

WebRTC stack cheat sheet

The API, the nine RFCs, the open-source SFUs, and the cost lines — on one page.

The five jobs WebRTC actually does

Job	Browser surface	Standards
Media capture	navigator.mediaDevices.getUserMedia()	W3C Media Capture and Streams Recommendation (April 2025)
Session negotiation	SDP offer / answer (JSEP)	RFC 9429 (April 2023) — obsoletes RFC 8829
Network traversal	ICE · STUN · TURN	RFC 8445 · RFC 8489 · RFC 8656
Encryption	DTLS handshake → SRTP keys	RFC 5764 · RFC 8827 (mandatory)
Media transport	RTP for media · RTCP for feedback	RFC 3550 · RFC 8834 · GCC / transport-cc

The IETF WebRTC RFC family (published January 2021 except where noted)

RFC	Title	What it owns
RFC 8825	Overview of WebRTC protocols	Umbrella document
RFC 8826	Security considerations for WebRTC	Threat model
RFC 8827	WebRTC security architecture	Mandates encryption
RFC 8828	IP address handling requirements	Privacy rules
RFC 9429	JavaScript Session Establishment Protocol (JSEP)	April 2023; obsoletes 8829
RFC 8830	MediaStream identification in SDP	Track and stream naming
RFC 8831	WebRTC Data Channels	SCTP-over-DTLS
RFC 8834	Media transport and use of RTP in WebRTC	RTP profile for WebRTC
RFC 8835	Transports for WebRTC	ICE, DTLS, SRTP integration
RFC 5764	DTLS extension to establish keys for SRTP	May 2010 — bootstraps SRTP keys

Open-source SFUs in 2026 — pick one

SFU	Language	When to pick it
mediasoup	Node.js / C++	Low-level building blocks; teams that need full control of room logic
LiveKit	Go	Batteries-included; AI Agents framework; the 2024–26 momentum leader
Janus	C	Long-running, modular plugin model; strong on broadcast and SIP gateway
Jitsi Videobridge	Java	Standalone Jitsi Meet stack; mature simulcast / SVC support
Pion	Go	Pure-Go WebRTC implementation; flexible for custom server-side logic

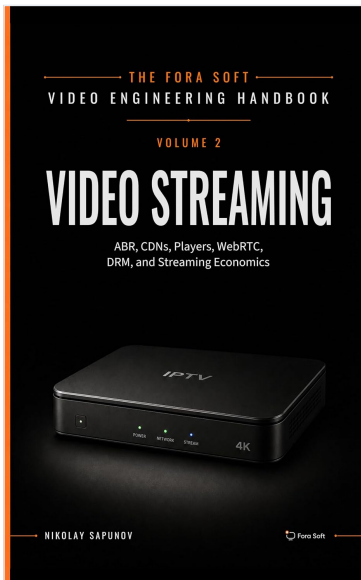
Cost lines a product team should model before launch

Cost line	What drives it
TURN bandwidth	Public-internet conferencing: 8–15% of sessions relayed. Enterprise: 25–40%. Every relayed byte counts twice (in + out).
SFU egress	Each remote video subscribed = one egress stream. A 5-person room with everyone subscribed to everyone = 20 egress streams.
Signalling host	Small WebSocket server; modest CPU; cheap until you add presence, chat, and recording controls.
Recording / HLS	Bridge runs as a participant; pays one full decode + transcode + segment + storage bill per session.
Coturn vs SaaS	Self-host coturn on a cheap egress provider (Hetzner, OVH) vs. buy from Cloudflare / Twilio. Break-even at ~5 TB/mo of relayed traffic.

Latency floor

WebRTC: 100–300 ms glass-to-glass. LL-HLS: 2,000–5,000 ms. Standard HLS: 5,000–30,000 ms.

If your use case tolerates >1 s of latency, an HTTP-based protocol is usually cheaper to operate.



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This sheet lists the five jobs WebRTC does, the RFCs behind them, the open-source SFUs and the cost lines. Volume 3 covers WebRTC and real-time delivery in depth, along with CDN and caching, QoE monitoring and the economics of delivery that decide those cost lines.

WHAT YOU WILL FIND INSIDE

- WebRTC and real-time delivery
- Economics of delivery
- CDN and caching
- QoE monitoring

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