

# Protect Your Business with Automated Business Continuity Solutions

## OVERVIEW

VMware makes business continuity simple and affordable, so no company operating a single-site or multiple-site environment has to do without it. VMware solutions come with dependable business continuity built in—to protect all of your virtualized applications and data against system failures—and add-ons to eliminate planned downtime, too. With VMware business continuity solutions, there is no disruption to users or operations.

## KEY BENEFITS

- Simple, one-click high availability
- Reliable, automated disaster recovery (DR)
- Nondisruptive backup and recovery

## SAMPLE CUSTOMER ROI

- Increased an IT organization's capacity to support business by a factor of 3, without adding staff
- Decreased recovery times by 80 percent
- Decreased an organization's DR costs by 50 percent, whereas DR capabilities increased by a factor of 5
- Eliminated \$400,000 in annual costs for a third-party DR service
- Saved \$200,000 in yearly payroll costs in an IT department
- Reduced maintenance costs by \$150,000 per year
- Enabled DR testing as needed, instead of forcing the organization to recover all data from tape, from a cold facility—a process that took up to a day and a half<sup>3</sup>

If your IT systems went down right now, would employee productivity plummet? Would project schedules slip, costs increase and product quality suffer? Would an IT service interruption cost you customers and revenue? Could it so severely impact customer satisfaction and your brand's reputation that the effects would be felt long after services were restored?

IT downtime damages business. Routine maintenance, unexpected hardware failures and natural disasters can all negatively impact how and when your business-critical applications are delivered, increasing costs and customer concerns. And outages can occur for reasons beyond technology—from inadvertent human mistakes to process changes. Unfortunately, it is during downtime that many businesses realize how unprepared they are to quickly get key applications and IT infrastructure operational again.

Without effective solutions, IT systems can take hours—even days—to restore. The most severe outages can be catastrophic. Forty-three percent of companies that experience disasters never reopen, and 29 percent close within two years,<sup>1</sup> reports McGladrey & Pullen. The U.S. National Archives and Records Administration found that 93 percent of businesses that lost their datacenter for 10 days went bankrupt within one year.<sup>2</sup>

Because you and your customers rely on your IT systems every day, you need a business continuity solution that protects against downtime—a system that, when the unexpected happens, gets you up and running in seconds or minutes, not days or weeks.

## Prepare to Prevent Service Interruptions

Delivering continuous service and minimizing downtime across one or more sites requires preparation. Like buying insurance, deploying business continuity solutions can safeguard your organization against the unknown, providing protection that you hope never to use. These solutions may even be considered a cost without a benefit—until they become the difference between business survival and bankruptcy. Always-available IT systems require an IT management approach simultaneously focused on

- **Preventive management** – Business continuity processes and technologies that help to avoid a loss of service by ensuring that critical applications are healthy and continually accessible to end users and customers.
- **Reactive management** – Disaster-recovery plans, processes and technologies to help recover from a failure or the loss of one or more services.

## Overcome Cost and Complexity Challenges

High availability and effective recovery plans for the entire IT portfolio are goals for every business. Yet traditionally these advanced capabilities have been too expensive and complex for businesses with midsized virtual environments to deploy and maintain, which is why many of these businesses are operating with

- **Incomplete coverage** – Good application availability protection is available only for a few critical production workloads because of the cost and complexity required to modify existing IT environments. This leaves workloads—such as file/print servers, internal Web servers and departmental applications—unprotected or poorly protected when an outage occurs.

<sup>1</sup> TechNewsWorld. "Virtualization Can Bulletproof Disaster Recovery Plans." John Biglin, March 4, 2009.

<sup>2</sup> U.S. National Archives and Records Administration. 2010.

<sup>3</sup> VMware Case Study. "Peoples Bancorp Inc." 2011. VMware Case Study. "With VMware Virtualization, Myron Steves Cuts Disaster Recovery Times—And Costs." 2011. Briefings Direct Podcast. "For Acordia Therapeutics, Disaster Recovery Protects Vital Enterprise Assets and Smooths Way to Data-Center Flexibility and Migration." May 8, 2012.

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*“By rehearsing our SAP upgrade on a VMware private cloud hosted by Texperts, we eliminated the chance that the upgrade would put our business operations at risk.*

*Virtualizing our SAP environment has also reduced our capital and operating costs, improved availability, and simplified disaster recovery.”*

– Paula Neil, IT System Manager, Accounting, Finance, Human Resources, and Legal for Mazda North American Operations

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- **Paper “runbooks”** – Disaster-recovery plans recorded in paper runbooks are costly to create and time-consuming to read and update. When executed, these detailed plans often require trained personnel to establish duplicate datacenters or infrastructure, and to interpret the plan’s accuracy for activities such as getting data to a recovery site and restarting servers. During outages, many businesses have found runbooks ineffective for achieving recovery time objectives (RTOs).
- **Inadequate testing** – Unreliable disaster-recovery plans exist because businesses have invested few IT resources in creating, testing, maintaining and updating them. When tested, many fail because of human error. When successful, basic recovery of critical workloads often takes hours, if not days or weeks, missing established continuity goals.
- **No alternate locations** – Maintaining the resources necessary to immediately establish and manage a second location for recovery is cost-prohibitive for most single-site businesses. It also adds complexity to an already brittle and typically fractured IT infrastructure.

### Extend Your Virtualization Investment to Achieve High Availability

Server consolidation through virtualization reduces costs and simplifies IT. Now you can extend your virtualization investment in VMware vSphere® with Operations Management™, the industry’s leading virtualization platform, to achieve high availability and improve quality of service.

VMware solutions make business continuity a reality by leveraging inherent virtual-machine characteristics such as partitioning, isolation and hardware independence. These capabilities help to ensure that failure of a service in one virtual machine does not affect other services or virtual machines on the same hardware. Moreover, they support virtual-machine provisioning onto one physical server and then moving that virtual machine to another physical server in a pool to avoid or recover from hardware fault situations. They also help scale virtual machines and services, providing better resource utilization across a pool.

vSphere features built-in VMware vSphere High Availability, VMware vSphere Fault Tolerance, VMware vSphere vMotion® and VMware vSphere Storage vMotion®. With vSphere, you don’t have to purchase separate products to gain high availability across your entire virtualized IT environment; rather, it is included in vSphere without the cost or complexity of traditional clustering solutions. You can minimize unplanned downtime with vSphere High Availability. In the event of physical server failure, affected virtual machines are automatically restarted on other servers with spare capacity. If an operating system fails, vSphere High Availability restarts the affected virtual machine on the same physical server. vSphere Fault Tolerance extends vSphere High Availability by providing even greater levels of protection for your mission-critical virtual machines. Enabling vSphere Fault Tolerance on virtual machines in your vSphere High Availability cluster can mean zero downtime and zero data-loss protection of your workloads against server hardware failure.

VMware also helps you eliminate planned downtime for server and storage maintenance. vSphere vMotion migrates virtual machines from one vSphere host to another while the virtual machines continue to run with no impact to end users. You can perform server maintenance and upgrades without scheduling downtime and disrupting business operations, and proactively move virtual machines away from failing or underperforming servers. With vSphere vMotion, you can dynamically reconfigure the placement of your virtual machines across vSphere servers according to changing hardware events or business policies.

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*“Virtualizing mission-critical applications has enabled our IT organization to become more responsive to all of our lines of business. Even more important, it has improved the uptime of applications that impact our customers.”*

– Steve Nulter, Senior Vice President and IT Director, Peoples Bancorp Inc.

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*“... basing our disaster-recovery infrastructure on VMware software has enabled us to get servers up and running in just eight minutes, compared to eight hours with our previous configuration.”*

– Steve Fountain,  
IT Director, Markel International

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By adding vSphere Storage vMotion to migrate virtual-machine disk files from one datastore to another, you can eliminate end-user service disruption. You can simplify storage array migrations, maintenance and upgrades, and you can dynamically optimize storage I/O performance. With vSphere Storage vMotion, you have the flexibility to take control of your storage operations.

Because having enough IT resources is always a concern, vSphere Storage Appliance helps you achieve the benefits of shared storage without the cost and complexity. A software-based shared storage solution, it transforms the local storage within your servers into a shared storage resource that runs your virtualized applications. It enables you to realize the high availability and automation capabilities of vSphere without the requirement of shared storage hardware. With vSphere Storage Appliance, you can configure vSphere continuous availability features for your business applications in just a few clicks.

### **Better Protect Your Data and Your Business**

By further leveraging inherent virtual-machine capabilities, vSphere provides greater protection—simply and cost-effectively—for the data that runs your business. Encapsulation enables the entire state of a virtual machine to be saved to a set of files that can be easily backed up and recovered in the event of a failure. These files can also be moved from one server to another—locally or across locations—as resource demands change. vSphere features automated backup to protect your business data across your virtual machines, helping to ensure that an outage on one machine does not mean the loss of all machines—whether you operate a single-site or multiple-site environment.

VMware products support multiple backup and restoration methods for vSphere environments. VMware vSphere Data Protection™ is a built-in, high-performance backup and recovery solution for virtual machines that is easy to set up and manage. Fully integrated with VMware vCenter Server™, vSphere Data Protection provides agentless, disk-based backup of virtual machines to deduplicated storage. Using third-party solutions to back up and restore your vSphere virtual machine and data is also possible with vSphere Storage APIs for Data Protection. Through these APIs, software performs centralized virtual-machine backups without the disruption and overhead of running backup tasks from inside each virtual machine.

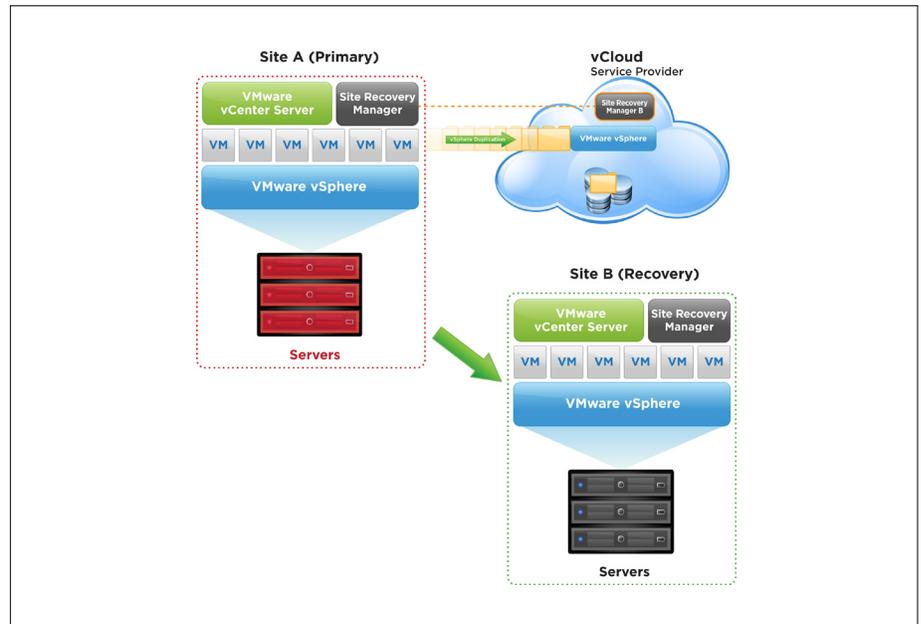
To better align your IT infrastructure with your business goals, vSphere helps you dynamically allocate and balance your IT resources. With VMware vSphere Distributed Resource Scheduler™, you can continuously monitor CPU and memory use across a cluster of vSphere hosts and intelligently allocate available resources among virtual machines according to business needs. With VMware vSphere Storage DRS™, you can place workloads during provisioning in response to available storage resources. You can also perform ongoing load balancing among datastores to avoid space and I/O bottlenecks. Together, these capabilities help you to optimize server and storage use by automating virtual-machine placement and load balancing.

### **Enable Automated and Reliable Disaster Recovery**

vSphere provides the foundation for disaster recovery with capabilities that support simple, cost-efficient replication at the virtual-machine level. You can easily replicate virtual machines to a second location because vSphere Replication copies a virtual machine to another location, within the cluster or in another cluster, and makes that copy available for restoration through the vCenter Server Web client. As changes are made to the virtual machine, vSphere replicates those changes to the copy on an ongoing basis, protecting the virtual machine and making it available for recovery without requiring you to restore data from a backup source.

*“Since [virtualization] was introduced, we had no shutdowns due to any malfunction, [and] we have been able to perform developments during continuous service in a way transparent to the users . . .”*

– Tamás Nagy,  
IT Operations Team Leader,  
FrieslandCampina Hungária Zrt.



**Figure 1.** Disaster Recovery Across One or More Sites

You can further automate the recovery of virtual machines protected with vSphere Replication using VMware vCenter Site Recovery Manager™ (see Figure 1). It leverages cost-efficient vSphere Replication or storage-based replication to provide simple management of recovery and migration plans, nondisruptive testing, and fully automated site recovery and migration.

With vCenter Site Recovery Manager, you gain unparalleled disaster-recovery management and automation for your systems, because it is the simplest and most reliable disaster recovery for all of your applications. Now you won't have to prioritize which business-critical applications deserve protection, because you can afford to protect all of them. When you automate the complex, manual processes outlined in runbooks, your recovery plans can be set up in minutes and forgotten. An administrator no longer needs to actively manage them, freeing your IT resources to work on more strategic projects and giving you more reliable recovery plans that are automatically synchronized with ongoing configuration changes.

If you don't have adequate disaster-recovery protection for your applications or a second site for recovery, VMware Disaster Recovery to the Cloud services may be right for you. With these services, you gain cost-efficient, automated and simple disaster protection from VMware service provider partners.

## Deploy the Right Package for Your Business

A recent Forrester survey reveals that upgrading business continuity and disaster-recovery capabilities is the number one technology priority for small and mid-sized businesses over the next 12 months.<sup>4</sup> With this in mind, VMware delivers business continuity solutions that are cost-efficient and easy to deploy and manage. While helping you keep services up and running in any location, VMware business continuity solutions minimize downtime impact to IT and end-user productivity, revenue and customer satisfaction. vSphere Essentials Kits and vSphere Acceleration Kits, plus vCenter Site Recovery Manager and disaster-recovery cloud services from VMware partners, are packaged to address your high availability, data protection and disaster-recovery requirements in a virtualized environment as you strive to meet the increasing demands of your business (see Table 1).

<sup>4</sup> Forrester. "Forrsights Budgets and Priorities Tracker Survey, Q2 2012."

## KEY CAPABILITIES OF VMWARE BUSINESS CONTINUITY SOLUTIONS

**High availability** – Eliminate planned downtime for server and storage maintenance, minimize unplanned downtime with automated restart of virtual machines, and optimize server and storage usage with automated virtual-machine placement and load balancing.

**Data protection** – Automate backup and recovery and replicate critical virtual machines and data to a remote site.

**Disaster recovery** – Simplify setup and perform nondisruptive testing of recovery and migration plans, streamline planned migration and preventive failovers, and automate site-wide disaster recovery.

	VSPHERE ESSENTIALS PLUS	VSPHERE WITH OPERATIONS MANAGEMENT STANDARD	VSPHERE WITH OPERATIONS MANAGEMENT ENTERPRISE PLUS
<b>High Availability</b>			
• High Availability, vMotion	✓	✓	✓
• vSphere Storage Appliance	✓		
• Fault Tolerance, Storage vMotion		✓	✓
<b>Data Protection</b>			
• vSphere Data Protection	✓	✓	✓
• vSphere Data Protection Advanced	✓	✓	✓
• vStorage APIs for Data Protection			✓
• Storage APIs for Array Integration, Multipathing			✓
• Storage DRS and Profile-Driven Storage			✓
<b>Disaster Recovery</b>			
• vSphere Replication	✓	✓	✓
• vCenter Site Recovery Manager	✓	✓	✓
• Disaster Recovery to the Cloud (vCloud Service Providers)	✓	✓	✓
	✓ Included in vSphere Kit	✓ Available as a separate purchase	

**Table 1.** Recommended Business Continuity Solutions Packaged to Meet Your Business Needs<sup>5</sup>

## Get Started with VMware Business Continuity Solutions

Your business can easily move, back up, recover, scale and protect business data, applications and services with VMware solutions. Rightsized for your organization, VMware business continuity solutions reduce operational and capital expenses while simplifying and automating processes for greater employee productivity. They help you eliminate scheduled IT task downtime and conduct updates and migrations as part of regular day-to-day IT operations.

Prevent outages resulting from routine maintenance, human error and peak demand, and quickly recover from unexpected downtime, such as natural disasters and malicious attacks, with VMware business continuity solutions. Contact VMware today to learn how you can deliver always-available applications that better protect your business and your brand reputation, keeping you ahead of your competition.

View VMware business continuity solution details or learn more at <http://www.vmware.com/solutions/company-size/smb/business-continuity>.

<sup>5</sup> The complete list of VMware business continuity solutions and features is available on the VMware Web site.

