Microsoft SQL Server
Partner Solution Case Study

Spatial Analysis and Geographic Data Firm Helps Clients Increase Efficiency and Insight

Partner: Esri
Website: www.esri.com
Partner Size: 2,900 employees
Country or Region: United States
Industry: Manufacturing—Software publishing

Partner Profile
Microsoft partner Esri is a leader in geographic information systems (GIS) and spatial analysis. Based in Redlands, California, the privately owned company provides GIS products and services to 350,000 customers in 150 countries.

Solution Spotlight
- Improves insight and analysis of GIS data in SQL Server 2012 by supporting full-globe spatial features.
- Increases efficiency by accelerating GIS performance and by streamlining database configuration.
- Minimizes GIS administrative costs.

For more information about other Microsoft customer successes, please visit: www.microsoft.com/casestudies

"With SQL Server 2012, customers can draw and store features including those that occupy a full globe—and take advantage of improved spatial types that allow users to query GIS data so that they can get information that is more precise."

Shannon Shields, Product Engineer, Esri

Esri wanted to streamline the configuration of its geographic information systems (GIS) and enhance spatial processing capabilities. In 2011, the company began work on making its products compatible with Microsoft SQL Server 2012 to take advantage of features such as automated spatial index setup and improved spatial data types. As a result, Esri can help its clients speed performance, improve insight, boost efficiency, and cut costs.

Business Needs

Esri helps individuals, companies, and governments understand the world by providing GIS software that creates and analyzes geographic data including maps and images. Organizations depend on geographic data for optimizing delivery routes, increasing insight into consumer buying behavior, studying environmental climatic science, establishing property and tax boundaries, and planning military operations.

Esri software runs on many operating systems and databases. However, clients often choose the Microsoft platform because it is affordable and easy to manage, and it provides mission-critical reliability. By using the Microsoft platform, customers can also take advantage of Microsoft SQL Azure as a cloud-based storage option for GIS data and application development.

Esri continually updates its offerings to support platform releases and to help customers overcome new challenges. In 2011, Esri wanted to simplify the manual

Microsoft SQL Server 2012

process needed to set up a spatial index in Microsoft SQL Server 2008 data management software. Spatial indexes are important in managing geographic data because they organize and describe data types in a way that delivers the right level of spatial feature selectivity and system performance. When a spatial index is not set up correctly, system responses can slow significantly. "Building a spatial index is considerably more complicated than building a regular database index," says Shannon Shields, Product Engineer at Esri. "The process often involved a lot of testing, and people needed to have a detailed understanding of their data to come up with effective index parameters."

Esri also wanted to offer customers who use relational databases such as SQL Server better spatial analysis capabilities to help clients simplify data manipulation, improve insight, and boost efficiency. For example, companies wanted to be able to use geographic data in SQL Server to quickly analyze how long it would take to drive to specific locations. In addition, Shields explains, "Many of our customers that deal with global-level data had to break large features down into smaller sections to be able to manage and store them properly in the SQL Server 2008 Geography data type."

Esri wanted to help customers simplify processes and enhance their insight into data.

Solution

In 2011, Esri began evaluating an early version of SQL Server 2012 to determine how its new capabilities could benefit customers. For example, the company was especially interested in adopting SQL Server 2012 to offer customers enhanced spatial data types for greater precision and data insight. In addition, by supporting SQL Server 2012, clients could simplify database setup with a new auto grid spatial index feature that automatically creates an effective spatial index.

In June 2010, Esri engineers began working on the next release of the company's core GIS product, ArcGIS, so that it runs on SQL Server 2012 Express, Standard, and Enterprise. To do so, engineers are using Microsoft Visual Studio 2010 Professional development system and Hyper-V technology in Windows Server 2008 R2. "We are seeing wide adoption of virtualization, including Microsoft Hyper-V," says John Baleja, Product Manager at Esri.

The company will release ArcGIS 10.1 before the end of September in 2012.

Benefits

By updating its software to use SQL Server 2012, Esri can help clients boost performance, speed efficiency, improve insight, and minimize costs.

Boosts Performance

Esri can help customers be more productive by supporting ArcGIS on SQL Server 2012. Not only is it faster than previous database releases, but it also simplifies administrative processes and minimizes testing so that customers can achieve an optimum balance between performance and spatial selectivity. "By choosing auto grid spatial index in SQL Server 2012, our customers can take some of the mystery out of spatial indexing, which is vital for good spatial performance," explains Thomas Dunn, Product Engineer at Esri. "SQL Server 2012 by default configures a very effective index that works in a variety of situations with different feature sizes and densities."

Companies can use ArcGIS with SQL Server 2012 to manage global spatial objects more quickly and with less effort. Shields says, "Our clients no longer have to divide large maps into smaller pieces. With SQL Server 2012, customers can draw and store features including those that occupy a full globe—and take advantage of improved spatial types that allow users to query GIS data so that they can get information that is more precise."

Minimizes Costs

Because SQL Server 2012 streamlines processes and efficiency, many Esri customers are eager to start using it. "Like its earlier releases, SQL Server 2012 is very easy for people to install and to get working on right away," says Baleja. "The database is also very affordable and easy to manage, so we expect to see a strong adoption of SQL Server 2012."

Software and Services

- Microsoft Server Product Portfolio
  - Windows Server 2008 R2
  - Microsoft SQL Server 2012

  Microsoft Visual Studio
  - Microsoft Visual Studio 2010 Professional
- Technologies
  - Hyper-V

Speeds Efficiency and Increases Insight

Document published April 2012

Microsoft