

# V-locity™

*Virtual platform performance optimizer from the makers  
of Diskeeper® real-time defragmentation technology*

## Product Overview

The intensified demand for corporations to consolidate and become more agile is driving the phenomenal growth of the virtualized environment. This new technology's viability will be measured by the increased efficiency and dependability it must produce, but there are problems...

### Barriers to virtualization effectiveness that must be addressed

1. I/O is one of the most critical hardware resources for virtual platform performance. Fragmentation of files and free space causes more I/O activity to be processed than is needed to directly get a job done. This occurs in both host platforms such as Hyper-V™ and the virtual machines themselves.
2. Virtual machines have limited knowledge of actual hardware resource usage. The solutions they use, such as “low priority I/O”, do not work well. While I/O can be balanced across virtual machines, it can't help but be incorrectly prioritized. Disk I/O from SQL transactions on one VM will compete with defrag/anti-virus/backup I/O from another VM. It is unacceptable to have any support programs cut across production resources.

This is such an issue that Microsoft® recommends to “disable scheduled tasks such as Scheduled Defrag” with Hyper-V in operation.<sup>1</sup>

3. Virtual disks that are set to dynamically grow don't shrink when users or applications remove data, bloating space and wasting what could be allocated to other virtual systems. Determining which VMs to shrink is a time consuming manual effort.

### The solution

The Diskeeper Corporation has created what was essentially a missing component in the virtualized environment. V-locity enables the virtual machine to fully deliver on its promise of increased efficiency and simplicity through consolidation.

### Solving fragmentation

The V-locity software solution consists of two components.

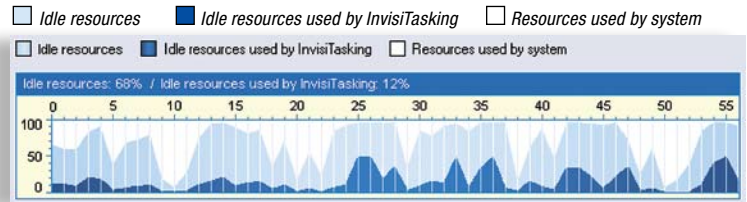
1. V-locity Host is installed in the Windows Server® 2008 operating system that is running Hyper-V.
2. V-locity Guest is installed in all Windows® virtual machines.

<sup>1</sup> Microsoft's Performance Tuning Guidelines for Windows Server 2008 ([http://www.microsoft.com/whdc/system/sysperf/Perf\\_tun\\_srv.msp](http://www.microsoft.com/whdc/system/sysperf/Perf_tun_srv.msp))

To eliminate unnecessary I/O due to fragmentation, each component will optimize its respective Windows OS and perform defragmentation of files and consolidation of free space. This minimizes unnecessary I/O passed from the OS to the disk subsystem and aligns data on the drives for optimal access.

## Coordinating resource overhead

Diskeeper Corporation's proprietary technology, InvisiTasking®, is specifically engineered to allow "background" applications to operate with zero impact/overhead on a system.

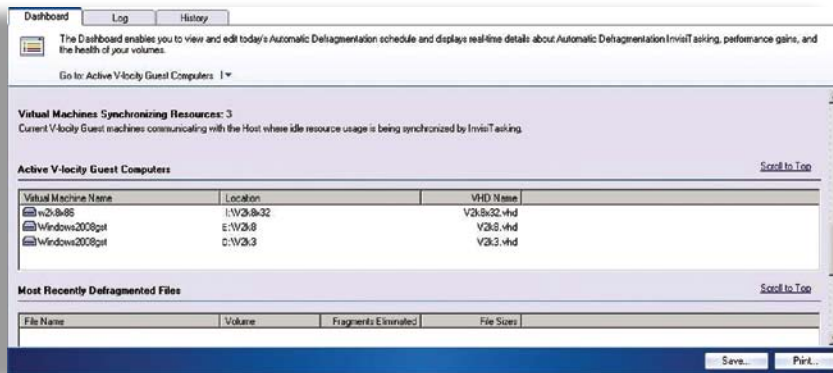


*InvisiTasking resource usage graph in V-locity.*

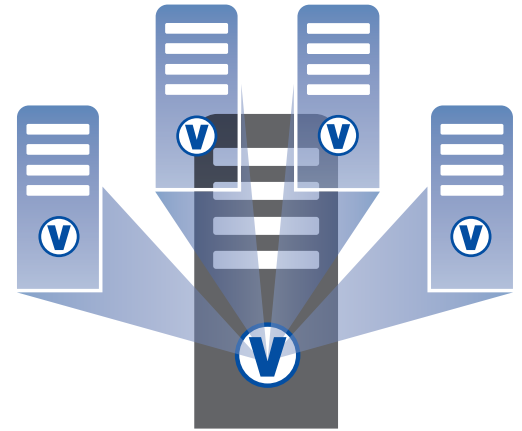
## How InvisiTasking works:

- Invisibly evaluates CPU, memory and the significant hardware bottlenecks of the disk drive and network.
- Takes a proactive approach to instantly detect resource usage.
- Taps into unused system resources (e.g. CPU and I/O that are almost never fully utilized).
- Maintains complete granular control over its own activity, and never preempts users or services.

Using InvisiTasking technology, the V-locity component on the Hyper-V operating system will coordinate defragmentation functionality across the Windows host and all guest systems to ensure optimal, automated disk performance with zero resource impact to productivity of those systems.



*V-locity host Dashboard.*



## Eliminating VHD "bloat"

V-locity offers information in an intuitive user interface about how much a virtual disk (i.e. a ".vhd file") can be shrunk and provide functionality to then compact any of those selected virtual disks. This will allow system administrators to better allocate storage resources on Hyper-V platforms.

Using Diskeeper technology, V-locity will automatically and invisibly defragment files and consolidate free space on every Windows system it is installed, eliminating unnecessary and excess I/O to restore system performance and reliability for the entire Hyper-V platform.

## V-locity user requirements

**Host** requires Windows 2008 Server with Hyper-V role.

**Guest** supports the following operating systems:

- Windows 2000 (requires SP3)
- Windows XP (requires SP2)
- Windows Server 2003
- Windows Vista®
- Windows Server 2008



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