Key Elements of a Successful Disaster Recovery Strategy: Virtual and Physical

by Greg Shields, MS MVP & VMware vExpert
Greg Shields
MS MVP & VMware vExpert

Greg Shields is a Senior Partner with Concentrated Technology. With fifteen years of IT experience, Greg is one of the world’s leading experts on virtualization, cloud, and systems management technologies. He is a Contributing Editor and columnist for Microsoft TechNet Magazine and Redmond Magazine, has written over fourteen books, and contributes regularly to online publications like TechTarget and MCPMag.com. He is also a highly sought-after and top-ranked speaker for both live and recorded events, and is seen regularly at conferences like TechMentor, the Microsoft Management Summit, Microsoft Tech Ed, VMworld, Connections, among others. Greg is a multiple-year recipient of Microsoft’s Most Valuable Professional (MVP) award and VMware’s vExpert award.
Organizations have had decades of experience in planning for disaster recovery.

- We know where the tapes are kept.
- We have spare server hardware on hand.
- We’ve protected installation media in a fire safe.
- We have off-site copies of key backups.
- And – if we’re smart – we’ve made plans with an alternate facility to host services after a loss.

But there’s a problem here: *These are the decades-old plans of a decades-old IT industry.*

Business has changed since then, and so has business technology. Virtualization in particular offers a way to completely revise the way we consider disaster recovery. If we’re doing things right, we can be back online in minutes and hours, not days and weeks. We can enjoy less data at-risk than ever before.

Even better, today’s technologies enable these DR capabilities for the smallest IT shop just as easily as the biggest enterprise. It’s all about having the right disaster recovery solution, and the right approach in using it.
Four Key Capabilities for a Disaster Recovery Solution

Let's look at some of the key business-level capabilities a modern disaster recovery solution should have. The intent here is to focus less on technology, and to not worry about solutions that actually exist. Instead, let's aim for the sky, and simply specify all of the “wouldn't it be nice” capabilities we'd like to have within our organizations.

While we're at it, we'll keep a firm focus on the need to recover both physical and virtual servers, preferably using the same approach for either. We may even blur the line between them a bit, opening up even more flexibility and a greater array of recovery options.
**Key Capability #1: Push-Button Failover**

Push-button failover means that recovery, whether virtual or physical, has to be dead simple.

That's hardly the case today, when disaster recovery requires a three-inch-thick procedure manual, a locker full of magnetic tapes, and the logistical coordination rivaling a major military exercise. Identify the full backups. Restore them. Then go for the differentials, and get them loaded. Next queue up and start restoring from incremental tapes. Don't forget to prioritize critical servers, since we've only got so many tape drives to work with.

For disaster recovery, complexity is the enemy. Recovering a server must be as easy as opening a console, clicking a few checkboxes, and hitting Recover. A disaster is by definition a chaotic situation. We certainly won't have time to line up tapes and prioritize servers.

**Key Capability #2: Bare-Metal Recovery**

Traditional backup solutions are far too hardware-specific. In a disaster, we can't rely on having the exact same hardware ready to receive our restores.

Having that hardware is a huge cost. Many organizations work extremely hard to ensure their off-site recovery partners have exactly the same equipment used in production – down to memory configuration, processors, and so on. But what about those upgrades you've been rolling through the datacenter? What about that hardware refresh? With each one, you'll need to notify your of-site partner and pay for their upgrades as well.

Similar hardware is a nonsense requirement. In an era where we routinely rely on OS imaging and deployment technologies that aren't hardware-dependent, we should be able to restore a server onto any hardware at hand, and have everything just work.
Key Capability #3: Integrated Data Replication

Everyone knows it’s smart to have off-site backup copies. That’s why for decades we’ve been rotating tapes off-site. If a disaster hits the office – say a flood, fire, or earthquake – we know the tapes are safe at the off-site facility. Of course, we’ll still have to get them, and have a place to take them, but that’s a minor detail, right?

Hardly. It’s important to get your backup data off-site, but these days physical tapes are no longer the smartest approach. The best practice these days replicates a copy of backup data over the network to an off-site location or cloud provider. That replication uses advanced compression and deduplication to make efficient use of bandwidth.

Replication changes the DR ballgame entirely. Suddenly any disaster event means powering on equipment and restarting services, rather than searching for backup tapes.
Key Capability #4: Easy Off-Site Recovery

Off-site recovery is probably one of the most painful and expensive things an IT team can experience. Even testing the process is painful. You know the drill: the annual pilgrimage to your off-site facility. There you’ll spend several days each year testing recovery procedures and hoping for the best.

Let’s ditch entirely that old concept of off-site recovery. Physical servers? Forget ‘em. When backups don’t care about hardware configurations, every physical server is automatically every other physical server. Every physical server is also automatically a virtual one.

Now integrate this with replication. But you’re not replicating backup data to your alternate site. You’re replicating live, ready-to-go copies of every protected server. Almost immediately everything about DR gets dramatically less complex. Got a disaster? Click to power on the backup servers. Done. Need to test your DR plan? Click to power on the backup servers. Done.

Cloud services can assist here as well. Don’t have the budget or need for an always-on, ready-to-go backup site? Just replicate servers into the cloud. After all, they are just data on disk. Now, got a disaster? Replicate those servers out of the cloud to some other location. Click to power them on. Done.
It’s Time to Examine Your Recovery Solution

Take a look at your existing disaster recovery plan, and the software solutions that make it work. Does your solution deliver on all four of these critical features? Probably not, if you’re using a legacy solution and a decades-old recovery approach.

If you can’t achieve these four capabilities, ask yourself why not? These capabilities are what will keep your business running. They’re what the business needs. And you can certainly achieve them – you just need a better disaster recovery solution.

Thankfully, these solutions aren’t fantasy. They exist today.

Features to Look for In a Disaster Recovery Solution

So how do you get there? What specific solution features do you need to achieve the four key capabilities? Believe it or not, they’re all available today. You just need to identify a solution that offers them in the right combination. Let’s explore five critical features that create the shopping list for your disaster recovery solution.
Feature to Look For #1: Push-Button Failover for Physical and Virtual Machines

Create a cost-effective recovery plan by maintaining not spare physical servers, but instead standby virtual machines. There's no need to duplicate physical infrastructure, or to purchase and maintain separate software licenses. Just click and watch entire servers power on as virtual machines. With the right technology, servers are ready to go in minutes, not hours – and certainly not days.

Build your disaster recovery plan around virtual machines and gain the flexibility to run them anywhere: In your own datacenter, in someone else's datacenter, in the cloud, it doesn't matter. Add modern hypervisor features, and you'll be dynamically allocating workload resources to where they're needed, further increasing your ability to keep the business running through the disaster.
Feature to Look For #2: Push-Button Disaster Recovery Testing

Disaster recovery testing used to be painful, but it needn’t be any longer. Open your backup management console, select the servers you want to test, and click a button. The right solution takes over and brings those machines back to life. It can even accomplish the task in a completely isolated test environment. That environment runs on your own hardware, or in the cloud. Your production network never notices, giving you the flexibility to test as often as you need to ensure your recovery plans are perfect.

Look for: Solutions offering push-button recovery testing that enable production servers to continue running unaffected.
Feature to Look For #3: Bare-Metal Server Recovery

You need to restore servers to the exact same hardware, to different hardware, or into a VMware or Hyper-V virtual environment. And you need total flexibility to restore any server to any option, any time.

That support gives you the freedom to perform Physical-to-Virtual (P2V), Physical-to-Physical (P2P), Virtual-to-Physical (V2P), and Virtual-to-Virtual (V2V) migrations, using backup data as the source. Doing so allows you to tailor your recovery plans to meet whatever resources you have on hand – even at the last minute.

Cross-platform support becomes particularly critical when the cloud is your disaster recovery site. There, having broad hypervisor support lets you choose the cloud recovery partner based on business criteria, like cost and service, rather than being locked into a single hypervisor choice.
Feature to Look For #4: Mountable Server Snapshots

Disaster recovery focuses so hard on wholesale disasters that it sometimes forgets the “small” stuff. No lost service is truly small, but what if you don’t really need to recover an entire server?

For disasters that are more technical than natural, recovering data from a server backup shouldn’t require restoring an entire server. Today’s best practice restores that data by directly mounting backup images as if it were restored. Once mounted, simply copy off the data you need. You’ll want this capability for all your major platforms: Exchange Server, SQL Server, SharePoint Server, file servers, Active Directory, and so on.
**Feature to Look For #5: Off-Site Backup Replication**

Tapes are a linear-read/linear-write technology. DR solutions that rely on them are linear thinking. Better solutions compress backup data, de-duplicate it, and replicate that data to off-site storage – either at your backup facility, into the cloud, or anywhere with a network connection.

Compression and de-duplication capabilities are crucial here, and they’re something you should investigate and test thoroughly. Modern compression algorithms and de-duplication techniques, when used together, can reduce the backup data stream by 80% or more in some cases, making it much more practical to get that data off-site via the WAN, and not a Monday morning delivery person.

No less important is the need to get the data back on-site after the disaster is over. Failback is all about replicating in reverse, streaming server copies back from the off-site location into your production datacenter. The right solution supports failback just as easily as failover.
If these key capabilities and features to look for have caught your attention, it's time now to start shopping around for a new backup, recovery, and disaster recovery solution. The right solution is all three of these in one. That solution fits each of these key capabilities and delivers on every feature to look for:

- **Key Capability #1: Push-Button Failover**
- **Key Capability #2: Bare-Metal Recovery**
- **Key Capability #3: Integrated Data Replication**
- **Key Capability #4: Easy Off-Site Recovery**
- **Feature to Look For #1: Push-Button Failover for Physical and Virtual Machines**
- **Feature to Look For #2: Push-Button Disaster Recovery Testing**
- **Feature to Look For #3: Bare-Metal Server Recovery**
- **Feature to Look For #4: Mountable Server Snapshots**
AppAssure 5 delivers five innovative and breakthrough technologies to create fast and reliable backups capable of protecting applications and data across virtual, physical, and cloud environments:

1. Scalable Architecture
2. True Global Deduplication
3. Live Recovery™: Instant Recovery
4. Recovery Assure™: Ensure Reliable Recoveries
5. Universal Recovery™: To any VM or Server

Download FREE Trial

www.appassure.com/Free-Trial