



Technical aspects of business continuity and disaster recovery

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Resilience of the IT infrastructure forms a significant part of an organisation's Disaster Recovery and Business Continuity plan. Traditionally businesses have relied upon backup tapes to recover their data in the event of any disaster, such as accidental file deletion, hardware failure, database corruption, power outage or catastrophic destruction of premises. But tape backups are notoriously unreliable, and it can take a number of days to recover systems using this method.

Recent technologies have enabled continuous data protection through the replication of data to a Disaster Recovery (DR) site, and more recent still, virtualisation has enabled true high availability to be built into the live site for faster recovery time, and minimal data loss. Here is a brief summary of the options available to businesses:

Tape Backups

Traditional tape backups are cost effective, but are ultimately the least reliable in terms of recovery time and data loss for Disaster Recovery. This is because backups are usually only taken each night, and in the event of a disaster, a second set of equipment must be procured before a lengthy restore process is carried out. In practice, this means that the systems can take several days to be recovered, and all changes or additions to the data, including e-mails and files, since the last good backup will be lost.

Replication to a Disaster Recovery Site

This technology overcomes many of the shortcomings of backup tapes by copying the live data across a private link to a business recovery site. Typically a duplicate of the IT infrastructure is set up and ready at the DR site in case of invocation, and the data is replicated directly onto the DR hardware, so the systems are ready to go in the event of a disaster.

From our experience, we have found that this type of replication works very well providing a fast failover of less than an hour, and very little or no data loss. In the event of a disaster, staff then relocate to the DR facility to carry on working. This scenario has been common



among many financial institutions in recent years, but is very expensive. It requires a complete duplicate set of hardware and licences on the DR site, plus the rental of seats at the DR facility and charges for the hosting of DR equipment, power usage and private circuit.

In addition, technical issues occur when the rate of change of data is greater than the private circuit link can accommodate. The link becomes flooded, replication cannot keep up with the data changes and the replication falls behind and eventually fails. A further technical challenge is that the failover to the DR site may be quick, but the effort and time to restore back to the live site is very significant, and often lingering technical configuration issues remain.

Highly Available Systems

In our experience 99% of all disasters are as a result of hardware failure. We have found the best solution is usually to create a highly available infrastructure in the live environment. This is the ultimate in business continuity, providing a clustered live system with two active-active nodes. Either of the two nodes can fail, and the second will continue operating almost seamlessly to the end user, who can continue working with no loss of data.

This solution takes advantage of two main technologies that have now become both affordable and widely adopted, Virtualisation and Storage Area Networks (SANs). These technologies combined provide a cost effective, highly available system with significant advantages over the traditional single application/single server approach.

This type of system has the added advantages of load balancing of resources across the duplicate systems, providing improved performance and flexibility, in addition to business continuity.

Virtual Disaster Recovery

Local regulatory requirements mean that finance businesses still need some type of offsite recovery plan. To enable local businesses to comply with this requirement in a cost effective manner, we offer a Virtual DR recovery service where we provide space on our NGIT hosted system for backup images. We backup clients' complete system states to portable hard drives and provide a service to restore these clone systems to our DR facility during their regular health checks. In the unlikely event of a disaster, we are then able to fire up the clients' DR systems and restore any data changes from backup tape in a timely manner.

Staff are then able to access their system from the DR facility, or remotely from any internet connected PC. This is a fraction of the cost of purchasing a duplicate of server hardware and software for DR.

Focusing your investment

As most disaster recovery events relate to the failure of IT hardware, focusing investment in the live systems provides the best value for money, enabling the budget for DR systems to be used in the live environment to increase performance and resilience.

We implement this type of solution for many of our clients, using the backup of virtual server images to regularly restore to our business recovery facility, to cover off the unlikely event that the live site was destroyed. This avoids the cost and issues with private circuits and DR equipment, and the complexity of asynchronous replication, whilst covering off the dual requirements of high availability and business recovery in the most cost effective manner.

The key balance is to maximise the performance, flexibility and reliability of the system, whilst providing the best value for Capex and minimising ongoing support costs.