



RAYMOND JAMES™

Challenges:

- Escalating costs of IT in a hyper-competitive market puts pressure on staff to do more with existing CAPEX and OPEX
- Backing up the reactive replication strategy with a proactive problem avoidance strategy
- Determining which servers need dedicated storage ports
- Identifying the top storage users and quickly seeing trends
- Being alerted to failing components and quickly replacing them before users are impacted

Solution:

- Virtual Instruments VirtualWisdom and professional services consulting

Customer Benefits:

- Causes of potential application slow-downs identified and corrective action provided before users are even aware of a problem
- Reduction in the need to replace suspected bad SAN components because of superior fault diagnosis, which saves on both CAPEX and OPEX

Raymond James Deploys Virtual Instruments' VirtualWisdom to monitor its SAN to continue ensuring 100% data availability

Overview

Raymond James, founded in 1962 and a public company since 1983, is a diversified financial services holding company with subsidiaries engaged primarily in investment and financial planning, in addition to investment banking and asset management. More than 5,300 financial advisors serve approximately 1.9 million accounts in approximately 2,300 locations throughout the United States, Canada and overseas. In addition, total client assets are approximately \$223 billion, of which approximately \$29 billion are managed by the firm's asset management subsidiaries.

IT Environment

With the major datacenter in St. Petersburg, Florida and a hot backup site in Southeastern Michigan, the IT staff supports over a thousand servers, 90% of which are Windows based, including a fast growing number of VMware ESX hosts supporting hundreds of virtual machines. There are almost 2,000 switch ports, supporting 200 storage ports and 400TB of data, in both facilities. Data is split between EMC DMX and Clariion systems, with the applications requiring replication deployed on the DMXs. The current ratio of server to storage ports averages 16:1.

Like many IT departments, Raymond James is challenged with tight budgets and with getting more and more performance out of existing hardware assets and personnel. The SAN team's success is measured by a simple metric: keep the data available; no excuses. So taking a purely reactive approach to SAN troubleshooting and performance optimization was out of the question. Getting the job done by massive over-provisioning, so often seen in major datacenters, was likewise not an option due to budget constraints.

"The services consultants sent out were knowledgeable, efficient and very easy to work with."

-Doug Ward

Role of VirtualWisdom

A more proactive approach to system availability was needed, and in early 2008, Raymond James deployed VirtualWisdom, both software ProbeSWs and a Fiber Channel ProbeFC8 along with a 144 port rover in the St. Petersburg datacenter. After the initial 2-day installation service, the storage team spent three weeks establishing a baseline, and built filters and alerts for metrics that give an early indication of trouble. VirtualWisdom sees loss of sync, link resets, packet discards, aborts, code violations, and CRC errors and can send alarms for out-of-bounds conditions. Every few months, a new baseline is reviewed and established to accommodate the changes in the SAN infrastructure. Additionally, a daily report on the top ten servers by utilization is sent up the management chain, as a quick way to get a meaningful trend of storage usage.

“I like the VirtualWisdom dashboard; I can log in and immediately see if something’s yellow or red and needs attention”

-Doug Ward
Storage Analyst

Troubleshooting the SAN

According to Raymond James, VirtualWisdom has enabled them to continue quickly responding to potential performance and availability problems, and “isolate issues in a timely manner”, well before any impact on the application users.

As an example of fast troubleshooting, on a number of occasions, the VirtualWisdom dashboard alerted to CRC errors, and made it easy to diagnose bad Switch Route Processors (SRPs) on Inter-Switch Links (ISLs). The issue was identified and resolved without extensive detective work.

In another example, after one of the first ESX host upgrades at Raymond James, the SAN staff used VirtualWisdom to quickly notice that a number of servers were incorrectly configured to go down the same I/O path. Multi-pathing was quickly re-enabled, before the application users were affected.

Optimizing Hardware

Thanks to the benefits of server virtualization, Raymond James has stopped the explosion of server sprawl, and with an average 10:1 guest to host ratio, is repurposing existing servers as ESX hosts. Additionally, the number of SAN links is stabilizing, and VirtualWisdom is being used to verify that the network consolidation doesn’t impact performance.

Lessons Learned

When asked what he would recommend to all new VirtualWisdom customers, Doug Ward, Storage Analyst replies “Spend as much time as you can with the services people learning how to develop reports”. We could not agree more. VirtualWisdom is a powerful platform, and utilizing the expertise of Virtual Instruments’ QuickStart services pays for itself many times over in helping to reduce CAPEX and OPEX.



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