

Oracle Data Integrator Configuration for FLEXCUBE  
Information Server  
Oracle FLEXCUBE Universal Banking  
Release 12.87.06.0.0  
[May] [2020]



---

# Table of Contents

<b>1.</b>	<b>ORACLE DATA INTEGRATOR CONFIGURATION .....</b>	<b>2</b>
1.1	INTRODUCTION .....	2
1.2	VERIFICATION OF PREREQUISITE SOFTWARE AND INSTALLATION .....	2
1.2.1	<i>Verification of prerequisite software .....</i>	<i>2</i>
1.2.2	<i>Verification of prerequisite installation .....</i>	<i>2</i>
1.2.3	<i>ODI repository connection configuration and verification .....</i>	<i>3</i>
1.2.4	<i>ODI agent connection configuration and verification .....</i>	<i>4</i>
1.3	STEPS FOR ODI CONFIGURATION .....	5
1.3.1	<i>Smart Import .....</i>	<i>5</i>
1.3.2	<i>Topology- Physical architecture configuration .....</i>	<i>7</i>
1.3.3	<i>Journalized tables creation .....</i>	<i>12</i>
1.3.4	<i>UDF Maintenance in ODS .....</i>	<i>17</i>
1.3.5	<i>Load Initial Data in FIS .....</i>	<i>18</i>
1.3.6	<i>Running the Package .....</i>	<i>18</i>
1.4	OBIEE CONFIGURATION .....	19
1.5	INTERMEDIATE RELEASE AND IMPORT OF OBJECTS .....	20
1.6	TECHNICAL SPECIFICATION .....	21

---

# 1. Oracle Data Integrator Configuration

## 1.1 Introduction

This document explains configuration of Oracle Data Integrator (ODI) for Flexcube Information Server in two steps, they are verification of prerequisite software installation and steps for ODI Configuration.

## 1.2 Verification of Prerequisite software and installation

Verification of prerequisite software and installation, involves the below steps:

- Verification of prerequisite software
- Verification of prerequisite installation
- ODI repository connection configuration and verification
- ODI agent configuration and verification

### 1.2.1 Verification of prerequisite software

Ensure the availability below prerequisite software:

- Oracle Data Integrator(ODI)
  - ODI Designer
  - ODI Master and Work Repositories
  - ODI JEE Agent installed
- Oracle Golden Gate (GG) installed in Flexcube and Operational Data store (ODS) Schema.

### 1.2.2 Verification of prerequisite installation

Ensure the installation/configuration of the below prerequisite software:

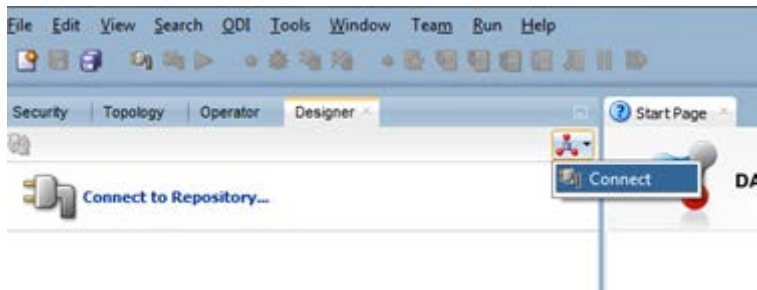
- **Flexcube Information Server Utility**
  - Run Flexcube Information Server Utility using Oracle Flexcube Universal Banking Installer .Refer document in path Installation/FLEXCUBE\_UBS\_Installation/Utilities/FLEXCUBE\_Information\_server.doc
  - This utility will ensure Operational Data Store(ODS) and Flexcube Information Server(FIS) Database is ready.
  - Note- Both ODS and FIS are on same schema.i.e one Reporting schema acting as ODS and FIS.
- **Data Synchronization of Flexcube and ODS tables**
  - Get a dump of all data in ODS Tables from Flexcube to ODS Schema. The list of tables to be in sync can be got from [INSTALLER/SOURCE/config/Database/DDL\\_List\\_ODS.txt](#)

- Oracle Golden Gate(GG) param file configuration  
Update param file configuration and start Golden Gate.

Database	Param File	Param File path	Deployment path
Flexcube	Ext.prm	ODS/PARAM_FILES	scratch/db/db1212/product/12.1.0/oggcore_1/dirprm/
ODS	REPL2.prm	ODS/PARAM_FILES	scratch/db/db1211/product/12.1.0/oggcore_1/dirprm/

### 1.2.3 ODI repository connection configuration and verification

Start ODI Designer by running the odi studio.exe file. Connect to the repository by clicking on the icon as indicated in the screen below:

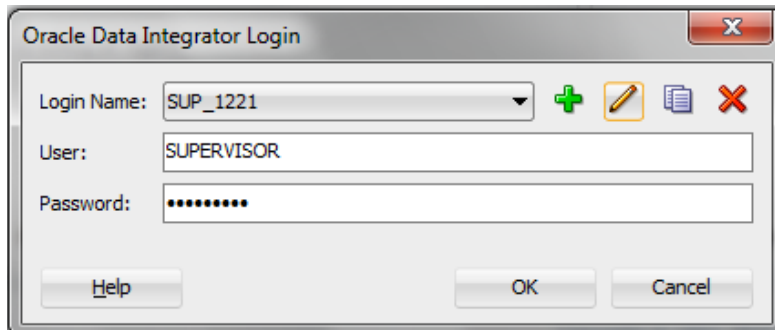


This opens an empty Repository Connection Information Screen. Enter the login credentials, Master and work repository details. Specify the repository connection information as in the below screen, click test to Test Connection and click **OK**

A screenshot of the 'Repository Connection Information' dialog box. It has a title bar with a close button. The dialog is divided into three sections: 'Oracle Data Integrator Connection', 'Database Connection (Master Repository)', and 'Work Repository'. In the 'Oracle Data Integrator Connection' section, 'Login Name' is 'SUP\_1221', 'User' is 'SUPERVISOR', and 'Password' is masked with dots. In the 'Database Connection (Master Repository)' section, 'User' is 'DEVODI1221\_ODI\_REPO', 'Password' is masked, 'Driver List' is 'Oracle JDBC Driver', 'Driver Name' is 'oracle.jdbc.OracleDriver', and 'URL' is 'jdbc:oracle:thin:@10.184.132.144:1522:FISDEV122'. In the 'Work Repository' section, 'Master Repository Only' is unselected, 'Work Repository' is selected with 'WORKREP' in the text box, and 'Default Connection' is unselected. At the bottom are buttons for 'Help', 'Test', 'OK', and 'Cancel'.

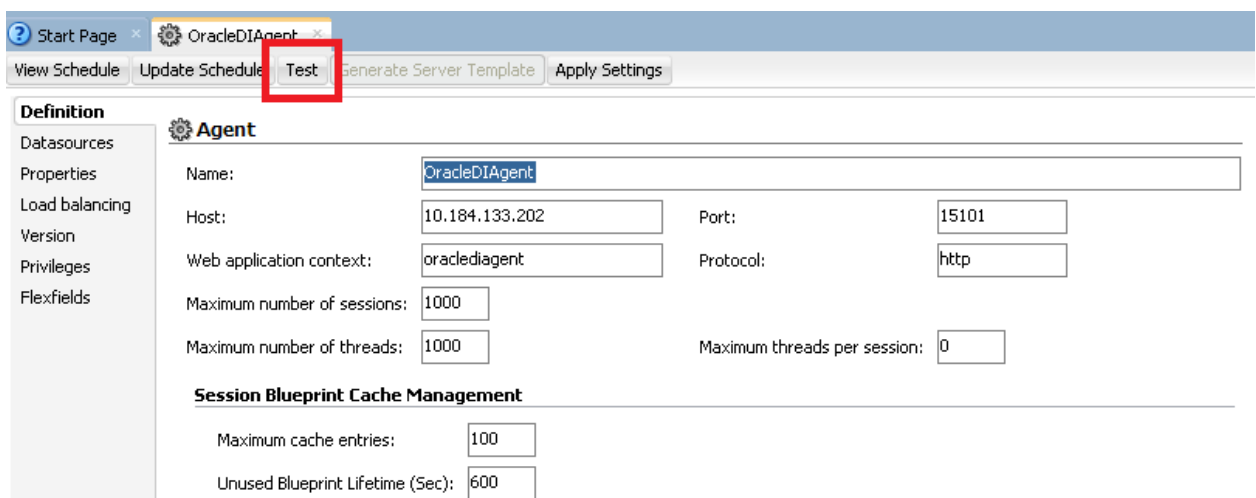
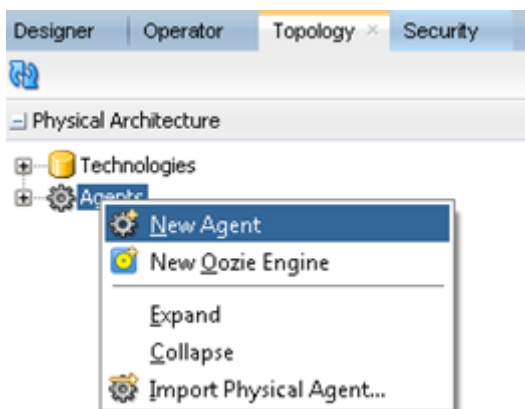
The login credentials entered above need to be entered every time we login to ODI as below,

Click Connect to repository and enter the login credentials and click **OK**. A confirmation is displayed on successful login. Next time whenever we open ODI Designer, it would display ODI Login screen as below:

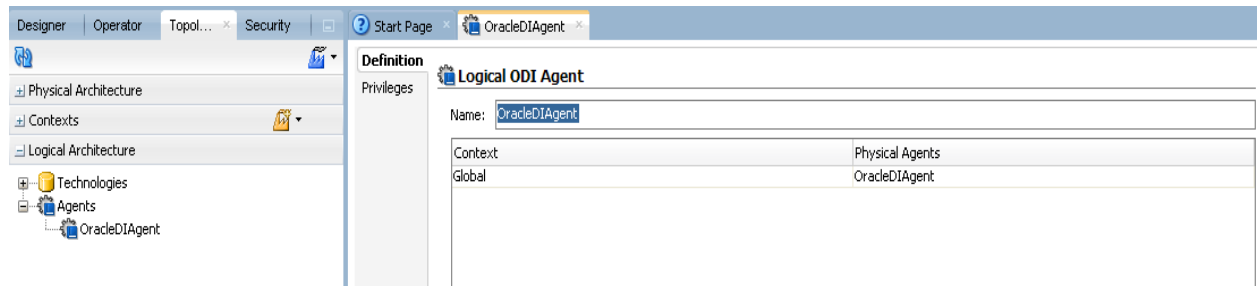


### 1.2.4 ODI agent connection configuration and verification

Create an agent by right click on Agents under Topology→Physical Architecture →Agents and select New Agent and give the agent details. To confirm if the agent is working fine, click **Test** button at the top of the OracleDI Agent.



Similarly under Topology→ Logical Architecture → Agents , right click on Agents and select New Logical Agent and enter details and save it.



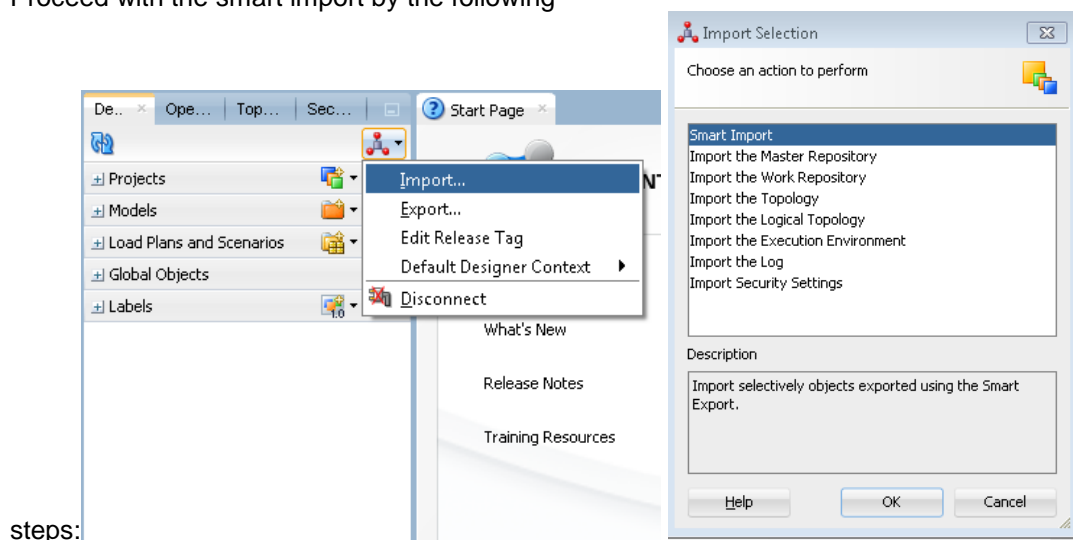
## 1.3 Steps for ODI Configuration

ODI configuration involves the below steps:

- Smart import
- Topology-Physical architecture configuration
- Journalized tables creation
- UDF Maintenance in ODS
- Load Initial data in FIS
- Running of packages

### 1.3.1 Smart Import

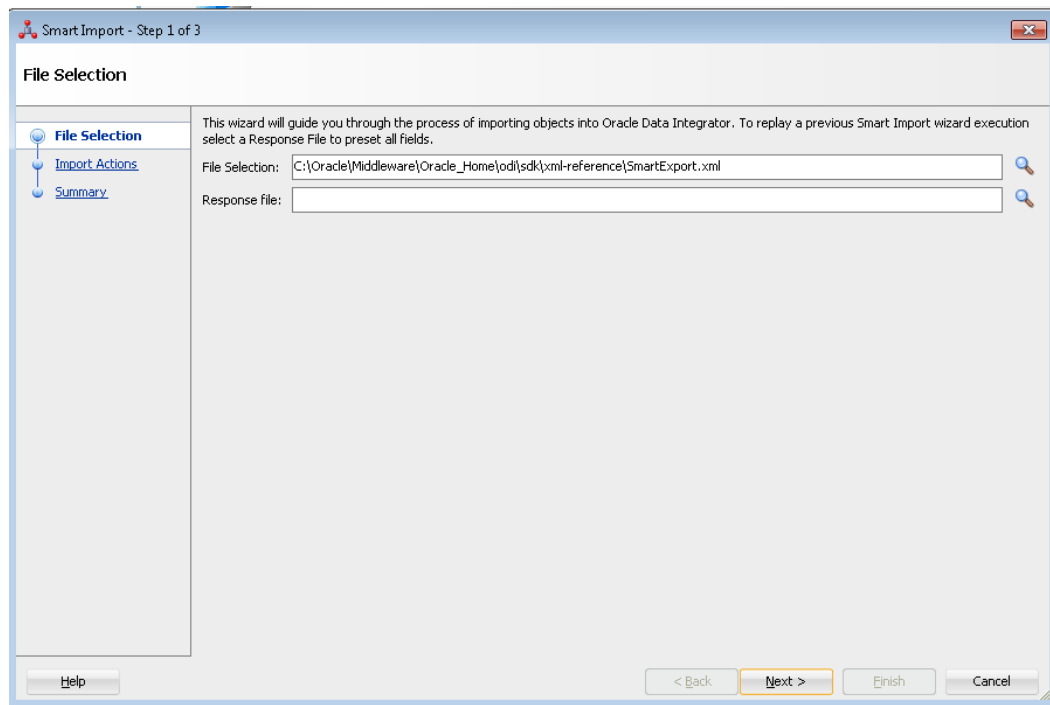
Proceed with the smart import by the following



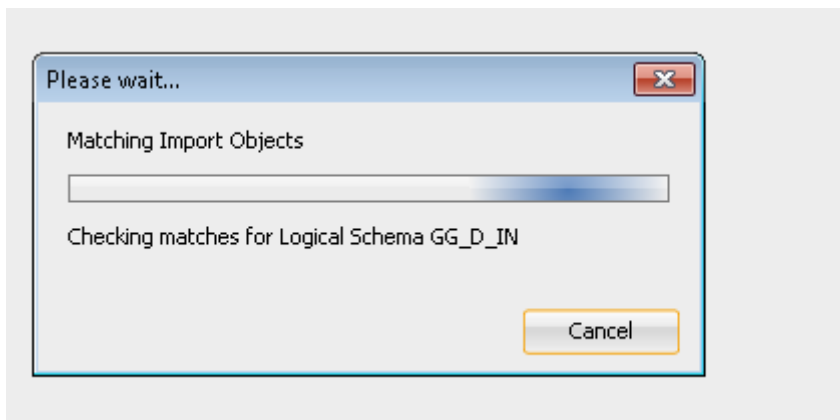
Select the Import→Smart Import from the action to perform dialogue box

Give the SmartExport.xml file path in the File Selection and click NEXT.

Note - SmartExport.xml is in path /FIS-REPORTING/FIS-Reporting-Infra/ODI/Projects/FIS/Project



This would start importing all the files.



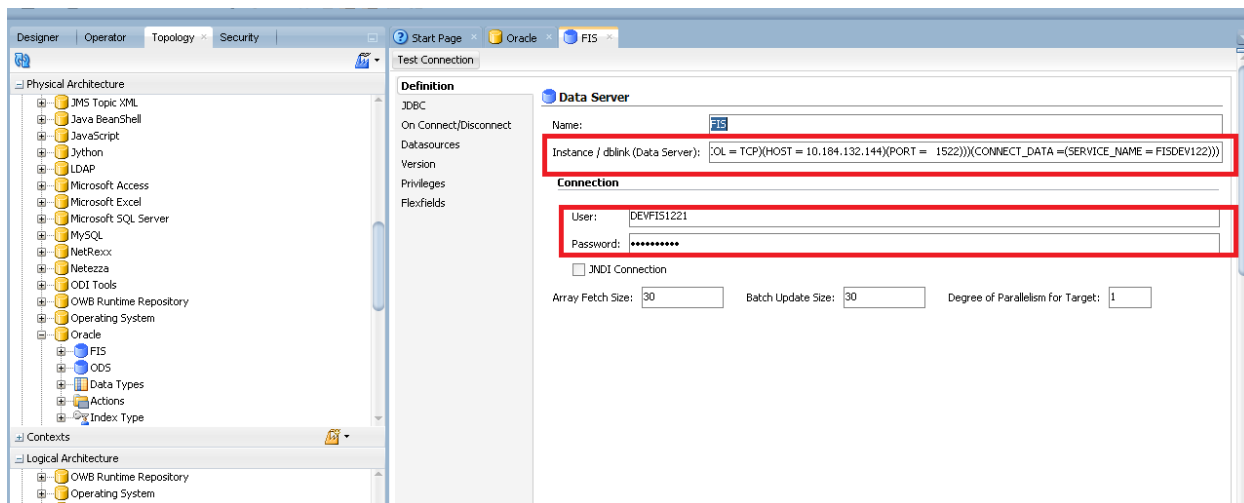
On confirmation of smart import, proceed with the below steps.

## 1.3.2 Topology- Physical architecture configuration

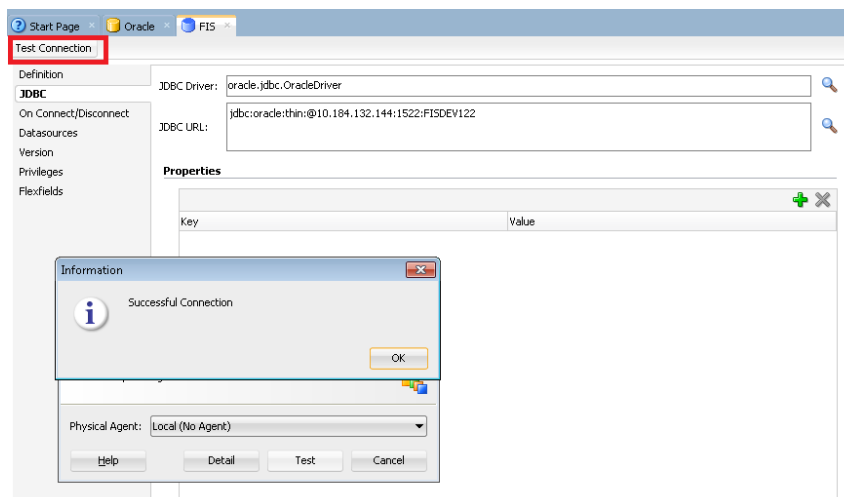
Under Topology we have to update the Physical Architecture of Oracle and Oracle Golden Gate

### 1.3.2.1 Oracle

Under the Topology→ Physical Architecture→Oracle→FIS→ Definition, update the Data Server Instance / dblink with connection user and password for the source schema.



Then go to the JDBC and update the driver details of the source schema and test the connection



Inside the Topology→ Physical Architecture→Oracle→FIS→ FIS.DEVFIS1221,update the Schema and Work Schema . Check or otherwise update the Work Tables Prefix as:

Errors: E\$\_<?=vSess?>

Loading: C\$\_<?=vSess?>

Integration : I\$\_<?=vSess?>



**Definition**

Context

Version

Privileges

Flexfields

**Physical Schema [Data Server: FIS]**

Name: FIS.DEVFIS1221

Schema (Schema): DEVFIS1221

Schema (Work Schema): DEVFIS1221

☒ Default

**Work Tables Prefix**

Errors: =vSess?> Loading: C\$\_<?>v\$ Integration: =vSess?> Temporary Indexes: IX\$\_

**Journalizing elements prefixes**

Datasources: D\$ Views: JV\$ Triggers: T\$

**Naming Rules**

Character Encoding: BASE38

Local Object Mask: %SCHEMA.%OBJECT

Remote Object Mask: %SCHEMA.%OBJECT@%DSERVER

Partition Mask: %SCHEMA.%OBJECT PARTITION(%PARTITION)

Sub-Partition Mask: %SCHEMA.%OBJECT SUBPARTITION(%PARTITION)

Local Sequence Mask: %SCHEMA.%OBJECT.nextval

Remote Sequence Mask: %SCHEMA.%OBJECT.nextval@%DSERVER

Local Sequence Current Value Mask: %SCHEMA.%OBJECT.currval

Remote Sequence Current Value Mask: %SCHEMA.%OBJECT.currval@%DSERVER

Similarly under Topology→ Physical Architecture→Oracle→ODS→ Definition , update the destination schema details in the Instance/dblink(data server) ,connection User and Password .

**Definition**

JDBC

On Connect/Disconnect

Datasources

Version

Privileges

Flexfields

**Data Server**

Name: ODS

Instance / dblink (Data Server): OL = TCP(HOST = 10.184.132.144)(PORT = 1522))(CONNECT\_DATA =(SERVICE\_NAME = FISDEV1221))

**Connection**

User: DEVFIS1221

Password: \*\*\*\*\*

☐ JNDI Connection

Array Fetch Size: 30 Batch Update Size: 30 Degree of Parallelism for Target: 1

Update the JDBC driver details under Topology→ Physical Architecture→Oracle→ODS and test the connection for the destination schema

Start Page Oracle FIS ODS

**Test Connection**

Definition

**JDBC**

On Connect/Disconnect

Datasources

Version

Privileges

Flexfields

JDBC Driver: oracle.jdbc.OracleDriver

JDBC URL: jdbc:oracle:thin:@10.184.132.144:1522:FISDEV122

**Properties**

Key	Value
-----	-------

Inside the Topology→ Physical Architecture→Oracle→FIS→ FIS.DEVFIS1221,update the Schema and Work Schema . Check or otherwise update the work tables prefix as :

Errors: E\$\_<?=vSess?>

Loading: C\$\_<?=vSess?>

Integration : I\$\_<?=vSess?>

Start Page MDL\_ODS FIS.DEVFIS1221 ODS.DEVFIS1221

**Physical Schema [Data Server: ODS]**

Name: ODS.DEVFIS1221

Schema (Schema): DEVFIS1221

Schema (Work Schema): DEVFIS1221

☒ Default

**Work Tables Prefix**

Errors: =vSess?> Loading: =vSess?> Integration: =vSess?> Temporary Indexes: IX\$\_

**Journalizing elements prefixes**

Datasources: J\$ Views: JV\$ Triggers: T\$

**Naming Rules**

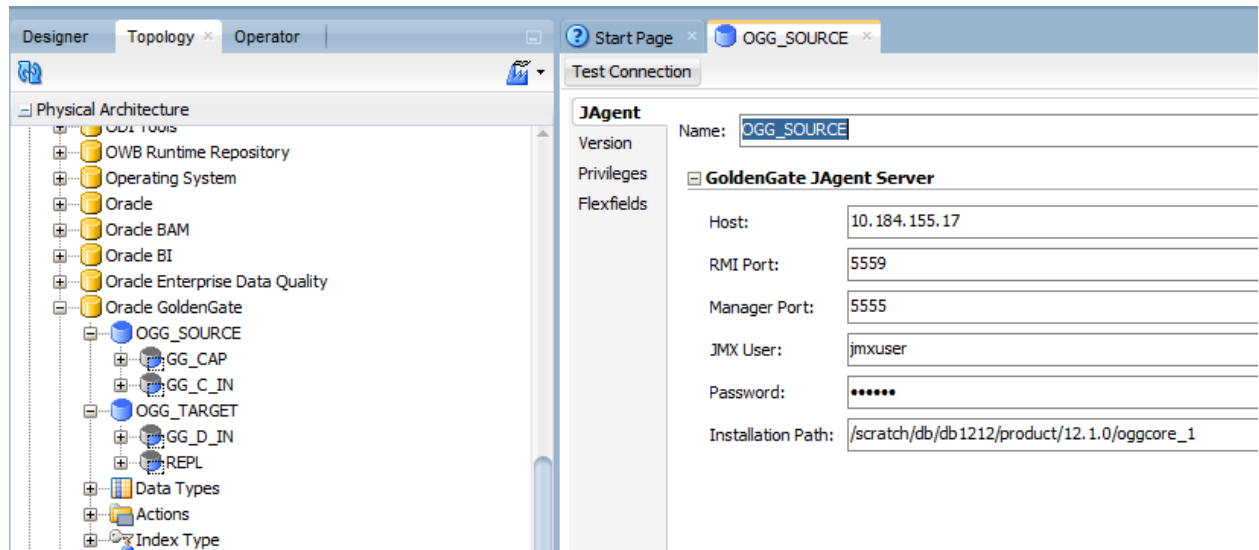
Character Encoding:	BASE30
Local Object Mask:	%SCHEMA.%OBJECT
Remote Object Mask:	%SCHEMA.%OBJECT@%DSERVER
Partition Mask:	%SCHEMA.%OBJECT PARTITION(%PARTITION)
Sub-Partition Mask:	%SCHEMA.%OBJECT SUBPARTITION(%PARTITION)
Local Sequence Mask:	%SCHEMA.%OBJECT.nextval
Remote Sequence Mask:	%SCHEMA.%OBJECT.nextval@%DSERVER
Local Sequence Current Value Mask:	%SCHEMA.%OBJECT.currenval
Remote Sequence Current Value Mask:	%SCHEMA.%OBJECT.currenval@%DSERVER

### 1.3.2.2 Oracle Golden Gate

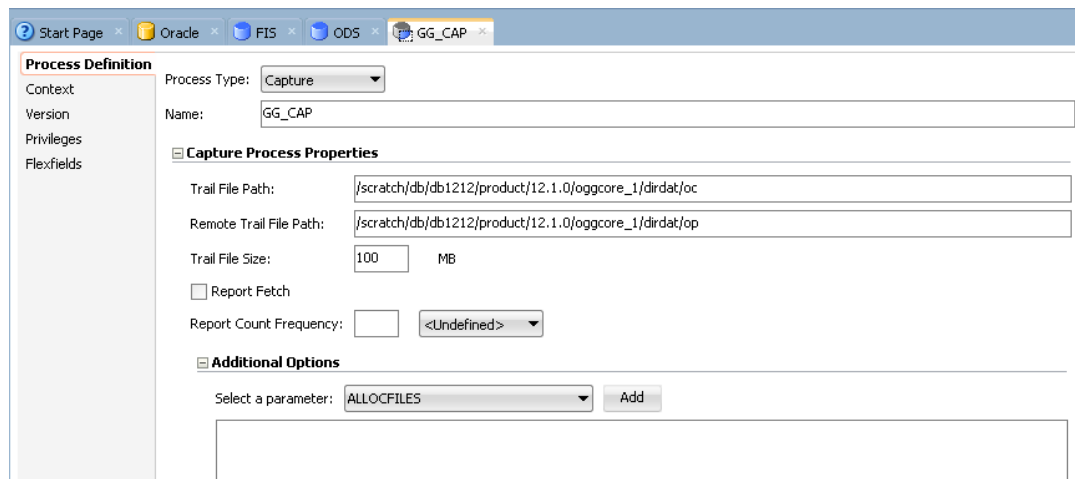
Update the golden gate source details under the

Topology→ Physical Architecture→Oracle GoldenGate →OGG\_SOURCE.

Update the Host,RMI port,Manager Port,JMX User, Password and Installation Path.



And also update the GG\_CAP,GG\_C\_IN Capture Process Properties .



The screenshot shows the 'Process Definition' window for the 'GG\_C\_IN' process. The 'Process Type' is set to 'Capture'. The 'Name' is 'GG\_C\_IN'. Under 'Capture Process Properties', the 'Trail File Path' is '/scratch/db/db1212/product/12.1.0/oggcore\_1/dirdat/oc', the 'Remote Trail File Path' is '/scratch/db/db1212/product/12.1.0/oggcore\_1/dirdat/op', and the 'Trail File Size' is '100 MB'. The 'Report Fetch' checkbox is unchecked, and the 'Report Count Frequency' is '<Undefined>'. Under 'Additional Options', the 'Select a parameter' dropdown is set to 'ALLOCFILES'.

Similarly update the GoldenGate JAgent Target Server details under  
 Topology→ Physical Architecture→Oracle GoldenGate →OGG\_Target  
 along with the details in the GG\_D\_IN and REPL delivery process properties

The screenshot shows the 'JAgent' configuration window. The 'Name' is 'OGG\_TARGET'. Under 'GoldenGate JAgent Server', the 'Host' is 'ofss220041', the 'RMI Port' is '5559', the 'Manager Port' is '5555', the 'JMX User' is 'jmxuser', the 'Password' is masked with '\*\*\*\*\*', and the 'Installation Path' is '/scratch/db/db1211/product/12.1.0/oggcore\_1'.

The screenshot shows the 'Process Definition' window for the 'GG\_D\_IN' process. The 'Process Type' is set to 'Delivery'. The 'Name' is 'GG\_D\_IN'. Under 'Delivery Process Properties', the 'Trail File Path' is '/scratch/db/db1211/product/12.1.0/oggcore\_1/dirdat/op', the 'Discard File Path' is '/scratch/db/db1211/product/12.1.0/oggcore\_1/dirrpt/', and the 'Definition File Path' is '/scratch/db/db1211/product/12.1.0/oggcore\_1/dirdef/'. The 'Report Detail' checkbox is unchecked, and the 'Report Count Frequency' is '<Undefined>'. Under 'Additional Options', the 'Select a parameter' dropdown is set to 'ALLOCFILES'.

The screenshot shows the Oracle GoldenGate Process Definition window. The 'Process Type' is set to 'Delivery' and the 'Name' is 'REPL'. Under 'Delivery Process Properties', the 'Trail File Path' is '/scratch/db/db1211/product/12.1.0/oggcore\_1/dirdat/op', the 'Discard File Path' is '/scratch/db/db1211/product/12.1.0/oggcore\_1/dirrpt/', and the 'Definition File Path' is '/scratch/db/db1211/product/12.1.0/oggcore\_1/dirdef/'. The 'Report Detail' checkbox is unchecked, and the 'Report Count Frequency' is set to '<Undefined>'. Under 'Additional Options', the 'Select a parameter' dropdown is set to 'ALLOCFILES', and there is an 'Add' button.

### 1.3.3 Journalized tables creation

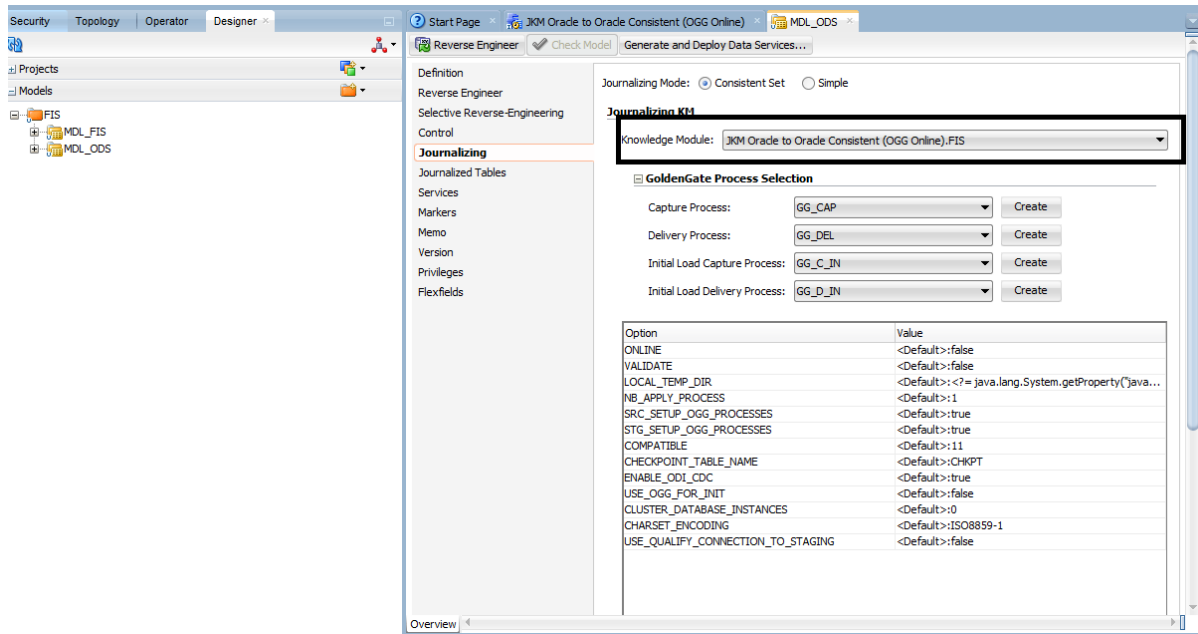
Journalized Tables Creation involves few Steps

- (i) Verification of MDL\_ODS properties
- (ii) Verify/Add Subscriber
- (iii) Add tables to CDC
- (iv) Start Journal
- (v) Add journal Tables in GG parameter files

#### 1.3.3.1 Verification of MDL\_ODS properties

Select MDL\_ODS in Models → FIS → MDL\_ODS,

- Definition : Logical Schema MDL\_ODS is selected and verify details are as per below screenshot
- Journalizing : Knowledge Module(KM) should be set to JKM Oracle to Oracle Consistent(OGG Online).FIS and other parameters are defined as per below screenshot.



Check the Group Name value in CHKPT table. This table is internally used by Golden Gate to create Window Ids.

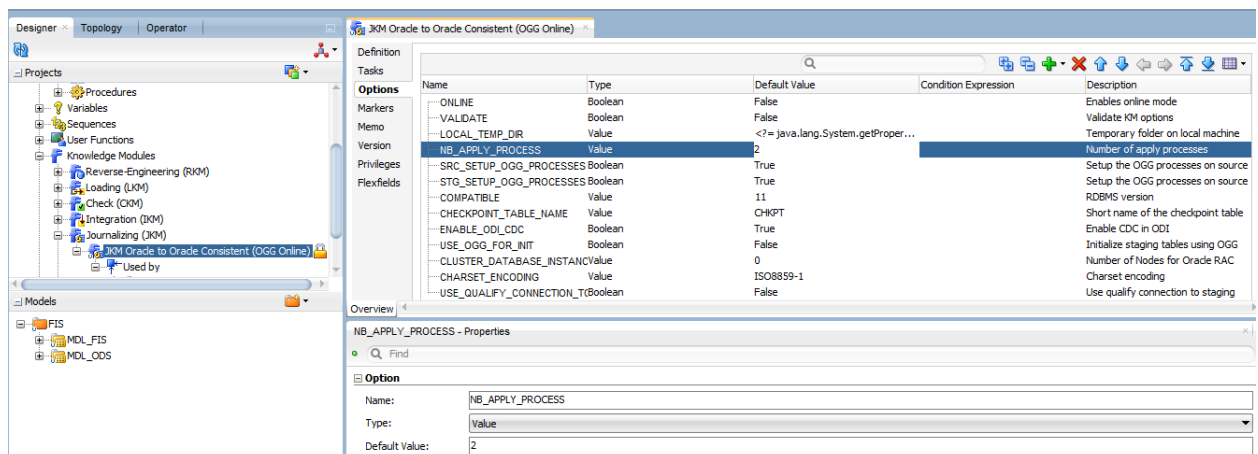
If Group name value is REPL1 then the NB\_APPLY\_PROCESS value should be 1.

If Group name value is REPL2 then the NB\_APPLY\_PROCESS value should be 2.

ODI may not allow changing the value directly in MDL\_ODS → Journalizing tab, then change in JKM screen as mentioned below, and then come change in Model details.

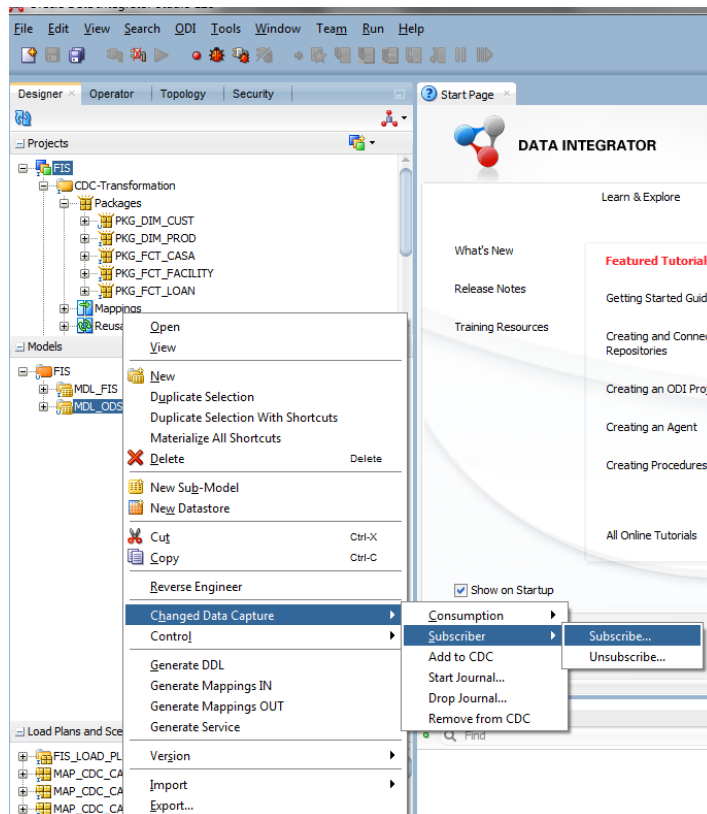
To change in JKM go to Knowledge Modules → Journalizing(JKM) → JKM Oracle to Oracle Consistent(OGG Online)

In that under Options Tab update the value of NB\_APPLY\_PROCESS.

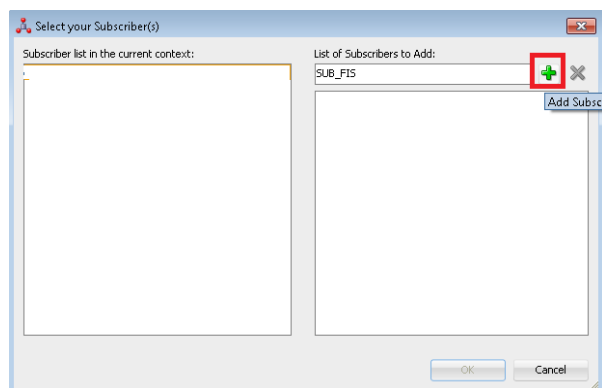


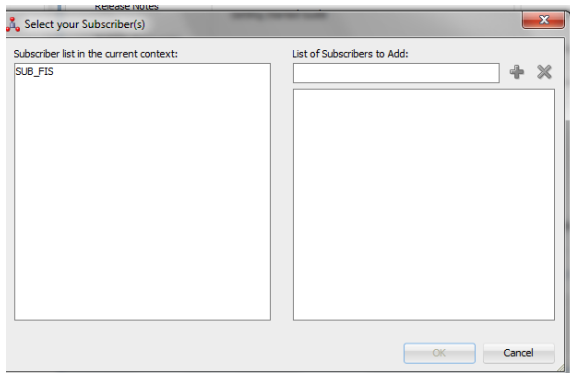
### 1.3.3.2 Verify/Add Subscriber

- Right click on MDL\_ODS -> Changed Data Capture -> Subscriber ->Subscribe...
- Check if the entry SUB\_FIS is available in Subscriber list in the current context.
- If not available please add a subscriber.



To add a subscriber enter “SUB\_FIS” in “List of Subscribers to Add” box and click the plus symbol and click OK. Then “Sub\_FIS” would be listed in Subscriber list in the current context box.



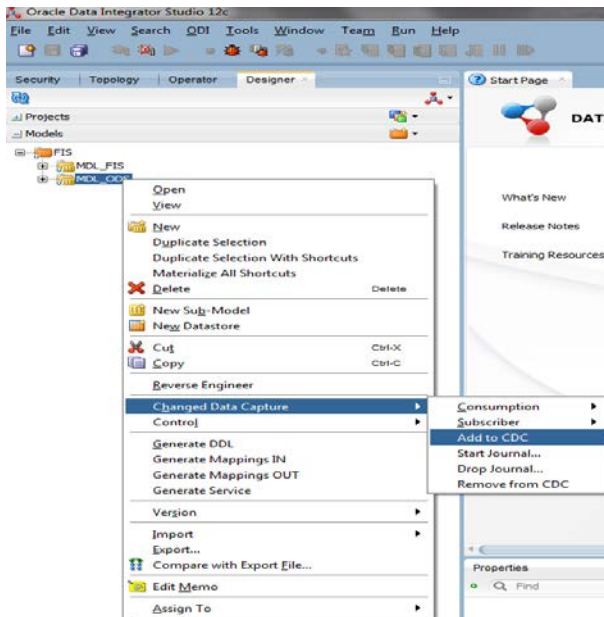


Note – After adding Subscriber it puts an entry in Table “SNP\_CDC\_SUBS” for  
CDC\_Subscriber= ' SUB\_FIS'. Please ensure it is available.

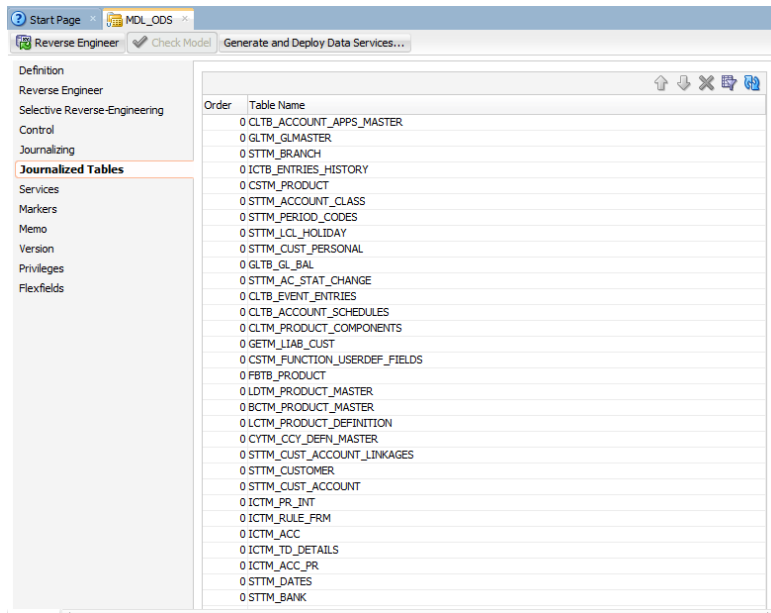
### 1.3.3.3 Add tables to CDC

To add tables for Change Data Capture, Right click on MDL\_ODS and select

Changed Data Capture -> Add to CDC. It would list all the Journalized tables inside the Journalized Tables tab of MDL\_ODS .

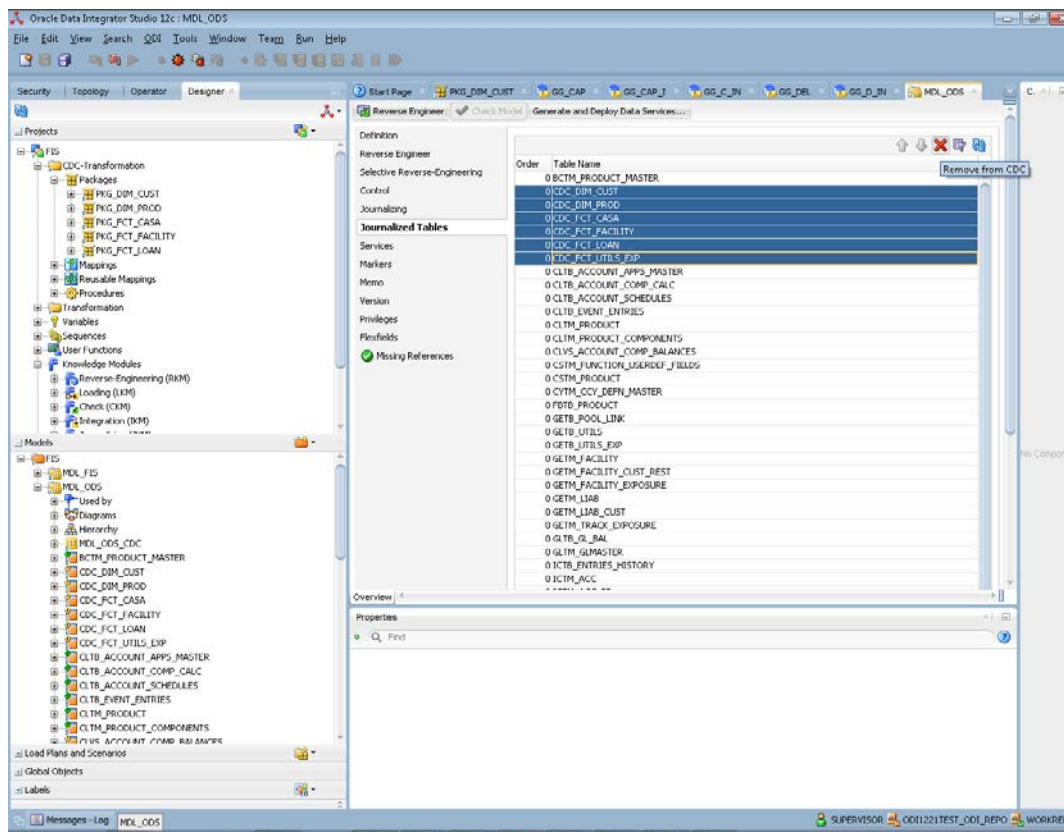






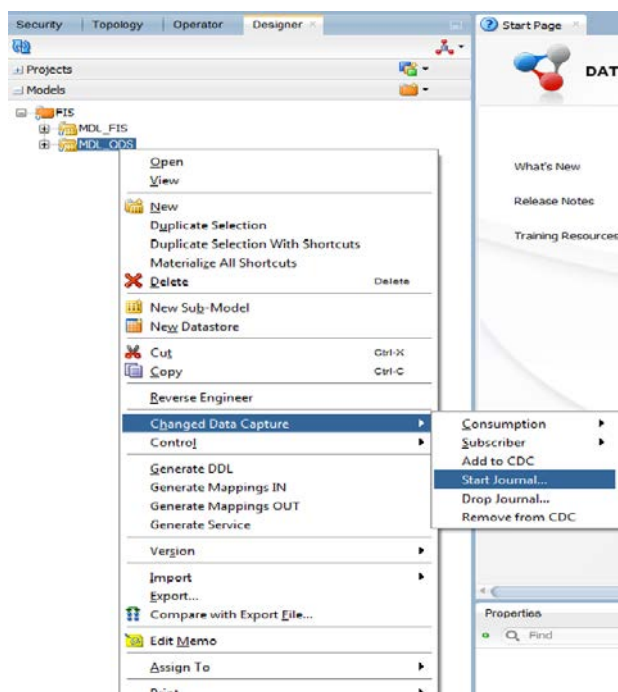
Now remove all the Tables starting with CDC\_\* by selecting the Cross symbol (Remove from CDC)

Note- Tables starting with CDC\_\* are temporary tables created in the ODS schema. This step is very essential as if we forget to remove those tables; it would create critical issues with journalizing.



### 1.3.3.4 Creation of journalized tables

Journal Tables are created using Start Journal feature, by Right click on MDL\_ODS -> Changed Data Capture -> Start Journal.



Then update Journal Tables in Golden gate param file REPL\_ODS.prm from REPL2\_OnlyJournal.txt in path "/ODS/PARAM\_FILES"

### 1.3.4 UDF Maintenance in ODS

Ensure param value in CSTB\_ODS\_PARAM and field number of UDFs maintained in Flexcube are in sync.

PARAM_NAME	PARAM_VALUE	PARAM_DESCRIPTION	KEY_ID
LOAN_INDUSTRY	3	UDF Number for Loan Industry	4
LOAN_TYPE_UDF_NO	2	Udf Number for Loan Type	2
CUSTOMER_SEGMENT_UDF_NO	1	Udf Number for Segment Type	1

Note-

In Flexcube run the below queries to get the Field number

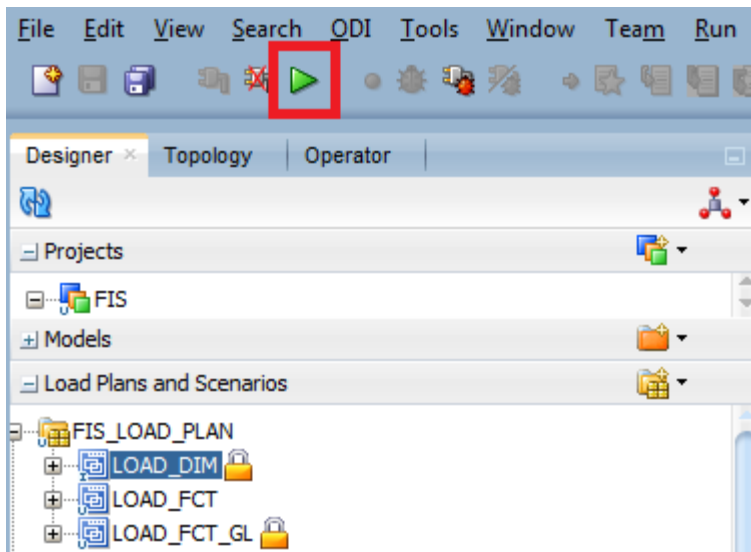
```
SELECT FIELD_NO FROM CLTM_PRODUCT_UDF WHERE FIELD_NAME IN ('LOAN_TYPE','LOAN_INDUSTRY')
```

```
SELECT FIELD_NUM FROM CSTM_FUNCTION_UDF_FIELDS_MAP WHERE FUNCTION_ID='STDCIF'
```

### 1.3.5 Load Initial Data in FIS

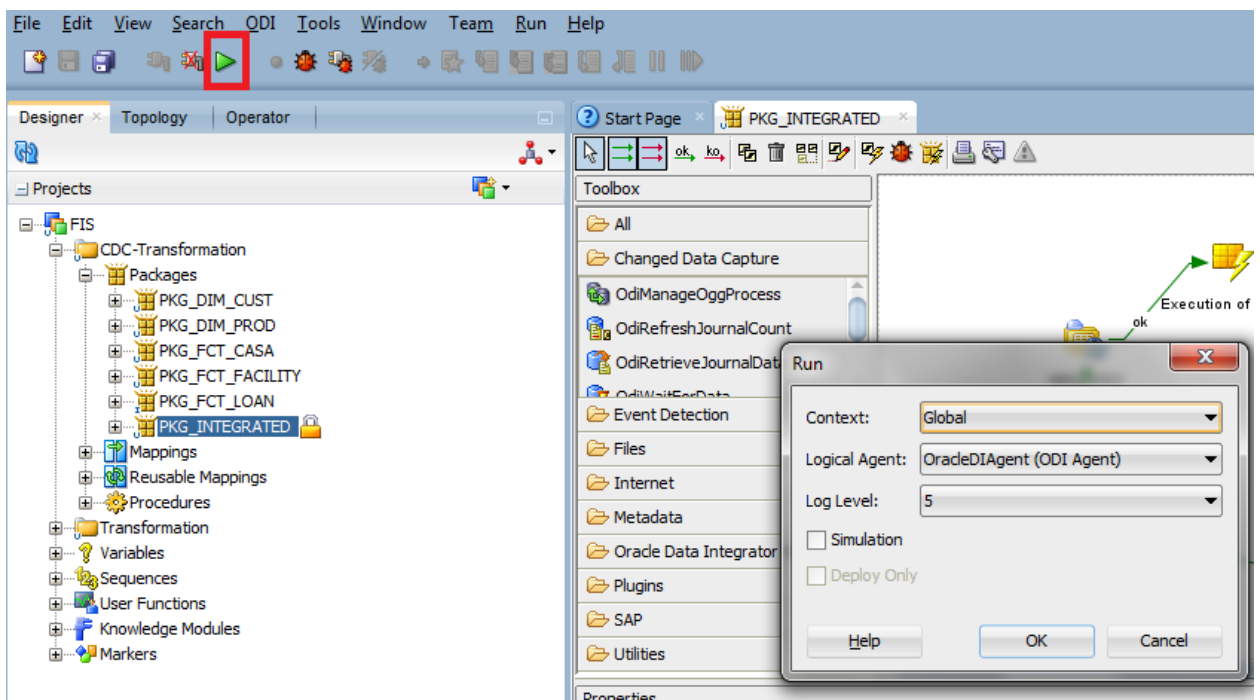
Check if all the tables starting with FCT\_ and DIM\_ are empty otherwise truncate them and run the LOAD\_DIM and LOAD\_FCT under Designer → Load Plans and Scenarios. This will load the Dimension and all Fact Tables, except GL Balance table (FCT\_GL). The FCT\_GL table will be populated at End of Financial Input (EOFI).

Note\*- If GL Balances has to be manually updated please run LOAD\_FCT\_GL load plan @ EOFI.



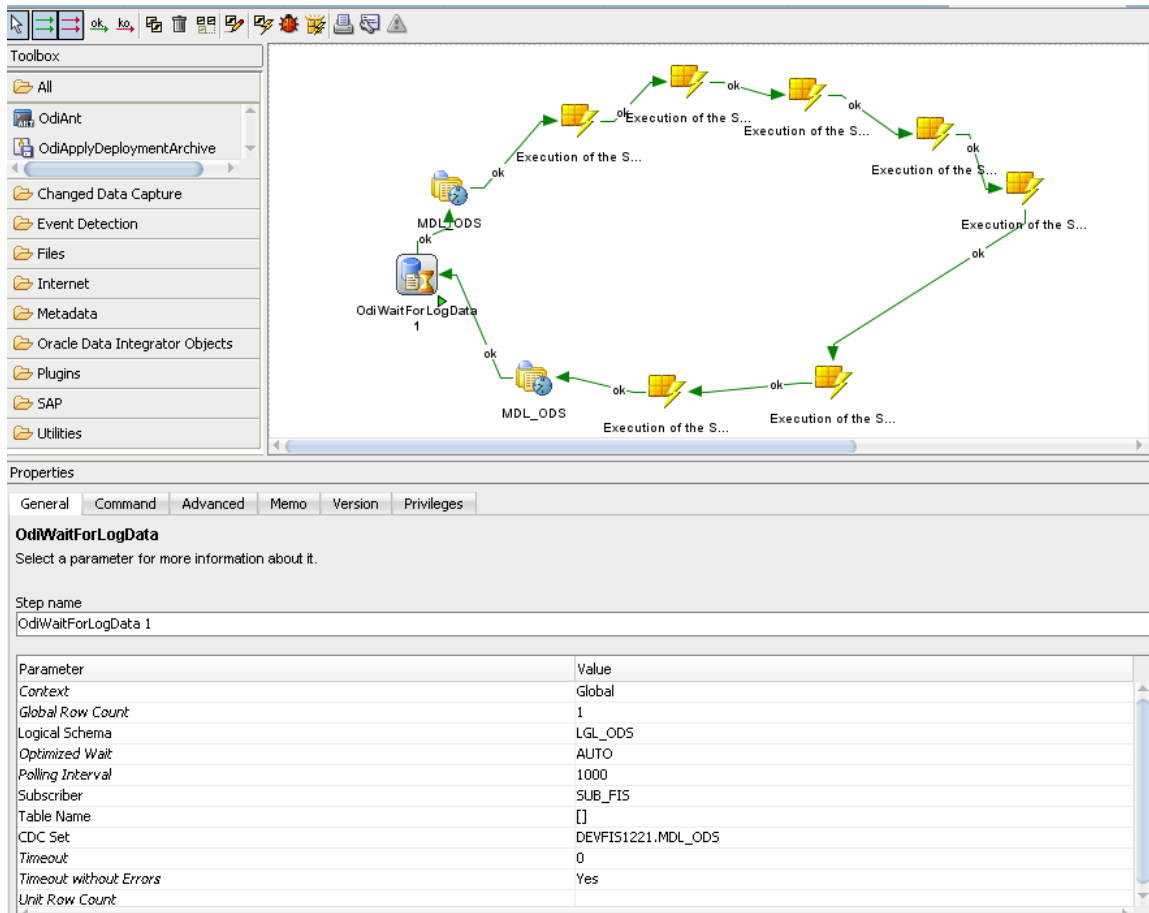
### 1.3.6 Running the Package

The below screenshot depicts the step to run a package /Mapping/Load Plan.



Press the Play button on the menu bar and select the OracleDI Agent.

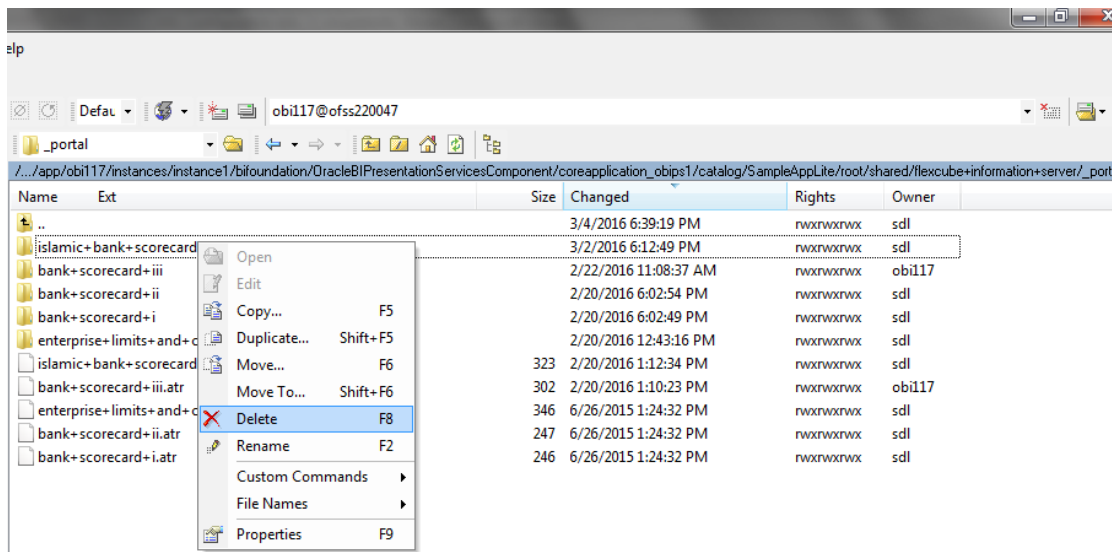
Run package **PKG\_INTEGRATED** (under CDC-Transformation). Ensure that you change the Subscriber and CDC Set Under OdiWaitForLogData. CDC Set name can be Obtained by querying Table `SNP_CDC_SET`.



## 1.4 OBIEE Configuration

While installing OBIEE, make sure that either one of the Bank Scorecard -3 or Islamic Bank Scorecard exists according to the Site requirement. So in-order to remove the scorecard, just remove the .atr and the respective scorecard folder from the OBIEE server (in path similar to below path):

/scratch/app/obi117/instances/instance1/bifoundation/OracleBIPresentationServicesComponent/coreapplication\_obips1/catalog/SampleAppLite/root/shared/flexcube+information+server/\_portal



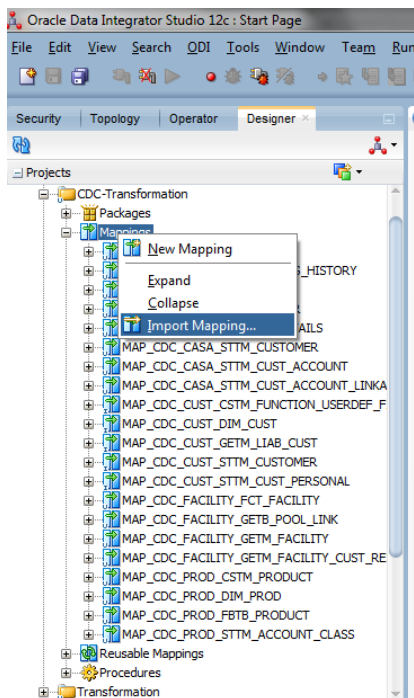
## 1.5 Intermediate Release and Import of Objects

- In case the load plan stops in any intermediate steps, right click on the stopped sessions under operator → Load Plan Executions → Agent → OracleDI Agent

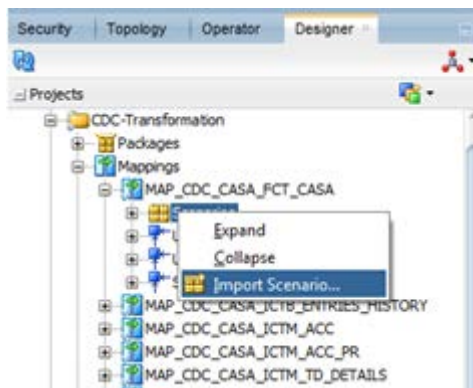
right click on the stopped session and Restart

- In the Intermediate Release of objects, ensure that both the Designer and the Scenario components are being imported properly with the change.

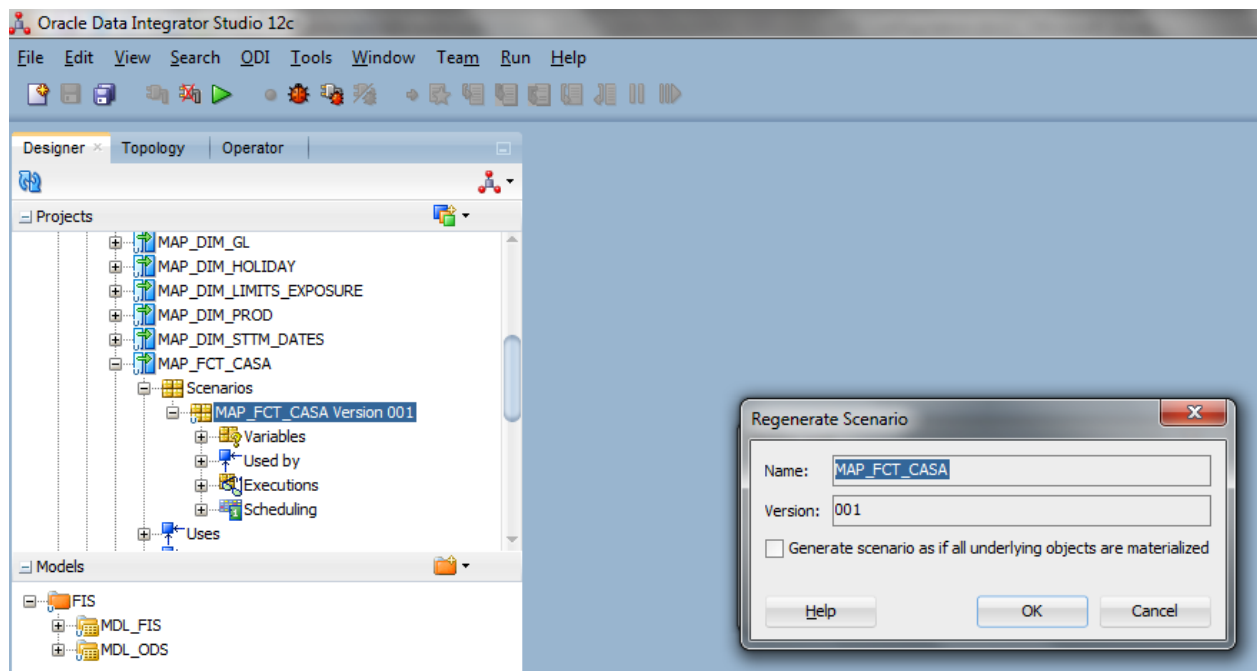
Follow the below steps to import the individual mappings.



Follow the below step to import the individual scenarios.



To re-generate existing scenario, Select the scenario, right click and select “Regenerate”. This regenerates the scenario to be in sync with the mapping.



## 1.6 Technical Specification

- ODI Studio Memory configuration :

We have to set a minimum heap size to 4GB. We can set it in odi.conf file which is placed in path similar to

/scratch/app/fmw122/Oracle/odi/studio/bin, as "AddVMOption -Xmx4g"

- ODI Work Repository :

It should have a minimum of 15 GB tablespace.

ORACLE

[May] [2020]  
Version 12.87.06.0.0

Oracle Financial Services Software Limited  
Oracle Park  
Off Western Express Highway  
Goregaon (East)  
Mumbai, Maharashtra 400 063  
India

Worldwide Inquiries:  
Phone: +91 22 6718 3000  
Fax: +91 22 6718 3001  
<https://www.oracle.com/industries/financial-services/index.html>

Copyright © [2007], [2020], Oracle and/or its affiliates. All rights reserved.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

**U.S. GOVERNMENT END USERS:** Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate failsafe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

This software or hardware and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.