

Share options

You have an urgent task and your machine grinds to a halt as another app hogs vital resources... Let SmartPeak get your priorities straight

One of the more frustrating experiences of using computers is when a machine slows to a point where it's unusable. If you still have enough resources and you manage to bring up the Task Manager, you'll probably see an application hogging all the system resources so other necessary tasks are being starved and are unable to continue. As a worst case, you may not even be able to get to the Task Manager. All you can do is reboot and try to fix the problem after the event. We've probably all sat and fumed to ourselves as the antivirus software insists on installing its updates just when you need to send that important e-mail. The problem is that the Windows Scheduler essentially gives the most resources to the application or user that 'shouts the loudest'.

So how do you solve problems like this? The natural response is 'fit more memory', or 'add another processor', or 'get a faster machine'. Depending on what application is causing your problem, solutions such as this will probably work for a while, but they're disruptive and expensive. Many Windows servers run at an average utilisation rate of under 10 per cent of the CPU capacity. It's an easier decision to buy another server rather than have to fix the problems that arise when applications compete for system resources.

Software alternative

SmartPeak Workload Management (WLM) is a clever alternative. It's an enterprise level software application for physical and virtual Windows machines that you can use to set rules for how applications should be allowed to use resources on your computers, whether desktops or servers. SmartPeak WLM ensures all users and applications get a resource allocation according to their importance. Out of the box each application and user gets an equal share of resource with the System Processes and Administration accounts getting a higher share if needed, ensuring they can always do their job. Simple configuration rules allow processes to be allocated different proportions of resources depending on how important they are to the user or business,

so you can ensure the computer is fully used while guaranteeing a consistent quality of service.

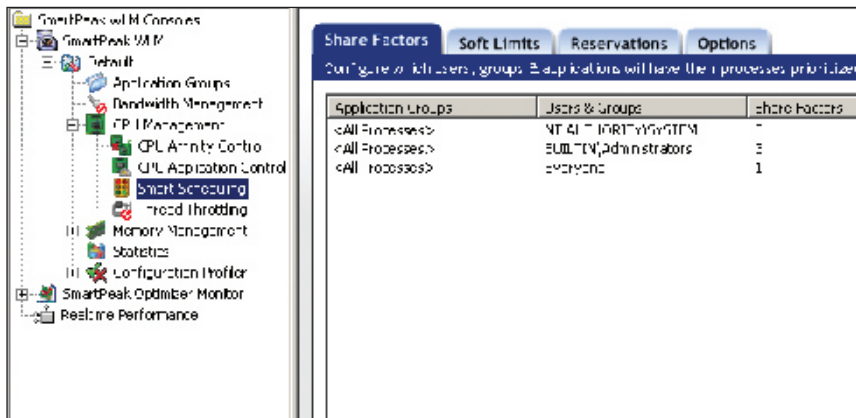
SmartPeak WLM's CPU usage is under 1 per cent, and it has minimal memory overhead, so doesn't put a strain on the system resources.

With SmartPeak WLM, you can have multiple applications safely on the same server. Some applications, such as Microsoft SQL Server or Oracle, do not lend themselves to other consolidation practices like virtualisation, either due to their licence models, lack of support or just plain simple resource contention. SmartPeak WLM provides the mechanism to consolidate multiple applications or instances onto the same machine by managing the resources each needs. This gives you the means to partition the resources to reflect the importance or service level agreement (SLA) for each application or instance.

So essentially, you tell SmartPeak WLM that SQL Server (say) will always be guaranteed a set amount of system resources no matter what else is running or that your e-mail application always has a higher proportion of resource than software updates.

SmartPeak WLM manages how different applications share the resources such as the CPU, memory and network bandwidth on your computer. You can manage the resources in terms of applications, users and groups of users. By managing the way resources are used, you can ensure heavily loaded machines continue working, and you can add extra applications to underused servers safe in the knowledge that the extra applications won't have a negative impact on the performance of the 'main' applications for which the servers are used.

You can deploy and administer SmartPeak WLM across your entire infrastructure from a single console, from where you begin by configuring the application groups – the collections of applications that should all be treated in a similar way. You can specify a group for a single application, or many applications of a similar type. You can then define how those applications should be treated by setting up rules for bandwidth use,



SmartPeak WLM allocates resources based on rules you have set

CPU management and memory management.

In all these cases, you define the application groups you're working with, then optionally say to which users and groups the settings should be applied. The details of what else you can change vary depending on which area you're configuring. For the bandwidth use, for example, you can specify for each port the limit of kilobyte per second per user or per instance. Alternatively, you can set more specific options depending on whether the session is idle or not and connected or not, the desktop is locked or unlocked, whether the process is in the foreground or the background, and whether it is minimised or not.

CPU management is controlled by 'Intelligent Process Management' via the Smart Scheduler that continually calculates how much resource each process is entitled to and then dynamically changes the base priority of each process. This ensures the Windows Scheduler delivers the amount of resource that's been specified in either business priorities or SLA agreements. The default Smart Scheduling rules ensure each process gets an equal share of CPU time, although additional rules allow the CPU time to be sliced to cater for more complex solutions.

Time is of the essence

You can define how the available CPU time should be used in a number of ways. For example, you can specify share factors, so that if one application has a share factor of 1, and another a share factor of 2, the second will be allowed to use twice as much CPU time as the first.

A different way of working is via CPU reservations, whereby you specify the percentage of the CPU time required by the application or user, and the CPU reservation guarantees that at least this minimum amount of resource will always be supplied. While the application or user is receiving less than this time, it will get priority access to the processor resources. So if it has a reservation of 15 per cent, it will get priority

until it's using 15 per cent, after which the amount of resources will be worked out using its share factors.

You can set both soft and hard limits on CPU use. In a soft limit, applications share the CPU time according to their share factors until their soft limit percentage is reached. Above that, the application is allocated the lowest possible priority.

The application will only be allowed to go above its limit

if the CPU time isn't needed by other applications, users or groups. This can be used to box off secondary processes preventing them from having a negative impact on more important tasks. Hard limits are more draconian. Up to the limit, the application will get resources according to its share factor. When the application reaches its hard limit, that's it – it's not allowed any more of the CPU time, even if nothing else is using it.

When you're configuring memory management, you can configure the virtual memory use for applications or users, as well as specifying minimum and maximum physical memory limits for applications. Physical memory can be released by dynamically trimming the working set of an application based on either the state of the application or conditions such as whether the process is idle. Virtual memory is also automatically optimised, a particular benefit in a multi-user environment.

The software includes a set of Management Reports that show all the information on the use of system resources on a machine running SmartPeak WLM. There's also an auditing feature that records performance events. You can choose to have the information in a variety of formats including the system event log, e-mail and SNMP, or integrated into MOM using SmartPeak's MOM Management Pack.

SmartPeak WLM overcomes some of the most irritating problems with modern machines. By managing your resources more effectively, it lets you make the best use of your system, and do it according to your own needs. It's easy to set up and use, and offers a great way to manage your Windows machines. <

Supported platforms Windows 2000, Windows Server 2003, Windows XP Professional SP2, Windows Vista, Windows Server 2003 64-bit, Windows XP x64 Edition

List price Server licence per physical CPU socket: £250. Desktop licence: £20. You can download SmartPeak WLM as a free 21 day evaluation from: www.smartpeak.com