

IBM zSeries Takes Corporate Data to the Highest Level

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Development of backup and recovery capabilities have mostly focused on the backup portion of the equation, with recovery limited largely to recouping individual files. However, the science of computing is such that some companies have significant portions of revenue dependent on the ongoing availability of core applications. Without those applications, there is essentially little or no business. The recovery of mission-critical applications and data is an integral component of business continuity requiring organisations to rethink their strategy for preventing damaging or potentially fatal downtime. These IT managers need systems capable of restoring data in seconds rather than in minutes or hours. The IBM eServer zSeries has GDPS technology that provides critical levels of availability, including recovery and swap capabilities that hedge against an organisation's risk exposure.

Making Your Business Highly Available

For truly available solutions, backup and recovery should be handled as an inseparable and integral pair. While many organisations have focused more on backup than recovery, most have been fortunate enough not to suffer substantial business disruption. Most availability issues have centred on individual servers or files. However, business continuity is increasingly dependent on keeping key applications and their data secure and always running. Business managers have begun to think about the hard questions such as how long they can afford to be without their systems or their data. IT managers responsible for these systems must think about post-recovery issues such as how much data the organisation can afford to recreate, or, for remote backup and recovery, how long it might take to switch over the network and how long they can afford to be without key systems. They also need to consider which IT staff is available and if they are capable of implementing recovery procedures.

These questions require more than well thought out processes for backup windows and adequate and appropriate storage. Mission-critical applications and data may require technology that can transfer data and on-line capabilities measurable in minutes rather than hours or in seconds rather than in minutes. Business managers have to balance the cost of downtime versus the cost of business continuity, as the more time they wait for an application to recover, the less expensive the solution, but the more revenue at risk. The good news is that for zSeries customers, IBM's GDPS (geographically dispersed parallel sysplex) technology makes it possible to provide remote disk mirroring, data and system swap, reconfiguration, and failover capabilities over longer distances than ever before, and in time frames that can indeed be measured in seconds. This paper briefly discusses the business benefits of GDPS and highlight which environments can best benefit from these enhanced capabilities.

Insurance for Your Electronic Assets

Business continuity from a systems perspective can be implemented in various tiers, of which IBM have adopted the SHARE user group definition of six levels and now added their own seventh level based on GDPS capabilities. From a bird's eye view, they span the gamut from the very basic tier one pickup truck access model, where you literally physically move the equipment from site A to site B; to tier seven, a dedicated

remote hot site equipped with highly automated takeover for a business-wide viewpoint with remote mirroring. Most companies currently sit somewhere between these two extremes, but are edging closer to tier seven all the time.

IBM offer several levels of GDPS benefit, depending on the needs of the organisation and the application. The first level, using IBM HyperSwap technology, is for those who want continuous availability within a single site or disaster recovery capability across two sites. With this capability, IBM are able to extend hot swapping capability to the disk subsystem. A primary disk subsystem failure results in an automatic swap to the secondary disk subsystem. A large number of devices can be swapped quickly, all done automatically by the GDPS; and because the server keeps using the same device addresses, there is no disruption of applications. Naturally this technology can also be used for maintenance and upgrades to disk subsystems, resulting in less planned downtime and better use of administrative resources.

The second option IBM offer is the ability to provide disaster recovery across two sites. For sites separated by up to 100km by fibre, IBM's Metro Mirror capabilities can provide mirroring of the entire zSeries, including the zOS, all disk and tape, and data from other applications running in open systems such as Windows or UNIX. This solution is designed to maintain data consistency and integrity across all volumes, and to provide fast, automated site failover with limited or no data loss, depending on customer business policies. This solution is automated and provides a single point of control for IT managers. The IBM technology does not actually sit on the systems, but instead works with SNMP alerts, and open systems need to be restarted at the backup site. However, data consistency across all systems is assured.

The third option is using Global Mirror for unlimited disaster recovery capabilities, meaning distance between two sites is not a limiting factor. Global Mirror for zSeries takes care of zSeries data and a new product that will specifically handle data in open systems, not traditionally protected by the mainframe. An example of how to use Global Mirror is to provide continuous availability as described above with Metro Mirror between two near sites and then offer a third, asynchronously connected site for disaster recovery of the main campus.

Depending on the distance and amount of data being swapped, recovery can be reduced from days to hours and from hours to minutes, effectively making business continuity a reality rather than a theoretical construct.

CYA: Cover Your Architecture

Executives whose revenue is significantly tied to the availability of online systems or who are planning their data recovery and business continuity strategies should seriously examine the GDPS solutions offered by the zSeries. IT managers who need to have automated capabilities where the recovery time objective is low or the recovery point is low (that is, how much time they have to recover or how much data they can afford to lose is low) should seriously consider the advantages of implementing this technology. IBM's ability to cover various operating systems, including zOS, zVM, and VSE/ESA, as well as Linux on the mainframe and various open systems, means that this solution is credible for most organisations regardless of their dominant application architecture.