

SQLintersection

Session SQL03

Best Practice ORM Usage with SQL Server

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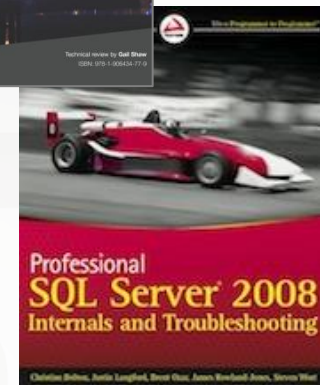
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- Co-author: SQL Server 2008 Internals and Troubleshooting
- Microsoft Certified Master: SQL Server 2008
- SQL Server MVP since October 2008
- Author of Using Extended Events whitepaper on MSDN
- Developed Extended Events Manager SSMS Addin for SQL Server 2008 on Codeplex and SSMS 2012 Addin for 2008 backwards compatibility
- Member of the Tampa SQL Server User Group and PASS





- **Team of world-renowned SQL Server experts:**

- Erin Stellato (@ErinStellato)
- Glenn Berry (@GlennAlanBerry)
- Jonathan Kehayias (@SQLPoolBoy)
- Joe Sack (@JosephSack)
- Kimberly L. Tripp (@KimberlyLTripp)
- Paul S. Randal (@PaulRandal)

- **Instructor-led training: Immersion Events (US & UK)**

- **Online training:**  <http://pluralsight.com/>

- **Consulting: health checks, hardware, performance, upgrades, virtualization, design review, HA/DR, scalability**

- **Remote DBA: system monitoring and troubleshooting**

- **Conferences: SQLIntersection, PASS Summit**

- **Become a SQLskills Insider**

- <http://www.sqlskills.com/Insider>



SQLskills Immersion Events

- **IE0: Accidental/Junior DBA, February 3-5**
- **IE1: Internals and Performance, February 3-7**
- **IE2: Performance Tuning, February 10-14**
- **IE3: High Availability and Disaster Recovery, February 17-21**
- **IEHW: SQL Server Hardware, February 6-7**
- **IEBI: Business Intelligence, February 10-14**
- **IEDEV: Developers, February 17-21**

SQLskills Pluralsight Courses

- 18 courses and counting...
- SQL Server 2012: Installation and Configuration
- SQL Server: Transact-SQL Basic Data Retrieval
- Developing and Deploying SQL Server ISV Applications
- SQL Server: Benchmarking and Baselineing
- SQL Server: Common Performance Issue Patterns
- SQL Server: Introduction to Extended Events
- SQL Server: Logging, Recovery, and the Transaction Log
- SQL Server: Performance Troubleshooting Using Wait Statistics
- SQL Server: Transactional Replication Fundamentals
- SQL Server: Virtualization
- SQL Server: Advanced Extended Events

My Background

- Started out as a developer working with Delphi and then .NET with SQL Server
- Transitioned to DBA role after four years in a developer role
- Continued to write .NET code as a DBA to assist developers with implementing flexible best practice solutions with SQL

Overview

- **ORM misconceptions**
- **The truth about ORMs**
- **Object-relational impedance mismatch**
- **Reasons ORMs are popular**
- **Reasons that ORMs are problematic**
- **Common ORM problems**
- **Demos**
- **Questions**

ORM Misconceptions

- Used by lazy developers
- Bad for performance
- Cause implicit conversions
- Cause plan cache bloat
- Write bad Transact-SQL
- Create security problems
- Should be avoided

The Truth About ORMs

- **Object-relational impedance mismatch is a real problem**
- **Every object-oriented application has some form of ORM**
 - Might be hand written leveraging ADO.NET
 - Could be code generated using popular tools
- **ORMs are just another tool in the toolbox**
 - If you try to drive a screw in with a hammer you will have bad results

Object-relational Impedance Mismatch

- **Object-oriented applications**
 - Model objects not necessarily data
 - Objects have four basic components
 - Identity, state, behavior, encapsulation
 - May or may not enforce data integrity rules
 - Objects are not transactional
- **Relational database management systems**
 - Model data in a normalized format
 - Enforces integrity rules using foreign keys
 - Data access leverages transactions

Reasons that ORMs are Popular

- **Faster development**
 - ORMs can cut development times by 80%
- **For most operations, ORMs provide equivalent coding to manually developed code**
 - Singleton INSERT, UPDATE, DELETE, SELECT
- **ORMs have matured over the last few years reducing problems that previously existed**
 - Smarter type mappings
 - RDBMS specific implementations

Reasons that ORMs are Problematic

- **Code-first development builds application object models first**
 - Sacrifices good relational database design in favor of object-based database design
 - This really makes sense to developers
- **DBAs don't understand application development or coding problems**
 - Leads to stone-walling ORMs and bad team communications between DBAs and Devs
- **Performance tuning is not applied as a part of the development process**

Common ORM Problems

- **N+1 SELECT problems**
- **Implicit conversions**
- **Array-based filters**
 - Results in long IN statements (best case)
 - Results in weird UNION statements
- **Complex SELECT query generation for JOIN operations or aggregates**

ORM Profilers

- Work similar to SQL Server Profiler but for code generated by ORM tools
- Critical for performance tuning and a successful ORM implementation

References

- Combating the Select N + 1 Problem In Nhibernate (<http://bit.ly/NHib-NPlusOne>)
- Vietnam of Computer Science (<http://bit.ly/umE>)
- Coding Horror (<http://bit.ly/agZZ9k>)
- How to fail at ORM (<http://bit.ly/9wdJoF>)

Review

- **ORM misconceptions**
- **The truth about ORMs**
- **Object-relational impedance mismatch**
- **Reasons ORMs are popular**
- **Reasons that ORMs are problematic**
- **Common ORM problems**
- **Demos**
- **Questions**

Questions?

*Don't forget to complete a session evaluation form
and drop it off at the conference registration desk.*

Session: SQL123

Thank you!

