

WHOA.com Builds Its DaaS Offering on Nimbus Data All-Flash Storage Foundation

WHOA.com realized that to deliver a robust offering in the rapidly growing DaaS market, it first needed to put in place a flexible, high performance all-flash storage array. By implementing the Nimbus Gemini F600 all-flash storage array, WHOA.com has positioned itself to deliver a fully-loaded DaaS offering built on a storage foundation that will adapt to however fast this service offering grows.

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Challenges

- Entering DaaS market for the first time
- DaaS growth could be unpredictable
- Traditional storage arrays unable to meet performance requirements of DaaS
- WHOA.com had no prior experience using all-flash storage arrays
- All-flash array needed to support data reduction, modular deployments, deliver the best performance and support multiple storage networking protocols

Solution

- Nimbus Data Gemini All-Flash Storage Array

Benefits

- Delivered 8X the performance of a traditional storage array
- CIFS, FC and 40Gb Ethernet protocols positioned WHOA.com for anticipated growth
- Implemented compression and deduplication with no performance impact
- Used Nimbus modular architecture to put servers and storage in segmented configurations
- Using FC to support boot from SAN

“The Nimbus array was easily 8X faster than our traditional storage arrays.”

— Yunexy Eloy
WHOA.com Chief Information Officer

Overview

Desktop-as-a-service (DaaS) is already poised to be the next big service offering from cloud service providers (CSPs) and WHOA.com wants to be at the forefront of that wave. Yet to successfully deliver DaaS as a service offering depended heavily upon WHOA.com using a storage solution that was cost-effective, feature-rich and delivered high levels of performance. Using the Nimbus Data Gemini all-flash storage array, WHOA.com was able to put in place the storage foundation it needed to build and deliver a robust DaaS offering to its current and prospective customer base.

WHOA.com Profile

WHOA.com is a national leading provider of enterprise-class, secure cloud solutions for growing organizations. Located in Hollywood, Florida, WHOA.com's founders and executive leadership consist of experienced entrepreneurs and IT experts who bring technical knowledge and a proven track record for success. WHOA.com delivers enterprise-level cloud solutions with fast approvals and detailed problem-solving that directly saves its customers time and money.

Traditional Storage Arrays Provide No Upside for DaaS

DaaS is poised to be the next rapidly growing service offering from CSPs and WHOA.com, as a leading CSP, needed to provide “best in class” performance. As more enterprise companies seek to give their increasingly mobile workforces remote access to desktops and small and midsize organizations look for new ways to control IT costs, these companies collectively view DaaS as a solution that can either reduce desktop costs or may even be used to eliminate desktops altogether. In light of this trend, WHOA.com anticipates that many companies will expect it to deliver DaaS.

Despite DaaS' upside, WHOA.com's CIO, Yunexy Eloy, understood that a successful DaaS deployment was anything but plug-n-play. To make DaaS a viable and profitable service offering, WHOA.com needed a back-end storage solution that could scale up to at least 100,000 virtual desktops.

Complicating the issue, WHOA.com wants to deliver a fully loaded desktop to its subscribing DaaS clients. Each desktop would include Microsoft Office applications, a hosted Exchange mailbox, a SharePoint site and Microsoft Lync. Eloy says, “Each desktop could generate upwards of 165 IOPS. This means WHOA.com needed a storage solution that can eventually handle millions of IOPS.”

Having years of experience with traditional storage arrays, he knew that arrays with hard disk drives (HDDs) were not the answer. While many scaled to deliver the hundreds of TBs that DaaS needed, their capital and operational costs became excessive over time. Further, they could not deliver the number of IOPS that WHOA.com's enterprise caliber DaaS deployment would require.

Building a Foundation for Enterprise DaaS

Eloy identified early on in his selection process that flash storage was a key element to delivering a successful enterprise DaaS service offering. His early research into flash technology uncovered that a few all-flash arrays could potentially deliver millions of IOPS – more than enough to meet WHOA.com's anticipated performance needs. But performance was not enough. WHOA.com also needed a solution that gave it the flexibility to align its backend storage infrastructure with its current and future needs. Three features it specifically needed the flash solution to offer included:

- **Data reduction.** Virtual desktop images are very conducive to being compressed and deduplicated. This made it a necessity for the storage solution to offer both compression and deduplication features as they would optimize available storage space while controlling storage costs over time.
- **Multiple storage networking protocols.** Eloy foresaw a time coming where WHOA.com would

use protocols other than NFS running over 10Gb Ethernet. He wanted the flexibility to introduce and concurrently use CIFS, Fibre Channel (FC) and even NFS over 40Gb Ethernet as WHOA.com's storage networking requirements evolved.

- **Modular.** Eloy anticipates WHOA.com will eventually host up more than the initial 100,000 virtual desktops over time so he wanted the flexibility to modularly grow the storage solution to meet its anticipated growth. He says, "When we get to a 70 percent subscription rate on the current infrastructure, we will add incremental capacity for an additional 25,000 desktops."

Nimbus Gemini All-Flash Array Fits the Bill

Taking all of these requirements into consideration and comparing them against SolidFire and Pure Storage, only the Nimbus Gemini all-flash storage arrays fit the bill. Its inclusion of compression, deduplication, dense form factor and multiple storage networking protocols perfectly aligned with WHOA.com's current and anticipated needs which led to WHOA.com selecting the Nimbus Data Gemini all-flash array to serve as the storage foundation for its DaaS build-out.

As Eloy expected, the Gemini all-flash array more than met WHOA.com's DaaS performance requirements. To test the anticipated throughput load, WHOA.com used worker VMware appliances against both the Nimbus all-flash array and traditional arrays with spinning disks. It was no comparison.

It only took two (2) worker VM appliances running against the Nimbus Gemini all-flash array to accomplish what it took **20** worker VMware appliances running against a traditional storage array to accomplish. Eloy says, "The Nimbus array was easily 8X faster than our traditional storage arrays."

The three features that differentiated Nimbus from its competitors also immediately came into play. Since WHOA.com was testing Nimbus in its DaaS environment, it immediately took advantage of its compression and deduplication features to reduce the amount of storage capacity used by the virtual desktops. More importantly, Eloy saw no performance impact as a result of using these features and achieved a 9 to 1 deduplication ratio on his environment.

WHOA.com also immediately took advantage of Nimbus' modular architecture. While Nimbus offers

the flexibility to scale-out to larger storage configurations, WHOA.com preferred to configure the Nimbus Gemini array as a modular array so each one hosts about 4,000 virtual desktops. It does this to better evaluate performance, forecast trends and provide a level of physical security. Further, by segmenting Nimbus Data's arrays, they will align with WHOA.com's server environment.

"One analyst firm predicted that the DaaS market is going become extremely large in the next couple of years. Using Nimbus, we will be able to service even those desktops that have the most I/O performance intensive requirements."

— Yunexy Eloy
WHOA.com Chief Information Officer

Nimbus Data's support of multiple storage networking protocols also came into play sooner than Eloy anticipated. While WHOA.com still exclusively uses NFS, Eloy is already making plans to take advantage of its FC support. He says, "WHOA.com has some needs for boot from SAN which is a feature that we cannot accomplish using NFS. We will use FC to do that."

WHOA.com's DaaS Offering Rests on Solid Flash Foundation

From where WHOA.com sits, the future of DaaS looks very bright. But whether DaaS grows slowly or explodes out of the gate, by using the Nimbus all-flash storage arrays as the foundation of its DaaS offering, WHOA.com is positioned to succeed. The Nimbus Gemini all-flash array gives the performance that WHOA.com needs when they require it. The Gemini array also enables WHOA.com to better control their storage infrastructure costs with the use of the Nimbus HALO software which delivers compression, deduplication, dense form factor and the ability to support of multiple storage networking protocols on one array

Using Nimbus Data, WHOA.com feels very confident about its ability to provide DaaS to any company—from small businesses to large enterprises—in a manner that will meet that client's needs while enabling WHOA.com to scale to meet them. Eloy observes, "The DaaS market is going become extremely large in the next couple of years. Using Nimbus Data, we will be able to service even those desktops that have the most I/O performance intensive requirements." ■

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About Nimbus Data Systems

Nimbus Data Systems, Inc. develops award-winning **Sustainable Storage®** systems, the most intelligent, efficient and fault-tolerant solid state storage platform engineered for server and desktop virtualization, databases, HPC, and next-generation cloud infrastructure. Combining low-latency flash memory hardware, comprehensive data management and protection software, and highly-scalable multiprotocol storage features, Nimbus systems deliver dramatically greater performance at a significantly lower operating cost than conventional disk-based primary storage arrays, all at a comparable acquisition cost. www.nimbusdata.com



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