

SQLskills Immersion Event IE2: Performance Tuning

Module 14: Advanced Extended Events

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Overview

- SQL Server 2012 Extended Events UI
- Extended Events advanced troubleshooting



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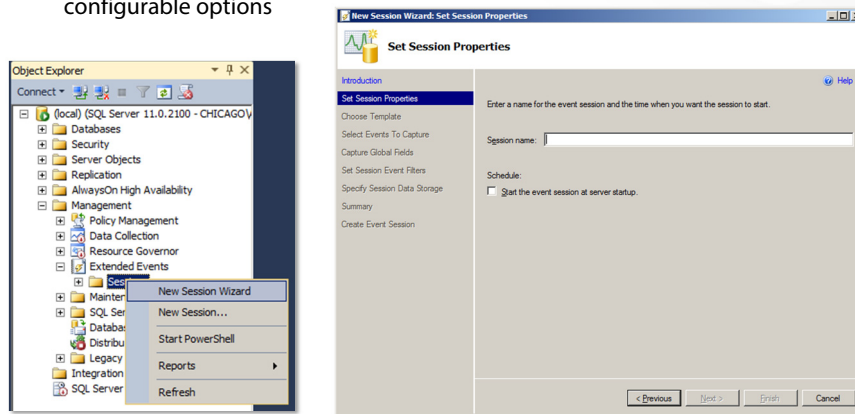
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Extended Events UI

▪ New Session Wizard

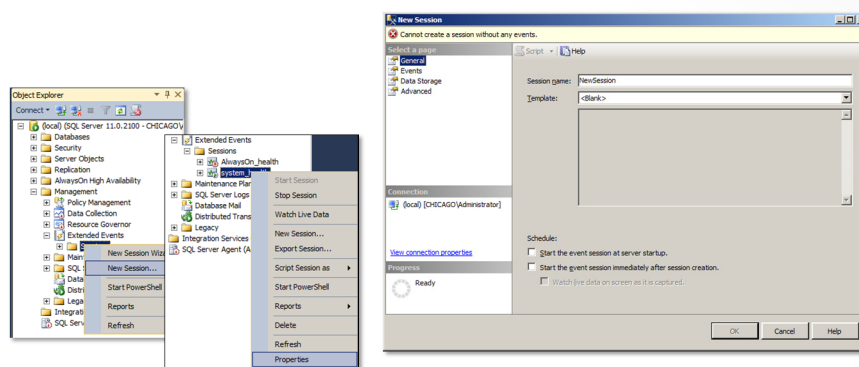
- Create new sessions rapidly from templates or by using a minimal set of configurable options



Extended Events UI

▪ New Session Dialog

- Used for advanced session creation using all available options and targets
- Used for modifying existing event sessions



Live Data Viewer

- Reads a live stream of event buffers from an Extended Events session on a server
 - Provides a “Profiler like” view of the data being generated
- Will disconnect if it can’t keep up with event generation to prevent impact to the instance
 - Boosting MAX_MEMORY option for the instance and/or changing memory partitioning may prevent disconnects from occurring

Displaying 150 Events

name	timestamp
sql_batch_completed	2012-02-27 16:30:44.4455716
error_reported	2012-02-27 16:30:44.4836575
error_reported	2012-02-27 16:30:44.4836575
error_reported	2012-02-27 16:30:44.4846241
sql_batch_completed	2012-02-27 16:30:44.4846241
sql_statement_completed	2012-02-27 16:30:44.4885403
sql_statement_completed	2012-02-27 16:30:44.4885403
sql_batch_completed	2012-02-27 16:30:44.4885403
sql_statement_completed	2012-02-27 16:30:44.4963528
sql_statement_completed	2012-02-27 16:30:44.4963528
sql_batch_completed	2012-02-27 16:30:44.4963528

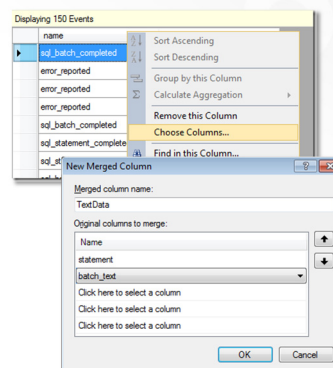
Event: error_reported (2012-02-27 16:30:30.7026587)

Details

Field	Value
attach_activity_id	3354E95C-A44D-436A-AE96-A61867673811
attach_activity_id_s...	1
attach_activity_id_...	2968B048-C486-4168-89C6-157074C82A28
attach_activity_id_...	0
category	SERVER
client_app_name	Microsoft SQL Server Management Studio - Query
database_id	10
destination	USER
error_number	5701
...	...

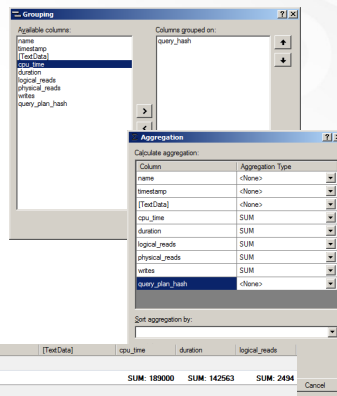
Data Viewer Customization

- Default view is limited but columns can be added using the column chooser
 - New Merged columns can be created to track similar information provided by different events in a single column in the grid view
- Display settings can be saved for reuse with later Event Sessions or event_file processing



Grouping and Aggregating Data

- Simplified complex data analysis of disconnected data within the data viewer for Extended Events
 - Group by any available columns in the current view
 - Aggregate one or many columns based on the current grouping settings to find trends of interest
- Groups can be expanded for detail level viewing



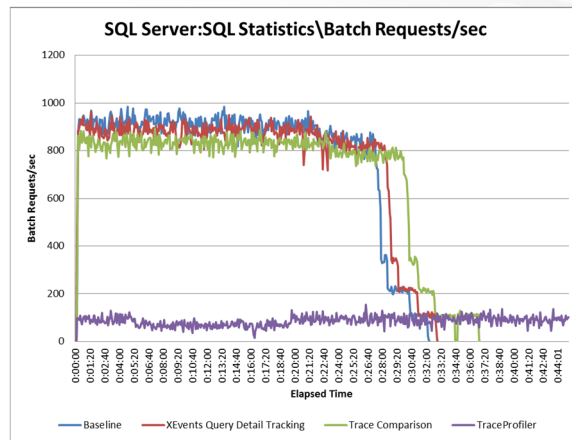
name	timestamp	(Text/Date)	cpu_time	duration	logical_reads
query_hash: 2019622035648856120 (24)					
			SUM: 189000	SUM: 142563	SUM: 243
query_hash: 11466902891013851518 (24)					
			SUM: 48000	SUM: 138661	SUM: 247
query_hash: 9126238797566703259 (19)					
			SUM: 983000	SUM: 937490	SUM: 2363
sql_statement_completed	2012-03-19 12:25:47.5439887	SELECT ProductID, Or...	47000	42963	1246
sql_statement_completed	2012-03-19 12:25:53.8857836	SELECT ProductID, Or...	78000	63007	1258
sql_statement_completed	2012-03-19 12:25:55.7041429	SELECT ProductID, Or...	47000	45886	1246
sql_statement_completed	2012-03-19 12:25:58.9631273	SELECT ProductID, Or...	62000	52734	1246

Demo

Extended Events UI

Workload Impacts from Tracing

- Baseline = 896
- XEvents = 871 (97.2%)
- TraceFile = 822 (91.7%)
- TraceProfiler = 81 (9.1%)



Extended Events Advanced Troubleshooting

- Tracking bad page splits
- Tracking tempdb allocation bitmap contention
- Tracking error handling in TSQL code
- Walking the tsql_stack to discover what caused a procedure to execute
- Tracking auto parameterized statements
- Debugging lock escalation issues
- Tracking database and object usage

Review

- SQL Server 2012 Extended Events UI
- Extended Events advanced troubleshooting