

LL-DASH Readiness Checklist (2026)

Twenty-four items every team should verify before declaring an LL-DASH deployment production-ready.

Encoder & packager

- Segment duration set to 2-4 s; CMAF chunk duration set to 200-500 ms (333 ms is the production default).
- B-frames disabled or limited to one; GOP at one second; encoder pipeline depth \leq 600 ms.
- At least one independent (I-frame) CMAF chunk per second of real time.
- Packager emits one moof + mdat pair per chunk (verify with MP4Box -info or Bento4 mp4dump).
- CMAF chunks aligned across all renditions (segmentAlignment='true' in the MPD).
- Init segment (init.mp4) static across the whole stream; never affected by mid-stream re-encoding.

MPD signals

- @profiles includes urn:mpeg:dash:profile:cmf-extended:2018 alongside isoff-live:2011.
- @availabilityTimeOffset present on every SegmentTemplate (= segmentDuration - chunkDuration).
- @availabilityTimeComplete='false' set on every SegmentTemplate.
- <ServiceDescription> present with <Latency target=" min=" max=""/> and <PlaybackRate min='0.95' max='1.05'/>.
- <UTCTiming> element points at a reachable wall-clock service (NTP-backed, < 100 ms accuracy).
- @minimumUpdatePeriod \leq segmentDuration; @suggestedPresentationDelay set as fallback for non-LL players.

Origin & chunked-transfer

- Origin begins streaming response within ~100 ms of request at the @availabilityTimeOffset moment.
- HTTP/1.1 chunked transfer encoding OR HTTP/2 DATA frames OR HTTP/3 streams pass through end-to-end.
- Origin shield deployed to coalesce concurrent requests for the same segment behind one upstream fetch.
- Init segment served separately with a long cache TTL; never bundled with the segment response.

CDN & caching

- MPD Cache-Control max-age=1 or 2; CDN respects the header (verified with curl + edge-trace).
- Segments cached aggressively (TTL = timeShiftBufferDepth or longer); MPD cached briefly.
- CDN configured for chunked-transfer pass-through (no store-and-forward buffering at the edge).
- Origin shielding in place; cache-key includes segment number, NOT any query parameters from the player.

Player & ABR

- Low-latency throughput estimator enabled (idle-time-based, not segment-time-based).
- ABR switch points constrained to independent CMAF chunks only.
- Playback rate controller bounded to <PlaybackRate min=" max=""/> from the MPD.
- Player playback buffer sized at 3-6 chunks (not 3 segments); rebuffer policy tuned accordingly.

Validation & monitoring

- DASH-IF reference player (dash.js v5) plays the stream cleanly in low-latency mode.
- DASH-IF conformance tool reports zero errors for both static and dynamic mode.
- Glass-to-glass latency monitored per region; alert above 5 s p95.
- Fallback to non-low-latency playback validated for older clients (dash.js v3 or Shaka v3.1).