Apple TV

Video Output Configuration
for HDR Playback

Document Rev.1
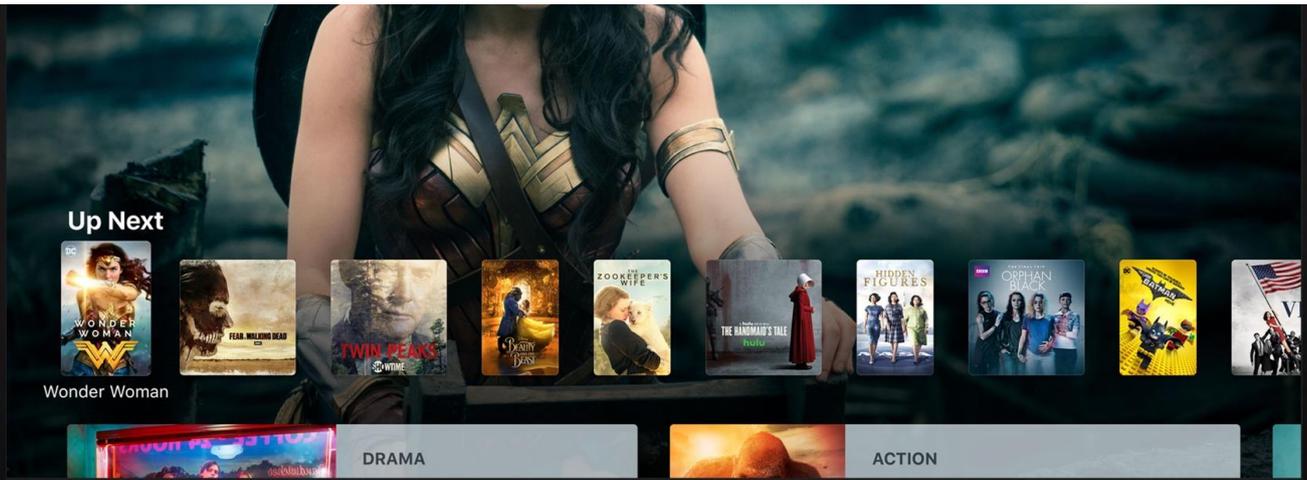
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Introduction

This document outlines recommended video settings for Apple TV 4K or Apple TV (4th generation), when viewing both SDR (Standard Dynamic Range) and HDR (High Dynamic Range) content.

Why is this important? Previous versions for the Apple TV software forced content to HDR regardless of the contents original format, this results in a sub-optimal SDR viewing experience. Due to this incorrect conversion of content, Barco projectors apply Screen Luminance settings to the "Faux HDR content" which results in a duller, under saturated image.

How to correct this? Following as recent update by Apple TV (tvOS 11.2), content can now be played in the correct format, this resolves the above issue, however, requires the correct Apple TV settings to be applied. The below guide will advise what these settings are.

Note: Real HDR (HDR10 / Dolby Vision) content is uneffected, however, whilst the majority of content viewed remains SDR content, it is important to set up your client's Apple TV correctly.

Update the software on your Apple TV

Firstly, please check that your Apple TV is running the latest software update otherwise some of the required settings outlined within this document will not be available.

1. On Apple TV 4K or Apple TV (4th generation), go to Settings > System > Software Updates and Select Update Software.

2. If there's an update, select Download and Install. Wait for your Apple TV to download the update. Don't disconnect or unplug your Apple TV until the update completes.

3. After the update downloads, your Apple TV will restart and prepare the update. Don't disconnect or unplug your Apple TV until the update completes.

4. After Apple TV prepares the update, it will install it. When the update is complete, your Apple TV will automatically restart again.

5. You can set your Apple TV to automatically install new updates when they're available.
   Just go to Settings > System > Software Updates and turn on Automatically Update.

   Source Information: https://support.apple.com/en-us/HT202716

Video Output Settings

In order to optimise the Apple TV for ALL content, it is important to set the video output to 4K SDR.
If you set the output to 4K HDR the user interface is converted by the Apple TV to HDR and looks dull and undersaturated.

1. On Apple TV 4K or Apple TV (4th generation), go to Settings > Audio and Video > Format
2. Select 4K SDR

Now we have correclty set the video output to SDR, we need to activate Content Matching. This feature will detect whether the content is SDR or HDR and change the output according, you can also content match the Frame Rate.

3. On Apple TV 4K or Apple TV (4th generation), go to Settings > Audio and Video > Content Match
4. Set Match Dynamic Range to ON
5. Set Match Frame Rate to ON
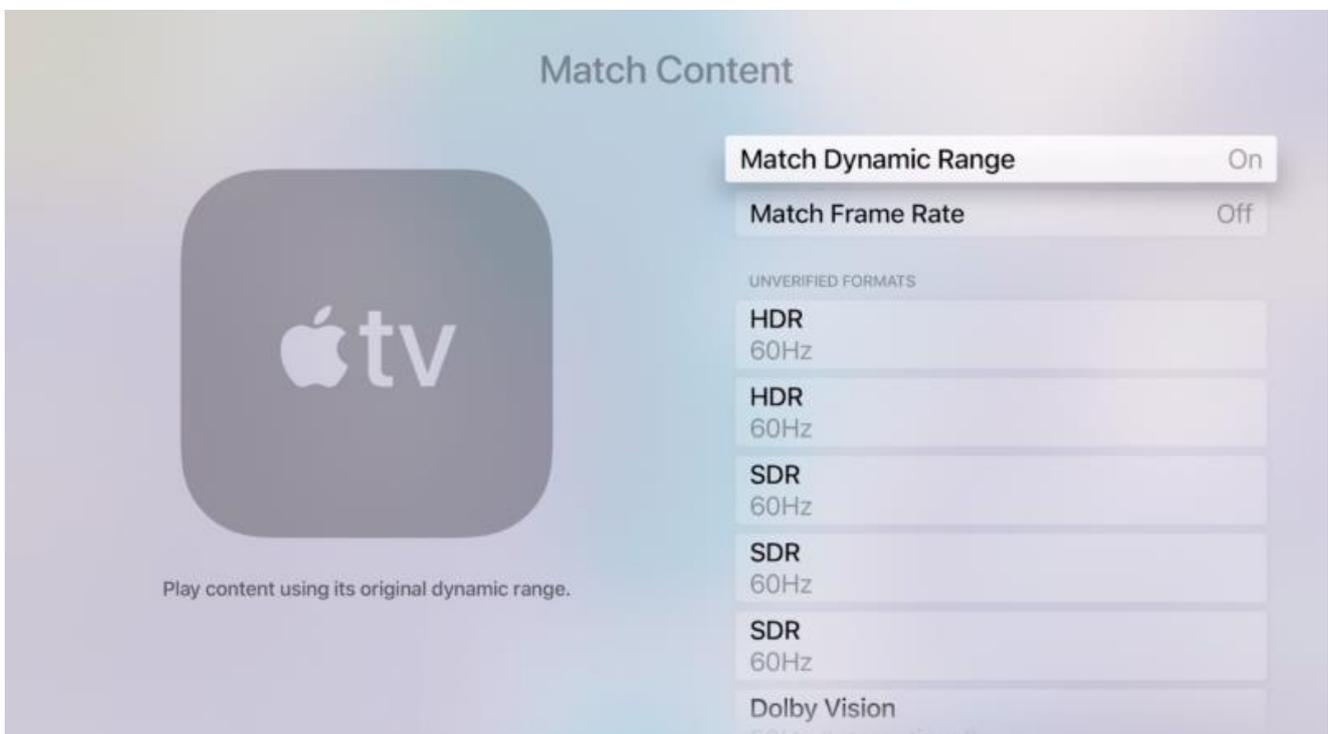
You Apple TV is now configured to output the user-interface and SDR in SDR, and HDR content in HDR, and is optimised for use with Barco projection solutions.
Your Barco projector will now only apply Screen Luminance settings to HDR content.

For further information on the optimising your Barco projectors video calibration for both SDR and HDR content, including the recommended values for Screen Luminance please review our video calibration guide.