

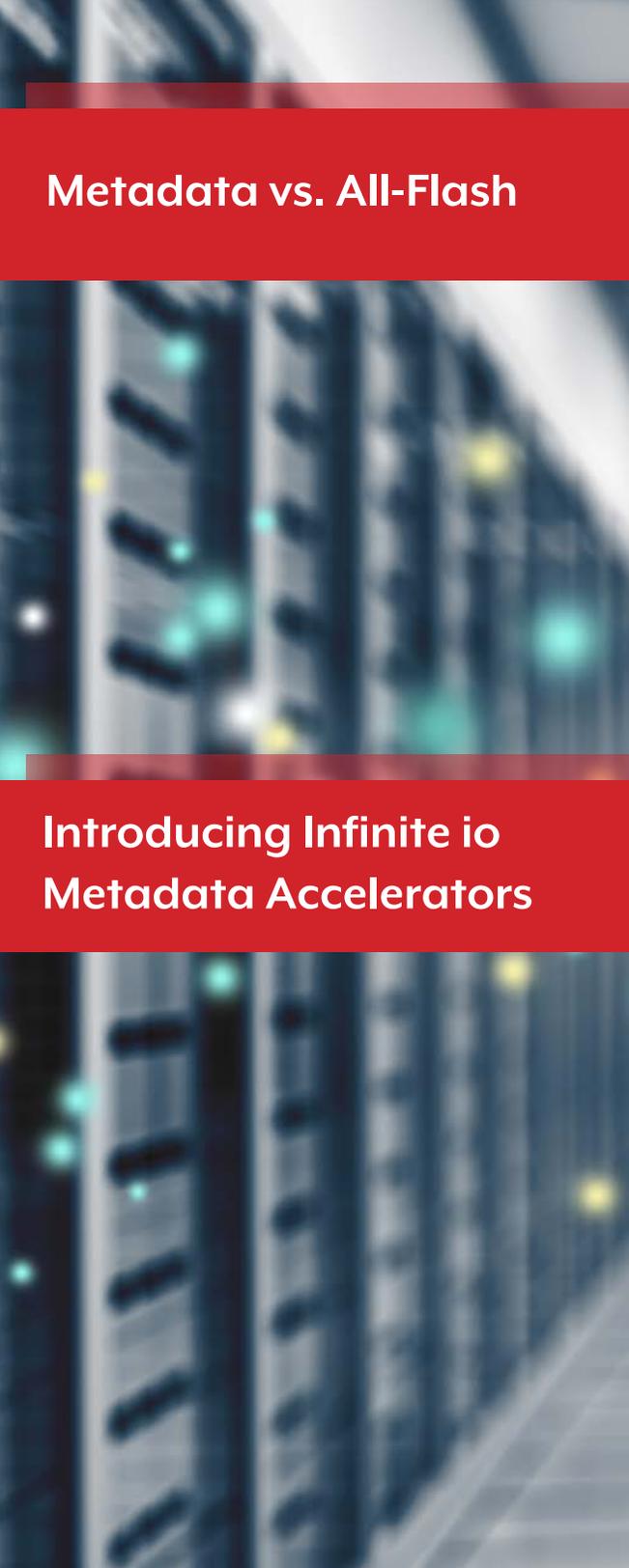


Enterprises Need a Metadata First Strategy

by George Crump

A photograph of a server room with rows of black server racks and a white tiled floor. The room is dimly lit, with some lights visible on the ceiling. A large red rectangular overlay is positioned in the center of the image, containing white text.

Organizations looking to improve the storage performance of their data centers often turn to all-flash arrays. The problem is an all-flash array is hitting the performance problem with a sledgehammer when all that may be needed is a scalpel. The reality is most performance problems are the result of metadata requests. That's why flash arrays appear to provide a boost to performance even for applications that in reality don't need flash performance. But there is a more surgical solution to the performance problem that can provide better performance and datacenter-wide benefit.



Metadata vs. All-Flash

Most studies indicate that 80 to 90% of all storage IO is metadata. Metadata is data describing data. By looking at metadata, applications discover the status and state of data; details like last access time, file size, file modification time, last access time or last file closed time. All-flash arrays, like any storage system, are designed to move actual data not necessarily to handle metadata requests, and their performance quickly degrades as metadata requests increase.

The other problem with counting on all-flash arrays to fix a performance problem solved by metadata is that only the data on the flash array benefits. Data has to be moved to the flash array, which causes configuration changes. Most data centers are not able to justify the cost of moving all of its data to the all-flash array, so much of their workflow doesn't benefit.

Introducing Infinite io Metadata Accelerators

Infinite io is a metadata management problem solver. Its first product, The Network-based Storage Controller, provides the ability to transparently migrate primary storage data to private or public cloud storage. A part of the controller solution is Infinite io's deep packet inspection technology which keeps real time copies of a storage systems metadata on RAM in the appliance.

Infinite io found many of its customers, at least initially, were more interested in the acceleration that storing metadata in RAM delivered to the organization's workflow. Infinite io's latest product, the NSC-055 is designed to address that specific interest. It is primarily a Network Storage Controller without the data movement component. The NSC-055 allows the customer to get started with Infinite io with a more cost-effective, performance-enhancing solution. Later the customer can upgrade to a complete Network Storage Controller without disruption.



The NSC-055 is designed to sell either as a stand-alone unit or as a cluster of three accelerators with 24 10Gbps port pairs. As metadata demands increase, IT can add more appliances to the cluster. The cluster design also provides high availability, eliminating downtime or performance degradation.

The cluster is installed in-line, logically sitting between the network and storage. The NSC-055 does not require applications to be re-provisioned or storage to be virtualized with new file paths. It installs transparently and seamlessly intercepts and responds to metadata requests.

STORAGESWISS TAKE

All-flash is not the performance cure-all many vendors claim it to be. It is an important tool in the IT tool belt, but sometimes other solutions are more practical. When it comes to performance, especially in data centers with specific data workflows, metadata acceleration provides better performance across the entire enterprise, not just the data sitting on the flash array. In fact, Infinite io claims that its metadata accelerator outperforms an all flash array by 10X on metadata operations.

For organizations with many storage systems and sophisticated data workflows, Infinite io's metadata accelerator may be a more logical way to go when addressing performance problems, or at least a more viable first step before buying an all-flash array.

THE ANALYST

George Crump is the founder of Storage Switzerland, the leading storage analyst focused on the subjects of big data, solid state storage, virtualization, cloud computing and data protection. He is widely recognized for his articles, white papers, and videos on such current approaches as all-flash arrays, deduplication, SSDs, software-defined storage, backup appliances, and storage networking. He has over 25 years of experience designing storage solutions for data centers across the U.S.



THE FIRM



Storage Switzerland is the leading storage analyst firm focused on the emerging storage categories of memory-based storage (Flash), Big Data, virtualization, and cloud computing. The firm is widely recognized for its blogs, white papers and videos on current approaches such as all-flash arrays, deduplication, SSD's, software-defined storage, backup appliances and storage networking. The name "Storage Switzerland" indicates a pledge to provide neutral analysis of the storage marketplace, rather than focusing on a single vendor approach.

ABOUT OUR PARTNER



Infinite io is changing the underpinnings of data storage by putting storage intelligence in the network. Our unique architecture responds to metadata requests faster than the most advanced all-flash storage arrays, significantly increasing the performance of existing storage. And when that metadata indicates files are no longer being accessed, they are migrated to low-cost cloud storage. All without sacrificing security or availability. Installing like a network switch, our products are totally transparent to existing systems and require zero workflow changes. For the first time, storage performance can be dramatically increased without a "rip and replace" storage array upgrade and traditional file-based workflows can take immediate advantage of low-cost cloud storage with no application changes, gateways, or complex new file systems. For more information please visit infinite.io.