

Ensuring Performance and Availability of your VCE Vblock Infrastructure Platform with VirtualWisdom



Introduction

Leading IT organizations continue to shift to increased use of virtualization and private cloud computing to lower the cost of IT operations and to ensure a more agile IT infrastructure that responds more quickly to changing business priorities. The VCE Vblock™ Infrastructure Platform simplifies and accelerates deployment of a virtualized infrastructure by integrating state-of-the-art components. Vblock™ systems are carefully configured to ensure maximum compatibility between components as well as assurance that upgrades, patches, and management changes are all handled in a pre-tested, coordinated fashion.

What Vblock™ Infrastructure Platforms lack is comprehensive end-to-end real-time monitoring that ensures the performance and availability of the infrastructure that supports your business-critical applications. Virtual Instruments VirtualWisdom® is an innovative real-time end to end monitoring and optimization solution that helps IT organizations realize the full economic benefits of networked storage and server virtualization, including environments running VCE's Vblock™ Infrastructure Platforms. VirtualWisdom dramatically reduces the risk of infrastructure problems that would affect your end-users and your revenues.

VirtualWisdom's Value Add

VirtualWisdom enables:

- Operational (OpEx) savings through faster Mean Time to Resolution (MTTR) and fewer trouble-tickets
- Capital expenditure (CapEx) savings by eliminating over-provisioning and over-tiering
- Better adherence to, and monitoring of performance and availability SLAs
- Improved cycle time through accelerated application and SAN deployments
- Increased use of server virtualization and more VMs per server
- Increased deployment of mission-critical applications on Vblock platforms

VirtualWisdom Infrastructure Optimization Platform

VirtualWisdom provides comprehensive instrumentation and measurement capabilities of the SAN and virtualized infrastructure that improve application response time, accelerate storage I/O performance, increase availability, and improve server and SAN utilization. VirtualWisdom is the only solution that can non-intrusively improve the performance of virtualized applications in real-time by analyzing actual I/O traffic data from the VM to the LUN. VirtualWisdom monitors, records, and analyzes every transaction from the virtual server to the LUN, enabling an unmatched level of application availability and performance assurance.

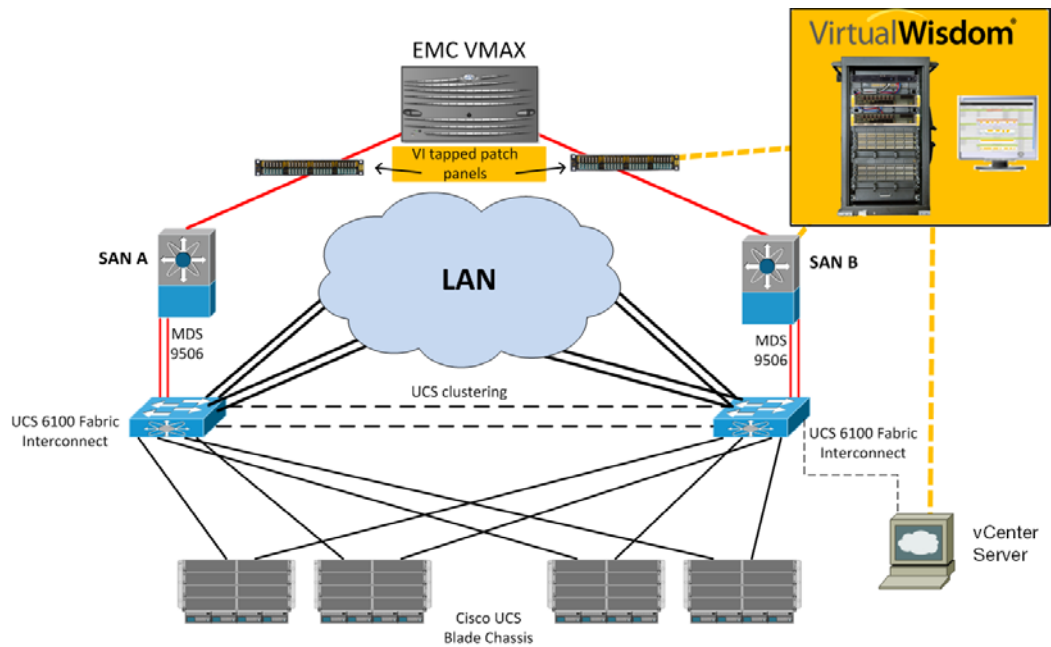
How VirtualWisdom Complements Vblock™ Management Tools

Though the VCE Vblock suite of management tools does some basic level of performance monitoring, it lacks physical, real-time monitoring of every transaction in the entire I/O path, and cannot prove where in the system an application performance problem is occurring. VirtualWisdom collects crucial link layer data, as well as the higher level data from the switches and servers, and offers unprecedented cross-domain correlation across the entire environment. VirtualWisdom is the only platform that can non-intrusively optimize the performance of applications, in continuous real-time, by measuring actual I/O traffic data. The vendor-supplied management tools from Cisco, EMC and VMware are primarily used for provisioning, administering and capacity planning for their own devices. These tools also provide a high level, non real-time view of performance that is insufficient for business-critical applications. To these vendor-supplied tools, VirtualWisdom:

- Adds continuous real time monitoring and filtering that calculates statistics based on seeing every SAN transaction, while adding no latency or risk. Vblock™ management products use polling or averaging techniques that simply do not see every transaction and frequently miss the causes of business-impacting problems.
- Instantly proves whether or not the I/O subsystem is the cause of application slowdowns, often reducing root cause analysis from weeks/days to hours/minutes.
- Due to physical layer access to the I/O, reduces time spent on problem resolution with early detection of I/O performance bottlenecks and transmission faults, also contributing to problem avoidance.
- Enables “what if” analyses using actual production data, substantially improving

capacity planning and optimization of the Vblock™ infrastructure.

- Adds event recording and real time (to the millisecond) capture capabilities and does not rely on “averages” or polling, which often occurs in 5 minute or longer intervals. Polling and averaging invariably miss meaningful transaction events, leading to increased risk to application availability and performance.
- Adds the ability to gather in-depth Fibre Channel network statistics such as pending exchanges, to tune the system for maximum performance.
- Adds the ability to determine if configuration changes and infrastructure upgrades are affecting performance by examining end to end I/O latency, not just latency at the component level. The net benefit of this is that it accelerates the deployment and reduces the risk of implementing virtualized I/O-intensive business-critical applications such as Oracle, SAP, DB2, SQL, and Exchange
- Eliminates all performance risks in tiering decisions by measuring the actual effect of the move on application response time. Vblock™ tools typically use only IOPS, MB/s or access frequency to recommend moving data to another tier.
- Lowers overall downtime by generating predictive data on potential virtual infrastructure problems
- Improves virtualized application performance by enabling administrators to optimally balance virtualized workloads based on I/O response time to each LUN, not just CPU and memory utilization
- Lowers overall operating expenses and capital expenses through ESX / ESXi server modeling and higher utilization of Vblock™ assets



Topology example

Vblock™ Infrastructure Platform Enhanced by VirtualWisdom

The preceding diagram shows how VirtualWisdom architecturally complements the Vblock™. Virtual Instruments TAP Patch Panels are inserted in between the Cisco MDS Fabric switches and the EMC VMAX storage arrays. TAP Patch Panels replace standard non-tapped patch panels and provide access to the physical FC protocol layer in a non-intrusive way that has no impact on performance or data transmission. The Tapped Patch Panels send a portion of the fiber optic signal to the VirtualWisdom SAN Performance Probe for aggregation by the VirtualWisdom Server. The VirtualWisdom Server also gathers data from the VirtualWisdom Virtual Server Probe that interfaces with the vCenter Server and the VirtualWisdom Network Switch ProbeSW, which gathers data from the Cisco MDS switches. All performance, utilization, and transmission data is collected, correlated and analyzed by the VirtualWisdom Server through its dashboard and reporting GUI.

Summary

VirtualWisdom increases the value of the VCE Vblock™ environment via more aggressive use of tiered storage, faster troubleshooting, full monitoring of performance and availability SLAs, while in parallel lowering the risk of deploying more VMs per server and virtualizing mission critical applications.



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