SSAS QuickTrace

Last Modified on 12 July 2022

QuickTrace™

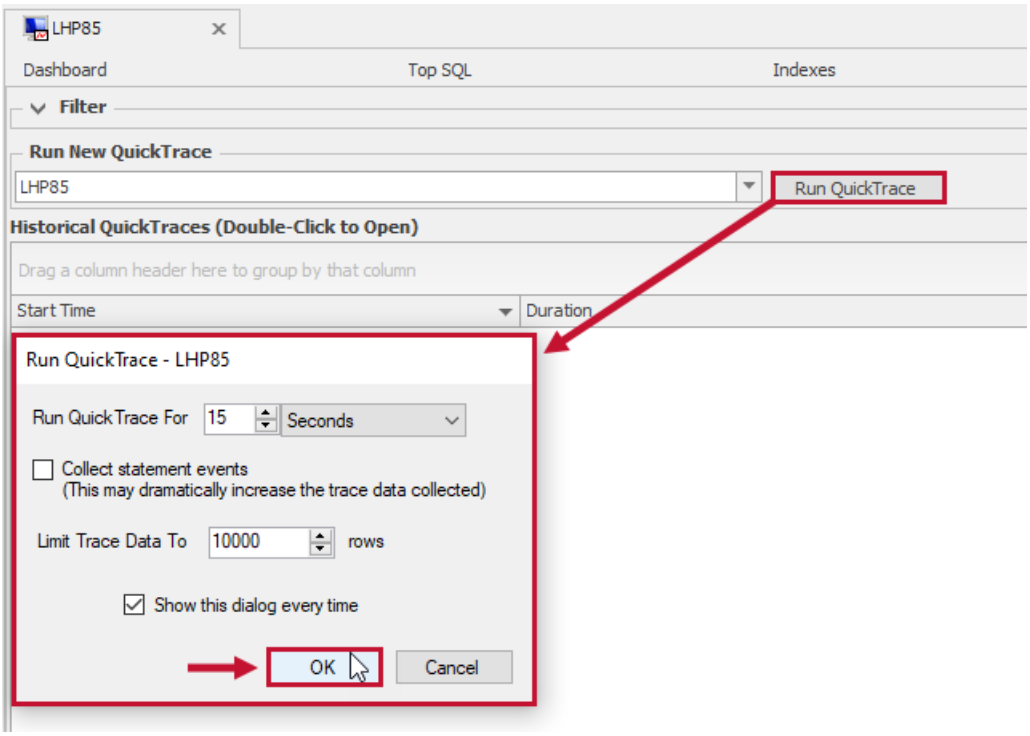
A **QuickTrace** is a comprehensive snapshot of activity created by combining process-level data and trace events collected during a brief sample period. Various metrics such as CPU, I/O, recompiles, cache misses, cursor operations, etc., are automatically aggregated, and are grouped and sorted providing a clear picture the processes, hosts, applications, or users responsible for activity during the sample. For a full list of the metrics gathered, see the QuickTrace Collected metrics table below.

Top SQL trace uses filters to collect only the heaviest events by default to maintain low overhead. A **QuickTrace** isn't filtered and collects all events and it's both time and row limited, to avoid impacting the performance of the target SQL Server.

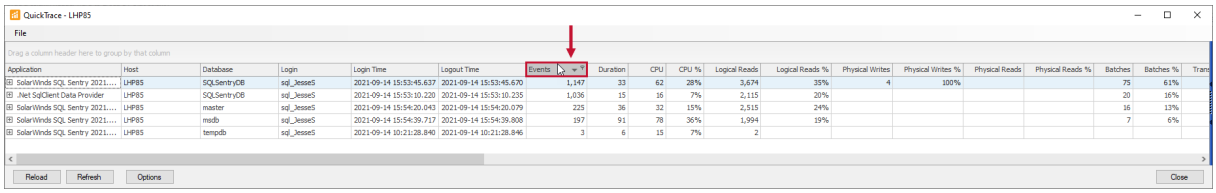
A **QuickTrace** is typically run manually from the **Dashboard** in response to observing high utilization in one or more metrics. For example, if there's a spike in **Transactions/sec** on the **SQL Server Activity**, run a **QuickTrace** by completing the following steps:

1. Highlight the spike, and then right-click to open the context menu. Select **Jump To** > **QuickTraces** to open the **QuickTraces** tab.

2. Select **Run QuickTrace** to open the **Run a QuickTrace** dialog box, configure your desired metrics, and then select **Ok**.

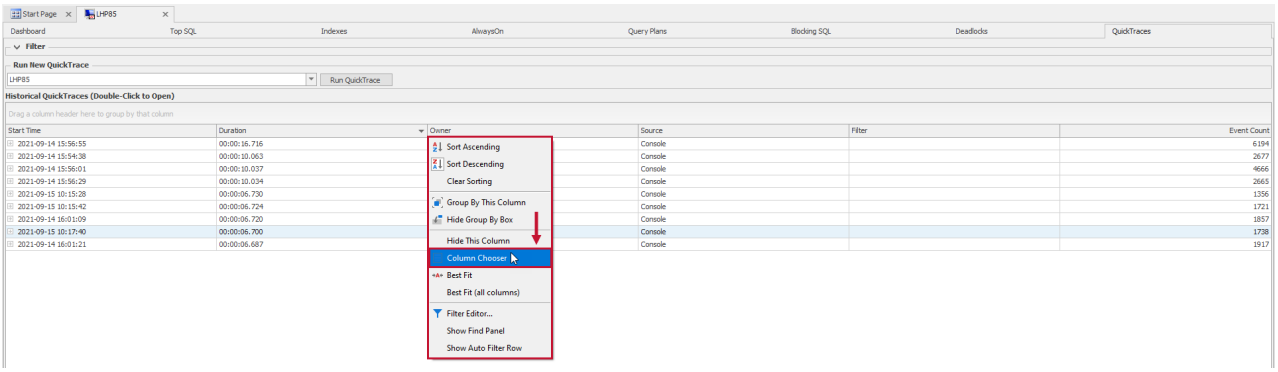


3. Sort by **Events** to determine the cause.



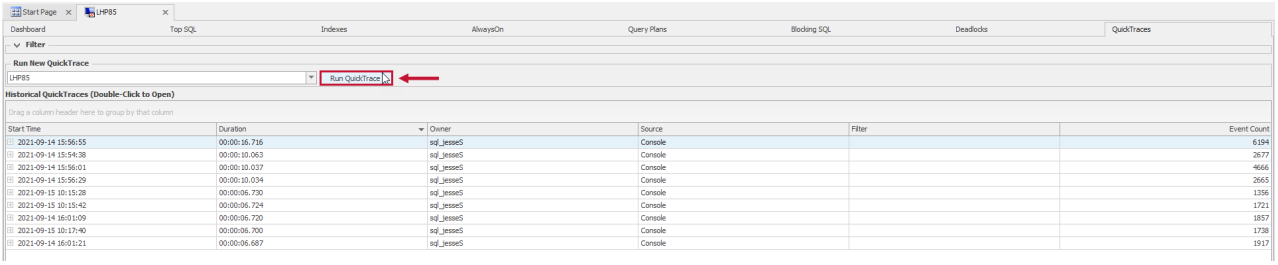
Column Set

There are four **Column Sets** that can be selected and modified to provide a pre-determined view of the data with preset columns and sorting. If a **QuickTrace** is launched by right clicking the **Network**, **CPU**, **SQL Server Activity**, or **Disk IO** charts, the appropriate column set is used by default. Change the active column set by right-clicking the master or detail column header row, and then selecting the **Column Chooser** menu item.



Note: When you run a **QuickTrace** from the **QuickTraces** tab the **SQL Activity Column Set** is used.

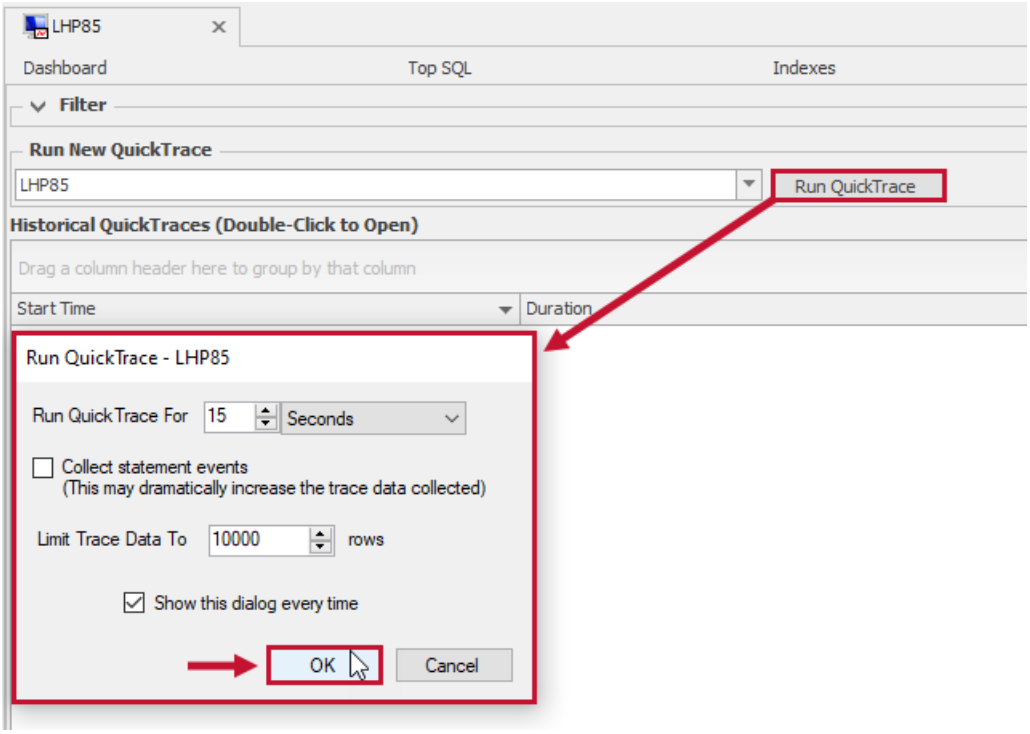
The **QuickTraces** tab lists all **QuickTraces** occurring during the active date range. Execute **QuickTraces** manually or automatically using the **Run QuickTrace** action in response to a condition such as **Runtime Threshold Max** or **Performance Counter Threshold Max**.



Running a QuickTrace

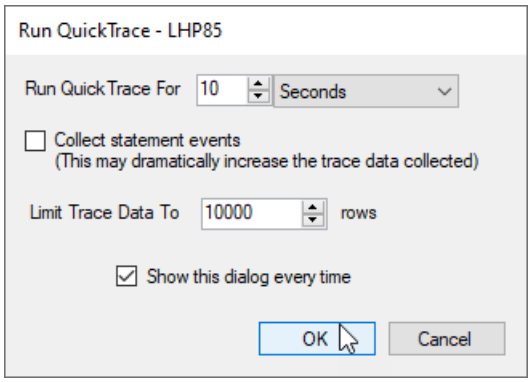
Select **Run QuickTrace** from the **QuickTraces** tab or from the right-click menu on the other applicable tabs, to open the options menu. Enter the length of time the **QuickTrace** runs in the first dialog box. Choose to **Collect statement events** or not by selecting the checkbox in the second dialog box. Limit the number of **Trace Data** rows in the third dialog box. Select **Ok** to run the **QuickTrace**.

Note: You can enable a QuickTrace to run when certain conditions are met by configuring the **Run QuickTrace** action. For more information about Actions in SQL Sentry, see the Actions article.



Default Settings

- The **QuickTrace** runs for 15 seconds.
- **Collect statement events** is unselected.
- **Limit Trace Data To** 10000 rows.



> **Note:** Generally, these settings are fine but may need to be adjusted in certain situations.

Restrictions

To avoid impacting server performance on very busy systems, SQL Sentry restricts **QuickTrace** functionality under some circumstances.

QuickTrace Restrictions

A **QuickTrace** isn't allowed if a 100Mb adapter is present, and the last sample indicates there are >300 users

or >3000 transactions per second for the targeted server.

This state is also checked before automated **QuickTraces** are run. The **QuickTrace** is disallowed if the state is detected.

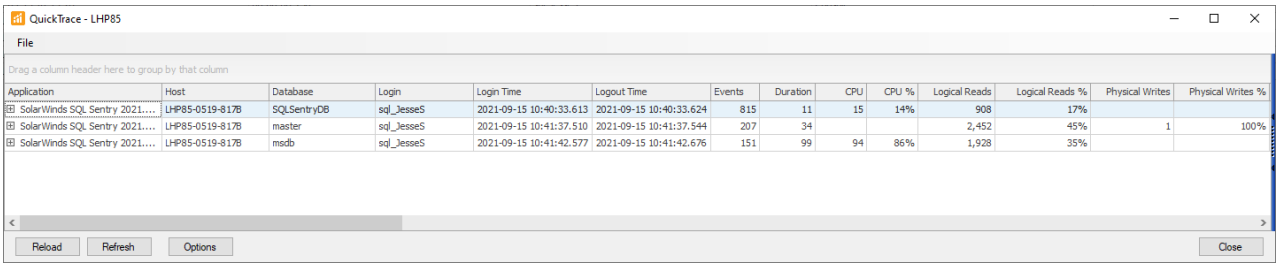
A **QuickTrace** isn't recommended in the case where 1000 Mb or above adapters are present, and the last sample indicates there are >500 users or >5000 transactions per second for the targeted server.

If this state is detected during a manually initiated **QuickTrace**, a warning generates indicating that the **QuickTrace** isn't recommended. The state is also checked before automated **QuickTraces** are run. The **QuickTrace** is disallowed if the state is detected.

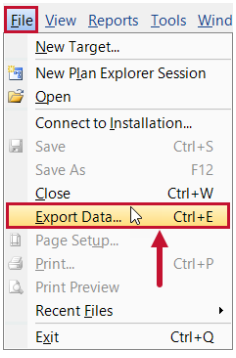
> **Warning:** SQL Sentry Version 7 introduced the above restrictions for **QuickTrace** functionality. For prior versions, use the above restrictions as a guideline when running a **QuickTrace**. Failure to follow these guidelines may cause a temporary suppression of transaction throughput. The risk of impact on performance is much greater if the network speed between the SQL Sentry client and the target server is less than 1000Mbps.

Exporting a QuickTrace

Once a **QuickTrace** is complete, it opens automatically for viewing.



Export the **QuickTrace** by selecting **Export Data** from the **File** menu (**File** > **Export Data**).



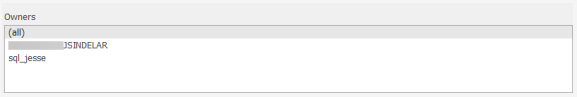
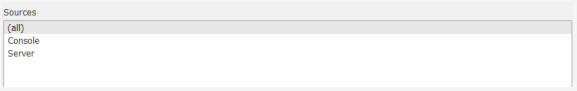
The following are four formats a **QuickTrace** can be exported in:

- Adobe Acrobat Files (*.pdf)
- CSV Files (*.csv)
- Microsoft Excel (.xls)
- Web Pages (.htm, .html)

Display

The top pane provides a series of filters and controls for specifying which records to display for the specified interval.

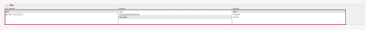
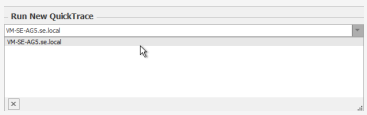
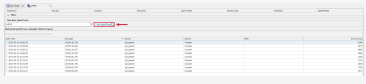
Display Filters

Filter	Image
SQL Servers	
Owner	
Sources	

The bottom pane lists the records matching the current filters. The default filter is to display all records.

Controls

Top Pane

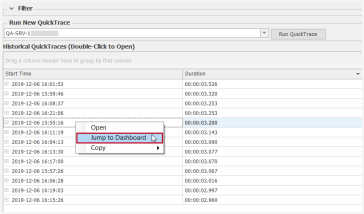
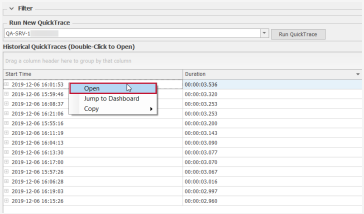
Control	Description	Image
Set filter	After changing any of the filters, select **Refresh**,or press **F5** to apply the filter.	
List box filters		
Select on a combination of items in any of the lists to set the filters.	The default filter displays all records.	
Select more than one item in a list.	**Shift-Click** or **CTRL-click**	
SQL Servers (dropdown)	Select server instance to run a **QuickTrace**.	
Run QuickTrace	Start a **QuickTrace** against the select SQL Server instance.	

Bottom Pane

Control	Description	Image

Control	Description
Sort Column	Select any column header to sort by that column.
Group By box	Drag any column header here to group by that column.
Double click on a row	View the selected **QuickTrace**.

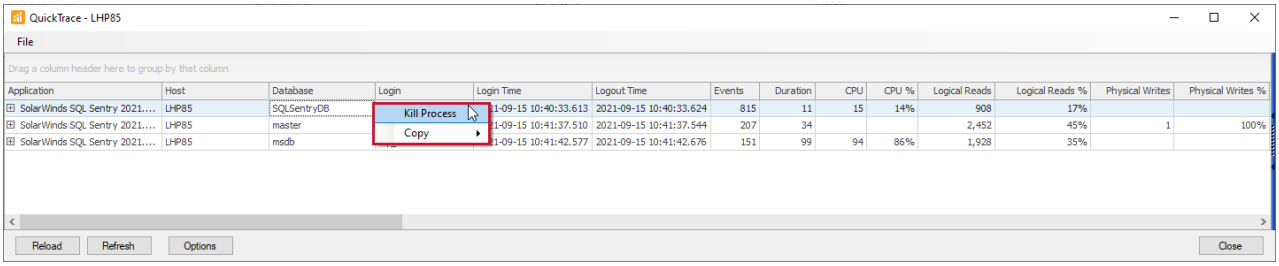
Context Items

Context item	Description	Image
Jump to Dashboard	Opens the **Dashboard** with the selected **QuickTrace** event overlaid on each of the charts.	
Open	View the selected **QuickTrace.**	

QuickTrace Viewer

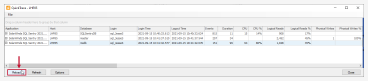
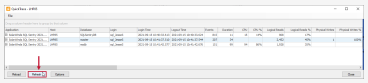
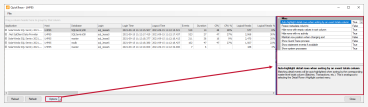
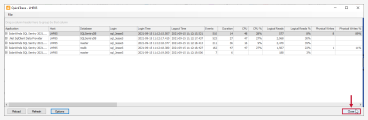
The **QuickTrace Viewer** presents a set of nested controls to inspect the trace. These controls behave the same as on the **QuickTraces** tab.

Right-clicking on a trace record presents a context menu that allows you to copy the event row data to the clipboard or kill the process associated with that trace event.



Note: The individual text can be copied from the **Text Data** column, once highlighted, using (**Ctrl + C**) or the context menu.

Additional controls presented include:

Control	Description	Image
Reload	Runs a new **QuickTrace** of the same target.	
Refresh	Available when a **QuickTrace** is run in real-time, and causes the **QuickTrace** to execute with same parameters.	
Options	Opens the **Options** pane. Available options in the **Viewer** are: • Auto-highlight detail rows when sorting by an event totals column • Freezes metadata columns • Hides rows with empty values in sort column • Maintains row position when changing sort • Shows the **QuickTrace** process • Shows statement events if available • Shows system processes	
Close	Closes the **QuickTrace Viewer.**	

QuickTrace Collected Metrics

The following metrics are collected per application when running a QuickTrace:

Metric	Column Set
SPID	CPU, Network, SQL Activity, Disk
Application	CPU, Network, SQL Activity, Disk
Host	CPU, Network, SQL Activity, Disk

Metric	Column Set
Database	CPU, Network, SQL Activity, Disk
Login	CPU, Network, SQL Activity, Disk
Login Time	CPU, Network, SQL Activity, Disk
Logout Time	CPU, Network, SQL Activity, Disk
Events	CPU, Network, SQL Activity, Disk
Duration	CPU, Network, SQL Activity, Disk
CPU (Description)	CPU, Network, SQL Activity, Disk
CPU %	CPU, Network, SQL Activity, Disk
Logical Reads	CPU, Network, SQL Activity, Disk
Logical Reads %	CPU, Network, SQL Activity, Disk
Physical Writes	CPU, Network, SQL Activity, Disk
Physical Writes %	CPU, Network, SQL Activity, Disk
Physical Reads	CPU, Network, SQL Activity, Disk
Physical Reads %	CPU, Network, SQL Activity, Disk
Recompiles	CPU, Network, SQL Activity, Disk
Recompiles %	CPU, Network, SQL Activity, Disk
Cache Misses	CPU, Network, SQL Activity, Disk
Cache Misses %	CPU, Network, SQL Activity, Disk
Cursors	CPU, Network, SQL Activity, Disk
Cursors %	CPU, Network, SQL Activity, Disk
Physical IO	CPU, Network, SQL Activity, Disk
Physical IO %	CPU, Network, SQL Activity, Disk

Metric	Column Set
Batches	CPU, Network, SQL Activity, Disk
Batches %	CPU, Network, SQL Activity, Disk
Transactions	CPU, Network, SQL Activity, Disk
Transactions %	CPU, Network, SQL Activity, Disk
SPs	CPU, Network, SQL Activity, Disk
SPs %	CPU, Network, SQL Activity, Disk
RPCs	CPU, Network, SQL Activity, Disk
RPCs %	CPU, Network, SQL Activity, Disk
Prep SQL	CPU, Network, SQL Activity, Disk
Prep SQL %	CPU, Network, SQL Activity, Disk
Network Reads	CPU, Network, SQL Activity, Disk
Network Reads %	CPU, Network, SQL Activity, Disk
Network Writes	CPU, Network, SQL Activity, Disk
Network Writes %	CPU, Network, SQL Activity, Disk
Cursor Ops	CPU, Network, SQL Activity, Disk
Cursor Ops %	CPU, Network, SQL Activity, Disk
Logins	CPU, Network, SQL Activity, Disk
Logins %	CPU, Network, SQL Activity, Disk
Objects Created	CPU, Network, SQL Activity, Disk
Objects Created %	CPU, Network, SQL Activity, Disk
Instance Resets	CPU, Network, SQL Activity, Disk
Instance Resets %	CPU, Network, SQL Activity, Disk

Metric	Column Set
Client Network Address	CPU, Network, SQL Activity, Disk
Client Interface Name	CPU, Network, SQL Activity, Disk
Network Transport	CPU, Network, SQL Activity, Disk
Network Auth Scheme	CPU, Network, SQL Activity, Disk
Network Packet Size	CPU, Network, SQL Activity, Disk
% Complete	CPU, Network, SQL Activity, Disk
Est Completion Time	CPU, Network, SQL Activity, Disk