SAMPLE

Simple Converter

1 Introduction

The purpose of this sample is to demonstrate how to build and execute a simple video converter using the AMD Media Framework (AMF). The sample showcases the conversion of BGRA video content to NV12 video content.

2 Using the sample

2.1 Location

$<*installDirectory*>\samples\amf\simpleConverter\

2.2 Contents

Package Contents

Folder:
$<*installDirectory*>\samples\amf\simpleConverter\src\

File name	Description
SimpleConverter.cpp	Source file for Simple Converter application

Folder:
$<*installDirectory*>\samples\amf\simpleConverter\build\windows\

File name	Description
SimpleConverterVs10.sln	Microsoft Visual Studio 10 solution file
SimpleConverterVs10.vcxproj	Microsoft Visual Studio 10 project file
SimpleConverterVs10.vcxproj.filters	Microsoft Visual Studio 10 project filter file
SimpleConverterVs12.sln	Microsoft Visual Studio 12 project solution file
SimpleConverterVs12.vcxproj	Microsoft Visual Studio 12 project file
SimpleConverterVs12.vcxproj.filters	Microsoft Visual Studio 12 project filter file

Folder:
$<*installDirectory*>\samples\amf\simpleConverter\docs\

File name	Description
MediaSDK_AMF_simpleConverter.pdf	Sample documentation

2.3 Compile

1. Ensure that the following tools and SDKs are present:
   - Microsoft Visual Studio 2010 or 2012
     If Windows Software Development Kit (SDK) is not installed, install it from http://msdn.microsoft.com/en-us/library/windows/desktop/hh852363.aspx.
2. Open one of the following solution files:
   - `$<installDirectory>\samples\amf\simpleConverter\build\windows\SimpleConverterVs12.sln`
   - `$<installDirectory>\samples\amf\simpleConverter\build\windows\SimpleConverterVs10.sln`
3. Build the sample:
   - Open the `SimpleConverterVs10.sln` solution file with Microsoft Visual Studio 2010 Professional Edition or the `SimpleConverterVs12.sln` solution file with Microsoft Visual Studio 2012 Professional Edition.
   - To build all the solutions, select `Build > Build Solution`.
   - The executable `simpleConverter.exe` is created in the following folders for 32-bit builds and 64-bit builds:
     `$<installDirectory>\samples\amf\simpleConverter\bin\x86\`
     `$<installDirectory>\samples\amf\simpleConverter\bin\x86_64\`
   - Depending on the build (i.e. 32-bit or 64-bit), the custom build step copies the appropriate `.dlls` file from the `$<installDirectory>\dll\amf\` folder into the relevant `\bin\` directory.

3 How to Run

The sample can be executed on an AMD platform that includes the VCE and UVD hardware blocks.

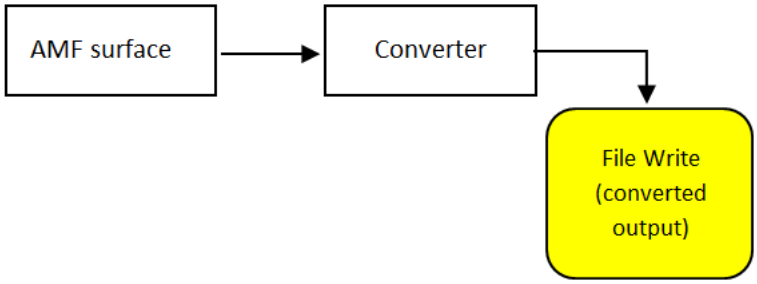
On the command prompt, change to the directory that contains the executable, and execute the following command:
`simpleConverter.exe <BufferMemoryType>`

BufferMemoryType: Specify the buffer memory type, either `DX9` or `DX11`

The output file, `output_<width>x<height>.nv12`, is generated after conversion completes.

4 Implementation Details

The sample implements the following pipeline:



The Data in the pipeline flows through the following processing elements:

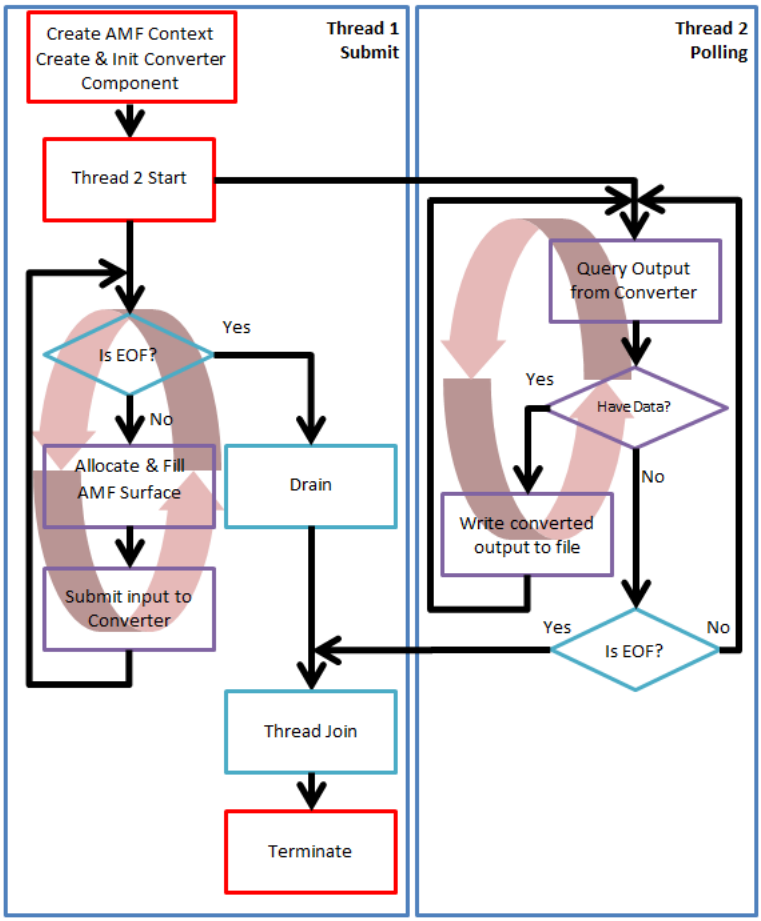
- Converter: Converts one frame worth of data from one AMF surface format to other AMF surface format and also scales the same. This sample showcases the conversion from `AMF_SURFACE_BGRA` to `AMF_SURFACE_NV12`.

Input resolution: 1920x1080
Output resolution: 1280x720

The sample prints the following performance parameters:

- Latency in ms
- Average convert time in ms / frame
- Average time to convert GPU memory to HOST in ms/frame
- Average time in ms to write one converted frame into file
- Average overall time in ms/frame

The sample is constructed using native AMF APIs executing over two threads, as shown in the following figure.



5 Supported formats

The following file formats are supported:

- Supported surface formats: NV12, YUV420P, BGRA, ARGB, RGBA, YV12 frames

6 Known Limitations

The sample is currently supported on the following platforms:

- Windows 7 (DirectX 9)
- Windows 8.1 (DirectX 9 and DirectX 11.1)

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