

The Sentry-go Monitoring System

Monitoring SQL Server Locking (Blocking)

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Be Proactive, Not Reactive!

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Symbols

Thank you for choosing Sentry-go® as your monitoring solution for Windows. In this guide, the following symbols are used to denote specific items ...



Important information which should be noted – it may affect what you are trying to do.



Additional information relating to the operation being described is shown.

Background

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 worse 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.

Recommended Monitoring Settings

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

Quick Facts

Here is a summary of the options available with this component. They are discussed in more detail in the pages that follow ...

| | |
|----------------------------|---|
| Component : | SQL Server Locking Monitor |
| Aim/Description : | To provide periodic monitoring of all SQL Server Instances on the local machine, in particular highlighting when lock contention for longer than a given period is detected. |
| Main Monitoring Features : | <ul style="list-style-type: none">• Verify currently allocated locks for each defined SQL Server Instance• Determine SQL queries that block for a given period of time• Record details both blocked & blocking SQL queries• Optionally terminate the blocking SQL query/connection• Optionally terminate the blocked SQL query/connection |
| Periodic Monitoring : | ✓ |
| Scheduled Monitoring : | |
| Local Monitoring : | ✓ |
| Dial-up Support : | |
| Alerting : | All alerting & auto-response options available, automatically terminate blocking processes, automatically terminate blocked processes. |
| Web Reports : | Status report, SQL Server Database Status, Transaction Log, Lock Status, Activity, Recent Blocked Queries. |
| External software req's : | SQL Server v7.0, 2000, 2005 or above |

Monitoring SQL Server Locking

To monitor SQL Server locking, simply select the Sentry-go monitor from the Client Console with the right mouse button and click "Configure".

A window containing a number of tabs will be displayed. To monitor available disk space, select the "DB Locks" tab. From here, you can configure the following ...

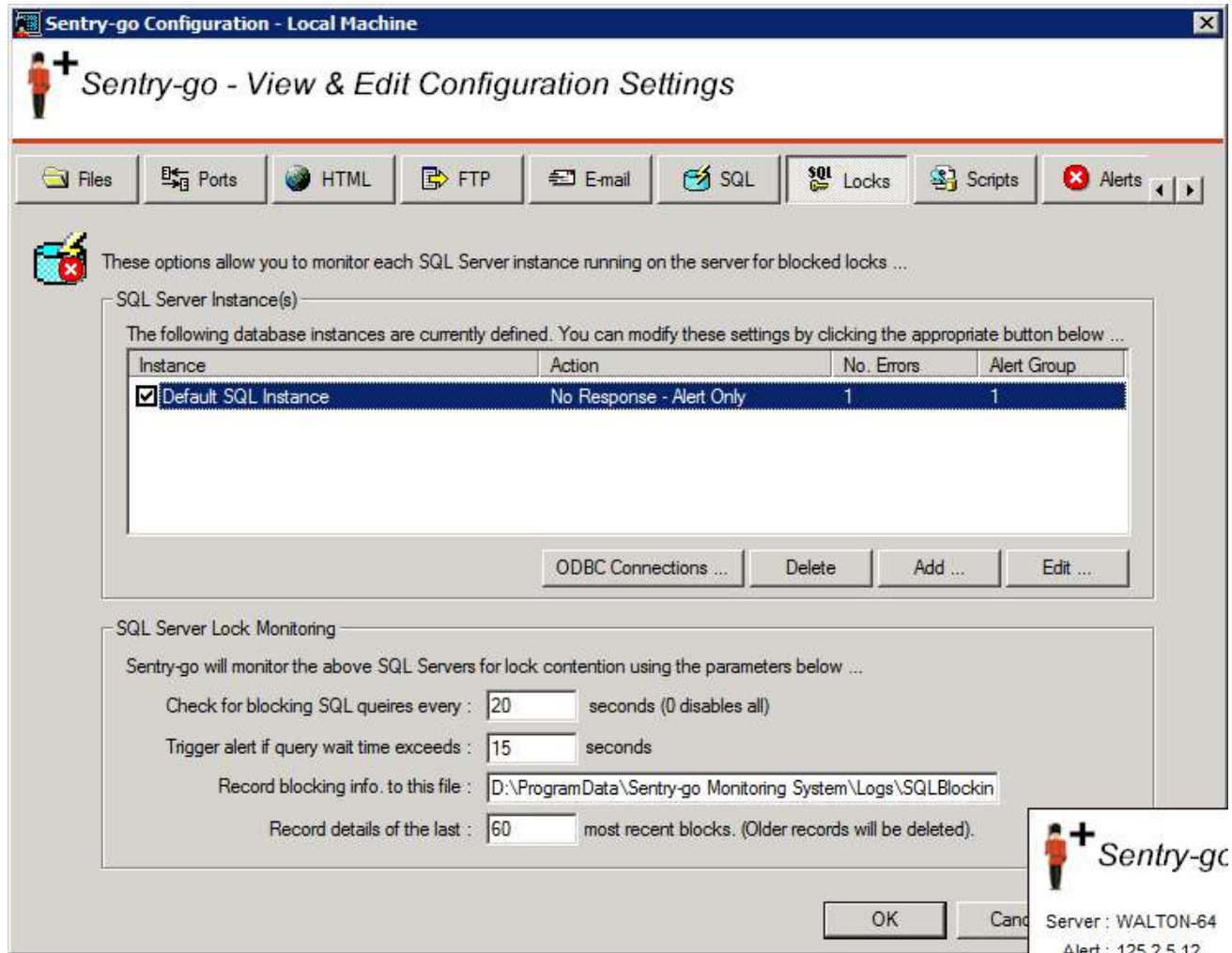
- One or more SQL Server Instances you wish to monitor.
- SL Server blocking parameters
- What should happen if the check fails.
- How often each check should be run.
- Temporarily disable the monitoring of one, more or all databases.

To monitor SQL blocking, simply ...

- Select the Quick Monitor from the Console with the right mouse button and click "Configure".
- Run the Configuration Utility and connect to the appropriate monitor

A window containing a number of tabs will be displayed. Select the "SQL Blocking" tab to configure the monitoring of locking within the database.

The resulting window allows you to define connections that enables Sentry-go to connect to one or more SQL Server Instances on the local server as well as response settings. You can also specify block monitoring parameters at the bottom of this window.



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 ...

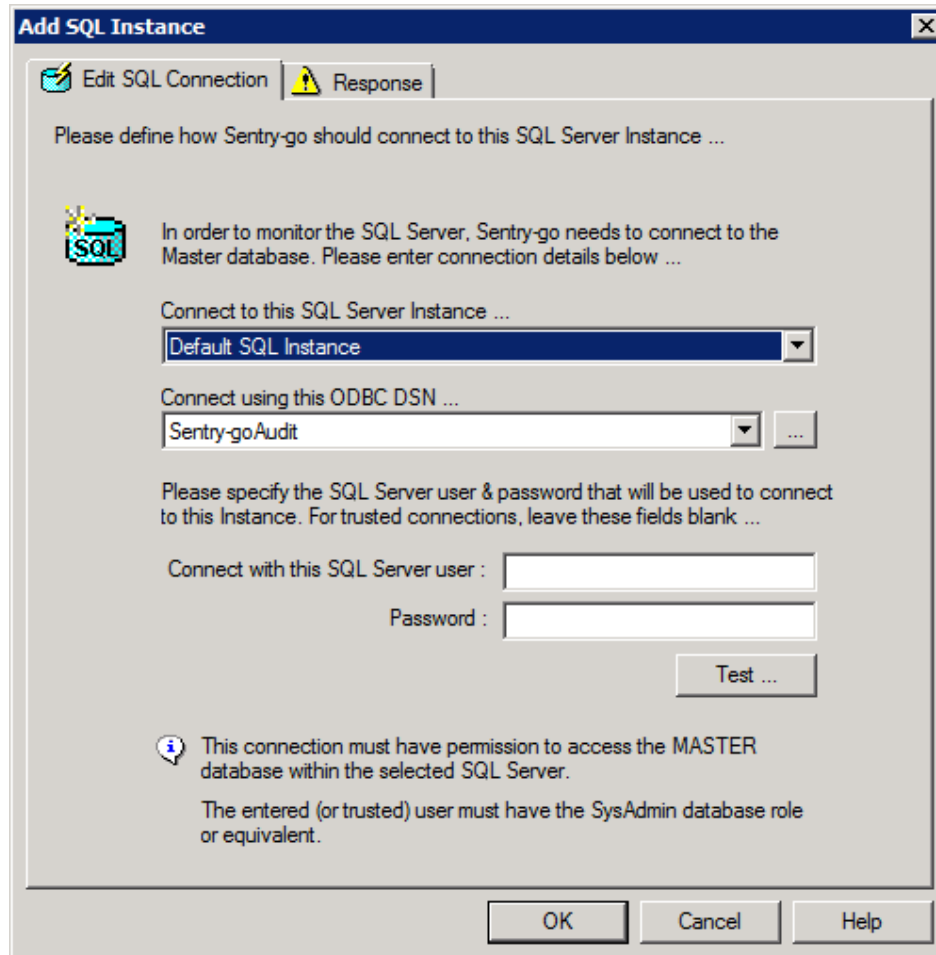
- The date & time the block occurred
- The SQL Server Instance (connection) name
- The database & host name
- The owner (user) & process ID who was running the SQL statement that was blocked
- The blocked SQL itself
- The process ID of the SQL blocking the above user
- The SQL causing the block the occur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




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 "..." 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 [“Sentry-go - Using Trusted SQL Server Connections”](#).

Password

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

Testing Database Connectivity

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 [Sentry-go - Configuring Logging Options](#).

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, an alert will be triggered. In this case, Sentry-go can be configured to either respond automatically (i.e. take action itself), alert one or more Administrators, or both.

Responses are configured per instance, so different actions can be taken or Administrators informed if failures occur. To configure what the monitor should do in the event an error is detected, select the 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 alerts & responses, see [Sentry-go - Configuring Alert & Automatic Response Options](#).

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

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

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

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

Generated on: 4th Nov. 2009 at 11:21:00

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 | 28714582 m/s | 0 | 0 |

The SQL Server Database Status Report

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

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

The screenshot displays the Sentry-go Monitoring System v5 Web Reporting interface. The browser window title is "WALTON-64 - Sentry-go Monitoring Service - SQL Server Database Status - Windows Internet Explorer". The address bar shows the URL "http://walton-64:1000/SgoMntrSQLDBStatus.sgp". The page header includes the Sentry-go logo, the text "Sentry-go Monitoring System v5 Web Reporting", and the copyright information "© 3Ds (UK) Limited http://www.Sentry-go.com".

The main content area shows the following information:

- Server: WALTON-64
- Licence: Demonstration (Shareware)
- Generated on: 4th Nov, 2009 at 17:20:49
- System Health: A progress bar showing 39% check success with an upward arrow.

Navigation links include: Home, Alerts, Status, Activity, SQL Activity, SQL Locking, Transaction Log, Recent Blocks, and Logout. A "Refresh Status" button is also present.

The current database status is for the connection "Sentry-go Native Client".

| 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 | 4.94 MB | OK, database is ready & available |
| 2 | tempdb | 8.50 MB | OK, database is ready & available |

The footer of the page shows the Sentry-go logo and the text "Page 11".

The SQL Server Transaction Log Summary Report

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.

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

Server: WALTON-64
 Licence: Demonstration (Shareware)
 Generated on: 4th Nov. 2009 at 17:23:35
 System Health: 39% check success ▲ [?]

Navigation: [Home](#) [Alerts](#) [Status](#) [Activity](#) [SQL Activity](#) [SQL Locking](#) [Database Status](#) [Recent Blocks](#) [Logout](#) [Refresh Summary](#)

Transaction Log Summary for connection:

| Database | Log Size | % Used | ----- Oldest Transaction Details ----- | | |
|----------|----------|--------|--|-------------|---|
| | | | Time Running | User ID | SQL |
| master | 0.49 Mb | 83.33% | N/A | public | N/A |
| tempdb | 0.49 Mb | 50.40% | N/A | public | N/A |
| model | 0.49 Mb | 56.35% | N/A | public | N/A |
| msdb | 0.49 Mb | 83.33% | N/A | public | N/A |
| 3Ds-test | 0.99 Mb | 40.70% | 10 secs. | -- Kill [?] | begin transaction update test set column1 = 1 where column1 = 1 |



The SQL Locking Status Report

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.

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

Server: WALTON-64
 Licence: Demonstration (Shareware)
 Generated on: 4th Nov. 2009 at 17:23:49
 System Health: 31% check success

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

Current Locking Status for connection: Sentry-go Native Client

Please select the information you wish to report on, then click 'Refresh Status' ...

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. The following processes are currently holding the locks indicated (blocked locks highlighted).

| Process # | Database | User | Run From | Current Status | Blocked By # | Waiting Time | # Transact. | SQL Query |
|-----------|----------|-----------------|-----------|----------------|----------------|--------------|-------------|-----------|
| 52 | 3Ds-test | WALTON3DS\neilc | WALTON-64 | sleeping | Not Blocked | Not Waiting | 1 | AWAITING |
| 53 | 3Ds-test | WALTON3DS\neilc | WALTON-64 | suspended | Blocked By #52 | 19422 m/s | 2 | UPDATE |

The Recent Blocks Report

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

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

| Time | Connection/Database | Run From | User | Process # | Running SQL | Blocked By # | User |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 26th Oct. 2009 at 21:41:59 | Sentry-go Native Client/3Ds-test | WALTON-64 | WALTON3DS\neilo | 53 | begin transaction update test set column1 = 1 where column1 = 1 | 52 | WALTON3DS\neilo |
| 26th Oct. 2009 at 21:42:32 | Sentry-go Native Client/3Ds-test | WALTON-64 | WALTON3DS\neilo | 53 | begin transaction update test set column1 = 1 where column1 = 1 | 52 | WALTON3DS\neilo |
| 4th Nov. 2009 at 17:24:07 | Sentry-go Native Client/3Ds-test | WALTON-64 | WALTON3DS\neilo | 53 | begin transaction update test set column1 = 1 where column1 = 1 | 52 | WALTON3DS\neilo |

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

More Information, Help & Support

More information can be found in the guides that accompany the Sentry-go software. You can also access the following resources ...

- For the very latest information & product updates, please visit <http://www.Sentry-go.com>
- For sales advice, please e-mail Sales@Sentry-go.com
- For technical support, please e-mail Support@Sentry-go.com



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