

Case Study

Software and Internet Business



Disappointed Customers Turned to Happy

Service Type:

SQL Consultation > Incident Support > Deadlocks & Timeouts

Duration: ~4 Months

Summary

Deadlocks & timeouts had made some customers of a software company disappointed. Four short-term solutions applied and three long-term solutions recommended.

Story

A software company had created a Windows-based application written basically with Java and Oracle for insurance businesses. Because of their customer requests, recently they had added the ability to support SQL Server to their software. After a while, some deadlocks and timeouts were reported by SQL

Why SQLMax?

EXPERIENCE

- 1,900+ SQL Jobs, Stored Procedures, Functions and SSIS Packages Tuned
- 100+ DBAs and Developers Have Relied on Our SQLMax Library
- 400+ Consultations Performed
- 40+ Databases Designed and Developed

SOLUTIONS

- Complete Set of SQL Server-Focused Solutions
- Comprehensive Technical Coverage

SUPPORT

- Full-time Services: 365*7*24
- Dedicated Account Managers
- World-Class Customer Service

OUR TEAM

- Experienced & Knowledgeable Dedicated Team
- Clear Focus on MS SQL Server
- 100% US-Based

Server customers making them disappointed.

The company's own team was able to find the source of the issues and had tried to solve it but the problems seemed endless and the creditability of the company was going to be at stake.

Situations

A quick solution to remove deadlocks and timeouts was expected considering customers' serious complains

Approaches

At first we tried to figure out the area of deadlock issues and duplicated the errors while SQL Profiler was active to log all deadlock information.

The deadlocks were happening when there were more than 3 concurrent users working with the same part of the application and the root cause of timeouts was long blocks.

After doing some deep analysis on both SQL scripts and middle tier codes, we figured out these are the main sources of the issues:

- Implement business logics on triggers instead of stored procedures
- Data update in a loop of middle tier making lock escalation
- Use a SSMA tool to immigrate Oracle codes to SQL Server and automatic generated codes were not optimized

To solve the issues as soon as possible we took the following actions and kept the customer informed about the downsides of the short-term solutions

Short-term Solutions

- To set SQL Server database on "SNAPSHOT ISOLATION LEVEL" to act like Oracle when it comes to concurrent data modifications
- To use "NOLOCK" hint on select statements
- To remove five main heavy cursors from the code and convert it set-based SQL scripts
- Avoid lock escalation to page level

And we recommended the technical team of the company to go ahead and perform the following long-term solutions to avoid downsides of the short-term solutions

Long-term Solutions

PROCESSES

- Clear Work Flow
- Customizable Service Level Agreements (SLAs)
- Transparent Terms & Conditions
- At Will Contracts Termination

SECURITY & CONFIDENTIALITY

- Customer Data Security Made by Most Advanced Technologies
- Customer Information Confidentiality

CUSTOMER SATISFACTION

- 80% Repeat Businesses
- Customer Satisfaction Gaurantee
- Free Cost/Time Estimation
- Free Initial Consultation

- Get rid of all triggers and put the logics in the stored procedures
- Avoid calling modification statement in a loop and try to do a batch update/delete/insert
- To replace all heavy cursors with pure SQL scripts or while-loops

Results

Having the short-term solutions applied wiped out all deadlock issues with the cost of putting tempdb on pressure. It's worth it because there was no error raised up anymore and the team had time to implement the long-term solutions.

Benefits

Customers using SQL Server edition didn't get lost.

Vice President of Service Delivery

"SQLMax's team can be defined in five words:
friendly, educated, focused, quick and result
oriented"