

ORACLE LOCATOR AND ORACLE SPATIAL OPTION

Location Features in Oracle Database 10g Release 2

NEW FEATURES

New features in Oracle Locator with Oracle Database 10g Release 2 include:

- Coordinate system support based on European Petroleum Survey Group (EPSG) model

New features in Oracle Spatial 10g Release 2 include:

- eLocation Quick Start
- GeoRaster compression
- Routing engine support for Western Europe
- New geocoding subprograms
- Topology data model enhancements
- Network data model enhancements

Features introduced in Oracle Locator with Oracle Database 10g Release 1:

- Parallel spatial queries
- Simplified relationship operators
- Performance enhancements for spatial queries, R-tree index inserts and updates, and more

Features introduced in Oracle Spatial 10g Release 1:

- GeoRaster support
- Topology data model
- Network data model
- Geocoder
- Routing engine
- Spatial analytic functions

Oracle provides the industry's leading spatial database management platform. With Oracle Locator, every Oracle database includes built-in location features that enable any business application to directly incorporate location information and realize competitive advantages. Oracle Spatial 10g includes support for all geospatial data types and models, including vector and raster data, and topology and network models, meeting the needs of advanced GIS systems such as land management, utilities, and defense/homeland security. Oracle's open, native spatial support eliminates the cost of separate, proprietary systems, and is supported by all leading GIS vendors. Only Oracle delivers industry-leading security, performance, scalability, and manageability for mission critical spatial assets stored in Oracle's native type. With Release 2, Oracle continues its commitment to providing the most advanced spatial database platform for enterprise class deployments. This data sheet highlights some of Oracle's spatial features, including new features in Release 2.

The Most Advanced, Industry-Leading Spatial Database Platform

Industry analyst IDC has found that "Oracle has developed the deepest spatial capabilities among the IT infrastructure players." IDC stated that the integration of spatial capabilities in Oracle Database "simplifies the use of spatial data in business applications and removes much of the cost of using spatial data." Since Oracle's spatial features are accessible through standard languages such as SQL and Java, IDC concludes, "developers can integrate spatial features directly into business and location-based applications at relatively low costs and with minimal training". Because of Oracle's "deep expertise in enterprise integration, the company's spatial capabilities are having a profound, positive effect on the SIM [Spatial Information Management] industry." IDC found that Oracle holds an 80-90% share of the spatial database management market. (Source: IDC, *Oracle 10g: Spatial Capabilities for Enterprise Solutions*; Sonnen and Morris, Feb. 2005) More customers and partners are choosing Oracle for spatial data management to deliver performance, scalability, security, ease of use, and advanced spatial features.

Easily Location-Enable All Your Applications

Most business information has a location component, such as customer addresses, sales territories, and physical assets. Businesses can take advantage of their geographic information by incorporating location analysis into their information systems. This allows organizations to make better decisions and respond to customers more effectively.

Oracle Database 10g provides the foundation for deploying enterprise-wide spatial information systems, location-enabled e-Business applications, and wireless location-based services.

Oracle Locator, a feature of Oracle Database (Standard Edition, Standard Edition One, and Enterprise Edition), provides core location functionality needed by most customer applications and partner solutions. (Locator is not a solution for complex GIS applications.) Developers can extend existing Oracle-based tools and applications, since with Locator they can easily incorporate location information directly in their applications and services. This is possible because location data is fully integrated in the Oracle server itself. Geographic and location data are manipulated using the same semantics applied to the CHAR, DATE or INTEGER types that are familiar to all users of SQL.

Specific Locator features include:

- An object type that describes and supports geometries such as points, lines, polygons
- Fast spatial R-tree indexing
- Spatial operators that use the spatial index for performing queries that determine the interaction of geometric features
- Open, standard SQL access to spatial operations
- Whole Earth geometry model that provides comprehensive storage, management and use of geodetic data
- Function-based spatial indexes
- Long transactions (through Oracle Workspace Manager feature)
- Integration with Oracle Application Server 10g Wireless
- Integration with Oracle Application Server 10g MapViewer tool
- **New in 10g Release 2!** Coordinate system support based on the European Petroleum Survey Group (EPSG) data model
- **New to Locator in 10g Release 2!** Explicit coordinate transformations

For more detailed information about Oracle Locator features, please refer to *Oracle Locator Technical White Paper*, available at <http://www.oracle.com/technology/products/spatial/>.

Manage All Your Geospatial Data Types and Models

Oracle Spatial, an option to Oracle Database Enterprise Edition, extends Locator, and provides a robust foundation for complex GIS applications that require more spatial analysis and processing in Oracle Database. Oracle Spatial 10g Release 1 introduced support for all major spatial data types and models, addressing the challenging business-critical requirements from the public sector, defense, logistics, energy exploration, and business geographics domains, as well as new areas such as life sciences.

Oracle Spatial features include:

- Powerful linear referencing system
- Over 400 Spatial functions such as buffer generation, centroids, area and length calculations, and aggregate functions (e.g. unions and user defined aggregates)
- GeoRaster data type that natively manages georeferenced raster imagery (e.g.,

satellite imagery, gridded data) in Oracle Database 10g

- **New in 10g Release 2!** GeoRaster compression
- **Enhanced in 10g Release 2!** A data model and schema to persistently store and update topology
- **Enhanced in 10g Release 2!** A data model to store and analyze network (graph) structure
- **Enhanced in 10g Release 2!** Geocoding engine
- Spatial analytic functions
- Routing engine
 - **New in 10g Release 2!** Support for Western Europe
 - **New in 10g Release 2!** eLocation Quick Start

For more detailed information about Oracle Spatial features, please refer to *Oracle Spatial 10g Technical White Paper*, available at <http://www.oracle.com/technology/products/spatial/>.

Easily Deploy Location Services “Out of the Box” (NEW with Release 2)

Oracle Spatial 10g Release 2 introduces eLocation Quick Start. Location service Java and XML APIs enable application developers to quickly and easily deploy mapping, geocoding, and routing services right "out of the box", from data stored in Oracle Spatial. The APIs ship with sample HTML interfaces to jump-start the creation of driving directions, mapping, and geocoding applications. Sample data is available online; data sets in the format supporting Oracle Spatial 10g are also available from leading data providers. Visit <http://www.oracle.com/technology/products/spatial/> for more information.

The Oracle Spatial geocoding and routing APIs may be used by Oracle Application Server MapViewer, many third party mapping tools, or user-developed applications.

Manage Critical Spatial Data Assets with Enterprise-Class Security, Scalability, Performance

For your mission-critical spatial data assets, only Oracle can provide the security, scalability, and performance of the industry’s leading database, to manage multiterabyte datasets and serve communities ranging from tens to tens of thousands of users. Only by using Oracle’s native spatial data type (versus Long Raw or BLOB) can you take advantage of the features below:

- Partitioning support for spatial indexes
- Parallel index builds for spatial R-tree indexes
- Parallel spatial queries
- Replication (some features available with Enterprise Edition only)
- Spatially-driven multi-level security

RESOURCES, RELATED PRODUCTS**RESOURCES****Oracle Technology****Network website:**

www.oracle.com/technology/products/spatial

- Documentation and white papers
- Software, sample code
- Customer profiles
- Technical forum
- Training (Oracle University class schedules, online training, free tutorials)
- Partners

Support:

www.oracle.com/support/metalink

- Product alerts
- Technical Assistance Request forms
- Technical spatial library

RELATED PRODUCTS

- **Oracle Application Server MapViewer** is a Java map rendering and viewing component used for visualizing geospatial data managed by Oracle Locator or Oracle Spatial
- **Oracle Workspace Manager** provides long transaction support for Oracle Locator and Oracle Spatial
- **For more information, visit www.oracle.com/technology/products/spatial See “More About”**

Use Any Leading Partner Application With An Open Data Management Solution

Oracle Locator and Spatial are directly integrated with the leading GIS, mapping and location services technology vendors. Since Oracle’s spatial data type is compliant with open standards, Oracle can serve as an interoperable, central geospatial data repository for providing data to any partner application. Spatial data can be shared more easily between departments and organizations, and across the enterprise, so you can realize increased return on spatial data assets while reducing costs.

A list of partners is available at www.oracle.com/technology/products/spatial (click “Partners”, under “Quick Picks”).

Oracle consistently works to help shape, drive, implement and support the latest open standards in the spatial and location services areas. Oracle is a Principal Member of the Open Geospatial Consortium (OGC) and participates actively on the Technical Committee. Oracle Locator and Oracle Spatial 10g Release 1 (10.1.0.4) comply with the OpenGIS Simple Features Specification for SQL, Revision 1.1, Types and Functions Alternative. Oracle is also committed to supporting the new OGC Geographic Markup Language (GML) as well as Open Location Service interfaces. The object-relational model used for geometry storage by Oracle Spatial and Oracle Locator also conforms to the specifications associated with SQL92 representation of points, lines, and polygons.

With Oracle Locator and Oracle Spatial 10g, Oracle brings the power and value of location analysis to your business applications, with advanced spatial data management features to support applications ranging from GIS to new domains such as life sciences. Only Oracle provides world-class performance, scalability, security, and manageability to your spatial data assets, while reducing costs, with support from every leading GIS vendor.

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 Author: Jean Ihm
 Contributors: Xavier Lopez, Jim Steiner, Siva Ravada, Dan Abugov

Oracle Corporation
 World Headquarters
 500 Oracle Parkway
 Redwood Shores, CA 94065 U.S.A.

Worldwide Inquiries:
 Phone: +1.650.506.7000 | Fax: +1.650.506.7200
oracle.com

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