vmware® | technology alliance PROGRAM

SOLUTIONS DATASHEET

Better Business Continuity with VMware Virtual Infrastructure and NetApp

Business Continuity Challenges

Implementing plans to ensure business continuity for key IT services is a requirement for organizations today. Downtime of important applications is a costly proposition and extended downtime can even be fatal—industry research finds that a significant number of companies that experience extended interruption to IT services soon go out of business.

While most organizations recognize the importance of business continuity, their ability to provide high availability and disaster recovery for key applications is often constrained by the following challenges:

- **High costs.** Many business continuity solutions require significant investment in additional hardware, software and services. Disaster recovery plans in particular often require duplicating data center infrastructure, resulting in a proliferation of costly, underutilized servers.
- **Failure to meet recovery time and availability goals**. Due to the cost and complexity of business continuity solutions, organizations are often forced to compromise on solutions that are unlikely to meet goals for availability and recovery time objectives.
- **Overly complex and unreliable solutions.** Requiring significant equipment and personnel resources, the complexity of specialized solutions make them difficult to maintain and harder to ensure that sufficient staff are trained and available when needed.

Higher Availability with VMware Virtual Infrastructure

VMware's groundbreaking VMotion technology allows IT administrators to move running virtual machines (software containers that hold a complete operating system and applications) from one physical server to another without downtime. This capability makes it possible to conduct zero-downtime hardware maintenance by simply using VMotion to move running applications to other physical servers as needed.

Support for redundant network and storage interface cards is built into VMware® ESX Server, allowing network and storage interface cards to be shared by multiple virtual machines on a server.

Better Disaster Recovery with Virtual Infrastructure

VMware virtual machines are hardware-independent and thus any physical server can serve as a recovery target for any virtual machine. As a result organizations can significantly reduce the cost of hardware for disaster recovery by repurposing underutilized existing servers for recovery targets and disaster recovery testing.

With VMware virtual infrastructure, complex multi-step procedures using specialized software for bare-metal recovery and operating system recovery can be simplified to single-step file recovery. Because virtual machines are completely encapsulated in a small number of files, they can be restored to any hardware. This encapsulation property also makes it possible to use third-party replication software to replicate entire virtual machines to a recovery site, reducing recovery time to just a few hours.

Virtual infrastructure enables a more reliable disaster recovery plan. Because it simplifies disaster recovery processes, the ability to meet time-to-recovery targets is improved, testing of disaster recovery plans is simpler, and training personnel in disaster recovery procedures is easier.

Benefits of Business Continuity Solutions with Virtual Infrastructure

Customers who have used VMware virtual infrastructure to improve their business continuity plans have realized benefits including the following:

- **Reduced downtime.** Customers can eliminate much of their planned downtime with a virtual infrastructure solution. They can also prevent and reduce unplanned downtime, including dramatic reductions in time to recovery for disaster scenarios.
- **Lower costs.** Virtual infrastructure makes it possible for companies to implement better business continuity at a lower cost by slashing the need for additional hardware and specialized software.
- **Simplified processes**. Virtual infrastructure removes the complexity of maintaining duplicate physical systems for disaster recovery. It also eliminates and streamlines much of the recovery process.

Learn More

To learn more about VMware solutions and products, visit our Web site at http://www.vmware.com or contact us at us at 1-877-4VMWARE.

Partner Solution Profile

NetApp
Simplifying Data Management

Key Highlights
Network Appliance, Inc.
www.netapp.com

Overview
With powerful storage provisioning and data protection, storage solutions from NetApp complement the manageability, utilization, and cost-saving benefits of VMware virtualization software.

Key Business Needs
Today's enterprise requires a scalable storage and server infrastructure that is simpler, more cost-effective and reliable with superior data protection, faster non-disruptive provisioning, and better performance and flexibility.

Key Business Benefits
Unified storage solutions from NetApp uniquely complement the manageability, utilization and cost-saving benefits of VMware software by providing simplified data provisioning and powerful storage-resident data protection across all IT protocols. This powerful server-to-storage virtualization solution makes utility computing real and affordable for enterprise environments.

Business Results
With VMware and NetApp solutions, IT organizations can expect faster ROI and better performance and availability by increasing utilization rates and simplifying data management—from servers to storage.

VMware and NetApp
NetApp and VMware provide unique server and storage consolidation solutions with technology integration that is jointly tested, serviced and supported. Principle features include:

- Dynamic data and application migration and automatic load-balancing
- Data protection without server downtime
- Disaster recovery through the encapsulation and replication features of VMs

Products
VMware Infrastructure 3 solutions (VMotion, VMware DRS, etc.) require network storage. All applications that run on ESX Server or VMware Infrastructure 3 can benefit from the NetApp server-to-storage virtualization infrastructure solution.

Partner Products
Network Storage: FAS-Series, StoreVault and NearStore; Software: FlexVol, SnapShot, SnapDrive, SnapManager, FlexClone, SnapVault, OSSV, SnapRestore, SnapMirror, FlexShare, MetroCluster

NetApp Storage Virtualization Solutions Simplify Data Management for VMware Environments

A virtualized infrastructure—from servers to storage—maximizes data center utilization, performance, resiliency and ROI.

Industry Overview

Server consolidation and virtualization are critical factors to consider when building an enterprise infrastructure that is efficient, scaleable and cost-effective. While customers can experience dramatic improvements in server utilization and manageability with VMware software, these benefits can place greater demands on storage subsystems to support higher I/O rates, greater capacity and faster non-disruptive provisioning, backups and restores. A complete server virtualization or consolidation strategy should consider storage as well as servers. NetApp offers data protection, management and storage virtualization solutions for VMware environments that dramatically reduces complexity and cost throughout the data center.

Solution Overview

Unified storage solutions from NetApp complement the manageability, utilization and cost-saving benefits of VMware software deployments. NetApp solutions enable powerful thin provisioning, simplified data protection and scalable and consistent I/O performance for all IT protocols across NAS, Fibre Channel and iSCSI SAN. Some of the key features of the NetApp storage virtualization solution include:

- **NetApp FlexVol** technology enables IT organizations to create multiple flexible volumes on a large pool of disks, aggregate I/O across all physical disks on NFS, iSCSI or Fibre Channel. Users can dynamically allocate storage and add storage capacity as needed without downtime.
- **NetApp FlexClone** provides instant clones of VMs without impacting server resources and requiring additional storage capacity.
- **NetApp Snapshot** allows VMware users to make fast and space-efficient backup copies of active data with negligible performance and storage overhead.
- **SnapMirror** protects data and accelerates recovery, by providing a simple, efficient way to replicate data between systems in multiple locations using multi-transport (IP and FC) and frequency choice (sync, semi-sync, and async) options while only transferring changed blocks.

Network Appliance storage systems offer powerful, flexible provisioning capabilities that give IT storage specialists the ability to lower cost while meeting the capacity, utilization, and performance requirements of VMware environments.

Solution Benefits

- Unsurpassed Flexibility: Accelerate new virtual machine deployments with instant, low-overhead storage cloning; reduce the backup windows needed for large amounts of data.
- Cost-effective storage for virtual machines: Rapid and cost-effective thin provisioning with FlexVol allows you to procure only the storage that is used.
- Solid, cost-effective and flexible data protection, high availability and disaster recovery: Superior NetApp Snapshot technology offers instant full backups at no performance impact; low-overhead dual-parity RAID provides 10,000 x data protection of RAID5, with better efficiency; full range of cost-effective Enterprise-class HA and DR options that are easier to deploy.

Lower Costs

- VMware Infrastructure 3 reduces hardware costs up to 50% and reduce operations costs up to 80%.
- NetApp Storage offers one of the lowest TCO in the industry with a thin provisioning model that lets customers buy only what they use.

Simplified Management

- VMware Infrastructure 3 enables server consolidation ratios of 10:1 to 20:1 and is optimized to run all major operating systems.
- NetApp Storage manages two to three times more storage than typical networked storage environments; it enables unified software and usage: FC, iSCSI, NFS.

Increased Flexibility and Utilization

- VMware Infrastructure 3 reduces server provisioning time—from days to minutes, while increases utilization rates by up to 75%.
- NetApp Storage enables fast ESX Server backups and restores using minimal disk, while reducing provisioning time by 40% with no impact on servers.

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