

Video Processing (VPP) Sample

Overview

VPP Sample works with **Intel® Media SDK 2016** and **Intel® Media Server Studio 2016 for Windows* Server**.

It demonstrates how to use the **Intel® Media SDK 2016** and **Intel® Media Server Studio – SDK** (hereinafter referred to as "**SDK**") API to create a simple console application that performs video processing of raw video sequences.

Features

VPP Sample supports the following video formats:

Format type	
input (uncompressed)	YV12, NV12, YUY2, RGB4 (RGB 32-bit)
output (uncompressed)	NV12

Hardware Requirements

See <install-folder>\Media Samples Guide.pdf.

Software Requirements

See <install-folder>\Media Samples Guide.pdf.

How to Build the Application

See <install-folder>\Media Samples Guide.pdf.

Running the Software

See <install-folder>\Media Samples Guide.pdf.

The executable file requires the following command-line switches to function properly:

-i <InputYUVFile>	Input uncompressed video file name and path
-o <OutputYUVFile>	Output uncompressed video file name and path
-sw <Width>	Width of source input YUV image
-dw <Width>	Width of destination output YUV image
-sh <Height>	Height of input YUV image
-dh <Height>	Height of output YUV image

-sec <FourCC>	Source Input FourCC
-lib <Type>	Implementation of SDK (hw by default): hw = platform-specific (default) sw = software
-extapi	Use RunFrameVPPAsyncEx instead of RunFrameVPPAsync for PTIR (Premium Telecine Interlace Reverser) feature from SDK . For details please refer to media_server_studio_ptir_release_notes.pdf
-p guid	32-character hexadecimal guid for VPP plugin.
-d3d	Use Microsoft® Direct3D9® surfaces
-dcc <FourCC>	Destination Output FourCC
-sf <FrameRate>	Frame Rate (frames/second) of input YUV image
-df <FrameRate>	Frame Rate (frames/second) of output YUV image
-scrX <X>	X coordinate of the source image ROI top left corner. 0 by default
-scrY <Y>	Y coordinate of the source image ROI top left corner. 0 by default
-scrW <Width>	Width of the source image ROI rectangle. Source width by default
-scrH <Height>	Height of the source image ROI rectangle. Source height by default
-dcrX <X>	X coordinate of the destination image ROI top left corner. 0 by default
-dcrY <Y>	Y coordinate of the destination image ROI top left corner. 0 by default
-dcrW <Width>	Width of the destination image ROI rectangle. Destination width by default
-dcrH <Height>	Height of the destination image ROI rectangle. Destination height by default
-denoise <Level>	Enable Denoise algorithm. Level is the optional value from the interval [0; 100]
-spic	Source Picture Structure: <ul style="list-style-type: none"> • 0 = Interlaced top field first • 1 = Progressive • 2 = Interlaced bottom field first
-dpic	Destination Picture Structure: <ul style="list-style-type: none"> • 0 = Interlaced top field first • 1 = Progressive • 2 = Interlaced bottom field first
-va	Video Analysis (scene change detection): <ul style="list-style-type: none"> • 0 = off • 1 = on
-n	The number of frames to process
-detail <Level>	Enable Detail Enhancement algorithm. Level is the optional value from the interval [0; 100]
-pa_hue <Hue>	The hue parameter for the destination video. Hue is the value from the interval [-180.0; 180.0]. 0.0 by default
-pa_sat <Saturation>	The saturation parameter for the destination video. Saturation is the value from the interval [0.0; 10.0]. 1.0 by default
-pa_con <Contrast>	The contrast parameter for the destination video. Contrast is the value from the interval [0.0; 10.0]. 1.0 by default

-pa_bri <Brightness>	Brightness is the value from the interval [-100.0; 100.0]. 0.0 by default
-frc:interp	Enables interpolating frame rate conversion mode (for progressive NV12 streams only)

Below are examples of a command-line to execute **VPP Sample**:

```
sample_vpp -lib sw -sw 352 -sh 144 -scc rgb4 -dw 320 -dh 240 -dcc nv12
-denoise 32 -istab -i input.rgb -o output.nv12
```

```
$ sample_vpp -lib hw -scc nv12 -dcc nv12 -composite
parameters.par -o out.yuv
The example of parameters.par:
primarystream=input_720x480.yuv
width=720
height=480
cropx=0
copy=0
cropw=720
croph=480
dstx=0
dsty=0
dstw=720
dsth=480
stream=input_480x320.yuv
width=480
height=320
cropx=0
copy=0
cropw=480
croph=320
dstx=100
dsty=100
dstw=320
dsth=240
```

Known Limitations

- Scene change detection is not supported (-vanalysis option not effective) with platform specific **SDK** libraries for Intel® HD Graphics 3000/2000 and later, also unsupported in software **SDK** libraries starting with API version 1.6.
- RGB3 (RGB 24-bit) input format is unsupported despite the fact that sample code and sample binary expose it as supported.
- YUY2 output format is unsupported despite the fact that sample code and sample binary expose it as supported.

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