

# HPA

## 2025 | 30TH

TECH RETREAT

ANNIVERSARY

### How Do I Deal with all these Live Streams?

Chris Lennon, Ross Video  
Loic Barbou, Bloomberg  
Stan Moote, IABM  
Emeka Okoli, Zixi

# How Do I Deal with all these Live Streams?



**Chris Lennon**  
**Ross Video**



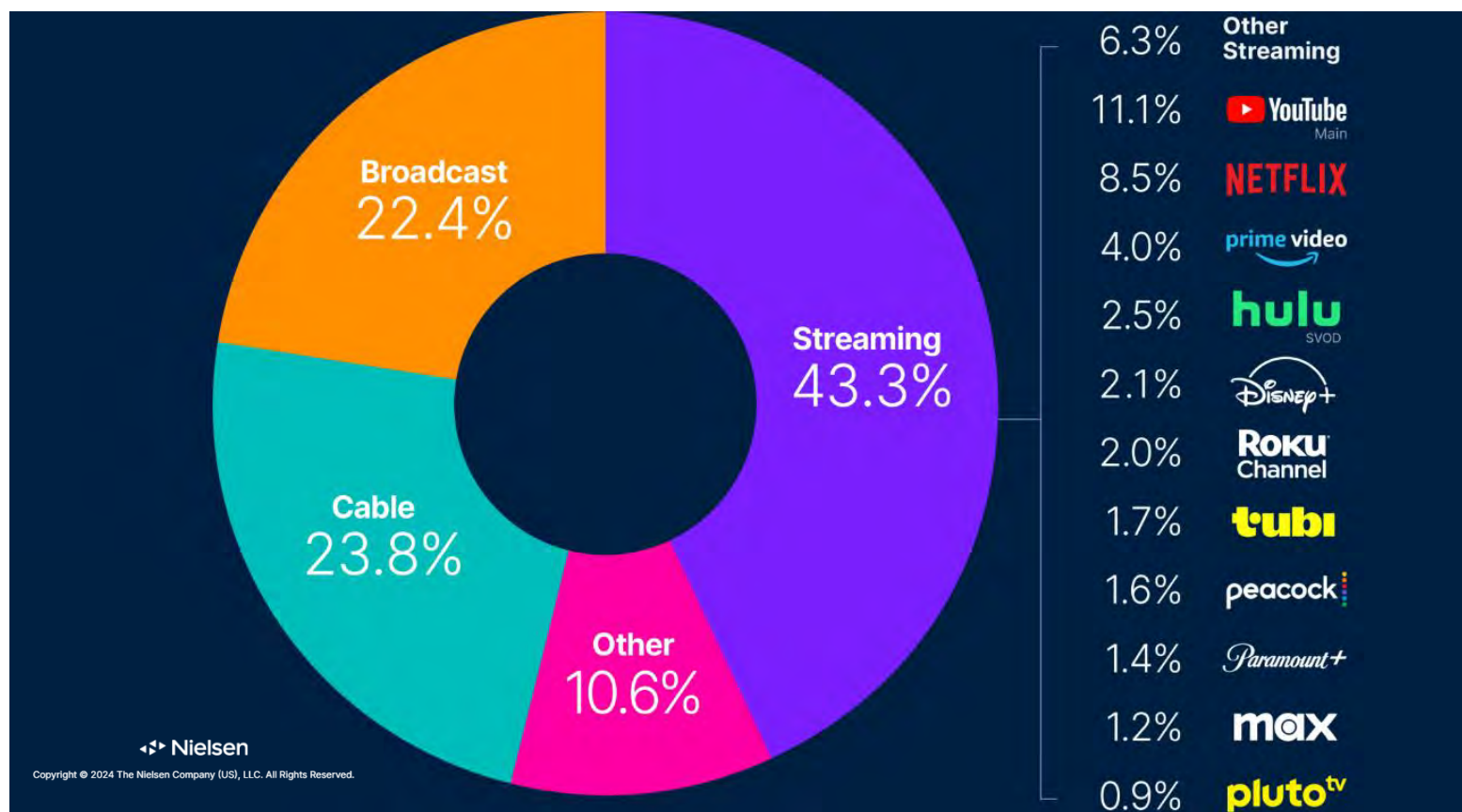
**Stan Moote**  
**IABM**



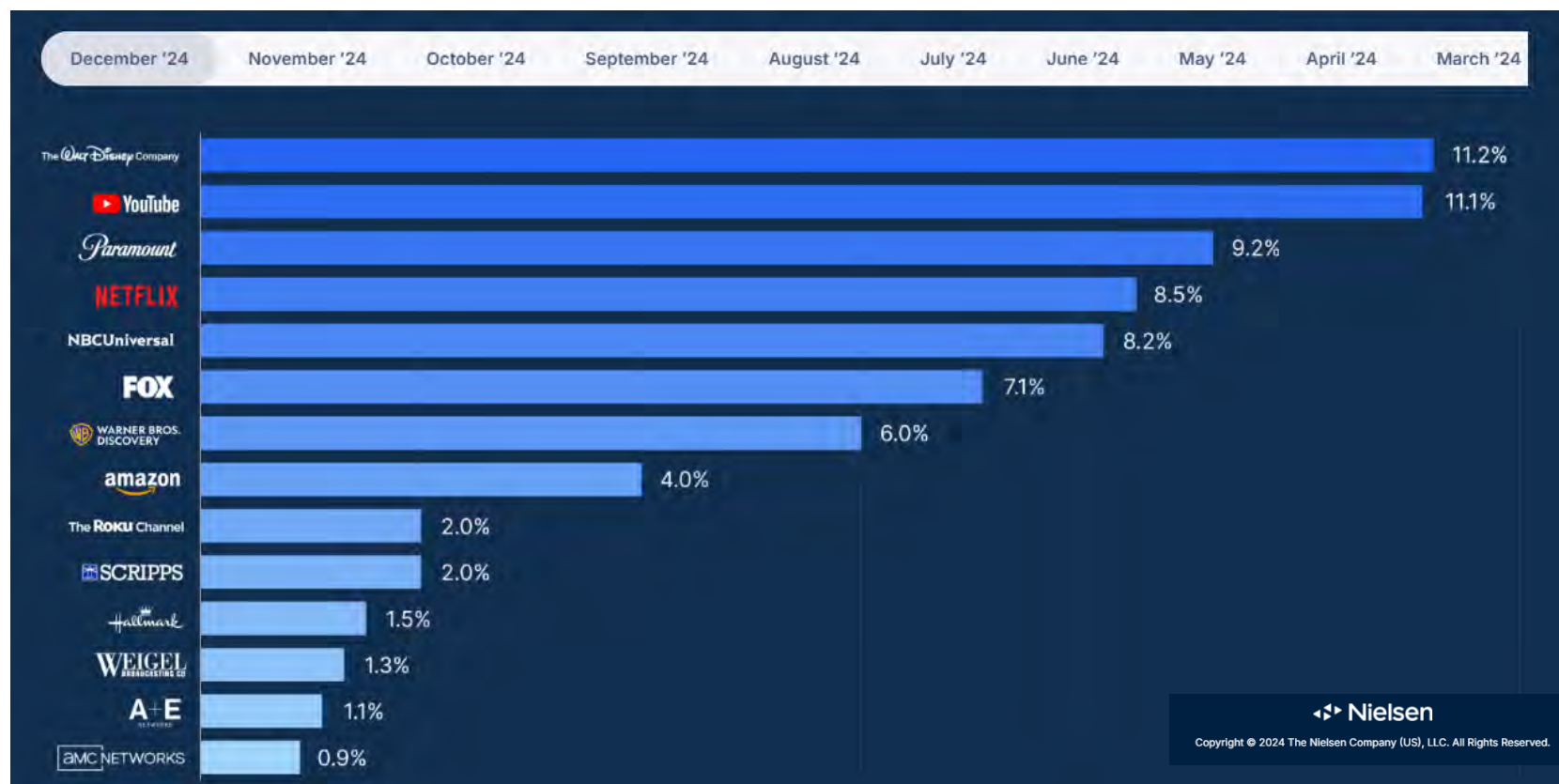
**Emeka Okoli**  
**Zixi**



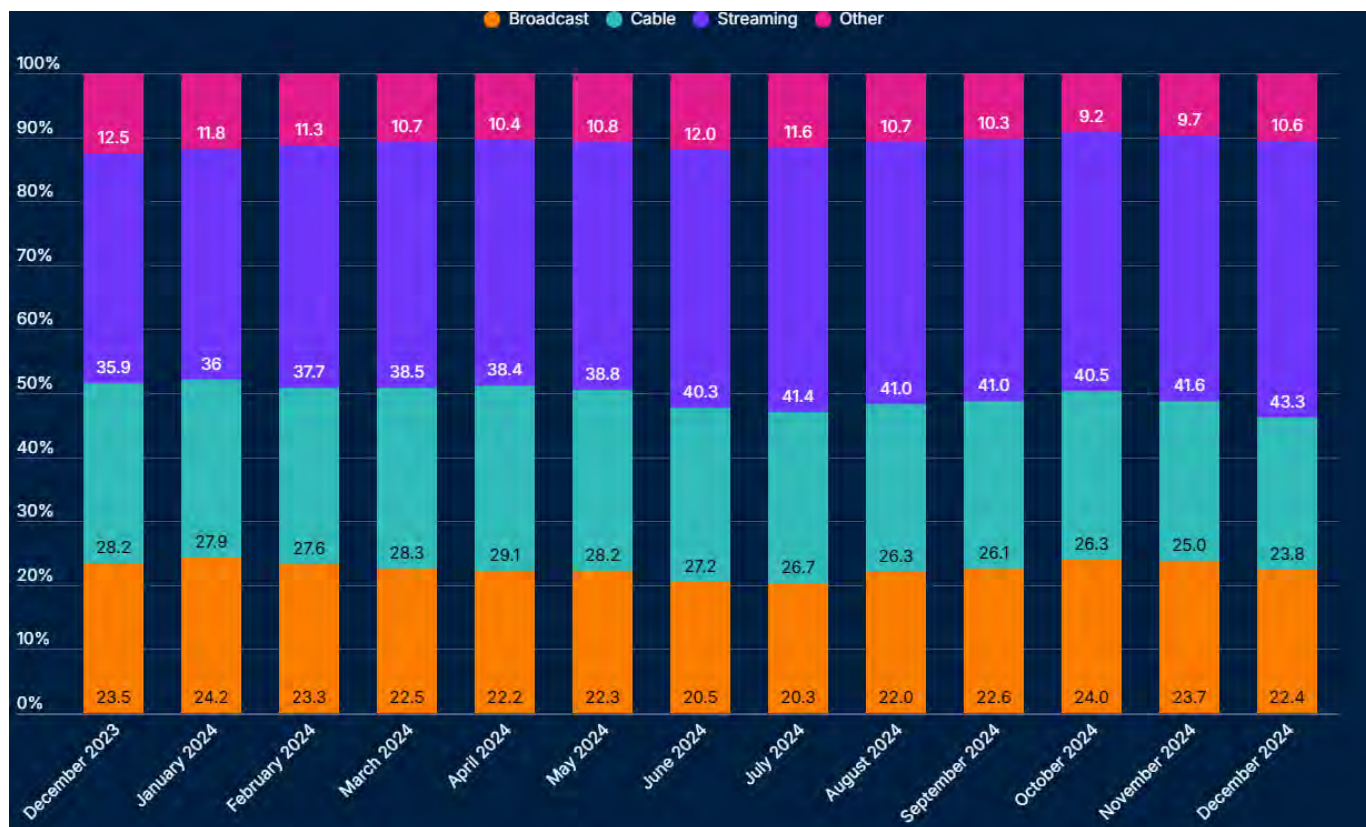
# Monthly TV viewing by platform (Nielsen)



# Monthly TV viewing by distributor (Nielsen)

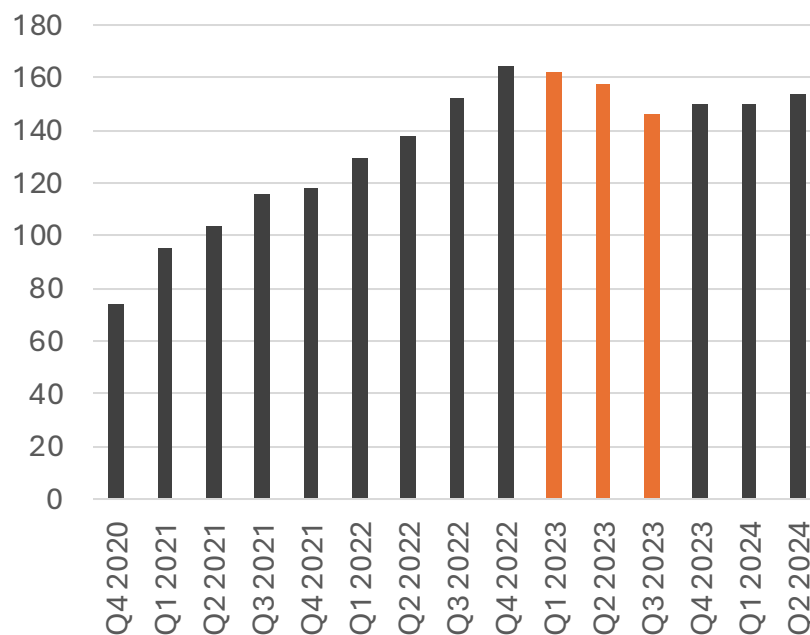


# TV Viewing trends by platform (Nielsen)



# Live Stream Distribution

Quarterly number of Disney+ subscribers worldwide



## Subscriptions

Despite concerns with recent stabilization of subscription numbers, Disney+ achieves QoQ uplift in Q2 2024

## Advertising

The number of ad-supported offerings in the industry has rapidly risen in 2023, though advertising has also been under pressure due to macro headwinds

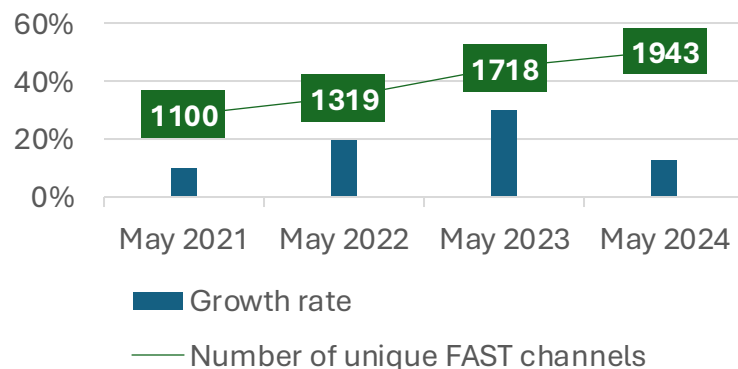
Source: IABM State of the Industry



# Live Stream Distribution

- FAST channel market is maturing but continues to see growth

## Unique FAST channels in the US



### Live Sports and Collaboration

In August 2024, Fubo TV and Amazon Prime partnered to launch Fubo Sports Network on Prime Video Channels in Canada.

Amazon / Fubo TV

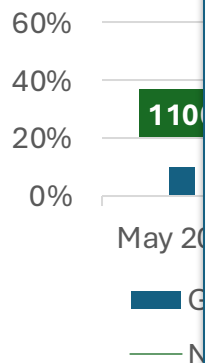
*This collaboration is a major step forward in our mission to deliver premium sports content to Canadian sports fans and provide them with unparalleled access to exclusive live events and more of the programming they crave*

Ben Grad  
SVP, strategic partnerships and operations Fubo  
(August 2024)

Source: IABM State of the Industry

Live Stream

•FAST



# Fubo's FAST Channel Fubo Sports Now Distributed on OTA in 100+ Markets

By [SVG Staff](#)

Tuesday, February 11, 2025 - 10:31 am

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FuboTV announces it will distribute its Fubo Sports owned & operated linear network on over-the-air (OTA) stations in more than 100 markets nationwide including major markets New York, Los Angeles and Chicago.

Fubo Sports is now available to more than 12 million traditional TV households as OTA diginets in addition to its continued availability as a FAST channel on Fubo and most free ad-supported streaming platforms.

Fubo Sports OTA programming features sports, topical shows and award-winning documentaries. Audiences can enjoy content from breakout and niche sports leagues such as Bare Knuckle Fighting Championship (BKFC), ProBox TV, The Professional Fighters League (PFL) and World Poker Tour, among others. A leading destination for combat sports, the network also broadcasts select live boxing and MMA events.

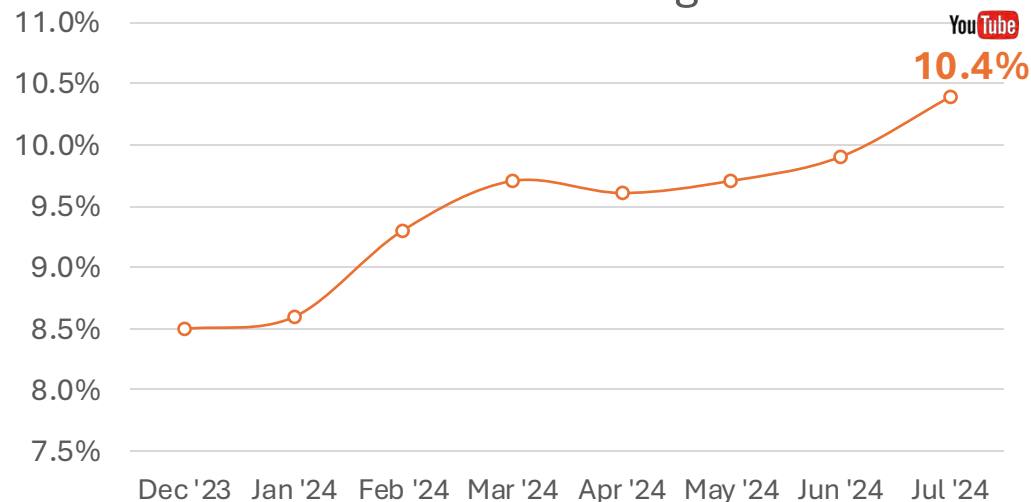




# Live Stream Distribution

## YouTube increases its share of living room viewing

YouTube's share of viewing on US TVs



### Alphabet's Q2 2024 Earnings Call

*Views of YouTube Shorts and CTVs more than doubled last year and we are making it easier for creators to add captions and turn regular videos into Shorts.*

**Philipp Schindler**  
Chief Business Officer at Google  
(July 2024)

**#1**

YouTube maintained its position as the leader in U.S. streaming watch time in July, surpassing the 10% mark of total TV usage.

**x3.3**

Full episode views of Channel 4 programming on YouTube increased by 331% so far in 2024, compared to the same period last year.

# Live Stream Distribution

- Financial struggle with streaming leads media business to more consolidation

## Selected M&A Deals & Rumours

### Strategic Partnership

CANAL+ Group has acquired a stake in Senegalese production company MARODI TV, boosting its presence in Africa's creative sector and enhancing MARODI's content production and distribution

March 2024

### Joint Bid Talks

Sony Pictures Entertainment and Apollo Global Management are discussing a potential joint bid for Paramount Global, though challenges and existing negotiations with Skydance Media complicate the situation

April 2024

### Streaming Partnership

Disney and Warner Bros. Discovery are launching a new bundle combining Disney+, Hulu, and Max to provide consumers with enhanced value and a diverse selection of content

May 2024

### Paramount Bid

Skydance Media has reportedly offered \$8 billion to acquire Paramount Global, which includes a proposal to buy out half of its Class B shareholders, amidst competing offers from other companies

June 2024

### Sport Streaming

Amazon and NBC have secured new \$76 billion deals to broadcast NBA games, enhancing their advertising revenue while increasing digital viewership opportunities

July 2024

### BBC's Future

As the BBC faces declining TV license payers, rumours of a potential merger with Channel 4 have surfaced, though these were denied by the BBC. Nonetheless radical reforms must be considered to secure financial stability and relevance.

August 2024

# The Challenge



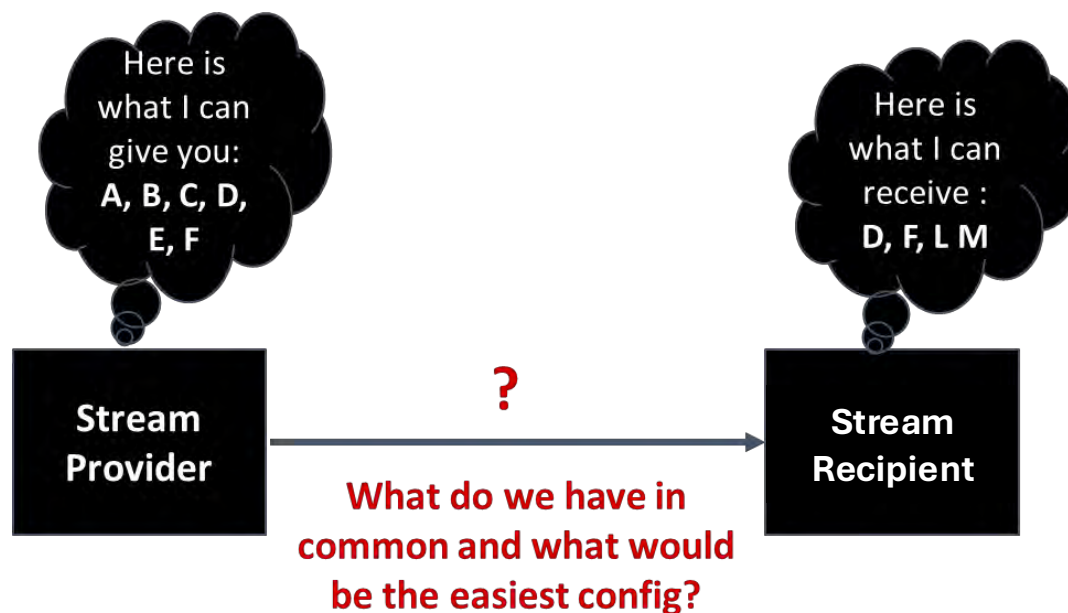
Large media  
companies today  
manage hundreds of  
live streams using  
**manual processes**



# What problem are we trying to solve?

- Media companies are dealing with a fast-growing number of point-to-point distributions for live streams:
  - IP distribution performance can be as good or better than traditional satellite
  - FAST channels and OTT platforms require this type of distribution

# How is it done today?



# The problem we are trying to solve

- Reduce complexity
- Speed up time to market
- Reduce management overhead
- Minimize the one offs
- Address security gaps



# The landscape of live stream distribution

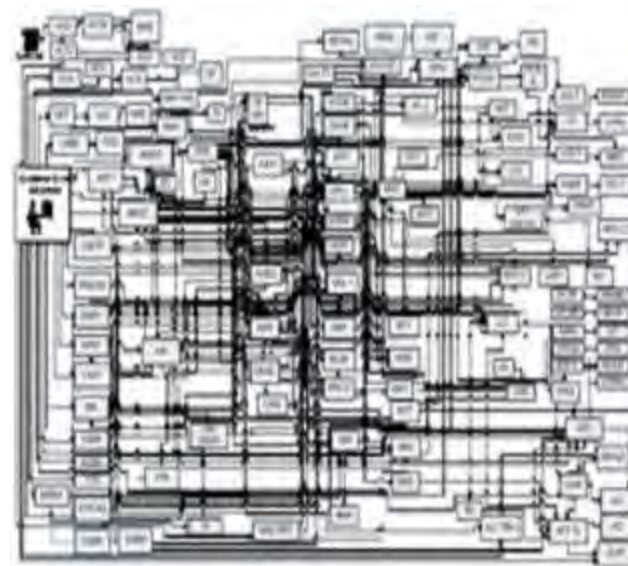
## Configuration

Hybrid architectures are becoming the norm

- Some hardware components on premises
- Some services in the cloud

Every configuration is different

- Large number of variables to achieve the same thing
- Agility of the cloud provides a slippery slope to the kitchen sink



# The landscape of live stream distribution

## Security

- Origin distribution is rarely secured by default and identifying traffic for a specific distribution can be challenging
- IP Allowlisting is the best we can do

# Threat Models

We have (thus far) identified a handful of potential threat models along with suggested mitigation approaches for each.

- Producer intruded
- Malicious bridge
- Content theft (D2P)
- Manifest tampering
- Denial of service



# The landscape of live stream distribution

## Proposal

Limit the variations of flavors for each type of format delivery

- Mezzanine stream
- Pre-packaged streams

Define a standardized security pattern for each type of delivery

- Point to point
- Origin distribution

Discard non effective protocols

- Transmission resilience
- Security capabilities
- Industry adoption

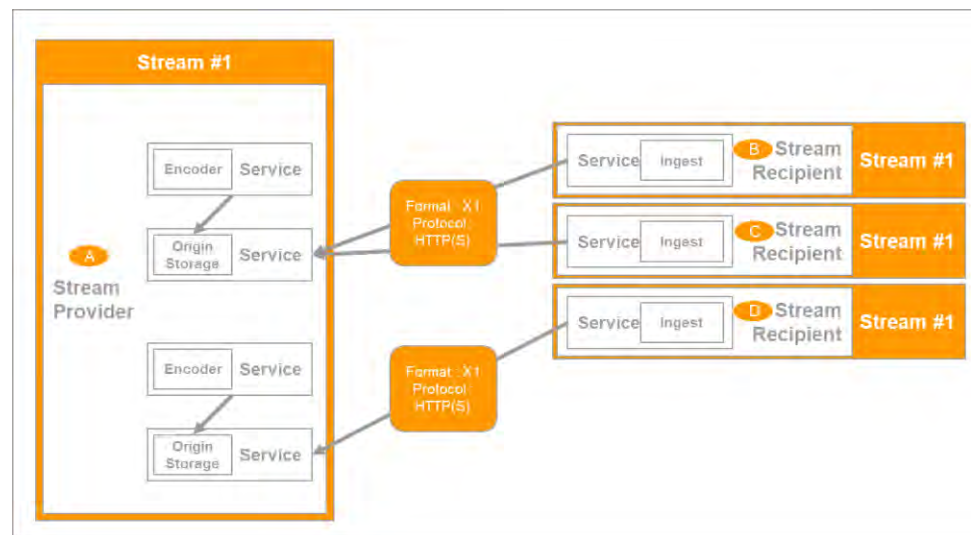
# The landscape of live stream distribution

## Proposal

- Implement a pattern for identification of consuming services
- Leverage existing entitlement models that scale and work
- Provide configuration recommendation for each defined scenarios

# Point to point distribution

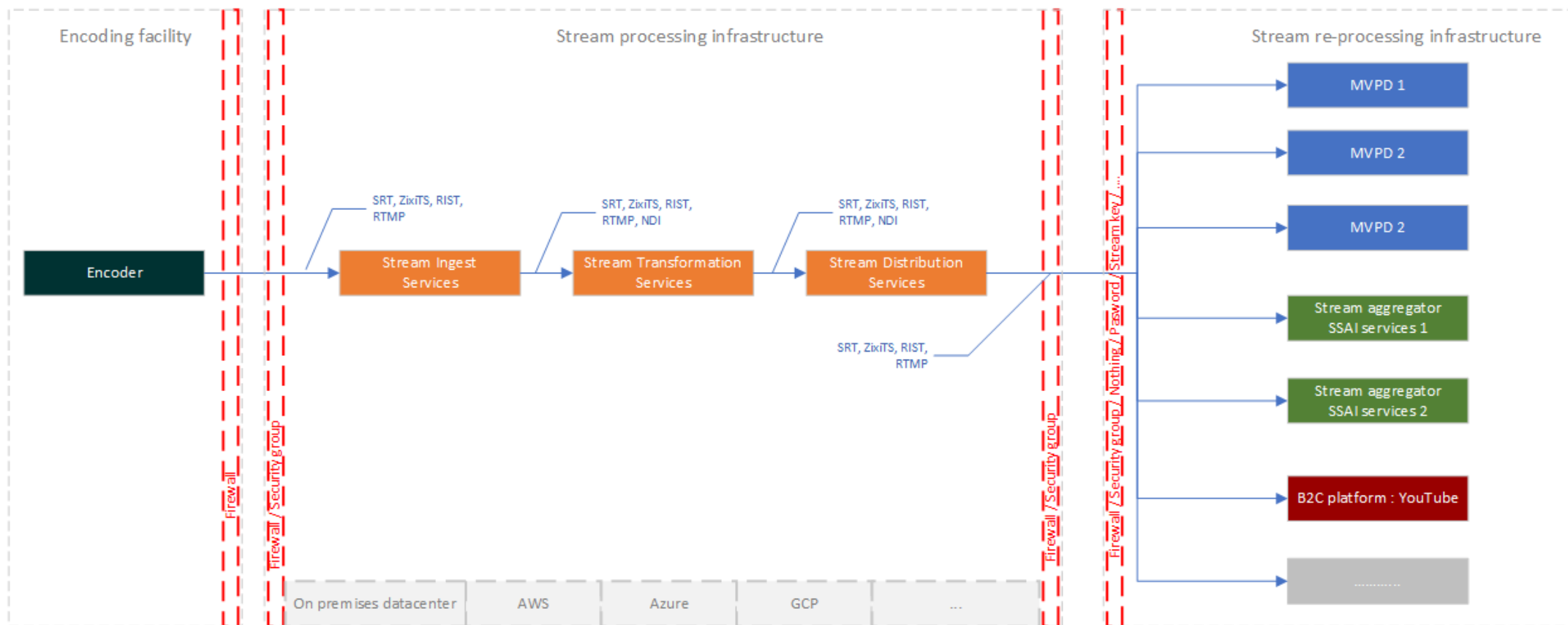
This form of distribution is encountered most frequently when distributing live streams to MVPDs, social platforms, and other large-scale redistribution platforms





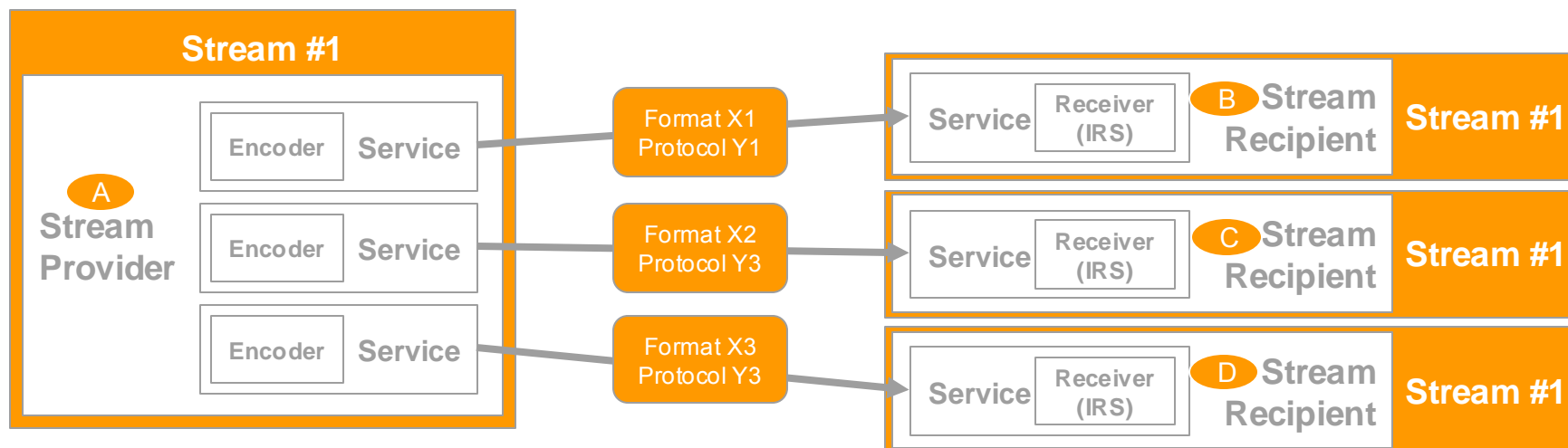
# Point-to-point Distribution

Best practices for B2B live stream distribution : Direct point to point delivery reference infrastructure



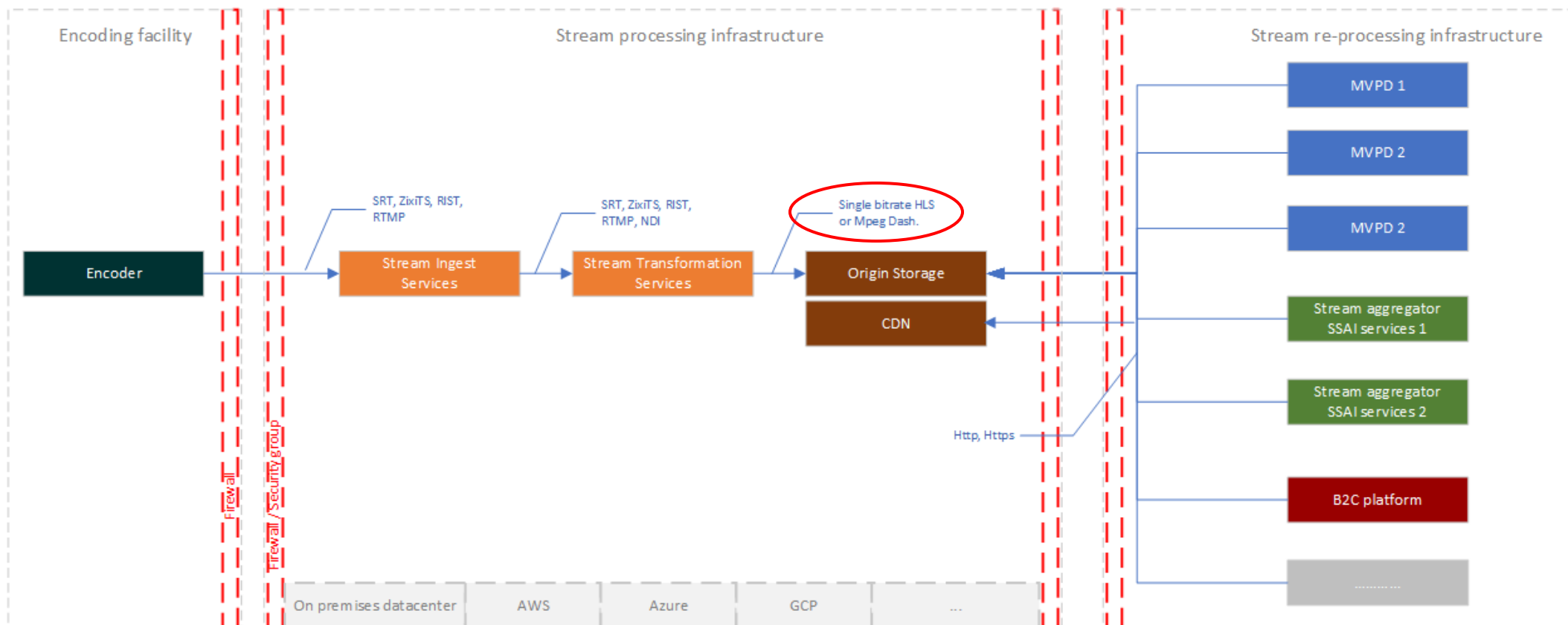
# Origin Distribution

This form of distribution is most commonly encountered when distribution is to OTT platforms or FAST channels, whether that be a direct relationship or one through redistribution platforms



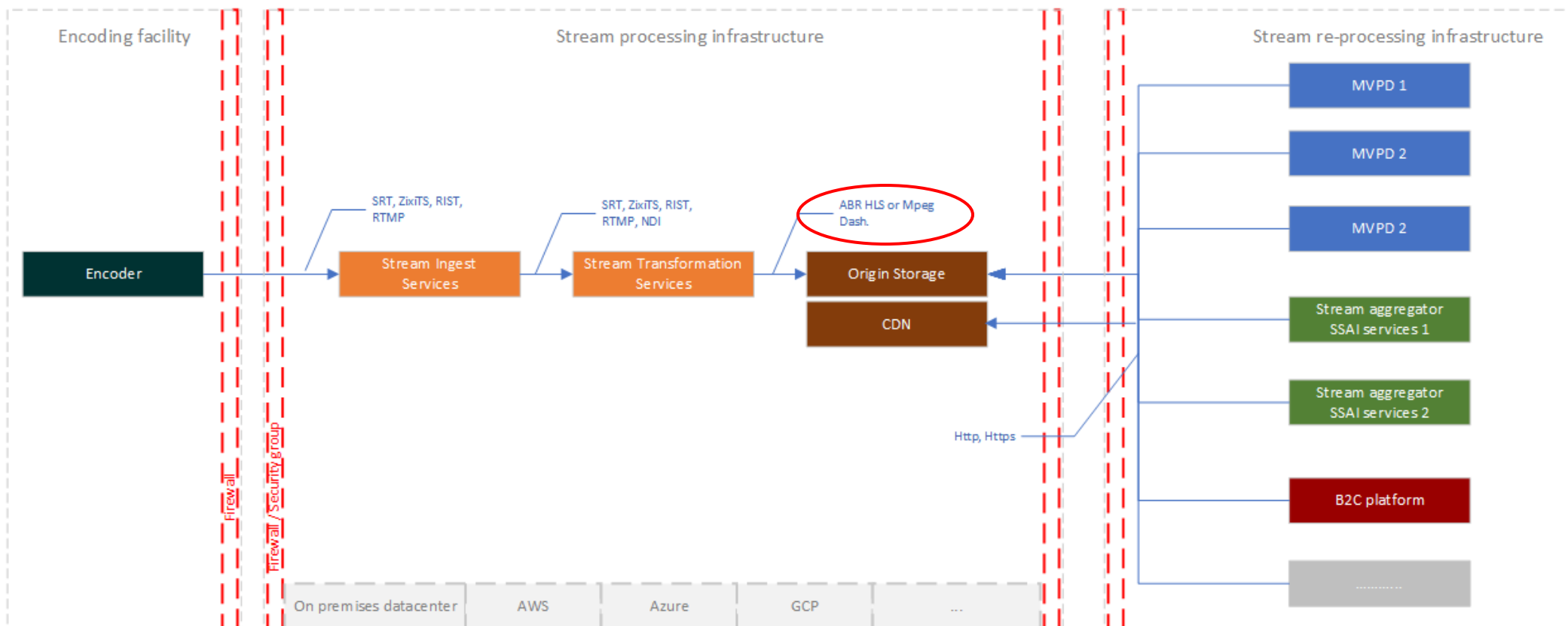
# Origin-based Mezzanine Distribution

Best practices for B2B live stream distribution : Origin based mezzanine delivery infrastructure



# Origin-based ABR Distribution

Best practices for B2B live stream distribution : Origin based ABR (Adaptive Bitrate) delivery infrastructure





# Protocol Comparison

Protocol	Application	Type of Network	Base Protocol	Spec Type	Packet Loss Recovery	Protocol Latency	Content Protection	Authentication	Comments
RTP	Point-to-Point Contribution	Clean Network (no loss)	UDP	Open Standard	None	Zero	None	None	There is a secure version of RTP.
RTP+FEC	Point-to-Point Contribution	Occasional Packet Loss	UDP	Open Standard	Up to 5%	Very Low	None	None	There is a secure version of RTP.
RTSP	Point-to-Point Contribution	Best Effort (Internet)	TCP	Open Standard	Better than 15%	High	None	Username/Password	
RIST	Point-to-Point Contribution	Best Effort (Internet)	UDP	Open Standard	Better than 15%	Tunable	DTLS or PSK	Several options available	
QUIC	Point-to-Point Contribution	Best Effort (Internet)	UDP	Open Standard	Better than 15%	Tunable	Available		
SRT	Point-to-Point Contribution	Best Effort (Internet)	UDP	Proprietary - Documented	Up to 15%	Tunable	AES encryption	Pre-shared keys	
RTMP	CDN Origin Contribution	Best Effort (Internet)	TCP	Proprietary - Documented	Better than 15%	High	SSL	Username/Password	
HTTP-based	CDN Origin Contribution	Best Effort (Internet)	TCP	Open Standard	Better than 15%	High	SSL	Certificates	
HTTP-based	CDN Origin Distribution	Best Effort (Internet)	TCP	Open Standard	Better than 15%	High	SSL	Certificates	
Zixi	Point-to-Point Contribution	Occasional Packet Loss	UDP	Proprietary - Closed	Better than 15%	Tunable	DTLS		

# Lots to consider!

- Who - Consumers/ Piracy
- When - When will, For how long, Why
- Where - Where (Geo)
- What - Specific content
- Why - Contractual /Business

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Email Anthony Catalano ([acatalano@smpte.org](mailto:acatalano@smpte.org)) for details on joining.