

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