Delivery Observability Checklist & Brownout Runbook

Fora Soft Learn

Instrument a stream so it describes its own health, then slice by where. Engineering guidance — CDN and player capabilities change, so date your assumptions and re-verify CMCD v2 (CTA-5004-A, 2026) support on both ends.

1 · INSTRUMENT THE CLIENT — CMCD (CTA-5004) (tick what your players send)

- ☐ **sid** on every request — ties thousands of log lines into one viewer session.
- ☐ **bs** (buffer starvation) — the flag that says THIS viewer is rebuffering now.
- ☐ **bl** (buffer length) — the leading indicator: a buffer draining toward zero.
- ☐ **mtp** (measured throughput) — what the player actually sees, kbps.
- ☐ Server propagates **sid** into access logs (CTA-5004 §4); plan for CMCD v2 event mode.

2 · INSTRUMENT THE SERVERS — CMSD + HTTP (tick what the chain reports)

- ☐ CMSD (CTA-5006) **n** + **du** — which hop handled it, and which is under duress.
- ☐ CMSD **etp** / **rtt** per hop — last-mile slow vs origin slow are opposite fixes.
- ☐ Cache-Status (RFC 9211) — hit/miss per hop = offload ratio + early brownout tell.
- ☐ Proxy-Status (RFC 9209) + 5xx ratio (RFC 9110) — which hop failed and why.

3 · THE DASHBOARD — four golden signals × dimensions

- ☐ Errors · Latency · Traffic · Saturation — the four signals (Google SRE).
- ☐ Compute EACH per Region × CDN × ISP/ASN × Device — never one global average.
- ☐ Real-time log streaming (CloudFront / Fastly / Akamai DataStream) — seconds, not morning.
- ☐ Sample the common path lightly; keep stall + error events at or near 100%.

4 · THE BROWNOUT RUNBOOK (the detect → confirm → act loop)

- ☐ DETECT: bs rate spikes in one slice while the global average barely moves.
- ☐ CONFIRM: CMSD du appears, rtt rises, 5xx and cache-misses climb in that slice.
- ☐ ACT: steer that slice to a healthy CDN (RUM-based) and/or shed bitrate.
- ☐ ALERT on rebuffering-per-slice, not on CPU; page on viewer impact, not machine symptoms.
- ☐ RECOVER: confirm the slice returns to baseline; write the post-mortem from the session logs.

THE ONE RULE OF DELIVERY OBSERVABILITY

A 200 OK in a CDN log does not mean the viewer was happy — bytes can arrive successfully but too slowly to refill the buffer, so the viewer stalls while the server logs a clean success. Connect the two halves of the truth: CMCD (CTA-5004) carries the player's session ID and buffer-starvation flag into the server logs; CMSD (CTA-5006) carries each hop's throughput, round-trip time, and a duress flag back. Then watch the four golden signals — errors, latency, traffic, saturation — computed per region, per CDN, per ISP, and per device. A brownout (one CDN, one region, one ISP) is invisible in the global average and screaming in the slice. The average is the liar; the slice is the truth — and real-time logs are what let you catch it in minutes, not by morning.



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This checklist instruments players and servers with CMCD and CMSD and slices the four golden signals to catch a brownout. Our seven-volume handbook covers the delivery stack you are watching; start with Volume 3 for CDNs, players and QoE, then Volume 2 for HLS and DASH, and Volume 1 for encoding.

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- QoE monitoring and CDN behaviour (Vol. 3)
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Need to see which CDN, region or ISP is buffering right now?

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