

Configuring PotPlayer for GPU-accelerated video playback with DirectX Video Acceleration (DXVA), Compute Unified Device Architecture (CUDA) or high-performance software decoding

Shortlink of this post – <http://wp.me/PrgSo-gQ> (use this URL when linking to this page in your Facebook/forums/twitter/IRC/BBS messages)

Alternative reading: same configuration with this page using MPC-HC – [click here.](#)

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CHANGELOG

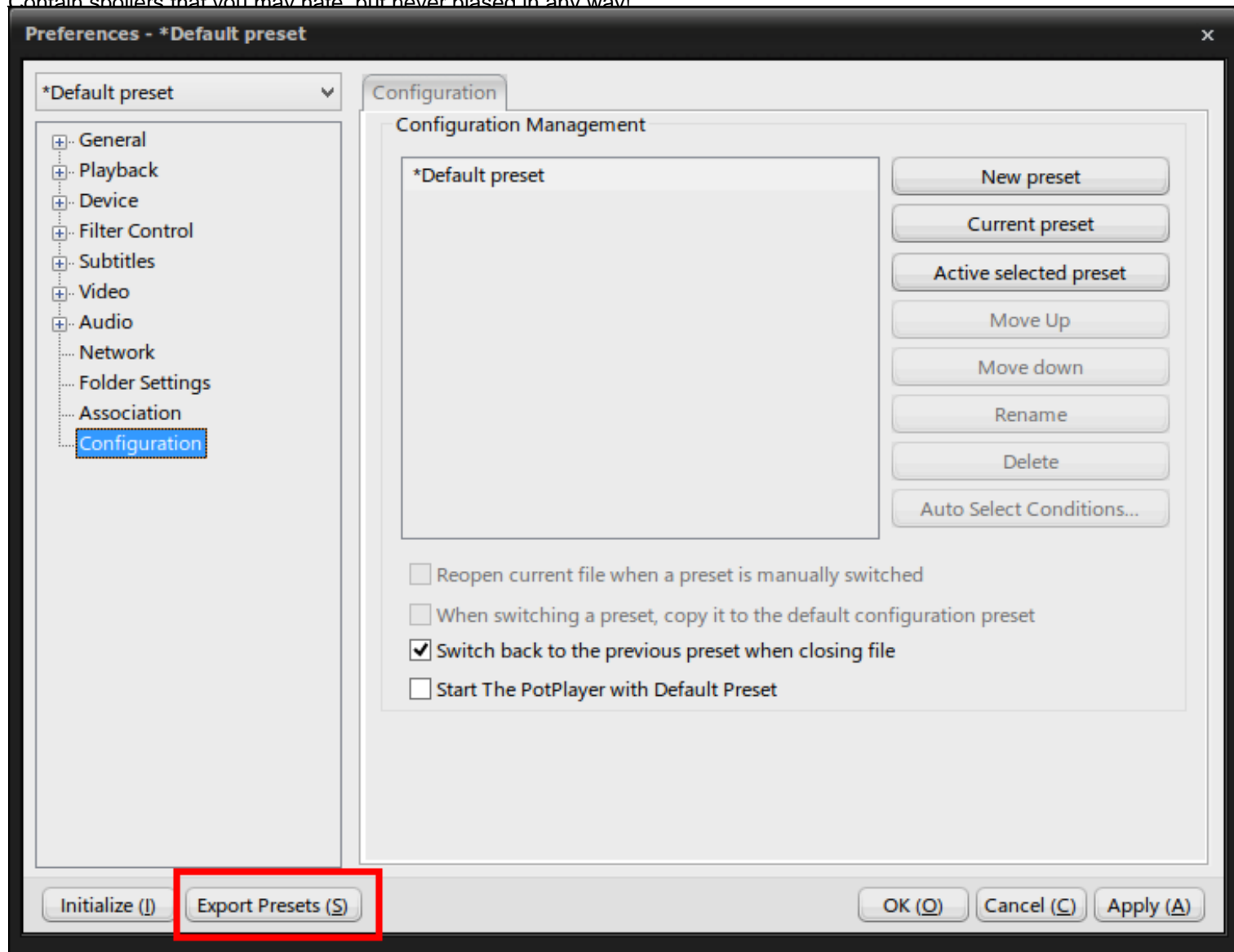
21 September 2014 – Modified slightly the CUVID decoding method below to include the HEVC hybrid decoding method.

Also included: [A detailed QuickSync headless mode setup.](#) You do not need this if you use Windows 8 and has installed the latest drivers.

From 12 May 2014, the installer will always reset the PotPlayer settings. Existing users that want to retain their custom settings should make a back-up of their default preset by opening the 'Preferences' window (F5) and clicking the 'Export Presets (S)' button as shown below.

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Introduction

When I first wrote the KMPlayer guide available in archive mode [here](#), it was meant to be an alternative to MPC-HC to watch fansubbed anime episodes, with soft subtitles and with GPU acceleration ([general DXVA](#), [Intel-specific](#) and [CUDA method](#)). But after KMPlayer being sold to pandora.tv, the development has slowed down considerably. The original developer of KMPlayer then moved on, and created a new media player called [PotPlayer](#), which will be used in this guide. Compared to KMPlayer, PotPlayer has a more rapid development cycle, with more new features being added now and then. PotPlayer used to be unusable for watching fansubbed anime with soft-subtitles, but as of today PotPlayer is more than capable to replace MPC-HC for watching such videos.

What you can expect in this page:-

1. Use madVR in all playback scenarios. No more being shackled to certain renderers like VMR9 renderless or EVR custom presenter for DXVA. No more compromise with image quality.
2. Be able to use DXVA renderless method even with madVR. You cannot do that with MPC-HC. Intel, ATI and nVidia GPUs are supported. CUDA decoding method are also supported in this page of course.

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3. Not only that you can use DXVA with madVR, post-processing methods like deband also works here, with ffdshow raw video filter. Deinterlacing is now done on decoder level.
4. If hardware-accelerated video playback isn't your thing, I will also show you how to configure PotPlayer for high-performance software decoding (for both H.264 and DivX/XviD videos) with LAV Video Decoder, which is reasonably fast and has better support for 9-bit and 10-bit H.264 videos too than ffdshow video decoder.

The main drawback for this guide is that the renderless DXVA method is usable only in Windows Vista and 7. Windows XP users are out of luck, unless you go with CUDA playback method or software decoding playback method. Another drawback of switching from MPC-HC to PotPlayer is that you have to re-learn everything. Keyboard shortcuts for common functions between these two players are completely different. In MPC-HC, the keyboard shortcut for full-screen playback is 'Alt-Enter' combo buttons, while for PotPlayer, it is simply the 'Enter' button. In MPC-HC, switching chapters can be done with the 'PgUp' and 'PgDn' buttons, while in PotPlayer, the same thing can be done with 'Shift-PgUp' or 'Shift-PgDn' combo buttons.

Supported hardware

For software decoding methods, especially for Hi10p videos, a reasonably powerful CPU is needed. Below are some recommended CPUs for the said task.

AMD systems:-

CPU

[AMD A10-6700 Richland 4.2GHz Socket FM2 65W Quad-Core Desktop Processor AMD Radeon HD AD6700OKHLBOX](#)

Motherboard

[ASRock Socket FM2/AMD A75 FCH/DDR3/SATA3&USB3.0/A&V&GbE/MicroATX Motherboard FM2A75M-DGS](#)

Intel systems:-

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CPU

[Intel Core i3-4130 3.4 3 FCLGA 1150 Processor BX80646I34130](#)

Motherboard

[ASRock LGA1150/Intel Z87/DDR3/SATA3 and USB 3.0/A&GbE/ATX Motherboard Z87 PRO3](#)

These CPU + motherboard combinations should be enough for even the most demanding of Hi10p videos out there in [TokyoTosho](#).

GPU

With the advent of OpenCL NNEDI3 upscalers and DirectCompute error diffusion dithering methods, plus the emergence of 4k displays, currently as of March 2014 there are no GPUs that can keep up with madVR. Not even Titan Black or R9 290x GPUs allows you to completely use all madVR's new features, especially with videos with high resolutions and/or high frame rates.

ATI

[MSI AMD Radeon R7 260X OC 2GB GDDR5 2DVI/HDMI/DisplayPort PCI-Express Video Card](#)

This GPU should be able to handle all the madVR scaling algorithms, including Jinc. Can also be used for hardware-accelerated video decoding (native DXVA, DXVA renderless) for H.264 8-bit, VC-1 and MPEG2. Can also bitstream HD audio tracks (Dolby TrueHD and DTS-HD MA/HR). You can get away with this card too if you want to use DirectCompute error diffusion options.

[Sapphire R9 290X 4GB GDDR5 DUAL DVI-D/HDMI/DP TRI-X OC Version PCI-Express Graphics Card 11226-00-40G](#)

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As of January 2015, R9 290x GPUs like this one is still the best card for madVR, especially if you use NNEDI3 and error diffusion. Cheaper than GTX980 too. Do not use drivers newer than 13.12 though.

nVidia

Low end:-

[EVGA GeForce GTX 960 SuperSC ACX 2.0+ 2GB GDDR5 128bit, PCI-E 3.0 Dual-Link DVI-I, 3 x DP, HDMI, SLI, HDCP, G-SYNC Ready Graphics Cards 02G-P4-2966-KR](#)

High end:-

[EVGA GTX980 CLASSIFIED ACX 2.0 4GB GDDR5 256bit, DVI-I, DP x 3, HDMI, SLI Ready Graphics Cards 04G-P4-3988-KR](#)

Get the low end card if you want to use all madVR features minus NNEDI3 image doubling, while you should get the GTX980 if you want more flexibility when using NNEDI3. Both cards can stream HD Audio

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tracks, and use DXVA (native and renderless) and CUDA decoding methods. GTX 960 has full 8-bit and 10-bit HEVC decoding support now in LAV Video.

Software Checklist

1. DirectX End-user Runtime June 2010 – Download the [offline installer](#) (recommended) or the [stub installer](#). **This is a mandatory installation**. If you already have it (some games installs it for you) then there is no need to redownload it again.
2. Windows 7 SP1 Platform Update – Download [here](#). For Windows 7 users, this package needs to be installed to use DirectX 11 features in madVR. Also can be installed via Windows Update (KB2670838).
3. Microsoft .NET Framework 4 – Download [here](#). You probably won't need it if you already have Windows Vista or 7. You will need it with Windows XP.
4. LAV Filters Megamix – Download the [64-bit](#) version or [32-bit](#) version. (Compile time: 22 September 2015 10:17pm UTC+8. Build: 44fce0eec1a7. Changes: New LAV Filters build). Contains PotPlayer (and MPC-HC), LAV Filters, madVR, Reclock (only in 32-bit installer), XySubFilter and DirectVobSub xy-vsfilter (disabled by default). [doom9 thread for LAV Filters](#).

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[doom9 thread for madVR](#), [doom9 thread for XySubFilter + xy-vsfilter](#). 64-bit version is vastly recommended. Use the 32-bit version only if you need Reclock or have 32-bit Windows. From now on PotPlayer will only be updated between stable versions so that both installers will have the same version.

Programs for troubleshooting purposes:-

1. [DXVA Checker](#) – Download latest version [here](#).
2. [GPU-Z](#) – Shows you detailed information about your GPU. Download latest version [here](#).
3. [CPU-Z](#) – Shows you detailed information about your CPU. Download latest version [here](#).
4. [Driver Sweeper](#) – Remove remnants of ATI/nVidia drivers in your system after installation. Download it [here](#).

Test videos:-

1. [H.264 SD video clip with styled karaoke subtitles \[MediaInfo\]](#) – [The Melancholy of Haruhi Suzumiya NCED theme \(Hare Hare Yukai\)](#) – download [here](#).
2. [H.264 720p video clip with styled karaoke subtitles \[MediaInfo\]](#) – [Clannad NCED theme \(Dango Daikazoku\)](#) – download [here](#).
3. [H.264 1080p video clip with styled karaoke subtitles \[MediaInfo\]](#) – [AIR NCOP theme \(Tori no Uta\)](#) – download [here](#).
4. [H.264 1080p video clip with styled karaoke subtitles \[MediaInfo\]](#) – [Clannad After Story NCOP theme \(Toki wo Kizamu Uta\)](#) – download [here](#).
5. [H.264 1080p video clip with styled subtitles \[MediaInfo\]](#) – [Planet Earth: From Pole to Pole](#) – download [here](#).
6. Optional test file for testing deinterlacing capabilities: [H.264 1080i video clip \[MediaInfo\]](#) – [History Channel – Decoding the Past: Mysteries of the Freemasons](#) – download [here](#).
7. Optional test file for testing splitter's segment linking capabilities: [3x H.264 anamorphic 1080p video clips with styled subtitles \[MediaInfo\]](#) – [K-On!!](#) episode 6 – download [here](#).
8. Optional test file to test H264 4K playback and scaling performance: [8-bit H.264 video clip with 125Mb bitrate \[MediaInfo\]](#) 4k UDHTV LG Demo video – download [here](#).
9. **Optional (animation) test file to test Hi10p decoding performance:** [H.264 1080p 10-bit video clip \(no subtitles\) \[MediaInfo\]](#) Sentai Filmworks' [Angel Beats](#) trailer – download [here](#). 2-pass encode with 10000Kbps bit-rate, 16 reference frames and 8 b-frames. Visually lossless compared to the source Blu-ray, even with 50% size reduction. If you can play this file flawlessly, your system should be good enough to play 99.999% Hi10p videos that anime fansubs groups will encode in the future. Even Tenshi's encodes.
10. **Optional (real-life) test file to demonstrate Hi10p encoding efficiency:** [H.264 1080p 10-bit video clip \(PGS subtitles\) \[MediaInfo\]](#) – [Pirates of the Caribbean: At World's End](#) blooper reel – download [here](#).

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2-pass encode with saner settings: 3072Kbps bit-rate, 3 reference frames, 3 b-frames. Differences in visual quality between the encoded file and the source Blu-ray is pretty much negligible. This clip is more than 3 times longer than the Highschool of the Dead clip above, yet the differences in size is merely only 20MB. A massive 80% file reduction has been achieved from the source file, with no 80% quality reduction, or any need to downscale to lower resolutions either.

If you have any problems downloading the files, please make a comment below.

The Guide Itself

Jump to:-

[STEP 1 – Installation Stage](#)

[STEP 2 – Choosing Your Preferred Decoding Method By Configuring LAV Video Decoder](#)

[STEP 3 – Configuring LAV Splitter Source, LAV Audio Decoder and AC3Filter \(optional\)](#)

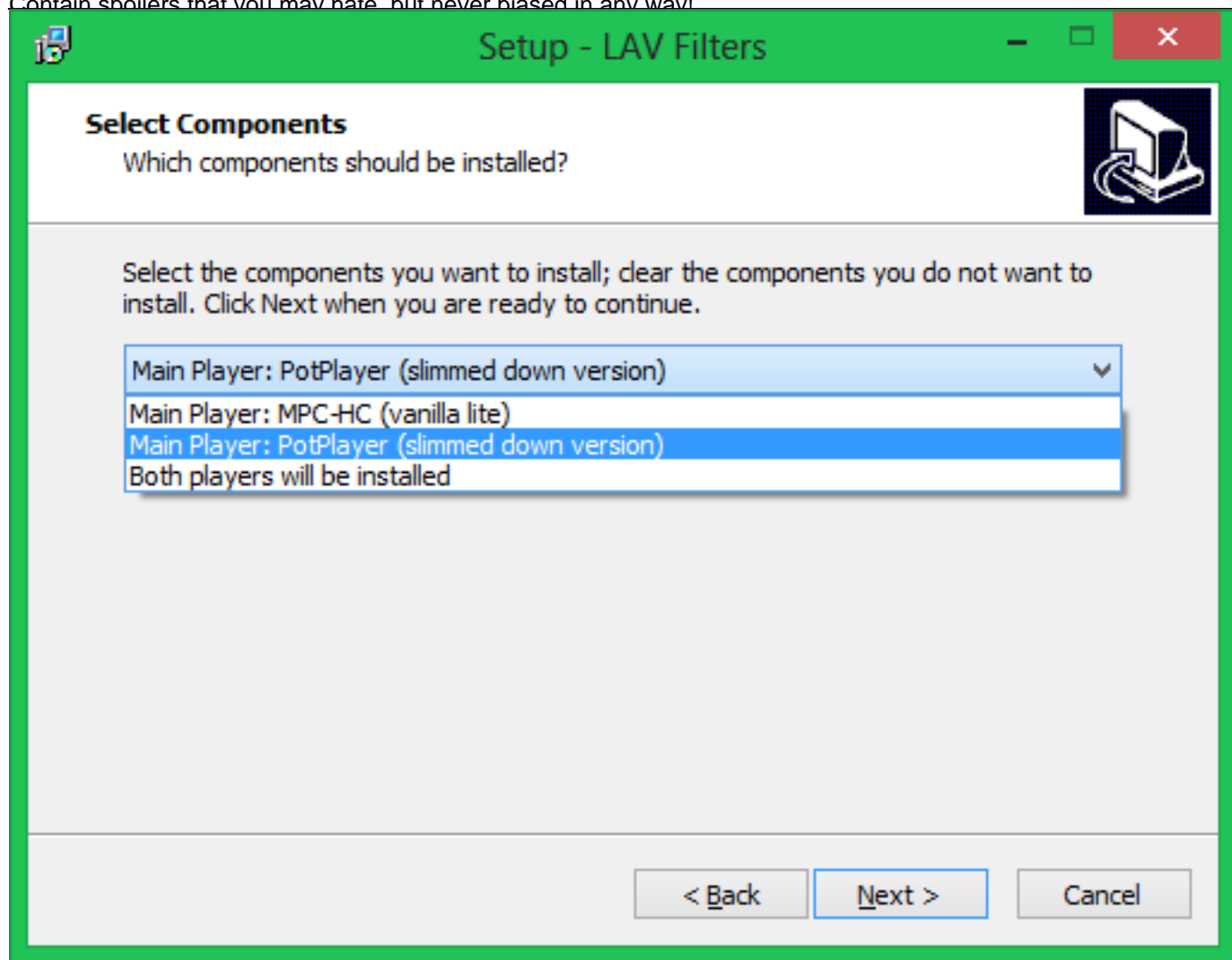
[STEP 4 – madVR](#)

Step 1 – Installation Stage

If you already have Haali Media Splitter, madFLAC, madVR and LAV Filters installed, uninstall them first. If you have previous versions of LAV Filter Megamix that has Haali Media Splitter in it from here before, use the uninstaller to uninstall it too. Uninstall your version of PotPlayer too if you have them installed.

First, download and install the DirectX End-user Runtime and Microsoft .NET Framework from the links above, if you haven't installed it already.

Then, download the LAV Filters Megamix above, and install it. Make sure you do not forgot to select PotPlayer in the screen below.



Click the 'Next' button a bunch of times until the installation process is complete.

A note for everyone, if you use Windows 64-bit, you do not have to use PotPlayer 64-bit too. PotPlayer 32-bit works just fine.

PotPlayer can now be started via 'All Programs —> LAV Filters —> PotPlayer'. Using Windows 8? It should be available somewhere in the Start Screen.

Step 2 –Choosing Your Preferred Decoding Method By Configuring LAV Video Decoder

It will be here where you will have to decide which decoding method from the list below that you want to use:-

1. High performance software decoding mode.
2. DXVA renderless decoding mode.
3. CUDA decoding mode.

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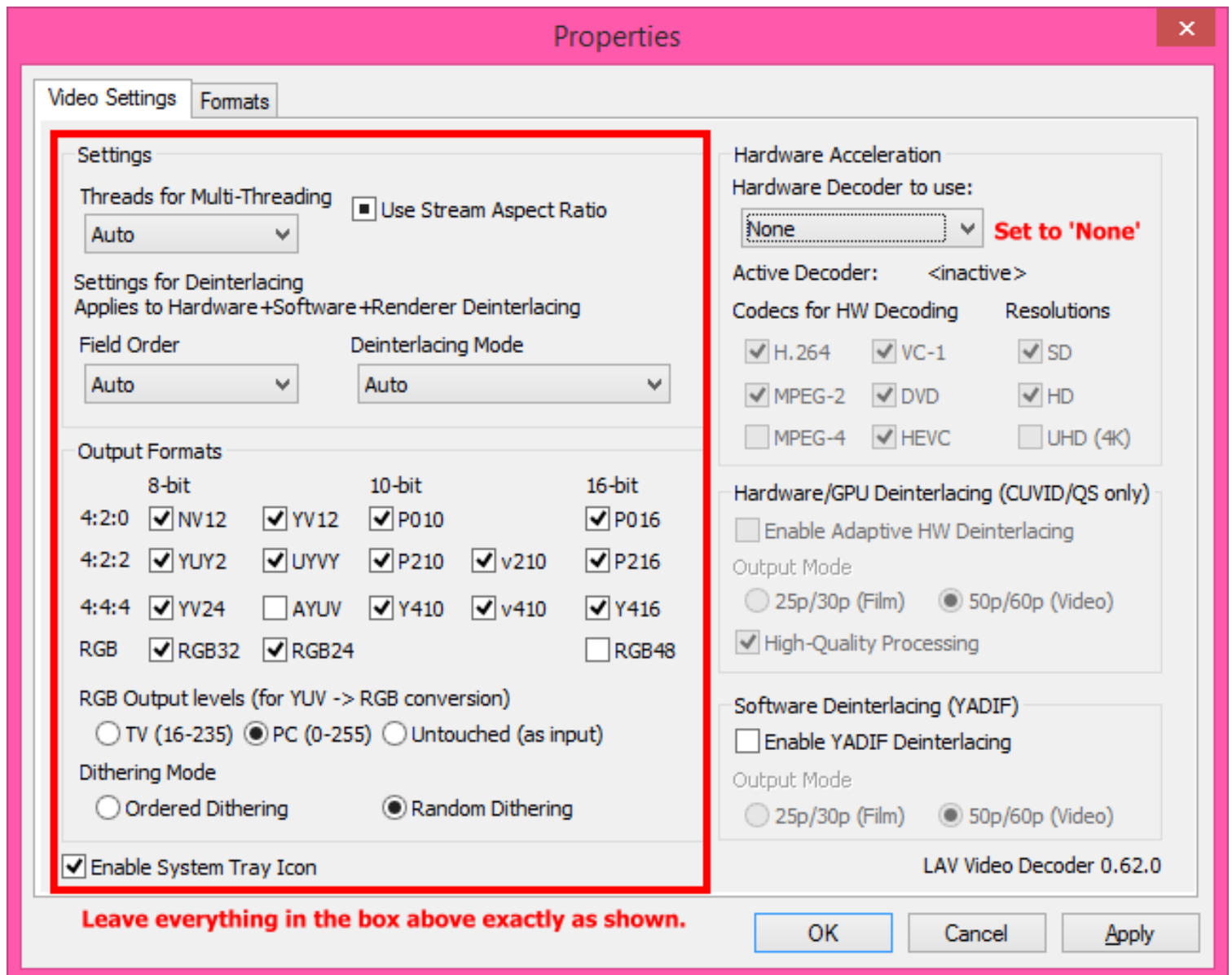
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4. Intel QuickSync decoding mode.

Go to 'Start Menu → All Programs → LAV Filters → LAV Video Configuration' to bring up LAV Video Decoder property page. For Windows 8 users, the shortcut should be somewhere in the Metro Start page. LAV Video Decoder property page will appear and ready to be configured according to your preferred decoding method.

Method #1 – High performance software decoding mode.

For best results, you need a fast dual-core CPU with minimum speed of 3Ghz. A quad-core CPU should at least have 2.5Ghz of speed at least. Read the Hi10p footnote below for more information.



The screenshot shows the 'Properties' dialog box for LAV Video Decoder, with the 'Video Settings' tab selected. A red box highlights the following sections:

- Settings:**
 - Threads for Multi-Threading: Auto
 - Use Stream Aspect Ratio:
 - Settings for Deinterlacing: Applies to Hardware+Software+Renderer Deinterlacing
 - Field Order: Auto
 - Deinterlacing Mode: Auto
- Output Formats:**

	8-bit	10-bit	16-bit
4:2:0	<input checked="" type="checkbox"/> NV12 <input checked="" type="checkbox"/> YV12	<input checked="" type="checkbox"/> P010	<input checked="" type="checkbox"/> P016
4:2:2	<input checked="" type="checkbox"/> YUY2 <input checked="" type="checkbox"/> UYVY	<input checked="" type="checkbox"/> P210 <input checked="" type="checkbox"/> v210	<input checked="" type="checkbox"/> P216
4:4:4	<input checked="" type="checkbox"/> YV24 <input type="checkbox"/> AYUV	<input checked="" type="checkbox"/> Y410 <input checked="" type="checkbox"/> v410	<input checked="" type="checkbox"/> Y416
RGB	<input checked="" type="checkbox"/> RGB32 <input checked="" type="checkbox"/> RGB24		<input type="checkbox"/> RGB48
- RGB Output levels (for YUV -> RGB conversion):**
 - TV (16-235):
 - PC (0-255):
 - Untouched (as input):
- Dithering Mode:**
 - Ordered Dithering:
 - Random Dithering:

Other visible settings include:

- Hardware Acceleration:** Hardware Decoder to use: None (Set to 'None'). Active Decoder: <inactive>
- Codecs for HW Decoding:** H.264, VC-1, MPEG-2, DVD, HEVC, MPEG-4.
- Resolutions:** SD, HD, UHD (4K).
- Hardware/GPU Deinterlacing (CUVID/QS only):** Enable Adaptive HW Deinterlacing: . Output Mode: 25p/30p (Film), 50p/60p (Video). High-Quality Processing:
- Software Deinterlacing (YADIF):** Enable YADIF Deinterlacing: . Output Mode: 25p/30p (Film), 50p/60p (Video).

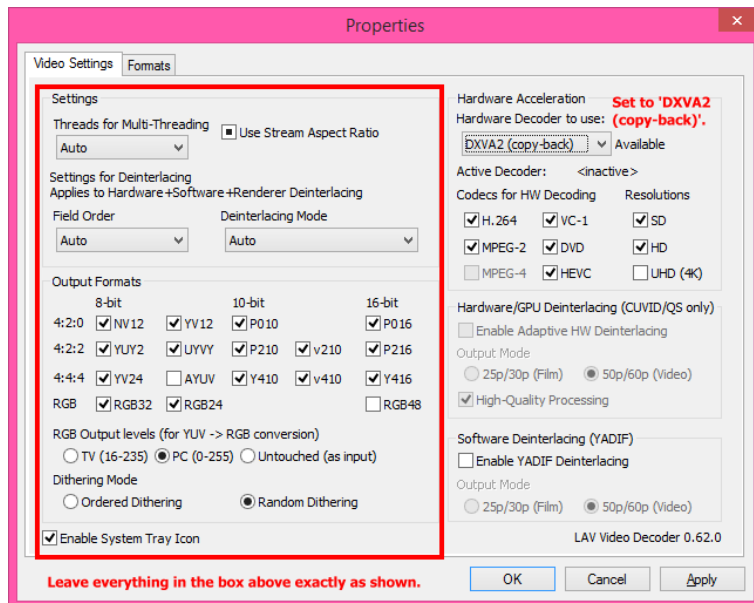
At the bottom, there is a red instruction: **Leave everything in the box above exactly as shown.** Below this are buttons for OK, Cancel, and Apply. The version number 'LAV Video Decoder 0.62.0' is also visible.

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Method #2 – DXVA renderless decoding mode.

Can only be used in Windows Vista and 7. Works best with nVidia GPUs, and also ATI GPU series that has UVD3. ATI UVD2.x users may have to switch to EVR custom presenter. Doesn't work on Hi10p videos and other unsupported video formats, and will fall into high performance software decoding mode when such files are played.



HEVC can only be supported if your GPU expose the 'HEVC_VLD_Main' mode in DXVA Checker. This is also the mode you have to use if you want to decode 10-bit HEVC videos with nVidia GTX960 GPUs.

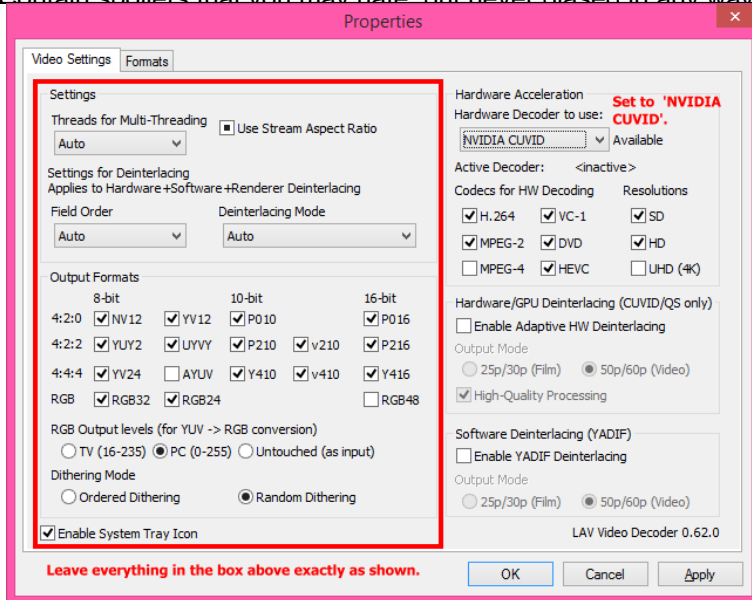
Method #3 – CUDA decoding mode (nVidia GPUs only).

note: Must use driver version 340.52, if your GPU is supported, if you want HEV hybrid decoding support.

Doesn't work on H.264 Hi10p, H.265 10-bit videos and other unsupported video formats, and will fall into high performance software decoding mode when such files are played.

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Configure the 'Codecs for HW decoding' appropriately according to the nVidia GPU you have:-

- nVidia PureVideo 2 – H.264 and DVD.
- nVidia PureVideo 3 – H.264, VC-1, MPEG-2 and DVD.
- nVidia PureVideo 4 – H.264, VC-1, MPEG-2, DVD and MPEG-4.
- nVidia PureVideo 5 and 6 – H.264, VC-1, MPEG-2, DVD, MPEG-4 and HEVC.

Also enable the UHD (4k) option if you have PureVideo 5 or later GPUs.

Method #4 – Intel QuickSync Decoding Mode.

You need an Intel SandyBridge/IvyBridge CPU that use the LGA1155 socket and a motherboard that did not use the P67 chipset. Therefore only motherboards with the B65, H61, Q67, H67, and Z68 chipsets can be used. All Series 7 motherboard chipsets will work. Windows 7 and later is recommended. Windows Vista is discouraged (no heterogenous GPU support), and Windows XP isn't supported at all.

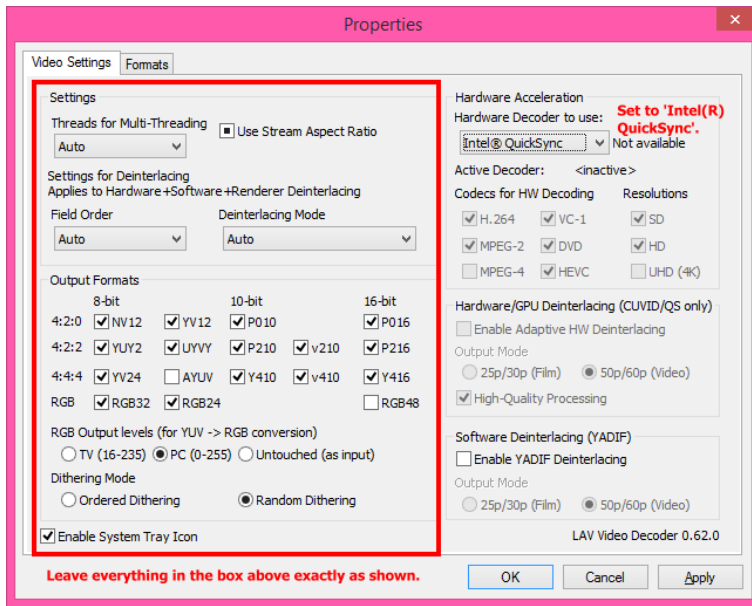
If you want to use QuickSync ASIC for decoding while using a discrete videocard for madVR, you will need Windows 7 or later. If you only have Windows 7, you need to enable the QuickSync headless mode by following the steps in this [link](#). If you have Windows 8, you do not have to do so.

Always make sure that you are using the latest drivers available from Intel's website, not the ones that

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comes from the motherboard manufacturer's websites, or the CD. Older driver versions may cause the decoder to fail.



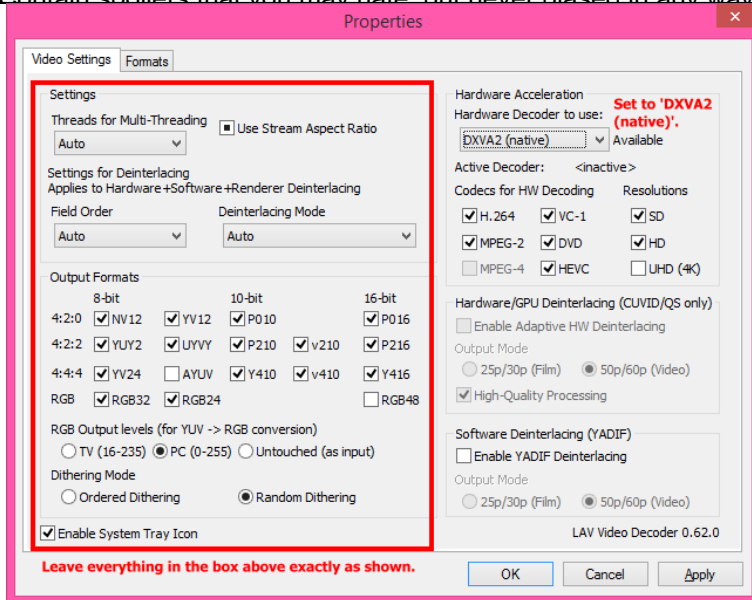
If you have an Ivy Bridge CPU or newer, you can also enable UHD (4K) option; you need to have the latest drivers of course. HEVC can only be supported if your GPU expose the 'HEVC_VLD_Main' mode in DXVA Checker. Will decode only 8-bit HEVC videos, not 10-bit.

Method #5 – native DXVA decoding mode.

Works only in Windows Vista and later. Should only be used by owners of Intel G45 chipset, Clarkdale and Arrandale CPUs, ATI HD3xxx, HD4xxx and HD5xxx GPUs. But all other GPUs/iGPUs that can use QuickSync/CUVID/DXVA renderless decoding methods should also be able to use this mode. Doesn't work on Hi10p videos and other unsupported video formats, and will fall into high performance software decoding mode when such files are played.

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HEVC can only be supported if your GPU expose the 'HEVC_VLD_Main' mode in DXVA Checker. Will only decode 8-bit HEVC clips. nVidia GTX960 GPUs users should switch to the DXVA renderless method to also be able to decode 10-bit HEVC clips.

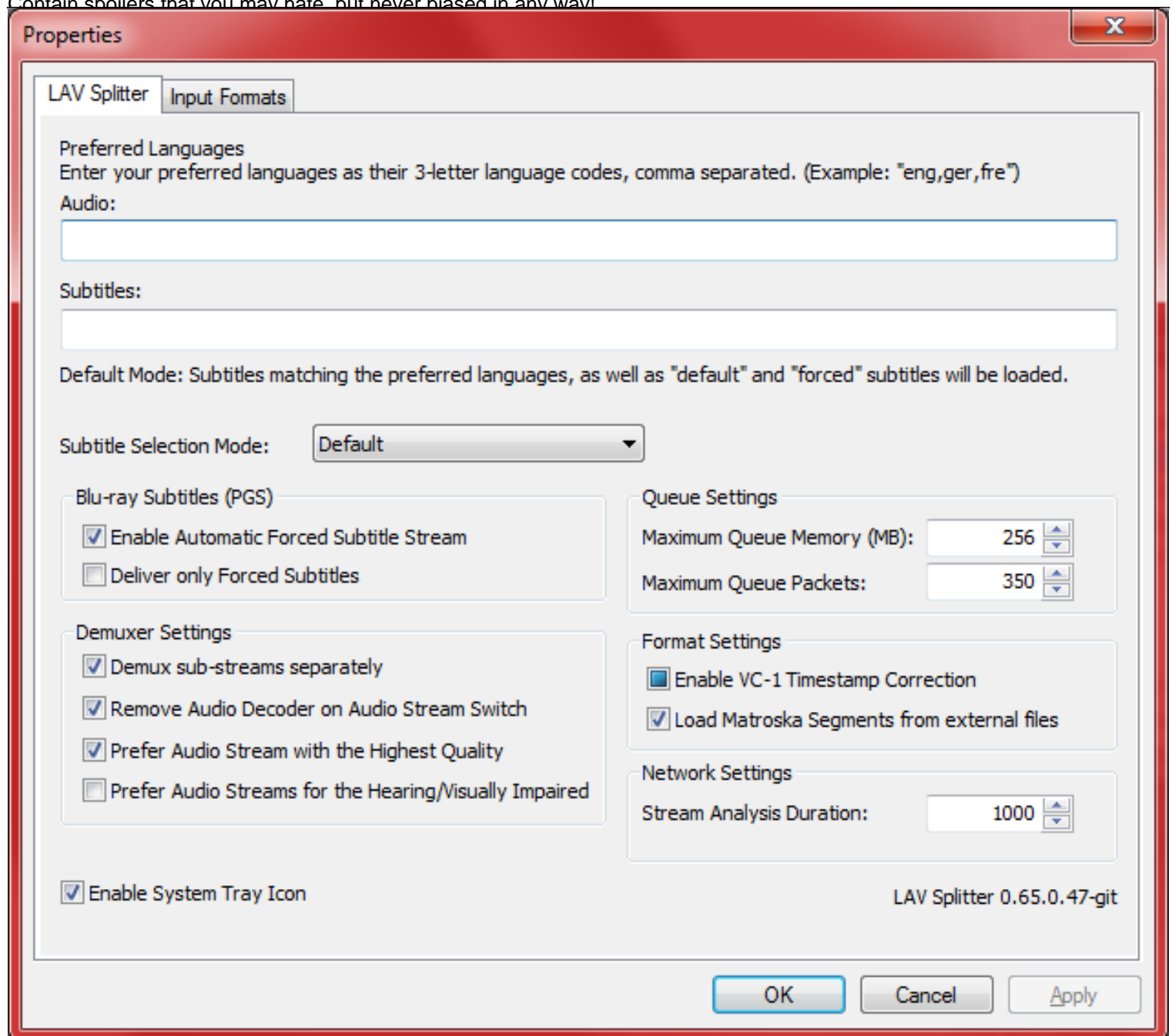
Click 'Apply' button to save your settings, then click the 'OK' button to close the property page.

Step 3 –Configuring LAV Splitter Source, LAV Audio Decoder and AC3Filter (optional)

Go to 'Start Menu —> All Programs —> LAV Filters —> LAV Splitter Configuration' to bring up LAV Splitter property page. For Windows 8 users, the shortcut should be somewhere in the Metro Start page. 'LAV Splitter' property page will appear below.

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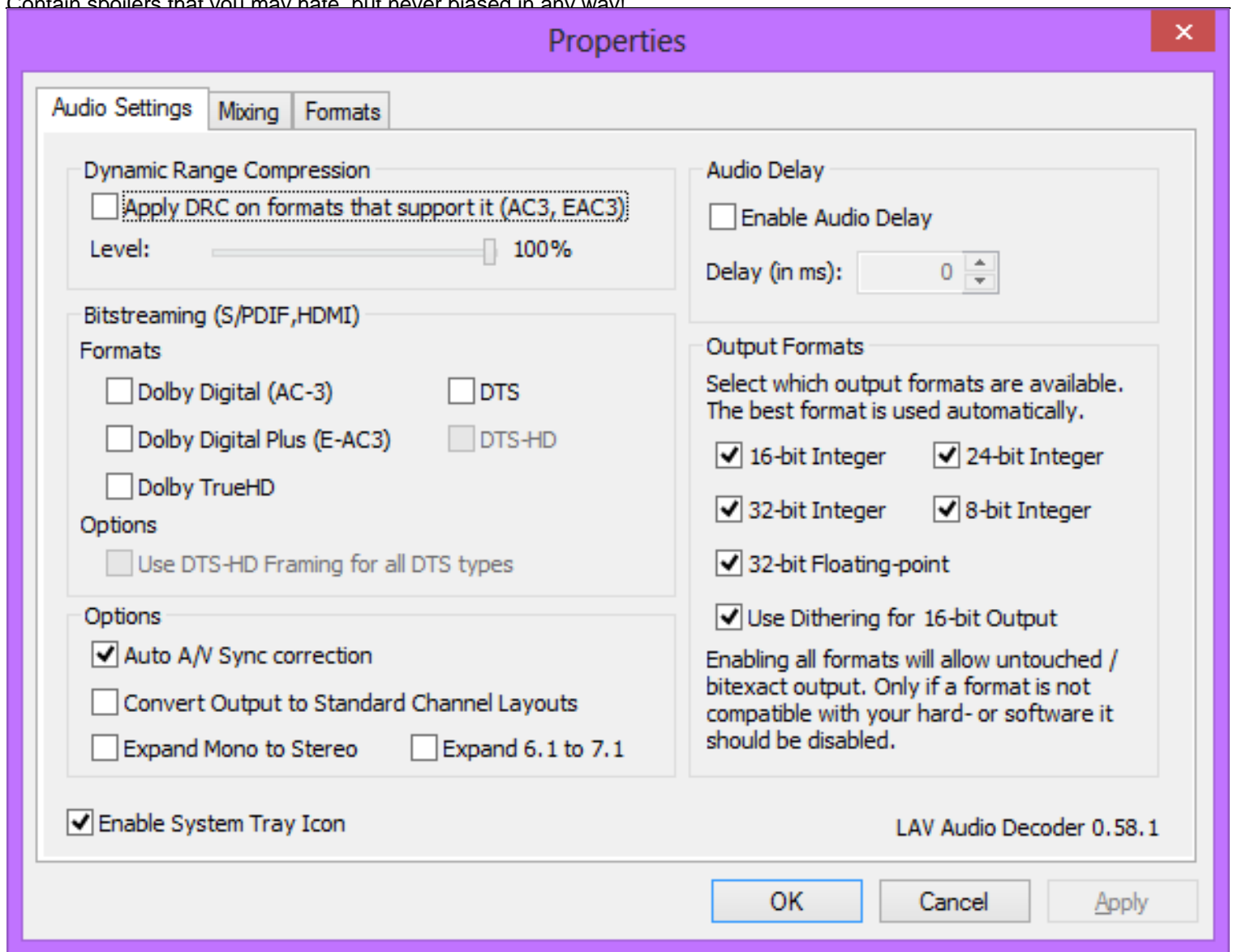


Leave everything here exactly as shown above. You're welcome to play around with automatic audio/subtitles track selection routine though to suit your needs. Verify that everything is in order, click 'Apply' and then click 'OK' to close the property page.

Go to 'Start Menu → All Programs → LAV Filters → LAV Audio Configuration' to bring up LAV Audio Decoder property page. For Windows 8 users, the shortcut should be somewhere in the Metro Start page. 'LAV Audio Decoder' property page will appear below.

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Enable any audio codec you want to bitstream here. Verify that everything is in order, click 'Apply' and then click 'OK' to close the property page.

Step 4 – Configuring madVR

Click [here](#) to read how to configure madVR.

If you have any problems, make a comment below, with the screenshots of your DXVA Checker, GPU-Z and CPU-Z results like in the example below.

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The image shows three software windows. The top window is 'DXVA Checker' displaying a list of video codecs and their supported DXVA profiles. The middle-left window is 'TechPowerUp GPU-Z 0.7.2' showing details for an Intel(R) HD Graphics 4000. The middle-right window is 'CPU-Z' showing details for an Intel Core i7 3770S. The bottom-right window is another instance of 'TechPowerUp GPU-Z 0.7.2' showing details for an NVIDIA GeForce GTX 760.

Codec	DXVA Profile	Support
NVIDIA GeForce GTX 760		
MPEG2_IDCT	DXVA2/D3D11	SD / HD / FHD / QFHD
MPEG2and1_VLD	DXVA2/D3D11	SD / HD / FHD / QFHD
MPEG2_VLD	DXVA2/D3D11	SD / HD / FHD / QFHD
MPEG2_A	DXVA1	SD / HD / FHD / QFHD
MPEG2_C	DXVA1	SD / HD / FHD / QFHD
MPEG1_VLD	DXVA2/D3D11	SD / HD / FHD / QFHD
VC1_VLD2010	DXVA2/D3D11	SD / HD / FHD
VC1_VLD	DXVA2/D3D11	SD / HD / FHD
VC1_IDCT	DXVA1/2/D3D11	SD / HD / FHD
WMV9_IDCT	DXVA1/2/D3D11	SD / HD / FHD
32FCFE3F-DE46-4A49-861B-AC71110649D5	DXVA2/D3D11	SD / HD / FHD / QFHD
H264_VLD_Stereo_Progressive_NoFGT	DXVA2/D3D11	SD / HD / FHD / QFHD
H264_VLD_Stereo_NoFGT	DXVA2/D3D11	SD / HD / FHD / QFHD
H264_VLD_NoFGT	DXVA2/D3D11	SD / HD / FHD / QFHD
1B81BE6A-A0C7-11D3-B984-00C04F2E73C5	DXVA2/D3D11	SD / HD / FHD / QFHD
H264_VLD_SVC_Scalable_Constrained_High	DXVA2/D3D11	SD / HD / FHD / QFHD
MPEG4pt2_VLD_Simple	DXVA2/D3D11	SD / HD / FHD
MPEG4pt2_VLD_AdvSimple_NoGMC	DXVA2/D3D11	SD / HD / FHD
9947EC6F-689B-11DC-A320-0019DBBC4184	DXVA2/D3D11	SD / HD / FHD
B194EB52-19A0-41F0-B754-CC244AC1CB20	DXVA2/D3D11	SD / HD / FHD / QFHD
6AFFD11E-1D96-42B1-A215-93A31F09A53D	DXVA2/D3D11	SD / HD / FHD / QFHD

Category	Value
Name	Intel(R) HD Graphics 4000
GPU	GT2
Technology	22 nm
Release Date	Apr 23, 2012
Transistors	1400M
Device ID	8086 - 0162
Subvendor	Gigabyte (1458)
ROPs/TMUs	2 / 4
Shaders	16 Unified
Pixel Fillrate	1.3 GPixel/s
Texture Fillrate	2.6 GTexel/s
Memory Type	DDR3
Memory Size	0 MB
GPU Clock	650 MHz
Memory Clock	800 MHz
Default Clock	650 MHz
Memory Default	800 MHz
Multi-GPU	Disabled

Category	Value
Name	Intel Core i7 3770S
Code Name	Ivy Bridge
Package	Socket 1155 LGA
Technology	22 nm
Core Voltage	0.900 V
Specification	Intel(R) Core(TM) i7-3770S CPU @ 3.10GHz
Family	6
Model	A
Stepping	9
Ext. Family	6
Ext. Model	3A
Revision	E1L1
Instructions	MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, EM64T, VT-x, AES, AVX
Core Speed	1601.69 MHz
Multiplier	x 16.0 (16 - 39)
Bus Speed	100.11 MHz
Cache	L1 Data: 4 x 32 KBytes 8-way L1 Inst: 4 x 32 KBytes 8-way Level 2: 4 x 256 KBytes 8-way Level 3: 8 MBytes 16-way
Cores	4
Threads	8

Category	Value
Name	NVIDIA GeForce GTX 760
GPU	GK104
Technology	28 nm
Release Date	Jun 25, 2013
Transistors	3540M
Device ID	10DE - 1187
Subvendor	Zotac/PC Partner (19DA)
ROPs/TMUs	32 / 96
Shaders	1152 Unified
Pixel Fillrate	35.6 GPixel/s
Texture Fillrate	106.7 GTexel/s
Memory Type	GDDR5
Memory Size	2048 MB
GPU Clock	1111 MHz
Memory Clock	1552 MHz
Default Clock	1111 MHz
Memory Default	1552 MHz
Boost	1176 MHz
Multi-GPU	Disabled

Notes about Hi10p MPEG4-AVC 10-bit decoding.

Tips on improving performance:-

- LAVFilters made available here are updated at least once every couple of days (or at least when there are commits). Try updating your installation regularly to get more performance improvements.
- Try using madVR in exclusive mode + new rendering path turned on + all three options for the new rendering path also turned on + use 16 framebuffers + all flushing options disabled.
- Don't use ffdshow raw video filter during playback (you then have to hope that the encoders do the deinterlacing and deband) so that dithering will only be done on the GPU with madVR.
- PotPlayer-specific: Don't use fancy skins like the one I made available above; those kind of skins do take resources too. Especially when that spectrum equalizer is being shown.
- When push come to shove, change your video renderer to EVR custom presenter to reduce more CPU usage.

If you can play [this test video](#) I made available above flawlessly, you should not have any problems playing any Hi10p videos that anime fansub groups may encode in the future, which is highly likely are

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less demanding than the referenced video.

CPU commentary:-

After a few days of testing MPEG4-AVC Hi10p playback on various systems using LAV Video Decoder with the two test files I have made available above and also Coalgirls Yuru Yuri episode 4 which is in 720p, here are my findings:-

AMD:

Dual-core CPUs from AMD like AMD Athlon II X2 (one clocked at 3Ghz, another at 2.8Ghz) have problems playing Hi10p 1080p videos like the two test files I have made available above. In fact, even a Phenom II X2 CPU at 3Ghz has problems with them. And so is the single Brazos E-350 laptop I tested. All of those systems I mentioned have their CPU utilization pegged at 100% and will drop frames in fast scenes in the HotD sequence.

The Yuru Yuri video doesn't pose a problem with them though. Two desktop computers with an AMD Athlon II X4 2.6Ghz and another with a Phenom II X6 2.8Ghz doesn't have any performance problems whatsoever with any of the files I used.

Recommendation, in order of preference:-

1. Any quad core or higher, from either the Phenom II, Athlon II or Llano A6/A8 CPU line. Personally, I have just upgraded to an Athlon II X4 640 3Ghz CPU (no need for me to change motherboard) and it works well.
2. One of those tri-core Athlon II/Phenom II/Llano A6 CPUs. Some of them can be unlocked too with the right motherboard.
3. For laptop: Any of the models that has Llano quad-core parts.
4. Those early Phenom quad-core CPUs available in Socket AM2 format.
5. Very high-clocked dual-core CPUs, like Athlon II X2 275.

Not recommended:-

1. Any Sempron CPUs.
2. CPUs from the [K8](#) family and older.
3. The brand new Brazos Zacate laptop, or almost all of the current mobile parts from the [Bobcat](#) CPU family. Those processors depends heavily on GPU acceleration for high-definition video playback.

Intel:

Dual-core CPUs from Intel are more tolerant with those two 1080p Hi10p files I used. The CPU usage is quite high, up until 70%-80% but I have not noticed any frame drops problems. CPU tested includes Core i3 530 (2.9Ghz), Core i3 650 (3.3Ghz) and Pentium G6950 (2.8Ghz). Seeing this, I don't even bother testing any of the Intel quad-core CPUs or the Sandy Bridge dual-core systems. I think if your motherboard has Socket 1366/1156/1155, any CPU (that doesn't have 'Celeron' in its name) that fits into it should have no problems with Hi10p videos. I think the same can also be said for Arrandale or Sandy Bridge laptops as long as the CPU clock is at least 2Ghz.

Recommendation, in order of preference:-

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1. Any of those Nehalem/Sandy Bridge/Ivy Bridge quad-core (or higher) CPUs.
2. Any dual-core CPUs from the Nehalem/Sandy Bridge/ Ivy Bridge series.
3. Core 2 Quad CPUs for Socket 775.
4. Some of the last-generation processors for Socket 775 like Core 2 Duo CPUs with minimum clock speed of 2.5Ghz.

Not recommended:-

1. Any CPUs from generations older than Core 2 series.
2. Intel Atom.
3. Celerons.

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