



## Industry Trends Perspectives (ITPs)

Following the debut in the June Summer 2010 edition, the section covers emerging and common industry trends, issues or challenges that I'm seeing or hearing while out and about in my conversations with IT professionals.

These short posts compliment other longer posts along with traditional industry trends and perspective white papers, research reports, solution brief content found at [www.storageio.com/reports](http://www.storageio.com/reports).

### Is Intel buying McAfee all about Hardware?

I do not believe that Intel buying McAfee is about putting all of the security functionality into hardware chips. Granted as Intel is a hardware company there is a prevailing thought process that McAfee is destined to end up being a chip play. EMC a hardware company bought RSA a software security company and over time more of that acquired technology is ending up in hardware systems, however there is also a plethora of software being made available.

Consequently in the case of Intel while I expect some of McAfee to be leveraged into hardware chips ranging from core processors to specialized chipsets, I also expect Intel to leverage McAfee as a software play both for virtual, cloud and physical services. After all, you can not have hardware without software, nor software without hardware even for virtual and cloud environments.

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### Has FCoE entered trough of disillusionment?

Yes, based on conversations with IT professionals, I believe that FCoE has entered the proverbial trough of disillusionment which is a good thing in that FCoE is also ramping up for deployment.

The reason I think that it is good that FCoE is in or entering the trough is not that I do not believe in FCoE, rather, technologies go through a hype and early adopter phase before taking a breather prior to broader adoption.

That is where I feel FCoE is at currently, taking a break from the initial hype, maturing while IT organizations begin planning for its future deployment. Thus the question around FCoE and its companion DCB should not be if, rather when, where, how and why. Thus I see FCoE as having a very bright future coexisting with other technologies including IO Virtualization (IOV) including PCI SIG MRIOV, Converged Networking, iSCSI, SAS and NAS among others.

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### Are IOV and Converged Networking the same?

Depending on who you talk to some position the many different variations of IOV along with converged networking and unified communications for that matter into the same context. While they are related and generally speaking complimentary, they play to different issues and roles.



## Plains, Trains, Automobiles and Boats

Some cities that I have visited while out and about so far this year doing keynote speaking, seminar along with advisory consulting events have included Minneapolis, Miami, San Diego, Beverly Hills, San Jose, San Diego (again) and Hollywood (again). There was Austin, Miami (again), New York City, Reston, Minneapolis (again), Irvine, New York City (again), Boston, Toronto, Atlanta, Chicago, Columbus, Philadelphia, Mountain View, Mahtomedia (Minneapolis area), Boston (again) and Indianapolis. These were followed by Calgary, Jasper (Alberta) and Vancouver before crossing the pond for a couple of days Nijkerk (Netherlands) for a one day Industry Trends and Perspectives seminar.

While there was some breaks from travel during the summer months, other cities visited included Stamford, Cleveland, Miami (again), Tampa, Louisville and Toronto (again) not to mention changing planes in Atlanta, Detroit, Memphis and Las Vegas.

Airplane travel as part of out and about should be obvious, however what about automobiles you may ask? After flying into Indianapolis there was an automobile ride to the [Indianapolis Motor Speedway \(IMS\)](#) where I did a keynote (BC, DR and HA) for a [CDW sponsored event](#) in [gasoline alley](#) a few days before the [Indy 500 race](#) occurred. Speaking of automobiles, racing, HA and technology, if you have not seen it, check out a post I did about what [NAS](#), [NASA](#) and [NASCAR](#) have in common.



Indy 500 Motor Speedway views from Gasoline Alley

What about trains you may also ask?

Besides the normal airport trams or trains, there was a fun Amtrak Acela ride between New York City Penn station and Boston after doing a morning keynote speaking event in the city.



VIA Rail in Jasper (Left), waiting for morning train to Schiphol airport (Right)

The trends that I am seeing with [converged networking](#) and I/O fall into a couple of categories. One being converged networking including unified communication solutions (UCS), [FCoE/DCB](#) along with InfiniBand based discussions while the other being around [I/O virtualization \(IOV\)](#) including PCIe server based multi root [IO virtualization \(MRIOV\)](#).

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#### Is FCoE a temporal or temporary technology?

Perhaps in the scope that all technologies are temporary however it is their temporal timeframe that should be of interest. Given that [FCoE](#) will probably have at least a ten to fifteen year temporal timeline, I would say in technology terms it has a relative long life for supporting coexistence on the continued road to convergence which appears to be around Ethernet.

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#### What is DFR or Data Footprint Reduction?

Data Footprint Reduction (DFR) is a collection of techniques, technologies, tools and best practices that are used to address data growth management challenges. Dedupe is currently the industry darling for DFR particularly in the scope or context of backup or other repetitive data.

However DFR expands the scope of expanding data footprints and their impact to cover primary, secondary along with offline data that ranges from high performance to inactive high capacity.

Consequently the focus of DFR is not just on reduction ratios, its also about meeting time or performance rates and data protection windows. This means DFR is about using the right tool for the task at hand to effectively meet business needs, and cost objectives while meeting service requirements across all applications.

Examples of DFR technologies include Archiving, Compression, Dedupe, Data Management and Thin Provisioning among others. Read about DFR in [Part I](#) and [Part II](#) of a two part series found [here](#) and [here](#).

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#### What are Hybrid Hard Disk Drives (HHDDs)?

Hybrid Hard Disk Drives (HHDDs) are basically what their descriptive name implies. That is, they combine a traditional spinning magnetic Hard Disk Drive (HDD) with flash memory found in Solid State Devices (SSD) along with some amount of DRAM cache effectively providing three tiers of memory or storage in a single device.

The value proposition of these devices is that of leveraging the high capacity and relative low cost of an HDD compared to a SSD, with the performance benefit of some flash and DRAM vs what is found in a traditional HDD while remaining plug compatible with existing laptops, PCs, servers and storage controllers. An example of an HHDD is the Seagate Momentus XT such as the 500GB 7,200RPM 2.5" HDD with 4GB of flash and 32MB of DRAM. Read more about HHDD in one of my blog posts found [here](#).

Besides subway or commuter light rail in the US and Europe (Holland) other train activity included an overnight trip on [VIA Rail Canada](#) (the Canadian) from Jasper Alberta to Vancouver. If you have never been to the Canadian Rockies, let alone traveled via train, check this one, I highly recommend it.

On a lighter note, what would summer be with out some boat activity?

There was the [Boston water taxi to Logan Airport](#) from the convention center where [EMCworld](#) was held. However most boat activity has been so far relegated to relaxation.

As all work and no play could make for a dull boy (or girl), I can update you that the out and about via boat fishing and sightseeing activity has been very good even with high (then low, then high, then low, then high) water on the scenic [St. Croix river](#).



Left: Greg and his fishing guide in pursuit of the elusive [Walleye](#) (Right)

To see more out and about activities, visit my [blog](#) as well as the [events](#) page for a list of current, recent and upcoming activities.

Date	Location	Activity	Topic
<a href="#">Sep 16, 2010</a>	San Jose	Keynote	BC, DR and HA
<a href="#">Aug 31, 2010</a>	San Francisco		VMworld
<a href="#">June 16, 2010</a>	Nijkerk, Netherlands	Keynote	Industry Trends
<a href="#">May 27, 2010</a>	Indianapolis IN	Keynote	BC, DR and HA
<a href="#">May 11, 2010</a>	Boston MA		EMC World
<a href="#">April 27, 2010</a>	Mountain View, CA	Keynote	Virtual Data Centers
<a href="#">April 21, 2010</a>	Philadelphia PA	Keynote	Storage Virtualization

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#### Featured Related Site

In the spirit of exchanging information, this section features a different site in each edition perhaps even some that you have not seen or heard about.

The featured site for this edition is [Enterprise Efficiency](#) where I have a blog post about availability or lack there of along with aging infrastructures. Have a look [here](#).

#### Interesting Industry Links

Random sites including some found on the [interesting links](#) page:

- [www.vpad.com](#): Eric Siebert vLaunchPad site
- [www.kendrickcoleman.com](#): Virtualization related content

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## >>> Read more

Since some of the above are new or emerging they may not yet be covered or discussed in other venues, research, surveys, studies or reports. Some are emerging trends perhaps even short lived while others will have longer legs to evolve. Thus do not be surprised or alarmed if there is something listed here or in one of the subsequent series of post that you have not seen or read elsewhere while others may already be familiar.

## Popular and New Blog Posts

- Post:** [Infosmack 3PAR CEO David Scott Interview](#)
- Post:** [My Favorite Late Summer Reading Material](#)
- Post:** [Dell Will Buy Someone, However Not Brocade](#)
- Post:** [Back to school shopping: Dell buys 3PAR](#)
- Post:** [Data footprint reduction \(DFR\): Dell and IBM](#)
- Post:** [Data footprint reduction: Life beyond dedupe](#)
- Post:** [Lack of availability: Frail Aging Infrastructure](#)
- Post:** [July 2010 Odds and Ends](#)
- Post:** [A Storage I/O Momentum Moment](#)
- Post:** [EMC and NetApp: On Parallel Tracks?](#)
- Post:** [Summer 2010 Out and About Update](#)
- Post:** [Supreme Court Rules on SARBOX](#)
- Post:** [Initial Virtumania Appearance \(Episode 14\)](#)
- Post:** [Honored to be named a 2010 VMware vExpert](#)

## >>> Read more StorageIO blog posts

## Reports, Articles and Tips

- Article: [MAID and IPM for energy efficiency](#)
- Article: [Storage Optimization: The Other Green](#)
- FAQ: [Budget benefits of shared SAS storage](#)
- FAQ: [SMB Energy Optimization](#)

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## Videos and Podcasts

### Videos, Podcast and other media content:

-  **Podcast:** [Unified computing: VAR Opportunity](#)
-  **Podcast:** [NAS clustering: What, why and when](#)
-  **Podcast:** [Reduce power, boost IOPS per watt](#)
-  **Podcast:** [Using a storage partitions](#)
-  **Podcast:** [Appearance on Virtumania](#)
-  **Podcast:** [Shared SAS storage budget benefits](#)
-  **Video:** [Scaling with Clustered Storage](#)
-  **Video:** [Virtualization - Life beyond consolidation](#)
-  **Video:** [Storage Efficiency and Optimization](#)

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## News and Announcements

Greg Schulz and StorageIO content are now appearing in several new venues including [Newstex](#) and [Enterprise Efficiencies](#) among others. In other news, Greg Schulz was also named a [2010 VMware vExpert](#)

## Follow on Social Media Networks

StorageIO engages via traditional mediums, Web 1.0 along with Web 2.0 or social networking media venues including among others:

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## Did You Know?

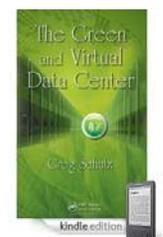
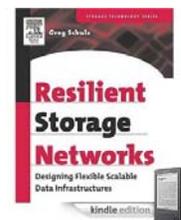
- Small percentage (or ratio) changes on a large population can have large impact or benefits
- Optimization can mean boosting utilization or increasing productivity via enhanced performance or lower response time
- Green IT benefits can be achieved as a by product of boosting productivity, reducing per unit costs while maintain QoS
- Data Footprint Reduction (DFR) is a broad category encompassing various technologies and techniques including Archive, Compression, Data Management, Dedupe and thin provisioning among others
- DFR and dedupe are not limited or exclusive to backup
- Some data can be deduped, some compressed, some archived
- External SAS Direct Attached Storage (DAS) solutions enables multiple standalone or clustered physical and virtual servers to accomplish what is often thought to be exclusive to iSCSI, Fibre Channel or FCoE SANs and NAS systems which is to provide access to shared storage!

## Book News and Reviews

**News:** [The Green and Virtual Data Center \(CRC\)](#) is now available on Amazon Kindle joining [Resilient Storage Networks \(Elsevier\)](#) previously available. Watch for news and information about release of new Chinese language translation of [The Green and Virtual Data Center \(CRC\)](#).

In addition to contributing, collaborating and co-authoring on other projects, Greg Schulz is the author of two books "[The Green and Virtual Data Center](#)" (CRC) and "[Resilient Storage Networks - Designing Flexible Scalable Data Infrastructures](#)" (Elsevier).

Learn [more](#) about these books, what they are about, what is inside of them, reviews and commentary along with where to buy them.



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