# SQL Server Spatial-related

## Microsoft-supplied

SQL Server spatial data concepts - SQL Server BOL

Spatial indexes - SQL Server BOL

Properties and methods - BOL

Geography

* 24 OGC Instance Methods
* 16 OGC Static Methods
* 16 Non-OGC Instance Methods and Properties
* 4 Non-OGC Static Methods

Geometry

* 43 OGC Instance Methods
* 16 OGC Static Methods
* 11 Non-OGC Instance Methods and Properties
* 4 Non-OGC Static Methods

Spatial Indexes - used by STIntersects(), STOverlaps(), STEquals(), STTouches(), STWithin(), STContains(), STDistance(), and Filter(). Geometry indexes configurable with bounding box, 4 tesellation levels, max cells. Geography index does not configure bounding box.

SSMS - spatial view tab

Spatial Builder API - Isaac's blog (<http://blogs.msdn.com/isaac/>)

SQL Server GML subset schema - <http://schemas.microsoft.com/sqlserver/profiles/gml/>

Libraries for standalone installation - Microsoft SQL Server 2008 Feature Pack (Microsoft SQL Server System CLR Types) - <http://www.microsoft.com/downloads/details.aspx?FamilyId=C6C3E9EF-BA29-4A43-8D69-A2BED18FE73C&displaylang=en> is the feature pack.

## Virtual Earth Spatial-Related

Sign Up for a Developer Account at: <https://mappoint-css.live.com/mwssignup/Default.aspx?wa=wsignin1.0>

Virtual Earth Web Services: Docs At - <http://msdn.microsoft.com/en-us/library/cc980922.aspx>

MapPoint Web Services SDK: Docs At - <http://msdn.microsoft.com/en-us/library/dd443605.aspx>

Virtual Earth ASP.NET Map Control - Part of Live Services SDK: <http://dev.live.com/resources/downloads.aspx>

Latest SDK: <http://www.microsoft.com/downloads/details.aspx?FamilyID=f438b207-96af-497c-94db-152d48344af5&DisplayLang=en>

Docs at: <http://msdn.microsoft.com/en-us/library/cc788749.aspx>

Alternative Mapping APIs (subset)

MapPoint Web Service SDK: <http://msdn.microsoft.com/en-us/library/dd443605.aspx>

MapQuest developer: <http://developer.mapquest.com/>

Google Maps/Google Earth developer: <http://code.google.com/apis/maps>, <http://code.google.com/apis/earth/>

Yahoo!Maps developer: <http://developer.yahoo.com/maps/>

## SQL Server Spatial Blogs

Isaac Kunen - <http://blogs.msdn.com/isaac>

Ed Katibah - <http://blogs.msdn.com/edkatibah>

Johannes Kebeck - <http://johanneskebeck.spaces.live.com/Blog/>

Bob Beauchemin – <http://www.SQLskills.com/blogs/bobb>

David Lean - <http://blogs.msdn.com/davidlean/>

Morton Nielsen - <http://www.sharpgis.net/>

Simon Sabin - <http://sqlblogcasts.com/blogs/simons/>

Soul Solutions - <http://www.soulsolutions.com.au/Blog.aspx>

Virtual Earth, An Evangelist’s Blog (Mark Brown) - <http://blogs.msdn.com/virtualearth>

## Spatial Tools

SQL Server Spatial Tools project on CodePlex <http://www.codeplex.com/sqlspatialtools>

Proj.NET - .NET Spatial Reference and Projection Engine - <http://www.codeplex.com/ProjNET>

Commercial Loaders: Manifold, Safe FME Objects, ESRI ArcGIS 9.3

Morton Nielsen Spatial Utilities

* Shape2Katmai: Uploads ESRI Shapefiles to Microsoft SQL Server Spatial.
* Sql Spatial Query Tool: Queries MSSQL Server 2008 and displays geometry output on a WPF-based interactive map.

<http://www.iter.dk/page/SQL-Server-2008-Spatial-Tools.aspx>

<http://www.iter.dk/post/2008/02/24/Creating-OGC-conformance-test-map-in-SQL-Server-2008.aspx>

Geoquery - <http://www.geoquery2008.com/> (older versions on <http://www.conceptdevelopment.net/Database/Geoquery/> )

SharpMap driver for SQL Server - coming in SharpMap.NET 2.0

Spatial View - Simon Sabin <http://www.codeplex.com/SpatialViewer>

Virtual Earth -> Sql Server 2008 Geospatial Data Generator - <http://mikeo.co.uk/demo/sqlspatial/default.aspx>

Map Cruncher - <http://dev.live.com/virtualearth/mapcruncher/>

SQL Server Driver for UMN Mapserver - <http://mapserver.gis.umn.edu/>

IDV Spatial Solutions Wiki - <http://silverlight.idvsolutions.com/>

Deep Earth - Virtual Earth Library for Silverlight 2.0 - <http://www.codeplex.com/deepearth/>

Virtual Earth Javascript Intellisense Helper – <http://www.codeplex.com/VEJS>

Google Maps Javascript Intellisense - <http://blog.rodj.org/archive/2008/04/15/google-maps-javascript-intellisense.aspx>

## Spatial Whitepapers and Articles

Isaac - Introduction to Spatial Coordinate Systems: Flat Maps for a Round Planet <http://msdn.microsoft.com/en-us/library/cc749633(SQL.100).aspx>

Cross Compare SQL Server 2008 Spatial, PostgreSQL/PostGIS 1.3-1.4, MySQL 5-6

<http://www.bostongis.com/PrinterFriendly.aspx?content_name=sqlserver2008_postgis_mysql_compare>

EPSG Announces [Spherical/Web Mercator: EPSG code 3785](http://sharpgis.net/post/2008/05/SphericalWeb-Mercator-EPSG-code-3785.aspx)

OpenGIS specs - http://www.opengeospatial.org/standards

Virtual Earth Meets SQL Server 2008 and ASP.NET AJAX - Matthew Ellis - <http://magmainteractive.net/tutorials/post/Virtual-Earth-Meets-SQL-Server-2008-and-ASPNET-AJAX-Video-Tutorial.aspx>

Developing a Mobile Application Using Virtual Earth Web Services - <http://msdn.microsoft.com/en-us/library/dd483215.aspx>

Virtual Earth Articles: <http://msdn.microsoft.com/en-us/library/bb545001.aspx>

## Educational Resources

Understanding spatial relations - <http://edndoc.esri.com/arcsde/9.1/general_topics/understand_spatial_relations.htm>

## Code Examples

Marc Schweigert:

* [Saving Virtual Earth Polygons to SQL Server 2008](http://blogs.msdn.com/devkeydet/archive/2008/07/18/screencast-saving-virtual-earth-polygons-to-sql-server-2008.aspx)
* [Rendering Polygons from SQL Server 2008 on Virtual Earth](http://blogs.msdn.com/devkeydet/archive/2008/07/19/screencast-rendering-polygons-from-sql-server-2008-on-virtual-earth.aspx)

GEORSS Library for VE-compliant GEORSS - Part of [Litware HR reference application](http://www.codeplex.com/LitwareHR/SourceControl/DownloadSourceCode.aspx?changeSetId=13257)

Johannes Kebeck’s Demos (see blog)

* SQL Server 2008 and Virtual Earth Series
* Find Near Route
* Creating Thematic Maps
* Creating Heat Maps

Mark Brown’s Demos (see blog)

* Geocoding with the Virtual Earth Web Service
* Getting a Map with the Virtual Earth Web Service
* Routing in Virtual Earth Web Service
* Microsoft Virtual Earth on Windows Azure

Soul Solutions

Virtual Earth Map Control Videos - <http://tinyurl.com/veasp>

Virtual Earth Map Control Demo Code - <http://veasp.soulsolutions.com.au>

Other CodePlex:

* WiE – Demonstrates Mobile, GPS, SSDS
* MapPoint Geocoder SSIS component
* MSSqlSpatial
* SqlSpatialIndexing

## GPS enabled

* Portable GPS
* Car (Onstar)
* Phone
* Watch
* Camera (Nikon Coolpix S6000)
* Tour Guides
* Walkers (for elderly)

## Spatial Data -publically available

Tiger Census Data - <http://www.census.gov/geo/www/tiger/>

Cartographic Boundary Files - <http://www.census.gov/geo/www/cob/bdy_files.html>

WSDOT <http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>

Oregon Geospatial <http://www.oregon.gov/DAS/EISPD/GEO/alphalist.shtml>

David Lean's List: <http://blogs.msdn.com/davidlean/archive/2008/11/14/sql-spatial-how-to-get-spatial-data-free-maps-n-demographics.aspx>