# Getting 64-bit clean: now is the time - The Eclectic Light Company

It's only two months to Apple's WWDC, at which it's expected to announce macOS 10.15 and release its first beta-test version. If you're already running Mojave, you'll be only too aware that one of the major changes almost certain to come in 10.15 is loss of support for all 32-bit apps and other code.

Now, with around six months to go before the first full release of 10.15, is a good time to finalise your preparations. Even if you don't currently intend upgrading until late in the year, you need to be planning how you will cope. This article looks at some of the most common issues, and areas which you should focus on.

**QuickTime**
Apart from losing use of 32-bit apps, the other major consequence for most users will be the loss of traditional QuickTime ('QuickTime 7') support. This is likely to make it impossible to access some old media files such as video clips and movies which rely on encodings which will no longer be supported. I have considered this this separately, and have a series of articles which show how to address it:
1: still images, primarily JPEG 2000,

2: embedded in Keynote presentations,
3: movies and more, how to find and convert them using QuickTime Player,
4: using Compressor to transcode batches and give finer control.

Each article has comments which are also particularly valuable: I am grateful to those who have added their advice and suggestions.

The following apps currently still include 32-bit components to support detection and conversion of legacy media:
- Compressor,
- Final Cut Pro,
- iMovie,
- Motion.

Those components will no longer work in 10.15, so if you want to use them to convert media, now is the time to do that.

**Applications**
The following apps are among those which currently rely on 32-bit code:
- Adobe Creative Studio 6 and earlier
- Adobe Acrobat 11 and 2015 look vulnerable in their support frameworks
- Aperture, some components
- Bento will be totally broken

- FileMaker Pro 12 Advanced and earlier, but parts of 13 and 14 are also 32-bit and you would be best upgrading to 17 to be confident
- iPhoto, some components, and I expect that iPhoto will not be usable in macOS 10.15
- Mailsmith
- Mathematica 11.3, whose 32-bit Carbon front end is hastily being rewritten to use Cocoa
- Microsoft Office 2011, whose apps are version 14; if you use Office, you need to upgrade to version 16 apps provided in Office 365 or other current plans
- Microsoft OneNote 15
- Nisus Thesaurus 1.1.1; upgrade to the free App Store version 1.1.4 which is 64-bit
- OED (Oxford English Dictionary) 4.0; unfortunately the only alternative now is an online subscription
- QuarkXPress 2016 and earlier, some of whose components are still 32-bit; the best action is to upgrade to the App Store version 2018
- Skype Meetings App 16.2
- Toast Titanium, older versions, in case you still have one to support an optical burner.

Xcode presents an interesting problem, as many watchOS simulator runtimes and Carbon support are still 32-bit. It may be that developers who want to maintain backward compatibility with older versions of macOS will need to have Mojave + Xcode 10.2 available.

## macOS itself

Although Apple has made clear that traditional QuickTime support is being removed, there are still some other parts of macOS which remain 32-bit. These currently include:

- /System/Library/Components/PDFImporter.component
- /System/Library/CoreServices/CarbonSpellChecker.bundle
- /System/Library/Frameworks/Scripting.framework and /System/Library/Frameworks/AppKitScripting.framework, which are worrying
- /System/Library/Input Methods/InkServer.app
- /System/Library/Frameworks/QuickTime.framework and /System/Library/QuickTime/ of course.

Among the support frameworks likely to be lost are those for iWork 09 and Stuffit compression. I don't know of a compatible 64-bit alternative for the latter, which could make accessing old Stuffit archives interesting in 10.15. Internet plugins which look set to go are DirectorShockwave, Silverlight, and of course QuickTime.

## Workarounds

If you want to upgrade to macOS 10.15 but retain access to some older apps, there are likely to be two good solutions: dual-booting, and a Mojave virtual machine. With recent major versions of macOS, dual booting has become increasingly difficult because of changes made in file systems notably APFS, and in the way that features such as Time Machine work. If you intend to set up a dual-

boot system, you should wait until well after the release of 10.15 to be confident that it is feasible.

Vendors such as VMware are expected to release new versions of their products to run on 10.15, allowing you to run Mojave or earlier in a VM. Again, this is unlikely to be available until after the release of 10.15, but may prove the best solution for many users who need to keep 32-bit products going.

Mojave's **System Information** gives some additional details in its **Legacy Software** section, but that is neither complete, *nor does it appear to get updated as you upgrade to 64-bit versions.* If you want to run checks on whole folders like /Applications, my free **32-bitCheck** is the only tool that I know which is comprehensive, and my new drag-and-drop utility **ArchiChect** is ideal for looking at individual apps and other components. Both are available from **Downloads** above.

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