A Breakthrough for Backup and Recovery: All-Flash Storage at a Price Comparable to HDDs

Recovery and backup operations are more critical—and more challenging—than ever before.

- **More critical** because digital transformation, big data analytics and 24/7 business operations make rapid recovery and the elimination of downtime an important business differentiator.

- **More challenging** because highly virtualized environments and exponential data growth are making it harder to meet today's recovery objectives using traditional hard disk or tape solutions.

A logical option to address the performance challenges of backup and recovery would be to use all-flash storage. If organizations could use all-flash, they could conceivably eliminate performance degradation across business-critical applications when the backup is needed for fast recovery.

The challenge, of course, has been cost. All-flash arrays can cost 10 or even 20 times more than hard disk arrays for comparable capacities, depending upon the configurations. With that, the idea of paying so much extra for the equivalent of an insurance policy has been impractical.

Until now.

With modern technology, IT decision-makers can use a unique scale-out all-flash array for backup and recovery without paying a premium for the additional performance capabilities they can achieve. The availability of this new approach represents a significant breakthrough for backup and recovery applications—particularly in highly virtualized environments.

StorageCraft

Introducing a new category of all-flash storage

The architecture of this new breed of array brings enterprise-grade all-flash storage to a price point that was previously impossible. At less than 50 cents per effective gigabyte, it is comparable to hard-disk drive (HDD) or hybrid arrays for backup and recovery scenarios. The solution uses several innovative design techniques to achieve this breakthrough for price and performance, including:

- Giving customers the ability to purchase standard enterprise-grade solid-state drives (SSDs) at retail prices without the traditional mark-up charged by the leading array vendors. This results in significant cost savings without impacting performance, reliability or functionality.

- An architectural design that combines a distributed file system that is tightly integrated with a fine-grained object store. It delivers a scale-out architecture with seamless capacity for backup and recovery options.

- Industry-leading data reduction technologies, including inline, variable length deduplication and compression. The combination of these technologies delivers a storage reduction ratio of 10:1 in backup environments.

This new all-flash array was developed by the leading backup and recovery provider StorageCraft. It is called OneBlox and is designed for a wide range of use cases, not just backup and recovery. OneBlox is also aimed at organizations looking for cost-efficient scale-out all-flash storage solutions for all of their tier-one production environments.

Backup and recovery challenges in highly virtualized environments

OneBlox solves very specific backup and recovery challenges that cannot be addressed as effectively by any other technology solution in highly virtualized environments.

Virtualization puts a performance strain on storage infrastructure because of the so-called "I/O blender effect." It occurs when multiple virtual machines (VMs) all send their I/O streams to a hypervisor for processing. Under heavy workloads, I/O processes that might otherwise have been sequential now become random, thereby increasing latency.[1]

Traditional HDD storage arrays tend to crumble under the pressure of the I/O blender, which is one of the key reasons why all-flash arrays have become the go-to solution for many tier one business-critical applications.

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1   "I/O Blender Effect," SearchStorage, TechTarget

But what happens in a disaster recovery or other downtime scenario? If dozens or hundreds of VMs are recovering at the same time from an HDD—or, worse, a tape backup—it is going to take an extremely long time for the business to get back up and running.

This is an acknowledged problem among IT decision-makers and is becoming untenable in this era of digital transformation and 24/7 business operations. In a survey across companies of all sizes in 47 vertical markets, more than 80% of respondents said a single hour of downtime costs an average of $300,000 or more. Nearly 70% of enterprises with 1,000 or more employees in industries such as retail, healthcare, finance and government said an hour of downtime can cost $5 million or more. As the study notes: "The only good downtime is no downtime."[2]

In this environment, business continuity is an essential competitive differentiator. However, the challenge to improve business continuity comes at a time when data growth is accelerating and IT teams are under pressure to improve recovery time objectives (RTOs).

2   "Cost of Hourly Downtime Soars; 81% of Enterprises Say it Exceeds $300K on Average," Information Technology Intelligence Consulting, August 2, 2016

Using all-flash storage to dramatically improve business continuity

Because every minute of downtime has a huge impact on the business, IT leaders are seeking solutions that improve RTOs and ensure that they can complete backups within the required backup windows.

In virtual environments, backup applications aim to deliver near instant recovery of virtual machines. They do so by booting directly off backups without waiting for restores to complete. Booting is just one piece of the puzzle. The recovery process still needs to be done with data recovered from backup images. During recovery operations, the virtual machines that are booted off the backup images need to be production-worthy and performance needs to be similar to what they would get from their primary storage.

With OneBlox, organizations can recover the entire virtual infrastructure literally in seconds or minutes and keep it production-worthy. Additionally, OneBlox lets organizations expand storage dynamically over time by incrementally adding SSDs or additional appliances. This is even possible

without having to make application configuration changes. No other solution on the market offers a comparable level of affordable performance for backup and recovery.

Taking the next step

Organizations need a backup when a recovery is necessary and to meet regulatory compliance/e-discovery requirements. While it might not be the most exciting aspect of IT operations, having the right backup solution is a vital insurance policy for every organization. If critical applications go down and business continuity is affected, businesses not only lose potential revenue, they suffer damage to customer satisfaction, employee morale, regulatory compliance and brand reputation.

The growth of virtualization has made backup and recovery operations more important—and more challenging as well. Legacy hard-disk and tape solutions were designed a quarter century ago. They are simply not meant to meet the

performance requirements of today's highly virtualized environments, both for production storage infrastructures and for backup and recovery operations. All-flash storage delivers the performance required to improve RTOs, but it has been prohibitively expensive.

The availability of a new class of all-flash array, represented by the development of OneBlox by StorageCraft, represents a breakthrough in backup and recovery for virtualized (and other) environments. With it, organizations have access to much higher levels of performance than legacy disk solutions, at a comparable price point. IT can achieve RTOs that deliver dramatic improvements in business continuity at a time when organizations of all sizes in all industries strive to reduce downtime and support new initiatives such as digital transformation.

For more information on how your organization can leverage all-flash scale-out storage for backup and recovery operations, please visit www.storagecraft.com/exablox/what-is-it.