

# MediaKind Packaging

## Overview

MediaKind Packaging is a powerful solution designed for the distribution of multiscreen video services. You can also deploy it across your 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 or OTT Set-Top-Boxes.

MediaKind Packaging's architecture is extremely modular and can scale according to your needs. It combines the following key functions:

- Stream ingest with efficient buffer and storage management
- Just-in-Time Packaging and Encryption with the widest variety of formats and DRMs
- Content publication to leading CDNs
- Highly scalable origin server



## End-to-end software solution, centralized configuration

The MediaKind video processing family of applications provides an end-to-end system designed to address key industry challenges. It enables operators to get the best from their IT infrastructure by providing a highly scalable and future-proof solution.

- **Faster time to market** by leveraging the software microservices-based architecture and a single solution to address all networks.
- **Reduce operational complexity** using the Controller as a single point of entry for all processing types.
- **Optimize OPEX and CAPEX** when migrating to full IP and leverage the latest IT technologies (Containers & Orchestration) to reduce infrastructure costs.

MediaKind video processing applications empower operators all over the world to provide the most unique and immersive ways to distribute and consume video content.

## Universal Origin

MediaKind Packaging is a powerful origin server which can transform live, buffered and stored video streams into mainstream Adaptive Bit Rate formats: HLS, Smooth Streaming or DASH.

It is already integrated with multiple Digital Rights Management (DRM) and Conditional Access System (CAS) providers and can interface with multiple CDNs or cache servers simultaneously.

Having more choices for formats, DRMs and CDNs without having to integrate means being able to address any device, reduce deployment expenses and rollout services faster .

## 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 with 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 MediaKind 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 .

## Increase your service revenue with Dynamic Ad Insertion

MediaKind Packaging performs manifest conditioning using data from Placement Opportunity Information Servers (POIS) based on the in-band triggers available in the stream. This enables playlist manipulators located downstream to perform linear or targeted ad insertion based on Ad Decision Server (ADS) responses.

## Robustness and performance for optimal scale and service uptime

The MediaKind Packaging modular architecture has been designed to scale in relation to channels, the amount of content stored, and the number of end-user sessions. Each component has been significantly optimized to handle high traffic and can scale independently based on the usage growth.

MediaKind Packaging supports N+1, or 1+1 redundancy. The output of various units is the same for the same input content. This ensures 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 MediaKind 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
- **Enhanced control and monitoring** by leveraging the existing IPTV or cable TV multicast distribution. The same probes and Quality of Service (QoS) tools can be used to monitor the distribution inside the core network.

## Reclaim the full potential of your Infrastructure

Thanks to our microservices-based architecture, Packaging is container and orchestration ready.

The MediaKind solution is designed for cloud use (private or public) and for future-proof operations. Service configuration and hardware are completely decoupled to provide all the flexibility you can expect from your video headend.

## Virtualized and Standard Server Deployments

Packaging can adapt to multiple deployment contexts, such as:

- Software on COTS or blade servers
- Virtual instances in the cloud

This versatility gives your team more flexibility to manage operations and deployment.

## 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 over CMAF or TS), Microsoft Smooth Streaming, MPEG DASH
Subtitling	<b>Closed Captions:</b> WebVTT for HLS, DFXP for HSS, WebVTT or SMPTE-TT for DASH <b>DVB-Teletext page 888:</b> WebVTT for HLS, DFXP for HSS, WebVTT or SMPTE-TT for DASH <b>DVB-Subtitles:</b> DFXP for HSS, SMPTE-TT for DASH
Multi Audio	Multiple audio streams per output for HLS, Smooth Streaming and DASH
Content Protection	Microsoft PlayReady DRM support for HLS, Smooth Streaming and DASH Apple Segment and Fairplay support for HLS Adobe Primetime Access support HLS Widevine, Playready and Marlin support for DASH using CENC Key provisioning interface to leading CAS & DRM vendors

### Output

Content Publishing	Support for pull scenarios in just-in-time packaging Support publishing to local storage or to WebDAV servers
Origin Server	Built-in live and VOD origin server for HLS, Smooth Streaming and DASH Up to 8000 simultaneous connections Custom HTTP headers management (Expiry settings, CORS headers...)
CDN	Interfaces to leading CDNs Certified with Akamai MSL 4 for HLS and DASH

## Workflow Management

Scheduled Applications	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
On-Demand content packaging	API based file to file packaging for VOD workflows

## Monitoring and Control

Control Interface	Control and monitoring via Web GUI
Synchronization	Built-in synchronization for services continuity in case of failure
Control	Services configuration and monitoring using HTTP REST API
High availability	Support both 1+1 and N+M redundancy schemes

## Compatible Deployment Models

Software Edition	Supported on Linux CentOS 7.6 and RedHat 7.6
Appliance	Available on G8 1024 1RU chassis