# TURN Bandwidth Cheat Sheet

The cost formula · 2026 per-GB prices · relay-share benchmarks · the two real levers

## The monthly cost formula

- **relayed streams** = peak concurrent streams × relay share
- **GB / stream-hour** = bitrate (Mbps) × 0.45 × directions
- **GB / month** = relayed streams × hours × GB/stream-hour
- **total** = (GB − free GB) × price/GB + fixed cost

*1 Mbps relayed 1 h, one way = 0.45 GB. Count both directions by default.*

## Worked example — conferencing

1. 1,000 streams × 20% relay = **200 relayed**
2. 2.5 Mbps × 0.45 × 2 = **2.25 GB** / stream-hour
3. 200 × 200 h × 2.25 = **90,000 GB/mo**
4. × $0.40 (Twilio US) = **$36,000/mo**

*Same 90k GB on Cloudflare ($0.05) ≈ $4,450/mo.*

## Relay-share benchmarks (2026)

| | |
|---|---|
| **Consumer calls** | 15–25% fall back to a relay |
| **Corporate Wi-Fi** | higher — firewalls block UDP |
| **AI voice agents** | ~100% — server endpoint relays |
| **IoT behind CGNAT** | ~100% — no direct path |

## Typical bitrate per stream

| | |
|---|---|
| **Audio only** | ~0.05 Mbps (Opus) |
| **SD video** | ~0.5 Mbps |
| **720p** | ~1.5 Mbps |
| **1080p** | ~2.5–4 Mbps |

## Same 90,000 GB, four prices

| Provider | Price / GB | 90k-GB bill |
|---|---|---|
| **Twilio TURN — US / EU** | $0.40 | **$36,000** |
| **Twilio TURN — Asia-Pacific** | $0.60–0.80 | **$54,000+** |
| **Cloudflare Realtime TURN** | $0.05* | **$4,450** |
| **Self-hosted coturn** | $0.05+box | **~$4,500** |

## The levers that move the bill

### Lever 1 — cut the relay share

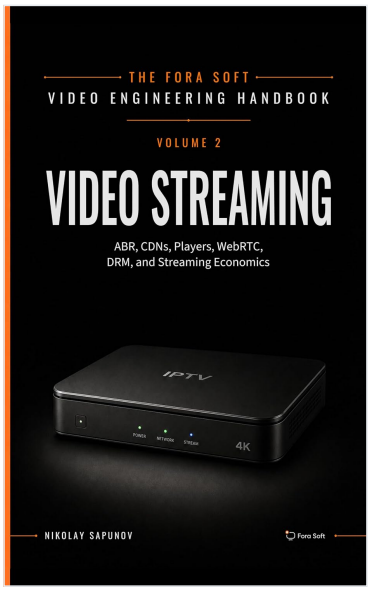
Better STUN coverage, IPv6 end to end, correct ICE gathering, trickle ICE. 25% to 15% relay = -40% bill, and lower latency too.

### Lever 2 — cut the price per GB

Negotiate a managed rate or self-host coturn. $0.40 to $0.05 = -88% on the same traffic. Spread across the market is ~8×.

### Non-lever — a bigger server

A modest box relays thousands of sessions. Hardware relays the same GB at the same price. Size bandwidth first, server second.




GO DEEPER · VOLUME 3 OF 7

# Video Streaming: A Complete Guide to Video Delivery

From ABR and CDNs to Players, WebRTC, DRM, and the Economics of Streaming

By Nikolay Sapunov, CEO at Fora Soft · 1,182 pages · Kindle & paperback on Amazon

**Read it on Amazon →** amazon.com/dp/B0HH76ZYWC

This sheet turns relay share, bitrate and per-GB price into a monthly TURN bill. Volume 3 covers the real-time side in depth: WebRTC media paths and relays, CDN and delivery costs, QoE monitoring for calls, and the economics of streaming, so you can see which lever actually moves the number.

## WHAT YOU WILL FIND INSIDE

- WebRTC media paths and relays
- Economics of video delivery
- Real-time delivery at scale
- QoE monitoring for real-time calls

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## Is your TURN bill growing faster than your user base?

We will measure your real relay share, fix ICE and IPv6 gaps that push calls to relays, and compare managed TURN against self-hosted coturn on your traffic. 250+ video products shipped since 2005.

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