SOLUTION BRIEF

Intel® Developer Zone
Video Editing/Tools

HARDWARE ACCELERATION FOR SHARING 4K CONTENT ON SOCIAL MEDIA

A pair of Intel®-based media apps from Video Apps Mechanic/EffectMatrix makes posting 4K content on social media platforms painless.

Simplifying 4K for Social Media Users

Whenever something amazing happens, the first impulse is to capture it on video. The second urge is to post that video on social media and start collecting likes and comments. For standard high definition video content, the process is painless enough, but with the arrival of ultra-high-definition (UHD) video with 4K resolution, users have been thrown a curveball. Due to the higher resolution and superior image quality of 4K content, UHD files can give media players fits. Outmoded video editing software may become unresponsive, and compatibility issues can rear their ugly head.

Thankfully, two software applications from Video Apps Mechanic/EffectMatrix simplify the act of sharing 4K UHD videos on the Internet. The first is the Video Editor & Movie Maker* application, a user-friendly toolkit used for doctoring raw video footage into superior content. It includes fun features like stickers, text overlay, and animated GIFs to give 4K home videos click appeal.

The second, Total Video Converter* app, is powerful software with a simple interface for converting incompatible video formats into files that will work with social media platforms and other video apps. Both applications come 4K-ready, letting users tweak and modify 3,840 by 2,160 resolution videos, and then populate their social media feeds with pristine content that stokes the envy of their friends.

Even though 4K resolution is four times that of standard HD content, the software remains remarkably nimble, a result that was only possible through performance optimization. In order to provide tools that can keep pace with the fast-moving world of social media, Video Apps Mechanic/EffectMatrix had to enlist powerful data decompression technology.

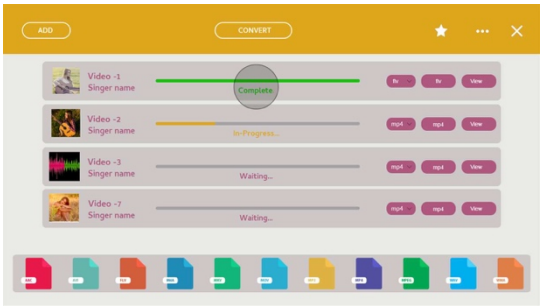

Figure 1. Total Video Converter app Source

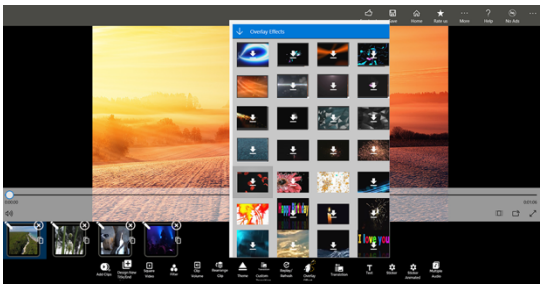

Figure 2. Video Editor & Movie Maker, Overlay Effects

Updating Media Pipelines for HEVC and AVC Decoding

Like so many media app developers, Video Apps Mechanic relied on readily available codecs for decoding older video formats, such as WMV, .MOV, AVI. In the past, this always did the trick. But when they tried implementing support for newer UHD formats, namely AVC (also known as H.264) and HEVC (H.265), their software development libraries performed less than admirably.

When the apps processed UHD content, they were tripped up. Both pieces of software are Redstone 4* (RS4) Universal Windows* Platform (UWP) apps, meaning that they must first decode raw video data into a MediaStreamSource (MSS) object, which is compatible with the Microsoft* Media Foundation* pipeline, before playback on the Microsoft* Windows® 10 platform can occur. Only then can the video content be edited for posting.

Decoding 4K UHD video is a big ask for a device's central processing unit (CPU), and even the best processors can buckle under the increased workload. In practice, this meant it took users far too long to import 4K videos into the apps. And worse, the apps produced disappointing results with video quality that missed the mark.

To help with decoding 4K video formats, Intel® Media SDK was introduced into the process. Now, whenever the user selects a video file in AVC or HEVC format, the API steps in to create the MSS object, harnessing the mojo of Intel® Core™ processors to decode beefy media files quickly and precisely. The improvements were apparent immediately.

"Intel Media SDK is fast, accurate, and able to retain the image quality of each frame," says Mohit Chandna, Chief Executive Officer of Video Apps Mechanic, along with Adarsh Rastogi.

When used in tandem with a 6th, 7th, or 8th generation Intel Core processor, both apps support 4K video reliably. They have also gained some convenient features to boot. Video Editor & Movie Maker app now employs a fast-forward and slow-motion module, allowing users to customize the speed of playback of 4K videos—an impressive technical feat. Likewise, the Total Video Converter app lets users convert multiple 4K video files at once, streamlining the creation of YouTube* and Facebook* content.

Overcome Unreliable Decoding with Intel Video Technologies

Though 4K video can overload system resources, Intel Media SDK provides a safety valve. When faced with tough tasks like encoding, decoding, and transcoding UHD video formats, hardware acceleration kicks in. The API's libraries are integrated with Intel® Quick Sync Video technology, a dedicated core found on Intel Core processors for crunching mega-sized media workloads, and they perform outstandingly with Universal Windows* Platform (UWP) apps. Features for working with UHD content include:

-Real-time hardware-accelerated video for AVC, HEVC, and VP9

-Software- and GPU-accelerated HEVC (H.265) codec components (for Microsoft Windows*)

The New World Awaits

As more devices and smartphones with 4K capability hit the market, UHD video content is poised to take the social media world by storm. Media apps optimized with hardware-accelerated codecs allow the world's estimated 2.6 billion** social media users to achieve Internet greatness with 4K video content.

"Intel technology enables us to provide powerful and versatile software solutions to our users—solutions we weren't able to achieve a year earlier," says Chandna.

With Intel-based video technology leading the way, Video Apps Mechanic/EffectMatrix are taking video content on social media to the next level.

Visit the Microsoft Windows* Store to download the Video Editor & Movie Maker app today: https://www.microsoft.com/en-us/p/video-editor-movie-maker/9nblggh5273d?rtc=1

Also, check out the Total Video Converter app on the Microsoft Store: https://www.microsoft.com/store/apps/9NBLGGH43WH3

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