Windows Performance Metrics

Windows collects a range of performance metrics from the various system components. Each component amalgamates the performance metrics into a *performance object*. The Uptime Infrastructure Monitor Windows agent collects the following metrics from the performance objects on a Windows system:

- CPU
- Multi-CPU
- Memory
- System
- Disk
- Network
- Process

Each set of performance metrics is averaged over an interval of one second.

CPU

The Uptime Infrastructure Monitor agent outputs the metrics listed below for the entire system, and combines and averages all CPU statistics.

Metric	Explanation	Performance Object
% User Time	The percentage of time that the processor spends in user mode (a processing mode for applications and subsystems).	Processor(_Total)
% Privileged Time	The percentage of time that the processor in privileged mode, in which it has direct access to hardware and memory.	Processor(_Total)
% Interrupt Time	The total amount that the processor uses to handle interrupts from applications or hardware.	Processor(_Total)
Available KBytes	The amount of physical memory, in kilobytes, that is available.	Memory
% Usage	The percentage of the paging file that is in use.	Paging File(_Total)
Processor Queue Length	The number of queued threads that are waiting to be processed.	System

Multi-CPU

The Uptime Infrastructure Monitor agent outputs the metrics listed below for the entire system, per CPU.

Metric	Explanation	Performance Object
% User Time	The percentage of time that the processor spends in user mode (a processing mode for applications and subsystems).	Processor (_Total)
% System Time	The percentage of CPU kernel processes that are in use.	Processor (_Total)
% Privileged Time	The percentage of time that the CPU spends executing kernel commands.	Processor (_Total)
% Interrupt Time	The number of CPU interrupts.	Processor (_Total)
Interrupts /sec	The rate at which CPU handles interrupts from applications or hardware each second. If the value for Interrupts/sec is high, there could be problems with the hardware on the system.	Processor (_Total)
% Total	The total amount of % User Time, % Privileged Time, and % Interrupt Time	System

Memory

The Uptime Infrastructure Monitor agent outputs the metrics listed below for the entire system.

Metric	Explanation	Performance Object
Cache Faults /sec	The rate at which faults occurred when a page that was sought in the file system cache was not found and must be retrieved either from elsewhere in memory or from the disk.	Memory

Pages Output/sec	The rate at which pages were written to disk to free space in physical memory.	Memory
Page Writes /sec	The rate at which pages were written to disk to free space in physical memory.	Memory
Pages/sec	The rate at which pages were read from or written to the disk in order to correct hard page faults.	Memory
Pages Input /sec	The rate at which pages were read from disk to resolve hard page faults.	Memory
Page Faults /sec	The average number of pages that are faulted each second.	Memory
Transition Faults/sec	The rate at which page faults were resolved by recovering pages without additional disk activity.	Memory

System

Metric	Explanation	Performance Object
Processes		System
System Calls /sec	The number of times, per second, that processes that are running on the system make calls to the operating system service routines.	System

Disk

The Uptime Infrastructure Monitor agent outputs the metrics listed below for each individual physical disk on the system.

Metric	Explanation	Performance Object
% Disk Time	The percentage of time during which the disk drive is handling read or write requests.	PhysicalDisk (<diskname>)
Disk Transfers/sec	The number of read and write operations on the disk that occur each second.	PhysicalDisk (<diskname>)
Avg. Disk Bytes /Transfer	The average number of bytes that have been transferred to or from the disk during write or read operations.	PhysicalDisk (<diskname>)
Disk Bytes/sec	The rate at which bytes are transferred to or from the disk during write or read operations.	PhysicalDisk (<diskname>)
Avg. Disk sec/Transfer	The average amount of time, in seconds, that a disk transfer takes to complete.	PhysicalDisk (<diskname>)

Network

The Uptime Infrastructure Monitor agent outputs the metrics listed below for each individual network interface on the system.

Metric	Explanation	Performance Object
Bytes Received/sec	The rate, in seconds, at which bytes are received over a specific network adapter.	NetworkInterface (<interface>)
Bytes Sent/sec	The rate, in seconds, at which bytes are sent over a specific network adapter.	NetworkInterface (<interface>)
Packets Received Errors	The number of inbound packets that contained errors, which preventing those packets from being delivered to a higher-layer protocol.	NetworkInterface (<interface>)
Packets Outbound Errors	The number of outbound packets that could not be transmitted because of errors.	NetworkInterface (<interface>)
Segments Retransmitted/sec	The rate at which segments, which contain one or more bytes that have been previously transmitted, are sent again.	TCP

Process

By default, the Uptime Infrastructure Monitor agent gathers the top 20 processes. These processes are sorted by highest CPU usage.

Metric	Explanation	Performance Object
ID Process	The unique identifier of a specific process.	Process(<processname>)
Creating Process ID	The identifier of the process that the process that is currently running.	Process(<processname>)
Virtual Bytes	The size, in bytes, of the virtual address space that a particular process is currently using.	Process(<processname>)
Working Set	The maximum size, in bytes, of the working set of a particular process.	Process(<processname>)
% Processor Time	The percentage of time that all of the threads of a process used the processor to execute instructions.	Process(<processname>)
Elapsed Time	The total time, in seconds, that a process has been running.	Process(<processname>)