dec-11 2-Mar-13	II.For Staging s, a new table is TIME_PAID 1-Mar-11 10-Jan-13 11-Feb-12 21-Apr-13	PR 11:- 66' 661 83'
	2640829 274985 4198007 3017318 3960836 288736 3007716 491130 1486529	9-On Hold 2-Fulfilled 2-Fulfilled 3-Shipped 3-Shipped 2-Fulfilled 9-On Hold 1-Booked 5-Paid	10 9 13 12 8 9 10 9 10	106.84 18.18 2.48 6.37 57.83 62.96 2.53 9.29 11.74	246.2 76.7 29.18 123.51 283.96 166.98 13.56 109.72 99.06	983.87 273.8 31.19 505.44 1080.36 198.41 45.36 251.8 634.37	2845.42 880.21 202.74 615.54 1465.19 958.08 135.18 218.72 625.03	13-Jun-12 13-Jun-12 18-Feb-11 28-Dec-12 14-Jul-12 27-Oct-12 4-Feb-11 5-Aug-12 22-Jan-12 26-Jun-11	1-Aug-12 8-Apr-11 30-Jan-13 1-Sep-12 29-Nov-12 24-Mar-11 16-Sep-12 23-Feb-12 31-Jul-11	12 15 12 65 11 15 94 93 72 72
Help						< <u>B</u> ack	<u>N</u> ext >	Einish	Cano	:el

• The next screen allows you to select the columns you like to include as part of the load and also as part of the table column list for the DDL. For this exercise, keep all settings as default the effect of which is to include all columns. Click **Next**.

5	Data Import Wizard -	- Step 3 o	of 5 X
Column Definition			
Data Preview Import Method Column Definition Options Enish	For each column on left, define the column details of the databas	ase table that get Table C Name Data Type e/Precision Scale Nullable? mment 14929 1163106 1488516 1488516 1488516 1488516 1488516 1488516 1488516 1488516 1488516 1488516 1498516 14	at will be created to import this data into.
Help			< <u>B</u> ack <u>N</u> ext > <u>F</u> inish Cancel

• This screen allows you to set SQL*Loader options. For this exercise just note the location where the scripts will be generated. Leave the rest of the options as default. Click **Next**.

Eō -	Data Import Wizard - Step 4 of 5	X
Options		
Data Preview Import Method Column Definition Options Enish	Sqldr Options Log Eile Directory: ~none~ gad File Directory: ~none~ Generated Files Directory: • Save In Import File Directory (C:\Labs) Save In: Save In: ~none~ Generated File Line Terminator: platform default Generate File Line Terminator: platform default Generate File Characters in a buffer: 4000 Generate File Character Set: •	Browse Browse
Help	< Back Next > Einish	Cancel

• Click Finish.

5 0	Data Import Wiz	ard - Step 5 of 5			×
Finish					
Pata Preview. Import Method Column Definition Options Finish	 Import Summary Destination Connection: admin_low Source File: C:\Labs\SampleData1.csv Selected Fields Fields Not Selected Import Method: SQL*Loader Utility 				Save State
Help		< <u>B</u> ack	<u>N</u> ext >	Einish	Cancel

• A new SQL Worksheet is created with the create table DDL command.



• Execute the Create Table script. Click F5 or the Run Script button.



• You may be presented with **Select a Connection** dialog. Ensure that it points to the right ADWC connection and click **OK**.

Select Connection
xisting connection or create a new one to
🛃 admin_low 🗾 🕂 🥒
OK Cancel

• Your table should be created.

Script Output ×	
📌 🥔 🗟 💂	Task completed in 0.672 seconds
Table LOAD_LDR c:	reated.

Step 2: Run the Generated SQL*Loader Scripts

Next, let's use the generated scripts from the previous step to load data using SQL*Loader.

- Using Windows Explorer, browse to C:\Labs directory and click to run SampleData1.bat.
- A command screen will pop-up prompting for a Username. Enter the following string :

ADMIN/<YourPassword>@<YourConnect_String>

- Where:
 - **<YourPassword>** is the password for the ADMIN user (entered when creating the service).
 - <YourConnect_String> is the TNS Alias to one of the ADWC Services (e.g. LOW, MEDIUM or HIGH).



• Your source file is now being loaded into ADWC.

0.40					
Commit point	reached -	logical	record	count	2490
Commit point	reached -	logical	record	count	2493
Commit point	reached -	logical	record	count	2496
Commit point	reached -	logical	record	count	2499
Commit point	reached -	logical	record	count	2502
Commit point	reached -	logical	record	count	2505
Commit point	reached -	logical	record	count	2508
Commit point	reached -	logical	record	count	2511
Commit point	reached -	logical	record	count	2514
Commit point	reached -	logical	record	count	2517
Commit point	reached -	logical	record	count	2520
Commit point	reached -	logical	record	count	2523
Commit point	reached -	logical	record	count	2526
Commit point	reached –	logical	record	count	2529
Commit point	reached -	logical	record	count	2532
Commit point	reached -	logical	record	count	2535
Commit point	reached -	logical	record	count	2538
Commit point	reached -	logical	record	count	2541
Commit point	reached -	logical	record	count	2544
Commit point	reached -	logical	record	count	2547
Commit point	reached -	logical	record	count	2550
Commit point	reached -	logical	record	count	2553
Commit point	reached -	logical	record	count	2556
Commit point	reached -	logical	record	count	2559
Commit point	reached -	logical	record	count	2562
Commit point	reached -	logical	record	count	2565
Commit point	reached -	logical	record	count	2568
Commit point	reached -	logical	record	count	2571
Commit point	reached -	logical	record	count	2574
commit point	reached -	fodicaf	record	count	2577
commit point	reached -	Todicat	record	count	2580
Commit point	reached -	Todicat	record	count	2583
commit point	reached -	Logical	record	count	2586
Commit point	reached -	logical	record	count	2207
Commit point	reached -	logical	record	count	2372 9505
Commit point	reached -	logical	record	count	2373 9500
Commit point	reached -	logical	record	count	2070
Commit point	reached -	logical	record	count	2604
Commit point	veached -	logical	record	count	2607
Commit point	reached -	logical	record	count	2610
Commit point	reached -	logical	record	count	2613
Commit point	reached -	logical	record	count	2616
Commit point	reached -	logical	record	count	2619
Commit point	reached -	logical	record	count	2622
Commit point	reached -	logical	record	count	2625
Commit point	reached -	logical	record	count	2628
Commit point	reached -	logical	record	count	2631
Commit point	reached -	logical	record	count	2634
Commit point	reached -	logical	record	count	2637
Commit point	reached -	logical	record	count	2640
Commit point	reached -	logical	record	count	2643
Commit point	reached -	logical	record	count	2646

- Once the load completes, run a COUNT(*) query and check the rowcount of table data that just got loaded.
- Open a Worksheet in **SQL Developer** connected to the ADWC Service. Run the query below:

```
select count(*) from <TableName>;
```

• Where <TableName> is the name of the table you entered in the wizard while loading (e.g. LOAD_LDR).

3 Start Page × Amin_low × Import-SampleData1-csv_1.sql ×	
🕨 📃 🗃 👻 🗟 🔯 🗟 🛗 🏈 🗔 🔩	•
Worksheet Query Builder	
<pre>select count(*) from LOAD_LDR;</pre>	
Query Result ×	
📌 📇 🙀 🙀 SQL All Rows Fetched: 1 in 0.078 seconds	
1 5247	Î

• This completes the SQL Loader lab.

Part 2: Importing Data Using Oracle Data Pump

Oracle Data Pump offers very fast bulk data and metadata movement between Oracle databases and Autonomous Data Warehouse Cloud.

Data Pump Import lets you import data from Data Pump files residing on the Oracle Cloud Infrastructure Object Storage, Oracle Cloud Infrastructure Object Storage Classic, and AWS S3. You can save your data to your Cloud Object Store and use Oracle Data Pump to load data to Autonomous Data Warehouse Cloud.

In this lab you will import a dump file from the Oracle Object Storage into **ADWC** using Oracle Data Pump.

Objectives

- Import a schema into ADWC from Oracle Object Storage
- Understand the role of Credentials

Required Artifacts

- Access to the Lab VM.
 - Locate the Lab VM's IP Address, User Name and Password
- The following artifacts of the Lab VM are used:
 - Installed software: Oracle SQL Developer and Oracle Database Client (which includes Oracle Data Pump)
 - Wallet files configured in Oracle Client's home directory

- Data Pump Export file previously uploaded to Oracle Object Storage
 - · Object Storage Swift credentials are provided in the lab

Lab Steps

Step 1: Creating Cloud Object Storage Credentials

• To load data from the Oracle Cloud Infrastructure Object Storage you will need a Cloud user with the appropriate privileges to read data (or upload) data from Object Store. The communication between the database and the object store relies on the Swift protocol and username/password authentication.

Note: For the puposes of this lab, we are providing the Swift username/password to connect to the Object Store instead of the credentials to the OCI Object Storage.

- In order to access data in the Object Store you need to enable the database user to authenticate with the Object Store using your object store account and Swift password.
- This is done by creating a private CREDENTIAL object that stores this information encrypted in ADWC.
- Using a SQL worksheet of SQL Developer and connected to admin_low connection, execute the following code to create the object store credential.

```
set define off
BEGIN
    DBMS_CLOUD.create_credential(
    credential_name => 'WORKSHOP_CREDENTIAL',
    username => 'adw_workshop_user',
    password => '+Wj75T1<.r50YaiHfJm!');
END;
/</pre>
```

• Set the credential as the default credential for your ADWC, as the ADMIN user.

alter database property set default_credential = 'ADMIN.WORKSHOP_CREDENTIAL';

Note: The above step is required only when using Oracle Data Pump version 12.2.0.1. and earlier.

3 Start Page × Amin_low × I Import-SampleData1-csv_1.sql ×		
🕨 📃 🗃 🗸 🗟 🔯 🛃 🏭 🥔 🗔 🖓 1.43700004 seconds	admin_low	•
Worksheet Query Builder		
set define off		
BEGIN		
DBMS_CLOUD.create_credential(
<pre>credential_name => 'WORKSHOP_CREDENTIAL',</pre>		
username => 'adw_workshop_user',		
<pre>password => '+Wj75T1<.r50YaiHfJm!');</pre>		
END;		
alter database property set default credential = 'ADMIN.WORKSHOP_CF	EDENTIAL';	
<pre>credential_name => 'WORKSHOP_CREDENTIAL', username => 'adw_workshop_user', password => '+Wj75Tl<.r50YaiHfJm!'); END; // alter database property set default_credential = 'ADMIN.WORKSHOP_CP</pre>	EDENTIAL';	

Step 2: Run Data Pump Import

• Click on the cmd.exe to start a command terminal.



• Copy the below impdp command and paste it in a text editor or SQL Developer Worksheet in the Lab VM.



- Edit the pasted script and enter <YourPassword> and <YourConnect_string> (keep the windows shell line continuation character ^ (caret) at the end of each line intact when copying/pasting).
 - <YourPassword> is the password entered while creating the service
 - <YourConnect_string> is the TNS Alias you have used earlier to connect to ADWC (prefereably use the HIGH service for improved performance)
- Run the impdp command by copying and pasting the edited command that has your password and connect string for user **ADMIN**.

Note: The dumpfile has the syntax "default_credential:https://swiftobjectstorage.

C:\user\opc>impdp userid=admin/password@workshop_low remap_schema=workshop_schema:admin schemas=workshop_schema remap_tablespace=USERS:DAT A directory=data_pump_dir dumpfile=default_credential:https://swiftobjectstorage.us-phoenix-1.oraclecloud.com/v 1/oraclepartnersas/workshop_object_storage_bucket/workshop_schema.dmp logfile=data_p ump dir:workshop schema.dmp.log

Import: Release 12.1.0.2.0 - Production on Thu Apr 26 19:59:29 2018
Copyright (c) 1982, 2014, Oracle and/or its affiliates. All rights reserved.
Connected to: Oracle Database 18c Enterprise Edition Release 12.2.0.1.0 - 64bit Produ
ction

Master table "ADMIN"."SYS_IMPORT_SCHEMA_01" successfully loaded/unloaded

Starting "ADMIN"."SYS_IMPORT_SCHEMA_01": userid=admin/******@workshop_low remap_sc hema=workshop_schema:admin schemas=workshop_schema remap_tablespace=USERS:DATA direct ory=data_pump_dir dumpfile=default_credential:https://swiftobjectstorage.us-phoenix-1 .oraclecloud.com/v1/oraclepartnersas/workshop_object_storage_bucket/workshop_schema.d mp logfile=data_pump_dir:workshop_schema.dmp.log

```
Processing object type SCHEMA EXPORT/USER
ORA-31684: Object type USER: "ADMIN" already exists
Processing object type SCHEMA EXPORT/SYSTEM GRANT
Processing object type SCHEMA EXPORT/ROLE GRANT
Processing object type SCHEMA EXPORT/DEFAULT ROLE
Processing object type SCHEMA EXPORT/TABLESPACE QUOTA
Processing object type SCHEMA_EXPORT/PRE_SCHEMA/PROCACT_SCHEMA
Processing object type SCHEMA_EXPORT/TABLE/TABLE
ORA-39151: Table "ADMIN"."COPY$3 LOG" exists. All dependent metadata and data will be
skipped due to table exists action of skip
Processing object type SCHEMA EXPORT/TABLE/TABLE DATA
. . imported "ADMIN"."SALES"
                                   29.63 MB 918843 rows
. . imported "ADMIN"."CUSTOMERS"
                                   10.27 MB
                                              55500 rows
. . imported "ADMIN"."COSTS"
                                              82112 rows
                                   2.420 MB
. . imported "ADMIN". "SUPPLEMENTARY DEMOGRAPHICS" 697.6 KB
                                                               4500 rows
. . imported "ADMIN"."TIMES"
                                   381.7 KB
                                               1826 rows
. . imported "ADMIN". "PROMOTIONS" 59.18 KB
                                                503 rows
 . imported "ADMIN"."PRODUCTS"
                                   26.73 KB
                                                 72 rows
 . imported "ADMIN"."COUNTRIES"
                                   10.47 KB
                                                 23 rows
. . imported "ADMIN"."CHANNELS"
                                   7.562 KB
                                                   5 rows
. . imported "ADMIN"."ABC"
                                       0 KB
                                                   0 rows
. . imported "ADMIN"."TEST SQLLDR" 1.376 MB
                                               5249 rows
 . imported "ADMIN"."TEST SQLLDR1" 4.088 MB
                                               15741 rows
Processing object type SCHEMA EXPORT/TABLE/STATISTICS/TABLE STATISTICS
```

Processing object type SCHEMA_EXPORT/STATISTICS/MARKER Processing object type SCHEMA_EXPORT/POST_SCHEMA/PROCOBJ Job "ADMIN"."SYS_IMPORT_SCHEMA_01" completed with 2 error(s) at Fri Apr 27 01:03:56 2 018 elapsed 0 00:04:26

Note: The impdp logfile is created in the default DATA_PUMP_DIR directory on the ADWC Service instance. If you need to view the impdp log, you need to use DBMS_CLOUD.PUT_OBJECT procedure to copy the logfile into object storage and then download the logfile from object storage.

• This completes the Data Pump lab.