
Backup Strategies

Introduction

It is well known and understood that all computer data should be backed up. What are less understood are the reasons for backup, the frequency, the length of time and the location of the storage site. This document aims to provide a high level overview of backup reasoning and methodology.

Why backup?

The reasons to backup data are as varied as the kinds of businesses that utilise computers. Many businesses backup computer-based data because it is 'the done thing', without realising the implications of backup data. Backups are primarily taken to enable data to be restored should an issue occur with the business's Information Technology (IT) hardware or software.

The reasons for data loss include hardware failure, software failure, and catastrophic events (flood, fire, etc.), malicious damage, virus infection and human error along with many others. Backups or Data Archival are also performed to minimise the amount of IT resource required to maintain an application. A company may decide to keep customer records from only the current and past year and archive all older records. Although these records are not available instantly to staff they can be accessed if required. There may also be a legal requirement to maintain tax or patient records for a set period.

Many business fail to recover after a serious data loss.

How often should I backup and how long should I keep the tapes?

The decision on how often to backup data is a business decision based on the risk of losing the data. The risk of losing data includes the cost of the data itself, the cost of re-entering the data (if possible), the length of time the application will be unavailable, the loss of customer service and confidence. These costs must be weighed by the business against the cost of a backup methodology and disaster recovery plan.

The most popular method of tape rotation is called 'Grandfather/Father/Son'. This method uses 3 layers of backup tapes. The first is written 4 nights per week and held for 1 week. The second is written 1 night per week and held for 4 weeks, the third is written 1 night per month (4 weeks) and held for 13 months. This methodology allows a restore to any day within the last week, any week within the last month and any month within the last year. To run this tape rotation 19 tapes are required.

What is Data Archiving and how is it different to Backups?

Data archiving is the backing up and removal of data that there is a requirement to keep (e.g. Tax records) but for which there is no regular requirement to access. Data once archived is removed from IT hardware thereby allowing greater use of the existing IT resource. Data can be archived to media such as CD-ROM but it pays to keep in mind that some CD-ROMs have a life span as short as 10 years.

Where should backups and archives be stored?

The same event that disables an IT system - causing the requirement for a restore - can also destroy backup media. This is particularly so in the case of natural disaster or malicious damage. To minimise the risk to business continuity it is recommended some tapes be stored in a separate physical location to the IT hardware. This location should be secure and have taken precautions against natural disaster.

In the 'Grandfather/Father/Son' tape rotation detailed above it is recommended the weekly and monthly tapes be stored offsite until required for next use.

Archive media – because of the length of time it must be retained - should be stored in multiple locations. We recommend a minimum of 2 copies of every archive made, 1 to be stored onsite and 1 stored offsite. The importance of the data needs to be taken into account when determining where and how many copies you will store.

The location of the offsite facility is dependant on the requirements of the business concerned, many companies send backup media to another geographic region to increase the security of the backup. There are companies that specialise in the management and maintenance of secure vaults within most main centres for backup storage and archival. These companies will also arrange secure transport for backup media.