

# Storage Vaults

## Backblaze's massive new ultra-low-cost Storage Vault

Need low-cost, highly-resilient storage - and lots of it? Backblaze, who stores over 150PB for their backup clients, is making public their Vault architecture.



By [Robin Harris](#) for [Storage Bits](#) | March 11, 2015 -- 08:01 GMT (01:01 PDT) | Topic: [Storage](#)

Scale-out object storage is the highest growth segment of the industry - and has been for 10 years - and now there's another option. Optimized for low-cost Backblaze open sourced Storage Pods (see [Build an 180TB storage array for \\$1,943](#)) the [Backblaze Vault](#) architecture promises 99.99999 percent annual durability. Backblaze is planning to open source the core of the Vault architecture in the near future.

### HOW'S IT WORK?

The software creates Vaults across 20 Storage Pods - on 20 different racks. Incoming files are split into 20 shards - 17 data, 3 parity - and written to 20 hard disk drives.

The 3 parity shards means any 3 drives, pods or racks can go offline and all data will remain fully available. That's better than any RAID 6 and more efficient.

Linux and the ext4 file system, well tried and reliable, get the bits on and off disk. But the Linux RAID software is not used.

Instead, Backblaze used a simplified fountain code - an advanced form of the Reed-Solomon coding used in RAID arrays - to provide efficient and resilient storage. The 17/3 data/parity ratio could be changed in a future release of the software.

There is no single choke point on the data path, so as each Storage Pod is added, another 1Gb/sec bandwidth is added as well. Each Vault can handle 20Gb/sec of I/O, more than fast enough for most active archive applications.

### THE STORAGE BITS TAKE

Our data archives are growing faster every year, but prices aren't coming down as fast as they once did. Something has to give.

# Introducing: Backblaze Vaults



By Victoria Kazz — Last Updated: 11 Mar'15

Storage provider for more than 150 petabytes of digital data, Backblaze has been working on a new project called [Backblaze Vaults](#). Today, the company shared details about the service as well as its results.



© ChrisDag

## The Ingenuity Of Backblaze Vaults

Backblaze reports that its vault is a major step in the right direction for its cloud storage services technology portfolio. In fact, Backblaze Vaults will become the core module of the company's cloud services from here on out. This feature offers the organization and its clients:

- ✓ Durability
- ✓ Scalability
- ✓ Permanence
- ✓ High-level Performance
- ✓ Data Availability
- ✓ User Operability

In addition to these six features, Backblaze Vaults is also significantly cost-efficient when it comes to storing content. In true Backblaze fashion, the company kept it simple when developing their vault service in combination with the existing Backblaze Storage Pod offering. The cloud storage software is front and center of Backblaze Vaults, relying as little as possible on the hardware aspect of the system.



© *ChrisDag*

## How Backblaze Vault Works

Made up of 20 [Backblaze](#) Storage Pods, data is evenly distributed and securely stored. Each Pod has the same amount of hard drives and all are the same size for consistency. One digital file is stored among this group of drives in separate pieces, spread out so it can reliably and readily be accessed. Each piece is called a shard and one document is stored as 20 shards.

Keeping information distributed among different shards and pods, if one or two [hard drives](#) fail the content can still be created, saved and accessed. In fact, a Backblaze Vault can lose up to as many as three drives in the same Pod all at once and still function normally.

Plan	Price Plan	Storage	Details
	\$ 5 MONTHLY <del>\$ 60.00</del> 1 YEAR		
Unlimited Personal	\$ 50.00 (-17%) <del>\$ 120.00</del> 2 YEARS	Unlimited GB	Plan is for one computer.
	\$ 90.00 (-25%)		

The company boasts that it can develop a data center, which includes 10,000 Backblaze Vaults and uploads information fast enough, that can reach full capacity (90 exabytes) in just a little over 30 days.

Current [Backblaze customers](#) utilizing version 3.0 or higher will be able to use Backblaze Vaults. This will happen to the account automatically without disturbance or configuration. In the upcoming months, Backblaze will migrate all user data from Storage Pods to Vaults. What do you think about this technology development by Backblaze?