

Agile Streambuilder

Cloud Processing, streaming origination and channel creation with market-leading performance and reliability.

Streambuilder is a comprehensive bundle of video processing products based on proven Edgeware-technology. It provides high-performance Live and VOD ingest, GoP-accurate stream segmentation, optimized content storage for on-demand and time-shift services, Cavena OCR subtitle transcoding, and just-in-time ABR packaging for OTT streaming (HLS, DASH, MSS), including encryption.

In essence, Streambuilder streamlines the process of preparing live and VOD content for OTT distribution to any device. It goes beyond being just an “Origin Server,” and it also features Virtual Channel Creation, eliminating the need for repetitive content re-encoding and contribution.

The architecture is based on distinctive modules for Ingest & Segmentation and Repackaging, enabling efficient scaling and reliability.

As origin products are vital to the smooth functioning of streaming services, Agile Content’s Streambuilder products are designed and built to operate 24/7 and provide market-leading reliability and scalability.

Streambuilder offers best-in-breed performances, with a packager that is up to ten times more efficient and powerful than the most deployed alternatives on the market.

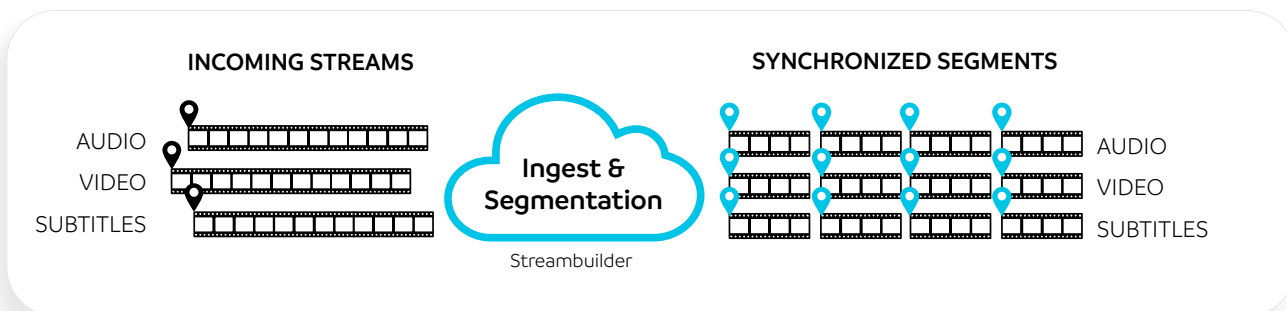
Streambuilder can be deployed on bare metal, VM or Container in a cloud.

Key features

- ✔ Video Segmentation and Recording
- ✔ ABR Packaging and Encryption
- ✔ Channel and Asset Creation and Origination
- ✔ Native support for OCR subtitle transcoding

Key benefits

- ✔ Ultra-high performance – 10x more efficient and powerful than the most deployed packager on the market
- ✔ Simple public API for improved audience targeting
- ✔ Market-proven and reliable, built to run 24/7
- ✔ Flexible architecture optimized for live or VOD, on-prem, virtual machines, or cloud
- ✔ Empowering creativity through asset creation



What it does

Ingest and Segmentation

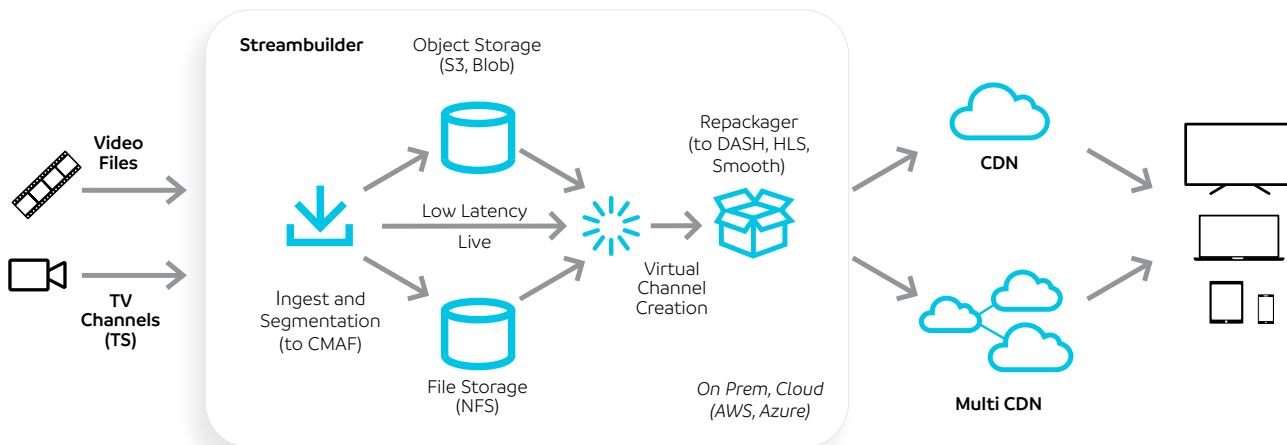
Streambuilder segments the incoming stream from a wide range of encoders.

The accurate and strict segmentation is aligning with the encoders' frame rate and GoP (group of pictures) duration. This can compensate for potential synchronization and time-drift issues introduced by the encoders.

All media-stream components such as audio, video and subtitles are segmented, aligned and synchronized to avoid unnecessary latency and glitches.

How it works

- ① Incoming live streams and VOD assets from the head-end are ingested.
- ② The streams are segmented with high precision.
- ③ Audio, video and subtitle segments are synchronized and aligned to minimize latency and avoid glitches.
- ④ Live segments are stored in a small catch-up buffer in the RAM giving maximum robustness for live streaming.
- ⑤ For time-shift services, the live segments are stored in a catch-up buffer in the internal or external storage.
- ⑥ VOD segments are stored in internal or external storage to enable on-demand viewing.



Packager and Protection converts and packages your content just-in-time into an adaptive streaming format such as HLS, DASH and MSS.

Content can be retrieved from Streambuilder's Ingest and Segmentation module, or from your external VOD library.

Providing glitch-free delivery of your valuable streaming assets, the Packager and Protection supports encryption according to the assets' DRM schemes.

- ⑦ Upon request from the client device, the Packager and Protection retrieves live or VOD content from Agile Content's Ingest and Segmentation or from your external VOD library.
- ⑧ The content is packaged to the requested ABR format (e.g. HLS, DASH, MSS).
- ⑨ If offline viewing is requested, the content is converted to DASH On Demand, which is an ideal offline format.
- ⑩ Content is encrypted if requested.
- ⑪ Manifest is created and content is streamed either directly to clients using an Agile CDN or via third-party CDN.

Technical specifications

LIVE INGEST	ENCRYPTION AND DRM	HIGH AVAILABILITY
Multicast ATS	CPIX incl signed document	Node redundancy
Unicast ATS (UDP)	Key Rotation	Synchronized segmentation
RTP + FEC	AES-128 + Sample-AES	Node synchronization
Zixi	Common Encryption	Repair mechanism between circular buffers
SRT	cbcs	Multiple circular buffer deployment options
VOD INGEST	cenc	Robust live streaming with dedicated
DASH on Demand	FairPlay Streaming	RAM catch-up buffer
MP4 (with SMIL)	PlayReady, Widevine, Verimatrix Irdeto, Conax and others	SYSTEM CONTROL
VIDEO & AUDIO CODECS	SUBTITLES	SNMP (Control and Status)
Video codecs:	EBU Teletext (in)	REST API
AVC/H.264	Cavema Teletext (in)	Configuration and Monitoring
HEVC/H.265	DVB Subtitle (image-based) (in)**	GUI
HDR10 Video	CEA-608/708 Closed Caption (Passthrough)	System Resource & Statistics
Audio codecs:	WebVTT	Monitoring
HE-AAC	TTML/IMSC-1	Notification and Alerts
HE-AAC v2	TTML/DFX	SYSTEM HW/SW
AAC-LC	DYNAMIC AD MARKERS	Linux RHEL 7 + CentOS 7
AC-3 (Dolby Digital)	Ad Markers from SCTE-35	Unlimited number of CPU Cores
E-AC-3 (Dolby Digital Plus)	OTHER FEATURES	IPv4 + IPv6
Dolby Atmos	Customizable client output profile	IGMPv2 + IGMPv3
STORAGE FORMATS	Trick play support (preview images in scrub bar)	HTTPS/FTPS
Edgeware Storage Format (ESF)* / CMAF	Download 2 Go	Red Hat 8 Support
OUTPUT FORMATS	CLOUD FRIENDLY	
HLS	Object-based storage	
MPEG-DASH:	S3	
SegmentTemplate:	Azure blob	
Number-based	Cloud platforms	
SegmentTimeline	AWS	
DASH On Demand	Azure	
MSS	Ingest formats	
	RTP + FEC	
	SRT	
	Zixi	

* The Edgeware Storage Format (ESF) is described here: <https://docs.agilecontent.com/docs/acp/general/esf/>

** With OCR Subtitling