

MaxDeploy Ready

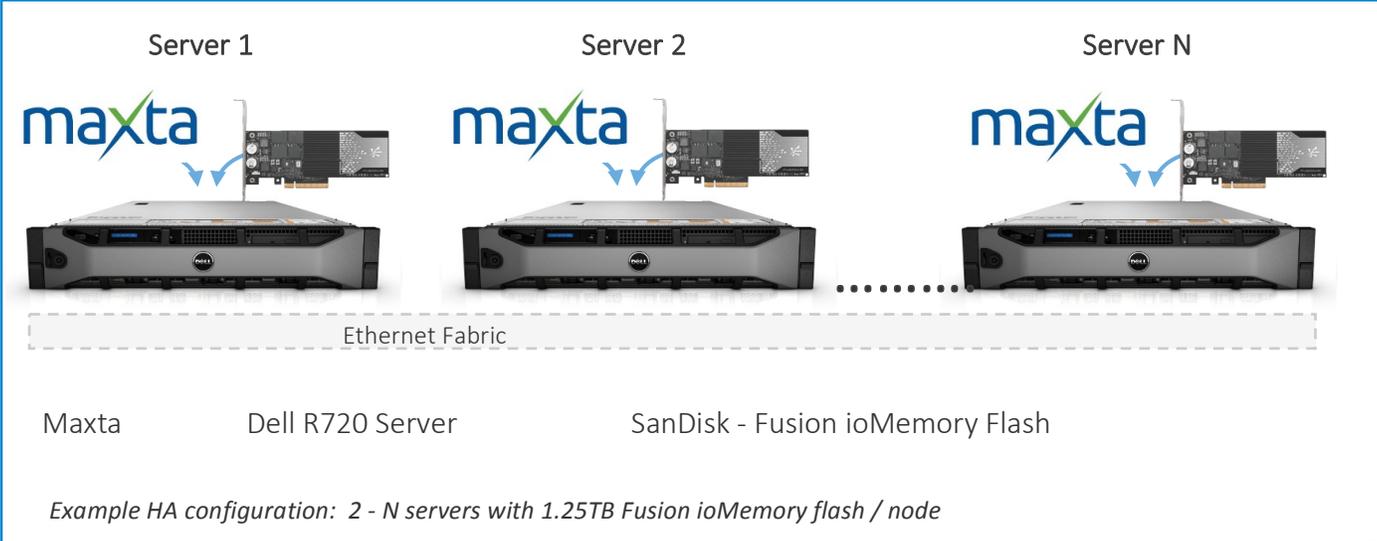
Hyper-Converged Virtualization Solution With SanDisk Fusion ioMemory products

MaxDeploy Ready products are configured and tested for support with Maxta software-defined storage and with MaxDeploy Reference Architectures. Maxta software-defined storage enables pooling of flash memory and locally attached disks across a virtualized cluster of any standard x86 server, delivering a converged compute and storage infrastructure. The server side flash is used as both read and write back cache to deliver enhanced storage performance. SanDisk Fusion ioMemory products offer a reliable flash tier with a unique architecture that Maxta customers can leverage to optimize the performance of their converged infrastructure deployments.

KEY SOLUTION BENEFITS

The combination of Maxta MxSP with SanDisk Fusion ioMemory Flash Acceleration and Dell R720 servers provides a cost-effective yet powerful solution in a small footprint. MaxDeploy ready, this solution delivers high performance for a range of virtualized workloads, is easy to manage and scales flexibly to meet current and future needs. Other important benefits include:

- Provides VM-centric enterprise-class reliability and data services
- Seamlessly integrates with VMware environments supporting vMotion, Storage vMotion, HA and Dynamic Resource Scheduler (DRS)
- Cost-effectively scales up VM performance density for more and larger VM workloads
- Dramatically simplifies IT by eliminating storage arrays, storage networking & storage management
- More than 100,000 IOPS in a 4 server cluster



CONVERGENCE, HYPER-CONVERGENCE

Software-defined storage platforms are disrupting traditional storage architectures (SAN & NAS) in the enterprise storage market. Enterprises, ranging from SMB, SME and large enterprises are beginning to take a page out of the book of the large public cloud providers like Amazon, Google and Facebook, where the IT infrastructure is a converged compute / storage scale out model. There are many different names used to describe this approach to storage such as Server SAN, Hyper-converged compute & storage infrastructure, software-defined storage, etc. The hardware building blocks are rack mounted industry standard servers with internal drives bays that can be populated with direct attached disk drives and SSDs. Intelligent software that runs alongside the applications in each server node abstracts and aggregates the pool of storage across the server cluster. Faster and cheaper CPUs, memory and flash technology has provided the leverage for intelligent software to deliver excellent performance, as well as all the data services required. Using this approach, NAS and SAN functionality can be delivered at a significantly lower cost. In many important application segments, this approach will offer superior performance, functionality and availability over traditional SAN & NAS.

This approach to storage is the de facto standard for the large public cloud providers. It is in the early stages of penetrating the enterprise storage market. Many industry analysts view that in the next 5 to 10 years, a majority of the enterprise storage market will shift to this approach. http://wikibon.org/wiki/v/The_Rise_of_Server_SAN

CONVERGENCE WITH VIRTUALIZATION

A smaller sub set of companies in this group have taken this approach to the next level. In addition to convergence, they provide integration into the server virtualization framework and deliver a VM centric storage framework, with full integration into the workflow and UI of the hypervisor. This approach allows for a single pane of glass management framework, where the VMs and associated storage can be managed seamlessly, significantly reducing the cost & complexity of managing storage. Maxta is a pioneer in this space, with its industry leading MxSP storage platform that exemplifies the best of the converged compute / storage model and a VM centric approach to managing storage.

COMPONENTS OF A MAXDEPLOY READY SOLUTION

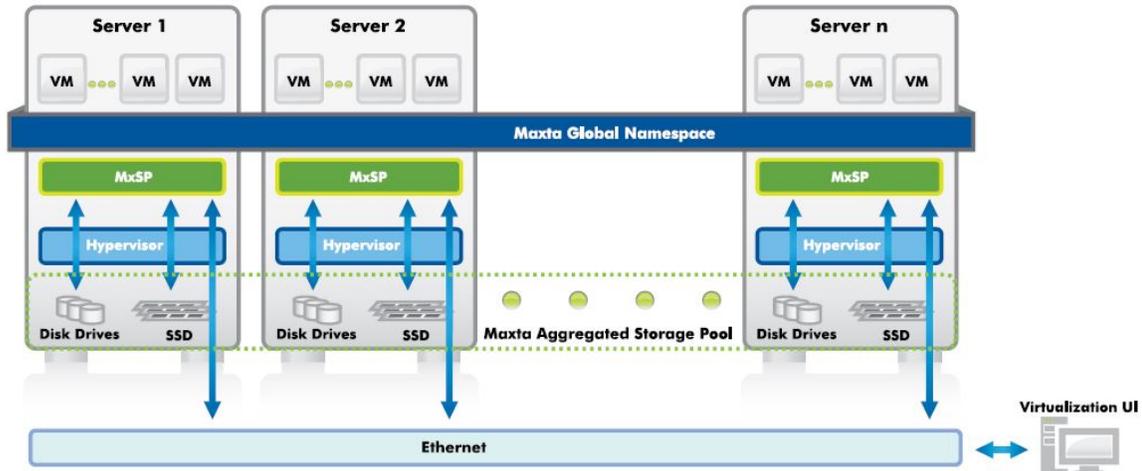
MAXTA STORAGE PLATFORM

The Maxta Storage Platform (MxSP) is a hypervisor-agnostic, highly resilient storage platform for the virtual data center, and is helping transform the enterprise storage market. It fully integrates with server virtualization at all levels from user interface to data management, while supporting all possible deployments of virtual data centers, including private, public and hybrid clouds. Through its software-only solution, MxSP turns standard servers into a converged compute and storage solution, leveraging server-side flash and disk drives to optimize performance and capacity. MxSP's distributed architecture enables shared storage with enterprise-class data services such as snapshots, clones, thin provisioning, compression, de-duplication, replication as well as full scale-out without performance degradation. This results in dramatically simplifying IT and significant cost savings.

The innovative, peer to peer architecture aggregates storage resources from multiple servers, assimilating a global namespace, creating a shared storage pool. An instance of MxSP software is installed on each of the servers that are part of the virtualization cluster. The storage resources are a combination of magnetic disk drives and SSD. All the servers running MxSP software have access to the aggregated storage pool.



MxSP intelligently maps VMs to storage resources, optimizing data layout for virtual workloads and leverages SSDs for read/write caching. It dramatically improves performance and eliminates the need for IT administrators to make difficult tradeoffs between performance and cost.



DELL SERVERS



POWERFUL AND BALANCED PERFORMANCE

Employ the newest Dell™ server technology, with high-density memory, balanced I/O and the latest processors, for your enterprise virtualization and business processing environments.

UNCOMPROMISING PRODUCTIVITY

Maximize your efficiency in demanding virtualization, databases and enterprise resource planning (ERP) workloads for midsize and large enterprises with the PowerEdge™ R720 rack server.

SANDISK FUSION IOMEMORY PCIE-BASED FLASH ACCELERATION

SanDisk Fusion ioMemory products provide break-through performance, scalability and efficiency. They are cost-effective high-performance devices that dramatically accelerate application workloads by connecting directly to the server PCIe bus to deliver unprecedented performance with the highest transaction rate per gigabyte. Featuring a highly simplified architecture and with capacities up to 6.4TB, each, Fusion ioMemory products feature enterprise class reliability and endurance and microsecond data access latencies for extreme performance density - satisfying even the most I/O intensive workload requirements and making the Maxta solution extremely cost-efficient.



I/O is one of the biggest barriers to effectively consolidating virtual environments. SanDisk Fusion ioMemory flash, with its industry-leading, ultra-low latency ioMemory technology eliminates this I/O bottleneck by making terabytes of high performance persistent memory available within each server—unlocking trapped CPU cycles, improving virtual machine workload capabilities and realizing virtualization’s true potential. Adding Fusion ioMemory products to servers as a high performance persistent memory tier dramatically scales up virtual machine densities and workload performance – attaining more, larger and higher performing VMs per server.

SanDisk Fusion ioMemory flash products solution benefits include:

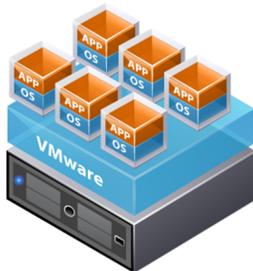
ioMemory

- Maximum consolidation and scalability
- Consistently fast response times
- Flexible and efficient resource utilization
- Increases virtual machine density and workload performance
- Extends virtualization to more I/O-intensive applications
- Reduces infrastructure power requirements and footprint,
- Improves compute economics making infrastructure investments more efficient
- Simplifies virtual environments and infrastructure while improving service levels



VMWARE VSPHERE

VMware vSphere is the industry-leading virtualization platform for building cloud infrastructures. It enables IT to meet SLAs (service-level agreements) for the most demanding business critical applications, at the lowest TCO (total cost of ownership).



vSphere accelerates the shift to cloud computing for existing data centers and also underpins compatible public cloud offerings, forming the foundation for the industry’s only hybrid cloud model. With the support of more than 3,000 applications from more than 2,000 ISV partners, vSphere is the trusted platform for any application.

MAXTA SOLUTION CONFIGURATION INFORMATION

Solution Components	Description
Number of servers	4 (Dell R720 servers)
Processor per server	2 x Six-core 2.4 GHz
Memory per server	128 GB
HDDs per server	4 x 1TB 7.2K RPM SATA
Flash per server	8 – 10% of HDD capacity (SanDisk Fusion ioMemory PCIe Flash)
Network configuration	Dedicated 10 GigE port for Storage communication
Maxta virtual machine	4 vCPU / 16GB memory - Can be tuned to deliver higher performance
VMware products	- VMware vSphere 5.5 - vCenter Server 5.5
Performance	60,000 – 100,000 IOPS

BENEFITS OF THE SOLUTION

DRAMATICALLY SIMPLIFY IT – MANAGE VMS, NOT STORAGE:

The solution dramatically simplifies IT by eliminating the need for storage provisioning and managing volumes, LUNs, file systems, and RAID. The installation and configuration of takes only few minutes. Additionally, all data services such as snapshots and zero-copy clones are configured and managed from the virtualization UI at the VM-level rather than from a storage specific UI at the storage-level. This enables the VM administrator to leverage storage without the need for deep storage and vendor specific expertise. This simplification along with converged compute and storage eliminates the day-to-day tasks of storage management and enables administrators to focus on managing applications and VMs.

MAXIMIZE CAPEX AND OPEX SAVINGS – LEVERAGE CONVERGENCE AND DELL SERVERS:

The solution enables significant capital savings by converging compute and storage resources on Dell servers, without compromising performance or scalability. This provides considerable up-front capital savings and even greater savings on upgrades compared to the capital expenses associated with purchasing and expanding storage arrays or storage appliances. In addition, leveraging disk drives, Fusion ioMemory Flash, snapshots, zero-copy clones, thin provisioning, in-line compression and in-line de-duplication increases storage efficiency and reduces storage expenses. By significantly simplifying IT, increasing IT efficiency, and enabling administrators to focus on managing applications and VMs, the solution enables dramatic reduction in operating expenses.



ENHANCE RESILIENCY, HIGH AVAILABILITY, DATA PROTECTION, AND AGILITY – PROVIDE ENTERPRISE-CLASS SERVICES:

The revolutionary solution achieves best-in-class resiliency and high availability with end-to-end data integrity and no single point of failure. With the solution there is no compromise to the enterprise-class features such as efficient snapshots, zero-copy clones, capacity optimization features such as thin provisioning, compression and de-duplication. Additionally the solution seamlessly supports all the VMware vSphere features such as vMotion, Storage vMotion, HA and Dynamic Resource Scheduler (DRS).

CONCLUSION

The MaxDeploy Ready products and solutions deliver a new way of deploying a hyper-converged software defined solutions for the virtual datacenter eliminating the need for SAN or NAS storage. This deployment provides a pre-defined and validated set of hardware and software solution for virtualized applications. The architecture will deliver the ability to combine the best-in-class technology for compute, storage and networking components. This delivers a simple and cost effective solution without compromising any features or performance to customers. For more information visit <http://www.maxta.com> or contact Maxta at sales@maxta.com

Maximize the promise of hyper-convergence!



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