



Maximizing Business Continuity and Minimizing Recovery Time Objectives in Windows Server Environments

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Executive Summary

Maximizing business continuity while minimizing business disruption can be especially challenging for small and medium sized businesses (SMBs) following a server failure. Resources are limited, so there isn't a lot of help to get systems back online. Having a server out of commission is never pleasant, but the consequences of business disruption are grimmer for SMBs than they are for large enterprises that can disperse the effect of a server meltdown.

That's why it is vitally important to keep your Recovery Time Objective (RTO) at a level that helps you avoid the serious consequences of a break in the flow of your daily business. Your RTO is the maximum amount of time your systems can be out of commission – from when a disruption occurs to the moment your system is available again. Minimizing your RTO helps you avoid the consequences of a long-term break in business continuity.

Unfortunately, most backup and recovery strategies are bound by technological limitations. When your server has many terabytes (TB) of data that must be recovered – not to mention the operating system and applications – it takes many hours to restore everything from the original volume, even at relatively rapid disk speeds.

In addition, the promise of virtualization may seem attractive for SMBs, particularly since virtualization can help address limitations on resources. But the reality of the cost and time expenditures to transfer data to virtual servers, in addition to the complexity of virtualization technology, makes this prohibitive.

Finally, upgrading to a new Windows server can frustrate IT staff with its complexity and potential for disaster. The migration process can place a heavy load on SMBs with limited IT resources.

This white paper outlines each of these issues, why they are important for SMBs to address and how to resolve them while maximizing business continuity and minimizing IT resources necessary to accomplish the demands of maintaining Windows servers.

Why is disaster recovery so difficult?

In the past 10 years many businesses have switched from tape-based backup systems to disk-based backup. Tape systems tend to be difficult to manage and much slower than disk-based systems not only for creating backup, but for restoring them as well. In addition, the cost of disk-based storage continues to drop every year. It's now extremely affordable to purchase multi-TB disks, so disk space is much less of an issue than it used to be.

Even businesses that are required to have tape backup for compliancy and archival purposes have moved to hybrid systems because of the time factor involved in recovery. The fastest tape backup cannot compete with the slowest disk-based system for recovery times. When you need rapid disaster recovery, when your RTO is hours, not days, you must have disk-based disaster recovery.

The problem is that disks, while becoming more affordable, have not become any more reliable. Most industry estimates place the average disk lifespan around five years. The truth is that hard disk drives fail. So wise administrators prepare for that eventuality and anticipate how they will recover when that drive failure occurs. *When*, not if.

Another issue is that even with the increased recovery speeds that disk-based storage offers, restoring a server is still a time-consuming process. Traditionally, when a disk drive fails, IT administrators must repair the server, if possible, re-install the operating system, re-install applications, and then add data file backups, if they are available. This process of rebuilding a server can take days – time your business can ill-afford to lose.

In addition, migrating to a new server is an equally painful process, requiring weeks of planning and days to execute – if all goes well.

As a result of these limitations, many SMBs choose to avoid the issue altogether, deciding that a server disaster recovery plan is too painful a process to contemplate. Or they continue with a backup solution that is too complicated or does not meet the needs of a growing business. Day-to-day server problems are ignored or placed on the backburner. This is not a safe and secure way to assure business continuity or data availability.

Why is it important to simplify backup, recovery and migration?

Your data is one of your most valued resources. Nearly every modern business relies on servers, large and small, to conduct everyday operations. Not only do you need access to applications such as Microsoft Exchange and SQL server, you need access to all the information on your servers all of the time. Extended downtime is not an option.

Managing your backups also needs to be a straightforward process, without consuming too much time administrating your server backup technology or the process of recovery. IT administrators do not have the time to spend hours or days learning new systems and new processes. Backup technology must be simple to learn and easy to manage.

There are many real-world requirements of simplifying server backup, recovery and migration.

Rapid Restore of Files and Folders

At one time or another, most users have accidentally deleted files or folders they need. Servers don't have a recycle bin the way desktops do, so administrators must have a way to resolve those day-to-day "oops" moments.

Without a granular backup, IT administrators may have to restore an entire server backup to access specific files and folders. Since this process can take hours, many administrators are reluctant to perform a brick-level restore for just a few missing files.

Rapid Recovery Following Server Failure

Nothing makes an administrator's heart skip a beat more than the words "server failure." Whether it's hard disk drives failing, power surges, misconfigurations or simple acts of God, it's a situation you will end up facing at one time or another.

Rebuilding a server from the ground up is a time-consuming process that means repairing the server – if possible – then loading the operating system, applications and finally the data, if you're able to access the data at all. Many times you may have to start from scratch or use other sources to painstakingly recover what you've lost.

Migration to New Servers

Upgrading to a new server is a difficult and daunting task that can cause all kinds of problems for IT administrators. The standard procedure is to take all users off-line – say, on a Friday evening – take a complete and final backup of the old server, then take the server offline. Then using the wizards and tools provided with the Windows servers, migrate the old server to the new one. This process can take a significant amount of time and IT resources to complete, while crossing your fingers that all goes well and that there aren't any problems during the migration process.

As many businesses investigate virtualization technology administrators must find new tools to help them migrate to virtual servers from physical servers. Not all tools are created equally and you may not be sure if your server, applications and data will migrate safely to a new, virtual environment.

Verification of Backup Images

Even if you have backup technology, how sure are you that your backups will work when you need them to? Many times your backup will work when it's created and then disk corruption or drive failure will make your backup unusable down the line.

Notification of Backup Problems

With many systems to manage and users to assist, many IT administrators don't have a way to check on their backups. Once they've set it, they'd like to forget it. But without some sort of notification, it may be like turning your back on the ocean. Just because you can't see that something has gone wrong doesn't mean that there isn't a problem about to hit you from behind.

Bottom Line

It's vital to have a complete backup of your Windows servers and data in the event of a catastrophic failure. You need to be able to recover files and folders quickly, but it's far too time-consuming to restore your server with only a file-level backup following a disaster or when migrating to a new server.

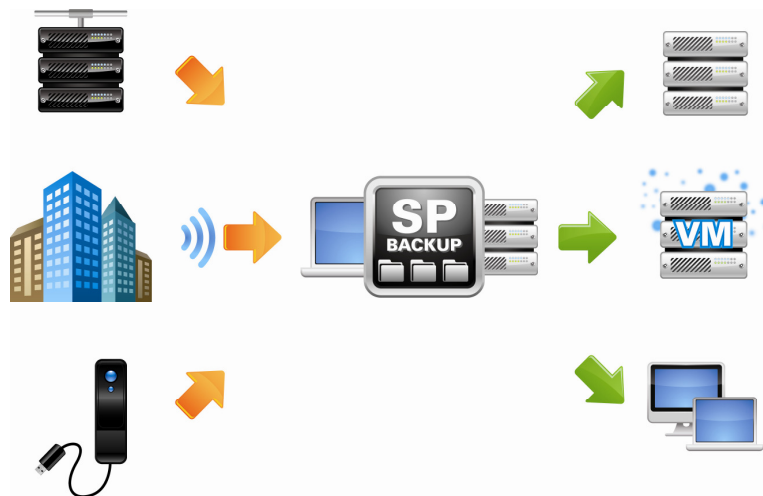
In addition, it's very important to have a simple way to keep tabs on your server backups that doesn't require a lot of time or money.

Rapid Recovery for Windows Servers

STORAGECRAFT™ SHADOWPROTECT 4 SERVER™

StorageCraft ShadowProtect Server™ 4.0 allows you to backup your Windows servers quickly and easily, and recover rapidly in the event of a disaster. ShadowProtect Server is fast and reliable disk-based backup that captures full, differential and incremental point-in-time backup images of your entire system. That includes the operating system, applications, configuration settings and data.

With ShadowProtect Server, you can schedule full and incremental backups, giving you automatic protection of everything on your Windows servers. You can schedule automatic backups as often as every 15 minutes, even backing up applications such as SQL or Exchange. ShadowProtect's point-in-time backup image technology runs in the background without impacting everyday business or throughput speeds.



In addition, ShadowProtect's flexibility gives you a number of recovery options. Restore from bare metal through the bootable ShadowProtect recovery CD, or restore a complete ShadowProtect backup image of your entire system environment from your network, a removable drive or an off-site location. ShadowProtect Server allows you to recover rapidly

because there are no extra steps for recovery. After repairing your server, you restore your point-in-time ShadowProtect backup image and you're ready to go – the server operating system, applications and data are all contained in the backup image file.

For granular recovery of individual files and folders, simply mount a point-in-time backup image file and then quickly browse to the files you need. If you want, you can drag and drop folders to your production server or leave the point-in-time backup image mounted to allow users to find the files they need.

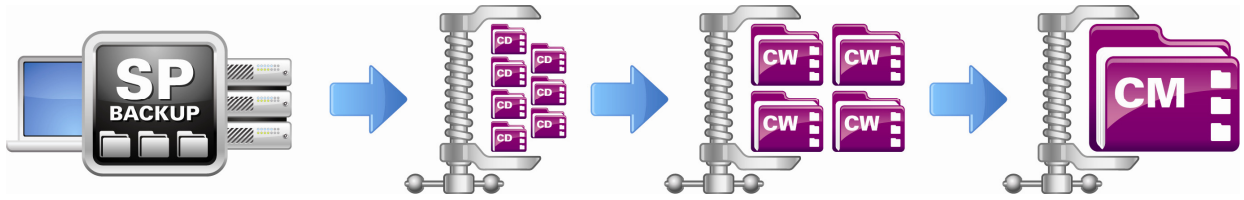
ShadowProtect Server makes migrating to new servers – even virtual servers – a relatively simple prospect. It includes Hardware Independent Restore™ (HIR) technology that helps automate migration to dissimilar hardware or to and from virtual environments.

VirtualBoot™ is revolutionary new technology in ShadowProtect Server. VirtualBoot allows you to right-click on any ShadowProtect Server point-in-time backup image and automatically boot it as a virtual machine. You can use this technology to test new applications for your server environment or to restore archived information from legacy systems. For complete conversion to virtual environments, ShadowProtect Server also includes a virtual converter. Take a ShadowProtect point-in-time backup image and convert it to a VMware .VMDK or a Microsoft .VHD file.



Streamline management of ShadowProtect backups with an integrated management console that allows you to simultaneously push install ShadowProtect to all of your Windows servers. You can also check the status of your system backups and create groupings for simplified management.

Another tool, ShadowProtect ImageManager™ also allows you to consolidate your backup image files to minimize storage consumption for your backup images. With a minimal amount of set up, ShadowProtect ImageManager will automatically collapse your image files into daily, weekly and monthly backups and notify you via e-mail if any of your backups fail.



ShadowProtect ImageManager also has a verification feature which will automatically check and re-check all of your backup image files. If there is ever a problem, if a disk drive begins to fail or a backup image file is accidentally deleted, ShadowProtect ImageManager will alert you to the problem.



Backup Fast, Recover Faster

ShadowProtect Server helps you maximize business continuity while minimizing your RTO. It eliminates backup windows through the use of image-based technology to perform online backups of Windows servers. Backups happen throughout the day, so there's no impact on business performance and even new data is protected because it is backed up.

But ShadowProtect Server also takes business continuity to the next level by minimizing *recovery* windows. Limiting the time required to restore server systems and data helps you get business back up and running in a matter of minutes, rather than hours. Every minute you lose in recovery time is income and productivity lost. Minimize recovery time and you maximize your profits.

For additional information about ShadowProtect Server, please visit:

www.StorageCraft.com/ShadowProtectServer.