

# Optimizing VMware Environments with Networked Storage Solutions

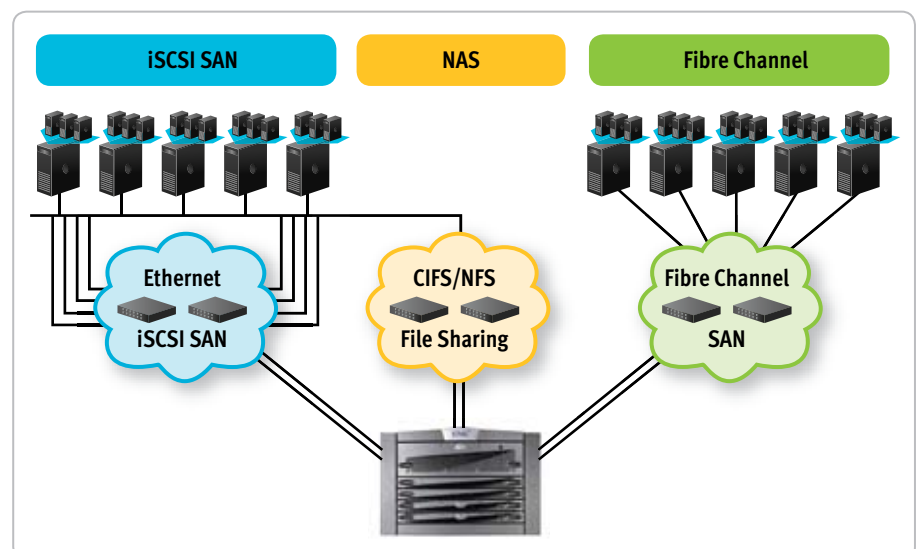
## Benefits of EMC Storage Solutions for VMware Environments

Realizing the full value of VMware® requires more than just server consolidation. It requires networked storage solutions that are designed to handle the increased volume of information being driven by the virtualized environment. Successful VMware deployments require flexible storage solutions that can respond to the dynamic nature of a virtualized data center. EMC has networked storage solutions that deliver the reliability, flexibility, and management features you need to accelerate and optimize the benefits of VMware.

- Unified storage: FC, iSCSI, NFS, and CIFS to satisfy all VMware storage needs
- Five-nines availability to protect data and keep applications running
- Quality of service (QoS) that dynamically adjusts storage resources to changing requirements
- Simple storage management software for ease of use
- Virtual provisioning to efficiently allocate storage for applications
- Tiered storage to balance performance, protection, and cost
- Virtual LUN technologies to dynamically allocate, expand, and move storage to meet changing requirements.

## Unified Storage

VMware supports Fibre Channel, iSCSI, and NFS protocols for storage of virtual machine (VM) file structures. Having the flexibility to choose the protocol that matches the application requirements in a single infrastructure provides the confidence to aggressively deploy VMware while having the ability to make adjustments as requirements change.



EMC and its partners offer innovative and affordable multi-protocol solutions that grow with your business and enable you to expand your virtualized infrastructure via integrated NAS, iSCSI, and FC. We can help you manage and realize the expanded capabilities of your virtualized infrastructure.

## Five 9s Availability

EMC unified storage systems maintain “no-compromise” availability. This means customer VMware applications continue to run at the same performance and service levels, even in the event of a failure, with 99.999 percent uptime.

## Storage QoS

VMware Distributed Resource Scheduler (DRS) dynamically allocates and balances computing resources to match application requirements. EMC® Navisphere® Quality of Service Manager (NQM) extends this functionality to adjust storage resources.

## Simple Storage Management

EMC storage arrays have easy-to-use GUIs for storage management. Wizards are available to perform the most common functions, such as storage allocation and expansion, or making array-based copies of VM data stores. Further, the NS20 multi-protocol array can be installed and provide file storage in just 15 minutes.

## Virtual Provisioning

Thin provisioning presents more storage to the server than has been actually allocated, thus reducing the amount of storage that must be provisioned. EMC Virtual Provisioning takes thin provisioning to the next level by providing automatic management of the thinly provisioned storage pools to minimize the risk of virtually provisioned devices running out of space. Virtual provisioning can significantly reduce the cost of deploying storage for hyper-consolidated VMware deployments.

## Tiered Storage

EMC storage systems support a wide range of RAID and disk types to match performance and cost to business requirements. For example, low-cost, high-density ATA drives can be deployed with RAID 6 for information archives. High-performance 15K RPM FC drives, required for the most-demanding application loads such as databases and e-mail, can run concurrently on the same system.

## Virtual LUN Technology

VMware Storage VMotion™ provides the ability to transparently move the storage for a virtual machine from one storage device to another. Virtual LUN technology scales this functionality to provide the movement of storage for tens or hundreds of VMs at a time within or between storage arrays.

## Fully Tested Solutions

EMC and VMware solutions are backed by industry-leading best practices, reference architectures, and strong investment protection. The bottom line—EMC has the widest range of storage platforms (EMC CLARiiON®, EMC Celerra®, and EMC Symmetrix®) and information infrastructure solutions to help you achieve your VMware vision.



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### Take the next step

Contact your EMC representative or EMC Velocity<sup>2</sup> partner today to find a partner near you. Let us help you choose the right storage platform, software products, and professional services you need.