Cutting the Cost of Enterprise Vault Archive Storage on Azure

bluesource

Executive Summary

Moving Enterprise Vault (EV) vault store partitions off Azure managed disks protected by Azure Site Recovery (ASR), and onto Azure Blob or Azure Files, cuts recurring archive storage cost by roughly 75–90%. In the reference environment modeled here, that is about $0.8–0.95 million a year on a $1.06 million annual run rate.
The savings come from three structural costs that managed disks impose on archive data:

- Provisioned billing. You pay for every provisioned GiB, used or not. Partitions in the reference environment were 56% full on average.
- Performance-tier pricing. Read-mostly archive data sits on Premium SSD or Standard SSD, priced for transactional workloads.
- Paying twice for DR. ASR keeps a full replica disk for every source disk in the DR region. In the model, those replicas account for 49% of total cost.

Blob and Files bill on the data actually stored, at archive-appropriate rates, with replication built into the storage account. Reserved capacity takes the rate down further.
After one-time migration costs of roughly $0.47–0.73 million, payback in the reference scenario is 7–9 months. Five-year net savings are $3.5–4.0 million.

Why ASR-protected Managed Disks Increase Costs

A lift-and-shift EV deployment usually keeps vault store partitions on NTFS volumes backed by managed disks, with ASR replicating each VM's disks to a second region. That design works, but it costs about $245 per TiB of archived data per month. The reference environment is a large email archive:

- About a dozen EV servers
- 36 vault store partition disks: 12 Premium SSD P70 (16 TiB), 20 Standard SSD E70 (16 TiB) and 4 Standard SSD E80 (32 TiB)
- About 640 TiB provisioned, holding 360 TiB of archived data
- About 3.5 billion archived items

Status quo cost component	$/month	Share
Premium SSD P70 partition disks (12)	17,300	20%
Standard SSD E70/E80 partition disks (24)	27,500	31%
ASR replica disks in the DR region (36)	43,250	49%
ASR inter-region transfer	100	<1%
Total	**88,175**	**100%**

Figures assume a 20% negotiated discount off pay-as-you-go list prices. At list price, the status quo is about $110,000 a month.

Four Things Drive the Cost:

1. Provisioned, not used, capacity. A 16 TiB disk bills as 16 TiB whether it holds 15 TiB or 4 TiB. Open partitions are deliberately left with headroom, and closed partitions rarely fill exactly. In the reference environment, 44% of what was paid for was empty.
2. The wrong performance tier. Archived items are written once and read rarely. Premium SSD bills about $0.11 per provisioned GiB a month and Standard SSD about $0.075, against $0.015–0.025 for Blob Cool.
3. A full second copy for DR. ASR replicates at the disk level, so the DR region carries a replica of every disk at nearly the same price. DR roughly doubles the bill.
4. No reservation path. Managed disk reservations cover only Premium SSD (P30 and larger, 1-year term); Standard SSD has none. Blob and Files both offer 1- and 3-year reserved capacity.

Target Architectures: Azure Blob and Azure Files

EV can write vault store partitions straight to Azure Blob, or to an SMB share on Azure Files. Either way, the storage service does its own replication, so the partition disks and their ASR replicas can be retired.

	Azure Blob (EV cloud partition)	Azure Files (SMB partition)
Billing basis	Used capacity	Used capacity (standard tiers)
Recommended tier	Cool	Standard Hot
DR option modeled	LRS + priority object replication to the DR region (15-minute RPO SLA)	GRS to the paired region (no RPO SLA)
Modeled rate, list price	$0.0252/GiB-month	$0.0632/GiB-month
Reserved capacity	100 TiB and 1 PiB blocks, 1 or 3 years (Hot, Cool, Archive)	10 TiB and 100 TiB blocks, 1 or 3 years (Hot, Cool, Premium v1)
Transaction cost	Higher per write; modest at archive read rates	Per-operation; SMB creates take several billable ops per file
Change to EV	New partition type; EV handles the move between partitions	Partition path moves to a UNC share; closest to today's model

Blob is the lower-cost target. Cool tier with object replication costs less than half the per-GiB rate of Files Hot GRS. Object replication can target the same DR region ASR uses today, and priority replication adds a 15-minute RPO SLA.

Files is the lower-change target. It keeps the file-system model EV already uses. It needs fewer professional services and has a shorter payback, but a higher run rate.

Two tiers to avoid: Archive tier is offline and unsuitable as a primary vault store. Check the Cold tier against the EV compatibility list before use, and note it has no reservation option.

How the Savings Were Modeled

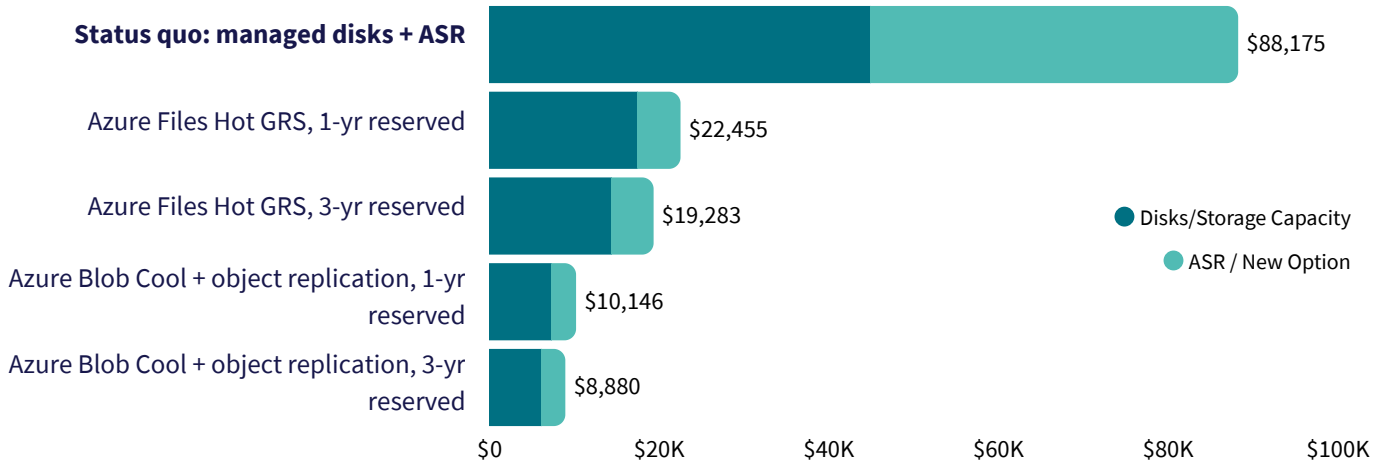
The figures come from a disk-by-disk cost model of the reference environment. Prices are Azure commercial pay-as-you-go list prices, US East primary and US West 2 DR, USD, as of October 2026, from the Azure Retail Prices API.

Assumption	Value used
Discount off pay-as-you-go list	20% (5% on reservations)
Status quo	Every partition disk plus a same-type ASR replica in the DR region, plus inter-region transfer of new data
Capacity billed after migration	Used GiB on each migrated disk; reservations bought in whole blocks, remainder pay-as-you-go
Ongoing write activity	~1.5 million messages a day at 3.5 files each, about 157 million files a month
Ongoing reads	About 52 million operations a month
Migration write transactions	3.5 billion items × 3.5 files per item × write ops per file (1 for Blob, 3 for Files)
Migration overlap	2.2 months of paying for both, with half the data landed on average
Professional services (illustrative)	$502,000 for Blob, $70,000 for Files
Growth	None; capacity held flat for five years

Not modeled: egress, snapshots and backup, private endpoints, Files metadata and early-deletion fees. Each of these is small next to the disk and replica costs being retired.

Results for the Reference Environment

Azure Blob Cool with object replication on a 3-year reservation is the lowest-cost option. It takes the monthly bill from $88,175 to $8,970, a 90% reduction, and pays back its migration cost in about 9 months.



Option	Annual savings	Savings	One-time cost	Payback	3-year net	5-year net
Blob Cool + object replication, 3-yr reserved	$950,000	90%	$727,000	9.2 months	$2.12M	$4.02M
Blob Cool + object replication, 1-yr reserved	$936,000	88%	$729,000	9.3 months	$2.08M	$3.95M
Files Hot GRS, 3-yr reserved	$827,000	78%	$473,000	6.9 months	$2.01M	$3.66M
Files Hot GRS, 1-yr reserved	$789,000	75%	$477,000	7.3 months	$1.89M	$3.47M

- One-time cost is professional services plus migration write transactions plus the overlap months of paying for both. Net figures run from cutover, with Year 1 carrying all one-time cost.
- The archived data costs about $25 per TiB per month on Blob (3-year reserved) and about $53 on Files. Today it costs $245.
- Blob's one-time cost is higher mostly because of the services estimate, not Azure charges. Its migration write transactions, about $219,000, are lower than Files' $387,000. With services excluded, Blob pays back in under 3 months.

What Moves the Numbers

ASR is the single biggest lever. Without ASR, Blob still saves about 80% but payback stretches to 20 months. With ASR, every other variation tested keeps savings above 70% and payback under 11 months.

What the Variations Show:

1. ASR is half the case. Dropping ASR halves the status quo but leaves the new options unchanged, because their DR is built into the storage account. Environments that protect partition disks with ASR see the largest gains.
2. Discounts barely matter. A negotiated discount lowers both sides. Savings percentages hardly move, and payback improves slightly at list price.
3. Low utilization helps, but isn't required. Even at 80% full, Blob saves 87%, because the cost per used GiB is still about 8x lower.
4. Premium SSD adds to the savings. Swapping 12 Premium P70s for Standard E70s cuts the status quo by about $9,400 a month. The new options cost the same either way.
5. Services cost drives payback. Azure's own migration charges are small. The labor and tooling to move billions of items set the payback period, so get firm quotes early.

Migration Considerations and Risks

The savings depend on actually retiring the partition disks and their ASR replicas. Plan the migration around reaching that point quickly.

- **Item count, not capacity, drives migration cost**. Write transactions are billed per operation. Get a real file count of the partitions; EV stores several files per archived item.
- **Files bills more operations per item**. An SMB file create takes several billable operations, so Files migration transactions can cost more than Blob's despite the lower services estimate.
- **Overlap months cost money**. Disks keep billing until they are retired. Retire each partition's disks and replicas as soon as it is verified.
- **Re-check DR requirements**. Object replication and GRS are asynchronous. Confirm the RPO meets your policy, and whether the DR copy must sit in the same region ASR uses today. GRS replicates only to the paired region.
- **Confirm EV support**. Check the EV compatibility list for your version against the Blob tier, the object replication setup and any immutability or WORM settings.
- **Size reservations after migration**. Reservations are bought in fixed blocks (Blob 100 TiB / 1 PiB; Files 10 TiB / 100 TiB). Buy them once the landed capacity is known, and leave the remainder on pay-as-you-go.
- K**eep what doesn't move**. OS, SQL, index and cache disks stay on managed disks under ASR. Only partition storage moves.

Recommendations

If EV partitions sit on ASR-protected managed disks, model a move to Azure Blob Cool with object replication first. For most large archives it gives the lowest run rate. Use Azure Files when the priority is the least change to EV.

1. **Inventory the partition disks**. List each disk's SKU and size, how full it is, and whether ASR protects it.
2. **Get an item and file count** for the partitions, plus monthly archiving volume.
3. **Model both targets** with your negotiated discount and reservation terms, and confirm the DR design.
4. **Get firm migration quotes**. Services cost sets the payback period.
5. **Migrate partition by partition**. Retire disks and ASR replicas as each one is verified, then buy reservations against the landed capacity.

The same pattern applies to other file-heavy archive stores on ASR-protected disks. In the reference environment, the eDiscovery platform's working volumes (about 67 TiB of data on 30 Standard SSD disks) modeled at an 84% reduction on Azure Files Hot GRS, 3-year reserved.