



Sneak Peek at BETA OLAP 11g

- Oracle 11g is currently in Beta
(Hope you all went to see it Monday morning!)
- Oracle OLAP has many NEW things Coming!
 - ❑ New CUBE_TABLE function in SQL
 - ❑ Tight integration with SQL
(automatically generated views)
 - ❑ Tight integration with data dictionary
 - ❑ New Calc Wizard in AWM!
 - ❑ Easier to use and deploy
 - ❑ Ability to use OLAP for Materialized views
(get MUCH FASTER response times!)

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OLAP 11g Changes

- **New CUBE_TABLE function simplifies access to AW data (replacing OLAP_TABLE)**

The screenshot shows the SQL Developer interface. On the left, the 'Connections' tree is expanded to 'stack07 - global - main3' > 'Views' > 'CUSTOMER_SHIPMENTS_VIEW'. The main pane shows the 'Enter SQL Statement:' window with the following query:

```
SELECT * FROM TABLE (CUBE_TABLE ( 'GLOBAL.CUSTOMER;SHIPMENTS' ) );
```

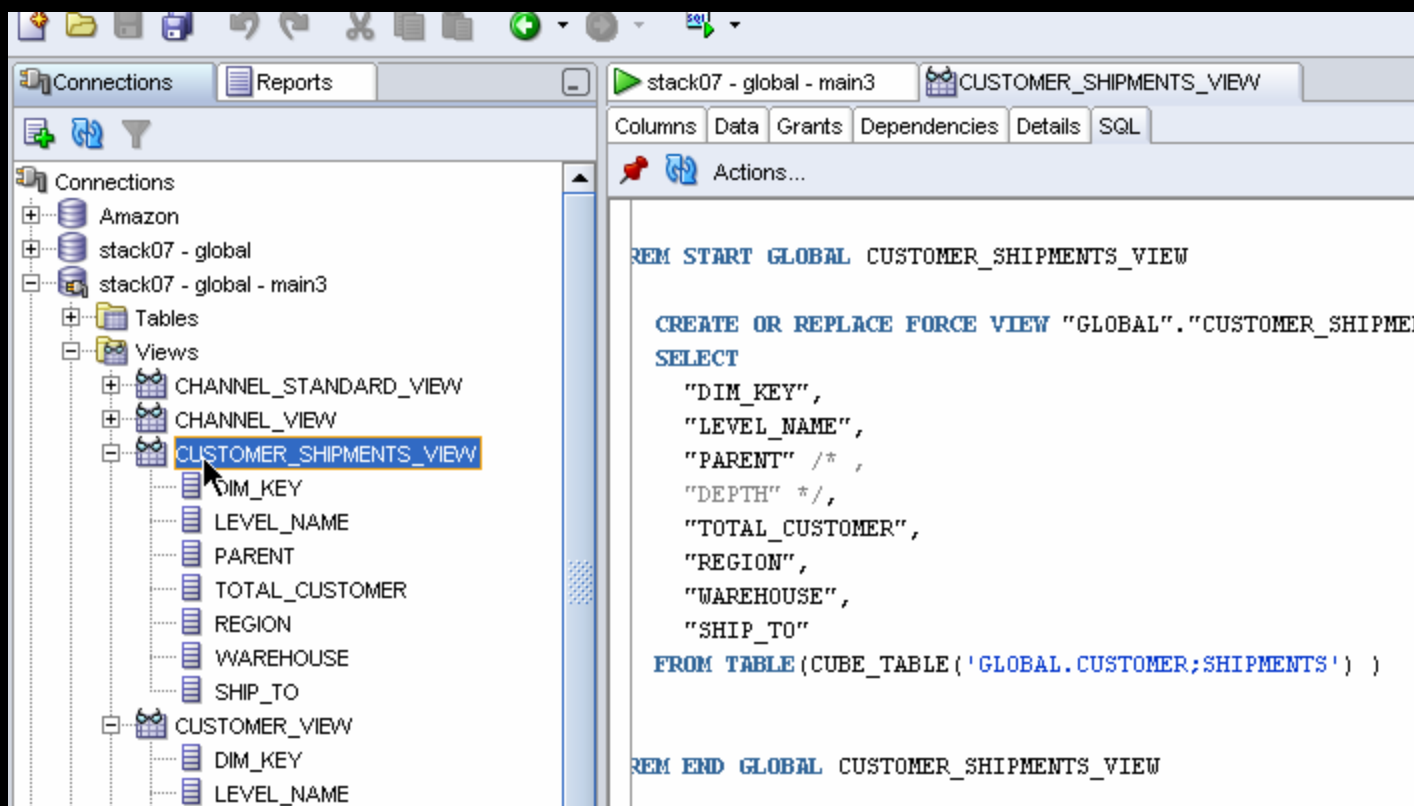
The query is highlighted with a red box. Below the query, the 'Results' tab is selected, showing a table with 6 columns: REGION, WAREHOUSE, SHIP_TO, LEVEL_NAME, and LONG_DESCRIPTION. The results are as follows:

	REGION	WAREHOUSE	SHIP_TO	LEVEL_NAME	LONG_DESCRIPTION
1	(null)	(null)	REGION	Europe	
2	(null)	(null)	REGION	North America	
3	(null)	(null)	REGION	Asia Pacific	
4	20	99	SHIP_TO	UK Env Dept Glasgow	



OLAP 11g Changes

- Views automatically created for SQL access to AWs – Dimensions and Cubes!





OLAP 11g Changes

- Views easily accessed from SQL Developer

The screenshot shows the SQL Developer interface. On the left, the 'Connections' pane shows a tree structure with 'Amazon' and 'stack07 - global' connections. Under 'stack07 - global - main3', there are 'Tables' and 'Views'. The 'CUSTOMER_SHIPMENTS_VIEW' is selected. The main pane shows the 'Data' tab for this view. The data is displayed in a table with columns: DIM_KEY, LEVEL_NAME, PARENT, TOTAL_CUSTOMER, REGION, WAREHOUSE, and SHIP_TO. The data is sorted by DIM_KEY in ascending order.

DIM_KEY	LEVEL_NAME	PARENT	TOTAL_CUSTOMER	REGION	WAREHOUSE	SHIP_TO
1 9	REGION	1	1	9	(null)	(null)
2 10	REGION	1	1	10	(null)	(null)
3 8	REGION	1	1	8	(null)	(null)
4 99	SHIP_TO	20	1	9	20	99
5 46	SHIP_TO	21	1	10	21	46
6 89	SHIP_TO	21	1	10	21	89
7 59	SHIP_TO	21	1	10	21	59
8 91	SHIP_TO	20	1	9	20	91
9 90	SHIP_TO	21	1	10	21	90
10 49	SHIP_TO	16	1	9	16	49
11 95	SHIP_TO	21	1	10	21	95
12 72	SHIP_TO	11	1	8	11	72
13 47	SHIP_TO	14	1	9	14	47
14 60	SHIP_TO	18	1	8	18	60
15 74	SHIP_TO	15	1	8	15	74
16 75	SHIP_TO	16	1	9	16	75



OLAP 11g Changes

- Automatic views accessible from AWM

abases
stack07 (global)
Schemas
GLOBAL
Analytic Workspaces
GLOBAL (attached RW)
Dimensions
CUSTOMER
PRODUCT
TIME
CHANNEL
Levels
TOTAL_CHANNEL
CHANNEL
Hierarchies
STANDARD
Attributes
Unique Key Attributes
Mappings
Views
CHANNEL_VIEW - [Dimension ET]
VIEWNAME - [Hierarchy: STANDARD]
Data Security

General

Specify View Information

Dimension Name: CHANNEL
Hierarchy Name: STANDARD
View Name:

Column Name	Data Type	Object Type
DIM_KEY	VARCHAR2	Key
LEVEL_NAME	VARCHAR2	Level Name
PARENT	VARCHAR2	Parent
TOTAL_CHANNEL	VARCHAR2	Hierarchy Level
CHANNEL	VARCHAR2	Hierarchy Level



OLAP 11g Changes

- Query Rewrite knows about AWs now

The screenshot shows the 'Materialized Views' tab in the Oracle OLAP 11g configuration window. The 'General' tab is selected, and the 'Materialized Views' sub-tab is active. The 'Enable Materialized View Refresh of the cube' checkbox is unchecked. The 'Refresh Method' is set to 'Force' and the 'Refresh Mode' is set to 'On Demand'. The 'Start With' and 'Next Refresh' fields are empty, each with a 'Modify...' button. The 'Constraints' section shows 'Trusted' selected and 'Enforced' unselected. The 'Parallel' checkbox is unchecked, and the 'Degree of Parallelism' field is empty. A red box highlights the 'Enable the Query Rewrite Materialized View' checkbox, which is currently unchecked. Below this, the 'Materialized View Implementation Details' section shows the 'Refresh' tab selected, with 'Compatibility Check list' selected and 'Materialized View details' unselected. A table with columns 'Status', 'Object', and 'Check' is visible at the bottom.

Status	Object	Check
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OLAP 11g Changes

- Optimizer pushes joins down to AW
- Enables efficient non-OLAP-aware SQL queries

The screenshot shows a SQL query in a text editor, highlighted with a red box. The query is as follows:

```
FROM time_view t,  
product_view p,  
customer_view cu,  
channel_view ch,  
units_cube_view f  
WHERE t.dim_key = f.TIME  
AND p.dim_key = f.product  
AND cu.dim_key = f.customer  
AND ch.dim_key = f.channel  
AND t.long_description = '2000'  
AND p.long_description = 'Total Product'  
AND cu.long_description = 'All Customers'
```

Below the query editor, the 'Explain' button is highlighted with a red box. The execution plan is displayed in a table with the following columns: Operation, Optimizer, Cost, Cardinality, Bytes, and Part.

Operation	Optimizer	Cost	Cardinality	Bytes	Part
SELECT STATEMENT	ALL_ROWS	1028	1	520	
HASH JOIN		1028	1	520	
MERGE JOIN(CARTESIAN)		407	1	380	
MERGE JOIN(CARTESIAN)		305	1	240	
MERGE JOIN(CARTESIAN)		203	1	160	
CUBE SCAN(OUTER) GLOBAL.CHANNEL					
BUFFER(SORT)		102	1	80	
CUBE SCAN(OUTER) GLOBAL.PRODUCT					
BUFFER(SORT)		203	1	80	



OLAP 11g Changes

- Views are stored in Oracle Dictionary
- Notice in SYS.USER_DIMENSION_VIEWS

The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' pane shows a tree structure with 'stack07 - global - main3' selected. The 'Views' folder is expanded, showing a list of views including 'CHANNEL_STANDARD_VIEW', 'CHANNEL_VIEW', 'CUSTOMER_SHIPMENTS_VIEW', 'CUSTOMER_VIEW', 'PRODUCT_PRIMARY_VIEW', 'PRODUCT_VIEW', 'TIME_CALENDAR_YEAR_HIER_VIEW', and 'TIME_VIEW'. The 'CUSTOMER_SHIPMENTS_VIEW' is highlighted. The main window shows the 'Enter SQL Statement' area with the query `select * from sys.user_dimension_views;` entered. Below the query, the 'Results' tab is active, displaying a table with the following data:

	DIMENSION_NAME	VIEW_OWNER	VIEW_NAME	VIEW_TYPE
1	TIME	GLOBAL	TIME_VIEW	ET
2	CHANNEL	GLOBAL	CHANNEL_VIEW	ET
3	PRODUCT	GLOBAL	PRODUCT_VIEW	ET
4	CUSTOMER	GLOBAL	CUSTOMER_VIEW	ET



OLAP 11g Changes

- **Cost-based presummarization balances aggregation time with performance**

Create Cube

General | Translations | Implementation Details | Materialized Views | Rules | Summarize To | Cache

Presummarization
Select the type of presummarization you wish to use

☐ No presummarization

☒ **Cost-based presummarization**

Percentage: (Slider from 0 to 100)

☐ **Level-Based Presummarization**

Choose the regions of the cube to be presummarized and stored in the analytic workspace.

Dimension:

Dimension	Levels
TIME	<input checked="" type="checkbox"/> ALL_TIMES
CUSTOMER	<input checked="" type="checkbox"/> CALENDAR_YEAR
PRODUCT	<input checked="" type="checkbox"/> MONTH
CHANNEL	<input checked="" type="checkbox"/> QUARTER



OLAP 11g Changes

- Native support for AWs with skip level and ragged hierarchies

Create Hierarchy

General Translations

Specify General Hierarchy Information

Name: CALENDAR_YEAR_HIER

Short Label: Calendar Year Hier

Long Label: Calendar Year Hier

Description: Calendar Year Hier

☒ Set as Default Hierarchy

☐ Skip Level

☐ Ragged

☒ Level Based Hierarchy ☐ Value Based Hierarchy



OLAP 11g Changes

- Create security policies based on hierarchies

The screenshot displays the OLAP 11g Data Security interface. On the left is a tree view of the data model, including Dimensions (TIME, PRODUCT, CUSTOMER) and their associated Levels, Hierarchies, Attributes, Mappings, Views, and Data Security. The 'Data Security' folder is expanded, showing policies for 'admin' and 'hardware'. The main window is titled 'Create Data Security Policy' and has two tabs: 'General' and 'Member Selection'. The 'Member Selection' tab is active, showing a 'Choose' dropdown set to 'Product' and a 'From' dropdown set to 'Primary' hierarchy. Below this, there are two panes: 'Available' and 'Selected'. The 'Available' pane shows a hierarchy tree with 'Descendants of Hardware' and 'TOTAL_CUSTOMER'. The 'Selected' pane shows a list of steps: '1. Start with' (Hardware) and '2. Add' (Descendants of Hardware). A second 'Create Data Security Policy' dialog is overlaid on top, showing the 'General' tab. It prompts for 'Specify Data Security Policy Information' with a 'Data Security Policy Name' field containing 'north america'. Below this, it says 'Select the access privileges for each user or role below' and shows a table with columns 'User or Role', 'Type', 'Select', and 'Insert'. The table contains one row for 'SCOTT' with 'User' type, 'Select' privilege checked, and 'Insert' privilege unchecked.

User or Role	Type	Select	Insert
SCOTT	User	<input checked="" type="checkbox"/>	<input type="checkbox"/>



OLAP 11g Changes

- Calc Wizard replaced by powerful "complete the sentence" wizard
- Expression language more SQL-like
- EQs of Calculated Measures in 11g-format AWs "read-only"

Choose a calculation type:

Rank

Calculation:

Rank members of the [PRODUCT](#) dimension and PRIMARY hierarchy based on measure [UNITS_CUBE.UNITS \(...\)](#)

. Calculate rank using [RANK](#) method with [member's level](#) in order [lowest to highest](#).

[member's level](#)
[member's parent](#)
[member's ancestor](#)

Expression:

RANK() OVER HIERARCHY (GLOBAL.PRODUCT.PRIMARY ORDER BY GLOBAL.UNITS_CUBE.UNITS WITHIN LEVEL)



OLAP 11g Changes

- Can Create AWs in 11g mode (automatic views)
- If no 11g mode, have same flexibility as 10g

