

Intel® Video Pro Analyzer 2017

Release Notes

(Version 2.3.0)

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Overview

The **Intel® Video Pro Analyzer** is a graphical coded video bitstream analysis tool, supporting the following coding standards:

- HEVC: (ISO/IEC 23008-2 MPEG-H Part 2 or ITU-T H.265) , 8/10-bit
- HEVC: RExt extension, 8/10/12-bit, 4:0:0/4:2:0/4:2:2/4:4:4
- HEVC: SCC extension, conform to HM + SCM 8.0 in reference code
- HEVC Scalable/Multiview Extension
- Google's VP9, profiles 0,1,2,3, 4:2:0/4:2:2/4:4:0/4:4:4, 8/10/12-bit
- AVC: (H.264/AVC, ISO/IEC 14496-10, MPEG-4 Part 10), except SVC/MVC
- MPEG2 (ISO/IEC 13818-2 Part 2), 4:2:0/4:2:2, 8-bit
- MKV container
- MP4 container
- MPEG2 TS/PS container
- AVI container
- Mpeg Media Transport container (ARIB STD-B60 1.0)

Once a bitstream is loaded, the tool allows the user to inspect each major step of the decode process visually and numerically, and the structure of the coded image can be explored. This data can be used as a visual reference when learning about HEVC/VP9 or when debugging a particular encoder or decoder.

New Features

- HEVC: added index file support created during full stream analysis
- HEVC: added additional SEI support
- HEVC: show active SPS,PPS,VPS in NAL tab

- HEVC: added MV heat map
- AVC: added hierarchy widget
- HEVC/AVC: added decoded frame caching
- HEVC/AVC: added psnr Y command line output
- HEVC/AVC: added error filtering support (GUI and command line)
- MPEG2: added error resilience

Bug Fixes

- HEVC: improved performance ~30%
- HEVC: extended precision on resampling for SHVC
- HEVC: fixed display order for SHVC
- HEVC: fixed some crashes in SHVC
- AVC: improved performance ~60%
- VP9: fixed bugs with incorrect clipping of parameters on segments
- VP9: ivf reading optimization
- COMMON: mkv reading optimization
- COMMON: improved codec detection

System Requirements

Hardware

- 1GB RAM minimum, 4GB recommended when loading 4K pictures.

Software

- Microsoft* Windows* 7, Microsoft* Windows* 8, Microsoft* Windows* 8.1, Microsoft* Windows* 10, 32-bit/64-bit.
- Ubuntu* Linux* 12.04 and higher, SLES* 12 and higher, CentOS* 6.5 and higher
- Mac* OS X* 10.9 and higher

Package Contents

<install-folder>

Intel® Video Pro Analyzer Release Notes (this file), Intel® Video Pro Analyzer User Guide, licenses, binary executables, tool's internal and third-party binaries.

Installation

To begin installation:

- Double-click on the executable file to begin installation.

Activation during installation

You must activate the product to finish installation. Use one of these methods:

- Activation using serial number. Internet connection is required;
- Remote activation using serial number. Used when your computer is not connected to the internet. You can use another computer with internet access;
- Activation using license file;
- Activation using license server.
- You can also evaluate the product for 30 days.

Activation after installation

Put the license file in the following default directory:

Under Microsoft* Windows* 32-bit:

`c:\Program Files\Common Files\Intel\licenses\`

Under Microsoft* Windows* 64-bit:

`c:\Program Files (x86)\Common Files\Intel\licenses\`

Under Linux* (as root):

`/opt/intel/licenses`

Under Linux* (as current user):

`~/intel/licenses`

Under Mac* OSX (as root):

`/Users/Shared/Library/Application Support/Intel/Licenses`

Under Mac* OSX (as root):

`/opt/intel/licenses`

If you have problems with installation under Mac* OSX, please, check System Preferences -> Security & Privacy options under "Allow apps downloaded from:". The option "Mac App Store and identified developers" should be checked.

Known Limitations

The Intel® Video Pro Analyzer has the following known limitations:

- 32-bit version of tool may not be able to work with streams of high resolution. It is recommended to use 64-bit version of tool for 4K and higher resolution streams.
- Supported containers for VP9 are IVF and WebM (MKV) only.
- HEVC HRD buffer fullness uses only Type II bitstream for visualization.
- Archive yuv files (*.zip, *.gz) fully unpacked in memory currently, huge files could require a lot of memory.
- For zip files only first file in archive is considered to be used as compressed yuv file. Only deflate and store compression methods are supported.
- Archived y4m files are not supported yet.
- AVC decoding does not support gaps in frame_num and slice groups currently.
- Dual view mode is in preview implementation now. It can be unstable and buggy.

HEVC Conformance checks:

- Bitstream conformance to active profile, tier and level representation and HRD parameters is tested on general representation only. (PTL syntax elements with prefix 'general_')
- Bitstream conformance to HRD parameters is tested using VUI parameters specified in active SPS only.
- For Intra only profiles picture reordering is not tested.
- Common Multilayer HEVC: external base layer configurations are not supported.
- HEVC Slice data errors: bitstream restrictions specified SPS VUI or VPS VUI parameters are not supported.

HEVC Decoder behavior:

- For Range extensions, Hightthroughput and Screen-Extended (SCC) profiles in order to detect sub-profile (e.g. Monochrome, Main 444 12bit, ...) bitstream constraint flags, coded in PTL, must be set according to the tables specified in clause A.3 of the spec.
- For Still Picture profiles test for number of pictures present in bitstream is applied to whole bitstream file.
- For Screen-Extended (SCC) profiles in order to detect these profiles, `general_profile_idc` must be set to 31 or `general_compatibility_flag[31]` must be set to 1. (same as of HM16.8+SCC6/7) (Will be changed to 9 (according to spec) in future releases)
- Multilayer bitstreams are decoded with highest available index of Layer Set (`TargetOlsIdx` is set to `NumOutputLayerSets - 1`). All available layers will be output.
- Different layers in Multiview HEVC stream must have the same resolution and chroma format for inter-layer prediction. (Configurations with different chroma format or resolution are still decodable, but resampling process for inter-layer prediction will be invoked in that cases)
- SCC extensions presence in bitstream is tested on both position 3 and 6 of `sps_extension_bit` and `pps_extension_bit`.

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Notice revision #20110804

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For details, please refer to <http://qt-project.org/doc/qt-5/licensing.html> for specific details.

Zlib

/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.8, April 28th, 2013

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*/

Qwt

Qwt License

Version 1.0, January 1, 2003

The Qwt library and included programs are provided under the terms of the GNU LESSER GENERAL PUBLIC LICENSE (LGPL) with the following exceptions:

1. Widgets that are subclassed from Qwt widgets do not constitute a derivative work.
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However, programs must still identify their use of Qwt.

The following example statement can be included in user documentation to satisfy this requirement:

[program/widget] is based in part on the work of the Qwt project (<http://qwt.sf.net>).