Deploying Spatial Applications in Oracle Public Cloud

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CTO
Infotech

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Safe Harbor Statement

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

1. Deployment of Spatial Apps to Oracle Public Cloud
2. Deployment of Big Data Spatial Apps to Oracle Public Cloud
3. Case Study: Aras Kargo using LocationBox by Infotech
4. Discussion
Oracle geospatial platform
Database and Big Data Platform support, both On-premise and in the Cloud
Oracle Spatial and Graph
Location and Graph analysis with Secure, scalable storage for enterprise data

SQL access
Web Services (OGC)
SPARQL End Point
Topologies

Oracle Spatial and Graph

“Points”

“Lines”

“Polygons”

Spatial Vector Acceleration
Geocoding
Routing
Inferencing

Network Graphs
RDF Semantic Graphs
Rasters
3D, point clouds (LiDAR)
Spatial Visualization

Map authoring tool

Web based admin

HTML5 mapping API
Oracle Database Cloud Services

- **Schema**
  - Database development and testing
  - SMB, departmental applications, sandboxes
  - Enterprise applications

- **Full-Instance DBaaS**
  - Database development and testing
  - SMB, departmental applications, sandboxes
  - Enterprise applications

- **Dedicated Exadata**
  - Highest database availability, scalability and performance
Spatial in Oracle Database Cloud Services

Spatial and Graph

High Performance and Extreme Performance Editions*

High Performance and Extreme Performance Editions

* HTTP access only
Announcing Oracle Database 12c Release 2 on Oracle Cloud

• Available now
  – Exadata Express Cloud Service

• Coming soon
  – Database Cloud Services
  – Exadata Cloud Machine

Oracle is presenting features for Oracle Database 12c Release 2 on Oracle Cloud. We will announce availability of the On-Prem release sometime after Open World.
Spatial in Oracle Database Cloud Services

Spatial and Graph

- Planned
- High Performance and Extreme Performance Editions
- Included

Exadata
Express

Full-Instance
DBaaS

Dedicated
Exadata

12.2
Loading Spatial Application to Cloud: Spatial Data

Typical spatial metadata and index migration considerations apply.
Loading Spatial Application to Cloud: App deployment

Oracle MapViewer deployment
Other JEE server deployment
Application deployment

Oracle Java Cloud Service
WebLogic Server

Oracle MapViewer metadata

Oracle Database Cloud Service
Spatial data

Map Authoring

Other application metadata

OCI, JDBC client

Application metadata

JEE deployments
Demo
Need for Spatial in Big Data Environments

Insurance Industry Use Case

- Actuarial and Demographic data
- Accident data
- Call data
- Customer data
- Enrich with Postal Code
- Categorize by Region
- Underwriting/Risk Analysis
Oracle Big Data Spatial and Graph

Spatial Features for Big Data Environments

Data Harmonization

Categorization and filtering

Preparation, validation and cleansing

Visualization

Spatial querying and analysis
Oracle Big Data Cloud Service

Key Features
• Dedicated Compute Shapes with Direct Attached Storage
• Hadoop, Spark delivered as an automated Cloud Service
  – Cloudera Enterprise – Data Hub Edition 5.x
  – Oracle Big Data Connectors
  – Oracle Big Data Spatial and Graph
  – Oracle Data Integrator Enterprise Edition
• Platform for new Big Data Services
  – Big Data Discovery
  – Big Data SQL (Coming Soon)

Benefits
• Consistently high performance
• Secure by Default
• Comprehensive Software Stack
Application Deployment

Geospatial data in native format

Semi-/Un-structured content

Oracle Storage Cloud Service

Big Data Cloud Service
Big Data Spatial and Graph
Case Study
LocationBox in Oracle Public Cloud
Dr. Kerem Par
CTO
Infotech
Agenda

• Infotech
• LocationBox
• Aras Cargo Solution
• Oracle Cloud Deployment
Infotech

- Oracle Gold Partner from Istanbul, Turkey
- Primarily covering countries around Europe, Middle East, North America
- Business Segments
  - Strategic Partnerships
  - Specializations

Strategic Partnerships:
- Oracle
- Ericsson
- TomTom

Specializations:
- Specialized
  - Oracle Spatial 11g
  - Oracle Database 11g
LocationBox

• Location Based Application Development Platform
  • Infotech’s Content + LBS Functionality
  • 50+ partners / customers
  • Cloud based / on premise

2014 Oracle Spatial Excellence Awards Winner
Services

- Mapping
- Geocoding / Reverse Geocoding
- Routing
- Traffic
- Spatial Analysis
- Map Based Visualizations
- POI Search / Display
- User Spatial Data
Applications

Spatial Analytics
Location Based Advertising
Site Selection
Asset Tracking
Workforce Management
Location Based Services
Fleet Management / Telemetry
Indoor Positioning
Risk Management
References

Banks, Insurance Companies, GSM Operators, Oil & Gas, Logistic Companies, Retail
Architecture

Applications

- Web Services API
- JavaScript API
- Mobile SDK

Oracle WebLogic Server 12c
Enterprise Edition

Routing Server

Oracle Database Server 11g R2
Enterprise Edition

Vector and Raster Map Data
POI, Traffic, Risk, Demographic Data
User Data (Point, Line, Polygon)
Metadata (Maps, Themes, Styles)
Infrastructure

Active Data Guard
Timeline

2012
LocationBox
Launched

2013
Aras Cargo
Private Cloud
Deployment

2015
LocationBox
on
Oracle Public Cloud

2016
Aras Cargo
Oracle Public Cloud
Deployment
Aras Cargo

• Leading CEP (Courier, Express, Parcel) Service Provider

• 450,000+ Deliveries per day
• Serving 12 million customers per month
• 13 Regional Directorates
• 28 Transfer Centers
• 825 Branch Offices
• 3,500 Vehicles
• 12,000 Employees
Requirements

• Reduce destination errors
• Better management of service areas
• Better management of vehicle fleet
• Optimization
  • Routes
  • Branch Office Locations
  • Transfer Center Locations

• Spatially enable delivery operations
Solution

Service Area Management

Geocoding / Destination Selection

Analysis & Reporting

Fleet Management
Routing / Driver Scoring
Deployment

On Private Cloud

Test

Production

Integration

ARAS Enterprise Applications

Integration
Public Cloud Deployment

On Private Cloud

On Oracle Cloud

PaaS

Oracle

WEBLOGIC

DATABASE

JAVA CLOUD SERVICE

DATABASE CLOUD SERVICE
Public Cloud Deployment

On Oracle Cloud

Oracle
Java Cloud Service

Oracle
Database Cloud Service

Test

Production

Integration

ARAS Enterprise Applications
Migration Process

- Provisioning of services and storage

- Database
  1. Transfer database dump files via pscp (~ 1 TB)
  2. Connect with SSH
  3. Create tablespaces, users via TOAD
  4. Import database via Oracle Data Pump

- WebLogic
  1. Connect with WebLogic Administration Console
  2. Deploy MapViewer and LocationBox (ear)
  3. Transfer cached map tiles via pscp (~ 300 GB)
Remarks

• First Oracle Public Cloud Deployment of a Production System
• Very Smooth Transition
• Completed in a short period of time
• Without any changes
• Offload Platform Administration
• Better Performance, Scalability, Reliability, Security
## Spatial at OOW 2016

*View this list at* [http://bit.ly/FODSpatialGraph](http://bit.ly/FODSpatialGraph)

### Spatial Sessions

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Title</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wednesday, Sept 21</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:30 p.m. - 2:15 p.m.</td>
<td>Real-World Case Studies: Application Development and Deployment in Oracle Cloud (featuring partner Infotech) [CON7107]</td>
<td>Marriott Marquis - Salon 4/5/6</td>
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<tr>
<td>2:30 p.m. – 2:50 p.m.</td>
<td>Bring Location Analysis to Your Big Data Workloads Using Spatial [THT7822]</td>
<td>Moscone South Exhibition Hall - Big Data Theater</td>
</tr>
<tr>
<td><strong>Thursday, Sept 22</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:45 a.m. - 11:30 a.m</td>
<td>Build Applications on Spark, Hadoop, and NoSQL with Oracle Big Data Spatial and Graph [CON6585]</td>
<td>Park Central - Olympic</td>
</tr>
<tr>
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<td>Title</td>
<td>Location</td>
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</tr>
<tr>
<td>Monday, Sept 19</td>
<td>Apply Location Intelligence and Spatial Analysis to Big Data with Java</td>
<td>Hilton - Franciscan Room C/D</td>
</tr>
<tr>
<td>4:00 p.m. - 6:00 p.m.</td>
<td>[HOL6255]</td>
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<tr>
<td>11:00 a.m. - 12:00 p.m.</td>
<td>Using Oracle Database 12c as a NoSQL JavaScript Object Notation</td>
<td>Hotel Nikko - Golden Gate (25th Floor)</td>
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<tr>
<td>Other offerings</td>
<td>Document Store [HOL7441]</td>
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<tr>
<td>Tues/Wed/Thurs 8:00 a.m. - 9:00 a.m.</td>
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<tr>
<td>12:45 p.m. - 1:45 p.m.</td>
<td>Getting Started with Oracle REST Data Services [HOL7369]</td>
<td>Hotel Nikko - Bay View (25th Floor)</td>
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<tr>
<td>Other offerings</td>
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<tr>
<td>Tues/Wed/Thurs 9:45 a.m. - 10:45 a.m.</td>
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</table>
Graph at OOW 2016 View this list at [http://bit.ly/FODSpatialGraph](http://bit.ly/FODSpatialGraph)

Graph Sessions

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<tbody>
<tr>
<td><strong>Monday, Sept 19</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:30 a.m. - 10:30 a.m.</td>
<td>Building a Java Recommender System in 15 Minutes with Graph Technologies [TUT5289]</td>
<td>Parc 55 - Cyril Magnin II/III</td>
</tr>
<tr>
<td>4:15 p.m. - 5:00 p.m.</td>
<td>Graph and Link Analysis: Discovering Network Relationships in Big Data [CON6445]</td>
<td>Park Central - Olympic</td>
</tr>
<tr>
<td><strong>Tuesday, Sept 20</strong></td>
<td></td>
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<tr>
<td>1:00 p.m. – 1:20 p.m.</td>
<td>Bring Graph Analysis to Relational and Hadoop Data [THT7821]</td>
<td>Moscone South Exhibition Hall - Big Data Theater</td>
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<tr>
<td>6:15 p.m. - 7:00 p.m.</td>
<td>Meet the Experts: Oracle’s Big Data Management System [MTE7224]</td>
<td>Moscone South - 306</td>
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<tr>
<td>7:15 p.m. - 8:00 p.m.</td>
<td>Meet the Experts: Spatial and Graph Technologies for Database, Big Data, and the Cloud</td>
<td>Moscone South - 306</td>
</tr>
<tr>
<td><strong>Thursday, Sept 22</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:45 a.m. - 11:30 a.m.</td>
<td>Build Applications on Spark, Hadoop, and NoSQL with Oracle Big Data Spatial and Graph [CON6585]</td>
<td>Park Central - Olympic</td>
</tr>
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</table>
## Spatial and Graph Demos

<table>
<thead>
<tr>
<th>Date/Time</th>
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<tbody>
<tr>
<td>Monday - Wednesday</td>
<td>Oracle’s Spatial Technologies for Database, Big Data, and the Cloud</td>
<td>Moscone South Exhibition Hall – 101 Oracle Database Showcase (left side)</td>
</tr>
<tr>
<td>Monday - Wednesday</td>
<td>Oracle’s Graph Database and Analytics for Database, Big Data, and the Cloud</td>
<td>Moscone South Exhibition Hall– 101 Oracle Database Showcase (left side)</td>
</tr>
<tr>
<td>Monday - Wednesday</td>
<td>Discover and Analyze Relationships with Oracle Big Data Spatial and Graph</td>
<td>Moscone South Exhibition Hall Big Data Showcase (SBD-016)</td>
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## Partners

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<th>Location</th>
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<tbody>
<tr>
<td>Monday – Wednesday</td>
<td>Tom Sawyer Software</td>
<td>Moscone South Exhibition Hall - Booth #436</td>
</tr>
<tr>
<td>Monday – Wednesday</td>
<td>DataNinja (DocomoInnovations)</td>
<td>Moscone South Exhibition Hall - Booth #1741</td>
</tr>
<tr>
<td>Monday – Wednesday</td>
<td>interred Consulting</td>
<td>Moscone South Exhibition Hall - Booth #3208</td>
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The Spatial & Graph SIG User Community

The SIG connects and exchanges knowledge via online communities and at conferences and events

• **Chat & Coffee at OOW**
  Join us & chat with other S&G users about your experiences! Bring your own coffee 😊
  **Wednesday at 8:00 am**
  Meet in front of Oracle Bookstore – Moscone South Lobby

• **Join us online**
  [tinyurl.com/oraclespatialcommunity](http://tinyurl.com/oraclespatialcommunity)

  [LinkedIn](https), [Google+](https) & [IOUG SIG](https) groups

[@oraspatsialsig](https) | [oraspatsialsig@gmail.com](mailto:oraspatsialsig@gmail.com)
BIWA SUMMIT 2017
WITH SPATIAL SUMMIT + YESSQL SUMMIT

THE Big Data + Analytics + Spatial + Cloud + IoT + Everything Cool User Conference
January 31 - February 2, 2017

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Applications & Platform Services