



Configuring SQL Server Lock (Block) Monitoring

With Sentry-go Quick & Plus! monitors

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<http://www.Sentry-go.com>

Be Proactive, Not Reactive!

To allow for secure concurrent access, database systems such as SQL Server implement a complex locking mechanism. Although in itself this is extremely efficient at protecting data and ensuring changes are applied in the correct sequence etc., it is easy for poorly designed or overstretched systems to block - where processes must wait for resources locked by others. This in turn leads to slow response times for the end user or calling system & in its worst case – called a deadlock, will mean the ultimate failure of at least one of the queries.

With Sentry-go you can easily and silently monitor for blocking or blocked SQL queries and optionally record details for later analysis, alert DBAs, developers or System Administrators, or even terminate the offending queries automatically.

In this guide

System requirements	2
Recommended monitoring settings	2
Monitoring SQL Server locking	2
Defining a SQL Server instance.....	4
Testing database access	5
Temporarily ignoring a configured check.....	5
Configuring an automatic response	6
Configuring an alert.....	6
Web reporting with this monitoring component.....	6
The SQL Server current activity report	7
The SQL Server database status report	8
The SQL Server transaction log summary report	9
The SQL locking status report.....	10
The recent blocked locks report.....	11
More Information	12

System requirements

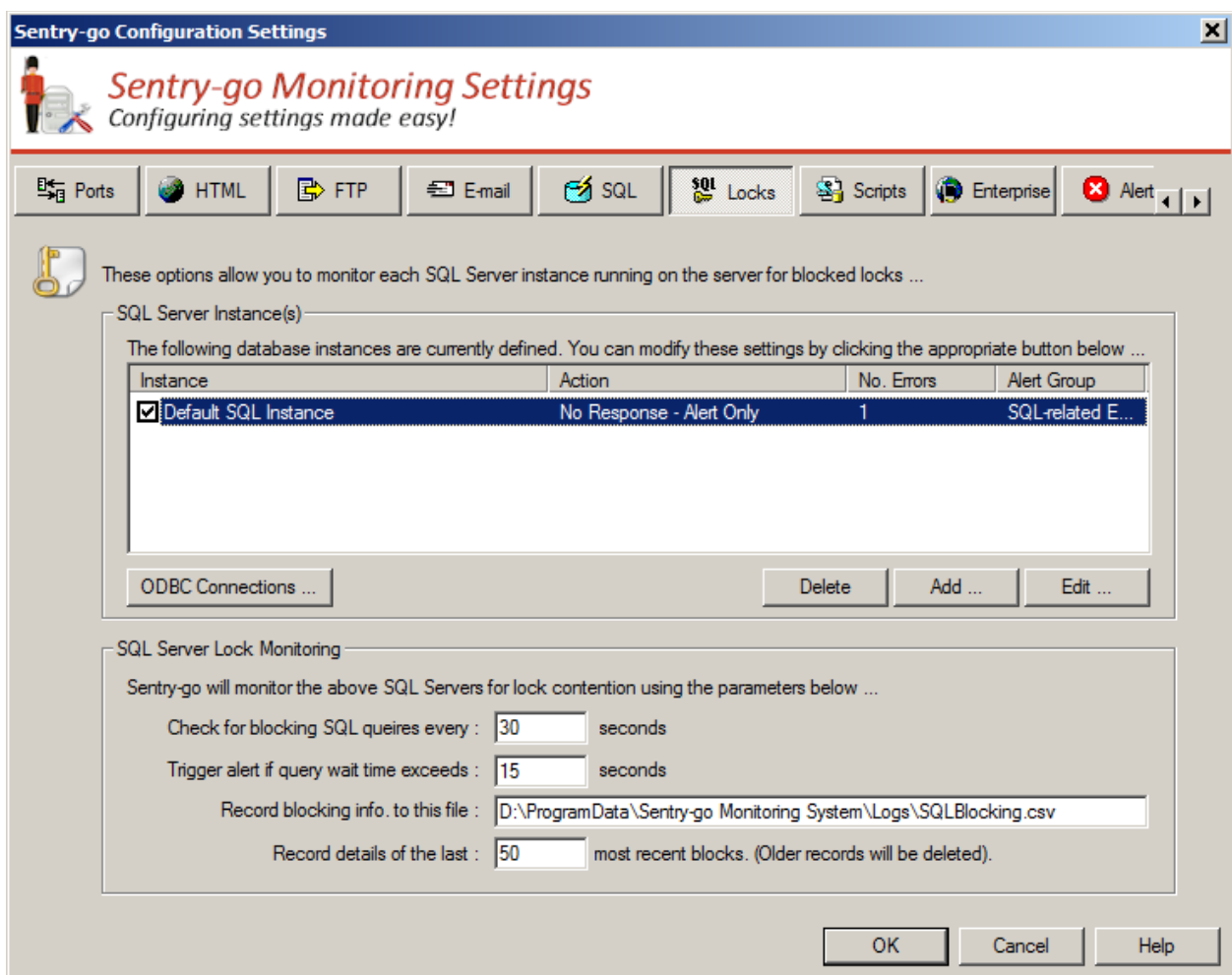
This component is fully compatible with both Sentry-go Quick Monitors v6 and above, and Sentry-go Plus! v6 monitors and above. Access to the appropriate SQL Server and a database user with the SysAdmin role, or equivalent.

Recommended monitoring settings

It is recommended that blocking is monitored on all your live SQL Server Instances & databases.

Monitoring SQL Server locking

To monitor SQL Server locking, configure the monitor and select the “Locks” tab.



SQL Server Instances

SQL Server allows for multiple instances (copies) of the database engine running on a single machine. These are known as “Instances” & are treated separately in terms of locking, users, connections etc. Sentry-go allows you to monitor one, some or all instances of SQL Server running on the local machine. Simply add connections to each instance you wish to monitor to this list in order to monitor them. See below for more details.



If the SQL Server database engine is installed on the local machine, at least one instance will always be present.

SQL Server Lock Monitoring

The values entered here relate to the monitoring of all instances defined above.

Check for blocking SQL queries every (seconds)

This value determines how often Sentry-go should scan each SQL Server instance defined above for processes that are either blocked, waiting for resources or blocking others.



The lower this value, the more often the scan is made and the more accurate alerting will be. However, lower values this will require additional resources from both the Sentry-go monitor and the target SQL Servers.

Trigger alert if query wait time exceeds (seconds)

This value is used to determine how long (in seconds) an SQL Query (SQL Server Process) can wait (be blocked) before the query is considered to be blocked.

Record blocking info. to this file

This value is used to specify the path and name of the CSV (comma-separated values) file that blocking information will be written to. It can automatically be trimmed using the value below.



The path entered must be relative to the local server. If configuring a remote machine, it is recommended that you specify the UNC path - e.g. \\SERVER\Path.



It is this file that is displayed when you access the Recent Blocked SQL report.

The following information is written to this file when a blocked process is detected ...

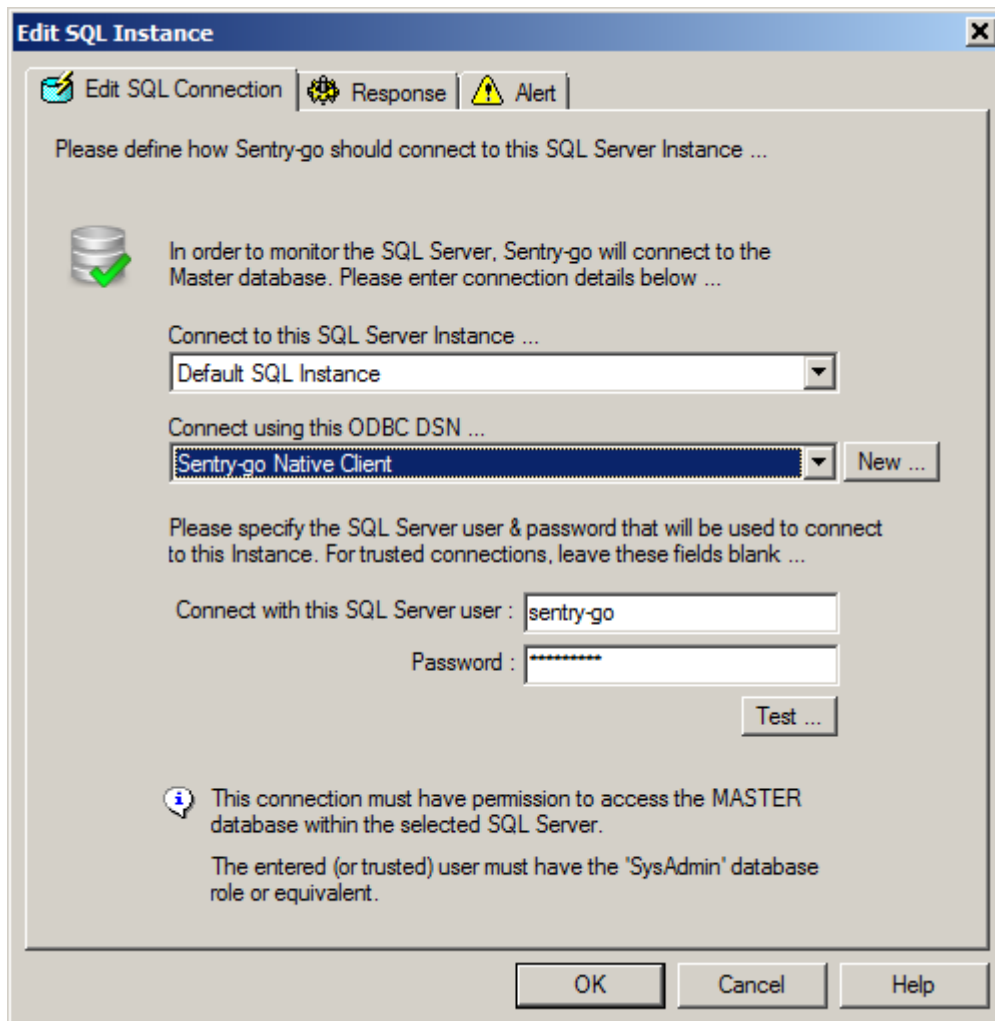
- The date & time the block occurred
- The SQL Server Instance (connection) name
- The database & host name
- The owner (user) & process ID who was running the SQL statement that was blocked
- The blocked SQL itself
- The process ID of the SQL blocking the above user
- The SQL causing the block the occur
- The least amount of time the lock was held

Record details of the last X most recent blocks

This value determines how many records are written to the above file. If more records are written than specified here, the oldest records will automatically be deleted.

Defining a SQL Server instance


To monitor a SQL Server instance for blocking, it must first be defined to Sentry-go. To do this, click Add from the main window to display the following ...



Edit SQL Instance

Edit SQL Connection | Response | Alert

Please define how Sentry-go should connect to this SQL Server Instance ...

 In order to monitor the SQL Server, Sentry-go will connect to the Master database. Please enter connection details below ...


Connect to this SQL Server Instance ...
Default SQL Instance

Connect using this ODBC DSN ...
Sentry-go Native Client | New ...

Please specify the SQL Server user & password that will be used to connect to this Instance. For trusted connections, leave these fields blank ...

Connect with this SQL Server user : sentry-go
Password : [masked]

Test ...

 This connection must have permission to access the MASTER database within the selected SQL Server.
The entered (or trusted) user must have the 'SysAdmin' database role or equivalent.


OK | Cancel | Help

Connect to this SQL Server Instance

Select the name of the SQL Server Instance you wish to monitor from the list of options.

Connect using this ODBC DSN

Select the ODBC data source that represents a connection to the database you wish to access or check. To add a new entry, click the "New ..." button.

 The connection selected must connect to the instance selected above.

Connect with this SQL Server User

This value is used to specify the SQL Server User ID that is to be used with the ODBC connection in order to logon to the database.



This user must have permissions to access the MASTER database in selected SQL Server instance & be a member of the SysAdmin database role or equivalent.

To use a Trusted SQL Server Connection, leave this and the password entry blank. For more information on using trusted connections with Sentry-go, see the “Using SQL Server Trusted Connections” guide.

Password

This is the password associated with the above SQL Server User ID.

Testing database access

You can optionally check connectivity to the defined database instance server by clicking the “Test” button. When selected, the Client Console connects to the target monitoring server (the server being configured) in order to run the test, the results of which are then displayed in the resulting web page.



In order to check the configuration, the target Sentry-go monitor must be running with web reports enabled.

The monitoring check itself is not run. However, clicking “Test” will verify that connectivity can be established via the DSN, user & password, access to the MASTER database is available and the user used has SysAdmin privileges within the SQL Server.

The parameters, along with the test results are shown on the web page. In some cases, errors may be obvious and easily corrected; in others, additional diagnostic information may be found in the Sentry-go log file, accessible on the server or via the web reports menu.

For more information on the Sentry-go log file, see the “Configuring Logging Options” guide.

Temporarily ignoring a configured check

In some cases, you may wish to exclude a check from monitoring without removing it permanently. To do this, simply remove the “tick” or check against the entry you wish to ignore in the main list.

Configuring an automatic response

In the event an error is detected, Sentry-go can be configured to optionally respond automatically - i.e. to take action itself.

To configure this, select entry from the list and click Edit. On the resulting window, select the “Response” tab.



For more information on the options available as well as details on how to configure automatic responses, please see the “Configuring Automatic Responses” guide.

Configuring an alert

In the event an error is detected and either no automatic response is defined or the response doesn't resolve the fault, an alert will be triggered. Depending on the monitor's general settings, you can either notify one or more contacts individually, or specify the alert group you wish to inform.

To configure these options, select the entry from the list and click Edit. On the resulting window, select the “Alert” tab.



For more information, please see the “Configuring Sentry-go Alerts” guide.

Web reporting with this monitoring component

In addition to the standard Sentry-go web reports, this component provides the following additional reports. These can be accessed directly from the URL, or from the monitor's home page.

The SQL Server current activity report

URL: <http://<Server Name>:<Port>/SgoMntrSQLActivity.sgp>

This report shows the current activity from the selected SQL Server Instance. From here you can ...

- Select the instance you wish to access
- Display the SQL statement being run
- Limit the display to a specific database
- Show all processes
- Show blocked (waiting) processes
- All running queries with open transactions
- Terminate the given SQL query/connection

WALTON-64 - Sentry-go Monitoring Service - SQL Server Activity - Windows Internet Explorer

Generated on: 4th Nov. 2009 at 17:21:00

System Health: 39% check success ▲ [?]

[Home](#)
[Alerts](#)
[Status](#)
[Activity](#)
[SQL Locking](#)
[Database Status](#)
[Transaction Log](#)
[Recent Blocks](#)
[Logout](#)
[Refresh Status](#)

Current SQL Server Activity for connection:

Display the following information:

Additionally Show SQL Query Text: (slower but shows last known query)

Show Activity information for this database: (leave blank for all databases)

Current Database Activity. The following processes are currently running in SQL Server.

Process #	Database	User	Run From	Current Status	Blocked By #	Waiting Time	# Transact.	Cf
5	master	sa		background	Not Blocked	28712639 m/s	0	0
6	master	sa		sleeping	Not Blocked	Not Waiting	0	0
7	master	sa		background	Not Blocked	3931 m/s	0	0
9	master	sa		background	Not Blocked	28714168 m/s	0	0
10	master	sa		background	Not Blocked	28722420 m/s	0	0
11	master	sa		suspended	Not Blocked	28712764 m/s	0	0
12	master	sa		sleeping	Not Blocked	Not Waiting	0	0
13	master	sa		sleeping	Not Blocked	Not Waiting	0	0
14	master	sa		background	Not Blocked	28711662 m/s	0	0

Trusted sites | Protected Mode: Off | 100%

The SQL Server database status report

URL: *http://<Server Name>:<Port>/SgoMntrSQLDBStatus.sgp*

This report shows the current status of all databases in the selected Instance.

WALTON-64 - Sentry-go Monitoring Service - SQL Server Database Status - Windows Internet Explorer

http://walton-64:1000/SgoMntrSQLDBStatus.sgp

File Edit View Favorites Tools Help

WALTON-64 - Sentry-go Monitoring Service - SQL Ser...

Sentry-go Monitoring System
v6 Web Reporting

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Server : WALTON-64
Licence : 3Ds (UK) Limited
Generated on : 1st August 2011 at 14:35:25
System Health : 52% check success ▲ [?]

[?] Sentry-go® SQL Server Database Status

◆ Home ◆ Alerts ◆ Status ◆ Activity ◆ SQL Activity ◆ SQL Locking
◆ Transaction Log ◆ Recent Blocks ◆ Logout

Refresh Status

Current Database Status for connection:

Database #	Database Name	Size	Current Status
5	3Ds-test	3.00 MB	OK, database is ready & available
1	master	4.50 MB	OK, database is ready & available
3	model	1.69 MB	OK, database is ready & available
4	msdb	6.44 MB	OK, database is ready & available
6	Sentry-go Enterprise Option	2401.31 MB	OK, database is ready & available
2	tempdb	8.50 MB	OK, database is ready & available

Done Trusted sites | Protected Mode: Off 100%

The SQL Server transaction log summary report

URL: <http://<Server Name>:<Port>/SgoMntrSQLTransactLog.sgp>

This report shows the current status of all transaction log files within the selected SQL Server Instance. Not only does this show the current size of each log, but also highlights the oldest transaction and its processing time. If a blocking SQL query is causing the log to fill up, you can use this report to help determine which query is running and optionally terminate it.

The screenshot displays the Sentry-go Monitoring System v6 Web Reporting interface. The page title is "Sentry-go Monitoring System v6 Web Reporting". The server name is "WALTON-64". The license is "3Ds (UK) Limited". The report was generated on "1st August 2011 at 14:35:40". The system health is "52% check success". The page includes navigation links for Home, Alerts, Status, Activity, SQL Activity, SQL Locking, Database Status, Recent Blocks, and Logout. A "Refresh Summary" button is also present. The main content is a table titled "Transaction Log Summary for connection: Sentry-go Enterprise Option".

Database	Log Size	% Used	Oldest Transaction Details		
			Time Running	User ID	SQL
master	0.49 Mb	62.70%	N/A	public	N/A
tempdb	0.49 Mb	49.01%	N/A	public	N/A
model	0.49 Mb	52.38%	N/A	public	N/A
msdb	0.74 Mb	57.37%	N/A	public	N/A
3Ds-test	0.99 Mb	44.24%	N/A	public	N/A
Sentry-go Enterprise Option	2110.30 Mb	1.45%	N/A	public	N/A

The SQL locking status report

URL: *http://<Server Name>:<Port>/SgoMntrSQLLockStatus.sgp*

This report shows all the current locks in the selected SQL Server Instance, their blocked & blocking status and optionally the SQL & resources being held. You can use this report to view which connections/queries are holding database resources and highlight those that are causing bottlenecks. Queries can also be terminated from here if required.

The screenshot shows a web browser window titled "WALTON-64 - Sentry-go Monitoring Service - SQL Server Locking Status - Windows Internet Explorer". The address bar shows the URL: `http://walton-64:1000/SgoMntrSQLLockStatus.sgp?btnRefresh=Refresh+Status&cboConnection=1&hDisplay=`. The page content includes:

- System Health: 52% check success (indicated by a green bar).
- Navigation menu: Home, Alerts, Status, Activity, SQL Activity, Database Status, Transaction Log, Recent Blocks, Logout.
- Refresh Status button.
- Current Locking Status for connection: Sentry-go Enterprise Option.
- Display the following information: All Locking Information.
- Additionally Show SQL Query Text: (slower but shows last known query).
- Show Lock Resource Info: .
- Show Locking information for: (leave blank for all databases).
- Process Locking Information table.

Process #	Database	User	Run From	Current Status	Blocked By #	Waiting Time	# Transact.	SQL Query
57	3Ds-test	WALTON3DS\neilc	WALTON-64	sleeping	Not Blocked	Not Waiting	1	AWAITING COMMA
58	3Ds-test	WALTON3DS\neilc	WALTON-64	suspended	Blocked By #57	3432 m/s	2	UPDATE
51	Sentry-go Enterprise Option	sentry-go		sleeping	Not Blocked	Not Waiting	0	AWAITING COMMA
52	Sentry-go Enterprise Option	sentry-go		sleeping	Not Blocked	Not Waiting	0	AWAITING COMMA

The browser status bar at the bottom shows "Done", "Trusted sites", "Protected Mode: Off", and "100%" zoom.

The recent blocked locks report

URL: *http://<Server Name>:<Port>/SgoMntrSQLRecentBlocks.sgp*

If blocking information is being recorded to a file, this report allows you to view this file from your web browser. The following information is written to this file when a blocked process is detected & shown on this report ...

- The date & time the block occurred
- The SQL Server Instance (connection) name
- The database & host name
- The owner (user) & process ID who was running the SQL statement that was blocked
- The blocked SQL itself
- The process ID of the SQL blocking the above user
- The SQL causing the block the occur
- The least amount of time the lock was held

The screenshot shows the Sentry-go Monitoring System v6 Web Reporting interface. The page title is "Sentry-go Monitoring System v6 Web Reporting". The server is identified as "WALTON-64". The license is "3Ds (UK) Limited". The report was generated on "1st August 2011 at 14:38:22". The system health is shown as a progress bar at "42% check success". The page includes navigation links for Home, Alerts, Status, Activity, SQL Activity, SQL Locking, Database Status, and Transaction Log. A "Refresh" button is also present. The main content area is titled "Recent Blocked/Blocking SQL Queries (from D:\ProgramData\Sentry-go Monitoring System\Logs\SQLBlocking.csv)". Below this is a table of blocked process information.

Time	Connection/Database	Run From	User	Process #	Running SQL	Blocked By #	User
1st August 2011 at 14:38:21	Sentry-go Enterprise Option/3Ds-test	WALTON-64	WALTON3DS\neilc	58	begin transaction update Test set Column1 = 1	57	WALTON3DS\neilc

More Information

If you need more help or information on this topic ...

- Read all [papers/documents on-line](#).
- Watch [demonstrations & walkthrough videos on-line](#).
- Visit <http://www.Sentry-go.com>.
- Contact our [Support Team](#).



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