Tapping Your Fibre Channel SAN Information Brief

Summary:

- Enable proactive problem avoidance to avoid downtime
- Enable real-time I/O performance monitoring & optimization
- Enable lower CAPEX by providing data for more aggressive use of tiering & more aggressive use of server virtualization
- Incremental cost is a rounding error
- Upside benefit can be worth millions
- Protects your investments; opens up your options
- Enable dramatically accelerated troubleshooting for lower OPEX

Storage Magazine Product of the Year – Storage Networking Equipment - **SANInsight Tap Patch Panel System**

Top 7 Business Reasons for Tapping Your Fibre Channel SAN

Introduction

Rapid increases in both the operating speeds and general complexity of SAN technologies, exacerbated by the high change rates demanded of enterprise IT organizations, significantly increase demands on the fiber optic physical layer.

A best practices-compliant physical layer must be capable of being both *maintained* and *monitored* in order to meet those demands. Physical layer Fibre Channel maintenance requires the ability to quickly and easily add, change, or remove links and devices. Physical layer monitoring is the real-time acquisition of error, performance, and utilization data via Traffic Access Points, or TAPs. Monitoring ensures the accuracy of the changes and validates that they produce only the desired results. Physical layers that address both requirements enable the Fibre Channel SANs operating on top of them to be iteratively optimized for maximum availability, performance, and utilization.

Top Reasons

1. **Hope for the best, prepare for the worst**

   Tapping your SAN is like installing a fire hydrant when your house is built, not when you have a fire. When your SAN has an emergency condition, you can plug in instrumentation without disrupting your data flow. If you have to disrupt your data flow to allow your SAN vendor to install a protocol analyzer, you run the very real risk of making the problem worse during the installation, or temporarily hiding the root cause, making the remediation process longer.

2. **Alternatives are painful**

   The alternatives to a Tapped infrastructure is either (1) longer than necessary troubleshooting projects and sub-optimal application performance or (2) risk of bringing an application down to install a TAP when you can least afford it, when the application performance is already problematic.

   Tapping is the only way to directly measure the SAN I/O. Without TAPs, there is no technology that enables you to see everything that happens between your application and your storage. The next best technology, software-based polling, will find many, but not all problems.

3. **Alternatives are expensive; tapping lowers CAPEX**

   Tapping has been common in the IP world for over 20 years, and only fibre

channel's overbuilt specs allows the typical SAN to shield the application from problems. The #1 alternative to tapping and measuring is massive over-provisioning of SAN resources, at a significant CAPEX penalty.

4. **Incremental cost is a rounding error**

   Datacenters traditionally use "dumb" fibre patch panels to connect fibre channel components. These offer absolutely no value in troubleshooting or performance optimization. Most of your cost in patch panels is in the labor involved in the planning and deployment. For a fractional CAPEX investment, a TAP turns your dumb patch panel into a life-saving monitoring enabler.

5. **Upside benefit can be worth millions**

   The incremental costs of TAPs over "dumb" patch panels can be recouped the first time a mission critical application starts to slow down, and you can immediately determine whether the cause is in the server or the SAN infrastructure. This triage gets performed in enterprise datacenters dozens of times a year and finding the cause of the slowdown quickly can directly contribute to huge dollar savings.

   Furthermore, by implementing a network Diagnostic Layer, physical-layer monitoring often discovers degrading hardware components before they fail catastrophically and cause an expensive application outage.

6. **Protects your investments; opens up your options**

   TAP technology is 100% vendor neutral, so you can confidently pick the best SAN components knowing that your ability to troubleshoot problems and optimize performance will in no way be compromised by your choice of monitoring tools.

7. **Enables the "silver bullet" performance metric; tapping lowers OPEX**

   Tapping enables the measurement of a metric that has more usefulness *than any other metric* you can get from non-tapped monitoring solutions. It enables the measurement of the effect of your SAN on application latency. With that metric, you can tier storage more confidently, use storage virtualizers more confidently, and find performance bottlenecks more quickly.

"The Tap Patch Panel System's unique integration of fiber-optic network TAPs into a patch panel enclosure allows Fibre Channel (FC) SAN administrators to accelerate SAN problem identification and resolution, optimize virtual or physical infrastructure application availability and performance, and increase resource utilization."
Storage Magazine
February 2011

"TAPs, especially with the ease at which they can be integrated into the corporate patch panel complex, should now be considered a best practice when implementing or upgrading a storage infrastructure"
George Crump
Storage Switzerland

"With solutions like Virtual Instruments TAP Patch System on the market, there simply isn't a reasonable excuse to not build access into the infrastructure. The cost is negligible, and dwarfed by the tremendous impact that access can have in the form of extracting maximum infrastructure use, and massively reducing the time and effort involved in troubleshooting"
Taneja Group
2009

VIRTUAL INSTRUMENTS
25 Metro Drive, Suite 400
San Jose CA 95110
408-579-4000
http://www.virtualinstruments.com

Sales Information
sales@virtualinstruments.com

Customer Support
support@virtualinstruments.com