Top 10 new features in SQL Server 2005

In the business world, everything is about being "better, faster and cheaper" than the competition -- and SQL Server 2005 offers many new features to save energy, time and money. From programming to administrative capabilities, this version of SQL Server tops all others and it enhances many existing SQL Server 2000 features. Here I'll outline the 10 most significant new features in order of importance:

1. T-SQL (Transaction SQL) enhancements

T-SQL is the native set-based RDBMS programming language offering high-performance data access. It now incorporates many new features including error handling via the TRY and CATCH paradigm, Common Table Expressions (CTEs), which return a record set in a statement, and the ability to shift columns to rows and vice versa with the PIVOT and UNPIVOT commands.

- More information from Microsoft.

2. CLR (Common Language Runtime)

The next major enhancement in SQL Server 2005 is the integration of a .NET compliant language such as C#, ASP.NET or VB.NET to build objects (stored procedures, triggers, functions, etc.). This enables you to execute .NET code in the DBMS to take advantage of the .NET functionality. It is expected to replace extended stored procedures in the SQL Server 2000 environment as well as expand the traditional relational engine capabilities.

- More information from Microsoft.

3. Service Broker

The Service Broker handles messaging between a sender and receiver in a loosely coupled manner. A message is sent, processed and responded to, completing the transaction. This greatly expands the capabilities of data-driven applications to meet workflow or custom business needs.

- More information from Microsoft.

4. Data encryption

SQL Server 2000 had no documented or publicly supported functions to encrypt data in a table natively. Organizations had to rely on third-party products to address this need. SQL Server 2005 has native capabilities to support encryption of data stored in user-defined databases.

- More information from Microsoft.

5. SMTP mail

Sending mail directly from SQL Server 2000 is possible, but challenging. With SQL Server 2005, Microsoft incorporates SMTP mail to improve the native mail capabilities. Say "see-ya" to Outlook on SQL Server!

- More information from Microsoft.

6. HTTP endpoints
You can easily create HTTP endpoints via a simple T-SQL statement exposing an object that can be accessed over the Internet. This allows a simple object to be called across the Internet for the needed data.

- More information from Microsoft.

7. Multiple Active Result Sets (MARS)
MARS allow a persistent database connection from a single client to have more than one active request per connection. This should be a major performance improvement, allowing developers to give users new capabilities when working with SQL Server. For example, it allows multiple searches, or a search and data entry. The bottom line is that one client connection can have multiple active processes simultaneously.

- More information from Microsoft.

8. Dedicated administrator connection
If all else fails, stop the SQL Server service or push the power button. That mentality is finished with the dedicated administrator connection. This functionality will allow a DBA to make a single diagnostic connection to SQL Server even if the server is having an issue.

- More information from Microsoft.

9. SQL Server Integration Services (SSIS)
SSIS has replaced DTS (Data Transformation Services) as the primary ETL (Extraction, Transformation and Loading) tool and ships with SQL Server free of charge. This tool, completely rewritten since SQL Server 2000, now has a great deal of flexibility to address complex data movement.

- For more information from Microsoft.

10. Database mirroring
It's not expected to be released with SQL Server 2005 at the RTM in November, but I think this feature has great potential. Database mirroring is an extension of the native high-availability capabilities. So, stay tuned for more details…. For now, here's

- more information from Microsoft.

Two technologies that cannot be left out of any SQL Server 2005 top 10 list are Analysis Services and Reporting Services. Although neither technology will be introduced with SQL Server 2005, combining them with SQL Server Integration Services rounds off Microsoft's core business intelligence suite. These technologies are essential to business intelligence success. Learn about the new functionality and how organizations are implementing it with Project Real.