

**Performance Measurement @ SunGard**

Explanation

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# Customer Information

## Contacts

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| --- | --- | --- |
| Contact Name | Contact Phone | Contact Email |
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## Address

# Document History

## Revision History

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| --- | --- | --- | --- |
| Version | Date | Summary | Author |
| 0.1 | 27.06.2014 | Initializing | Holger Habermehl |
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## Reference Documents

|  |  |  |
| --- | --- | --- |
| Version | Document Name | Author |
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# Processor

## Explanation Processor: % Processor Time (< 80% for non-workers)

This measures the percentage of elapsed time the processor spends executing a non-idle thread. If the percentage is greater than 85 percent, the processor is overwhelmed and the server may require a faster processor.

## Explanation Processor: % User Time (baseline)

This measures the percentage of elapsed time the processor spends in user mode. If this value is high, the server is busy with the application. One possible solution here is to optimize the application that is using up the processor resources.

## Explanation Processor: Interrupts/sec (baseline)

This measures the time the processor spends receiving and servicing hardware interruptions during specific sample intervals. This counter indicates a possible hardware issue if the value is greater than 15 percent.

## Explanation Processor: % Privileged Time (<30%)

Corresponds to the percentage of time the processor spends on execution of Microsoft Windows kernel commands, such as processing of SQL Server I/O requests. If this counter is consistently high when the Physical Disk counters are high, consider installing a faster or more efficient disk subsystem.

# System

## Explanation System: Processor Queue Length (< 10 per CPU)

The System\Processor Queue Length counter shows how many threads are ready in the processor queue, but not currently able to use the processor. Notice that the default scale for the Processor Queue Length counter value is 10 per CPU. The server doesn't have enough processor power if the value is more than two times the number of CPUs for an extended period of time.

## Explanation System: Context Switches/sec (< 5000 per CPU)

Indicates that the kernel has switched the thread it is running on a processor. A context switch occurs each time a new thread runs, and each time one thread takes over from another. A large number of threads is likely to increase the number of context switches. Context switches allow multiple threads to share time slices on the processors, but they also interrupt the processor and might reduce overall system performance, especially on multiprocessor computers. You should also observe the patterns of context switches over time.

# Memory

## Explanation Memory: Available MBytes (> 10% of installed RAM)

This measures the amount of physical memory, in megabytes, available for running processes. If this value is less than 10 percent of the total physical RAM, that means there is insufficient memory, and that can increase paging activity. To resolve this problem, you should simply add more memory.

## Explanation Memory: Pages/sec (baseline)

This measures the rate at which pages are read from or written to disk to resolve hard page faults. If the value is greater than 1,000, as a result of excessive paging, there may be a memory leak.

## Explanation Memory: Page Faults/sec (baseline)

A page fault occurs when a process requests a page in memory and the system can’t find it at the requested location. If the requested page is elsewhere in memory, the fault is called a soft page fault. If the requested page must be retrieved from disk, the fault is called a hard page fault. Most processors can handle large numbers of soft faults. Hard faults, however, can cause significant delays. Page Faults/sec is the overall rate at which the processor handles all types of page faults. A high number of hard page faults may indicate that you need to increase the amount of memory or reduce the cache size on the server.

## Explanation Memory: Transition Faults/sec (baseline)

The rate at which page faults are resolved by recovering pages without incurring additional disk activity. Transition faults, which measure soft page faults, are counted in numbers of faults because only one page is faulted in each operation; the number of transition faults is equal to the number of pages faulted.

# Physical Disk

## Explanation PhysicalDisk: % Idle Time (baseline)

This measures the percentage of time the disk was idle during the sample interval. If this counter falls below 20 percent, the disk system is saturated. You may consider replacing the current disk system with a faster disk system.

## Explanation PhysicalDisk: Avg. Disk Queue Length (< 1 per disk)

Tracks the number of requests that are queued and waiting for a disk during the sample interval, as well as requests in service. As a result, this might overstate activity. If more than two requests are continuously waiting on a single-disk system, the disk might be a bottleneck.

## Explanation PhysicalDisk: Disk Reads/sec (baseline)

Perfmon captures the total number of individual disk IO requests completed over a period of one second. If the Perfmon capture interval is set for anything greater than one second, the average of the values captured is presented.

Disk Reads/sec and Disk Writes/sec are calculated in the same way, but break down the results in read requests only or write requests only, respectively.

## Explanation PhysicalDisk: Disk Writes/sec (baseline)

Perfmon captures the total number of individual disk IO requests completed over a period of one second. If the Perfmon capture interval is set for anything greater than one second, the average of the values captured is presented.

Disk Reads/sec and Disk Writes/sec are calculated in the same way, but break down the results in read requests only or write requests only, respectively.

## Explanation PhysicalDisk: Disk Read Bytes/sec (baseline)

Perfmon captures the total number of bytes sent to the disk (write) and retrieved from the disk (read) over a period of one second. If the Perfmon capture interval is set for anything greater than one second, the average of the values captured is presented.

The Disk Read Bytes/sec and the Disk Write Bytes/sec counters break down the results displaying only read bytes or only write bytes, respectively.

## Explanation PhysicalDisk: Disk Write Bytes/sec (baseline)

Perfmon captures the total number of bytes sent to the disk (write) and retrieved from the disk (read) over a period of one second. If the Perfmon capture interval is set for anything greater than one second, the average of the values captured is presented.

The Disk Read Bytes/sec and the Disk Write Bytes/sec counters break down the results displaying only read bytes or only write bytes, respectively.

## Explanation PhysicalDisk: Split IO/Sec (baseline)

Measures the rate of IO split due to file fragmentation. This happens if the IO request touches data on non-contiguous file segments.

## Explanation PhysicalDisk: Avg. Disk Queue Length (< 1 per disk)

This indicates how many I/O operations are waiting for the hard drive to become available. If the value here is larger than the two times the number of spindles, that means the disk itself may be the bottleneck.

## Explanation PhysicalDisk: Avg. Disk sec/Read (< 50 ms)

Indicates how fast data is being moved (in seconds). Measures the average time of each data transfer, regardless of the number of bytes read or written. Shows the total time of the read or write, from the moment it leaves the Diskperf.sys driver to the moment it is complete. A high value for this counter might mean that the system is retrying requests due to lengthy queuing or, less commonly, disk failures.

## Explanation PhysicalDisk: Avg. Disk sec/Write (< 75 ms)

The **Avg. Disk sec/Write** performance counter shows the average time in seconds that it takes to write data to the disk. The average value of the **Avg. Disk sec/Write** performance counter should be under 10 milliseconds. The maximum value of the **Avg. Disk sec/Write** performance counter should not exceed 50 milliseconds. The likely solution here is to replace the disk system with a faster disk system or add more spindle.

# Network

## Network Interface: Bytes Received/sec (baseline)

Shows the rate at which bytes are received over each network adapter. The counted bytes include framing characters. Bytes Received/sec is a subset of Network Interface\Bytes Total/sec.

## Network Interface: Bytes Sent/sec (baseline)

Shows the rate at which bytes are sent over each network adapter. The counted bytes include framing characters. Bytes Sent/sec is a subset of Network Interface\Bytes Total/sec.

## Network Interface: Bytes Total/sec (baseline)

This measures the rate at which bytes are sent and received over each network adapter, including framing characters. The network is saturated if you discover that more than 70 percent of the interface is consumed. For a 100-Mbps NIC, the interface consumed is 8.7MB/sec (100Mbps = 100000kbps = 12.5MB/sec\* 70 percent). In a situation like this, you may want to add a faster network card or segment the network.

# SunGard Corporate Information

## About SunGard

SunGard is one of the world’s leading software and technology services companies. SunGard has more than 17,000 employees and serves over 25,000 customers in more than 70 countries. SunGard provides software and processing solutions for financial services, education and the public sector. SunGard also provides disaster recovery services, managed IT services, information availability consulting services and business continuity management software. With annual revenue of about $4.5 billion, SunGard is ranked 480 on the Fortune 500 and is the largest privately held business software and IT services company. Look for us wherever the mission is critical.

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SunGard iWorks is a business-driven IT product family for the insurance industry in each of the following major business lines: life/health/annuities/pensions, property and casualty, and reinsurance. iWorks offers a range of products and services including front-office tools, policy administration, reinsurance, actuarial calculations, financial and investment accounting and reporting. SunGard partners with customers to help deliver products and services that align with changing business and regulatory needs.

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## About SunGard iWorks Prophet

SunGard iWorks Prophet is an enterprise-wide actuarial modelling system. It helps insurance and other financial services companies to meet their reporting responsibilities and improve risk management. Actuarial libraries engineered separately from the modelling system deliver solutions which can be customized and deployed around the world.

Prophet's enterprise architecture provides the power and performance for models to run in a secure and controlled environment and fits in with companies' end-to-end infrastructure to produce management information required by decision-makers. iWorks Prophet is implemented by more than 9000 users, across more than 730 sites, worldwide in more than 65 countries

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