SOLUTION BRIEF

ATLANTIS™

Atlantis USX and VMware VSAN

vmware®

Unified Software-Defined Storage

The Transformation of the Datacenter

Datacenters are facing a storage crisis. Storage needs are doubling every two years and outpacing customers' ability to buy, manage and operate storage hardware. Datacenters are also in the midst of a fundamental transformation from inefficient silos of hardware to intelligent software-defined datacenters. However, the inefficiency of traditional enterprise storage in virtualized datacenters is driving exponential storage growth that is untenable with existing approaches.

The Inefficiency and Complexity of Storage Silos

Today, enterprises buy storage to match the specific capacity and performance needs of their applications. As a result, enterprises often end up with four or more classes of storage including SAN, NAS, All-Flash arrays and many forms of direct attached storage (DAS). Managing and maintaining these separate silos of storage is costly and inefficient. To make matters worse, enterprises are forced to over-provision either capacity or performance. This leads to waste and inefficiencies that drive up the cost of delivering and managing storage.

VMware Virtual SAN and Atlantis USX – Doing More with the Storage You Already Have

Atlantis USX together with VMware VSAN eliminate the inefficiencies of storage silos by unifying all storage types into a highly optimized pool of local and shared storage resources that are now available to all applications. Policy-based storage volumes then optimize capacity, performance and availability based on application needs. Storage utilization is optimized for each VM workload resulting in lower storage costs, better performance and increased flexibility. The joint solution amplifies VSAN storage capacity presented to applications, boosts application performance, simplifies management, and makes rapid on-demand provisioning a reality by automating the real-time creation and orchestration of storage.

Key Benefits

- **DAS Into Enterprise-Class Storage –** Lower cost by pooling local server disk, flash, SSD
- **Non-disruptive capacity scalability –** You can easily and non-disruptively expand the capacity of the Virtual SAN datastore by adding hosts to a cluster, as well as adding shared SAN/NAS arrays present on the network
- **More VMs on Existing Storage –** Deploy up to 5x more VMs per VSAN cluster
- **In-Memory Performance –** Boost IO performance of any VSAN cluster by up to 5x to accelerate performance intensive applications
- **Automated Deployment –** Push-button installation, configuration, and datastore creation across the datacenter
- **Flexibility –** Policy-based controls deliver optimal storage capacity, performance and availability to each VM using any class of storage; local and shared, file and block

SOLUTION OVERVIEW

The Atlantis USX™ with VMware Virtual SAN solution pools SAN, NAS, and DAS storage resources to lower storage costs, boost performance and increase scalability.

SOFTWARE-DEFINED STORAGE FOR ANY VIRTUAL WORKLOAD:

- Databases
- Microsoft Exchange
- Big Data
- Collaboration
- Test & Development

ATLANTIS USX + VMWARE VSAN

(3 Servers with 1 SSD and 6 SAS disks)

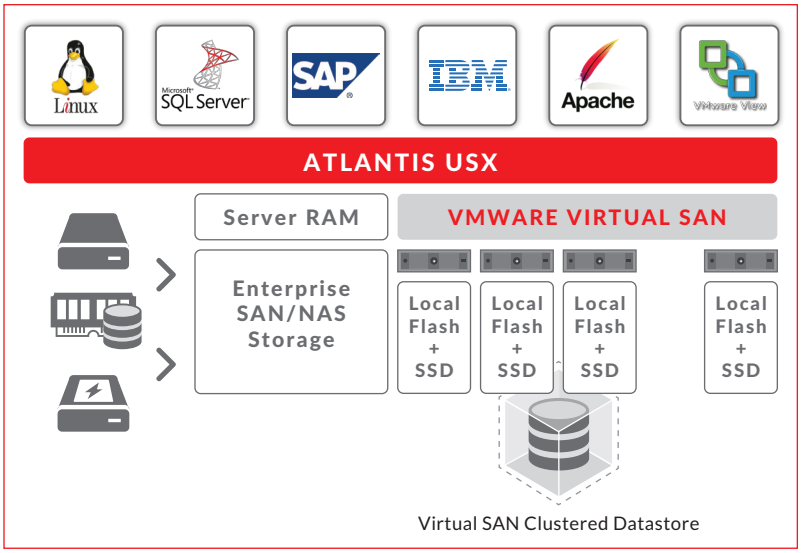
Total IOPS	117,090
Avg Latency	3.4ms
Boot Storm (375 desktops)	6 mins 10 secs (0.99s / desktop)
PassMark score	6795 7th best reported
Datastore Capacity Increase	4 – 5x

"Innovations in software will cause datacenter managers to deploy software-defined storage offerings to improve agility and quality of service (QoS) while optimizing costs."

— Gartner: G00255093

By 2016, server-based storage solutions will lower storage hardware costs by 50% or more.

— Gartner: G00255093



VMware VSAN with Atlantis USX

VMware Virtual SAN is a new software-defined storage tier that extends the vSphere Hypervisor to pool both compute and direct-attached storage. By clustering server direct-attached hard disk and solid state drives (HDDs and SSDs), Virtual SAN creates a shared datastore designed for virtual machines.

Virtual SAN is built into the vSphere kernel and implements a distributed architecture that leverages SSDs and HDDs for cost-effective data persistence. The technology is based on a highly available architecture with no single point of failure. It can withstand failures at the disk, server and network level with no data loss, thanks to built-in redundancy mechanisms that transparently store multiple copies of the data across disks and hosts.

Atlantis USX extends VMware VSAN by pooling VSANs with existing shared SAN, NAS and Flash storage, boosting performance and decreasing the amount of storage used by each virtual machine. ILIO USX delivers a number of data services that optimize the interactions with the underlying storage components. It also delivers Fast Cloning, storage provisioning and unified management across all datacenter storage hardware.

Atlantis USX – Unique In-Memory Storage Technology

Atlantis ILIO In-Memory storage optimization services, including IO processing, inline de-duplication, compression, coalescing, thin provisioning, data protection and high availability, are automatically applied at the compute layer to boost performance, reduce storage capacity, and ensure the availability and reliability of each storage volume.

- **IO Processing —** Atlantis USX processes IO operations in real-time at the compute layer to lower latency and reduce network traffic
- **Inline De-duplication —** Atlantis USX performs inline de-duplication in real-time on-the-wire with microsecond latency, eliminating up to 90% of storage IO traffic
- **Real-Time Compression —** Atlantis USX compresses the optimized blocks In-Memory with microsecond latency
- **IO Blender Fix —** Atlantis USX coalesces small random blocks generated by the hypervisor into larger sequential blocks, greatly improving storage access and efficiency
- **Thin Provisioning —** All Atlantis USX storage volumes are automatically thin provisioned with up to 10:1 consolidation.
- **Fast Clone —** Atlantis USX can clone full VMs in as little as 4 seconds with no network or storage traffic.

ATLANTIS™
The New Order of Storage Freedom

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