

# QuickTrace™

Last Modified on 20 September 2021

## 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.

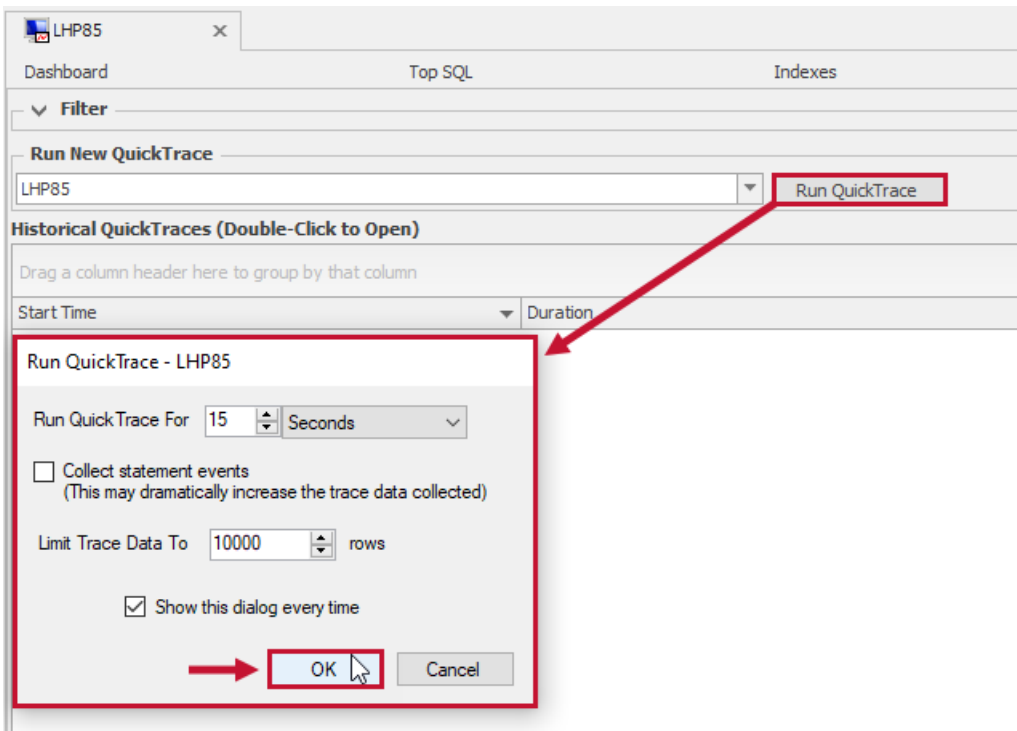
Top SQL trace uses filters to collect only the heaviest events by default to maintain low overhead. A **QuickTrace** isn't filtered and collects all events and it's both time and row limited, to avoid impacting the performance of the target SQL Server.

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**.

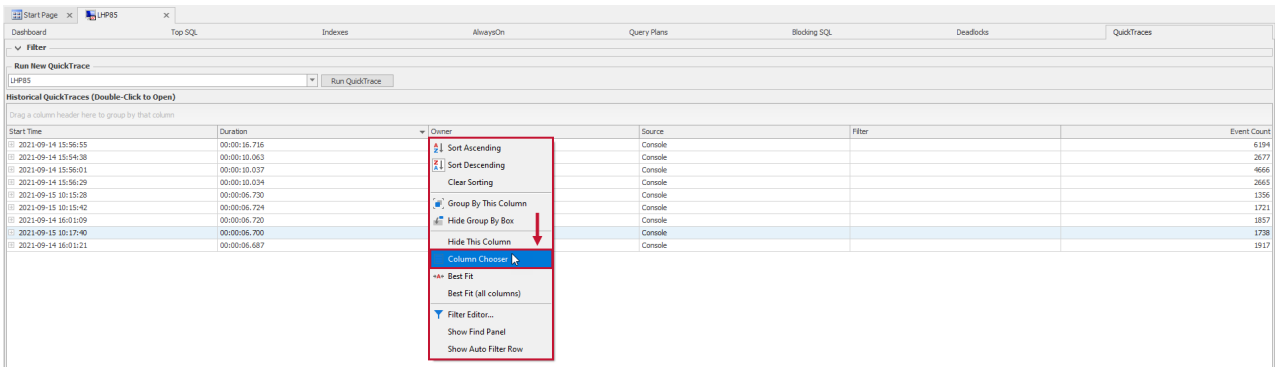


3. Sort by **Events** to determine the cause.

| Application                   | Host  | Database    | Login      | Login Time              | Logout Time             | Events | Duration | CPU | CPU % | Logical Reads | Logical Reads % | Physical Writes | Physical Writes % | Physical Reads | Physical Reads % | Batches | Batches % | Trans |
|-------------------------------|-------|-------------|------------|-------------------------|-------------------------|--------|----------|-----|-------|---------------|-----------------|-----------------|-------------------|----------------|------------------|---------|-----------|-------|
| SolarWinds SQL Sentry 2021... | LHP85 | SQLSentryDB | sql_jesse5 | 2021-09-14 15:53:45.637 | 2021-09-14 15:53:45.670 | 1,147  | 33       | 62  | 28%   | 3,674         | 35%             | 4               | 100%              |                |                  | 75      | 61%       |       |
| Net SQLClient Data Provider   | LHP85 | SQLSentryDB | sql_jesse5 | 2021-09-14 15:53:10.220 | 2021-09-14 15:53:10.235 | 1,036  | 15       | 16  | 7%    | 2,115         | 20%             |                 |                   |                |                  | 20      | 16%       |       |
| SolarWinds SQL Sentry 2021... | LHP85 | master      | sql_jesse5 | 2021-09-14 15:54:20.040 | 2021-09-14 15:54:20.079 | 235    | 36       | 32  | 15%   | 2,515         | 24%             |                 |                   |                |                  | 16      | 17%       |       |
| SolarWinds SQL Sentry 2021... | LHP85 | msdb        | sql_jesse5 | 2021-09-14 15:54:39.717 | 2021-09-14 15:54:39.808 | 197    | 91       | 78  | 96%   | 1,994         | 19%             |                 |                   |                |                  | 7       | 6%        |       |
| SolarWinds SQL Sentry 2021... | LHP85 | tempdb      | sql_jesse5 | 2021-09-14 10:21:28.840 | 2021-09-14 10:21:28.846 | 3      | 6        | 15  | 7%    | 2             |                 |                 |                   |                |                  |         |           |       |

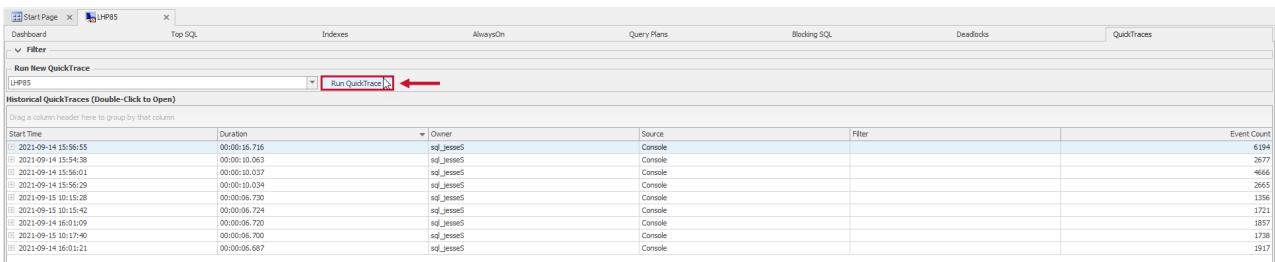
## Column Set

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.

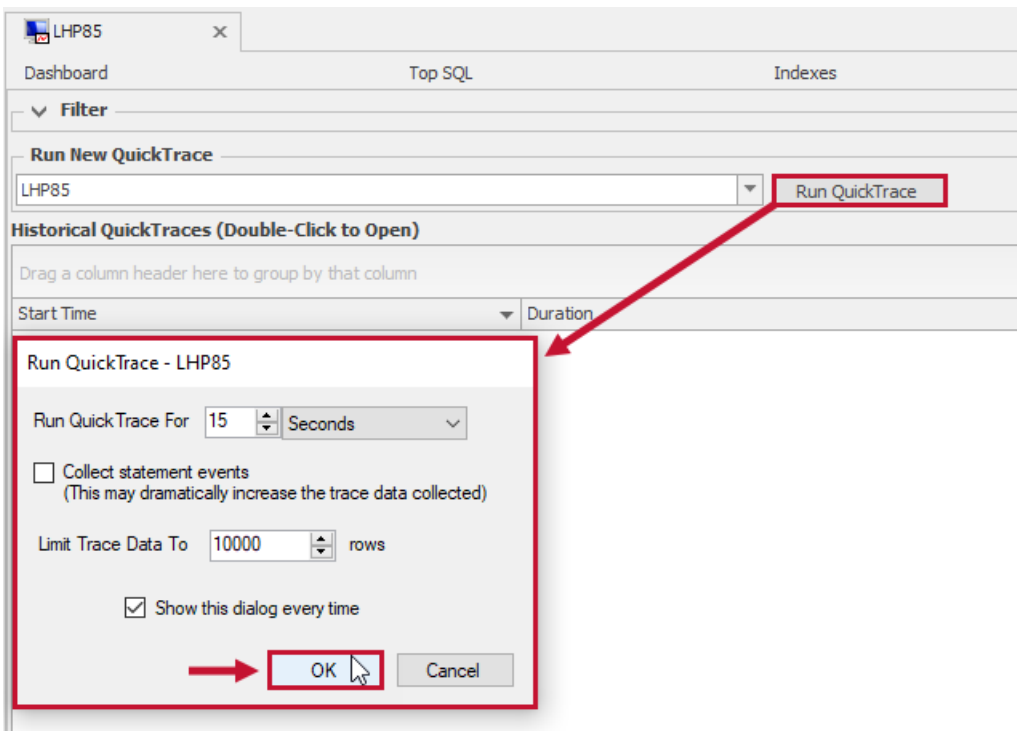
The **QuickTraces** tab lists all **QuickTraces** occurring during the active date range. Execute **QuickTraces** manually or automatically using the **Run QuickTrace** action in response to a condition such as **Runtime Threshold Max** or **Performance Counter Threshold Max**.



## Running a QuickTrace

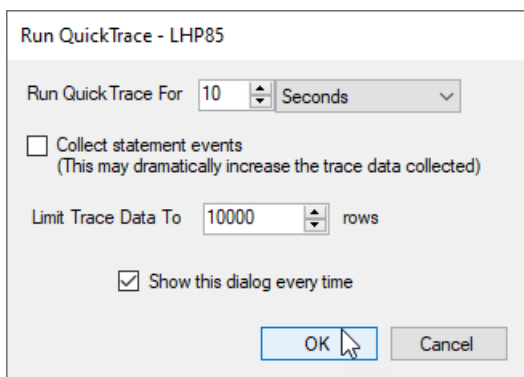
Select **Run QuickTrace** from the **QuickTraces** tab or from the right-click menu on the other applicable tabs, to open the options menu. Enter the length of time the **QuickTrace** runs in the first dialog box. Choose to **Collect statement events** or not by selecting the checkbox in the second dialog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

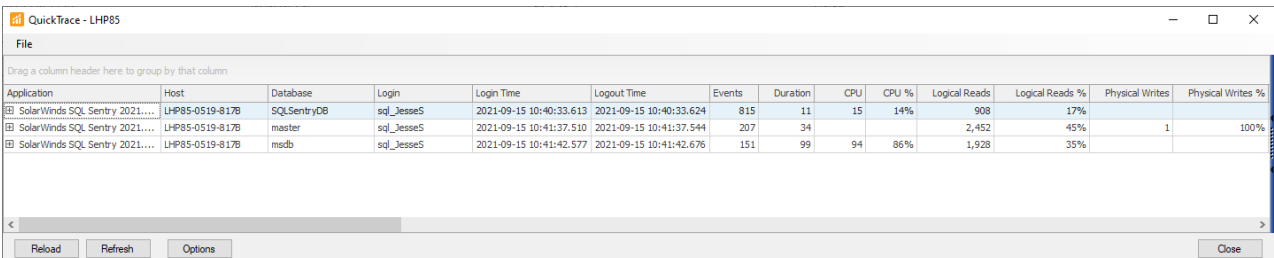
A **QuickTrace** isn't recommended in the case where 1000 Mb or above adapters are present, and the last sample indicates there are >500 users or >5000 transactions per second for the targeted server.

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.



QuickTrace - LHP85

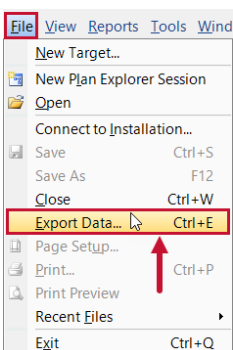
File

Drag a column header here to group by that column

| Application                     | Host            | Database    | Login      | Login Time              | Logout Time             | Events | Duration | CPU | CPU % | Logical Reads | Logical Reads % | Physical Writes | Physical Writes % |
|---------------------------------|-----------------|-------------|------------|-------------------------|-------------------------|--------|----------|-----|-------|---------------|-----------------|-----------------|-------------------|
| SolarWinds SQL Sentry 2021..... | LHP85-0519-8178 | SQLSentry08 | sql_jesseS | 2021-09-15 10:40:33.613 | 2021-09-15 10:40:33.624 | 815    | 11       | 15  | 14%   | 908           | 17%             |                 |                   |
| SolarWinds SQL Sentry 2021..... | LHP85-0519-8178 | master      | sql_jesseS | 2021-09-15 10:41:37.510 | 2021-09-15 10:41:37.544 | 207    | 34       |     |       | 2,452         | 45%             | 1               | 100%              |
| SolarWinds SQL Sentry 2021..... | LHP85-0519-8178 | msdb        | sql_jesseS | 2021-09-15 10:41:42.577 | 2021-09-15 10:41:42.676 | 151    | 99       | 94  | 86%   | 1,928         | 35%             |                 |                   |

Reload Refresh Options Close

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




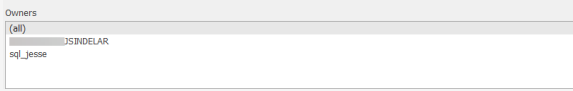
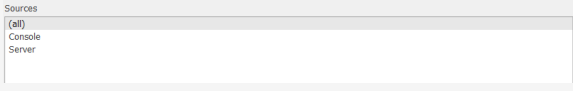
The following are four formats a **QuickTrace** can be exported in:

- 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.

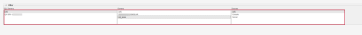
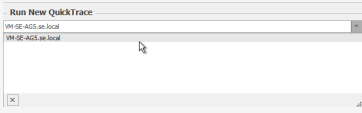
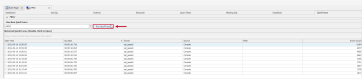
## Display Filters

| Filter      | Image  |
|-------------|--|
| SQL Servers |  |
| Owner       |  |
| Sources     |  |

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

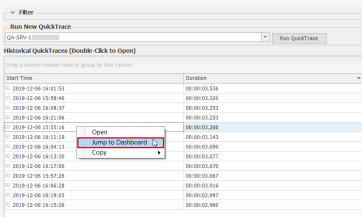
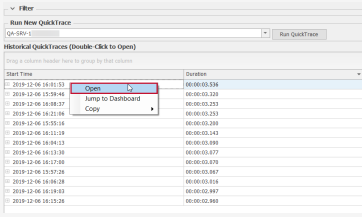
## Controls

### Top Pane

| Control  | Description  | Image   |
|--|--|---|
| Set filter   | After changing any of the filters, select <b>Refresh</b> , or press <b>F5</b> 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.                                     | <b>Shift-Click</b> or <b>CTRL-click</b>  |   |
| SQL Servers (dropdown)   | Select server <u>instance</u> to run a <b>QuickTrace</b> .   |  |
| Run QuickTrace   | Start a <b>QuickTrace</b> against the select SQL Server <u>instance</u> .                          |  |

| Bottom Pane Control   | Description  | Image |
|-----------------------|--|-------|
| <b>Control</b>        | <b>Description</b>                                   |       |
| 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 <b>QuickTrace</b> .                |       |

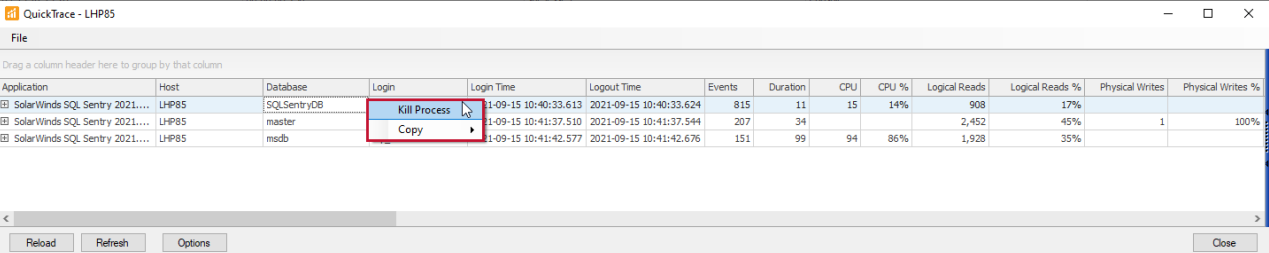
## Context Items

| Context item             | Description  | Image   |
|--------------------------|--|---|
| <b>Jump to Dashboard</b> | Opens the <b>Dashboard</b> with the selected <b>QuickTrace event</b> overlaid on each of the charts. |   |
| <b>Open</b>              | View the selected <b>QuickTrace</b> .  |  |

## 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.

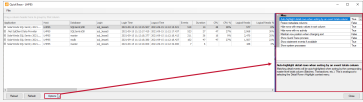
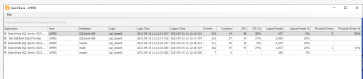
Right-clicking on a trace record presents a context menu that allows you to copy the event row data to the clipboard or kill the process associated with that trace event.



| Application                    | Host  | Database    | Login | Login Time            | Logout Time             | Events | Duration | CPU | CPU % | Logical Reads | Logical Reads % | Physical Writes | Physical Writes % |
|--------------------------------|-------|-------------|-------|-----------------------|-------------------------|--------|----------|-----|-------|---------------|-----------------|-----------------|-------------------|
| SolarWinds SQL Sentry 2021.... | LHP85 | SQLSentryDB |       | 21-09-15 10:40:33.613 | 2021-09-15 10:40:33.624 | 815    | 11       | 15  | 14%   | 908           | 17%             |                 |                   |
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**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   |
|----------------|---|---|
| <b>Reload</b>  | Runs a new <b>QuickTrace</b> of the same <u>target</u> .  |    |
| <b>Refresh</b> | Available when a <b>QuickTrace</b> is run in real-time, and causes the <b>QuickTrace</b> to execute with same parameters.   |    |
| <b>Options</b> | <p>Opens the <b>Options</b> pane. Available options in the <b>Viewer</b> are:</p> <ul style="list-style-type: none"> <li>• Auto-highlight detail rows when sorting by an event totals column</li> <li>• Freezes metadata columns</li> <li>• Hides rows with empty values in sort column</li> <li>• Maintains row position when changing sort</li> <li>• Shows the <b>QuickTrace</b> process</li> <li>• Shows statement events if available</li> <li>• Shows system processes</li> </ul> |   |
| <b>Close</b>   | Closes the <b>QuickTrace Viewer</b> .   |  |

## 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 |
| Database    | CPU, Network, SQL Activity, Disk |



| <b>Login Metric</b> | <b>Column Set</b>                |
|---------------------|----------------------------------|
| 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 |
| 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 |
| 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           | CPU, Network, SQL Activity, Disk |

| Scheme<br>Metric       | Column Set                       |
|------------------------|----------------------------------|
| Network Packet<br>Size | CPU, Network, SQL Activity, Disk |
| % Complete             | CPU, Network, SQL Activity, Disk |
| Est Completion<br>Time | CPU, Network, SQL Activity, Disk |