

Perfmon counters for Enterprise MOSS

#	Counter	What does it measure or can tell us	Threshold [Action taken if]	Notes
PROCESSOR RELATED COUNTERS				
1	Processor(_Total)\% Processor Time	Measures average processor utilization or the system's busyness.	> 75%	These 3 counters should be monitored together
2	Processor(_Total)\% Privileged Time	Show processor utilization for kernel-mode processes. High means server is underpowered	> 30% of Total %Processor Time	
3	Processor(_Total)\% User Time	Show processor utilization for user-mode processes. High means server is running too many specific roles	> 30% of Total %Processor Time	
4	Process(instance)\% Processor Time	Measures processor utilization by the specific instance – <ul style="list-style-type: none"> i. inetinfo ii. w3wp_n iii. sqlservr iv. LSASS (<i>Local Security Authority Subsystem Service is responsible for helping Windows manage security and logins</i>) v. OWSTIMER 	<ul style="list-style-type: none"> i. Inetinfo : > 20% ii. w3wp_n: > 40% iii. sqlservr: > 75% iv. LSASS: > 40% v. OWSTIMER: 75%? 	
5	System\Processor Queue Length	If the threshold of this rule is exceeded, it indicates that the processor(s) are not fast enough.	>2 * number of processors	

#	Counter	What does it measure or can tell us	Threshold [Action taken if]	Notes
6	Processor\Interrupts/sec	Interrupts/sec is the average rate, in incidents per second, at which the processor received and serviced hardware interrupts. It does not include deferred procedure calls (DPCs), which are counted separately. This value is an indirect indicator of the activity of devices that generate interrupts, such as the system clock, the mouse, disk drivers, data communication lines, network interface cards, and other peripheral devices. These devices normally interrupt the processor when they have completed a task or require attention. Normal thread execution is suspended. The system clock typically interrupts the processor every 10 milliseconds, creating a background of interrupt activity. This counter displays the difference between the values observed in the last two samples, divided by the duration of the sample interval. Values < 1000 considered good. Monitor for trends over time. May indicate failing hardware.	>1000	
DISK RELATED COUNTERS				
7	LogicalDisk (instance)\% Disk Time	% Disk Time is the percentage of elapsed time that the selected disk drive was busy servicing read or write requests. Value > 80% may indicate lack of RAM or a disk controller issue.	>80%	These 2 counters should be monitored together
8	LogicalDisk (instance)\% Idle Time	Reports the percentage of time that the disk system was not processing requests and no work was queued. This counter, when added to % Disk Time, might not equal 100 percent, because % Disk Time can exaggerate disk utilization.	n/a	
9	PhysycalDisk (instance)\Avg. Disk sec/Transfer	The average disk transfer. Disk transfer indicates the number of read and writes completed per second, regardless of how much data they involve. Measures disk utilization. If value exceeds 50 (per physical disk in the case of a striped volume), then a bottleneck might be developing.	>50 per physical disk	
10	LogicalDisk (instance)\Avg. Disk Queue Length	High value indicates disk is not fast enough	>2	

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11	LogicalDisk \Current Disk Queue Length	Indicates the number of disk requests that are currently waiting as well as requests currently being serviced. Subject to wide variations unless the workload has achieved a steady state and you have collected a sufficient number of samples to establish a pattern. An instantaneous value or snapshot of the current queue length,	>2	
12	LogicalDisk (instance)\Avg. Disk sec/Read	Avg. Disk sec/Read is the average time, in seconds, of a read of data from the disk. This counter indicates the time it takes the disk to retrieve data. On well-tuned I/O subsystems, ideal values are 1-5 ms for logs (ideally 1 ms on a cached array), and 4-20 ms for data (ideally below 10 ms). Higher latencies can occur in peak times, but if high values are occurring regularly, investigate the cause.	>15ms	
13	LogicalDisk (instance)\Avg. Disk sec/Write	Avg. Disk sec/Write is the average time, in seconds, of a write of data to the disk. This counter indicates the time it takes the disk to write the data. On well-tuned I/O subsystems, ideal values would be 1-5 ms for log (ideally 1 ms on a cached array), and 4-20 ms for data (ideally below 10 ms). Higher latencies can occur in peak times, but if high values are systematically occurring, investigate the cause.	>15ms	
MEMORY RELATED COUNTERS				
14	Memory\Pages/sec	Measures the rate at which pages are read from or written to disk to resolve hard page faults. A hard page fault occurs when a memory page is not in the immediate memory and needs to be fetched from the disk. This counter is a primary indicator of the kinds of faults that cause system-wide delays.	> 20	

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15	Memory\ Page Faults/sec	Page Faults/sec is the average number of pages faulted per second. Also equal to the number of page fault operations. This counter includes both hard faults (those that require disk access) and soft faults (where the faulted page is found elsewhere in physical memory.) Most processors can handle large numbers of soft faults without significant consequence. However, hard faults, which require disk access, can cause significant delays.	>0? or Rise over time. Need to create a baseline first.	These 2 counters should be monitored together
16	Memory\Page Reads/sec	This counter indicates the number of times the disk was read to retrieve pages of virtual memory necessary to resolve page faults. Sustained values of more than 5 indicate a memory shortage.	Consistently >5	
17	Cache\ Faults/sec	Cache Faults/sec is the rate at which faults occur when a page sought in the file system cache is not found and must be retrieved from elsewhere in memory (a soft fault) or from disk (a hard fault). The file system cache is an area of physical memory that stores recently used pages of data for applications. Cache activity is a reliable indicator of most application I/O operations. This counter shows the number of faults, without regard for the number of pages faulted in each operation. Sustained high values or increasing values indicate concerns that must be investigated with other counters, such as Memory: Page Reads/sec.	Rise over time. Need to create a baseline first.	
18	Memory\Available Mbytes	Measures memory available for allocation to a process or for system use.	<4MB	All 3 counters should be monitored together, to get a better understanding on memory pressure
19	Memory\Pages input/sec	Measures the rate at which pages are read from disk to resolve hard page faults.	> 10	
20	Paging File\% Usage	This parameter shows the percentage of the Page File instance in use	>70%	

#	Counter	What does it measure or can tell us	Threshold [Action taken if]	Notes
21	Process(instance)\Working Set Instance :- i. w3wp_n ii. sqlservr	Number of allocated pages the process can address without generating a page fault. Significant fluctuation can indicate a lack of available memory	Significant fluctuation	
22	Process(instance)\Working Set Peak Instance :- i. w3wp_n ii. sqlservr	Maximum number of allocated pages the process can address without generating a page fault. Significant fluctuation can indicate a lack of available memory.	Rise over time. Need to create a baseline first.	
23	Process(instance)\Private Bytes Instance :- i. w3wp_n ii. sqlservr	Private Bytes is the current size, in bytes, of memory that this process has allocated that cannot be shared with other processes	Significant fluctuation	
24	Process(instance)\Private Bytes Peak Instance :- i. w3wp_n ii. sqlservr	Maximum value, in bytes, of memory that this process has allocated that cannot be shared with other processes	Rise over time. Need to create a baseline first.	
25	Process(instance)\Virtual Bytes Instance :- i. w3wp_n ii. sqlservr	The amount of virtual address space, in bytes, reserved directly by the w3wp.exe process (where isolated or pooled applications run when IIS is set to worker process isolation mode) instantiated on your server.	Significant fluctuation	

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26	Process(instance)\Virtual Bytes Peak Instance :- i. w3wp_n ii. sqlservr	Maximum value of the amount of virtual address space, in bytes, reserved directly by the w3wp.exe process (where isolated or pooled applications run when IIS is set to worker process isolation mode) instantiated on your server.	Rise over time. Need to create a baseline first.	
27	Memory\Transition Faults/sec	Measures how often recently trimmed page on the standby list are re-referenced. Indicates insufficient memory if this counter slowly starts to rise over time.	Rise over time. Need to create a baseline first.	
28	System\Context Switches/sec	Measures how frequently the processor has to switch from user- to kernel-mode to handle a request from a thread running in user mode. Value of this counter should remain fairly constant. If this counter suddenly starts increasing however, it may be an indicating of a malfunctioning device.	Sudden jump in value or rise over time. Need to create a baseline first.	These 2 counters should be monitored together
29	Processor(_Total)\Interrupts/sec	A sudden jump in <u>System\Context Switches/sec</u> and <u>Processor(_Total)\Interrupts/sec</u> , indicates a malfunctioning device. A sudden jump in <u>System\Context Switches/sec</u> and but not in <u>Processor(_Total)\Interrupts/sec</u> , indicates application is hitting scalability limit (<i>may need to scale out</i>)	Sudden jump in value or Rise over time. Need to create a baseline first.	
NETWORK RELATED COUNTERS				
30	Network Interface\Bytes Total/sec	Counter measures how busy the network interface card is. The rate at which bytes are sent and received over each network adapter, including framing characters. Should not exceed Network Card Speed X 2 (for duplex) X 75%. Monitor trend over time.	> Network Card Speed X 2 (for duplex) X 75%	
31	Network Interface\Output Queue Length	This is the number of packets in the output queue. This value should not sustain more than 2 or the network is bottlenecked and the underlying hardware may need to be reconfigured or replaced.	>2 for 15 minutes	

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32	Network Interface\Packets Outbound Errors	Value > 1 shows NIC is experiencing network problems and is a potential bottleneck Most likely caused by a faulty or damaged network interface card (NIC).	>1	
33	Network Interface\ Packets Received Errors		>1	
SQL RELATED COUNTERS				
34	SQLServer:General Statistics\User Connections	Number of users connected to the system.	Rise over time. Need to create a baseline first.	
35	SQLServer:SQL Statistics\Batch Requests/sec	Number of SQL batch requests received by server.	Rise over time. Need to create a baseline first.	
36	SQLServer:Databases\Transactions/sec	Number of transactions per second started for the database. This counter is the key indicator for activity in the back-end SQL Servers.	Rise over time. Need to create a baseline first.	
37	SQLServer:Locks Lock Waits/sec	Shows the number of locks per second that could not be satisfied immediately and had to wait for resources.		
38	SQLServer:Locks(_Total)\Number of Deadlocks/sec	Shows the number of deadlocks on the SQL Server per second. If anything above 0, your users and applications will experience problems. Their queries will abort and the applications may fail.	>0	
39	SQLServer:Locks(_Total)\Lock Wait Time (ms)	This counter shows the number of locks per second that timed out. If anything above 0 for this counter, your users will experience problems as their queries are not completing.	>0	
EXCEL AND INFOPATH SERVICES RELATED COUNTERS				
40	Excel Calculation Services\Average Request Processing Time	Average processing time for a request on Excel Calculation Services	Rise over time. Need to create a baseline first.	These 3 counters should be monitored together.
41	Excel Calculation Services\Requests Received Per Second	Number of requests received per second on Excel Calculation Services	n/a	
42	Excel Calculation Services\Requests With Errors Per Second	Number of requests that are returned with errors per second on Excel Calculation Services	Rise over time. Need to create a baseline first.	

#	Counter	What does it measure or can tell us	Threshold [Action taken if]	Notes
43	InfoPath Forms Services\ Avg. Transaction Duration	The average time to complete a transaction in form filling sessions	Rise over time. Need to create a baseline first.	
SEARCH RELATED COUNTERS				
44	Office Server Search Gatherer\ Active Queue Length	The number of documents waiting for robot threads. If this number is not 0, all threads should be filtering.	>2? or Need to baseline first.	
45	Office Server Search Gatherer Projects\ Retries	The total number of times a document access has been retried. Having this number high may indicate a problem with accessing the data.	Rise over time. Need to create a baseline first.	
46	Office Server Search Gatherer Projects\ Error Rate	The number of filtered documents which returned an error per second.	Rise over time. Need to create a baseline first.	
47	Office Server Search Indexer Catalogs\ Queries	Number of queries	n/a	These 2 counters should be monitored together.
48	Office Server Search Indexer Catalogs\ Queries Failed	Number of queries failed	Rise over time. Need to create a baseline first.	
PROJECT SERVER RELATED COUNTERS				
49	ProjectServer:QueueGeneral\ \ % Sql Retries / Day	Percentage of Sql calls the Queueing system had to retry per day	Rise over time. Need to create a baseline first.	
50	ProjectServer:QueueGeneral\ Average Unprocessed Jobs / Day	Average number of unprocessed jobs in the queue per day	Rise over time. Need to create a baseline first.	
51	ProjectServer:QueueJobs\ Average Processing Time / Day	Average time it took to process a job in the queue within the last 24 hours	Rise over time. Need to create a baseline first.	
52	ProjectServer:Winproj\ Average time taken for Project Open	Average time taken for Project Open	Rise over time. Need to create a baseline first.	
SSP RELATED COUNTERS				
53	Shared Service Provider\ Personal Site Throughput	Rate at which personal sites are rendered	Rise over time. Need to create a baseline first.	

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54	Shared Service Provider\ Public Site Throughput	Rate at which public sites are rendered	Rise over time. Need to create a baseline first.	
OTHER COUNTERS				
55	Server Work Queues\ Bytes Received/sec	The rate at which the Server is receiving bytes from the network clients on this CPU. This value is a measure of how busy the Server is.	Rise over time. Need to create a baseline first.	May give us an idea of what clients are experiencing
56	Server Work Queues\ Bytes Sent/sec	The rate at which the Server is sending bytes to the network clients on this CPU. This value is a measure of how busy the Server is.		
57	Server Work Queues\ Read Bytes/sec	Read Bytes/sec is the rate the server is reading data from files for the clients on this CPU. This value is a measure of how busy the Server is.		
58	Server Work Queues\ Write Bytes/sec	Write Bytes/sec is the rate the server is writing data to files for the clients on this CPU. This value is a measure of how busy the Server is.		
59	ASP.NET Apps v2.0.50727\Requests/Sec	Counts the number of requests per second.	>80 or Rise over time. Need to create a baseline first.	

References

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