



MapInfo SpatialWare 4.8 for Microsoft SQL Server Release Notes

These release notes contain information about SpatialWare for Microsoft SQL Server, release 4.8.

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Introduction

SpatialWare® allows you to store, access, manage and manipulate spatial data as a standard part of your business data. Spatial data contains geographic information so that it may be represented on a map. Customer records with name, address and telephone numbers are only records in a database. Once the address can be tied to a geographic location on earth, the record becomes spatial information. Display that record with other spatial information on a map and you can see the relationships among the records, allowing you to make more informed decisions about your business data.

With SpatialWare and SQL Server, spatial data may be a part of any SQL Server database insert, update or delete. You can query both spatial and non-spatial data within a single SQL Server query. Spatial data used in conjunction with non-spatial data is being used by companies to find their next customer, increase the number of products and services that are offered to customers, and serve customers better. Spatial data can help answer key questions such as: Where can I buy or service products? Can you get a service truck out to me today? Do you offer cellular service in my area? What is the average home value within a 5 KM radius? All these answers depend on knowing accurate location information. SpatialWare lets you capitalize on this information. You already store key business information in your database; your spatial data should complement and extend the analysis opportunities available from the database.

What's New...

In SpatialWare?

The following are new features in this release:

- Named instance support – SpatialWare installs on named instances of SQL Server.
- Spherical operations on longitude/latitude data – Functions have been added to `sp_spatial_query` and in the form of user-defined functions to support operations such as area, perimeter, and buffer on geometries in longitude/latitude systems.
- Performance improvements – Several performance optimizations have been made:
 - Insert/Update/Delete operations are significantly faster on spatialized tables.
 - Table joins are significantly faster on full-table joins in `sp_spatial_query`
 - Joins involving complex polygons and point/polygon combinations are faster in `sp_spatial_query`.
 - Batch updates, inserts, and deletes with spatialized/indexed tables are faster.
 - R-tree creation and access is improved resulting an incremental performance edge.
- The format of the new R-trees is slightly different, but old spatial indices will continue to work.

For TransactSQL Developers?

The following new features are of interest to developers who do server-side development, or Transact-SQL developers:

- Use of global temporary tables – You can now use global temporary tables in spatial joins. You can also create temporary R-tree indices on these tables.
- Nearest neighbor enhancements – A new stored procedure is included for nearest neighbor queries, which includes attribute qualifications for the search. For example, you can ask for the nearest five restaurants whose type is 'Chinese'. Note that this is different from looking for a fixed number of restaurants and discarding all restaurants that are not Chinese.
- Improved sp_spatial_query support:
 - Some anomalies resulting in truncation of char/varchar columns are removed.
 - Joined columns do not have to be spatialized to appear in a spatial join for optimal use
 - of indices.
 - Order by and Group by clauses can be used. You can use aggregate functions, spatial aggregates such as HG_AggUnion and scalar aggregates such as AVG and MAX, along with the Group by clause.
- Import utility – The recommended import utility to import data is MapInfo's EasyLoader. The commandline utility sw_MI_import is now a contribution with limited support. Note that EasyLoader has a commandline interface as well.

With Documentation?

SpatialWare's documentation has been enhanced. It now conforms to MapInfo standard documentation format, so that you have access to the following features in your online (HTML) SpatialWare User Guide:

- Index list – A more comprehensive index is provided.
- Searching – You can now perform key word searches. Search results are ranked. A higher ranking is assigned when a key word appears in a title. Otherwise, the ranking is by frequency of appearance in a given section.

A PDF copy of the SpatialWare User Guide is provided on your CD for easy printing.

Enhancements and Fixes

Although not an exhaustive list, the following are SpatialWare 4.8 fixes for several commonly reported bugs.

Incident Number	Description
15280	In some instances, SQL Server returned a non-descriptive error message when a query passed a non-existing table name. This issue is corrected.
22111	The following error with HG_Separation is now fixed: Sp_spatial_query: "Error message "SW-70802: Invalid parse tree detected in valuetarget_verify"

Incident Number	Description
22112	There was an instance of HG_NPoints not returning the same result from the UDF function versus the SQL Spatial function. This is now fixed.
22226	The "Memory allocation failure" that existed when passing text geometry without st_spatial into an SQL Spatial function is fixed.
25036	Sample code for UDF functions in the SpatialWare User Guide documentation is corrected.
28750	A memory leak existed in the function called func_geometry_union is now fixed.

Incident numbers are used to track reported bugs, and are used by MapInfo representatives when referring to issues.

Known Issues

The following table outlines known issues with this release. Each issue is preceded by its incident number (used by MapInfo to track the issue).

Incident Number	Description
15563	There is currently no way for an ODBC client to determine through any spatial query if a particular column is editable.
28117	SP_Spatial_Query do not handle multiple geometry columns. UDF's do handle multiple geometry columns.
28614	In some instances, issuing a ST_Overlap will not return the correct result. In these rare cases use the HG_Erase_Outside function instead.
28780	In some instances, when issuing the HG_SphericalDistance function against data that contains complex polygons (large geometries with large amounts of nodes) the performance might be less than optimal.
28815	Issuing the function HG_SphericalDistance on a Live table in MapInfo Professional could produce erroneous results. The same function issued on a Linked table works properly.
28843	Performing an OrderBy operation on a Live table in MapInfo Professional might not work as expected. The same process performed on a Linked table will work correctly.
28858	Issuing the GroupBy clause, by aggregate functions, within the expert dialog box in MapInfo Professional or MapBasic could produce erroneous results.
28893	Performing an GroupBy operation on a Live table in MapInfo Professional might not work as expected. The same process performed on a Linked table will work correctly.
29066 and 28768	When Latitude/Longitude values that are out of the valid range are passed to a spherical function, then the function does behave consistently and returns invalid numbers instead of a failure or NULL result.

Incident Number	Description
29067	The table named GRID15 in the WORLD sample database is not in the Latitude/Longitude coordinate system.
29103	<p>There is some unexpected behavior in SpatialWare 4.8 when using <code>sp_spatial_query</code> for certain statements having ORDER BY clauses.</p> <p>If there is a spatial function returning a geometry in the select list (e.g., <code>ST_Buffer</code>, or <code>HG_Union</code>), and at the same time a spatial function in the ORDER BY clause, then the spatial function returning a geometry in the select list will always return a NULL value.</p> <p>An example of this is:</p> <pre>exec sp_spatial_query ' select pin, st_buffer(sw_geometry,20,null), st_area(sw_geometry) as area from parcel order by area '</pre>
29143	<p>In some cases when inserting text geometries into a spatialized table geometries are rewritten into NULL strings. This is a difference in behavior from SpatialWare 4.6.</p> <p>In SpatialWare 4.6, when you insert invalid geometries into a table with an R-tree index they are rewritten with NULL values. In the same situation in SpatialWare 4.8 an invalid geometry is left invalid in the table. Subsequent spatial operations on that geometry will return an error.</p>
30127	Global temp tables are not accessible to non-DBO users (<code>sp_spatial_query</code>). Currently, this appears to be due to a problem with the views in <code>tempdb.INFORMATION_SCHEMA</code> in SQL Server. The effect is that global temp tables are accessible in <code>sp_spatial_query</code> only for logins who are DBO user in <code>tempdb</code> . (This can be tested in Query Analyzer by executing "use tempdb" followed by "select current_user" to see whether the result is "dbo".) There is no known workaround at present.

Known Issue with SQL Server

There is a known issue with the SQL Server 2000 Service pack 3. A stop and start of SQL Server will cause degradation in the performance of the components that use extended stored procedures, including:

- Operations that involved INSERT/UPDATE/DELETE on spatialized and spatially indexed columns.
- Any extended stored procedure that needs to internally connect to the database. For example, the components under `sp_spatial_query`.

Note that the performance degradation is not as noticeable in the second case as in the first.

This issue is due to an MDAC bug (number 94302) in the shared memory.

Verification

Should you run into this issue, you will see an error message similar to the following in the application log:

```
Error event id is 19011, Message "SuperSocket info: ConnectionListen(Shared-Memory (LPC)) : Error 5. "
```

Workaround

Suggested solutions include:

- Obtain a hotfix from Microsoft (<http://www.microsoft.com>). You will need to cite the 94302 reference number.
- Turn off shared memory in the client network configuration utility to disable shared memory.
- Replace the SQL Server SSMSLPCN.DLL with the SSMSLPCN.DLL (8.00.540) from SQL Server 2000 Service Pack 2.

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