

Liquidity Management OBIEE Setup  
Oracle Banking Liquidity Management  
Release 14.0.0.0.0  
[November] [2017]



---

# Table of Contents

- 1. Starting BI Server .....3
  - 1.2 Upload OBIEE Reports..... 4
- 2.REPORT CREATION .....8
  - 2.1 Analysis Creation ..... 8
- 3 .PROMPT CREATION.....16
- 4.Dashboard creation.....20
- 5. RPD Creation in OBIEE 12c.....22
  - 5.1 RPD Deployment Steps: ..... 33

# 1. Starting BI Server

1. Login to putty or any Linux client
2. Navigate to the path where the BIP is installed and open bin folder under the bitools folder

(For ex: /scratch/oracle/Oracle/Middleware/Oracle\_Home/user\_projects/domains/bi/bitools/bin)

3. Run `./start.sh` or `start.cmd`

4. Wait until all the servers are up and running.

```
Starting all servers ...
```

```
Server bi_server1 not started as already in state (RUNNING)
```

```
Starting obiccs1 (Original State:SHUTDOWN) ...
```

```
Started obiccs1
```

```
Starting obis1 (Original State:SHUTDOWN) ...
```

```
Started obis1
```

```
Starting obips1 (Original State:SHUTDOWN) ...
```

```
Started obips1
```

```
Starting obijh1 (Original State:SHUTDOWN) ...
```

```
Started obijh1
```

```
Starting obisch1 (Original State:SHUTDOWN) ...
```

```
Started obisch1
```

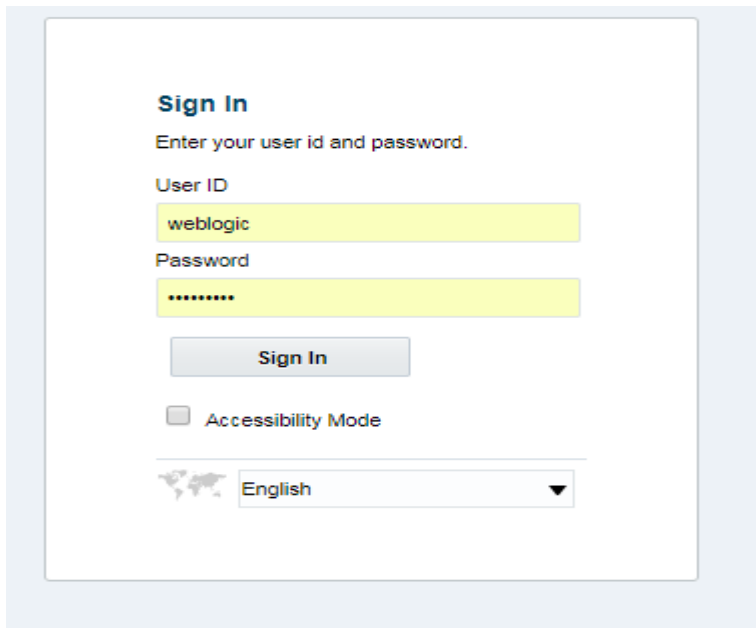
```
Finished starting servers
```

```
Status of Domain: /scratch/obiee12c/Middleware/Oracle_Home/user_projects/domains/bi
```

```
NodeManager (whf00bmv.in.oracle.com:9506): RUNNING
```

Name	Type	Machine	Status
AdminServer	Server	whf00bmv.in.oracle.com	RUNNING
bi_server1	Server	whf00bmv.in.oracle.com	RUNNING
obips1	OBIPS	whf00bmv.in.oracle.com	RUNNING
obijh1	OBIJH	whf00bmv.in.oracle.com	RUNNING
obiccs1	OBICCS	whf00bmv.in.oracle.com	RUNNING
obisch1	OBISCH	whf00bmv.in.oracle.com	RUNNING
obis1	OBIS	whf00bmv.in.oracle.com	RUNNING

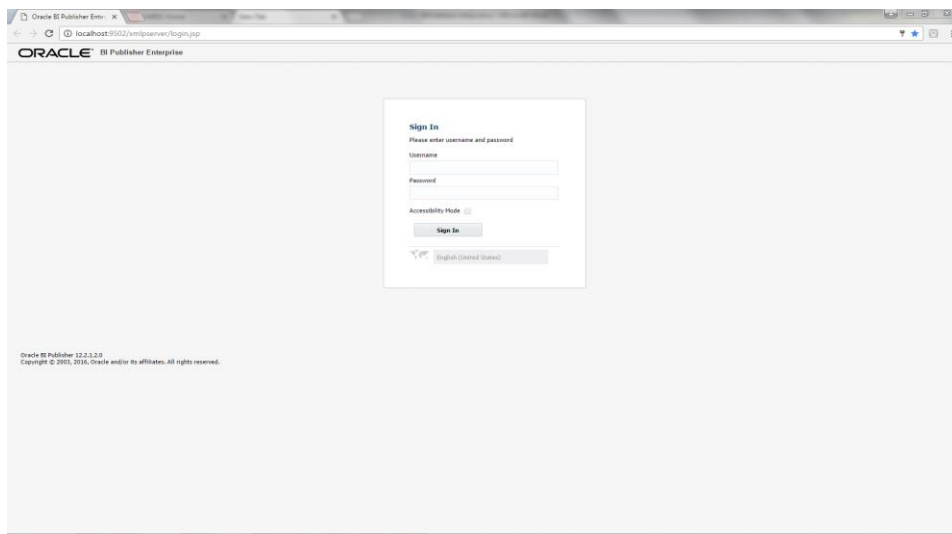
Open browser and go to <http://<localhost>:<port>/analytics/login.jsp>



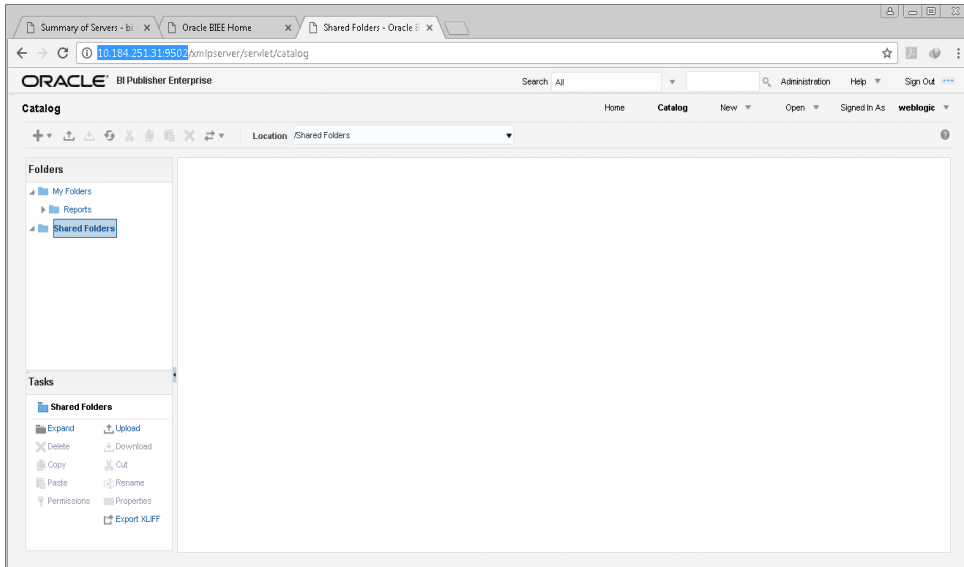
Enter Username and Password and Sign in into BI Publisher Administration Console.

## **1.2 Upload OBIEE Reports**

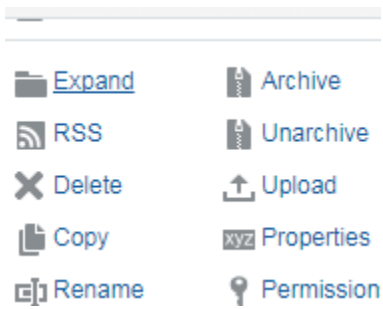
Open browser and go to OBIEE Console <http://<host>:<port>/analytics/login.jsp>

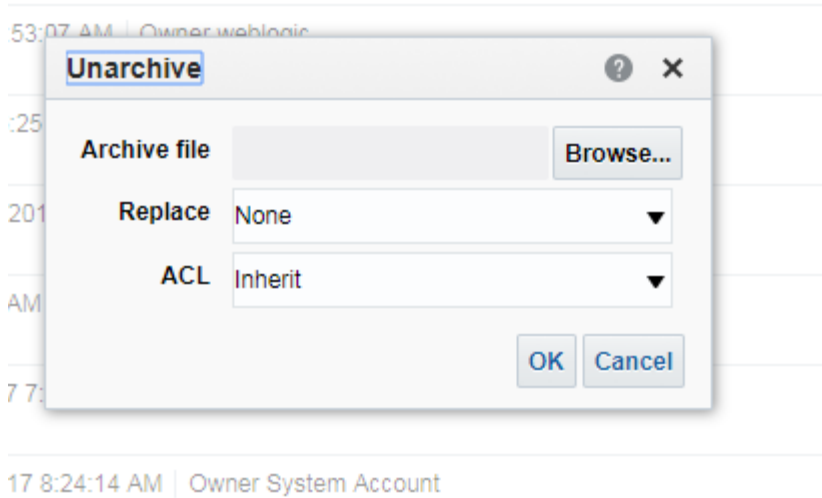


1. Enter Username and Password and Sign in into BI Publisher Administration Console.
2. Click on Catalog tab at the upper right corner of the page and click on the Shared Folder on the left hand side.













3. Click on Unarchive at the bottom left corner of the page.





4. Browse the Reports folder of the OSDC Package to find the files **obiee\_reports.catalog**
5. The reports will be uploaded to the OBIEE Server.

	<b>Reports Dashboard</b>   Last Modified 9/18/2017 7:44:24 AM   Owner : Expand Open Edit More ▼
	<b>Bvt Report</b>   Last Modified 10/5/2017 3:11:19 AM   Owner weblogic Open Edit More ▼
	<b>Bvt Report Prompt</b>   Last Modified 9/27/2017 9:47:51 AM   Owner w Edit More ▼
	<b>Exception Report</b>   Last Modified 10/26/2017 2:35:46 AM   Owner w Open Edit More ▼
	<b>Exception Report Prompt</b>   Last Modified 9/27/2017 7:53:07 AM   C Edit More ▼
	<b>Interest Accrual Report</b>   Last Modified 10/3/2017 8:16:25 AM   Ow Open Edit More ▼
	<b>Interest Accrual Report Prompt</b>   Last Modified 10/3/2017 8:28:15 Edit More ▼
	<b>Interest Paid Report</b>   Last Modified 10/4/2017 9:52:31 AM   Owner Open Edit More ▼
	<b>Interest Paid Report Prompt</b>   Last Modified 9/27/2017 7:01:01 AM Edit More ▼
	<b>Interest Reallocation Report</b>   Last Modified 10/25/2017 8:24:14 A Open Edit More ▼

## 6. Upload the rpd file to OBIEE Server

Before uploading **obiee\_reports.rpd** in OBIEE server, rpd file should be reconfigured to point to the schema created for OBLM. **Refer Chapter 5: RPD Creation in OBIEE 12c**

Copy the **obiee\_reports.rpd** file to linux box and run the `./datamodel.sh` to upload the rpd file.

For Example:

Say you have copied the `obiee_reports.rpd` file to

`/scratch/Deployments/bi/osdc/obiee_reports.rpd`, run the below `./datamodel.sh` command, this will ask for rpd password, give the password as **weblogic1**

```
./scratch/obiee12c/Middleware/Oracle_Home/user_projects/domains/bi1/bitools/bin
```

```
./datamodel.sh uploadrpd -I /scratch/Deployments/bi/osdc/obiee_reports.rpd -SI ssi -U weblogic -P weblogic123
```

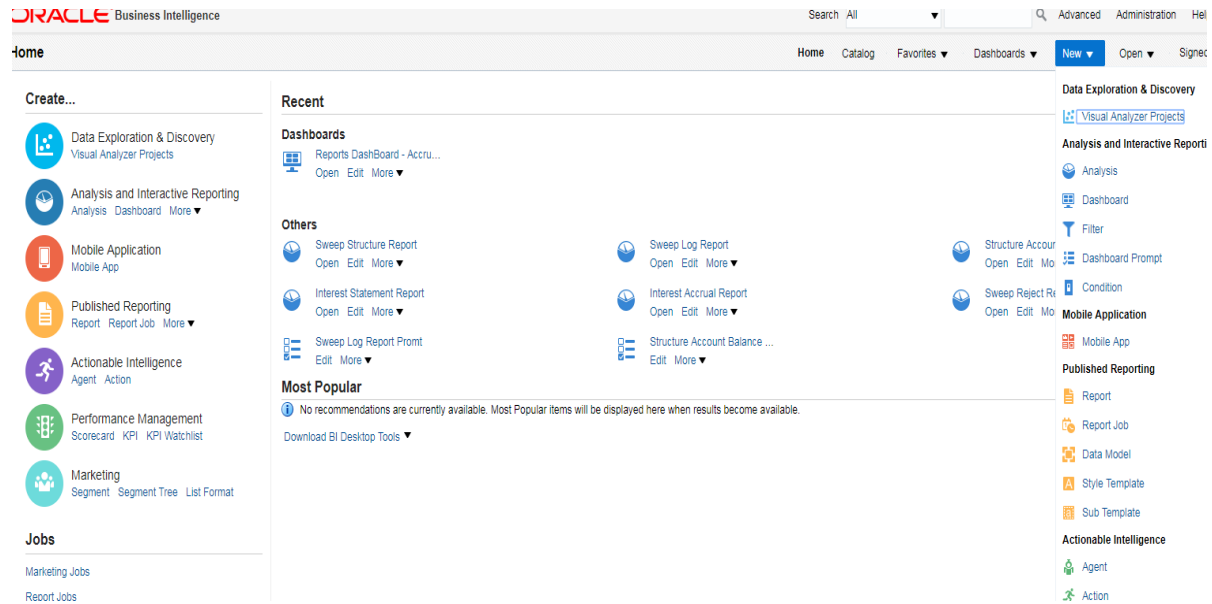
Running this command will ask for rpd password, rpd password is: **weblogic1**

## 2.REPORT CREATION

To create new report in OBIEE server we need to create analysis and prompt.

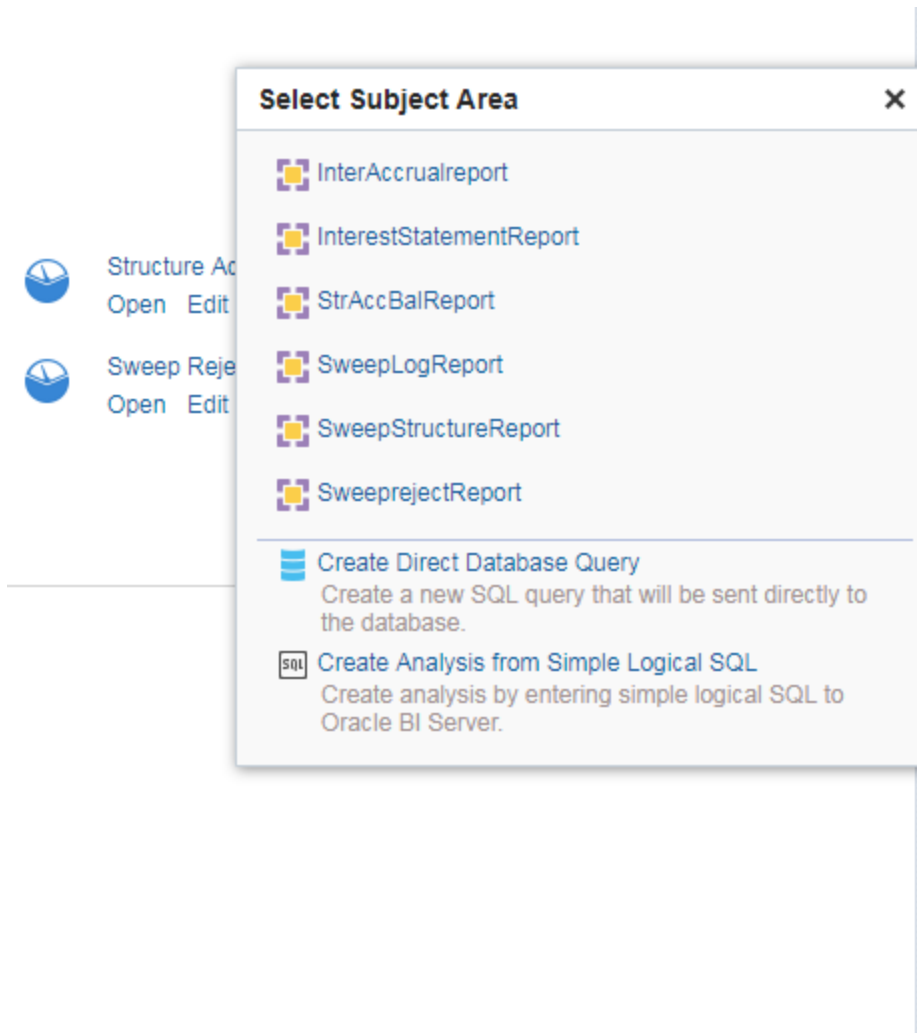
### 2.1 Analysis Creation

To create Analysis click New → Analysis



Then following image will appear





In the select subject area you will be seeing the created RPD, which will appear after deploying the created RPD in the server

After this select the Create Direct Database query, following screen will appear

**Connection Pool**

Enter the name of the Oracle BI Server connection pool you wish to use for this analysis. This must match exactly the name of an existing connection pool as specified in the

**SQL Statement**

Enter a database-specific SQL statement. This statement will be issued as-is to the database associated with the specified Connection Pool. Use care when creating direct

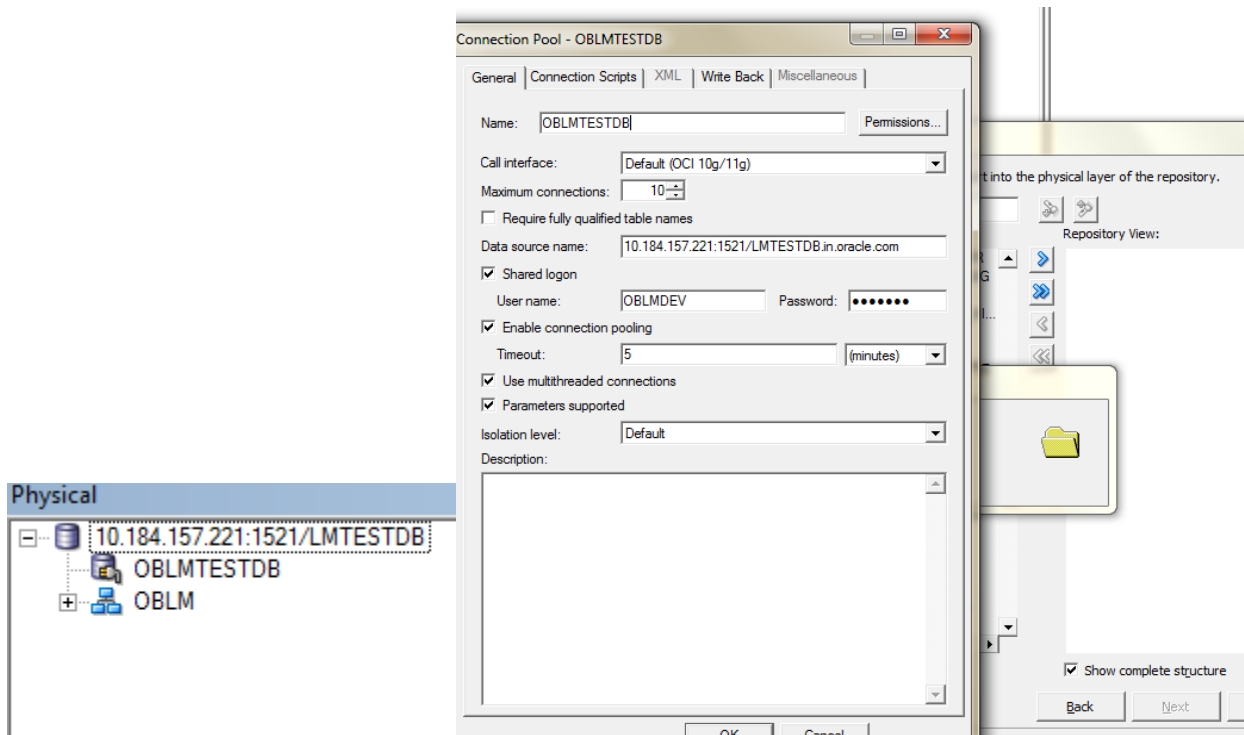
Validate SQL and Retrieve Columns

Bypass Oracle BI Presentation Services Cache

**Result Columns**

Add or remove columns by changing the SQL statement and pressing the "Validate SQL and Retrieve Columns" button. Optionally change a column's formatting and aggregation not return data, in which case no columns will be displayed.

In the connection pool give the name in the rpd physical layer connection pool name given while creating rpd. In my case OBLMTESTDB is the connection pool name.



In sql statement block give the query to generate report.

### Connection Pool

Enter the name of the Oracle BI Server connection pool you wish to use for this analysis. This must match exactly the name

OBLMTESTDB

### SQL Statement

Enter a database-specific SQL statement. This statement will be issued as-is to the database associated with the specified C

```
temp.reverse_frequency,  
str.interest_method,  
str.reallocation_method,  
temp.Account_inst_priority,  
cbd.BRANCH_NAME child_brname,  
cbd.EXTERNAL_REFERENCE child_ext_ref,  
pbd.EXTERNAL_REFERENCE parent_ext_ref,  
cust.EXTERNAL_REFERENCE ext_ref,  
pbd.BRANCH_NAME parent_brname  
from LM_SWEEP_STR str,
```

[Validate SQL and Retrieve Columns](#)

Bypass Oracle BI Presentation Services Cache

### Result Columns

Add or remove columns by changing the SQL statement and pressing the "Validate SQL and Retrieve Columns" button. Opti not return data, in which case no columns will be displayed.

Query format should be like this for where condition.

(str.customer\_id in (@{PV\_Customer}['@']{allvalues'}) or '(All Column Values)' in  
(@{PV\_Customer}['@']{(All Column Values)}))

AND ( temp.acc\_str\_id in (@{PV\_Acc\_Str\_Id}['@']{allvalues'}) or '(All Column Values)' in  
(@{PV\_Acc\_Str\_Id}['@']{(All Column Values)}))

Then click on **validate sql and retrieve Column.**

Now the result of the column will be shown below in the same screen

Criteria Results

**Subject Areas**

**Direct Database Request**

Create and issue a direct database request using an Oracle BI Server connection pool and database specific SQL statement. Add or remove columns by changing the SQL statement used to retrieve the data you want to analyze.

**Connection Pool**  
Enter the name of the Oracle BI Server connection pool you wish to use for this analysis. This must match exactly the name of an existing c

OBLMTESTDB

**SQL Statement**  
Enter a database-specific SQL statement. This statement will be issued as-is to the database associated with the specified Connection Pool

```
SELECT DISTINCT st.acc_str_id structure_Id,
                st.acc_no account_number,
                st.account_ccy account_currency,
                ic.Drcr DRCR ,
                decode(ic.drcr, 'D', ic.cur_run_accr*-1, ic.cur_run_accr)
Interest,
                ent_dt,
                st.CASH_CC_METHOD
FROM im_sweep_str_details st,
     im_customer cus,
```

Validate SQL and Retrieve Columns  Bypass Oracle BI Presentation Services Cache

**Result Columns**  
Add or remove columns by changing the SQL statement and pressing the "Validate SQL and Retrieve Columns" button. Optionally change ; not return data, in which case no columns will be displayed.

Structure ID	Account No	Account CCY	DRCR	Interest	Ent DT	Cash Concentration Method
varchar	varchar	varchar	char	double	timestamp	varchar

**Catalog**

In the criteria page result column will be generated. Click the result next to the criteria to see the result  
Now the report will be generated like below and Click on Save to save it in the right top corner and give a name for the Report it is called Analysis.

Criteria Results

**Subject Areas**

**Direct Database Request**

Create and issue a direct database request using an Oracle BI Server connection pool and database specific SQL statement. Add or remove columns by changing the SQL statement used to retrieve the data you want to analyze.

**Compound Layout**

Title: Interest Accrual report

Table

Structure ID	Account No	Account CCY	DRCR	Interest	Ent DT	Cash Concentration Method
STWF9768	KNM87	USD	C	139	8/3/2017 12:00:00 AM	Sweep
STWF9768	KNM87	USD	C	139	8/4/2017 12:00:00 AM	Sweep
STWF10971	KNM509	GBP	C	46	8/5/2017 12:00:00 AM	Sweep
STWF8079	KNM66	USD	C	139	8/5/2017 12:00:00 AM	Sweep
STWF10971	KNM509	GBP	C	46	8/6/2017 12:00:00 AM	Sweep

Rows 1 - 5




Add to Briefing Book

**Catalog**

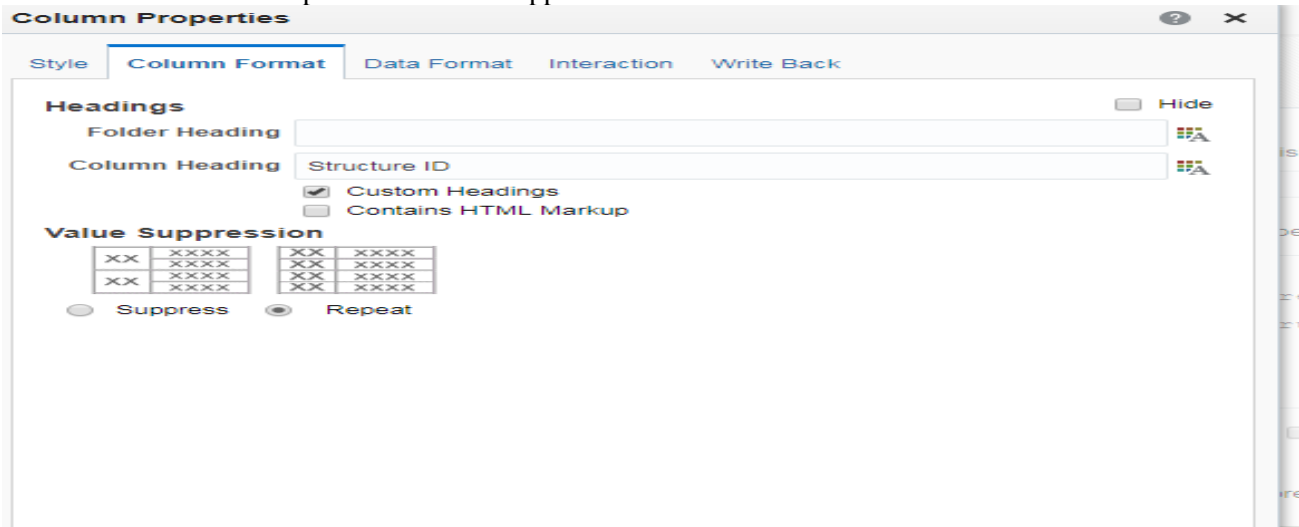
You can edit the report by clicking the edit in the result page. To Rename the column name you should edit in the criteria page itself.

In the following image in the criteria page, click on the symbol before ix.

In the column properties you can **rename** the column and can do formatting option there.

Structure ID	Account No	Account CCY
varchar	varchar	varchar
		

After clicking the column properties following image will appear .in this select column format and in column heading you can rename it and by clicking the A symbol in the right side you can format the column. And select the repeat in the value suppression.



To remove un wanted column from the result go to result page click on edit symbol following image will appear. In the excluded Row you can drag and drop the unwanted column and use in the future if needed. If you want to permanently delete the column. Click on the setting button in the column to be deleted then select →remove column

Structure ID	Account No	Account CCY	DRCR	Interest	Ent DT	Cash Concentration Method
STWF9768	KNM87	USD	C	139	8/3/2017 12:00:00 AM	Sweep
STWF9768	KNM87	USD	C	139	8/4/2017 12:00:00 AM	Sweep
STWF10971	KNM509	GBP	C	46	8/5/2017 12:00:00 AM	Sweep
STWF8079	KNM66	USD	C	139	8/5/2017 12:00:00 AM	Sweep
STWF10971	KNM509	GBP	C	46	8/6/2017 12:00:00 AM	Sweep

Rows 1 - 5

**Layout**

Table Prompts

Drop here for Table prompts

Sections

Drop here for a sectioned Table

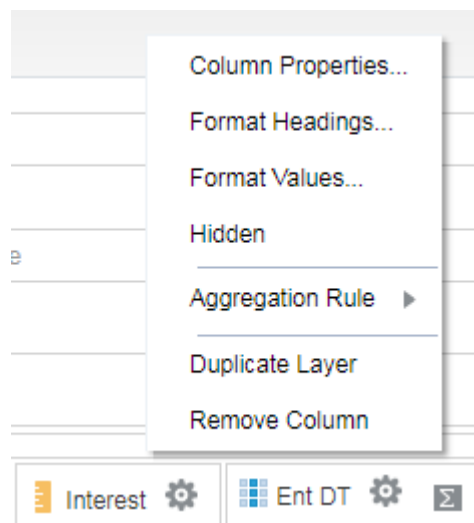
Table

Columns and Measures

Structure ID Account No Account CCY DRCR Interest Ent DT Cash Concentration Method

Excluded

Drop here to exclude from this Table only



To change the Date format for the date column go to setting → column properties. In that select data format. If you want to override the format, unselect the override default data format and in date format you will be seeing the list of date format and select anyone from the list or if you to override your own format select the custom from the date format and give the format which you want in the custom date format

## Column Properties

Style Column Format **Data Format** Conditional Format Interaction

Override Default Data Format

Date Format Custom

Custom Date Format [FMT:timeStampShort]

Display Time Zone Default

Data Time Zone Offset

## Column Properties

Style Column Format **Data Format** Conditional Format Interaction Write Back

Override Default Data Format

Date Format Custom ▼

Custom Date Format DD/MM/YYYY|

Display Time Zone Default

Data Time Zone Offset

**Column Properties**

Style Column Format **Data Format** Conditional Format Interaction Write Back

Override Default Data Format

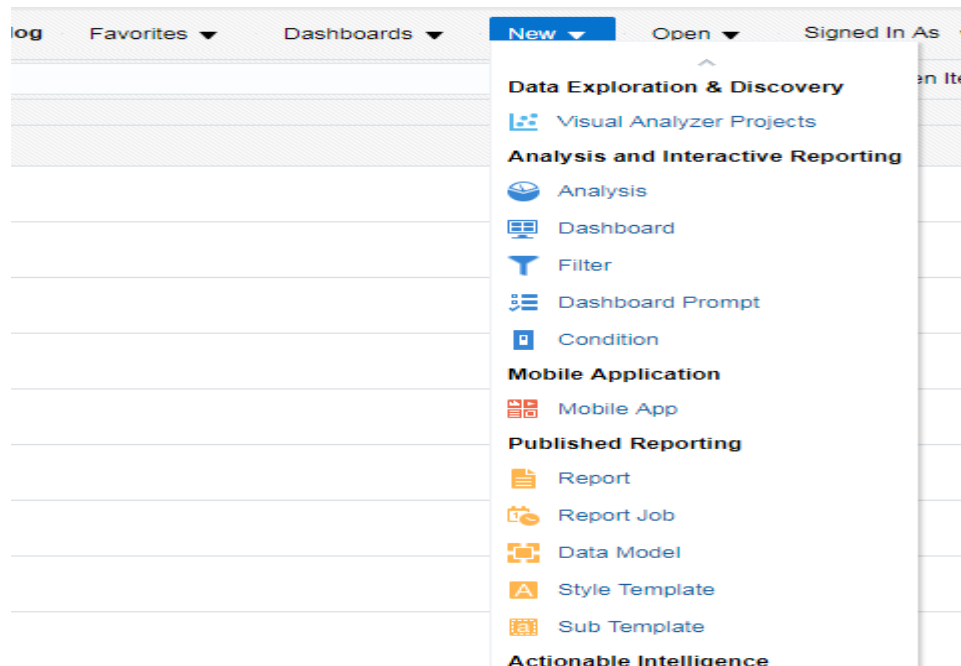
Date Format	Custom
Custom Date Format	06/08/03 07:34:57 AM 06/08/03 7:34:57 06/08/03 07:34:57
Display Time Zone	06/08/2003 7:34:57 AM 06/08/2003 07:34:57 AM
Data Time Zone Offset	06/08/2003 7:34:57 06/08/2003 07:34:57 03/06/08 7:34:57 AM 03/06/08 07:34:57 AM 03/06/08 7:34:57 03/06/08 07:34:57 2003-06-08 7:34:57 AM 2003-06-08 07:34:57 AM 2003-06-08 7:34:57 2003-06-08 07:34:57 08-Jun-03 7:34:57 AM 08-Jun-03 07:34:57 AM 08-Jun-03 7:34:57 08-Jun-03 07:34:57 Custom

Now creating of analysis completed. Next we need to create Prompt for the report.

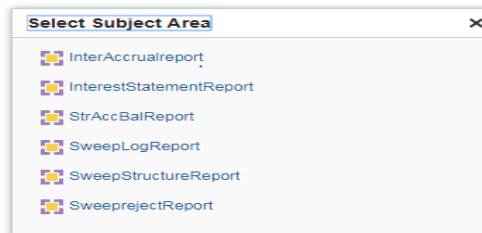
### **3 .PROMPT CREATION**

Prompt is like giving inputs to the where condition.so we need to create prompt for the report. To create prompt for the report New→Dashboard prompt





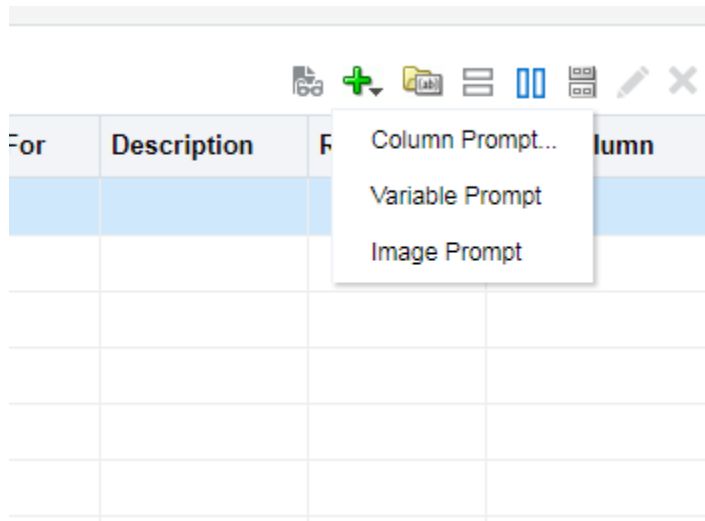
After selecting dashboard prompt select subject area page will appear with the following image. This will display the name of the RPD which we have created. From this we need to select the one of the rpd to create prompt for the report you're going to do.



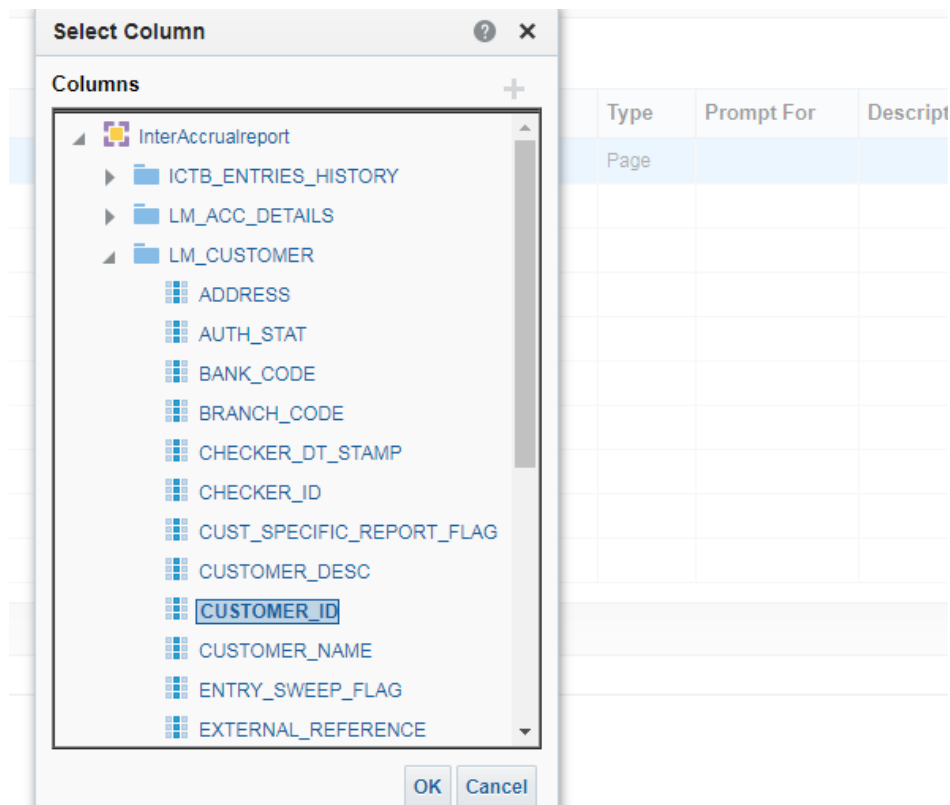
Select anyone from this for the report. After selecting the report following page will appear

Definition						
Add prompts for users when they run this analysis.						
Prompt Label	Type	Prompt For	Description	Required	New Column	
Page 1	Page					

Click the green color plus button to create where condition filed from which table the field should be taken. Select column prompt



Then following screen will appear



I want to select this Customer id from the lm\_customer table to be display the prompt condition. Select and click  
 Ok, after this one more screen will appear.

**New Prompt:**

Prompt For Column: "LM\_CUSTOMER"."CUSTC" *fx*

Label: CUSTOMER\_ID

Custom Label

Description:

Operator: is equal to / is in

User Input: Choice List

**Options**

**General** | More

Choice List Values: All Column Values

Include "All Column Values" choice in the list

Enable user to select multiple values

Enable user to type values

Require user input

Limit values by: All Prompts

Auto Fill:  All Column Values,  None,  First Available Value

Default selection: None

Set a variable: Presentation Variable

PV\_Customer

OK Cancel

In the above screen you edit label name by selecting custom label option and select the set a variable to presentation variable so that the value which we are passing will be given to the where condition in the query and display the result. In choice list value select the include all column values so that you can select all list of value at same time

**Definition**

Add prompts for users when they run this analysis.

Prompt Label	Type	Prompt For	Description	Required	New Column
Page 1	Page				
CUSTOMER_ID	Column value	CUSTOMER_ID			<input type="checkbox"/>
BANK_CODE	Column value	BANK_CODE			<input type="checkbox"/>

**Display**

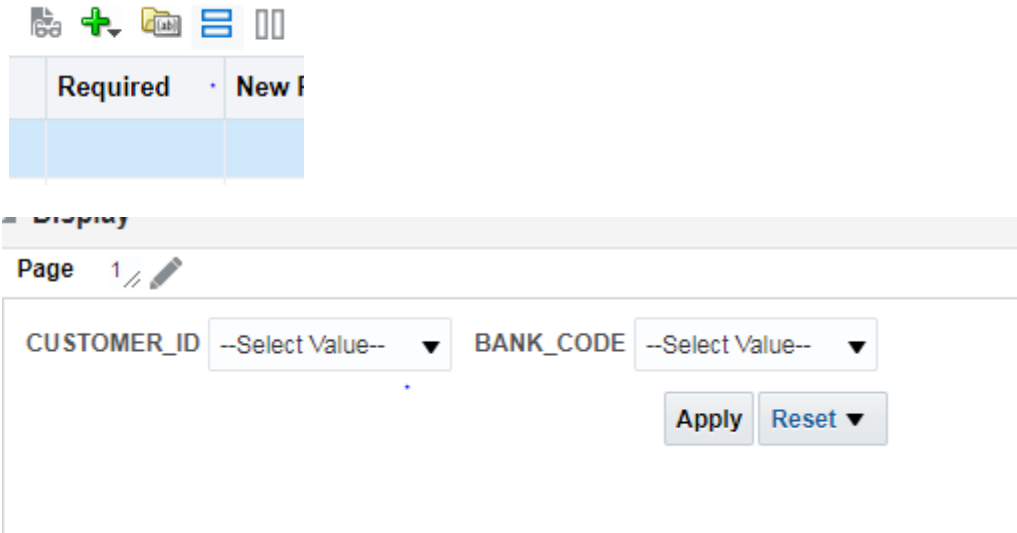
Page 1

CUSTOMER\_ID --Select Value--

BANK\_CODE --Select Value--

Apply Reset

Now selected value will be shown in the same page below. If you want it to display it one by one select the icon next to the plus icon

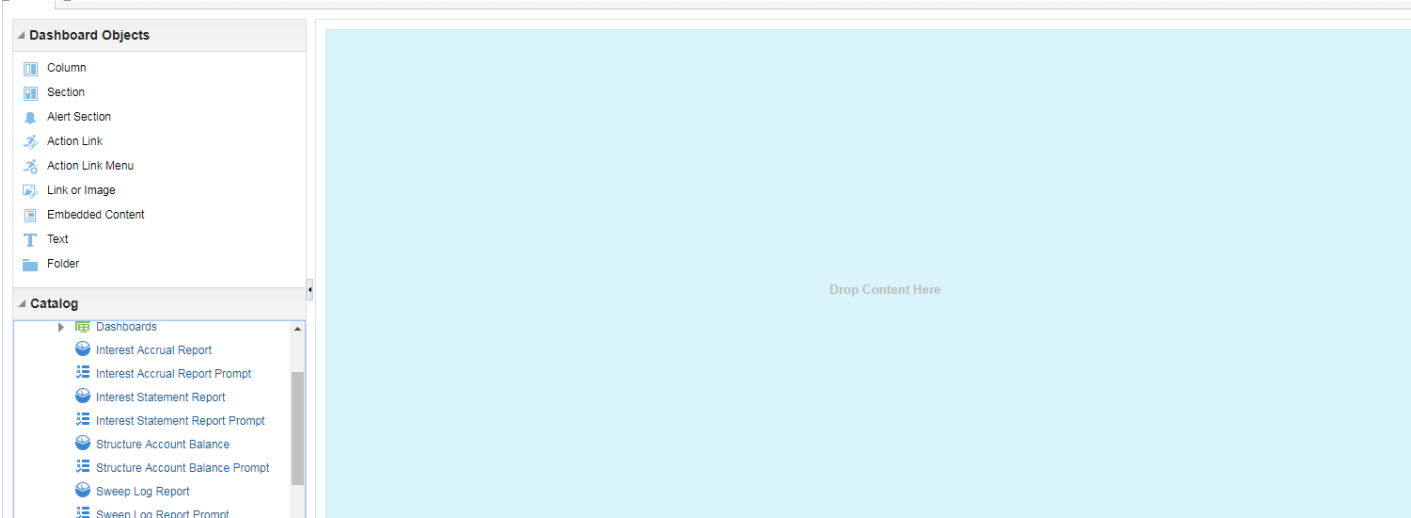


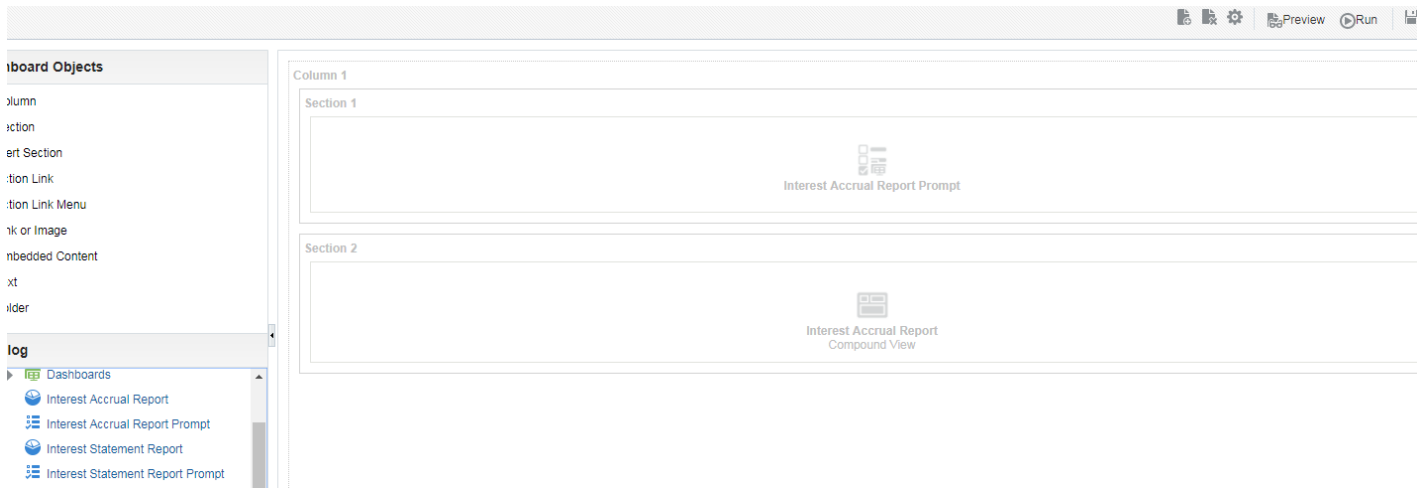
Now it is changed to like above. Now Save it and give Name for it. Its called prompt. Give a name like ending with prompt.

## 4. Dashboard creation

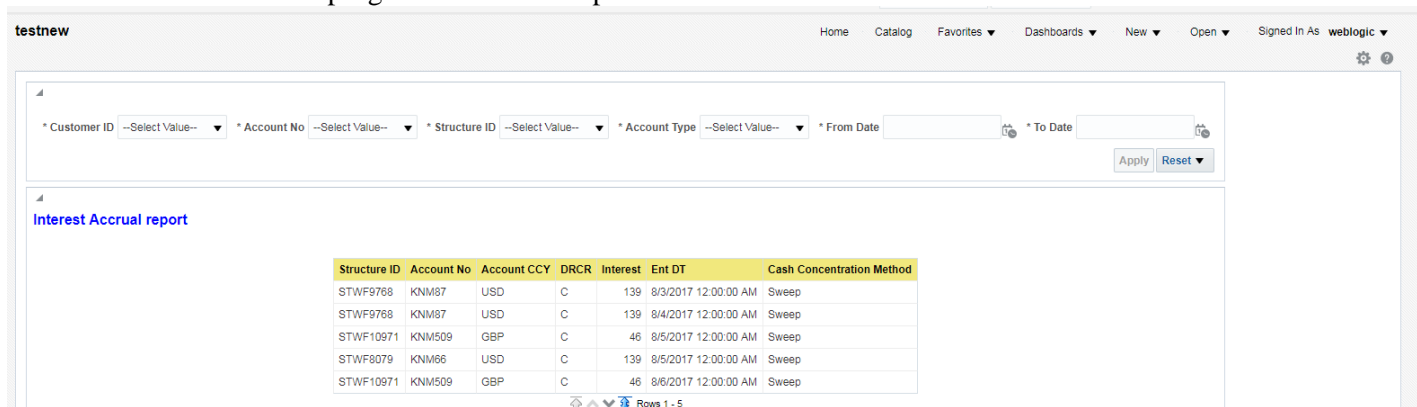
After completion of this we need to create Dashboard for the report, we need to drag and drop the created analysis and prompt in the same dashboard.

Go to New → Dashboard in top right corner. Following screen appear in the left side of the screen created analysis and prompt will be displayed. Now drag the prompt in the top and analysis in the below of the prompt.

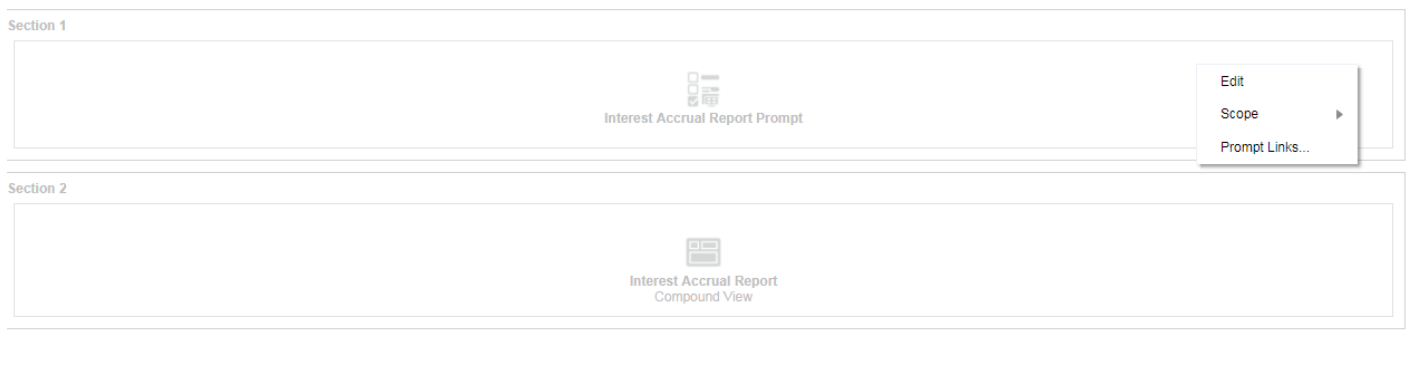




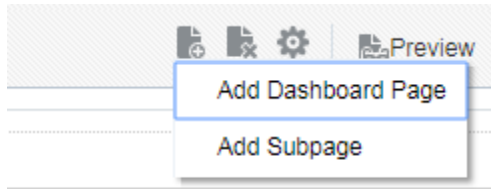
Then click on Run in the top right corner. Then report will be created like below



If you to edit the report click on the setting button in the top right corner now you can edit the dashboard which will be having analysis and prompt like below



click on xyz → edit .Now you can edit the report. You can add the more report on the same dashboard page itself



Add one more page to show the all the reports in the same dashboard itself. Creation of reports completed in the OBIEE server

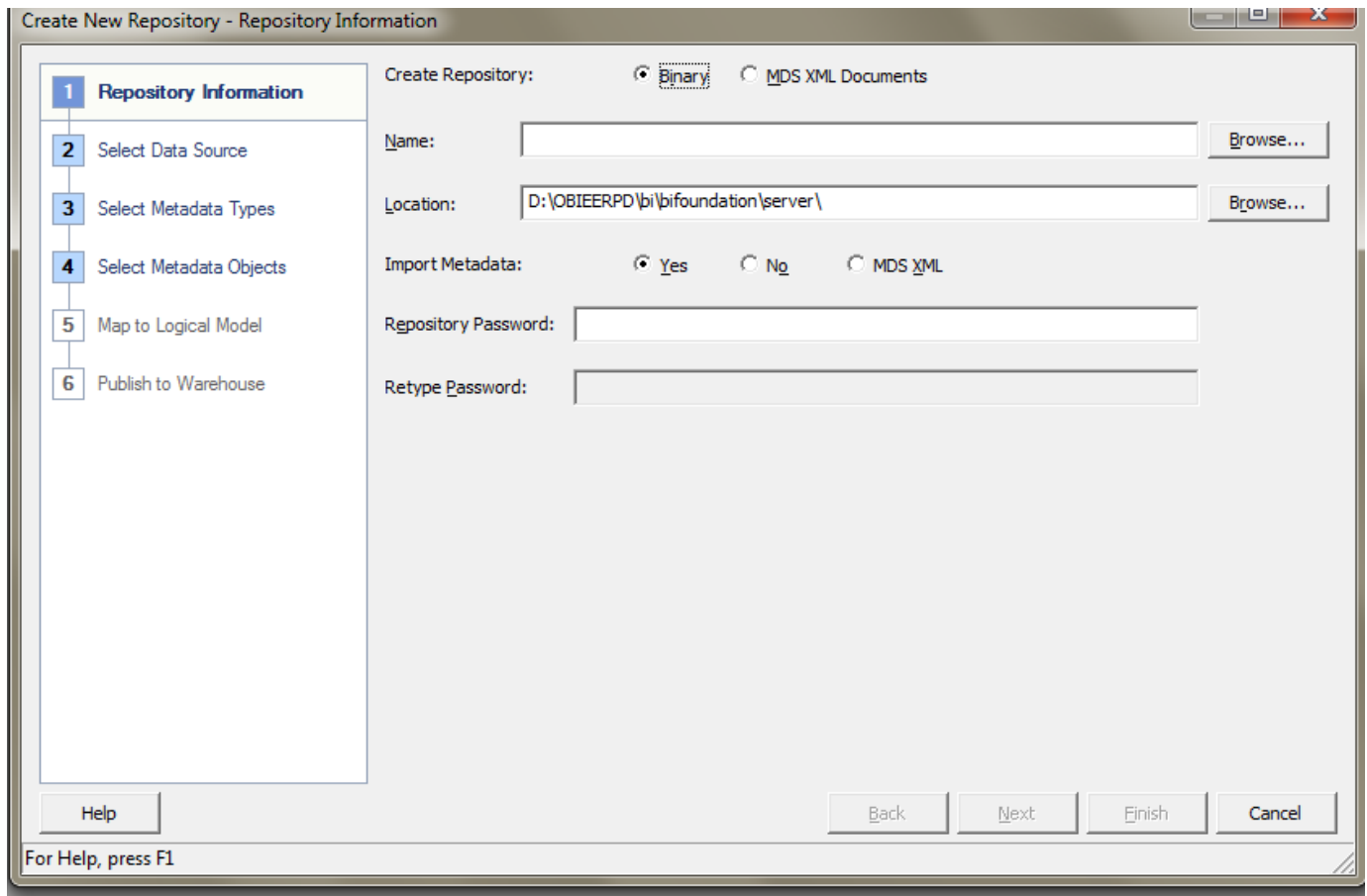
## **5. RPD Creation in OBIEE 12c**

Step 1

Run the RPD from the path

Scratch\OBIEERPD\bi\bitools\bin\admintool.cmd

To create RPD in the OBIEE Administration tool click, Run the obiee Admin tool and click on the File->New Repository. Now the following page will appear



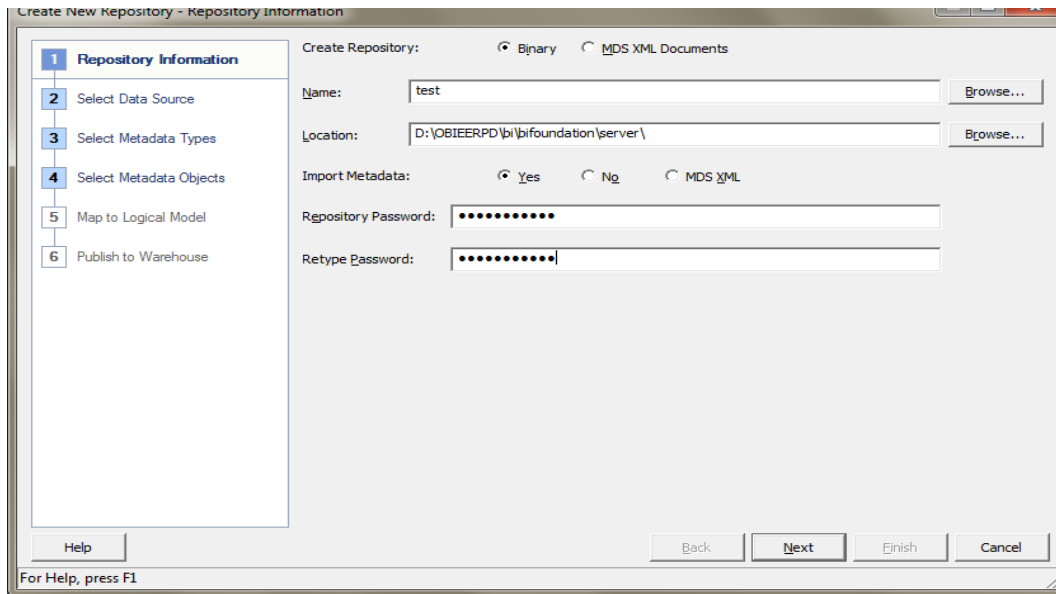
Give the name for the rpd in the Name field and browse the location to save the RPD.

Keep the imported metadata to be selected in YES model.

If we click on yes ,then we need to give the data source connection while creating RPD itself.

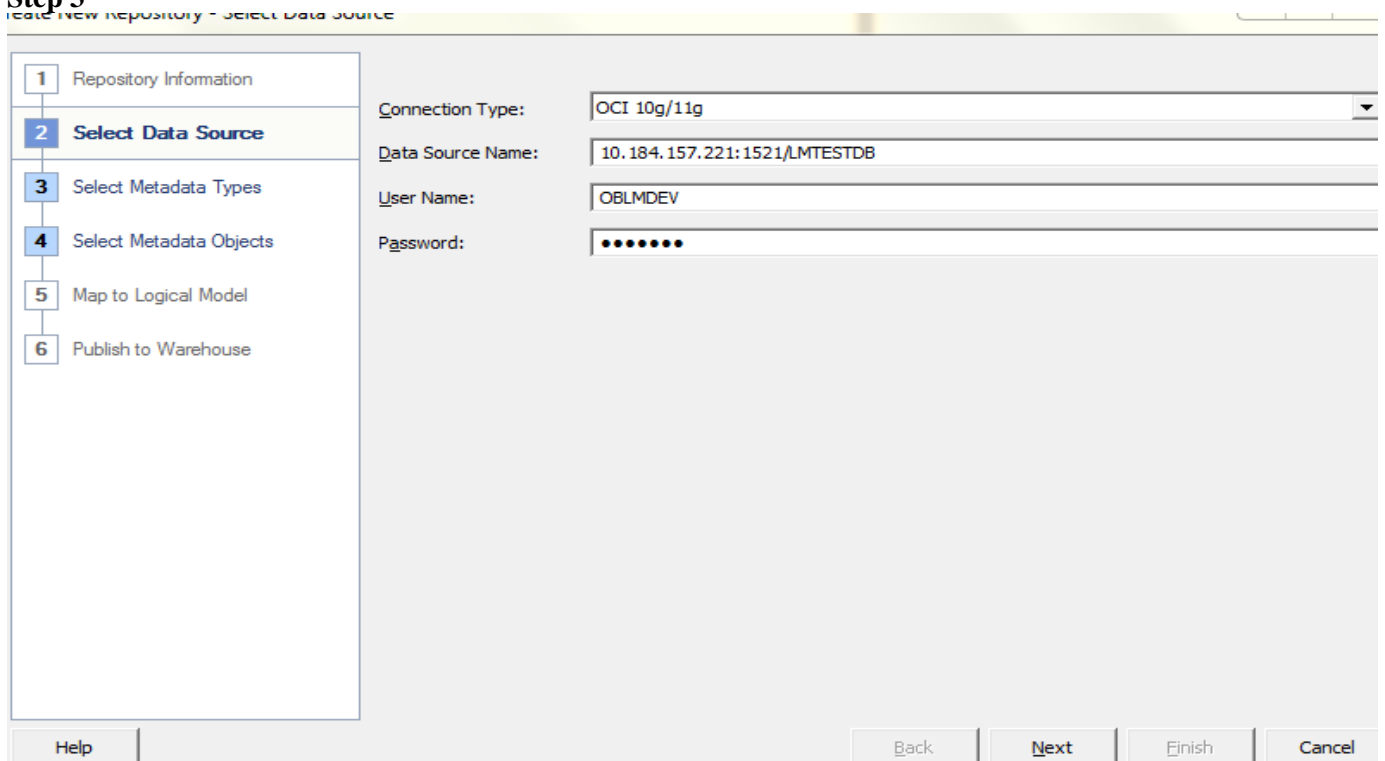
### **Step 2**

Give the username and password for the RPD. We need open the Rpd with this name, whenever we want to open the RPD.



The Click on Next to give Database connection.

### Step 3

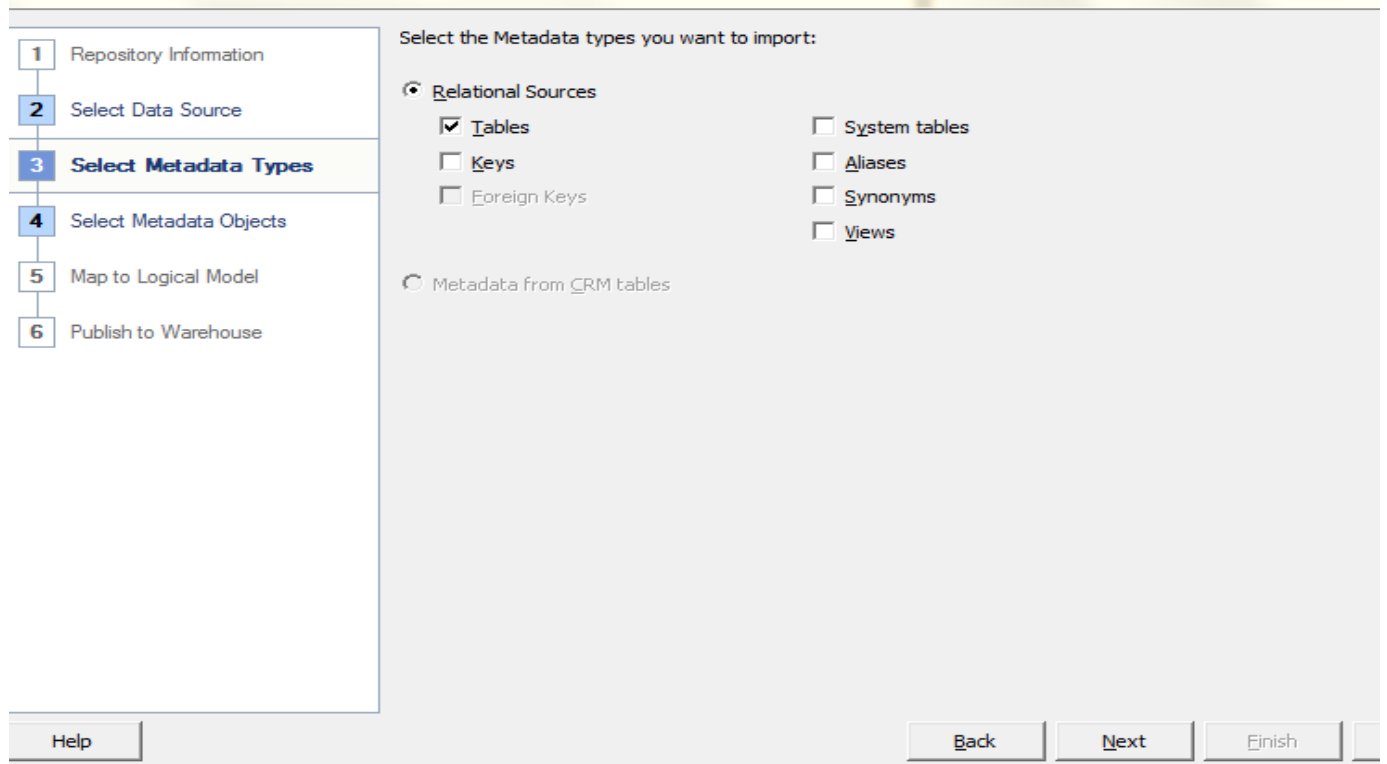


Change the connection type to oci 10g/11g and give data source name  
 <host\_name>:<port\_no>/<service\_name>  
 Then user name and password.  
 Then click on next.

### Step

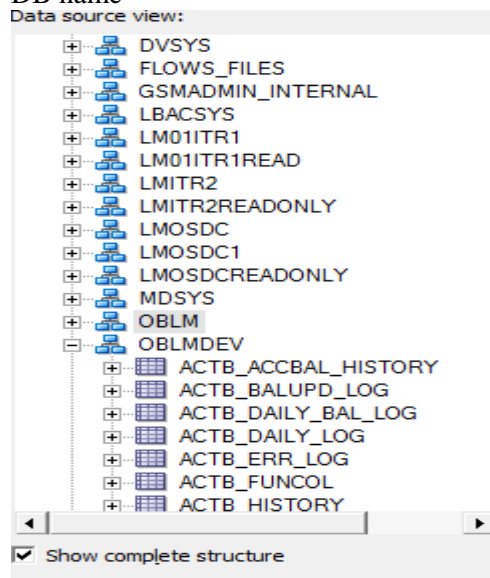


4



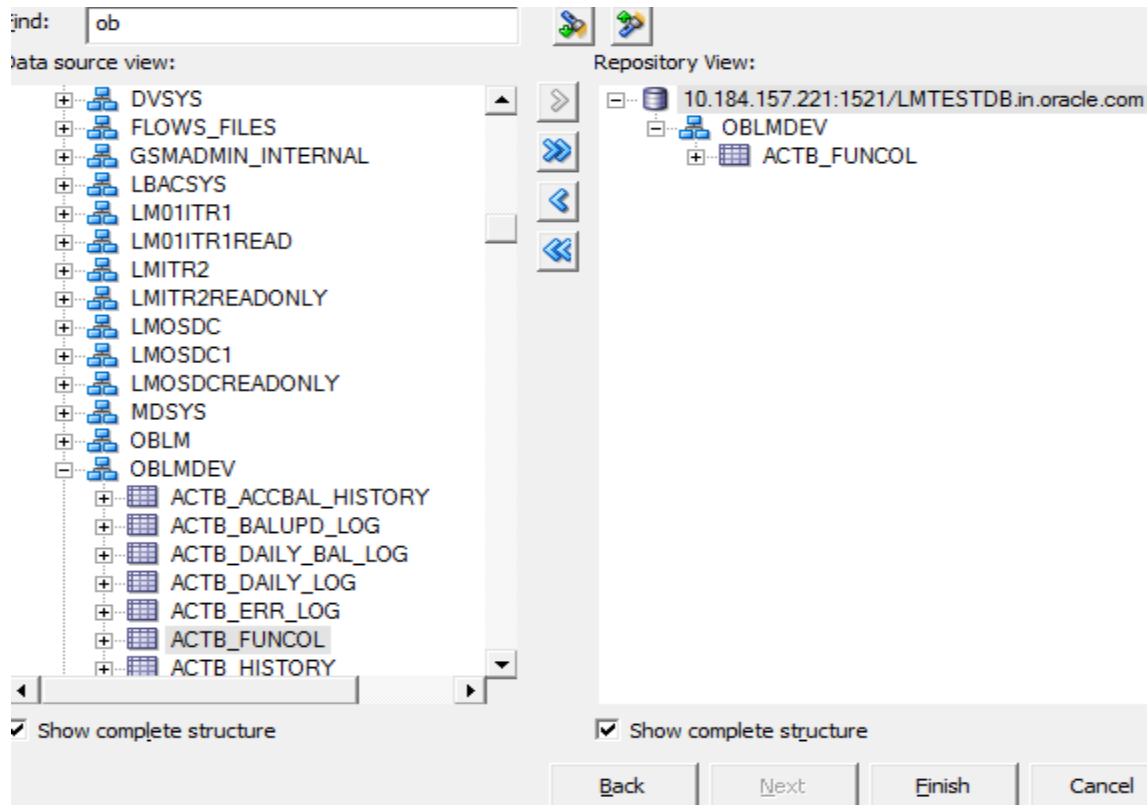
### Step 5

Unselect the key and foreign keys select the tables in the relational sources. Click on next. Search for your DB name



Now select the tables to be imported and click on the > image

### Step 6

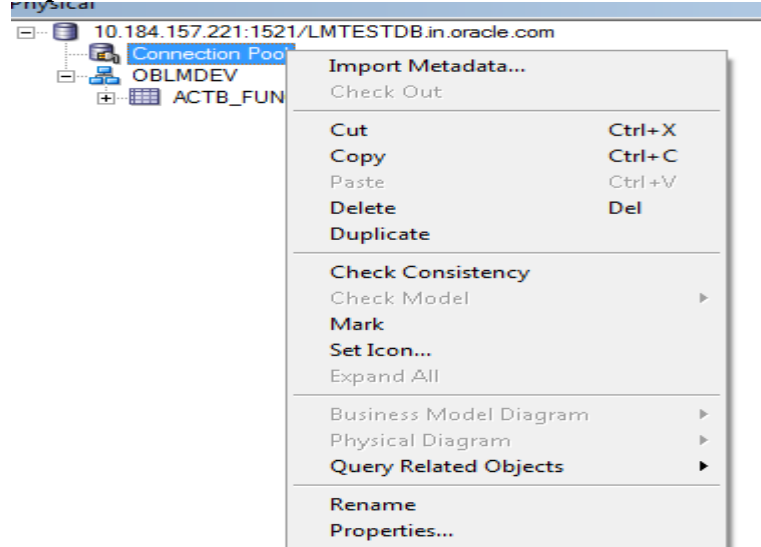


Then click on Finish.

Now you will be seeing the RPD have created with three layers.

In the presentation layer you will be seeing the selected tables. if you want to import more tables click on the connection pool name right click on it, import metadata then the same process will be followed from

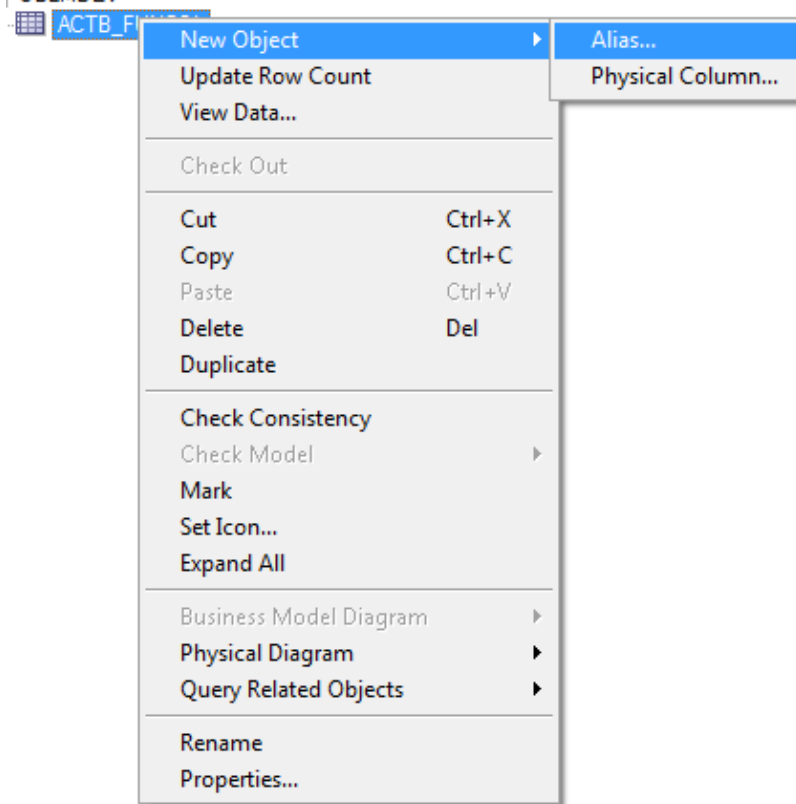
#### step 4



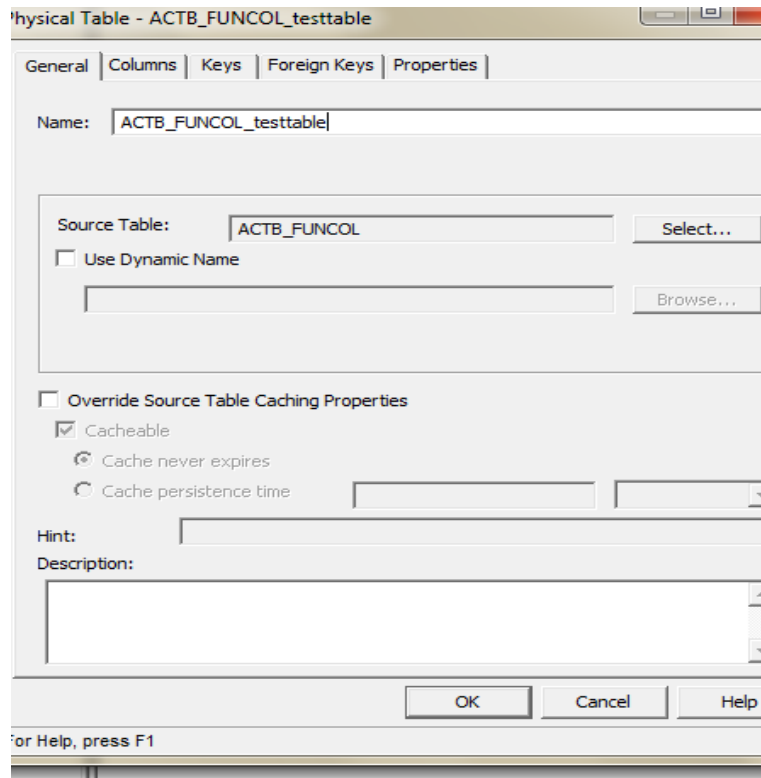
Now in the Presentation layer we can import the necessary table for the report creation. We can use one

table for only one report. In this case we need take copy of the same table by right click on the table name then

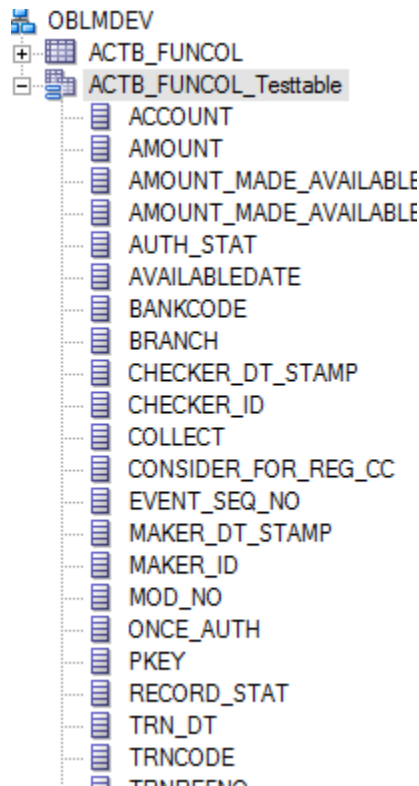
New object→Alias.



Now following page will appear give the new name for the alias table in Name field.



Now the copy of the table will be shown like below.



If the same table is used more than once for different report, we need to create alias table like above. Import the tables and join the table accordingly to our report. Select the tables to join in the physical layer. Right click on physical display folder -> Physical Diagram-> Selected Objects only, Now make the join to the tables based on our requirement

LM_ACC_DETAILS				
Columns	Types	Length	Nullable	
ACCOUNT_DESC	VARCHAR	50	true	
ACC_CATEGORY	VARCHAR	50	true	
ACC_NO	VARCHAR	20	false	
ACC_RESIDENT_TYPE	VARCHAR	20	false	

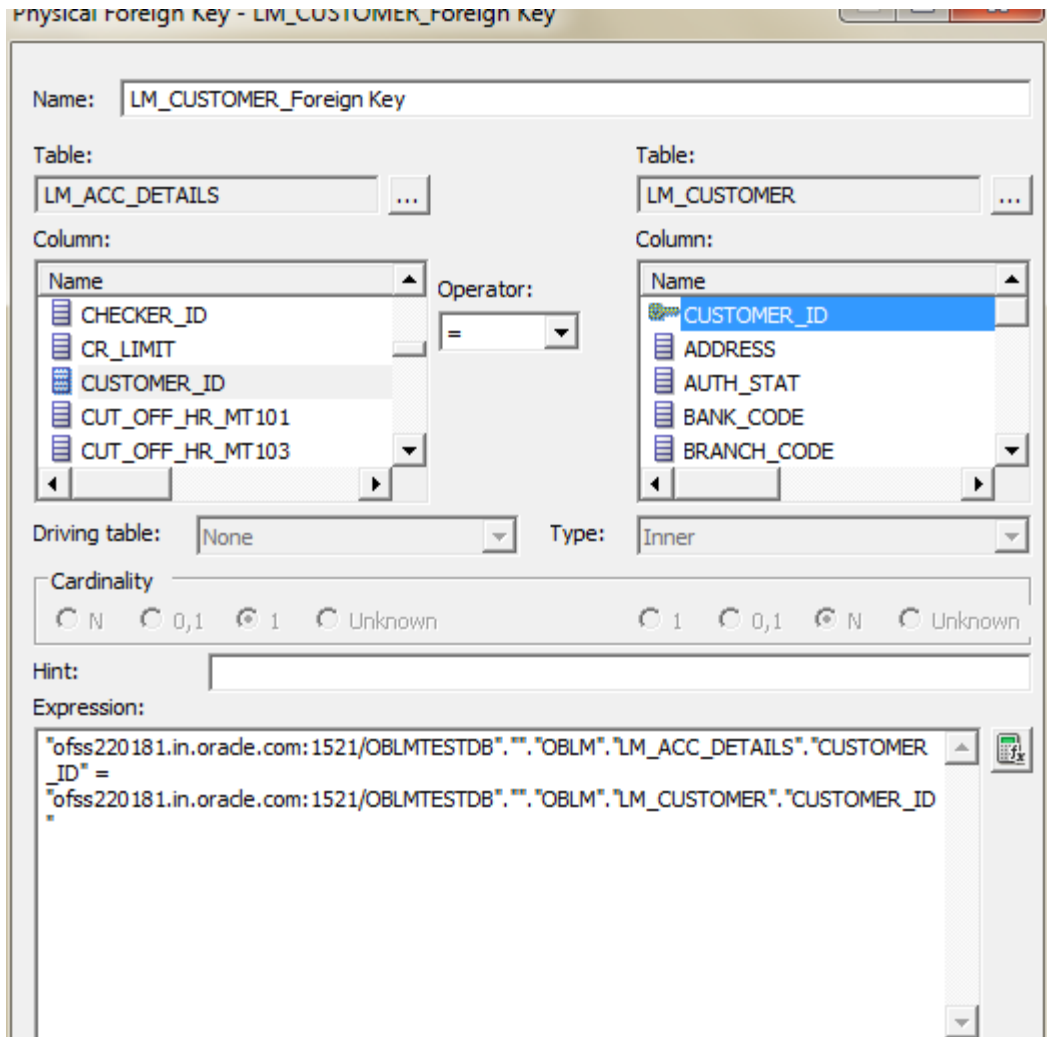
LM_BRANCH_DETAILS				
Columns	Types	Length	Nullable	
LOCAL_CLEARINGCODE	VARCHAR	50	true	
LOCAL_CURRENCY	VARCHAR	10	false	
MAKER_DT_STAMP	DATETIME	10	true	
MAKER_ID	VARCHAR	12	true	

LM_CUSTOMER				
Columns	Types	Length	Nullable	
ADDRESS	VARCHAR	1,000	true	
AUTH_STAT	VARCHAR	1	true	
BANK_CODE	VARCHAR	3	true	
BRANCH_CODE	VARCHAR	5	true	

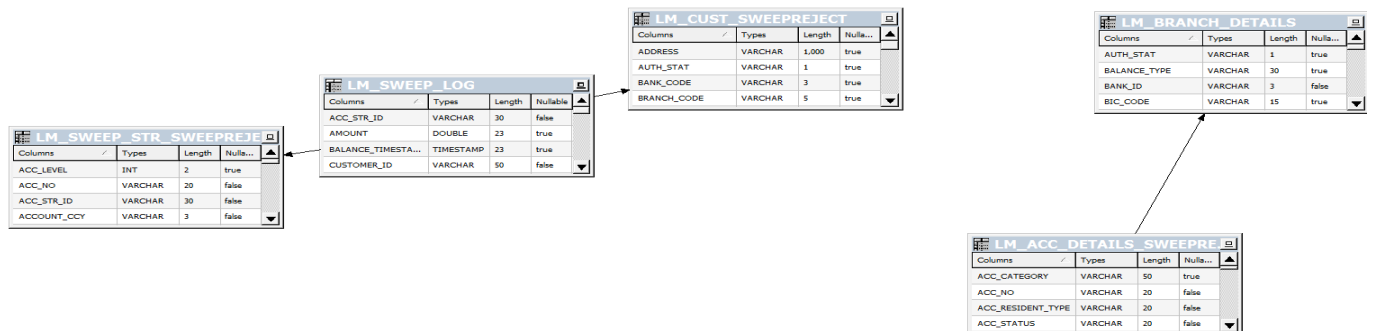
Click on the new join in the following image first icon



Select the column name in the both table like below and click ok.

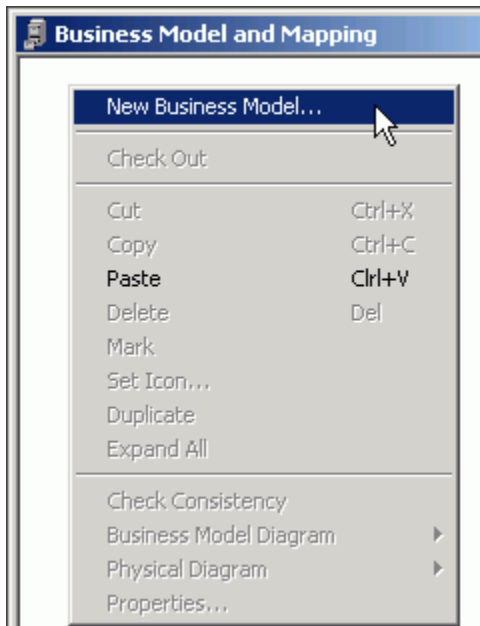


Click on customer ID from the both table and click on ok.  
Similarly Join other tables as shown in diagram using New foreign key

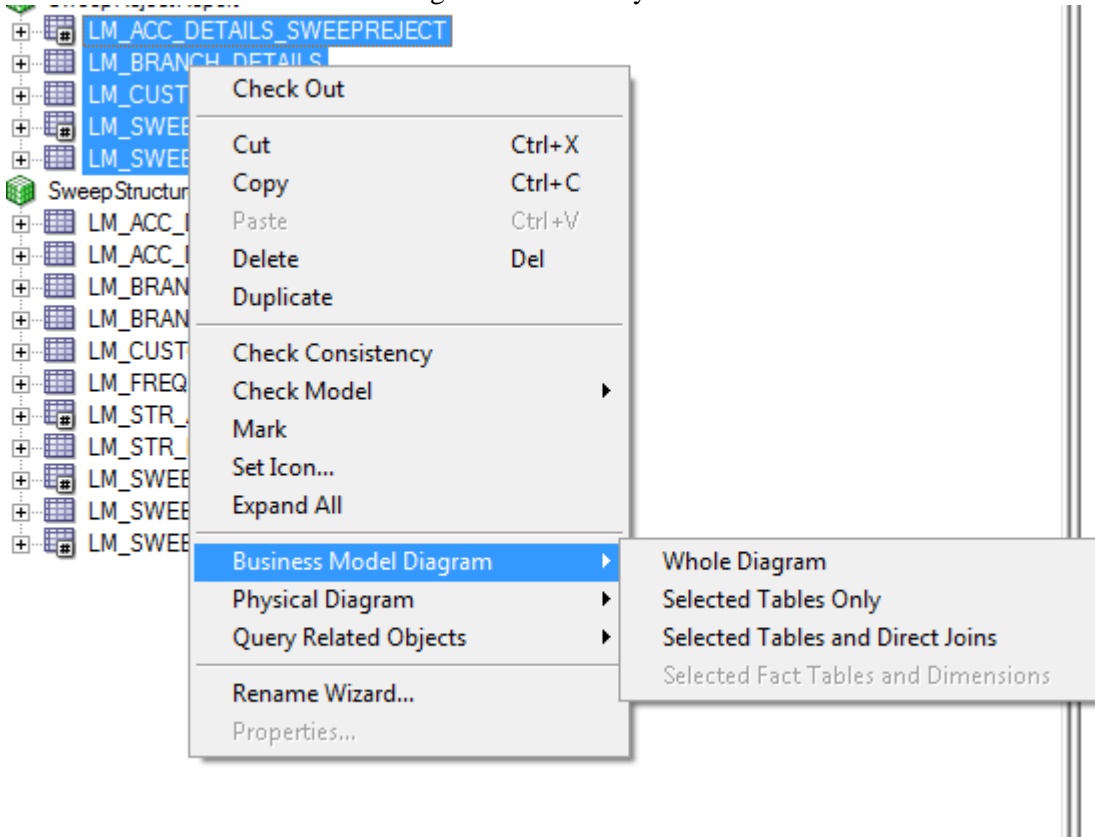


Now go to file click on save

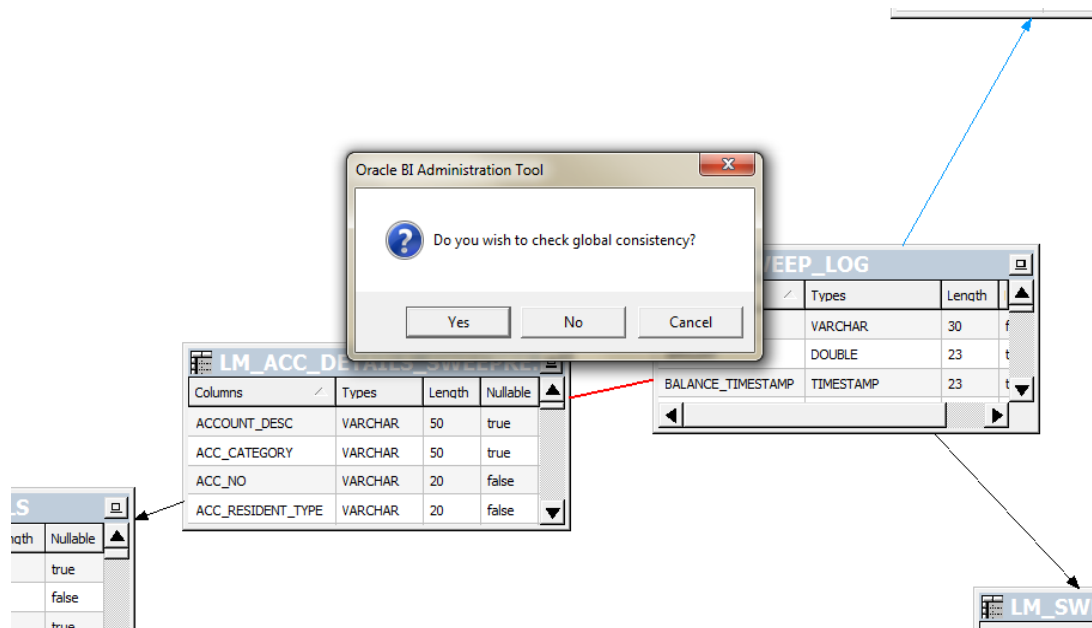
In Business Model and Mapping layer, right-click the white space and select **New Business Model**.



Now move the selected table to create report from presentation layer to business model layer  
Now select the tables and check for global consistency check



Then you will see the below image for consistency check



Click yes and check global consistency check. If the tables are joined correctly with the primary keys, then screen will appear like this below with warning. Close this.

**File** Edit View Manage Tools Window

- New... Ctrl+N
- Open ▶
- Multiusers ▶
- Close
- Save Ctrl+S
- Save As...
- Copy As...
- Import ▶
- Compare...
- Turn off Compare Mode
- Merge...
- Check Global Consistency** Ctrl+K
- Check Out All
- Check In Changes
- Undo All Changes
- 1 D:\OracleBI\...\Repository\PC
- 2 D:\OracleBI\...\FlexCube.rpd
- 3 D:\OracleBI\...\FlexCube
- 4 BRANCH
- Shut Down Server
- Exit

**Consistency Check Manager**

Display:  Errors (0)  Warnings (3)

Messages:

Message Type	Object Type	Object	Error No.	Error Description
Warning	Logical Table	LM_SWEEP_STR_D	39011	Key "InterAccrualReport", "LM_SWEEP_STR_DETAILS", "LM_SWEEP_STR_DETAILS_#1" in logical table "InterAccrualReport", "LM_SWEEP_STR_DETAILS" is a superset or subset of another key in this table. Any redundant table key should be removed.
Warning	Logical Table	LM_SWEEP_STR_D	39011	Key "InterestStatementReport", "LM_SWEEP_STR_DETAILS_INTERESTSTATEMENT", "LM_SWEEP_STR_DETAILS_INTERESTSTATEMENT_#1" in logical table "InterestStatementReport", "LM_SWEEP_STR_DETAILS_INTERESTSTATEMENT" is a superset or subset of another key in this table. Any redundant table key should be removed.
Warning	Logical Table	LM_ACC_DETAILS	39011	Key "SweepStructureReport", "LM_ACC_DETAILS_SweepStr", "LM_ACC_DETAILS_SweepStructureReport", "LM_ACC_DETAILS_SweepStr" is a superset or subset of another key in this table. Any redundant table key should be removed.

Show Qualified Name

Objects... Stats... Save As... Check All Objects Edit... Go To...

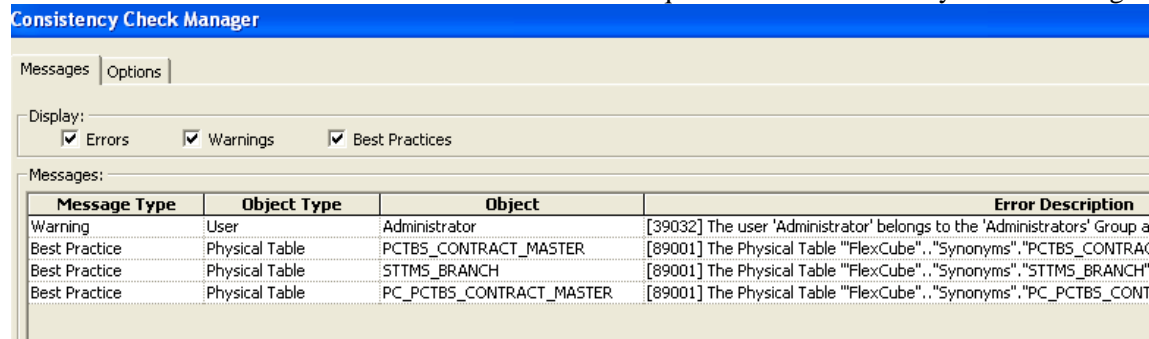
A Global Consistency Check was performed. 0 Error(s) (0 shown), 3 Warning(s) (3 shown), and 0 Best Practice violations(s) (0 shown) found.

Select **File > Check Global Consistency**.



You should receive a message indicating that the repository is consistent and asking if you want to make it available for queries.

Click **Yes** to make the Pc business model available for queries. The Consistency Check Manager displays.



If the Consistency Check Manager displays any **Error** messages, edit the repository to correct the inconsistencies and run the consistency check again. If you see only **Warning** and **Best Practices** messages, you can ignore the messages for now and click **Close**.

Now the completed the necessary table to create the report in OBIEE server. The moved tables will be displayed in the obiee report.

### **5.1 RPD Deployment Steps:**

Open the following shipment media directory for RPD files. For the modules where modularity has been done, the RPDs will be under the path in the browsed path which have given while creating RPD. Deploy the RPD in the server installed path. In my case datamodel.cmd is in the following path.

For windows machine the following command to be used for deployment.

```
datamodel.cmd uploadrpd -I <TEMPDIR_DASH>/RPD_File_Name.rpd -SI ssi -U<adminUserName>
2 For Linux machine
```

```
datamodel.sh uploadrpd -I <TEMPDIR_DASH>/RPD_File_Name.rpd -SI ssi -U<adminUserName>
```

#### **Example**

Say you have copied the obiee\_reports.rpd file to /scratch/Deployments/bi/osdc/obiee\_reports.rpd in Linux box, run the below ./datamodel.sh command, this will ask for rpd password, give the password as **weblogic1** or the password that you have saved during the rpd creation.

```
/scratch/obiee12c/Middleware/Oracle_Home/user_projects/domains/bi1/bitools/bin
```

```
./datamodel.sh uploadrpd -I /scratch/Deployments/bi/osdc/obiee_reports.rpd -SI ssi -U weblogic -P weblogic123
```

Running this command will ask for rpd password, rpd password is: **weblogic1** or the password that you have saved during the rpd creation.



Liquidity Management OBIEE Setup  
Oracle Banking Liquidity Management  
Version 14.0.0.0  
[November] [2017]

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  
[www.oracle.com/financialservices/](http://www.oracle.com/financialservices/)

Copyright © 2017, 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.

