3 Reasons Why Flash Storage Pumps You Up.

1 **It's physically better.** Similar to how eating healthfully or exercising optimizes your body, Flash storage combines the right fuel and functionality. With a smaller footprint, increased reliability and performance, and competitive pricing, an All-Flash solution is like a personal trainer for your data center.

2 **Offers wider range of choices in key storage environments.** Regardless of your storage environment and application, All-Flash can handle it with ease.
- **Cloud:** For public, private or hybrid.
- **Big Data:** For data lakes/ oceans, or high performance file storage.
- **Virtualization:** For heterogeneous enterprise-class data services.
- **Business Critical:** For mainframe systems.

3 **Makes easy what hard disks find hard.** Running multiple applications, even in a multi-tenancy environment, Flash wins. In heterogeneous environments, with big data and business critical applications, Flash wins again.

Get your data center amped up on Flash!
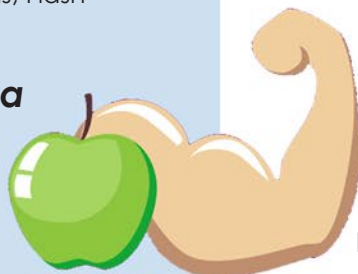
Is Flash Storage Worth It?

Flash storage. It has been hailed as the new game-changing technology. By all accounts, flash replaced the hype of virtualization from 2007. Similar to the way virtual servers financially outperformed physical boxes, flash's speed is unparalleled because it outpaces legacy spinning-disk drives exponentially.

If spinning disk and flash arrays were to race, it would be like setting up a competition between a tortoise and a jet engine.

The Performance Break Down. Storage environments that utilize flash memory, or Solid State Drives (SSDs) don't suffer from the latency issues that can plague spinning disk drives.

For instance, the time it takes for a host CPU to access data from a legacy spinning disk drive storage environment is measured in milliseconds. The period is referred to as 'Latency' and, for spinning disk, the latency is usually around two and 10 milliseconds for well-tuned and managed storage arrays.

Flash storage, on the other hand, is measured in sub-milliseconds. Flash latency is typically measured between 0.100 and 0.800 milliseconds. Sometimes-even lower.

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Often, an attempt at fixing application performance is done by adding faster and more CPUs to the host. That may improve the performance, but the performance bottleneck is almost always the storage. The speed at which a database application can complete a task, for example, is often based upon how quickly data from storage can be accessed.

If the application is accessing spinning disk storage, the application will be waiting for the storage to transfer data anywhere from one millisecond to 10 milliseconds, depending upon the speed of the storage array. As a result, the host

CPU utilization is relatively low. But, if that application is accessing a flash storage system, the application will access the data it needs from the storage environment at a latency of only .300 milliseconds.

Flash storage has the potential to make application five to 10 times faster. It would also enable companies to process large quantities of data exponentially faster.

Having a hybrid flash storage system may offer the needed speed to propel your operations at a better price.

Those analytics or batch jobs that used to take hours are now cut back to mere minutes.

The performance metrics are there. The only thing that isn't quite there is the price tag.

The Price Break Down. Flash systems may be way faster, but they are also twice as expensive. The average cost of a consumer spinning disk drive (or HDD) is around $70 per GB. An enterprise SSD could set your company back around $150 per GB. This is a big difference, as you can see.

As such, it begs the question: Is Flash Storage Technology Worth It? The answer, like the answers to many technology questions, is maybe. It depends solely on your organization's needs and application of flash.

If you are a large financial enterprise that relies on processing stock market sales, then, yes, having the fastest processing power on Wall Street is a competitive advantage.

If you are a smaller to mid-size company that thrives on high-powered apps to propel the performance of staff, however, then flash storage shouldn't be ruled out altogether.

Having a hybrid flash storage system may offer the needed speed to propel your operations at a better price.

Hybrid models, for instance, take $5 per GB flash models down to $1 per GB. Our white paper, *4 Questions to Ask When Upgrading Storage Capabilities*, further breaks down the unique application and affordability of a hybrid flash storage system.

Who Are the Market Leaders of Flash? In Gartner's SSD Magic Quadrant for SSDs, IBM and PureStorage rank at the top of the list, along with EMC. In 2015, IBM made the commitment to invest over one billion dollars into all-flash arrays. That investment appears to have paid off, as flash technology is worked into more storage solutions – even used in smaller amounts to keep pricing lower.

To Flash, or Not to Flash? That Is the Question. Overall, to determine if or how much flash your business should invest in, analyze your workloads. If your company is plagued by bottlenecking storage environments and slow applications, then it may be time to consider a faster solution. TCO comes down to how much data your company needs to access and how faster access can improve your bottom line.

Ready to see how flash storage can improve your organization's bottom line?

Set up a meeting with CAS Severn experts by emailing sales@cassevern.com or call 800-252-4715.

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