

Performance Monitor

Summary

The performance monitor module enables website administrators to monitor and record the performance counters of the system the Orchard instance is running on. The module stores monitored values about the system in Orchard database tables. The module can be used if the Orchard CMS instance is running in **Full Trust environment**.

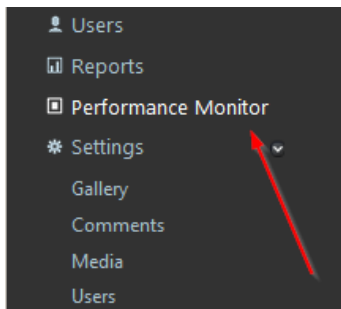
NOTE: The application requires administrative permissions to access the performance counters. (the Application Pool, needs to be member of the 'Performance Monitor Users' group). This is (usually) a possibility if having dedicated hosting. Unfortunately, adding user accounts to the 'Performance Monitor Users' group is (usually) not an option in shared hosting. (*Error: Not able to load the categories. Exception: System.UnauthorizedAccessException: Access to the registry key 'Global' is denied.*)

Why a Performance Monitor?

We can use it to identify resource bottlenecks or locate root causes of issues and as a result optimize code, hardware or settings for performance.

Installation

Install and enable the Performance Monitor module. You will get the option " Performance Monitor " in the dashboard. It has been tested on Orchard v1.7.2.



The Performance Monitor main page

Click the Performance Monitor option in the Dashboard. On the main page of the Performance Monitor you see a table containing a lot of columns, containing different sections:

1. Counters on system (1)
2. Time (2)
3. Values (3)
4. Actions (4) and related status

Performance Monitor User: admin | Logout

New counter 5
Search:

Object	Instance	Counter	Node	Duration (hrs)	Interval (m)	Created (start time)	End time	Runtime	Initial	Last	Threshold	Status	Actions
.NET CLR Exceptions	_Global_	# of Exceps Thrown	SSO595485	1	1	2014-01-16 16:42:43	2014-01-16 16:47:37	00:04:54	5842	5970	> 5875	Stopped	Delete Show details
Memory	none	Available KBytes	SSO595485	1	1	2014-01-16 16:29:55	2014-01-16 16:35:07	00:05:12	2402900	3316796	< 2584000	Stopped	Delete Show details

Showing 1 to 2 of 2 entries

 Show 10 entries
 1

Counters

You can add a new counter by pressing the button ‘New counter’ (5). (see further on in this document for detailed description). After you have added a counter , it will be added as a row in the table of counters (defined instances), and it will automatically be started (status : ‘collecting data’).

Performance Monitor implements IBackgroundTasks and every Sweep(), it checks if the defined interval (e.g. 1 minute) has passed between the last registration, and if so it performs a reading of the countervalue and saves this as a datarecord belonging to the defined counterinstance (monitorrecord).

NOTE: The first timed reading after the initial reading is (usually) not exactly within the minute. Every subsequent reading is usually exactly within the specified interval (e.g. 1 minute), but this isn’t always guaranteed. For more info: <http://orchard.codeplex.com/workitem/20383>

After you have stopped a counter, you can decide to keep this instance in the list for future reference, or to delete it. (click “delete” in the action section).

NOTE: At this moment it is only possible to run one counter at a time (maybe in the next version?), so when you have added a new counter and this instance is running, that it is not possible to add a new counter (you would have to stop it first).

Details (statistics)

Performance Monitor : Counter statistics

User: admin | Logout



Here we see:

- Datable with conditional formatting (1) , depending on the current value and if it has exceeded the given threshold.
 - **NOTE:** The first timed reading after the initial reading is (usually) not exactly within the minute. Every subsequent reading is exactly within the specified interval (e.g. 1 minute). For more info: <http://orchard.codeplex.com/workitem/20383>
- Fixed values (2), containing:
 - Threshold value (is supplied) , with an indication if set to indicate when above (>) or below (<) a certain value.
 - Mean: sum of all values divided by the total number of values
 - Minimum: the minimum value of all countervales
 - Maximum: the maximum value of all countervales

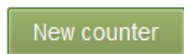
- Graph:

Performance Monitor uses jqPlot for graphical display of the values (see <http://www.jqplot.com> for more information).

- The X-axis (4) value is fixed and displays the runtime in minutes.
 - The Y-axis (5) value and label depends on the selected counter.
 - The plotted line contains markers (6) with data point highlighting.
 - Zoom: click on the graph and select an region to zoom into that region (double click to restore).
- Refresh/Autorefresh: click the autorefresh button once to enable (toggle). It then automatically refreshes every interval.

An example (add a new counter)

From the mainpage , click on the button “New Counter”



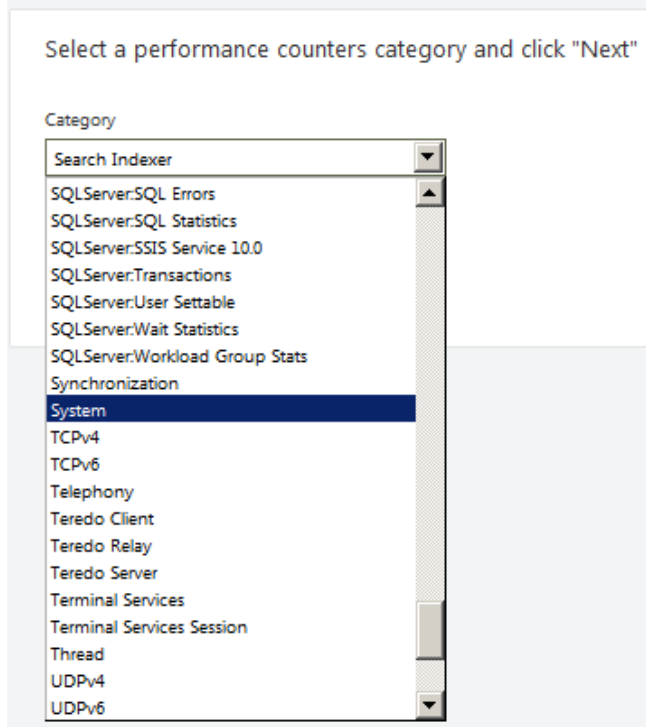
When you have clicked the button, a list of the performance counter categories that are registered on the system, that the Orchard instance is running on, is retrieved (this might take a while). If it seems that this takes too long (hangs or you get an error), you can check several things (besides the required administrative permissions) that might be causing the issue :

- <http://stackoverflow.com/questions/18751789/performancecountercategory-getcategories-throws-exception-argumentexception>

(also I experienced an issue, and I had to remove the Nvidia WMI)

When the counter categories are loaded , selected a desired category (e.g. “system”), and click next.

New performance counter



NOTE: After selecting a category, you either go straight forward to selecting and defining a counter , or first you have to select an **instance** when having selected a Multi-Instance Counter Category.

In this case we have selected a single instance category and are redirected directly to select a counter and define our counter instance in the following screen.

Edit performance counter

System

Counter

Context Switches/sec

Duration

(in hours, with a maximum of 24 hours)

1

Sample Interval

(in minutes with a minimum of 1 minute and maximum of 60 minutes)

1

Threshold

(optional)a limit value to indicate when the countervalue exceeds (or reaches below) this value

3500

Indicate when threshold value is:

Above

Save

Here we have selected the counter “Context Switches/sec” belonging to the category that is mentioned above (System).

- Now enter the time that the registration should run (in hours, with a maximum of 24 hours), or use default
- Input the sample interval (minimum of 1 minute and maximum of 60) or use the default (1 minute)
- Enter a threshold value or just keep the default value (0 = disabled)
- (if using the threshold value) then you can select to give an indication (red text and the difference between the threshold value) when it is either above (default) or below a certain value.

Now click “Save”.

After having saved the counterdefinition , it starts automatically (status: ‘Collecting data’) and we can view the details (see the screenshot in the description of the details (statistics)). Note here that the Runtime, Last Value are registered only when stopping the counterregistration (as well as the mean/minimum/maximum values that are shown in the details view).

Object	Instance	Counter	Node	Duration (hrs)	Interval (m)	Created (start time)	End time	Runtime	Initial	Last	Threshold	Status	Actions
System	none	Context Switches/sec	SSO595485	1	1	2014-01-16 17:26:14	2014-01-16 18:26:14		3651327		>3500	Collecting data	Stop Show details