SOLUTIONS BRIEF

VMware Solutions for Small to Medium Businesses

Ensuring Rapid, Reliable and Affordable Disaster Recovery

> *"VMware Infrastructure 3 strengthens IT infrastructure, addressing challenges such as stability and disaster recovery.*
>
> *"Any IT manager looking to streamline his daily workflow should consider VMware across all areas, from disaster recovery to stability and backups. You name it, there's an area where VMware can help improve efficiency."*
>
> *Aaron Kincer , IT Manager*

High Availability and Disaster Recover Provide Key to Survival

Ensuring that all of the systems and applications that run the business are protected against outages has never been more important. But small and medium businesses (SMBs) continue to face challenges and tradeoffs when implementing disaster recovery (DR) programs. Traditional solutions for protecting against outages have been costly and complex, forcing organizations to accept lower levels of protection for all but a few key applications.

IT managers are now seeking effective and affordable solutions to minimize unplanned downtime when hardware failures occur. In addition to unplanned outages, SMBs also seek to reduce downtime for planned activities, such as hardware maintenance, firmware updates, and server reconfiguration.

According to primary research, VMware has found that the key challenge for all SMBs is providing effective back up, recovery and high availability (HA) of key applications and data, to address planned and unplanned downtime issues. Most have implemented at least a basic level of data protection (such as tape backup), but backup and restore alone cannot deliver the rapid and reliable DR capabilities that organizations need. Affordable HA and DR solutions are critical to the survival of all SMBs in the event of a disaster.

The Risks of Inadequate Planning

The risks of poor DR planning can be catastrophic. It has been estimated that between 60-90 percent of mid-sized companies (<1,000 employees) that don't have a proactive DR plan find themselves out of business within 24 months of experiencing a major disaster. The Underwriting Guide for insurers by A.M. Best found that only 6 percent of mid-sized companies that suffer catastrophic data loss survive – 43 percent never reopen, and 51 percent close within two years of the disaster.

Implementation of a reliable DR strategy with fast time to recovery has traditionally been expensive, largely because it has involved maintaining recovery equipment in another location that mirrored the equipment in the primary data center – then sat idly until needed. As a result, many SMBs made dangerous compromises, such as limiting disaster coverage to only the most critical applications, employing manual processes to recover on dissimilar equipment, or simply baking up to tape and hoping they will have access to working backups when needed. But these methodologies put companies at tremendous risk of insufficient protection in terms of application coverage, acceptable downtime and reliability of recovery.

Components of a Sound DR Plan

Reliable backup and high availability strategies are essential for any DR plan:

Backups

Backups provide the first layer of protection in a comprehensive DR plan. IT staff must ensure the integrity of all media and test the backups regularly to make sure data can be easily restored. It is also essential to store backup copies off-site in case of local or regional disasters, such as fires or earthquakes. Tape is still the most common and affordable backup media, but restoring from tape can be very problematic.

Efficient and reliable backups form the foundation of a complete DR strategy. But to restore operations, IT teams still face many hurdles. They have to obtain replacement hardware, reinstall operating systems, and reconfigure all software applications. All of these processes can be very difficult and time-consuming since it is essential to restore every setting to exactly the way it was before the disruption.

High Availability

The next layer of a comprehensive disaster recovery plan is ensuring high availability of applications and servers. Traditional highly available systems consisted of a single, high quality, multi-purpose physical system with comprehensive internal redundancy running all interdependent functions – paired with a second, identical system at a separate physical location. These HA environments provide two of everything, including power supplies and network cards. Clustering or load balancing provided the software redundancy. This type of architecture grouped several computers together so that if one failed, others could handle the load. Clustering and hardware redundancy provides an effective – but expensive and complicated – solution for ensuring high availability.

SMBs can now achieve their DR goals and more by leveraging cost-effective virtual infrastructure solutions. As the leader in virtualization, VMware enables small and mid-sized businesses with simple and affordable, yet powerful DR that go well beyond creating backup copies of all data, to encompass high availability and comprehensive disaster recovery capabilities.

Leveraging Virtualization to Optimize Availability

VMware virtualization solutions enable SMBs to eliminate planned and drastically reduce unplanned downtime, deliver HA, and be better prepared for a disaster – without large investments in duplicate hardware or the complexity normally associated with clustering. VMware Infrastructure makes DR economically feasible for small to mid-size enterprises and provides always-on coverage capabilities that until now have not been possible for SMBs.

VMware infrastructure simplifies IT computing architecture by providing a layer of abstraction between the computing, storage and networking hardware, and the software that runs on it. VMware Infrastructure provides the server virtualization and management software SMBs need to create affordable DR, enabling businesses to lower IT costs through increased efficiency, flexibility and responsiveness.

"Robust DR used to be affordable and manageable only by large enterprises. However, the introduction and maturation of several key technologies, such as virtualization, has brought affordable and easily implementable DR to small and mid-sized companies."

"Disaster Strikes! Is your Business Ready? Disaster Preparedness for Mid-Sized Firms", Yankee Group, February 2008

VMware Platforms:

- **VMware ESX 3**

  VMware ESX 3 serves as the foundation for delivering virtualization-based distributed services to IT environments. A core building block of VMware Infrastructure, VMware ESX is a robust, production-proven virtualization layer that abstracts processor, memory, storage and networking resources into multiple virtual machines (VMs) that run side-by-side on the same physical server.

- **VMware ESXi**

  VMware ESXi offers a scalable, cost-effective virtualization platform for SMBs. It offers all the same functionality as VMware ESX 3, but with a thin 32 MB footprint that provides unparalleled security and reliability, while integration as server firmware makes deployment fast and easy.

VMware Infrastructure:

- **VMware Consolidated Backup**

  VMware Consolidated Backup enables LAN-free backup of VMs from a centralized proxy server. Consolidated Backup enables IT staff to eliminate backup traffic from the network to improve the performance of production VMs.

- **VMware Distributed Resource Scheduler (DRS)**

  VMware® DRS enables SMBs to align IT infrastructure with business goals by dynamically and intelligently allocating and balancing computing resources to the highest priority virtual machines. VMware DRS continuously monitors utilization across resource pools and intelligently allocates available resources among the VMs based on pre-defined rules that reflect business needs and changing priorities.

- **VMware High Availability (HA)**

  VMware® HA provides pervasive, cost-effective failover protection within the virtualized IT environment. Ideal for unplanned downtime, VMware HA helps SMBs deliver high availability across the entire virtualized environment without the cost or complexity of traditional clustering solutions.

- **VMware VMotion**

  VMware® VMotion technology enables the live migration of running virtual machines from one physical server to another with zero downtime, continuous service availability, and complete transaction integrity. VMotion technology enables the creation of the dynamic, automated and self-optimizing data center.

Management and Automation:

- **VMware VirtualCenter**

  VMware® VirtualCenter delivers centralized management, operational automation, resource optimization and high availability to virtualized IT environments built with VMware Infrastructure. Centralized management capabilities provide a unified view of the entire environment and operational automation, enabling rapid provisioning, increased productivity and improved responsiveness to business needs.

- **VMware VirtualCenter Foundation**

  VMware® VirtualCenter Foundation delivers all the functionality offered in VMware VirtualCenter, however this version is designed for the SMB that only needs to manage three physical hosts.

- **VMware Site Recovery Manager**

  VMware® Site Recovery Manager uses virtualization to provide DR management and automation for the virtual datacenter. Site Recovery Manager leverages VMware Infrastructure and leading partners' storage replication software to deliver centralized management of recovery plans, automate the recovery process and enable dramatically improved testing of recovery plans.

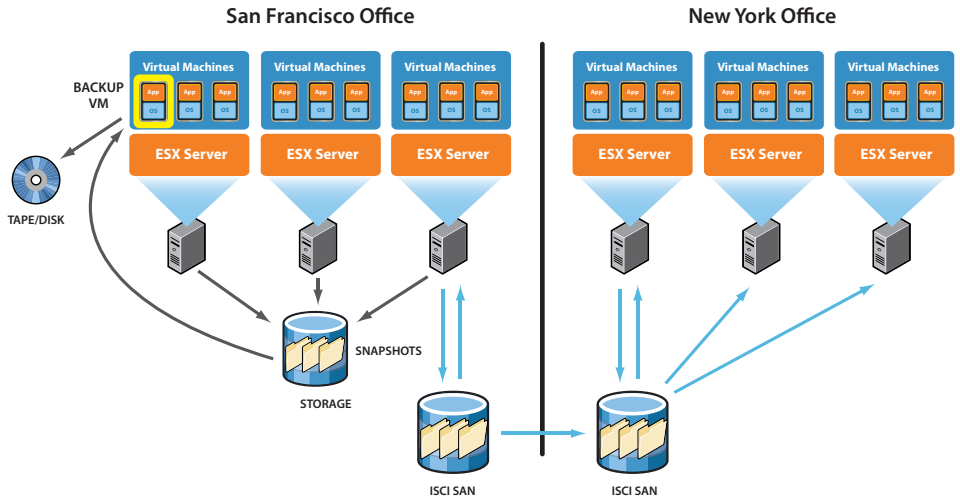
Enterprise-Class Functionality in Four Deployment Sizes for SMBs

VMware Infrastructure Acceleration Kits enable SMBs to optimize existing IT investments while providing enterprise-class benefits of virtualization, including DR, HA, simplified IT management, and reduced energy costs.

- **VMware Infrastructure Foundation Acceleration Kit** – This kit is for SMBs looking to simplify back-up processes; consolidate servers or contain server sprawl; reduce power consumption; and simplify server provisioning, patching, and management.
- **VMware Infrastructure Standard High Availability (HA) Acceleration Kit** – For environments in which high availability of infrastructure and data is critical, this solution gives the ability to ensure business continuity, while providing all the additional benefits virtualization offers.
- **VMware Infrastructure Midsized Acceleration Kit** – This kit serves the needs of SMBs looking for enterprise-class solutions with all of the benefits VMware virtualization offers, including business continuity using VMware VMotion technology. This kit is ideal for organizations that don't need to manage more than three physical servers hosting virtual machines.
- **VMware Enterprise Acceleration Ki**t- This kit is designed for the SMB that is ready to get all the functionality offered in the Enterprise edition,much like the midsized acceleration kit, but expects to add more licenses to its environment to support its growing business needs. The management platform in this kit allows for additional physical machines with VMs on them to be added as needed.

Sample Customer DR Architecture

The following diagram illustrates how VMware allows SMBs to build a dynamic IT environment that serves as the foundation for an effective DR plan. With VMware Vmotion, DRS and HA, local and remote sites become "resource pools" that dynamically allocate VMs to best serve the needs of the business and provide continuous uptime during a disaster.



The grey arrows show how customers may still back up their local sites to tape or disk; while the blue arrows show how replication and the use of a SAN can enable dynamic allocation of resources at a local or remote site, in the event of downtime or a disaster.

The Benefits of VMware

VMware delivers practical solutions for preventing and minimizing downtime by making effective DR and HA affordable, simple and reliable. With VMware virtualization solutions, SMBs can:

- Make rapid DR attainable, rather than relying on time-consuming restoration from tape or disk backups.
- Extend DR protection to all important systems, not just a privileged few.
- Increase availability across all applications independent of OS and hardware used.
- Minimized outages and unplanned downtime.
- Eliminate planned downtime for many types of maintenance by migrating running workloads to other servers, without downtime or service interruption.
- Dramatically reduce infrastructure costs by consolidating servers.
- Build recovery infrastructure using existing servers, rather than installing identical duplicate servers for recovery.
- Cut operational costs related to power, cooling and infrastructure management.
- Eliminate dependencies of recovery plans on physical server hardware.
- Enable realistic, frequent tests of recovery plans, without the cost and complexity of traditional DR testing.

Find Out More

For more information or to purchase VMware's SMB products, call 1-877-4VMWARE (outside of North America dial +1-650-427-5000), go to http://www.vmware.com/smb/ or visit the VMware online store at http://www.vmware.com/vmwarestore/. Or, search online for an authorized VMware reseller at http://www.vmware.com/partners/

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