SPATIAL

May 2011
Oracle Spatial User Conference

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May 19, 2011

Ronald Reagan Building and International Trade Center

Washington, DC USA

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- TIGER - Topologically Integrated Geographic Encoding and Referencing System
  - A digital map of US, Puerto Rico, & Island Areas
  - Contains
    - Roads (Streets), Rail, Hydro
    - Geographic Entity Boundaries
    - Housing Unit Locations
    - Address Ranges and Zip codes
    - Key Geographic Locations

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- MAF – Master Address File
  - An inventory of all known living quarters in the US, Puerto Rico, and the Island Areas
  - Contains
    - Mailing Address, if one exists
    - Descriptive Address, when no city-style address exists
    - Census Geographic Location
    - Source and History data

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- MAF/TIGER – Mission Critical Corporate Resource
  - System provides storage, processing, products and services that support agency's statistical programs
    - Geocoding
    - Maps
    - Residential Address Lists
  - Continually updated with new address and geographic information
  - Wide public use of geographic information

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- Current MAF/TIGER System
  - Oracle database
  - RAC environment
  - Oracle Spatial and Topology Data Model
  - Persistent Topology
  - Integrated MAF & TIGER
  - Unique batch processing environment
  - Benchmarks
  - In-house built software (core API, BRE, etc.)

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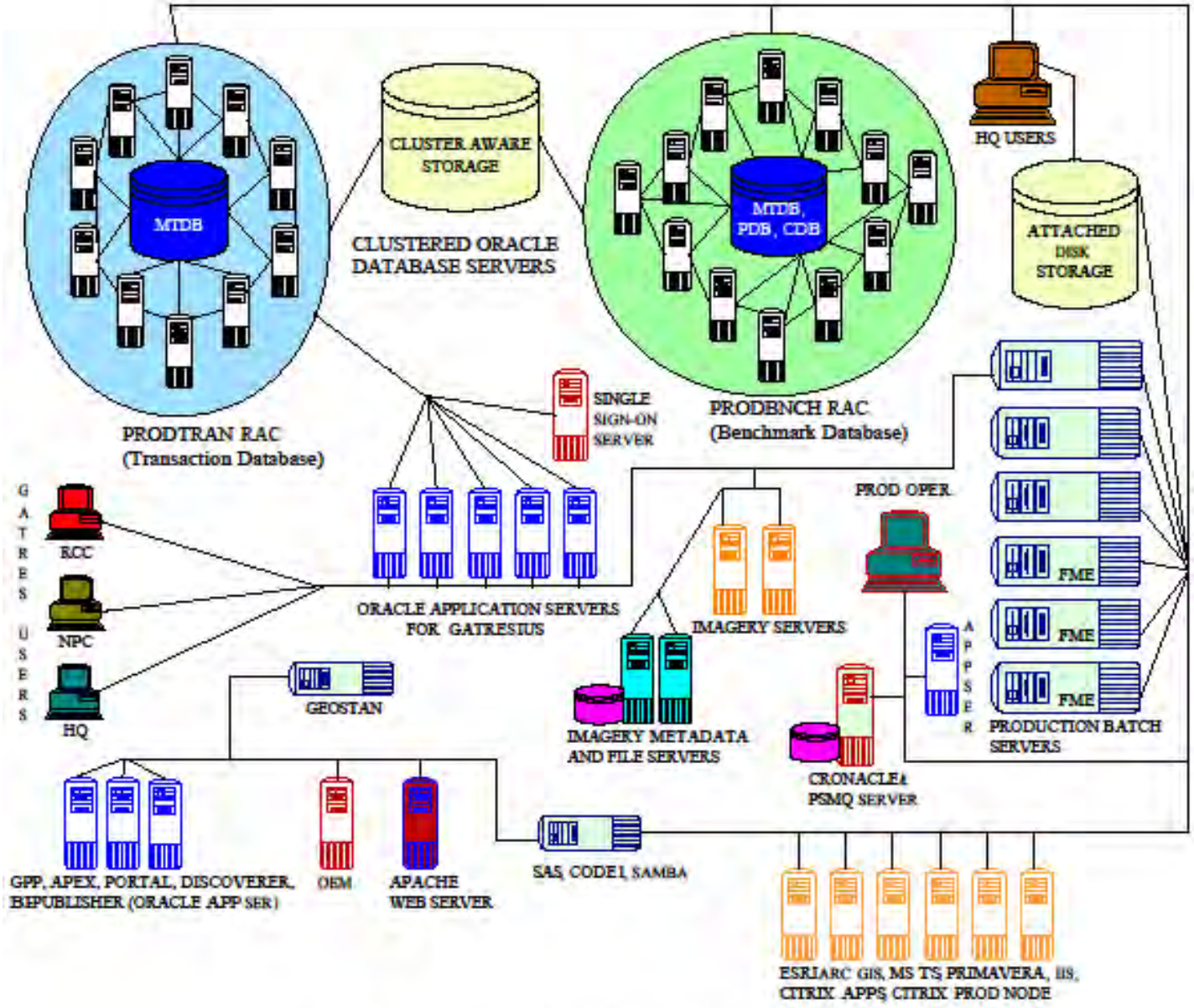

GEOGRAPHY DIVISION PRODUCTION INFRASTRUCTURE

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- Current inflow of data
  - Interactive
    - GATRES
      - 3 tier architecture
      - Based on Acquis ADE (Map Viewer technology)
      - Supports over 500 simultaneous users
  - MTPS
  - Batch
    - BFUS (linear, areal), Address Update System
  - CHEA PET & GAADS
    - Updates of entities based on polygons

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- Current outflow of data
  - Data Extracts, GRFs
  - TIGERLINES
  - Shapefiles (LISRDS)
  - Maps
  - Viewing tools (Map Viewer, MT View, TIGER on Google)
  - MAF Browser
  - PDB Viewer (WEBLOGIC)

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- Serving TIGER data
  - Visualization tools for TIGER
  - TIGER Base Map
  - TIGER WMS
  - TIGER WFS
  - Based on Oracle Application Server and ArcGIS10
  - Source is TIGER PDB
  - Serve Corporate Listing Device

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- Some MTDB statistics
  - EDGE$ 73,187,478
  - FACE$ 22,597,539
  - NODE$ 160,123,508
  - RELATION$ 3,054,850,670

  - Number of features (layers) = 68
  - Number of hierarchical levels = 06

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- Census 2010 Support
  - Address Canvassing: GEO processed 730,920 Assignment Areas (AA) which were canvassed for housing units and new road features. From this operation, a total of **2,756,444** road feature updates were made to TIGER.

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- Census 2010 Support
  - The Geography Division (GEO) conducted geographic programs to review and update nearly **604,000** legal, statistical and administrative areas nationwide.
  - GEO added **702,952** lines (edges) in paper based operations to TIGER.

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- Census 2010 Support
  - Mapping: GEO produced 17,127,751 unique small format (11 x 17) enumerator maps for the Census. On our most productive day GEO produced 202,210 unique maps at a rate of 2.43 maps/ second. Our average production rate for the small format maps was **one map every 1.2 seconds**.

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- Census 2010 Support
  - Looking at the Field and Administrative/Partnership operations, GEO processed about **230 million** addresses for the 2010 Census. This does not include the processing we did for the DSF.

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- Census 2010 Support
  - Census data tabulated and presented for over 11 million unique geographic areas, including nearly 74,000 census tracts, over 220,000 block groups, and over **11 million census blocks** in 3,221 counties and equivalents in the US and Puerto Rico.

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- GEO's success was dependent on Oracle Spatial and Topology Data Model. Key characteristics that helped:
  - Scalability
  - Reliability
  - Usability
  - Support

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Q&A