Implementing Multiple Fact tables in OBIEE Repository file By Amit Sharma

Many of time people ask me some way to create the data model consists of multiple Fact table so I though I should create a simple example for people who are new to OBIEE. The tutorial follows step by step approach to create a Data Model (RPD) with multiple fact tables. The example I'm going to use has two fact tables and three dimension tables.

Dimension Table : Period_days, Products, Stores, Region **Fact Tables** : Sales_Fact, Cost_and_Prices_fact.

To understand the concept clearly you can download the RPD file and MS-Access DataSouce for the same from my blog..

Physical Layer : Picture Data Source with Multiple Fact Tables.

Step #1 Import the Metadata Source File->Import->Data Source

Oracle BI Administration To	ool - HypSa	ales.rpd
File Edit View Manage Tools	; Window	Help
New Open	Ctrl+N	
Multiuser Close Save Save	• Ctrl+S	Business □-∰ S □-∰ E
Copy As		
Import	•	from Database
Compare		through berver
Morge		from Multi dimonsional
Check Global Consistency	Ctrl+K	
Check Out All Check In Changes Undo All Changes		
1 C:\OracleBI\\HypSales.rpd 2 Khirod_Practice.rpd 3 HypSales_test.rpd		1 → 1
Shut Down Server Exit		

Step #2 Select the DSN and give the user credential to connet to Data Source

Select Data Source									
Connection Type:	ODBC 3.5		•						
DSN		Driver							
🔋 AnalyticsWeb		Oracle BI Server							
🔋 demo		Teradata							
🔋 🔋 Development		Teradata							
📕 🔋 Hyperion BIplus Cl	ient Sample1	Microsoft Access Drive	r (*.m						
📕 🔋 Hyperion BIplus Cl	ient Sample2	Microsoft Access Drive	r (*.m						
📕 🔋 Hyperion Client Sa	mple	Microsoft Access Drive	r (*.m 💌						
•			•						
User Name:	amit_sharm	a							
Password:	****								
Read from CRM me	tadata tables	ОК С	ancel						

Step#3 Select only the below tables from the data source.[Delete the remaining one for this example we don't need anyother tables.]

l	Physical											
1	🖃 🗍 Sales_Physical											
I	Sonnection Pool											
I	🗄 🚖 Sales DataSource											
I	ter costs_and_prices_fact											
I	i periods_days											
I	in products											
I	🕂 📲 regions											
I	🔃 📲 sales_fact											
I	i tores											
I												

Step#4 : Now drag the Dimension and facts tables in BMM layer as given in the below diagram.

As we have two fact tables and we suppose to have a star schema. We need to combine two fact tables into one. This we'll do by adding a addition sources in Sales Fact Table. Just drag and drop the **Cost_and_Prices_Fact** over the source of **Sales_fact**.

As seen in the below diagram the **Product** dimension is a confirm dimension(Bridge Dimesion)



Step#5 : The next step is to add logical sources(double click on logical source) of sales_fact

Logical Table Source - sales_fact	:			<u>- 🗆 ×</u>
General Column Mapping Conte	nt			
				1
Name: sales_fact				
Active				
Map to these tables:			_	
📰 "Sales_Physical "."Sales Data	aSource""cos	sts_and_prices	_fact"	
"Sales_Physical "."Sales Data ""Sales_Physical "."Sales Data	aSource""pro	ducts"		
"Sales_Physical "."Sales Data	abource""sali	es_ract"		
Add Bemove				
Joins:	Table	Типе	1	
Products	sales_fact	Inner		
costs_and_prices_fact	products	Inner		
View Details				
VICW D'Ctdils				
Description:				
		ОК	Cancel	Help
		UN		пер

Step#6 : Make sure all columns are mapped correctly.

neical Table Course - cales (- Locial Table Course, salas fact
.ogical Table Source - sales_r		
General Column Mapping Co	ontent	General Column Mapping Content
Show mapped columns	I✓ Show <u>u</u> nmapped columns	Name: Isales fact
Logical column to physical colu	umn New column	
Logical Column	Expression	Active
amount_sales	amount_sales	Map to these tables:
day_id	day_id	
product_family	product_family	"Sales_Physical "."Sales DataSource""costs_and_prices_fact"
product_id	product_id	"Sales_Physical "."Sales DataSource""products"
standard_unit_cost	standard_unit_cost	" Sales_Physical "."Sales DataSource""sales_fact"
store_id	store_id	
suggested_retail_price	suggested_retail_price	
unit_sales	unit_sales	
year_montri_id		
		Add Remove
		Joins:
		Table Table Type
		products sales_fact Inner
		costs_and_prices_fact products Inner
		View Details
		Description:
•		
	OK Cancel Help	OK Cancel Help

Step#7: Finally you're BMM Logical Model should look like this



Step#8: In the below diagram is it crealy shown that the measures are coming from two different fact tables.



Step#9: Now simple drag the BMM Sales BMM to Presentation Layer.



Step#10 The next step is to run the "Consistency Check"



Step#11: Make sure there is no error.

Presentation		Business Moo	del and Mapping	Pl	hysical		
AdHoc		E€ Sales ⊕Ⅲ pe ⊕Ⅲ pr □Ⅲ sa	BMM eriods_days oducts ales_fact	E	(ĵ) Sales_Physical 		
day_id f product_id f product_id f store_id f amount_sales f unit_sales f standard_unit_c f suggested_retai	Consistency Check Mar Messages Options Display: Frors F Messages:						
	Message Type	Object Type	Object		Error Description		
	Warning	User	Administrator	[39032] The user 'A 'Administrators' Gro	Administrator' belongs to the oup and has an empty password.		
	Warning	Database	ase Sales_Physical [39028] The features in Database 'Sales_Physical match the defaults. This can cause guery pro'				
	Show Qualified Name	:k was performed. 0 Error	Chec r(s) (0 shown), 2 Warning(s) (2 sho	:k All Objects Cop wwn), and 0 Best Practic	py Close Help e violations(s) (0 shown) found.		

Step#12: In order to deploy the RPD file we need to make the changes in NQSConfig.INI file as given below in the diagram.

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Step#13: Now restart the services.

Services (Local)						
Oracle BI Presentation Server	Name A	Description	Status	Startup Type	Log On As	
	McAfee Framework Service	Shared co	Started	Automatic	Local System	
	McAfee McShield	Provides M	Started	Automatic	Local System	
	🆏 McAfee Task Manager	Allows sch	Started	Automatic	Local System	
	🍓 Messenger	Transmits	Started	Automatic	Local System	
	🍓 Microsoft Office Diagnostics Service	Run portio		Manual	Local System	
	🍓 MS Software Shadow Copy Provider	Manages s		Manual	Local System	
	🆓 Net Logon	Supports p	Started	Automatic	Local System	
	🍓 Net. Tcp Port Sharing Service	Provides a		Disabled	Local Service	
	🍓 NetMeeting Remote Desktop Sharing	Enables an		Manual	Local System	
	🍓 Network Connections	Manages o	Started	Manual	Local System	
	🆓 Network DDE	Provides n		Disabled	Local System	
	🍓 Network DDE DSDM	Manages D		Disabled	Local System	
	🍓 Network Location Awareness (NLA)	Collects an	Started	Manual	Local System	
	🆓 Network Provisioning Service	Manages X		Manual	Local System	
	🍓 NT LM Security Support Provider	Provides s		Manual	Local System	
	🍓 NVIDIA Display Driver Service	Provides s	Started	Automatic	Local System	
	🆓 Office Source Engine	Saves inst		Manual	Local System	
	💑 Oracle BI Cluster Controller			Manual	Local System	
	🆏 Oracle BI Java Host			Automatic	Local System	
	Server @ Oracle BI Presentation Server		Stopping	Automatic	Local System	
	We Uracle BI Scheduler			Manuai	Local System	
	🆏 Oracle BI Server			Automatic	Local System	
	Performance Logs and Alerts	Collects pe		Manual	Network 5	
	🍓 Plug and Play	Enables a c	Started	Automatic	Local System	
	🎇 Portable Media Serial Number Service	Retrieves the	serial numbe	r of any portable i	media player connected to	this computer
	🍓 Print Spooler	Loads files	Started	Automatic	Local System	
	🆓 Protected Storage	Provides pr	Started	Automatic	Local System	
	🍓 QoS RSVP	Provides n		Manual	Local System	
	🎇 Remote Access Auto Connection Manager	Creates a		Manual	Local System	
	🍓 Remote Access Connection Manager	Creates a	Started	Manual	Local System	
	🍓 Remote Desktop Help Session Manager	Manages a		Manual	Local System	
	🍓 Remote Procedure Call (RPC)	Provides th	Started	Automatic	Network S	
	🍓 Remote Procedure Call (RPC) Locator	Manages t		Manual	Network S	
	🏶 Remote Reaistry	Enables re	Started	Automatic	Local Service	

Step#14: Finally we'll run the Answer and check the query is working correct.



Step#15: Login to the BI Answer.

pł	Address	http://amit-pc:9704/analytics/saw.dll?[)ashboard
]			
			Oracle Business Intelligence
			Please enter your User ID and Password below, and then press the Log In button. User ID amit_sharma Password Log In
			Select a Language English
			Oracle Business Intelligence 10.1.3.4.1
			Copyright © 1997, 2009, Oracle. All rights reserved. The Programs (which include both the software and documentation) contain proprietary information; they are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright, patent, and other intellectual and industrial property laws. Reverse engineering, disassembly, or decompilation of the Programs, except to the extent required to obtain interoperability with other independently created software or as specified by law, is prohibited.

Step#16: The presentation layer may look like this.



Step#17: Drag and drop the column from the presentation layer and create query like this.

Address	http://amit-pc:9704/analyti	is/saw.dll?Answers8SubjectArea=%22Main%205%22 🗾 🔂 Go 🛛 Links										
ORA	CLE Answers	Criteria Res	ults Prompts	Advanced	Dashboards - Answers	- More Products 🔻 -	Settings 👻	- Log C				
Main S Colun	nns) 🗊			Untitled Analysis	<u>i</u>	8				
	ods_days ucts s_fact /_id	Columns Click on column r format, formula a	names in the select nd filters by clicking	tion pane to add them to ; the buttons below its na	he request. Once added, drag-and-drop columns ne. 🖗	to reorder them. E	dit a colur	nn's				
pro sto	duct_id	stores	sales_fact									
am uni sta	c_id punt_sales _sales ndard_unit_cost	store_name ↓↑	amount_sales ↓↑	standard_unit_cost ↓↑								
• sug ⊟ store • sto	igested_retail_price es re_id	Display Results	Remove All									
reg sto sto stre city	ion_id re_type re_name set_address	Filters Add filters to the r below included co	request criteria by h olumns. Add a save	olding down the CTRL ke ed filter by clicking on its r	y and clicking on column names in the selection ; ame in the selection pane. (2)	pane, or by clicking	on the filt	er butte				
sta pos sto pho fax	te_province stal_code re_manager nne	Combine with Si	imilar Request									
• ope • rem • sqf	ned_date hodel_date t											
Y Filters This fold	s lerisempty.											
Refresh D	isplay_											
Reload Se	rver Metadata											

Step#18: Process the query by clicking on Results section to get the output like this.

Address http://amit-pc:9704/analytics	/saw.dll?Answers&Su	bjectArea=%22Mai	in%205%22	🔽 ラ Go 🛛 Lin
	Criteria Resu	ts Prompts	Advanced	Dashboards - Answers - More Products * - Settings * - Log
Main S		Layout 🔻 🗐 🕻	2	Untitled Analysis 🔲 *1 🕾 🗖
Columns				
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□ products				
• day_id	Title		A.4 179 V	
product_id	.nue		24 W A	
 store_id amount_sales 	Table		14 😰 ×	
 unit_sales standard unit_cost 	store_name	amount_sales	SUM(standard_unit_cost)	
 suggested retail price 	Anaheim	18,787,080	37,166	
🗆 stores	Barreiras	10,142,333	110,623	
store_id	Brooklyn	100,114,537	197,380	
• region_id	Buenos Aires	9,583,212	22,017	
 store_type store_pame 	Cologne	11,213,585	32,283	
 store_name street address 	Dublin	43,774,572	131,261	
• city	Hiroshima	6,140,037	16,278	
state_province	London	22,270,834	98,423	
postal_code	Los Angeles	87,411,922	214,071	
 store_manager nbone 	Lyon	64,517,523	211,289	
• fax	Munich	15,217,649	80,432	
opened_date	New York	100,671,873	247,244	
remodel_date	Osaka	35,931,645	170,628	
• sqft	Oslo	22,490,092	73,589	
	Paris	18,004,773	74,936	
This folder is empty.	Perth	9,551,141	44,499	
Defeads Disular	Santos	5,064,384	15,852	
Refresh Display	Stockholm	38,462,079	162,535	
Reload Server Metadata	Sydney	27,431,006	188,519	

Step#18 Now let us see the query the BI Server fires again Database.

NQQuery.log - Notepad
File Edit Format View Help
Oracle BI Version: 10.1.3.4.1.090414.1900 : New Session Timestamp: 2010/02/19 19:36:18
Oracle BI Version: 10.1.3.4.1.090414.1900 : New Session Timestamp: 2010/02/22 15:44:46
Oracle BI Version: 10.1.3.4.1.090414.1900 : New Session Timestamp: 2010/02/22 16:07:28
Oracle BI Version: 10.1.3.4.1.090414.1900 : New Session Timestamp: 2010/02/22 16:09:39
Oracle BI Version: 10.1.3.4.1.090414.1900 : New Session Timestamp: 2010/02/22 16:19:17
Oracle BI Version: 10.1.3.4.1.090414.1900 : New Session Timestamp: 2010/02/22 17:16:51
Oracle BI Version: 10.1.3.4.1.090414.1900 : New Session Timestamp: 2010/02/22 17:25:48
+++Administrator:2a0000:2a0004:2010/02/22 17:26:45
######################################
+++Administrator:2a0000:2a0004:2010/02/22 17:26:45
General Query Info: Repository: Star, Subject Area: C:\Hyperion\BIPlus\docs\samples\Hyperion BIplus Sample2, Presentation: Main S
1++Administrator:2a0000:2a0004:2010/02/22 17:26:45
Sending query to database named Sales_Physical (id: <<398>>): select T324."store_name" as c1, T318."amount_sales" as c2, T231."standard_unit_cost" as c3
""""stores" T324, "costs_and_prices_fact" T231, "products" T305, "sales_fact" T318
where (T231."product_id" = T305."product_id" and T305."product_id" = T318."product_id" and T318."store_id" = T324."store_id")

As it is clearly visible in the log file that the Actual SQL query which fires again RDBMS consists of three tables (Two fact tables and one dimension table), however the logical query shows as if there is only one table exist(Main S Subject Area) in the above example.