Dapper 3.x Manual

iTunes to Digital Audio Player Sync Tool

Updated: April 16, 2017

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Introduction

Thank you for downloading the Dapper manual. Reading this document will help you immensely in terms of setting up your Digital Audio Player as well as troubleshooting any issues you may have. I know its boring and long, but please take the time to read it to get the most from your DAP and Dapper.

Digital audio players have been designed to play music primarily, and the ability to connect and copy music have typically been secondary goals of the designers, so you will no doubt have picked Dapper as a result. This also means that some DAPs do not always behave well, especially when copying the huge amounts of data we find Audiophiles want to copy. Dapper attempts to mitigate these issues, but reading this manual thoroughly will explain the quirks and solutions to some issues we find with players.

Dapper is an app that copies your iTunes music and playlists to your Digital Audio Player. It supports just about any player that supports it's storage to be seen by your Mac as a drive, either directly or via an app such as SyncMate. You can see a list of DAPs we have tested on the Tested DAPs page on www.map-pin.com, but Dapper can be used by many other models too, so long as they show up on your Mac as Disk Drives.

Dapper requires OSX 10.8.5 or above and is available on the Mac App store. We also have demo versions available to download on our site, and typically those versions are "ahead" of the App Store versions because Apple takes a few weeks to approve and post new versions to the App Store.

If you buy Dapper on the App Store, and run it at least once, then the most recent version on our site will recognize the fact that you have purchased a license and unlock automagically for you.

What Dapper Does - An Overview

Dapper copies your music from your iTunes over to your Digital Audio Player. It also reads, re-formats and then copies your playlists to your Digital Audio Player so they will work correctly.

In order to tell Dapper what music you want to copy, you will use iTunes playlists. Dapper will look for a folder in your iTunes called Dapper and copy all the playlists in that folder, and the music associated with those playlists to your Digital Audio Player:
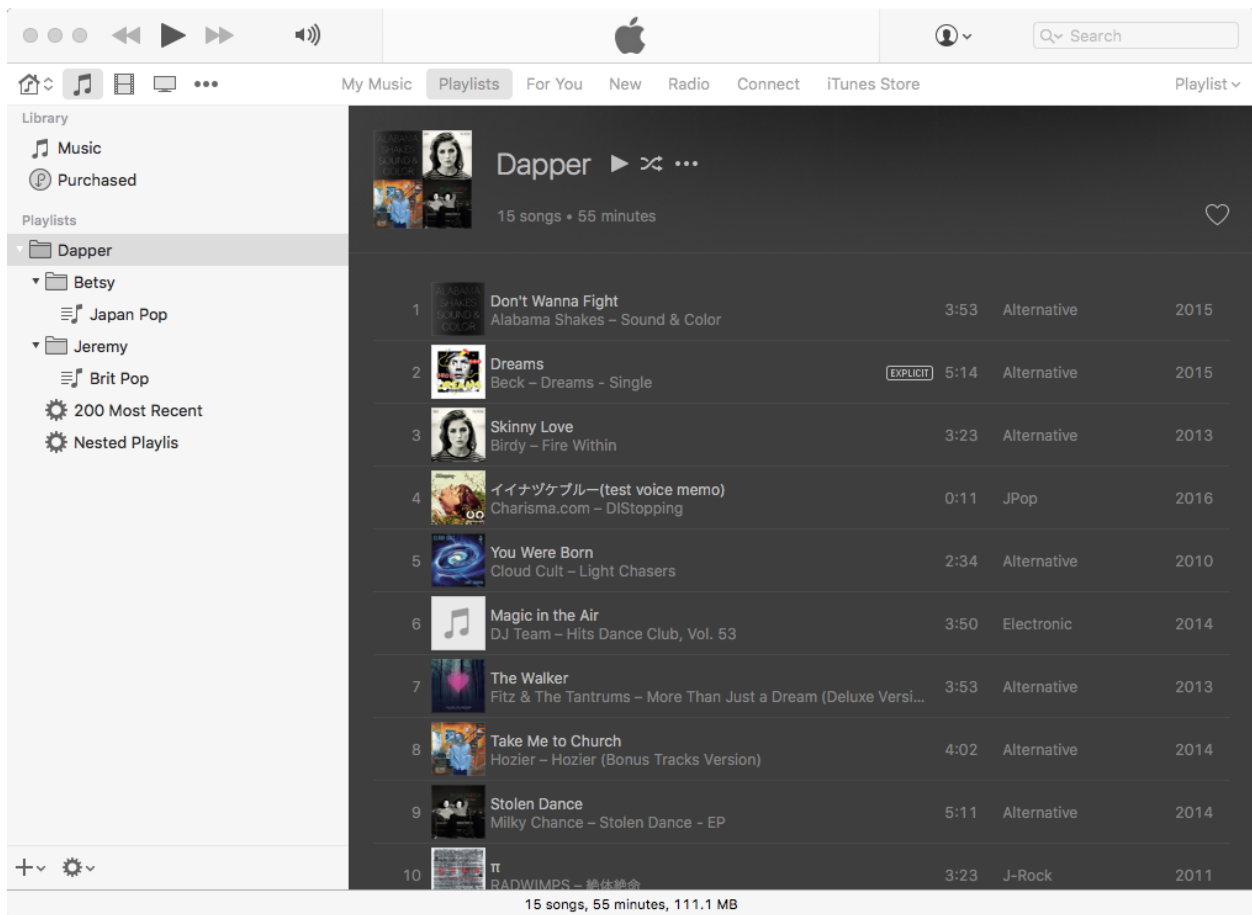
Dapper supports nested folders in order to allow you to further organize your playlists on your Digital Audio Player. In the example above, the Betsy and Jeremy folders and the Japan Pop as well as Brit Pop playlists will be copied over to the DAP.

Security and the OS X Sandbox

App Sandbox is an access control technology provided in OS X. It is there to stop any app from accessing any data it should not have access to. So when you first run Dapper, it has no access to your iTunes or disks, including your DAP.

From Apple: "A sandboxed app automatically obtains access to files in arbitrary locations when those files are *explicitly opened by the user* or are dragged and dropped onto the application by the user."

So, in order for Dapper to work, you are going to have to select your iTunes library folder as well as all the DAP drives that show up on your Mac. Dapper has a setup wizard that runs you through this process as well as other options.

Quick Start

When Dapper starts up for the first time, it takes you through an initial setup explaining what it does:

The main things you are going to do are to select your Music folder to give Dapper access to your iTunes libraries, select each of your DAP drives in order to tell Dapper where to save your music to, and lastly select how you want to distribute your music between the storage areas on your DAP.

Step one - select your Music folder:
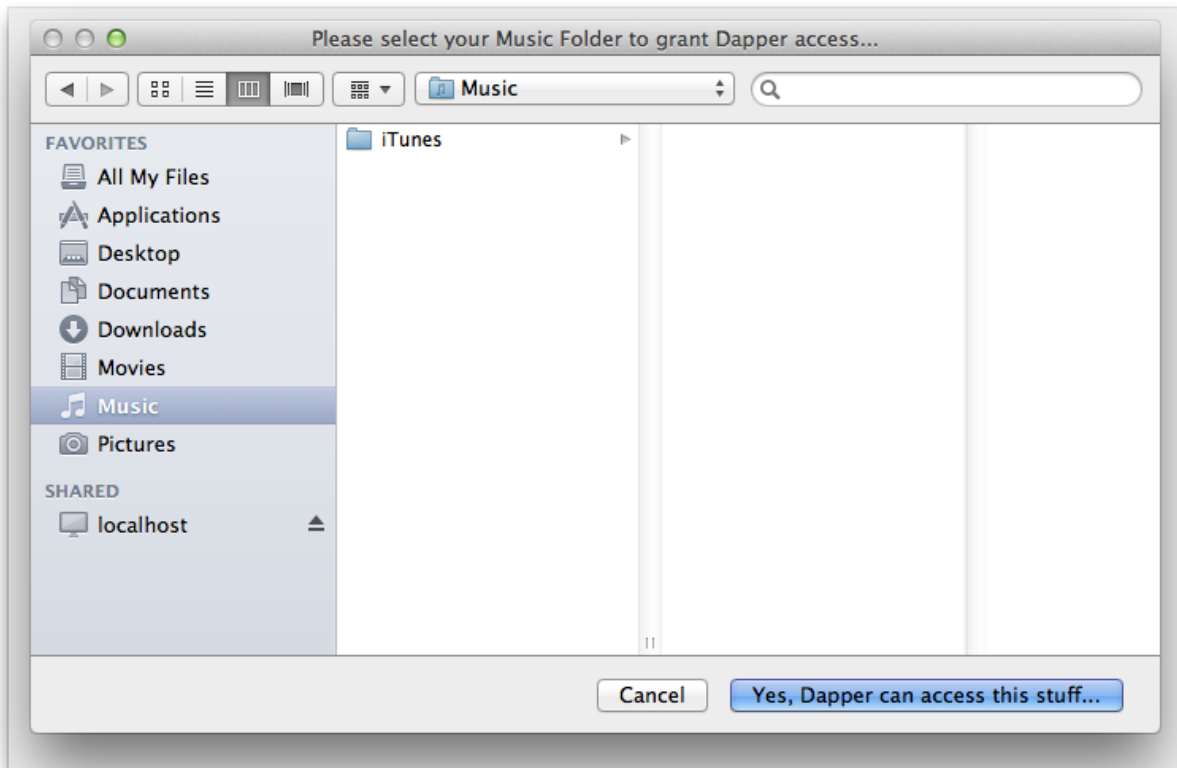
Selecting your Music folder tells Dapper where your iTunes library is, and tells OS X to allow Dapper to read those files. If your iTunes library is somewhere else, select the folder that contains the iTunes library itself.

Notice above that we did not click on the iTunes libraries themselves, but simply made sure i was in the folder. If you select your library only, this will usually work, but the best option is to select your Music folder.

If you are an Audiophile you may even have multiple libraries - once again, don't select the library itself, select the folder that contains the library.

If you do have multiples, as shown below, Dapper will ask which one you want to use:
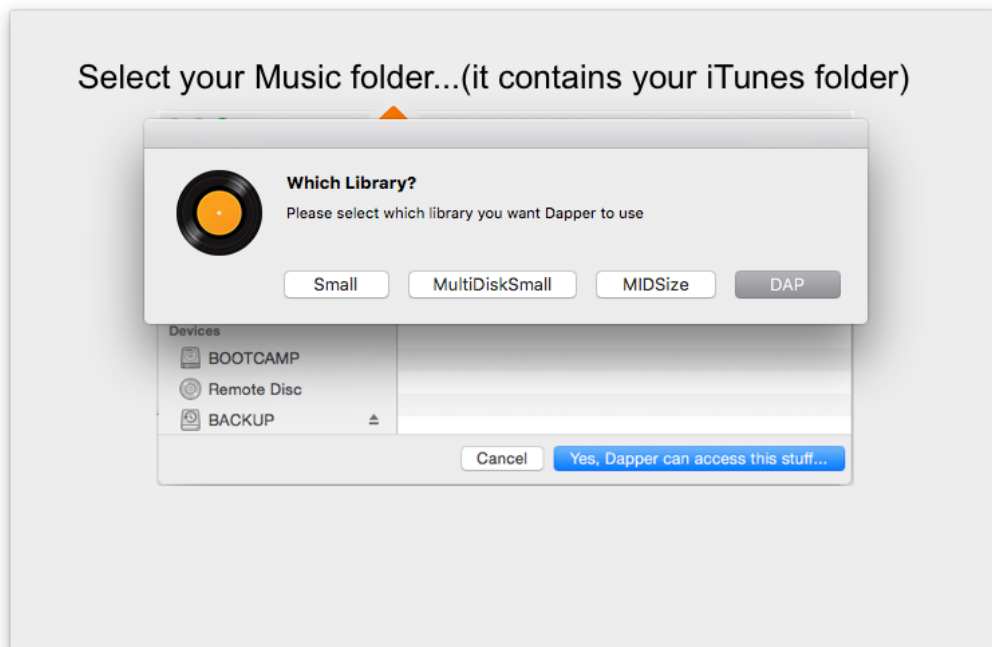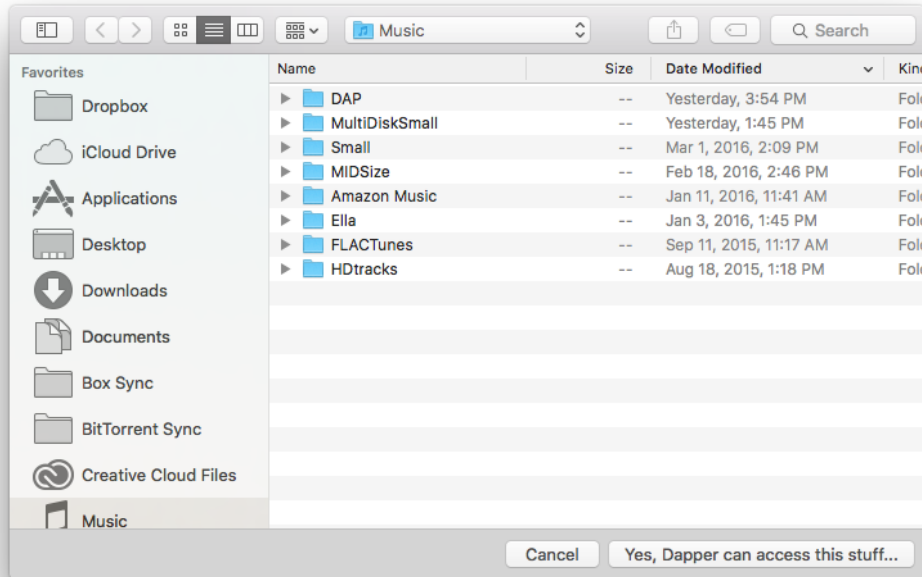
Step Two - select your DAP Drives:

Dapper needs to know where to save your Music and Playlists. In order to do this, it will ask you to select your DAP drives, or the storage areas shared by your Android based DAP.

When you connect your DAP to your Mac, there are two ways Dapper can "see" your Digital Audio Player.

A DAP that shows up as Disk Drives:

It May appear in your Mac as one or two external devices, which will show up on the left hand side of any Finder window. You can open a new finder window by clicking it's icon on the left hand side of your dock:
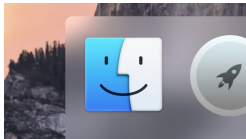
You will notice on the screen shot below that when the user connected their FiiO X7, it showed up in the finder on the left as two devices - **X7** and **SD_CARD**.
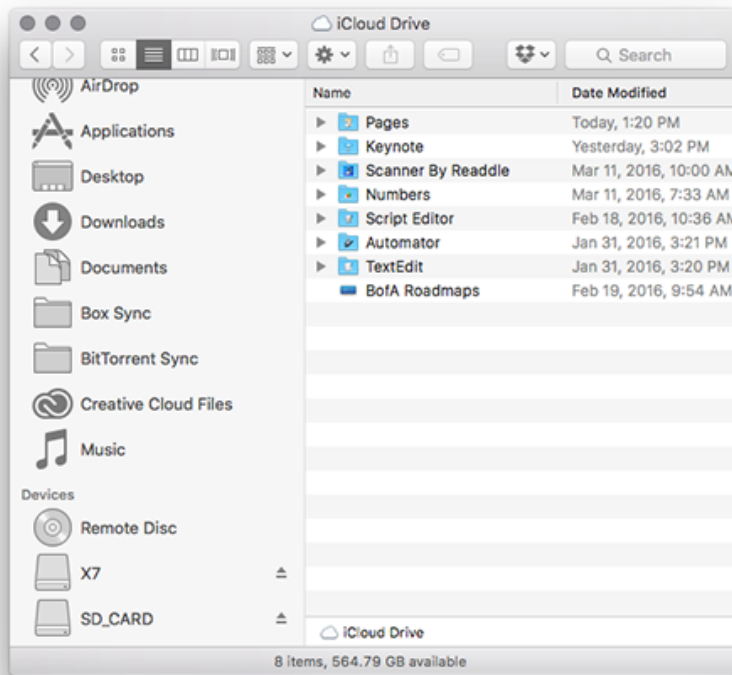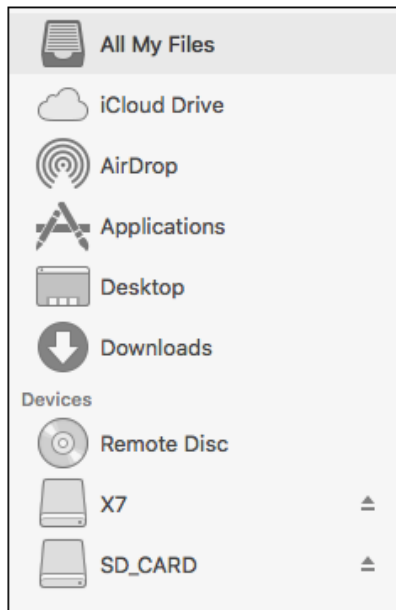
A DAP that is Android Based and uses Media Transfer Protocol:

Digital Audio Players that use Android will use Media Transfer Protocol or MTP to connect to your Mac. In this case it will not show up in the Finder but you will be presented with a list of storage areas to select in the next step… You should read the section of the manual titled "Android DAPs and what you need to know" in order to learn about some of the options and characteristics of Android based DAPs.

After selecting your Music, Dapper will ask you to select the first or primary drive. If your DAP only shows up one drive, you should select it now. If your dap has two storage areas, you will want to select the one that is the first, primary or internal drive. If you have more than two storage areas you will only be able to pick two of them, usually the MicroSD cards.

You will be asked for the first drive, and then a second drive. If your DAP does not have a second drive, you can simply skip the step of selecting the second drive.
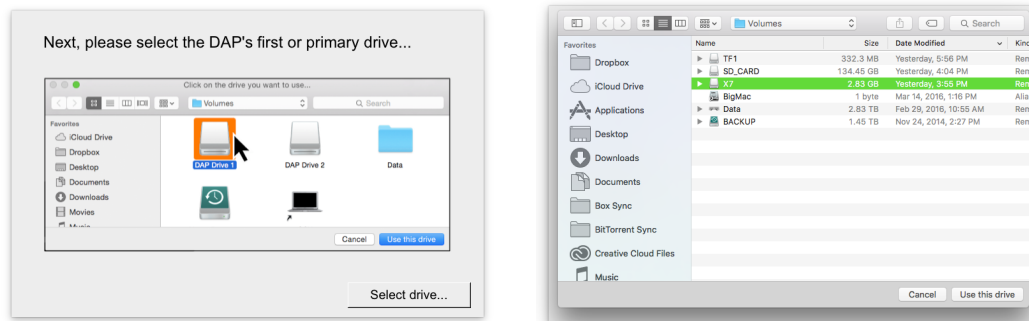
Step 3 - Add your Playlists

Next, Dapper will walk you through some information. You will need to create some playlists in iTunes that contain the music you want to sync. These playlists should be put into a Playlist Folder named "Dapper" Here is a picture of the playlists portion of iTunes, set up and ready to go.
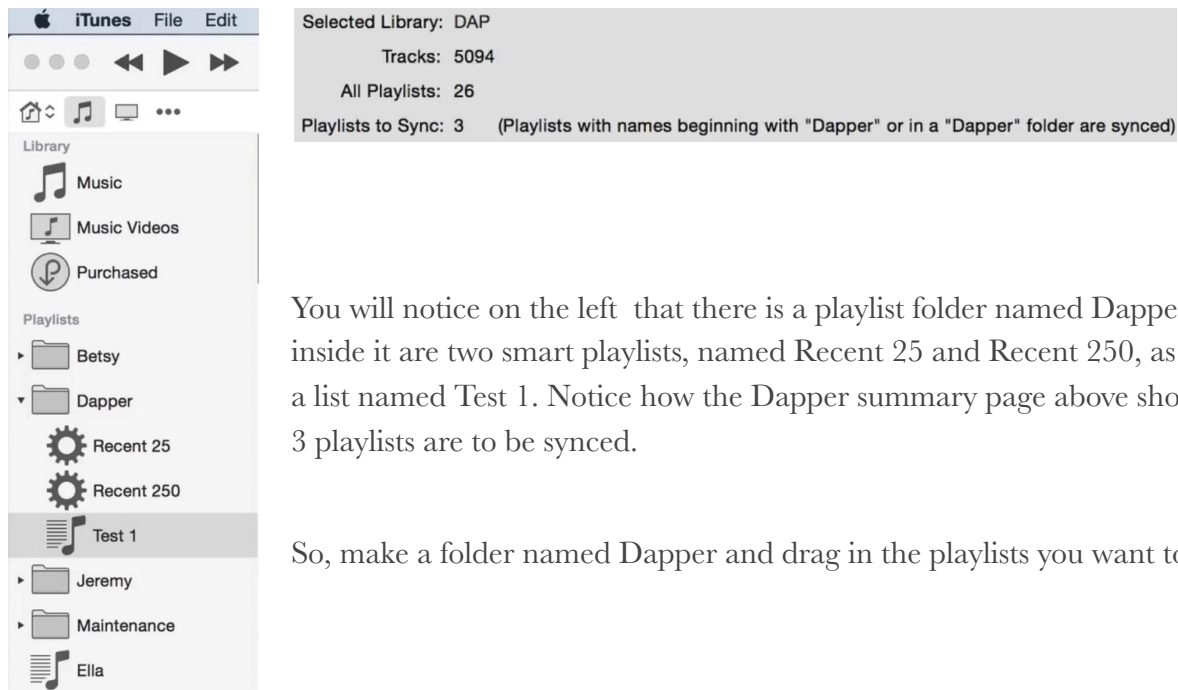
You will notice on the left that there is a playlist folder named Dapper and inside it are two smart playlists, named Recent 25 and Recent 250, as well as a list named Test 1. Notice how the Dapper summary page above shows that 3 playlists are to be synced.

So, make a folder named Dapper and drag in the playlists you want to sync.

Step 4 - Drag the slider to allocate music across the storage on your DAP

You can now use the slider to choose what music is saved on the first and second storage drives you selected:

You can also click the calculator button in the center of the slider to automatically have Dapper balance the music proportionally across three two.

Step 5 - You're done - Click "Go"

Once you are done, click the lock button to lock your configuration and then click the go button to sync. Bear in mind that the "Go" button only appears if the drives you selected are connected to your Mac.
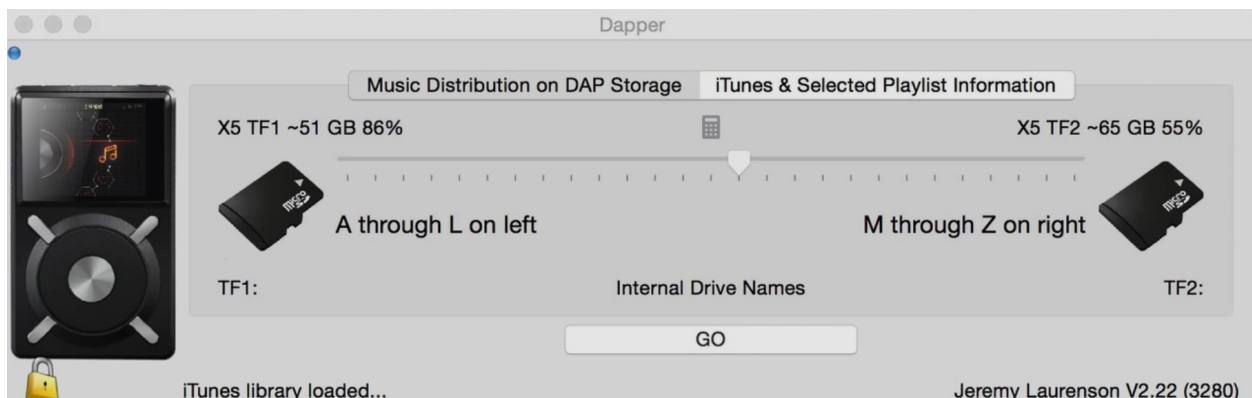
Android DAPs and what you need to know

Android devices can connect to your Mac in two different ways. One is by supporting "USB Mass Storage" in which case your DAP shows up on your Mac as a set of Disk Drives. If this is the case with your DAP, you can skip this section. Android can also connect using the "Media Transfer Protocol" or MTP in some cases (Such as the Onkyo, Pioneer and most Astell and Kern players) If your device uses MTP, you need to read this section.

Dapper can sync directly to a connect Android based DAP if you have installed Android File Transfer for Linux and OSX. When you install the Dapper scripts you are essentially installing them and this tool, and you are prompted to do so when you first connect an Android DAP that Dapper knows about. Alternately, you can use SyncMate to most your DAP drives on your Mac, in which case Dapper will automatically turn off MTP mode.

Why doesn't my Mac see the device as a Disk when I connect it?

USB mass storage — also known as "USB mass storage device class," USB MSC, or UMS — was the way older versions of Android exposed their storage to a computer. When you connected your Android device to your computer, you'd have to specifically tap a "Connect storage to PC" button to make the Android device's storage accessible to the computer over USB mass storage. When disconnecting it from the computer, you'd have to tap a "Turn off USB storage" button.

USB mass storage is the standard protocol used by flash drives, external hard drives, SD cards, and other USB storage devices. The drive makes itself completely available to the computer, just as if it were an internal drive. In this case, it shows up as a disk on your Mac.

MTP stands for "Media Transfer Protocol." When Android uses this protocol, it appears on PCs... but not on Macs.

This protocol works very differently from USB mass storage. Rather than exposing your Android device's raw file system to OSX, MTP operates at the file level. Your Android device doesn't expose its entire storage device to the Mac. Instead, when you connect a device to your computer, the computer queries the device and the device responds with a list of files and directories it offers. Usually its the Music App thats responds to the request - and that means if the Music app is still "Scanning" your music, the Dapper app on your Mac may not "see" everything.

You should use Dapper to Sync using MTP only when the Music app is finished scanning your storage.

The computer can download a file — it will request the file from the device, and the device will send the file over the connection. If a computer wants to upload a file, it sends the file to the device and the device chooses to save it. When you delete a file, your computer sends a signal to the device saying, "please delete this file," and the device can delete it.

Android can choose the files it presents to you, and hide system files so you can't see or modify them. If you attempt to delete or edit a file that can't be modified, the device will refuse the request and you'll see an error message.

Your computer doesn't need exclusive access to the storage device, so there's no need to connect the storage, disconnect it, or have separate partitions for different types of data. Android can also use ext4 or any other file system it wants — OSX doesn't have to understand the file system, only Android does.

Apple does not support MTP, like Windows does, and so a lot of work has gone into Dapper to try and make the connection more reliable. It works great on some devices using a modern version of Android like the Onkyo, but on some older ones like Astell and Kern AK300s it may be more flakey. If it is, you will be alerted by Dapper and you may have to reset the connection by unplugging your DAP, and plugging it into a different USB port, or better yet unplug and reconnect your USB hub.

For large amounts of changes (such as with an initial sync) we suggest you connect your storage cards to your Mac directly using a USB adapter. After that you'll only be syncing an album or two and the MTP sync will be just fine. See the next section for fast syncing...

Remember: Only user Dapper when your DAP has scanned all the music, or Dapper will think it has to copy over a lot of your music again because Android does not report all your music is on the DAP yet. Its a great idea to make sure after you have powered your Android device note that you "Scan for new music" and let if finish. If you see Dapper wanting to change a large number of files you *know* are on the DAP, give it a few minutes to catch up.

Getting more speed from your Sync

Dapper is capable of syncing at speeds of well over 300MB/s… so why are you getting slow speeds?

The reality is, with fast SDCards, connected in fast card readers you can get transfer rates of 50MB/s to 70MB/s to your storage cards:
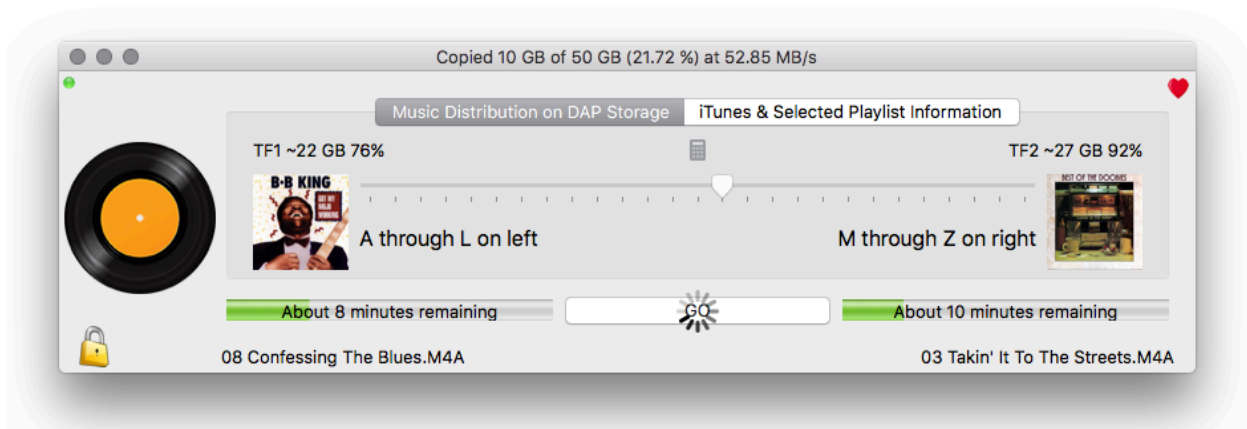
The bottleneck is often caused by the connection between your Mac and your actual storage card… either the cable, the DAP itself, or the card reader you may be using.

The DAP itself is made for Music, not transfer speed, and is a bottleneck.

The MicroSD Card may not be best.

You may not be connecting a great card to a great card reader.

So how can you sync the fastest to get your music on your DAP?

### 1… Use a MicroSD card reader (especially on your first big sync)

Connecting using your DAP is extremely slow. Most DAPs are made to play music, not to get a fast transfer speed and we regularly see speeds of 1MB/s to 3MB/s… or even lower. The example above is more than ten times faster when we connect the MicroSD card directly to a reader in a Mac!

2… Choose a good card for writing speed (or be patient with your current card)

There are three different standards for speed, and you may see more than one on a card. The original speed marking was a number inside the letter C (middle in the image below). The number denoted the minimum sustained write speed, so a 'Class 6' card would be capable of writing at 6MB/s – that's six megabytes per second. That's a sequential write speed, so it only applies when writing large amounts of data (such as when copying large music files) in sequential memory cells.

Most Class 10 microSD cards are capable of much more than the minimum of 10MB/s write speed. The SanDisk 200GB cards can do a theoretical 30MB per second on long sequential files. On shorter ones like album art youre going to see lower speeds.

Now, for even better speed on newer cards, this is where the UHS system comes in. It stands for Ultra High Speed, and uses a number in the letter U to denote the class. A UHS class 1 card writes at a minimum of 10MB/s and a UHS class 3 card writes at a minimum of 30MB/s. So basically the U number is a factor of 10 better than the C number, which also maxes out at C10.
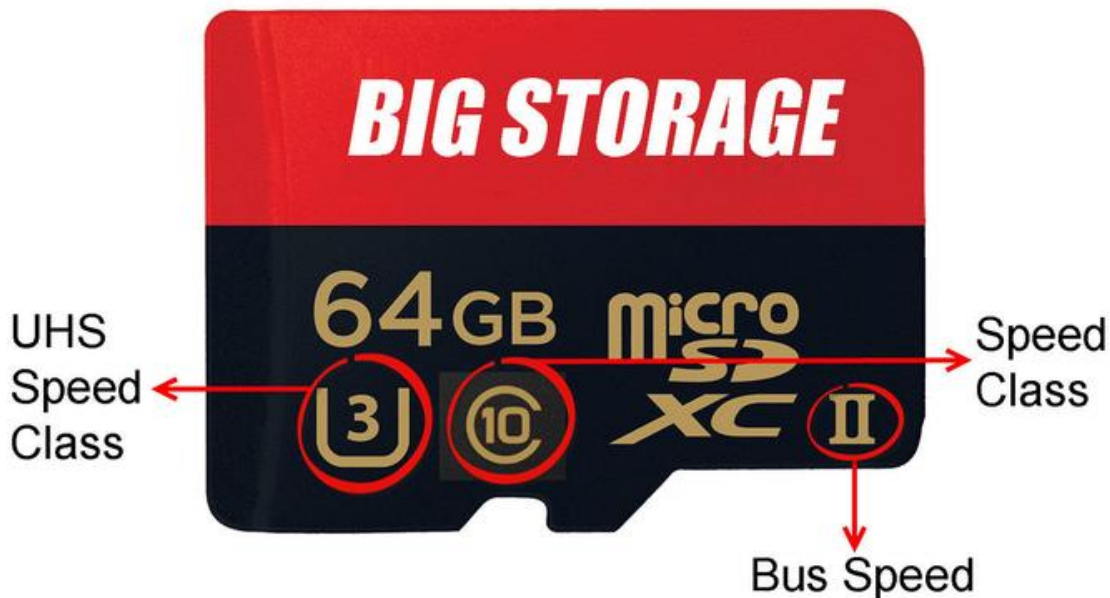
You may also see UHS-I or UHS-II on the card. This tells you which technology the card uses. The UHS-I 'bus' can operate at up to 104MB/s, while the UHS-II bus can transfer data at up to 312MB/s. This doesn't mean the card will read and write at those speeds, only the maximums.

At the moment I don't know of any DAPs that actually take advantage of the UHS-II connections on these cards… but thats fine, we're worried about writing to them from your Mac, not your DAP. So UHSII makes a difference. You DAP can read slowly - thats fine:
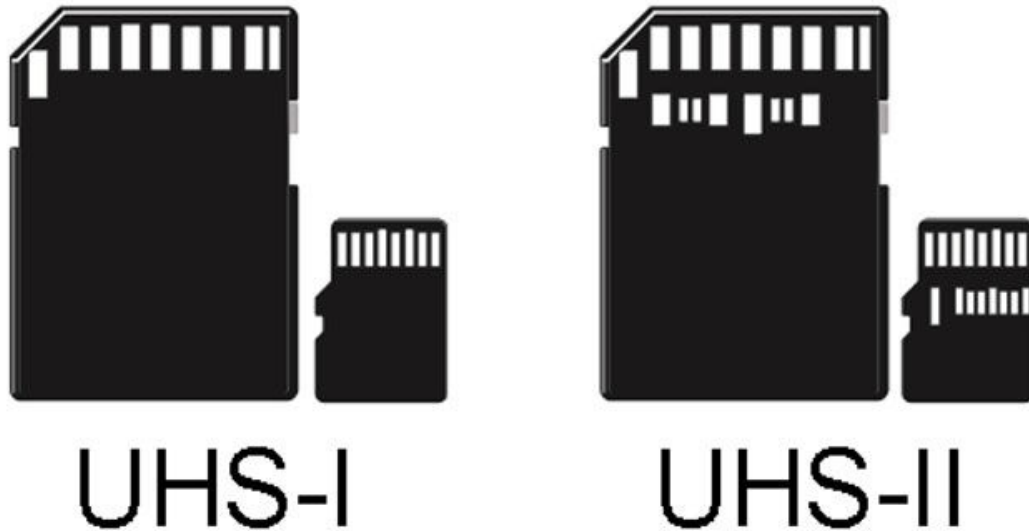
3… Choose a good card reader (writer) and use that instead of your DAP for big syncs:

Just like the cards themselves, the readers make a difference. Your DAP by itself is not a super-speed card writer. Don't expect much over 2.5Megabytes per second using your DAP, and in some cases if it's also doing other things (like emulating/masquerading as a disk using software) you may see a lot less. So a 90MB/s card in your FiiO X5 is basically trying to squeeze all that data through the X5 emulation software which can do 3MB/s if the planets are aligned or a horrific .1MB/s if its busy.

So, take out the middleman and plug the memory card into a good, fast reader thats connected to your Mac using good, fast USB 3.0! If your Mac is older and only has USB 2.0 ports, theyre going to max out at 60MB/s vs USB 3.0 at 640MB/s. Make sure to plug the reader into a USB 3.0 port directly on your Mac - no hubs, please.

Recommended Cards and Reader

SDCard Reader:

I recommend the Lexar Professional Workflow UR2 Three-slot microSDHC/microSDXC UHS-II USB 3.0 Reader - LRWUR2TBNA which is on Amazon for around $40

SDCard:

I recommend the Samsung 256GB 95MB/s EVO Select Micro SDXC Memory Card (MB-ME256DA/AM) card available on Amazon for $199

All these things together help make things faster. You'll never get the theoretical maximum (See the "Up to" text) since Dapper is reading, and writing files over the USB connection to the card you are using, but if you get the best reader, best card and USB 3.0 your transfers will be able to use the added speed in order to help all the operations and improve you speed dramatically - our demo video below uses the best of the best on freshly formatted cards.

My speeds vary, but with the recommended cards and a reader I get speeds around 55-60MB/s. With a 200GB SanDisk card I get only 3-5MB/s.

Connecting Dapper directly to an SDCard instead of via the DAP

When your Mac is connected to your DAP it can see the storage available in the DAP itself and also any external cards you have plugged into the DAP. As I described in the previous section, this is great, but can be very slow.

In order to do an initial sync or a subsequent sync much faster, I recommend plugging the storage card(s) into a card reader connected to your Mac instead of via your DAP after you have done a normal setup:

1. Make sure you have run through the normal Dapper setup with any storage cards in your DAP itself.

2. Eject the storage cards/DAP from our Mac by using the finder. (Safely remove the device)

3. Turn off your DAP.

4. Uncheck the "Use Media Transfer Protocol for this DAP" checkbox if its checked in the options tab.

5. Remove any external storage cards from the DAP and connect them to your Mac directly using a USB card reader. (A good one)

6. Turn your DAP back on and reconnect it.

7. Dapper will now see any internal storage in your DAP as well as the "external storage" which is now directly connected, you can click Go to sync.

8. If your Dapper does not show the Go button, you can unlock the config and click each of the icons in the dapper window that represent the internal/external storage and re-select the internal card or the external card.
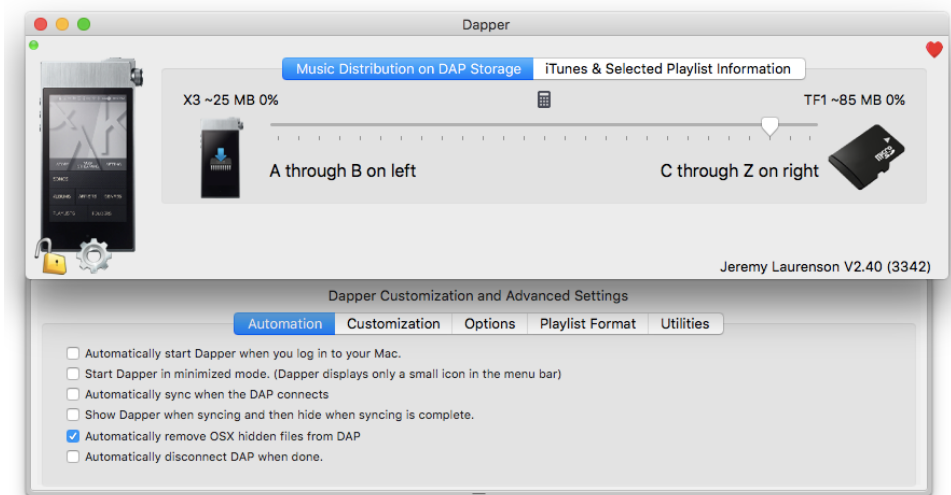
For a demo video, visit: http://bit.ly/2g7sqsz

Changing Settings in Dapper

Dapper has tons of settings to allow you to change what and how your music is synced.

In order to access settings, you unlock Dapper by clicking the lock button and then click the settings gear:

This will open the settings drawer underneath the Dapper window:


From here you can access all sorts of settings by clicking on the appropriate tab in the settings drawer. When you are done, you can click the gear icon again to close the drawer. We will cover each tab in the "Dapper Settings in Detail" section.
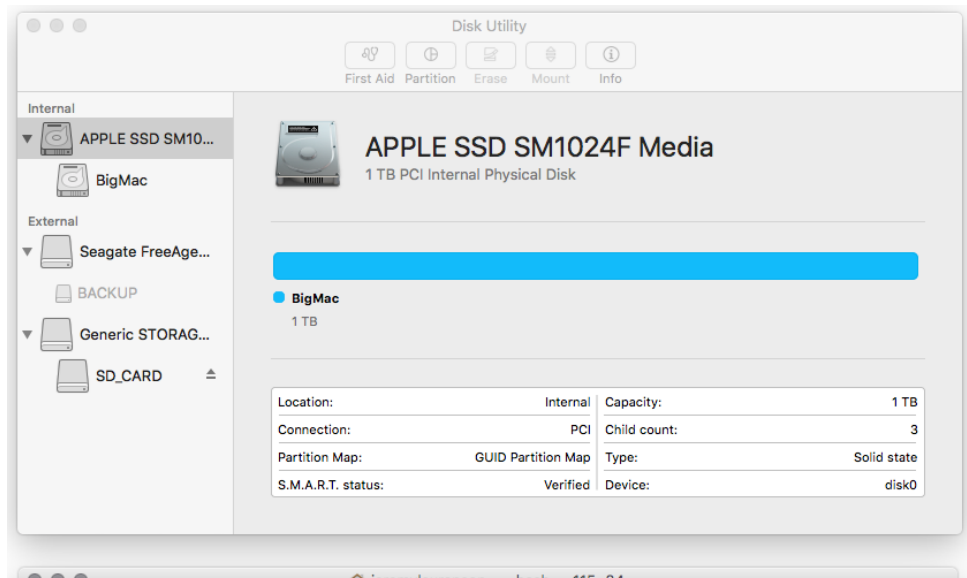
Formatting of SD Cards

For your DAP to read your cards best, they are best formatted in the DAP itself. OS X does not necessarily format SDCards in the way that the players like, and the difference is subtle.

Here is a view of Disk Utility for a card that FiiO X7 likes - notice the format:
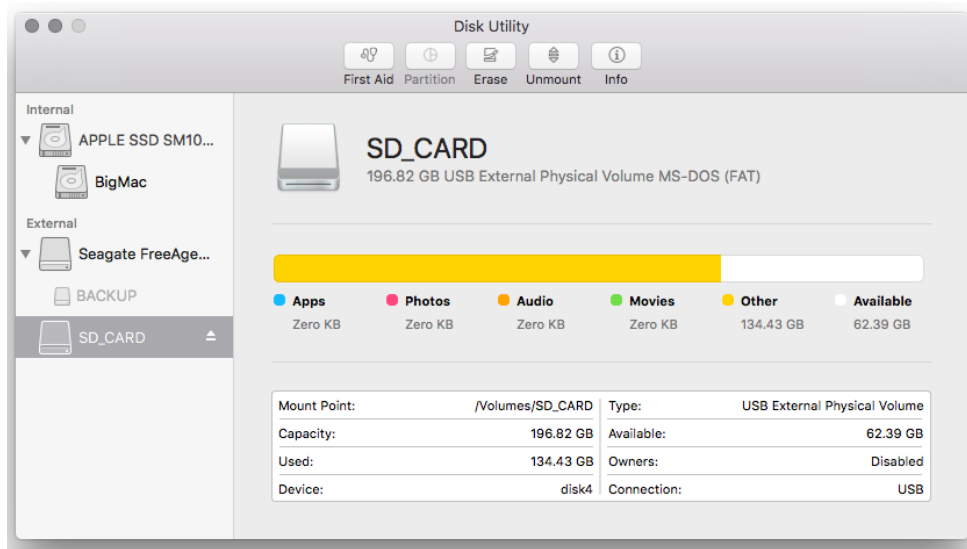
Here is a card the X7 does NOT like - a Generic Storage Disk:

Both these disks are formatted as ExFAT and both look like they are named SD_CARD, but one works and the other doesn't.

Dapper Settings in Detail

Let's dive right into the settings available for you to change the behavior of Dapper. In order to access settings, you unlock Dapper by clicking the lock button and then click the settings gear:


This will open the settings drawer underneath the Dapper window:
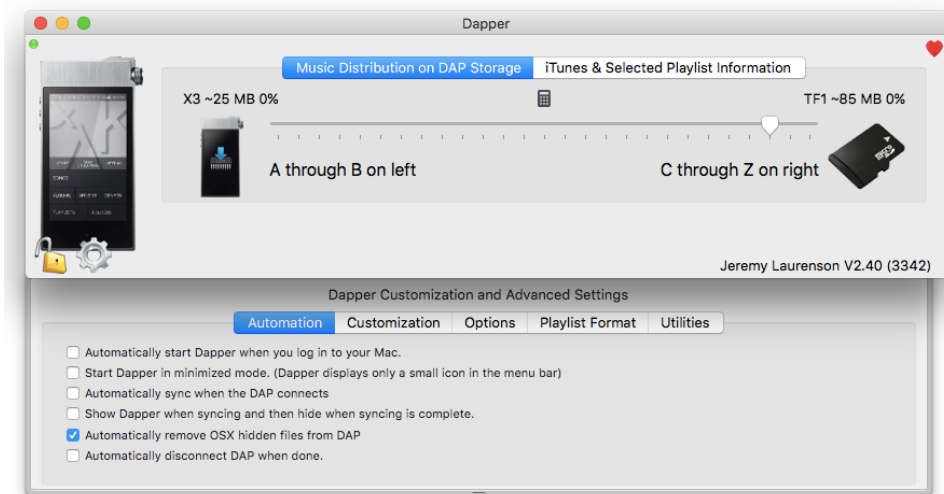
Automation Settings

Automation settings allow you to set up how Dapper runs and what it does automatically. The goal is that after you have your Dapper settings dialed in you can automate the whole procedure of syncing and ejecting the DAP disks from the Mac so you can simply plug it in, wait for syncing to finish and then disconnect it.
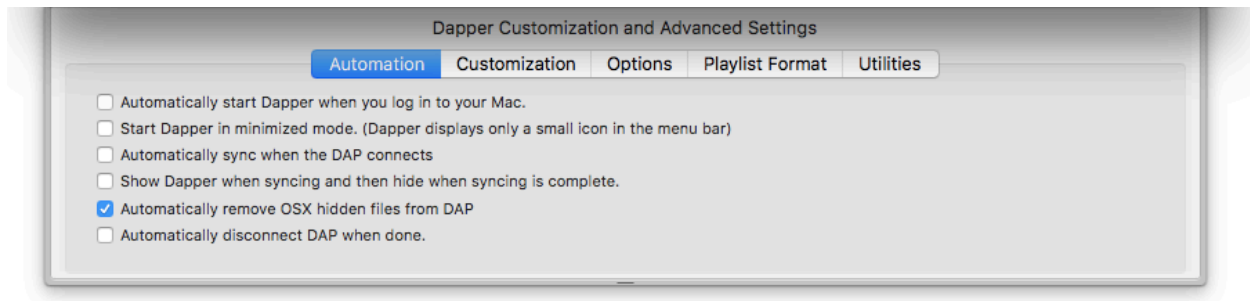
Automatically start Dapper when you log in to your Mac will cause Dapper to always be up and running when you are at your computer. This will make sure Dapper is always running, waiting for you to connect your DAP.

Start Dapper in minimized mode is the setting which will make Dapper start and not have it's window open. It will appear only as a little Dapper icon in your top menu bar. Click it in order to show or hide the Dapper window. This setting helps keep Dapper out of the way when you're not using it, even if it launches on startup.

Automatically sync when the DAP connects will set Dapper so that when your DAP is detected, Dapper will automatically start syncing - as if you clicked the "Go" button. You'll need to set some other settings in the options tab to make this 100% automated, as Dapper usually warns you what its going to change before just proceeding.

In order for this feature to work, you must make sure Dapper's configuration is locked (the lock icon on the main window is locked) :

When locked, Dapper checks every few seconds and if a DAP has been connected while the configuration is locked, it will sync.

Show Dapper when syncing and then hide when syncing is complete will allow you to watch the progress if you have enabled minimized mode above. If this isn't turned on the sync will happen entirely hidden, with just the Dapper icon on the menu bar changing color to green as it syncs.

Automatically remove OS X hide files from DAP is a setting which will cause Dapper to clean some of the OS X files that OS X places on your DAP. You may notice as you browse

folders from your DAP itself that you see strange files named ds_store , .trashes etc. This setting will cause Dapper to try remove those before finishing syncing.

Automatically disconnect DAP when done will cause Dapper to eject the DAP disks from your Mac when it finishes syncing so you don't have to do this manually. It solves the issue of the "Disk not ejected properly" notice you may get if you forget.

Customization Settings

Customization settings allow you to customize some of the organization of files on your DAP as well as when Dapper will force you to acknowledge big changes to your DAP. Lets take a look:
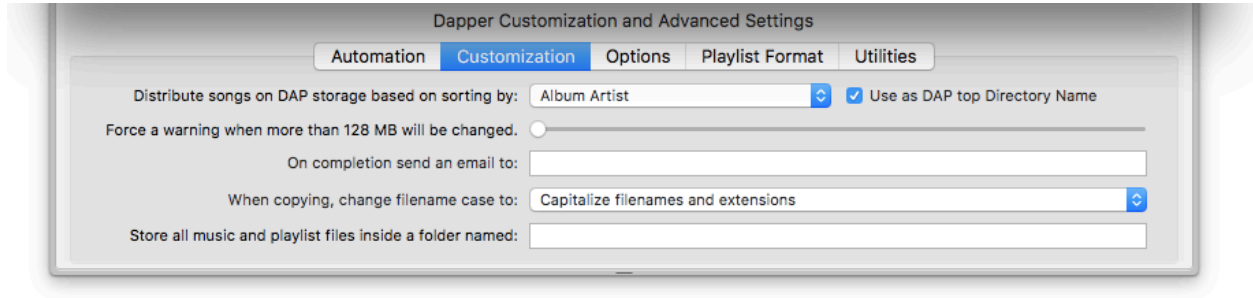
This space intentionally blank

Distribution of Music between DAP Storage Areas

The **Distribute songs on DAP Storage based on sorting by…** dropdown list allows you to determine how you want your music to be allocated between the storage areas in your DAP.
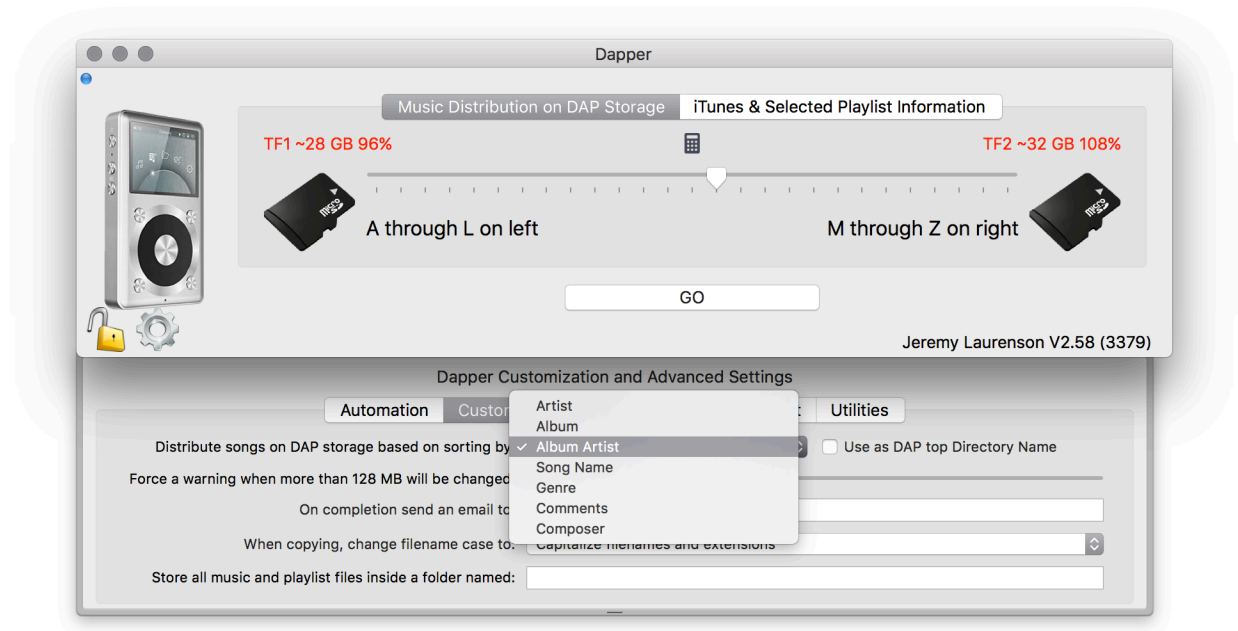
Dapper will look at whatever property you select here, and then use this to alphabetically decide what music goes onto which card. The main window slider allows you to choose where the cutoff is alphabetically between each card.

What exactly is being used to sort is what you are selecting in the **Distribute songs on DAP Storage based on sorting by** dropdown list. By default it is Album Artist, but as you can see you have plenty of options to select from.

For example, in the DAP disk shown below, the sorting was based on Album Artist and the cutoff for the first Disk was A though L on left and M through Z on right.
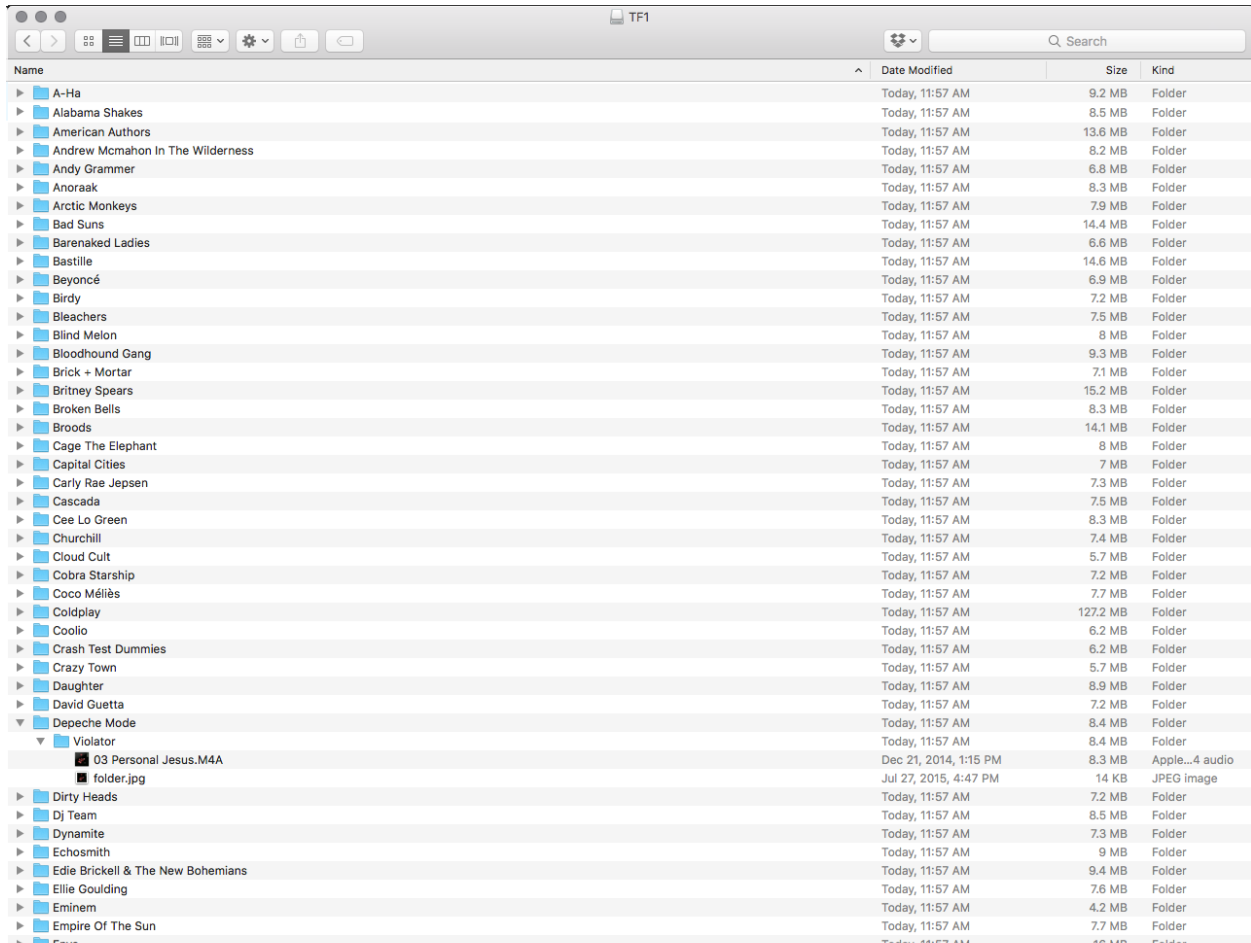
Notice how the directory structure includes a folder for each **Artist**, followed by a folder for each **Album**. Inside the album folder is all of the music as well as a **folder.jpg** file with the album art Dapper has extracted for you.

If you check the checkbox next to the **Distribute songs on DAP Storage based on sorting by** dropdown list, the **Artist** folder is instead replaced by whatever you selected from the list. For example you can sort by Genre and put all your Albums in Genre folders:
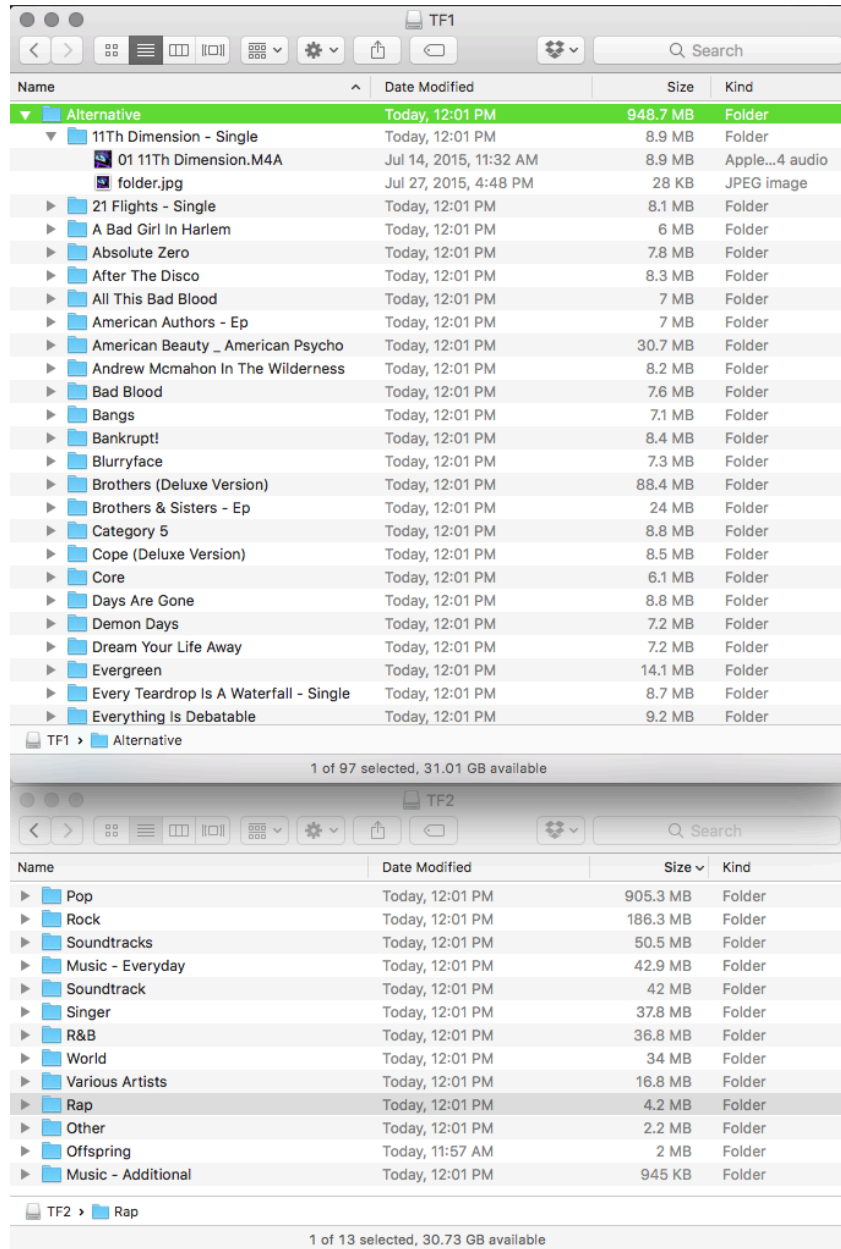
As another example, if you sort by Album *and check the checkbox* to change how the folders are actually organized on the DAP, then Dapper will create a directory structure that just has albums and not artists:
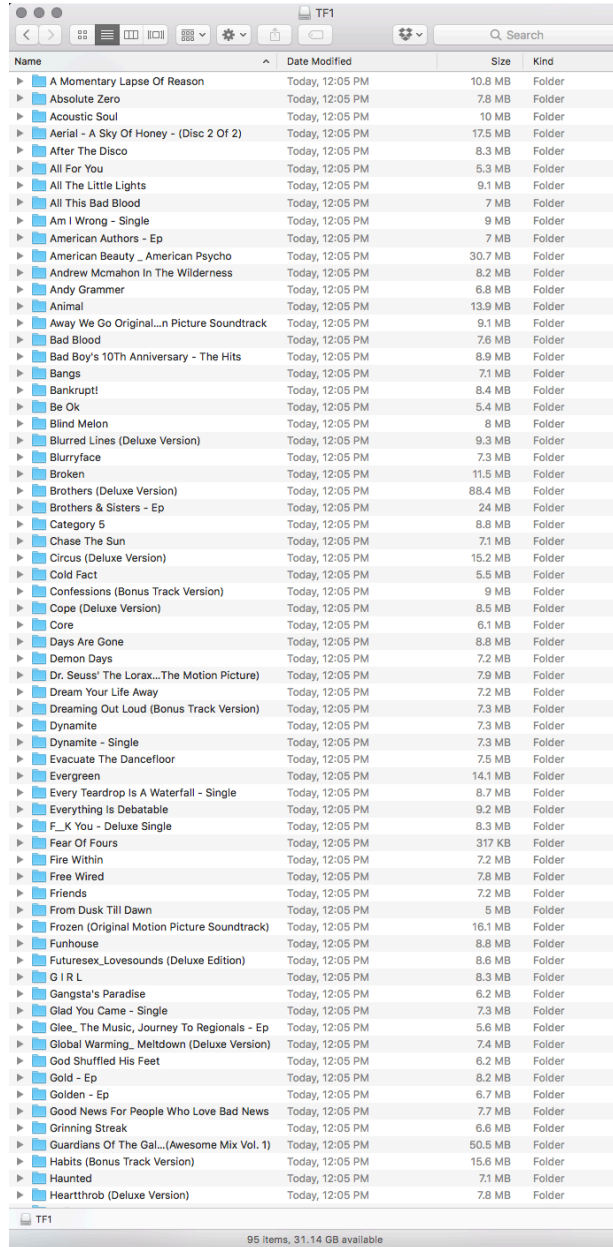
By using the **Distribute songs on DAP Storage based on sorting by** dropdown list and it's associated checkbox for making that also the way the actual files are saved not he DAP you have a huge range of capabilities.

As mentioned before, play around with just a few smaller playlists first and then you can test different settings to see if they are to your liking before applying to a much larger number of files - as this takes time to sync.
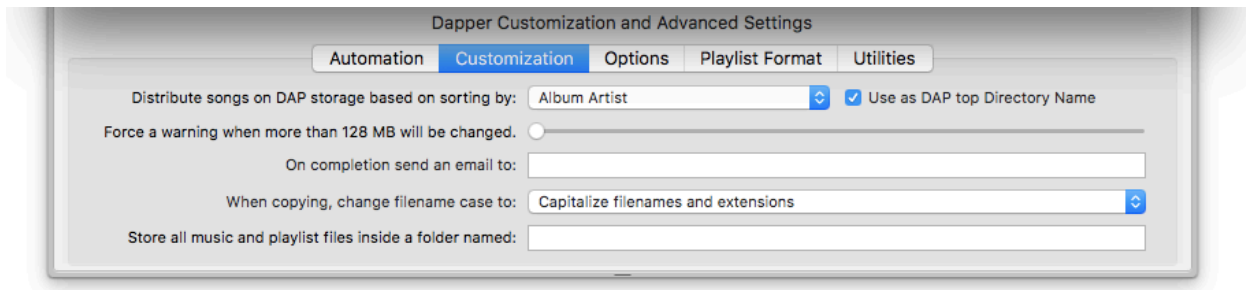
The **Force a warning when more than 128MB will be changed** is used in conjunction with automatic syncing. If you turn on automatic syncing, Dapper will automatically run through a sync process whenever you connect your DAP. This is great, unless because of some configuration change you're going to do a lot of changes.

This slider is there as your emergency circuit breaker. You can choose to have Dapper auto sync unless this amount of date or more is about to be changed, in which case it ill prompt you first.

The slider values can be set from 128 Megabytes all the way to 1024 Gigabytes.
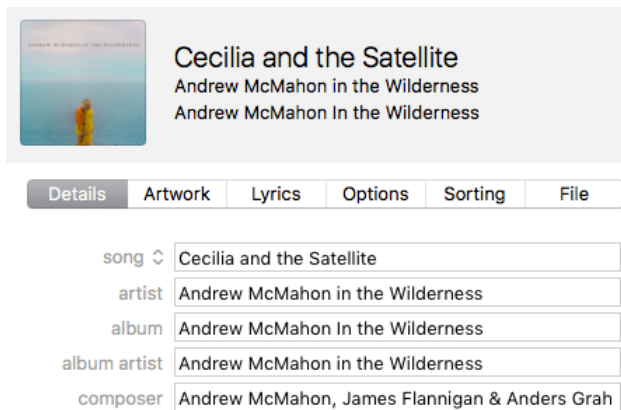
On completion send an email to field allows you to specify an email address to use when sending notices. If this is filled in, Dapper will email this address when a sync is complete. So, for example, you can enter an address to SMS your phone so what you get a notification automatically after a long sync.

In order to enable this field you need to install the Dapper helper scripts from our WebSite at.

When copying, change filename case to allows you to have Dapper automatically "normalize" the capitalization of files a variety of ways.

For example, if the name of your particular track is mixed as with this example:
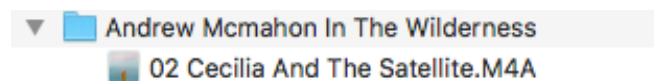
Capitalize Filenames and Extensions causes the files and folders to be capitalized like this:

Store all Music inside a folder named allows you to make sure your music is stored in a folder and not just the root of the DSP drive. This is especially useful when you are running an Android DAP. *Note: if you select this, Dapper will totally ignore whats outside of this folder.*

Here you can see the difference:
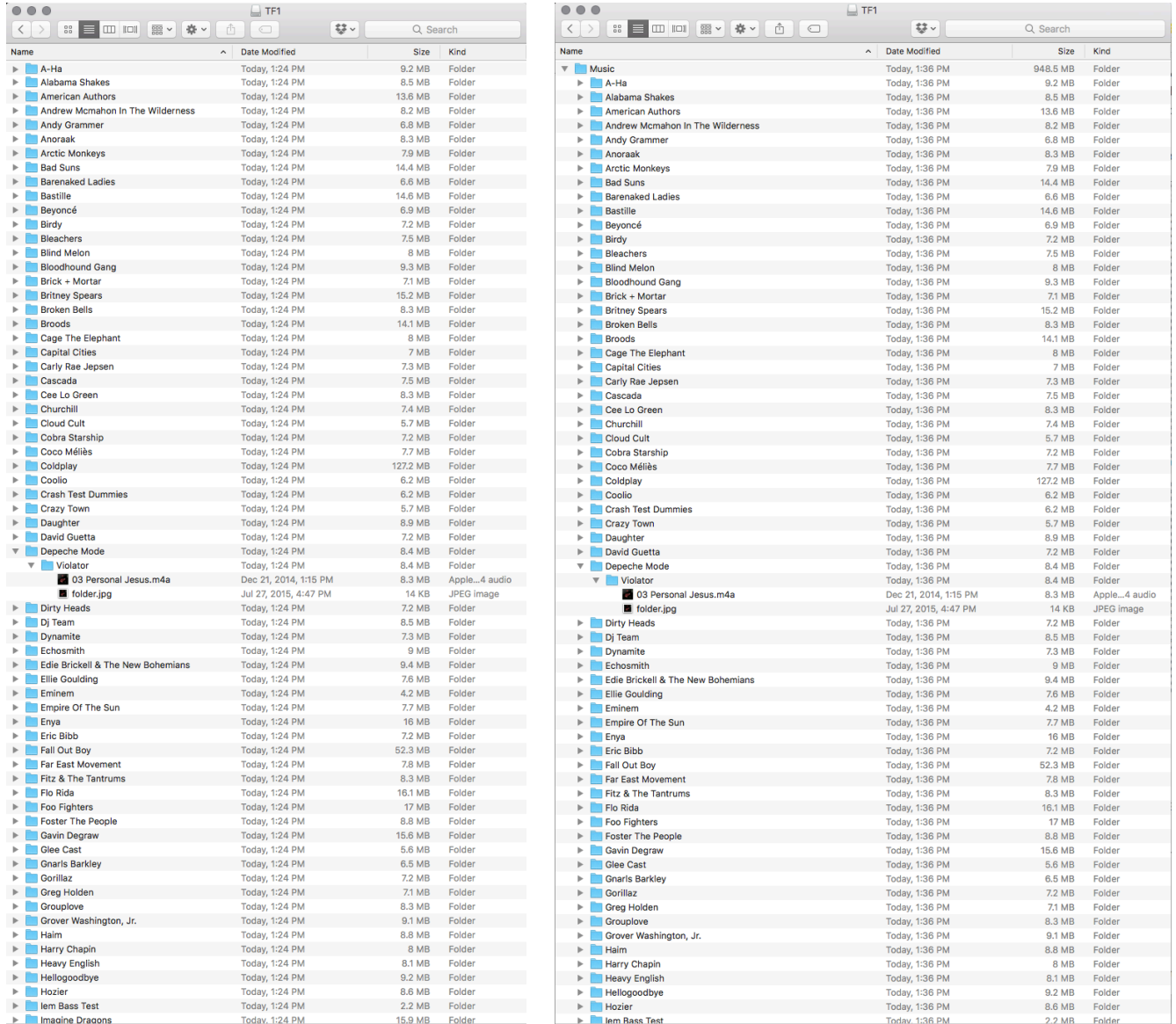
This will save your Music inside the folder - there is a separate setting for a playlists folder in the playlist customization screen.

Options Settings

The Options settings in Dapper allow you to turn on or off several different functions in Dapper. Let's cover each in turn:
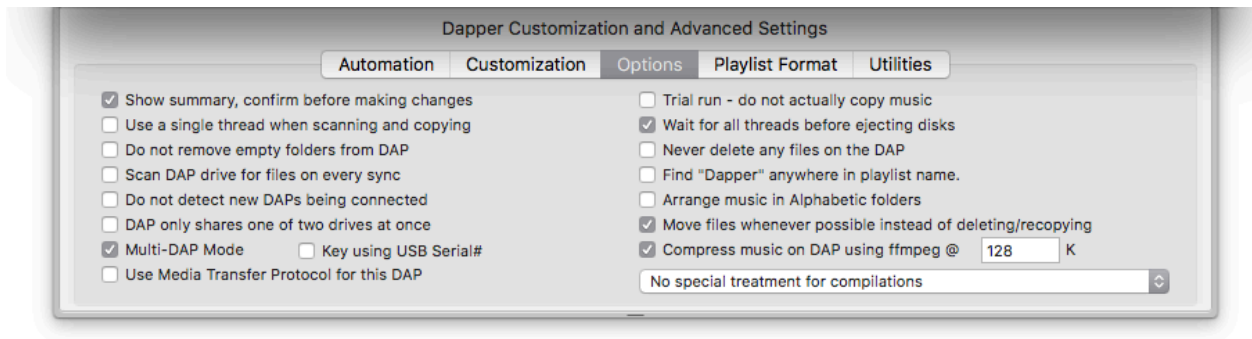
Show summary, confirm before making changes checkbox causes Dapper to read out to you before each sync what will change:

If you want to automatically sync, you can uncheck this box. You will still be notified despite this if the amount of data that will change is more than the amount you selected on the **Force a warning when more than xxxx will be changed** in the **Customization** area of Dapper's configuration.

When this message comes up, you can click on the "Show Me" button to see exactly what will change. Deletions are listed in red, new data is listed in green and moves/changes will be shown in blue.

Deletions will be very fast, Moves will be fast, and new files to be copied will be the slowest operation to do.

Changes: 438 MB will be copied. 16 MB will be moved or renamed. 229 MB will be deleted.

The following changes will be made:

3 files (16 MB) will be moved or renamed on card 1
3 files (229 MB) will be deleted from card 1
95 files (438 MB) will be written to card 1

Playlists will be written to the DAP

[Show me]   [Stop]   [Continue]

Dapper

Changes to be made on
Nov 2, 2016, 1:37:42 PM

Files to be moved or renamed on X1
0001 /Music/Flee/Sonic Highways/02 The Feast And The Famine.M4A ---> /Music/Foo Fighters/Sonic Highways/02 The Feast And The Famine.M4A (07 MB)
0002 /Music/Flee/Sonic Highways/folder.jpg ---> /Music/Foo Fighters/Sonic Highways/folder.jpg (28 KB)
0003 /Music/Flee/Sonic Highways/06 In The Clear.M4A ---> /Music/Foo Fighters/Sonic Highways/06 In The Clear.M4A (08 MB)

Files to be moved or renamed on
None

Files to be removed from X1
0001 /Volumes/X1/Music/Fall Out Boy/10.Touched by Tango_Five Tango Sensations - Anxiety.dff
0002 /Volumes/X1/Music/Edie Brickell The New Bohemians/01-Habits (Stay High).m4a
0003 /Volumes/X1/Music/Edie Brickell The New Bohemians/30sSilence192-24.m4a

Files to be removed from
None

Files to be copied to X1
0001 /Volumes/X1/Music/Playing For Change/Songs Around The World AudioVideo Version/1-06 Talkin Bout A Revolution.M4A (07 MB)
0002 /Volumes/X1/Music/Playing For Change/Songs Around The World AudioVideo Version/folder.jpg (25 KB)
0003 /Volumes/X1/Music/Bastille/All This Bad Blood/2-10 The Draw.M4A (06 MB)
0004 /Volumes/X1/Music/Bastille/All This Bad Blood/folder.jpg (23 KB)
0005 /Volumes/X1/Music/Bastille/Bad Blood/01 Pompeii.M4A (07 MB)
0006 /Volumes/X1/Music/Bastille/Bad Blood/folder.jpg (19 KB)
0007 /Volumes/X1/Music/Various Artists/Guardians Of The Galaxy Awesome Mix Vol. 1/01 Hooked On A Feeling.Mp3 (06 MB)
0008 /Volumes/X1/Music/Various Artists/Guardians Of The Galaxy Awesome Mix Vol. 1/folder.jpg (30 KB)
0009 /Volumes/X1/Music/Britney Spears/Circus Deluxe Version/01 Womanizer.M4A (07 MB)
0010 /Volumes/X1/Music/Britney Spears/Circus Deluxe Version/folder.jpg (25 KB)
0011 /Volumes/X1/Music/Britney Spears/Circus Deluxe Version/02 Circus.M4A (06 MB)
0012 /Volumes/X1/Music/Sir Sly/You Haunt Me/01 Where Im Going.M4A (07 MB)
0013 /Volumes/X1/Music/Sir Sly/You Haunt Me/folder.jpg (07 KB)
0014 /Volumes/X1/Music/Imagine Dragons/Smoke Mirrors/05 I Bet My Life.M4A (06 MB)
0015 /Volumes/X1/Music/Imagine Dragons/Smoke Mirrors/folder.jpg (18 KB)
0016 /Volumes/X1/Music/Various Artists/Guardians Of The Galaxy Awesome Mix Vol. 1/11 O-O-H Child.Mp3 (07 MB)

Use a single thread when scanning and copying causes Dapper to only copy to one card at a time instead of doing both together.

Do not remove empty folders from DAP turns off the function where Dapper will remove empty folders, for example in the case that you have delated an album, Dapper will remove the empty album folder. This setting turns that functionality off.

Scan DAP drive on every sync. This setting forces Dapper to scan the DAP drives for changes every single time you sync. Dapper normally does not re-scan unless the amount of disk cree space reported on the DAP has changed - making syncing happen much faster. DAPs that change files or add data such as index will unfortunately be scanned every time too.

Do not detect new DAPs being connected tells Dapper not to try prompt you that it has detected a new DAP and to allow you to accept the settings for it.

DAP only shares one drive at a time is a setting for some DAPs like Sony DAPS which can only share one of their disk drives at a time for the Mac. This setting enables Dapper to sync essentially just one disk at a time. Dapper will prompt you to eject and connect as needed while it syncs.

Multi DAP Mode and **Key using USB Serial#** allow you to turn on a feature where you may sync several different DAPs to a single iTunes library. Please see the Multiple Dap Mode section.

Trial Run This setting makes Dapper run through the entire sync process without actually copying/deleting or writing any data.

Wait for all threads before ejecting disks is there to only have Dapper eject a completed disk when all syncs have completed. Some DAPs will disconnect both drives when you eject any single drive, and so this setting is there to avoid that issue.

Never delete files on the DAP is useful when you want to manage your library to a large degree. Dapper will only copy new files to the DAP and will not remove anything you may

already have on the DAP. For example, maybe you manually copied FLAC files over and don't want Dapper removing them.

Find "Dapper" anywhere in playlist name will force Dapper to sync all playlists that have the word Dapper anywhere in them. By default Dapper syncs playlists inside a Dapper folder, or with Dapper at the start of the name.

Arrange music in alphabetic folders will cause Dapper to create folders on your DAP labeled A, B, C, D etc. Now all the artists beginning with A will be saved under the A folder. Artists beginning with B will be put into he B folder and so on.

Move files whenever possible is the setting that has Dapper check the files on the dap to see if they should be moved or renamed. So, for example, if you turned on the Alphabetic folders above, Dapper would delete all the existing Artist/Album/Songs and replace them with fresh copies in the new hierarchy. With this move option turned on, Dapper will instead actually just move the file on the DAP, or rename it on the DAP.

The **Compilations dropdown** allows you to select how you want compilation albums saved to the DAP. By default, they will simply be saved like any other Album, listed by Album Artist, or whatever else you may have overridden to. You can have Dapper create a special Compilations folder for compilations and either put all compilations inside, or only put compilations inside when an Album Artist tag is not present in the file.
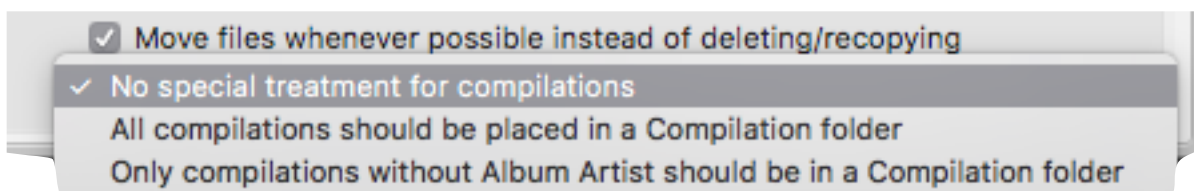
Playlist Format Settings

When you connect a new DAP to Dapper it automatically looks for the settings that best fit your DAP. This includes details on how to write the actual playlist files to the DAP so that each line refers correctly to the songs on your DAP and also so that the playlist itself is named correctly and has the right format.

If your DAP is not automatically detected, or if you want to override the settings, you can do so on the Playlist Format Settings page:
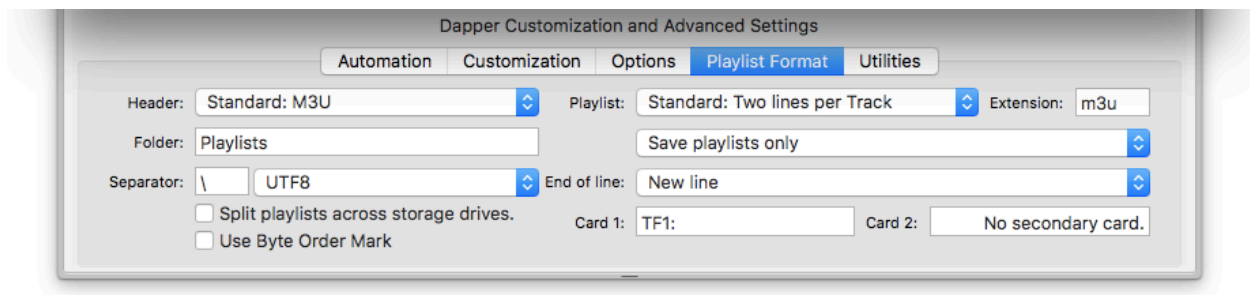
Header: The first item allows you to have Dapper place a standard M3U header as the first line of the playlist file, or just not have any header there. If the header is selected, Dapper will write a single line at the start of the file: #EXTM3U

Folder: If you enter a name here, Dapper will create this folder for you on the DAP and save your playlists inside. It will save them in folders hierarchically if you have them set up this way in iTunes. *If you have no name in this field Dapper will simply save all the playlists to the root of the DAP card storage, and not make any hierarchical folders.*

Separator: The separator character is the character that Dapper will use in the playlist file to separate the folders from each other and from the filename. So, as an example, if the character is set to "\" as seen in the screenshot above, the playlist will look like this:

```
#EXTM3U
\Music\Parade Of Lights\Golden - Ep\01 Golden.M4A
\Music\Cloud Cult\Light Chasers\05 You Were Born.M4A
\Music\Marlo Thomas\Thanks And Giving All Year Long\11 The Little Stuff.M4A
\Music\The All-American Rejects\When The World Comes Down Deluxe Edition\04 Gives You Hell.M4A
```

Whereas if you se it to "/" the playlists will have separators that look like this:

```
#EXTM3U
/Music/Parade Of Lights/Golden - Ep/01 Golden.M4A
/Music/Cloud Cult/Light Chasers/05 You Were Born.M4A
/Music/Marlo Thomas/Thanks And Giving All Year Long/11 The Little Stuff.M4A
/Music/The All-American Rejects/When The World Comes Down Deluxe Edition/04 Gives You Hell.M4A
```

Next to the separator is a dropdown menu for the **encoding to use for the text file**. In order for the file to include special characters, the encoding needs to be correct. See the section on Special Characters for more detail. You can select a few different types of encoding from the dropdown menu.

Byte order mark When writing a file using a specific encoding, the text for each character is actually made up of two bytes or characters which, together, define the letter. However, there is not a clear set of rules among operating systems on DAPs as to which of the two bytes used to make up a single character would be written first. By checking the byte order mark checkbox, you are instructing Dapper to write a special character at the very start of the playlist file that can/may/may not be read by your DAP in order to automatically determine what formatting to use. If you are unsure of Unicode and Byte order Marks, you're likely not going to use this setting.

The **Split Playlists across storage drives** setting is in Dapper for Sony DAPs which only allow a playlist to reference songs on the same card as the playlist is on. In the case it is checked each playlist will be written twice - once to each card - but only include the songs that are on the respective card in the playlist thats written. So if you had a "Rock and Roll" playlist with ACDC and ZZ Top on it, the playlist would appear on both cards, but on one it would include AC/DC and the other, on the second card would include ZZ Top.

Playlist format: This field allows you to select whether each song in a playlist should simply be written as a single line, referencing the file - or as two lines where the first line includes data about the actual song name and duration, with a second line including the actual file information:

```
Standard: Two lines per Track
Standard: One line per Track
```
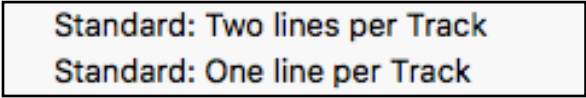
The two line files look like this:
```
#EXTM3U
#EXTINF:259,Velvet - a-ha
\A-Ha\25 (Deluxe Version)\29 Velvet.M4A
#EXTINF:226,Talkin' Bout a Revolution - Afro Fiesta
\Playing For Change\Songs Around The World (Audio_Video Version)\1-06 Talkin' Bout A Revolution.M4A
#EXTINF:232,Don't Wanna Fight - Alabama Shakes
\Alabama Shakes\Sound & Color\02 Don't Wanna Fight.M4A
#EXTINF:258,Breathe - Alexi Murdoch
\Compilations\Away We Go Original Motion Picture Soundtrack\08 Breathe.M4A
#EXTINF:213,Gives You Hell - The All-American Rejects
\The All-American Rejects\When The World Comes Down (Deluxe Edition)\04 Gives You Hell.M4A
```

And single lines like this:
```
#EXTM3U
\A-Ha\25 (Deluxe Version)\29 Velvet.M4A
\Playing For Change\Songs Around The World (Audio_Video Version)\1-06 Talkin' Bout A Revolution.M4A
\Alabama Shakes\Sound & Color\02 Don't Wanna Fight.M4A
\Compilations\Away We Go Original Motion Picture Soundtrack\08 Breathe.M4A
\The All-American Rejects\When The World Comes Down (Deluxe Edition)\04 Gives You Hell.M4A
```

Extension determines the file name extension of the playlist. Usually its M3U or M3U8.

The playlist saving dropdown allows you to choose whether the playlists are simply copied to the DAP or whether to clean out the playlist folder and copy a fresh set of playlists each time. You would usually leave this at **Save playlists only** in which case any external playlists you made and put into the same folder would not be deleted. If you select **Save playlists and remove old playlists** Dapper will clean out the playlist folder each time and replace just fresh copies from iTunes. If you select **Ignore this folder and save in Root** then playlists will be written instead to the root of the DAP drive and the folder you have listed as the playlist folder will be ignored.

End of line: This allows you to determine whether a carriage return, line feed or both are used at the end of each line of the playlist text files.

Card1 and **Card2** are text fields where you can fill in the internal DAP representation of each storage card. As an example, the FiiO X5 DAP has two storage card slots. Lets say we have our playlist in the device:

```
#EXTM3U
#EXTINF:259,Velvet - a-ha
\A-Ha\25 (Deluxe Version)\29 Velvet.M4A
#EXTINF:226,Talkin' Bout a Revolution - Afro Fiesta
\Playing For Change\Songs Around The World (Audio_Video Version)\1-06 Talkin' Bout A Revolution.M4A
#EXTINF:232,Don't Wanna Fight - Alabama Shakes
\Alabama Shakes\Sound & Color\02 Don't Wanna Fight.M4A
#EXTINF:258,Breathe - Alexi Murdoch
\Compilations\Away We Go Original Motion Picture Soundtrack\08 Breathe.M4A
#EXTINF:213,Gives You Hell - The All-American Rejects
\The All-American Rejects\When The World Comes Down (Deluxe Edition)\04 Gives You Hell.M4A
```

You will notice that the *Playing for Change* artist is in the same list as the *A-Ha* artist, however *A-Ha* songs will be stored on card 1 and *Playing for Change* songs will be saved on card 2.

Internally to the FiiO is knows these cards at TF1: and TF2: and so in order for the playlists to reference the file in the correct location, you would use TF1: and TF2: in the card fields, resulting in this playlist:

```
#EXTM3U
#EXTINF:259,Velvet - a-ha
TF1:\A-Ha\25 (Deluxe Version)\29 Velvet.M4A
#EXTINF:226,Talkin' Bout a Revolution - Afro Fiesta
TF2:\Playing For Change\Songs Around The World (Audio_Video Version)\1-06 Talkin' Bout A Revolution.M4A
#EXTINF:232,Don't Wanna Fight - Alabama Shakes
TF1:\Alabama Shakes\Sound & Color\02 Don't Wanna Fight.M4A
#EXTINF:258,Breathe - Alexi Murdoch
TF1:\Compilations\Away We Go Original Motion Picture Soundtrack\08 Breathe.M4A
#EXTINF:213,Gives You Hell - The All-American Rejects
TF2:\The All-American Rejects\When The World Comes Down (Deluxe Edition)\04 Gives You Hell.M4A
```

Utilities Settings

Utilities settings.
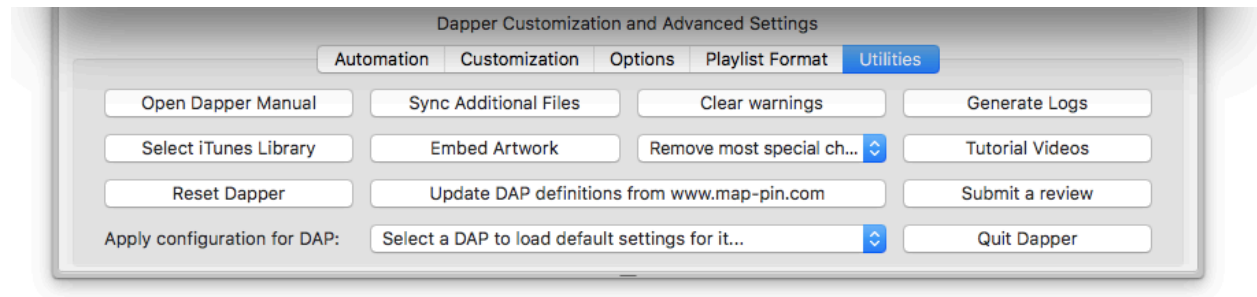
Open Dapper Manual allows you to open the latest version of this document online.

Select iTunes Library allows youth select your Music folder and choose a different iTunes library.

Reset Dapper will reset all Dapper settings and Quit. The next time you launch Dapper it will go through setup again from the start.

Sync additional files allows you to add files outside of iTunes to your DAP - for example a collection of FLAC files. The process is described on the next major section in the manual, titled: "Sync Additional Files: Adding music that is not in iTunes"

Embed Artwork is a utility function that allows you to use the Kid3 ID3 tag editor available here: https://sourceforge.net/projects/kid3/ to take the album art from iTunes and embed it directly into he actual music files. For this option to work, you must have Kid3 installed and also have the Dapper Scripts installed from https://www.map-pin.com/ds

This option will cycle through very single file in your DAP and run Kid3 against it. As a result this can take a lot of time, so when you click the button you will get a popup asking for you to enter a filter - essentially forcing you to put in some text to filter on:
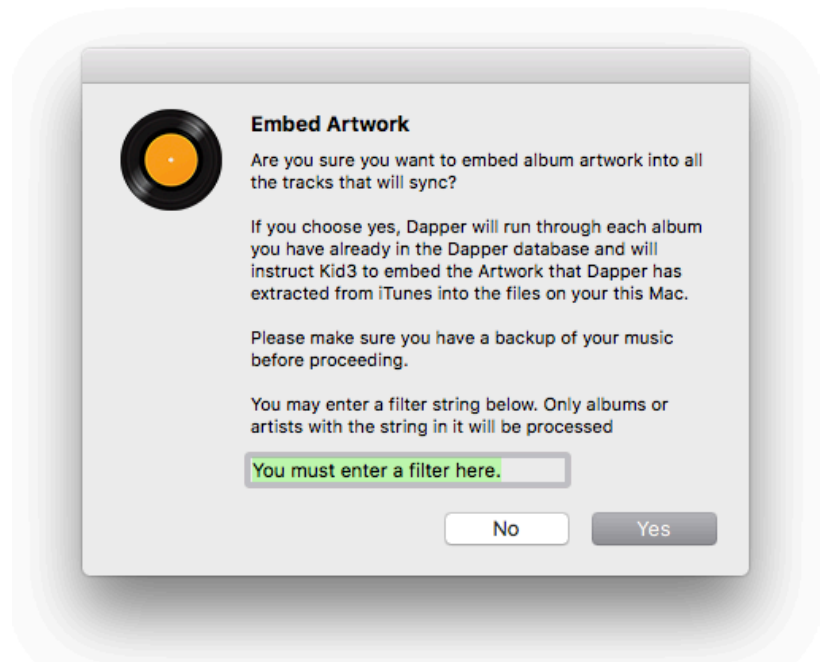
You would, for example, type in "Aerosmith" in order to ember artwork in any Aerosmith file. Or if you type in an album name, it would run through that album. Dapper doesnt let you try every single file all at once simply because it takes an enormous amount of time and power to tag your entire library all in one go.

Sync Additional Files: Adding music that is not in iTunes

Dapper also can copy files that you have on your Mac that are not in iTunes such as DSD, FLAC and other types of files that iTunes does not handle directly. In order to do this, you simply need to make sure your music that you want to sync is organized in folders by Artist and then Album as shown below:
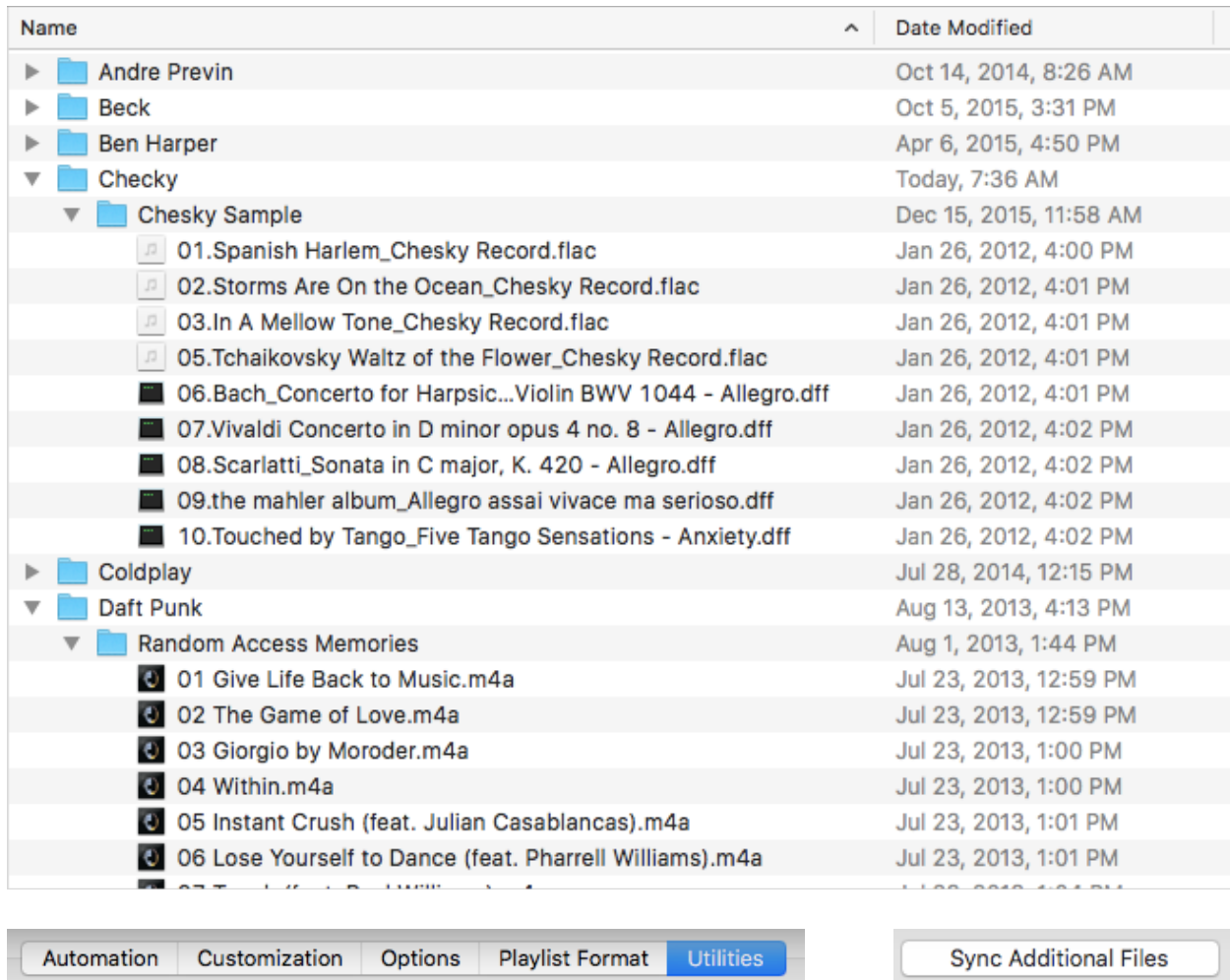
To select the files, open the Dapper settings, click on the "Utilities" tab and click the "Sync Additional Files" button to select the folder containing all the artist folders.

To deselect and stop syncing, click the same button and cancel the selection.

Dapper will read each file, and then use the name of the folder it is in as the Album name, and the folder above that as the artist name. So, be careful of your layout. As an example if some selected files and how they land on the DAP:

Selected Folder: **FlacTunes**

Notice that the two songs - Habits and 30sSilence both are not in an Album and Artist folder, and the Chesky Sample album is correct, but with no artist. So Dapper will still look at the enclosing directory and categorize the Chesky Sample album as done by artist *Flactunes* because thats it's enclosing folder, and the other two are considered to be by artist *Music* and album *Flactunes*:
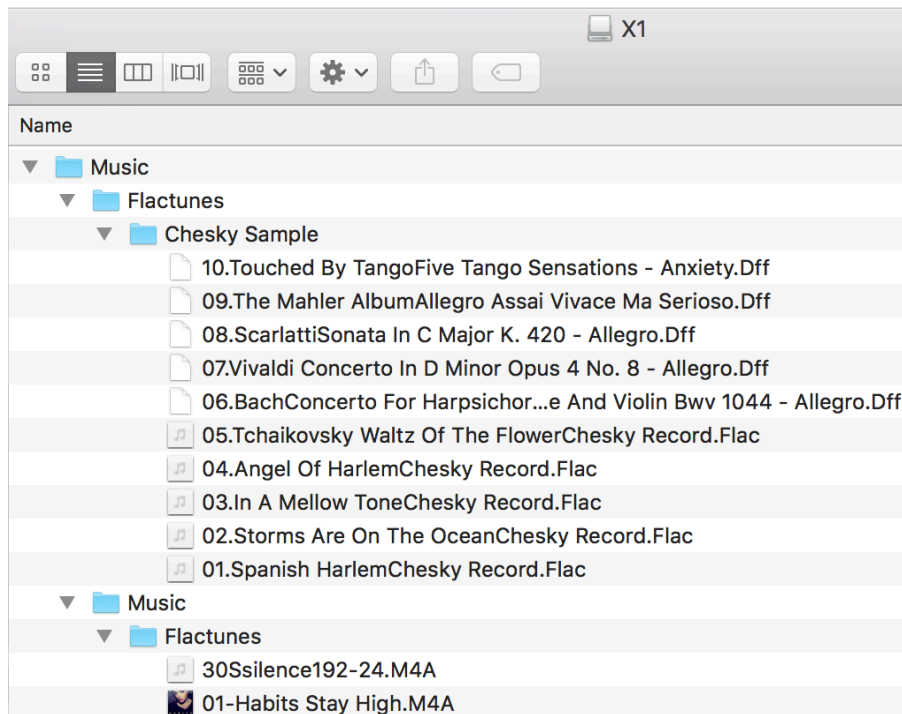
Remove Special Characters

In certain songs, albums or artists names you may well have special characters. These range from the / in AC/DC through the ö in Björk all the way to full non-western songs like

イイナヅケブルー by charisma.com.

The issue with these special characters is that they can confuse the DAP in several ways.
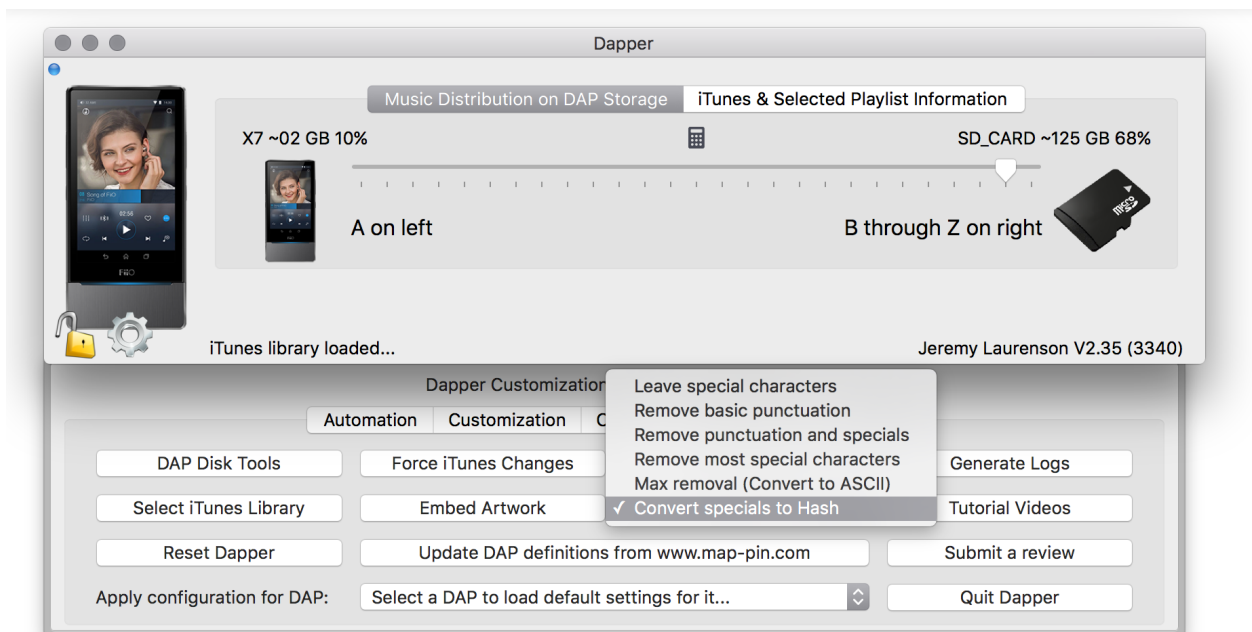
1… The DAP may not be able to read filenames with special characters in them.

2… The DAP may not be able to display those filenames properly.

3… The DAP may not be able to read the filenames properly inside a playlist.

So what's an Audiophile to do with the album Distopping by Charisma.com?

Dapper has special character stripping capability to help your DAP cope:

By default, Dapper will leave all special characters as-is, but if you are having issues with your DAP being able to play a particular song in a playlist, or on the drive, then you can select a more aggressive setting.

If most of your music just has accents on western characters (such as in Björk) then you can push this setting to the "Remove most special characters" to get good results. If your collection has a lot of non-western characters such as with Distopping, then you may want to try the last option - where Dapper will remove all special characters and also insert a unique code for each song so there are no duplicates.

Update DAP definitions from <u>www.map-pin.com</u> will cause Dapper to connect to your server and get the latest copy of our DAP settings for all the DAPs we have created custom settings for. Underneath this is a dropdown **DAP Selector** that allows you to choose your DAP from a list to apply the settings. Normally Dapper will automatically detect your DAP, but if you want to manually select a set of settings you can use the dropdown to do so.

Multiple Digital Audio Player Mode

By default, Dapper syncs a single Digital Audio Player to a single iTunes library, but we have a lot of folks who have several Digital Audio Players and want to sync them each to their iTunes library.

In order to do this, Dapper has an option in settings called "Mutli DAP Mode" which you can turn on (see bottom left of the settings area below).
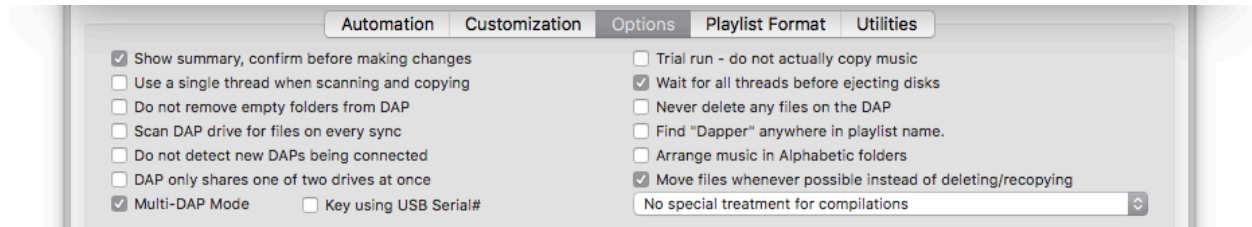

In this mode, Dapper will remember the specific settings for each Dap you connect and instead of syncing all the contents in the "Dapper" playlist folder, each DAP will have it's own specific playlist folder in iTunes.

When you turn on Multi Dap Mode, and you connect a DAP, Dapper will display this message including details of the specific playlist folder name to use:
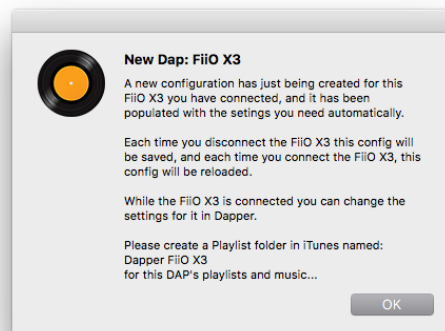

In this case, a FiiO X3 has been connected and the playlist folder Dapper will be looking for is "FiiO X3", and so the iTunes playlist folder looks like this:
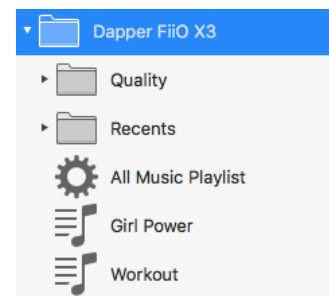
In come cases, you may have two of the same kind of DAP you want to sync, in which case you will not be able to simply use the DAP make and model to differentiate your playlist folders. This is what the "Key using USB Serial#" is for.

If you check this checkbox, then Dapper will not use the DAP Make and Type, but will instead use the USB Serial number of the device.

As an example, when you connect a DAP with this checked you get this notice:
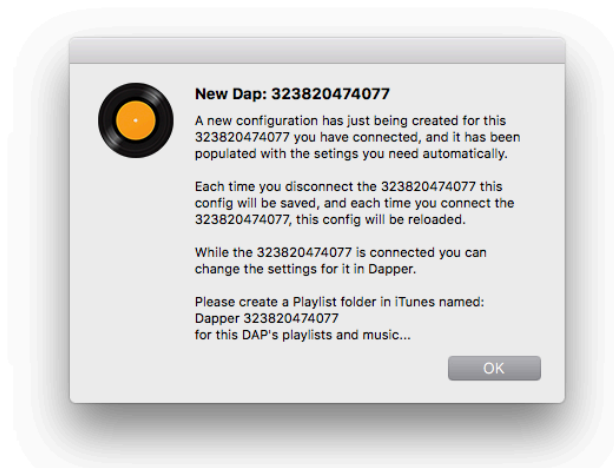
Now that you have a playlist folder for your Digital Audio Players, you can configure it however you like, and Dapper will "remember" its configuration whenever you connect it. Make sure to make changes to the settings for your Digital Audio Player in Dapper only when the DAP is connected, as this is how it will know which player the settings apply to.

For a tutorial, see: https://www.map-pin.com/_db/dapper/tutorial.php?url=MULTIDAP

Auto-Compressing your Music

In some cases you may well want to compress your music. For example, you may have a main DAP with a lot of storage and then use multi DAP mode to put a compressed version of your music on a different device.

Perhaps you just want it all to fit and you don't want to manually compress things.

Dapper supports compressing your music on the fly using **ffmpeg** software. By default if you turn this option on, Dapper will compress your music using the lame mp3 encoder at 256k/sec cbr.

You can turn this on, and change the birrate in bottom right of the *options* tab in Dapper:
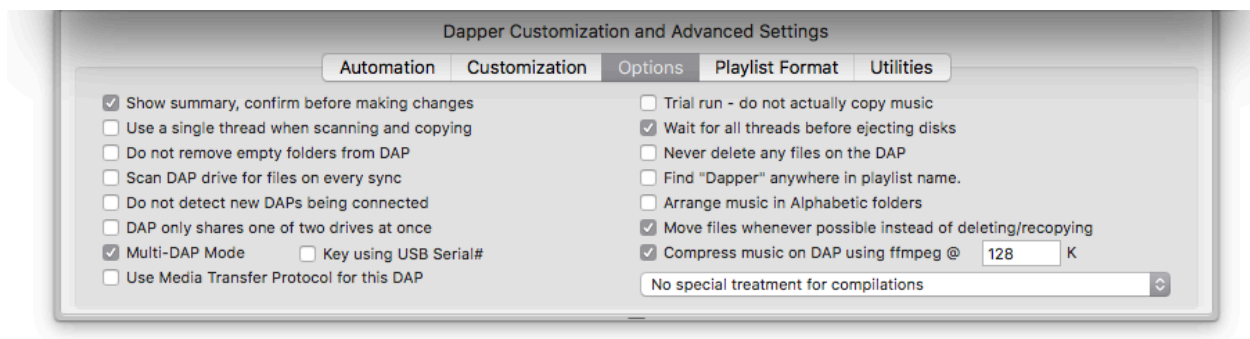
The option to compress will be disabled unless you install ffmpeg from:

 http://www.ffmpegmac.net

Put it into the Dapper Applications Scripts folder, or to make it easier you can have our Dapper Scripts Installer do it for you by going to https://www.map-pin.com/ds and running the installer app. (This will download ffmpeg and put it into he right folder)
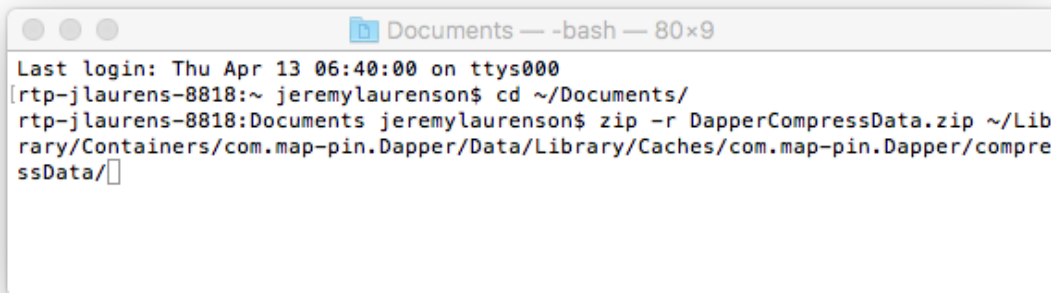
We currently do not do AAC/m4a files because ffmpeg does not support embedding album art into that format.

NOTE: When Dapper compares your Music in iTunes to the music on your DAP, it uses the file size primarily to check for changes. Since the file size in your iTunes will be different than the compressed file on your DAP, Dapper will instead "remember" the file size in it's cache instead of using the iTunes original file size when you compress. This means if you "Reset Dapper" it will lose the "remembered file size" for compressed songs and will end up syncing your entire

library again. If you are going to reset Dapper you may want co save the data by saving the cached size files:

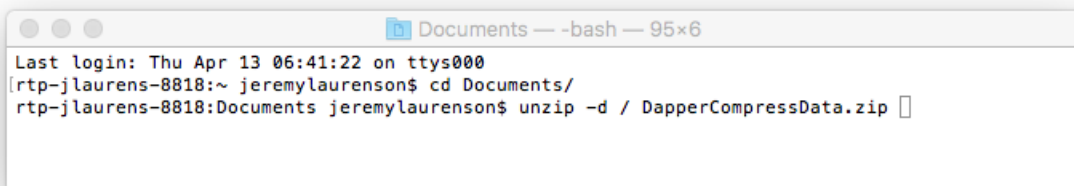Open a terminal (Applications->Utilities->Terminal) and type:

```
cd ~/Documents/
zip —r DapperCompressData.zip ~/Library/Containers/com.map—pin.Dapper/
Data/Library/Caches/com.map—pin.Dapper/compressData/
```


This will save all the compression data. Once you've reset Dapper, you can restore it:
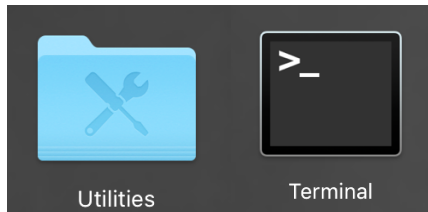
```
cd ~/Documents/
unzip —d / DapperCompressData.zip
```
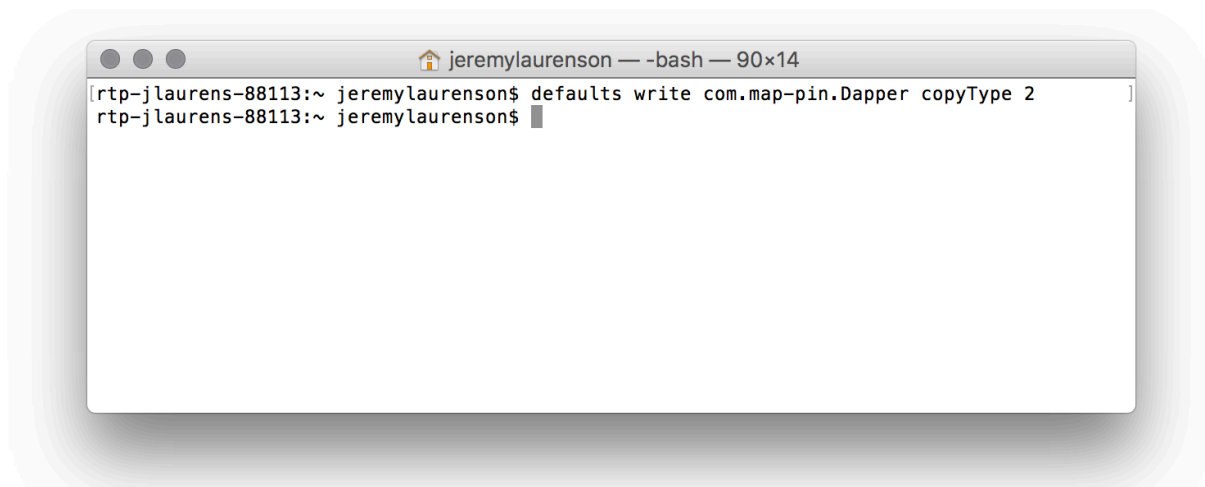
Hidden Settings

There are some hidden settings that you can tweak. In order to do this, you need top open the **Terminal** application that is inside the **Utilities** folder inside your **Applications** folder of your Mac:

Quit Dapper and in the new terminal window you can type the following commands and press enter:

defaults write com.map-pin.Dapper detailedTimeDisplay -bool yes

Displays time left in more accurate terms eg 1:56:56 instead of "About two hours"

defaults write com.map-pin.Dapper collectAlbumArt 0

Turns off saving folder.jpg files to your DAP

Limiting File Name Length or Path Length

If your DAP only recognizes or supports a certain length of a file name, or path there are two hidden settings that can help.

For example:

```
/Music/30 Clasica - Locatelli, Pietro Antonio/2016 L'Arte del Violino
(Locatelli Violin Concertos) (DSD128 2.0 Bin) - Lisa Jacobs, The
String Soloists\03 3. Andante (Locatelli Violin Concerto No. 2 in C
Minor, Op. 3, No. 2).dsf
```

Is 228 characters long. This is too long for some players to handle.

Dapper can shorten this, if you tell it what your limitations are:

defaults write com.map-pin.Dapper longestFileName 200

This tells Dapper to truncate the entire file path and name of the destination file to this number of characters. So, for example if the

defaults write com.map-pin.Dapper longestComponent 200

This tells Dapper to truncate the each item in the file path and name of the destination file to this number of characters.

Getting help or new features

If you have any issues at all with Dapper, please visit us at support.map-pin.com - we are always very happy to help, or add a new feature you may want.

You can find helpful articles, how-to videos and more at www.map-pin.com!

Is my Digital Audio Player Supported?

We have created DAP definitions for a variety of Digital Audio Players which make your setup easier, the current list we have tested and added can be seen at:

http://www.map-pin.com/_db/dapper/alldaps.php

If your DAP is not on the list, this does not mean it will not work with Dapper. In fact, just about all Digital Audio Players on the market today work with Dapper.

Unfortunately we can not afford to buy and set up every single DAP, but you can set up Dapper to work with your DAP, and can use the free version on our website to do so. When you are done, you can even submit your settings to us and we'll add the DAP to Dapper.

How to custom configure Dapper for your Digital Audio Player to Sync Music

In order to set up a DAP that is not currently listed n Dapper is relatively easy. If your manufacturer is already listed, you can select a similar DAP from the utilities tab in the Dapper settings and start from there - usually this is the quickest method.

Here are the steps you need to go though to see up a new DAP:

1. Unlock Dapper - make sure the lock icon is unlocked.

2. Determine how OSX will connect to the DAP. If the DAP shows up on your Mac as one or more disk drives, you are good. If not, you should select "Generic Android DAP" from the Utilities page to start. This sets up how your Mac will communicate in the first place.

3. Create an iTunes playlist folder named Dapper and add a playlist that has some songs from various artists. Its best to create a playlist with some early alphabet artists (AC/DC, America) and some late alphabet artists (ZZ-Top, XTC, U2) in order to check that your playlists will work when the music in them spans two storage areas.

4. Now, click the left hand card on the Dapper window and choose your primary storage location of your DAP:
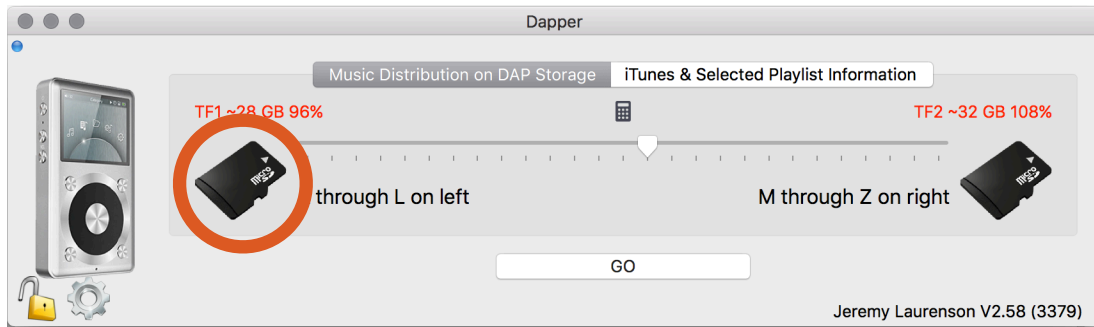
5. Now, if you have a second storage area click the right hand card on the Dapper window and choose your secondary storage location of your DAP:
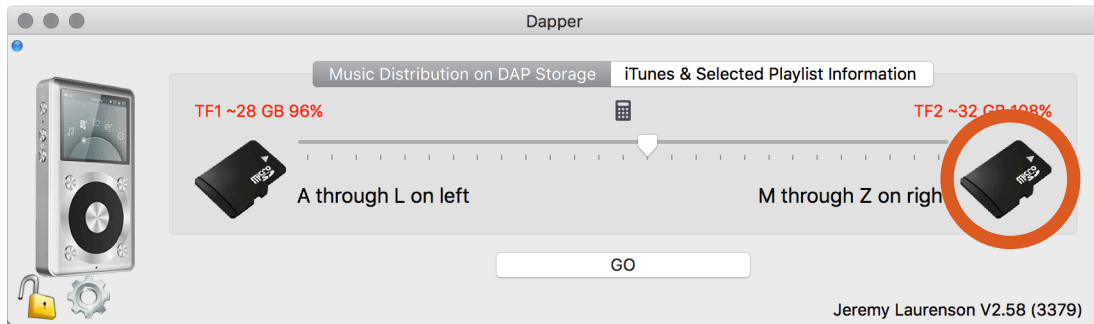
6. If you have only one storage location, drag the slider all the way to the left - to put all the music and playlists on that storage. If you have selected both cards, move the slider to the middle so you can test playlists with some music on the left and some on the right.

7. We're almost ready to copy the music. You have to decide of the music will be stored directly on the storage areas, or in a folder called Music in the storage areas. I highly recommend storing it in a Music folder to keep things organized. In the Dapper settings, under the Customization tab, enter *Music* into the "Store all music and playlists inside a folder named…" field:

8. You should now be able to do a sync and get your music copied to the Digital Audio Player, and play some tracks. If you are having issues at this point, contact us by going to http://support.map-pin.com

How to custom configure Dapper for your Digital Audio Player to Sync Playlists

Setting up playlists can be more tricky to set up because there are a ton of options. This section will help you getting set up with playlists. Below is an example of a playlist file:

```
#EXTM3U
#EXTINF:232,Don't Wanna Fight - Alabama Shakes
/mnt/internal_sd/Music/Alabama Shakes/Sound & Color/02 Don't Wanna Fight.M4A
#EXTINF:311,Stolen Dance - Milky Chance
/mnt/internal_sd/Music/Milky Chance/Stolen Dance - Ep/01 Stolen Dance.M4A
#EXTINF:238,Talking Body - Tove Lo
/mnt/external_sd/Music/Tove Lo/Queen Of The Clouds/04 Talking Body.M4A
#EXTINF:257,Habits (Stay High) [Hippie Sabotage Remix] - Tove Lo
/mnt/external_sd/Music/Tove Lo/Truth Serum - Ep/06 Habits (Stay High).M4A
#EXTINF:233,Kryptonite - 3 Doors Down
/mnt/external_sd/Music/3 Doors Down/The Better Life/01 Kryptonite.M4A
#EXTINF:202,Stressed Out - twenty one pilots
/mnt/external_sd/Music/Twenty One Pilots/Blurryface/02 Stressed Out.M4A
#EXTINF:10,イイナヅケブル - Charisma.com
/mnt/internal_sd/Music/Charisma.Com/Distopping/イイナヅケブル.Mp3
```

Each song in this playlist has 2 lines. The first includes extended information about the song - the time in seconds, the name of the track and the name of the artist.

The second line contains the path to the actual song itself. This must be formatted correctly or the DAP will not find the song - and you may get the dreaded "File not found" error, or the song may just not show up on the list in the DAP.

Lets take a look at the lines above and dive in. Most of the settings needed to change the format of your playlists is on the Playlist tab in Dapper settings:
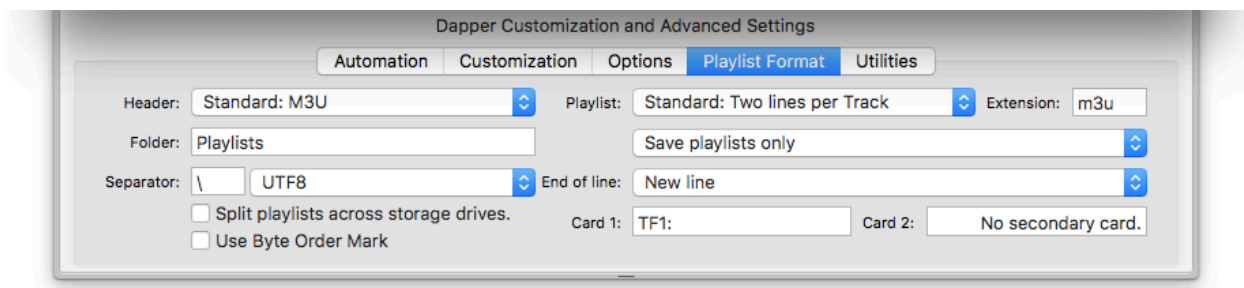
First, you will notice that in each line there is a "/" between the different parts of the path. Your dap may want to see a / or a \ here depending. This is the "Separator" setting. Android based players like a / whereas some other players like older FiiO ones like a more Windows-like \

Next, you will notice that the playlist above is showing two different storage locations in red before the file name itself. One is **/mnt/internal_sd** and the other is **/mnt/external_sd**

These are how the DAP refers internally to its one or two storage areas. In the case above this is an Android player. These storage locations can be modified by editing the two settings listed at the bottom right of the settings tab - Card1: and Card2:

Some DAPs work fine with nothing here, and some need the proper formatting. If you can get a sample playlist from your DAP manufacturer or someone else who has a working playlist, you can see what your DAP expects here. Make sure to ask for a sample that includes music on both storage areas or you'll get a generic playlist that does not include the storage location at all.

By getting these right, your Rock playlist can include AC-DC as well as ZZ Top (which would be on different cards/storage areas) in a single playlist.

Older FiiO players expect TF1: and TF2:

Android players like /storage/internal , /storage/sdcard1 and /storage/sdcard2

On your Android player if you can install and run apps, try installing and looking at *ES File Explorer* from the play store - in that app you can see your Android player's internal file system and you can poke around to find the names of your storage areas.

It is usually a good idea to strip out special characters from your music filenames and also playlist lines. A player may well be able to handle a file name with a special character, but my experience has been that the playlist files mostly do not.

As an example, the playlist above includes a track by Distopping called イイナヅケブル. The

file may well transfer, but FiiO players as an example can't handle this in the playlist itself. You may have something more benign like Blue Öyster Cult which may also trip your DAP up. As a result, for most people the best option is to strip most special characters on the Utilities tab: