Foreword

Roger Wolter

MY FIRST JOB with Microsoft was in the COM+ group. One day I was having a problem getting an OLE DB sample program I was writing to work, and I asked someone who I should talk to about OLE DB. They said Bob Beauchemin. I asked, "Isn't there someone on the MDAC team I should talk to first?" and they replied, "The MDAC guys know about parts of OLE DB, but Bob knows it all." I think that after reading the book that Bob, Dan, and Niels have put together, you'll agree—Bob still knows it all.

SQL Server 2005 is the biggest release from a feature content point of view that the SQL Server team has ever done. Some may argue that the major rewrite in SQL Server 7 was more significant, but the feature content in SQL Server 2005 is larger than in any previous release. Given this, it may seem like hubris to write a book about all of SQL Server 2005, but I think this book is clear evidence that it's possible. This book doesn't cover every new feature in SQL Server 2005, but it describes the most significant ones in enough detail to be useful to anyone who needs to get up to speed on what SQL Server 2005 has to offer.

This book is also extremely well researched. The Service Broker chapter, for example, started with a two-hour conversation with me in a Starbucks in downtown Seattle, extended through many long e-mail threads, and went through a half-dozen different reviews before it ended up in the book. In addition to the research, the material in this book was used in an "Introduction to Yukon" class that has been presented to hundreds of students all over the world, so only the topics these students found most relevant have survived.

The first major section of the book deals with the most significant new feature in SQL Server 2005—the new programming model provided by the CLR engine deeply embedded into the SQL Server engine. This feature means stored procedures, triggers, and so on can be written in most .NET languages. I can't wait to see the first COBOL stored procedure running in SQL Server. As we have come to expect from DevelopMentor authors, these chapters are replete with well-documented code samples. Although this section was written with the database developer in mind, it will also be very useful to the DBA who has to deploy and manage CLR code in the database. After the CLR chapters, there is a chapter on the new security features that make SQL Server 2005 more secure and easier to configure with the exact permissions each user needs. The final chapter in this section covers the feature enhancements designed to make the T-SQL programmer's life easier and more productive. The highlights here are the `RANK` and `PIVOT` commands, recursive query support, and snapshot isolation. All these features have been near the top of the SQL Server wish list for several years.

The next section covers the improvements to XML integration into the database that are included in SQL Server 2005. The evolution from the XML-relational mapping technology introduced in SQL Server 2000 to the native `XML` data type functionality in SQL Server 2005 is presented clearly, and includes an explanation of the strengths and weaknesses of each approach and when to use each technology. The XQuery chapter is an excellent tutorial on the powerful new query language for XML data introduced in SQL Server 2005. This section concludes with coverage of the new HTTP/SOAP interface that makes it easy to expose your SQL Server 2005 stored procedures and functions as SOAP methods directly from the database without requiring a Web server.

The third part of the book moves from the server features to the new client-side features included in the Visual Studio release that accompanies SQL Server 2005. The first chapter emphasizes the client changes necessary to expose the new server features, like the `XML` data type and CLR user-defined types. There is also a good presentation of how to decide when to implement a function as a CLR stored procedure and when to implement it as client or middle-tier logic. This decision is much less clear-cut now that CLR code can run equally well in the server and in the client, and this section gives you the information you need to make that decision. There is also excellent coverage of the new client-side XML features available in this release. Many of the most requested features from SQLXML users are included.

Last but certainly not least, from my point of view, is excellent coverage of the SQL Server Service Broker. I spent quite a bit of time with Bob, Niels, and Dan indoctrinating them into the "Zen of Service Broker," and they put together an excellent explanation of how the Service Broker revolutionizes the way users will write database applications in the future. The power of queues as first-class database objects is presented very effectively.

This brief summary doesn't do justice to the broad coverage of all the new features included in this book. If you plan to design, implement, deploy, or support applications on SQL Server 2005, this is the book for you to start with. The clear explanations and examples will help you quickly master the most comprehensive SQL Server release ever.

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Foreword

Andy Gammuto

AROUND THE TIME Microsoft SQL Server Yukon went into alpha, I was asked to take on the responsibility of program manager for Yukon evangelism. Among the many decisions to make and challenges to overcome, perhaps the greatest was finding a credible way to prove to developers that this newest release of SQL Server was worthy of their time and interest. After ten years at Microsoft, I knew that the key to achieving this lofty goal was to assemble the right team. I was fortunate to be joined by Don Petersen and Roger Doherty, both capable Microsoft veterans I had worked with before.

Microsoft SQL Server 2005 represents a major evolution of the product. The range of new capabilities makes it a very compelling and feature-rich release. While offering world-class capabilities in terms of management, performance, and reliability, it helps developers and database administrators simplify and reduce the effort involved in creating, managing, and deploying database applications. At the same time, it delivers economy without sacrificing anything. The tough part was figuring out how to prove this to the developer community.

As a former code slinger, I know that developers are skeptical by nature—particularly about claims about new and improved products. More importantly, they thrive on their curiosity—diving into products and technologies that interest them. They live to figure out how products like SQL Server work, and develop expertise that often rivals the people who wrote it.

We decided to reach out to developers early and build a program that delivered a hard-core drill-down on SQL Server Yukon beta 1 to prove how good it is. The experience had to be something worthy of their valuable time and

worthy of taking them from their demanding schedules. We wanted to deliver five-day instructor-led training workshops and follow-on labs that were so content-rich they would make your head hurt. It was an ambitious plan. Our predicament was that outside of the SQL Server development teams who were working on the product, only a handful of experts at this early stage of Yukon's development were capable of creating and delivering this sort of training worldwide. Our search ended with DevelopMentor, and this is how I came to know Bob Beauchemin, Dan Sullivan, and Niels Berglund.

I admit to being cynical at first about our ability to accomplish the very high goals we set for our program. Developer training was one of the building blocks of our plan. If it wasn't high quality, we were doomed to mediocrity at best. We put our own reputations on the line and in many ways our faith in the skills of Bob, Dan, and Niels. The results from the first phase of our SQL Server Yukon evangelism program, which we called "Ascend," were remarkable. After observing the training workshops firsthand, I can honestly say these three guys are among the best I've seen. They are eerily consistent not only in their deep technical knowledge but also in their skill as trainers. It is almost as if some kind of mind meld has occurred between them. There was an astonishing energy in our Ascend training workshops. This is what happens when you combine smart developers with plugged-in trainers, working together to explore the inner workings of a cool new product.

Bob was the first to tell me that he and his colleagues were writing a book about SQL Server 2005. Naturally, I was thrilled with the idea, but it wasn't until after I met and spent some time with Dan and Niels that I realized how much of their combined knowledge and experience could be packed into this book. By virtue of what they do, trainers gain insight into product behaviors and experientially figure out what is happening. They get the most puzzling questions from their students and learn how to explain things clearly. There is no substitute for that kind of experience, and drawing from that makes for a great book.

It is evident that Microsoft SQL Server is a labor of love for the authors of this book. There is much to discover in SQL Server 2005, and I feel certain you will find value in this book as your introduction to exploring the product and as a useful guide for developers who are architecting and building their next-generation .NET applications.

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Foreword

Roger Doherty

I BET MY CAREER on SQL Server many years ago, when I joined Microsoft from Sybase in 1991. Over the years, I've watched SQL Server grow and change from a "departmental client/server database" running on OS/2 written by a small team of developers, to the rich enterprise database and development platform that it is today. In June 2003, I joined a team responsible for driving Microsoft's global developer evangelism initiative for SQL Server 2005, known as "Yukon Ascend."

Back in 1991, there was a small group of people at Microsoft who could speak that bizarre foreign tongue known as "SQL." It was always fun seeing e-mails come across the wire, where someone asked for technical help on "Sequel Server," or asking, "When will SQL Server incorporate FoxPro's Rushmore technology?" I took pleasure in seeing C++ programmers being confounded by simple join syntax. Databases in general were a mystery, a black art.

Things couldn't be more different today. It's been fun watching Microsoft try to figure out where this technology fits and how to integrate it with our operating systems, development tools, and applications. The development team is enormous, with literally thousands of developers and testers solving incredibly hard problems. The product is big; it's not just a relational database anymore. There are so many powerful integrated capabilities that it's difficult to keep track of them sometimes.

It's hard to overstate the impact of .NET on the SQL Server landscape. All things new and exciting seemed to be the domain of .NET, and poor old SQL Server was relegated to being "just a database." The SQL Server

2005 development team mobilized around the idea of embracing and extending .NET in powerful ways. As a result, SQL Server 2005 is going to bring .NET into the grasp of the database developer. Middle-tier programmers are going crazy over powerful new features like cache invalidation and ObjectSpaces.

In short, the boundaries between database and middle tier have blurred, and these fiefdoms are being invaded. Developers are wearing lots of hats these days. They need to understand core relational database fundamentals, but they need to know how to write managed code and how to deal with things like XML and Web Services. So when we were trying to decide who we should partner with to get developers up to speed, the choice was clear.

Bob, Dan, and Niels wound their way through the maze of developers and program managers known as the SQL Server development team. Through trial and error and sheer determination, they explored some of the most esoteric aspects of SQL Server 2005 and figured out how to apply these capabilities in practical ways. After all of this painstaking R&D, they took the show on the road for us, delivering a rock-solid DevelopMentor class known as "Essential SQL Server 2005 for Developers" to a worldwide audience.

We used this class to train the Microsoft field technical personnel and many of our top customers and partners in Yukon Ascend. It's been a long time since I've heard the kind of positive feedback we received from this class, and I know that it's due to the deep knowledge, experience, and understanding that Bob, Dan, and Niels bring to the table. I know that you will find this book an enlightening and worthwhile read.

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