VICOM

Where Flash Storage Can Take Your Company

5 Business Use Cases for Flash Storage

Introduction
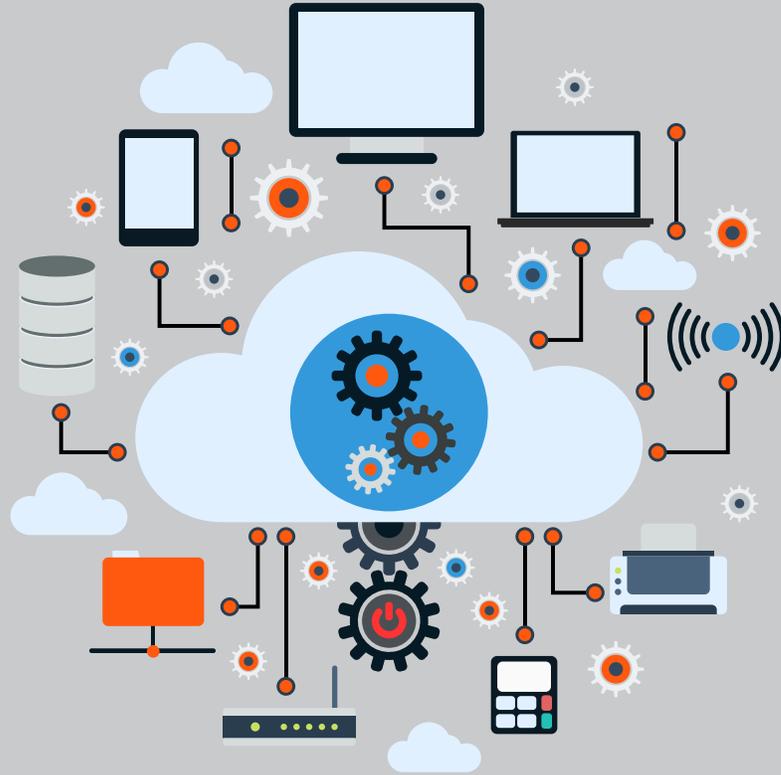
One of the major business barriers to adopting flash storage has been its cost—but that is rapidly changing. Last year, the price of flash storage fell 75% over the span of 18 months.[1] As flash storage becomes more affordable, it is turning into a more popular business option.

Infostor reports that the all-flash array market has grown 94.5% to reach $1.1 billion.[2] Some companies have chosen to dip their toes into the water by using flash storage to supplement their hard disk drives in hybrid solutions. As a result, the hybrid storage market rose 26.1% to reach $2.3 billion.

IDC's research director for storage, Natalya Yezhkova, stated that "Flash-based storage is among a number of technologies that are shaping and transforming data centers [but] the industry is still in the beginning of the flash adoption journey. As end users start experiencing the benefits of all-flash storage solutions, they should look at the entire ecosystem of product features and data services a vendor can provide."[3]

IT leaders considering a storage upgrade should evaluate the advantages flash storage offers. This eBook explores 5 ways that flash storage can help your business meet your goals.

Optimize Your Storage Infrastructure

IT leaders are always looking for ways to do more with less. Older hard disk drive-based storage technologies take up a lot of real estate and consume a lot of energy. Flash storage holds more data in a smaller package to reduce the data center footprint.

The solid-state drives used in flash storage have a 2.5-inch footprint for 40% of the volume and 10% of the weight of hard disk drives (HDDs).[4] Flash storage offers increased capacity by providing data compression and inline deduplication.

Improving Cost Efficiency

Using flash storage reduces operating costs by lowering energy and maintenance expenses. Because solid state storage has no moving parts, power and cooling consumption are 50 to 90% less per gigabyte compared to HDDs.[5] A lack of moving parts means flash storage is less likely to break down and require repairs.

Boosting Performance

With flash storage, good things come in small packages. Flash storage provides 200x the input/output per second (IOPS) of HDDs.[6] A rapid IOPS rate means your business can process more data faster to meet your workload needs. You also avoid costly bottlenecks with super low latency rates and faster throughput.

Create Data Storage Tiers

With its performance benefits, flash storage provides the perfect place for your mission-critical data. But there is no need to put all of your data on flash. Only 3 to 10% of a company's information is hot or active. Combining flash and HDDs in a hybrid storage solution enables your company to be more flexible and efficient in meeting the storage needs of specific workloads.

Finding the Right Storage Tier

Hybrid storage that combines flash with HDD enables your business to move data that needs to be accessed frequently to flash while reserving HDD for archival or less frequently accessed data. Input/output intensive workloads can also be moved to flash to improve the user experience through faster response times. Flash storage can serve as tier 1 storage and hard drives can form the lower tiers. This way, you make the most efficient use of your storage.

Some flash storage solutions enable automated storage tiering for even greater efficiency. Instead of manually monitoring workloads and transferring them from tier to tier, automated tiering allows companies to establish policies for distributing data that can be enacted without human intervention.

Manage Your Data

The volume of data entering your business can overwhelm your storage resources and slow down the decision-making process. According to a recent study by the American Institute of CPAs, 72% of organizations report that at least one major project failed in the last 3 years because of slow decision making.[8]

Data can originate from many sources throughout a business and can contain duplicate information that overinflates data volumes. More efficient data management makes the vital information needed to make business decision easier to transmit, sort through, and process.

Flash Storage Data Management

Tech Target reports that flash enables 3x the data reduction of HDDs.[9] Some flash storage solutions have a variety of built-in storage management tools. These tools include:

- **Compression:** Characters are removed from the encoded information, which allows it to be transmitted using fewer bytes. Smaller parcels of data ensure that information can be transmitted quickly. Compression also identifies and removes statistical redundancies.

- **Deduplication:** As a special form of compression, deduplication removes redundant copies of data and replaces them with reference markers that refer to the original data.

- **Thin Provisioning:** The efficiency of all-flash arrays can be improved through thin provisioning, which allows storage volumes to be allocated ahead of the actual need for it. Capacity can be boosted on demand, eliminating wasteful overprovisioning to meet possible workload spikes.

- **Snapshots:** Snapshots help your business back up important data by creating an exact copy of it. Snapshots can also be used for data mining because the copy contains metadata that can be used to easily locate the information at another time.

Meet Big Data Challenges

Big data requires storage that meets both the capacity demands of growing volumes of data and the high-performance requirements of sophisticated data analytics applications. Data analytics have progressed from predictive analytics that forecast customer and client trends to prescriptive analytics that suggest alternative paths to follow and the possible results of each.

More recently, cognitive analytics have enabled companies to use machine learning and natural language processing to turn encyclopedic amounts of information into advanced hypotheses.

To meet the needs of big data analytics, flash provides high input/output speeds, fast throughput, and super low latency. More powerful CPUs enable flash storage to process more information using fewer servers. MIT ran an experiment and found that 20 servers using 20 terabytes of flash storage were just as fast as 40 servers using 10 terabytes of RAM.[10]

Big Data Flash Storage Use Case

Companies that adopt flash storage to accomplish big data analytics initiatives see amazing results. Fortune Magazine reported that Coca Cola Bottling Co. saw their data leap from 100,000 to 3.5 million data points after initiating predictive analytics for their supply chain. Moving to flash storage enabled them to reduce data processing time by 75%.[10]

Now that real-time data analytics are the standard, reducing the time it takes to reach valuable insights is more important than ever.
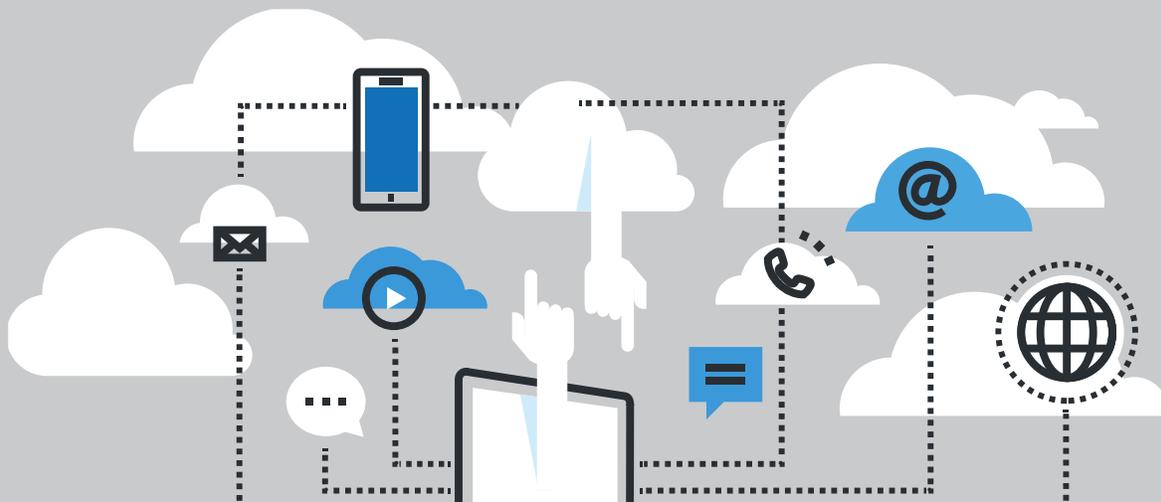
Enhance Object Storage

Adopting object-based storage is becoming crucial for companies as unstructured data volumes rise. IDC estimates that unstructured data makes up 90% of the information entering companies today.[12] Unstructured data holds the key to the significance behind structured data. By analyzing unstructured data, organizations can learn what customers want from their products and services and how their business processes and equipment are performing.

Unstructured data presents a challenge for traditional block and file storage methods. Because unstructured data is made up of images, text, audio, and video, it doesn't fit into rows and columns. In object storage, data like doctors' notes, medical scans, surveillance video, PowerPoint presentations, and social media posts are labeled with metadata so they can be easily and quickly retrieved when needed.

Why Use Flash for Object Storage?

Object storage is often considered secondary storage so it gets left to HDD. But unstructured data plays an important role in making business decisions. Not all of it falls into the category of archival or inactive information. For more critical data workloads, moving from HDDs to flash for object storage increases performance by 100%.[13] Flash enables information in object storage to be processed without bottlenecks because of lower latency and higher IOPS.
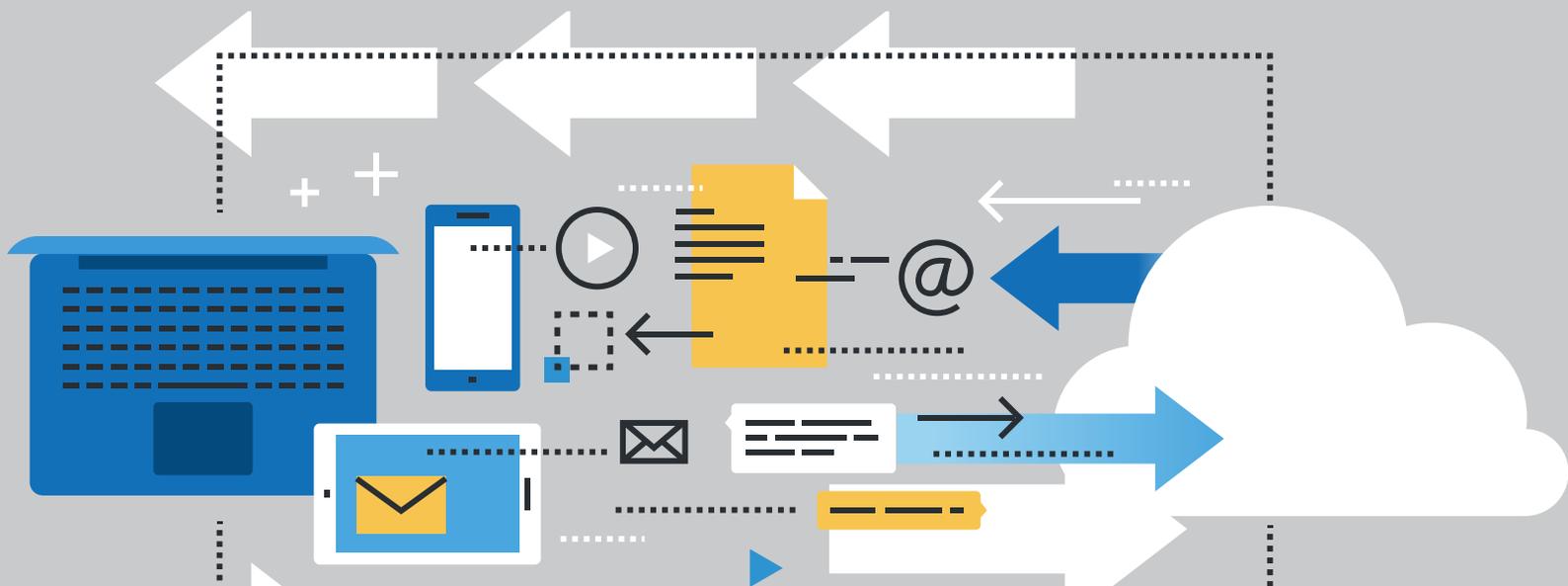
Explore Your Flash Storage Options

Flash storage is the wave of the future. IBM CTO Andy Walls makes this prediction: "Flash will dominate disk storage by 2019."[14] Not only does flash enable your business to create a more efficient and flexible storage infrastructure, but it also helps you manage your data better so you can reach deeper insights more quickly. Whether you choose to go with an all-flash array or hybrid storage, the change could give you the competitive edge you need.

Before you decide on a flash storage partner, consider that not all flash solutions offer the same features. IBM offers a range of top-performing flash options that include IBM Storwize. IBM Storwize offers 3x the performance with 5% flash. For greater optimization of your storage infrastructure, Storwize provides a small form-factor of 24x2.5-inch drives.[15]

As a Premier IBM Business Partner, Vicom has the expertise to guide your business through process of deciding how flash storage fits into your future business plans.

[1] Tech Republic | http://www.techrepublic.com/blog/10-things/10-storage-trends-to-watch-in-2016/
[2] TBusinessEdge | http://www.itbusinessedge.com/blogs/infrastructure/assessing-the-all-flash-storage-equation.html
[3] ZDNet | http://www.zdnet.com/article/flash-storage-is-there-a-tipping-point-anytime-soon/
[4] Tech Target | http://searchsolidstatestorage.techtarget.com/feature/Almost-time-for-SSD-flash-storage-to-be-used-with-object-storage
[5] Tech Target | http://searchsolidstatestorage.techtarget.com/feature/Seven-ways-flash-data-storage-beats-HDDs-for-any-workload
[6] InfoWorld | http://www.infoworld.com/article/2912373/flash-storage/how-flash-changes-the-storage-equation.html
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[8] Data Watch | http://www.datawatch.com/2016/02/17/the-challenges-to-data-management/
[9] Tech Target | http://searchsolidstatestorage.techtarget.com/feature/Seven-ways-flash-data-storage-beats-HDDs-for-any-workload
[10] IT Buyer's Resource | https://www.itbr.com/blog/big-data/599/
[11] BizTech Magazine | http://www.biztechmagazine.com/article/2014/07/flash-storage-helps-businesses-cross-big-data-finish-line
[12] CIO | http://www.cio.com/article/2941015/big-data/solving-the-unstructured-data-challenge.html
[13] Tech Target | http://searchsolidstatestorage.techtarget.com/feature/Almost-time-for-SSD-flash-storage-to-be-used-with-object-storage
[14] TechRepublic | http://www.techrepublic.com/article/storage-in-2016-flash-is-in-disk-is-out-and-tapes-coming-back/
[15] IBM | http://www-03.ibm.com/systems/storage/disk/storwize_v3700/overview.html

Find out where flash storage can take your business. Reach out to Vicom today to **schedule a complimentary consultation.**