

A horizontal rectangular banner with a red background. The background features a faint, light-colored map of a city area, likely Washington, D.C., with labels for "Rosslyn", "Radnor Heights", "Washington National Mall", and "ANIS".

Oracle Spatial and Graph User Conference

May 22, 2013

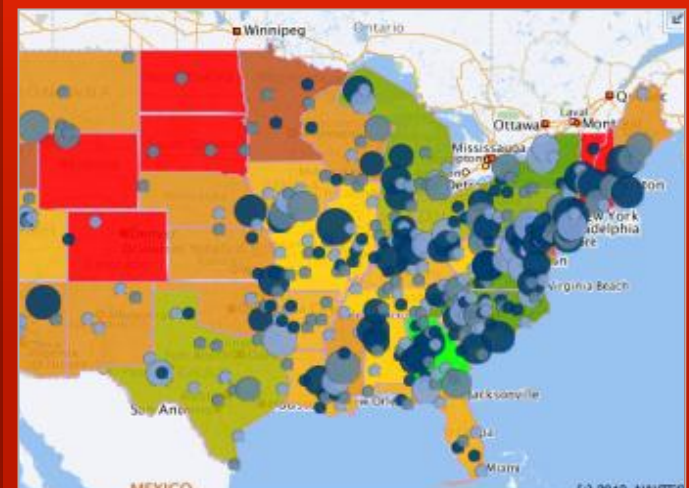
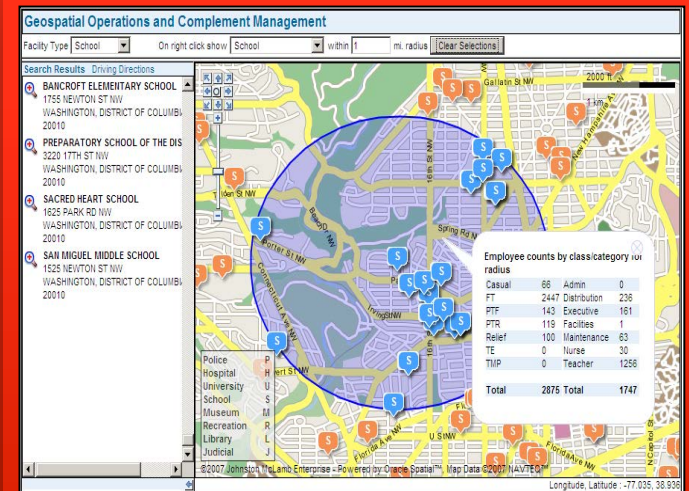
Ronald Reagan Building and International Trade Center
Washington, DC USA



Introduction to MapViewer & Tools for Your Business Apps and Mobile Devices

Albert Godfrind

Oracle Spatial Architect and Evangelist



The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

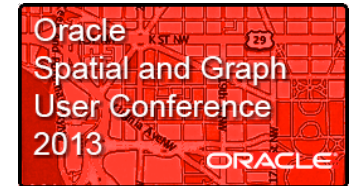


Topics



- MapViewer Architecture
- Installing, Configuring and Managing
- Defining Maps
- Developing Applications
- Other Tools
- Resources

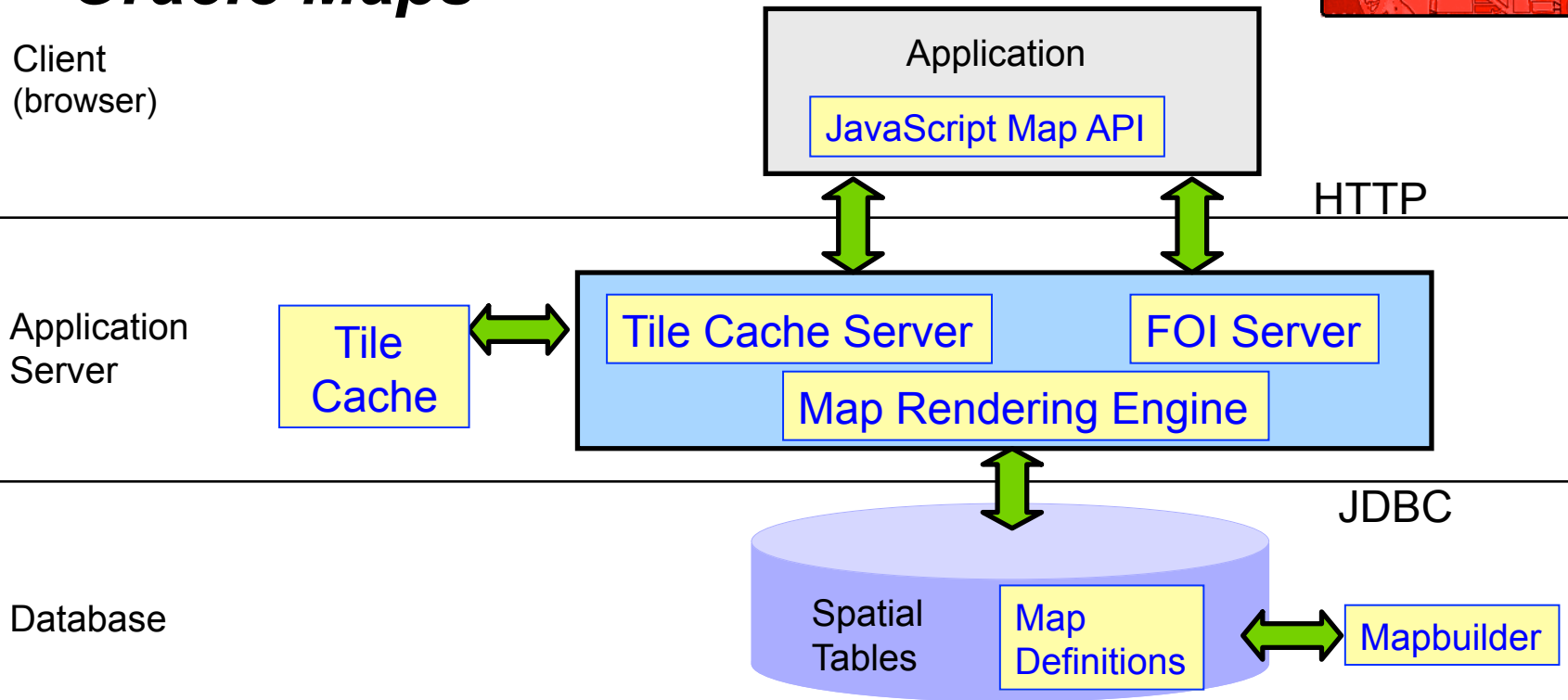
What is MapViewer ?



- ✓ A standard feature of all versions of Fusion Middleware
- ✓ Map definitions and symbology stored in the database
- ✓ Map builder GUI
- ✓ Thematic mapping
- ✓ High performance map cache
- ✓ Integration in Business Intelligence tools and many applications

- ✓ Multiple content sources
 - ✓ Local (Oracle database)
 - ✓ Online web services
 - ✓ Hybrid (local database + online content)
- ✓ Multiple development options
 - ✓ JavaScript for rich user interfaces
 - ✓ Java, JSP and XML APIs
 - ✓ ADF component, APEX integration
- ✓ Multiple devices
 - ✓ Web browsers
 - ✓ Tablets and smartphones

MapViewer Architecture: *Oracle Maps*

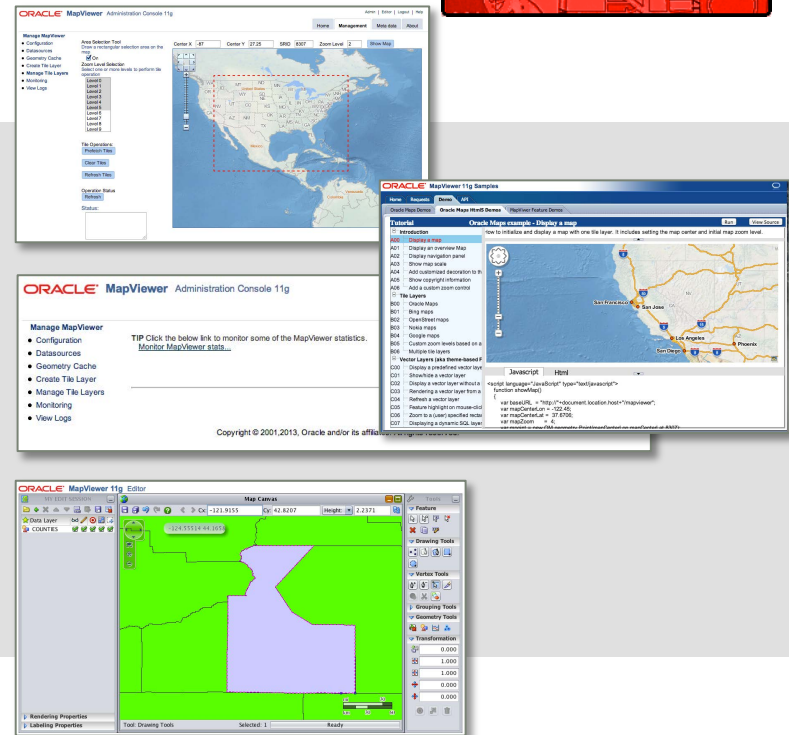


ORACLE

What is New in Latest Version ?

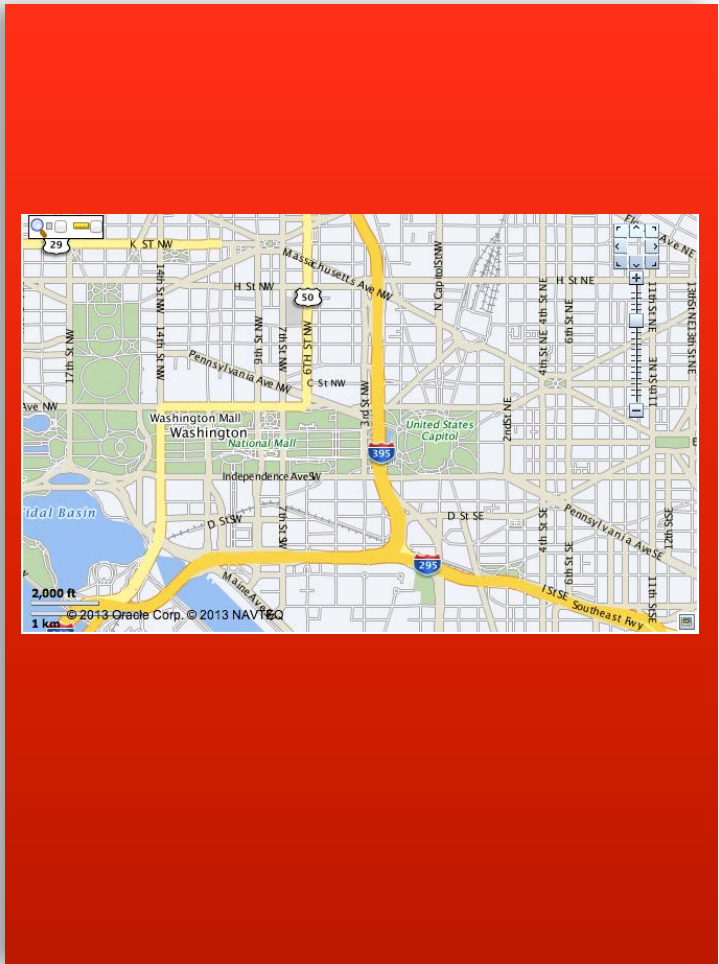
Mapviewer 11.1.1.7.1

- Rich client interactivity
 - New HTML5-based API
- Map data editing
- 3rd party data sources
- Refreshed Web console
- Separate MVDEMO samples
- Glassfish-based “quick start” kit



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Installing and Configuring



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Overview Downloads Documentation Community Learn More

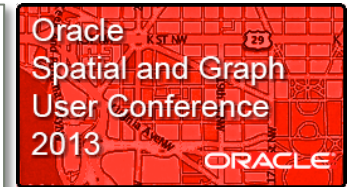
Software Downloads for Oracle Fusion Middleware MapViewer

You must accept the [OTN License Agreement](#) to download this software.
 Accept License Agreement | Decline License Agreement

Current MapViewer Version

Oracle Fusion Middleware MapViewer Version 11g ps6 (11.1.1.7)

- Download the MapViewer .EAR file (ZIP - 43.4MB)
- Download Map Builder (ZIP - 21.2MB)
- Download the MapViewer QuickStart Kit (Zip - 143MB)
- Download MVDEMO Sample Data Set (Zip - 414MB)
- Download Storm Sample Data Set for MapViewer Quickstart HTML5 Demos (Zip - 160MB)
- View/Download the Readme (Text - 4KB)
- View/Download the User's Guide (PDF - 2.8MB)



Downloading MapViewer

- Installation Kit
- Map Builder
- "Quick Start" Kit With Glassfish server
- Manual

<http://www.oracle.com/technetwork/middleware/mapviewer/downloads/index.html>



Installing MapViewer

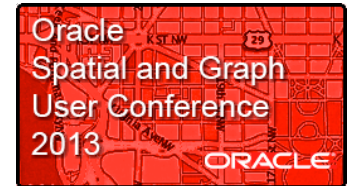


- Deploy the application (mapviewer.ear) into your application server
- **No longer need to manually unpack the ear file (Weblogic)**

The screenshot shows the Oracle WebLogic Server Administration Console. On the left, the 'Domain Structure' tree is visible, with 'Deployments' under the 'mapviewer' domain circled in red. The main content area displays the 'Install Application Assistant' dialog box. The dialog has a title bar with 'Back', 'Next', 'Finish', and 'Cancel' buttons. Below the title bar, there is a section titled 'Locate deployment to install and prepare for deployment' with instructions to select a file path. A 'Path' field contains the text 'D:\Oracle\wls1033_dev\user_projects\domains\mapviewer\mapviewer.ear', which is circled in red. Below the path field, there are sections for 'Recently Used Paths' (showing '(none)') and 'Current Location' (showing 'localhost | D: | Oracle | wls1033_dev | user_projects | domains | mapviewer').

MapViewer Administration Console

<http://<server>/mapviewer>



The screenshot shows the Oracle MapViewer Administration Console interface. At the top, there is a navigation bar with links for "Admin", "Editor", "Logout", and "Help". Below this, there are tabs for "Home", "Management", "Meta data", and "About". The "Management" tab is selected and highlighted with a red circle. The main content area contains a welcome message, a "Getting started" section with a list of instructions, a "What is Oracle Maps" section, and a "Demos and tutorials" section. The "Admin" link in the top navigation bar is also circled in red.

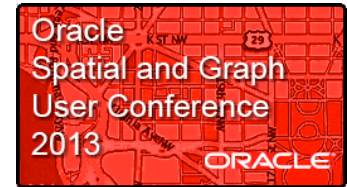
- Use the “Admin” link
- Log in as administrator
- This enables the “Management” tab

The screenshot shows the Oracle MapViewer Administration Console login page. It features a "Log in" section with a "User Name" field containing the text "weblogic" and a "Password" field with masked characters. Below the fields are "Log In" and "Cancel" buttons. A link for "can't login?" is also visible.

ORACLE

MapViewer Administration Console

<http://<server>/mapviewer>



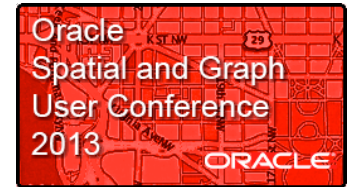
The screenshot shows the Oracle MapViewer Administration Console 11g interface. At the top left, it says "ORACLE MapViewer Administration Console 11g". On the top right, there are links for "Admin | Editor | Logout | Help". Below this, there are four tabs: "Home", "Management", "Meta data", and "About". The "Management" tab is selected. On the left side, there is a sidebar with a red border containing the following items: "Manage MapViewer" (highlighted with a red box), "Configuration", "Datasources", "Geometry Cache", "Create Tile Layer", "Manage Tile Layers", "Monitoring", and "View Logs". The main content area contains a "TIP" message: "Click the below link to monitor some of the MapViewer statistics. Monitor MapViewer stats...". At the bottom of the page, there is a copyright notice: "Copyright © 2001,2013, Oracle and/or its affiliates. All rights reserved."

- Edit MapViewer configuration (data sources, logging, etc)
- Manage Tile Layers
- Monitor
- View logs

ORACLE

MapViewer Administration Console

<http://<server>/mapviewer>



ORACLE MapViewer Administration Console 11g Admin | Editor | Logout | Help

[Home](#) [Management](#) [Meta data](#) [About](#)

Manage MapViewer

- Configuration**
- Datasources
- Geometry Cache
- Create Tile Layer
- Manage Tile Layers
- Monitoring
- View Logs

TIP Edit mapViewerConfig.xml file

File location: D:\Oracle\glassfish\mapviewer11g_qs\apps\mapviewer.war\WEB-INF\conf\mapViewerConfig.xml

Config:

```
<?xml version="1.0" ?>
<!-- This is the configuration file for Oracle9iAS MapViewer. -->
<!-- Note: All paths are resolved relative to this directory (where
this config file is located), unless specified as an absolute
path name.
-->

<MapperConfig>
```

```
-->

</MapperConfig>
```

[Save](#) [Save & Restart](#) [Cancel](#)

MapViewer Administration Console

<http://<server>/mapviewer>



ORACLE MapViewer Administration Console 11g Admin | Editor | Logout | Help

Home Management Meta data About

Manage MapViewer

- Configuration
- Datasources
- Geometry Cache
- Create Tile Layer
- Manage Tile Layers
- Monitoring
- **View Logs**

TIP View MapViewer server logs

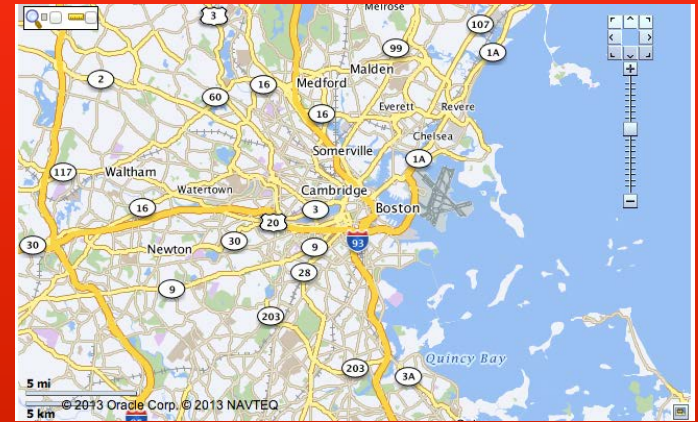
File location: D:\Oracle\glassfish\mapviewer11g_qs\apps\mapviewer.war\WEB-INF\log\mapviewer_5.log

Most recent logs:

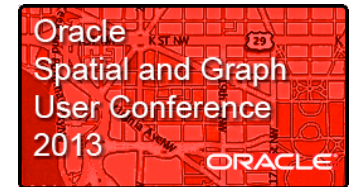
```
May 9, 2013 12:02:36 PM oracle.sdovis.SRSConstants getDPI
INFO: Using 96 as default dpi.
May 9, 2013 12:02:36 PM oracle.lbs.mapserver.core.MapperConfig loadMapViewerConfig
INFO: Setting default dpi to: 96
May 9, 2013 12:02:36 PM oracle.sdovis.GlobalVisContext <clinit>
WARNING: will use 96 as default dpi.
May 9, 2013 12:02:36 PM oracle.sdovis.SDataProviderMgr registerProvider
INFO: Oracle mapviewer started.
May 9, 2013 12:02:47 PM oracle.lbs.foi.FOIServer init
INFO: *** Oracle Feature of Interest (FOI) Server started. ***
May 9, 2013 12:02:47 PM oracle.lbs.dataserver.MapDataServer <init>
INFO: *** Oracle Map Data Server started. ***
May 9, 2013 12:02:48 PM oracle.lbs.mapcache.cache.MapCache <init>
```

Refresh

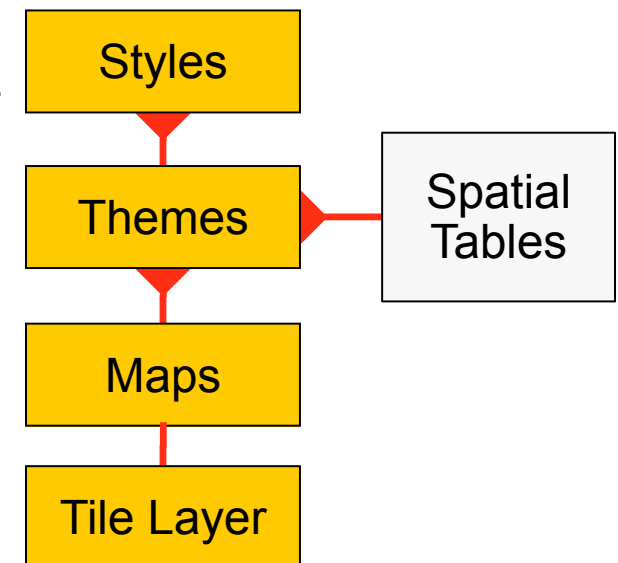
Defining Maps



Defining Maps



- **Styles:** define how shapes should be rendered
 - Areas: color, transparency, boundary thickness and color, ...
 - Lines: color, thickness, center lines, wing lines, hash marks
 - Points: symbols, graphics, ...
 - Texts: font, styling, color, size, halo, ...
- **Themes:** associate a spatial table and a style
 - Graphic style and text style (for labels)
- **Maps:** group a number of themes
 - Visibility of themes based on scale
- **Tile Layers:** make a base map available to web applications



Defining a Color Style

The screenshot displays the Oracle Map Builder interface. On the left, a tree view under 'Metadata' shows a 'Colors' folder containing several styles, with 'C.US_COUNTIES' selected. The main workspace shows the configuration for 'C.US_COUNTIES'. The 'Name' field is 'C.US_COUNTIES' and the 'Description' field is empty. A preview window shows a yellow square. Below, the 'Style Options' section has 'Fill' and 'Stroke' checked. The 'Fill' section shows a color picker set to yellow, a hex code of '#FFFFCC', and an opacity slider set to 100%. The status bar at the bottom indicates 'Program initialized'.

Oracle Map Builder

File Edit View Tools Window Help

Connection: orcl112:scott

C.US_COUNTIES

Name: C.US_COUNTIES

Description:

Preview Background

Style Options

Fill

Stroke

Fill

Color: Hex: #FFFFCC

Opacity: 100%

Editor XML

Show Data

Program initialized





Oracle Map Builder

File Edit View Tools Window Help

Connection: orcl112:scott

L.US_INTERSTATES

Defining a Line Style

Name: L.US_INTERSTATES

Description:

Preview Background

Style Options

Overall Line

- Center Line
- Wing Line
- Marker Patt...

Overall Line

Width: 6 px

End Cap: ROUND

Joint: ROUND

Arrow Select

Color: #FFFF33

Opacity: 100%

Cased

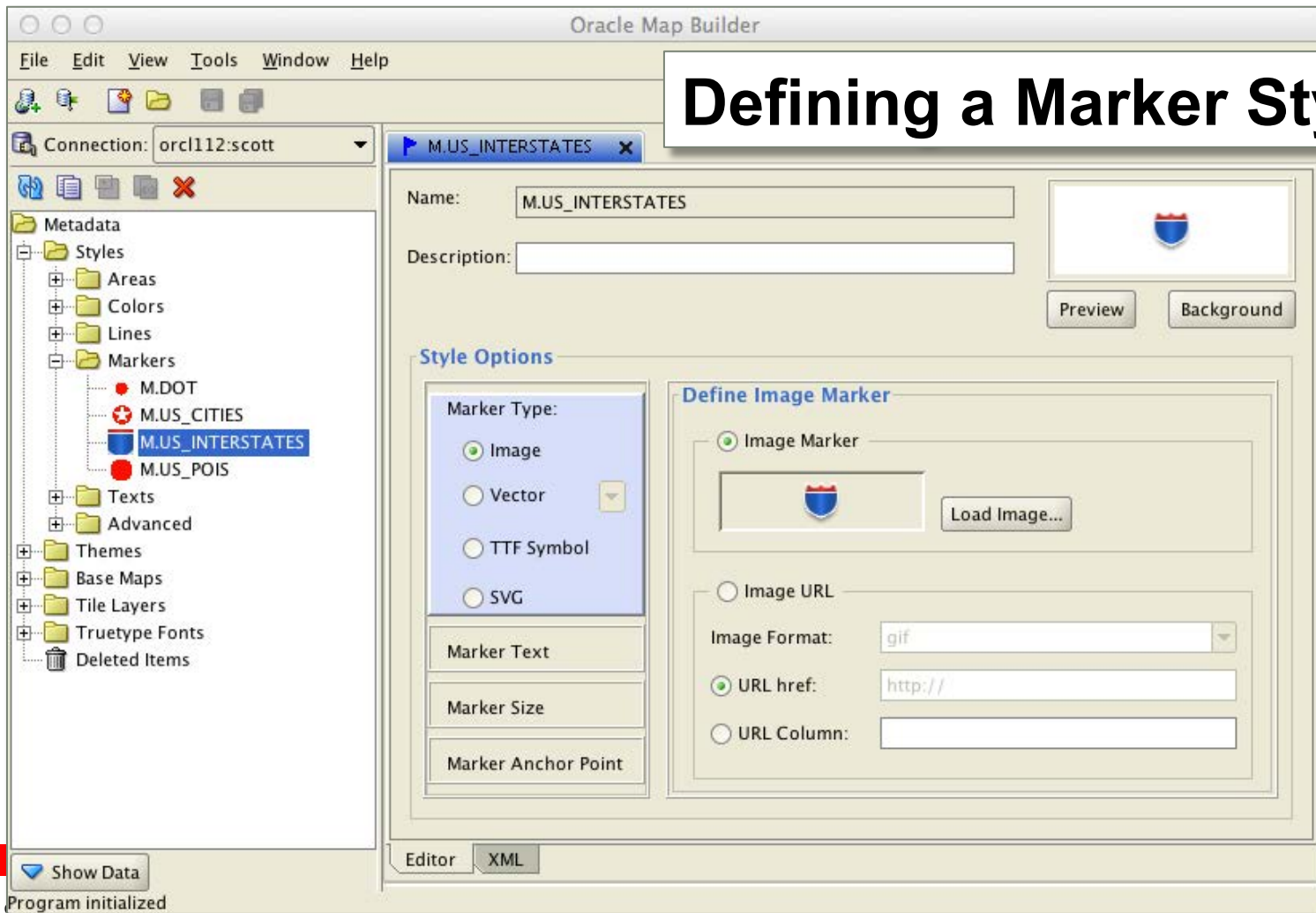
Show Data

Program initialized

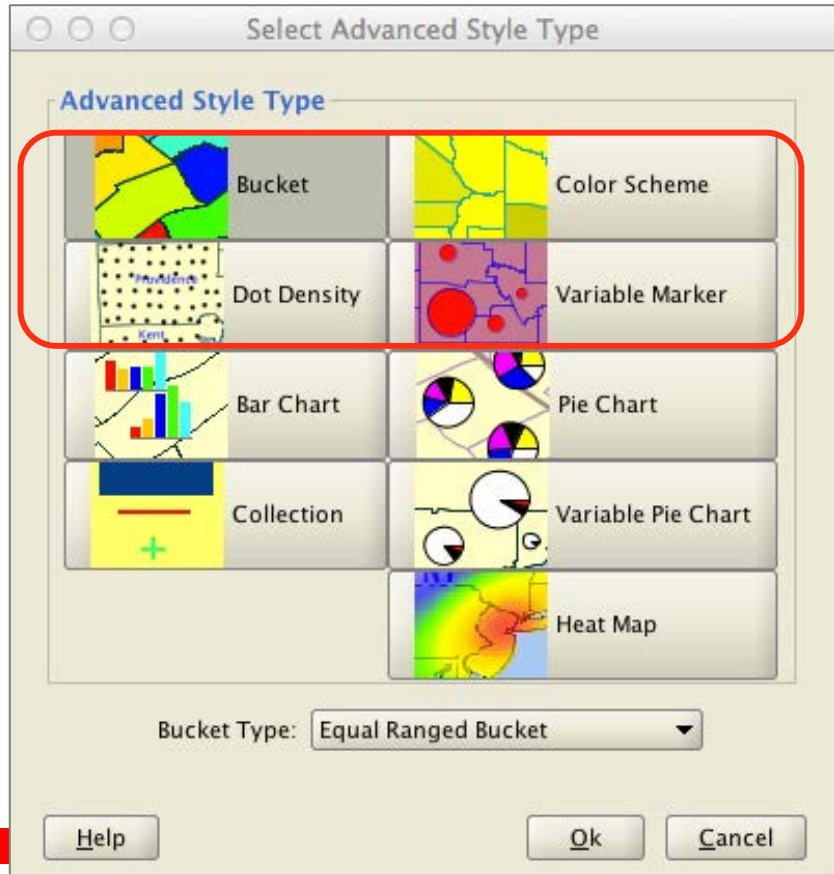
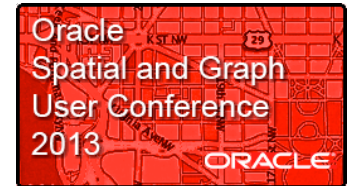
Editor XML



Defining a Marker Style

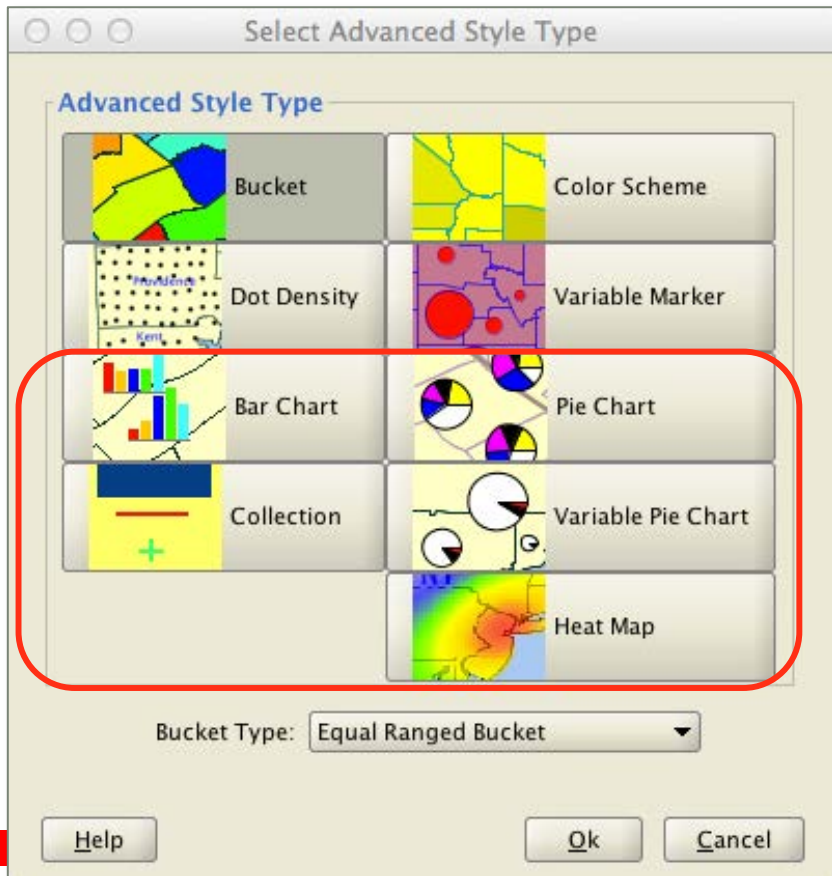


Thematics: Advanced Styles



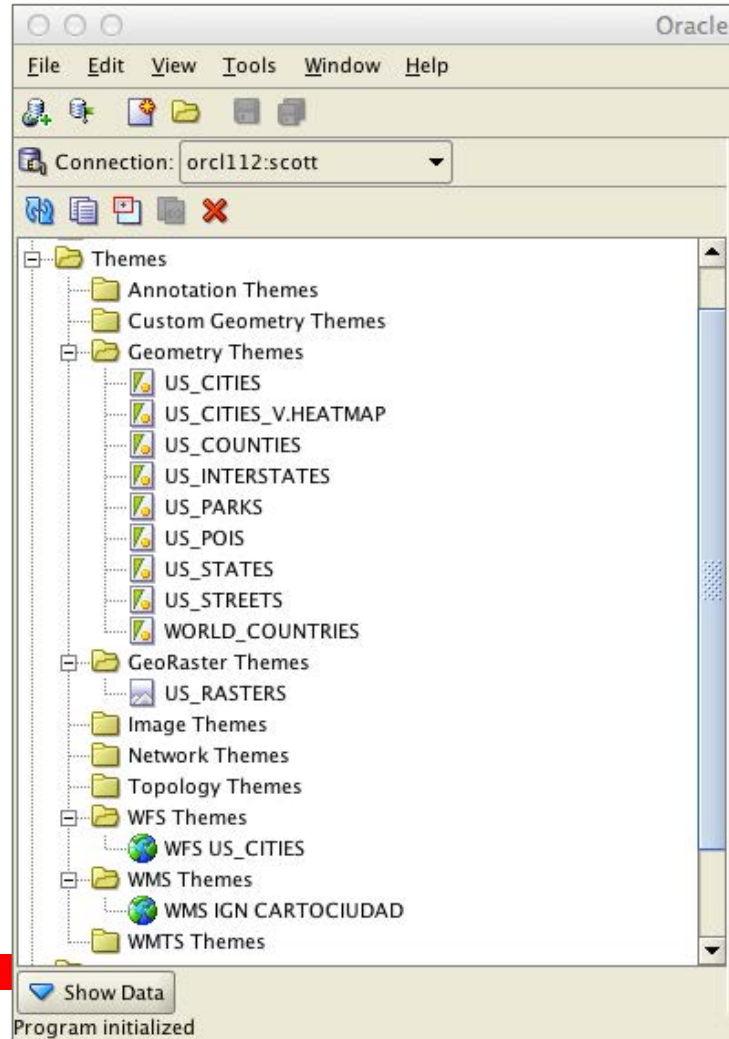
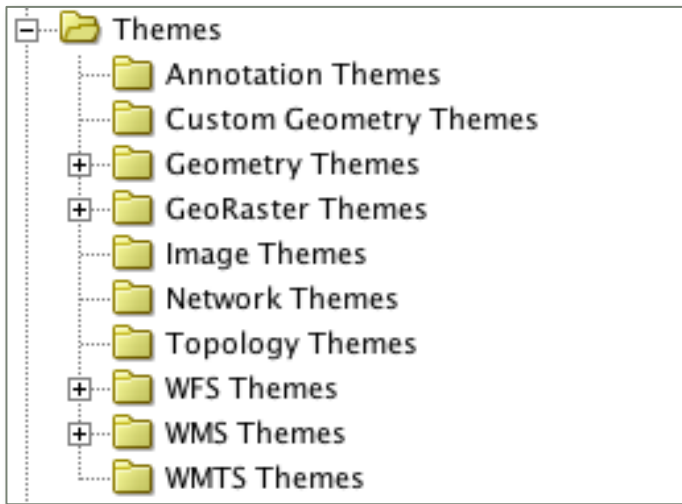
- **Bucket**
 - Specify variable or fixed (equal-range) buckets
 - Separate color for each bucket
- **Color Scheme**
 - Variable or fixed buckets
 - Buckets assigned gradually darker colors from a base color
- **Dot Density**
 - Area filled with dots proportionally to the value of the variable
- **Variable Marker**
 - Size of chosen symbol increases proportionally to the value of the variable

Thematics: Advanced Styles



- Bar Chart
 - Combines multiple variables
- Pie Chart
 - Same
- Variable Pie Chart
 - Same, but size of pie chart increases proportionally to the sum of the variables
- Heat Map
 - Color ranges from “cool” (blue) to “hot” (red) according to density of geometries

Defining Themes



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Defining a Geometry Theme

The screenshot displays the Oracle Map Builder interface. The main window is titled "Oracle Map Builder" and shows a menu bar (File, Edit, View, Tools, Window, Help) and a toolbar. The connection is set to "orcl112:scott" and the current table is "US_COUNTIES".

The "Edit Styling Rule" dialog box is open, showing the following settings:

- Rendering:** Attribute Columns (empty), Render style: C.US_COUNTIES, Query Condition (empty).
- Labeling:** Label Column: COUNTY, Label Style: T.US_COUNTIES, Label Function: 1.
- Other Properties:** No spatial filter, Order by: None Selected, ASC, DESC.

The "Styling Rules" table is visible in the background, showing the following columns and data:

Rendering	Labeling	Other
Columns:	Column: COUN...	<input type="checkbox"/> No spati...
	le: T.US_...	Order by:
	nction: 1	<input checked="" type="radio"/> ASC <input type="radio"/>

The "Other Properties" dialog box is also open, showing the following settings:

- Scale:** Scale Mode: RATIO, Minimum Scale: (empty), Maximum Scale: (empty), Label Minimum Scale: (empty), Label Maximum Scale: (empty).

The "Theme Options" dialog box is also open, showing the following options:

- Basic Information
- Styling Rules
- Advanced
- Other Properties (selected)
- Custom Tags

The "Show Data" button is visible at the bottom of the main window, and the "Editor XML Preview" tabs are also visible.

Defining a Map



The screenshot shows the Oracle Map Builder interface. The main window displays a tree view on the left with folders for Metadata, Styles, Lines, Markers, Texts, Themes, and Base Maps. The 'Base Maps' folder is expanded, showing themes like MY_MAP, US_BASE, US_HEAT, US_RASTE, and WMS IGN. The 'Define a Base Map - Step 2 of 2 - Base Map Themes' dialog box is open, showing a list of theme names and a table of theme details.

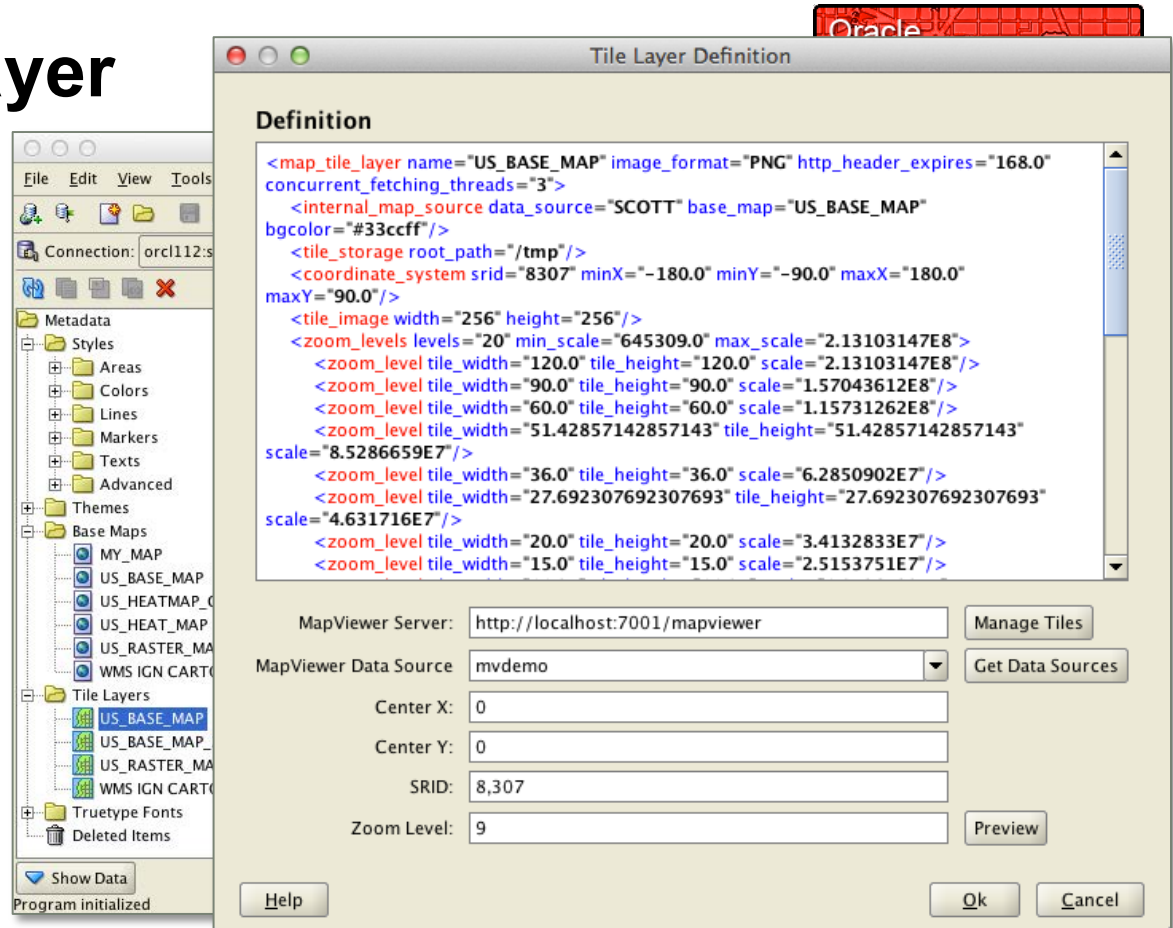
Theme Name	Min Scale	Max Scale	Scale Mode
US_CITIES			RATIO
US_PARKS			RATIO

Buttons at the bottom of the dialog box include: Help, < Back, Next >, Finish, and Cancel.

ORACLE

Define a Tile Layer

- Use the Tile Layer definition wizard
- Select base map
- Select area from the map
- Select min and max scales from the map
- Generate scales for zoom levels
- Choose tile size
- Preview



The screenshot displays the Oracle MapViewer interface. On the left, a tree view shows a hierarchy of map layers under 'Base Maps' and 'Tile Layers'. The 'US_BASE_MAP' layer is selected. The main window is the 'Tile Layer Definition' dialog box, which contains a 'Definition' section with XML code for configuring the tile layer. Below the XML code are input fields for 'MapViewer Server', 'MapViewer Data Source', 'Center X', 'Center Y', 'SRID', and 'Zoom Level'. The 'MapViewer Server' is set to 'http://localhost:7001/mapviewer', 'MapViewer Data Source' is 'mvdemo', 'Center X' and 'Center Y' are '0', 'SRID' is '8,307', and 'Zoom Level' is '9'. Buttons for 'Manage Tiles', 'Get Data Sources', 'Preview', 'Ok', and 'Cancel' are visible.

```
<map_tile_layer name="US_BASE_MAP" image_format="PNG" http_header_expires="168.0"
concurrent_fetching_threads="3">
  <internal_map_source data_source="SCOTT" base_map="US_BASE_MAP"
bgcolor="#33ccff"/>
  <tile_storage root_path="/tmp"/>
  <coordinate_system srid="8307" minX="-180.0" minY="-90.0" maxX="180.0"
maxY="90.0"/>
  <tile_image width="256" height="256"/>
  <zoom_levels levels="20" min_scale="645309.0" max_scale="2.13103147E8">
    <zoom_level tile_width="120.0" tile_height="120.0" scale="2.13103147E8"/>
    <zoom_level tile_width="90.0" tile_height="90.0" scale="1.57043612E8"/>
    <zoom_level tile_width="60.0" tile_height="60.0" scale="1.15731262E8"/>
    <zoom_level tile_width="51.42857142857143" tile_height="51.42857142857143"
scale="8.5286659E7"/>
    <zoom_level tile_width="36.0" tile_height="36.0" scale="6.2850902E7"/>
    <zoom_level tile_width="27.692307692307693" tile_height="27.692307692307693"
scale="4.631716E7"/>
    <zoom_level tile_width="20.0" tile_height="20.0" scale="3.4132833E7"/>
    <zoom_level tile_width="15.0" tile_height="15.0" scale="2.5153751E7"/>
  </zoom_levels>
</map_tile_layer>
```

Manage MapViewer

- Configuration
- Datasources
- Geometry Cache
- Create Tile Layer
- **Manage Tile Layers**
- Monitoring
- View Logs

Area Selection Tool
Draw a rectangular selection area on the map

On

Zoom Level Selection
Select one or more levels to perform tile operation

- Level 0
- Level 1
- Level 2
- Level 3
- Level 4
- Level 5
- Level 6
- Level 7
- Level 8
- Level 9

Tile Operations:

Prefetch Tiles

Clear Tiles

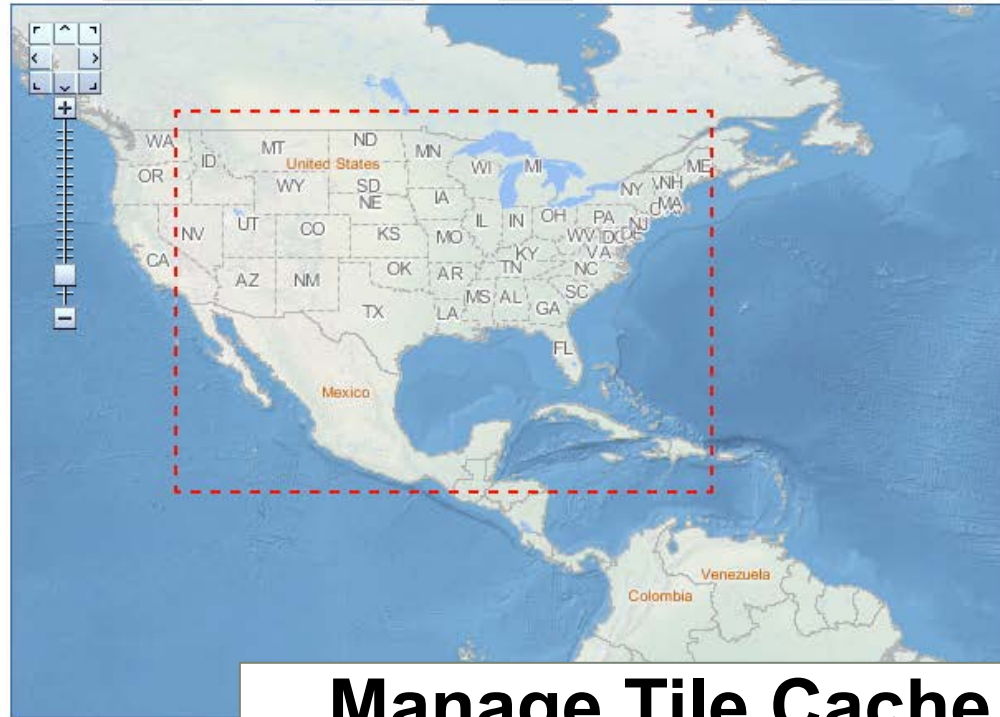
Refresh Tiles

Operation Status

Refresh

Status:

Center X Center Y SRID Zoom Level



Manage Tile Cache

Developing Applications





Mapping Applications

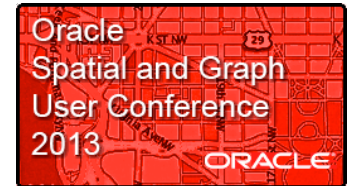
JavaScript APIs



- Oracle Maps API V1
- Oracle Maps API V2 (since version 11.1.1.7)
 - Complete re-write of the Oracle Maps JavaScript API
 - Based on HTML5 (canvas & svg) standards
 - Much richer client-side rendering & interaction
 - Mobile support
 - Supports lightweight data editing and region management

Examples and Tutorials

“MVDEMO” Application



- Examples and demos no longer part of the MapViewer installation
- Download and install “MVDEMO” application and associated data sets
- Quick Start kit has the application pre-installed
 - Just need to download and import the sample data sets

Oracle Fusion Middleware MapViewer Version 11g ps6 (11.1.1.7)

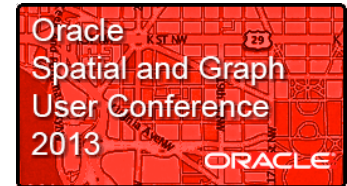
- Download the MapViewer .EAR file (ZIP - 43.4MB)
- Download Map Builder (ZIP - 21.2MB)
- Download the MapViewer QuickStart Kit (Zip - 143MB)
- Download MVDEMO Sample Data Set (Zip - 414MB)
- Download Storm Sample Data Set for MapViewer Quickstart HTML5 Demos (Zip - 160MB)
- View/Download the Readme (Text - 4KB)
- View/Download the User's Guide (PDF - 2.8MB)

“Quick Start” Kit
With Glassfish
server,
Mapviewer and
examples

Sample Data
Sets

Examples and Tutorials

<http://<server>/mvdemo>

The screenshot shows the Oracle MapViewer 11g Samples web application. At the top, there is a navigation bar with tabs for "Home", "Requests", "Demo", and "API". The "Demo" and "API" tabs are highlighted with red boxes. Below the navigation bar, there is a main content area with a "Welcome to Mapviewer Console" section. This section contains a welcome message and a "Getting started" section with a list of links. Below this, there is a "What is Oracle Maps" section with a description and a list of links.

ORACLE MapViewer 11g Samples

Home Requests **Demo** API

Welcome to Mapviewer Console

Your MapViewer server is now running and you can start viewing your Oracle Spatial managed data. MapViewer is a component of Oracle Application Server. It provides powerful geospatial data visualization services.

Getting started

Here are a few things that can get you started.

What is Oracle Maps

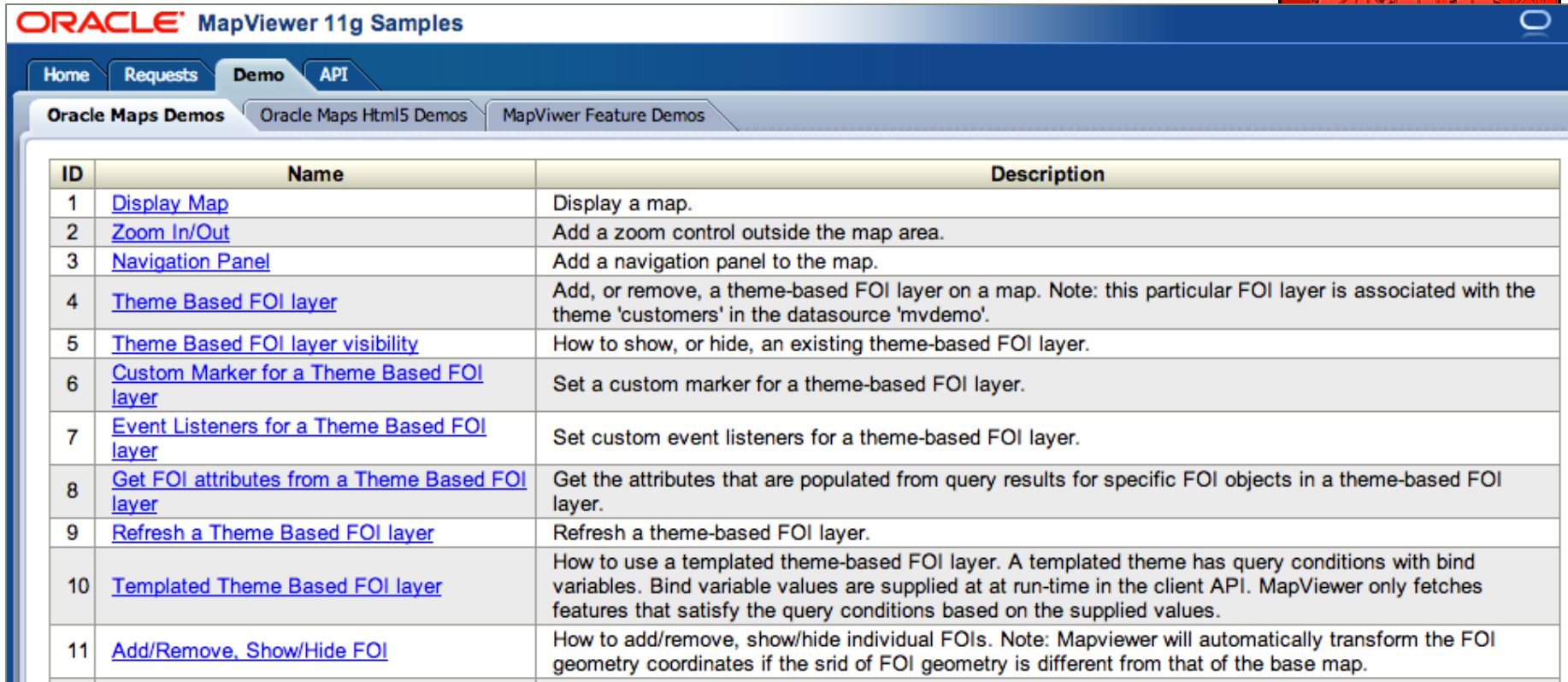
Oracle Maps is a new feature of MapViewer. It consists of a free scrolling AJAX-based web mapping interface, a flexible and open JavaScript API, a server-side map image caching engine and a Feature of Interest (FOI) server.

- [Oracle Maps Tutorial](#)
- [Oracle Maps API Reference](#)
- [Oracle Maps V2 tutorial \(HTML5\)](#)
- [Oracle Maps V2 API Reference \(HTML5\)](#)

ORACLE

Oracle Maps V1 Tutorials

Oracle
Spatial and Graph
User Conference



ID	Name	Description
1	Display Map	Display a map.
2	Zoom In/Out	Add a zoom control outside the map area.
3	Navigation Panel	Add a navigation panel to the map.
4	Theme Based FOI layer	Add, or remove, a theme-based FOI layer on a map. Note: this particular FOI layer is associated with the theme 'customers' in the datasource 'mvdemo'.
5	Theme Based FOI layer visibility	How to show, or hide, an existing theme-based FOI layer.
6	Custom Marker for a Theme Based FOI layer	Set a custom marker for a theme-based FOI layer.
7	Event Listeners for a Theme Based FOI layer	Set custom event listeners for a theme-based FOI layer.
8	Get FOI attributes from a Theme Based FOI layer	Get the attributes that are populated from query results for specific FOI objects in a theme-based FOI layer.
9	Refresh a Theme Based FOI layer	Refresh a theme-based FOI layer.
10	Templated Theme Based FOI layer	How to use a templated theme-based FOI layer. A templated theme has query conditions with bind variables. Bind variable values are supplied at at run-time in the client API. MapViewer only fetches features that satisfy the query conditions based on the supplied values.
11	Add/Remove, Show/Hide FOI	How to add/remove, show/hide individual FOIs. Note: Mapviewer will automatically transform the FOI geometry coordinates if the srid of FOI geometry is different from that of the base map.

ORACLE

Oracle Maps V1 Tutorials



Oracle Maps example - Display a map



Run and test the example

Instructions

Try dragging the above map around.

Source code

The JavaScript source code for the above map display is listed below.

```
function showMap()
{
  var baseURL = "http://" + document.location.host + "/mapviewer";
  var mapCenterLon = -122.45;
  var mapCenterLat = 37.6706;
  var mapZoom = 4;
  var mpoint = MVGeoGeometry.createPoint(mapCenterLon, mapCenterLat, 8307);
  var mapview = new MVMapView(document.getElementById("map"), baseURL);
  mapview.addMapTileLayer(new MVMapTileLayer("mvdemo_demo_map"));
  mapview.setCenter(mpoint);
  mapview.setZoomLevel(mapZoom);
  mapview.display();
}
```

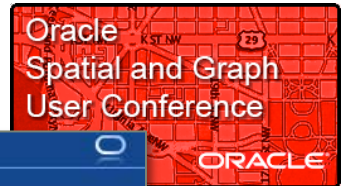
The map is displayed inside a container DIV element such as the following:

```
<div id="map" style="width:100%; height:600px;"></div>
```

Note that the id of the DIV element, "map", is passed into the constructor of the MVMapView object in the JavaScript code above. This establishes the link between the DIV element and the JavaScript mapping client.

Examine the source code

Oracle Maps V1 API Documentation



The screenshot shows a web browser window titled "ORACLE MapViewer 11g Samples". The browser has several tabs: "Mapviewer Java API", "Oracle Maps API" (selected), and "Oracle Maps Html5 API". The page content is titled "Class Index" and features a left-hand navigation menu with sections for "Class Index", "Global Variables", and "Classes". The "Classes" section lists various API classes with blue underlined links. The main content area displays detailed descriptions for several classes, each separated by a horizontal line.

Class Name	Description
MVArrayParameter	MVArrayParameter defines an array type binding parameter for a theme-based FOI layer that is based on a templated predefined theme.
MVBaiduTileLayer	MVBaiduTileLayer defines a map tile layer that displays baidu map tiles using baidu Maps Javascript API.
MVBarChartStyle	MVBarChartStyle represents the client side Bar Chart style.
MVBarInfo	MVBarInfo this class represents the definition of a single bar in a Bar chart.
MVBingTileLayer	MVBingTileLayer defines a map tile layer that displays Microsoft Bing map tiles using Bing Maps Javascript API.

Oracle Maps V2 Tutorials

Home Requests Demo API

Oracle Maps Demos Oracle Maps Html5 Demos MapViewer Feature Demos

Tutorial

Oracle Maps example - Display a map

Run View Source

Introduction

- A00 Display a map
- A01 Display an overview Map
- A02 Display navigation panel
- A03 Show map scale
- A04 Add customized decoration to th
- A05 Show copyright information
- A06 Add a custom zoom control

Tile Layers

- B00 Oracle Maps
- B01 Bing maps
- B02 OpenStreet maps
- B03 Nokia maps
- B04 Google maps
- B05 Custom zoom levels based on a
- B06 Multiple tile layers

Vector Layers (aka theme-based F

- C00 Display a predefined vector laye
- C01 Show/hide a vector layer
- C02 Display a vector layer without a
- C03 Rendering a vector layer from a
- C04 Refresh a vector layer
- C05 Feature highlight on mouse-clicl
- C06 Zoom to a (user) specified recta
- C07 Displaying a dynamic SQL layer

How to initialize and display a map with one tile layer. It includes setting the map center and initial map zoom level.



Run and test the example

Javascript Html

```
<script language="JavaScript" type="text/javascript">
function showMap()
{
    var baseURL = "http://" + document.location.host + "/mapviewer";
    var mapCenterLon = -122.45;
    var mapCenterLat = 37.6706;
    var mapZoom = 4;
    var mapPoint = new GM.geometry.Point(mapCenterLon, mapCenterLat, 4307);
}
```

Examine and modify the source code

Oracle Maps V2 API Documentation

Oracle
Spatial and Graph
User Conference

The screenshot shows the Oracle MapViewer 11g Samples API documentation page for the Class OM.Feature. The page has a blue header with the Oracle logo and the text "ORACLE MapViewer 11g Samples". Below the header is a navigation bar with tabs for "Home", "Requests", "Demo", and "API". Under the "API" tab, there are sub-tabs for "Mapviewer Java API", "Oracle Maps API", and "Oracle Maps Html5 API". A vertical sidebar on the left is labeled "Oracle MapViewer" and contains a list of navigation items: Home, OM, Feature, Map, MapContext, [-] control, ButtonGroup, CopyRight, Magnifier, MapDecoration, NavigationPanelBar, ScaleBar, ToolBar, and ToolButton. The main content area displays the class name "Class OM.Feature" in a dark grey box. Below this, there are sections for "[-] Constructor Summary" and "[-] Methods Summary". The constructor summary shows a single constructor: "[+] OM.Feature(id, geometry, options)" with the description "This class represents a vector geometry feature." The methods summary shows three methods: "[+] addListener(eventType, f, context)" with the description "Attaches an event listener for the given event type under the given context.", "[+] {void} bringForward()" with the description "Brings the feature to the front by one z-index level (i.e.", and "[+] {void} bringToTop()". A link "expand all / collapse all" is located to the right of the methods summary.

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Application Development

Java ADF Faces - JDeveloper



The screenshot displays the JDeveloper IDE interface for an application. On the left, the **Component Palette** is open, showing a tree view of components under **ADF Data Visualizations**. The **Geographic Map** component is selected. The main workspace shows a map application with a legend, a toolbar, and a survey examination form. A red box highlights the `<dvt:map>` component on the map. A **Set Examination Note** dialog box is also visible.

Check Type	Check Status	N/A Reason	Text Comment
Check 1	<input checked="" type="radio"/> Undone <input type="radio"/> Done <input type="radio"/> N/A	Acceptable Reason 1.	1
Check 2	<input type="radio"/> Undone <input checked="" type="radio"/> Done <input type="radio"/> N/A	Acceptable Reason 2.	2
Check 3	<input type="radio"/> Undone <input type="radio"/> Done <input checked="" type="radio"/> N/A	Failure Reason 1.	3
Check 4	<input type="radio"/> Undone <input checked="" type="radio"/> Done <input type="radio"/> N/A	Failure Reason 2.	4
Check 5	<input checked="" type="radio"/> Undone <input type="radio"/> Done <input type="radio"/> N/A	Unacceptable Reason 1.	5

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Application Development

Application Express



ORACLE
Application Express 4.0



The screenshot displays an Oracle APEX application interface with several components:

- Mapview:** A map titled "Multi route" showing a geographical area with various colored polygons representing different zones or districts.
- Graphique:** A bar chart titled "Graphique" showing data for five categories with values 129, 602, 173, 203, and 416. The y-axis ranges from 0.00 to 60.00.
- Request:** A SQL query editor showing the query: `select * from cad_batiments_geos`. It includes options for Label, Line, Fill, Public, Save, and Load.
- Builtup Area:** A data table listing built-up areas with columns: Id, Name, Name1c, and Tomap. The Tomap column contains "link" values.
- Search:** A search dialog box with a "Theme" dropdown set to "US Built-up area". The "Text" field contains a list of search terms including "US Built-up area", "Mex District center", "US Water lines", "US Ferry connections", "Mex Water lines", "Mex Built-up area", "US Settlement", "US Capital", "Mex Ferry connections", "Mex Capital", "US Land use", "Mex Settlement", "Mex Land use", and "US District center".

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SQL Developer and Map Views

A screenshot of the Oracle SQL Developer interface. The main window displays a table named "WORLD_COUNTRIES" with columns: POP_CNTRY, SQKM_CNTRY, SQMI_CNTRY, CURR_TYPE, CURR_CODE, LANDLOCKED, COLOR_MAP, and GEOMETRY. The GEOMETRY column contains values like "[MDSYS.SDO_GEOMETRY]". A context menu is open over the GEOMETRY column, with the option "Identify Geometry Shape in Map View" highlighted by a red rectangle. Other menu items include "Others..", "Save Grid as Report...", "Display geometry shape...", "Invoke Map View on result set", "Single Record view...", "Count Rows...", "Find/Highlight...", "Publish to APEX...", "Duplicate Row", "Refresh", "Insert Row", "Delete Selected Row(s)", "Commit Changes", "Rollback Changes", and "Export...".

POP_CNTRY	SQKM_CNTRY	SQMI_CNTRY	CURR_TYPE	CURR_CODE	LANDLOCKED	COLOR_MAP	GEOMETRY
18321920	66580.242	25706.631	Rupee	LKR	N	7	[MDSYS.SDO_GEOMETRY]
2318276	345429.5	133370.297	CFA Franc	BEAC	N	8	[MDSYS.SDO_GEOMETRY]
41025920	2337027	902326.125	Zaire	ZRZ	N	4	[MDSYS.SDO_GEOMETRY]
1281008318	9338902	3605750	Renminbi Yuan	CNY			[MDSYS.SDO_GEOMETRY]
13772710	742298.188	286601.312	Peso	CLP			[MDSYS.SDO_GEOMETRY]
31777	277.005	106.951	Dollar	KYD			[MDSYS.SDO_GEOMETRY]
609	18.135	7.002 (null)	(null)	(null)			[MDSYS.SDO_GEOMETRY]
13218480	466306.688	180041	CFA Franc	XAF			[MDSYS.SDO_GEOMETRY]
634656	1659.724	640.82	Franc	KMF			[MDSYS.SDO_GEOMETRY]
34414590	1141962	440911.5	Peso	COP			[MDSYS.SDO_GEOMETRY]
60963	581.331	224.452	Dollar	USD			[MDSYS.SDO_GEOMETRY]
3319438	51608.039	19925.859	Colon	CRC			[MDSYS.SDO_GEOMETRY]
public 3149545	621499.375	239960.906	CFA Franc	XOF			[MDSYS.SDO_GEOMETRY]
11102280	110443	42642.039	Peso	CUP			[MDSYS.SDO_GEOMETRY]
413573	3961.998	1529.727	Escudo	CVE			[MDSYS.SDO_GEOMETRY]

The screenshot shows the Oracle SQL Developer interface. The main window displays a query in the Worksheet:

```
select state_abrv, county, geom from us_counties where state_abrv in ('CA','NV','AZ')
```

The Map View window is open, showing a map of the United States with the state of Arizona highlighted in yellow. The Map Query List on the right shows the 'GEOM' column selected. A context menu is open over the map, with the option 'Invoke Map View on result set' highlighted in red.

State	County	Geometry
4 AZ	Gila	[MDSYS.SDO...
5 AZ	Graham	[MDSYS.SDO...
6 AZ	Greenlee	[MDSYS.SDO...
7 AZ	La Paz	[MDSYS.SDO...
8 AZ	Maricopa	[MDSYS.SDO...
9 AZ	Mohave	[MDSYS.SDO...
10 AZ	Navajo	[MDSYS.SDO...
11 AZ	Pima	[MDSYS.SDO_GEOMETRY]

SQL Developer – Data Maintenance

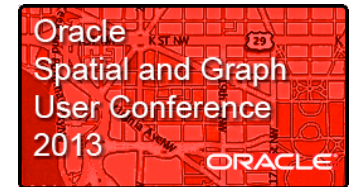
User Conference
2013

The screenshot displays the Oracle SQL Developer interface. On the left, the 'Connections' pane shows a tree view of database objects, with the 'Spatial' menu option highlighted. The main workspace shows the 'Worksheet' and 'Query Builder' tabs. Overlaid on the interface are two dialog boxes: 'Validate Geometry' and 'Validation Results'. The 'Validate Geometry' dialog has the following fields: 'Table Name' (US_COUNTIES), 'Tolerance' (3), and 'Spatial Column' (GEOM). The 'Validation Results' window shows a progress bar and a table of results. The table has the following data:

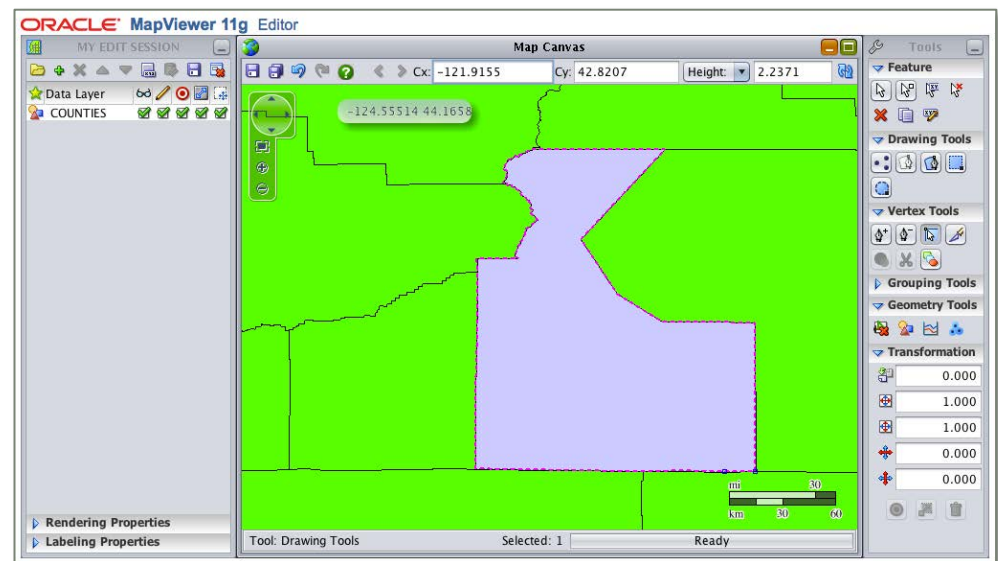
ROWID	ID	STATUS
AAuAATAAEAAAADCAAB	1186 13356	[Element <1>] [Coordinate <346>][R
AAuAATAAEAAAADqAAB	1344 13356	[Element <1>] [Coordinate <20>][Ri
AAuAATAAEAAAADvAAD	1173 13356	[Element <1>] [Coordinate <184>][R
AAuAATAAEAAAAD/AAA	1175 13356	[Element <1>] [Coordinate <129>][R
AAuAATAAEAAAHAJAAB	2758 13356	[Element <1>] [Coordinate <159>][R

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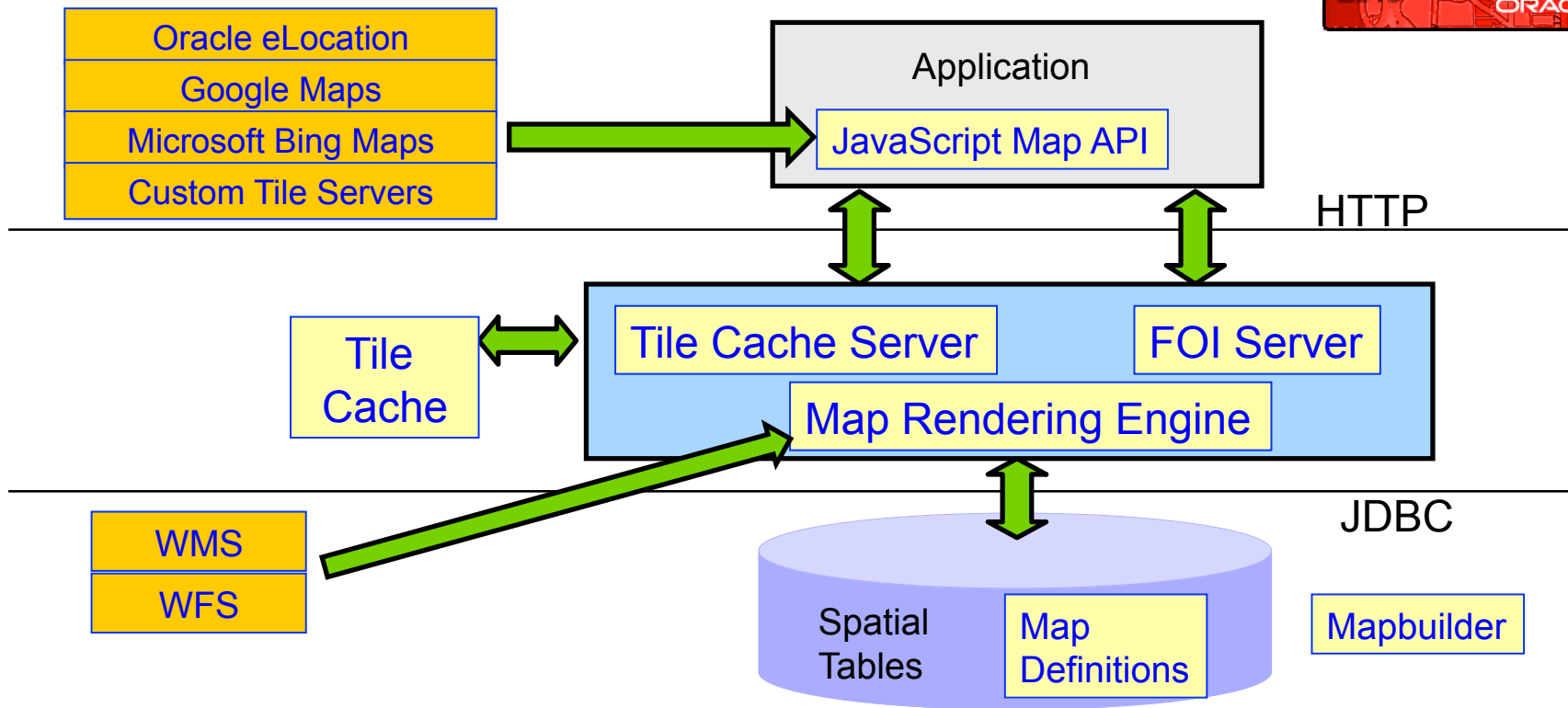
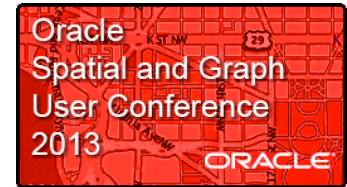
Data Editor



- Web-based spatial data editing tool
- Supports versioned, concurrent editing through editing “sessions”.
- Supports geometry model
 - Future: topology-based editing.
- Supports WFS-T
- Editing sessions are saved in database
- Admin tool to visually review editing sessions, and resolve conflicts.



Integrating External Data Sources



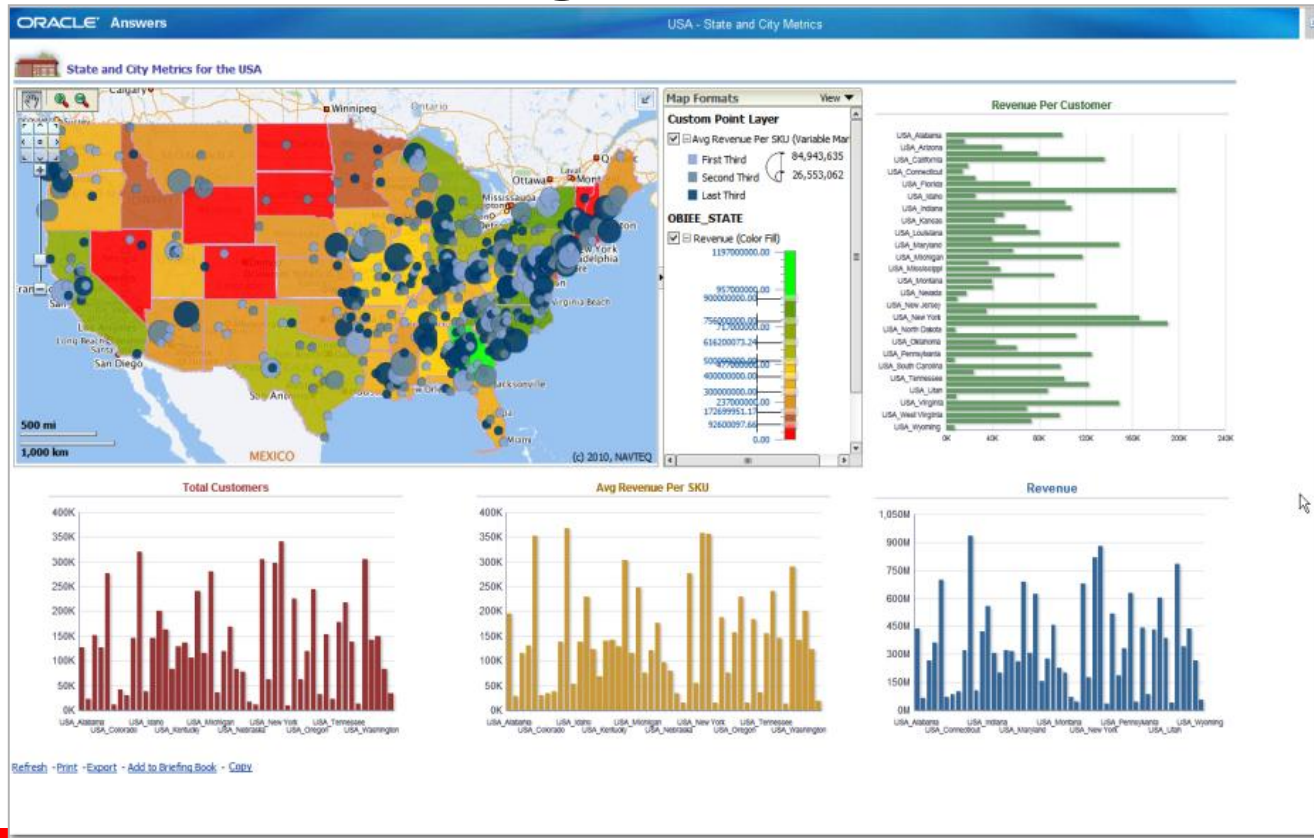
ORACLE

Integrating External Data Sources



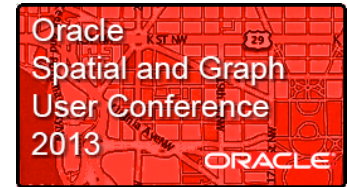
- Consuming and aggregating third party spatial data sources
 - eLocation, Bing, Google
 - Any other map tile server (via a custom adapter)
- Support many standards:
 - WMTS (Tile Service),
 - WFS, WMS,
 - Geo-Json, GeoRSS.
- Bundles GDAL/OGR for support of even more external data sources

Location Intelligence



Combining the power of Business Intelligence and Maps

Advanced Spatial Analytics



ORACLE Utilities - Outage Management Home NMS Customer Portal Sign Out

ZIP - 66208

Customers Impacted: 891
Average Outage Duration: 26

Outages

- < 100
- 100 - 200 Outages Customers
- > 200

Outages by ZIP

- 500 +
- 300 - 500
- 200 - 300
- 100 - 200
- 50 - 100
- 1 - 50

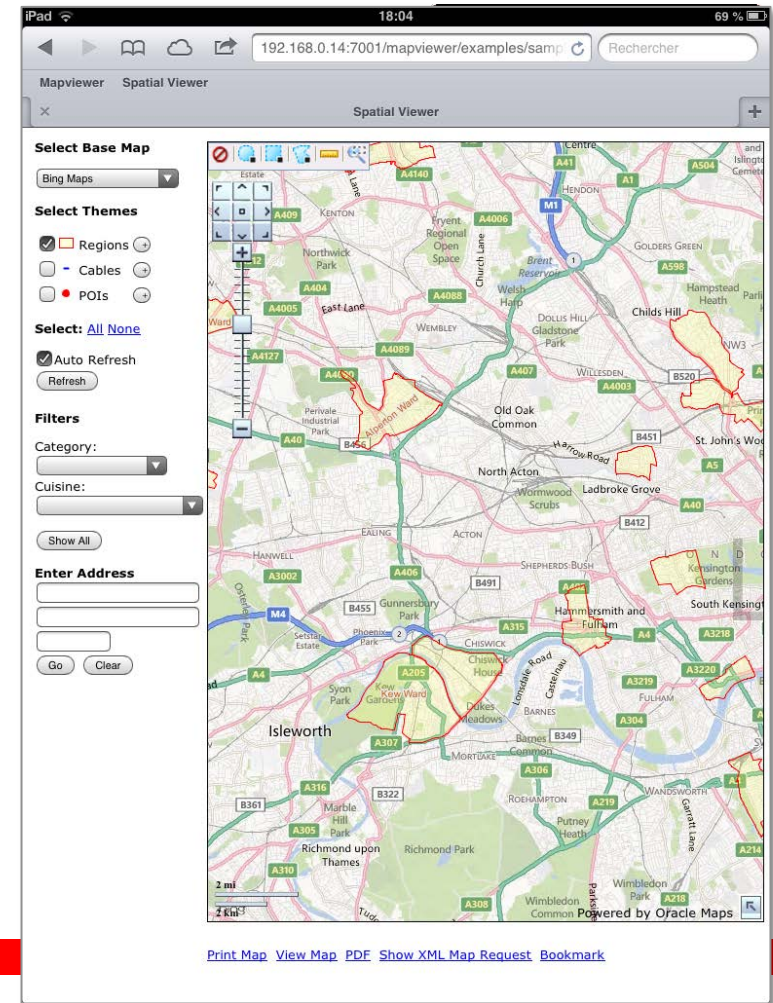
Devices

- Breaker
- Overhead Seg.
- Underground Seg.
- Sectionalizer
- Switch
- Transformer
- Recloser
- Fuse

Control Zone Name	Device Name	Device Type	Event State Description	Remedy	Outage Duration	Crew Assigned	Est. Rest. Time	Customers Impacted	Customers Impacted
(c)F&M 7961	UG_92D751 1000000542	att_ug_elec_line_seg	CMP	Reset Sectionalizer	29 minutes	Mobile Crew 8	30-AUG-08 05:43:12	1	1
(c)F&M 3711	xfm_oh_JO-7871	att_transformer	NFY	Unselected	0 minutes	***	31-AUG-08 05:32:51	0	0
(c)Dodson 7581	ELBOW_1024121_STR_75496	att_elbow	M-CMP	Temporary Jumpers	0 minutes	***	26-AUG-08 17:58:37	198	198

Mobile Devices

- Full support for mobile devices (tablets, smartphones)
- Tablet gestures (zoom, pan, identify, draw)
- Landscape vs portrait orientation.



MapViewer in Action



Oracle eLocation Services

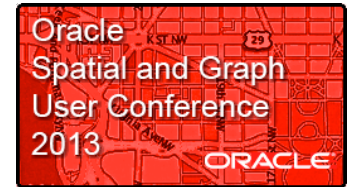
<http://maps.oracle.com>



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More Information ...

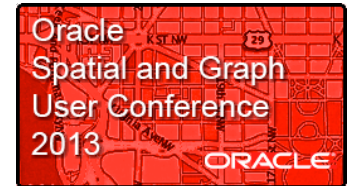
<http://www.oracle.com/technetwork/middleware/mapviewer>



A screenshot of the Oracle Technology Network website. The page is titled "Oracle Fusion Middleware MapViewer" and is part of the "Overview" section. The page includes a navigation menu with options like "Overview", "Downloads", "Documentation", "Community", and "Learn More". The main content area describes MapViewer as a J2EE service for rendering maps using spatial data. A sidebar on the left lists various Oracle products and services. A sidebar on the right lists popular downloads, including Berkeley DB, Enterprise Manager, Database EE and XE, Developer VMs, Enterprise Pack for Eclipse, Java, JDeveloper and ADF, Oracle Linux and Oracle VM, MySQL, NetBeans IDE, NoSQL Database, Solaris, SQL Developer, VirtualBox, and WebLogic Server. A banner at the bottom of the page promotes a webcast titled "Attend by Webcast! Location Intelligence / Oracle Spatial and Graph New Product Training & User Conference Washington, DC, May 21-22 View the Agenda and Register".

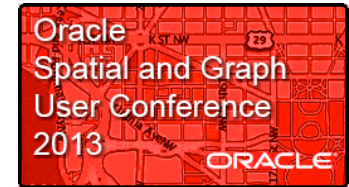
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More Information ...



1:15pm - 2:00pm	Technical Training Sessions – Oracle Spatial and Graph/MapViewer Development Team		
	<i>Horizon Room A</i> Track C: Deep Dive Topics for Experts from Experts Deep Dive: Oracle Fusion Middleware MapViewer New Features LJ Qian	<i>Horizon Room B</i> Track B: Developing Spatial Applications Advanced Oracle Spatial and Graph Features In Oracle Database Siva Ravada	<i>Pavilion Room</i> Track A: Oracle Spatial in Business Intelligence Location Intelligence David Lapp and Jerry Conrad

Resources



- **Oracle Technology Network**

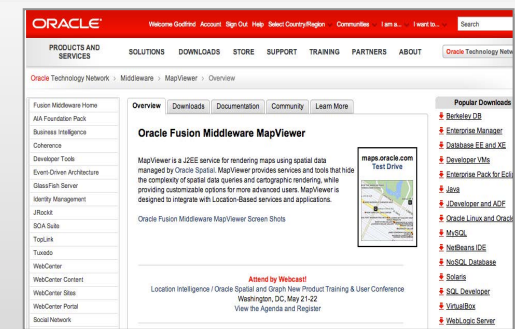
Get software downloads, sample code, tech info, updates, documentation, partner resources

- **Oracle Spatial and Graph**

www.oracle.com/technetwork/database-options/spatialandgraph/overview/spatialfeatures-1902020.html

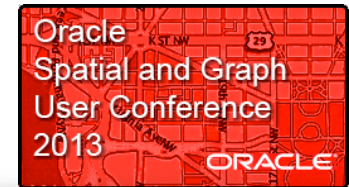
- **Oracle Fusion Middleware MapViewer**

www.oracle.com/technetwork/middleware/mapviewer/



Communities & Certification

- **Communities:** Stay connected and exchange knowledge with the community of users and experts
 - User Groups Worldwide
 - North American IOUG S&G SIG:
<http://www.ioug.org/p/cm/ld/fid=148&gid=439>
 - Technology blogs, social networking groups
 - OTN Spatial or MapViewer > [Community Tab](#)
- **Partner Specialization & Individual Certification for Spatial**
 - Credentials for individuals & official partner specialization program through Oracle PartnerNetwork
 - Exam information, training, business/competency requirements for partners, webcast
 - www.oracle.com/technetwork/database-options/spatialandgraph/learnmore/spatial-partners-423197.html
 - Speak with an specialization committee member at the Oracle table today



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- ✓ Recognized by Oracle
- ✓ Preferred by Customers

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A horizontal rectangular banner with a red background. The background features a faint, light-colored map of a city area, with labels for "Rosslyn", "Radnor Heights", "Washington National Mall", and "ANIS".

Oracle Spatial and Graph User Conference

May 22, 2013

Ronald Reagan Building and International Trade Center
Washington, DC USA