



It's Not About Backup.

It's About Getting Back Up and Running.

E-BOOK



Contents

From Backup to Back Up-and-Running	3
High Stakes for Failure.....	3
So What's the Problem?	4
Scary Scenarios and Recovery Fails.....	5
The Right Stuff:	
Adopting Cloud-Based Backup and Recovery	6
Cloud-Based Recovery: Big Benefits for a Small Investment..	7
Cloud-Based Disaster Recovery for Business Continuity	8
Q&A.....	8
The Holistic Cloud Recovery Process.....	10
Choosing the Best Platform	11
The Last Word	12



From Backup to Back Up-and-Running

Keeping the business running doesn't just mean recovering data. It means recovering the application that runs that data.

Recovered data waiting on its application is about as useful as a tin can. Administrators know this of course, and work a series of tasks to recover applications as fast as possible.

But think about it: this manual process means supplying new servers or reconstructing the old. It might mean bare metal recovery. It means reinstalling applications on physical servers and re-creating virtual machines. With larger and more complex applications you may well be re-creating clusters and dependencies. And while all of this is challenging enough, you will be working to meet service level agreements on business-critical or even mission-critical applications.

With complex applications and big data, this job is hard and getting harder – maybe even impossible. You need software and services that recover your applications as well as your data, and that do it fast.

High Stakes for Failure

A major physical disaster can happen anywhere. Your region may be prone to hurricanes, tornadoes, earthquakes, fire, or flood – and although no one likes to think about it, terrorist attack. It can take weeks to months to fully recover from such an event but you can still avoid catastrophic loss by bringing up your mission-critical and business-critical applications within hours to a day. The faster you become operational in your core business, the faster you will recover from financial and reputation losses.

Downtime of more than a day can have a devastating impact on your business. Recently 300 IT professionals across 15 industries answered a survey about the impact of downtime and cloud-based backup and recovery on SMB. Surveyed companies ranged in size gamut from 50 to 1000 employees.



84% of the respondents reported that at their company, extended IT downtime would result in moderate to catastrophic loss.¹

So What's the Problem?

If extended downtime can be catastrophic, what is stopping IT from recovering fast enough to avoid the damage? There are several challenges that are real obstacles for recovering your environment as fast as you need to.

- **Virtualization.** *Virtualization is great for consolidating servers, not so great for recovering them.* For all of its irreplaceable benefits, virtualization makes recovery more complex. You must install operating systems, applications, and their attendant upgrades and patches. Depending on the extent of damage to your data center, you might also have to reinstall the physical hosts and rebuild clusters before even getting to your virtual environment.
- **Big data.** *Data is growing fast, and TB-sized data sets can seriously impact backup and recovery speeds.* Traditional backup applications do one thing well: they optimize the flow of sequential data to on-premise backup media. Some of them may back up to the cloud as an additional backup target, but are not optimized for it. Today everything has changed. Huge data growth and the popularity of the cloud has left backup vendors scrambling to offer acceptable backup and recovery performance.
- **Slow pipes.** *Cloud-based backup and recovery are great until you realize that performance has taken a dive.* Data protection in the cloud is a great move for scalability, cost, lowering risk, and simplicity – if and only if your recovery solution has the performance to match those big benefits.

¹ Zetta 2016 SMB Recovery Readiness Study



Scary Scenarios and Recovery Fails

SCENARIO #1:

Failing the test.

The IT backup admin is hunched over his keyboard. A DBA located corruption in the Oracle financials and needs a point restore immediately. That would be no problem – if the IT guy could find it. He didn't test for verification and it looks like that point backup failed. And not just that one.

SCENARIO #2:

Speed bumps ahead.

The data center manager taps her fingers and sighs. The cloud data protection product she bought works fine for backup. But she just found out that recovery is way too slow. She has to break the news to the end-user who literally needed the data yesterday.

SCENARIO #3:

Failover would have been nice.

The 3-person IT team looks at each other. Data recovery went swimmingly but so what? They can't do anything with it until they recover their servers, install operating systems, deploy applications, and then upgrade and patch. It will be days before they can get the applications up and running.



**YOU ALREADY HAVE
A REMOTE HOT SITE?**

Great. How much is that costing you for leasing, management, and equipment? How long is it going to take you to rebuild servers, install applications, reinstall patches and upgrades – and only then restore your data?

The Right Stuff: Adopting Cloud-Based Backup and Recovery

The cloud can be an ideal choice for fast recovery. It can also be a frustrating tangle of performance and recovery management issues.

Backup to the cloud is very common on the consumer side. If you use your favorite search engine to look for “backup to the cloud” you’ll mostly find results for the solo user. Useful to be sure, but not a big help for business – especially business that backs up terabytes of data a day. This environment is still the domain of dedicated, on-premise backup systems.

Even so, cloud-based data protection is penetrating business. Cold storage for example is deservedly popular for long-term, economical storage of older backups and archival data. But what cold storage does not need is blazing fast performance. As long as backup is not impacting the production environment, companies can afford to wait. And as long as recovering cold data doesn’t take more than a couple of days, that’s generally good too.

What is not so popular is entrusting mission- and business-critical active backup to the cloud. Businesses would like to: the cloud’s near-infinite scalability at reasonable cost is a very attractive prospect. Granted that the more data you keep up there the more it’s going to cost you, but the cloud offers economies of scale that are not possible in the data center environment.

This is why cloud-based data protection vendors are concentrating so hard on three performance-related offerings: 1) high speed backup, 2) high speed data and application recovery, and 3) ensuring application access during recovery.



Cloud-Based Recovery: Big Benefits for a Small Investment

With a high performance cloud-based solution, you can expect some excellent benefits for moving data protection to the cloud.

- **Lower scalability cost.** Instead of buying yet another on-premise appliance or storage system, you can dynamically get more storage when you need it.
- **Energy and real estate savings.** You are scaling backup storage in the cloud and not on-premise, so save on energy costs and rack space. You'll also save on management time, especially if you have been backing up to tape. No more trucks pulling into your parking lot bearing a load of cartridges or removable drives.
- **Lower risk.** The right cloud-based package is not only going to give you backup and recovery, it's also going to let you to verify backup and test your DR plan.
- **Lower complexity.** Cloud administrators do the heavy lifting of scaling, provisioning, patching, and upgrading.
- **WAN optimization.** Cloud-based data protection worth its name will optimize the WAN for faster backup and recovery speeds.
- **Centralized management.** You'll manage and optimize your solution from a web-based management console. Since your data is based in the cloud, you can manage data from remote sites just as well as from your data center.
- **Application-specific backup.** The best of these offerings come with application plug-ins to optimize application-specific backup and recovery. This feature makes it considerably easier to, say, recover your entire Exchange environment instead of just downloading the mailboxes.
- **Business continuity.** Not all backup and recovery offerings also include the ability to spin-up a hot site in the cloud. But if you invest in one that does, you'll gain fast backup and recovery and the ability to keep your applications running in the cloud while you restore your production environment.



3-FACTOR APPLICATION RECOVERY

There is a triplet of processes that construct the best of cloud-based recovery. The first two you know: backup and recovery. The third critical factor is failover in the cloud. The cloud acts as your secondary data center, which takes over application processing should your data center go down.

Cloud-Based Disaster Recovery for Business Continuity

You can have it all with cloud-based Disaster Recovery as a Service (DRaaS)

DRaaS is a step beyond Recovery as a Service (RaaS). DRaaS offers cloud-based backup and recovery and also the ability to spin up fully functioning application servers in the cloud. It's the cost-effective alternative to the hot remote site, gives IT peace of mind, and enables a workable DR plan – finally.

Q&A

Q: Isn't DRaaS expensive?

A: It can be. Failing over servers to the cloud is more expensive than cloud-based backup and recovery alone. It used to be so expensive that only the companies with the biggest IT budgets could afford to position failover in the cloud.

For them it was worth it. When a significant downtime event can literally cost them hundreds of thousands of dollars a day and millions within a week, even an expensive failover proposition is a winning one.

However, this is not the case for most businesses. It's not that they weren't running the same proportional risk as the big guys, it's just that they simply do not have the budget for expensive failover services.

Fortunately for this market, DRaaS providers have rushed in to fill that gap with less expensive failover services. Not all of them will be suitable for all environments, but it is certainly a step in the right direction.



Q: So what's the cheapest failover alternative?

A: That's the wrong question to ask. You can find so-called DRAAS solutions on the cheap but they will not deliver what you need. You may be saving on operating expenses month over month or gigabyte by gigabyte, but if you experience a disaster and your service cannot recover for you in the amount of time that you need, then those supposed "savings" become very, very expensive. What you are looking for is a highly cost-effective cloud-based service that ensures 24x7 uptime for your applications.

Q: Fair enough. Then what are my most cost-effective choices?

A: Software-only solutions that don't require a staging drive are your best bet. These direct-to-cloud applications stream server images and snapshots directly to the cloud using WAN optimization technologies. Choose a service that also offers failover in the cloud. Although you might not take advantage of this offering right away, it will be available to you without having to switch data protection vendors.

Q: Some recovery products make virtual-only a competitive differentiator. What do you think about that?

A: Not much. Even in 100% virtualized data centers you still have physical servers. And those physical servers have to be protected just as much as the virtual ones. If you have a virtual-only solution, you have to buy different solutions for those physical servers. Remember, it takes physical servers to run your hypervisor in the first place. When your physical servers go down, there go your VMs.

Q: So how does DRaaS work?

A: Your cloud-based platform will store your physical and virtual server images and data in the cloud. The process should be near-continuous and very fast: your platform should continually replicate and verify changes to the cloud via an optimized WAN. Iron-clad security encryption in transit and at rest are basic requirements, as are physically and digitally secure cloud data centers. Also look for solutions offering two-factor authentication.

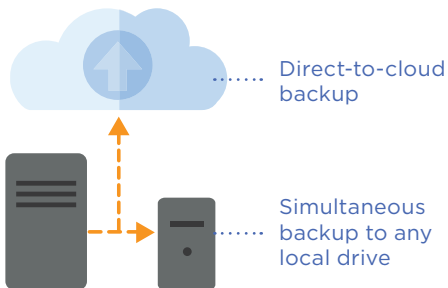
When a disaster happens, cloud-based images populate physical and virtual servers and take over application processing from downed servers. The failover solution will typically offer user access through



either existing VPN or Remote Desktop Protocol (RDP). Meanwhile, IT begins a high-performance recovery process to restore the production environment. Acting by application priority, IT rebuilds the data center while maintaining 100% uptime.

The Holistic Cloud Recovery Process

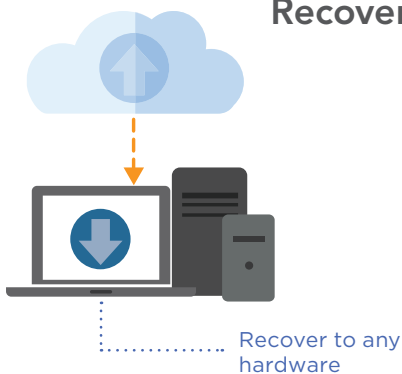
Backup –



Replicate server images and file systems in their native formats to the cloud. Optimize backup and recovery performance with application-specific plug-ins for databases, email, hypervisors, operating systems, and office applications.

Although your DRaaS solution should not require a staging drive, it should give you the option to save high-priority backup files to a mapped local drive in addition to streaming to the cloud.

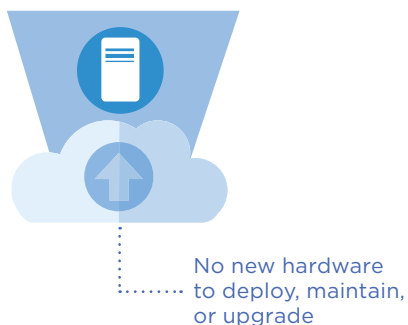
Recovery –



Cloud-based recovery should quickly restore everything from individual files to entire servers. Be sure that your software is optimized to efficiently recover big data sets.

Also look for options to verify recoverability. Hashing, background validation, bit-to-bit matching, and quiescing for point-in-time consistency are all critical verification features. You do not want to launch a file restore only to find out that the backup never happened.

DRaaS –



Minimize a disaster's impact by spinning up fully functioning servers and applications in the cloud in their native network environment. Applications will continue to run while you recover images and files to your production environment.

Support for multiple hypervisors will ensure continuity for VMware and Hyper-V, and P2V features will also allow failover for physical servers. Your service should also include regular DR testing services for recoverability, performance, and integrity.



Choosing the Best Platform

There are a lot of DRaaS offerings out there. MSPs like DRaaS because it's a natural product extension to backup and recovery offerings. Backup vendors like it because selling to MSPs gives them another sales channel. And IT likes it because the service gives them the 3-tier recovery architecture: backup, recovery and cloud-based failover.

But with so many offerings out there, you need to do your due diligence before signing up.

There are DRaaS offerings that don't fulfill every one of these best practices. Some of them may still work for you. But if they lack more than one or two of these features, take a very close look at them in terms of scalability, performance, flexibility, and cost.

- **Don't get stuck with virtual-only.** V2V is a beautiful enabler for VM recovery and migration. However, you own physical machines too so make sure that your DRaaS solution is capable of restoring them with P2P server image restores. And if you do want to go physical to virtual, make sure your service also supports P2V.
- **DR testing included.** The standard yearly test has never been good enough. Look for DRaaS services that test your DR procedures at least quarterly.
- **Direct cloud transfer.** Staging backup files and then transporting them to the cloud is a holdover from the days when backup vendors simply bolted on the cloud as an extra storage target. Hold out for services that do not require local staging, which adds time and cost to cloud-based backup and recovery. At the same time, make sure that your DRaaS service enables you to save some files on-premise as needed.
- **No PBBA (Purpose-Built Backup Appliance).** Physical appliances can only recover to other physical appliances. If your data center has experienced a disaster-related meltdown, then you'll need to ship in another appliance to start recovery. The extra time can gut service level recovery agreements, even assuming that you can use the new PBBA out of the box. PBBAs are also more expensive to scale since they require additional units and integration.



"THE CLOUD IS
TRANSFORMING DISASTER
RECOVERY AND BUSINESS
CONTINUITY STRATEGIES
LIKE NEVER BEFORE."

—Mike Grossman, CEO, Zetta

- **Non-proprietary backup formats.** Your DRaaS platform should save images in common formats like native Windows VHD format. This speeds up backup and recovery since it skips file conversion steps necessary in a proprietary backup format.
- **Built-in WAN acceleration.** Today's data is getting bigger and bigger. Backup and recovery speeds depend on optimizing the WAN for big data sets. Look for change tracking, compression, multi-threading/parallelization, and flash caching at the cloud ingestion layer.

The Last Word

Protecting your applications protects your whole business. Don't rely on backup alone. Rely on high performance backup, recovery, and failover to get you back up and running – fast.



It's a good thing you had Zetta.

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