



Ecommerce Business Deploys Virtual Instruments' VirtualWisdom to Gain Transaction Visibility and Ensure SAN Uptime

Transaction visibility is a key supporter for strategic vision

Ecommerce Company Background

The company, with revenues growing 33% year over year, is one of the leading e-commerce businesses allowing payments and money transfers to be made securely through the internet. The payment service is as an electronic alternative to traditional paper methods such as checks and money orders and operates in over 100 markets with millions of accounts.

IT Environment

The HDS storage environment in their U.S. datacenters includes USP-V for tier-one storage and AMS for tier-two, running through a Brocade Fiber Channel SAN fabric totaling 2400 ports and over 400 SAN connected hosts (Solaris and AIX). Primary applications are deployed on very large Oracle databases, with over 7 petabytes of storage and roughly 50% yearly growth. Hosts are primarily Solaris, AIX, and Linux based.

Business Challenge

The company's revenues come from online financial transactions. While this company is one of the leaders in this space, consumers have many choices when paying online. In the physical world, if you are standing in line to pay for something in the local grocery store, and one line appears to be slow, you will move to another line. So it is in the online world. If one online payment option is slow or has an outage, consumers will move over to another option, such as paying by another credit card. For this business, online performance and uptime directly equate to revenue. A slowdown for any reason can mean hundreds of thousands of dollars, or even millions of dollars are lost. And a severe outage would be front page news in financial publications around the world.

Challenges:

- Keep IT infrastructure up and running 24x7x365 at peak performance.
- Huge growth in Oracle databases and escalating costs of IT in a hyper-competitive market put pressure on staff to do more with existing staff resources, and to optimize CAPEX
- Inordinate amount of IT staff and vendor services time spent on trying to diagnose SAN problems
- SAN team lacked the tools necessary to move to a chargeback model, to provide a QoS environment to its customers

Solution:

- Virtual Instruments VirtualWisdom software and SANInsight Tap Patch Panel Systems and SAN Performance Probe monitoring, and professional services consulting

Customer Benefits:

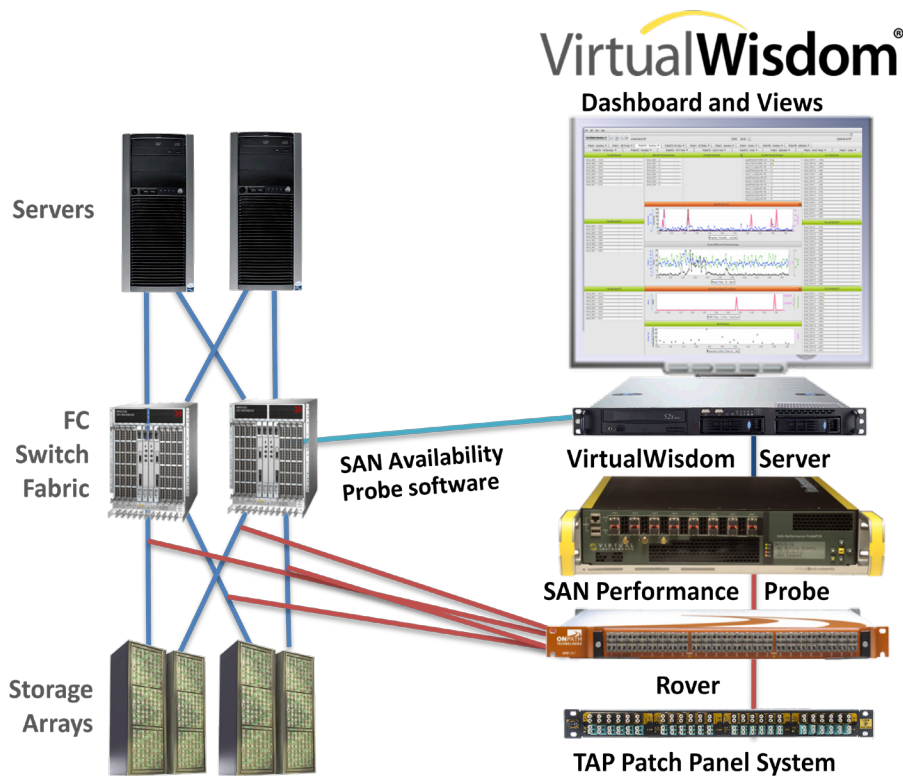
- Used in test lab to validate vendor claims and test for compatibility issues
- Reduction in CAPEX and OPEX by reducing over-provisioning of ports
- Tracks SAN performance in real time during migrations, upgrades, and reconfigurations, to ensure that changes

IT Challenge

The primary objective of the IT department is to support the growth and smooth operation of the business unit. IT must ensure new applications are rolled out quickly and reliably, applications are up and available to users 24x7x365, and application response times to the users meet their expectations. The challenge facing the IT administrators is really one of transaction visibility through the I/O system, getting meaningful data about their infrastructure on a continuous, real-time basis. Without this data and measurement system, application performance is difficult to optimize, and every application demands the most expensive, tier 1 storage.

The Virtual Instruments Solution

VirtualWisdom offers an instrumentation, monitoring, and analysis platform that simplifies the lives of IT storage professionals. With Virtual Instruments, the eCommerce company can holistically assess the entire multi-vendor SAN infrastructure, and get the data necessary to make intelligent decisions about capacity, utilization, and performance for every layer of the infrastructure - network, server, storage, and applications. Vendor finger-pointing is nearly eliminated, making both customers and the HDS and Brocade service organizations more productive.



The diagram above is a simple representation of the deployment. VirtualWisdom gets its data from the Brocade switches via SNMP, and from the physical layer via an optical splitter (Tap Patch Panel System). This TPPS provides real-time, bit-for-bit copy of all traffic, unlike switch mirror or SPAN ports. The SAN Performance Probe analyzes every Fibre Channel frame (transaction) in real-time to provide dozens of critical statistics about storage traffic, transmission errors, and SAN read and write latency.

Customer Benefits

Specific VirtualWisdom benefits to the IT team include:

- Potential application slow-downs can be more easily identified and corrective action taken before the application consumer experiences a problem and chooses another online payment vendor

do not hurt application performance, and to provide assurances to the DB, host and application teams that latency changes during the events are within expected ranges

- Potential application slow-downs can be more easily identified and corrective action taken, often before the application consumer is even aware of a problem
- Provides SAN team the tools necessary to move to a cloud or chargeback model, to provide a QoS environment to its customers
- Integrated TAPs and patch panels provide immediate access to all network traffic without downtime or disruption to live environment

“To implement the strategic vision of being first-to-market, to bring significant new projects online quickly, you have to have visibility, and that’s where VI comes in. Virtual Instruments is a very big part of our business”

“If you’ve got a SAN refresh coming up, TAP your switches. Just put them in. Our Oracle team can report performance figures at a one-second granularity. With the TAPs and hardware monitoring, so can we.”

*Senior Manager
Network and Storage
Engineering
eCommerce Business*

- Reduced over-provisioning of array front end ports, with no risk to performance
- Test and development lab can more easily validate vendor claims and test for compatibility issues
- Over time, will help to optimize tiering by validating latency against baseline values when LUNs are moved to lower cost tiers, and to “right tier” in the first place
- Tracks SAN performance in real time during migrations, upgrades, and reconfigurations, to ensure that changes do not hurt application performance, and to provide assurances to the DB, host and application teams that changes during the events are within expected ranges
- Substantial reduction in the need to replace suspected bad SAN components because of superior fault diagnosis, which saves on both CAPEX and OPEX
- Significant reduction in vendor finger pointing between IT departments and with vendors; can provide better metrics to the vendors to assist them in making real-world decisions on migrations and upgrades
- Over time, IT staff plans to use VirtualWisdom to help balance over-utilized and under-utilized ports and reduce links that are too heavily subscribed.
- Immediate access to all network traffic without downtime or disruption to live environment enables dynamic connection of analysis, monitoring, and security devices into fiber optic networks
- Quantitative modeling helps eliminate “rules of thumb” capacity and performance planning; provides critical input for future purchasing decisions.
- Over time, expected to help enable the IT infrastructure management team to generate, promote, and comply with service level agreements, provide SLAs, and demonstrate the health of the SAN via dashboard displays in the Network Operations Center.

With VI, we were able to track link utilization and it enabled us to save a boatload of dough by reducing the number of storage front-end ports. We went from 128 ports to 64, and then to 32 per new frame. That’s a savings of over \$300K per array.”

*Operations Manager
Network and Storage
Engineering
eCommerce Business*

“Before VI, our latest storage upgrade would have been an all-hands-on-deck call-out and my team would have been severely criticized for what could have been interpreted as a real problem. With VI monitoring, we could demonstrate, in real-time, that longer latencies were due to the upgrade and not by any real problems in the SAN”.

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