

[Tech Field Day VFD3 - Pure Storage and the all-flash revolution](#)

As we close out our first day of presentations here at [Virtualization Field Day 3](#), we are at the office of Pure Storage in Mountain View. Pure Storage is a really neat company for a number of reasons. Their all-flash array is a product that is not an evolution of an existing product which was simply being augmented with a flash tier to accelerate data storage and retrieval. In fact, they launched among our community using great events like Tech Field Day to an avid audience of storage enthusiasts.

✘ **What is the strategy to all-flash?**

How about a simple strategy: Let's deliver an all-flash storage array for a lower price than traditional spinning disk? Wow! That's quite an aggressive tagline, but what Pure Storage does is to work at delivering a performance and consolidation platform that lowers the per-VM cost to bring its customers 0.3-0.7ms data access with 5-10x consolidation through inline de-duplication and compression.

So how do they do this? Very good question, and it is comprised of a lot of features at the hardware and software layer. I couldn't do it justice in a quick post, so please forgive me that I won't dive into the deep technical goodies here, but I wanted to look at some of the other aspects that make Pure Storage interesting in what they do.

The Forever Flash promise

✘ This is really cool! When you bring a Pure Storage product into your data center you will size it as needed and the typical experience is to acquire storage with a long lease cycle because of the high cost to acquire enterprise scale storage.

The challenge is that the same large scale storage really needs care and feeding, and with the aggressive moves happening in storage engineering, it seems counter-productive to sign on for a long lease on large storage.

With the Forever Flash program you can actually upgrade your controllers every 3 years to align with the updates that have been engineered by Pure Storage, and to top it off the rest of your storage in the chassis then has its support cycle re-aligned with the upgraded hardware. Effectively it is as if you just put the product on the floor and started your support contract again.

Incremental upgrades also give the same re-up for your support, so you can continue to grow your Pure Storage environment and stay up to date on features, hardware, software and support, all at the same time.

For info on the Forever Flash program head on over here: [Forever Flash with Pure Storage](#)

Is it really lower cost?

I have to be honest that it sometimes seems like a little sleight of hand when I see all-flash options that can be deployed for a lower per-VM or per-GB than other traditional storage arrays.



Image courtesy of Pure Storage - <http://www.purestorage.com/resources/roi.html>

Looking at the diagram we can see how the overall cost is accounted for with storage and how Pure Storage is able to put storage on the floor at a customer for a per-GB cost that comes in much lower than expected because of compression, power/cooling reduction, and minimal management overhead for the administration.

That being said, there is a real cost to bringing all-flash solutions into the data center. In my opinion, this may not be appropriate for many SMB organizations with moderate workloads. There is a definite target market, and a lot of factors come into play to define where the sweet spot is for moving to an all-flash solution.

The basic deployment is a 2 controller implementation with a half-populated shelf, so there is an entry point that is attainable for many organizations.

The bits matter

Literally. The way that one storage stands apart from another is the way the bits are read, written, replicated, de-duplicated and generally managed. Hardware becomes a genuine question when dealing with flash storage because of the alternatives that are available (MLC, eMLC, SLC) and the Pure Storage goal is to find the balance with performance and reliability with managing the price point to keep their solution as a cost-effective offering.

Since their first array hit production, they have replaced 5 drives altogether and one was for a firmware issue. That's a pretty good track record. We discussed a lot of deep-dive details on hardware, software, and workloads which was eye opening and encouraging.

Pure Storage also built their solution with a 512 byte block default rather than the traditional 4K block size. This has some really slick advantages in how the performance can be increased at many points. In fact, it means that block alignment is no longer an issue because the block sizing eliminates the performance issues that come into play with 4K blocks and certain application/VM features.

I'll be sure to post the videos so that you can see some of the targeted talks on content such as the thick versus thin, eager zero versus lazy zero on SSD. Very interesting info on tactically handling performance in conjunction with your hypervisor features.

My thoughts

I really like the idea of what Pure Storage is doing as a company, and as product creators on both the software and hardware side. It would be great to be able to have an all-flash solution in my data center, and that time may come as my workloads are more able to take advantage of the predictable performance and speed of all-flash arrays.

I see OpenStack in there ☐

There is a current Cinder driver for the Folsom release with an upcoming update to support the Havana build. With an increased customer field growing in the OpenStack space, the team has added that they will be increasing some focus on the platform to align with requirements from the

consumers.

Is Pure Storage right for you?

This one will be something that every organization has to evaluate, but I can say that the people and the product are great here at Pure Storage and it is absolutely worth putting on the evaluation plan to see how it may fit into your data center.

You can be the judge with your particular situation, but make sure to reach out to the team at Pure Storage on Twitter ([@PureStorage](https://twitter.com/PureStorage)) and at their website <http://www.purestorage.com> for more details.

DISCLOSURE: Travel and expenses for Tech Field Day - Virtualization Field Day 3 were provided by the Tech Field Day organization. No compensation was received for attending the event. All content provided in my posts is of my own opinion based on independent research and information gathered during the sessions.

[What to expect during Virtualization Field Day 3](#)

It's a countdown of just over a week until the [Tech Field Day - Virtualization Field Day 3](#) event that I will be attending as a delegate. Following in the footsteps of some powerful minds in virtualization and technology, I will be doing my best to bring all of my readers a first person view of the event and I hope to make this a fun and informative event for all involved.

Hosting Vendors of VFD3

This event has a strong field of presenting vendors as you can see from the event page:



The schedule of the presentations will be updated shortly before the event so that you can see the calendar of sessions and you can even add it to your own calendar so you know exactly who is on during each session for extra convenience.

These sessions are extremely great because of the technical depth they can reach to. Each presenting vendor will be diving into their product with our delegates giving them a good mental workout with some deep questions to fully explore the products and how they fit against others in the industry, and how they can be great for any particular organization.

Delegates of VFD3

There is a great group of delegates attending this event, so I would encourage you to take a look at them from the list below, and if you don't already follow them on Twitter, now is a great time to do so!

The Tech Field Day profile pages will provide Twitter and Blog links for the delegates so you can see all of the great stuff coming out of the event as it unfolds.

- Alastair Cooke - <http://techfieldday.com/delegate/alastair-cooke/>
- Scott D. Lowe - <http://techfieldday.com/delegate/scott-d-lowe/>
- Marco Broeken - <http://techfieldday.com/delegate/marco-broeken/>
- James Green - <http://techfieldday.com/delegate/james-green/>
- Eric Wright - <http://techfieldday.com/delegate/eric-wright/>
- Eric Shanks - <http://techfieldday.com/delegate/eric-shanks/>
- Andrew Mauro - <http://techfieldday.com/delegate/andrew-mauro/>
- Paul Meehan - <http://techfieldday.com/delegate/paul-meehan/>
- David M Davis - <http://techfieldday.com/delegate/david-davis/>
- Rick Schlander - <http://techfieldday.com/delegate/rick-schlander/>
- Jeff Wilson - <http://techfieldday.com/delegate/jeff-wilson/>

Making Tech Field Day fully interactive

One of the fantastic features of Tech Field Day events is that they are live streamed from the site (<http://www.TechFieldDay.com>) so not only can you follow along on [Twitter using the hashtag #VFD3](#), but you can see the live activity while it is happening!

In fact, you can post questions yourself along the way also by Tweeting me (<http://twitter.com/DiscoPosse>) and I will present your questions to the vendors right from the delegate table.

Let's treat this as our collective session and share in the opportunity together! Looking forward to the event and I encourage your questions as we go ☐

Live Tweeting and Summary Blogs

With all the information coming from the presentations, I will be live Tweeting during the presentations and I hope to have a summary blog for the event days as we go. Given the intensity of the event and the volume of information, I will be playing it by ear as to when I post the summary. Rest assured that the info will be captured through the event day and as you will see from the times we are Tweeting, there is little rest time, but that is what makes the event so powerful and effective.

It's going to feel a little like this:



As the videos are posted I will be sure to include embedded links for them so you may find that the blog posts are rather organic and adaptive during the event week.

Thanks go as always to Stephen Foskett and Tom Hollingsworth for their extensive effort to prepare the event and it is going to be a great time for all of us!

Toronto VMUG: November 6th Event Recap

✘ It was another great VMUG session at the November 6th half-day Toronto VMUG at the Metro Toronto Convention Centre. It turned out to be a Toronto VMUG first with a remote presenter as a result of some of the aftermath of hurricane Sandy.

I have to start by giving kudos to Angelo Luciani (@AngeloLuciani) for not only putting together a great event, but for coming up with a phenomenal recovery plan when a vendor was unable to travel to present at the event. Plus, we've laid the groundwork to open the doors for future remote presenters which is a great opportunity for the VMUG members to get access to more great content.

Because we had internet access in the venue this time we were able to watch the VMworld 2012 keynote speech with Steve Herrod (@Herrod on Twitter) which was a great warm up for some VMUG goodness.

✘ First up in the day was Mike from VMware to bring us up to speed on the vCloud Suite features, editions and changes which came to market between VMworld San Francisco and VMworld Barcelona. It was a great chance to see the overview of new features and a reminder that all VMware customers should get in touch with their reseller ASAP to take advantage of the great licensing deals available until December 15th!

Next to present was McAfee (@McAfee on Twitter - <http://www.mcafee.com>) with a session on their virtualization security offerings. The presentation covered a lot of ground and once again hammered home the ✘ need for us as designers, implementers and administrators to latch onto the SDDC (Software Defined Data Center) concept as it is the inevitable future for many companies as virtualization expands and cloud computing becomes more widely accepted.

The McAfee solution covers the bases although for the audience it sparked a lot of questions about the application to smaller environments and how the solutions adapt to "less compliant" server builds. Preetham and the team who came for the presentation fielded the questions well and the impact was good in that it created conversation about design. In my opinion, the key to looking forward is knowing where we are coming from.

✘ Pure Storage (@PureStorage on Twitter - <http://www.purestorage.com>) took the stage so to speak, with a great GoTo Meeting from California to talk about their all-flash array offering. Pure Storage is leading the way in the flash storage space by pushing past the idea of "hybrid storage" and moving right to the all-flash array deployment which is a winning design from what I've seen.

The challenge with the all-flash deployment as you can imagine is price. With spinning disk storage coming at around 1\$ per GB and auto-tiering hybrid solutions not too much over that, the idea of moving up to 5-10\$ per GB is quite a jump. The pitch for Pure Storage is that the usable space brings that price close to 5\$ per GB with the implementation of de-duplication.

Again, the key thing about knowing whether Pure Storage is appropriate for your organization is to engage them and do some analysis to find where it is the right fit. An interesting product and I hope to see more from them in the future.

Lastly in the presentation was little old me! More than anything I have to thank Vision Solutions and Veeam Software for all of the help and support to bring great products to the market and some

really cool giveaways for the VMUG members. My presentation was titled **BCP for VMware Environments: Double-Take, Veeam and vSphere Replication**. The presentation was meant to show some real-world examples where I've deployed these products and to talk about how different levels of each solution are available.

While I presented 3 products (Double-Take Availability, Veeam Backup Free Edition, vSphere 5.1 Replication), it was meant as what I call an Apples to Bananas to Oranges comparison. The goal was not to pit the products against each other, but to show how each type of implementation can be used and how they can be all brought together as part of your overall BCP program.

Don't forget to take a look at some of my BCP resources here on the site, including the 5 part BCP Primer post for those who are keen on getting involved with a BCP program at their organization: [BCP/DR Primer Series](#)

I hope that everyone there had a great time and that the content was worthwhile. I was able to have lunch with Angelo and Ryan who was another VMUG member. Plus lots of time to chat with Mike Preston ([@mwpreston](#) - <http://www.mikepreston.net>).

Here is the slide deck I used for the presentation. Because I brought this as a real-world example of tools used for BCP, there was much more content that was spoken about than written. If you would like to see more, just let me know and I'd be happy to walk you through what I've done with BCP in various situations.

See you all at the next event!