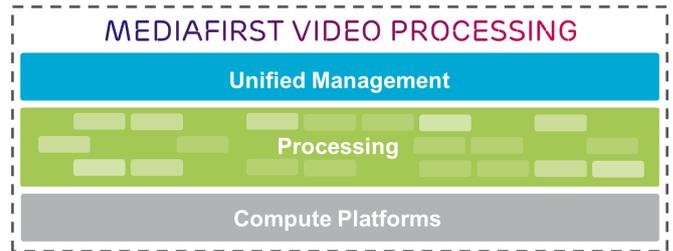# MEDIAFIRST VIDEO PROCESSING
PACKAGING

Ericsson MediaFirst Video Processing Packaging is a powerful solution designed for the distribution, personalization and monetization of multiscreen video services. With MediaFirst Video Processing Packaging it is possible to expand revenue opportunities by creating new TV Anytime services. These include Catchup TV, Cloud DVR (recording programs in cloud storage for later viewing on any device), Time-Shifting, and program Start-Over. It can also be deployed across the network to drastically reduce the bandwidth, storage, or equipment footprint usually required to distribute video services securely to smartphones, tablets, connected TVs, game consoles, PCs, and OTT Set-Top-Boxes.

MediaFirst Video Processing Packaging's architecture is extremely modular and can scale according to your needs. It combines the following key functions:
- Stream recording with efficient buffer and storage management
- Just in Time Packaging and encryption with the widest variety of formats and DRMs
- Highly scalable origin and cache server

Deployed as pre-integrated servers, software, or virtual images, MediaFirst Video Processing Packaging fits any type of architecture – either in broadcast head-ends, private and public clouds or deeper inside the network as Virtualized Network Function (VNF).

PLATFORM HIGHLIGHTS

Universal Origin
MediaFirst Video Processing Packaging is a powerful origin server which can transform live, buffered and stored video streams into mainstream Adaptive Bit Rate formats: HLS, Smooth Streaming, HDS or DASH. It is already integrated with a large number of Digital Rights Management (DRM) and Conditional Access System (CAS) providers and can interface with multiple CDNs or cache servers at once.

More choices in formats, DRMs and CDNs with the integration already performed means addressing any device, reducing deployment expenses and rolling out services faster.

TV Anytime
MediaFirst Video Processing Packaging allows viewers to control what, where and when they watch by combining live multi-screen services with Cloud DVR, Time-shifted TV, Restart TV or Catchup TV applications.

Recordings can be scheduled from a simple interface to Content Management Systems or from the DVR player interface. It also supports a multi-day circular buffer that can be leveraged to deliver content from any point within the buffered live stream.

In order to save storage space, all content buffering or recordings are performed in a single mezzanine stream format and packaged just in time to the proper output when requested by the user.

Rich user experience
Getting the best user experience not only requires receiving high quality audio and video without a glitch, but also requires being able to enjoy the same experience as digital home cinema: playing video in HD (or even Ultra HD!) with surround sound, selecting alternate audio tracks, displaying closed caption or subtitles in different languages or navigating through the content more easily with chapters and video thumbnails.

With Packaging, it is possible to offer this level of experience across all devices. It accommodates various codecs, resolutions and bitrates, carries image streams to facilitate the navigation. It even translates original subtitles and closed captions into formats understood by each device.

Robustness and performance for optimal scale and service uptime

MediaFirst Video Processing Packaging modular architecture has been designed to scale with channels, with the amount of content stored, and with the number of end-user sessions. Each component has been deeply optimized to handle high traffic and can scale independently based on the usage growth.

Packaging also supports N+1 or 1+1 redundancy with advanced synchronization. For the same input content, the output of various Packaging systems is strictly the same. This insures a transparent failover with no impact on the delivery network and no glitch in the video playback.

Optimal Network distribution for Live Multiscreen

For a distribution network, deploying MediaFirst Video Processing Packaging as an NFV component deeper inside the network and closer to the end user, brings significant structural improvement to the distribution of live multiscreen services. With this approach, live streams are originated from a central head-end and carried as multicast transport streams in the core network.

At the edge, Packaging transforms the multicast streams into the proper ABR formats. Compared to conventional file-based content delivery network (CDN) architectures, this streamlined approach offers several benefits, including:

- Considerable bandwidth savings in the core network: a single stream is propagated instead of all the different multiscreen formats between the different CDN caches
- Better control and monitoring: by leveraging the existing IPTV or cable TV multicast distribution, the same probes and QoS tools can be used to monitor the distribution inside the core network.

SPECIFICATIONS

Input

Ingest

Real time ingest of adaptive MPEG2-TS over IP
Ingest of adaptive MPEG2-TS VOD content

Input format

GOP-aligned, H264 or H265 encoding

Multicast

IGMPv2/v3 support

Processing

Formatting

Apple HTTP Live Streaming (HLS), Microsoft Smooth Streaming, MPEGD DASH, Adobe Flash RTMP and Flash HDS

Subtitling

Closed Captions: Pass-through or conversion into WebVTT for HLS, Conversion into DFXP for HSS, Conversion to SMPTE-TT for DASH

DVB-Teletext subtitle page 888: Conversion into WebVTT for HLS, Conversion into DFXP for HSS, Conversion to SMPTE-TT for DASH

DVB-Subtitles: Pass-through or conversion into ID3 for HLS, Conversion into DFXP for HSS, Conversion to SMPTE-TT for DASH

Multi Audio

Multiple audio streams per output for HLS (iOS4 and iOS5-compatible), Smooth Streaming and DASH

Content Protection

Microsoft PlayReady DRM support for HLS, Smooth Streaming and DASH

Apple Segment, Apple Sample and Fairplay support for HLS

Adobe Primetime Access support for HDS and HLS

Widevine and Marlin MS3 support for DASH using CENC

Key provisioning interface to leading CAS & DRM vendors

Output

Content Publishing

Support for pull scenarios in live or just-in-time packaging

Support of push scenarios with multiple publishing points

Encryption keys, fragments and playlists can be published in different locations

DVR Publishing

Recording window publishing over external storage for time-shifting, start-over, catch-up TV and NPVR applications

Origin Server

Built-in live and VOD origin server for HLS, Smooth Streaming and DASH

Start-over and catch-up TV delivery

Up to 8000 simultaneous connections

Custom HTTP headers management (Expiry settings, CORS headers…)

CDN

Interfaces to leading CDNs

Optimized delivery of live and non-linear content

Workflow Management

Scheduled Recording

Asset creation from live for catch-up TV applications; live to file scheduling API for integration with 3rd party scheduler/CMS components

Anytime TV Applications

Combine live with time-shifting, start-over, catch-up TV and NPVR

Content can be delivered from origin server (recorded DVR window) or directly from the CDN

Control API for integration with 3rd party scheduler/CMS components

Dynamic Processing

Dynamic processing of TS ABR content in HLS, Smooth Streaming and DASH for multiscreen applications

Metadata Insertion

Real-time insertion of metadata in the output streams (HLS and HSS) for applications such as EAS, Nielsen

Monitoring and Control

Control Interface

Control and monitoring via Web GUI

Synchronization

Built-in 1+1 Envivio Halo synchronization for services continuity in case of failure

Control

API Services configuration and monitoring using HTTP REST API

Compatible Hardware platforms

Ericsson Platforms

Ericsson G6 1022 Standard (max 750 Mbps ingest, 1 Gbps throughput)

Ericsson G6 1022 Advanced (max 750 Mbps ingest, 3 Gbps throughput)

(For additional feature information, refer to the G6 datasheet)

Software Edition

Supported on Linux CentOS and RedHat 6.5 and higher releases of 6.x baseline