

A PRACTICAL GUIDE TO PROTECTING AND LEVERAGING YOUR VIRTUAL ENVIRONMENT FOR RAPID RECOVERY

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TABLE OF CONTENTS

PAGE PART 1

03 Common roadblocks to broadly rolling out virtualization

PAGE PART 2

05 The challenges of virtualization availability

PAGE PART 3

07 What to look for in the ideal backup solution

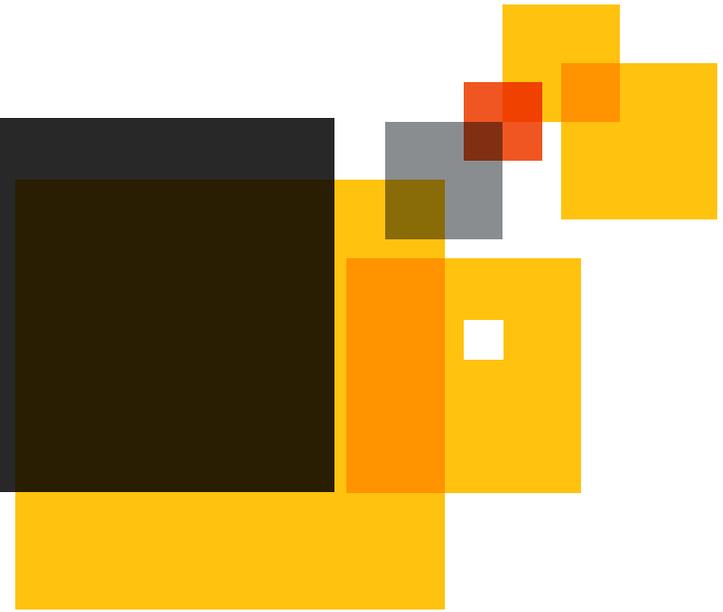
PAGE PART 4

11 A partnership you can count on



1

Common roadblocks to broadly rolling out virtualization





Seventy-four percent of small and medium businesses don't have a disaster recovery plan.¹

If your company is using virtualization to a limited degree, or is considering rolling it out more broadly to include mission-critical applications, you're not alone. Nearly 34 percent of small and medium businesses are implementing or engaged in server virtualization and that number will continue to grow, especially as more organizations contemplate putting their business-critical applications in virtualized environments.²

However, organizations' legitimate concerns about availability and disaster recovery for virtualized machines often limit rolling it out more broadly. It's tough to make the case of putting your company's email or accounting system on a virtualized machine if you have no way to quickly and easily recover it.

Interestingly, though, 71 percent of companies using server virtualization report improved disaster preparedness.³ And it makes sense: server virtualization provides a level of flexibility that lets you easily move your computing capacity when a disaster strikes your main data center. One of the selling points of virtualization, in fact, is its ability to provide better disaster recovery solutions for organizations.

But to even get to that level of preparedness means you need a good understanding of the challenges inherent in ensuring a virtualized environment's availability, and you need the right tool—one that supports both your virtual and physical environments. This e-book describes factors to consider when ensuring virtualization availability, and key criteria to look for in a solution that efficiently manages backup and recovery operations across your virtual and physical infrastructure.

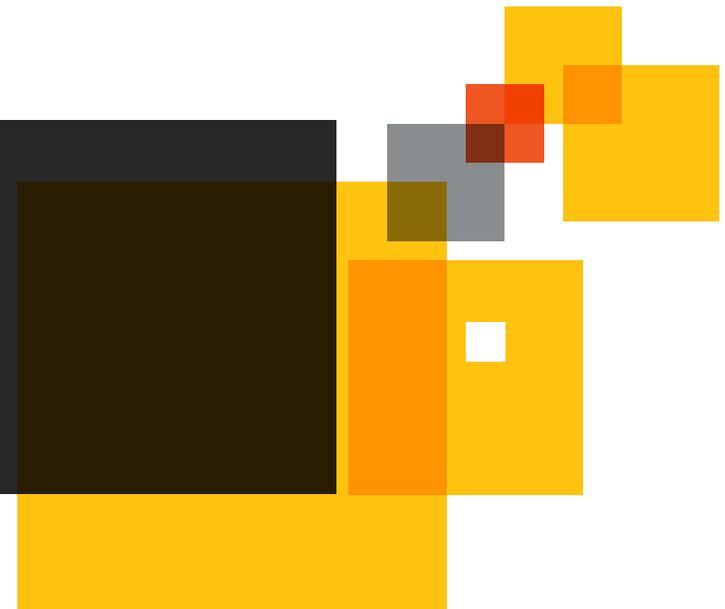
¹74 percent of respondents to the survey. [Symantec 2012 Disaster Preparedness Study, Global Results](#), Slide 22.

²Ibid.

³Ibid.

2

The challenges of virtualization availability



In some ways, virtualized environments, especially those with mission-critical applications, are in greater need of a bulletproof disaster recovery plan due to the complexities, and simplicities, that virtualization introduces. For example, the ease of replicating virtual machines means the proliferation of virtual data can make backup configurations more time-consuming, increase storage requirements, and add complexity to backups and restores. The sheer lack of knowledge or visibility as to when new virtual machines are created also contributes to challenges in adequately protecting them.

Key challenges to understand when ensuring your virtual environment's availability include:

Each host server is a potential, single point of failure

A virtualized environment can be more vulnerable than a physical environment, because the virtualized host server, on which all the virtualized machines reside, represents a single point of failure for business-critical applications. This increases the importance of using a backup solution that systematically and automatically discovers and protects virtual machines. If a virtualized server with many critical applications fails, the need to quickly restore it is paramount.

Network performance bottlenecks can occur during backups and restores

As the number of virtual machines grows, backups within each virtual machine compete for valuable network, CPU, and memory resources on the host server. Resource-intensive backup and restore operations that run on virtual machines can lead to network bottlenecks that increase backup windows and negatively impact the performance of important virtualized applications.

Purchasing and maintaining a dedicated backup solution for your virtual environment

You might assume you'll need to purchase a second backup product for your virtual environment, in addition to your existing solution for your physical environment. But by purchasing two backup products, you introduce additional headaches like adding a second management interface, taking time from your team's busy schedule to learn it, and increasing costs for a second set of backup hardware and licenses.

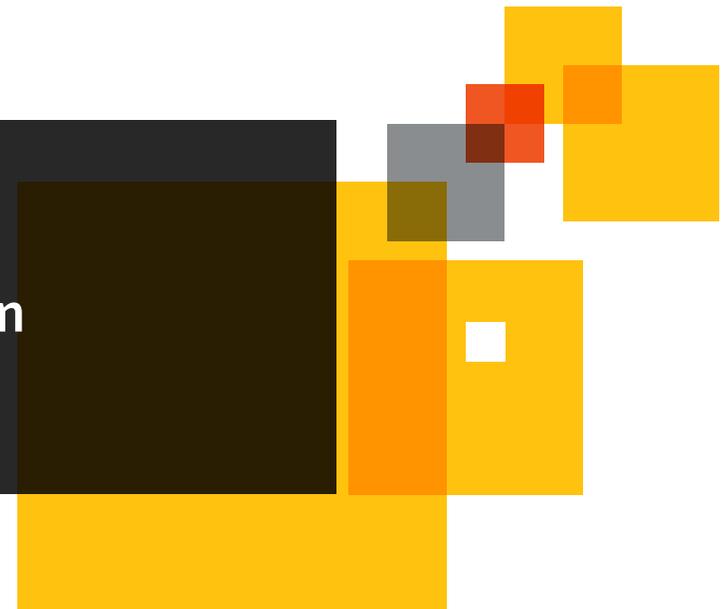


Thirty-nine percent of small and medium businesses say it never occurred to them to have a disaster recovery plan.⁴

⁴Symantec 2012 Disaster Preparedness Survey Global Findings, slide #24

3

What to look for in the ideal backup solution



You'll want to look for a backup solution that protects data regardless if it's housed in a virtual or physical environment. Using one product that works across both environments brings distinct advantages, including integrated deduplication, quick restoration of individual files and folders, and the ability to restore physical backups as virtual machines.

The best backup and availability solution should have this functionality:

Unifies both virtual and physical environments

The very best backup solution for your virtual environment will also work for your physical environment. Most products can only support one environment or the other, not both. By choosing a product that works across both types of environments, you'll realize some important benefits, including the ability to deduplicate and not backup redundant data across virtual and physical environments.

Deduplication is critical in virtual environments. Just like physical servers, the underlying operating system, applications, and the data itself is common and redundant to other data. Virtual machines can also be easily copied and replicated—which means that you'll have a lot of similar virtual machines as well as similar data. To avoid backing up huge amounts of redundant data, you need the ability to deduplicate across your virtual and physical environments. This type of integrated deduplicating across all virtual machines can result in 90+ percent deduplication rates.⁶

Benefits of unifying virtual and physical environments with integrated deduplication include:

- Saves enormous amounts of disk space as compared to compression or single-instance storage
- Dramatically reduces backup storage costs
- Minimizes backup window times

Forty-two percent of small and medium businesses are somewhat confident in their ability to restore from their backups.⁵

⁵Symantec 2012 Disaster Preparedness Survey Global Findings, slide #25

⁶"Virtualized Backup Advantages of the Dell PowerVault DL Backup to Disk Appliance powered by Symantec Backup Exec 2010 R3," Principled Technologies Test Report, June 2011, http://principledtechnologies.com/clients/reports/Symantec/Virt_BackupExec2010R3_0711.pdf



Speeds disaster recovery by restoring at the file level

The advantages of using a backup solution for your virtualized environment to quickly and easily recover individual files become very apparent the first time you need to do it. Say your CEO has an important investor presentation tomorrow morning and just before he leaves for the meeting, the virtual machine with his PowerPoint file fails. How quickly could you recover his presentation?

The typical steps to restore a virtual machine include mounting the entire volume that is that virtual machine and then scanning and searching for the correct file—all of which can be laborious, time-consuming, and stressful. For large virtual machines, it's not uncommon for it to take hours to do a complete virtual machine restore; now add that to the time it takes to find and restore the single, critical file.

The better insurance policy is to use a backup solution that supports file- and folder-level backup and recovery for virtualized environments, so it's very easy to quickly locate the critical file and restore it, even to another virtual machine, a file folder, or to a portable USB drive.

Benefits of restoring at the file level include:

- Quickly and easily locating and restoring the desired file
- Dramatically shortened restoration time
- Easily recover individual files or folders from the virtual machine to the original or an alternate location

Automatically converts physical backups to virtual machines

Another important factor to consider when choosing a backup solution is the ability to easily back up a physical server and have it converted into a virtual machine. This is an important disaster recovery safeguard if a mission-critical physical server fails and you have no available, properly configured standby hardware for restoring it. Rather than impacting your organization's productivity while you locate the appropriate hardware, you can restore your physical server's image as a virtual machine—and no additional hardware is needed.

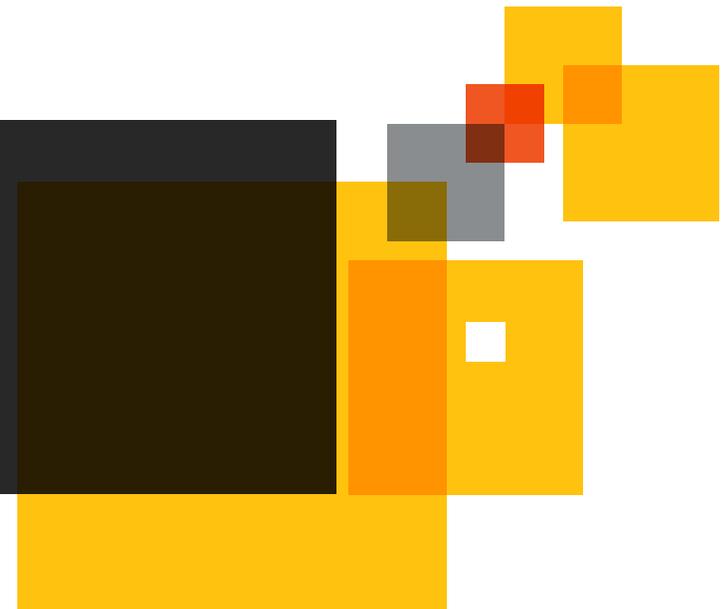
This ability is also important if you're migrating physical servers to virtual as many organizations are planning to do. In this case, you run a backup of the physical server and a virtual machine is automatically created and ready to be used.

Benefits of automatically converting a physical machine's backup to a virtual image include:

- **Eliminates a single point of failure.** If a physical server fails, it can easily be restored as a virtual machine.
- **Quicker to restore a server,** whether it's failed due to a disaster or you're migrating your physical environment to virtual.
- **Eliminates the need to have configured, ready-to-go physical server hardware on hand in case of a failure.** If a disaster strikes, you can quickly restore your physical server's image as a virtual machine.

4

A partnership you can count on





Symantec believes your data should always be secure and available, regardless of the environment it resides in. Symantec is a leader in protecting systems, networks, and business information worldwide. Our backup and availability solutions work across virtual and physical, so you don't need to purchase and maintain a separate product for each environment.

Backup and availability for virtual and physical environments

Symantec Backup Exec™ 2012 V-Ray Edition provides visibility across virtual and physical servers, as well as into the virtual machine and applications for very fast and efficient backup and recovery. Backup Exec with V-Ray automatically detects new virtual machines as they come online and protects them. There's no need to search for new virtual machines that may have been created or edit backup policies when applications move to different virtual machine hosts.

With integrated Granular Recovery Technology, Backup Exec provides single-pass, high-speed backup of virtual machines. You can recover the entire guest virtual machine or individual files and folders within the virtual machine to the original or alternate locations.

Backup Exec also improves recovery for applications such as Microsoft® Exchange, SQL®, SharePoint®, or Active Directory®, such as allowing granular recovery of SharePoint files, Active Directory users, objects, Exchange mailboxes, individual emails, and calendar items.

Backup Exec V-Ray Edition has award-winning backup and disaster recovery for VMware® and Microsoft Hyper-V® environments, which enables you to:

- **Dramatically minimize downtime and data loss** by rapidly recovering what you need, when you need it.
- **Easily reduce data backup storage by 10:1 and shrink the backup window** while optimizing network utilization across virtual and physical environments.
- **Eliminate point solutions, backup complexity, unnecessary storage growth, costs, and risk** with a single unified scalable solution.
- **Protect an unlimited number of guest machines** per host with socket-based licensing.

Conclusion

Don't be one of the 74 percent of small businesses that doesn't have a disaster recovery plan, especially for your virtualized environment. It is possible to easily protect both your virtual and physical infrastructure with one backup solution. Consider Backup Exec V-Ray Edition, which supports deduplication, file-level restoration from applications, automatic conversion of physical backups to virtual machines, and more for your VMware or Hyper-V virtual environments.

Learn more

Want to know more? Contact us today for a comprehensive solution for your business:

- Select a solution at the [Symantec Small Business Website](#), your online resource for recommendations, product details, and selection guides.
- Find a solution partner at the [Symantec Partner Website](#). With more than 60,000 partners worldwide, you're sure to find one that's right for your business.
- Request a call from a [Symantec representative](#).