

SQL Server / .NET Engineering Audit

ENGINEERING AUDIT ESSENTIALS

Time Frame

- 4 weeks to 10 weeks, depending upon system scope and complexity

Deliverables

- Documented Engineering Audit Findings and Recommendations
- Detailed Remedial Engineering Examples
- Audit Findings Review Sessions (GoToMeeting)

Typical Cost

- From \$10K to \$25K

Microsoft .NET/SQL Server applications are often comprised of a large number of inter-related and complex moving parts — table structures, referential integrity rules and constraints, indexes, stored procedures, views, user-defined functions, and queries — all required to work accurately and efficiently with .NET application-side forms, queries, 3rd-party controls, web services, and a properly configured database server.

The root-cause behind poor system performance (and other issues such as record locking, poor data integrity, high maintenance costs, etc.) can almost always be traced back to poor system design and/or code implementation deficiencies. PCA employs a standard engineering audit check-list — in combination with many years of experience and advanced database analytics tools — to identify root-causes behind system performance, reliability, data integrity, security, and maintenance cost issues.

Our Engineering Audit team will document our findings, and make specific remedial engineering recommendations to improve the quality and maintainability of your Microsoft.NET/ SQL Server system.

"I got to the bottom of my system issues quickly, and for a fraction of what I was spending internally."

- David Crumley, Director
The Servo Group

ABOUT PCA

Founded in 1992, PCA is a nationally-recognized database engineering services firm located in Boston — with senior engineering professionals using advanced tools and practices that are dedicated to solving custom Microsoft .NET and SQL Server business needs.

Warning Group	Warning Level	Warning Severity	Risk Of Fixing	Warning Message							
Data Structure Issues	object	High	Medium	The table doesn't participate in any relationships.							
		Low	Low	Page Verify not equal to CheckSum							
		Medium	Low	Quoted Identifiers Enabled not equal to true							
		Medium	Low	ANSI Warnings enabled not equal to true							
		Low	Low	Date Correlation Optimization enabled not equal to true							
		Medium	Low	SQL Server Major Release Version is not up to date							
		Medium	Low	SQL Server Minor Release Version is not up to date							
		Medium	Low	SQL Server version installed is not the latest							
		Medium	Low	ANSI PADDING Enabled not equal to true							
		Medium	Low	Concatenate Null yields null not equal to true							
Indexing Issues	index	High	Low	Duplicate key indexes present							
		Medium	Low	Clustered Index is Multiple Column, and Non-Clustered Index Exists							
		Low	Medium	Clustered Index is wide (combined size greater than 16 bytes) (No other NC indexes)							
		Medium	Low	Clustered Index is a unique identifier, and IsRowGuid is NOT set							
		Medium	Low	Indexes are equal except for included columns							
		Medium	Low	Seeks & lookups low but update high							
		Medium	Low	Clustered Index is an int, but not an Identity (Warning possible Page Split problems)							
		Medium	Low	Clustered Index is Multiple Column							
		Medium	Low	Clustered Index is Multiple Column, and PK columns are FKs to other tables							
		Medium	Low	Clustered Index is wide (combined size greater than 16 bytes) and there are Non-Clustered Index with high numbers of scan							
Naming Conventions	column	High	Low	Tables which are Heaps (No Clustered Index), and Non-Clustered Indexes Exist							
		Low	Low	Columns ending in GUID and ID should be either Primary or Foreign Key							
		Medium	Low	Scalar functions that are not named fn*							
PCA Conventions	object	Low	Low	Store Procedure name starts with sp_ or dt_							
		Low	Low	Missing CreatedBy column in the table							
		Low	Low	Missing CreatedOn column in the table							
		Low	Low	Missing UpdatedBy column in the table							
Programming Issues	object	Medium	Low	Missing UpdatedOn column in the table							
		Low	Low	Table without at least two unique keys							
		Medium	Low	Table does not have TimeStamp data type column							
		High	Low	Global variable @@identity is used in the stored procedure							
Usage Issues	index	High	Low	Warnings for CURSORS that are not LOCAL FAST_FORWARD							
		Medium	Low	Stored Procedures, Functions, and Views should not have SELECT* in them							
		Medium	Low	Stored procedures with Transactions should also have Try Catch block in them							
		Medium	Low	Select * or Top inside an Exists () statement							
		Medium	Low	Indexes unused since last reboot							
		Medium	Low	Indexes are candidates for deletion							
		Medium	Low	Rarely used Indexes							
		Low	High	Tables unused since last reboot							
		Medium	Low	Table may not be in use.							
		Medium	Low	Views unused since last reboot							

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