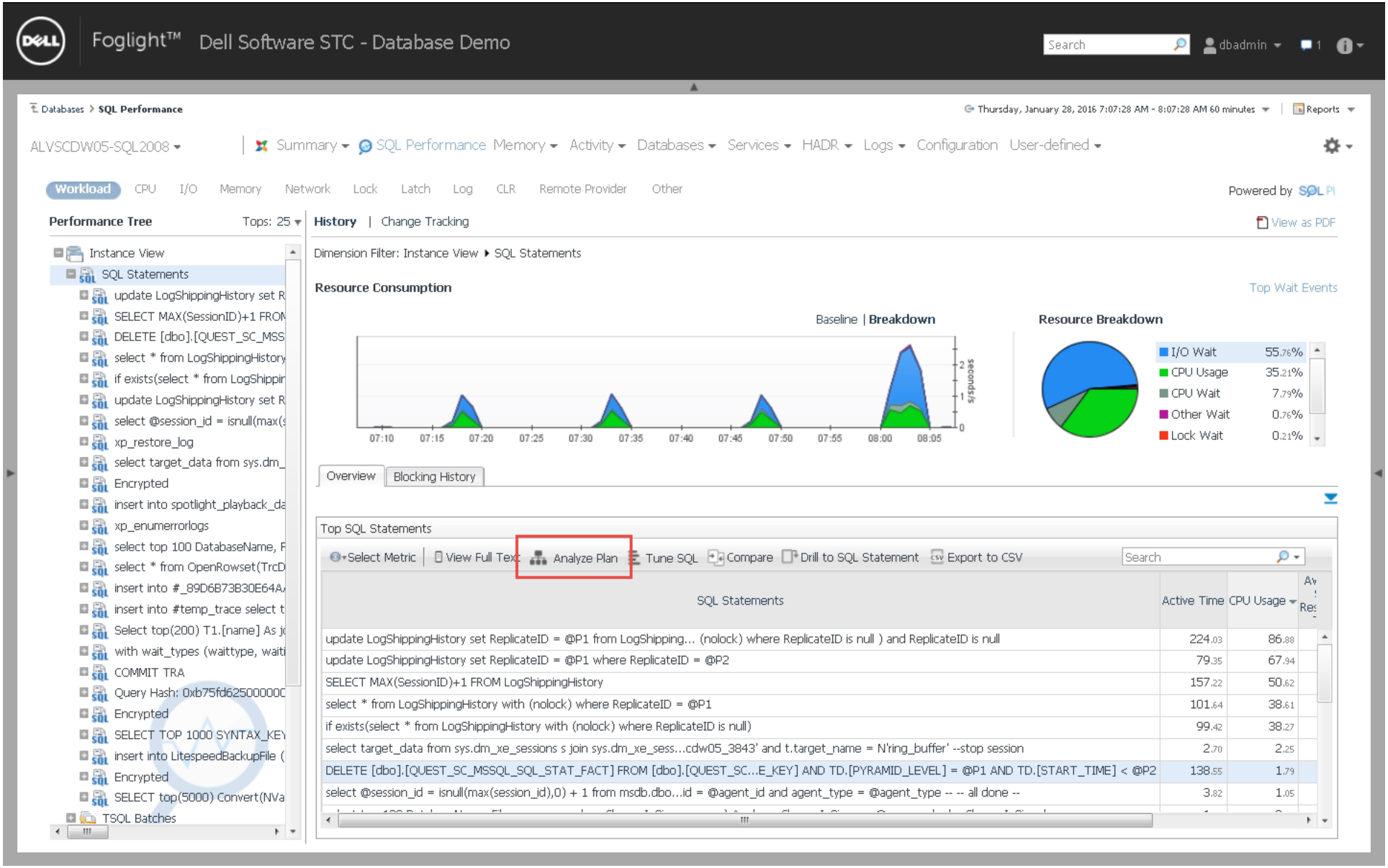
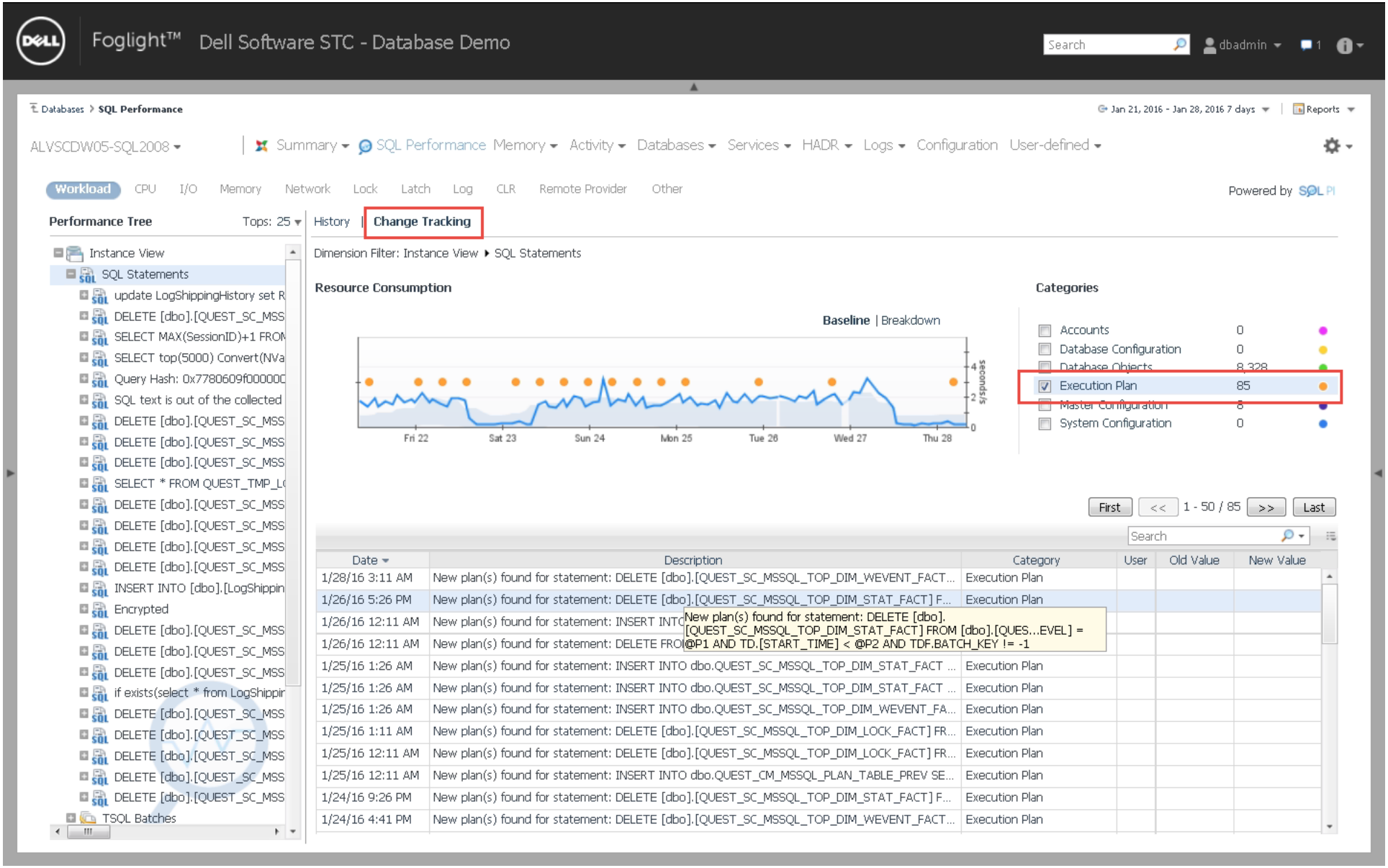
What Did that SQL Query Do?

SQL Server Edition

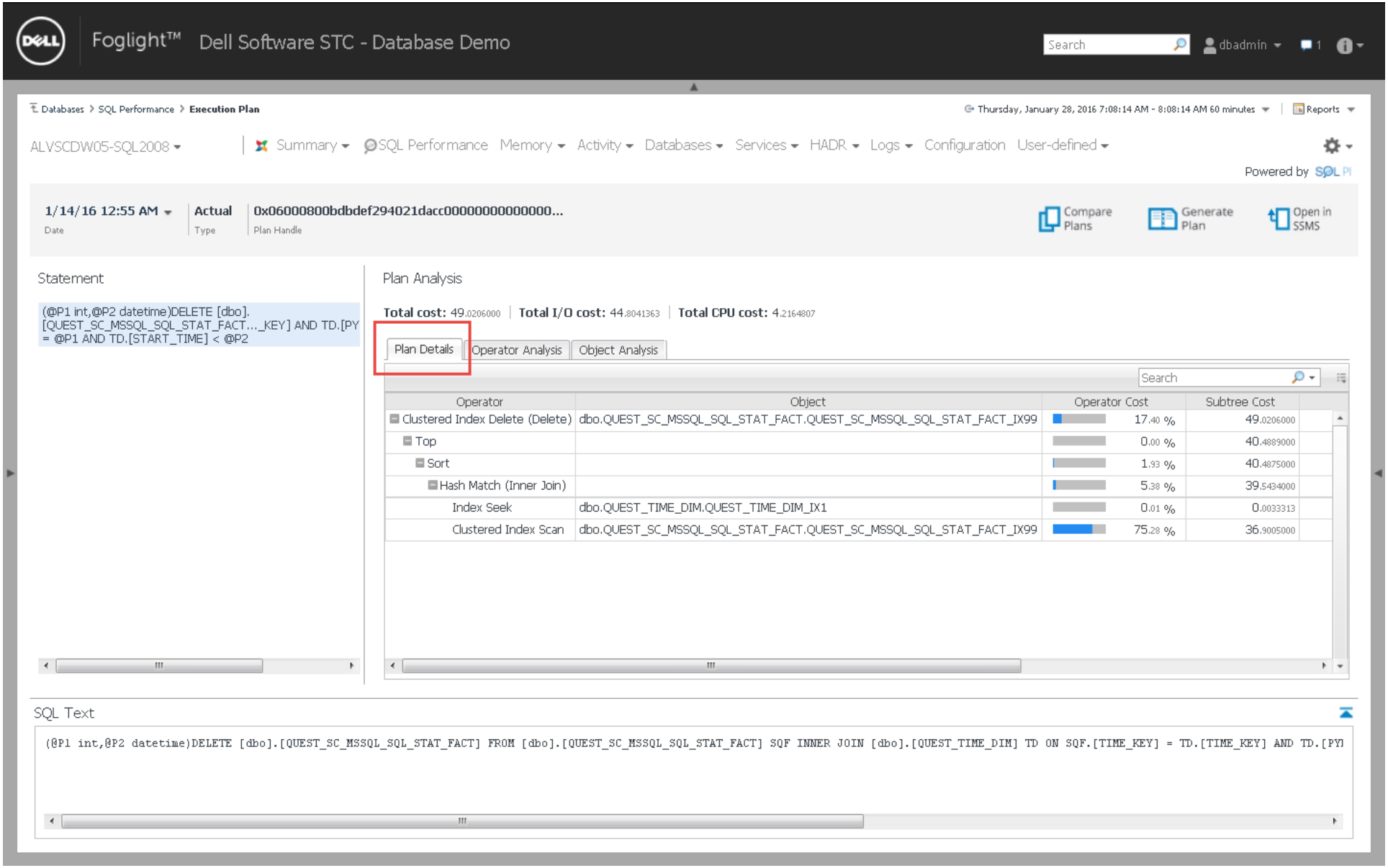
When investigating database performance issues related to SQL queries, it is often useful to know the execution plan of the statement. However, unless it was executed recently, we only have the execution plan that we can generate via a show plan command. This may or may not be the actual plan that was used when the SQL ran. Using Foglight Performance Investigator for SQL Server, we can easily go back and review *actual* plans that were used when the statement was executed. In addition, we can compare different plans as they change over time due to database object changes, optimizer statistics, etc.



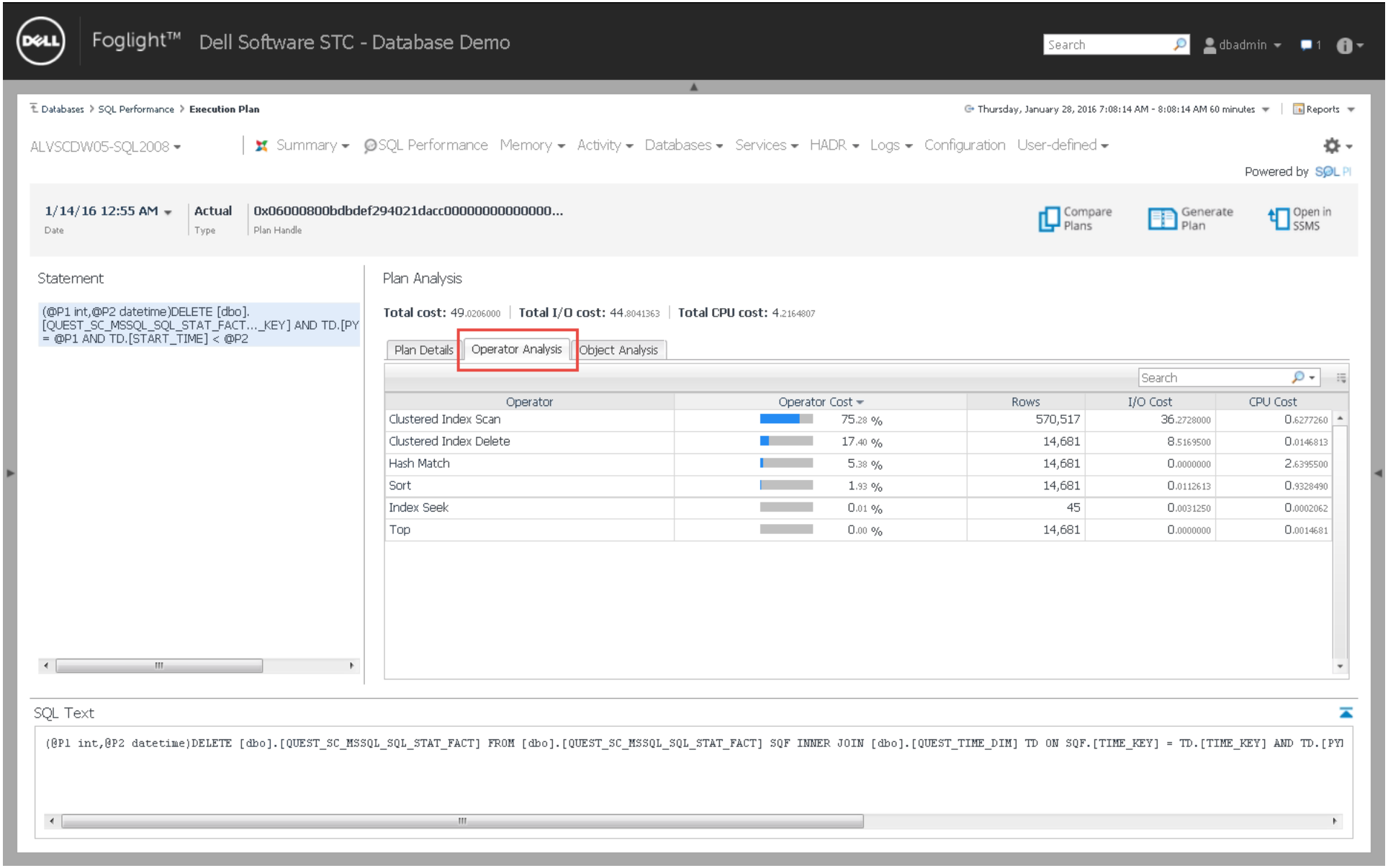
In the screenshot above, a time period was isolated and the top SQL statements sorted by CPU Usage are shown. To review the execution plans, all you need to do is pick a SQL and click “Analyze Plan”.

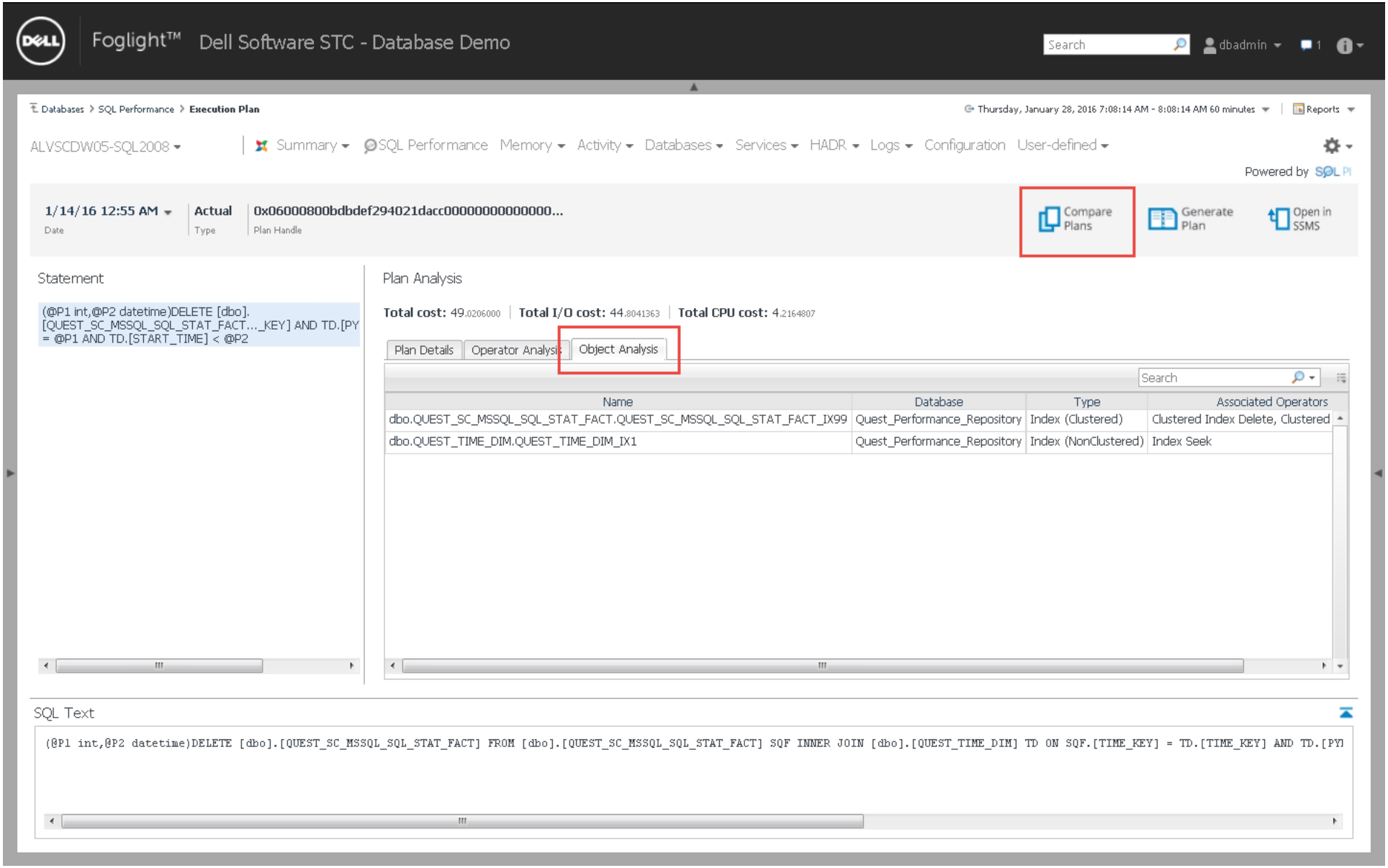


You can also review changes to execution plans by switching to “Change Tracking” from the “History” view. Execution plan changes are overlaid on the timeline and workload baseline graph, and you can simply click into one of the changes in the grid.

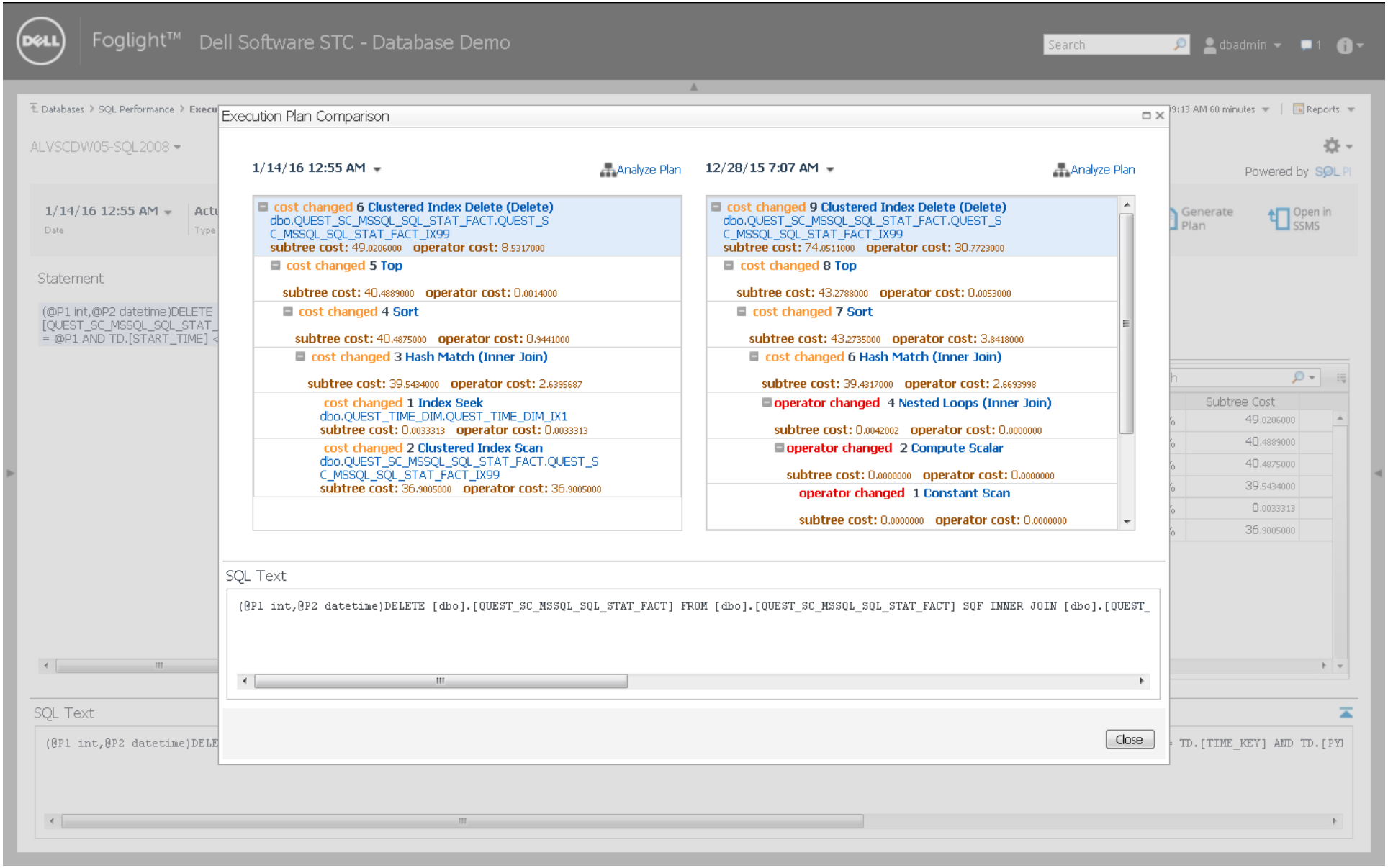


This drilldown shows you Plan Details, Operator Analysis and Object Analysis on separate tabs.

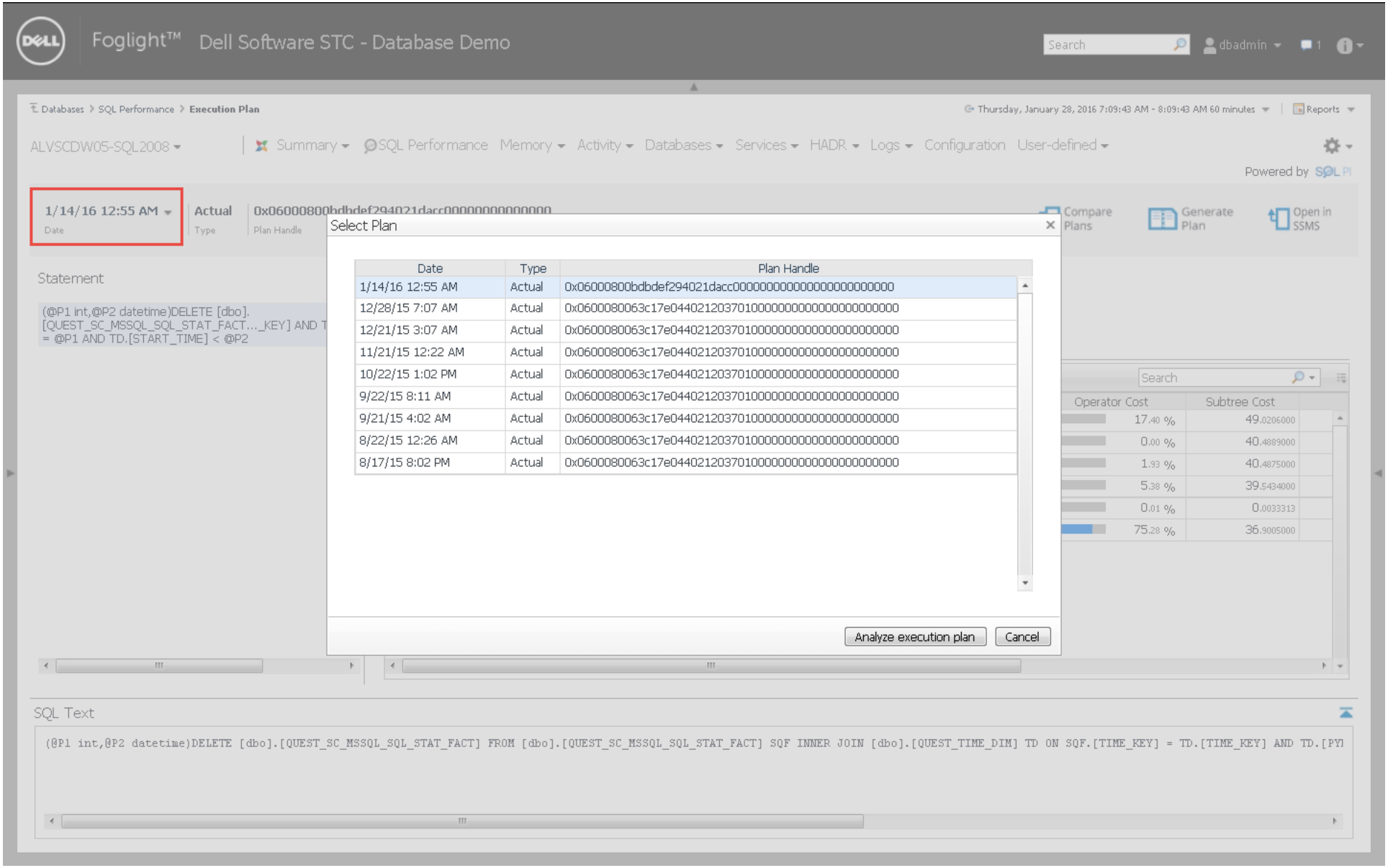

Foglight™ Dell Software STC - Database Demo
Search
dbadmin
1
Databases > SQL Performance > Execution Plan
Thursday, January 28, 2016 7:08:14 AM - 8:08:14 AM 60 minutes
Reports
ALVSCDW05-SQL2008
Summary
SQL Performance
Memory
Activity
Databases
Services
HADR
Logs
Configuration
User-defined
Powered by SQL PI
1/14/16 12:55 AM
Date
Actual
Type
0x06000800bdbdef294021dacc00000000000000...
Plan Handle
Compare Plans
Generate Plan
Open in SSMS
Statement
(@P1 int,@P2 datetime)DELETE [dbo].[QUEST_SC_MSSQL_SQL_STAT_FACT..._KEY] AND TD.[PY = @P1 AND TD.[START_TIME] < @P2
Plan Analysis
Total cost: 49.0206000
Total I/O cost: 44.8041363
Total CPU cost: 4.2164807
Plan Details
Operator Analysis
Object Analysis
Search
Operator
Operator Cost
Rows
I/O Cost
CPU Cost
Clustered Index Scan 75.28 % 570,517 36.2728000 0.6277260
Clustered Index Delete 17.40 % 14,681 8.5169500 0.0146813
Hash Match 5.38 % 14,681 0.0000000 2.6395500
Sort 1.93 % 14,681 0.0112613 0.9328490
Index Seek 0.01 % 45 0.0031250 0.0002062
Top 0.00 % 14,681 0.0000000 0.0014681
SQL Text
(@P1 int,@P2 datetime)DELETE [dbo].[QUEST_SC_MSSQL_SQL_STAT_FACT] FROM [dbo].[QUEST_SC_MSSQL_SQL_STAT_FACT] SQF INNER JOIN [dbo].[QUEST_TIME_DIM] TD ON SQF.[TIME_KEY] = TD.[TIME_KEY] AND TD.[PY



If there is more than 1 historical execution plan available, the “Compare Plans” button will be active. You can click into that drilldown to compare historical plans. Note that there will only be a historical plan stored for the first time it was detected as being changed.



You can then pick from the date/time pulldowns different historical plans to compare.



You may also analyze a specific plan by picking from the date/time dropdown shown above. This is great functionality to have because it lets you review plans that may have executed weeks or months ago, and also makes it very easy for you to detect when a plan has changed. If you also manage Oracle databases, I've posted a similar tutorial on the site as well.