

Intel® Media Software Development Kit Samples Guide

[Overview](#)

[Software Requirements](#)

[Build Instructions](#)

[Run Instructions](#)

[Legal Information](#)

[Attributions](#)

[FFmpeg*](#)

[msinttypes](#)

Overview

The **Intel® Media Software Development Kit (Intel® Media SDK) Samples** demonstrate how to incorporate the Intel Media SDK into various applications.

The following sample packages are available at [Intel Media Solutions Portal](#):

- **Video Decoding Sample**

Console application which performs decoding of elementary compressed video stream to raw frames. Includes the following features:

- stereoscopic 3D (S3D) rendering of elementary MVC (Multi-View Video Coding) streams
- decoding of VP8 video via VP8 Decoder Plug-in Sample using FFmpeg*
- decoding of HEVC (High Efficiency Video Coding) video via Intel Media SDK HEVC Software Decode Plug-in from Intel Media SDK 2014 HEVC Software Pack

- **Video Encoding Sample**

Console application which performs encoding of raw video frames into elementary compressed stream. Includes the following features:

- video resizing
- video rotation via User Plug-in Sample
- video rotation via User Plug-in Sample using Intel OpenCL™
- encoding HEVC video via Intel Media SDK HEVC Software Encode Plug-in from Intel Media SDK 2014 HEVC Software Pack

- **Video Processing Sample**

Console application which performs various video processing algorithms on raw frames.

- **Video Transcoding Sample**

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Console application which performs transcoding of elementary video stream from one compressed format to another. Includes the following features:

- multiple video streams transcoding
- video resizing, de-interlacing
- video rotation via User Plug-in Sample
- video rotation via User Plug-in Sample using Intel OpenCL

- **Video Conferencing Sample**

Console application which performs encoding of raw video frames into elementary compressed stream. Shows various encoding features specific to video conferencing use case.

- **Full Transcoding Sample (new!)**

Console application which performs full scale transcoding of media files: allows changing container format and video/audio compression formats. Includes the following features:

- shows usage of the new Splitters and Muxers Sample using FFmpeg
- shows usage of the new Intel Media SDK Audio Library

- **Transcoding Sample using Microsoft* DirectShow***

Application Sample with GUI (Graphical User Interface) for playback and transcoding using Microsoft DirectShow. Includes the following features:

- Sample Microsoft DirectShow Plug-Ins (Filters) for video decoding and encoding using Intel Media SDK
- stereoscopic 3D (S3D) rendering of container MVC (Multi-View Video Coding) streams using custom EVR Presenter Sample

- **Transcoding Sample using Microsoft Media Foundation***

Application Sample with Windows* Presentation Foundation* (WPF*) GUI for transcoding using Microsoft Media Foundation Plug-ins

- **Transcoding Sample using Microsoft Windows 8 User Interface**

A Microsoft Windows 8 UI sample application for transcoding from various media formats to MP4 format with control over encoding parameters

Each sample package:

- has own installer
- includes a readme file for each sub-sample
- includes source and header files for each sub-sample

Software Requirements

Hardware

- IA-32 or Intel® 64 architecture processors with support for Intel® Streaming SIMD Extensions 2 instructions.

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- For S3D display functionality using `igfx_s3dcontrol` library (Video Decoding Sample, Transcoding Sample using Microsoft* DirectShow*):
 1. 2nd Generation Intel® Core™ Processors with Intel® HD Graphics 3000/2000 or later
 2. HDMI* 1.4, eDP* 1.1 or similar based monitor/TV as primary display
 3. Active shutter glasses

Software

- Microsoft Windows* 7, Microsoft Windows 8 or Microsoft Windows 8.1.
- For Microsoft DirectX* 11 functionality - Microsoft Windows 8 or Microsoft Windows 8.1.
- Microsoft Visual C++* 2005 with Service Pack 1, or later version of Microsoft Visual C++ (if exact version is not specified in particular sample readme)
- For samples - Microsoft Windows SDK for Windows 7 or Microsoft Windows SDK for Windows 8.
- For Microsoft DirectX 11 enabled samples - Microsoft Windows SDK for Windows 8.
- Intel Media SDK 2014 for Clients.
- Intel Media SDK Audio Library to run Full Transcoder Sample with audio transcoding. If Intel Media SDK Audio Library is not available the sample can run video transcoding only.
- For Intel® OpenCL™ User Plug-in sample - Intel® SDK for OpenCL™ Applications 2013.
- FFmpeg*. See below section for details.

Build Instructions

1. INTELMEDIASDK_WINSKD_PATH environmental variable

- Intel® Media SDK samples depend on Microsoft* Windows* SDK include and library files.
- Intel Media SDK for Clients installer will try to set `INTELMEDIASDK_WINSKD_PATH` environment variable used in sample project files to locate those include and library files.
- You may want to set (possibly to "") `INTELMEDIASDK_WINSKD_PATH` variable manually (possibly with the help of `<install-folder>\samples\set_INTELMEDIASDK_WINSKD_PATH.bat`) in the following cases:
 - i. The variable was not set during installation due to no Microsoft Windows SDK installed or installed to a non-default location.
 - ii. Your Microsoft Visual Studio* environment is already set up with Microsoft Windows SDK include and library directories (e.g. via

registration script for Microsoft Visual C++* 2005). Set the variable to "" or delete it in this case.

- iii. You wish to use a different Microsoft Windows SDK version than was auto-detected and set at installation.

2. INTELMEDIASDKROOT environmental variable

- Intel® Media SDK samples depend on Intel Media SDK external headers and Intel Media SDK dispatcher library which are searched in folders `INTELMEDIASDKROOT\include` and `INTELMEDIASDKROOT \lib\<arch>` respectively.
- `INTELMEDIASDKROOT` is set by Intel Media SDK installer and points to the Intel Media SDK installation folder.

3. Microsoft DirectShow* BaseClasses for Transcoding Sample using Microsoft DirectShow

- This sample requires Microsoft DirectShow BaseClasses (part of Microsoft Windows SDK Samples, version 7.1 or earlier) include and pre-built library files and locate them using `INTELMEDIASDK_DSHOWBASECLASSES_PATH` environment variable
- Use the batch file `<install-folder>\sample_dshow_plugins\set_INTELMEDIASDK_DSHOWBASECLASSES_PATH.bat` to set the variable.
- You also need to build `BaseClasses` manually in advance.
- Note: you should build `BaseClasses` and Intel Media SDK sample code with the same version of Microsoft Windows SDK.

4. Building with Microsoft Visual C++*

Use provided with each sample solution file `.sln` with Microsoft Visual C++ version 2005 or later to build the respective sample. Locate the resulting executable file in the folder `<install-folder>_build\<PlatformName>\<ConfigurationName>`.

5. Building samples with FFmpeg* dependency: Full Transcoding Sample (Splitters and Muxers Sample), Video Decoding Sample (VP8 Decoder Plug-in Sample)

Create an environment variable `INTELMEDIASDK_FFMPEG_ROOT` and point it to the existing folder in the install folder of sample package "`<install-folder>/thirdparty/ffmpeg`"

6. Choosing Microsoft Direct3D* version to build with

If version of the installed Microsoft Windows* SDK is 8.0 or above, then Microsoft Direct3D* 11.1 surfaces support will be enabled in sample by default.

You can enable or disable it manually using `MFV_D3D11_SUPPORT` macros defined in `<install-folder>\sample_common\sample_defs.h`

Run Instructions

1. Running samples with FFmpeg* dependency (Full Transcoding Sample, Video Decoding Sample when it invokes VP8 Decoder Plug-in Sample)

- Add "`<install-folder>/thirdparty/ffmpeg/bin/win32`" or "`<install-folder>/thirdparty/ffmpeg/bin/x64`" to `PATH` variable

2. Running Transcoding Sample using Microsoft* DirectShow*

- Run "`<install-folder>_bin<arch>\register_dshow_plugins.bat`" to register Sample Microsoft DirectShow Plug-Ins

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Notice revision #20110804

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FFmpeg*

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Page 9 of 18

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Ty Coon, President of Vice

That's all there is to it!

msinttypes

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