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1.1

MP4 Parser WinCE
Release Notes

ABSTRACT:

Release Notes for MP4 Parser Direct Show Filter

KEYWORDS:

Directshow, Parser, MP4, H264, MPEG4, AAC

Revision History

VERSION	DATE	AUTHOR	CHANGE DESCRIPTION
1.0	23-Oct-2007	Kusuma	Initial Version
1.1	17-Dec-2007	Lauren Post	Updates for directory changes
1.2	10-Jan-2008	Lauren Post	Add section for MX27 to add _TGTARM=arm9 in Platform Settings
1.3	21-Jan-2008	Lauren Post	Cleanup based on CPO comments

Table of Contents

1 Introduction

1.1 Purpose

The purpose of this document is to provide information on the package contents, instructions on building library and direct show filter and test execution on a platform with WinCE OS.

1.2 Scope

The scope is restricted to information on the package contents and instructions for building and testing. This document does not provide any details about the architecture or APIs in the Decoder.

1.3 Audience Description

The reader is expected to have basic understanding of MP4 File Format and MS DirectShow Framework.

1.4 References

1.4.1 Freescale Multimedia References

- MP4 Parser Direct Show API Document - mp4_parser_dshow_api.pdf
- MP4 Parser Direct Show Data Sheet - mp4_parser_datasheet.pdf
- MP4 Parser Direct Show Release Notes - mp4_parser_release_notes.pdf

1.5 Definitions, Acronyms, and Abbreviations

TERM\ACRONYM	DEFINITION
API	Application Programming Interface
ISO	International Standards Organization
ITU	International Telecommunication Union
MPEG	Moving Pictures Expert Group
DSHOW	Direct Show

1.6 Document Location

docs\mp4_parser

2 Release History

RELEASE NUMBER	DELIVERABLES	FEATURES
0.1	• Documentation • Application Interface header file • MP4 Parser Core Libary • MP4 Parser DShow Filter sources	• H264 video + AAC demux • MPEG4 video + AAC parser demux
1.0	• Documentation • Application Interface header file • MP4 Parser Core Libary • MP4 Parser DShow Filter sources • Registry Files	• Directory restructure • Bug fixes

Table 1. Details of the release

2.1 Assumptions and Known Issues

- This package only contains the Freescale MP4 Parser – for use case support it also requires separate video and audio codecs depending on the target i.MX platform listed below:
    - o For MX32, MX32 VPU Decoder and AAC/AACPlus audio codecs
    - o For MX31, H.264, MPEG4 video codecs and AAC/AACPlus and MP3 audio codecs.
    - o For MX27, MX27 VPU Decoder and unoptimized AAC and MP3 audio codecs. Note that MP4Parser binary from MX32 and MX32 works on MX27 without recompilation.

2.2 Support

If you have any questions or problems concerning this release, please contact a Freescale representative. Please include release version, board version, BSP version and any other relevant information.

3 List of Deliverables

3.1 Documentation

Base directory: \fsl_mm_wince\Multimedia\

Subdirectory	Files
docs\mp4_parser	mp4_parser_release_notes.doc

3.2 Public Headers

Base directory: \fsl_mm_wince\Multimedia\

Subdirectory	File
API_include	FSLGuids.h

3.3 Binaries

Base directory: \fsl_mm_wince\Multimedia

Subdirectory	File
bin500\libarm9\ARMV4I\retail	WinCE 5.0 Parser Filter – fsl_mp4_parser_dshow.dll
bin500\libarm11\ARMV4I\retail	WinCE 5.0 Parser Filter – fsl_mp4_parser_dshow.dll
bin600\libarm11\ARMV4I\retail	WinCE 6.0 Parser Filter – fsl_mp4_parser_dshow.dll

3.4 MP4 Parser DShow Filter Source

Base directory: \fsl_mm_wince\Multimedia\components\parser\

Subdirectory	Files
mp4_parser	Parser DShow *dirs* file
mp4_parser\dshow_filter	Parser Filter Filter source and headers

3.5 Core Library

Base directory: \fsl_mm_wince\Multimedia\core_libs\parser

Subdirectory	Files
include	Core library headers
lib\ARMV4I\retail	lib_mp4_parser_wince.lib (will work on both WinCE5.0 and 6.0)

3.6 Registry

Base directory: \fsl_mm_wince\Multimedia\misc

Subdirectory	Files
misc	fslmm_mx31.reg for MX31 platforms fslmm_mx32.reg for MX32 platforms fslmm_mx27.reg for MX27 platforms

4 Software Setup & Tools used

4.1 WINCE 5.0

- Build machine should be running Microsoft WinXP
- Build machine should have following installed
    - Microsoft Windows CE 5.0 with Platform Builder
    - WinCE BSP RTM14 for MX31 and MX32 ADS boards
    - WinCE PDK 1.2 for 3DS boards
    - WinCE BSP RTM13 or higher for MX27
        - Add the environment variable _TGTARM and set it to *arm9* in Platform Settings.

4.2 WINCE 6.0

- Build machine should be running Microsoft WinXP
- Build machine should have following installed
    - Microsoft Windows CE 6.0 with Visual Studio 2005
    - WinCE BSP RTM14 or higher for MX31 and MX32 ADS boards
    - WinCE BSP RTM13 or higher for MX27
        - Add the environment variable _TGTARM and set it to *arm9* in the Project Properties->Configuration Properties->Environment tab.
    - WinCE PDK 1.2 for 3DS boards

5 Build Procedure

The MP4 Parser can be built on all i.MX platforms either by copying the Multimedia directory into the platform section of the BSP under Platform\<chip>\src\ where <chip> is 3DS for MX31 3DS, MX31 for MX31 ADS and MX32ADS for MX32 ADS boards.

In addition, the MP4 Parser can be built anywhere the package is unzipped to. The final binaries will be copied into both the BSP release directory and the bin directories mentioned below during the build process.

The MP4 Parser dirs file will generate a Platform Builder project with more detail below.

Go to Platform->Settings. Click on Environment Tab. Add FSL_MMF_PARSER_MP4 with value of 1 (there are no spaces in the variable).

5.1 WINCE 5.0

Steps to insert projects into PB workspace:

- Right click on **projects** in the WinCE BSP Workspace, select the option '**Insert Existing Project**….'
- Select the option 'Sources/Dirs Files (sources; dirs)' in dropdown menu for "Files of Type".
- Open the "dirs" file in the folder ...\Multimedia\components\parser\mp4_ (PB will automatically create the mp4_filter.pbpxml).

Steps to build the filter:

1. Right click on mp4_filter present in the projects in PB workspace
2. Select "Clean before building"
3. Select "mp4_filter" and "Build the Current Project". This builds and places the filter (fsl_mp4_filter_dmo.dll) in the BSP release directory and the ...\Multimedia\bin500\libarm11\ARMV4I\retail\ directory. This also builds the mp4_filter_testbench which is placed into the BSP release directory and the ...\Multimedia\bin500\exearm11\ARMV4I\retail directory.

5.2 WINCE 6.0

Steps to insert projects into PB workspace:

- Right click on **Subprojects** in the WinCE BSP Workspace, select the option '**Add existing subprojects ….'**
- Select the option 'Sources/Dirs Files (sources; dirs)' in dropdown menu for "Files of Type".
- Open the "dirs" file in the folder ...\Multimedia\components\parser\mp4_filter (PB will automatically create the mp4_filter.pbpxml).

Steps to build the filter:

    a. Right click on mp4_filter present in the projects in PB workspace and select rebuild. This builds the filter (fsl_mp4_filter_dmo.dll) which is placed into the BSP release directory and the ...\Multimedia\bin600\libarm11\ARMV4I\retail directory. This also builds the MP4 Parser Testbench application which is placed into the BSP release directory and the ...\Multimedia\bin600\exearm11\ARMV4I\retail directory.

5.3 MX27 on WinCE 5.0

Use same steps as WinCE 5.0 but add environment variable _TGTARM with value of arm9 for builds to work. Core libraries are the same for both ARM9 and ARM11

6 Integration with Windows Media Player

Following are the steps to integrate with the Windows Media Player (WMP):

6.1 MX31 Platforms

- For WinCE 5.0, copy the binaries provided in package from the bin500\libarm11\ARMV4I\retail to the BSP release directory.

- For WinCE 6.0, copy the binaries provided in package from the bin600\libarm11\ARMV4I\retail to the BSP release directory.

- Select Build OS->Sysgen to build the BSP after all the following steps are complete

- For MP4 content with Mp3 audio, Add "MPEG-1 Parser/Splitter" to the OS design from the catalog if not present (Need separate MP3 audio package and FSL_MMF_CODEC_MP3 environment variable defined in platform settings)

- For MP4 content with AAC audio, need separate AAC audio package and FSL_MMF_CODEC_AAC environment variable defined or AAC Plus package with FSL_MMF_CODEC_AACPLUS defined (not both – only one)

- For MP4 content with H.264 video, need H.264 SW video package and FSL_MMF_CODEC_H264 environment variable defined

- For MP4 content with MPEG video, need MPEG SW video package and FSL_MMF_CODEC_MPEG4 environment variable defined

- Locate platform.reg in the list of parameter files in the BSP

- For MX31, add the path of fslmm_mx31.reg as below in the platform.reg.

6.2 MX32 Platforms

- For WinCE 5.0, copy the binaries provided in package from the bin500\libarm11\ARMV4I\retail to the BSP release directory.

- For WinCE 6.0, copy the binaries provided in package from the bin600\libarm11\ARMV4I\retail to the BSP release directory.

- Select Build OS->Sysgen to build the BSP after all the following steps are complete

- For MP4 video content on MX32 platforms need MX32 VPU Decoder package – no environment variables needed for video

- For MP4 content with Mp3 audio, Add "MPEG-1 Parser/Splitter" to the OS design from the catalog if not present (Need separate MP3 audio package and FSL_MMF_CODEC_MP3 environment variable defined in platform settings)

- For MP4 content with AAC audio, need separate AAC audio package and FSL_MMF_CODEC_AAC environment variable defined or AAC Plus package with FSL_MMF_CODEC_AACPLUS defined (not both – only one)

- Locate platform.reg in the list of parameter files in the BSP

- For MX32, add the path of fslmm_mx32.reg as below in the platform.reg.

  #include " <path>\Multimedia\misc\fslmm_mx32.reg"

- Select Build OS->Sysgen to build the BSP

6.3 MX27 Platforms

- For WinCE 5.0, copy the binaries provided in package from the bin500\libarm9\ARMV4I\retail to the BSP release directory.

- For WinCE 6.0, copy the binaries provided in package from the bin600\libarm9\ARMV4I\retail to the BSP release directory.

- Select Build OS->Sysgen to build the BSP after all the following steps are complete

- For MP4 video content need MX27 VPU Decoder package – no environment variables needed for video

- For MP4 content with Mp3 audio, Add "MPEG-1 Parser/Splitter" to the OS design from the catalog if not present (Need separate MP3 MX27 audio package and FSL_MMF_CODEC_MP3 environment variable defined in platform settings)

- For MP4 content with AAC audio, need separate MX27 AAC audio package and FSL_MMF_CODEC_AAC environment variable defined.

- For MX27, add the path of fslmm_mx27.reg as below in the platform.reg.

  #include " <path>\Multimedia\misc\fslmm_mx27.reg"

- Select Build OS->Sysgen to build the BSP

The image built will have all the necessary registry settings for the MP4 Parser Filter to work with the Windows Media Player.