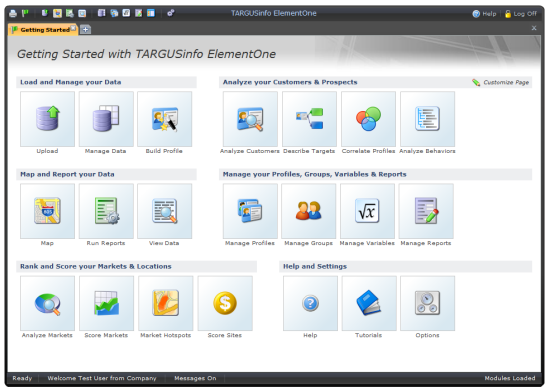
Oracle Spatial User Conference

Oracle Spatial User Conference 2012

TARGUS*info* ElementOne Analytics

TARGUSinfo a Neustar company



OVERVIEW

- Comprehensive cloud based GIS analytics platform
- Feature rich, secure and highly scalable application
- Provide rich data and cutting edge analytics to help clients acquire, retain and grow high value customers

CHALLENGES / OPPORTUNITIES

- Ensure enterprise level security needs
- Provide mechanism for efficient and optimal data transfer
- Fast query response times for large customer and transaction level datasets
- Frequent, transparent software and data updates
- Quick and easy set up

SOLUTIONS

- Oracle Database 11g Release 2 Enterprise Edition
  - Spatial Option with GeoRaster, Network Data Model
  - Partitioning
  - Advanced Security
- Oracle Fusion Middleware 11g
  - MapViewer

RESULTS

- Up to10x performance improvement for detailed mapping with the use of MapViewer map cache
- Use of NDM partitioned blobs resulted in 300% quicker isochrone creation times while increasing accuracy
- Consolidation of raster, vector, network data in 500 GB sized central repository
- Utilize topology to maintain accurate geography relationships
- Improved base data precision with 25M+ ZIP4 level data

SPATIAL

May 2012

Oracle Spatial User Conference

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Oracle Spatial User Conference

May 23, 2012

Ronald Reagan Building and International Trade Center

Washington, DC USA

Nick Salem
Director, Software Engineering

David Tatar
Director, Software Engineering

Geospatial Cloud Analytics with ElementOne

Program Agenda

- Intro / Summary
- Cloud Concepts
- Oracle Spatial 11gR2 LRS / NDM
- Use of Oracle Spatial 11gR2 Features
- Demo – E1 Platform in Action

TARGUSinfo Corporate Overview

Real Intelligence. Better Decisions.

- Today, part of the Neustar family
- Publicly held, $700M+ Information Service Company with
- 1,500+ employees HQ'd in Sterling, VA
- Proprietary relationships with over 220 telcos (MSOs, ROBOCs, LECs)
  - NANPA = North American Numbering Plan Administrator
  - LNP = Local Numbering Portability
  - 1 billion voice calls daily
  - 5 billion text messages daily
  - 14 billion DNS queries daily
  - 112 billion mobile and multi media messages daily

A few of TARGUSinfo's clients

AMERICA Online

DATAMARK

Sylvan Learning

CUnet
A nelnet COMPANY

WESTWOOD COLLEGE
A PLACE WHERE YOU CA

SAKS FIFTH AVENUE

COX COMMUNICATIONS

Jenny Craig

Pizza Hut

AT&T

FedEx

PROGRESSIVE

Audience Science

Sprint

GRAND CANYON UNIVERSITY
ARIZONA 1949

meineke car care center

Cloud Concepts

Benefits of cloud / web-based

- Minimal or no need for installation
- Minimal IT engagement
- Frequent, transparent updates (software + data)
- Redundancy, backups, security included
- Mobility, remote access, collaboration and sharing
- Scalability, additional cpu power, faster response
- Cost effective across small and large businesses

Cloud Concepts

Challenges / solutions

Challenge	Solution
Notification when Oracle jobs complete	"Push" style messaging w/ Oracle DCN
Sensitive data	Oracle RLS / VPD policies, TDE
Internal-only access security requirements	Token/IP authentication, WebLogic
"Live" linking of external data	SFTP, WebLogic, ojdbc, web services
Loading large data over http	WebLogic, ojdbc, setExecuteBatch
Integration with external services and apps	WebLogic, Oracle Spatial Java API
Browser to middle-tier response	MapViewer, SDO_GEOMETRY, vectors, SDO_CS.TRANSFORM, JSON

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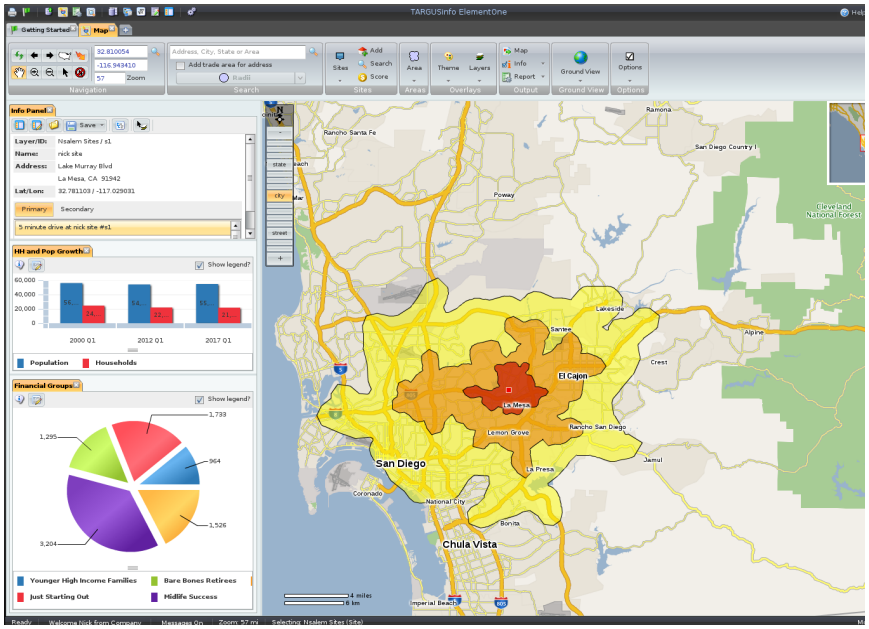
Use of Oracle Spatial LRS & Network Data Model



- **Oracle Spatial LRS**
  - Use combination of SDO_GEOM and SDO_LRS methods to build comprehensive and highly detailed US road network
  - Nodes and links are divided into classifications of freeway, highway, major and local roads
  - Cost of linear distances between nodes
- **Oracle Spatial NDM**
  - Use SDO_NET.SPATIAL_PARTITION and SDO_NET.GENERATE_PARTITION_BLOBS for scalability and performance
  - Load On Demand Cache on Mid-Tier
  - Flexibility to dynamically override link cost

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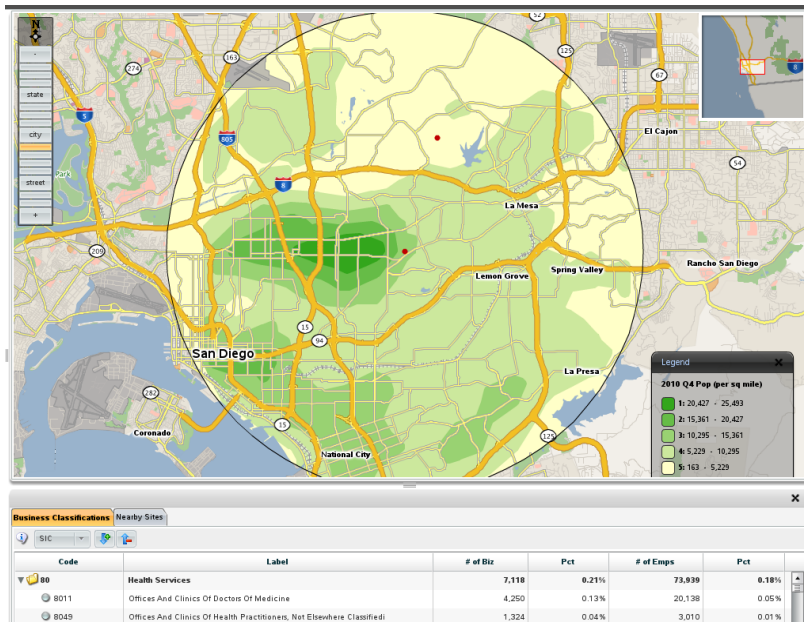
Use of Oracle Spatial 11gR2 Features



- **SDO_TIN for Heat Map**
- **SDO_UTIL and SDO_GEOM for various geography creation and manipulation**
- **SDO_BUFFER for polygon smoothing**
- **SDO_INTERSECTION, SDO_UNION, SDO_DIFFERENCE, POINT_AT_BEARING, POLYGONTOLINE, SDO_CONVEXHULL, & CONVERT_RADIAN for polygon creation and manipulation**
- **SDO_MBR, SDO_AREA & SDO_CENTROID for polygon utility functions**
- **SDO_CS for Google Projection**
- **SDO_VALIDATE, RECTIFY_GEOM, and SIMPLIFY for polygon cleansing**

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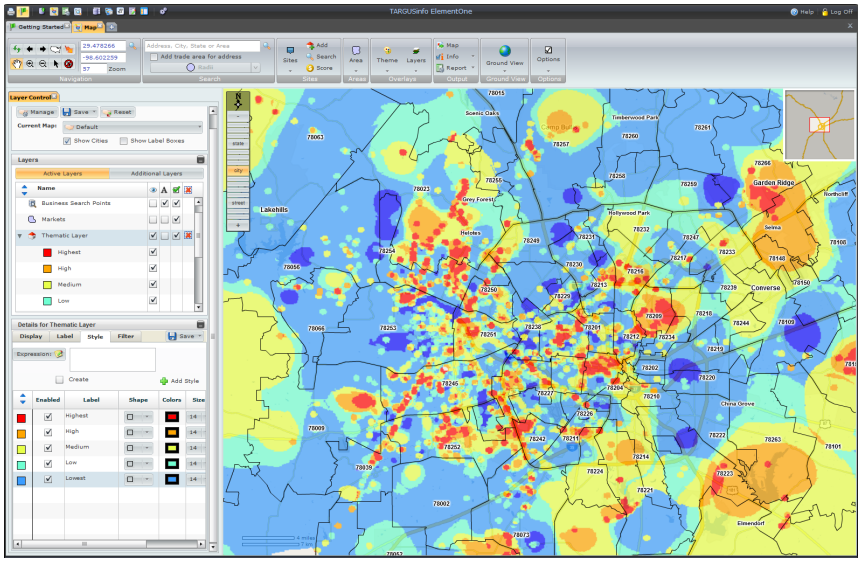
Benefits of Oracle Spatial 11gR2 Features



- **Benefits of MapViewer 11g**
  - Tight integration with Oracle Spatial
  - Cached tile maps for high performance, scalability and portability
  - Use of bind variables for scalability
  - Highly flexible – full control over map detail and labels
- **Benefits of Geo-Raster Image**
  - Display and query of highly detailed markets and trade areas
- **Scalable and High Performance**
  - Handle large datasets (ZIP4 points, large customer and transaction level files)
  - Partitioning and SDO_JOIN

"With TARGUSinfo's platform we can access the most up to date and robust market analysis to meet our strategic objective of identifying where we need to concentrate our growth."

Andrew Hoit

Director Marketing, Falken Tire Corporation

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

ElementOne Analytics Platform

Q&A