

Server-based Storage Makes Accelerating Application Performance Insanely Easy

In today's enterprise data centers, when one thinks performance, one thinks flash. That's great. But that thought process can lead organizations to think that "all-flash arrays" are the only option they have to get high levels of performance for their applications. That thinking is now so outdated. The latest server-based storage solution from [Datrium](#) illustrates how accelerating application performance just became insanely easy by simply clicking a button versus resorting to upgrading some hardware in their environment.

As flash transforms the demands of application owners, organizations want more options to cost-effectively deploy and manage it. These include:

- Putting lower cost flash on servers as it performs better on servers than across a SAN.
- Hyper-converged solutions have become an interesting approach to server-based storage. However, concerns remain about fixed compute/capacity scaling requirements and server hardware lock-in.
- Array-based arrays have taken off in large part because they provide a pool of shared flash storage accessible to multiple servers.

Now a fourth, viable flash option has appeared on the market. While I have always had some doubts about server-based storage solutions that employ server-side software, today I changed my viewpoint after reviewing Datrium's DVX [Server-powered Storage System](#).

[Datrium](#) has the obvious advantages over arrays as it leverages the vast, affordable and often under-utilized server

resources. But unlike hyper-converged systems, it scales flexibly and does not require a material change in server sourcing.

To achieve this ends, [Datrium](#) has taken a very different approach with its “server-powered” storage system design. In effect, Datrium split speed from durable capacity in a single end-to-end system. Storage performance and data services tap host compute and flash cache, driven by Datrium software that is uploaded to the virtual host. It then employs its DVX appliance, an integrated external storage appliance, that permanently holds data and orchestrates the DVX system protects application data in the event of server or flash failure.

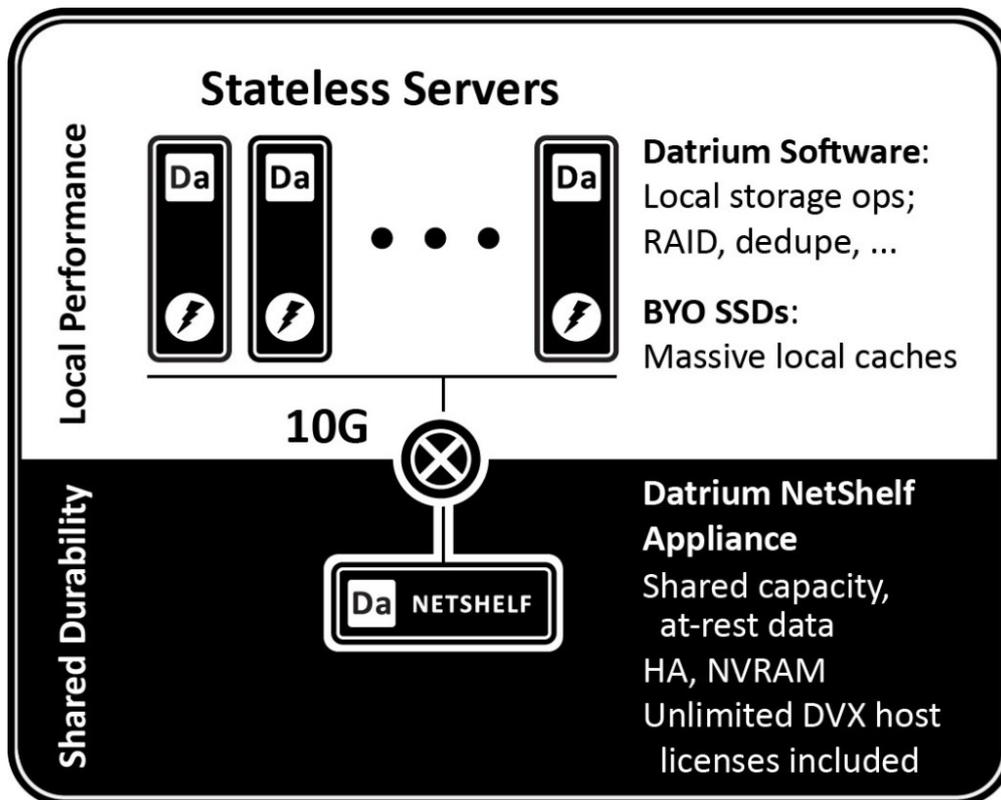
This approach has a couple meaningful takeaways versus traditional arrays:

- Faster flash-based performance given it is local to the server versus accessed across a SAN
- Lower cost since server flash drives cost far less than flash drives found on an all-flash array.

But it also addresses some concerns that have been raised about hyper-converged systems:

- Organizations may independently scale compute and capacity
- Plugs into an organization’s existing infrastructure.

Datrium Offers a New Server-based Storage Paradigm



Source: Datrium

Datrium [DVX](#) provides the different approach needed to create a new storage paradigm. It opens new doors for organizations to:

1. **Leverage excess CPU cycles and flash capacity on ESX servers.** ESX servers now exhibit the same characteristics that the physical servers they replaced once did: they have excess, idle CPU. By deploying server-based storage software at the hypervisor level, organizations can harness this excess, idle CPU to improve application performance.
2. **Capitalize on lower-cost server-based flash drives.** Regardless of where flash drives reside (*server-based or array-based,*) they deliver high levels of performance. However, server-based flash costs much less than array-based flash while providing greater flexibility to add more capacity going forward.

Accelerating Application Performance Acceleration Just Became Insanely Easy

Access to excess server-based memory, CPU and flash combine to offer another feature that array-based flash can never deliver: push button application performance. By default, when the Datrium storage software installs on ESX hypervisor, it limits itself to 20 percent of the available vCPU available to each VM. However, not every VM uses all of its available vCPU with many VMs only using only 10-40 percent of their available resources.

Using Datrium's [DIESL Hyperdriver Software](#) version 1.0.6.1, VM administrators can non-disruptively tap into these latent vCPU cycles. Using Datrium's new Insane Mode, they may increase the available vCPU cycles a VM can access from 20 to 40 percent with a click of a button. While the host VM must have latent vCPU cycles available to accomplish this task, this is a feature that array-based flash would be hard-pressed to ever offer and unlikely could ever do with the click of a button.

Server-based storage designs have shown a lot of promise over the years but have not really had the infrastructure available to them to build a runway to success. That has essentially changed and Datrium is one of the first solutions to come to market that recognizes this fundamental change in the infrastructure of data centers and has brought a product to market to capitalize on it. As evidenced by the Insane Mode in its latest software release, organizations may now harness next generation server-based storage designs and accelerate application performance while dramatically lowering complexity and costs in their environment.