



Configuring System Performance Monitoring

With Sentry-go Quick & Plus! monitors

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

Be Proactive, Not Reactive!

Keeping a check on the performance characteristics of the server, key software services as well as Web Server and related databases is vital to those wishing to proactively monitor any Windows system. In fact, many errors can be avoided by being alerted to early signs of performance problems and reacting accordingly.

Monitoring the performance of the server, operating system & software is both quick & easy with the Sentry-go Performance monitoring component.

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System requirements

This component is fully compatible with both Sentry-go Quick Monitors v6 and above, and Sentry-go Plus! v6 monitors and above. The availability of performance counters is dependent on the version of Windows & underlying software installed.

Pre-configured options & counter availability

Unlike many other solutions, which require you to manually include each performance counter before you start, Sentry-go comes pre-configured to monitor the key aspects of the both server and software you're likely to need. The settings on this window refer to performance counters on the local server. Although all can be configured here, their activation depends on the counters available on the server itself. If any counters are missing when the server is started, a notification will be sent to the System Administrator and an error written to the Verify Configuration Report.



If you are running Sentry-go on a non-English version of Windows, a message will have been displayed during Setup, explaining that some counters may not be pre-configured. In this case, some options may need to be added manually as described in the pages that follow.

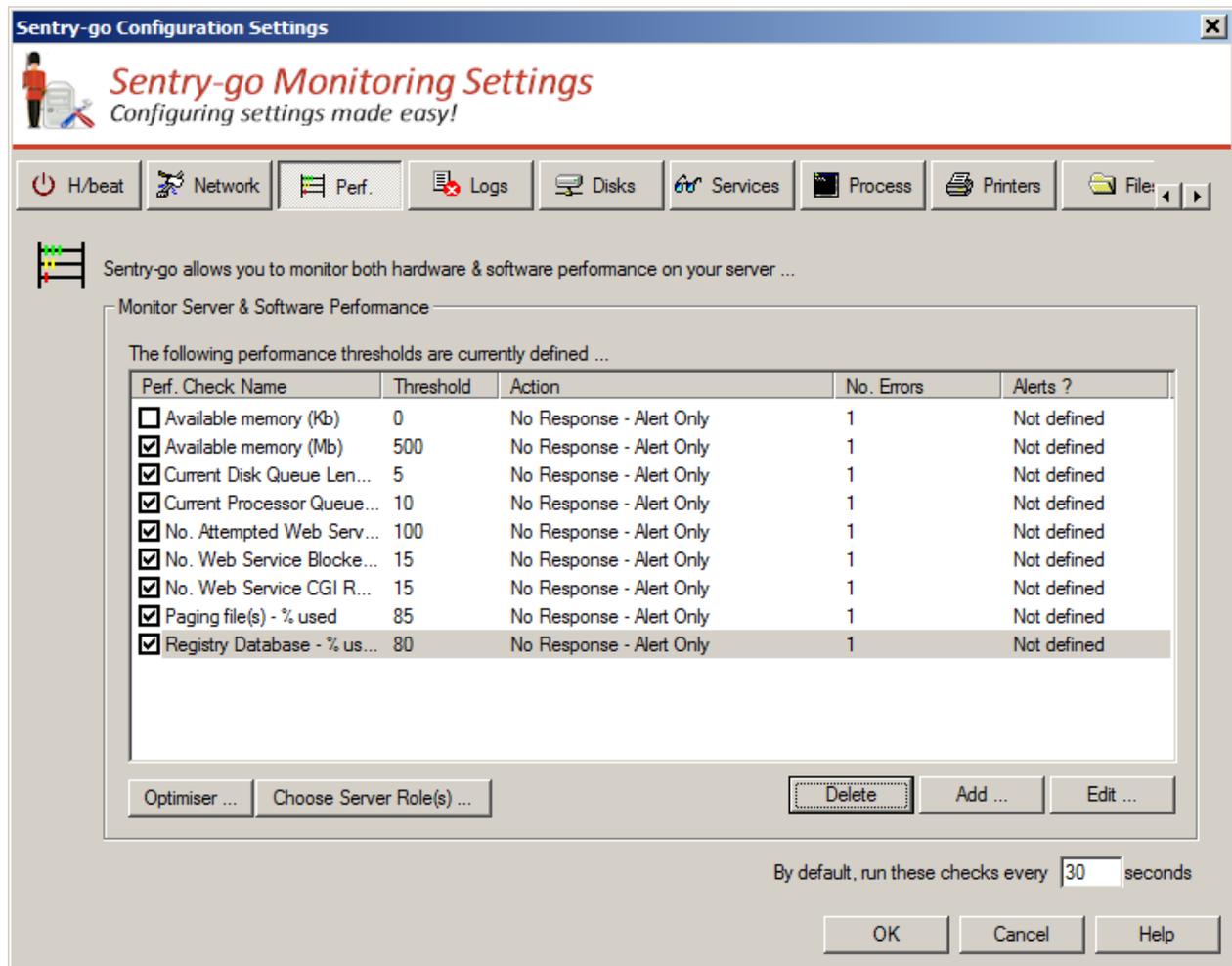
Recommended monitoring settings

The counters you monitor will depend greatly on the software installed & running on the server. Some standard counters include ...

- High CPU usage
- Memory low
- % Paging File in use high
- System Registry size near or at maximum
- High no. Running processes
- Suspicious no. Server Access attempts
- Suspicious no. Server Logon attempts
- High no. Internal Server Errors
- High Disk Queue Length

Monitoring system performance

To set up monitoring, configure the appropriate monitor and select the “Perf.” tab.



Optimiser ...

Click this button to enable/disable & configure the Performance Optimiser. See “Sentry-go Performance Optimiser” later in this guide for more information.

Choose Server Role(s) ...

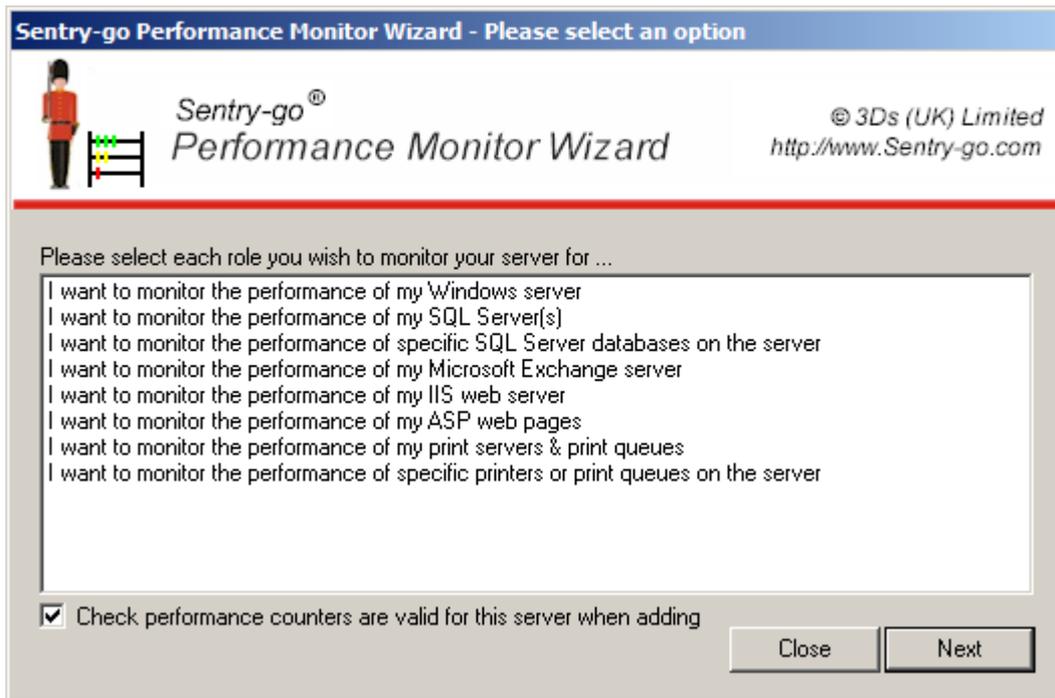
To bulk load standard settings on a locally configured monitor, click the ‘Wizard’ or ‘Choose Server Role(s) button.



The Wizard will overwrite any unsaved changes made to the current configuration. Before running it, ensure you save any existing configuration changes already made.

Changes made by the Wizard will be saved automatically upon completion. You can then further edit these options as described below.

This allows you to preselect a number of settings which can then set the thresholds for ...



Please see the "Sentry-go Performance Setup Wizard" guide for more information.

By default, run these checks every (seconds)

This value specifies how often, in seconds Sentry-go should check performance counter values against the expected thresholds. Setting this value to 0 disables the monitoring of all counters.

Configuring performance counter monitoring

To monitor a new performance counter, or edit an existing one, select the Add or Edit option from the main window. This window allows you to define the counter that will provide the value to be checked as well as the threshold value that it should be checked against.

Edit Performance Counter

Add/Edit Performance Counter | Threshold | Response | Alert

Please define the Performance counter you wish to monitor ...

Name shown on Alerts : High CPU usage
Name on other reports : CPU Usage
Display suffix (e.g. %, bytes) : %

Please define the performance counter you wish to check ...

Import from Windows : Import ... (recommended)

Name of Counter Object : Processor
Counter Name : % Processor Time
Parent Name :
Instance Name or Number : _Total

Monitor all numeric instances (e.g. CPUs etc.)
Index No. : 0
 Check this box if the counter indicates a cumulative total value

Test ...

OK Cancel Help

From here you can either define or edit a performance counter or import it's definition from Windows (recommended).

Name shown on Alerts

This is the name that will appear when an alert is triggered. It is typically a phrase such as "High no. of XXXX detected".

Name on HTML Status Report

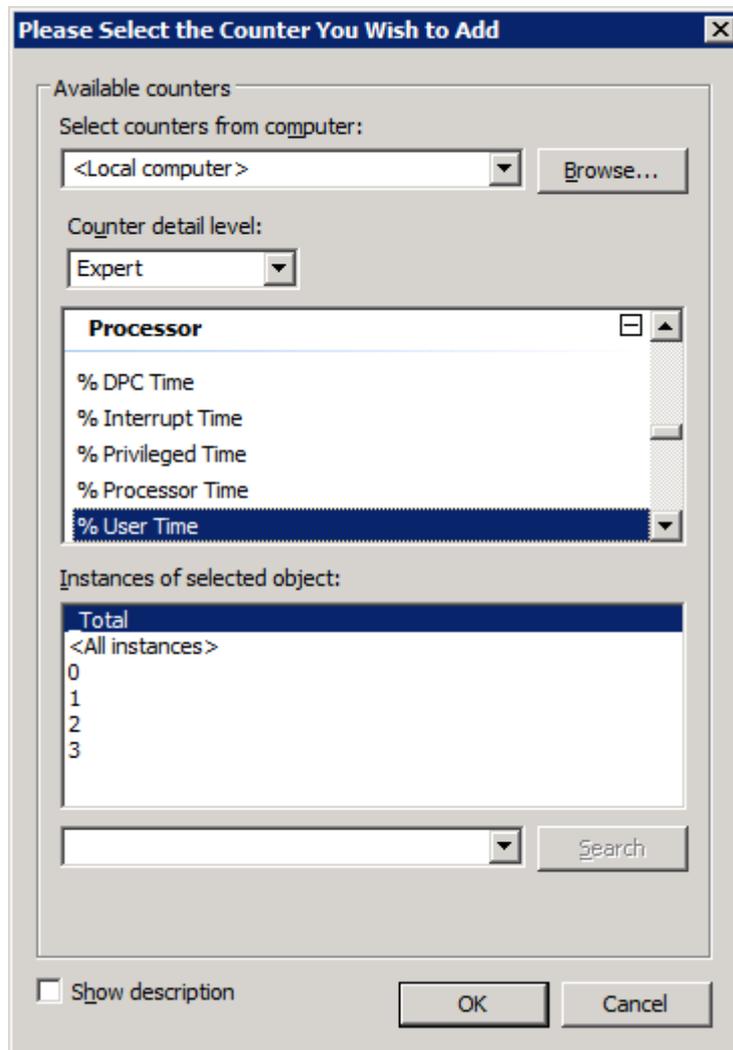
This is the name which will appear on the Current Status web report. It is typically the name of the counter - e.g. "No. XXXX" etc.

Display suffix

This is the suffix, if any that will appear on the Current Status web report. For example, %, sessions, bytes, bps etc.

Importing counters from Windows (recommended) ...

The easiest way of selecting an available counter is to select it from Windows. To do this, simply click the appropriate button to display the Windows Add Counter dialog as used by Windows Performance Monitor ...



For more information on an individual counter, click the "Explain" button, or tick the "Show description". For more information on this specific dialog box, please refer to your Windows documentation.

Name of Counter Object

This is the name of the Performance Counter object you wish to monitor - as defined within Windows.

Counter Name

This is the name of the counter you wish to monitor - as defined within Windows.

Parent name

This is the name of the Parent object you wish to monitor - as defined within Windows.

Instance name or number

This is the instance name or number of the counter you wish to monitor - e.g. total, CPU 1, process name etc. Its value, if any is dependent on the information you wish to monitor. (See also 'Monitor All Instances' below)

Monitor All Instances

Some counters can concurrently be applied to multiple instances at the same time – e.g. counters relating to CPUs where multiple CPUs are available. By default only a single instance will be imported/added but you can tick this box to automatically replicate the check for each instance.



Instances must be numeric in order to automatically replicate the settings.

When added, the check will be duplicated for each instance found to be valid on the server. The instance number will be appended to the name of the check.

This option is only available when adding a new performance check.

Index number

This is the index number of the counter you wish to monitor - as defined within Windows.

If the counter indicates a cumulative total value, check this box

Check this option if the counter being monitored is a cumulative figure that simply increments as time passes (until the next Windows reboot). It allows the monitor to save current values and calculate the difference when performance counter data is retrieved.

If the value is an average value or a value retrieved within the sampling time, then this option should remain unchecked.

Testing performance counter availability

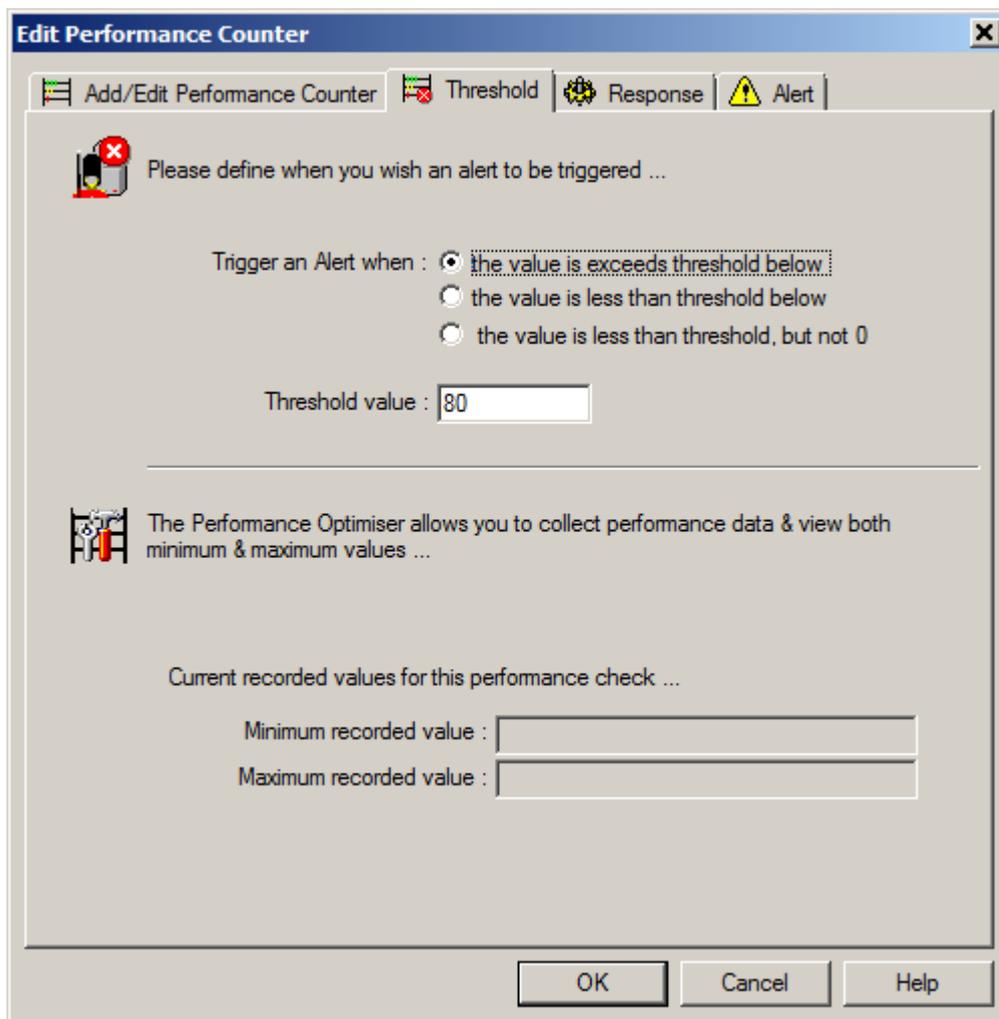
The availability of performance information depends on a number of factors including ...

- The software installed on the target server
- The version of the software running
- The version of Windows on which the software is installed
- The current state of the software providing the data

To verify that a counter is valid on the server, click the “Test” button. This will request the monitor to verify the performance counter & display its results in a web page.

Setting the threshold

The second tab allows you to specify the threshold against which the check will be made.



The screenshot shows the 'Edit Performance Counter' dialog box with the 'Alert' tab selected. The dialog has a title bar with 'Edit Performance Counter' and a close button. Below the title bar are four tabs: 'Add/Edit Performance Counter', 'Threshold', 'Response', and 'Alert'. The 'Alert' tab is active, showing a warning icon and the text 'Please define when you wish an alert to be triggered ...'. Underneath, there are three radio button options for 'Trigger an Alert when': 'the value is exceeds threshold below' (selected), 'the value is less than threshold below', and 'the value is less than threshold, but not 0'. Below these options is a text box for 'Threshold value' containing the number '80'. A horizontal line separates this section from the next. The next section has a bar chart icon and the text 'The Performance Optimiser allows you to collect performance data & view both minimum & maximum values ...'. Below this is the text 'Current recorded values for this performance check ...' followed by two text boxes: 'Minimum recorded value : ' and 'Maximum recorded value : '. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.



Setting the threshold is important as incorrect values may cause false alerts to be generated, or no alerts to be presented even though problems are occurring. You may need to adjust these values from time to time as your server's workload or role changes.

The Performance Optimiser can help track high/low values allowing you to perform trend analysis and set levels accordingly.

Trigger an Alert when ...

Select the option that matches the required test - i.e. when the monitor should trigger an alert. The threshold limit is defined below.

An alert can be raised if ...

- The value exceeds the threshold below
- The value is below the threshold below
- The value falls below the defined threshold but not 0

This option is particularly useful when monitoring the rate at which something such as a network card is running (e.g. bytes per second). In this case, if the service is legitimately not performing any work, the rate will be zero, but is not an error. When work is required, a poor performing service will show a low rate, but usually higher than zero - thus triggering an alert.

Threshold Value

This is the numeric value against which the counter's runtime value will be compared to.

Minimum Recorded Value

If available, shows the lowest value recorded by the Performance Optimiser.

Maximum Recorded Value

If available, shows the highest value recorded by the Performance Optimiser.

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.

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.

The Sentry-go performance optimiser

The Performance Optimiser is an option that can be enabled with the Performance Monitoring component. With it, Sentry-go will periodically record sample performance values. In particular these allow you to ...

- Record performance information over longer periods of time
- Automatically record details of the counters you wish to monitor
- Highlight the lowest & highest values recorded against current monitoring threshold, allowing thresholds to be updated and/or resources added if the server is found to be overloaded.

Data can be displayed as a web report & for trend analysis.

Once samples have been taken, you will have a series of base-line figures - the typical values encountered by the system. You can then use these figures as the benchmark threshold, allowing you to set the appropriate monitoring limits for alerting etc.

To access the Performance Optimiser settings click the “Optimiser ...” button on the Performance tab ...

Sentry-go Performance Optimiser

The Performance Optimiser allows you to periodically save performance data & record high/low values retrieved. This information can then be used to tune your server

Enable Optimisation (recommended) Reports ...

In addition, Sentry-go can also keep a recent history of performance data allowing you to monitor trends over time ...

Enable Performance History Logging ...

Save logged data to : ...

Delete data older than : hours from the file (0 retains all data)

Help ... Cancel OK

Enable Optimisation

Tick this option to enable the optimiser within the Performance monitoring component on the server. Once enabled, details of high/low performance results will be monitored and recorded.

Enable Performance History logging

Tick this option to enable performance logging. When enabled, recorded performance data will be saved to a file, allowing trend analysis to be performed.

Reports ...

Click the “Reports ...” button to access the performance optimiser reports direct from the monitor.

Record & flush data Every X scans

This option determines how often (in scans) the cached data is written from memory to the file. A typical value for this setting is 3.

Save Logged Data to

This is the name of the file in which logged data will be stored. Enter a fully qualified path or the file using the ‘...’ button.



For performance and to ensure reliability, it is recommended that the file be stored locally.

The Performance Log & Trend Analysis web reports use the data stored here to display their results.

Delete data older than X hours

To conserve space and optimise system performance, the above file is periodically trimmed. When trimmed, data older than the value entered here will automatically be removed.

 The higher this value, the longer data will be stored in the file.

The more often scans are performed & the higher this value, the larger the file will become.

To prevent data automatically being removed (not recommended), set this value to 0.

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 performance history report

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

If performance logging is enabled, this report shows the latest saved values and is colour coded to show where they exceed the defined threshold. It also provides links to the Trend Analysis report where available.

The screenshot shows a web browser window titled "WALTON-64 - Sentry-go Monitoring Service - Performance History - Windows Internet Explorer". The address bar shows the URL "http://walton-64:1000/SgoMntrPerfHistory.sgp". The page content includes the Sentry-go logo, server information, and a performance history table.

Server: WALTON-64
Licence: Demonstration (Shareware)
Generated on: 4th Nov. 2009 at 17:31:49
System Health: 39% check success ▲ [?]

Navigation: [Home](#) [Alerts](#) [Status](#) [Activity](#) [Logout](#) [Redisplay](#) the last entries

Performance History (from D:\ProgramData\Sentry-go Monitoring System\Logs\PerfData.csv)

Date/Time	CPU Usage (> 80 %)	Available memory (< 500000 b)	Paging file(s) - % used (> 75 %)	Registry Database - % used (> 80 %)	No. Recent Suspect Access Attempts (> 0)	No. Recent Suspect Logon Attempts (> 0)	No. Recent Internal Server Errors (> 0)
04/11/2009 12:25:08	6	2147483647	0	6	0	0	0
04/11/2009 12:25:38	8	2147483647	0	6	0	0	0
04/11/2009 12:25:53	6	2147483647	0	6	0	0	0
04/11/2009 12:26:23	7	2147483647	0	6	0	0	0
04/11/2009 12:26:38	6	2147483647	0	6	0	0	0
04/11/2009 12:27:08	6	2147483647	0	6	0	0	0
04/11/2009 12:27:23	8	2147483647	0	6	0	0	0
04/11/2009 12:27:53	6	2147483647	0	6	0	0	0

The trend analysis report

URL: Accessed from the Performance History & Performance Optimiser reports

If performance logging & optimisation is enabled, this report shows the latest saved values for the given check and charts it against the given threshold. This allows you to see peaks as well as the performance of the counter over time.

The screenshot shows a web browser window titled "WALTON-64 - Sentry-go Monitoring Service - Performance Trend Analysis - Windows Internet Explorer". The address bar contains the URL: `http://walton-64:1000/SgoMntrPerfTrend.sgp?Counter=CPU%20Usage%20(>%2040%20%25)&CounterI`. The page header includes the Sentry-go logo and the text "Sentry-go Monitoring System v5 Web Reporting". The server information is: "Server: WALTON-64, Licence: Demonstration (Shareware), Generated on: 4th Nov. 2009 at 17:52:42". The system health is shown as a green bar with "31% check success". Navigation links include Home, Alerts, Status, Activity, and Logout. A "Redisplay" button is next to a text input field containing "500" and the text "the last 500 entries". The main content is titled "Performance Trend Analysis (Check CPU Usage (> 40 %) from D:\ProgramData\Sentry-go Monitoring System\Log\PerfData.csv)". Below this, it shows "Totals for entire file (cache) ..." with "Min Value: 5, Average Value: 10, Max Value: 30". A table displays the trend data:

Date/Time	0	40 (Threshold)	Actual Value
04/11/2009 17:35:23			16
04/11/2009 17:35:53			11
04/11/2009 17:36:08			14
04/11/2009 17:36:38			9

The browser status bar at the bottom shows "Done" and "Trusted sites | Protected Mode: Off" with a zoom level of 100%.

The performance optimiser report

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

This report shows the current status of the Performance Optimiser & the high/low values for each check being performed. The current cache of values can also be reset (cleared) from here.

The Sentry-go Performance Optimiser allows you to collect performance data & view both minimum & maximum values. You can do this on an ongoing basis, or specifically over a given period of time to collect base line information. Once data is available, you can then set monitoring thresholds accordingly, so they alert you when a monitored value exceeds its expected maximum or falls below a given minimum. For example, assuming sufficient contingency, thresholds might be set 20% higher than the maximum recorded value.

[Click here for more information on Optimising & Performance baseline values.](#)

Status Information ...

- Optimiser Status : Running
- Optimisation started : 19/10/2009 12:04:56
- Last entry was recorded : 04/11/2009 17:51:10

Check Being Performed	Lowest Value	Highest Value	Current Threshold
High CPU usage	0 %	85 %	> 40 %
Memory low	968847360 b	2147483647 b	< 500000 b
% Paging File in use high	0 %	1 %	> 75 %
System Registry size near or at maximum	6 %	10 %	> 80 %
Suspicious no. Server Access attempts	0	0	> 0
Suspicious no. Server Logon attempts	0	0	> 0
High no. Internal Server Errors	0	0	> 0

[Clear Optimiser Cache](#) [Refresh Information](#)

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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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