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Oracle Spatial User Conference
Oracle Spatial User Conference

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OBIEE 11g Mapping and Spatial Analytics
Program Agenda

- OBIEE 11g product overview
- OBIEE 11g geospatial overview
  - Map Views and Spatial Analytics
- Configuring Map View Layers
- Configuring Map View Background Maps
- Configuring Spatial Analytics in OBIEE 11g

Current production version OBIEE 11.1.1.6.0
OBIEE product overview

Oracle Business Intelligence Enterprise Edition 11g

Common Enterprise Information Model

- Common Metadata Foundation across all Data Sources
- Common Security, Access Control, Authorization, Auditing
- Common Request Generation and Optimized Data Access Services
- Common Clustering, Workload Management, & Deployment
- Common Systems & Operational Lifecycle Management

OLTP & ODS Systems
- Data Warehouse
- Data Mart
- Exadata
- OLAP Sources
- Packaged Applications (Oracle, SAP, Others)
- Unstructured & Semi-Structured
- Excel XML/Office
- Business Process
OBIEE 11g Map View feature
Thematic Map Visualizations

- Thematic map visualization of any analysis that includes geography
- Simple configuration, no coding required
- Inherits OBIEE functionality such as Ad Hoc, Drilling, Action Framework, Master-Detail Linking etc
OBIEE Map View  Layers

- Dynamic, interactive
- “BI Data Layers”
  - Tied to OBIEE model
  - Thematic rendering of OBIEE analysis results
- “Map Features”
  - Not associated with OBIEE model
  - Provides additional context
- Configured through simple Web GUI
OBIEE Map View Background Maps

- Map Tile Caches
- Internal (MapViewer)
- Bing
- Oracle eLocation
- WMS
- Nokia
- …and the other household name
DEMONSTRATION

Map View Layer and Background
Map Configuration
Layer and background map config
Theme to use as non-BI layer
Import but do not associate with BI column
Associate with background map(s)
Normal analysis with geographic dimension
Map offers “Map Features” since there is now a non-BI layer configured.
Map Feature added
Hosted and WMS background map config
The OpenGIS® Web Map Service Interface Standard (WMS) provides a simple HTTP interface for requesting geo-registered map images from one or more distributed geospatial databases.

- Supported as MapViewer a tilecache source
- Can therefore be an OBIEE background map

National Atlas WMS is used for this demo
Create WMS Theme in Map Builder
Create WMS Theme in Map Builder
Create WMS Theme in Map Builder
Create WMS Theme in Map Builder
Create WMS Theme in Map Builder
Create WMS Base Map in Map Builder
Create WMS Base Map in Map Builder
Create WMS Base Map in Map Builder
Create WMS Tilecache in MapViewer web console (or in Map Builder)
Create WMS tile layer in MapViewer web console (or in Map Builder)
Create WMS tile layer in MapViewer web console (or in Map Builder)
Create WMS tile layer in MapViewer web console (or in Map Builder)
Associate WMS tile layer with map layers in OBIEE
Associate WMS tile layer with map layers in OBIEE
Associate WMS tile layer with map layers in OBIEE
Create Analysis, render map View, select WMS background map.
Spatial Analytics with OBIEE

- Supplements and weaves together the native analytic capabilities of OBIEE with location-based analyses.
- Configured by invoking Oracle Spatial features through supported straightforward OBIEE integration mechanisms.
- Proximity, nearest nbr, within distance, topological operators, geocoding etc etc
- Seamless with other OBIEE data and can be rendered in any OBIEE view (table, chart, map etc)
Spatial Analytics Scenario 1

Scenario 1: Column in an analysis based on **Spatial function**

Example: Analysis columns include **Customer**,**Distance_To_Nearest_Store**, ...

Approach: Define location-based column using EVALUATE() function to ship query to Spatial

EVALUATE(*Oracle Spatial functions accepting BI column values...*)
Scenario 2: Data source in OBIEE model based on **Spatial query**

Example: OBIEE model includes table `Stores_Near_Customer`

Approach: Define the OBIEE data source as a view that accepts variables sent from the dashboard via user-driven prompts (i.e., `Customer, Distance`)
Spatial Analytics Scenario 3

Scenario 3: **Spatial query** within OBIEE dashboard, not tied to OBIEE model

Example: Select all stores within user defined distance of an address

Approach: Define the query using the “Create Direct Database Request” feature in OBIEE, and include references to variables set by dashboard prompts.
DEMONSTRATION

Spatial Analytics using EVALUATE() and OBIEE variables
Scenario 1 – using EVALUATE()
Create stored function
Confirm it works
Invoke Spatial function with EVALUATE()
Our location-based column could be based on any much more involved Spatial operations.
EVALUATE()
Spatial examples in SampleApp
This example constructs geometries from coordinates and feeds into function
Scenario 2: using Spatial SQL-based source and session variables
Physical source is Spatial SQL with variables

```sql
SELECT postalcode, name
FROM oilee_naveq_nlm_nep_pol_hotel
WHERE postalcode = VALUEOF(NQ_SESSION, Zip5, variable)
AND sdo_within_distance(b.geometry, a.geometry, 'distance=VALUEOF(NQ_SESSION.Distance, Variable) unit=MILE') = TRUE
```
Confirm it works (based on variable defaults)
Create prompt for Zip and Distance that will set variables
Results are dynamic based on passing prompt values to physical layer
Physical layer/variable examples in SampleApp.
This example includes a custom function that invokes the Spatial Geocoder.
This example includes a custom function that invokes the Spatial Geocoder.
In OBIEE 11g

- Interactive drillable thematic mapping is turn-key feature
- Full arsenal of Oracle Spatial location analysis is easily integrated
Resources

• OBIEE SampleApp “Source Specific Features > Oracle Geospatial”

• Collaborate 2012 Spatial Analytics Workshop

• OBIEE Documentation Configuring Mapping and Spatial Information
  http://docs.oracle.com/cd/E23943_01/bi.1111/e10541/configmap.htm

• OBIEE Documentation Creating Map Views
  http://docs.oracle.com/cd/E23943_01/bi.1111/e10544/creatingviews.htm#sthref165
Q&A