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Priva-Stream: Private Collaborative Streaming

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► **To cite this version:**

Simon da Silva. Priva-Stream: Private Collaborative Streaming. 19th International Middleware Conference, 2018, Rennes, France. hal-02181026

HAL Id: hal-02181026

<https://hal.science/hal-02181026>

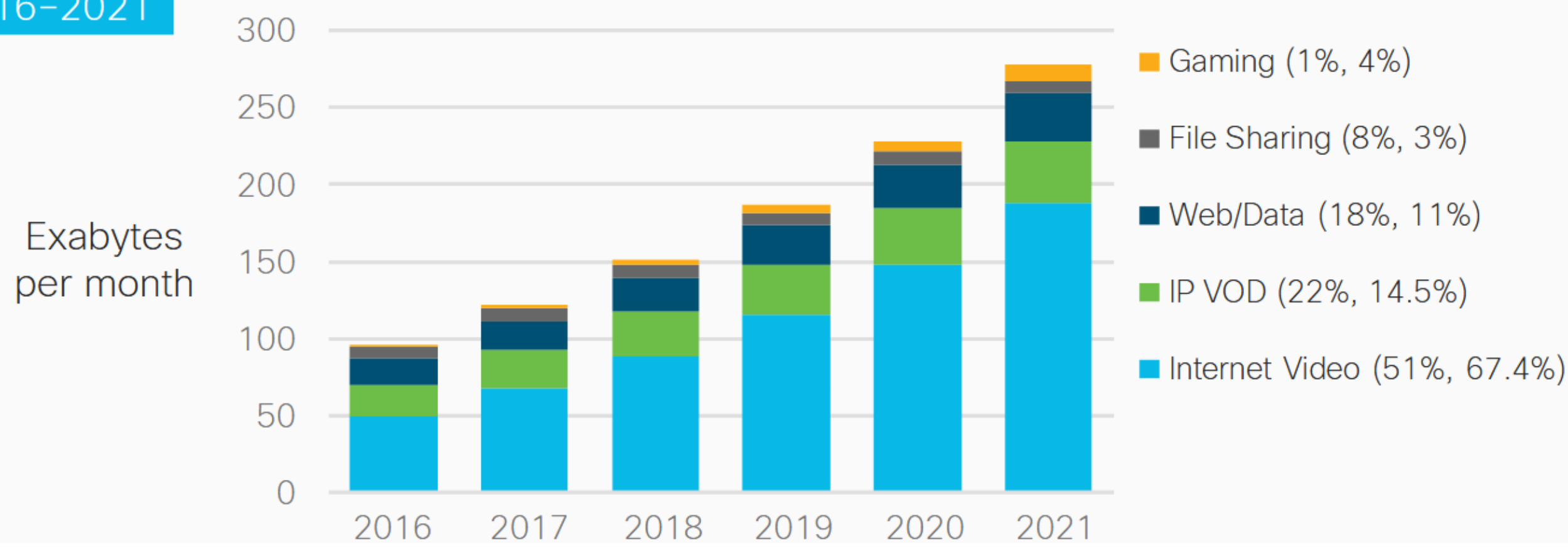
Submitted on 11 Jul 2019

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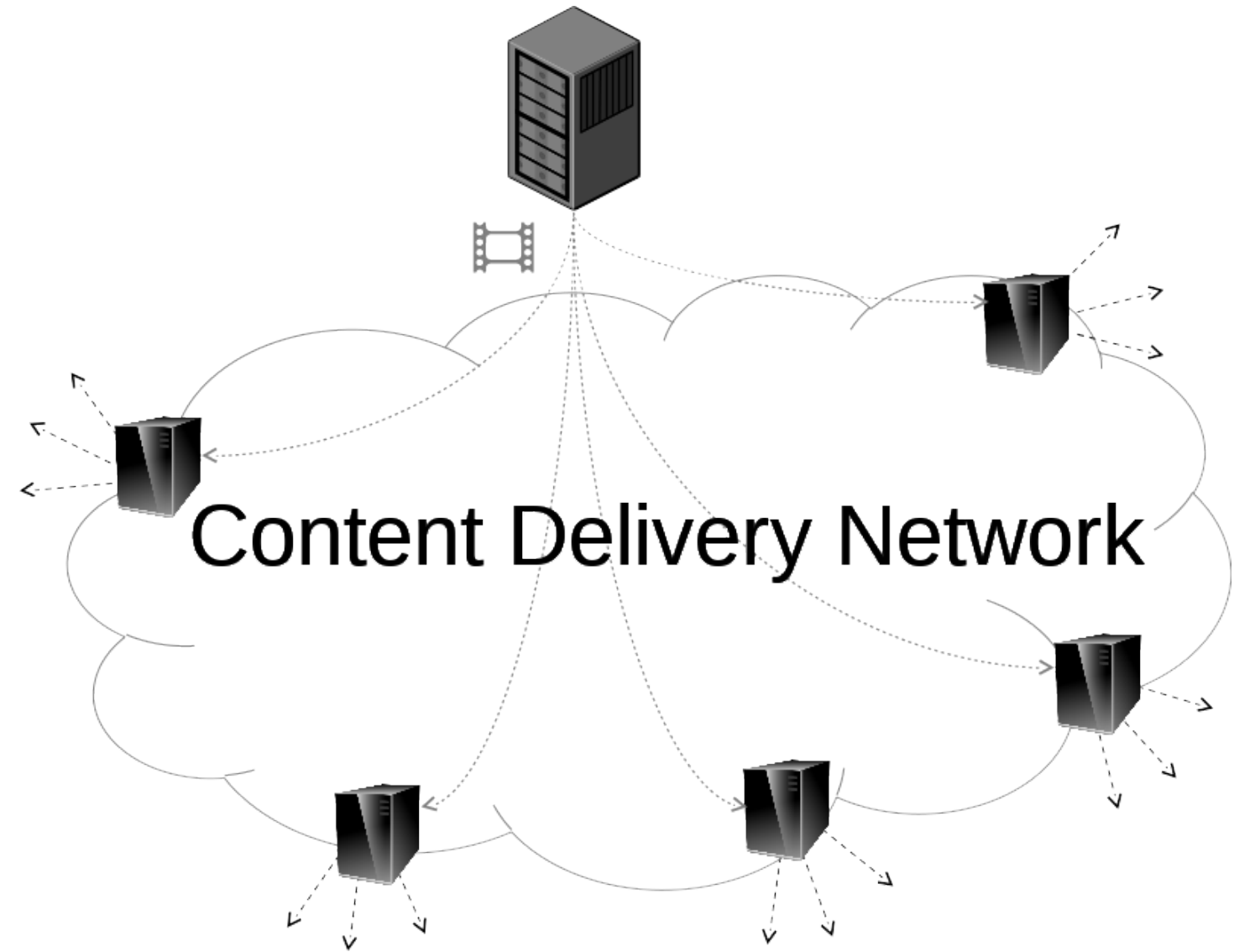
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Video content consumption

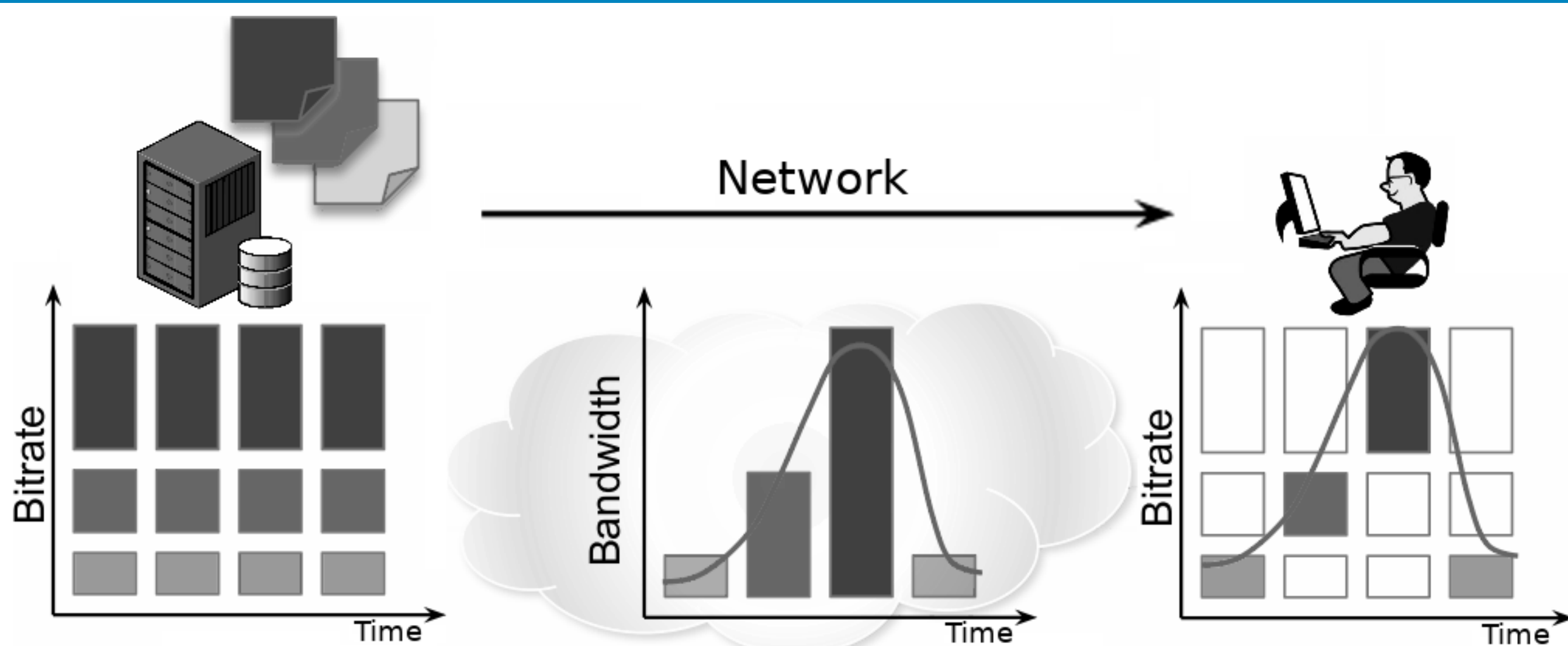
24% CAGR
2016-2021



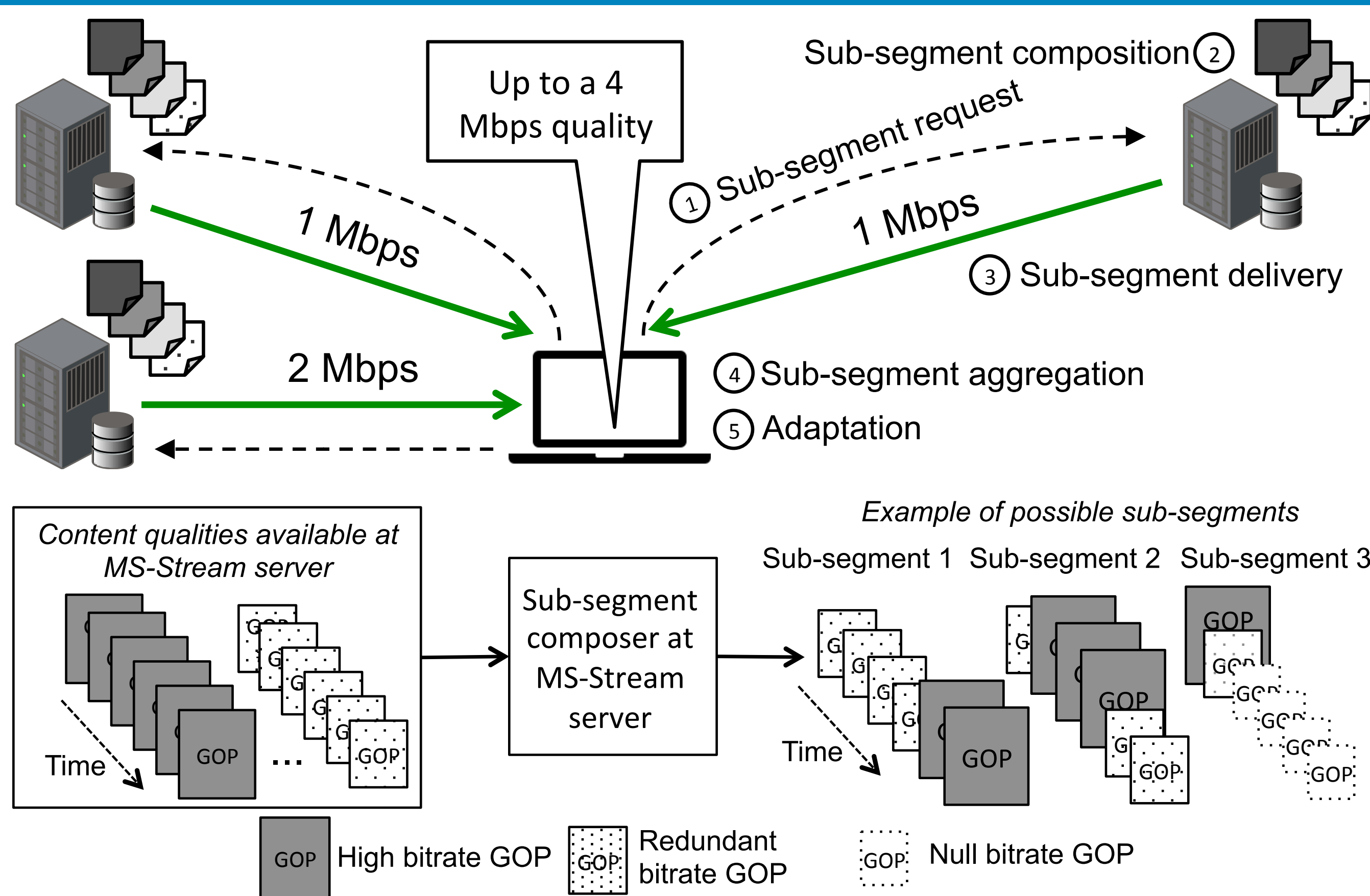
Content Delivery Networks (CDN)



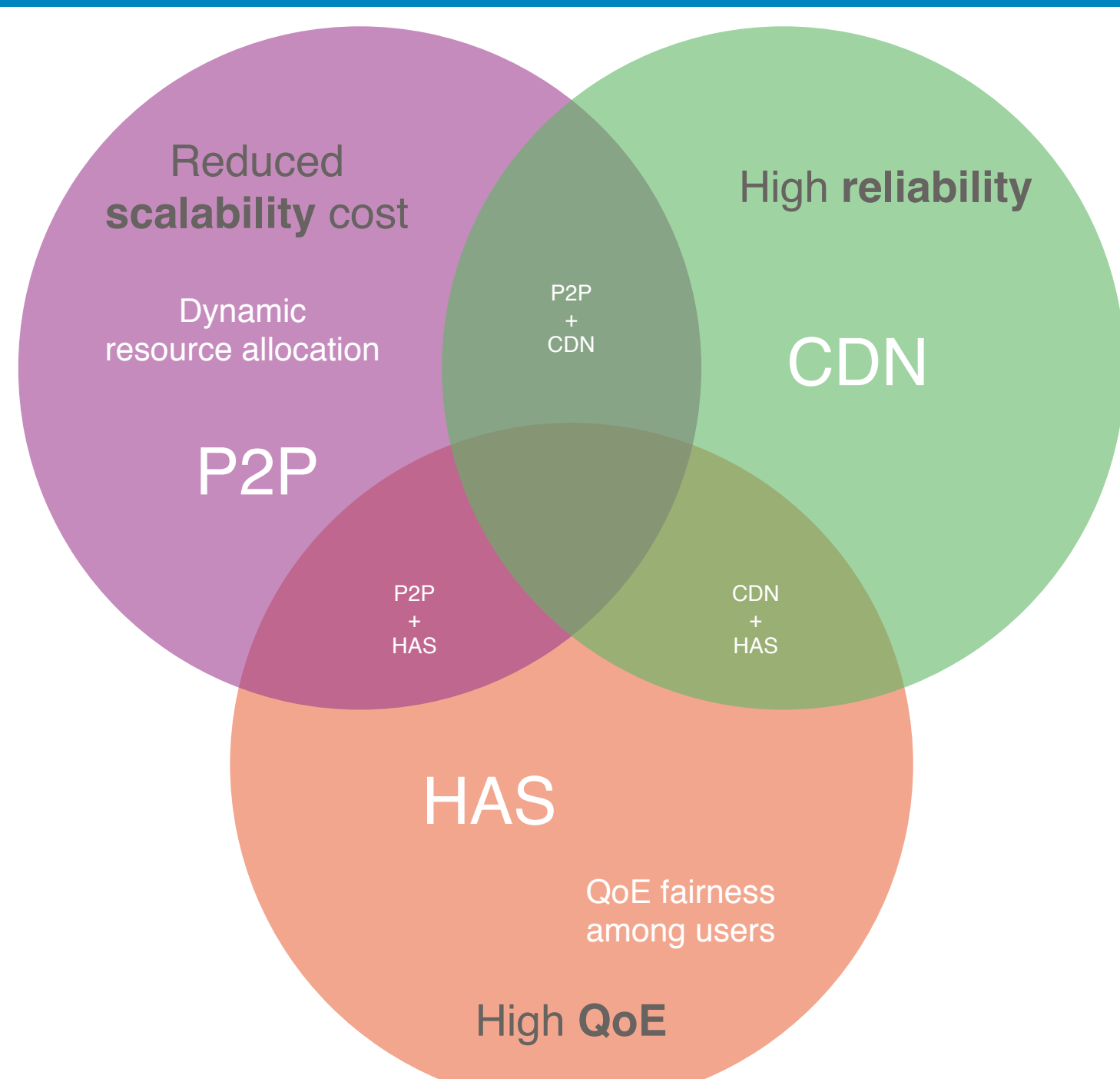
HTTP Adaptive Streaming (HAS)



MS-Stream: Multi-Source Streaming over HTTP



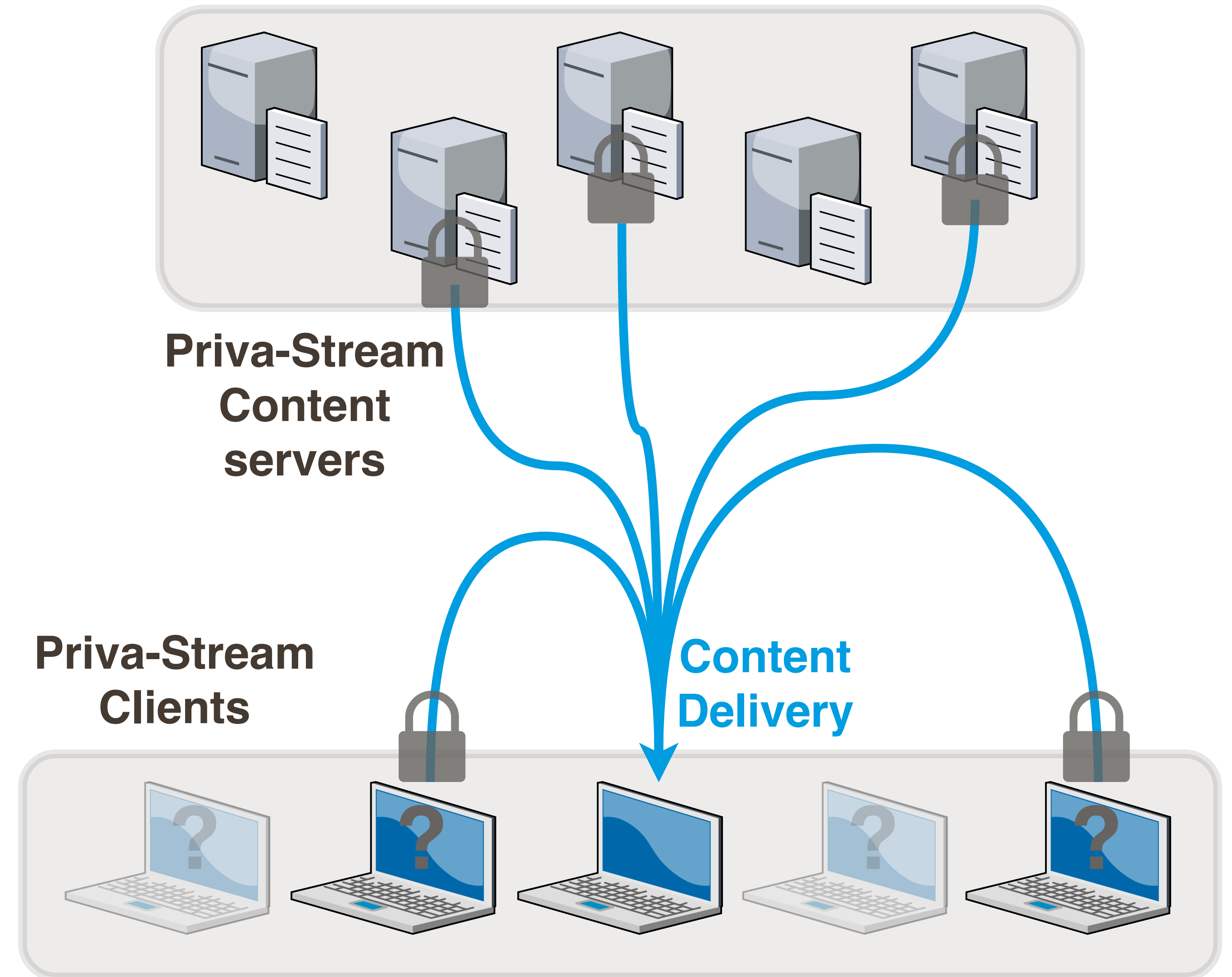
Problem statement



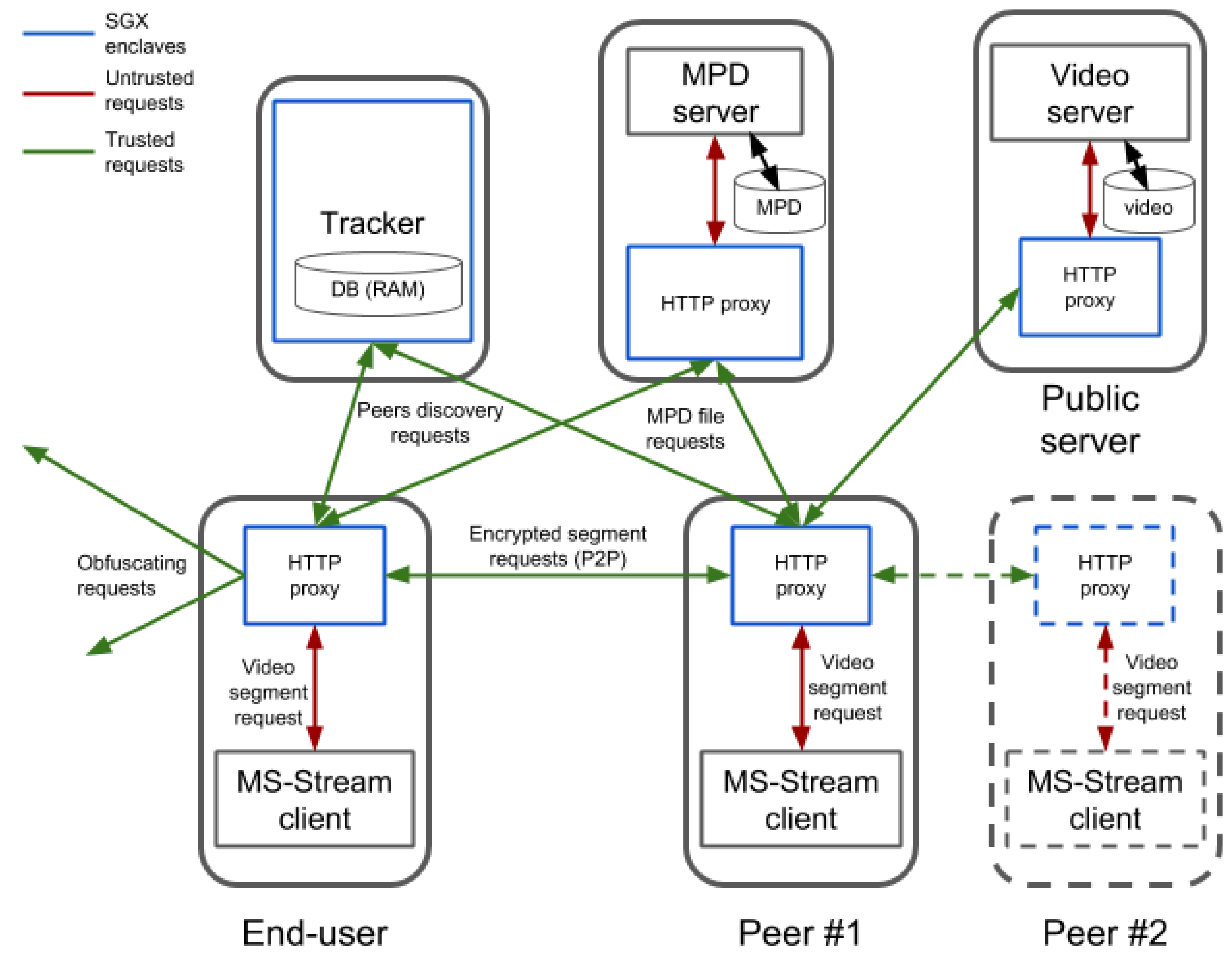
PRIVA-STREAM idea

- Reliability, QoE and scalability
- MS-Stream: Multiple-Source adaptive streaming over HTTP
- Incentive to contribute
- Rewarding: contributing users get a higher quality
- End-users privacy
- TEE (SGX): encryption, NAT and anonymity

PRIVA-STREAM overview

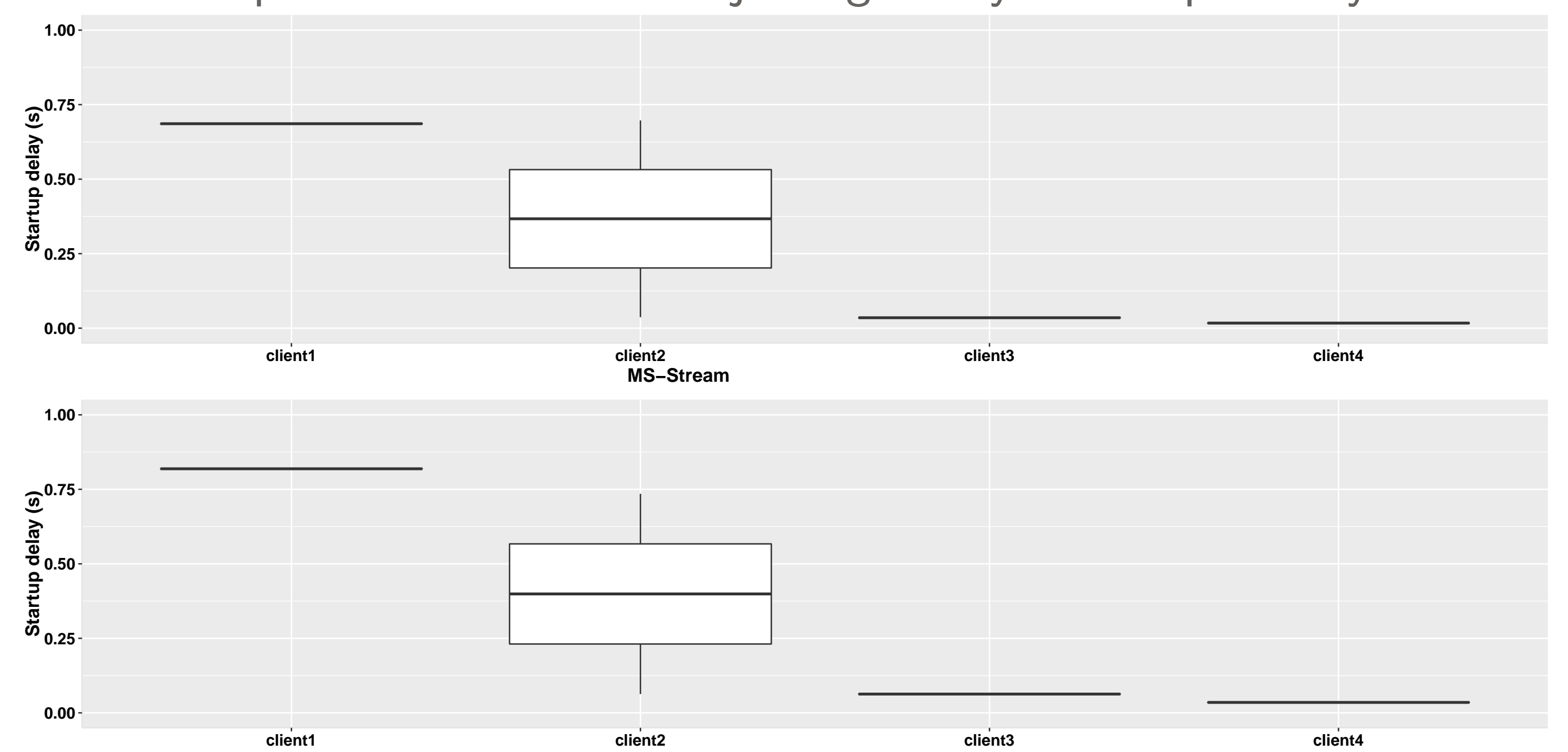


PRIVA-STREAM technical description



PRIVA-STREAM early results

Experiment: Four clients joining the system sequentially



Startup delay per client (s) - MS-Stream (top) vs PRIVA-STREAM (bottom)