



## Hybrid Storage takes the lead in storage conversations



The hottest topic in storage these days is Hybrid Storage. There are many vendors in this market, all offering storage arrays that claim to be “hybrid”. What exactly is hybrid storage?

Hybrid storage is a storage array that typically has the following characteristics; 1) iSCSI connectivity, 2) has some form of on-board SSD or Flash technology for caching and acceleration of data flow, 3) has spinning disk for capacity and data retention, 4) has most, if not all, of the storage software you’d require for management of the device and environment, and 5) comes packaged as a single, rackable unit.

The big advantage of Hybrid storage is that it is very fast, and is perfect for applications that are performance dependent. Hybrid storage is also very high capacity, through the use of 3-4TB SAS drives (typically). Finally, you’ll find most hybrid storage arrays are dual controller, with plenty of RAM and fast processors.

Some of the primary vendors of hybrid storage are Nimble Storage, Fusion-io (which acquired NexGen), EMC, Nexsan and others.

When considering hybrid storage, it is very important to take a close look at your network. Most of these arrays are capable of 10GB connectivity, and you’ll want to make sure that your network is able to support sustained 10GB throughput, especially when you see how fast the devices are, due to the acceleration layer (SSD or Flash).

Roundstone Solutions is very experienced and knowledgeable about storage, and has been involved in numerous hybrid storage implementations. We have partner relationships with all of the vendors listed above and are looking forward to working with you and your company to see if hybrid storage arrays makes sense (hint...they do).

Contact us at [sales@roundstonesolutions.com](mailto:sales@roundstonesolutions.com) or give us a call at (925) 217-1177

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# Flash Technology...why you should look at it closely

Flash technology is getting a lot of attention these days, as many storage vendors are including it in their storage arrays, server vendors are including it as an option in their servers, and some advanced users are simply using Flash technology for their entire storage environment (Facebook).

But what, exactly, is Flash? There are many ways that people refer to Flash, to the point that it gets confusing. Let us help with a little simplification of the topic.

To begin with, Flash technology is the use of high density and high speed memory chips that are placed on a card. This card can be used as a replacement for a disk drive, or it can be used like an extension of system memory.

Let's look at Server-based Flash. This is Flash that is plugged into an empty Bus slot on the motherboard of a server. The Flash sits very close to the CPU, which gives it the ability to serve IOPs very, very quickly. One vendor, Fusion-io, has gotten over 1 million IOPs from a single card. In this

implementation, the Flash technology does not run through a storage controller.

Performance improvements possible with server based Flash are on the scale of 10-40 times the previous performance. WOW! That's super fast, and if properly implemented, can eliminate the need to buy as many servers or storage spindles.

Your CPUs can run a lot faster than they typically do, and the reason they don't is because they are waiting for IOPs from the storage. Eliminate that wait, and you can take full advantage of the CPU's performance speed.

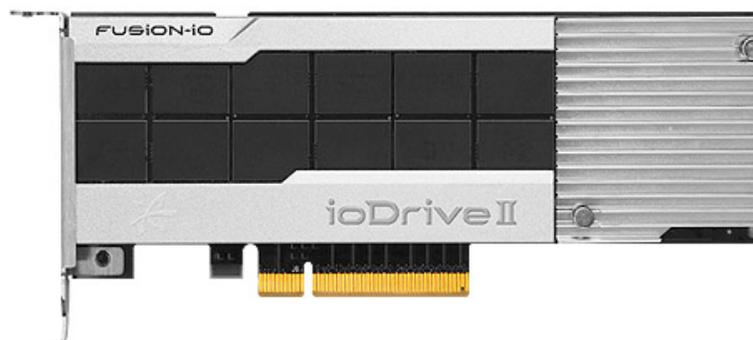
Storage-based Flash is typically in the form of Flash cards that are placed behind the storage controller in a storage array. In storage arrays, Flash is usually referred to as SSD, and, while fast, has a small performance hit because the data path goes through the storage controller.

There is one implementation of Flash in storage arrays that is a bit

different, and that's NexGen, now called Fusion-io ioControl.

Overall, Flash is an enabling technology that provides some of the biggest performance improvements we've ever seen. The potential savings are so large, you really should take a look at how you can move this technology into your data center.

Contact Roundstone Solutions and we'll help you take a look at Flash, and get you more performance and lower costs very quickly. We can be reached at (925) 217-1177 or [sales@roundstonesolutions.com](mailto:sales@roundstonesolutions.com).



Fusion-io ioDrive Flash card

# Time to get your network connectivity to 10GB, and to consider converging it

For many years, networking vendors like Cisco, Foundry Networks (now Brocade), HP, Juniper, and others have been selling products that allow for 10GB connectivity. It's possible for you to have 10GB speed to the desktop, and this isn't new.

Many companies have been more focused on making sure that they provide wireless coverage throughout their facilities, to permit the use of corporate and personal devices throughout their environments. That's important, but there's more to it.

We're now at a point where IP networks can go 40GB and 100GB in the data center. 40GB is usually used as uplink speeds between switches, and 100GB is about to be offered by a few vendors, led by Brocade.

If you haven't deployed 10GB throughout your network yet, you should take a serious look at doing it. Why? Because the nature of the way your company conducts business has changed, and more and more of your applications have moved into the network, and that's going to accelerate, not slow down.

On related topic, you probably run an entirely separate and additional network in your data center, Fibre Channel. It's been written that

Fibre Channel is dead, but don't believe it. The market for FC is still growing, and will for some time.

Brocade is the market leader in FC, and commands a greater than 70% share of that market. Speeds of 16GB are common, 32GB is about to be announced, and there are plans for speeds higher than that.

With two networks, how do you manage both? Today you're probably managing them separately, with different sets of tools. That's not really necessary, though, as there exists the ability to run both networks as one, using the same equipment for both.

It's called Converged Networking, and only two companies really offer it; Brocade and Cisco.

The benefits are simplification of the networks, reduced staffing needs, and reduced costs. Let Roundstone Solutions help you take a look at whether Converged Networking is right for you and your company.

We can be reached at (925) 217-1177 or [sales@roundstonesolutions.com](mailto:sales@roundstonesolutions.com).

We look forward to working with you.



# How do you acquire your IT technology these days?

How do you acquire your IT assets?

It used to be that when a company acquired technology, there were two separate conversations: 1) what do we need to acquire for our business, and 2) how do we acquire it?

There were three (3) possible answers to the second question:

- Purchase the assets outright
- Finance the purchase of the assets
- Lease the asset

Things have changed over the past few years, not the least of which is the availability of low interest rates, and the lack of any real residual value in the asset. So, most

acquisitions these days are outright purchases.

The Cloud has caused this discussion to be relevant again. After all, everything that goes into the Public Cloud is paid on a regular/monthly basis, much like a lease. For Private Cloud (your own data center) you're being asked to consider Public Cloud as a comparison, and since that option is a monthly payment, you end up needing a monthly payment approach for your own Cloud.

Roundstone Solutions' principal is very experienced in computer leasing and financing, and can

provide expert advice on the various options available for purchase.

One final note, there is an excellent option available for customers of Brocade networking equipment. It's called Brocade Network Subscription, or BNS. It's a rental program, month to month, and it's a great way to scale up and down. Brocade will include products other than networking products in the offering. It's one of the most aggressive programs in the industry, and it's there for you to take advantage of.

Contact Roundstone Solutions for help in how to acquire your IT assets.

## About Roundstone Solutions

Roundstone Solutions is an IT solutions provider, based in Northern California. Roundstone is focused on the data center environment for small, medium, and large enterprises. As more and more workload moves to the Cloud, we specialize in helping companies and public sector entities implement IT environments that are higher performing and lower cost than their previous environments.

Roundstone Solutions was founded by Tim Joyce, an industry veteran who has run similar companies for many years, always with an eye towards earning the highest level of customer satisfaction.

Please see more about Roundstone Solutions at [www.roundstonesolutions.com](http://www.roundstonesolutions.com)

Our blog can be found at [www.timjoyce-roundstonesolutions.blogspot.com](http://www.timjoyce-roundstonesolutions.blogspot.com)

We can be reached at (925) 217-1177

Our email address is [sales@roundstonesolutions.com](mailto:sales@roundstonesolutions.com)

**ROUNDSTONE SOLUTIONS INC.**  
383 DIABLO ROAD  
DANVILLE, CA 94526

(925) 217-1177  
[sales@roundstonesolutions.com](mailto:sales@roundstonesolutions.com)

