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Appendixes

Appendix A - User interface and architecture diagram of the system.

Security Module - Authentication

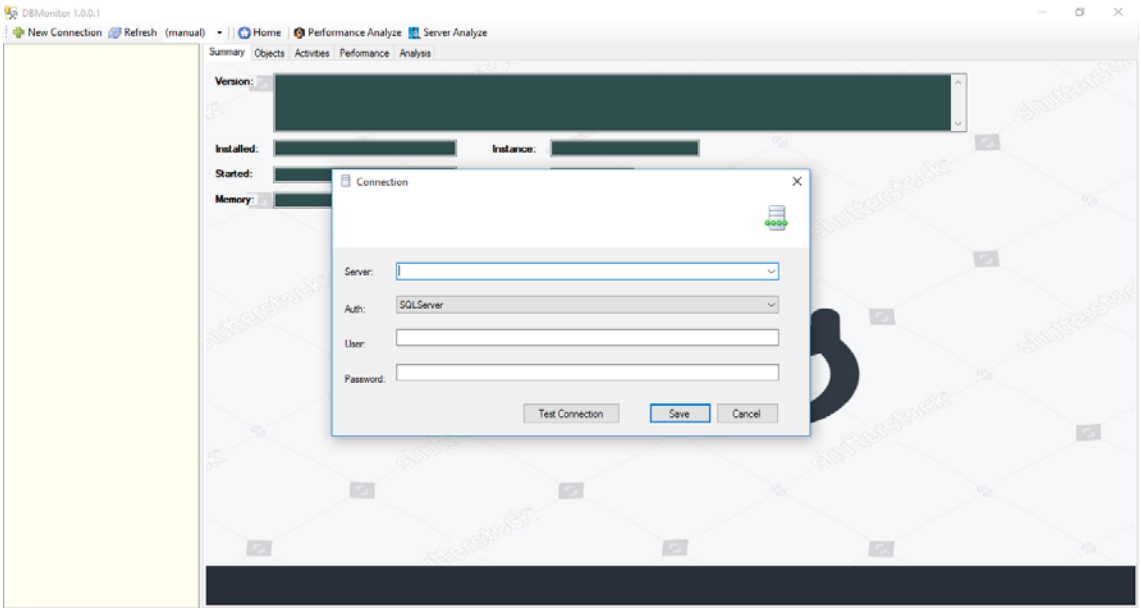


Figure 5.1 – Security Module - Authentication

Control Module – Server and Database Information

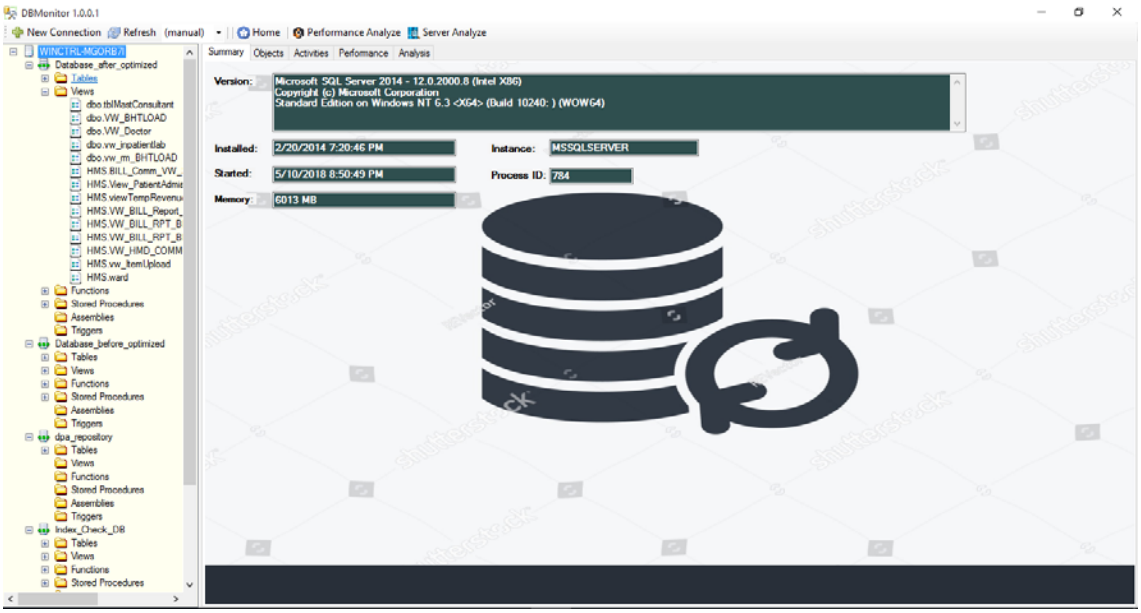


Figure 5.2 – Control Module-Server and Database Information

Server Configuration

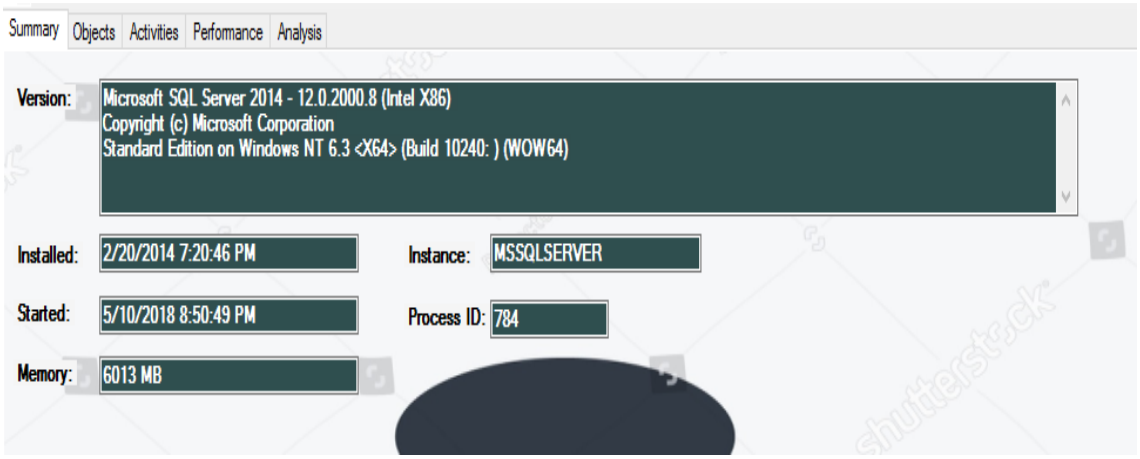


Figure 5.3 – Server Configuration

Database Server Performance Analyzer

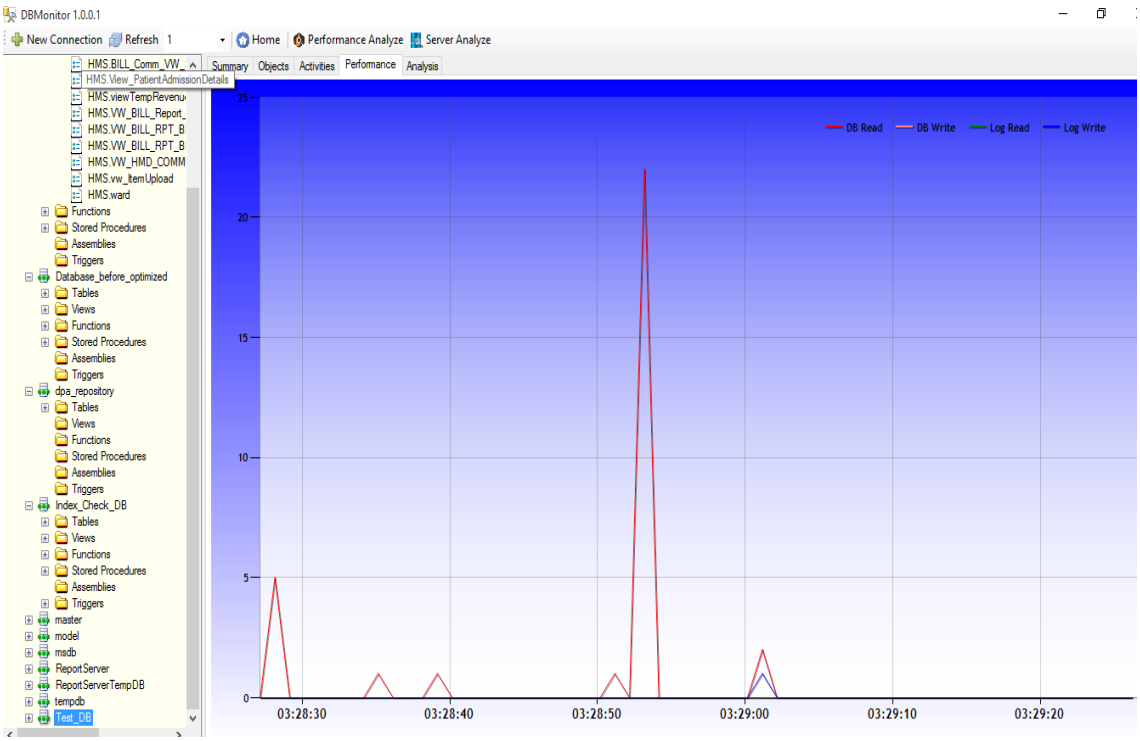


Figure 5.4 – Database Server Performance Analyzer

Database Log Information and Suggestions

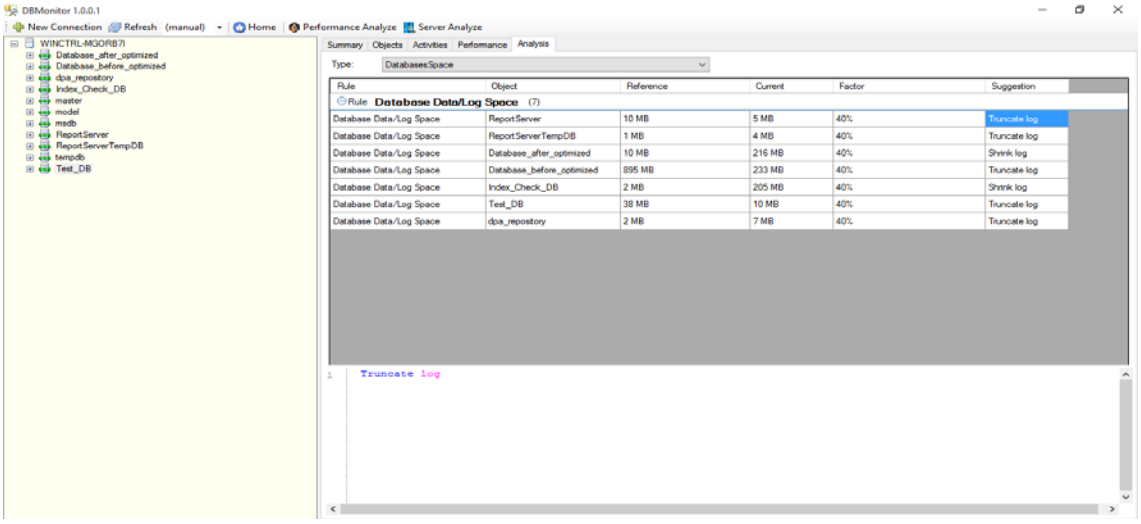


Figure 5.5 – Database Log Information and Suggestions.

Database Performance Improvement Suggestions

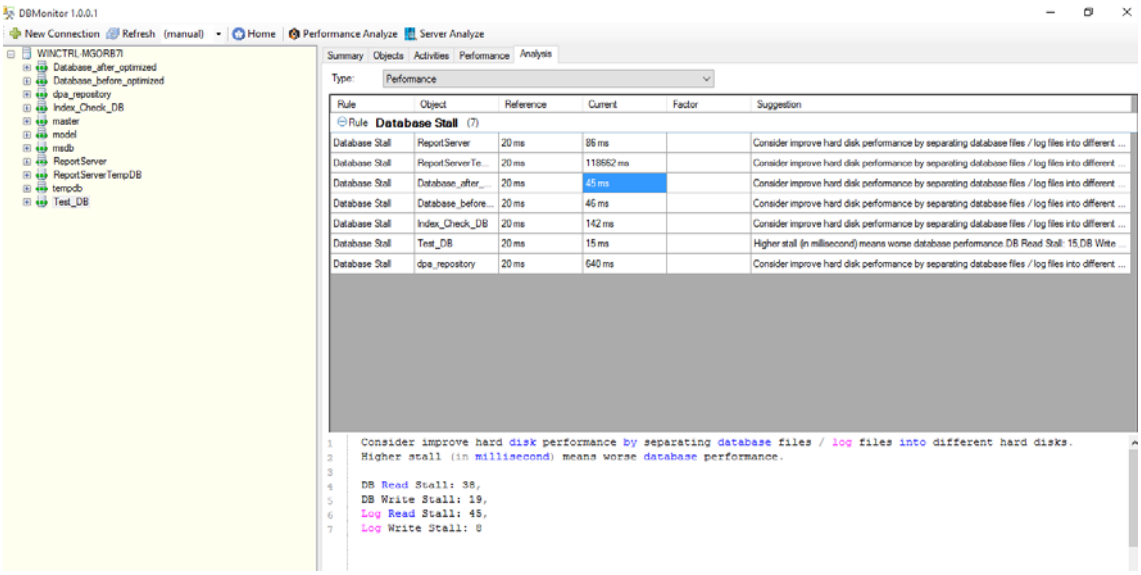


Figure 5.6 – Database Performance Improvement Suggestions.

Database Waiting Tasks

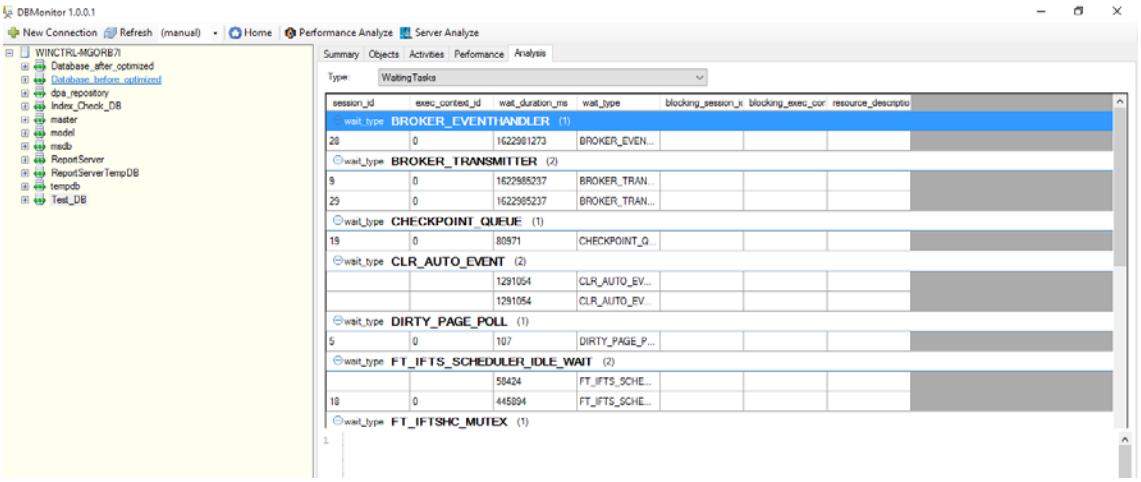


Figure 5.7 – Database Waiting Tasks.

Database Missing Index Details and Suggestions

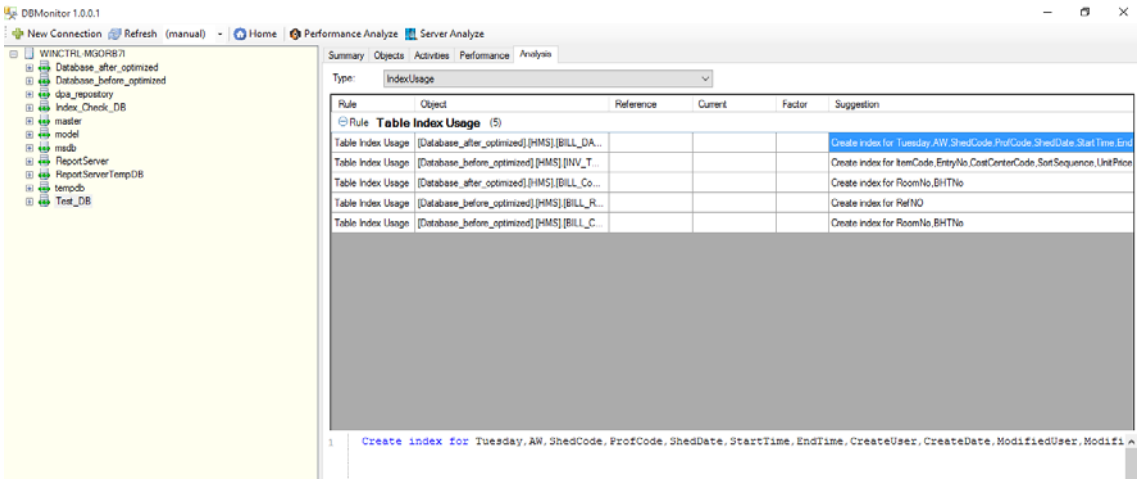


Figure 5.8 – Database Missing Index Details and Suggestions

Database IO operations

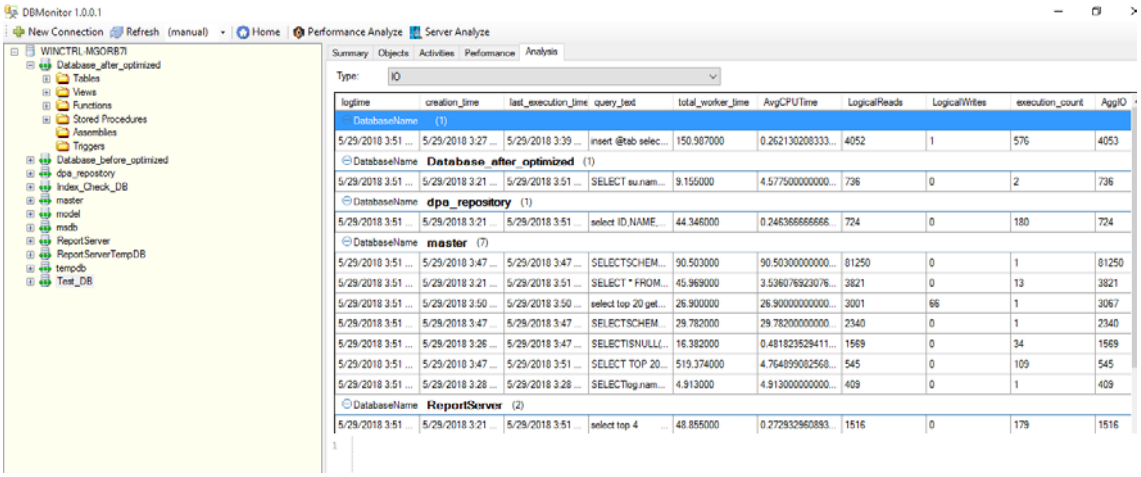


Figure 5.9 – Database IO Operations

Database Objects and Details

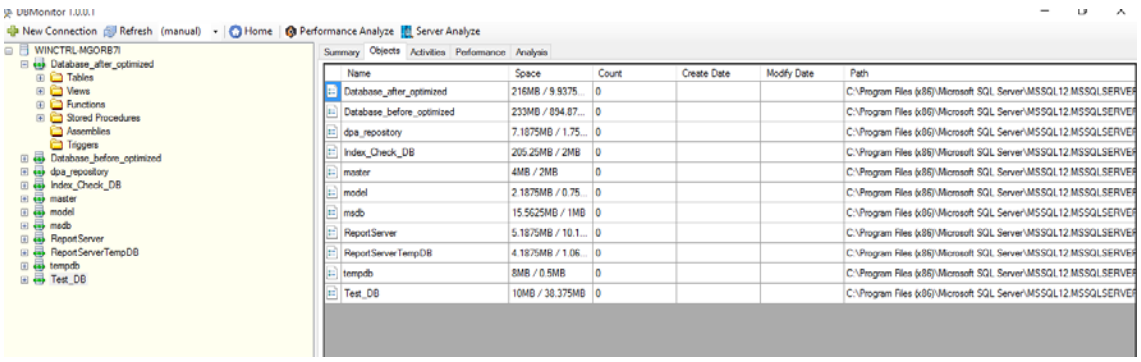


Figure 5.10 – Database Objects and Details

Database Monitoring Application Options

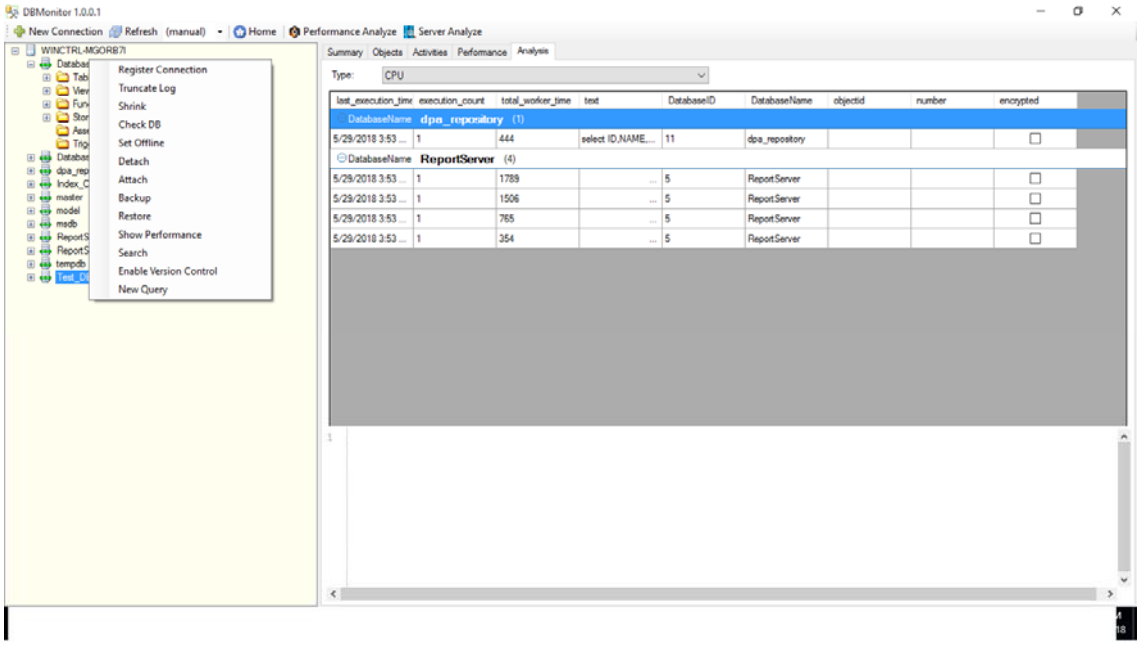


Figure 5.11 – Database Monitoring Application Options

Appendix B – Evaluation of Database Monitoring Application

Functionality	Result in our approach	The result from manually check in the database	Are the both results are same?
Server information	Please refer figure 7.4.1.1	Please refer figure 7.4.1.2	**Yes**
Database Table Count	Please refer figure 7.4.1.3	Please refer figure 7.4.1.4	**Yes**
Database current reading count	Please refer figure 7.4.1.3	Please refer figure 7.4.1.4	**Yes**
Database current writing count	Please refer figure 7.4.1.3	Please refer figure 7.4.1.4	**Yes**
Missing index details	Please refer figure 7.4.1.5	Please refer figure 7.4.1.6	**Yes**
Database current reading count	Please refer figure 7.4.1.3	Please refer figure 7.4.1.4	**Yes**
Database memory utilization details	Please refer figure 7.4.1.7	Manually checked	**Yes**
Database lock	Please refer figure 7.4.1.8	Manually checked	**Yes**
Currently running Processors	Please refer figure 7.4.1.9	Manually checked	**Yes**

Table 7.1 – Evaluation functionality in database monitoring application

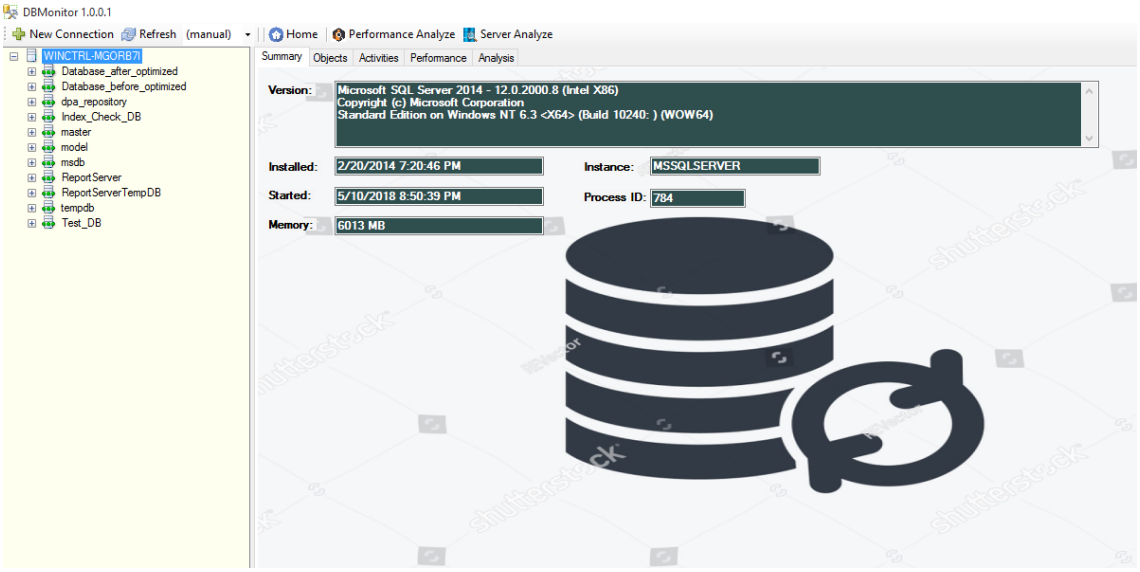


Figure 7.4.1.1 – Database server information from newly developed database monitoring application

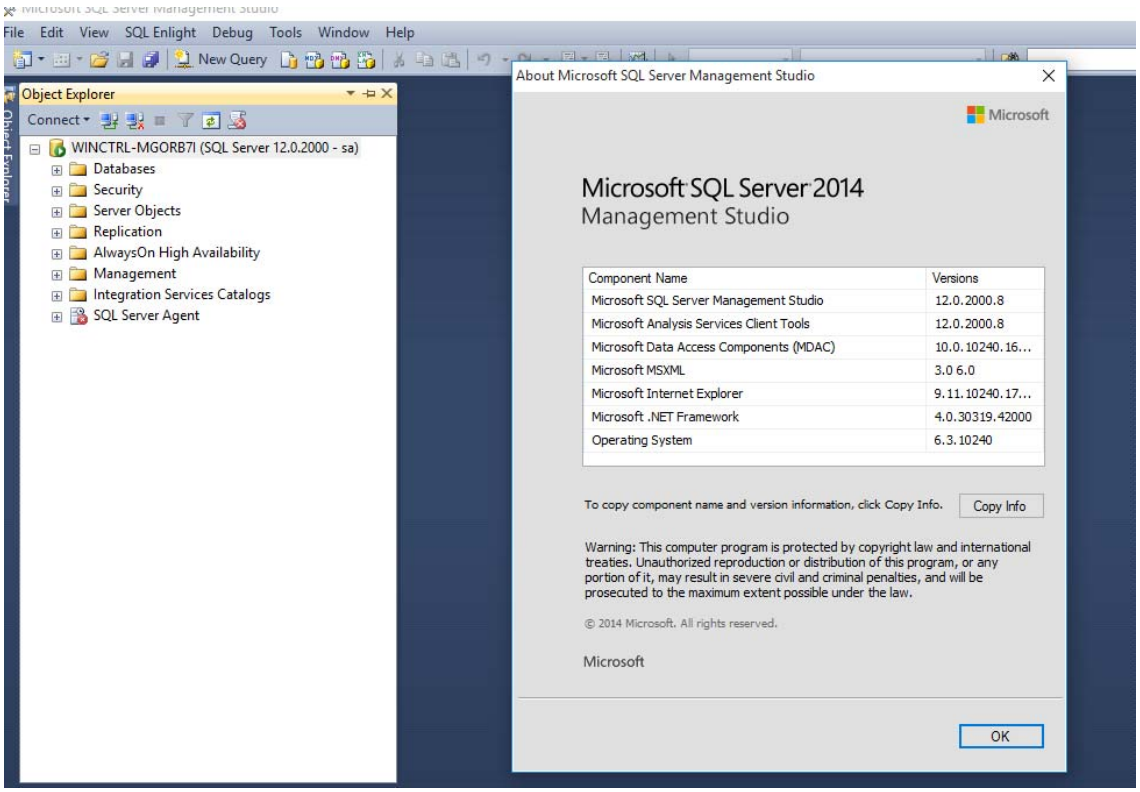


Figure 7.4.1.2 – Database server information

Figure 7.4.1.3 - Database server statistics from newly developed database monitoring application

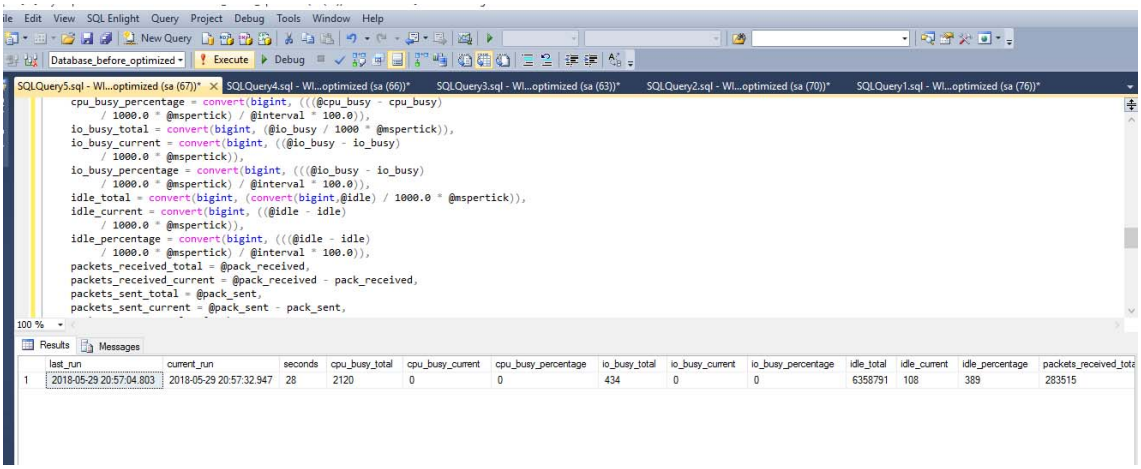


Figure 7.4.1.4 - Database server statistics

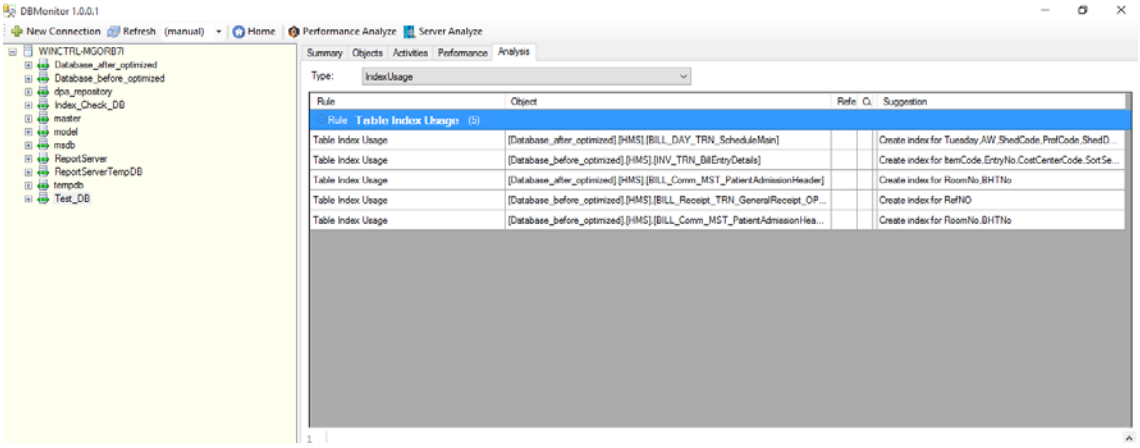


Figure 7.4.1.5 – Missing index suggestions from newly developed database monitoring application

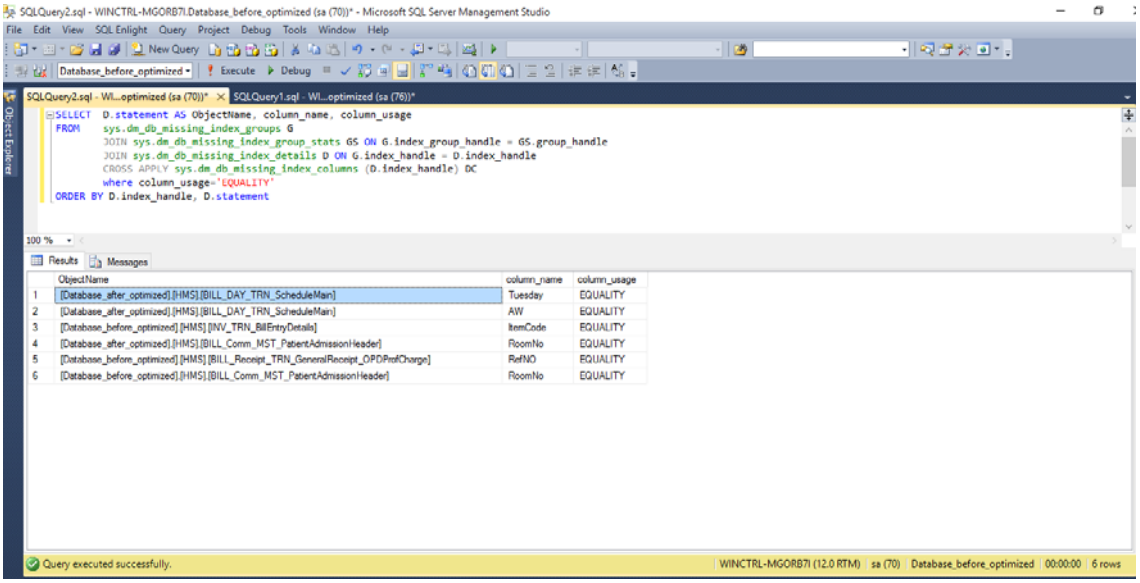


Figure 7.4.1.6 – Missing index suggestions by manually

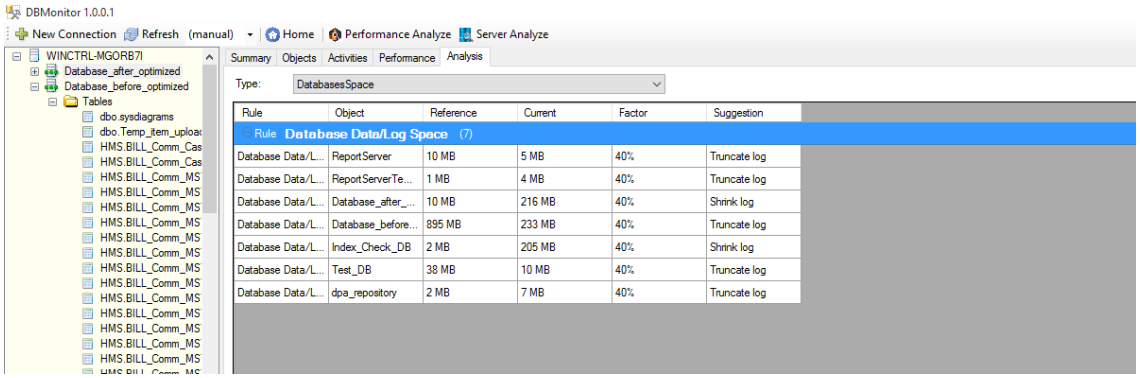


Figure 7.4.1.7 – Database memory utilization details

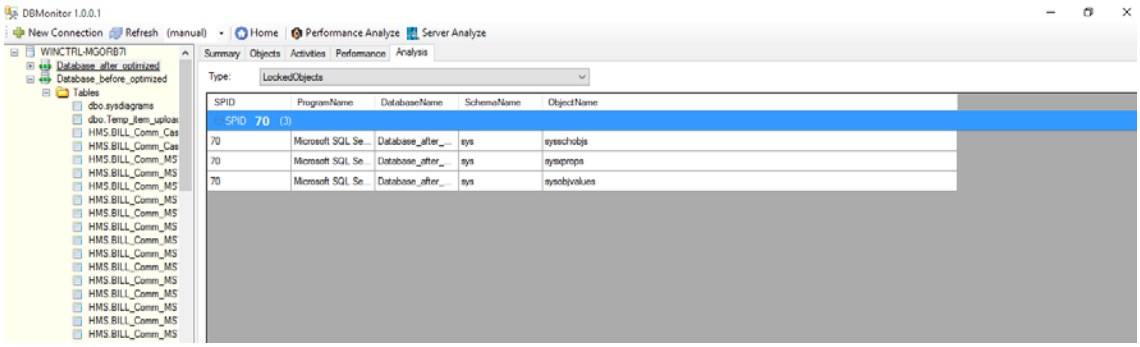


Figure 7.4.1.7 – Database lock

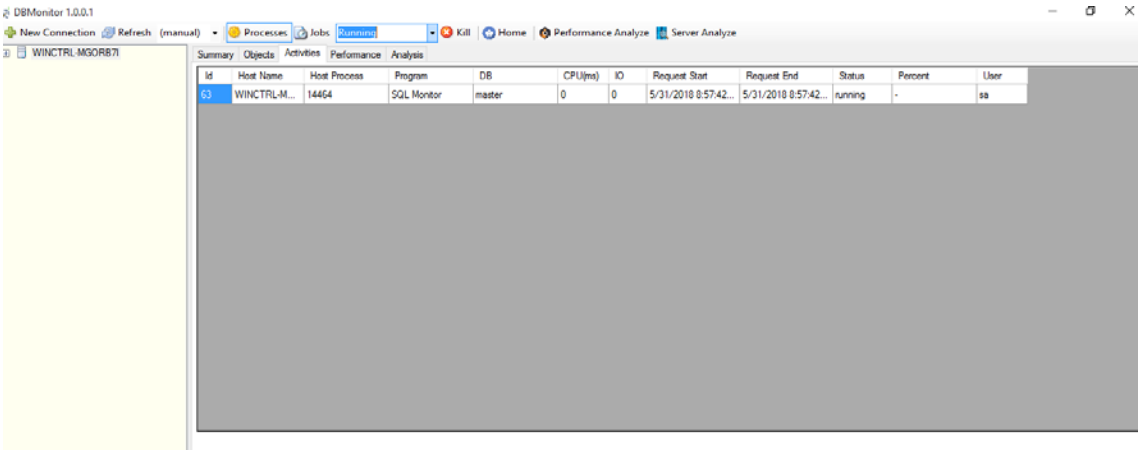


Figure 7.4.1.8 – Currently running Processors

Appendix C – Evaluation of proposed optimization techniques

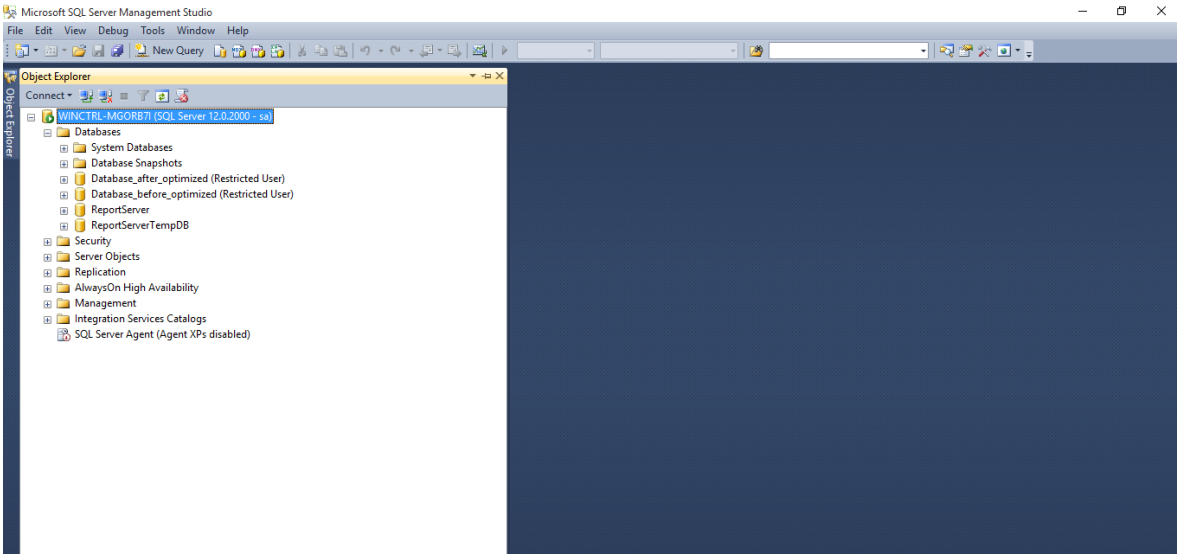


Figure 6.1 – Database Configuration

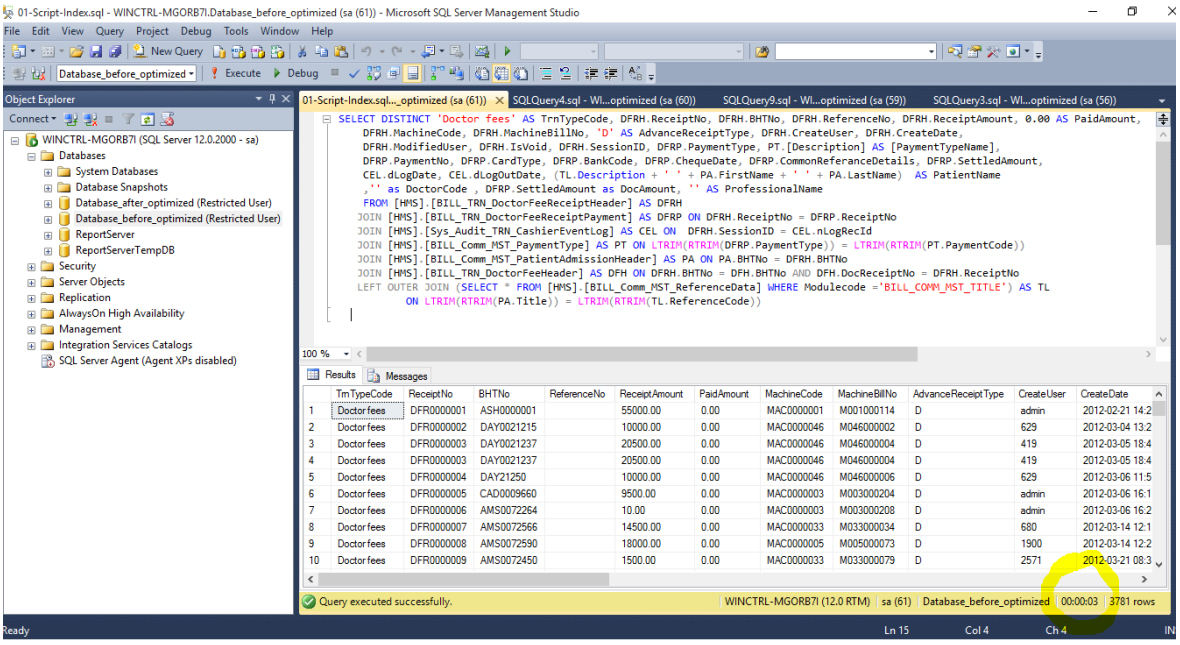


Figure 6.2 – Complex Query Execution Time

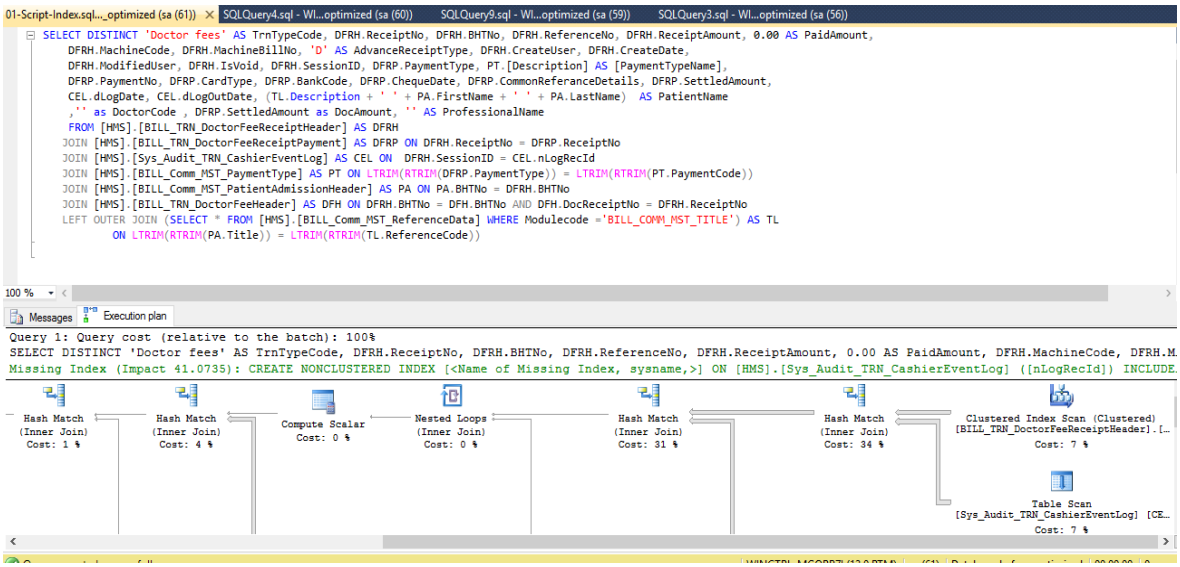


Figure 6.3 - QEP Plan

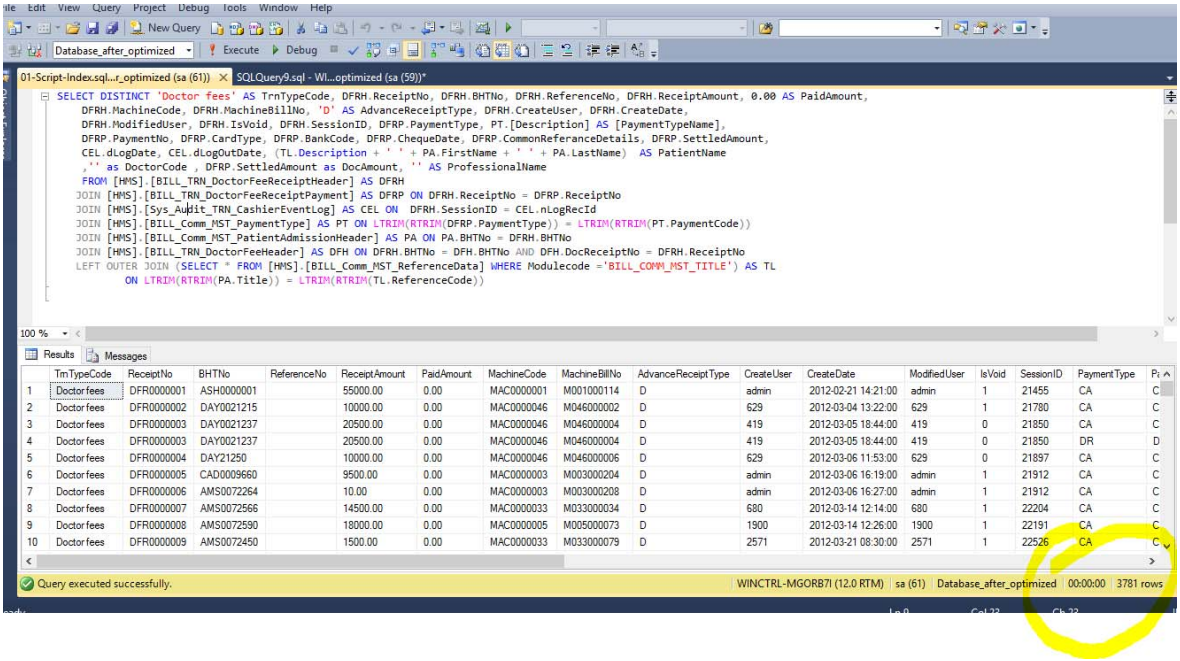


Figure 6.4 – Query Execution Time After Optimized

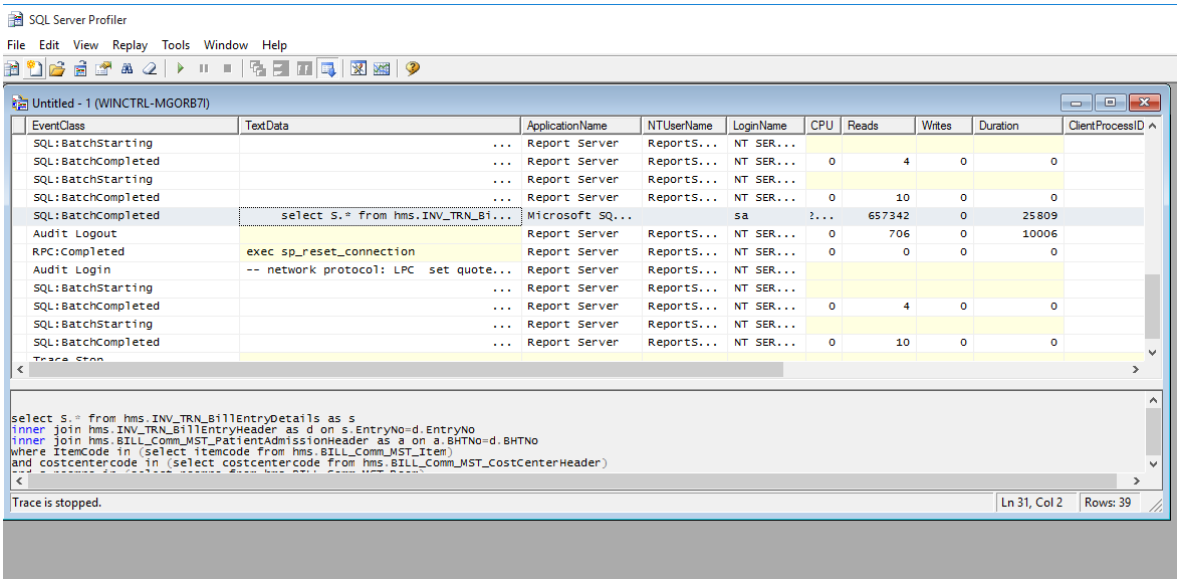


Figure 6.5 – SQL Profiler

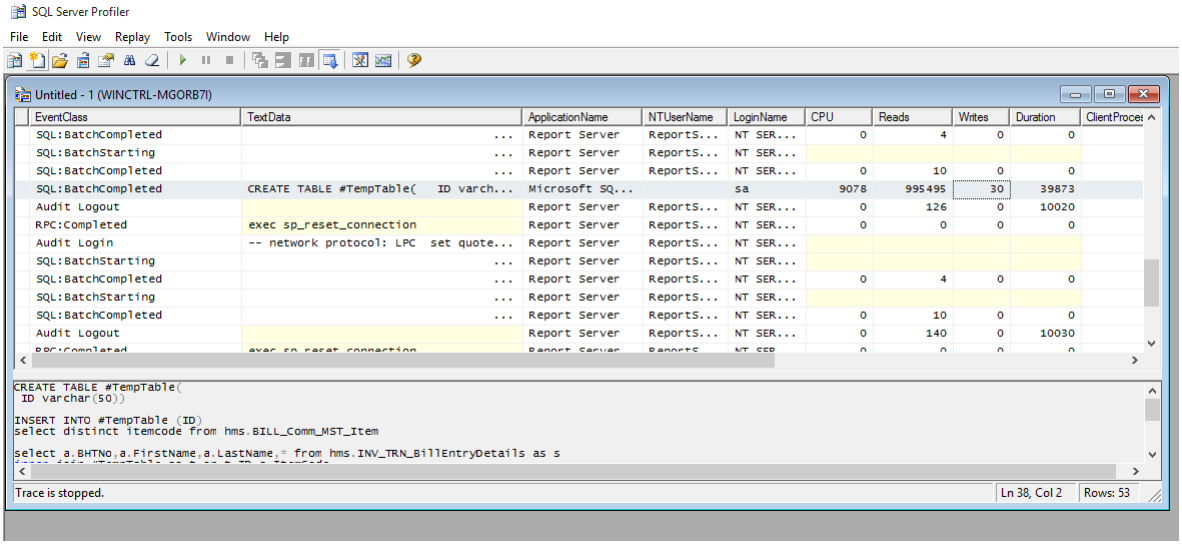


Figure 6.6 – SQL Profiler result

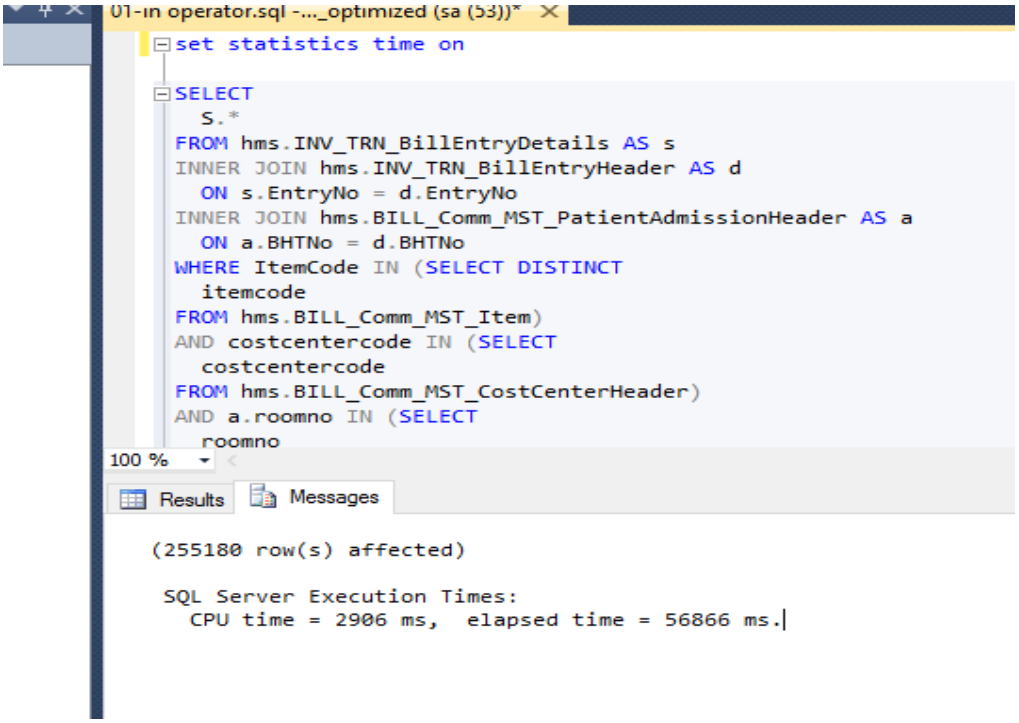


Figure 6.7 – SQL Server Execution time for Traditional query

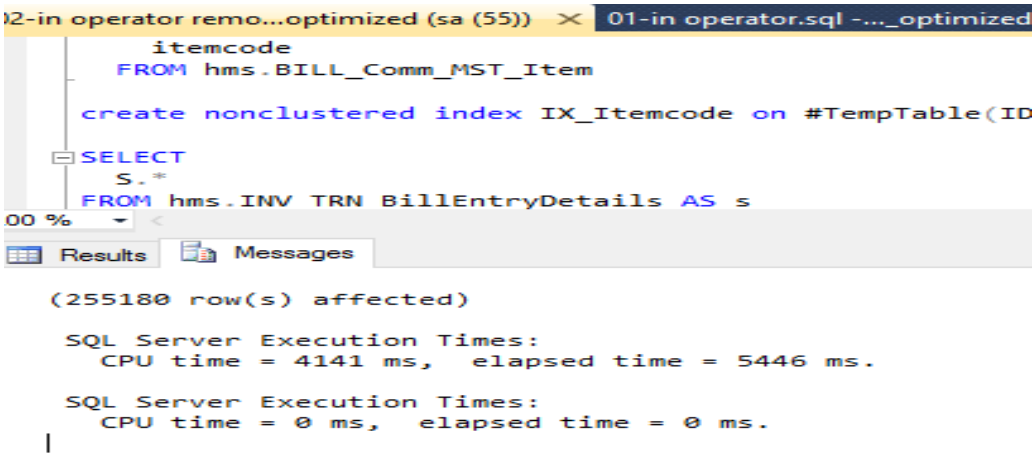


Figure 6.8 – SQL Server Execution time for our new proposed query

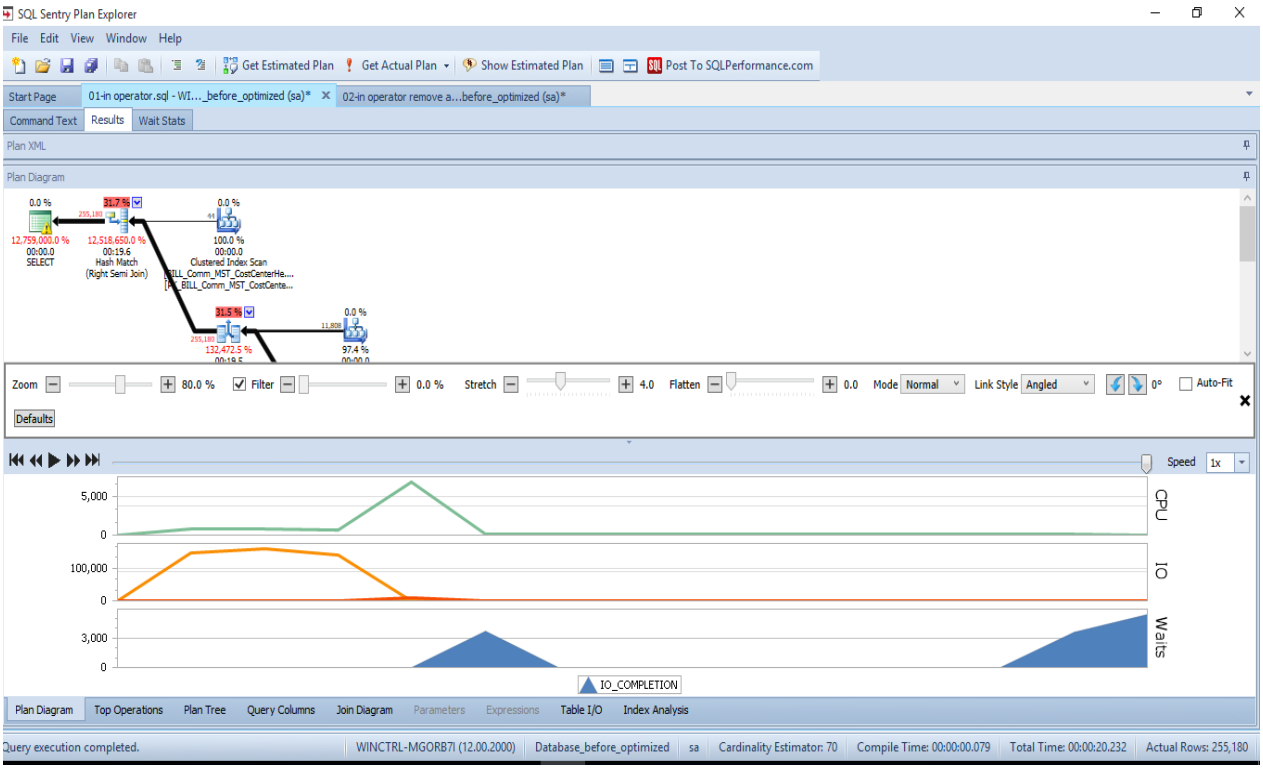


Figure 6.9 - Analyze by using Sentry Plan explore with IN

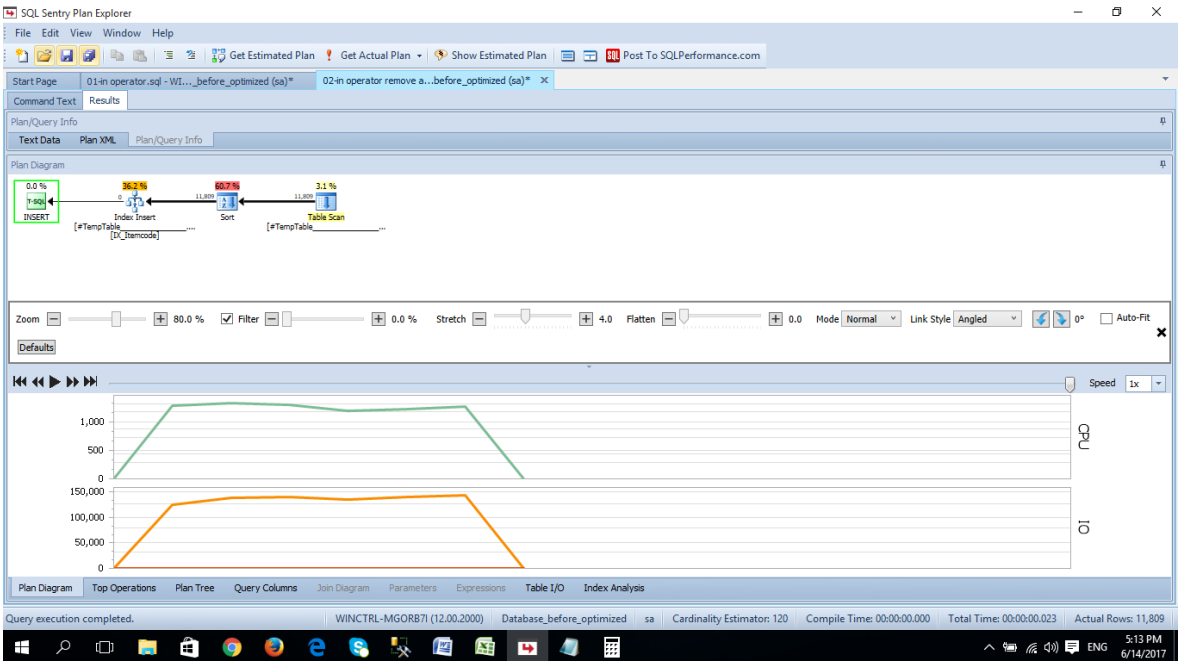


Figure 6.10 - Analyze by using Sentry Plan explore without IN

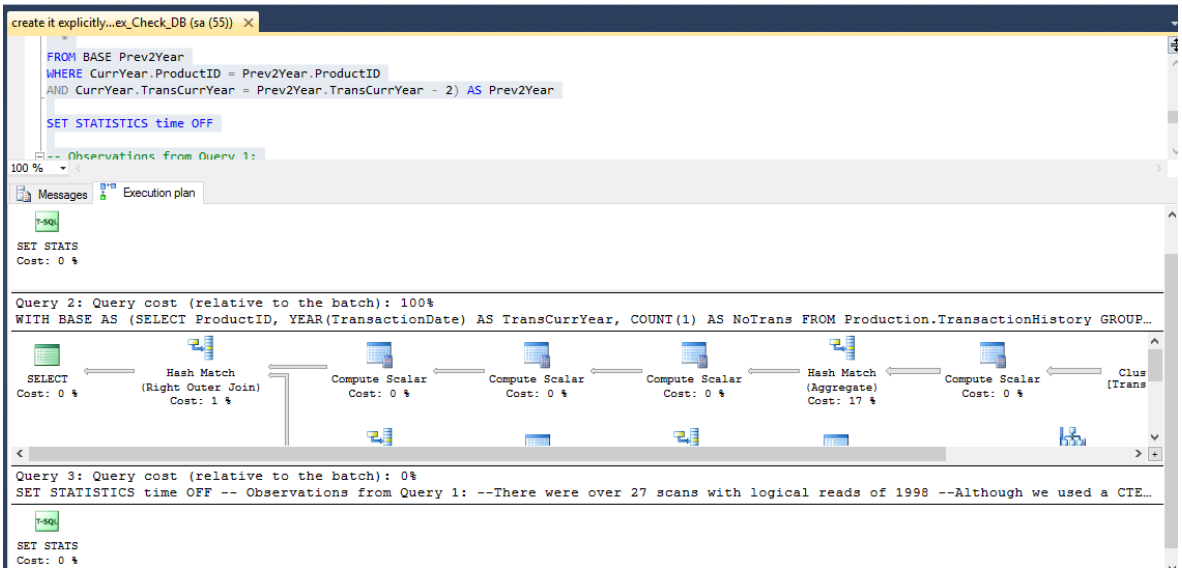


Figure 6.11 – Query cost with temp table

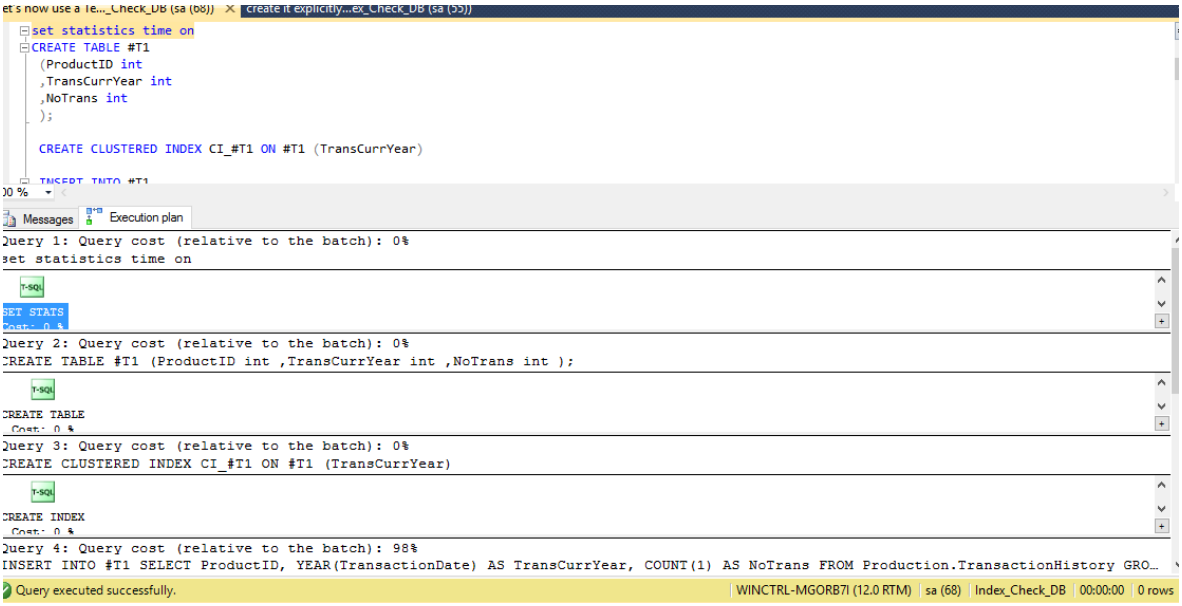


Figure 6.12 - Query cost with #temp table

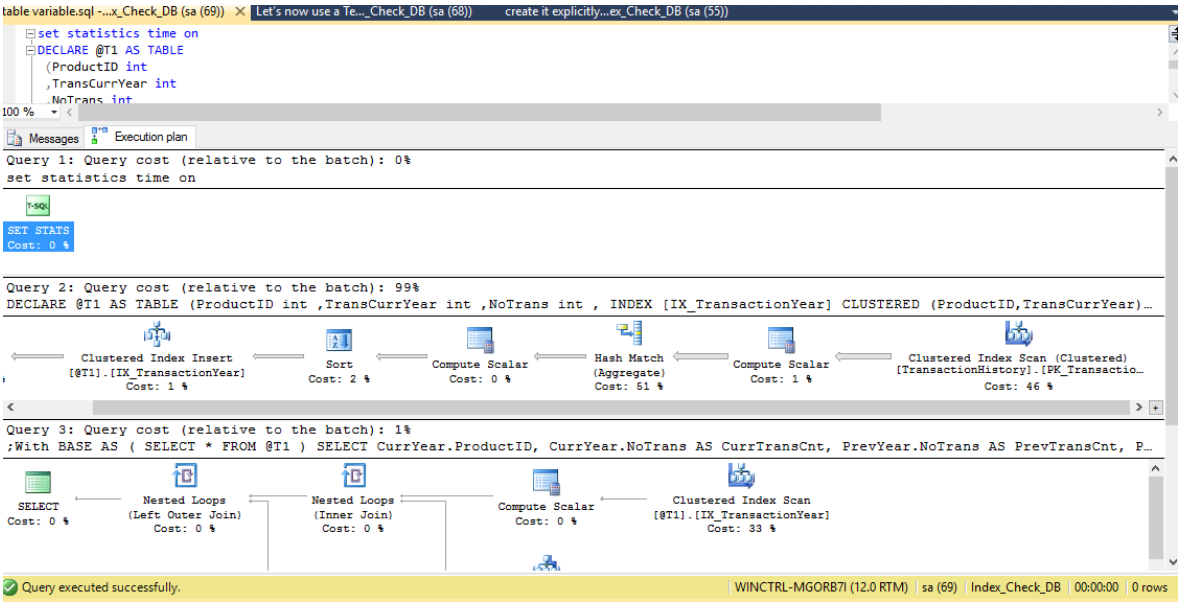
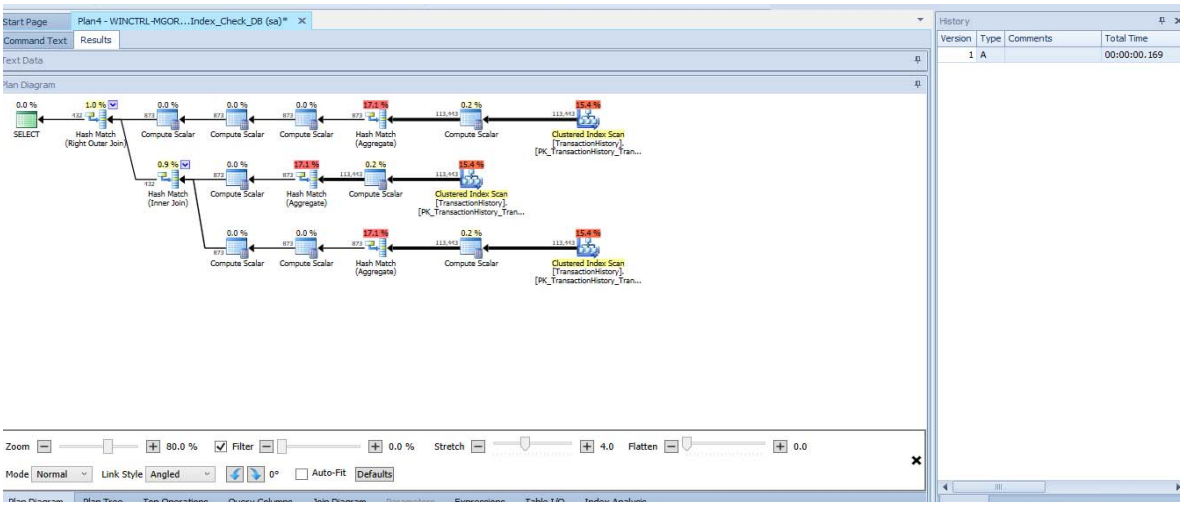
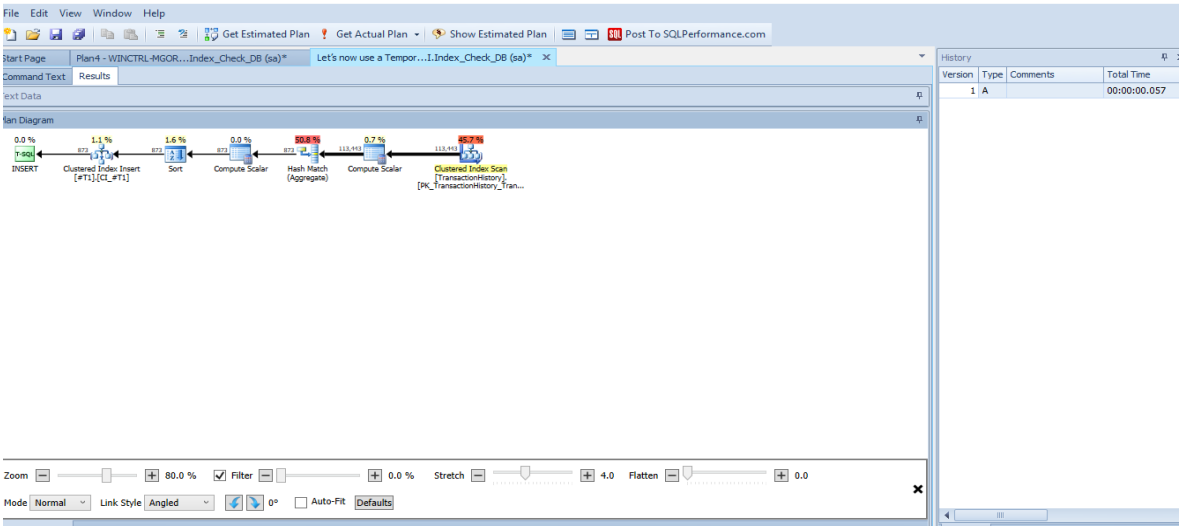


Figure 6.13 - Query cost with @temp table



6.14 - Sentry plan with #temp table



6.15 - Sentry plan with @temp table

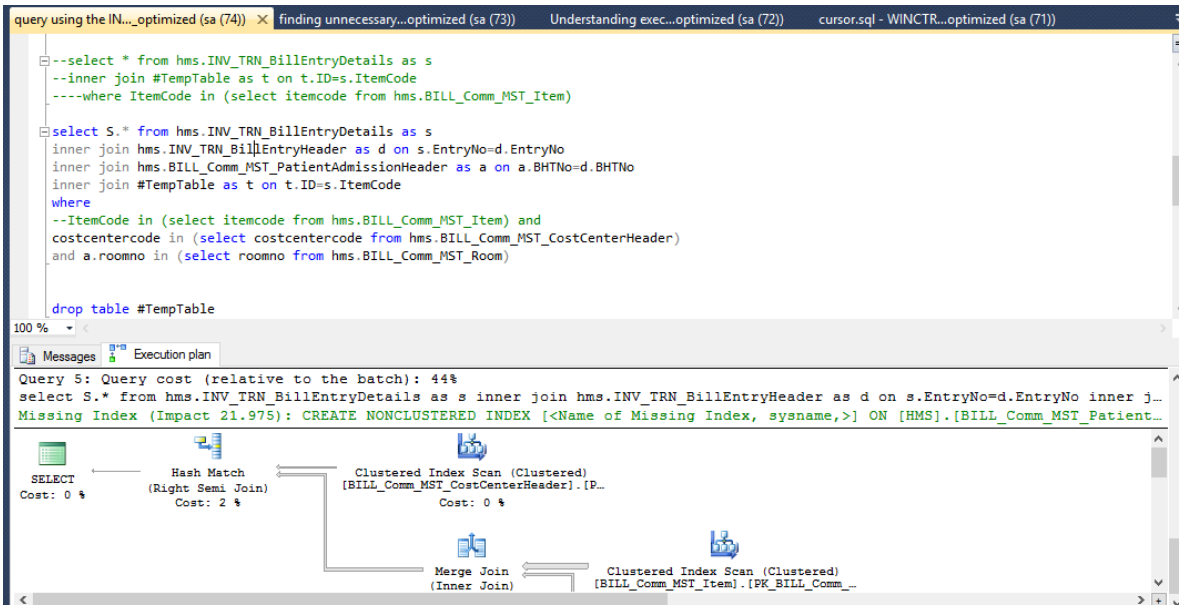


Figure 6.16 – How to find missing index

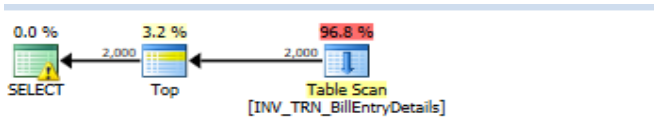


Figure 6.17 – Analyzed best practice IN and Where Clause.

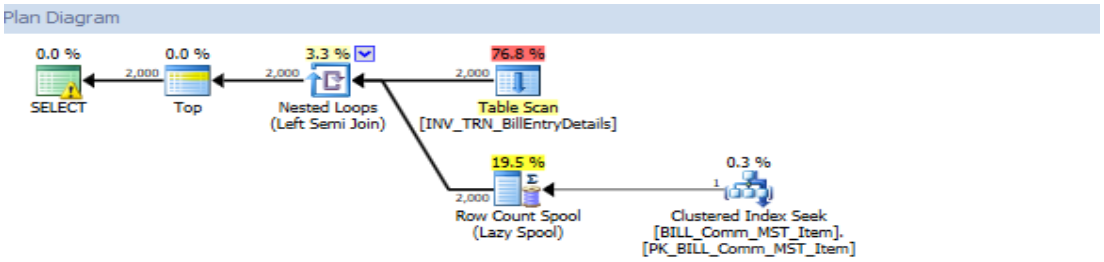


Figure 6.18 – Analyzed bad practice IN and Where Clause

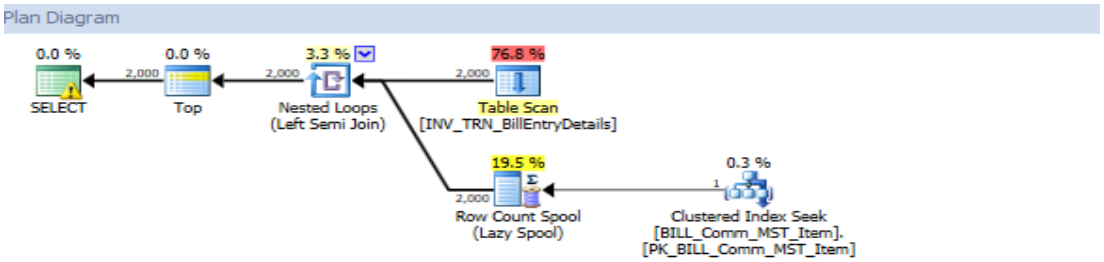


Figure 6.19 – Bad practice for IN and Where

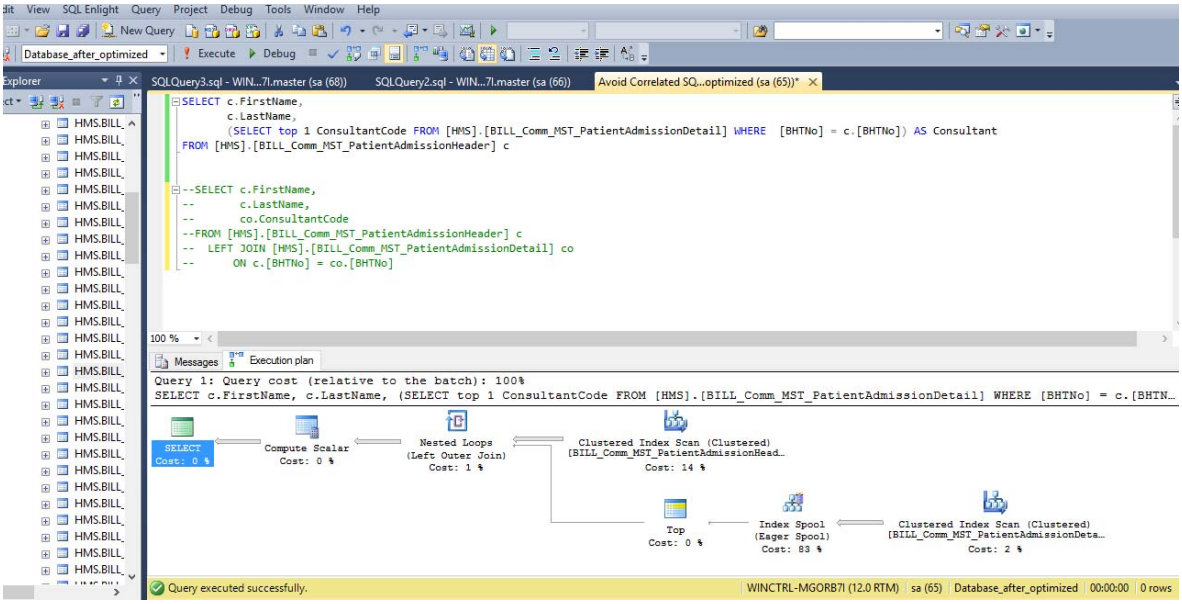


Figure 6.20 – QEP plan and Cost of Correlated SQL subqueries

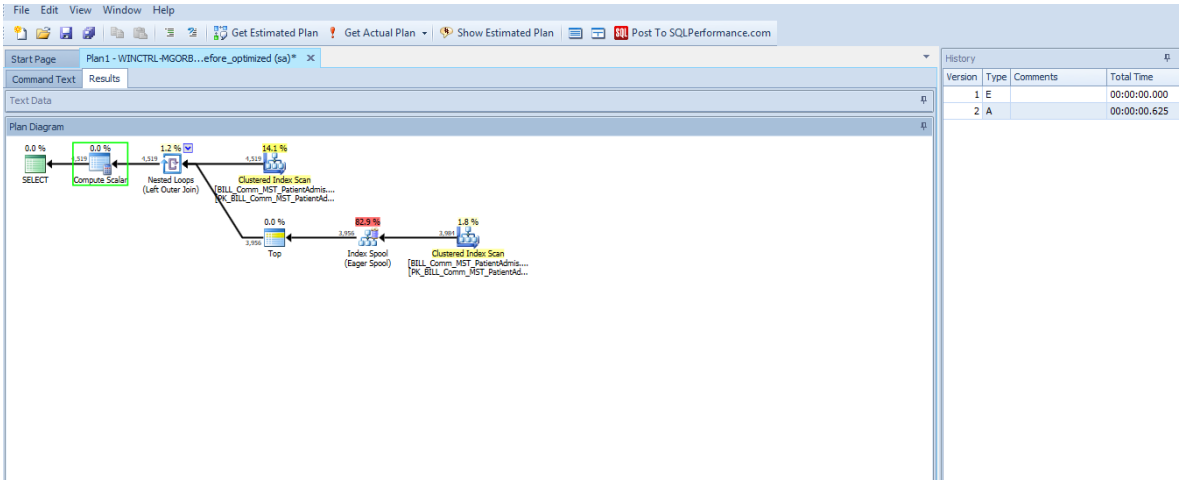


Figure 6.21- QEP plan and Cost of Correlated SQL subqueries in Sentry planner

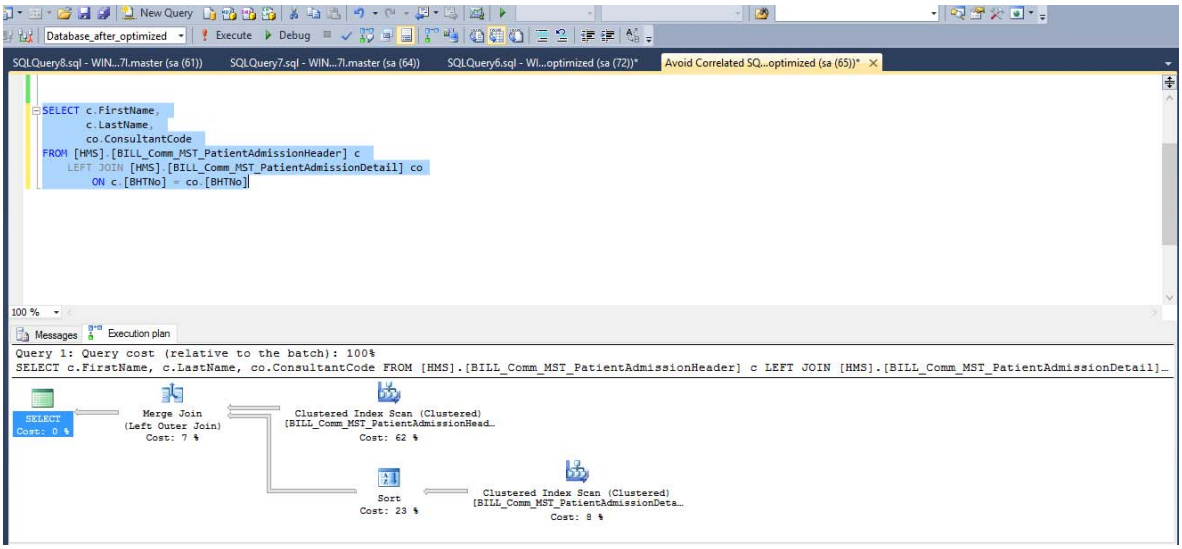


Figure 6.22- Our Query QEP plan and Cost of Correlated SQL subqueries

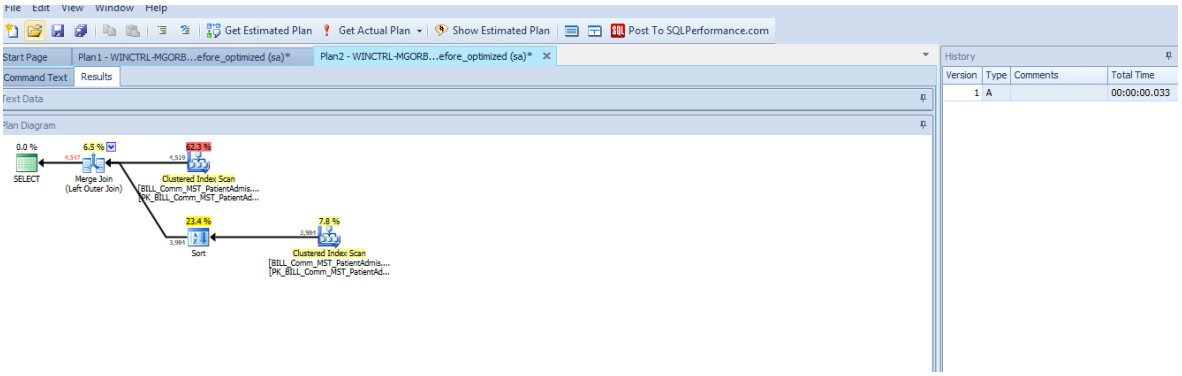


Figure 6.23- Our Query QEP plan and Cost of Correlated SQL subqueries in Sentry planner

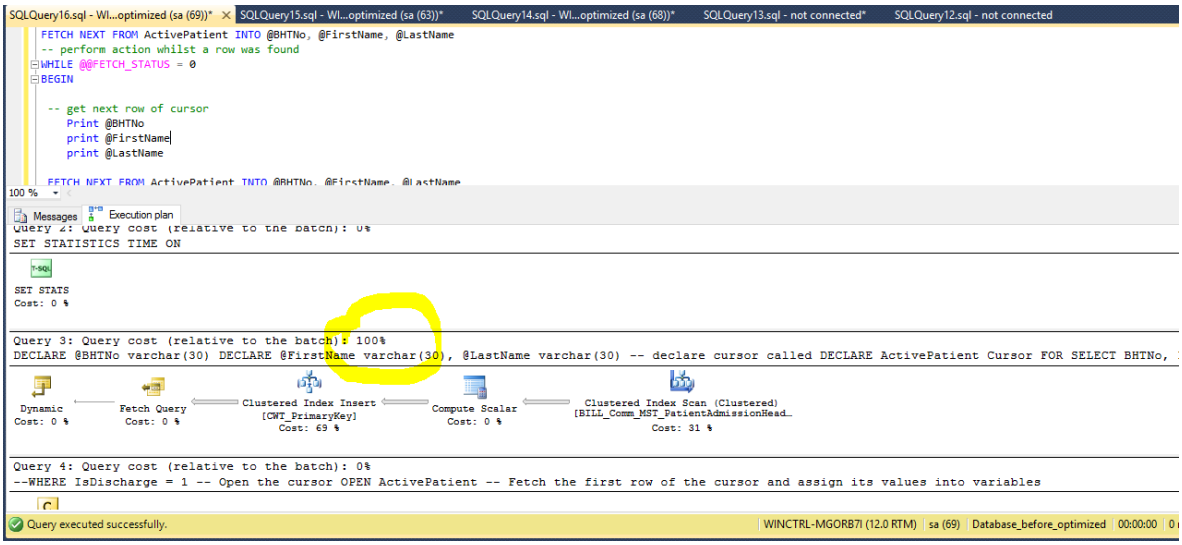


Figure 6.24 – QEP in Cusror

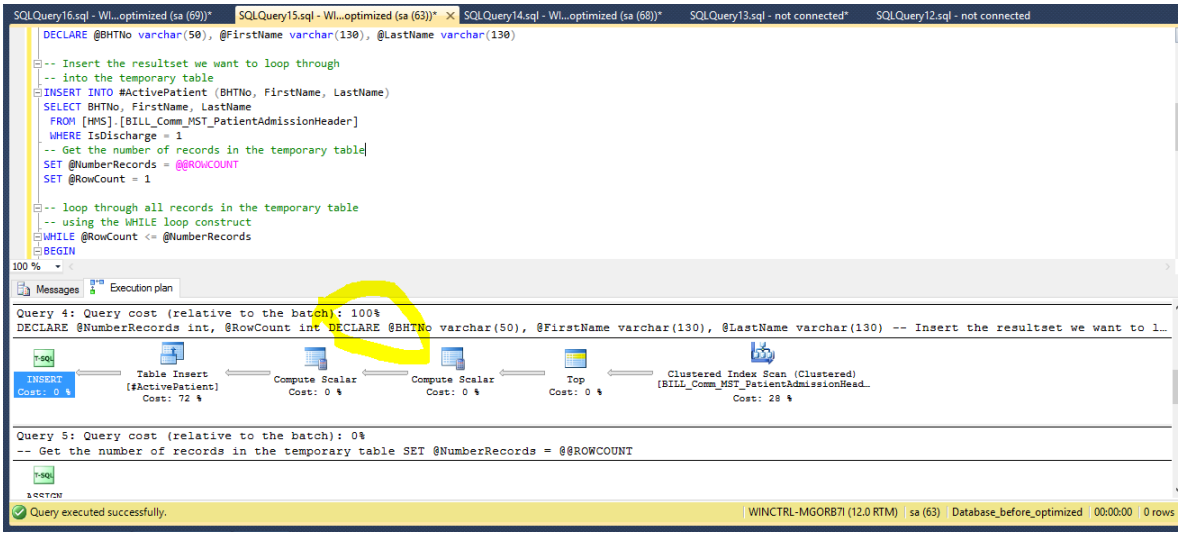


Figure 6.25 – Alternative solutinon QEP plan and query cost

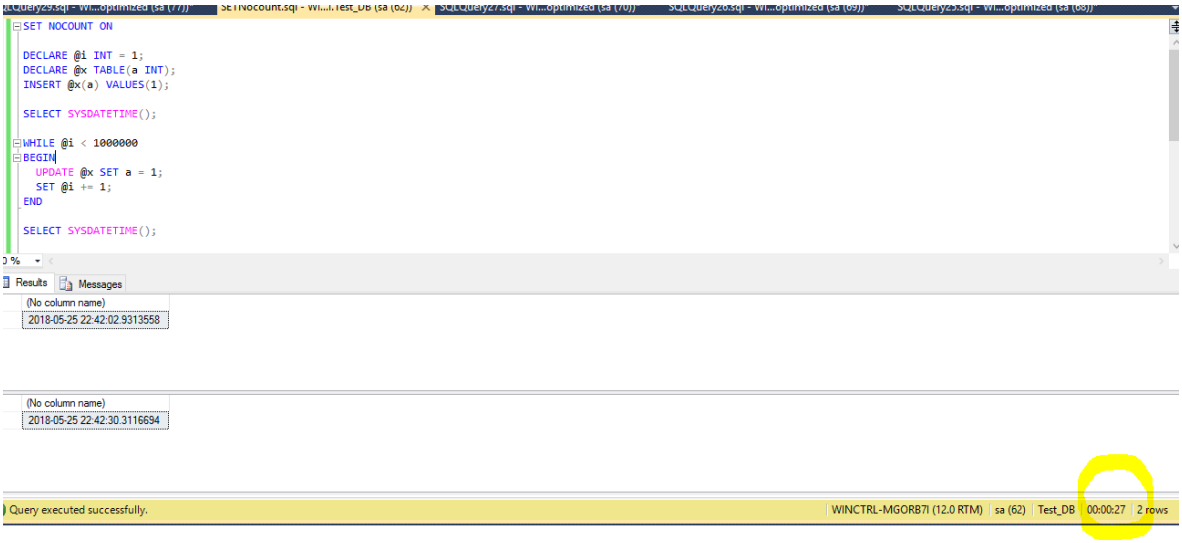


Figure 6.26 – Set no count on execution time

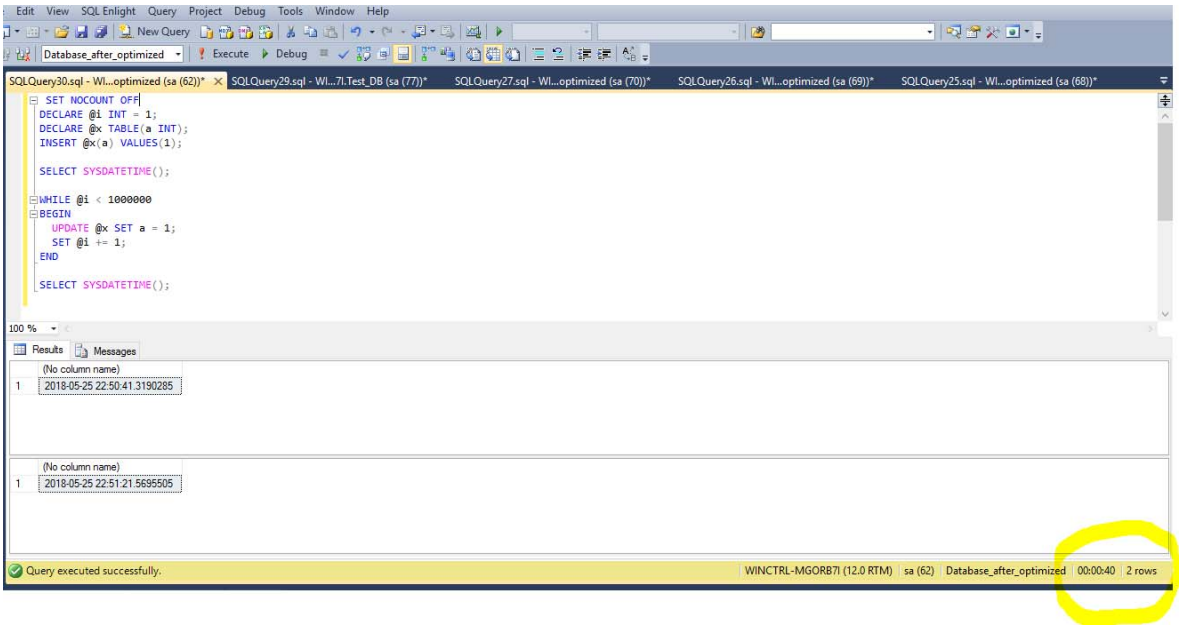


Figure 6.27 - 6.26 – Without no count execution time