

Ingest Protocol Selection Cheat Sheet

The four protocol families that cover almost every live ingest in 2026 — and how to pick one.

The four families compared

Protocol	Transport	Latency (glass-to-glass)	Packet-loss tolerance	Encoder support	Encryption	Best fit
RTMP	TCP	2-5 s	Low (TCP halves on 2% loss)	Universal — OBS, vMix, Wirecast, every hw encoder	Optional (RTMPS = TLS)	Studio / office uplink
SRT	UDP + ARQ	120 ms - 2 s	Very high (recovers 10-25% loss in budget)	OBS 28+, vMix, Haivision, Teradek, FFmpeg	Built-in AES-128/256	Field contribution
WHIP (RFC 9725)	UDP / SRTP	< 500 ms	Medium (NACK + RED + congestion ctrl)	Browser-native; OBS 30+, FFmpeg, Larix	Mandatory DTLS-SRTP	Browser source · interactive
RIST / Zixi / ST 2110	UDP + ARQ + FEC	100 ms - 2 s	Very high (ARQ + FEC layered)	Broadcast-grade encoders only	Mandatory DTLS / AES	Tier-1 broadcast facility

Pick by contribution path — five questions in order

- 1. Browser source?** Yes → **WHIP** (RFC 9725). No → continue.
- 2. Tier-1 broadcast facility?** Yes → **RIST** (SMPTE TR-06-x) or **Zixi**. No → continue.
- 3. Public-internet field path with loss spikes?** Yes → **SRT**. No → continue.
- 4. Office / studio uplink, low loss, universal encoder needed?** Yes → **RTMP**.
- 5. Sub-500 ms latency required, even on a studio path?** Re-check WHIP regardless of source.

Backup rule.

Run a second encoder on a second uplink to a second ingest endpoint — cheapest single redundancy in the pipeline.

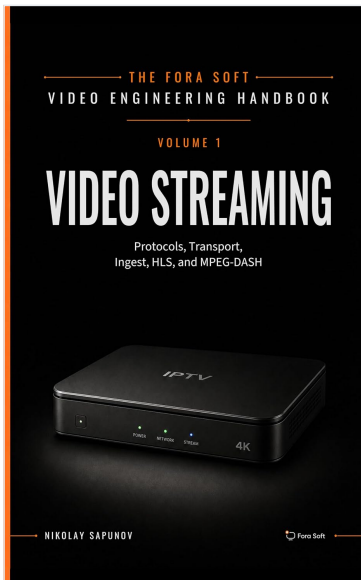
Pitfalls

Don't test ingest on office Wi-Fi.
Always test on a path representative of the production contribution.

Set SRT latency = 4× RTT, not the 120 ms default. 200 ms window on a 90 ms path is too tight.

Confirm audio codec at both ends.
RTMP+Opus or SRT-passthrough mismatches break transcoders.

Don't hard-code the ingest URL. Pull from a config endpoint that can be updated 5 min before showtime.



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This sheet compares RTMP, SRT, WHIP and RIST and gives a five-question order for picking one per contribution path. Volume 2 covers the transport underneath in depth: TCP versus UDP and congestion control, NAT traversal, the glass-to-glass latency budget, and contribution and ingest with RTMP, SRT and RIST.

WHAT YOU WILL FIND INSIDE

- RTMP, SRT and RIST contribution, compared on real paths
- TCP vs UDP, congestion control and packet loss
- Glass-to-glass latency budget for live events
- QUIC, HTTP/3 and NAT traversal for ingest

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Picking an ingest protocol for field crews, studios and browser guests?

We will map each of your contribution paths to a protocol, size the latency window and design the backup encoder route. 250+ video products shipped since 2005.

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