nimblestorage

Overcoming the Obstacles
to the All Flash Data Center

eBOOK

Steps you can take
now to prepare for the
all-flash data center.

Begin Your Journey >

There is widespread agreement among IT professionals that the data center will ultimately transition to flash as the primary storage technology.

However, there are diverging opinions on how to get there.

One thing is clear: the route to the all flash data center requires traversing a number of obstacles related to application performance, availability, manageability, scalability, disaster recovery and investment protection.

Plan Your Route to the All-Flash Data Center

Getting to all flash is one of the most important strategic initiatives that your organization will take in the next few years.

This eBook outlines concrete steps that you can take that will move you closer to your goal of all flash in a cost-effective and non-disruptive way.

By following these recommendations, your organization can avoid the missteps that others are making, for example, ripping out existing storage before you have realized the full return on your investment or introducing storage siloes that increase complexity.

Achieving the all flash data center is like climbing a mountain: it takes planning, organization and hard work— but it doesn't have to be painful. If you're ready to set out for the summit, keep reading.

Before you start the climb, it's important to have a clear picture of why you are climbing the mountain in the first place.

What do you hope to find at the summit?

The View from the Summit

Absolute Performance
The all flash data center needs to optimize performance, capacity and cost for every application, not just the mission-critical ones.

Non-Stop Availability
The all flash data center should deliver unprecedented levels of uptime, integrated data protection as well as the ability to use predictive analytics to predict and prevent potential issues.

Cloud-Like Agility
The all flash data center should offer effortless operations and on-demand capacity growth, resulting in cloud-like flexibility and agility.

OBSTACLE 1

Application Performance

The application performance obstacle arises because servers are faster than disk storage.

As a result, data-intensive applications such as virtual desktop infrastructure (VDI) and online transaction processing (OLTP) can't take full advantage of the available computing power, but instead must constantly wait for the storage system to deliver more data. Storage performance is a major cause of slow data delivery through your infrastructure stack.

SOLUTION

The Nimble Storage Predictive Flash Platform

The Nimble Storage Predictive Flash platform delivers absolute performance, non-stop availability, and cloud-like agility through predictive analytics and a Unified Flash Fabric™. With performance over 1.2 million IOPS at sub-millisecond latency your applications will take on a new life.

The Nimble Storage Unified Flash Fabric unifies All Flash and Adaptive Flash (hybrid) arrays into a single managed entity with common data services. Each type of array is optimized for a particular data center need.

Nimble All Flash arrays deliver absolute performance for those latency-sensitive VDI, OLTP and mission-critical database applications. Nimble Adaptive Flash arrays enable you to dynamically allocate storage resources to meet the fluctuating needs of business-critical applications in a more cost effective way.

By combining All Flash and Adaptive Flash into one, the Unified Flash Fabric eliminates the painful trade-off enterprises need to make between the cost of All Flash and the desire to use flash everywhere.

However, there's another obstacle looming: availability. Data velocity alone isn't enough — uptime is a crucial ingredient in realizing the full business potential of flash storage. And that's where predictive analytics comes in.

Availability

Users expect their applications to work, all the time and that means non-stop availability for storage — no downtime, no data loss, no breaches. Every vendor offers a plan for fixing a failed flash array, but most only start the process after the problem occurs.

SOLUTION

InfoSight Predictive Analytics

Nimble Storage InfoSight™ predictive analytics uses powerful data sciences, completely transforming the reactive, error-prone support and management experience into a proactive process for maintaining peak storage health. InfoSight predictive analytics monitors all

Nimble arrays from the cloud, gathering tens of millions of sensor data points per array each day. Powerful predictive algorithms enable administrators to visualize data growth patterns and identify looming capacity limits.

On the side, InfoSight predictive analytics pinpoint bottlenecks: application, network, hypervisor, operating system, or serve — providing an end-to-end view of the entire software and hardware stack in an easy-to-digest graphical presentation, using a simple Web browser.

The Nimble Storage solution is proven to be field reliable with measured uptime across our entire installed base is 99.9997%. Thanks to InfoSight predictive analytics, your storage infrastructure stays up all day and night — so you don't have to.

OBSTACLE 3
Manageability

Too often in today's storage infrastructures, individual applications are tightly tied to a specific storage technology, either all flash or hybrid, depending on performance needs. This siloed approach limits data mobility and negates some of the benefits of a virtualized environment.

Lacking a unified management framework, storage managers jump back and forth between tools from a number of vendors, making it all but impossible to optimize capacity and performance of the storage infrastructure.

SOLUTION
Unified Flash Fabric

Nimble Storage Unified Flash Fabric makes storage siloes disappear by combining Nimble All Flash and Nimble Adaptive Flash arrays to create a single managed entity. And that spells agility — cloud-like agility with effortless operations. Just a single click shifts workloads between all-flash and adaptive flash, without disruption to applications or users. Storage managers can stop wasting time on complex storage management tasks and start thinking about ways to make things better, a.k.a., innovation. InfoSight predictive analytics helps system architects forecast requirements, identify potential hot-spots and use prescriptive guidance to ensure optimal long-term performance.
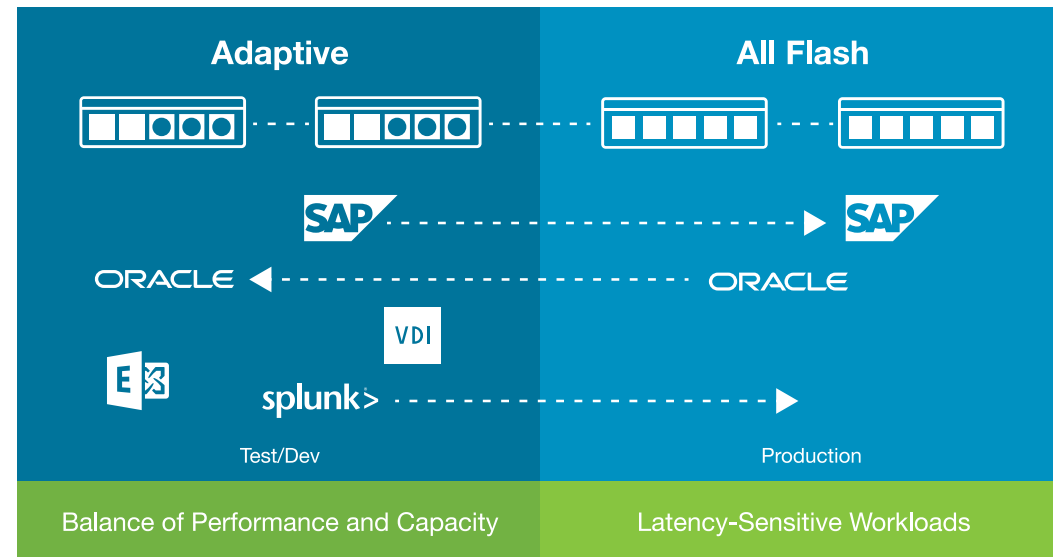
OBSTACLE 4

Scalability

Whether you choose a scale-up or scale-out architecture, the reality is most all flash arrays hit their ceilings pretty quickly and are unable to serve the capacity needs at an enterprise wide scale.

When you max-out, you either live with it or spend more money and increase complexity by adding islands of all flash arrays.

SOLUTION

Scale-to-Fit

The best approach is to scale performance and capacity independently and not be tied to either a scale-out or a scale-up architecture. Nimble All Flash arrays scales performance to over 1.2 million IOPS at less than 1ms latency and scales capacity to over 8PB by giving you the ability to scale in multiple dimensions with Scale-to-Fit.

Scale each component non-disruptively. Scale out by clustering arrays together. Scale up by swapping in a faster controller card with no downtime. Or scale deep for adding more capacity by adding expansion shelves. Put it all together and you get massive scale and flexibility to choose the modality to upgrade and scale to best suits your needs.

OBSTACLE 5

Disaster Recovery

Another challenge is how to implement disaster recovery. You can snapshot data to the all flash array, but replicating to another all flash array can be cost-prohibitive. Most enterprises have to compromise by adding additional tiers — disk and tape —and specialized backup and disaster recovery tools.

However, the resulting solution is highly complex, a ticking time bomb at your DR site. When a disaster actually happens can you be assured you can failover and recovery data quickly?

SOLUTION

Replication from All Flash to Adaptive Flash

The Nimble solution features seamless backup and recovery, no matter what the storage mix, at a third of the cost compared to other all flash vendors with no added complexity. All Nimble arrays are designed with efficient, fully integrated data protection built right into the platform.

The Nimble Unified Flash Fabric allows data to be seamlessly replicated from All Flash to Adaptive Flash arrays, eliminating the need for additional disaster recovery software or third-party cloud backup.

Production Storage

$$$

WAN Efficient
SmartReplicate

Cost Optimized Adaptive Flash

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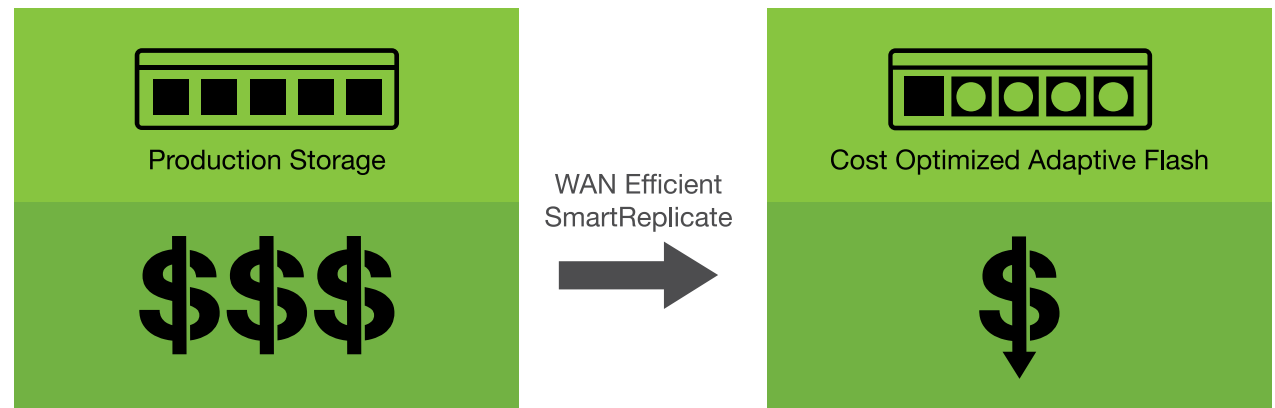
OBSTACLE 6

Investment Protection

As discussed earlier, system architects often face a no-win choice: How do you choose something now that not only meets your requirements today but also helps you transition to the future while avoiding the dreaded forklift upgrade?

SOLUTION

Timeless Storage

At Nimble Storage we are committed to providing the best customer experience. We believe customers deserve better and should not be forced into forklift upgrades or get nickeled and dimed with hidden cost. We back this up with our Timeless Storage™ guarantee that offers investment protection, included upgrades, and payment flexibility to keep the forklift out in the maintenance shed where it belongs.

With Timeless Storage, you get:

- All-inclusive licensing with free software upgrades
- Flat annual support pricing
- Option for free new and faster controller every 3 years
- Option to buy the array through a capital purchase or pay-as-you-go through Storage On Demand

Reaching the Pinnacle

Reaching the top has its rewards.

Here's what you can expect when you choose Nimble Storage:

- Absolute performance of more than 1.2 million IOPS with sub-millisecond latency
- Cut total cost of ownership by 33-66%
- Back-up, DR, and archival at one-third the cost of other solutions
- Non-stop availability measured at 99.9997%
- Cloud-like agility

Time to Get Climbing

The all flash data center may be your future, but flash storage is a fact of life today. You can be deploying All Flash and Adaptive Flash arrays now; there's no benefit to waiting.

While it's difficult to predict when you will reach the goal of the all flash data center, one thing is certain: users want ever-higher levels of performance and availability, and only flash can help you meet those expectations.

About Nimble Storage

Nimble Storage (NYSE: NMBL) is the leader in predictive flash storage solutions. Nimble offers a Predictive Flash platform that combines flash performance with predictive analytics to predict and prevent barriers to data velocity caused by complex IT infrastructure. Nimble customers experience absolute performance, non-stop availability and cloud-like agility that accelerate critical business processes. More than 7,500 enterprises, governments, and service providers have deployed the Nimble Predictive Flash platform across more than 50 countries. For more information visit www.nimblestorage.com and follow us on Twitter: @nimblestorage.