

# Plan Explorer Results

Last Modified on 25 June 2021

## Video

## Statement Section

The top section of the **Results** tab contains the **Statement** section or **Statements** tree. The **Statement** section represents one of the biggest differences between **Plan Explorer** and SSMS. Its function is critical when navigating multi-statement plans. It shows a logical breakdown of the entire plan tree, including all control structures, nested procedure calls, and estimated and/or actual metrics for each statement, including operation counts.

## Common Operations

- Select any statement in the grid to show the associated plan for that statement.
- Select any control structure (**IF** or **While**), or **Exec** higher up the tree to see a filtered view of the plan starting from that point.
- Sort the statements list and the highest cost trees, and statements immediately bubble up to the top.

## Context Menu Commands

Statement	Est Cost %	Compile Time	Duration	UDF Duration	CPU	UDF CPU	Est CPU Cost %	Reads	Writes	Est IO Cost %	Est Rows	Actual Rows	Key Lookups	RID Lookups
SET @OldTasksDateTime = DATEADD(DAY, -1, GETUTCDATE()) --Tasks.Task...	0.0%	0	0	0	0	0	0.0%			0.0%			0	0
SET @firstpass = 1	0.0%	0	0	0	0	0	0.0%			0.0%			0	0
WHILE (@@rowcount > 20 OR @firstpass = 1)	0.4%	0	0	0	0	0	0.6%			0.3%			0	0
SET @firstpass	0.0%	0	0	0	0	0	0.0%			0.0%			0	0
WHILE (@@r	0.7%	0	0	0	0	0	1.7%			0.6%			0	0
SET @firstpas	0.0%	0	0	0	0	0	0.0%			0.0%			0	0
WHILE (@@r	0.6%	0	0	0	0	0	0.1%			0.6%			0	0
SET @firstpas	0.0%	0	0	0	0	0	0.0%			0.0%			0	0
WHILE (@@r	4.0%	0	0	0	0	0	8.5%			3.8%			0	0
SET @firstpas	0.0%	0	0	0	0	0	0.0%			0.0%			0	0
WHILE (@@r	0.8%	0	0	0	0	0	0.1%			0.8%			0	0
SELECT @MinPerformanceAnalysisssasTraceDataID = ISNULL((UNION) FR...	0.0%	0	0	0	0	0	0.0%			0.0%	1		0	0
SET @firstpass = 1	0.0%	0	0	0	0	0	0.0%			0.0%			0	0
WHILE (@@rowcount > 20 OR @firstpass = 1)	0.4%	0	0	0	0	0	0.1%			0.5%			0	0
SET @firstpass = 1	0.0%	0	0	0	0	0	0.0%			0.0%			0	0

Command	Description
<b>Show Captured Statements Only</b>	<p><b>Note:</b> Applicable to only .queryanalysis files that originate in the SQL Sentry <b>Performance Analysis</b> integrated version of <b>Plan Explorer</b>.</p> <p>In the integrated version of <b>Plan Explorer</b> only statements that exceed the trace filters display by default. If a statement is part of the query call stack, but doesn't exceed the filters it's hidden. This helps you in quickly identifying the costliest parts of the query. Unchecking this option shows the entire query call stack.</p>
<b>Show Hidden Captured Statements</b>	<p><b>Note:</b> Applicable to only .queryanalysis files that originated in the SQL Sentry <b>Performance Analysis</b> integrated version of <b>Plan Explorer</b>. In the integrated version of <b>Plan Explorer</b>, you're able to hide statements in the <b>Statements</b> tree. If checked, those statements are no longer hidden.</p>
<b>Expand Subtree</b>	Expands all the child nodes of the selected statement.
<b>Expand All</b>	Expands the entire <b>Statement</b> tree.
<b>Collapse All</b>	Collapses the entire <b>Statement</b> tree.
<b>Edit Connection</b>	Allows you to edit the SQL Server connection.
<b>Copy &gt;</b>	Copies the cell, row, or all query information to the clipboard.
<b>Copy Statement to Command Text</b>	Copies the selected statement to the <b>Command Text</b> tab, overwriting any text currently in the tab.
<b>Copy All Statements to Command Text</b>	Copies all statements belonging to the query call stack over to the <b>Command Text</b> tab.

**Note:** When using a column filter that uses a percent value, use a decimal value for the filter. For example, if you'd like the filter to be 50 percent, use 0.5.

## General Query and Plan Info Section

The **General Query** and **Plan Information** section is in the center panel by default. It contains the **Text Data** tab and the **Plan XML** tab.

```

Text Data
--Tasks.TaskStatus
SET @firstpass = 1
WHILE (@@rowcount > 20 OR @firstpass = 1)
BEGIN
    SET @firstpass = 0
    WAITFOR DELAY '00:00:00.100'

    DELETE Tasks.TaskStatus
    FROM (SELECT TOP 1000 TaskId, OwnerId
          FROM Tasks.TaskStatus
          WHERE LastUpdatedTimeUtc < @OldTasksDateTime) T1
    WHERE Tasks.TaskStatus.TaskId = T1.TaskId AND Tasks.TaskStatus.OwnerId = T1.OwnerId
END

```

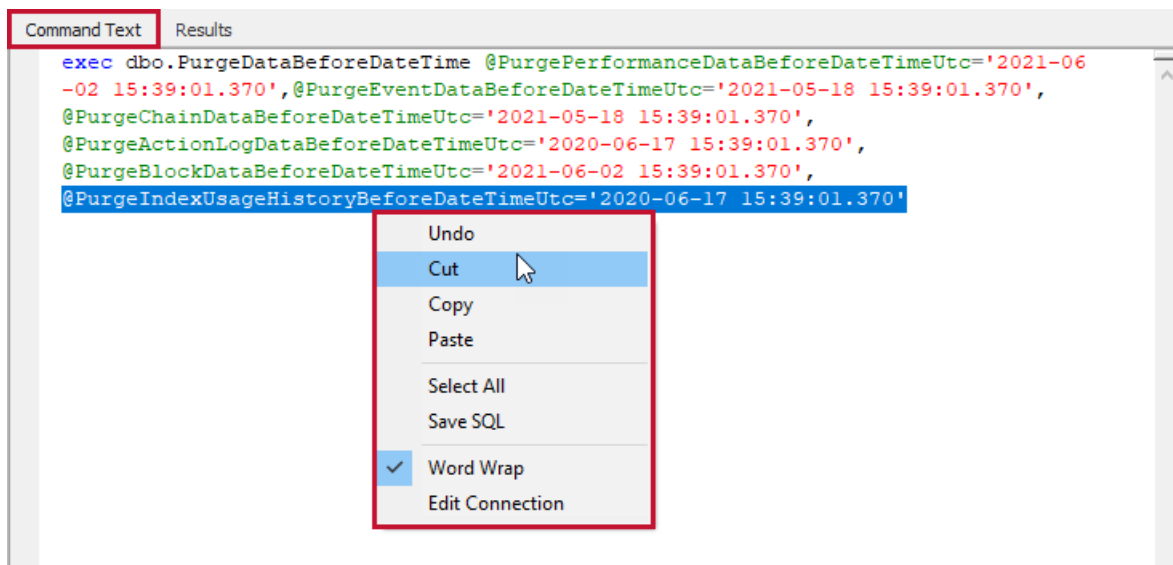
Text Data Plan XML Plan/Query Info

## Common Operations

- If you modify the query in the **Command Text** tab, the query text and XML synchronize when you generate a new **Estimated** or **Actual Plan** from the toolbar.
- The T-SQL statements synchronize with the **Statements** tree, meaning that if you select a row on the **Tree** view it auto-selects the associated T-SQL statement and its execution plan, and vice versa.

## Context Menu Options

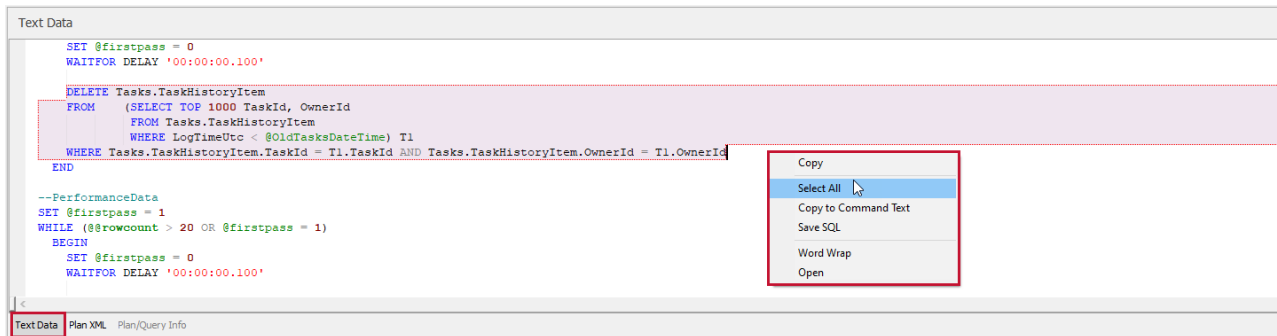
### Command Text Panel



Command	Description
<b>Undo</b>	Allows you the undo pasting the recent query.
<b>Cut</b>	Cuts the selected text to the clipboard.
<b>Copy</b>	Copies the selected text to the clipboard.
<b>Paste</b>	Pastes the selected text from the clipboard.
<b>Select All</b>	Selects the text in the active tab.

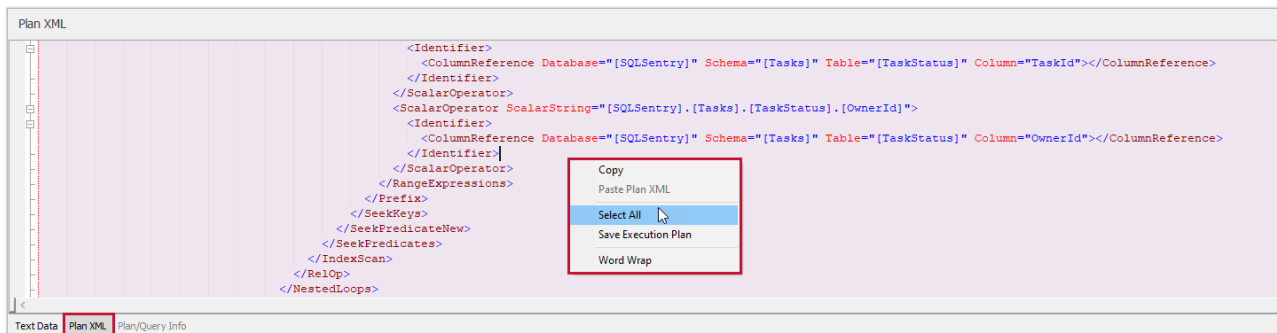
<b>Save SQL Command</b>	Saves the text data as a <b>.sql file</b> . <b>Description</b>
<b>Word Wrap</b>	Wraps text to the current width of the panel.
<b>Edit Connection</b>	Allows you to edit the SQL Server connection.

## Text Data Panel



Command	Description
<b>Copy</b>	Copies the selected text to the clipboard.
<b>Select All</b>	Selects the text in the active tab.
<b>Copy to Command Text</b>	Copies the selected information to the <b>Command Text</b> tab, overwriting any text currently in the tab.
<b>Save SQL</b>	Saves the text data as a <b>.sql file</b> .
<b>Word Wrap</b>	Wraps text to the current width of the panel.
<b>Open</b>	Allows you to open a new Plan Explorer session.

## Plan XML Panel



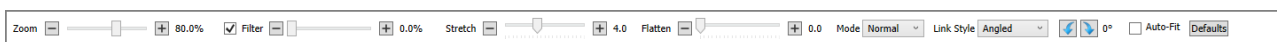
Command	Description

<b>Copy Command</b>	<b>Description</b> Copies the selected text to the clipboard.
<b>Paste Plan XML</b>	Allows you to paste a new plan.
<b>Select All</b>	Selects the text in the active tab.
<b>Save Execution Plan</b>	Saves the current execution plan.
<b>Word Wrap</b>	Wraps text to the current width of the panel.

## Plan Details

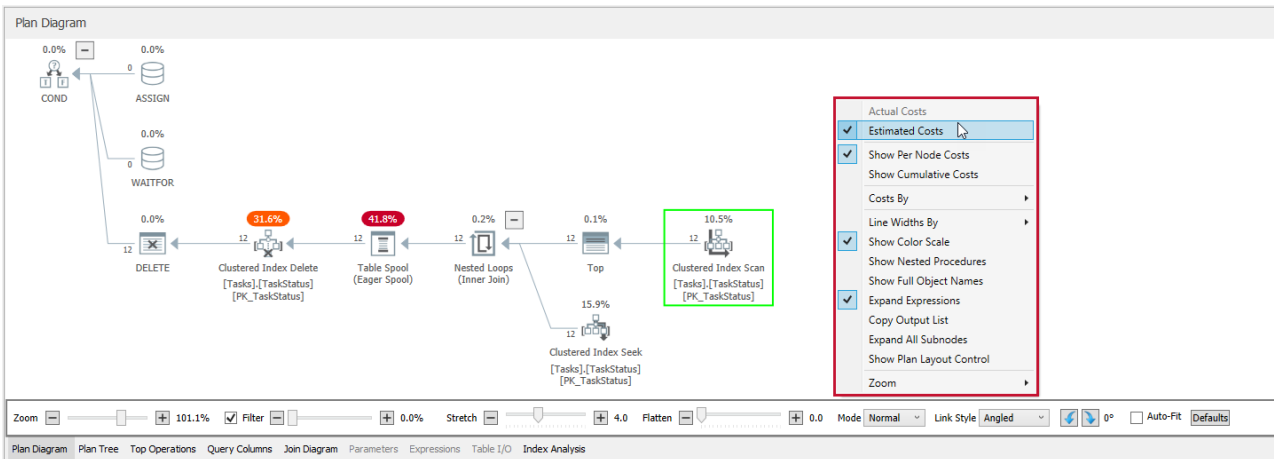
**Plan Explorer** offers several options and styles that can be applied to the **Plan Diagram**. When a plan is saved, these visual plan properties are maintained as part of the **Plan Explorer** session. Create a very specific view of the **Plan Diagram** for sharing and troubleshooting purposes. For a complete rundown of this feature, see the [Plan Explorer PRO 2.5: Query plans your way](#) blog post.

## Plan Diagram Toolbar



Option	Description
<b>Zoom</b>	Scales the <b>Plan Diagram</b> between six percent and 400 percent of its original size. Use <b>CTRL + Mouse Wheel</b> to perform this operation.
<b>Filter</b>	<b>Filter</b> nodes from the <b>Plan Diagram</b> based on cost.
<b>Stretch</b>	Stretches the links between <b>Plan Diagram</b> nodes.
<b>Flatten</b>	Flattens the space between node levels in the <b>Plan Diagram</b> .
<b>Mode</b>	There are several modes available that change the layout of the entire <b>Plan Diagram</b> .
<b>Link Style</b>	The <b>Link Style</b> used between nodes in the <b>Plan Diagram</b> .
Rotation	Rotates the entire <b>Plan Diagram</b> 90 degrees.
<b>Auto-Fit</b>	Automatically fits the plan in the <b>Plan Diagram</b> tab.
<b>Defaults</b>	All <b>Plan Diagram</b> options are reset.

## Plan Diagram Context Menu



Command	Description
<b>Actual Costs</b>	Shows metrics captured during <b>Actual Plan</b> retrieval.
<b>Estimated Costs</b>	Shows metrics associated with the <b>Estimated Plan</b> .
<b>Show Per Node Costs</b>	The default view, costs are per node, representing each individual nodes contribution to the total cost.
<b>Show Cumulative Costs</b>	Costs are cumulative, representing each individual nodes contribution plus the contribution of any of its children.
<b>Costs By</b>	<b>I/O</b> —Show costs by I/O <b>CPU</b> —Show costs by CPU <b>CPU + I/O</b> —Show costs by CPU +I/O
<b>Line Widths By</b>	Rows Data Size (MB)
<b>Show Color Scale</b>	Node costs are highlighted with an appropriate color scale, ranging from a light yellow to red.
<b>Show Nested Procedures</b>	Shows nested procedures.
<b>Show Full Object Names</b>	Objects are represented with full object names.
<b>Expand Expressions</b>	Expands all expressions.
<b>Copy Output List</b>	Copies the output list to the clipboard.
<b>Missing Index Details</b>	Displays the index details.
<b>Expand All Subnodes</b>	Expands all the subnodes.
<b>Show Plan Layout Control</b>	Shows the layout controls.

<b>Command Zoom</b>	<b>Description</b>
	Various options for zooming in and out. Alternatively, use <b>CTRL + Mouse Wheel</b> .

## Plan Tree

Operation	Object	Est Cost %	Est Subtree Cost %	Est Rows	Est Executions	Est CPU Cost	Est IO Cost	Est Data Size	Parallel	Ordered	Est Rebinds	Est Rewinds	Partitioned
Index Scan	[SQLSentry].[dbo].[EventSourceHistory].[IX_P...	0.1%	0.0%	2,053	1	0.0024153	0.0083102	30,795	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	<input type="checkbox"/>
SELECT		0.0%	0.0%	1	0	0.0000000	0.0000000	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Compute Scalar		0.0%	0.0%	1	1	0.0000001	0.0000000	15	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Stream Aggregate		0.0%	0.0%	1	1	0.0000011	0.0000000	15	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Top		0.0%	0.0%	1	1	0.0000001	0.0000000	15	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Scan	[SQLSentry].[dbo].[EventSourceHistory].[PK_E...	0.0%	0.0%	1	1	0.0024153	0.0008678	15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	<input type="checkbox"/>
DELETE		0.0%	0.0%	6	0	0.0000000	0.0000000	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Delete	[SQLSentry].[dbo].[EventSourceHistoryDetail]....	0.8%	0.0%	6	1	0.0000405	0.0700000	52	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Table Spool (Eager Spool)		0.1%	0.0%	6	1	0.0001022	0.0131249	87	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Nested Loops (Inner Join)		0.0%	0.0%	6	1	0.0000242	0.0000000	87	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Top		0.0%	0.0%	6	1	0.0000006	0.0000071	87	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Seek	[SQLSentry].[dbo].[EventSourceHistoryDetail]....	0.0%	0.0%	6	1	0.0001659	0.0031250	133	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Seek	[SQLSentry].[dbo].[EventSourceHistoryDetail]....	0.1%	0.0%	6	6	0.0009145	0.0060232	87	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5	0	<input type="checkbox"/>
INSERT		0.0%	0.0%	1	0	0.0000000	0.0000000	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Table Insert	[tempdb].[dbo].[#tempMinRemoteSequenceIds]	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Stream Aggregate		0.0%	0.0%	1	1	0.0000031	0.0000000	23	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Seek	[SQLSentry].[dbo].[EventSourceHistoryDetail]....	0.0%	0.0%	5	1	0.0001627	0.0031250	120	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	<input type="checkbox"/>
UPDATE		0.0%	0.0%	1	0	0.0000000	0.0000000	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Table Update	[tempdb].[dbo].[#tempMinRemoteSequenceIds]	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Compute Scalar		0.0%	0.0%	1	1	0.0000001	0.0000000	23	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Nested Loops (Left Outer Join)		0.0%	0.0%	1	1	0.0000042	0.0000000	23	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Table Scan	[tempdb].[dbo].[#tempMinRemoteSequenceIds]	0.0%	0.0%	1	1	0.0001581	0.0031250	31	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	<input type="checkbox"/>
Top		0.0%	0.0%	1	1	0.0000001	0.0000000	15	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>

Plan Diagram **Plan Tree** Top Operations Query Columns Join Diagram Parameters Expressions Table I/O Index Analysis

The **Plan Tree** tab contains a tree representation of the plan's operations and associated metrics. Use the arrows to expand and collapse sections of the **Plan Tree**. Right-click any column header, and use the **Column Chooser** command to access additional plan metrics. Any significant differences between estimates and actuals are highlighted, as are possible problematic operations like scans and bookmark lookups.

## Context Menu Options

Option	Description
<b>Copy &gt; Cell</b>	Copies the selected cell.
<b>Copy &gt; Row</b>	Copies the selected row.
<b>Copy &gt; All</b>	Copies all column data.

## Top Operations

Operation	Object	Est Cost %	Est Subtree Cost %	Est Rows	Est Executions	Est CPU Cost	Est IO Cost	Est Data Size	Parallel	Ordered	Est Rebinds	Est Revinds	Partitioned
Index Scan	[SQLSentry].[dbo].[EventSourceHistory].[IX_P...	0.1%	0.0%	2,053	1	0.0024153	0.0083102	30,795	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Insert	[tempdb].[dbo].[#tempProcessHistoryID].[PK_...	0.1%	0.0%	523	1	0.0005226	0.0100000	4,703	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Seek	[SQLSentry].[dbo].[EventSourceHistoryDetail]...	0.1%	0.0%	27	27	0.0042687	0.0062500	405	<input type="checkbox"/>	<input checked="" type="checkbox"/>	26	0	<input type="checkbox"/>
Index Scan	[SQLSentry].[dbo].[PerformanceAnalysisDevice...	0.1%	0.0%	523	1	0.0020732	0.0083102	9,929	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Merge Join (Left Semi Join)		0.1%	0.0%	342	1	0.0103137	0.000035	3,075	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Scan	[SQLSentry].[dbo].[PerformanceAnalysisSqlInd...	0.1%	0.0%	1,613	1	0.0019313	0.0083102	20,969	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Delete	[SQLSentry].[Tasks].[TaskStatus].[PK_TaskSta...	0.1%	0.0%	12	1	0.0000120	0.0100000	108	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Insert	[SQLSentry].[dbo].[PerformanceAnalysisSqlFile...	0.1%	0.0%	9	1	0.0000090	0.0100000	81	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Insert	[SQLSentry].[dbo].[PerformanceAnalysisDevice...	0.1%	0.0%	7	1	0.0000070	0.0100000	63	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Insert	[SQLSentry].[dbo].[PerformanceAnalysisTrace...	0.1%	0.0%	7	1	0.0000066	0.0100000	59	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Insert	[SQLSentry].[dbo].[PerformanceAnalysisDevice...	0.1%	0.0%	3	1	0.0000030	0.0100000	27	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Delete	[SQLSentry].[dbo].[PerformanceAnalysisFragm...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Table Update	[tempdb].[dbo].[#tempMinRemoteSequenceIDs]	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Delete	[SQLSentry].[dbo].[PerformanceAnalysisSaaS...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Delete	[SQLSentry].[dbo].[PerformanceAnalysisSaaS...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Delete	[SQLSentry].[dbo].[PerformanceAnalysisSaaS...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Delete	[SQLSentry].[dbo].[PerformanceAnalysisSaaS...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Index Delete	[SQLSentry].[dbo].[PerformanceAnalysisSaaS...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Delete	[SQLSentry].[VM].[AuditVirtualMachineHostSyst...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Delete	[SQLSentry].[SqPerf].[History].[PK_Synchistor...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>
Clustered Index Delete	[SQLSentry].[SqPerf].[SessionTableStatus].[P...	0.1%	0.0%	1	1	0.0000010	0.0100000	9	<input type="checkbox"/>	<input type="checkbox"/>	0	0	<input type="checkbox"/>

The **Top Operations** tab contains a sortable list view of all plan operations. The **List** view is sorted by total cost descending by default so you can immediately see which operations are the highest cost.

## Context Menu Options

Option	Description
Copy > Cell	Copies the selected cell.
Copy > Row	Copies the selected row.
Copy > All	Copies all column data.

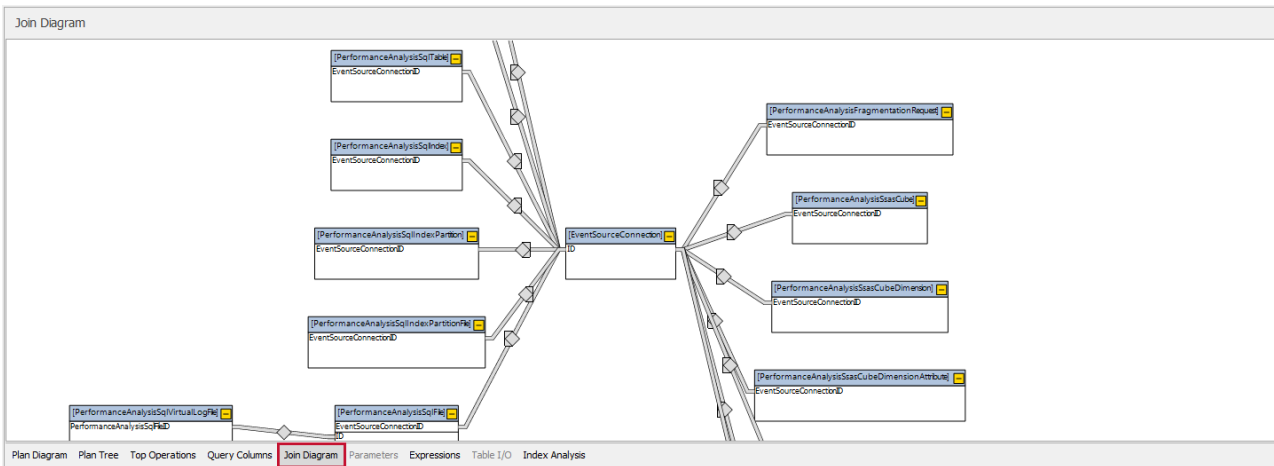
## Query Columns

Database	Schema	Table	Column	Operation	Index	Est Rows	Est Data Size	Filters	Group By
		#tempMinRemoteSequenceIDs	EventSourceID	Table Scan		1	31		<input type="checkbox"/>
		#tempMinRemoteSequenceIDs	MinRemoteSequenceID	Table Scan		1	31		<input type="checkbox"/>
		#tempProcessHistoryID	ID	Clustered Index Scan	[PK_#tempPro_3214EC2782D5805A]	1	15		<input type="checkbox"/>
		#[HistoryMetaTables]	name	Table Scan		1	4,035		<input type="checkbox"/>
[SQLSentry]	[dbo]	[AlertingChannelLog]	ID	Hash Match (Inner Join)		70	1,049	[SQLSentry].[dbo].[AlertingChannelLog].[ID] = ...	<input type="checkbox"/>
[SQLSentry]	[dbo]	[AlertingChannelLog]	ID	Index Seek	[IX_Covering]	50	756		<input type="checkbox"/>
[SQLSentry]	[dbo]	[AlertingChannelLog]	NormalizedStartTimeUtc	Index Seek	[IX_Covering]	50	756	[SQLSentry].[dbo].[AlertingChannelLog].[Norm...	<input type="checkbox"/>
[SQLSentry]	[dbo]	[AlertingChannelLog]	ID	Index Scan	[IX_Covering]	669	10,035		<input type="checkbox"/>
[SQLSentry]	[dbo]	[AlertingChannelLog]	ID	Hash Match (Inner Join)		1	11	[SQLSentry].[dbo].[AlertingChannelLog].[ID] = ...	<input type="checkbox"/>
[SQLSentry]	[dbo]	[AlertingChannelLogNote]	ID	Clustered Index Scan	[PK_AlertingChannelLogNote]	1	19		<input type="checkbox"/>
[SQLSentry]	[dbo]	[AlertingChannelLogNote]	AlertingChannelLogID	Clustered Index Scan	[PK_AlertingChannelLogNote]	1	19		<input type="checkbox"/>
[SQLSentry]	[VM]	[AuditVirtualMachineHostSystemChange]	ID	Clustered Index Scan	[PK_AuditVirtualMachineHostSystemChange]	1	19		<input type="checkbox"/>
[SQLSentry]	[VM]	[AuditVirtualMachineHostSystemChange]	Timestamp	Clustered Index Scan	[PK_AuditVirtualMachineHostSystemChange]	1	19	< @PurgePerformanceDataBeforeDateTimeLocal	<input type="checkbox"/>
[SQLSentry]	[VM]	[AuditVirtualMachineHostSystemChange]	ID	Clustered Index Seek	[PK_AuditVirtualMachineHostSystemChange]	1	11		<input type="checkbox"/>
[SQLSentry]	[dbo]	[BlockChain]	ID	Index Seek	[IX_BlockData_LogTimeUtc]	1	15		<input type="checkbox"/>
[SQLSentry]	[dbo]	[BlockChain]	NormalizedStartTime	Index Seek	[IX_BlockData_LogTimeUtc]	1	15	[SQLSentry].[dbo].[BlockChain].[NormalizedSta...	<input type="checkbox"/>
[SQLSentry]	[dbo]	[BlockChain]	ID	Clustered Index Seek	[PK_BlockChain]	1	15		<input type="checkbox"/>
[SQLSentry]	[dbo]	[BlockChain]	ID	Index Scan	[IX_BlockChainMessageStatus]	1	15		<input type="checkbox"/>
[SQLSentry]	[dbo]	[BlockChainDetail]	ID	Index Seek	[IX_BlockedBySpid]	1	15		<input type="checkbox"/>
[SQLSentry]	[dbo]	[BlockChainDetail]	BlockChainID	Index Seek	[IX_BlockedBySpid]	1	15	[SQLSentry].[dbo].[BlockChainDetail].[BlockCha...	<input type="checkbox"/>

The **Query Columns** tab shows exactly how data is accessed for each column used by the query, including the associated operation and estimated rows. This view helps you identify bookmark lookups or index scans occurring due to non-covering indexes. Columns for related operations are grouped together (indicated by a thick separator bar), with the indexes used and bookmark (key / rid) lookup columns highlighted in orange. This helps you see how indexes can be modified to eliminate lookups.

## Join Diagram





If there are joins present in the query, the **Join Diagram** tab is present, showing a visual representation of the joins involved. This is like the database diagram or **Query Designer** features within the **Management Studio**, but it only shows the columns that actively participate in joins. **Plan Explorer** looks past any views and shows the base tables and base columns, making it quicker to analyze queries that involve, for example, nested views.

## Parameters

Parameters		
Parameter	Compiled Value	Runtime Value
[@Counter]		@Counter - 1

Plan Diagram Plan Tree Top Operations Query Columns Table I/O Expressions **Parameters** Join Diagram Index Analysis

The **Parameters** tab shows compiled and runtime parameters referenced in the plan, if any exist (otherwise the tab isn't visible). An **Estimated Plan** only shows the compiled parameter value. An **Actual Plan** compares compiled values with runtime that can in turn help point out potential parameter sniffing issues.

## Expressions

Expressions				
Operator Type	Expression Name	Computed Column	Expression	Expression (Expanded)
Compute Scalar	[SQLSentry].[dbo].[Perfor...]	✓	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS Cube].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Cube].[CubeID],0))	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS Cube].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Cube].[CubeID],0))
Compute Scalar	[SQLSentry].[dbo].[Perfor...]	✓	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[MeasureGroupID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[DimensionID],0))	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[MeasureGroupID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimension].[DimensionID],0))
Compute Scalar	[SQLSentry].[dbo].[Perfor...]	✓	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[MeasureGroupID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[DimensionID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[AttributeID],0))	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[MeasureGroupID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[DimensionID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS CubeDimensionAttribute].[AttributeID],0))
Compute Scalar	[SQLSentry].[dbo].[Perfor...]	✓	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[MeasureGroupID],0))	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS MeasureGroup].[MeasureGroupID],0))
Compute Scalar	[SQLSentry].[dbo].[Perfor...]	✓	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[MeasureGroupID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[PartitionID],0))	CONVERT(binary(20),hashbytes(N'SHA1',CONVERT(nvarchar(6),[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[EventSourceConnectionID],0)+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[DatabaseID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[CubeID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[MeasureGroupID]+[SQLSentry].[dbo].[PerformanceAnalysisSaaS Partition].[PartitionID],0))

Plan Diagram Plan Tree Top Operations Query Columns Join Diagram Parameters **Expressions** Table I/O Index Analysis

If there are any expressions in the plan the **Expressions** tab is present. You can see the operator type, the shorthand expression name, and the expanded version of the expression, as well as any other expressions that reference it or are referenced by it, allowing you to quickly see if you're performing the same operations repeatedly.

## Context Menu Options

Option	Description
Copy > Cell	Copies the selected cell.
Copy > Row	Copies the selected row.
Copy > All	Copies all column data.

## Table I/O

Table	LOB Read-Ahead Reads	LOB Physical Reads	LOB Logical Reads	Read-Ahead Reads	Physical Reads	Logical Reads	Scan Count	Rowgroups Read	Rowgroups Skipped
columns	0	0	20	0	0	0	1	1	0
tables	0	0	0	0	0	21	1		
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>2</b>	<b>1</b>	<b>0</b>

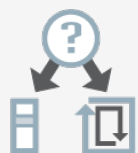
Plan Diagram Query Columns Top Operations Join Diagram Expressions Plan Tree Parameters **Table I/O** Index Analysis





The **Table I/O** tab is present for **Actual Plans**. This tab breaks down all the reads from a query by object, making it easy to see where most of your I/O is coming from.

## Plan Diagram Icons



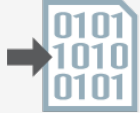
The following is a list of the icons, and what they signify in Plan Explorer :

A

Icon	Description
	Adaptive join


Icon	Description
	Aggregate
	Arithmetic Expression
	Assert
	Assign






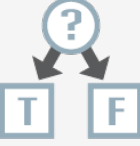



## B

Icon	Description
	Build Batch Hatch table
	Bitmap
	Bookmark Lookup




## C

Icon	Description



Icon	Description
	Clustered index delete
	Clustered index insert
	Clustered index merge
	Clustered index scan
	Clustered index seek
	Clustered index update
	Collapse
	Column Store index delete
	Column Store index insert



Icon	Description
	Column Store index merge
	Column Store index scan
	Column Store index update
	Compute Scalar
	Concatenation
	Condition
	Constant Scan
	Convert
	Cursor

## D

Icon	Description
	Declare
	Delete
	Deleted Scan
	Distribute Stream
	Dynamic

## F

Icon	Description
	Fast Forward
	Fetch Query

Icon	Description
	
	Foreign key reference

## H

Icon	Description
	Hash Match / Hash Match Aggregation / Hash Match Union
	Hash Match Root
	Hash Match Team

## I


Icon	Description
	Index Delete
	Index Insert

Icon	Description
	Index Scan
	Index Seek
	Index Spool
	Index Update
	Insert
	Inserted Scan
	Intrinsic
	Iterator / Iterator Catch All




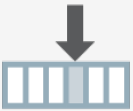
## K

Icon	Description





<b>Icon</b> 	<b>Description</b> Key Lookup
	Key Set

## L

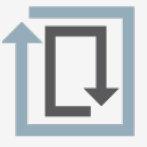





Icon	Description
	Locate
	Logical Op Distribute Streams
	Logical Op Reparation Streams
	Log Row Scan


## M

Icon	Description
	Merge






Icon	Description
	Merge Interval
	Merge Join

## N-O


Icon	Description
	Nested Loops
	Overlay Batch Mode
	Overlay Batch Mode Parallel
	Overlay Error
	Overlay Information
	Overlay Parallel






Icon	Description
	Overflow Warning




## P

Icon	Description
	Parallelism
	Parameter Table Scan
	Population Query
	Print
	Put




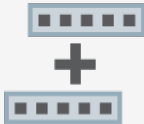

## R







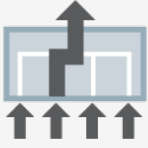
Icon	Description
	Rank

Icon	Description
	Remote Query
	Remote Delete
	Remote Index Scan
	Remote Index Seek
	Remote insert
	Remote Query
	Remote Scan
	Remote Update
	Repartition Stream


Icon	Description
	Result
	RID Lookup
	Row Count Spool









S

Icon	Description
	Segment
	Select
	Select Into
	Sequence
	Sequence Project

	<b>Description</b> Set Function
	Snapshot
	Sort
	Split
	Spool
	Stream Aggregate
	Switch



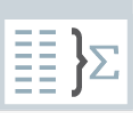

## T

Icon	Description
	Table Delete

Icon	Description
	Table Insert
	Table Merge
	Table Scan
	Table Spool
	Table Update
	Table Value Function
	Top
	TSQL

## U-W

Icon	Description

Icon	Description
	Unknown
	Update
	Window Aggregate
	Window Spool