UNITRENDS

5 Hidden Costs of Cloud Backup

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Many organizations have recognized that cloud-based backup is a superior solution for storing copies of backups for long term retention and disaster recovery. For years enterprises have relied on tape or other rotational media to meet the "rule of 3" best practice, also known as the 3-2-1 rule. The rule of 3 states that you should have 3 copies of your data, across at least 2 different media types, with one of those copies being located off site.

Cloud delivers a multitude of benefits over these legacy methods including:

- Greater ease of use
- More automation / less manual steps required
- Better recoverability over tapes that frequently fail
- Ability to scale and grow as data grows
- Ability to incorporate Disaster Recovery as a Service (DRaaS) with backup storage
- Ability to test backups

However, not all cloud backup options are the same. In fact, Unitrends supports several different cloud options for storing backup copies that include Unitrends No Limits Cloud, Unitrends Forever Cloud, and support for various third party clouds, including Amazon AWS, Google Cloud, and others. Unitrends believes it is important to provide our customers with as wide a selection of choices as possible so that our customers can choose what best fits their needs. But how should an IT executive evaluate which option is best for their specific environment?

Data is growing exponentially, and with the cloud storage cost per GB as low as 1 cent per month with some hyper-scale cloud vendors, that may seem like your most affordable option. And, for some customers it is the right option, which is why Unitrends supports archiving backup copies to Amazon and Google cloud as a standard feature.

But when you add network egress fees, data retrieval fees, and the compounding storage of data for long term retention, you may be shocked by your total costs for these low-cost options. Additional factors such as the ability to get your data back quickly may not be so obvious but can be just as costly to your business.

Unitrends Forever Cloud is a purpose-built cloud for backup and recovery, designed to securely and cost effectively retain your backup copies for an infinite amount of time. Forever Cloud is priced at 10 cents per GB per month. Therefore, a common question is how can Forever Cloud be cost effective compared to Google and Amazon at 1 cent. (Note: Amazon recently changed Glacier's pricing to $0.007 per GB and created an Infrequent Access Storage solution at $0.012 /GB.)

The answer lies in the different operational and billing models between the purpose-built Unitrends Forever Cloud and the more general purpose hyperscale clouds, such as AWS with S3 and Glacier and Google with Google Cloud Storage and Nearline.

Because Forever Cloud is purpose-built for data protection and recovery it has a number of features and benefits that are simply unavailable with the general purpose hyper-scale cloud. However, the main reason Forever Cloud can be more cost effective is the difference in what you pay for. With Forever Cloud, you only pay for the amount of data you want to protect, not for the amount of raw cloud storage that is consumed. Regardless of your daily change rate or other factors that affect how much raw cloud storage is used, your cloud backup expense stays the same. With other cloud solutions, you pay for each GB used in the cloud. As your backups grow over time, so does your bill. Also, Unitrends never charges fees for retrieving your data or network egress, which can also increase your bill.

5 Hidden Charges

There are a number of “hidden” charges that many users may not consider when comparing just the top line cost per GB cost for each solution. This whitepaper will step through 5 different costs that users must consider to get a true cost comparison.

Hidden Cost #1: Compounding Storage Needs

The size of your backups is dependent on a number of variables, which are beyond the primary scope of this whitepaper. However, the storage required to retain multiple copies of your backup can be substantially larger than the original source data. Many organization must retain copies of backups for several reasons. First, data must be protected against human errors, natural disasters, and system failures. Just as important for some organizations is the regulatory or policy requirement to store copies of backups for long term retention.

A common strategy for keeping data for long term retention is to use a Grandfather-Father-Son (GFS) backup scheme. In this scheme, a set of daily, weekly, monthly and yearly backups are retained using a First In-First Out (FIFO) pattern. Even if only the data that is changing daily is stored in the cloud and the backups are being compressed, the cloud storage used can really add up over time.

For example, if we assume the following for 1 TB of source data protected:

- a 5% daily change rate,
- a compression / deduplication engine that is reducing data to 10%,
- and a GFS scheme storing 7 daily backups, 4 weekly and 12 monthly and a set of annual backups.

Then that 1 TB of protected data will require almost 4 TB of cloud storage by the end of year 1 and almost 6 TB by the end of year 2. To save 7 years of backups it will use approximately 15 TB of cloud storage.

If the daily change rate is higher, then the amount of cloud storage required can be much higher. For example, if the daily change rate is 10% then 1 TB of source protected data will require 7.8 TB at the end of year 1 and 30 TB at the end of year 7.

Consequently, it matters a great deal where the gigabytes and terabytes reside that we are paying for. Most cloud storage and backup solutions charge for every GB of storage used in the cloud. As your backups grow, and consume more cloud storage, so does your bill.

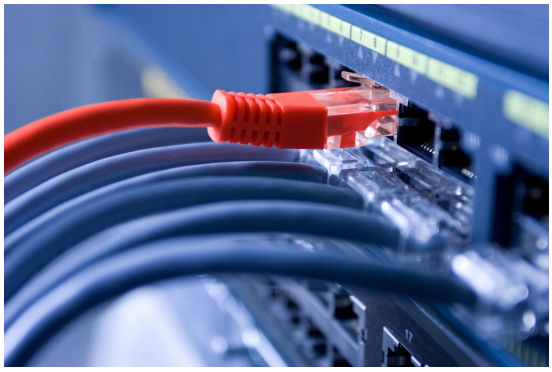
Unitrends Forever Cloud takes a different approach. Forever Cloud only charges for the amount of data protected on the source side. If our standard backup is 1 TB, Forever Cloud only ever charges for 1 TB, not for the cloud storage consumed over time by all the copies of that protected data. As a result, customers get consistent and predictable cost. Unless your source data grows in size, your price in year 7 is the same and the price in year 1.

Hidden Cost #2: Retrieval Fees

Many of the low cost hyperscale cloud storage solutions are designed as cold storage. The data stored there is not expected to be accessed frequently and these clouds will penalize users who need to access their data. These cold storage solutions charge a fee for merely accessing your own data. Typically, these fee are 1 cent per GB.

These fees may seem small, but if you have multiple events throughout the year where you need to access your data to restore a lost system or recover from a disaster, they can really add up.

Hidden Cost #3: Network Egress Fees



All clouds allow you to insert you data for free (Network Ingress). However, many clouds charge network fees to move your data out of the cloud to another geography or to the Internet (Network Egress). These network egress fees vary greatly by cloud provider and depend on the amount of data moved in a month and the geography where the data resides. These charges are on top of other fees such as data access fees.

For example, Google charges $0.12 per GB for Network Egress for most countries for 0-1 TB monthly. This drops to $0.08 for 10+ TB monthly. However, for other geographies such as China, this fee jumps to $0.23 per GB. Amazon also charges for Network Egress. Rate range for $0.00 per GB for the first GB to $0.09 per GB for up to 10 TB/month and $0.05 per GB for the next 350 TB/month.

Hidden Cost #4: Getting Data Into and Out of the Cloud

Getting your data into and out of the cloud has both hard costs and soft costs beyond the fees described above. The impact of those costs really depends on which option is used to move your data. The most obvious method to move your data to and from the cloud is to send it all over a WAN connection. However, this may not be ideal for moving large amounts of data, such as the many terabytes of data most enterprises have.

Even with a high speed Internet connection, transferring multiple terabytes of data can take a substantial amount of time. For example, the table below provides the time it would take to transfer just 2 TB over various connections. Therefore, enterprises must ask themselves “Is my WAN connection sufficient or do I need to acquire a higher speed connection at a greater cost?”

WAN Challenge

Transfer rates over WAN can be restricting		
Type	Bandwidth	Time for 2 TB
T1	1.5 Mbbs	131+ Days
T3	44.7 Mbps	4 Days 13 Hours
Faster Ethernet	100 Mbps	2 Day 52 Minutes
OC-3	155.5 Mbps	1 Day 7.4 Hours

Physical Seeding

There is an alternative method to get the initial set of data into the cloud without having to wait days or weeks to transfer many TBs. Physical seeding uses physical disks and overnight shipping to quickly create an initial dataset in the cloud. Media is sent to the cloud provider to “seed” the initial full set of data and avoid the WAN challenge. The cloud vendor sends the customer a set of disks that are used to store a complete set of backup data. Those disks are then sent by overnight carrier to the cloud vendor, who then loads that data into the cloud.

Physical seeding can greatly speed up the process of getting started with cloud backup, reducing the setup time from weeks to a single day even for hundreds of TBs. However, not all vendors offer a seeding option and almost all charge a nominal fee for it.

Even more important than seeding your data to get started is the requirement for “Reverse Seeding,” a.k.a. a Data Shipment Service Level Agreement (SLA), to get data back within 24 hours in the event of a disaster. This works the same as seeding but in reverse. If the customer has a disaster and loses all or a large amount of their data, the cloud vendor places their data onto disks or a new backup appliance and ships the data to the customer.

Whether an organization can obtain reverse seeding or not can be the difference between a achieving or missing a Recovery Time Objective (RTO). With reverse seeding, downtime can be minimized by avoiding the challenge of sending large amounts of data over a WAN. It can be the difference between experiencing downtime of hours vs weeks.

Hidden Cost #5: Cost of Not Having Rock Solid SLAs

Many clouds have soft SLAs. It pays to read the fine print and determine how the cloud you are relying on for mission critical backup and recovery will perform when it matters most. Be sure to determine the following:

- What does your cloud provider guarantee for recovery? Do they guarantee a specific recovery time?
- What is the guarantee for uptime?
- If you have concerns for data sovereignty, does the provider validate that your data will stay in the geography that you choose?
- What are the SLAs for response time for service? Is there a person to answer the phone or is it email / chat only?
- Are there multiple vendors involved? Does that affect the SLA?

SLAs are particularly important for backup and recovery. You need to make sure that you have a supplier who will be there with you when you have a disaster or emergency. Without such SLAs in place and clearly articulated, you may find that you have just purchased cheap offsite storage, not a backup and recovery solution.

Cost Comparison Calculator

Please see our cloud comparison cost calculator at: http://blogs.unitrends.com/cloud-cost-comparison-calculator/. Plug in your own numbers for your own environment to compare the cost of Unitrends Forever Cloud vs a hyperscale cloud.

Unitrends Forever Cloud

Unitrends Forever Cloud is purpose-built for data protection and recovery. With Forever Cloud, you only pay for the amount of data you want to protect, not for the amount of raw cloud storage that is consumed. Regardless of your daily change rate or other factors that affect how much raw cloud storage is used, your cloud backup expense stays the same. Unitrends never charges fees for retrieving your data or for network egress.

Unitrends Cloud has a physical seeding option so customer can avoid the WAN challenge that can slow down the initial cloud setup. Unitrends Cloud also includes a data shipment SLA (reverse seeding) so you will never be without your data for long periods of time.

Forever Cloud can be combined with Unitrends DRaaS disaster recovery services and Recovery Assurance for spin-up of critical systems in the Unitrends Cloud with a 1 hour recovery SLA for complete disaster protection for your data and your systems.

All Unitrends Cloud solutions come with Unitrends white glove services and SLAs. Unitrends is your committed partner delivering confidence in your environment with responsive and personal service and support.

REQUEST A QUOTE FOR UNITRENDS FOREVER CLOUD.

About Unitrends
Unitrends delivers award-winning business recovery solutions for any IT environment. The company's portfolio of virtual, physical, and cloud solutions provides adaptive protection for organizations globally. To address the complexities facing today's modern data center, Unitrends delivers end-to-end protection and instant recovery of all virtual and physical assets as well as automated disaster recovery testing built for virtualization. With the industry's lowest total cost of ownership, Unitrends' offerings are backed by a customer support team that consistently achieves a 98 percent satisfaction rating. Unitrends' solutions are also sold through a community of thousands of leading technology partners, service providers, and resellers worldwide.