MaxDeploy Reference Architecture Brief on Lenovo ThinkServer Family

MaxDeploy Reference Architecture delivers a new and flexible way of deployment hyper-converged solutions for the virtual data center by predefining and pre-validating solutions that combine Maxta Storage Platform (MxSP) along with partner solutions and platforms. This removes the interoperability and performance guesswork and simplifies ordering process. MxSP enables pooling of SSDs and locally attached disks across a virtualized cluster of any standard x86 server, delivering a simple, easy to deploy hyper-converged infrastructure solution.

Key Solution Benefits

The combination of MxSP with Lenovo Thinkserver Rack-Mount servers provides a cost-effective yet powerful solution in a small footprint. The 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:

- Maximize choice by enabling custom server configurations, any virtualization (vSphere, KVM), and OpenStack platform
- Maximize simplicity by streamlining IT management and providing VM-centric enterprise-class reliability and data services
- Maximize savings by reducing total cost of ownership and increase agility
- Cost-effectively scales up VM performance density for more and larger VM workloads

Lenovo ThinkServer Platform

Lenovo is known for its excellence in quality, reliability, and innovation — attributes that their customers find meaningful — at very competitive prices. With these attributes, Lenovo ThinkServer servers are perfect for a range of customers and use cases ranging from line-of-business applications in smaller firms to full data processing needs in mid-sized firms to distributed computing deployments in the largest of organizations.

Built for the Enterprise, ThinkServer provides self-healing through built-in fault diagnosis and automatic throttling when thresholds are exceeded. Interoperability for continuity with existing hardware and software is provided through strategic partnerships with top industry technology providers, and an intense focus on standards so that infrastructure pieces can be changed when the business changes, and includes integration with best-of-breed management consoles. ThinkServer provides more IT capacity in less space and more configuration options to fit your exact needs. Additional cost savings come from high efficiency power supplies.

System Configuration Information

Components	Description
Number of servers	3 (Lenovo ThinkServer RD340)
Processor per server	2 Socket 8 cores (Intel Xeon® CPU E5-2667 @ 3.30GHz)
Memory per server	64GB DDR3
HDDs per server	6x1TB 7.2K RPM SATA
SSDs per server	2x400GB SATA (Intel DC S3700)
Network configuration	Dedicated 1 GigE port
Maxta virtual machine	4 vCPU/8GB memory
Virtualization products	- VMware vSphere 5.x - KVM in CentOS 6.5 - RedHat Enterprise Linux 6.x
Management	- VMware vCenter 5.x - OpenStack Icehouse, Juno - Maxta Native Web Interface and API
Performance	28,000 – 70,000 IOPS @ 4K Block Size

Maxta Storage Platform

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 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 Hyper-Convergence:

The solution enables significant capital savings by converging compute and storage resources on Intel Server Boards and System 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 commodity disk drives, Intel SSDs, 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 virtualization features such as live migration, high availability, and load balancing.