RENDERHEADS

AVPro Video

for Android, iOS, tvOS, macOS, WebGL
Windows Desktop, Windows Phone and UWP

Unity plugin for fast and flexible video playback

RELEASE NOTES

Version 1.11.3

Released 15th June 2020

Release Notes

- **Version 2.0.0 BETA 2 (UNRELEASED, IN-PROGRESS)**
    - General
        - TODO: Add new frame-accurate methods for seeking by frames: GetDurationFrames(), GetMaxFrameNumber(), GetCurrentTimeFrames(), SeekToFrame(), SeekToFrameRelative()
    - iOS / tvOS
        - Entirely new plugin written from scratch, unified codebase, performance and stability improvements
    - macOS
        - Entirely new plugin written from scratch, unified codebase, performance and stability improvements
    - Windows
        - TODO: Hap codec now supported when using Media Foundation and WinRT API's

- **Version 2.0.0 BETA 1 - 15 June 2020**
    - General
        - Huge code cleanup and refactoring
        - New MediaPlayerUI demo
        - Added assembly definition (asmdef) files to improve compile times and modularity
        - MediaPlayer component can now be used to play videos in the editor without having to enter play mode
        - Dropped support for all Unity versions before before 2017.1.0
        - Support for Unity extensions including Playables/Timeline and VFX Graph
        - Restructured shaders so they aren't all resources, allowing unused shaders to be stripped out reducing build size and time
        - Inspector editor uses better caching to generate less garbage
        - Custom HTTP fields changed from JSON to simpler string blob
    - Android
        - Upgraded from ExoPlayer 2.8.4 to 2.11.5, which raises a minimum API level to 18
        - Upgraded from Facebook Audio 360 1.6.0 to 1.7.12
        - Added support for AES HLS encryption
        - Added support for multiple video tracks
        - ExoPlayer built with custom package name to hopefully solve issues of conflicts with projects that already include ExoPlayer files
        - Better support for ARM64 platform - plugin no longer causes conflicts in different Unity versions
    - iOS / tvOS / macOS
        - Not supported in this beta release
    - Windows
        - New Windows RT plugin, uses the latest Microsoft video APIs and

offers a lot of improvements, especially for streaming media
        - For Windows RT added an option to select the highest bitrate when an adaptive stream starts
        - Stereo videos containing stereo metadata now display correctly when using Media Foundation API
        - Added support for AES HLS encryption (WinRT API only)
        - Added support for custom HTTP headers (WinRT API only)
        - Added support for Direct3D 12
        - Better support for ARM64 platform - plugin no longer causes conflicts in different Unity versions
        - Dropped support for Windows Phone and Windows Store 8.1, now we only support the UWP (10) Windows platforms
        - Upgraded FXC from 9.29.952.3111 to 10.1
        - Upgraded from Facebook Audio 360 1.6.0 to 1.7.12
        - Upgraded to 2020-04-19 snapshot of Hap (DirectShow)
        - Upgraded to 2020-04-19 snapshot of GDCL-MPEG-4 (DirectShow)

- **Version 1.11.3 - 15 June 2020**
    - Android
        - This plugin now still works even when the Facebook Audio360 library files have been deleted
    - General
        - Fixed PlaylistMediaPlayer where playing the same item again on the same mediaplayer would cause it to not play
        - Fixed glitch in PlaylistMediaPlayer where sometimes an old first frame would display during the start of a transition
        - PlaylistMediaPlayer playlist items can now collapse in Unity inspector
        - Added support for forcing eye rendering on uGUI shaders
        - Updated demos to not have warnings in Unity 2019 and 2020

- **Version 1.11.2 - 28 May 2020**
    - macOS
        - ZubeiFixed flickering rendering issue when using Metal with certain GPUs
    - iOS
        - Fixed crash when using multithreaded rendering with the OpenGLES renderer

- **Version 1.11.1 - 27 May 2020**
    - Android
        - Fixed issue of texture padding when using OES textures causing edge artifacts or image jumps when adaptive media switch resolutions with non-multiple of 16 resolutions on some devices
        - Fixed linear colour space conversion function in OES shaders
        - Added error message about cleartext support
    - iOS / tvOS
        - Plugins built with Xcode 11.3.1 in order to support Unity Cloud Build
    - Windows
        - Fixed D3D11 watermark blending in trial version

        - Fixed D3D9 warnings in skybox shaders
    - General
        - Added stereo support to skybox shaders

- **Version 1.11.0 - 11 May 2020**
    - iOS / macOS / tvOS
        - Added support for routing movie audio through to Unity via the Audio Output component
        - Fixed issue with empty AES Key-Server URL override being applied
        - Fixed issue with empty AES Key-Server Auth Token being applied
    - iOS
        - Fixed issue with multi-threaded rendering and the OpenGLES renderer introduced with Unity 2019.2
        - Fixed crash when running on iOS 9
    - macOS
        - Fixed trial version rendering issue when using the Metal renderer
    - Windows
        - Fixed a bug where a live MPEGTS stream would not play or would only show the first frame
    - General
        - Improvements to ApplyToMaterial and ApplyToMesh components
        - Fixed an issue with HTTP header field escaping removing characters

- **Version 1.10.3 - 14 April 2020**
    - Android / iOS / macOS / tvOS
        - Replaced HTTP header entry text box with key-value list
    - iOS / macOS / tvOS
        - No longer possible for a status update to mask other updates, e.g. seeking status updates being masked by buffering status updates
        - Confirmed support for HEVC+Alpha codec (macOS 10.15, iOS 13.0, tvOS 13.0)
    - iOS / tvOS
        - Fixed issue with duplicate GUIDs when linking the trial version, and when linking alongside AVPro Movie Capture
    - Android
        - Fixed issue where having Android selected as build platform would cause File.Exist to not be called in the editor
    - Windows
        - Fixed issue where building with IL2CPP could cause videos to be flipped upside down on Windows

- **Version 1.10.2 - 20 March 2020**
    - Android
        - Fixed issue where HTTP header fields sometimes wouldn't be applied when using ExoPlayer
        - Changed behaviour of setting a very low/negative playback rate to internally pause playback. Playback is resumed when rate is set to a value >= 0.01

    - Windows
        - Fixed posterized/crushed colours when using Linear colour-space with DirectShow in Unity 2019.2 and above due incorrect usage of internal sRGB textures
        - Fixed DirectShow issue that caused some videos to have pink tint due to incorrect P010 conversion shader
    - macOS / iOS / tvOS
        - Fixed issue where some HLS streams wouldn't report being finished at the end of the stream when playback reaches end of an HLS stream
    - iOS
        - Added option to auto resume playback should the audio session route change, for instance when unplugging headphones
        - Fixed a texture creation error when using versions below Unity 5.6 with the YCbCr option
    - UWP
        - Added ARM 64-bit support (for Hololens 2)
    - Windows / UWP / Windows Phone
        - Windows plugins now compiled with VS2017 (was VS2015)
    - General
        - Added new SkyBox shaders and demo scene
        - Added new AudioChannelMixer component to allow audio volume to be controlled per channel when playing back via Unity (currently Windows only)
        - Added support for stereo rendering to CubemapCube component
        - Audio mute is now toggled via the global Mute Audio editor option
        - Fixed deprecation warnings for Unity 2019.3
        - Fixed many typos and spelling mistakes

- **Version 1.10.1 - 2 October 2019**
    - Android
        - ExoPlayer API path now uses a bandwidth meter to enable adaptive streaming
    - iOS
        - Add support for auto-resuming playback after an audio route change has occurred (i.e. by removing headphones)
    - macOS / iOS / tvOS
        - Fixed crash caused by trying to change to non-existent audio track
        - Fixed crash caused by race condition when disposing of a player whilst an open is still pending completion
    - Windows
        - Added support for Hololens single-pass-instanced stereo mode to InsideSphere shaders
    - General
        - Added option to PlaylistMediaPlayer component to auto close videos that are not visible (freeing up memory)
        - Fixed issue when calling RemoveAllListeners() where it wouldn't correctly remote listeners

- **Version 1.10.0 - 8 July 2019**
  - macOS / iOS / tvOS
    - Improved memory handling so all texture memory is freed when the media player is destroyed
  - iOS
    - Fixed issue where app regaining focus doesn’t resume playback
  - Android
    - Improved loading with file offsets - now works from Android App Bundles (AAB), file:// URL scheme, OBB and ZIP files
    - Added custom HTTP header support to ExoPlayer path
    - Fixed a couple of issues that could cause blank frames or playback to not appear
    - Calling Play() ExoPlayer can now resume playback once a dropped network connection has been restored
    - Fixed the transparent lit shader being upside-down on Android
    - Fixed issue where FirstFrameReady event could trigger without a valid texture or zero width/height values
    - Fixed audio going out of sync when looping local videos using the ExoPlayer API path
    - Buffering event now fires on first video load
    - Improved thread safety and various internal logic for improved stability
    - Added detection and warning message for Vulkan usage (not supported)
  - General
    - Support window updated to post issues to GitHub page

- **Version 1.9.17 - 14 June 2019**
  - Android
    - Fixed regression introduced in 1.9.16 that caused videos to freeze on the first frame and not report any duration
    - Fixed some issues related to using ExoPlayer which would cause videos to randomly fail to load
    - Fixed bug where uGUI component wouldn’t display OES or stereo videos correctly
  - macOS / iOS / tvOS
    - Fixed crash when playing audio only assets
  - iOS
    - Fixed issue with player restarting after the application enters foreground
  - WebGL
    - Fixed regression introduced in 1.9.16 for mute autoplaying videos that contain audio
    - Removed erroneous mipmap support for version below Unity 5.6
  - Windows
    - Added support for paths longer than 240 characters
  - General
    - Fixed bug where uGUI component wouldn’t display stereo videos

        correctly
    - Fixed FrameExtract demo in async mode where it would not capture the first frame
    - Improved MediaPlayer FrameExtract methods so that a time threshold can be specified to make approximate extraction faster

- **Version 1.9.16 - 4 June 2019**
  - UWP / Hololens
    - Fixed crash bug which was a regression introduced in 1.9.12
    - Fixed compiler warning in 2019 for deprecated HLSStream WWW class usage
  - Android
    - Fixed resource leak when using MediaPlayer API where FileInputStream was not closed
    - Fixed bug where subsequent video loads would always play automatically
    - Various logic changes to reduce bugs
  - WebGL
    - Improved Safari support - videos containing audio that don't have permission to autoplay will now log an error and attempt to play with audio muted
  - General
    - DisplayUGUI component now uses lazy evaluation for shader loading which improves loader performance in most cases

- **Version 1.9.14 - 9 May 2019**
  - Known Issues
    - A regression introduced in 1.9.12 causes UWP builds (Hololens and desktop) to crash - Fixed in 1.9.16
  - Windows
    - Fixed crash bug introduced with Unity 2019
    - Added support for auto-generating mipmaps for Hap videos and a few other formats
  - macOS / iOS / tvOS
    - Fixed crash bug introduced with Unity 2019
    - Fixed compile error when building with IL2CPP
    - Fixed status state on media closing
    - Improved accuracy of seeking
    - Fixed incorrect colours when using the uGUI Mask component
  - General
    - Fixed parsing bug in HLSStream
    - Added ability to add item to PlaylistMediaPlayer

- **Version 1.9.12 - 28 January 2019**
  - Known Issues
    - A regression introduced in 1.9.12 causes UWP builds (Hololens and desktop) to crash - Fixed in 1.9.16
  - Android
    - Fixed typos in OES shader introduced in 1.9.10

    - WebGL
        - Fixed issue where compile errors would happen when building with Development Mode
    - Windows
        - Fixed crash bug when running in 32-bit
    - General
        - Fixed script warnings and errors showing in Unity 2018.3.x

- **Version 1.9.10 - 10 January 2019**
    - Known Issues
        - Android OES shader is broken, fixed in 1.9.12
    - Android
        - Fixed a crash bug with ExoPlayer that would happen randomly when loading or closing a video
        - Added HIGH_QUALITY option to OES shader which fixes the issue of equirectangular videos having distortion at the poles
        - Added texture transform to the OES shader
    - General
        - Fixed bug where UVRect didn't work in DisplayGUI when in ScaleAndCrop mode

- **Version 1.9.8 - 13 December 2018**
    - Windows
        - Fixed a rare crash bug that could happen when closing multiple videos at once

- **Version 1.9.7 - 11 December 2018**
    - macOS / iOS / tvOS
        - Fixed rare memory leak when rendering with Metal where a texture was not freed after a seek operation on multi-resolution HLS media
    - Android
        - Added support for automatic rotation of portrait videos when using ExoPlayer
        - Added support for linear color-space to OES rendering path
    - Windows
        - Fixed the device name for the Oculus Rift audio device
        - Fixed Facebook Audio 360 support for playing audio to a specific named device
    - General
        - Fixed a shader issue where stereo top-bottom videos wouldn’t display the correct eye on Windows and Android
        - Other minor improvements

- **Version 1.9.6 - 16 November 2018**
    - macOS
        - Fixed a Metal rendering issue where the watermark didn’t display in the editor
        - Fixed issue with Hap and Metal rendering in the editor
        - Upgraded to latest Hap version (1.6.9)

- iOS / tvOS
    - Fixed a crash in iOS 9 and lower that could happen when closing a player
    - Fixed packed transparent shaders to expand range correctly when using YpCbCr mode
- Android
    - Fixed bug where using the OES shader would cause video to display pink/black, this was a regression introduced in 1.9.5
- General
    - Shaders refactored

- **Version 1.9.5 - 7 November 2018**
  - Known Issues
    - A regression in our Android OES shader causes videos to appear black/pink when using OES mode - Fixed in 1.9.6
    - Custom shaders may not compile due to removal of Convert420YpCbCr8ToRGB - Fixed in 1.9.6
  - macOS / iOS / tvOS
    - Fixed issue where videos would appear too bright when using Linear colorspace and YpCbCr mode
    - Improved support for different video colour transforms(Rec601, Rec709)
    - Convert420YpCbCr8ToRGB shader function removed and replaced with ConvertYpCbCrToRGB
  - Android
    - Fixed a crash and memory leak bug regression introduced in 1.9.3, caused videos not to release resources when a player is destroyed
  - Windows
    - Fixed issue where using Low Latency option and Unity Audio would cause the application to lock up

- **Version 1.9.4 - 25 October 2018**
  - Known Issues
    - A regression in our Android implementation causes videos not to release resources when a player is destroyed - Fixed in 1.9.5
  - iOS / tvOS
    - Fixed issue where subsequent video loads would sometimes fail to display frames

- **Version 1.9.3 - 22 October 2018**
  - Known Issues
    - A regression in our Android implementation causes videos not to release resources when a player is destroyed - Fixed in 1.9.5
  - Android
    - Fixed Oculus Go texture wrap mode being set to repeat instead of the default clamp. This was due to a new firmware update that allowed different texture wrap modes on OES textures
    - Added support for SeekFast() to ExoPlayer which seeks to the closest keyframe

        - Various robustness improvements related to resource freeing and plugin shutdown for Android apps that contain a Unity player instance
        - Built with new version of Android Studio (3.2)
    - macOS / iOS / tvOS
        - Added support for handling key requests for encrypted HLS streams (eg using AES). Supports direct key setting and key retrieval using authentication token via HTTP header. See DRM section for details.
        - Added new SetPlayWithoutBuffering(bool) method to allow playback to start immediately, bypassing the API buffering duration logic
    - WebGL
        - Added support for mip-map texture generation
    - General
        - Fixed regression in 1.9.2 causing some events not to fire, in particular the subtitle change event
        - Fixed issue where videos would open twice when calling OpenVideoFromFile() while AutoLoad was enabled and Start() hadn't run yet
        - Many improvements to PlaylistMediaPlayer, including StartMode and ProgressMode options, improved UI and per-item transitions

- **Version 1.9.2 - 2 October 2018**
    - Known Issues
        - A regression in the general event handler can cause some events not to fire. Fixed in 1.9.3
    - Android
        - Fixed rare crash bug when using ExoPlayer due to commands being called in the render thread
        - Added file offset support when using ExoPlayer and loading from StreamingAssets folder
    - iOS
        - Fixed issue where some HLS streams wouldn't play on older iOS devices
        - Fixed XCode 8/9 compatibility issue
    - WebGL
        - Fixed support for WebGL 2.0
    - General
        - Exposed options for automatically pausing / playing the media when application pauses
        - Exposed a mask to control which events the MediaPlayer should trigger. This is a minor optimisation to allow event logic to be skipped.
        - Fixed a minor issue with OnApplicationPaused and m_WasPlayingOnPause
        - Fixed a logic bug where a non-auto-play video loaded from a prefab wouldn't play after calling Play()
        - Fixed a minor issue with PlaylistMediaPlayer where stereo/alpha/loop/path state wasn't set correctly

- **Version 1.9.1 - 7 September 2018**

  - macOS and iOS
    - Fixed bug where video would always auto-play (only iOS < 10.0 and macOS < 10.12)
    - Fixed bug where texture properties (wrap, filter etc) weren’t being set
  - WebGL
    - Fixed regression introduced in 1.9.0 which prevents videos from loading
    - Fixed support for 3rd party decoder libraries
    - Added support for “blob:” URL scheme
  - General
    - Resampler now honours texture properties set in MediaPlayer
    - Added position bar to PlaylistMediaPlayer editor
  - Windows Desktop
    - Fixed focus, volume and mute on videos using FB 360 Audio
    - Fixed some issues with switching between instances of videos using system audio and FB 360 Audio
    - Fixed a bug where audio sample rate and channel count were swapped around

- **Version 1.9.0 - 23 August 2018**
  - Known Issues
    - A regression in the WebGL player causes videos to not load, fixed in version 1.9.1
  - Android
    - Upgraded Facebook Audio 360 to version 1.6.0 from 1.5.0
    - Upgraded ExoPlayer to 2.8.4 from 2.8.2
    - ExoPlayer is now the default video API instead of MediaPlayer
    - Changed Android API level requirement to 15 from 16 when using MediaPlayer API (ExoPlayer still requires 16)
  - Windows Desktop
    - Upgraded Facebook Audio 360 to version 1.6.0 from 1.5.0
  - WebGL
    - Added support for 3rd party decoder libraries such as dash.js and hls.js, see documentation for details
    - Added warning for unsupported WebGL 2.0
  - General
    - Added new (beta) PlaylistMediaPlayer component which allows seamless playlist progression and has a number of optional transitions, and a new demo scene using it
    - Added a new demo scene and video showing stereo 360 playback with spatial audio (on Windows and Android only)
  - Minor
    - Resampler now has some support for videos with unknown frame rate
    - Sphere demo no longer has camera affected by VR positional head tracking
    - Added demo scriptlet to show how to toggle stereo mode via script

- **Version 1.8.9 - 9 July 2018**

- Android
  - Upgraded ExoPlayer to version 2.8.2 from 2.8.1
  - Fixed audio glitches on Oculus Go when using Facebook Audio 360 by increasing the default spatial buffer size
  - Reduced garbage generation by caching frequently used methods
- Windows UWP / Hololens
  - Fixed an issue where non-debug builds would crash on some versions of Unity
- WebGL
  - Added notes to AVProVideo.jslib on how to integrate dash.js
- General
  - Reduced some garbage generation in various components
  - Improved shader support for multi-view stereo rendering

- **Version 1.8.8 - 26 June 2018**
  - Android
    - Upgraded ExoPlayer to version 2.8.1 from 2.6.0
    - Upgraded Facebook Audio 360 to version 1.5.0 from 1.4.0
    - Fixed audio track 1 not being set initially on ExoPlayer
    - Removed unneeded debugging and logging code on ExoPlayer
  - Windows Desktop
    - Upgraded Facebook Audio 360 to version 1.5.0 from 1.4.0
    - Fixed bug where videos using FB Audio 360 wouldn't stop at the end of the video
    - Fixed a bug where using D3D9 and DirectShow and resizing the window or switching fullscreen mode would cause a crash
  - macOS / iOS / tvOS
    - Fixed an issue in Unity 2018.1 and above that caused the projects not to compile
  - WebGL
    - Fixed issue where Buffering and Stall events weren't triggered correctly
  - General
    - Fixed garbage generation in DisplayUGUI component
    - Added support for Stall event on platforms that don't natively support it
    - Added documentation notes on seeking and playback rate

- **Version 1.8.7 - 16 May 2018**
  - macOS
    - Fixed a bug in the HapQ colour conversion
  - WebGL
    - Fixed compile issue in Unity 2017.4.1 by removing unused method and variable
  - Windows
    - Fixed a bug where FinishedPlaying event wouldn't get retriggered after the first time when playing a WAV or MP3 audio file
    - Now when emulating mobile builds in the editor, texture size limitations are ignored to allow videos to play locally

    - General
        - Fixed a bug with the 180 video shader where left-right stereo packed videos appear behind the viewer
        - Fixed the SSL certificate validation code in HLSStream so it doesn't ignore bad certificates

- **Version 1.8.6 - 13 May 2018**
    - macOS, iOS, tvOS
        - Fixed issue where playback wouldn't resume after setting playback rate to zero
        - Fixed crash issue when playing back HLS streams on iOS/tvOS versions older than 10.0
        - Fixed issue playing some unescaped URLs
    - Android
        - Added option to force a streaming format using Exoplayer regardless of the file extension
        - Added option to prefer software decoders using ExoPlayer
        - Fixed bug where video wasn't pausing correctly when seeking and the app is suspended
    - Windows
        - Fixed rare runtime error when audio is disabled in Unity
    - General
        - Fixed stretching issue in 180 degree video display and added a new mapping layout field in the Visual section for specifying that the video is using equirectangular 180 degree layout
        - Fixed null reference exception in ApplyToMaterial script when no material is assigned
        - Added buffered progress rendering to the 03_Demo_VideoControls sample scene timeline
        - Moved the MediaPlayer debug display option into a separate component called DebugOverlay
        - Added new option to UpdateStereoMaterial component so allow stereo rendering to force just the left or right eye
        - PlayMaker actions now have a logo in the header
        - Shaders updated to use a common function for vertex transform

- **Version 1.8.5 - 5 April 2018**
    - macOS, iOS, tvOS
        - Fixed issue since iOS 11 where live HLS streams refused to go higher than the device native resolution
        - Fixed a potential crash bug on old iOS versions (before 10.0) when querying audio or video bitrate
    - General
        - Fixed minor bug where newly loaded subtitles wouldn't immediately update

- **Version 1.8.4 - 23 March 2018**
    - macOS, iOS, tvOS
        - Fixed crash bug introduced in 1.8.0 related to seekableTimeRanges in

        - HLS streams
    - Android
        - Added OES shader support for the GUI component

- **Version 1.8.2 - 19 March 2018**
    - Known Issues
        - There is a crash bug on macOS, iOS and tvOS when closing down a HLS stream. This is fixed in 1.8.4
    - Windows
        - Improved accuracy of the Stalled state/event which triggers when the player is unable to decode the next frame, usually due to network connection issues
        - Improved accuracy of IsBuffering state/event which occurs when data is being downloaded over the network
        - Fixed a bug with HLS live streams where pausing the stream or a dropped connection would stop streaming indefinitely. The stream now resumes correctly, or throws an error if the stream cannot be resumed

- **Version 1.8.0 - 14 March 2018**
    - Known Issues
        - There is a crash bug on macOS, iOS and tvOS when closing down a HLS stream. This is fixed in 1.8.4
    - Android
        - Performance improvement by minimising texture copy operations
        - Upgraded ExoPlayer from 2.5.4 to 2.6.0
        - Upgraded Facebook Audio 360 from 1.3.0 to 1.4.0
        - New method GetCurrentDateTimeSecondsSince1970() for getting the absolute date-time of a video stream
        - New method GetSeekableTimeRanges() returns an array of seekable time ranges
        - Fixed bug where only up to 255 video player instances could be created
        - Fixed issue where camera set to skybox clear mode would make OES videos not appear, by changing shader to write to the depth buffer, just like the other VR shaders do
        - OES mode now uses less memory and starts faster
        - Fixed bug when using Facebook Audio 360 where sometimes the audio or video wouldn't play
    - macOS, iOS and tvOS
        - New method SeekWithTolerance() offers fine seek control
        - New method GetCurrentDateTimeSecondsSince1970() for getting the absolute date-time of a video stream
        - New method GetSeekableTimeRanges() returns an array of seekable time ranges
        - Fixed YCbCr support in shader used by 180 video demo
    - Windows
        - Improved adaptive stream resolution switch seamlessness by

        - eliminating the black frame flash
        - Added DirectShow chunk-based file loading method to allow for loading large files into memory without making large managed buffer allocations. See LoadFromBufferInChunks.cs
        - Fixed a bug when loading from buffer using DirectShow where memory was deleted twice
        - Fixed a D3D9 rendering bug that caused only the skybox to render on some newer versions of Unity due to renderstate restore issues
        - Upgraded Facebook Audio 360 from 1.3.0 to 1.4.0
        - Various improvements when using the AudioOutput component, including better AV sync and fixed glitching. Also added manual sample rate setting for streaming videos.
        - Improved UWP file loading demo script NativeMediaOpen.cs
    - WebGL
        - Changed the way textures are updated to hopefully be more compatible
    - General
        - DisplayUGUI component now exposes Raycast Target field so videos can allow touch/mouse input to pass through
        - Added new events for video resolution change, stream stalling, buffering and seeking
        - Added SSL/HTTPS support to StreamParser
        - Various code refactoring and cleanup

- **Version 1.7.5 - 22 January 2018**
    - macOS
        - Fixed build issue with Unity 2017.3 related to the post build script
        - Fixed build issue with Unity 2017.3 related to universal/64-bit plugin metadata
    - macOS, iOS and tvOS
        - Fixed a build issue with Unity 5.6.x related to a missing zlib dependency
    - Android
        - Fixed stereo support in OES shader
        - Fixed support for IsBuffering state in ExoPlayer
    - Windows desktop
        - Fixed a rare bug when using DirectShow and Unity 2017.3 that would cause the video texture to display as a single channel or black
        - Fixed a performance bug in the DirectShow player that meant a paused video would continue to upload frames to the GPU

- **Version 1.7.4 - 28 December 2017**
    - WebGL
        - Added support for URL's that start with "chrome-extension://"
        - Fixed recent regression causing video to not render when not rendering anything else
    - iOS
        - Plugin rebuilt with XCode 8.3.3 to work around linker missing

        - framework issue when building Unity apps using XCode 8 and previous versions of the plugin that were compiled with XCode 9
        - Fix to the ApplyToMaterial component when using YCbCr mode so the default texture gets displayed correctly when the MediaPlayer is closed
    - General
        - Added support for Facebook's "360-capture-sdk" cubemap layout to the CubemapCube component

- **Version 1.7.3 - 9 December 2017**
    - Windows
        - Fixed a bug when using D3D9 that would cause the DirectShow video to either render black or cropped. This was a regression since version 1.7.0
        - Fixed DirectShow loading from buffer support for 32-bit builds
    - WebGL
        - Added support for error events
        - Fixed issue where resampler could be enabled when it is not supported for WebGL
    - General
        - Optimised SRT subtitle file parse to be much faster

- **Version 1.7.2 - 30 November 2017**
    - Known Issues
        - There is a bug that causes video to appear black or cropped, only when using Windows desktop with D3D9. This is fixed in 1.7.3
    - Android
        - Fixed two major GLES bugs which sometimes prevented the video appearing. This mostly affected Galaxy S8 devices, Lenovo tablets and anyone using the Vuforia plugin
        - Added support for accurate seeking when using MediaPlayer API - requires Android 8.0 Oreo
        - Added support for HTTP/HTTPS redirects when using ExoPlayer API
    - macOS, iOS and tvOS
        - Added support for switching between multiple audio and video tracks
        - Added support for querying audio and video track bitrate
    - Windows Desktop
        - Added the ability to set a list of preferred decoders for DirectShow. This makes it easier to predict which decoder installed on the user's system will be used. For example they could have many codec packs installed, but you prefer to use the Microsoft decoders for stability
        - When using the Use Unity Audio option, the video will no longer fail to load if the audio is not able to pass through to Unity
        - Fixed a bug where Facebook Audio 360 channel mode wouldn't be passed through to the plugin
        - Fixed a shader bug causing Main10 videos in DirectShow to display too dark
    - General

        - Added new HLSParser class to help parse HLS m3u8 manifests. This allows for the discovery of all of the streams available, their resolutions and bitrates
        - Improved Facebook Audio channel mode enumeration UI

- **Version 1.7.0 - 15 November 2017**
    - Known Issues
        - There is a bug that causes video to appear black or cropped, only when using Windows desktop with D3D9. This is fixed in 1.7.3
    - Facebook Audio 360
        - Added Facebook Audio 360 support for spatial audio in VR. Currently we have support for Windows desktop (Rift, Vive etc) and Android (Cardboard, GearVR, Daydream etc). Uses MKV videos with Opus audio tracks encoded using Facebook Audio 360
    - Windows Desktop
        - Added Facebook Audio 360 support
        - Added “Alpha Channel Hint” option to DirectShow for cases where alpha channel is needed - currently required by Lagarith codec
        - Added native NV12 support for legacy D3D9 with DirectShow - this a performance optimisation, but also fixes some issues when using subtitle rendering DirectShow filters (such as DirectVobSub) which would cause the image to become flipped
        - Added Hap Q support for legacy D3D9 with DirectShow
        - Fixed a memory leak when an invalid Hap video (non multiple of 4 resolution) was loaded
        - Fixed an issue where AudioOutput wouldn’t redirect audio to another device (eg Rift Audio) for streaming media
        - Fixed “Low Latency” option so it is actually used
    - Windows UWP
        - Fixed “Low Latency” option so it is actually used
    - Android
        - Added Facebook Audio 360 support (requires ExoPlayer API)
        - Added ExoPlayer video API option which can offer improved format support, including MPEG-DASH and in the future will include more control over streaming video
    - iOS / tvOS
        - The YCbCr optimisation is now enabled by default
    - WebGL
        - Fixed issue with Safari on macOS calling Play() with default auto-play permission disabled as outlined here: https://webkit.org/blog/7734/auto-play-policy-changes-for-macos/
    - General
        - Added new frame resampler option which can be used to get smoother playback by buffering frames and presenting them at the right interval. This feature does use more memory and is still in beta
        - Fixed a bug where the FinishedPlaying event didn’t fire when a second stream was played on the same MediaPlayer
        - Fixed a bug where Instantiating ApplyToMaterial would cause a null

        - exception
        - Fixed compile error in Unity 2017.2 related to mobile multi-threading
        - Fixed warnings in Unity 2017.2 related to API changes to playModeStateChanged
        - Changed shader line endings to Unix to prevent mixed line ending warnings
        - Inspector UI improvements
        - Documentation updates

- **Version 1.6.15 - 5 October 2017**
    - Windows
        - Fixed an issue mainly affecting Windows mixed reality and VR headsets using “hybrid-gpu” mode where more than one GPU is available to the system
        - Fixed the WSA 8.1 x86 DLL that didn’t get recompiled since 1.6.12

- **Version 1.6.14 - 23 August 2017**
    - macOS / iOS / tvOS
        - Fixed issue where audio-only media would not update current time
        - Improved error reporting
    - iOS
        - Fixed texture error when using Unity 4.x
    - Android
        - Fixed file offset not working for videos in StreamingAssets folder. Until now file offset only worked for files at other locations in the file system
    - Windows
        - Fixed regression introduced in 1.6.12 that would cause DirectShow videos to not play when using Direct3D9 or OpenGL
        - AudioOutput component now handles different sample rates and channel counts set in Unity’s audio settings and automatically detects number of audio channels in source media

- **Version 1.6.12 - 6 July 2017**
    - <u>Known Issues</u>
        - On Windows when using DirectShow and Direct3D9 or OpenGL, videos do not display and VRAM runs out. This is a regression introduced in this version and is fixed in 1.6.14
    - Android
        - Fixed a rare crash bug that could happen during seeking
    - Windows Desktop / UWP
        - Added new low latency option for Media Foundation which provides a hint to the decoder to do less buffering
    - Windows Desktop
        - Added support for 10-bit HDR video decoding (Main10) when using DirectShow any suitable decoder such as LAV Filters. The decoding still resolves to an 8-bit texture but we plan to add 10-bit or floating point texture resolve soon
        - Fixed a crash bug when using DirectShow and LoadFromBuffer to load a video from memory

    - General
        - ExtractFrame() method now faster and more accurate
        - Time Scale support (where a non-realtime video capture solution changes Time.timeScale or time.captureFrameRate) has been improved, making it faster and more accurate
        - Added new 180 degree sample video
        - Fixed a bug in AudioOutputManager when channel count <= 0

- **Version 1.6.10 - 14 June 2017**
    - iOS
        - Improved support for iOS 8.0 by fixing an issue with CoreVideo
    - Android
        - Fixed issue where loading over 255 videos would cause videos to no longer load correctly
    - Windows Desktop / UWP
        - The AudioOutput component now supports routing audio to a specific channel, or to multiple channels. It also now supports multiple instances so you can more easily have audio coming from different world positions.
        - Fixed a memory leak when using AudioOutput component
    - Windows Desktop
        - Added new function to load media from memory for DirectShow API. This is demonstrated in the scriptlet LoadFromBuffer.cs
    - General
        - Started adding a new 180 degree video playback demo, it just lacks a media file which will come in the next release.
        - Videos with auto-start enabled no longer fire the ReadyToPlay event.
        - Added new method ForceUpdate() to ApplyToMesh component which refreshes the material when changing media properties such as stereo packing.

- **Version 1.6.8 - 31 May 2017**
    - iOS / tvOS
        - No longer requires a separate plugin file for Unity 5.3 and below. New bootstrap C code handles the change in Unity's plugin API.
        - Improved Metal compatibility with older versions of Unity
    - General
        - The AudioOutput component has some new experimental changes, including the ability to have multiple AudioOutput instances and to remap which channels the audio outputs to

- **Version 1.6.6 - 25 May 2017**
    - General
        - PlayMaker (the popular visual scripting system for Unity) is now supported by AVPro Video. We have added over 64 new PlayMaker actions for seamlessly integration into your PlayMaker workflow
        - Added audio stereo balance support
        - Added new stereo packing mode that uses a pair of UV sets for custom left and right mapping.

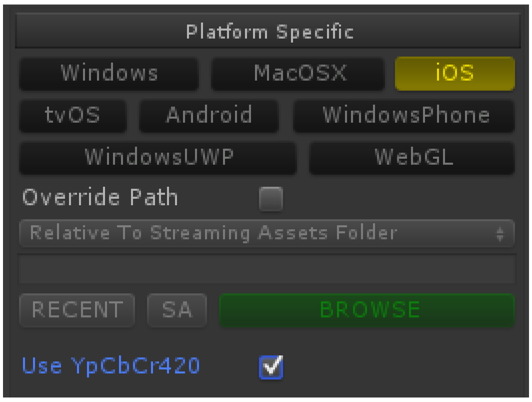
        - Added new Support & Help window to make reporting issues easier and to include helpful diagnostic information
        - Added documentation about 3rd-party library usage
        - Added documentation about iOS video decoders
    - Windows Desktop
        - Added multi-threaded decoding for chunked Hap videos
    - Windows Store / UWP / Hololens
        - Added new function to load media from native file locations using IRandomAccessStreamWithContentType. This means you can now play media from the camera roll. See the example script in Demos/Scripts/Scriptlets/NativeMediaOpen.cs for details of usage.
    - Android
        - Fixed lost GLES context issue that can happens at least when switching Google Cardboard on/off
        - Fixed one of the OES shaders that was failing to compile on Android due to undefined TRANSFORM_TEX macro
        - Refactored some of the low-level code
    - iOS
        - Added support for headphone connection changes. Unplugging / connecting headphones will now correctly set state of the video so that IsPaused() and IsPlaying() return the correct value
        - Fixed a rare bug in the VCR demo script which caused the FinishedPlaying event not to fire due to triggering a Seek() at the end of an HLS stream
    - iOS / tvOS / macOS
        - Fixed frame flash issue due to FirstFrameReady event firing too early due to frame count increment bug

- **Version 1.6.4 - 5 May 2017**
    - Windows Desktop
        - Fixed an intermittent bug introduced in version 1.6.2 which caused videos to sometimes not appear or appear black

- **Version 1.6.3 - 3 May 2017**
    - Windows Desktop
        - Fixed mistake from 1.6.2 which included a Visual Studio 2015 dependency (the OpenMP vcomp140.dll)
        - Chunked Hap decoding is now no longer multi-threaded. We will add this optimisation back in 1.6.6
        - Added some notes to documentation about Windows N / KN editions
    - Known Issues
        - There is an intermittent bug in Windows desktop which causes videos to not appear or to appear black sometimes - fixed in 1.6.4

- **Version 1.6.2 - 25 April 2017**
    - iOS / tvOS
        - Added support for Y'CbCr Biplanar textures which results in less memory usage. This feature means older devices with only 1GB of RAM (iPhone 5+, iPhone6+) will no longer struggle with memory when

playing back 4K video content.



Override Path □

Relative To Streaming Assets Folder

Use YpCbCr420 ☑

    - Tweaks which hopefully fix a rare flickering issue for Metal when using multi-threaded rendering
    - Fixed shader compile issue for legacy Unity 4.x
  - macOS
    - Fixed bug for high resolution Hap decoding due to apparent bug in Apple OpenGL extension
    - Fixed an issue with transparent ProRes video
  - Android
    - Fixed bug that would cause video to not display when using the Mask uGUI component
    - Fixed OES GLSL shader support for Unity 5.5.2
    - Fixed shader compile issue for legacy Unity 4.x
    - Reported bug in Unity 5.6.0f3 support for GLSL (OES) shaders
  - Windows
    - Performance improvement for Hap codec when using “chunks” encoding option. Now decoding happens over multiple threads.
    - Added support for the “-force-d3d11-no-singlethreaded” command-line parameter which doesn’t require the use of a new D3D context with a shared texture in the MF-Hardware path
    - Media Foundation code refactored
  - General
    - Fixed bugs in NGUI script, previously it could crash when changing videos
    - Fixed very specific bug related changing texture quality settings while the MediaPlayer is disabled which would cause texture to become black. Removed the global setting that disabled the above texture quality fix as it no longer has a performance benefit
    - Improved UI of ApplyToMesh component with custom editor
    - Some shaders now default to black textures instead of white
    - Added basic playback controls to the debug UI
    - Added documentation about AMD hardware decoding (UVD) capabilities
    - Added support for Unity 2017 beta
  - Known Issues
    - Windows desktop - this release includes a Visual Studio 2015

        OpenMP dependency by mistake (vcomp140.dll) which means that the Visual Studio 2015 runtime must be installed. Fixed in 1.6.3
        - There is an intermittent bug in Windows desktop which causes videos to not appear or to appear black sometimes. Fixed in 1.6.4

- **Version 1.6.0 - 29 March 2017**
    - iOS / tvOS
        - Added support for linear color-space (available in Unity 5.5 and above)
        - Performance improvements, especially when reusing MediaPlayer component to load videos
        - iOS simulator support added
    - macOS
        - Added support for Hap Q Alpha format (HapM)
        - Performance improvements, especially when reusing MediaPlayer component to load videos
    - Android
        - Fixed OES rendering path support in Unity 5.6
        - Improved linear colour-space support (available in Unity 5.5 and above)
        - Performance improvement due to alternative way to get around checking GetNativeTexturePtr() and instead checking for when texture quality level changes
        - Removed unused AndroidManifest.xml file
    - Windows
        - Performance improvement due to alternative way to get around checking GetNativeTexturePtr() and instead checking for when texture quality level changes
    - General
        - Fixed DisplayIMGUI component depth value not working
        - Improved IMGUI linear color-space conversion function

- **Version 1.5.28 - 24 March 2017**
    - Windows
        - Added support for HapQ+Alpha format
        - Fixed Unstalled event not firing
    - macOS / iOS / tvOS
        - Added support to ExtractFrames demo to handle videos containing rotation
        - Minor C# performance improvements
    - WebGL
        - Fixed support for Safari browser
        - Added documentation about supported browsers
    - General
        - Added some DRM notes to the documentation
        - Fixed PlayMaker example script

- **Version 1.5.26 - 14 March 2017**
    - Android

        - Added support for passing custom HTTP header fields
        - Fixed minor bug when calling SetPlaybackRate too soon
        - Android API 15 (4.0.4 Ice Cream Sandwich) is now supported, previously API 16 (4.1 Jelly Bean) was required
        - Added plugin files for the arm64-v8a platform (currently disabled in the inspector, but simply enable it once Unity has added support for this architecture)
    - macOS / iOS / tvOS
        - Added support for passing custom HTTP header fields
        - Added support for videos containing orientation data. The orientation transform is now retrievable and the uGUI display component correctly displays the video
    - WebGL
        - Fixed bug in Internet Explorer and Firefox where video would not display
        - Added support for displaying multiple ranges of buffered time
    - Windows / WSA / Hololens
        - Fixed FinishedPlaying rarely not firing on Media Foundation
    - General
        - DisplayUGUI component no longer generates any garbage when vertices are dirtied. Also some minor optimisations
        - ApplyToMesh component no longer generates any per-frame garbage
        - ApplyToMesh component has improved interface
        - Improved time display in the editor to be millisecond accurate, and also fixed time rounding error bug
        - Changed EnableSubtitles() to return true while it is loading in a coroutine
        - Added new example script VideoTrigger that shows how to trigger videos when entering/exiting collider volumes, including audio fading
        - Added more streaming video URLs to documentation

- **Version 1.5.25 - 20 February 2017**
    - Windows Desktop
        - Patch fix for regression in 1.5.24 which caused DirectShow videos to display in green

- **Version 1.5.24 - 19 February 2017**
    - General
        - Shaders improved to also work on older hardware that only support shader model 2.0
    - Windows Phone / WSA / UWP / Hololens
        - Added support for audio to be played through Unity's audio system
        - Fixed a serious bug which could cause video to not appear and native plugin functions to return incorrect values
        - Fixed the hardware decoding option not being passed through to the plugin correctly
        - Fixed support for older GPUs that only supported D3D11 feature set 9.x

        - Trial version watermarking optimised for speed and memory
    - Windows Desktop
        - Fixed support for older GPUs that only supported D3D11 feature set 9.x
        - Trial version watermarking optimised for speed and memory
    - Known Issues
        - Regression in this version causes Windows DirectShow decoded videos to display green. Fixed in v1.5.25

- **Version 1.5.22 - 14 February 2017**
    - General
        - Improved performance of CubemapCube component. Due to a typo it would previously regenerate the cube mesh each frame.
        - Improved the fix for Unity 5.4.2 and above where changing texture quality during runtime would cause the video texture to turn black. The expensive fix now doesn't apply to Unity 5.4.1 and 5.4.0, and can be disabled in the global options
        - Fixed bug in subtitles that would cause them to go blank for a frame
    - Workflow
        - Android OES path now displays hint about using correct shaders
        - Error message display is more detailed
        - Improved user feedback when selecting stereo packing to warn about the need for the UpdateStereoMaterial component
        - Improved UI for UpdateStereoMaterial component to give more feedback about its setup
    - Android
        - Better reports error when a video fails to decode due to insufficient resources
        - Added option to not show the "poster" frame, leading to faster start and less resource usage for loaded videos. A video that is loaded but not played and not displaying the poster frame will not engage the decoder hardware and use up resources
        - Saved some memory in OES mode by no longer allocating unnecessary render texture
        - Improved playback rate timer
    - WebGL
        - Fixed issue where no video displays when using WebGL 2.0 (default in Unity 5.5.0 and above)
        - Cached texture pointer for improved performance
        - Fixed subtitle loading by changing to use a coroutine
    - Windows
        - Added new events for when a stream has stalled and resumed - useful for detecting connection loss when live streaming
        - Added new option to generate texture mipmap levels automatically - this reduces aliasing when the texture is scaled down
        - Updated Snappy library (used in Hap codec) to latest 1.1.4 which has 20% decompression speedup
        - Fixed bug in DirectShow where calls to SetMuted() or setting very low

        - audio volume would be ignored
    - UWP / Windows Phone / Hololens
        - Added new option to generate texture mipmap levels automatically - this reduces aliasing when the texture is scaled down
    - Breaking Changes
        - For Android if you previously loaded videos in a paused state to see the initial “poster” frame now you’ll need to tick the new “Show Poster Frame” option in the Platform Specific settings. In previous versions this was enabled by default, but now it is disabled by default as it has performance implications.

- **Version 1.5.20 - 25 January 2017**
    - General
        - Added more notes to the Hap codec documentation
        - Added more notes to the Android OES documentation
    - Android
        - Fixed fast OES rendering path in Unity 5.4.x and 5.5.x
        - Fixed various stereo rendering issues
        - Fixed OES GLSL shaders failing to compile due to inline keyword
        - Fixed OES path displaying debug GUI panel
        - Fixed OES shader compiling on Google Daydream platform
        - Fixed Unity 5.6beta GearVR stereo rendering issue
        - Disabled minor Daydream stereo eye shader optimisation as it was causing too many problems with older versions of Unity
    - Windows
        - Fixed bug where changing playback rate when playback has finished would result in an error
        - Fixed the DirectShow audio volume level so it matches that of Media Foundation

- **Version 1.5.18 - 18 January 2017**
    - General
        - Added support to UpdateStereoMaterial for DisplayUI component so that uGUI can render stereo videos correctly
    - WSA / UWP / Hololens
        - Fixed a script compile error introduced in 1.5.16

- **Version 1.5.16 - 16 January 2017**
    - General
        - Optimised stereo left-right shader for Google VR support
        - Improved shaders to use UnityObjectToClipPos() instead of UNITY_MATRIX_MVP to give better support for Unity 5.6 and above
        - Fixed bug in stereo left-right shader introduced in 1.5.14
        - Fixed various bugs in subtitle support
    - Android
        - Fixed subtitles not loading
    - Known Issues
        - Regression from 1.5.14

            - WSA and UWP platforms will fail to compile due to new Thread.Sleep() which isn't defined on these platforms.

- **Version 1.5.14 - 9 January 2017**
    - General
        - Added subtitle support for external SRT files
        - Added a new demo showing the new subtitle support
        - Improved 03_Demo_VideoControls demo scene to use two MediaPlayers for seamless playlisting
        - Fixed issue where initial playback fields (volume, mute, playback rate, looping) could be reset to incorrect values in certain cases such as such AutoOpen option was disabled
        - Shader improvements such as inlining for performance, sRGB to Linear shader corrections and optimisations
    - iOS
        - Added documentation note about using AAC instead of MP3 for the audio tracks
    - WSA / UWP / Hololens
        - Fixed bug where video would often not appear, due to audio track being loaded first and reporting metadata loaded. This appears to be a bug/change in the new Anniversary UWP Media Foundation version.
        - Plugin DLL file sizes are smaller
    - Windows Desktop
        - Plugin DLL file sizes are smaller
    - Known Issues
        - Regression from 1.5.12
            - Bug in stereo shader causing only left eye to render
        - Subtitles
            - New subtitle feature doesn't load files from StreamingAssets on Android and WebGL
            - Bug in script don't allow subtitles to be loaded via code

- **Version 1.5.12 - 12 December 2016**
    - WSA / UWP / Hololens
        - Fixed crash issue when using Unity 5.5

- **Version 1.5.10 - 9 December 2016**
    - macOS
        - Fixed issue where OpenVideoFromFile() called multiple times quickly would cause a crash
        - Removed PLIST modification from the PostProcess build script
    - iOS
        - Fixed issue where OpenVideoFromFile() called multiple times quickly would cause a crash
        - Fixed issue with Unity 5.5.x which caused XCode project not to run due to missing Metal symbol (only affects watermarked trial version)
    - tvOS
        - Fixed issue where OpenVideoFromFile() called multiple times quickly would cause a crash

        - Fixed issue with Unity 5.5.x which caused XCode project not to run due to missing Metal symbol (only affects watermarked trial version)
    - Android
        - Fixed issue with Unity 5.4.2 and above where changing the TextureQuality level in the QualitySettings would cause the texture to go black
    - Windows
        - Fixed issue with Unity 5.4.2 and above where changing the TextureQuality level in the QualitySettings would cause the texture to go black
    - General
        - Added support to uGUI shaders for RectMask2D
        - ApplyToMesh component now works with other renderer components (eg Skinned Mesh)
        - Updated documentation and FAQs

- **Version 1.5.8 - 23 November 2016**
    - macOS
        - Fixed issue with OpenGLCore where texture wouldn't update due to GL state not being restored correctly when using a uGUI mask
        - Fixed issue where RelativeToProjectFolder was pointing to inside the .app package instead of at the same level
    - Android
        - Streaming video no longer blocks while loading (but video frame-rate may now not be available)
        - Removed duplicate function call, minor performance win
        - Fixed number of audio tracks reported for streams
        - Fixed potential case issue with URL detection
    - Windows
        - Platform specific settings exposed better in the editor
    - General
        - Fixed some shader build errors for older versions of Unity
        - Added some in-editor warnings for using unsupported file extensions on various platforms
        - Fixed broken scripting reference link in 'About'

- **Version 1.5.7 - 16 November 2016**
    - Android
        - Minor optimisation for non-OES rendering path by eliminating blending during blit
        - Added frame timestamp support via TextureProducer.GetTextureTimeStamp()
    - macOS, iOS and tvOS
        - Added support for OS X 10.8
        - Added frame timestamp support via TextureProducer.GetTextureTimeStamp()
        - Fixed issue when Seek and Play were called before another command had completed

        - Fixed issue of events not firing
        - Added support for custom URL schemes
        - Improved support for device simulator
        - Various small bug fixes

- **Version 1.5.6 - 8 November 2016**
    - General
        - Added “Scale and Crop” scaling mode to uGUI component (replaces old “keep aspect ratio” option)
        - Added helper function for seeking to a specific frame
        - Improved MediaPlayer event handling code
        - Fixed null exception when unloading scene from the event callback
    - Windows
        - Fixed major issue using hardware decoding which caused videos to crash or not load
        - Improved DirectShow colour reproduction by using more accurate linear colour-space and YUV conversion functions
        - Added ability to get the presentation timestamp of the current video frame - useful for more accurate frame syncing: TextureProducer.GetTextureTimeStamp()
        - Fixed issue with HLS streaming crashing when changing stream quality and resizing texture
        - Fixed AudioOutput issue where playing back multi-channel videos would cause the video not to load
        - Fixed AudioOutput issue where some videos would play back at the wrong pitch

- **Version 1.5.5 - 1 November 2016**
    - Windows
        - Fixed issue on old Windows versions without D3D11 which caused the plugin to not load
    - WebGL
        - Fixed width and height being zero when MetaDataReady event fires

- **Version 1.5.4b - 31 October 2016**
    - Fixed broken iOS, tvOS and macOS release from v1.5.4
    - Fixed “null id” error in in multi-video demo in WebGL builds

- **Version 1.5.4 - 28 October 2016**
    - General
        - 02_Demo_imGui demo scene updated to show network streaming progress
        - Improved how destroyed MediaPlayer components are shut down
        - Fixed alpha packing in background transparent shader
        - Fixed some bugs in three of the sample scene scripts that would cause a crash due to null values or invalid textures left behind when destroying MediaPlayer
        - Added documentation about hardware GPU decoding
    - Android

        - Fixed bug where IsPlaying would return false during playback
        - Fixed a shader compiler error for newer Android phones with Snapdragon chipset when using the OES shaders
        - Optimised code to generate less garbage
        - Some internal JNI caching for speed
        - Added new unlit OES shader
    - macOS
        - Added support for Linear colour space
        - Improved feedback when progressive and streamed movies are buffering
        - Added support for macOS 10.12 streaming auto wait behaviour
    - iOS and tvOS
        - Fixed a case where some HLS streams wouldn't play
        - Improved feedback when progressive and streamed movies are buffering
        - Added support for iOS/tvOS 10 streaming auto wait behaviour
    - Windows
        - Added new AudioOutput component so that audio can be played directly through a Unity AudioSource node. This allows Unity audio effects to be used, spatial 3D movement with falloff and doppler, and most importantly allows sound to move with the head in VR!
        - Fixed a visual glitch when using the hardware decoder path, most noticeable at the end of videos
        - Streaming can now return multiple buffered ranges using method GetBufferedTimeRange()
        - Windows watermark improved for GPU decoding path
        - Potential fix for DirectShow seeking issue causing hanging on some systems
    - VR
        - Support for 3D audio via the new AudioOutput component (Windows only, supports Oculus Rift and HTC Vive)
        - InsideSphere transparency shader now supports transparency packing

- **Version 1.5.2 - 11 October 2016**
    - General
        - uGUI and IMGUI components now automatically displays videos with stereo or alpha packing correctly without having to assign material manually
        - Fixed shader build errors in Unity 5.4.1
        - Fixed shader build errors in Unity 4.x for D3D9 and OpenGL
        - Added stereo support to more shaders including uGUI
    - Workflow
        - Improved component menu layout by grouping components
        - Logging improved so some log messages can be clicked on to highlight the logging MediaPlayer
    - Windows
        - Linear colour space now automatically rendered correctly when using

        GPU decoder
        - Fixed memory leak in GPU decoder introduced in v1.5.0
        - Fixed old memory leak in Notify system
        - Fixed HLS adaptive resolution changing when using GPU decoder and improved texture switch to remove 1 frame glitch
    - WebGL
        - Cubemap script fixed to not show texture seam
        - Texture filtering and wrapping modes applied correctly now
        - Added crossOrigin=”anonymous” to video element

- **Version 1.5.1 - 30 September 2016**
    - Windows
        - Fixed crash bug when playing audio files in DirectShow path
        - Fixed visual flicker bug in Unity editor in DirectShow path

- **Version 1.5.0 - 29 September 2016**
    - General
        - Added new shader for uGUI to support stereo videos
        - Added global option to disable logging
        - Added audio track selection to IMGUI demo
        - Fixed editor bug where “\” character could be used in file path
        - Updated documentation
    - Android
        - Added display of initial “poster” frame for videos set to not auto-play
        - Fixed bug that prevented files with escape characters from loading
        - Fixed bug causing audio files to not play
        - Fixed issue where GetCurrentTimeMs() could report values greater than Duration
    - macOS
        - Fixed no error being returned for loading videos without correct plist permissions set
    - Windows
        - Hardware decoding enabled by default
        - Hardware (GPU) decoding no longer require command-line parameter
        - Better video API selection in editor
        - Added support for multiple audio tracks to DirectShow playback path via IAMStreamSelect.
        - Added Media Foundation multiple audio track code back in
        - Fixed some minor resources leaks
    - Windows Phone / UWP
        - Added option for hardware decoding (enabled by default)
    - WebGL
        - Added support for multiple audio tracks
        - Fixed frame rate and count not displaying
        - Fixed issue where multiple videos wouldn’t unload cleanly
        - Cleaned up plugin code, removing unneeded code

- **Version 1.4.8 - 12 September 2016**

    - General
        - Less garbage generation
            - Optimised ApplyToMesh component
            - Optimised rendering coroutine of MediaPlayer component
            - Added global option to disable debug GUI
    - Workflow
        - Improved file path display and editing
        - Added watermark description to trial version
    - VR
        - Cubemap script (for 3:2 cubemap VR)
            - Fixed vertical flip issue
            - Improved performance
        - Added fog and transparency options to VR sphere shader
        - Android OES optimisation (see below)
        - Shaders support GLSL better
    - Android
        - New faster rendering path, less memory, faster, no overheating - see OES playback path notes above
        - Added ability to load file from within another file by specifying an offset
            - Which lets you hide video files from prying eyes
    - macOS
        - Fixed occasional memory leak when destroying player
        - Fixed editor warning about absolute path
    - iOS / tvOS
        - Fixed occasional memory leak when destroying player
    - Windows
        - HLS streams now dynamically adjust texture size
            - Resulting in support for higher quality streams
            - Fixes issue where videos would become letterboxed
    - WebGL
        - Fixed broken build issue when using the “use pre-built” build option

- **Version 1.4.4 - 20 August 2016**
    - General
        - Packed transparency support added
            - Use top-bottom or left-right packed layout to encode alpha channel
            - Set the packing type in the “Media Properties panel”
            - Supported by all display components automatically
            - See “Transparency Notes” section of this document for encoding tips
        - “Platform Specific” section now highlights platforms with modified settings
        - Minor optimisations to the ApplyToMaterial and ApplyToMesh components (used property ints instead of strings)
        - Minor optimisation to DisplayIMGUI (disables layout pass)
        - Fixed CubemapCube.cs to handle vertically flipped video textures
        - Changed many components to use UpdateLate() instead of Update()

        - to fix some crash issues
        - Various minor improvements
    - macOS
        - Fixed compatibility issue with OS X 10.10 (Yosemite)
    - Windows
        - Huge performance improvements when using DirectShow playback path due to usage of NV12 format (D3D11 only)
        - Added support for Hap Q format (D3D11 only)
        - Added performance warning message when using software decoder instead of GPU decoder for large videos
        - Fixed bug in DirectShow audio mute not restoring volume
    - WebGL
        - Fixed issue where IMGUI text became flipped
    - Upgrade Notes
        - Some shader files have moved (and been renamed) from /Materials and /Demos/Materials to /Resources/Shaders, so make sure to delete duplicates that results from merging

- **Version 1.4.0 - 10 August 2016**
    - WebGL
        - WebGL platform support added
    - macOS
        - Now with Metal rendering support
        - The Hap codec is now supported on macOS
    - iOS / tvOS
        - Metal rendering path now supports multi-threaded rendering
        - Various fixes to rendering and memory resources
    - Android
        - Ability to adjust the playback rate (Android 6.0 and above only)
    - Windows
        - Fixed audio device override not working in builds
        - Fixed fast seeking function
    - General
        - Added support for video files containing multiple audio tracks
        - Video frame rate is now available via Info.GetVideoFrameRate()
        - Fixed some issues with events firing at the wrong time
        - Streaming videos can now query IsBuffering() and GetBufferingProgress()
        - Improved errors reporting
        - Renamed Info.GetVideoPlaybackRate() to GetVideoDisplayRate() to avoid confusion
        - New “scriptlets” have been added to the /Demos/Scripts folder which give mini examples of how to do simple scripting
    - VR
        - Fixed bug in stereo section of VR sphere shader which caused eyes to flip on some platforms
        - Fixed a bug in Windows where the audio override wasn’t being passed through for VR headphone device name

- Workflow
  - Added new “SA” button for shortcut to StreamingAssets folder
  - Improved editor inspector performance
- Upgrade notes
  - Demos scenes have been renamed so you should delete the old .unity files in the /Demos folder otherwise you will have duplicate files.
  - The sample video files in StreamingAssets have been moved into a subfolder within StreamingAssets/AVProVideoDemos/ so make sure to delete the old ones.

- **Version 1.3.9 - 15 July 2016**
  - Android
    - Fixed bug for Unity versions < 5.2.0 that caused videos not to display
    - Fixed bug for Android versions < 6 that caused video pausing and other operations to break playback
    - Removed zip classes from plugin package to fix conflicts with other plugins using the same zip classes
  - General
    - Better error handling via new GetLastError() function and a new Error event type
    - NGUI support added via new component
    - TimeScale support feature now disabled by default and exposed in new Global Settings panel
    - ApplyToMesh/Material script improved with new scale and offset parameters
    - Added platform overrides for Windows Phone and Windows UWP
    - Improved documentation
  - Workflow
    - Added new Android warning for loading absolute path without external permission set in PlayerSettings
  - VR
    - Fixed VR audio output device not working
    - New high quality option for sphere shader to improve quality at the poles and general optimisations
    - Fixed issue with left/right eyes becoming swapped sometimes
    - Minor fixes to cube map script

- **Version 1.3.8 - 30 June 2016**
  - Bug fixes
    - Fixed stereo VR script broken in v1.3.6
    - Fixed issues with UWP and Hololens support
    - Fixed Windows DirectShow issue preventing Hap videos playing when another source filter is installed
    - Fixed Windows DirectShow bug in watermark for Hap videos
  - Workflow
    - Improved recent file list to be sorted by when the files were last used

- **Version 1.3.6 - 27 June 2016**
  - General

    - Added (BETA) support for Universal Windows Platform 10 and Windows Phone 8.1
    - Added (BETA) support for Time.timeScale and Time.captureFramerate allowing video playback to work properly with video capture systems that alter Unity time
    - Added ExtractFrame function to MediaPlayer
    - Added Extract Frames demo scene
    - Added SeekFast function which will try to seek to keyframes only so it's less accurate but faster. On unsupported platforms it will just do a normal seek operation
    - Added functions to change the playback rate. Note that the behaviour of this varies between platforms and is not available yet on Android
    - General API improvements, platform overrides system improved
    - Fixed bug where disabled gameObject would cause rendering to stop
    - Fixed bug where destroying MediaPlayer while uGUI component is using it could cause a crash
    - Fixed rare bug where uGUI component would become offset or hidden
    - Fixed rare bug where m_events would be null
  - VR
    - Fixed VR sphere shader coordinates on some platforms, especially cardboard
    - Added "Media Properties" section to MediaPlayer where you can define the stereo packing of a video. This then automatically adjust the sphere shader to render the video correctly per eye
    - Fixed bug in InsideSphere shader where stereo rendering would flip the eyes at some angles
    - Added support for Unity 5.4 "Single-Pass Stereo Rendering" to 360 InsideSphere shader
    - Added new VR sample with "cubemap 3x2" (facebook layout) support
  - Workflow
    - Added button in preview panel to save frame to PNG
    - Added persistent option to preserve the media player between level loads
    - Added multi-object MediaPlayer component editing support
    - Texture properties (wrap mode, filtering) can be set via Media Properties panel
    - Debug GUI now shows preview of video
  - Android
    - Fixed bug where no visuals would appear when old devices
    - Switched from AAR to JAR/SO files to improve Unity 4 compatibility
    - Added x86 support
    - Fixed bug where Pausing a stopped video would lock it up
  - OS X / iOS / tvOS
    - Large performance boost on iOS and tvOS (removed texture copy)
    - Streaming video buffering stalls now recover and IsBuffering function added
    - Seek accuracy improved
    - Looping handled better to reduce seam time

        - Fixed texture memory leak in Metal rendering path
        - Fixed mute not working with autoStart
    - Windows
        - DirectShow video playback smoother
        - Fixed DirectShow support for showing images or videos with zero duration
        - Added platform-override option to force DirectShow player
        - Added platform-override option to force audio output device. This is useful for VR hardware that has its own audio device.
        - Fixed poster frame not displaying
        - Fixed videos not displaying due to empty RGB32 alpha channel
        - Fixed D3D9 lost device issue
        - Fixed D3D9 issue of texture not being released
        - Fixed DirectShow player time displaying NaN sometimes at the end of video
        - Fixed crash bug if you closed Unity with video was playing
        - Fixed Windows N edition crash

- **Version 1.3.0 - 20 April 2016**
    - Android
        - Added multi-threaded rendering support
        - Fixed various rare bugs
    - Windows
        - Exposed GPU video player path (when using command-line argument “-force-d3d11-no-singlethreaded”), this requires Win8.1 minimum and D3D11
        - Windows XP, Windows Vista and Windows 7 support added by adding DirectShow playback path
        - Hap1 and Hap5 codec support added for Windows 7 and below (via DirectShow playback path)
        - Fixed audio only media not being seekable
    - iOS
        - Fixed iOS 8.2 compatibility issue
    - Workflow
        - Editor pause button now pauses/resumes playing videos
        - Added new ‘about’ section with handy links
        - Improvements to editor UI
        - UI fixes for standard Unity editor ‘light’ skin
    - Bugs
        - Fixed IsFinishedPlaying event not firing on some platforms
        - Fixed player freezing when component is disabled. It now pauses OnDisable() and resumes OnEnable().
        - Fixed crash in VCR demo related to uGUI component when changing videos
        - Fixed bug closing application with many videos open
        - Fixed seeking bug for audio-only media
    - Documentation
        - Updated FAQ

        - Added stereo virtual reality notes

- **Version 1.2.0 - 1 April 2016**
    - General
        - Improved support for audio-only media
        - Improved streaming support
        - Added HasVideo, HasAudio and HasMetaData functions
        - Added MetaDataReady event
        - First frame now displays without starting playback
        - Added new ApplyToMesh component
        - Removed troubled #AVPRO defines
    - Android
        - Fixed issue where Finished event wouldn't fire
        - Minimum API level bumped from 15 to 16
    - Mac, iOS, tvOS
        - improved performance of multiple video playback
    - Windows
        - Improved performance (duplicate frame handling)
        - Added missing IsSeeking function
        - Fixed IsFinished function always returning false
        - Fixed URL parsing
        - Fixed OpenGL texture cleanup
        - Fixed minor D3D11 leak caused by views not being released
        - Improved init/deinit
    - Workflow
        - Resulting file name is now displayed clearly and is copyable
        - More file extensions in inspector file browser
        - Components now have AVPro icon
        - Added warnings for incorrect Player Settings for streaming videos
        - Editor platform override tab is restored
    - Debugging
        - Improved logging
    - VR
        - Improved 360 Sphere demo support for GearVR
        - InsideSphere shader has color tint option for stereo debugging
    - Docs
        - Added video streaming notes
        - Added VR notes
        - Improved notes on supported formats

- **Version 1.1.0 - 11 March 2016**
    - Added Windows support
    - Added lat-long stereo top-bottom and left-right video support for VR
    - Added per-platform file path overrides
    - Absolute and relative path loading support added
    - Android loading from OBB support added
    - Workflow improvements
        - Added browse button
        - Added recent file list

        - Added relative folder support
        - Improved MediaPlayer UI, including preview in editor
    - Created a scripting class reference
    - Improved documentation
    - Fixed Linear colour space support in Windows
    - Fixed shutdown and memory freeing
    - Various bugs fixed

- **Version 1.0.0 - 25 February 2016**
    - Initial release on the asset store
    - Added new events

- **Version 0.9.0 - 17 February 2016**
    - Initial beta release