

Data Backup Options for SME's

As an IT Solutions company, Alchemy are often asked “what is the best backup solution?” The answer has changed over the years and depends a lot on your situation. We recognize that every business has different IT requirements, whether in architecture or budget.

Traditionally one of the most tedious and complex jobs in the world of IT is data backup. Not only is it potentially an

administrative nightmare, is it often complex and therefore there are many cases where “**backup solutions fail**” with all the resultant implications for businesses!

Regardless of the data storage model or media used for backups, a balance needs to be struck between data reliability, accessibility, security and cost. The possible solutions are not mutually exclusive and are frequently combined to meet the needs of the situation.

There are now a range of cost effective backup solutions that meets every budget, whether it is a new requirement or upgrading existing backup solutions. Alchemy is able to directly guide you through the options and provide the best solutions for your needs.

This short article looks at some of the scenario's to be considered by small and medium sized enterprises (SME's) both from a technology and data backup management point of view.

WHY IS DATA BACKUP SO IMPORTANT?

Suppose for a moment that a virus infects your entire computer network. The virus spreads through every employee's workstation, into every document and database file. All your work, all your data—it's all destroyed. How would your business recover?

Without an adequate data backup plan, your business is at risk. Your company relies on its data and mission-critical applications, the cost of downtime is exorbitant, potentially exceeding thousands of pounds per hour of costs in recovering data and system files, replacing equipment, losing productivity, and losing customers.



A recent study reveals the “precarious position” of small business backups:

- 30% lack formal data backup and storage procedures,
- 39% review their storage procedures only after a problem occurs,
- 34% admit to only fair or poor performance in storing backup data offsite,
- 17% don’t consistently perform incremental data backups, and
- 55% rate their disaster recovery plan as fair or poor.

According to a disaster recovery study, nearly half of the small companies that are unable to fully restore their data after a disaster will go out of business entirely.

Small businesses often don’t have the time, expertise or money to properly implement a data backup strategy for their companies, but now there are cost effective solutions.

DATA BACKUP INTRODUCTION

Backups are useful primarily for two purposes. The first is to restore a state following a disaster. The second is to restore small numbers of files after they have been accidentally deleted or corrupted.

The backup data ideally needs to be securely stored on **storage media** and organized such that it is easy and convenient to restore at any time.

In addition, it is critical that the data should also be taken off-site to recover from worst-case scenarios such as theft, fire, flood, or earthquakes which would destroy any backups in the immediate vicinity along with everything else.

STORAGE MEDIA – THE CHOICES

Regardless of which backup model is used, the data has to be stored on some data storage medium somewhere. The two primary choices for backup media for SME’s are **magnetic tapes** or **hard disks**.

MAGNETIC TAPE

Magnetic tape has long been the most commonly used medium for bulk data storage, backup, archiving, and interchange. Tape has typically had an order of magnitude better capacity/price ratio when compared to hard disk, but recently the ratios for tape and hard disk have become a lot closer. Magnetic tape, on a positive note, gives companies total control over their own back ups. However, backing up company data using magnetic tape is becoming less popular and the big decline in tape market revenue starting in 2003 confirmed this trend. In addition, backup and recovery experts estimate that anywhere from **42% to 71% of tape restores fail**. The reason for the decline is based on some of the disadvantages of magnetic tape backups:

- **Mechanical Tape loaders** - make the system prone to breakage.
- **High Restore Failure Rates**
 - **Backup problems and failures** - due to the software not being configured properly or changes due to OS updates that throw the backup schedule off often without warning.
 - **Backup Tests** - many companies infrequently or never check their backups to see if they work.
 - **Fragile** - Tape, in contrast to disk, is physically delicate and more easily compromised by environmental factors such as heat, humidity, and magnetic interference.
- **Tapes Must Be Replaced Frequently** - Tape cartridges must be replaced frequently (every 12-24 months).
- **Tapes are Vulnerable to Theft** - Even when magnetic tape backups are successful, tapes themselves are subject to loss or theft.
- **Data Is Not Encrypted** - tape backups are rarely encrypted which compromises data security.
- **Tapes or not taken Off-Site** - 34% of SME's admit to only fair or poor performance in storing backup data off-site.
- **Time constraints, licensing fees and labour intensive processes** - that are associated with tape backup solutions
- **Tape Data Backup Access** - Tape backup doesn't really allow for you to easily browse through and pick and choose what you need at a granular level. You have to load the tape, and maybe if you are lucky view the contents, but unless you have carefully documented the hierarchy of the contents, it can still be days of searching, trial and error for you to find any specific data. If the question is "how fast do I need access to all of your archived documents?", and the answer to that question is "QUICKLY or FAIRLY QUICKLY", then tape is probably not the way to go.

The bottom line is that even when physical backup and restoration processes succeed, tape may not prove to be as timely and appropriate a medium for data storage as disk.

HARD DISK

The capacity/price ratio of hard disk has been rapidly improving for many years. This is now making it the de facto method for best practices backup and recovery.

Gartner Group notes that, *"The need for high-performance online recovery of data, combined with the availability of low-cost disk arrays, has influenced enterprises and small and midsize businesses to adopt a disk-based approach for backup and recovery."*

The main advantages of hard disk storage are:

- **Durability** – Hard disks are not compromised in normal operational environments
- **Reliability and Longevity** – Levels of hard disk reliability have increased significantly and disks last a very long time.
- **Falling prices** – combined with higher capacity disks have made disks the de facto standard.
- **Fast read and write times** – important for incremental storage and fast data recovery.
- **Easy to encrypt** – Provides increased security.
- **Hard Disk Data Backup Access** - A hard drive or disk based backup system mirrors your data, so, with the right backup management software, you have easy and almost instant access to the backup data on any given machine down to a granular level such as a users mailbox.

In summary, it's a wise move for any business to concentrate its backup and recovery solutions that leverage disk-based storage.

As with magnetic tape, it is essential that backup hard disks are physically taken off-site and stored in a second location. However we know this is not always rigorously implemented with the resultant risk that companies are unable to recover from on-site disasters.

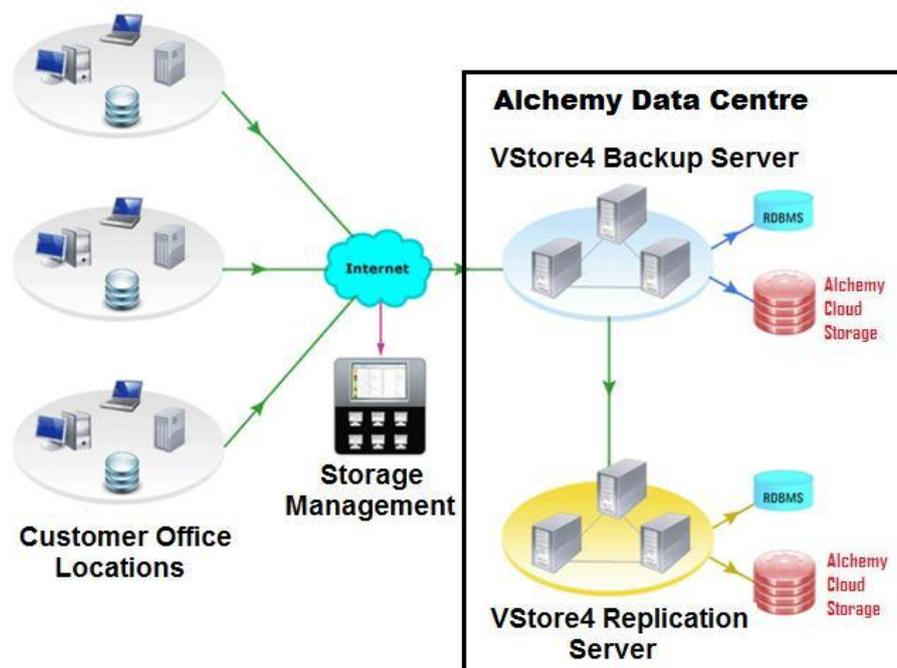
ON-LINE DATA BACKUP SERVICE WITH REPLICATION

As broadband internet access becomes more widespread and faster, on-line backup services are gaining in popularity. Automatic data back up data from multiple locations via the internet to remote locations backup and replication storage, will protect your data and protect you against worst-case scenarios such as fires, floods, or earthquakes which would destroy any on-site backups in the immediate vicinity along with everything else.

There are enormous benefits of a hosted remote backup service:

- **Eliminate Infrastructure Capital Costs** - there are no customer data backup infrastructure costs.
- **Reduction of costs by up to 50%** - The customer only pays for storage with a low cost per GB per month.
- **Run on Enterprise Class Data Backup Infrastructure** - data is backed up in an enterprise class infrastructure in the cloud that is unaffordable for most SME's.
- **Automate the Process** – remove the administrative nightmare of data backup.

Most of these on-line backup services are managed by you, the customer, via a web-based Storage Management Console and they work well for companies that have the in-house IT expertise and time to set up and monitor their own data backups.

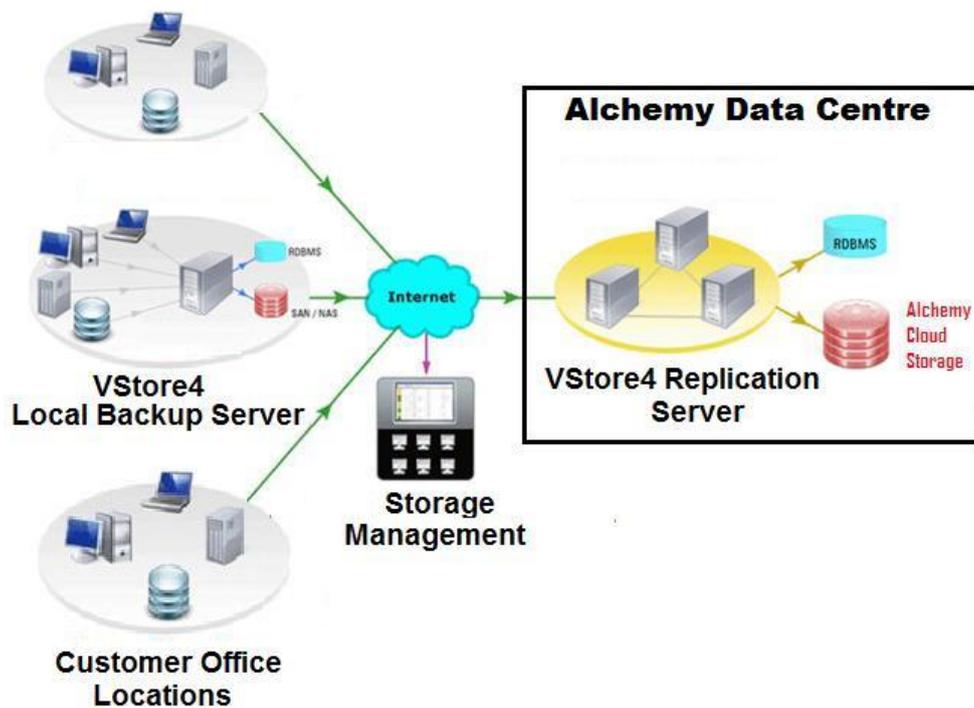


On-Line Data Backup Service with Replication

ON-SITE DATA BACKUP SERVICE WITH ON-LINE REPLICATION

The major potential drawback of a remote backup service may be the speed of the internet connections which are generally substantially slower than the speed of local data storage devices. This is often acceptable for small companies or individual users with PC's or laptops, but this speed limitation may be a problem for organisations that generate or modify large amounts of data.

To overcome the drawback of remote only backup services, users can deploy an on-site backup server with client machines and servers backing up to the locally deployed (on-site) server. A local backup server offers the ability to restore quickly from a local server and the flexibility to schedule frequent backups to the local backup server. Dependent on internet bandwidth, a relatively less frequent replication of backup data is made to the remote replication server to the Cloud Data Centre which provides protection against worst-case on-site scenarios.



On-Site Data Backup Service with On-Line Replication

MANAGED ON-LINE BACKUP SERVICE

Many SME businesses don't have the time, expertise or money to properly implement, maintain and test a data backup strategy. This is where a Managed On-Line Backup Service may be the appropriate solution where the service provider, such as Alchemy, installs, manages and monitors all aspects of the data backup process on behalf of their customers.

In this scenario, companies should look at a fully managed on-line backup service that provides:

- **Install, run and test the backup agents on customer devices** - PC's, Laptops, Servers with Microsoft, Mac, Linux Operating Systems including popular business platforms such as MS Exchange, MySQL, SQL and Sharepoint.
- **Setup Data Backup Schedules** – fine tuned and based on a customer's specific Internet bandwidth, backup requirements and IT infrastructure for both on-site and remote devices.
- **Monitor** – Check that the data backups are occurring on a daily basis
- **Test File Restore** - Periodically test file restores to ensure that the data backups are successful

This managed service, available from Alchemy takes the hassle out data backup.

CONCLUSION

The Alchemy conclusion is that there have to be good reasons as to why companies **do not** decide on the **On-Site Data Backup Service with On-Line Replication** or **On-Site Data Backup Service with On-Line Replication** with the option of selecting a **Managed On-Line Backup Service**, as the benefits of this approach are compelling.

SUMMARY OF BENEFITS

Existing Potential Issues	On-line Data Backup Features	Benefits of On-Line Backup
Manual tape backup causes operational inefficiencies and ties up skilled IT resources.	Fully automated process allows regular data backups to local and/or remote locations at scheduled intervals.	Frees up IT resources and delivers operational efficiencies and cost savings.
Backup window is ever increasing and often extends into the business day.	Backs up and transfers incremental changes in data, which is typically not more than 1-2% of all data.	Normally data backup can be completed outside of normal business hours. If this is not possible backups can be throttled during business hours with minimum impact.
Restoring data from tape is a slow, unreliable and inefficient process.	Data stored on hard disks to allow rapid online restore of single files or larger data volumes.	Improved productivity for both system administrators and end users.
Data backup and restore are cumbersome to support in geographically distributed operations.	Centralised management of all backup and restore operations for central and remote sites.	Effective online data protection for remote sites whilst reducing capital and operational costs.
Tape backups need to be manually moved to an off-site location	Fully automated process moves data off-site	Never worry about off-site replication
The current data backup solution is not scalable.	Online Data Backup Service is currently delivering managed data backup services from 10GB and upwards using the same technology and infrastructure.	Industrial-strength online data backup solution that scales with your business requirements.
Using tape backup technology causes unpredictable capital expenditure as data volumes grow.	Online Data Backup Service is scalable charged on a per GB basis.	Pay-as-you-use model offers a storage-on-demand charging model enabling further cost savings.
Security and data integrity concerns.	The managed Online Data Backup service protected with secure communications and 448-bit military level data encryption.	Reduced risk and additional compliance with audit and regulatory requirements.

Alchemy Systems International Ltd

Alchemy House, Band Lane, Egham, Surrey, TW20 9LN

Tel: +44 (0)1784 223 100 | Fax: +44 (0)1784 223 120

E-mail: pleasecontactme@alchemysys.net | Website: <http://www.alchemysys.net>

Alchemy Systems International Ltd is a company incorporated in England & Wales: 3593636 | VAT no: 722298336