DATA PROTECTION

Your Backup Costs Aren't What You Think

Calculating the True Cost Beyond Storage

Storage is the smallest part of the bill.

Recovery breaks the model.

THE ILLUSION

Backup cost = storage.

That's what vendors quote. GB/month fits in a spreadsheet, survives a budget review, and closes a procurement conversation.

Vendor pricing

License quotes lead with GB protected or TB stored.

Cloud invoices

Storage line item is visible. Movement costs are buried.

Dashboards

Capacity used. Not what it costs to get that data back.

Storage is the most favorable number — which is why it leads the conversation.

THE REAL COST COMPONENTS

5 components. Most architectures model 1.

01	**Storage**	*Cheapest. Predictable. Vendor's favorite number.*
02	**Data Movement**	*Replication + cross-region + restore egress.*
03	**Compute**	*Compression, dedupe, encryption, restore workload.*
04	**Recovery Events**	*DR tests + actual restores. Retrieval fees fire here.*
05	**Operational Overhead**	*Monitoring, triage, policy management, compliance.*

The restore event is the largest data movement in the backup lifecycle.

It is almost never included in the cost model.

Ingest

Source → backup target. Usually cheap or free.

Replication

Primary → secondary region. Doubles movement cost per cycle.

Cross-region copy

Ransomware resilience copy. Multiplies egress on every backup.

Restore event

Cold archive → production. Egress + retrieval fees fire simultaneously.

THE MULTIPLIER EFFECT

Backup cost is not linear.

A. Retention Policies

90-day retention = 3× the cost of 30-day. Compliance extensions multiply this directly.

B. Copy Counts

3-2-1-1-0 means 5 copies across tiers. Each adds storage + movement cost per cycle.

C. Regional Distribution

Every geographic copy multiplies egress on replication and restore.

D. Recovery Frequency

Every DR test fires egress, retrieval, and compute — the full cost stack.

WHERE MODELS BREAK

4 failure patterns found in every broken backup cost model.

⚠ DR Tests Excluded

Cost model covers backup jobs. Not recovery validation. DR tests fire the same cost stack as real disasters.

⚠ Restore Frequency Ignored

Model assumes write-only. File restores, compliance retrievals, and app recoveries generate ongoing egress.

⚠ Egress Not Modeled

Storage cost is modeled. Movement to target, cross-region replication, and restore egress are not.

⚠ Snapshot Assumptions Wrong

Snapshots ≠ backups. Encrypted or corrupted storage = failed recovery. Unpruned snapshots compound silently.

THE FRAMEWORK

True Backup Cost = 5 inputs.

```
True Backup Cost  =

  Storage                          // GB × retention × copy count × tier cost

+ Data Movement                    // ingest + replication + restore × egress rate

+ Compute                          // job execution + compression + restore workload

+ Recovery Events                  // DR tests + actual restores × retrieval + egress

+ Operational Overhead             // management + tooling + compliance
```

RECOVERY COST — THE REAL NUMBER

A ransomware recovery from archive can exceed your annual backup budget in 72 hours.

Egress Fees

Data transfer out of archive tier. Fires at full volume on a disaster restore.

Retrieval Charges

Archive tiers charge per-GB retrieval. Deep archive = hours of delay + premium fee.

Compute

Rehydration, decryption, and reconstruction saturate proxies under RTO pressure.

Downtime Impact

The cost per hour of downtime during restore. Rarely in the backup budget model.

ARCHITECT'S VERDICT

Storage is the smallest part of your backup cost.

Recovery is the part that breaks your model.

The teams that get surprised by backup cost are not the ones who chose the wrong vendor. They are the ones who modeled the write path and never modeled the read path.

The fix is not to spend more on backup. It is to model the full cost surface before the architecture is committed — including the DR test that fires all the egress multipliers at once.

`Model the recovery. Not just the backup.`

Read the full breakdown →

How to Calculate True Backup Costs (Beyond Storage)

FREE TOOLS ON RACK2CLOUD

[+] Universal Cloud Restore Calculator

Model egress + retrieval fees for a full restore event

[+] Cloud Egress Calculator

Expose the true cost of replication and cross-region copies

rack2cloud.com/how-to-calculate-true-backup-costs/