

How to Protect Your Small or Midsized Business with Proven, Simple, and Affordable VMware Virtualization

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Business continuity and disaster recovery (BC/DR) planning is becoming a critical mandate for all companies and especially for small and midsized businesses, where the cost of downtime and/or lost data can be devastating. It doesn't take a cataclysmic event to cause major disruption—the untimely loss of a critical server or file for even a few hours can be extremely costly in today's highly competitive, 24x7 business climate.

If you have implemented virtualization, you already know how this powerful technology can save you money on IT costs via server consolidation. But are you aware that the benefits of virtualization extend beyond IT cost savings, and that virtualization can also keep your business running through many types of planned and unplanned IT outages?

By leveraging BC/DR solutions from VMware, you can turn your investment in virtualization into an investment in your *business*. And protecting your business is easier than you might think. VMware has already helped thousands of small and midsized businesses achieve higher availability with less hassle, and continues to simplify BC/DR planning further with innovative features and new packaging options.

Backed by the virtualization industry's largest IT and developer community, collection of BC/DR best practices, and network of channel partners, many IT managers are surprised how quickly they are able to deploy VMware BC/DR solutions in production, and in the process, demonstrate an ROI that goes well beyond mere cost reduction.

How Can Virtualization Help Protect Your Business?

Taneja Group regularly speaks to customers of all sizes about improving business uptime, and we've found that small and midsized businesses have many of the same challenges as larger companies.

Do any of these statements ring true to you?

"I can't take servers off line during business hours, and we do business more hours every week. That means squeezing more work into ever-shorter off-hours maintenance windows."

"If we lost a critical server, it might take us a couple of days to rebuild it (if we had some spare hardware). If we completely lost our main

facility, we'd be off line until we could recover from tapes stored off site--that might take days or even weeks."

"We spend too much time updating and patching servers. When we get behind, we run the risk of viruses or incompatibilities taking us down."

"I know we need to back up more often, but I don't have the staff to manage more backup schedules, nor do I have the budget for additional capacity."

"We have a rough idea of how to recover from a major failure, but we certainly don't have the spare time or extra hardware to test our recovery processes. I have to make do with the staff and IT resources I have."

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If so, you're not alone. Based on a Taneja Group survey of hundreds of IT managers conducted in mid-2009, more than half of North American small and mid-sized businesses do not have a disaster recovery plan in place. Unfortunately, nearly 25% of those same businesses have suffered a significant outage in their IT infrastructures during the past three years.

However, there's good news if you've already invested in virtualization, even if you're just coming up to speed. Not only is virtualization the ideal platform for building a highly-available application environment, but the *process* of BC/DR planning itself can be simplified to a few core concepts.

Business Continuity Basics: What You Need to Know

BC/DR planning is fundamentally about increasing the availability—the *uptime*—of your most critical applications by automating as much of your maintenance, backup and recovery procedures as possible.

We advise our clients to get started with BC/DR planning using a simplified “1-2-3” plan:

1. Identify Your Application Availability Requirements: First, identify your most critical servers and workloads, then prioritize them as critical (Tier 1), important (Tier 2), etc. Establish maximum acceptable downtime limits (recovery time objectives, or RTOs). Then, do the same for your business data (files, databases, e-mail, customer info): identify tiers and establish how current data must be when recovered (recovery point objectives, or RPOs).

2. Catalog Your Top Downtime/Failure Scenarios: We recommend categorizing them into the three main operational types: Planned Downtime (including provisioning, upgrades, and maintenance), Unplanned Downtime (such as server, disk, or network failures), and Disaster (major power outage, loss of a facility, natural disaster). Start with a manageable set of 5-10

scenarios and document your existing workflows and recovery procedures in as much detail as possible.

3. Validate, Automate, and Test: Run through several iterations of each scenario and workflow, making sure to test both failover and failback to establish your best and worst application recovery times. Also, remember that backed-up data is useless if it can't be restored, so validate your backup sets and time how long it takes to recover them.

We realize that even this simplified BC/DR planning approach will take resources and an investment of time—both of which are scarce commodities in a busy small or mid-sized business. Luckily, VMware virtualization makes each step simpler and delivers automation throughout the process.

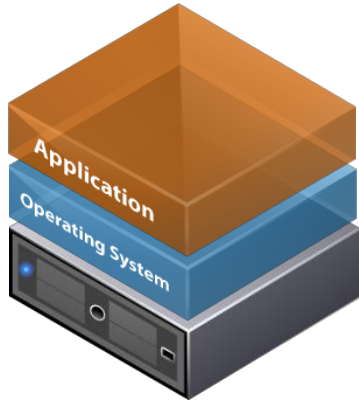
VMware's vSphere Virtualization Platform: Benefits “Out of the Box”

VMware pioneered the x86 virtualization market, delivered the earliest and most powerful features, and offers the most robust platform available today. After more than a decade of production success, VMware continues to both innovate and lower the cost of enterprise-class virtualization for businesses of any size.

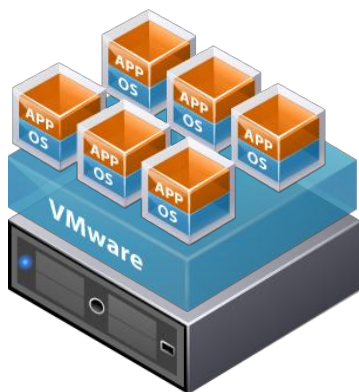
The way in which VMware virtualization transforms server architectures (illustrated in Figure 1) can make all aspects of BC/DR planning and execution simpler:

- Increases Overall Application Availability: VMware virtual machines (VMs) are encapsulated and protected workloads—they are servers independent of hardware—so you can consolidate more applications onto fewer servers safely, without worrying about conflicts. VMs can be moved manually or automatically to any vSphere server, increasing your options for where to run critical applications.

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Traditional Server Architecture



VMware Virtualized Architecture

Fig.1: VMware virtualization transforms server architectures through encapsulation and isolation.

- **Simplifies IT Management:** VMs can all be managed from a central console via the vCenter Server management suite, where you can patch and update them automatically, removing the need to visit and/or manually reconfigure physical servers. You can easily control server provisioning, enforcing “good” configurations and automatically taking “point in time” snapshots of running applications to enable easy rollback to a previous state.
- **Makes Better Use of Existing IT Resources:** Higher consolidation ratios mean you can free up resources to be used for BC/DR

testing, without sacrificing business uptime. With vCenter Server’s extensive automation features, you can easily test your BC/DR processes during business hours, even using shared servers, without putting your critical applications at risk.

These benefits are just a starting point, however.

VMware’s BC/DR Solutions for Small and Mid-sized Businesses

Building on the vSphere 4.1 platform, VMware provides added-value features that take the stress out of BC/DR planning and automation. vCenter Server enables you to manage all workloads from a single console. You can automate patching and provisioning activities, and schedule backups when it’s most convenient for each application workload. By automating and streamlining these kinds of administrative tasks, vCenter Server allows your IT team to do more work *without* more people.

VMware vSphere BC/DR solutions are aimed squarely at simplifying all the critical failure and downtime scenarios outlined in our BC/DR “1-2-3” plan above:

VMware vMotion: Mobility with No Downtime

To eliminate planned downtime – due to tasks such as provisioning, upgrades and maintenance – you can use VMware vMotion to more easily move application VMs to new servers, automatically or on demand. For example, to perform scheduled maintenance on a physical server, you can simply employ vMotion to migrate all running VMs to one or more other servers that have available resources.

Once maintenance operations have been completed, use vMotion to move them back. Any VMware-virtualized server can be a vMotion target, taking most if not all downtime out of your planned maintenance workflows.

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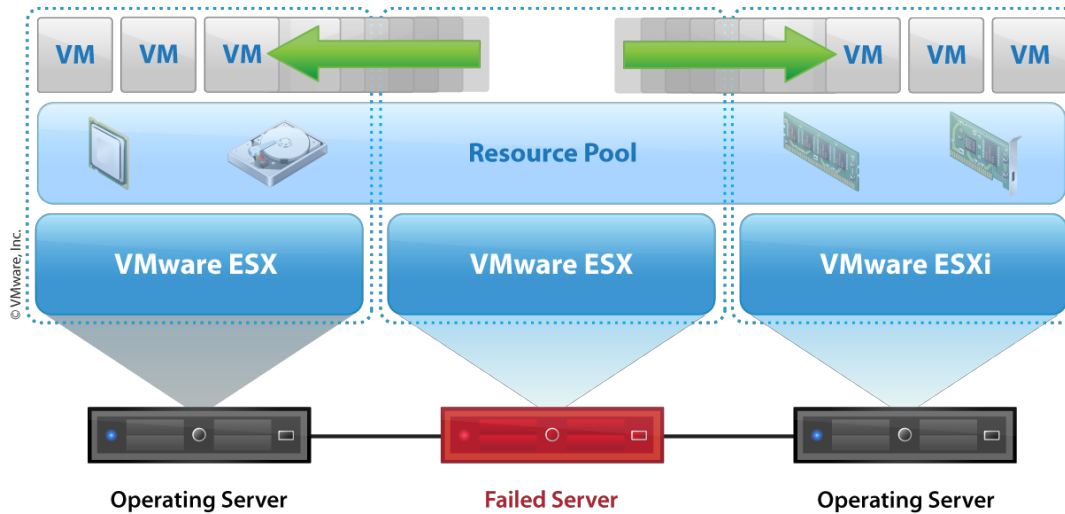


Fig.2: VMware High Availability minimizes unplanned downtime automatically.

**VMware High Availability (HA):
Automatic Recovery**

To minimize the second type of downtime—unplanned outages resulting from server and operating system (OS) failures—you can turn to VMware HA.

As shown in Figure 2, VMware HA continuously monitors the health of your virtual machines, and upon detecting a server or OS failure, automatically moves and restarts the affected VM workloads on other physical servers, without manual intervention.

VMware HA allows you to protect not only production workloads, but development and test workloads as well, using a fraction of the resources that would be required under an HA approach based on physical infrastructure.

With VMware HA, your server administrators no longer have to keep an eye out for failures that disrupt application availability.

You can simply “set it and forget it,” eliminating most if not all unplanned downtime.

**VMware Data Recovery:
Back Up More Data, More Often**

In the event of the third type of failure—the onset of a disaster such as a major power outage, flood or hurricane—you can protect and recover critical business data with VMware Data Recovery.

As depicted in Figure 3, VMware Data Recovery enables you to schedule and create multiple, point-in-time snapshots of each VM, and then use deduplication to shrink the data before it is stored to disk. With this approach, you can backup more data, more often, but without more operational overhead.

VMware Data Recovery requires no agents and no changes to your applications. It allows you to backup to disk, rather than tape, which can shrink recovery times. You can restore an entire VM image to a “known good” point in time, or restore individual files. Built-in deduplication reduces your backup data footprint, which keeps storage costs down and delivers higher ROI for every dollar you spend on storage.

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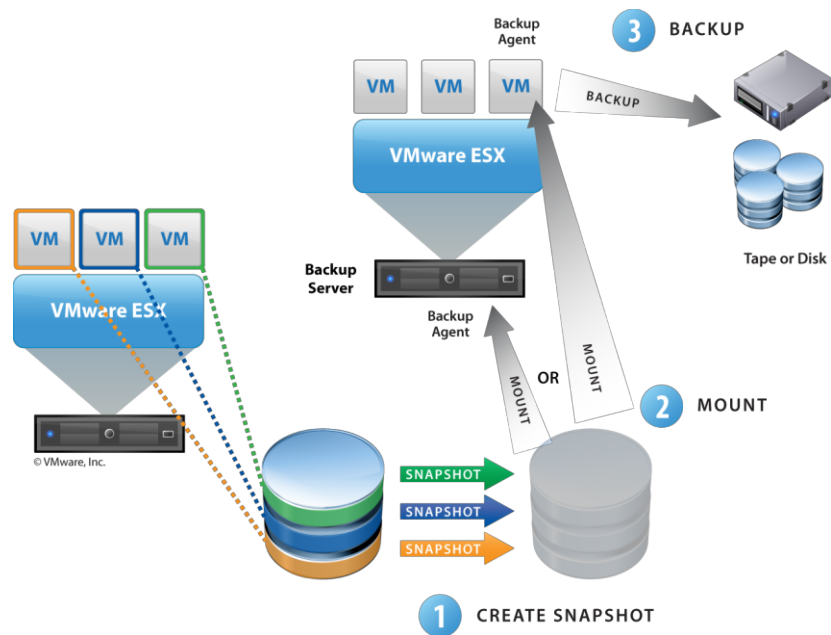


Fig.3: VMware Data Recovery simplifies the backup of more data, more often.

Putting it Together: Automatic Protection plus One-Step Recovery

Taken together, these VMware solutions not only improve overall availability, but give you a set of simple, cost-effective options to plan and prepare for different downtime scenarios.

DR plans can easily be tested using VM snapshots and spare CPU resources, when you want to, even during production hours, without affecting other workloads.

Because your DR plans are now based on your virtualized applications, rather than specific hardware or operating systems, you will save the time and money you would otherwise have spent re-building and re-testing physical systems after DR testing.

To prepare for failures that impact multiple servers, or even an entire facility, you can routinely replicate VM applications to standby

hardware either on-site or off, such as to a remote office or service provider site (or even eventually to the Cloud). And in the event of a failure, VMs restore with one step—you simply power them on.

VMware saves you the time and reduces the complexity of dealing with complex, multi-step server rebuild processes. Compared to traditional BC/DR approaches, VMware virtualization will help you to better prepare for and more nimbly respond to any type of downtime that threatens your business.

Deploying VMware: Proven and Flexible Solutions

Maintaining business continuity is far from easy. If you're like most IT managers in small and midsized companies, you want to be sure that the BC/DR solutions you deploy will work without compromise in every potential downtime

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scenario. The last thing you need to worry about is the quality and reliability of your BC/DR tools and capabilities.

Fortunately, this is not a concern with VMware. As the leading provider of virtualization technology, VMware has been delivering BC/DR solutions to small, midsized and enterprise customers for the past ten years.

More than 95% of Fortune Global 500 companies—including every one of the world's top 100 companies—rely on VMware as their virtual infrastructure platform. Now in its fourth generation, VMware vSphere offers the most reliable and mature virtualization technology in the industry.

According to Taneja Group research, one of the top two reasons that small and midsized companies deploy virtualization—and VMware in particular—is to improve BC/DR practices. It's not hard to see why these IT managers turn to virtualization, given its inherently powerful and flexible BC/DR features.

But why VMware?

We believe there are several advantages that give VMware a leg up on other leading virtualization providers:

More Flexibility to Fit Your Environment

VMware BC/DR solutions such as VMware HA and VMotion work in any shared storage environment (FC SAN, iSCSI SAN, or NAS) and are also supported for use with a growing number of Virtual Storage Appliances (VSAs).

Largest Community of Expert Users

You can learn from and share best practices with a large and growing VMware Community, drawing on the tens of thousands of IT and developer participants in the VMware Technical Network (VMTN) and many published BC/DR best practice guides.

Broadest Range of ISV Solutions

When you're looking for a particular tool or application, you won't have to wait – nearly every third-party vendor develops, tests and validates for VMware first.

Easiest to Learn

You can start small to lower the learning curve, with a 60-day free evaluation of VMware vSphere and free VMware Converter to begin to convert physical workloads to virtual machines.

Most Widely Available

Tap into the VMware Partner Network, which includes more than 25,000 distributors, resellers, VARs and integrators, to find the local channel provider that best meets your needs.

Packaged to Grow Incrementally

If you need a cost-effective BC/DR solution that covers up to twenty server workloads, then VMware Essentials Plus Kit is a great package to start with.

Essentials Plus includes all of the BC/DR functionality we've discussed, including VMware VMotion, VMware HA and VMware Data Recovery, at a price per workload that is a fraction of what you would pay for an equivalent physical server solution.

Then, as your business grows beyond twenty consolidated workloads, we recommend the VMware Advanced Acceleration Kit, which supports a larger number of processors and processor cores.

The Advanced Acceleration Kit contains all of the BC/DR capabilities of Essentials Plus, plus support for VMware Fault Tolerance, which ups the ante on VMware HA by providing *continuous* availability for your most critical applications in the event of server failures.

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Taneja Group Opinion

Building off its initial success as a vehicle for server consolidation and cost reduction, virtualization is now becoming the preferred industry platform for deploying BC/DR solutions. Virtualization provides a flexible and automated approach for addressing each of the three failure scenarios that might impact your business, minimizing (and in the case of *planned* maintenance, *avoiding*) downtime without the high costs and operational overhead of physical infrastructure solutions.

But you shouldn't trust your business continuity to just any virtualization provider. In fact, you shouldn't settle for anything less than the most proven, mature, easy-to-use BC/DR platform. For these reasons, most IT managers choose VMware to meet their BC/DR needs.

As the only industry vendor focused solely and squarely on virtualization—and the only provider with a 10+ year track record—VMware delivers not only business continuity solutions, but *peace of mind*. VMware takes the worry out of BC/DR planning and implementation, by better protecting the applications and data that are the lifeblood of your business.

As a result, tens of thousands of IT managers have chosen to gain the benefits of proven, enterprise-level BC/DR capabilities in VMware offerings that are tailored to both small and midsize businesses. VMware's pay-as-you-grow philosophy allows your small or midsize business to start small, and expand comfortably and affordably into a larger deployment over time. As your business grows, your BC/DR capabilities will grow in tandem.

When it comes to addressing the downtime risks that threaten your business, we suggest you take a close look at VMware. In our opinion, it's a BC/DR solution you can count on.

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