**Back up Procedure**

***Critically evaluate the disaster recovery system called the “Grandfather-Father-Son" GFS backup procedure.***

The GFS procedure involves several levels of backup which happen at different points in a schedule. A full Grandfather backup is the least frequent, perhaps monthly, and a full extensive backup, it will often be stored offsite. A father backup is a full back up, more regular and potentially stored locally for speed of access. A son back up is an incremental backup, it just stores changes since the previous backup so is a much smaller (Vitanium, 2019). This strategy balances the frequency of backup and time to backup against the need to store many full backups which take up huge amounts of storage. There will always be a recent back up available and a full system backup will never be too outdated should there be a need to roll back recent changes. Over the course of the cycle, the son backups are replaced by new son backups, creating a history. This does still require lots of storage compared to some other backup options and the periodic full backups will be slower than other options.

Alternatives to the GFS process include a progressive incremental backup. An original full backup is made and the incremental updates then follow with full copies saved off site, this takes less time and less storage than GFS (Storagepipe, 2010). The main disadvantage is when recovery is required, if the last good state was in a now over written backup it can take time to roll back through the incremental backups (MicroAge, 2023). The other alternative is full backups on every occasion, this provides a full copy and history of the system but can be slow and consume a lot of storage space (MicroAge, 2023).

The GFS system offers a balance of full and incremental backup, it allows a comprehensive history to be held of full backups but also provides regular and quicker incremental backups to allow recovery of recent issues and changes and rollbacks. The best backup solution will always be driven by the business needs, how often is the data refreshed, how large is the data, what is the business risk of losing some of the data or not being able to recover quickly. Each case will have a more suitable solution.

**Sources:**

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Storagepipe (2010) Grandfather Father Son (GFS) vs. Progressive Backup. Available at <https://storagepipe.com/insights/grandfather-father-son-gfs-vs-progressive-backup/> [Accessed 11 November 2023]

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