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February 2007

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IT Corner

Mark Your Calendars
for SNIA's Enterprise
Information World
August 6 – 9, 2007
San Francisco, CA

This year, the SNIA's
Enterprise Information
World (EIW) is joining
forces with IDG's new
Next Generation Data
Center (NGDC) confer-
ence and expo.

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Spotlight on SNIA

SNIA Interviews Jacob Farmer, Tutorial "Top Speaker" at the Storage Networking World Conferences

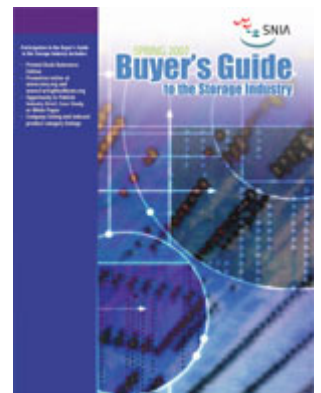
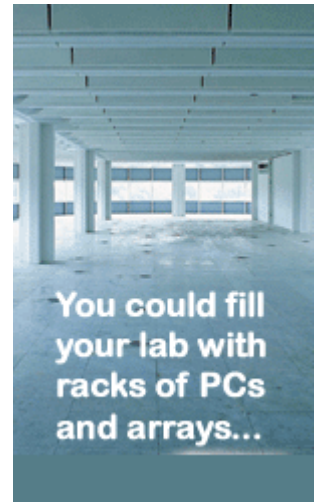
SNIA Tutorials are among the premier educational materials available to the industry, presenting the latest technical and business information - free of charge - in a fair and unbiased manner. Jacob Farmer, Chief Technology Officer for Cambridge Computer, was recently named "Top Speaker" for his SNIA Tutorial "Identifying and Eliminating Backup System Bottlenecks: Taking Your Existing Backup System to the Next Level," presented in October at the Storage Networking World Conference (SNW) (http://www.snia.org/education/tutorials/2006/fall/data-management/Identifying_and_Eliminating_Backup_System_Bottlenecks.pdf).

Nancy Clay, SNIA Tutorial Program Manager, recently interviewed Jacob about the keys to effective backups.

Question: In your tutorial, you talk about the pain points of backup systems. What are they, and how do they affect the user?

Answer: There are three common pain points. The first is that of making the backup window. If backup jobs do not complete on time, they compete with applications for processing and I/O resources. The second point of pain is that of backup jobs inexplicably failing, and then trying to figure out why during production hours. Lastly, there is the pain of a restore job simply failing, in which case, it was all for naught.

Question: What are the not so obvious bottlenecks of backup?



Answer: Most traditional backup systems are constrained in the center of the backup system - within the backup servers themselves. You cannot simply add RAID boxes and tape drives and hope for performance improvements. We also tend to find bottlenecks in file systems, particularly those with millions of small files.

Question: Where are backup system bottlenecks, and what tools are used to pinpoint them?

Answer: There are a few software tools on the market that are specifically designed to analyze backup system performance. The challenge is that the results are sometimes hard to interpret. In short, there is no real alternative to a trained eye.

Question: You talk about eliminating central bottlenecks and back end bottlenecks. What is the methodology for this?

Answer: Once you know where your throughput is constrained, there are usually only a few choices, depending on the backup software you are using. Some backup products offer ways to reduce redundancy in the backup traffic - these are usually configuration settings or add-on products. Others allow you to parallelize backup traffic by having multiple servers that work together. In other words, the tools at your disposal vary from vendor to vendor. Now, once you have opened up the flood gates in the center of the backup system, you grow the back end by adding disk and tape.

Question: How do you design your way out of the "pain points?"

Answer: The first step in solving a problem is identifying that you have a problem! Every backup system is different, so we have to start with a top down analysis. Often, we find that a given backup application lacks the means to address one pain or another. For instance, very few of the mainstream backup systems are good at dealing with high volumes of small files. In these cases, we would bring in a third party tool with that strength, and integrate it into the main backup system.

You can download Jacob's full tutorial online (http://www.snia.org/education/tutorials/2006/fall/data-management/Identifying_and_Eliminating_Backup_System_Bottlenecks.pdf), and view all of the SNIA's recent tutorials



(<http://www.snia.org/education/tutorials/>) in the Education section of the SNIA Web site (<http://www.snia.org/education/>).

About the Interviewee

Jacob Farmer is Chief Technology Officer for Cambridge Computer, an integrator and reseller specializing in data protection and storage management. Founded in 1991, Cambridge is best known in the industry for its award-winning training center, which teaches classes on storage networking and data protection. Jacob is a regular speaker at industry events and travels the country consulting and teaching classes for both end users and storage manufacturers. Jacob is the senior technical advisor and a regular columnist for InfoStor Magazine, a trade magazine dedicated to the storage sector. Jacob is a graduate of Yale University.

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