Overview

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

Intel Media SDK Samples can be used with (or are part of) the various Intel Media SDK products: Intel Media SDK for Clients, Intel Media SDK for Windows Servers, Intel Media SDK hardware accelerated library in the Intel Iris™ and HD graphics driver for Windows* 7/8/8.1. Not all of the samples listed below might be applicable and supported for a particular Intel Media SDK product. Make sure to check the respective release notes document for potential limitations.

Full list of available samples:

- **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
  - decoding with video post processing (color conversion) of raw video sequences

- **Video Encoding Sample**
  
  Console application which performs encoding of raw video frames into elementary compressed stream. Includes the following features:
  
  - video resizing

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- 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**
  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.
- 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 or Intel Media SDK 2014 for Windows Servers.
- 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.

Installation

1. Each sample has its own installer. Depending on the product samples could be packed together with Intel® Media SDK or be downloaded via Intel® Media Solution Portal (https://software.intel.com/en-us/media-solutions-portal).
2. Samples could be installed together to one folder or placed to separate folders.
3. If the samples are installed to a custom folder, please note that installation of older version of any sample will overwrite sample_common folder and newer version of the samples installed previously to the same folder may not be functional after that.

**Build Instructions**

1. **INTELMEDIASDK_WINSDK_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_WINSDK_PATH environment variable used in sample project files to locate those include and library files.

   - You may want to set (possibly to "") INTELMEDIASDK_WINSDK_PATH variable manually (possibly with the help of <install-folder>\samples\set_INTELMEDIASDK_WINSDK_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

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• 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 MFX_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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FFmpeg*

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Ty Coon, President of Vice

That's all there is to it!

msinttypes

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