# Streaming Server

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Servidor de **Audio** y **Video** con Grabación de Sesión

**Protocolos Soportados**

- RTMP (Real Time Messaging Protocol)
- RTSP
- HLS

RSS - Github

# Protocolos

## RTMP

Realtime Messaging Protocol

TCP - port:1935

Canales para enviar y recibir paquetes independientes (video, audio)

## RTSP

Realtime Streaming Protocol

TCP - port:8554
UDP - ports:8000-8001
RTP

Manda audio y video por UDP

Best effort

## HLS

HTTP Live Streaming

HTTP - port:8888

Desarrollado por Apple

File.m3u8

# Codecs

| | RTMP | RTSP | HLS |
|---|---|---|---|
| AUDIO | **HE-AAC**<br>AAC<br>AAC-LC<br>MP3 | **AAC**<br>AAC-LC<br>HE-AAC+ v1 & v2<br>MP3 | AAC-LC<br>**HE-AAC**+ v1 & v2<br>xHE-AAC<br>FLAC |
| VIDEO | **H.264**<br>H.263<br>VP8<br>VP6 | **H.264**<br>**H.265** | H.265<br>**H.264** |

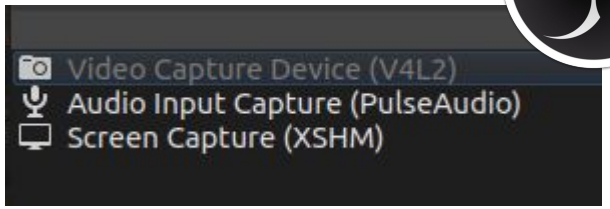
# Demo

RTMP
RTSP

RSS

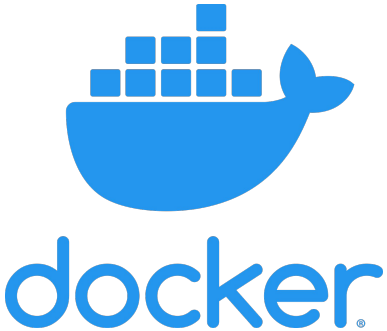
RTMP
RTSP
HLS

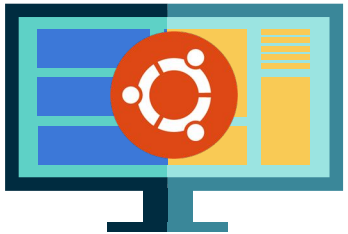
**OBS Studio**
Publicar Streams



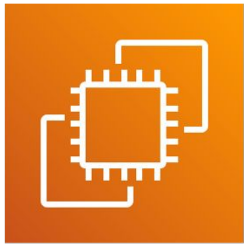

**FFmpeg : ffplay**
Consumir Streams

# Levantar el Server



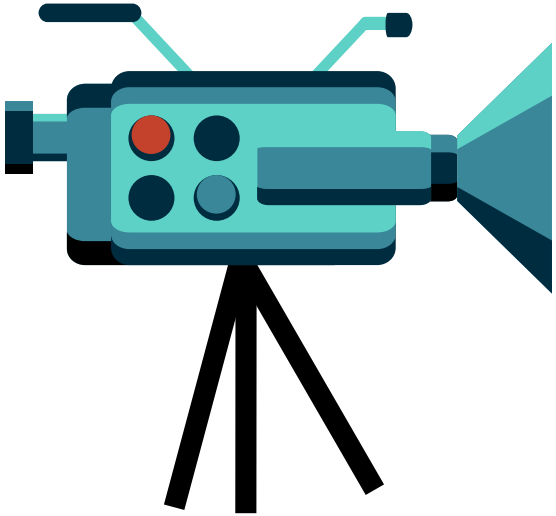



**Localmente**
Ubuntu 20.04

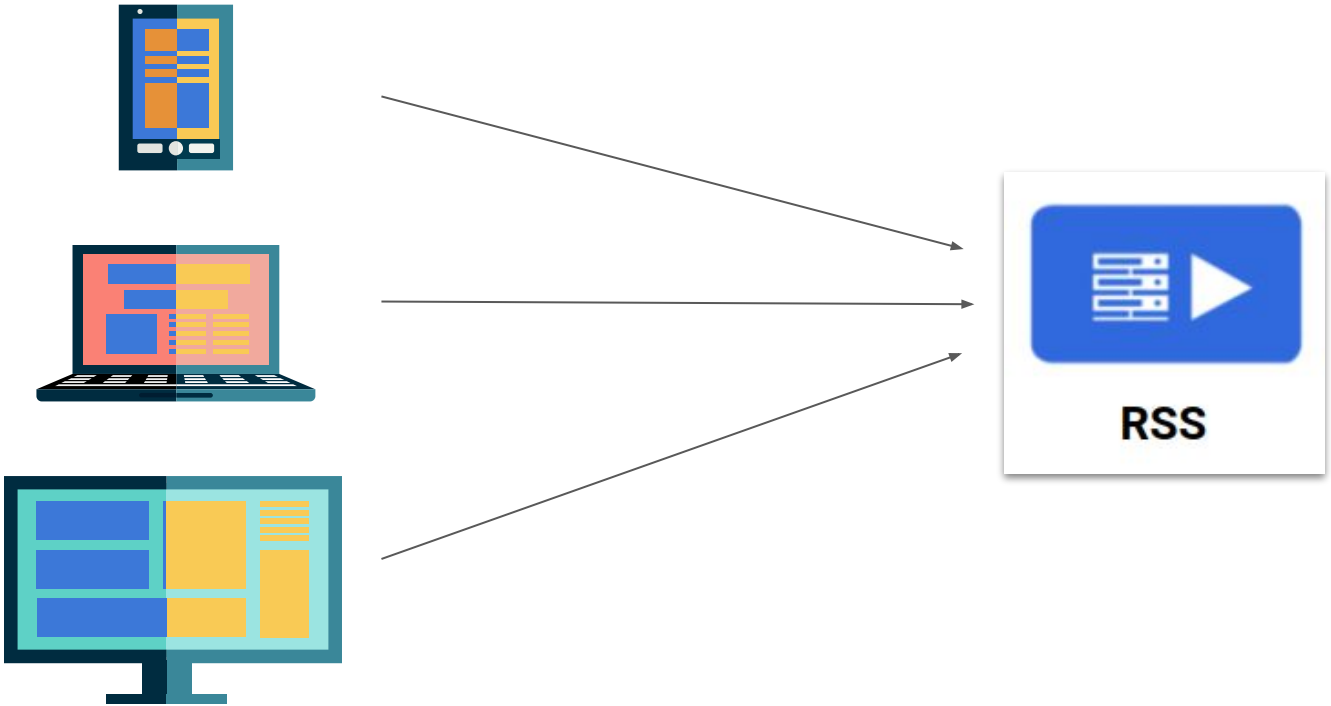


Amazon EC2
AMI Ubuntu 22.04

# Live Streaming



# Múltiples Clientes



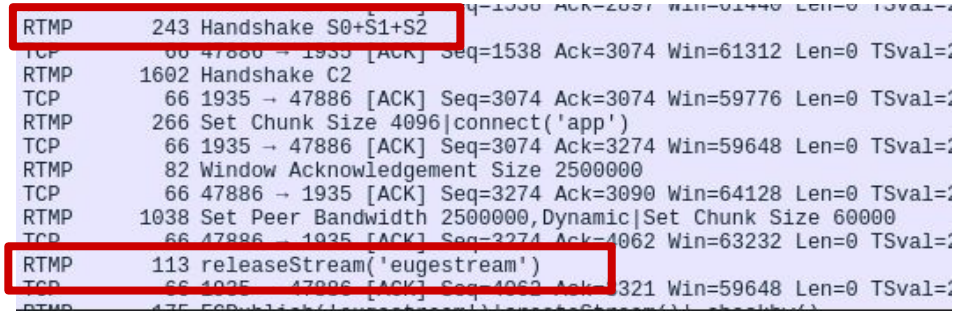
# Publicar un Video

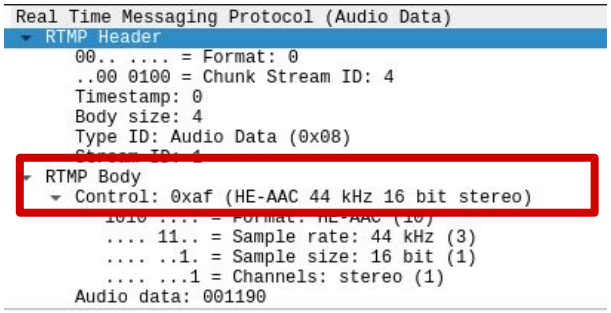
# Métricas

- Cantidad de Clientes conectados
- Ancho de Banda total y por cliente

# Wireshark

- Protocolos
- CODECS
- Ancho de Banda por Cliente




IPv4 · 114 | IPv6 · 2 | TCP · 124 | UDP · 29

| Port A | Address B | Port B | Packets | Bytes | Packets A → B | Bytes A → B | Packets B → A | Bytes B → A | Abs Start | Duration | Bits/s A → B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38018 | 35.228.14.46 | 443 | 18 | 2.079 | 7 | 1.037 | 11 | 1.042 | 1:56:38.04214 | 63.0873 | |
| 46658 | 104.19.149.54 | 443 | 11 | 675 | 6 | 324 | 5 | 351 | 1:56:38.49780 | 39.0088 | 66 |
| 35904 | 104.18.4.81 | 443 | 13 | 789 | 7 | 378 | 6 | 411 | 1:56:38.49783 | 38.8862 | 77 |
| 48004 | 151.101.193.69 | 443 | 4 | 264 | 2 | 132 | 2 | 132 | 1:56:38.49784 | 45.1001 | 23 |
| 44244 | 35.244.216.234 | 443 | 5 | 403 | 3 | 198 | 2 | 205 | 1:56:39.78329 | 0.0212 | 74 k |
| 40776 | 162.247.241.14 | 443 | 16 | 912 | 8 | 432 | 8 | 480 | 1:56:40.49986 | 76.8007 | 44 |
| 50096 | 35.186.224.25 | 443 | 9 | 735 | 4 | 276 | 5 | 459 | 1:56:40.54586 | 49.1075 | 44 |
| 56756 | 104.22.17.141 | 443 | 15 | 903 | 8 | 432 | 7 | 471 | 1:56:40.54587 | 83.8359 | 41 |
| 43606 | 35.207.24.140 | 443 | 4 | 337 | 2 | 132 | 2 | 205 | 1:56:41.21650 | 0.2048 | 5.157 |
| 39198 | 104.45.184.134 | 443 | 20 | 2.031 | 11 | 1.197 | 9 | 834 | 1:56:42.43396 | 61.2476 | 156 |

# DEMO

# ¡ GRACIAS !