

Advanced Plan Explorer Usage for Tuning Execution Plans

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- SQL Server DBA & DB Developer
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- Working with SQL Server since 2001
- Speaking since Early 2014
- Microsoft MVP (2017-2018)



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Bef



Today's Goal

To showcase advanced features and functionality often overlooked in Plan Explorer

Increase your speed and productivity while query tuning

Mostly demo

Basics will NOT be covered

Resources for Beginners

- Plan Explorer Documentation Website
<https://docs.sentryone.com/help/plan-explorer>
- Plan Explorer Blog Posts (SentryOne)
<https://www.sentryone.com/blog/tag/plan-explorer>
- SQLPerformance.com Blog Posts
<https://sqlperformance.com/?s=plan+explorer>
- Plan Explorer Demo Kit by Aaron Bertrand
<https://www.sentryone.com/blog/aaronbertrand/plan-explorer-3-0-demo-kit>
- eBook: Query Optimization with SentryOne Plan Explorer
by Paul White | Greg Gonzalez | Aaron Bertrand | Rob Farley
<https://info.sentryone.com/ebook-query-optimization-plan-explorer>
- Pluralsight: Using SentryOne Plan Explorer by Jonathan Kehayias
<https://www.pluralsight.com/courses/sqlserver-using-sentryone-plan-explorer>
- The BEST Index Analysis Solution by Devon Leann Wilson
<https://www.sentryone.com/blog/devonleannwilson/t-sql-tuesday-101>

[**github.com/sqlbeka/**](https://github.com/sqlbeka/)

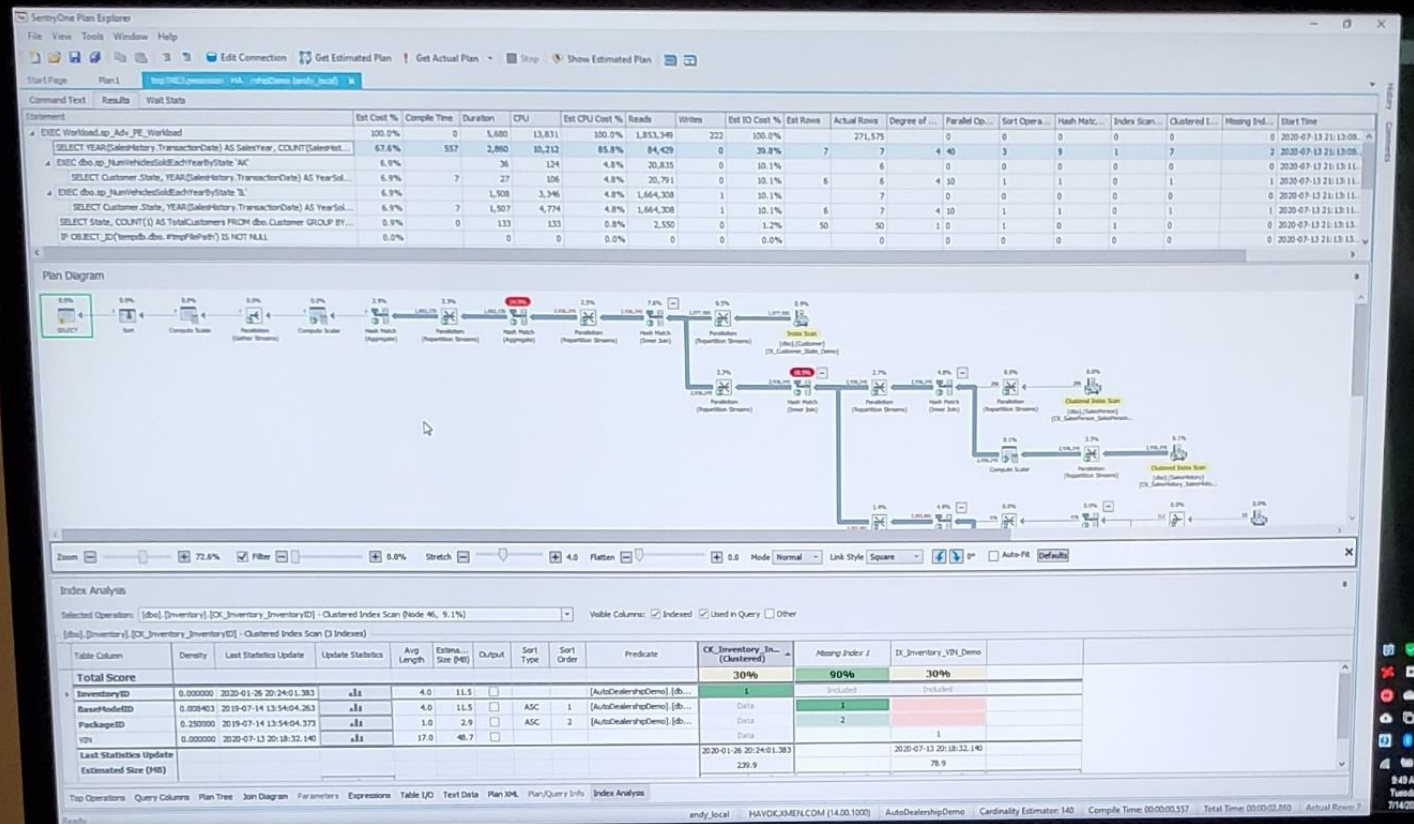
SSMS vs Plan Explorer

“I think there are two steps in the evolution of a query:

- (1) ensuring correct results, and
- (2) performance optimization”

- Aaron Bertrand

Customizing Your UI



SentryOne Plan Explorer

FileViewToolsWindowHelp

Edit ConnectionGet Estimated PlanGet Actual PlanStopShow Estimated Plan

Start PagePlan1tmp7AE3.pesession - HA...rshipDemo (andy_local)

Command TextResultsWait Stats

Statement	Est Cost %	Compile Time	Duration	CPU	Est CPU Cost %	Reads	Writes	Est IO Cost %	Est Rows	Actual Rows	Degree of ...	Parallel Op...	Sort Opera...	Hash Matc...	Index Scan...	Clustered I...	Missing Ind...	Start Time
EXEC Workload.sp_Adv_PE_Workload	100.0%	0	5,680	13,831	100.0%	1,853,349	222	100.0%		271,575		0	0	0	0	0	0	2020-07-13 21:13:08...
SELECT YEAR(SalesHistory.TransactionDate) AS SalesYear, COUNT(SalesHist...	67.6%	557	2,860	10,212	85.8%	84,429	0	39.8%	7	7	4	40	3	9	1	7	2	2020-07-13 21:13:08...
EXEC dbo.sp_NumVehiculesSoldEachYearByState 'AK'	6.9%		36	124	4.8%	20,835	0	10.1%		6		0	0	0	0	0	0	2020-07-13 21:13:11...
SELECT Customer.State, YEAR(SalesHistory.TransactionDate) AS YearSol...	6.9%	7	27	106	4.8%	20,791	0	10.1%	6	6	4	10	1	1	0	1	1	2020-07-13 21:13:11...
EXEC dbo.sp_NumVehiculesSoldEachYearByState 'IL'	6.9%		1,508	3,346	4.8%	1,664,308	1	10.1%		7		0	0	0	0	0	0	2020-07-13 21:13:11...

Plan Diagram

Zoom72.6%Filter0.0%Stretch4.0Flatten0.0ModeNormalLink StyleAuto-FitDefaults

Index Analysis

Selected Operation: [dbo].[SalesHistory].[CK_SalesHistory_SalesHistoryID] - Clustered Index Scan (Node 20, 6.1%)Visible Columns: ☒ Indexed☒ Used in Query☐ Other

[dbo].[SalesHistory].[CK_SalesHistory_SalesHistoryID] - Clustered Index Scan (2 Indexes)

Table Column	Density	Last Statistics Update	Update Statistics	Avg Length	Estima... Size (MB)	Output	Sort Type	Sort Order	Predicate	CK_SalesHistory_Sa... (Clustered)	Missing Index 2
Total Score										0%	80%
CustomerID	0.000002	2019-07-14 17:27:19.790		4.0	11.2	<input type="checkbox"/>			[AutoDealershipDemo].[db...	Data	Included
InventoryID	0.000000	2019-07-14 17:27:21.240		4.0	11.2	<input type="checkbox"/>			[AutoDealershipDemo].[db...	Data	Included
SalesHistoryID	0.000000	2020-01-26 20:24:03.240		4.0	11.2	<input type="checkbox"/>				1	Included
SalesPersonID	0.003378	2019-07-14 17:27:22.807		4.0	11.2	<input type="checkbox"/>			[AutoDealershipDemo].[db...	Data	1
SellPrice	0.000000	2020-01-26 20:14:17.857		8.0	22.4	<input type="checkbox"/>				Data	Included
TransactionDate	0.000002	2020-06-16 16:18:14.900		8.0	22.4	<input type="checkbox"/>				Data	Included
Last Statistics Update										2020-01-26 20:24:03.240	
Estimated Size (MB)					154.3						
Scripting Options										<S>	<S>

Parameters

Parameter	Compiled Value	Runtime Value	Test Value
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Statistics Histogram: [CK_SalesHistory_SalesHistoryID] (SalesHistoryID)

Top OperationsQuery ColumnsPlan TreeJoin DiagramParametersExpressionsTable I/OText DataPlan XMLPlan/Query InfoIndex Analysis

andy_localHAVOK.XMEN.COM (14.00.1000)AutoDealershipDemoCardinality Estimator: 140Compile Time: 00:00:00.557Total Time: 00:00:02.860Actual Rows: 7

DEMO

Customizing UI Recap

Use multiple monitors!

Experiment with different tiled & tabbed layouts

Reset Layout:

%UserProfile%\AppData\Local\SentryOne Plan
Explorer\

Final Notes & Parting Thoughts

<https://github.com/sqlbek/>

Download

- Sample 1 PE Session – Master.pesession
- Demo Notes.txt
- DeadlockGraph1.xml

Thank you!

Questions?

<https://github.com/SQLBek>

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<http://sqlbek.wordpress.com>

Want To Learn More About SentryOne?

Book a demo with me!

<http://www.sentryone.com/BookAndy/>