

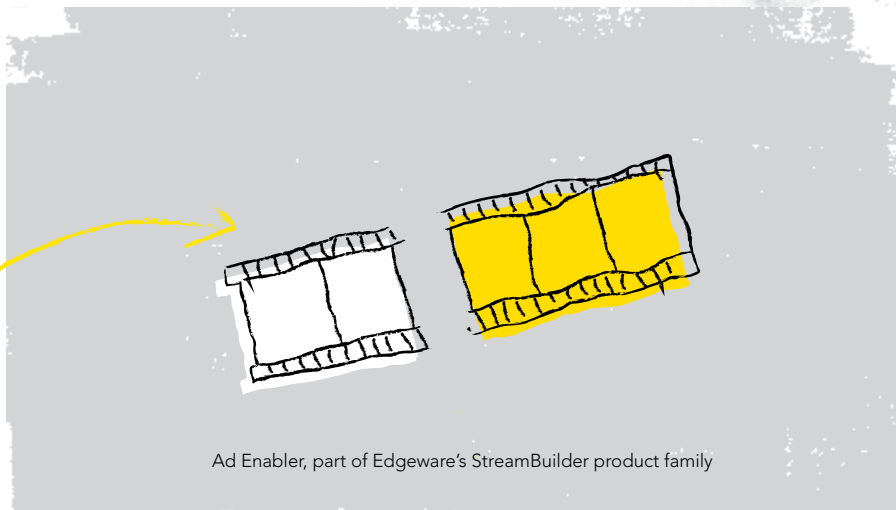
STREAMBUILDER OVERVIEW

StreamBuilder is one of Edgware's four product families and includes content processing functionality necessary for an OTT distribution.

Available as both an on-prem and saas offering it brings key capabilities to capitalize your content, offer a glitch-free viewing experience and a scalable solution.

StreamBuilder includes products for the following applications:

- OCR Subtitling
- Ingest and Segmentation
- Ad Insertion
- Time-shift TV
- Just-in-Time Repackaging
- Protection
- Content Stitching



Ad Enabler, part of Edgware's StreamBuilder product family

ENABLE FRAME-ACCURATE DYNAMIC AD INSERTION FOR A GLITCH-FREE LIVE OTT EXPERIENCE

Ad Enabler, part of Edgware's StreamBuilder product family, provides frame-accurate segmentation of live streams enabling personalized ads in your live OTT, live to VoD and time-shift TV for DASH and HLS clients. The Ad Enabler detects the SCTE-35 markers in the incoming stream and adjusts the segments' length (chunks) to exactly fit the ad break duration without losing content frames and avoiding glitches between content and ad. Integrated with leading ad stitching and ad decision technologies, the Ad Enabler enables both client-side (CSAI) and server-side (SSAI) ad insertion.

WHAT IT DOES

Edgware's StreamBuilder products provide the ultimate capabilities for distributing live and VoD streaming assets over an http delivery platform.

Ad Enabler is one of the products in the StreamBuilder product family.

The Ad Enabler detects the SCTE-35 ad markers in the live incoming stream when ingested to the Edgware's Ingest and Segmentation. With frame-accurate segmentation the Ad Enabler adjusts and cuts the segments to exactly fit the length of the ad break to avoid that the ad break drifts.

The adjusted segments and the SCTE-35 markers are packaged in the requested ABR format in the manifest.

KEY FEATURES & BENEFITS

- ✓ Enables dynamic ad insertion in DASH and HLS formats for live OTT, live to VOD and time-shift TV
- ✓ Frame-accurate segmentation ensures the ad break is not drifting and delivers a glitch-free experience for the viewer with a smooth transition between content and ad
- ✓ Provides CSAI, and enables SSAI in integrated solution
- ✓ Integrated with leading ad stitching and ad decision technology vendors
- ✓ Enables conditional black-out and localized program replacement (in addition to dynamic ad insertion)

HOW IT WORKS

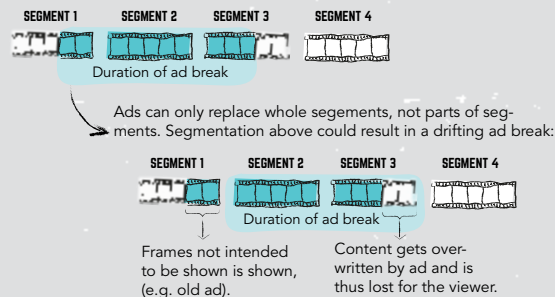
1. The live stream including the SCTE-35 markers are ingested into Edgware's Ingest and Segmentation.
2. The Ad Enabler detects the SCTE-35 markers and performs frame-accurate segmentation. This fine-granular adjustment ensures that the length of the segments corresponds with the length of the ad break.
3. Based on the client device the segmented stream is packaged to the requested ABR format (HLS and DASH*) with the SCTE-35 markers in the manifest.
4. The manifest is delivered to the client or the ad stitching system depending if CSAI or SSAI is chosen.

*DASH ad enabling is supported through multi-period DASH

SEGMENTATION – TWO ALTERNATIVES

Edgware's Ad Enabler detects ad markers in the incoming stream and provides frame-accurate segmentation adjusting the segments to fit the ad breaks avoiding glitches and lost content.

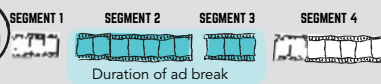
1. SEGMENTATION NOT ADJUSTED FOR AD BREAKS



Viewing experience due to less accurate segmentation and drifted ad break:

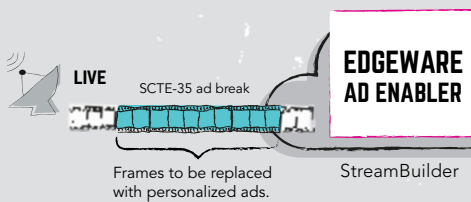
- Frames of original ad (that should be replaced) are shown, causing glitches
- Frames of live program that should have been replaced are instead shown
- Frames of content is lost

2. FRAME-ACCURATE SEGMENTATION WITH AD ENABLER



A frame-accurate segmentation means that the ad break corresponds exactly to the replaced segments:

- No glitches from old ads
- No content is lost or inadvertently shown



HOW TO DEPLOY

Ad Enabler can be deployed in public or private clouds, in data centers or on COTS hardware. The product can also be offered as

part of the Edgware Cloud Service, with Edgware operating it from the cloud. The modular architecture of the StreamBuilder products allow

full flexibility to suit different market characteristics and business models and provide an elastic and scalable content processing solution.

TECHNICAL SPECIFICATIONS FOR AD ENABLER

CSAI	
HLS	Yes
MPEG-DASH	Yes
SSAI*	
HLS	Yes
MPEG-DASH	Yes

* Provided in integrated solution

SCTE-35
Type5 (splice_insert)
Type6 (time_signal)
CLOUD FRIENDLY
Object based storage
S3
Azure blob
Cloud platforms
AWS
Azure

SYSTEM HW / SW
Linux RHEL 7
COTS, cloud