Study and Analysis of Cloud Vault

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Abstract— in this article, the Study and analysis of Cloud Vault is overcome. Cloud Vault has a simple web services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web. Extremely Scalable in terms of Storage Size (Several Petabytes) and Storage Capacity (Number of objects). Pay as you use- no user or device licensing

Keywords— IDC, CD-ROM, SQL, NAS, ITIL, HIPAA

I.   INTRODUCTION

Cloud computing is a growing technology example that shifts the technological and computing concepts into utility-like solutions. This technology provides a large pool of services without any initial investment on set up. The cloud computing concept eliminates the need for hiring and training the IT professionals but at the same time Cloud computing comes with the threat of theft, misuse or discloser of data of the costumer organization accidentally or deliberately because the data of the costumers of a cloud service providers is available at remote server, which may be shared between a number of clients. Such type of technology also increases the client's flexibility by immediately taking over the services and basic resources when needed. The major aspects to think about are security and privacy concerns which are considered the primary threats to a wide utilization of clouds. The new concepts that are included in clouds are multi-occupancy, resource sharing and outsourcing; demand a very high security level.

In recent times, the significance of ensuring the remote data integrity has been highlighted by the following research works [1–5]. These techniques, while can be useful to ensure the storage correctness without having users possessing data, cannot address all the security threats in cloud data storage, since they are all focusing on single server scenario and most of them do not consider dynamic data operations. As a complementary approach, researchers have also proposed distributed protocols [6–8] for ensuring storage correctness across multiple servers or peers. Again, none of these distributed schemes is aware of dynamic data operations. As a result, their applicability in cloud data storage can be drastically limited. Researchers proposed several methods of security of data over cloud.

Cloud vault is dedicated to providing the safest, most reliable and most comprehensive online backup solution available for SMEs in Hong Kong and beyond. Our software solution is being constantly improved and supports all major operating systems, email solutions and database applications in common use today.

II.   WHY USE CLOUD VOULT

A. **Restore files anytime:** Backups need to be tested regularly. One of the major failings by IT staff is regularly restoring files from tape backups to prove that data is recoverable. Restoring files with Cloud vault is as easy as using Explorer, Nautilus or Finder - and can be done whenever you like. Restores can be restricted to particular IP addresses too.

B. **Web interface:** You do not need to install any software on your computer to restore data from Cloud vault - just log on to web interface with your credentials and choose what to restore. It's as easy as using your normal file manager.

C. **Tapes are not reliable:** Computer backup tapes typically last for a maximum of 99 usage cycles, after which they are no longer reliable. Two fifths of respondents to a recent study reported they had been unable to recover data from tape due to tape failure.

D. **Comprehensive reports:** At the end of every backup system produces a detailed report which is compressed and emailed to your nominated member of staff. This gives you peace of mind knowing that individual files have been backed up, and how much storage is being used.

E. **Eliminate human error:** Analysis of backup failures has shown that approximately one third of all failures are due to human error. This includes failure to change the backup tape, failure to follow cleaning procedures, failure to store tapes correctly and failure to rotate tapes correctly.

F. Reduce disk usage: The Cloud vault backup solution only needs to save the changes within your body of data. This means that your server is not reading redundant information every time you back up your files, prolonging the life of the disks and speeding up the backup process.

G. Flexible retention policy: You have complete control of how far back your data is available for restore.

III.   WHAT WE DO

A. Why Backup Online:
Conventional backup solutions are not enough:

Traditional backup solutions have low ROI for businesses today. They are costly, inefficient, and inflexible and time consuming. Poor "unstructured" conventional backup methodologies, such as tape, CD-ROM and external hard drives are simply inadequate for a host of reasons:

- High failure rates during restore operations
- Slow read / write speed
- Difficulty in detecting backup problems before performing a restore
- Problems finding the data that needs to be restored
- High maintenance cost
- Expensive off-site storage of tape libraries
- Inflexibility of fixed capacity backup media
- High risk of negligence-induced problems (e.g. lost or misplaced data)

Online backup is the standard data protection method for successful businesses today because it's the only solution that addresses all of these issues. It offers all the capability and flexibility to handle the whole process of data backup efficiently and effectively. It has all the backup and recovery capabilities seen in D2D backups, but stores your data off-site by default, thereby being able to fully protect your data. Even if the original infrastructure is unavailable due to a catastrophic failure, you can recover your critical documents instantly through a secure web interface.

B. Data protection is critical:
Your data usage is growing: The volume of data required to manage businesses has grown rapidly over the last decade, driven by widespread use of the internet, e-mail and media-rich applications that most organisations depend on. As early as 2002, International Data Corporation (IDC) projected a dizzying annual data growth rate of 80%. Today, the accelerating pace of data creation, accumulation and distribution is becoming an increasingly common phenomenon among companies throughout the world today. Yet backing up your business data as well as searching for the files you backed up has never been more complex. And hardware upgrades to handle the massive amount of data your business uses may be costing you an excessive amount.
How much is data worth to you? :

Viewed from a strategic perspective, your data is at the heart of your business. Contracts, databases, transaction records, proposals, accounting records, marketing material, business contacts, e-mails and, increasingly, photos and video are invaluable business assets that you simply can't afford to lose. You have invested valuable TIME, MONEY and EFFORT in developing the data on which your business depends on. This value can be measured in a number of ways:

- initial cost of data creation and maintenance
- cost of re-creation of missing information
- opportunity cost incurred through inaccessible data
- legal liability with regard to contractual obligations with clients
- implications of failing to observe regulatory requirements
- damage to your hard-earned reputation if data is unavailable or lost

Backup is mission-critical:
However you measure it, reliably backing up data is essential for every organisation. Meanwhile, increasingly complex, competitive and regulated business environments demand it.

- Operational efficiencies are driving increasing automation of business processes
- The reach and impact of regulatory and best-practice frameworks such as ITIL, Sarbanes-Oxley and HIPAA is growing relentlessly, with compliance requiring a new focus on data storage
- Ever-rising customer and client service expectations require close to 100 percent systems uptime, and close to immediate data recovery
- Open, interoperable corporate IT architectures require flexibility and scalability: Backup solutions need to fit into the IT infrastructure, not the other way around

The challenge for successful businesses is to achieve optimum data protection with the minimum of cost overhead.

C. Professional services:

Express start-up service:

A start-up service will be provided to help install and configure software to meet the needs of your company. Once the configuration for the backup selection, retention policy and backup schedules are set, cloud vault will monitor your backup jobs to ensure that everything is in working order. You'll simply never have to worry about backing up data again. Get your critical data protected now! : Software protects your business, not just data.

IV.   HOW IT WORKS

A. Features:

Advanced Retention Policy:

Advanced retention policy enables you to keep snapshots of a file for as long as you like. This ensures that you will be able to access and recover data from any day you specify.

All platforms and common databases supported:

Cloudvault supports all leading operating systems which can run the Java2 Runtime environment 1.4.1 or above, including Windows, Linux, Mac, Netware, and selected NAS devices. Modules specially designed for backing up common server applications, including Microsoft Exchange Server, Microsoft SQL server, Lotus Notes/Domino, Oracle and MySQL, are bundled with the Cloudvault solution. This allows these applications to be backed up as recommended by their respective software vendors. If the databases or applications you are using in-house are not listed here, don't worry: Cloudvault's extensive and easily configurable command line tools enable you to add custom logic to basic backup operations through simple scripting.

Fig. 1

Automated Backup:

Cloud vault's automatic backup technology allows the computer to run full backups in the background automatically without affecting the computers performance. Once the backup schedules and configurations have been set, you can sit back relax and let our software handle everything for you.
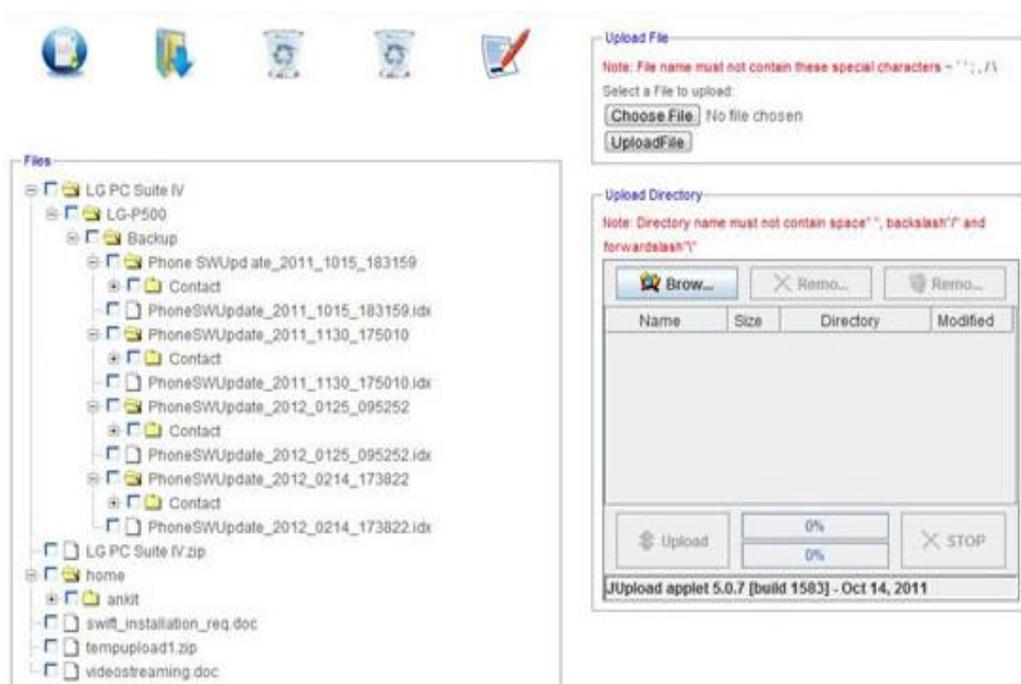

Fig. 2

B. Feature Comparisons:

Costs	USB Hard Drive	Tape	Cloudvault
Initial Start Up	High	Very High	Included
Software	Moderate	Moderate	Included
Maintenance/ Replacements	Very High	Very High	Included
Hardware Upgrade	High	Very High	Included
Data Storage Upgrade	High	Very High	Low
Off-site Storage	High	High	Included
Courier Service	Low	Low	Included
Backup	**USB Hard Drive**	**Tape**	**Cloudvault**
Fault Tolerance	✘	✘	○
Data Encryption	✘	○	○
Virus Safe	✘	○	○
Full Automation	✘	✘	○
Fast Backup Process	○	○	○
Fast Restore Process	○	✘	○
Easy Restoration Tests	✘	✘	○
Easy Restoration Tests	✘	✘	○
Restore Files Instantly	○	✘	○
Restore Older Version of Files Instantly	✘	✘	○
Restore to Anywhere	○	✘	○
Managed Media	✘	○	○
Continuous Data Protection	✘	✘	○
Automated Retention Policy	✘	○	○
Hardware Independent	○	✘	○
Advanced Backup Filter	✘	○	○
User Friendly GUI	✘	✘	○
All Platforms Supported	○	✘	○
Common Databases Support	✘	✘	○
Detailed Reports	✘	○	○
In-File Delta Support	✘	✘	○
Unlimited Data Storage	✘	✘	○

Fig. 3

V.   INTENDED USERS

Cloud Vault provides academic and research communities with a convenient and affordable way to store data, including extremely large data sets. The object based storage system and multiple interface methods make the Cloud Vault easy to use for the average user, but also provide a flexible, configurable, and expandable solution to meet the needs of more demanding applications.

VI.   BENEFIT TO THE USERS

Directories or Files of any size can be stored in the cloud, from small document to multi-terabyte data sets. Users can upload, download, delete and navigate files and directories via very simple User interface. And with on-demand storage, you never have to worry about running out of space - your storage scales as needed. Once objects are in the cloud they are immediately available over the web to other users, the public, or just to you.

VII.   CONCLUSIONS

So as given analysis Cloud Vault has a simple web services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web. Pay as you use- no user or device licensing.

Accessible - test the restore procedures anytime you like
Automated - no more changing tapes or worrying about your road-warriors
Flexible - you have complete control over the data being backed up
Reliable - our servers are safely hosted in industry-leading data centres
Secure - your data is fully encrypted with a password set by you

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