ORACLE

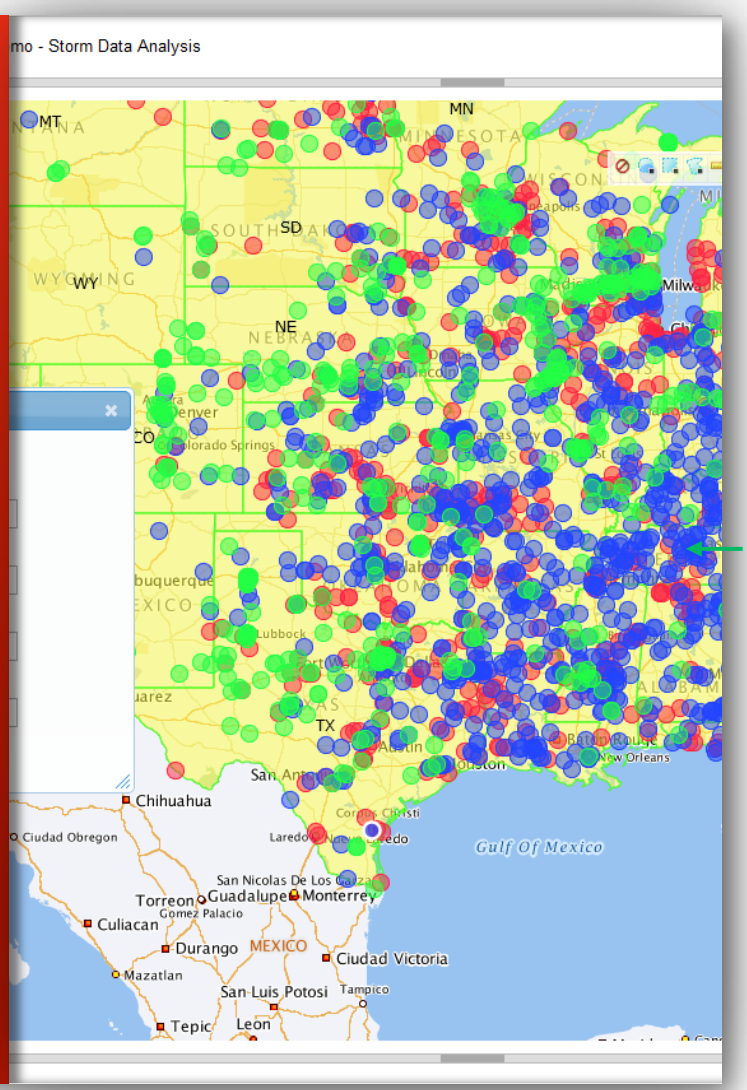
May 22, 2013

Ronald Reagan Building and International Trade Center

Washington, DC USA

MapViewer New Features

LJ Qian (lj.qian@oracle.com)
Director, Software Development



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.

Program Agenda

- What's new in the latest patches
- HTML5 API
- Securing Map Data Server
- Using the MapViewer Editor
- Using OGR libraries

Latest MapViewer patches

Version 11.1.1.7 : released two months ago

- First major new release in two years
- V2 API: a new HTML5 JavaScript mapping API
- MapViewer Editor: a new spatial data editor
- OGR-GDAL support
- New Glassfish based Quick Start kit
- Refreshed Admin Console
- More deployment options: unexploded deployment

Latest MapViewer patches

Announcing 11.1.1.7.1

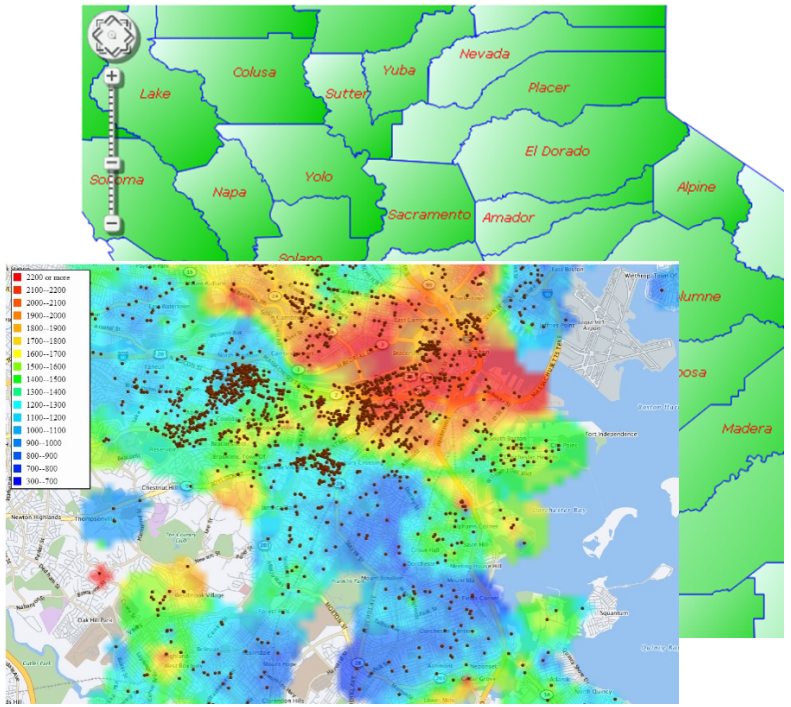
- Just released !
- Changes since 11.1.1.7:
  - HTML5 performance and feature improvements
  - Strengthened Map Data Server
  - TomTom map services support (in both v1 and v2 APIs)
  - A separately packaged Samples App
  - Updated Quick Start kit

HTML5 API

HTML5 API

Overview

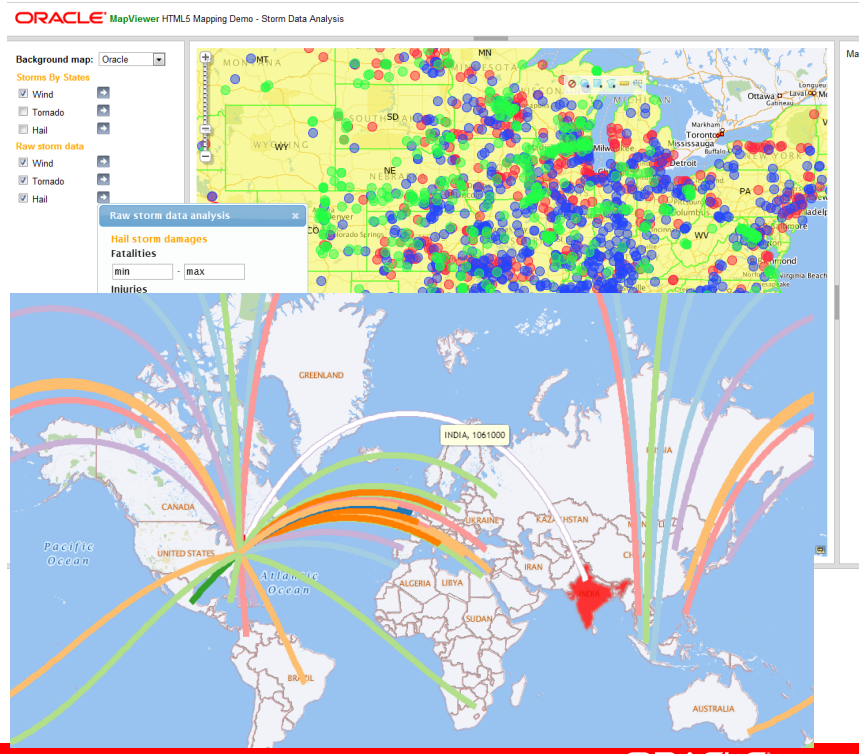
- Written from ground up
- Uses Canvas/SVG
- Browser renders JSON data with many effects and animations
- Supports all existing MapViewer metadata
- Natively supports Nokia, TomTom, Bing, OSM and other map services
- Not backward compatible with V1 API



HTML5 API

Overview ctd.

- All classes under OM namespace
- *OM.layer.VectorLayer* is *MVThemeBasedFOI* on steroids
- Built-in attribute and spatial filters
- Out of the box labeling support
- Many customizable rendering effects
- Many built-in tools



 | |

HTML5 API

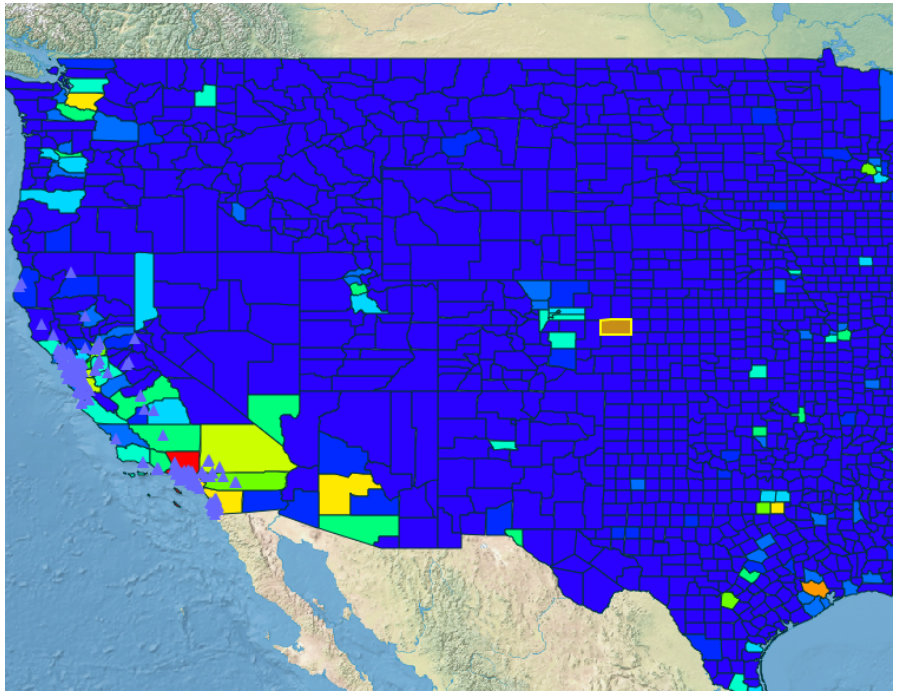
What's new in 11.1.1.7.1

- Marked improvements in rendering performance (up to 30% or more)
- Map Templates support: pre-packaged, offline mapping made easy
- CORS support; HTML5 apps no longer require a proxy servlet
  - Direct, easy access to any remote MapViewer server (v11.1.1.7.1 +)
  - Call OM.gv.setResourcePath() if no local MV instance
- Supports pre-defined themes with binding variables
- Heat map supports attribute weighted rendering
- Indicator features

HTML5 API

Performance improvements in 11.1.1.7.1

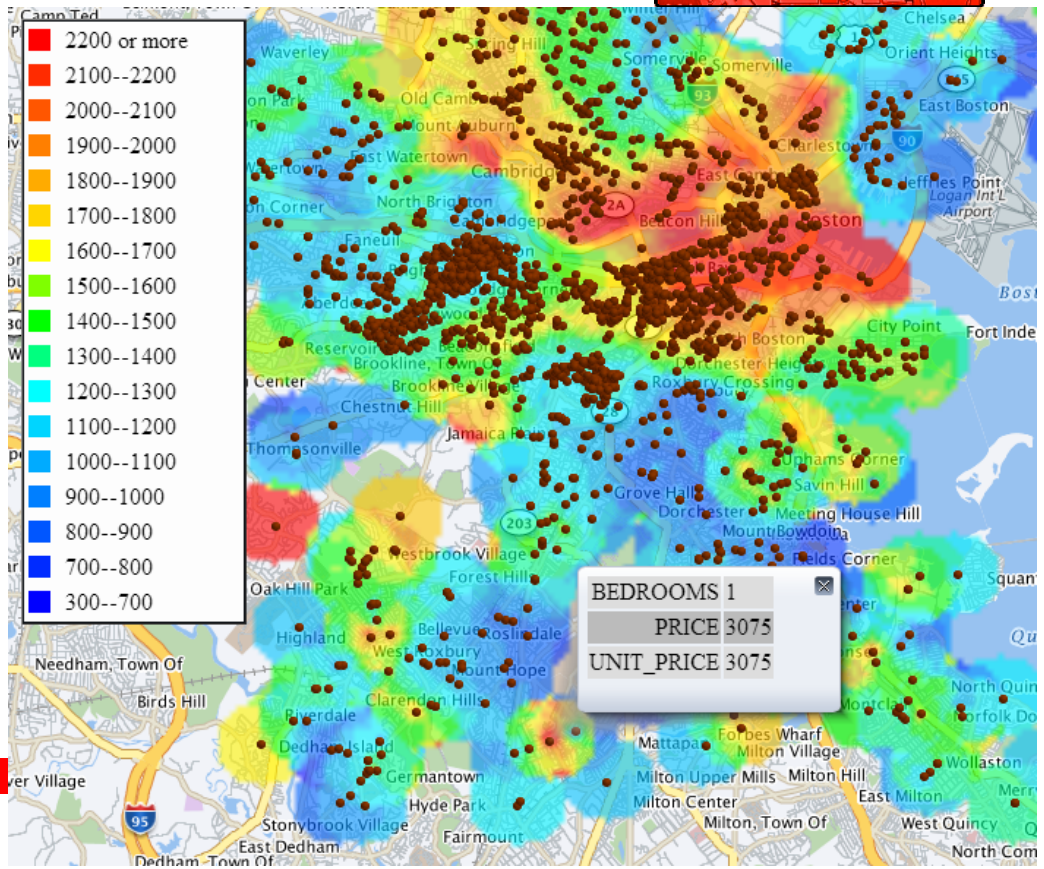
- Optimized canvas renderer
- Handles dirty area refreshes more efficiently
- Much better overall responsiveness with 10s of MBs of vector data



HTML5 API

Heat map supports attribute weights

- Heat map typically based on distribution density
- Can now also take into account attribute values

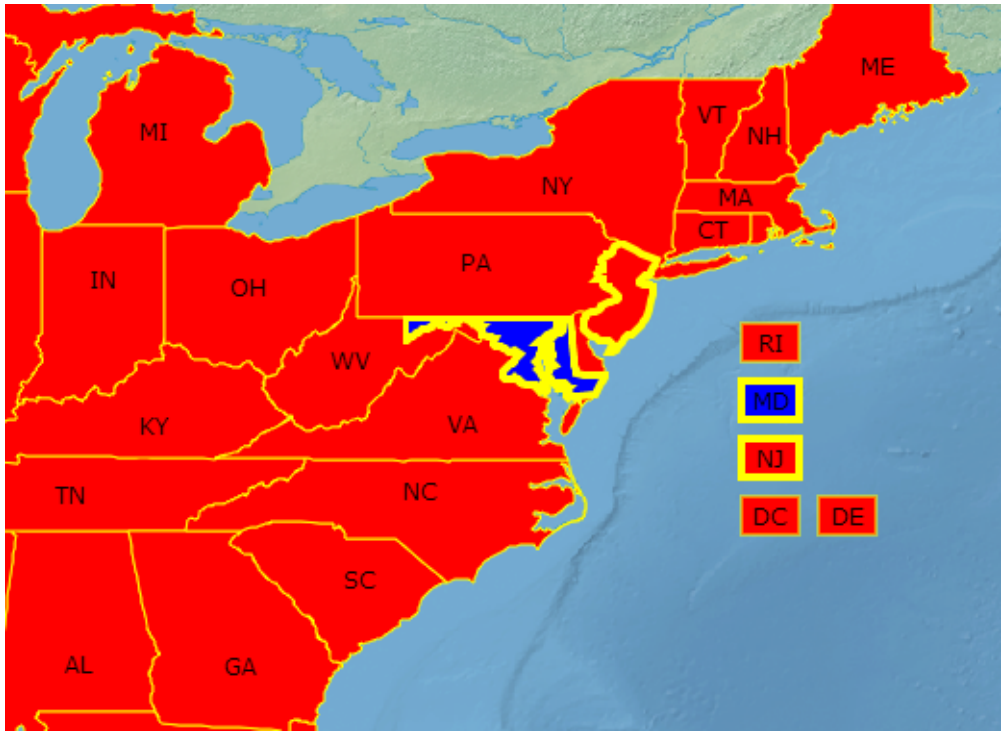


 | |

HTML5 API

Indicator features

- Introduced in 11.1.1.7.1
- Represents features too small to be labeled
- Fully automatic, configurable and interactive



HTML5 API

Map Template

- Introduced in 11.1.1.7.1
- Set of related geoJSON files + a configuration file
- Config file lists metadata: layers, styles, initial map display et al
- geoJSON files generated by Map Data Server
- MapViewer server not required at run time

HTML5 API

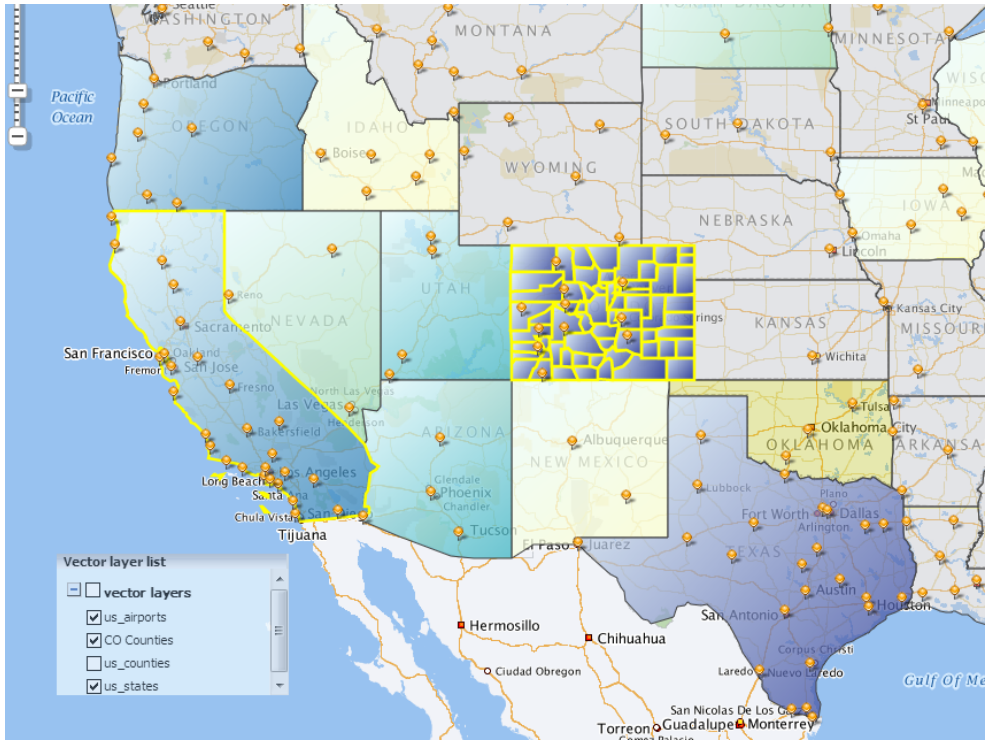
A sample Map Template config file


```
"init": {
      "center": [-100, 38],
      "zoomLevel": 4,
      "layers": ["us_states"],
      "tileLayer": "Oracle maps"
   },
   "vectorLayers": [
      {
         "dn": "us_counties",
         "uri": "/mvdemo/datapacks/usa_counties.json",
         "cn": ["US counties", "United States Counties", "Counties of USA"],
         "pl": ["us_states"],
         "styles": {
            "normal": "mutedColor1",  "mouseOver": "hoverColor1",
         }
      },
      {
         "dn": "us_states",
         "uri": "/mvdemo/datapacks/usa_states.json",
         "cn": ["USA States", "US states", "States of USA", "States"],
         "cl": ["us_counties", "us_airports"],
      }
   ],
```

```
"tileLayers": [
      {
         "dn": "Oracle maps",
         "vendor": "oracle"
      },
      {
         "dn": "Nokia maps",
         "vendor": "nokia",
         "mapTypes": "normal,terrain,satellite",
         "key": "<your_nokia_key>",
      }
   ],
   "styles": [
      {
         "dn": "mutedColor1",
         "type": "color",
         "def": {
            "fill": "#cccccc",
             "stroke": "#444444",
             "fillOpacity": 0.4
         }
      },
```

HTML5 API

A sample Map Template app



 | |

D E M O N S T R A T I O N

MapViewer HTML5

Securing Map Data Server

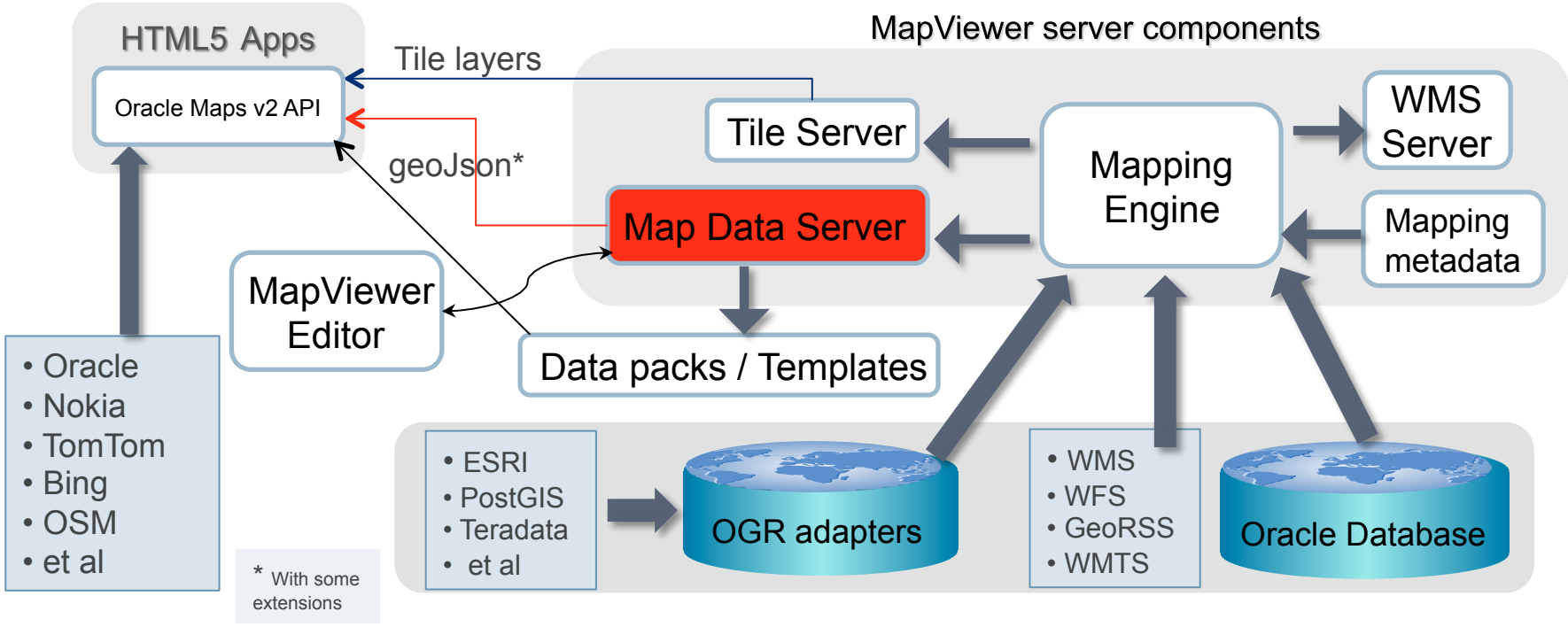
Map Data Server

A new component of MapViewer

- Streams predefined theme data to html5 clients
- Streams dynamic (JDBC) theme with ad hoc queries
- Streams geometry and session data to the Editor
- Spatial data transformed into geoJson format on the fly
- URL end point: */mapviewer/dataserver*

Map Data Server

A new component of MapViewer



Map Data Server

geoJson responses

Request: http://localhost:8080/mapviewer/dataserver/mvdemo?t=theme_demo_cities

JSON response:

{"type":"FeatureCollection", "collectionName":"theme_demo_cities", "srs":8307, "geodetic":true, "bbox":[-157.80423, 21.31725, -71.01789, 61.17837], "attr_names":["_label_"], "attr_types":["string"],
"features":[
{"type":"Feature","_id":"AAAdorAABAAAYlBAAA","geometry": {"type":"Point", "coordinates":[-73.94385, 40.6698]},"properties":{"_label_":"New York"},"styles":{"rendering":{"style":"M.ALL_CITY_L1"},"labeling": {"style":"T.ALL_CITIES_SMALL", "columns":["_label_"]}}}, {"type":"Feature","_id":"AAAdorAABAAAYlBAAB","geometry": {"type":"Point", "coordinates":[-118.4112, 34.1121]},"properties":{"_label_":"Los Angeles"},"styles":{"rendering": {"style":"M.ALL_CITY_L1"},"labeling":{"style":"T.ALL_CITIES_SMALL", "columns":["_label_"]}}},
{"type":"Feature","_id":"AAAdorAABAAAYlBAAC","geometry": {"type":"Point", "coordinates":[-87.68497, 41.83705]},"properties":{"_label_":"Chicago"},"styles":{"rendering":{"style":"M.ALL_CITY_L1"},"labeling": {"style":"T.ALL_CITIES_SMALL", "columns":["_label_"]}}} …

Map Data Server

Securing it: option 1

- Guard against all requests to Map Data Server
  - Modify the web.xml file
  - All requests to /mapviewer/dataserver now require authentication

```
<security-constraint>
<web-resource-collection>
     … …
    <url-pattern>/dataserver/*</url-pattern>
 </web-resource-collection>
 <auth-constraint>
    <role-name>map_admin_role</role-name>
 </auth-constraint>
</security-constraint>
```

Map Data Server

Securing it: option 2

- Added in version 11.1.1.7.1
- Control which data sources and themes can be streamed
  - Configured in a new **mds.xml** file
  - Found in the same folder as mapViewerConfig.xml
  - **No data source and theme can be streamed by default** !
- Can be used together with option 1 for greater security

Using the MapViewer Editor

MapViewer Editor

Editing your spatial data on the web

- Runs as a Java applet
  - Self signed Jars.
- Multi-user concurrent editing
  - Supports conflict resolution
- Supports Workspace Manager and versioning
- Edits WFS-T data
- Provides geometry validation and simplification tools

MapViewer Editor

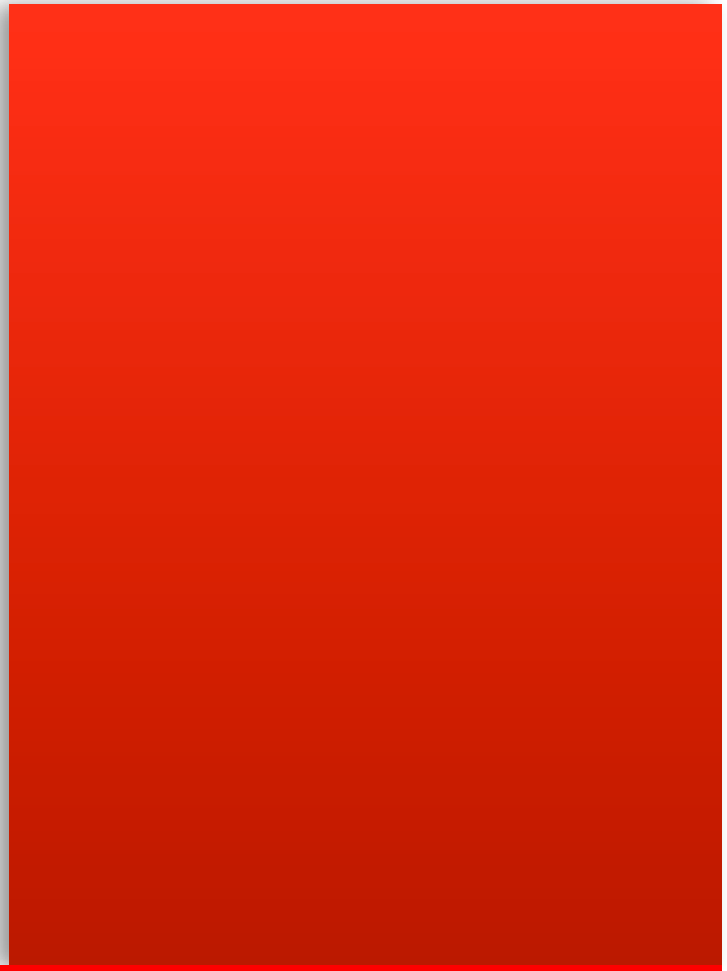
A demonstration

- Shows how to create a new table
- Populates the table with digitized polygons
- Create polygons based on existing regions from another layer
- Validate and simplify geometries

D E M O N S T R A T I O N

MapViewer Editor

Using OGR libraries



OGR/GDAL support

Added in 11.1.1.7

- Needs MapViewer-certified OGR Jar and native libraries
  - Separately downloaded from OTN MapViewer site
- Some configuration required in MapViewer & Map Builder
- Any data source supported by OGR can be used
- Consume OGR data by creating a MapViewer theme

ORACLE

May 22, 2013

Ronald Reagan Building and International Trade Center

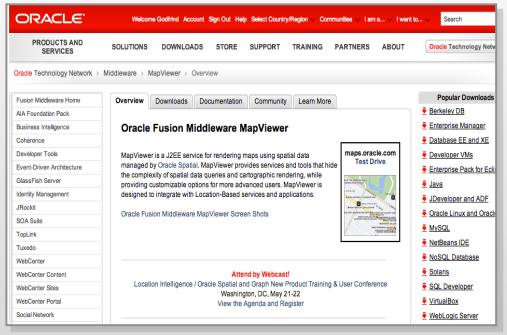
Washington, DC USA

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/



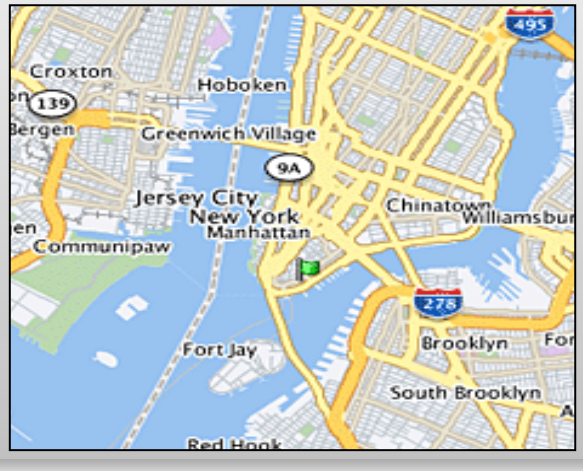
Communities & Certification

- **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

MapViewer in Action

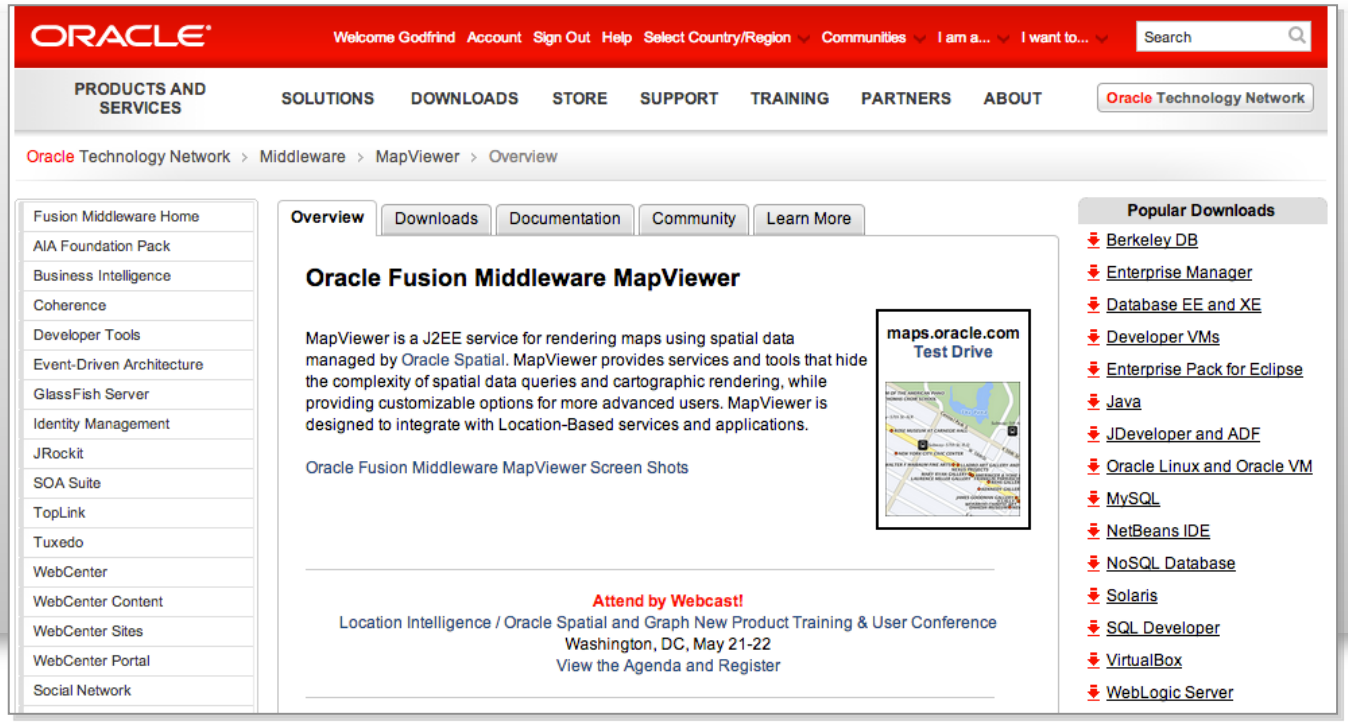
Oracle eLocation Services

http://maps.oracle.com



More Information …

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



 | |