

# Codec · Container · Protocol · Profile

A one-page reference for the four streaming-stack layers everyone confuses.

## 1. Codec

Algorithm that compresses raw pixels into bits.

**EXAMPLES** H.264 (AVC) · H.265 (HEVC) · AV1 · VP9 · H.266 (VVC). Audio: AAC-LC, Opus, xHE-AAC.

**QUESTION IT ANSWERS** *How is it compressed?*

**CANONICAL SPEC** ISO/IEC 14496-10 (H.264) · ITU-T H.265 v9 · AOM AV1 v1.0.0 · RFC 6716 (Opus)

## 2. Container

File format that bundles compressed streams with timing, audio, subtitles.

**EXAMPLES** MP4 · fragmented MP4 (fMP4) · MPEG-TS · MKV · WebM · Ogg.

**QUESTION IT ANSWERS** *How is it packaged?*

**CANONICAL SPEC** ISO/IEC 14496-12 (ISO BMFF) · ISO/IEC 14496-14 (MP4) · ISO/IEC 13818-1 (MPEG-TS)

## 3. Protocol

Rules for moving the container's bytes across a network to the player.

**EXAMPLES** Delivery: HLS · MPEG-DASH · LL-HLS · LL-DASH · WebRTC · MoQ.  
Contribution: RTMP · SRT · RIST · WHIP.

**QUESTION IT ANSWERS** *How is it delivered?*

**CANONICAL SPEC** RFC 8216 (HLS, 2017) · ISO/IEC 23009-1:2022 (DASH) · RFC 9725 (WHIP, Mar 2025) · W3C WebRTC 1.0

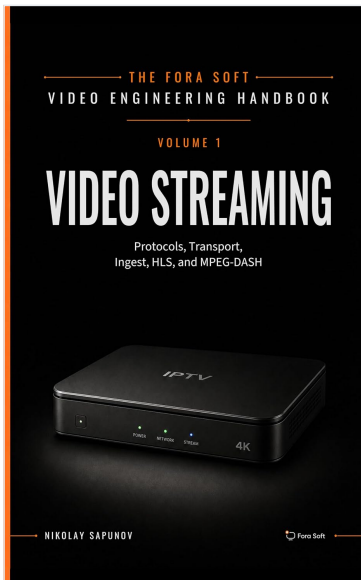
## 4. Profile

Labelled subset of rules in a codec, container, or protocol that an encoder obeys.

**EXAMPLES** Codec: H.264 High level 4.0 · HEVC Main 10 · AV1 Profile 0. Container: CMAF (cmfc). Protocol: DASH-IF Live · Apple HLS Authoring 2025-09.

**QUESTION IT ANSWERS** *Which subset am I obeying?*

**CANONICAL SPEC** Each codec spec §Annex A · ISO/IEC 23000-19:2024 (CMAF) · DASH-IF IOP Guidelines · Apple HLS Authoring Spec



GO DEEPER · VOLUME 2 OF 7

## Video Streaming: A Complete Guide to Video Delivery

From Network Protocols and Transport to Ingest, HLS, and MPEG-DASH

By Nikolay Sapunov, CEO at Fora Soft · 1,124 pages · Kindle &amp; paperback on Amazon

Read it on Amazon →

[amazon.com/dp/B0HH8F4R82](https://amazon.com/dp/B0HH8F4R82)

This sheet separates codec, container, protocol and profile and names the spec behind each. Volume 2 covers the transport half in depth: what the network does to a stream, TCP versus UDP, QUIC and HTTP/3, contribution over RTMP, SRT and RIST, and packaging for HLS, MPEG-DASH and CMAF.

### WHAT YOU WILL FIND INSIDE

- HLS, MPEG-DASH and CMAF
- TCP, UDP, QUIC and HTTP/3
- RTMP, SRT and RIST contribution
- Live, VOD and near-live latency budgets

### THE FULL HANDBOOK · 7 VOLUMES · 9,000+ PAGES · ALL ON AMAZON

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

## Not sure which codec, container and protocol your streaming product needs?

We will map your devices and latency target to a concrete stack and the profiles each encoder must follow. 250+ video products shipped since 2005.

Book a 30-min call →

WhatsApp →

Email us →