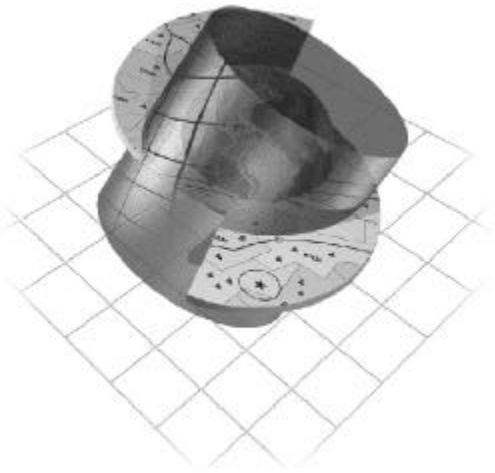

SpatialWare® v4.0

Spatial Information Management for Oracle 8.05 Databases

MapInfo SpatialWare allows users to store, access, manage, and manipulate spatial data in the same database as the rest of their business data. SpatialWare is the first spatial information management system to implement SQL-based advanced spatial access, analysis and modelling in a database environment. For the occasional user or the sophisticated database programmer, it sets a new standard in ease of use and seamless integration, and adheres to database industry standards and the emerging OpenGIS Consortium, Inc's specifications.

- Complete server-based Spatial Information Management system
- Efficient, flexible Spatial database for MapInfoDATA and other spatial data in a database system
- Powerful and fully-integrated Standard Query Language (SQL) for spatial operations
- High speed spatial data loaders
- Highly scalable to thousands of users and hundreds of gigabytes of spatial data

Version 4.0 highlights

- New SpatialWare Operators like Difference, Convex Hull, Clean,Relate, Cross and many others.
- SpatialWare graphical applications on NT in addition to UNIX
- Dramatic speed improvements for many spatial operators.
- Tcl 8 Support

SpatialWare Features

- Support for Sun® Solaris™, Windows NT®, DEC Alpha UNIX, and HP-UX
- Over 130 spatial verbs, operators and mathematical functions
- Custom user defined projection systems
- Client support for MapInfo Professional®, MapX™, MapXtreme™
- Unparalleled coordinate system support. A single SQL statement returns spatially accurate results even if the SQL refers to geographic objects that are stored in different coordinate systems.

SpatialWare Information Management

SpatialWare is an integrated spatial information management system using an Oracle database system. SpatialWare provides on-line spatial data services that enhance functionality and improve critical business processes and operational applications. It is comprised of data analysis, mapping, reporting facilities and a modular tool set for integrating sophisticated client applications. SpatialWare uses a rich data model, fully scaleable client/server architecture for the desktop (NT and UNIX®) and an extended SQL-based spatial query language to provide you with a single source for creating custom spatial solutions

SpatialWare offers:

- Integration and management of spatial and business data Central storage and management of large volumes of spatial data
- align with the emerging ISO/IEC 13249-3 SQL/MM-Part 3: Spatial Standard and the Open GIS Consortium's Simple Features for SQL Specification.
- multi-user access to data
- sophisticated spatial analysis such as buffer, contains, adjacent to, overlap, length, union, slope, area, perimeter

Business Process enhancement

SpatialWare allows you to enhance key business process by connecting data and location. Geospatial analysis can improve a wide variety of business processes:

Customer Service/Call Center - In the Cellular Telecommunications industry, quickly connecting the location of a trouble call into an engineering trouble reporting system results in major cost savings.

Property Risk Management - In the Savings and Loan industry, the ability to quickly issue loans in a highly competitive market, while reducing the risks associated with the loans, is a major competitive advantage.

Asset/Facilities Management - Utility companies can quickly identify underground cable and/or pipelines, to speed "call before you dig" applications or upgrades to existing facilities.

Land Information Management – Government agencies can synthesize data from numerous sources and reduce processing time required to create permits.

SpatialWare Data Access

SpatialWare provides spatial data management for Oracle, enabling organizations to freely and uniformly access, manipulate and integrate business and spatial data types. SpatialWare is specifically designed to meet all requirements of a dynamic, multi-user environment. It provides fast spatial indexing, retrieval, and multi-user update capability.

Specifically, SpatialWare meets the database community ACID test for:

- Atomicity: Commits all or nothing, essential for data integrity.
- Consistency: Consistency rules to allow system validation.
- Isolation: Data is not available to others until it commits and is in a consistent state.
- Durability: When data commits it is preserved with hardware or software failures.

Extensible, Adaptable Spatial Object Storage and Access

SpatialWare implements the proposed ISO Abstract Data Type (ADT) for spatial data, SQL/MM. It stores all spatial data as objects, and includes the following geometry types: 2 dimensional points, 3 dimensional points, polylines, splines, circular arcs, arcs or polylines and polygons.

Multiple Client support

SpatialWare supports several MapInfo clients; *MapInfo Professional* is a robust client wonderfully suited to the analyst environment. *MapInfo MapX* is an OCX that offers true Object Linking and Embedding (OLE) control, allowing you to integrate a mapping object into new and pre-existing business applications. *MapInfo MapXtreme* is a mapping application server for the addition of interactive maps on your web site. *MapInfo's MapMarker* is a state of the art geocoder for all your address matching needs.

ODBC client connectivity

The ODBC link complies with the Microsoft standard and provides an open and option filled connection to SpatialWare through the use of almost any commercial-off-the-shelf software (e.g. Delphi or Visual Basic). For example, Microsoft Access Query Builder can be used to submit traditional SQL statements or prepare pass through queries allowing the use of spatial operators and predicates.

C API

For custom development, SpatialWare provides a C API that exposes the full functionality of SpatialWare to application developers.

Powerful Standard SQL for Data Access

SpatialWare uses standard SQL commands to create, update, insert, delete, and select spatial objects in a table. It makes adapting to spatial information applications easier for users—lowering training costs and overall investment.

SpatialWare SQL Extensions facilitate the addition of powerful geospatial analysis extensions to a relational database, simplifying both query and analysis of complex geospatial data. It also extends popular relational database tools so you can manipulate and analyze geospatial data simply and efficiently. Unlike other implementations that limit you to functions or programming routines, SpatialWare technology is much more robust and flexible than a low level programmatic solution.

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SpatialWare has over 130 functions that allow you to analyze and manipulate geospatial data. They are grouped into six categories:

- **Spatial Predicates** analyze geospatial data types to see if they meet specific conditions. A true or false is returned. Overlaps and Contains are examples of predicates.
- **Spatial Measurement** Functions return number values that describe a spatial data type's shape, size, angle, rotation, or position. Examples are Length, Perimeter, and Height.
- **Spatial Functions** perform operations on spatial data types and return a spatial data type. For example, Union joins two spatial data types and returns the combined result as a new spatial object.
- **Constructor Functions** create new spatial objects. For example, Circle is a spatial data type using a point and radius to create the circle.
- **Observer Functions** return numbers, objects, or conditions from within a spatial object Assemble and Radius are examples of Observer Functions.
- **General Functions** include mathematical functions, identifiers, and indexing functions. For example, Pi and Degrees.

Flexible Data Loading & Data Interchange

Because the SpatialWare fully utilizes SQL, adding ASCII data is a simple matter of formatting the data with standard SQL commands. No special converters or formatting is required. By employing emerging industry standards, SpatialWare assures your future needs can be met while avoiding obsolescence.

SpatialWare also makes it easy for you to load MapInfo tables, AutoCAD dxf and SDTS files.

SpatialWare Oracle System Requirements

- Oracle 8.0.5
- Sun Solaris 2.6, HP-UX 11.0, Digital Unix 4.0D, or Windows NT 4 operating environment
- TCP/IP Network
- One copy of Oracle SQL Plus for administrator's use
- CD recommended on server for installation

Graphics display recommended on server

Call for more information:

1.800.327.8627 *or visit*

http://www.mapinfo.com or

http://www.spatialware.com \