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SOFTWARE

Busting a Myth
Can One Backup Solution Really Do It All?

Introduction

If your IT department is like most, you prefer to standardize on one solution whenever possible. Using a single solution for any given task means one license to buy, one upgrade schedule to keep track of, and one vendor to deal with. It also reduces the learning curve for new members of your team—rather than spending hours training people on a wide range of applications, you can have them focus on your go-to tools.

The reasons for standardizing make good business sense. But this is not to say that for any and every IT activity, your team should blindly follow the standardization rule when faced with solid business reasons to make an exception. Enterprise backup solutions are an example of why exceptions make good business sense.

There are many popular backup solutions that claim to be able to back up anything and everything you have in your IT environment. But when it comes to enabling you to restore systems running on Linux and Unix quickly after a crash—which is the whole point of having backup solutions in the first place—most of these systems fall short.

Having a way to rapidly recover your Linux and Unix systems is far more important and valuable to your company than having a single backup solution. According to a 2016 estimate, downtime costs businesses an average of $9,000 per minute[1]. This is clearly a case where making an exception and having multiple solutions for backups makes good business sense.

Don't Risk Settling for "Good Enough"

No single backup solution on the market can meet all the needs of any organization that's running a combination of Windows, Apple, Linux and Unix computers. If you really want to keep your data safe and your business moving forward in any circumstances, you need to create a comprehensive disaster recovery plan that goes beyond a single backup solution.

Don't worry—you won't necessarily have to replace the backup software you're already using. But you may need to augment it with an additional layer of protection. Your mission-critical business applications running on Linux or Unix are too important to risk on a "good enough" backup that won't allow for a full and rapid recovery. The cost of adding a more effective backup solution may end up being only a fraction of the cost of letting your business sit idle for several hours during a system outage.

So, what's the problem with the "we-can-backup-everything" backup solutions? Most of them fall into the category of either data-only backup solutions or image-only backup solutions. Let's explore the pros and cons of each.
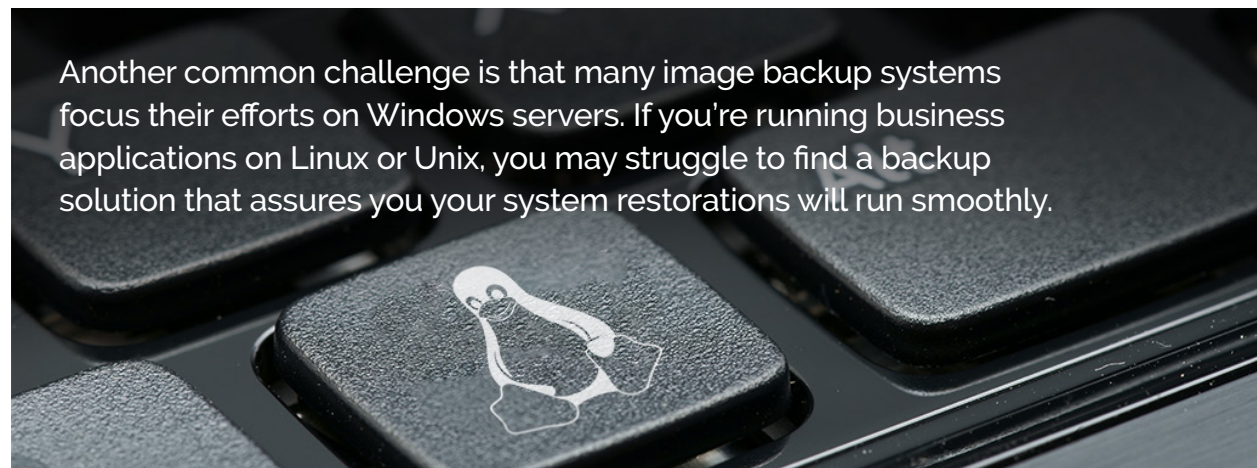
[2] Ponemon Institute. "Cost of Data Center Outages." Ponemon Institute Research Report. January 2016.

The Limitations of Data-Only Backups

If your organization has adopted a data-only backup approach, you have total assurance that you'll be able to bring all your data back online within minutes of a system crash. But that's in an ideal world—one in which you can restore your business applications such as ERP in just minutes. As every sysadmin knows, getting to a fully restored application is often the hard part. To put it another way, even the best data backup in the world is useless unless you have a functioning system onto which you can restore it.

Suppose your server has just went down. After a few minutes of evaluation, you determine that the server is dead, and you'll need to rebuild your environment on a new box. Fortunately, your organization invested in a spare server. You power up the new box. So far, your business has been down for only minutes.

Another common challenge is that many image backup systems focus their efforts on Windows servers. If you're running business applications on Linux or Unix, you may struggle to find a backup solution that assures you your system restorations will run smoothly.

Your biggest priority at this point is to install your main business application (such as an ERP) on the new server. But before you can do that, you'll need to reinstall the Linux operating system on which your business applications run. Pulling out DVDs of the OS and installing them is the easy part. But keep in mind that you'll also need to reinstall all the security patches and updates you've painstakingly implemented over the past couple of years. Each installation will eat up precious minutes.

By the time you have a powered-up server with a working operating system, your business users may have been sitting idle for hours. From there, you'll still need to install your ERP, along with any third-party applications you added onto it. Finally, you'll need to install your data backup software so you can restore from your data backup.

To avoid this scenario—in which an outage costs your business many hours of productivity and untold dollars of revenue—you really need a way to back up your operating system as wellas your data. Only when you can restore everything in minutes — your OS, your business applications, and your data — can you minimize the impact of a failed server.

When you need to replace a physical server, you want to restore your system exactly the way it was.

Now, many companies host their business applications on virtual servers. And many vendors offer solutions that claim to back up more than data on these servers—much more. In fact, they promise to back up the whole system, which you could theoretically restore in minutes on a new server. This situation sounds ideal, but keep in mind that these solutions, too, often have significant shortcomings.

Why Image-Only Backups Don't Provide a Complete Solution

If your backup software offers "complete system backup," the chances are good that it's making image backups. Image backups are a raw copy of hard drive which will include the OS, the applications, user data and empty space. With a full copy, you would expect to be able to restore this image back to your server.

While this approach should work well in theory, it's a different matter in practice. Many backup tools that offer image backups are focused on taking snapshots of virtual servers. However, when you need to replace a physical server, you want to restore your system exactly the way it was. Although backup vendors typically offer plugins for this purpose, they often lack the robust functionality you'll need to protect your business fully.

Suppose you use a backup system that offers limited functionality for physical systems running Linux. In that case, you'll struggle to implement a good disaster recovery plan for a complex implementation of a business platform.

Limitations Restoring Onto New Hardware

One of the significant limitations of image backups is that they require you to restore your system onto the exact same hardware you were using before your crash. If you have changed any of your hardware variables—even slightly—there's a good chance that your restore won't work.

Here are some of the common pitfalls system administrators encounter in trying to restore their image backups onto new hardware:

■ **Different disk size.** Suppose you have to replace your physical server after a crash of a machine that has been in production for two years. You may go back to your manufacturer—with whom you have a contract—and ask them to send you the same server. But the chances are good that that particular server will no longer be available.

Your manufacturer may be able to send you a similar model, but because disk sizes continue to increase, it's unlikely you'll find an exact match with what you had before. You've probably noticed that the internal block sizes of hard drives have changed. For years, they had a sector size of 512 bytes. Today, the 4K sector size is becoming increasingly common.

■ **Different disk geometry.** Not only are today's hard drives more spacious, but they're also laid out differently. Even if your manufacturer has the same model server in stock when you call, the disk's geometry may be different. Even slight changes—in heads, cylinders, sectors per track—may affect the success of your disaster recovery plan. When you go to restore your image backup onto it, it's certain that you'll run into problems.

■ **Different storage controllers or drivers.** Change your storage controller, and you'll change the way your ERP implementation communicates with your mass storage devices. This can be a big issue if your organization uses external storage such as SAN storage rather than internal storage drives.

Some sysadmins are adept at searching eBay for used servers and can sometimes find the exact out-of-production box they need to restore their operations. But that's a longshot—and it eats up valuable time that you could spend optimizing and maintaining systems. A much wiser approach is to ensure your disaster recovery plan enables you to back up your entire system at the file level rather than the image level.
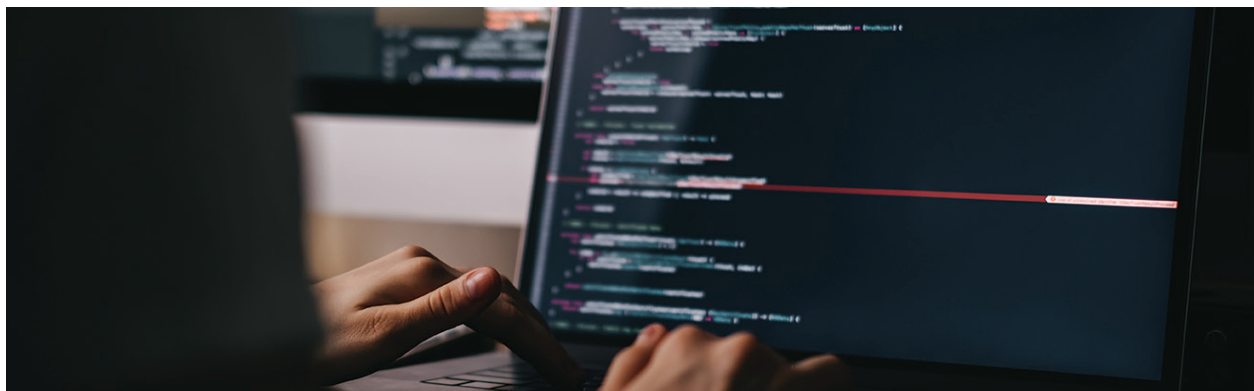
Get the Advantages of File-Based Backup

We've outlined the shortcomings of data-only backup systems and image-only backup systems. What's the alternative? To use a file-based disaster recovery solution.

A file-based backup lets you restore your entire system, including your operating system and user data, onto the bare metal of new hardware or virtual machines. This means that, regardless of its other merits, file-based backup is significantly faster than either data-only or image-only backups. It bears repeating that speed of recovery is the whole reason for performing system backups.

Of course, the value of file-based backups doesn't end with speed of recovery. Unlike image backup systems, a file-based system backup is flexible enough to let you restore onto different hardware or disk configurations. Storix SBAdmin's process of hardware migration (or cloning) let's you install your entire system onto new hardware in minutes, without the need for trial-and-error adjustments. Another strength of file-based backups is that you can restore individual files as you choose. If there are corrupted files in your backup, you can leave them out when you reinstall on your new server.

When you use a solution such as Storix SBAdmin for your file-level backup, your backups will include your entire operating system as well as enough information about the storage configuration to rebuild your Linux or Unix systems on new hardware. During your recovery process, the software will automatically detect changes in your hardware and make the necessary configurations to ensure a speedy, successful recovery. You'll also have the flexibility to make changes to your storage configuration.

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As we mentioned at the outset, IT teams prefer to standardize on one tool per task and are often hesitant to add the expense of a new solution. But consider how paying for additional backup protection could prevent your organization from suffering through the cost of extended downtime during your next server failure. Remember, downtime costs businesses an average of $9,000 per minute. Data-only and image-only backup systems virtually ensure that your business will have to stand still as your IT team scrambles to reinstall an operating system. By contrast, SBAdmin gives you an excellent chance of minimizing your downtime—and its impact on your bottom line.

Where to begin? Start by reevaluating your current backup strategy so that you can identify any glaring gaps. If your organization is like most, you'll soon realize that you lack a way to restore your ERP or other major business applications from bare metal. And although your company's executives may think that they've already invested enough in backup solutions and data storage, you'll know better.

Request Your Proof
of Concept Today

We at Storix believe that the best way to convince your management of the need for a better backup solution is to perform a disaster recovery test. Simulate a situation in which your main business server dies and you need to reinstall your operating system, database, and software on a new server that's not identical to your previous one. Estimate the time involved in performing this complete reinstall. Then, present this information to your management and ask them whether they would be comfortable having your business remain inoperative for this many hours.

*Need help planning your disaster recovery test? Got questions about anything we've discussed? We're here to help. You can reach Storix disaster recovery experts **at (877) 786-7491 or schedule your consultation on our website.***

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