

Microsoft SQL Server Profiler Configurations and Definitions

Application Note

Date	August 23, 2011
Applies To	Kofax Capture 8.0, 9.0, 10.0 Ascent Capture 7.5
Summary	This application note provides steps for configuring a SQL Server Profile trace in SQL Server 2000, SQL Server 2005 and SQL Server 2008 platforms for tracing Capture application events. Also included is a detailed Trace Event Criteria Options table list.
Revision	2.1

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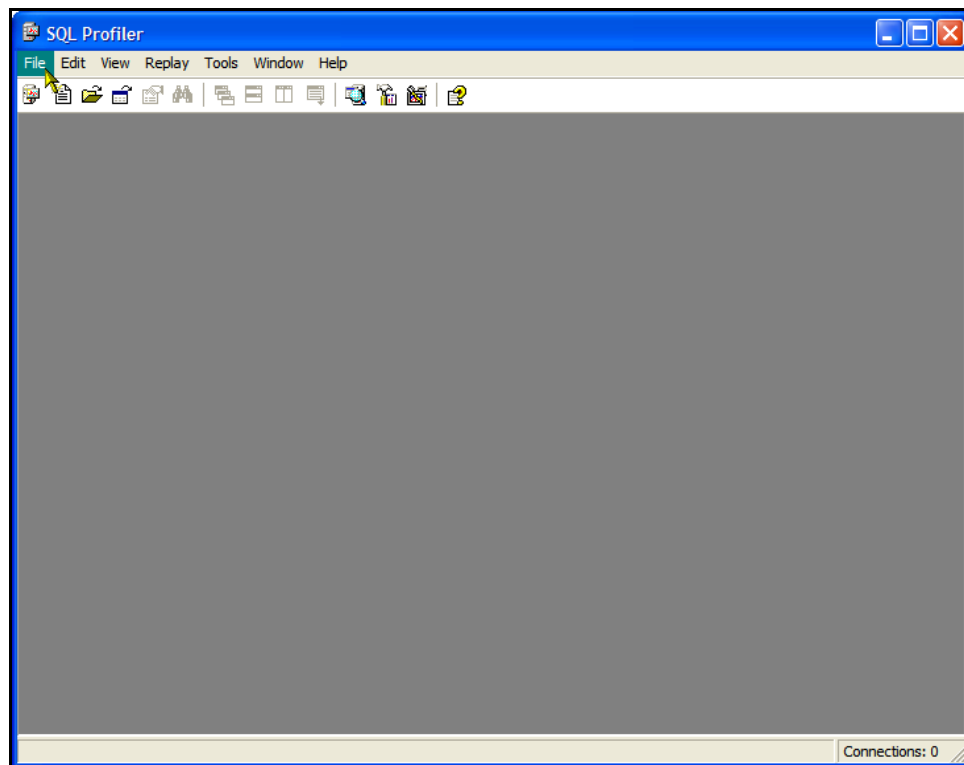
This application note will assist Capture application users with configuring a SQL Server Profiler trace to troubleshoot Capture issues.

Configuring a SQL Server Profiler Trace

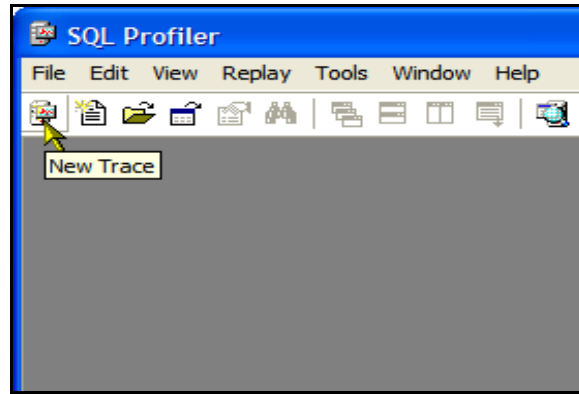
This section will cover step-by-step procedures for configuring a SQL Server Profiler trace with SQL Server 2000, 2005 and 2008.

SQL Server 2000 Profiler

1. Launch the SQL Profiler tool by selecting Start | All Programs | Microsoft SQL Server | Profiler.
2. A window similar to the screenshot below will launch,



3. Select File New | Trace or click on the New Trace Icon shown below:



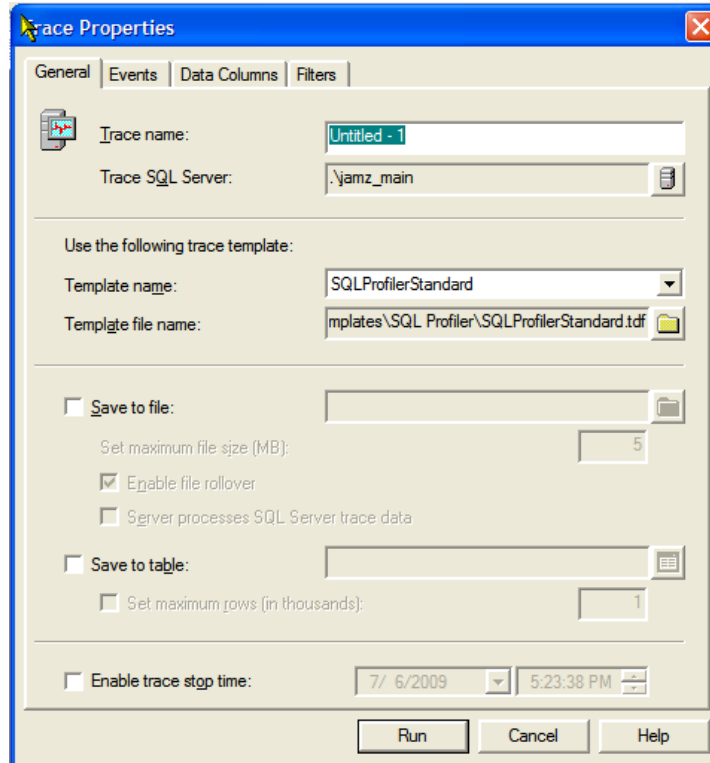
4. In the *Connect to SQL Server* window, type or select the SQL Server instance and select the authentication type.



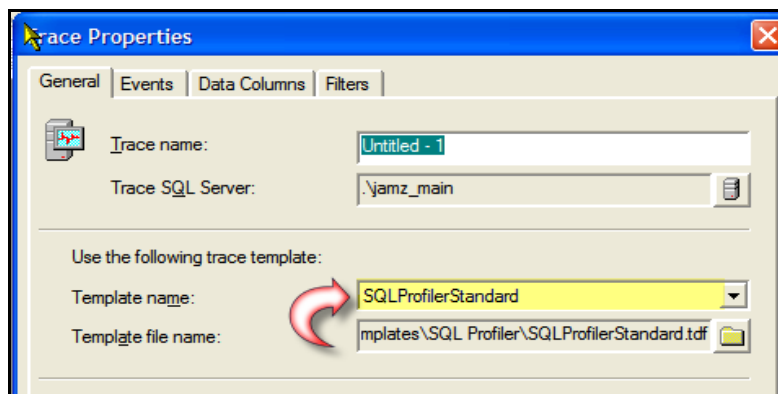
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- Click *OK* to accept the connection parameters. The Trace Properties window will then automatically launch for the trace configuration.



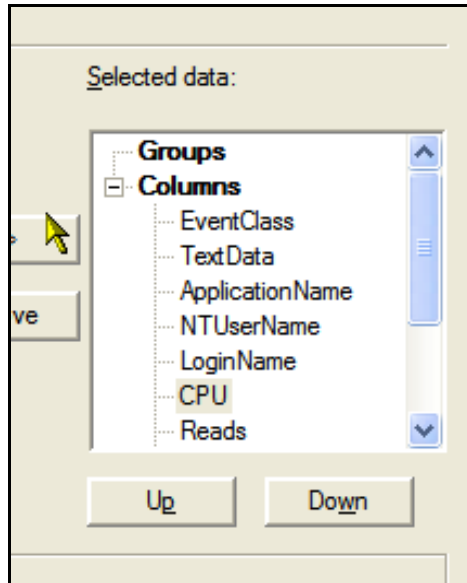
- Leave the default trace template unchanged.



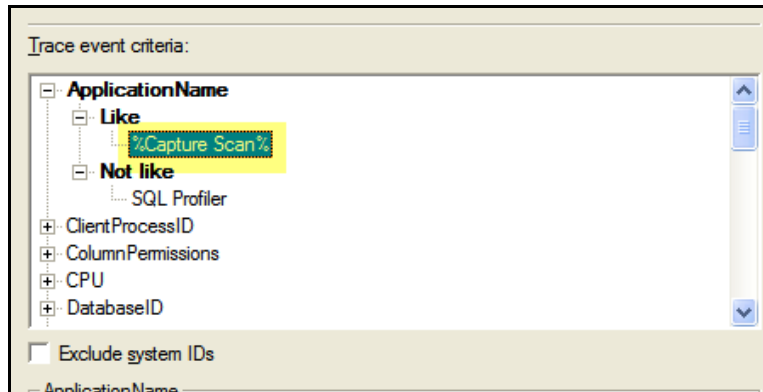
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7. On the Events tab, scroll down to the *Stored Procedures* section and add the *SP:Starting* and *SP:Completed* events.
8. Leave the *Selected Data* section unchanged under the *Data Columns* tab. Take note that there's other selected data under *Reads* from the screenshot below.

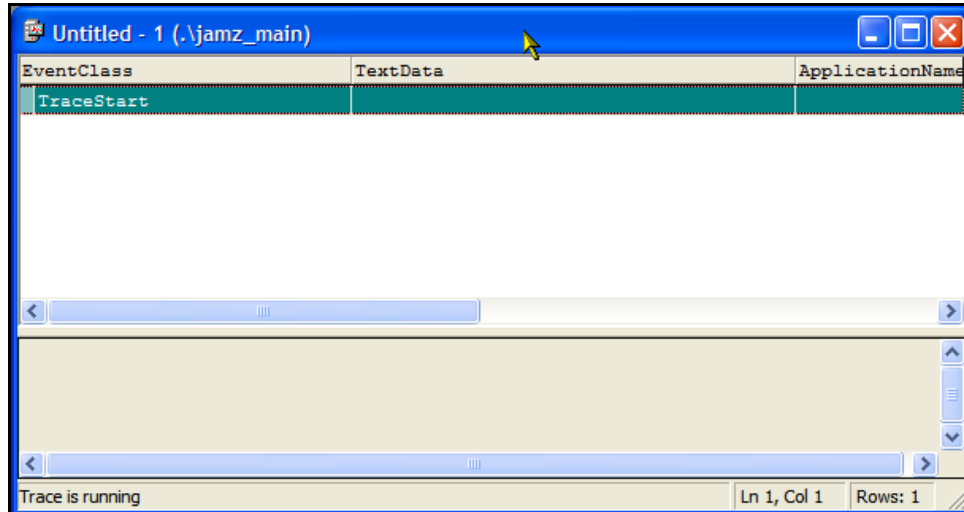


9. On the *Filter* tab, there are different trace event selections, but the typical filter is the *ApplicationName* filter. For example, if tracing SQL activities from the Capture Scan application, then the *ApplicationName* filter is *%Scan%* or *%Capture Scan%*.

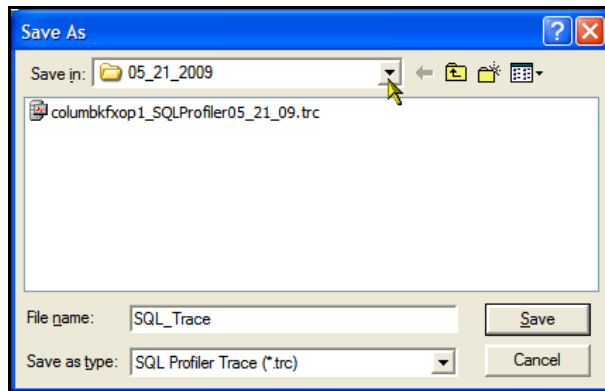


NOTE: Each trace event criteria is defined under the *Trace event criteria* Options section of this application note.

- Click Run to Start the SQL Server Profiler trace. The trace window will launch with TraceStart as its first activity.



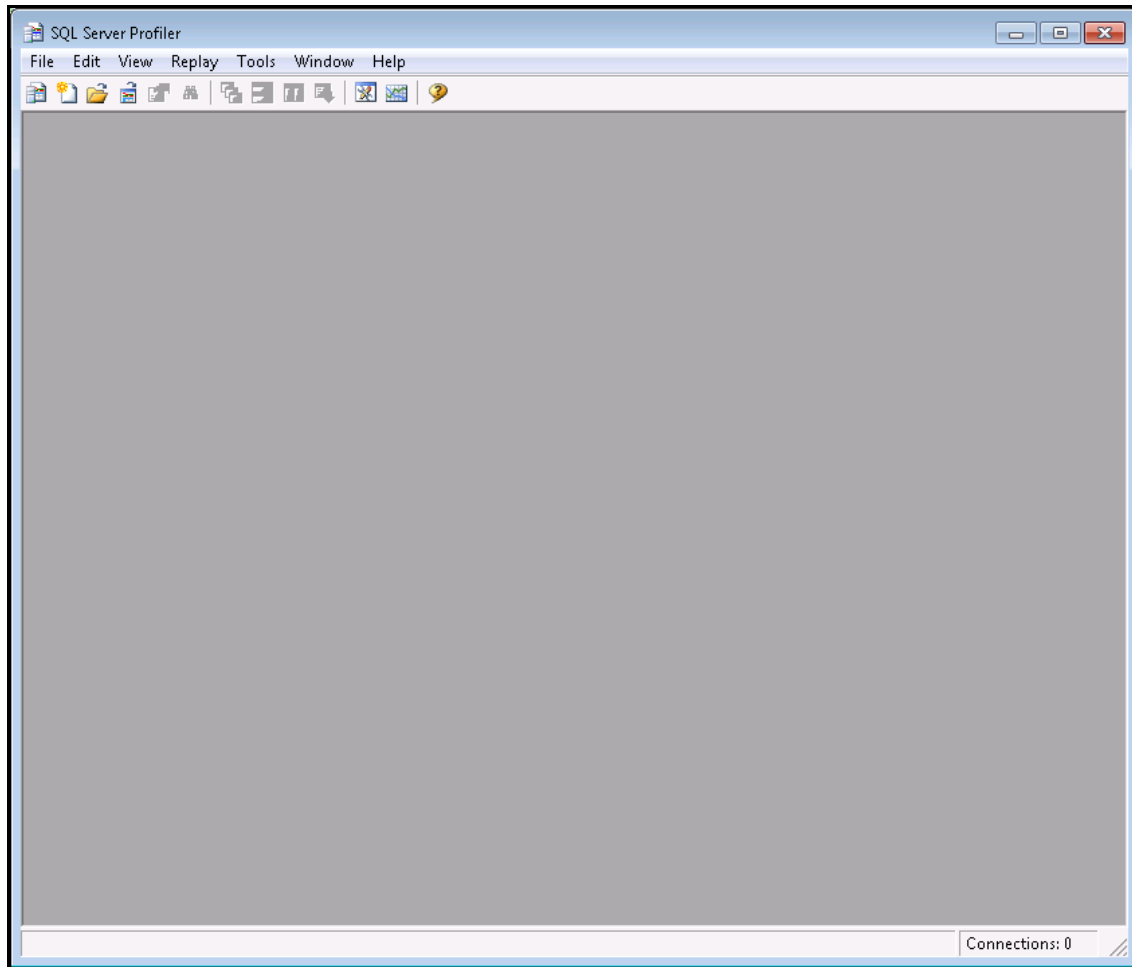
- After performing the SQL Profiler trace on the Capture event that is being traced, save the trace by clicking on File ! Save or Save as.



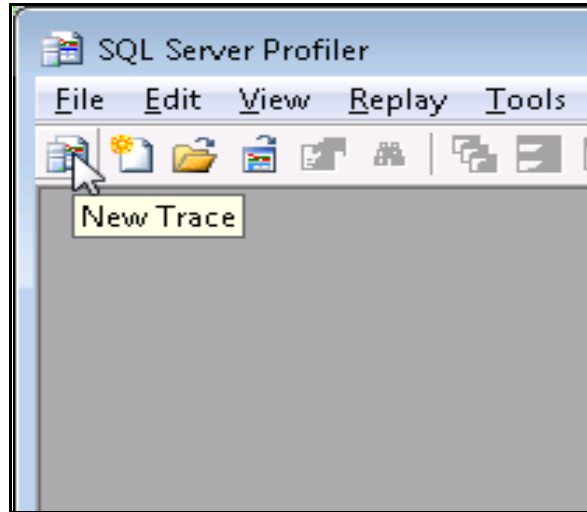
- Click Save to save the SQL Profiler trace to a .TRC file.

SQL Server Profiler 2005 and 2008

1. Launch the SQL Profiler tool by selecting Start | All Programs | Microsoft SQL Server 2005 | Performance Tools | SQL Server Profiler for 2005 or Start | All Programs | Microsoft SQL Server 2008 | Performance Tools | SQL Server Profiler for 2008.
2. A window similar to the screenshot below will launch,



3. Select File | New | Trace or click on the New Trace Icon below the File menu.



4. In the *Connect to Server* window, type or select the SQL Server instance and select the authentication type.



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- Click OK to accept the connection parameters. The Trace Properties window will then automatically launch for the trace configuration.

The screenshot shows the 'Trace Properties' dialog box with the 'General' tab selected. The fields are as follows:

- Trace name: Untitled - 1
- Trace provider name: \\SIDS LABPC\sql2k8
- Trace provider type: Microsoft SQL Server 2008 version: 10.0.1600
- Use the template: Standard (default)
- Save to file: (Set maximum file size (MB): 5, Enable file rollover, Server processes trace data)
- Save to table: (Set maximum rows (in thousands): 1)
- Enable trace stop time: 1/10/2011 11:18:44 AM

Buttons at the bottom: Run, Cancel, Help.

- Click on the *Events Selection* tab, a window with SQL events will display.

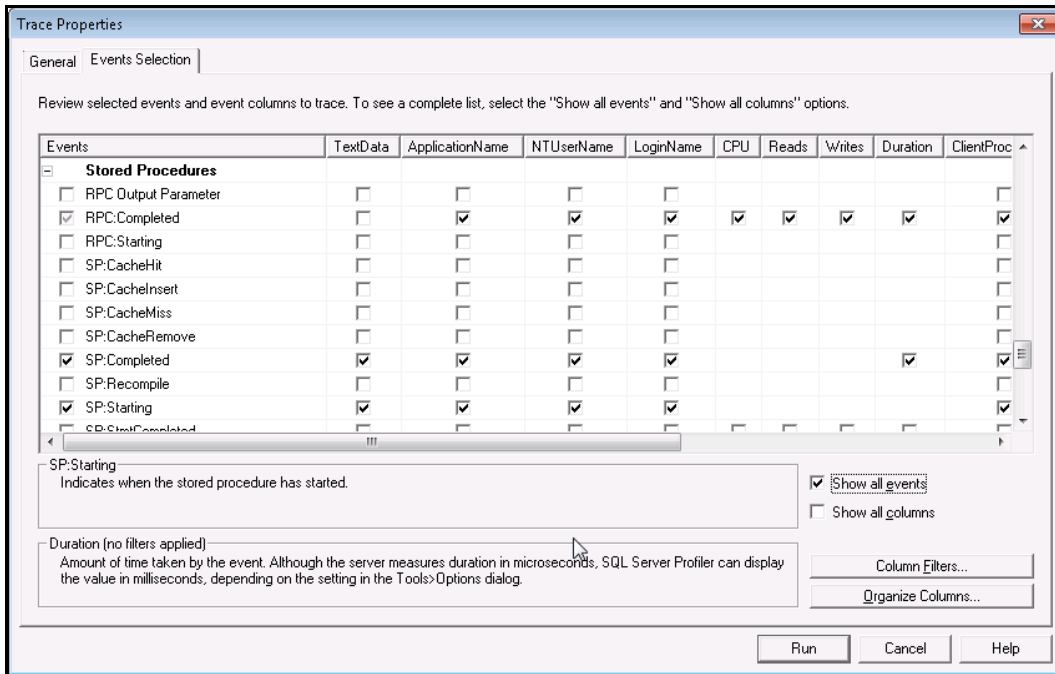
The screenshot shows the 'Trace Properties' dialog box with the 'Events Selection' tab selected. It displays a table of events to trace:

Events	TextData	ApplicationName	NTUserName	LoginName	CPU	Reads	Writes	Duration	ClientProcess
Security Audit									
<input checked="" type="checkbox"/> Audit Login	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Audit Logout		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sessions									
<input checked="" type="checkbox"/> ExistingConnection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>
Stored Procedures									
<input checked="" type="checkbox"/> RPC:Completed	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TSQL									
<input checked="" type="checkbox"/> SQL:BatchCompleted	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> SQL:BatchStarting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>

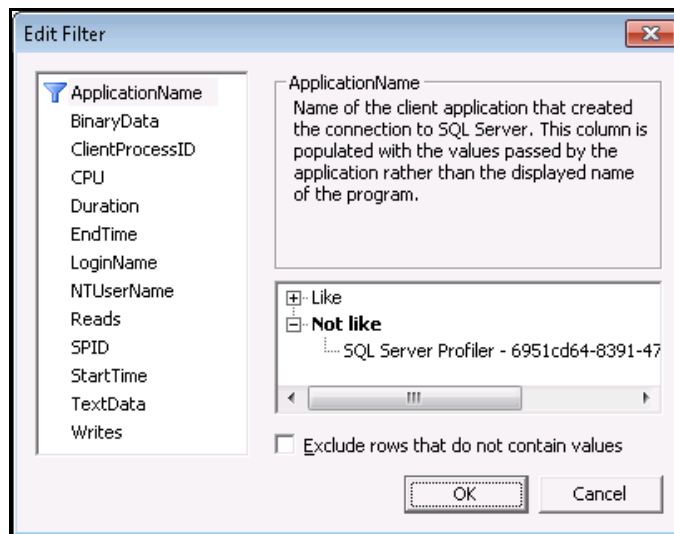
Below the table, there is a description for 'Security Audit' and two checkboxes: Show all events and Show all columns. There are also buttons for 'Column Filters...' and 'Organize Columns...'.

Buttons at the bottom: Run, Cancel, Help.

- Place a check mark on *Show all events* and scroll down to the *Stored Procedures* section.

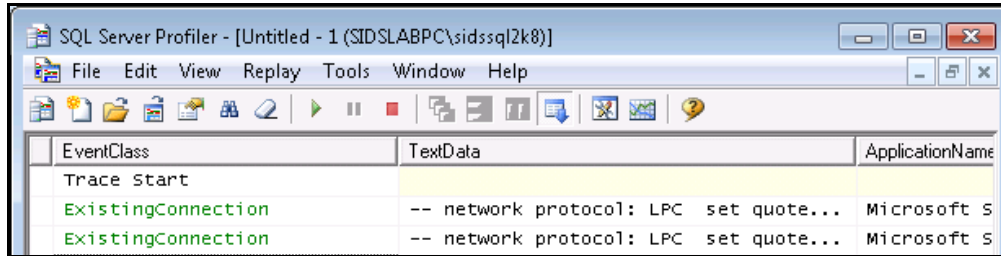


- Place a check mark on the *SP:Starting* and *SP:Completed* events.
- Click on the *Column Filters* button and a window similar to the screenshot below will display. There are different trace event selections, but the typical filter is the *ApplicationName* filter. For example, if tracing to trace SQL activities from the Capture Scan application then the *ApplicationName* filter is *%Scan%* or *%Capture Scan%*, to be more specific.

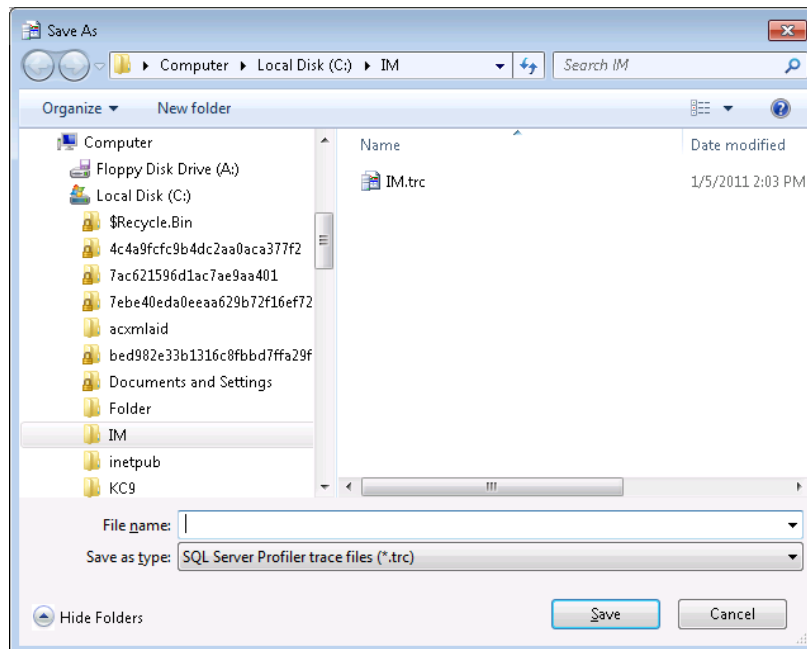


NOTE: Each trace event criteria is defined under the Trace Event Criteria Options section of this application note.

- Click Run to Start the SQL Server Profiler Trace. The trace window will launch with TraceStart as its first activity, followed by ExistingConnections Event Class.



- After performing the SQL Profiler trace on the Capture event that is being traced, save the trace by selecting File | Save or Save as.



- Click Save to save the SQL Profiler trace to a .TRC file.

Trace Event Criteria Options

This section will provide detailed information for each available trace event criteria in SQL Profiler. It will help Capture users have a better understanding on what events to filter on each Capture issue.

Event criteria option	Description
Like	Specifies that the trace event data must be like the text entered. Allows multiple values.
Not like	Specifies that the trace event data must not be like the text entered. Allows multiple values.
Equals	Specifies that the trace event data must be equal to the value entered. Allows multiple values.
Not equal to	Specifies that the trace event data must not be equal to the value entered. Allows multiple values.
Greater than or equal	Specifies that the trace event data must be greater than or equal to the value entered.
Less than or equal	Specifies that the trace event data must be less than or equal to the value entered.

The following table lists the trace event criteria (filters), and the options available for each.

Trace event criteria	Description	Like	Not like	Equals	Not equal to	Greater than or equal	Less than or equal
Application Name	Application that generates the event, for example, Query Analyzer.	Yes	Yes				
Client ProcessID	The process ID of the application calling Microsoft® SQL Server™.			Yes	Yes	Yes	Yes
Column Permissions	Indicator of whether column permission was set.			Yes	Yes	Yes	Yes
CPU	Amount of CPU time (in milliseconds).			Yes	Yes	Yes	Yes
Database ID	ID assigned to the database. The value for a database can be determined by using the DB_ID function.			Yes	Yes	Yes	Yes

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Trace event criteria	Description	Like	Not like	Equals	Not equal to	Greater than or equal	Less than or equal
Database Name	Name of the database in which the statement of the user is running.	Yes	Yes				
Duration	Amount of elapsed time for remote procedure calls (RPCs) and language statements, locks, sessions, and other events that have a defined elapsed time.			Yes	Yes	Yes	Yes
End Time	Time at which the event ended. This column is not populated for starting event classes, such as SQL:BatchStarting or SP:Starting .					Yes	Yes
Error	Error number of a given event. Often this is the error number stored in sysmessages .			Yes	Yes	Yes	Yes
File Name	The logical name of the file being modified.	Yes	Yes				
Handle	Integer used by ODBC, OLEDB, or DB-Library to coordinate execution with the server.			Yes	Yes	Yes	Yes
Host Name	Name of the computer that generates the event. To determine the host name, use the HOST_NAME function.	Yes	Yes				
Index ID	Index ID for the object. To determine the index ID for an object, use the indid column of the sysindexes system table.			Yes	Yes	Yes	Yes
Login Name	Name of the login of the user (either SQL Server security login or the Windows login credentials in the form of DOMAIN\Username).	Yes	Yes				

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Trace event criteria	Description	Like	Not like	Equals	Not equal to	Greater than or equal	Less than or equal
Mode	Integer used by various events to describe a state the event has received or is requesting.			Yes	Yes	Yes	Yes
NT Domain Name	Windows NT or Windows 2000 domain of the client that generates the event.	Yes	Yes				
NT User Name	Individual responsible for generating the event.	Yes	Yes				
Object ID	Unique ID for the monitored object. Alternatively, by selecting the Exclude system objects check box, all objects are monitored, except system objects such as the sysobjects table.			Yes	Yes	Yes	Yes
Object Name	The name of the object being referenced.	Yes	Yes				
Object Type	Value representing the type of the object involved in the event. This value corresponds to the type column in sysobjects .			Yes	Yes	Yes	Yes
Owner Name	Database user name of the object owner.	Yes	Yes				
Permissions	Integer value representing the type of permissions checked. Values are: 1 = SELECT ALL 2 = UPDATE ALL 4 = REFERENCES ALL 8 = INSERT 16 = DELETE 32 = EXECUTE (procedures only) 4096 = SELECT ANY (at least one column) 8192 = UPDATE ANY 16384 = REFERENCES ANY			Yes	Yes	Yes	Yes

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Trace event criteria	Description	Like	Not like	Equals	Not equal to	Greater than or equal	Less than or equal
Reads	Number of logical reads performed by the server executing the statement.			Yes	Yes	Yes	Yes
Role Name	Name of an application role being enabled.	Yes	Yes				
Severity	Range of error severity levels.			Yes	Yes	Yes	Yes
SPID	Each connection has a unique SPID.			Yes	Yes	Yes	Yes
DBUserName	User who generates the event.	Yes	Yes				
Start Time	Time at which the event started, when available.					Yes	Yes
State	Equivalent to an error state code.			Yes	Yes	Yes	Yes
Success	1 = success. 0 = failure (for example, a 1 means success of a permissions check and a 0 means a failure of that check).			Yes	Yes	Yes	Yes
Target Login Name	For actions which target a login (for instance, adding a new login), the name of the targeted login.	Yes	Yes				
Target User Name	For actions which target a database user (for instance, granting permission to a user), the name of that user.	Yes	Yes				
Text Data	Text contained within the event data.	Yes	Yes				
Writes	Number of disk writes performed by the server executing the statement.			Yes	Yes	Yes	Yes

NOTE: SQL Server 2005 has a fewer *Trace Event Criteria* options compared to SQL Server 2000. Also, it is named *Filters* in SQL Server 2005 and SQL Server 2008..