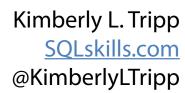
Other Concerns and Considerations







Overview

- We've just touched on one of the most problematic areas of stored procedure performance: parameter sniffing
- There are other concerns
 - Connection settings
 - Execution context
 - Resource governor pools
 - Coding practices
- I'm going to cover these in greater depth in Part 2

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Demystifying Plan Caching for Bad Plans

- Most common considerations around bad plans
 - Parameter sniffing
- How do you resolve parameter sniffing?
 - Don't go straight to updating statistics
 - Try sp_recompile procedure_name first
 - Use OPTION (RECOMPILE) as an intermediate solution
 - Don't leave it there: FIX it with a more permanent solution that doesn't require
 EVERY execution to be recompiled
 - Find a more permanent solution that uses less CPU
 - Modular code / branching
 - If you have multi-purpose procedures then use sp_executesql with targeted recompiles

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Secondary Concerns and Considerations

Plans go into cache based on many factors

- The application from which you connected
- The session settings that you have established and/or changed
- The resource governor pool in which you're a member
- The use of temporary or "transient" objects
 - Local or global temporary stored procedures
 - Temporary objects created / used inside stored procedures
- There are many other factors, see Part 2 for more information!

But, can you have too many recompiles?

- Yes: however, it's not as bad as SQL Server 2000 because only the statement is recompiled (from SQL Server 2005 onward), not the entire procedure
 - SQL Server 2000 had horrible problems with compile locks, see KB article 263889:
 Description of SQL Server blocking caused by compile locks
- Yes: however, sticking to a variety of best practices can help to DRASTICALLY minimize that!

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Optimizing Statement and Procedure Performance

- Between these first two courses, you have a complete understanding of the most commonly problematic areas around caching, compilation, and performance:
 - SQL Server: Optimizing Ad Hoc Statement Performance
 - SQL Server: Optimizing Stored Procedure Performance Part I
- There are still other areas that can frustrate you but there IS a rhyme and a reason to it and there is a methodology for tracking it down and resolving it
 - Compiled plans aren't always best
 - Recompiling isn't always a bad thing
 - Check out Part 2 for additional stored procedure considerations
- It depends!
 - And now you know [mostly] what it depends on!



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Just the Tip of the Iceberg

- Data types: column size / row size / consistency
 - Released course: SQL Server: Why Physical Database Design Matters
- Ad hoc statements: plan cache / parameter sniffing
 - Released course: SQL Server: Optimizing Ad Hoc Statement Performance
- Stored Procedures: Parameter Sniffing / Recompilation
 - THIS COURSE
- Indexes: creation / overhead / maintenance
 - Coming soon: multiple courses on index internals, data access patterns, and indexing strategies
- Statistics: accuracy / cardinality estimation / skewed data / histogram limitations / uneven distribution and correlated columns

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Where To Go Next?

- Check for new Pluralsight courses from me
 - I'm going to stay within the developer/database development area for my first few courses
 - Targeting best practices and typically using a "problem/solution" approach
- Check out these SQLskills courses on Pluralsight that are the most appropriate for you to consider next:
 - Developing and Deploying SQL Server ISV Applications
 - SQL Server: Common Performance Issue Patterns
 - SQL Server: Troubleshooting Query Plan Quality Issues
- Everyone using SQL Server should watch Paul Randal's course: SQL Server: Myths and Misconceptions
 - You'd be surprised at how many of these you might think you know
 - It gives you all sorts of great advice across the entire product! Do Not Place Anything

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Course Summary

- Performance doesn't just "happen"
- Do not expect the SQL Server defaults to perfectly support every environment and every use case
 - It's not one-size-fits-all!
- The effect on performance of using only one strategy for all of your procedures DOES NOT WORK
 - Use the right method for the right request (and right data pattern)
 - Caching isn't always good... it isn't always bad either
 - Knowing what works and how to test it is the key to good statement execution as well as reducing plan cache pollution and CPU!
- Thanks for watching!

