

MS SQL

Optimization, Refactoring

Case Study



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Optimizing MSSQL Performance for a Delhi-Based Retail Business

Technology Stack: Microsoft SQL Server 2016, T-SQL, SSMS

Outcome: Achieved a 40x improvement in query performance

Background

A retail chain with multiple outlets in Delhi faced significant performance issues with their MSSQL-based inventory management system. The system experienced slow response times during peak hours, leading to delays in stock updates and billing processes.

Challenge

The primary challenges included:

- High disk I/O operations due to inefficient queries
- Excessive use of index scans
- Lack of optimized stored procedures

Solution

SoftPie Technologies conducted a comprehensive analysis and implemented the following optimizations:

- **Query Optimization:** Revised inefficient queries to reduce unnecessary joins and eliminate redundant function calls, leading to reduced CPU and memory usage.
- **Index Optimization:** Revamped outdated or unused indexes and implemented more efficient ones, significantly improving data retrieval times and reducing page reads.
- **Stored Procedure Refactoring:** Streamlined over 800 stored procedures by reducing nested calls and improving execution plans.

Results

The optimizations led to:

- **Performance Improvement:** Query execution time reduced by approximately 40 times.
- **Reduced Disk Reads:** Disk read operations decreased from over 687,000 to just 90 per query.
- **Enhanced User Experience:** Faster response times during peak hours, improving overall customer satisfaction.

Conclusion

This project demonstrates SoftPie Technologies' ability to deliver significant performance improvements in MSSQL environments, even for small to medium-sized businesses. By focusing on query optimization, index management, and stored procedure refactoring, SoftPie Technologies helped the client achieve substantial operational efficiency gains.