

The Promise and Problems of Cloud Backup and Restore

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Backup and restore still remains a black art for many. Although companies accept viscerally that data is now so central to their business that it should be protected, many small and medium businesses (SMB) and mid-market organisations still take an ostrich approach to data protection. In many cases, there is no formal back up process or it is at best ad hoc; even where processes are in place systems are never checked and in reality recovery may be tricky; in others, it is felt that using e.g. email as a replication store for data is enough of a step to allow for recovering after any data loss.

However, now on-demand (cloud-based) services are coming to the fore as a consideration for data protection. As an external environment for storage such services hold much promise. For example, being off-site, they provide good protection against disasters as well as just component failure (e.g. a flood taking out a complete building as opposed to the failure of a disk drive). Such services are also "elastic" – if you need more storage, then the cloud provider can allocate it, generally on the fly, so the business is not faced with large capital bills for storage units, tape systems or whatever. Furthering the move away from capital costs, the amount of storage used is generally dealt with on a subscription basis, so making the costs relatively predictable and also controllable to a degree.

So, cloud-based backup and restore is perfect for the SMB and mid-market, then? Well, yes and no. There are a few issues that anyone looking to the cloud should bear in mind and ensure that they are happy with the way the provider deals with before proceeding.

- **Minimise the amount of data.** Much of the data that a business deals with is repetitive and contains a lot of redundancy. Ensuring that data

deduplication is in place can reduce the amount of data needing to be backed up by up to 80%. This then lowers the costs of cloud storage – and also makes any need for restore faster after any problems. The customer can either carry this out as part of its overall data policy, or can use a provider that builds in target-based deduplication in its services.

- **Initialising the first backup.** If all you want to do is backup a small amount of data, then an ADSL line will probably be OK. But, for an organisation with a few terabytes of data, such an initial backup could take weeks – and hammer your available bandwidth. Better to backup to a physical storage device at LAN speeds and ship the device to the cloud provider, so that they can transfer the data to their systems at LAN speeds too. Conversely, when it comes to the need for recovery, the same approach should be available – the cloud provider copies the required images/data over to a storage device, ships it to the customer who can then carry out the full restore at LAN speeds, rather than over the WAN.
- **Continuing the backup.** Once the first full backup has been created, the amount of data being transmitted over the WAN needs to be controlled. The best way to do this is for the provider to carry out "incremental" backups, which just look at what has changed over a defined timescale and create a small additional file that is transferred and stored. On a regular basis, it is best to then consolidate the original image and incrementals to a single file to make restores less of a hassle.
- **Security of data.** Any organisation should have a defined data security policy, and a set of procedures to support this. This is all well and good if

everything inside the organisation is carefully dealt with, but if the cloud provider's procedures do not match the corporate policy, then where does leave the organisation? Ensure that your needs for data security against internal and external governance needs are met by the cloud provider. For example, backups may be encrypted at rest and the data may be encrypted while on the move to provide better levels of security.

- **Veracity of backup.** It's fine believing that you have a full backup system in place. It's heart-breaking to find that it doesn't work when you come to restore. Backup sets need to be tested on a regular basis to make sure that what you believe is there is really there and is recoverable.
- **Granularity of recovery.** Image backups, where a full system is encapsulated, are a great way of dealing with data recovery – when a system is broken, a “bare metal” restore can be carried out against new replacement system and can be back up and running again in a short time. However, unless granularity is in place, a user losing just one file may find that they have to wait for a full restore of their system is done just to regain access to that file. A system must be able to present the image as if it was a complete disk system, enabling either technical staff, or preferably the user themselves, to recover single files from the image.
- **A “Plan B”.** Times are tough, and businesses are going to the wall all the time. Cloud companies, far from being immune to this, are possibly more prone to failure, as they are pushing a new

approach, with differing business models, and there are a lot of cloud companies that will never make it through the hard times. The last thing you want is to find that you have a failure resulting in the need to have a full restore of a system and to then find that the cloud provider's phone is answered by an administrator saying that all the hardware – and what lies on it – now belongs to them, and it will be on eBay within the next couple of weeks. The cloud can be a great help here – as long as data deduplication has been used and the number of images concerned is controlled, they can be copied to other cloud-based storage providers, so creating a level of redundancy. Where a lot of data is being dealt with, it may be necessary to look more towards the use of a physical device again. Here, owning a NAS-based device that sits within the provider's network and where they copy images over on a regular basis means that should they go bust, the NAS device can be reclaimed by the customer, as the administrator has no ownership of it.

The cloud does offer a great way for backup and restore needs to be dealt with in a cost- and business-effective manner. However, if approached in the wrong way, it will be costly and may not provide the peace of mind that the organisation expects. By ensuring that the above areas are dealt with, cloud-based backup and restore should be something that can be set up and forgotten about, being available for the remediation of both minor and major issues as they occur.

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<http://www.acronis.com>*

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