Weak-Network Reach Readiness Checklist

A one-page path to delivering learning video on slow, costly, and unreliable networks — recorded lessons, live classes, offline, and codec choice.

A. Recorded lessons — adaptive bitrate

- [ ] Ship an HLS or MPEG-DASH adaptive ladder, not one fixed-quality file
- [ ] Include a real low rung at 240p/360p (a few hundred kbps), not just 480p and up
- [ ] Verify the ladder on a throttled 3G connection before every release
- [ ] Keep captions on every rung — a few KB, and they help most on weak links

B. Live classes — graceful degradation

- [ ] Use WebRTC with simulcast/SVC so the server forwards fewer layers on poor links
- [ ] Define the fallback order: lower video layer, then audio + slides, then audio only
- [ ] Carry voice on Opus (16-32 kbps speech) with FEC and DTX enabled
- [ ] Prioritise the instructor's audio above every other stream

C. Offline & intermittent connectivity

- [ ] Offer download-on-Wi-Fi, watch-offline for commuters and field learners
- [ ] Queue xAPI statements on the device; sync to the LRS on reconnect
- [ ] Handle the edge cases: half-finished download, failed sync, full storage

D. Codec & device floor

- [ ] Keep an H.264 version as the universal compatibility floor
- [ ] Offer HEVC/AV1 only where the device decodes it in hardware
- [ ] Test on a real low-end phone, not just office Wi-Fi, before launch
- [ ] Track data-per-hour as a product metric, not just resolution

Companion to: 'Learning Video on Weak Networks'
www.forasoft.com/learn/elearning-video/articles-elearning/learning-video-on-weak-networks



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This checklist gets learning video to slow, costly and unreliable networks: low ladder rungs, graceful live fallback and offline. We wrote seven volumes on that stack: Volume 3 covers ABR and WebRTC, Volume 1 codecs and ladders, and Volume 4 Opus and speech audio.

WHAT YOU WILL FIND INSIDE

- ABR ladders and low rungs
- Opus with FEC and DTX
- WebRTC simulcast and SVC
- H.264, HEVC and AV1 device support

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Vol. 1 · Video Encoding — pixels and color to H.264, HEVC, AV1, quality metrics and AI

Vol. 2 · Video Streaming I — network transport, contribution and ingest, HLS, MPEG-DASH, CMAF

Vol. 3 · Video Streaming II — ABR, CDNs, players, WebRTC, DRM and the economics of delivery

Vol. 4 · Audio for Video I — PCM, codecs, loudness, accessibility, real-time voice processing

Vol. 5 · Audio for Video II — jitter buffers, lip sync, Atmos, quality metrics, neural codecs

Vol. 6 · AI for Video I — models and inference, computer vision, speech, search, generative video

Vol. 7 · AI for Video II — real-time pipelines, agents, serving, cost, compliance, verticals

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