aspera

Aspera FASPStream Software

Send and receive any "byte" data using the high-speed Aspera FASPStream

AT A GLANCE

Quality Video Delivery

- Glitch-free play out with negligible start up delay at "any" Internet distance

- Less than 2 seconds of delay from live for 50 Mbps video sources over global Internet networks with round-trip delays of 200 milliseconds and 2% packet loss and for 10 Mbps sources over networks with 500 milliseconds round trip delay and 5% packet loss.

Interoperability

- Transport any live video source available on local multicast, unicast UDP, unicast TCP, or growing file source and will output video to the same options.

- Provides a uniform lossless, in-order byte stream transport that equally supports constant bit rate and adaptive bit rate formats with performance independent of video encoding details

Reliability and Multi-endpoint capability

- One stream source can be sent to multiple destinations concurrently and provides built-in path redundancy

- FASPStream server hosts are natively clustered; stream sessions failover automatically to another host

- Aspera management services automatically reconnect and restart failed streams on network outage

Security

- All FASPStreams are encrypted in transit and security authenticated using standard public/private key authentication or Aspera's multi-tenant access key system

- Built in access control policies can be used to restrict stream providers and consumers by stream protocol, IP address, and ports.

Interoperability and Management

- FASPStream sessions are designed for full interoperability with the Aspera file transfer stack including writing to cloud based "object" storage.

- RESTful APIs allow production workflow and broadcast management systems to manage streams and provide status

- Stream sources can include cloud and on premises transcoders / encoders that read from stream and file, or provide stream outputs or growing files.

The FASPStream software product was created from the ground up by Aspera with the potential to revolutionize the way that live and near-live video is transported. Broadcast video transport over long distances (ingest and backhaul, pitch and distribution) has traditionally relied on linear satellite systems. However, satellite transport has significant limitations for today's Internet video demands, where video is produced anywhere and everywhere, and consumer appetite for live and interactive second-screen video is explosive. For example:

 - Satellite uplinks are often not available on demand, requiring huge investments of capital or long startup times impractical for one-time events and modern on-location original programming and news.

 - The linear feed format limits the rapid turnaround and customization demanded in file-based production.

 - Satellite transmission is difficult to integrate with modern cloud computing environments for transcoding and distribution, and can be disproportionately expensive for long tail content on the Internet.

Today's live video opportunities are hungry new transport solutions over Internet (IP) networks in place of legacy satellite delivery. As a result, various kinds of technologies and services have been introduced over the past several years that have attempted to deliver video reliably over the Internet such as services that use forward error correction over UDP and peer-to-peer distribution. However, these technologies have not been able to provide the consistent exceptional

broadcast quality and "zero-delay" experience provided by traditional satellite backhaul and transmission: Neither FEC over UDP nor peer-to-peer networks are able to guarantee live transmission rates over commodity Internet with variable round trip time and packet loss, and unlimited data rates.

 - FEC over UDP methods introduce significant delays from live in order to protect against Internet packet drops, and the greater the protection provided, the greater the delay.

 - Peer to peer distribution networks and CDNs are constrained to locate "ideal routing paths" to minimize stream startup delay and glitching. This limits their practical function because only certain peer paths will work well enough and can lead to high costs where content has to be transported to "nearby" CDN points for ingest or served from "nearby" edge locations to ensure good quality.

The FASPStream transport is a new breakthrough alternative for Internet video transport because the protocol efficiency is able to guarantee timely arrival of live video and data independent of network round-trip delay and packet loss, and do so with negligible startup delay/pre-buffering (less than 2 seconds for 50 Mbps video streams transported over commodity global Internet conditions, e.g. 200 milliseconds round-trip latency and 3 percent packet loss). Its software engine is the Aspera patented FASP transport technology that provides fully reliable bulk data transfer over commodity IP networks. FASP is widely used in media and

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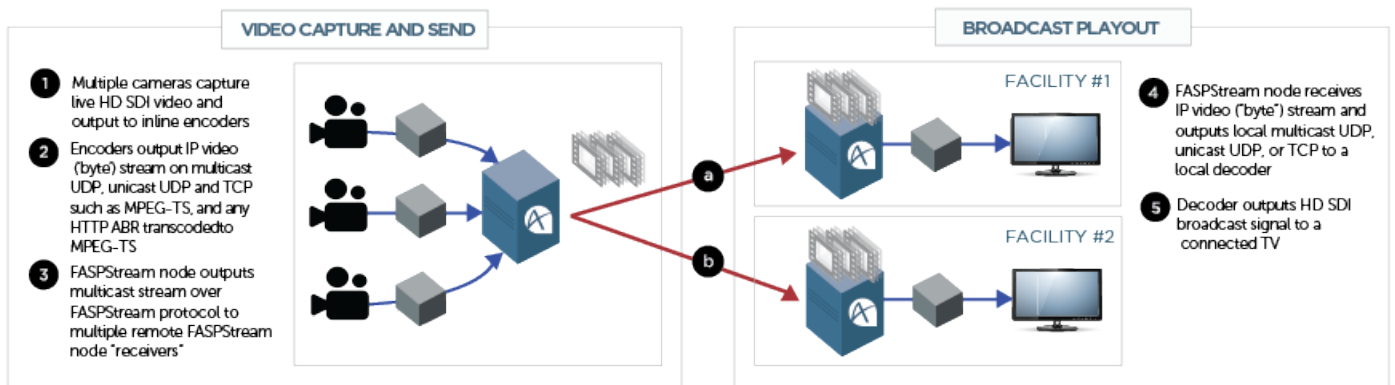
REMOTE VIDEO SOURCE SENDING TO MULTIPLE PLAYOUT FACILITIES OVER WAN
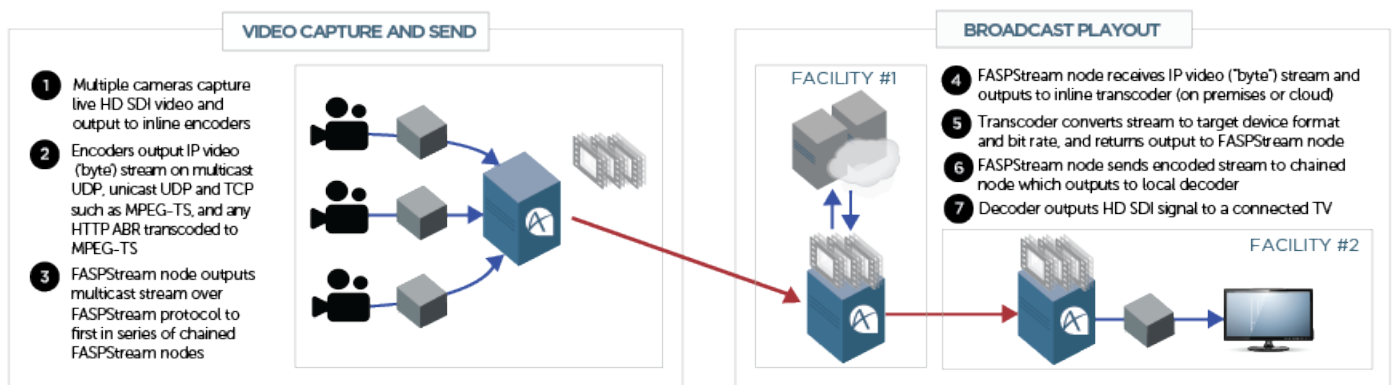
REMOTE VIDEO SOURCE SENDING TO LIVE PLAYOUT FACILITIES IN SEQUENCE (WITH OPTIONAL INLINE LIVE TRANSCODING) OVER WAN

entertainment for high-speed long distance file transfer, and with this new architecture now also enables in-order byte stream delivery for live feeds.

The new FASPStream Server and Peer are application software (for Linux, Windows etc.) that provide a turnkey software solution using FASPStream transport to stream live video with broadcast quality over commodity Internet networks, globally, with glitch-free play out and negligible startup time. At NAB 2016 Aspera will introduce the product and demonstrate its capabilities with the transport of three live camera streams from global locations - South Africa, China and New York City - over commodity Internet from stream source directly to the Aspera booth with for live decode and broadcast play out in the booth, as well as IP based play out through local desktop media players. FASPStream transport is agnostic to video type, encoding, and format; the live stream demonstrations at NAB 2016 will feature HD-SDI 1080P MPEG sources encoded at 8 Mbps direct from broadcast encoders and HVEC encoded output from live transcoders. FASPStreams will support all high quality video streams including uncompressed HD. Additionally, the FASPStream server can transport growing files and adaptive bit rate output from transcoding workflows and media servers.