

Cache-Key Pre-Launch Checklist

Seven questions to answer in writing before any live launch. The version we use internally.

1 · The seven questions

- ☐ **1. Cache key today** — Print the active key from the CDN console. If you cannot articulate it in one sentence, the rule is too complicated.
Fix: Cloudflare Cache Rules; CloudFront Cache Policy; Fastly vcl_hash; Akamai Cache ID Modification.
- ☐ **2. Session tokens in the query string** — If yes, every viewer's URL is unique and the cache fragments per viewer.
Fix: Move to signed cookies or a signed path-prefix; strip token from the key.
- ☐ **3. Authorization header in the key** — If yes, the JWT per viewer fragments the cache the same way.
Fix: Forward via Origin Request Policy (or equivalent) without including in the key.
- ☐ **4. Origin Vary header** — Anything beyond Accept-Encoding shards the cache. User-Agent, Cookie, or * is dangerous.
Fix: Strip extra Vary values at the edge (Akamai Remove Vary Header; Fastly unset beresp.http.Vary).
- ☐ **5. Hostnames per route** — Multiple CNAMEs over the same CDN duplicate the cache by host.
Fix: Normalise to one canonical host or use the CDN's resolved-host option.
- ☐ **6. URL canonicalisation** — Percent-encoding and case differences split one file into multiple keys.
Fix: Lowercase and percent-normalise the path at the edge in one rule.
- ☐ **7. Manifest vs segment rules** — One rule for .m3u8/.mpd and .ts/.m4s is the wrong shape. Manifests are mutable, segments are not.
Fix: Two rules: short TTL + serve-stale on manifests; 1-year immutable on segments.

2 · Per-vendor knob names (2026)

Vendor	Add a query string to key	Forward header without keying	Normalise host
Cloudflare	Cache Rule > Custom Cache Key	Workers / Transform Rule	Resolved host setting
AWS CloudFront	Cache Policy > QueryStringsConfig	Origin Request Policy	Cache Policy > HeadersConfig (omit Host)
Fastly	set req.url in vcl_recv	req.http.X = ...; remove from vcl_hash	Rewrite req.http.Host in vcl_recv
Akamai	Cache Key Query Parameters	Modify Outgoing Request behaviour	Cache ID Modification > Hostname
Google Media CDN	cacheKeyPolicy.includedQueryParameters	Origin request configuration	Backend bucket host rewrite

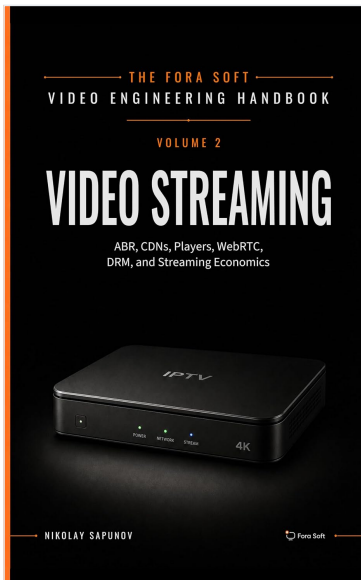
3 · The arithmetic of one mistake

Clean key (URL only)

50,000 viewers · 3 Mbps · 4-second HLS segments. Edge hit ratio 88%, shield 92%. Residual misses: 120 / sec. Origin egress: 180 MB/s. Steady-state cost: ~\$42K/month.

Broken key (URL + ?token=...)

Same workload, per-viewer token in the query string. Hit ratios collapse to ~5%. Origin egress: 16.92 GB/s. Steady-state cost: ~\$3.95M/month. **94x** the clean number.



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This checklist covers the seven cache-key questions and the vendor knobs to set before a live launch. Volume 3 goes deeper into the delivery layer: CDN caching and shield design, signed URLs and DRM, ABR and players, QoE monitoring and the economics of streaming delivery.

WHAT YOU WILL FIND INSIDE

- CDN caching and shield tiers
- Signed URLs, tokens and DRM
- QoE monitoring at the edge
- Egress cost modelling

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