Why Microsoft SQL?

While many of BS&A Software's larger clients and consultants have instantly hailed their migration to Microsoft SQL and .NET programming tools, others have asked why.   This paper will attempt to outline the technical and business reasoning for this massive switch, and its advantages to customers' I.T. departments and application users.

Advantage of SQL

Reliability/Dependability-- With SQL Server, the client machines do not have direct access to the tables/data.   Because the client software is on a PC that is remote from the data, the client communicates with an intelligent database manager on the server.   The database manager has sole control over the data, and is local to the actual table.   Thus, the possibility that it will be interrupted mid-transaction is greatly reduced.   This eliminates half completed transactions, and many causes of general data corruption.

Data Integrity/Security

Data integrity in SQL Server is enhanced by the use of triggers that are applied whenever a record is added, modified, or deleted. Because this occurs at the table level, and is entirely handled by the server side database engine, audit processes (for example) cannot be avoided or bypassed.

MSSQL does not require a mapped drive letter or user-level access to the data tables.   All transactions are controlled centrally by the server, which operates under separate user/authority.   This eliminates the need for application users to have elevated security rights over the data.   It prevents the accidental or malicious deletion of data, and greatly reduces the possibility of malware infections.

Lower Overall Cost

Microsoft SQL has allowed BS&A Software to lower customer costs in several key areas:

~ Small and midsize municipalities are able to use the Microsoft SQL Express Database Engine, which is free of charge.

~ Many midsize and larger customers already maintain a Microsoft SQL Server for other applications, and don't have to re-purchase.

~ .NET-based development tools in conjunction with Microsoft SQL allow for more rapid development than was previously possible.

~ Because SQL and .NET are industry standards, it is easier to find additional qualified software developers, and much less time-consuming to train them.

Portability

With MSSQL, the data layouts are stored within the table structure, providing a simple delineation of fields and data types. Third-party reporting and ODBC access are greatly simplified.

SQL itself is an industry standard, which improves access to the raw data and simplifies the tools and methods used to do so. Microsoft SQL is a dominant player in that market space, and as such there are numerous third-party tools that help with backup, configuration, queries, and exportation of data into other formats.

Network Traffic/Speed

MSSQL is highly optimized for modern network environments.   With the database manager doing a majority of the work, network traffic is greatly reduced in a client/server scenario, often by many orders of magnitude. This improves network reliability (by reducing collisions, etc.) and adds to overall stability and performance.

Scalability

MSSQL is uniquely adept at supporting a wide range of network and database sizes. This database engine is equally adroit at supporting 2 users, as it is 2000.   While it is obvious that larger networks will require greater infrastructure, and larger servers, the underlying data doesn't need to change.

Many of the largest, most active databases in the world are Microsoft SQL databases.   So it can be certain that as usage increases, communities grow, historical data multiplies, MSSQL is able to handle the load without complicated upgrades or conversions.

In Summary

In today's rapidly developing world of technology, Microsoft's SQL Server has many advantages as a database platform. Choosing Microsoft .NET programming tools and Microsoft SQL Server was perhaps the simplest part of the decision to rewrite an entire suite of applications.   Given the advantages listed previously, the choice was obvious.

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