

The Terabyte Journey to the Cloud

WHITE PAPER

Overview

With data growing exponentially year-on-year, moving data to the cloud will convert capital expenditures (CapEX) from hardware purchases into operational expenses (OpEx), with subscription-based plans from cloud storage providers. Additionally, with Terabytes of data scattered on multiple employee devices or centralized on a NAS or centralized server over disparate locations, businesses are increasingly challenged in finding feasible and cost effective means to make the move. This white paper discusses how organizations are able to move valuable Terabytes of data to the cloud, in the most cost effective, secure and pragmatic way.

Assessing Cloud Storage Providers

Not every cloud provider can handle big data, businesses with Terabyte plus data need to consider specific criterion to ensure the service provider has the resources, including capabilities designed for storing their valuable data assets as well as being scalable.

The following table summarizes the top requirements storage providers must provide to accommodate protecting colossal amounts of data:

During Migration

Requirement	Details
The ability to ship data directly to data centers	With data over 10TB, consider shipping data directly to data centers; saving bandwidth costs
Ship data multiple times	Data may accumulate mass data production bottlenecks. Providers must provide a means to allow shipping data multiple times, not just as an initial seed
Resource-friendly	The service should work seamlessly with transparency in the background without disrupting BAU (Business As Usual) operations
User-friendly	The user interface should have a minimum learning curve; it should not require hiring a technical consultant or wait for scheduled technical assistance to go operational
Cost	Hidden costs such as bandwidth consumption, additional hardware or shipping should be a consideration

Post Migration

Requirement	Details
Deduplication	Only one copy of each file should be uploaded, optimizing bandwidth, providing faster backup savings on storage
Security	Service providers should have Zero-knowledge encryption to protect valuable data assets
Access control	Provide access to employees from anywhere while preventing unauthorized data access
Remote configuration	For global teams, IT should be able to configure backups and privileges remotely and apply instantly
Remote restore	Administrators can remotely recover data to any computer with a click of a button

How Zoolz Surpasses Colossal Data Storage Requirements

Zoolz Cloud Backup uses state of the art technology, designed from the ground-up for backing up data starting from 1TB. Its elastic back-end is architected to accommodate ever increasing volumes of unstructured data, residing on Amazon AWS, cloud leaders in secure, reliable and scalable data storage. With a feature-rich service that is cost effective, organizations are assured in moving mass data assets to the cloud with Zoolz, which provides:

Import/Export: Zoolz offers businesses the option to ship their data assets directly to our US or UK data centers and skip the web. Zoolz Import/Export Service offers 2 methods:

1. **Bring your own hard disk (BYOHD):** With this service you can ship your hard disk to Zoolz data centers and once processed, the disk will be wiped and sent back to you.
2. **Import/Export via Snowball:** Amazon's Snowball device is fully compatible with Zoolz. Snowball includes a high-speed, 10 Gbps network connection to minimize data transfer times. The Snowball appliance is designed to transfer up to **50 terabytes of data from your data source to the appliance in less than one day.**



Amazon Snowball is waterproof and detects tampering attempts. The device serves as its own shipping container and once unplugged, the e-ink updates automatically the shipping label.

Unlike other services, **Import/Export service can be used at any time** and not just as an initial seed, in addition to the ability to transfer 50TB+.

Reliable and scalable back-end: Zoolz resides on the secure and reliable Amazon AWS infrastructure. According to cloud reliability ratings by CloudHarmony¹, AWS is ranked leaders in cloud availability amongst all public clouds in 2014. And, in 2012, Amazon's Simple Storage Service (S3) stored 905 billion objects and handled, on average, 650,000 requests per second². The AWS platform enables Zoolz to handle colossal volumes of unstructured data with ease.

Cost efficient: Zoolz commitment to on-going R&D investments have continually resulted in the development of advanced technologies specifically designed to drive down data asset storage costs for our customers with massive storage requirements. Zoolz introduction of data tiering on two cloud storage types with an optional local backup, known as Tribrid Backup for faster recovery times. Tribrid backup is an easy to use backup technology that allows users to configure one backup job and select what data goes to each storage type:

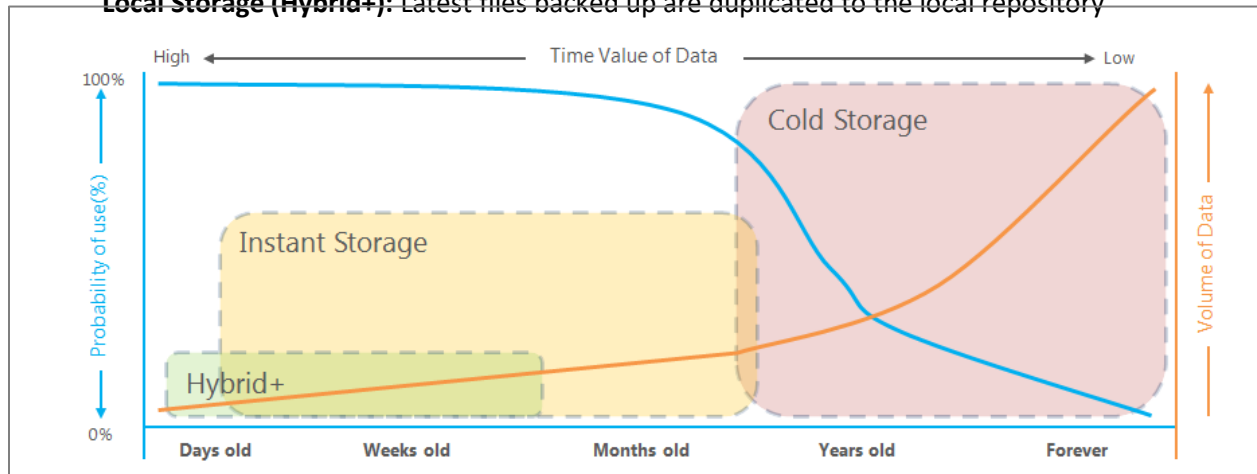
¹ <https://cloudharmony.com/status-1year-group-by-regions-and-provider>

² <https://aws.amazon.com/blogs/aws/amazon-s3-905-billion-objects-and-650000-requestssecond/>

Cold Storage: Optimal for storing data that is rarely accessed

Instant Storage: Provides instant access and collaboration capabilities for your live data

Local Storage (Hybrid+): Latest files backed up are duplicated to the local repository

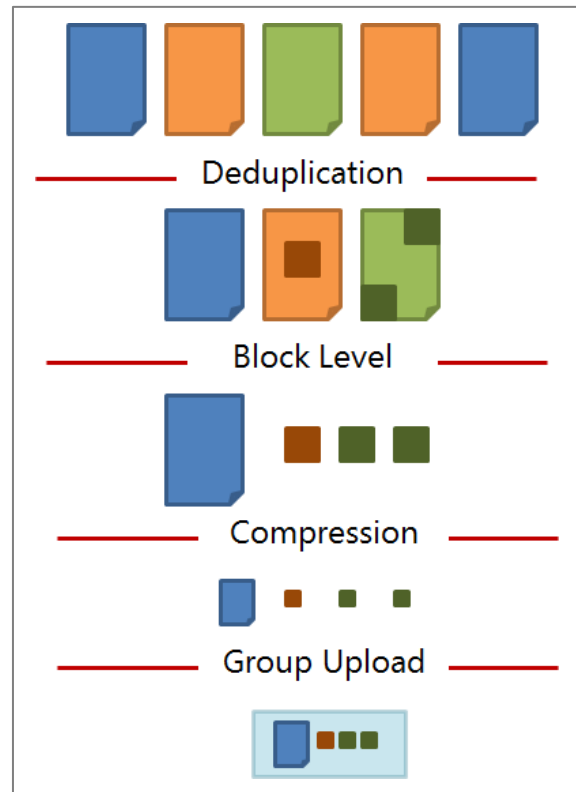


As data becomes inactive over time, it does not need to live on expensive storage

Cold Storage resides on the secure and reliable Amazon Glacier that minimizes storage costs; cheaper than storing on premises. Zoolz Cold Storage Technology overcame the limitations of Amazon Glacier with:

- **Zero Restore Cost:** By leveraging 5% retrieval quota of our 5PB+ storage
- **Zero Restore Time:** Cut the 3-5 hours Glacier waiting time with local backup via Hybrid+
- **Zero Learning Curve:** Automatic and easy access to the data
- **Zero Knowledge:** With 3 levels of 256-AES Encryption

Resource Friendly: To ensure business continuity, all major operations are performed on the back-end. Not to mention that Zoolz only uploads what is necessary, saving bandwidth and time.

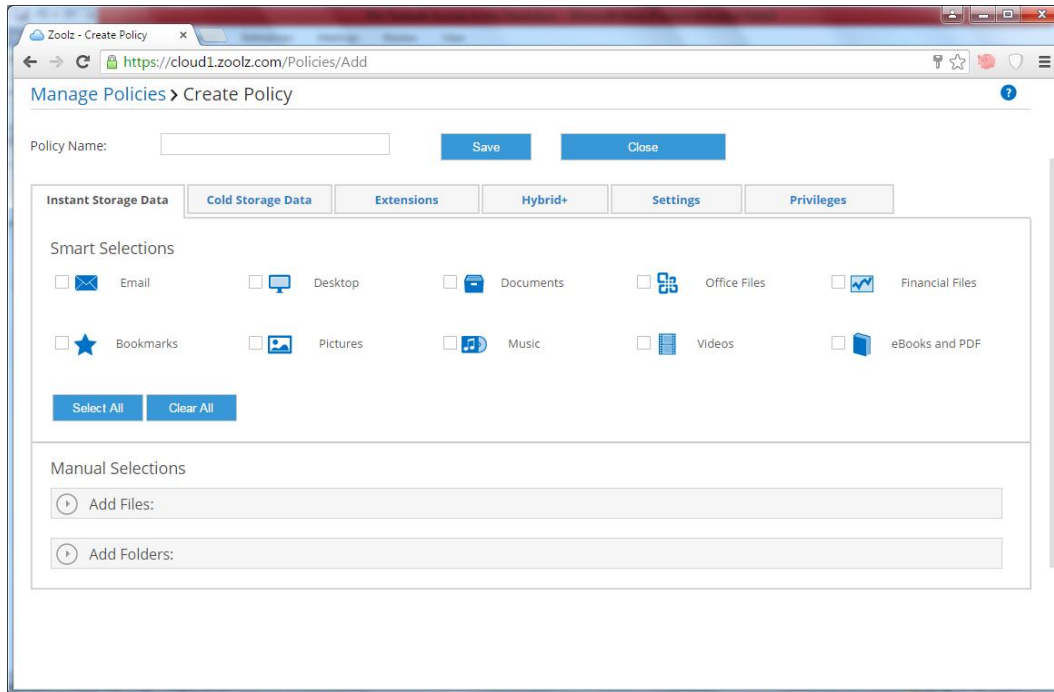


Our extra steps might seem to have little impact; however, when backing up on a large scale it will save a significant amount of bandwidth and time.

Security: Zoolz provides the highest levels of data security, including 3-levels of data encryption:

- **256-AES Machine level encryption:** All data is encrypted **before** leaving your machine, this is what is popularly referred to as Zero-knowledge encryption;
- **Secure data transfer:** All requests and data are transferred via 256-AES Secure Sockets Layer (SSL);
- **At rest encryption:** The encrypted data is encrypted at rest with 256-AES Server Side Encryption (SSE).

Remote configuration and deployment: From a centralized web console, a Zoolz administrator can deploy Zoolz via active directory deployment. The administrator can also remotely select user data, add filtering, set permissions, enable bandwidth throttling, set a backup schedule and more via backup policies with a couple of clicks:



An easy to use, yet powerful web console to remotely configure backups, deploy and monitor backup statuses, and remotely restore data without leaving your chair

Time to take the journey

There is no doubt moving to the cloud is inevitable when considering the huge cost reductions and providing data mobility. For organizations that need to manage copious volumes of data, Zoolz offers the most cost effective, practical, and feature-rich solution making this journey a reality.

Organizations will need to assess the security, control and infrastructure implications that a data migration to the cloud will have on productivity and ongoing BAU operations. Zoolz offers an easy, secure and practical migration path for massive unstructured data, is scalable in providing a data tiering model that reduces costs dramatically. And, surpasses enterprise-level features that will accommodate with all business needs in a complete data storage solution.