**Task #66: Storage Providers Comparison Matrix**

**User Story:** #52 Storage Providers

**One-Page Storage Provider Comparison Matrix**

| **Provider** | **Cost (72GB storage + 72GB egress/mo)** | **Pros** | **Cons** | **Performance Metrics** | **Integration Results** | **Access Control Options** |
| --- | --- | --- | --- | --- | --- | --- |
| **AWS S3 Standard** | **$8.14/mo** Storage: $0.023/GB Egress: $0.09/GB | - Global regions with CloudFront CDN - Mature streaming toolchain - Extremely high durability - Rich IAM controls | - High egress costs dominate bills - Complex pricing with API charges - Overkill for low-cost archival | **Availability:** 99.99% **Durability:** 11-nines **Latency:** Ultra-low **TTFB:** <50ms | **Auth:** IAM **Setup:** 12-16 hrs **API:** Native S3 **CDN:** CloudFront (native) | - IAM policies - Bucket policies - Pre-signed URLs - Object Lock (WORM) - Encryption at rest/transit |
| **Google Cloud Storage** | **$7.99/mo** Storage: $0.026/GB Egress: $0.045–$0.085/GB | - Strong media tools (Transcoder/Live Stream API) - Global infrastructure - Media CDN integration - Good for GCP workflows | - Significant egress costs - Confusing tier pricing - Need CDN for cost control | **Availability:** 99.95% **Durability:** 11-nines **Latency:** Low **TTFB:** <50ms | **Auth:** Service Account **Setup:** 12-16 hrs **API:** Native GCS **CDN:** Media CDN (native) | - Cloud IAM - Signed URLs - Object/bucket permissions - Customer-managed keys - Audit logging |
| **Azure Blob (Hot)** | **$7.70/mo** Storage: $0.02/GB Egress: $0.087/GB | - Azure Media Services integration - SAS tokens for granular control - Strong enterprise features - Global regions | - Similar egress costs to other hyperscalers - Pricing complexity per region - Costlier without MS integrations | **Availability:** 99.9% **Durability:** 11-nines **Latency:** Low **TTFB:** <50ms | **Auth:** Azure AD **Setup:** 10-14 hrs **API:** Native Blob **CDN:** Azure CDN (native) | - Azure AD integration - SAS tokens - RBAC - Encryption at rest/transit - Access tiers |
| **Backblaze B2** ⭐ | **$0.43–$1.15/mo** Storage: $0.006/GB Egress: Free up to 3× (216GB), then $0.01/GB | - Very low storage cost ($6/TB) - 3× free egress policy - S3-compatible API - CDN partnerships (Cloudflare/Fastly free egress) - Ideal for cheap online storage | - Fewer regions than hyperscalers - No built-in media services - Need separate transcoder - Pay if exceed free egress | **Availability:** 99.9% **Durability:** 11-nines **Latency:** Moderate **TTFB:** 50-150ms | **Auth:** API Key **Setup:** 8-12 hrs **API:** S3-compatible **CDN:** Cloudflare/Fastly (free egress partners) | - API keys - Bucket policies - Time-limited tokens - Encryption - CDN integration |
| **Wasabi** ⭐ | **$0.50/mo** Storage: $0.00699/GB Egress: $0 (claimed, fair-use applies) | - Lowest list price (~$7/TB) - S3-compatible - No API request fees - Simple pricing - Good for archival | - Fair-use egress policies apply - Fewer regions - No integrated transcoding - Storage-only solution | **Availability:** 99.9% **Durability:** 11-nines **Latency:** Moderate **TTFB:** 50-150ms | **Auth:** Access Key **Setup:** 8-10 hrs **API:** S3-compatible **CDN:** Third-party required | - IAM-style policies - Bucket policies - Access keys - Immutable buckets - Encryption |

**Recommendation Summary**

**PRIMARY: Backblaze B2** — Best cost/benefit with $0.43–$1.15/mo vs. $7.70–$8.14 for hyperscalers. 3× free egress (216GB for 72GB storage) covers expected usage. S3-compatible for easy CDN integration.

**SECONDARY: Wasabi** — Lowest total cost at $0.50/mo. Ideal for archival/VOD with predictable access patterns under fair-use policy.

**IMPLEMENTATION:** Store raw livestreams in Backblaze B2 → Front with Cloudflare/Bunny.net CDN (free egress partnership) → Use third-party transcoder (GCP Transcoder/FFmpeg) for VOD preparation.

**ANNUAL SAVINGS:** $85–95 vs. hyperscalers | **Setup Time:** 8-12 hours | **Status:** Ready for