Playlist Manager

(aka Playlist-Manager-SMP)

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Contents

Part I

Introduction

1 Why do we need a playlist manager?

1.1 Playlist tabs and UI limits

Foobar2000 already excels at library management, specially with plugins, but there is a hole in its set of features: playlist management. Playlists, by default, are entities always loaded within the UI, specially for those using playlist tabs. At some point, if there is a high number of them, the UI becomes cluttered with so many tabs that it becomes useless.

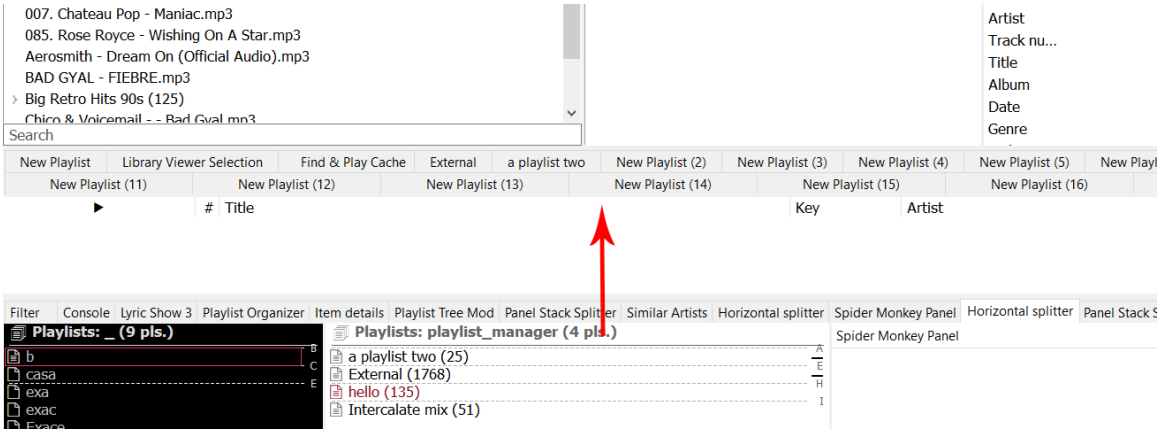


Figure 1:

For this reason there has been some attempts of playlist manager UI plugins for DUI and CUI[1] which try to work around that with lists or playlist drop-downs. The problem is that those solutions are only workarounds... the playlists are still loaded within Foobar2000, so you must either completely remove the playlist tabs or clutter the UI with them. The managers make it easier to look for specific playlists, but the tabs dilemma remains the same.

And lets not talk about having thousands of playlists, then the only layout possible is a single tab for the active playlist and using a playlist list to switch between them. The problem with that layout is obvious. Are you able to switch between 2 or 3 playlist easily? No, that's what tabs are meant for, but since they are unusable in this case...

The problem seems to be that playlists are always loaded within Foobar2000. Why do you need a list of playlists if they are already loaded? Would not make it more sense if you were able to load a playlist -from the list- in the tabs on demand the same than you add a track to a playlist -from the library-?

[1] Default UI and Columns UI.

1.2 Auto-playlists slowdowns

Other of the problems experienced by advanced users appears during the prominent use of Auto-playlists. They are so great that it's easy that you end creating a lot of them... but then Foobar2000 magically becomes really slow at startup. Why? Because Auto-playlists query the library everytime they are created, so every Auto-playlist instance equals to a query that is constantly checked on real time[2]... At startup is even worse, since all those great Auto-playlists have to be created at that point, thus requiring a lot of time until all are done.

Some examples to easily break your Foobar2000 experience if you add multiple instances of them :), enjoy:

> %rating% MISSING OR %last_modified% DURING LAST 1000 SECONDS
>
> %last_played% DURING LAST 19 MINUTES
>
> (%replaygain_track_gain% MISSING) OR (%style% MISSING) OR (%ALBUM DYNAMIC RANGE% MISSING)
>
> NOT ((%path% HAS "_-\") OR (NOT %path% HAS "{") OR (%comment% MISSING) OR (%title% IS -))

The problem -again- seems to be the design choice of playlists always being loaded within the program. If Auto-playlists were loaded on demand, there would be no need to check them all at startup... neither constantly checking all of them all of the time. For this particular problem, there is a Spider Monkey Panel script which allows you to load Auto-playlists on demand: marc2003's Auto-playlist Manager.

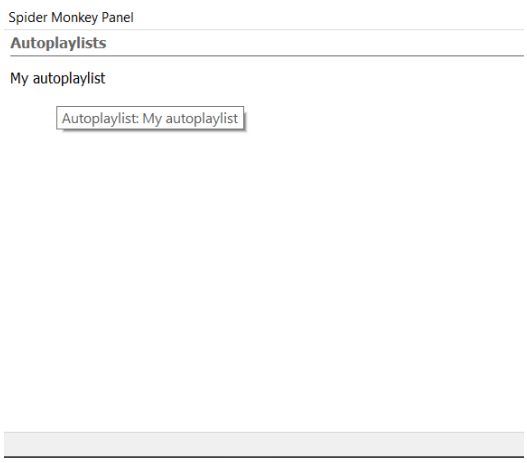


Figure 2: marc2003's Auto-playlist Manager.

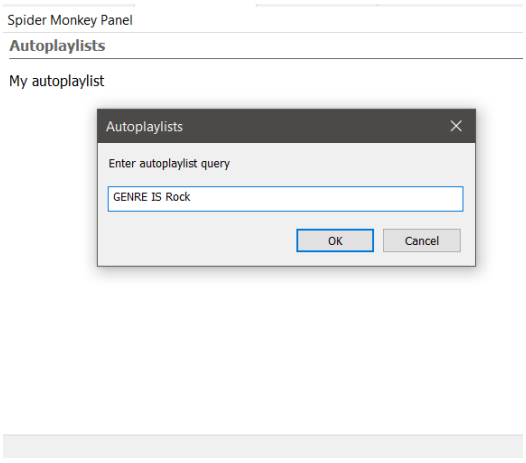


Figure 3: Editing a query.

[2]For ex. Check this thread: High Processor usage at Foobar Idle, just a single query which uses time ranges lower than 20 minutes are a problem.

1.3 Playlists are a bit auto-destructive

One of the consequences of playlist being an UI element by design, is that they only exist while being loaded within the UI. That seems a redundant pleonasm (pun intended), but is not: playlists are permanently deleted as soon as you close their instance in the UI. And that's a big thing[3]... Furthermore, while they may be 'restored' as long as you deleted the playlist on the same session, as soon as you close Foobar2000 the playlist history is gone. So it can not be undone.

The obvious problem is playlist not having a physical counterpart file managed in a non-destructive way. Well, to honor the truth, standard playlists do have a physical file somewhere in the profile folder... but:

1. They are in a **closed source format**.
2. They use an **non-human readable UUIDs as name**, so there is no way to know to which playlist they are linked to (aka good luck making backups or exporting an specific playlist).
3. The **files are only updated when shutting down the program**.
   (a) Changes between sessions are lost if there is a crash.
   (b) Playlists files are permanently deleted if you close a playlist.
   (c) New playlists are only saved when closing the program.
4. All the file management is done without indication, user intervention and in a non-transparent way.

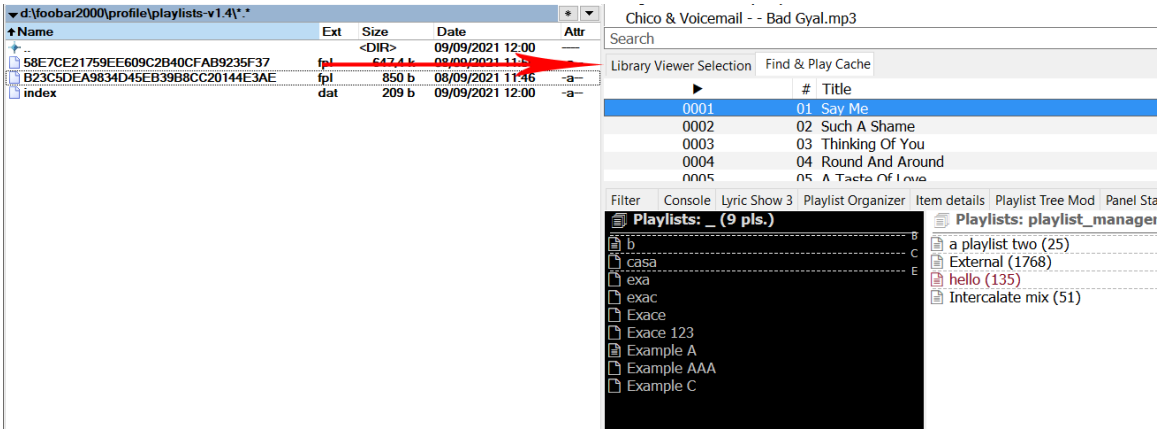


Figure 4: Uhm... yeah. Clearly '58E7CE21759EE609C2B40CFAB9235F37' belongs to the library viewer. Or is the other?

An ad-hoc solution for some of these problems is the use of another plugin to create automatic backups (including the physical playlists files and the database for unsaved changes): Autosave & Autobackup (foo_jesus).

[3]Do you imagine loosing your music files because you deleted the track from a playlist? Makes no sense, but translated to playlist files, that's they way they work within Foobar2000.

2 Multiple problems, one solution?

It seems there are partial solutions for Auto-playlists and others for standard playlists, but none for both... and in any case, either with native Foobar2000 or using plugins, some features are missing: adding labels to playlists, sub-folders to categorize them (instead of a plain list), searching, loading on demand (for standard playlists), easy exporting or syncing between the native foobar format and a plain text file[4]

Looks like you have to mix and match tons of plugins and scripts to manage different types of playlists, without an unified UI or manager and with basic features missing. Foobar is meant to manage libraries and tracks, not playlists[5].

So multiple problems and limitations have been discussed and now comes the point where a solution is proposed... and there is the place where this manager fits: a playlist manager which aims to work with playlist and Auto-playlists (without distinction) on the same panel, which only loads things on demand when required. Add some neat features to the mix like labeling, auto-tagging, auto-saving, syncing physical playlist files with loaded ones, backups, advanced exporting tools and integrity checks... and that's only a fraction of what can be done with it. Btw, marc2003's Auto-playlists are fully compatible and can be imported, in case you wonder.

2.1 Which playlist are compatible with it?

Short answer: All relevant.

Within the Playlist Manager context, playlists are virtual items (loaded in the UI) also linked to a physical file in the preferred format (.m3u8, .m3u, .pls or .fpl).

Auto-playlists, due to its nature (its content change according to the library they reside in), are saved into json format [VI] in a file named accordingly to the folder tracked by the Playlist Manager[6].

.fpl playlists, similarly to Auto-playlists, are read only files... due to its closed source nature they are locked for further editing by default and metadata[7] is saved into the json file described previously.

In resume, writable formats are those that may be freely edited (.m3u8, .m3u, .pls) and readable-only formats are those that may be tracked by the manager with at least a minimum set of features[8] and the capability to load their tracks within foobar (.fpl or .json).

[4] Obviously nothing stops you to save your playlist manually using 'File\Save playlist...'. But how do you do that on 100 playlists?

[5] Not saying there is a player out there which does it better, so lets not even talk about having all those features!

[6] For ex. if the panel is set to track 'H:\My Music\Playlists', then the playlist json file (at foobar profile folder) will be at '.\js_data\playlistManager_Playlists.json'.

[7] Category, tags, lock status, etc.

[8] Metadata editing and conversion to a writable format.

Part II

Features

3 Tracking folder

The key feature of a file manager, whether it's a library or playlist manager, can be reduced to tracking paths in some way. The playlist manager tracks one folder per instance[9] and lists all readable playlist files found on it. Auto-playlists, while not being "on the folder" are considered linked to it, so different playlist manager instances have different Auto-playlists associated. The tracked folder can be set on the header menu [12]:

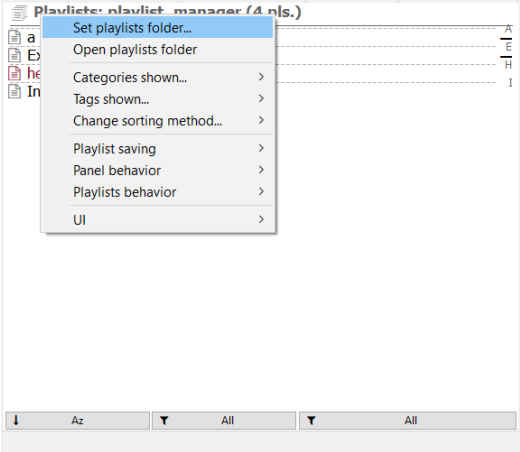


Figure 5: Setting tracking folder.

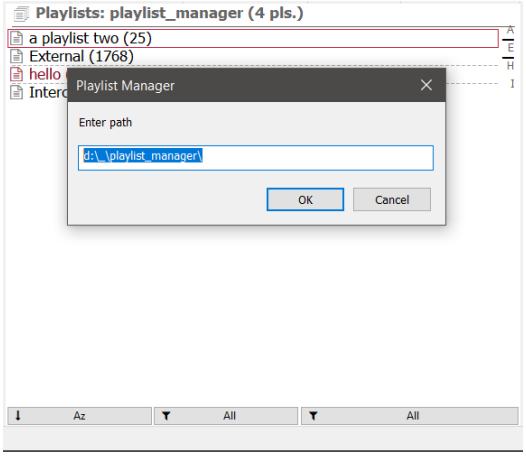


Figure 6: Tracking an absolute path.

Sub-folders are not tracked[10] and the tracked path is meant to be set once and done, so categorization is done with metadata instead [14.1]. Why? It offers the same functionality ('virtual sub-folders') while not making it unnecessarily complex... at the end these are playlist files (links to tracks), not tracks. So they should be physically -more or less- all on the same place while also having some kind of metadata to easily categorize them[11].

The path may be an absolute or relative path. Relative paths have their root set at the Foobar2000 installation path (where the '.exe' resides in). So something like '.\profile\playlist_managerís perfectly fine. There are multiple reasons to prefer relative paths, check the tips section for more info [27].

[9] Yes, that means you may have multiple manager panels.
[10] i.e. If 'Playlists' is tracked, 'Playlists\Summer' will not be tracked too'
[11] If you think otherwise, nothing stops you to create multiple sub-folders and having multiple manager instances in a panel with tabs for easy access.

4 Managing Playlist files and Auto-playlists

4.1 Auto-playlists

Contains all functionality on Auto-playlist Manager by marc2003 plus more:

- Create, rename, delete Auto-playlists.
- Edit query, sort pattern and sort forcing.
- Adds tooltip info, UI features, filters, etc.
- Number of tracks output is updated at foobar startup, 'Manual refresh' [11], when loaded or automatically at startup.
- Queries and sort patterns are checked for validity before using them, instead of crashing.
- Import playlists from Auto-playlist Manager by marc2003[8.1].
- ...

Auto-playlists are essentially treated the same than standard playlists, with their physical file being a json formatted file (containing all Auto-playlists). They can be exported or imported the same than standard playlists, cloned as standard playlists, etc. In other words, the differences are in their internal format and their set of features associated, but that's all[12]. There is no differences in the way they are managed or presented to the user.

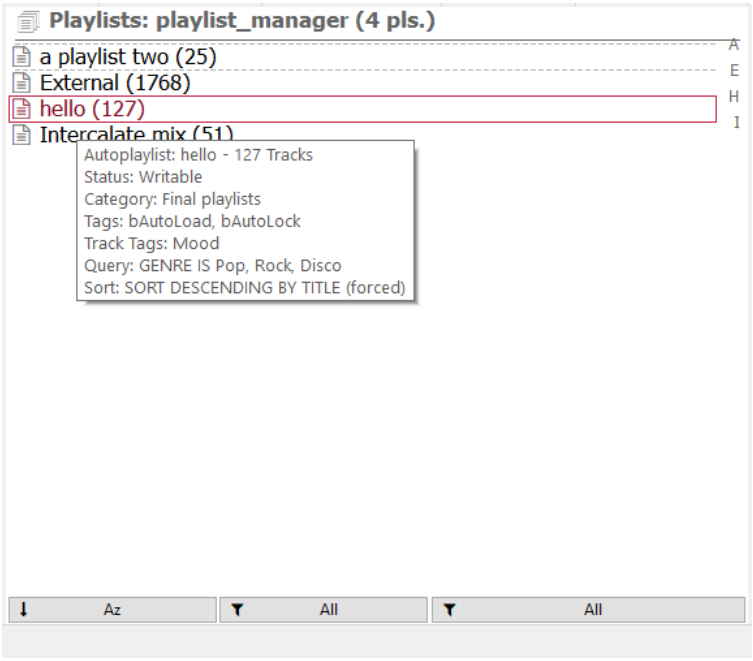


Figure 7: Tooltip shows all relevant info, like query, sort pattern, etc.

[12]Obviously standard playlist have no query or sort patterns. But whenever a tool or feature make sense in both types of playlists, it's implemented on both.

4.2 Standard playlists

Standard playlists are the common playlists used within Foobar2000, the ones where you may add, remove or reorder tracks (contrary to Auto-playlists which are query-generated). When a playlist loaded in Foobar2000 is also tracked by the manager, then a physical playlist file within the tracked folder is associated to it. That process is called 'playlist binding' [4.7]. There is nothing special about it, it's simply a way to say the physical file and the playlist within foobar are in sync.

Playlist files may be freely created, renamed, deleted, etc. and their associated Foobar2000's playlist counterpart will follow the same changes (if desired). The same applies in both directions (with some logical exceptions). It's key to understand this; there is a real physical playlist file with all those tracks written to it: If at some point you close a playlist within Foobar2000 and restart it, that playlist is gone for good[13]. On the other hand, if you do the same with a playlist from the manager, you may simply reload the file. The physical file is never deleted unless you do it on purpose, so you can always load it at any point no matter what you do with the playlist on the tabs.

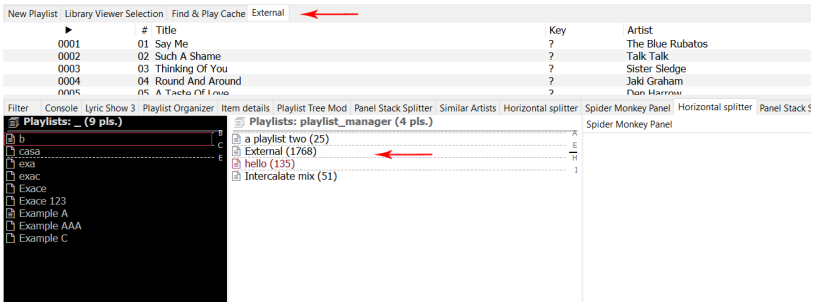


Figure 8: The playlist tabs have 4 playlists currently loaded, while the manager has other playlists which are not loaded yet.

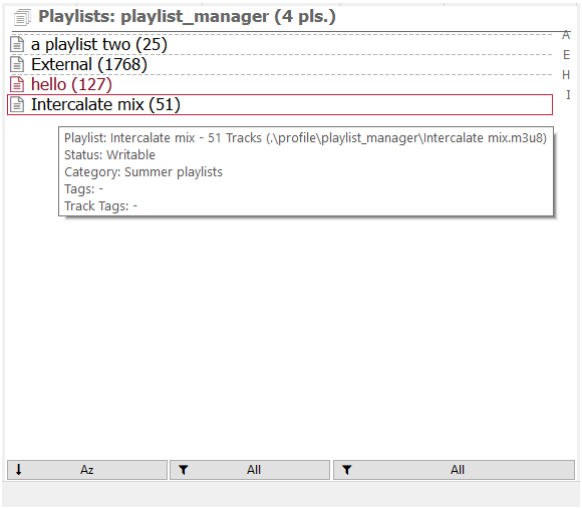


Figure 9: Playlist's tooltip show essentially the same info than Auto-playlist's one. Note both types of playlists are easily identified by their color code (configurable).

[13] Because playlists only reside in the program as long as they are loaded within the UI.

4.3 How paths are written: absolute and relative paths

In writable playlists formats, tracks may be written as absolute or relative paths (considering as root the folder where the playlist resides in). For ex:

Absolute path:
D:\Music\Big Retro Hits 90s\007. Chateau Pop - Maniac.mp3

Relative path on current root (D:\):
.\Music\Big Retro Hits 90s\007. Chateau Pop - Maniac.mp3

Relative path one level up from root (D:\Playlists\):
..\Music\Big Retro Hits 90s\007. Chateau Pop - Maniac.mp3

```
[D:]
├─ [Playlist]
│    └─ My playlist.m3u8
└─ [Music]
   ├─ [Big Retro Hits 90s]
   │  ├─ 007. Chateau Pop - Maniac.mp3
   │  └─ ...
   └─ ...
```

Relative paths may be enabled changing the related configuration on the header menu [12]:

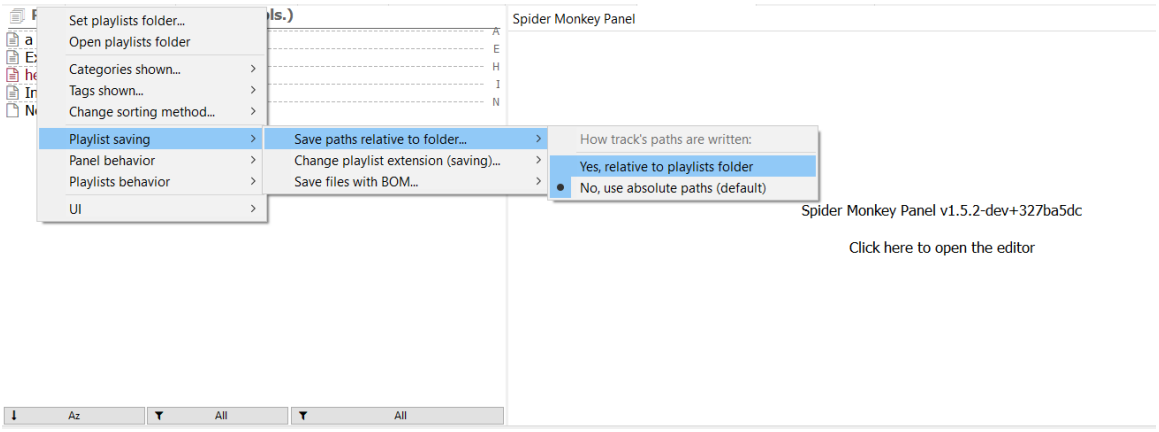


Figure 10: Enabling relative paths for tracks on (new) playlists.

Note enabling this feature is not enough condition per se, since the tracks must reside in the same drive disk to have relative paths working. Whenever relative paths can not be set, absolute paths are used as fallback. Relative paths would not be available on the following example :

```
[D:]
├─ [Playlist]
│    └─ My playlist.m3u8
[E:]
├─ [Music]
   ├─ [Big Retro Hits 90s]
   │  └─ 007. Chateau Pop - Maniac.mp3
```

4.4 Setting playlists format

All playlists created or edited by the manager use the format (extension) set on the panel, no matter their original format. That means that new playlists will use by default that format but also that any external playlist added to the tracked folder will be converted to the set format unless manually locked to avoid so[4.9]. The configuration can be changed at the header menu [12].

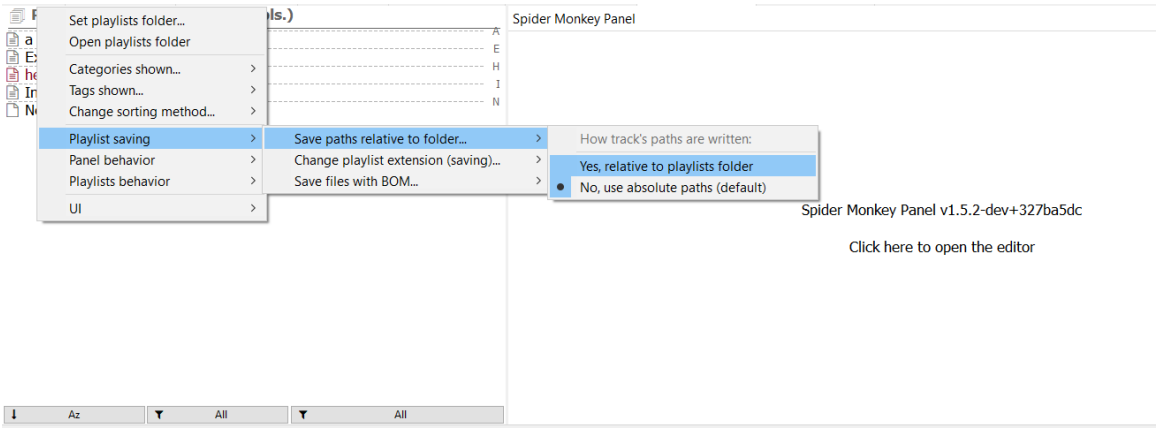


Figure 11: Playlists default format.

Additionally, playlist files may be written with or without BOM (files are always UTF-8 encoded) [VI]. For compatibility purposes it can also be enabled or disabled on the header menu [12]:

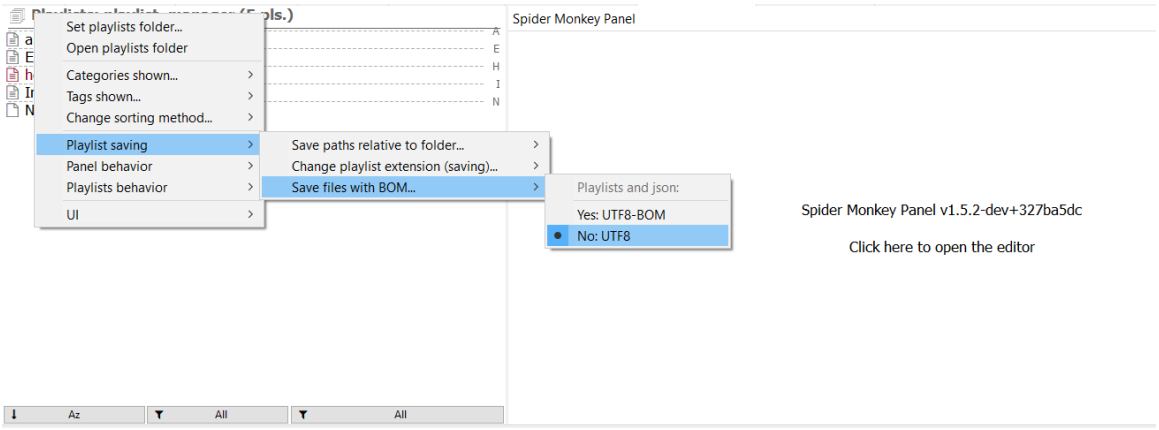


Figure 12: BOM configuration.

Further information about the differences of the multiple formats available and their structure can be found on the respective section [V].

4.5 Creating playlists

Creating new playlists [files] may be done easily in 2 ways on the list contextual menu[12]: either an empty playlist or creating a new file from the active playlist ('cloning it'). The first option simply creates an empty playlist file on the tracked folder and then also a new playlist on Foobar2000's UI with the same name:

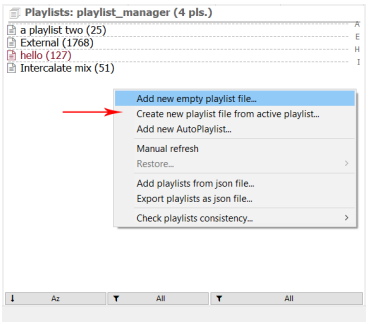


Figure 13: Menu entries to create playlists. A popup will appear to input the name.

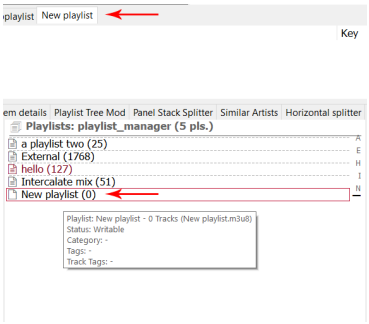


Figure 14: Playlist is created in both places: the UI and the physical folder.

The second option simply creates the physical[14] file in the tracked folder, bound to the active playlist. A popup will appear asking to maintain the name (thus using the active playlist) or input another one (creating and using a clone of the active playlist with the new name).

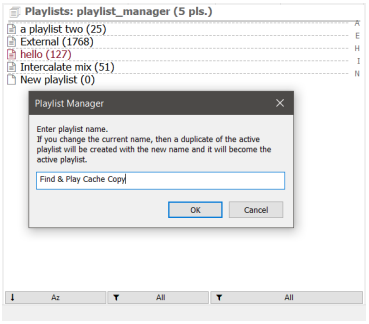


Figure 15: Cloning active playlist.

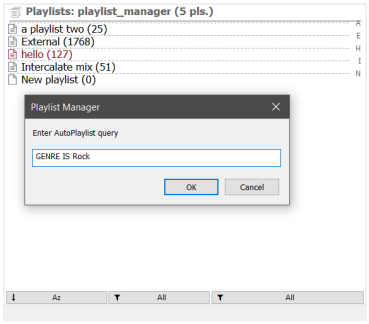


Figure 16: Query input for Auto-playlist.

Auto-playlists are created using the third option of the same contextual menu. Appart from the name. query and sorting are also set via popups.

[14]The format used is the one set at configuration.

4.6 Playlist loading

Foobar2000 loads playlists pretty fast thanks to using a binary playlist format (.fpl) instead of looking for the physical track files. The binary format stores all the relevant metadata needed to then display the tracks within foobar200.

On the contrary, loading any of the writable format playlists in native Foobar2000 is really slow. The physical files are loaded one by one and then their metadata retrieved... that process is done asynchronously and can easily take minutes as soon as a playlist has more than a hundred of tracks[15].

The manager uses those writable formats to create clones of the playlists within foobar but they are loaded as fast as the native binary format (.fpl) by finding matches on library for every track. Since playlists are supposed to be pointing to items already on Foobar2000's library on most cases, caching the paths of every item on library greatly speeds up the process[16].

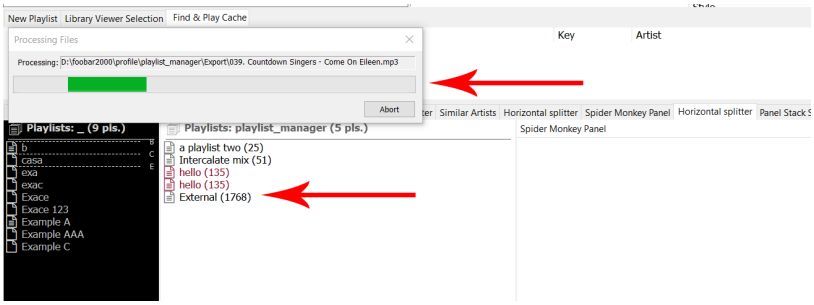


Figure 17: Async loading of a playlist file with tracks not present on library.

Having in mind the previous comments, here are some key rules to optimize the loading time of playlists:

- Use the playlist files to store only tracks present on the library whenever it's possible.
- Don't mix external items with items on library on the same playlist.
- Replace dead items whenever it's possible.
- Add streams to their own playlists.
- Add external items to their own playlists.
- Use the tools to check for external and dead items [10.2] and avoid unoptimized playlists.

[15] Note subsequent loading of the same playlist is much faster since those items have been already cached.
[16] This erratic behavior has been already reported at Foobar2000 support forums without an answer.

4.7 Playlist binding

Binding is the action of associating a playlist within Foobar2000 and a physical file for syncing purposes. This is done by name, so a playlist named 'ABC' in the manager will be a mirror of a playlist named 'ABC' in Foobar2000 UI. Additional ways to handle playlist names can be set using UUIDs [16.5].

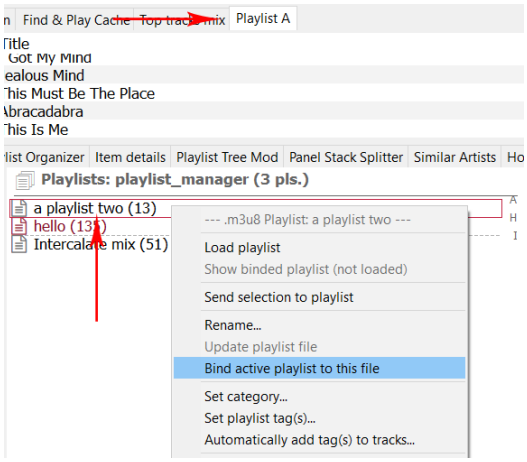


Figure 18: Bind selected playlist to active playlist.

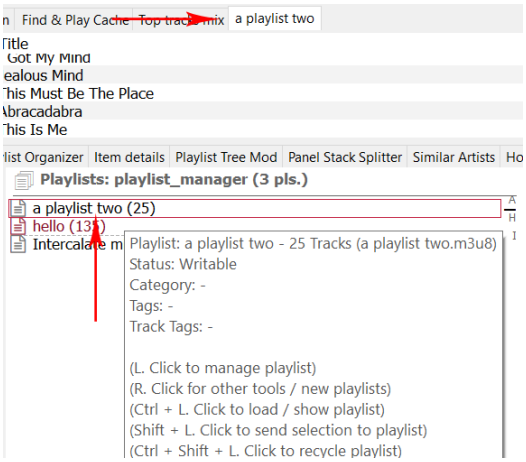


Figure 19: The active playlists is renamed and the playlist file updated with its contents.

Bound playlists are auto-saved if such feature is enabled, i.e. any change made to the Foobar2000 playlist will be automatically reflected in the physical file. Some restrictions may apply though[17]. Other manual actions include:

- Reload: reloads the playlist within Foobar2000, overwriting any non saved changes.
- Update / Force update: saves any change to the physical file[18].
- Delete: deleting the file also asks to delete the bound playlist within Foobar2000.
- Rename: renaming the file also renames the bound playlist[19].
- Show bound playlist: bound playlist within Foobar2000 becomes active playlist[20].

Since the only way to assign a playlist file to a Foobar2000 playlist is forcing both to have the same name, a new problem appears... what about duplicates? By default the Playlist Manager will not allow 2 playlists with the same name if there is already a playlist file named equal to them. i.e. no duplicates allowed for tracked playlists. Note there is not an [exposed] UUID associated to every playlists to work with, so in fact the only thing that may be used as UUIDs are the names. There are multiple configurable UUIDs that can be set instead of the plain name that can be used to allow some kind of 'duplicates' or to differentiate tracked from non tracked playlists [16.5].

[17] Playlist may be locked for changes, a non writable format may be used, etc.
[18] The manual counterpart of auto-saving.
[19] This is a requisite, since the link is the name!
[20] Like the 'Show now playing' action, but instead it simply shows the selected playlist.

4.8 Deleting and restoring files

Playlist files deleted within the manager context are not permanently deleted but sent to the Recycle Bin. Timestamps are used to uniquely identify files; this is done to ensure no collisions with other files within the Recycle Bin. Manually deleting a playlist using the playlist contextual menu [12] allows restoring at a later point using the list contextual menu[21].

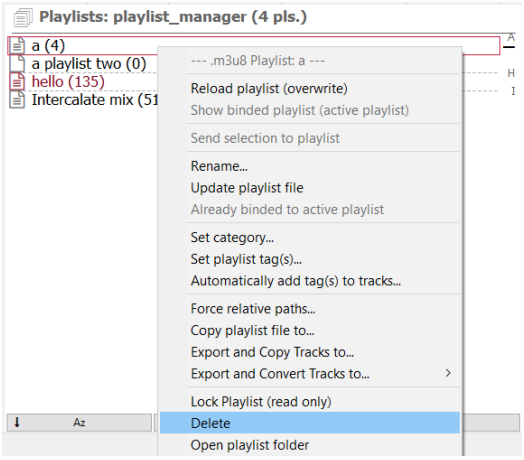


Figure 20: Delete selected playlist.

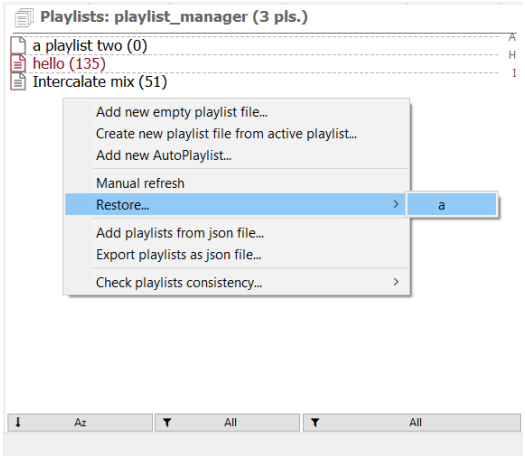


Figure 21: Restore deleted playlists.

Additionally, a backup of the Auto-playlist/fpl json database is created every time the panel is loaded and previous backups are sent to recycle bin[22].

Since playlist files are sent to the Recycle Bin every time an edit is done, as long as the Bin is not emptied, previous versions of the playlists may be found indefinitely. Reverting an unwanted edit, file corruption or restoring files deleted long time ago is as easy as restoring a previous version.

[21] Alternatively, the file may be found on the Recycle Bin... so it could be restored manually after stripping the timestamp.

[22] In other words, there is always 2 versions of the file. The current and the previous [start-up] one.

4.9 Locking files

Playlist may be locked to disable editing, overwriting the physical file or any change apart from unlocking or renaming it[23]. Locked playlists are also skipped on auto-saving.

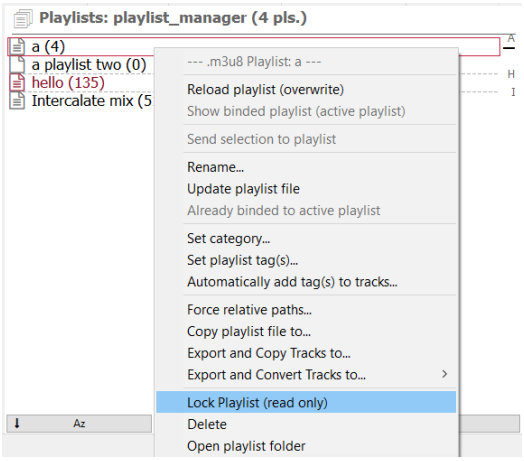


Figure 22: Lock selected playlist.

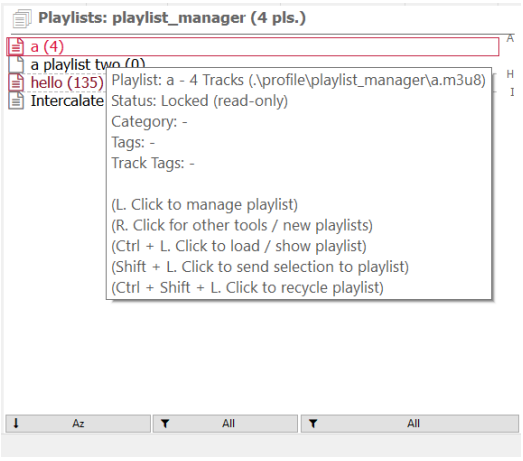


Figure 23: Locked playlist tooltip.

Note a loaded playlist within foobar may be edited even if its associated physical file is locked. This is done on purpose [24], to allow playlist edits while having the physical file locked and untouched. At any point the playlist may be unlocked and changes be saved or it may be directly forced to update the changes. Alternatively they may be discarded simply reloading the playlist file.

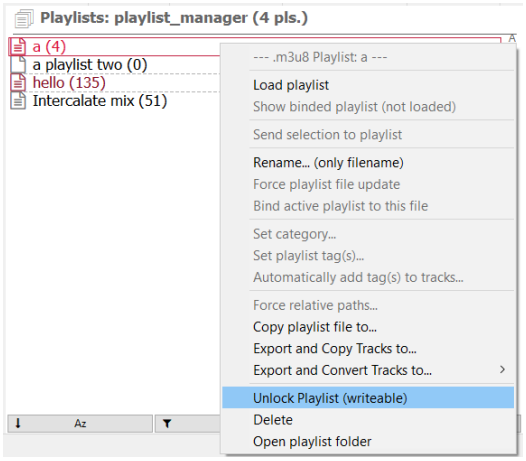


Figure 24: Unlock selected playlist.

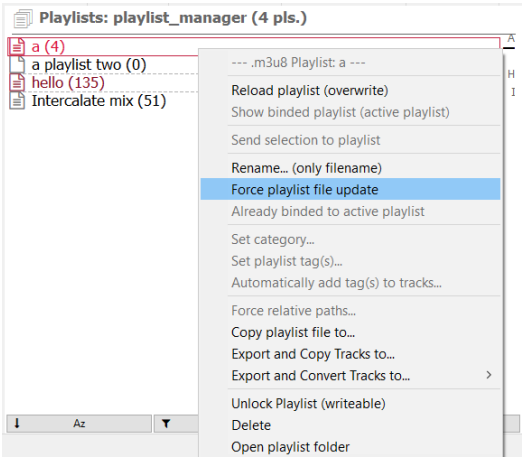


Figure 25: Force saving to locked playlist.

Native foobar playlists files (.fpl) are locked by default to avoid changing their format[25].

[23] Only the physical file is renamed in such case.

[24] Contrary to what other Foobar2000 playlist managers do, which lock/unlock the playlists within the program (sincere there is no physical files).

[25] Configurable at properties panel only.

5 Auto-saving and Auto-loading

5.1 Auto-saving

The first refers to the capability of duplicating any change made within foobar loaded playlists (usually those on the playlist tabs) to their physical file counterpart. Obviously, only those playlists with a bind file in the Playlist Manager panel will be tracked for changes[26]. This may be configured, on the header menu [12], changing the tracking interval (ms) or completely disabled (to copy back changes manually on demand).

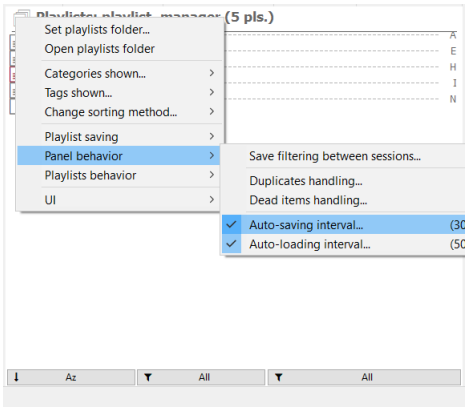


Figure 26: Auto-save configuration.

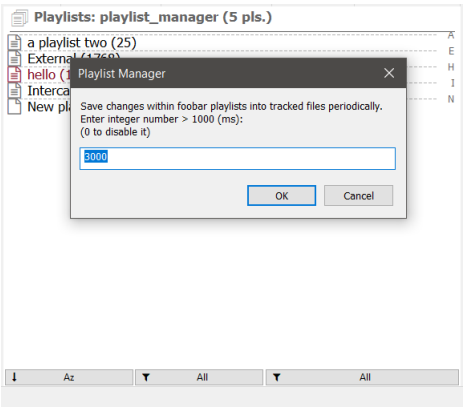


Figure 27: Auto-save interval in ms.

5.2 Auto-loading

The former refers to the capability of automatically tracking changes within the tracked folder, reflecting any change made to files on real time. This may be configured changing the tracking interval (ms) or completely disabling it (to only reflect changes manually or on every startup).

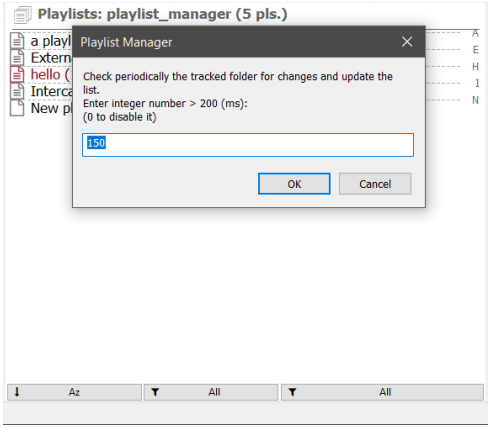


Figure 28: Auto-load interval in ms.

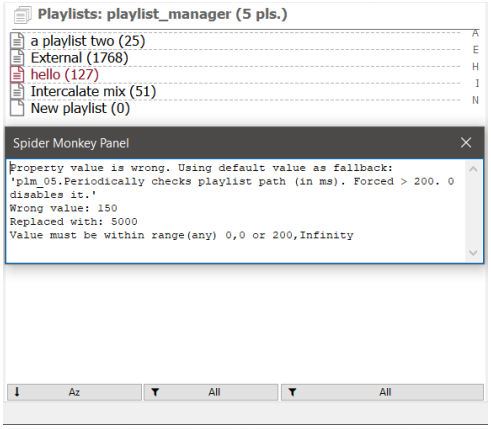


Figure 29: Wrong values trigger a warning.

[26] In other words, it may be possible to have both tracked and non tracked playlists within foobar.

6 Automatic playlist actions

Some reserved playlists tags names are used for special purposes by the manager to automatically perform some actions as soon as it loads a playlist with such keywords:

- 'bAutoLoad' makes the playlist to be loaded within foobar automatically (on the UI). Meant to be used on remote servers with online controllers.
- 'bAutoLock' locks the playlist as soon as it's loaded on the panel.

The feature must be explicitly enabled on the header menu [12] to work; i.e. a playlist with such tags will not automatically perform any action until enabled globally.

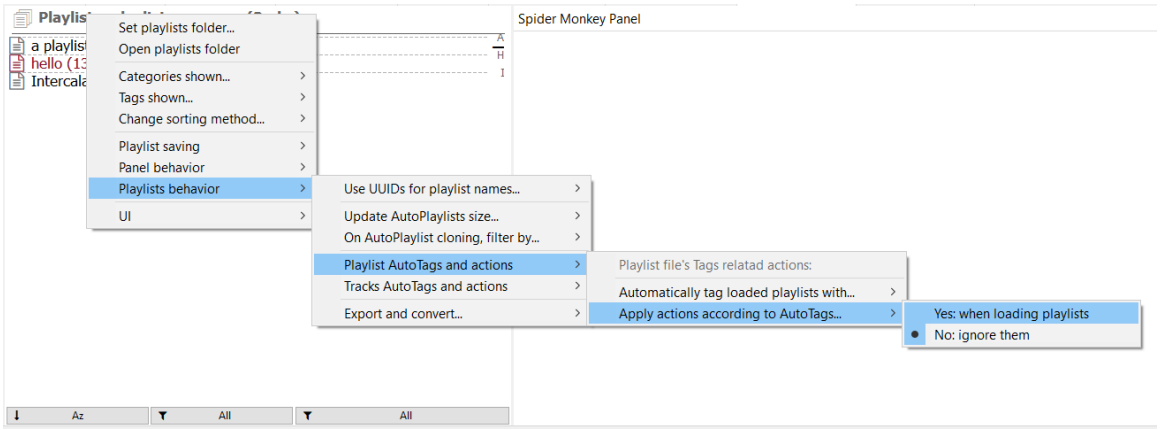


Figure 30: Enabling Automatic playlist actions on the header menu.

Additionally, tags may be added to playlists automatically as soon as they are loaded. This may be used to enforce an specific tag on all playlists tracked by the manager, no matter what it's set on the playlist file. Furthermore, used along the automatic playlist actions, it may be used to force loading or locking of all tracked playlist [27].

[27] It's disabled by default, so this allows both: to selectively apply actions to 'tagged' playlists or apply them to all.

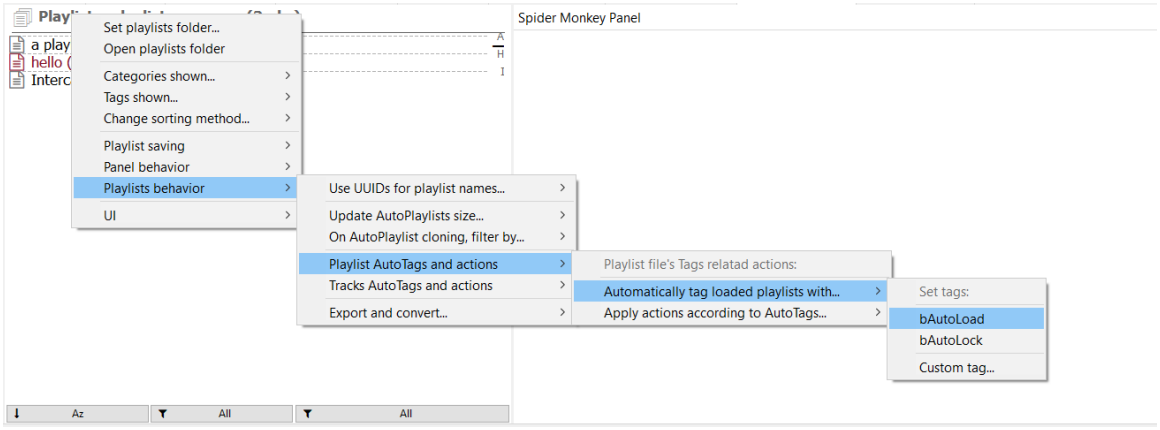


Figure 31: Setting tags to be added automatically to tracked playlists.

Obviously, nothing stops you to use it to simply tag playlists with a custom tag that has nothing to do with automatic actions. In any case, the tooltip shows the playlist tags (whether they are for informative purpose or used for actions):

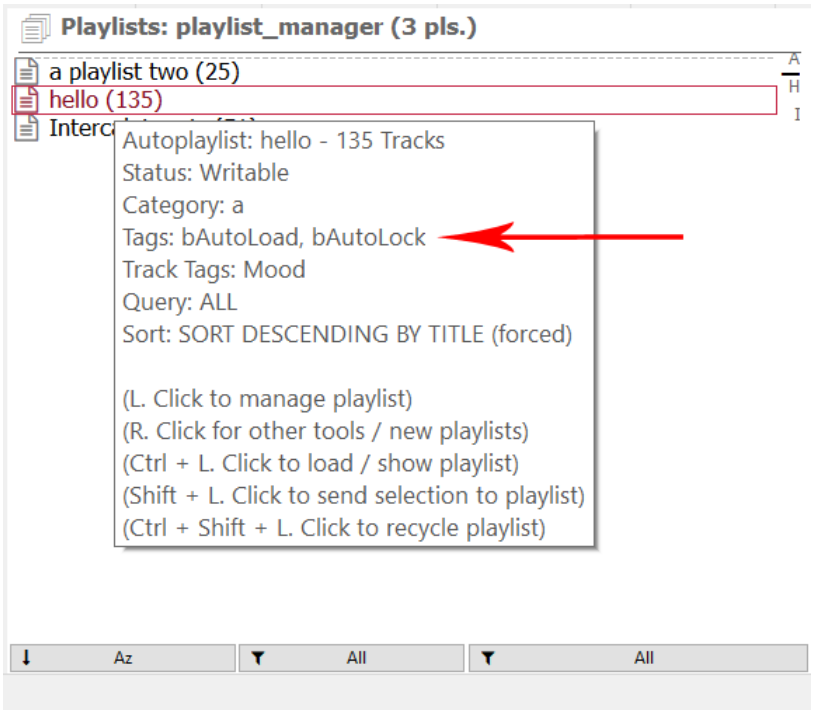


Figure 32: [Playlist] tags on tooltip.

7 Automatic track tagging

Playlists may be used to automatically tag tracks on demand (the moment you add a track) or on startup [16.3]. The conditions to tag tracks on a playlist are set using the contextual menu for the selected playlist [12] and must follow json format [VI]. For example:

Example	Description of how tracks would be tagged
[{"rating":5}]	%rating% and a value of 5
[{"mood":"Chill"}]	%mood% and a value of 'Chill'
[{"year":"$year(%date%)"}]	%year% and a year value from the full date tag
[{"checked":"JS:todayDate)"}]	%checked% and a date value using JavaScript.

Table 1: Automatic track tagging examples.

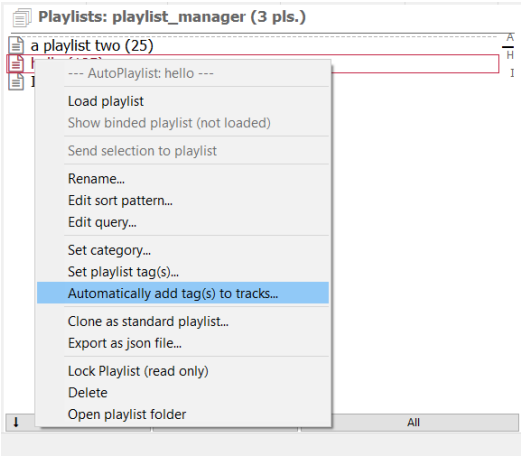


Figure 33: Add track tags to selected playlist.

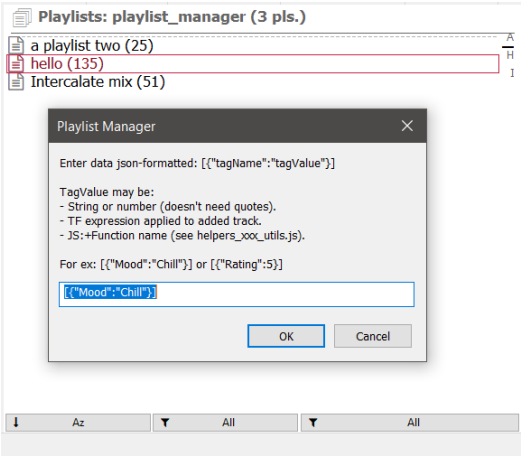


Figure 34: Track tags popup.

As noted, the use of arbitrary JavaScript functions is allowed, but they must be defined at a helper file '.\helpers\helpers_xxx_utils.js'. In this case, the function it simply returns the date Y-M-D-h-m-s in which was tagged. Users may add their own functions to it.

Playlists may have multiple track tags, in that case all of them would be applied to the tracks when required. Other features include:

- Can be configured separately for standard playlists, Auto-playlists, locked playlists and individual playlists.
- Standard playlists may be used to easily tag your library just by sending them to the right playlist (which don't need to be loaded at all).
- Auto-playlists Auto-tagging allows to automatically (and periodically) apply some tagging logic to the current library following some condition.
- Allows multiple conditions (must follow json format) [VI]. Look at playlist metadata for more info 16.3.

The feature must be explicitly enabled on the header menu [12] to work; i.e. a playlist with track tags will not apply them until globally enabled.

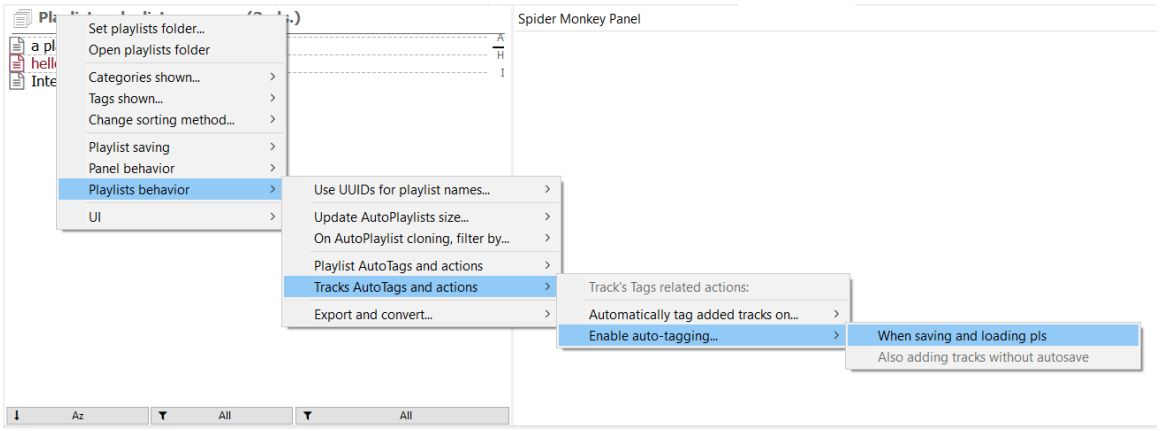


Figure 35: Enabling Automatic track tagging on the header menu.

When a playlist has track tags set, the tooltip shows the tags which would be written in case the feature is enabled:

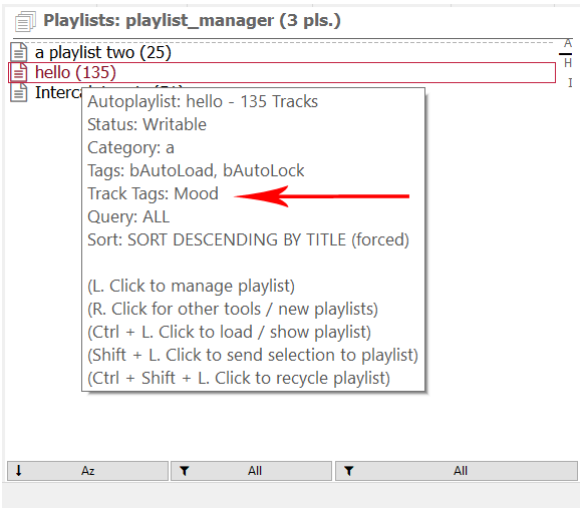


Figure 36: Track tags on tooltip.

Enabling Automatic track tagging for Auto-playlists at startup involves processing their queries and thus requires some processing time. The process is done asynchronously on the background [sec:faq], thus not requiring additional startup time in most cases, but enabling the option should be considered carefully on resource constrained PCs. In any case, **it's recommended to make a moderate use of this feature**; note having multiple Auto-playlists trying to tag the same files at the same time may lead to errors (due to files being blocked), your mileage may vary.

8 Exporting Auto-playlist

8.1 Exporting or importing Auto-playlist files

The original idea of a playlist manager found on Auto-playlist Manager by marc2003 consisted only on a list of Auto-playlists which could be loaded on demand... thus to make it easy to transfer all those Auto-playlist to this manager there is an option to directly import its json files[28] on the list contextual menu [12].

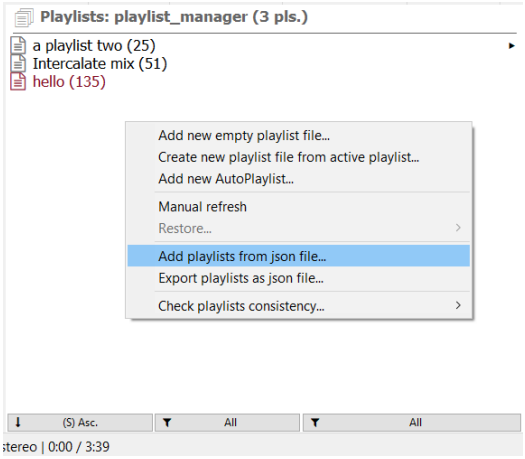


Figure 37:

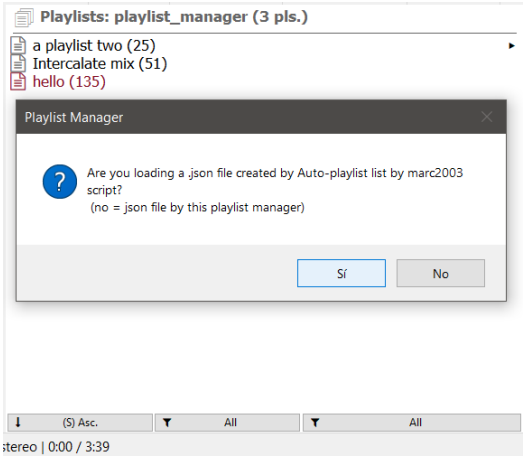


Figure 38:

At the importing process 2 options may be chosen depending on the json file being originary from marc2003's panel or from this one[29]. All Auto-playlists found will be checked for validity and added to the current playlist list on the manager.

Auto-playlists exporting process for this manager is equivalent to marc2003's one, just copy/paste the appropriate json file[30]. To import it at another panel instance just follow the steps written previously, and choose the appropriate option (files from this panel).

Note the json file from this manager contains both Auto-playlists and .fpl virtual playlists for metadata purposes [19], but the latter are discarded when importing using the menus as described[31]. Anyway the format from this manager is not backwards compatible with marc2003's script, so it doesn't affect in any way for regular users.

Alternatively, Auto-playlists from the panel may be selectively exported using the playlist contextual menu option [8.2].

[28] marc2003's json file (at foobar profile folder) will be at '.\js_data\autoplaylists..json'.

[29] Since marc2003's panel follows its own schema for Auto-playlists, some internal conversion is needed [20]

[30] For ex. if the panel is set to track 'H:\My Music\Playlists', then the playlist json file (at foobar profile folder) will be at '.\js_data\playlistManager_Playlists.json'.

[31] Contrary to marc2003's script, whose json file only has Auto-playlists.

8.2 Export as json file

Single Auto-playlists may be exported as json files, instead of following the general procedure (which exports all of them at once), using the selected playlist contextual menu [12]:

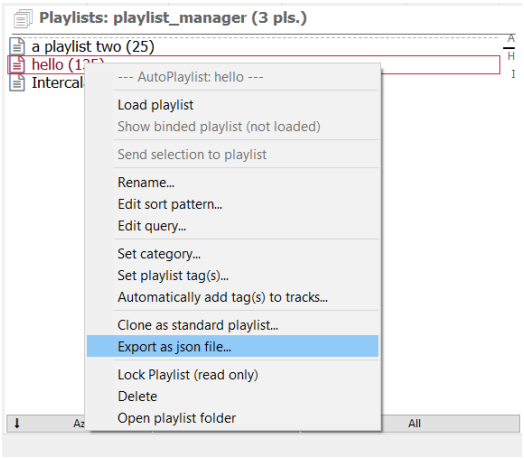


Figure 39: Export selected Auto-playlist.

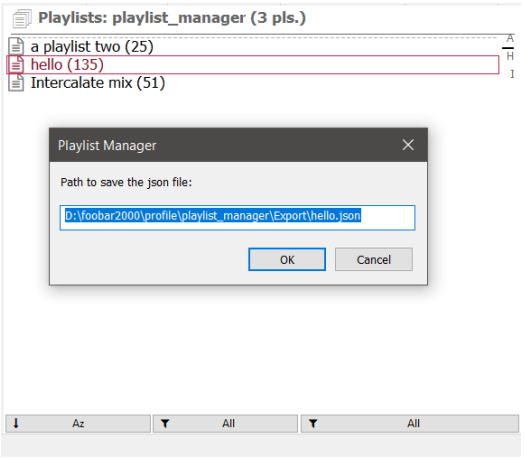


Figure 40: Path to exported json file.

Alternatively all Auto-playlists may be exported at once using the list contextual menu too. This option has an advantage over the general procedure of just copying the json file: .fpl playlists may be filtered before exporting, thus exporting only the Auto-playlists[32].

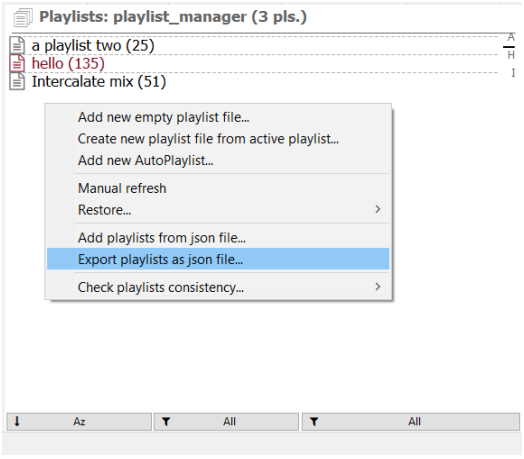


Figure 41: Export all Auto-playlists.

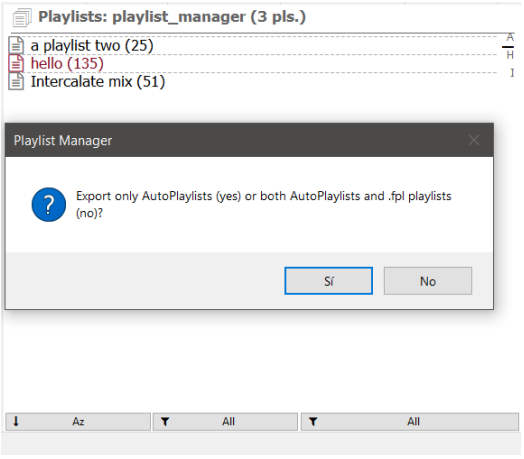


Figure 42: Auto-Playlists and .fpl popup.

[32]Therefore, choosing both playlists types at exporting process is equivalent to simply copying the associated panel json file. Note the advantage is mostly cosmetic for regular users, since .fpl playlists are filtered anyway at importing! It may come handy for advanced users though (for backup purpose or manual .fpl syncing).

8.3 Clone as standard playlist

Auto-playlists may be converted to standard playlists (writable formats [V]) for further editing, sorting or exporting as plain-text files. A new playlist file will be created in the tracked folder with similar name and duplicating the tracks and original sorting from the Auto-playlist.

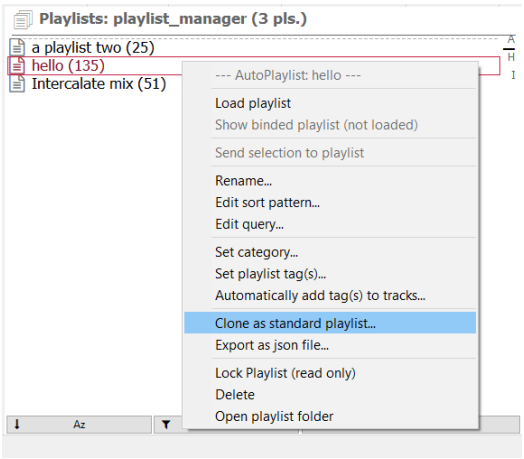


Figure 43: Clone selected Auto-playlist.

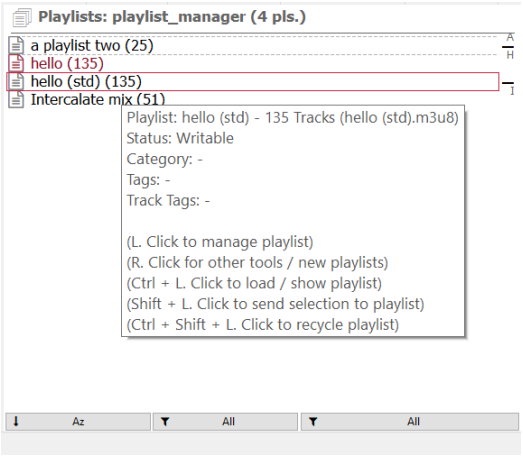


Figure 44: Cloned Auto-playlist as standard playlist.

Additionally, duplicates may be automatically removed according to tag(s) or TF expression(s) by setting 'On AutoPlaylist cloning, filter by....' option. By default is set to 'artist,date,title'[33].

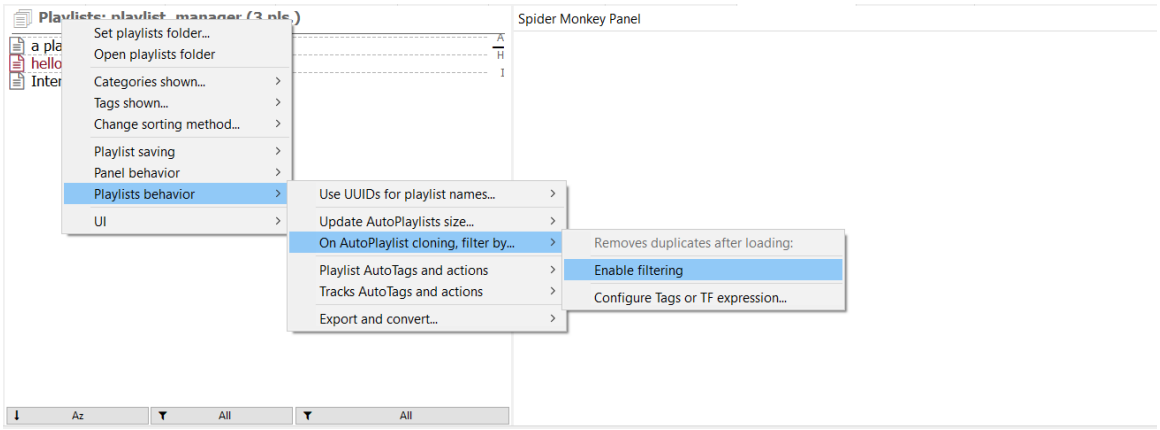


Figure 45: Enabling filtering duplicates for Auto-playlists clones on header menu.

[33] Automatizes the process of removing duplicates by tags after cloning using tools like those found on Playlist-Tools-SMP and automatically fixes one of the worst quirks of Auto-Playlists (having multiple versions of the same tracks)

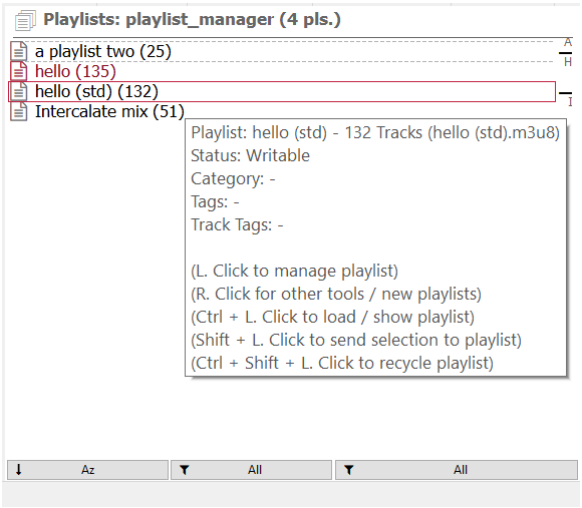


Figure 46: Cloned Auto-playlist now has 3 less tracks (132) than the original (135).

Once an Auto-playlist has been converted, the regular exporting tools may be used [9] to export or convert not only the playlist but also its tracks (for ex. exporting to a portable player). In resume, the procedure to export Auto-playlist tracks and playlists always involves cloning it first as standard playlist. While this may seem like a limitation, it offers multiple advantages over simply converting the tracks using native Foobar2000:

- Duplicates can be filtered automatically. Auto-playlists are non editable, so to achieve the same manually all the tracks would have to be sent to another playlist anyway (and then using additional scripts to filter duplicates by tags).
- The playlist file can be exported along the tracks. Using Auto-playlists only the tracks can be converted/exported, the playlist can not be saved.
- The exported playlist file will point to the tracks using relative paths, contrary to the file written using 'File/Save playlist...'.

9 Exporting playlists and files

9.1 Copy Playlist file

Exports (a copy of) the selected playlist file to the given path, the final filename may be changed[34]. This is equivalent to open the tracked folder and copying/pasting the file to the desired location.

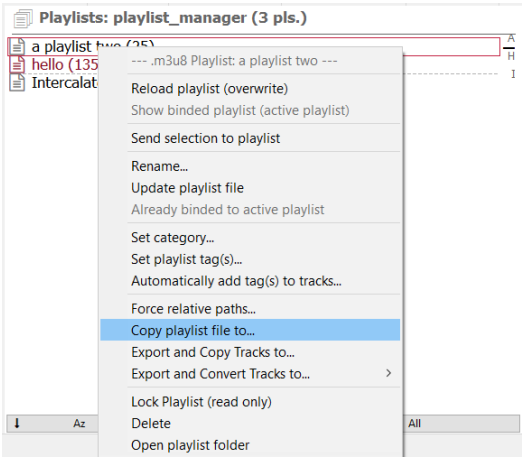


Figure 47: Copy selected playlist file.

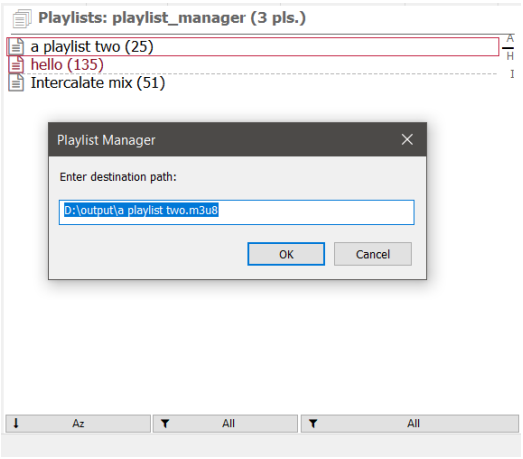


Figure 48: Output popup.

D:\foobar2000\profile\playlist_manager\example.m3u8 → **D:\output\example.m3u8**

This is the only option available for readable-only formats [V] which have a physical file (.fpl). The Auto-playlist counterpart would be exporting as json file [8.2].

9.2 Export and copy tracks to

Exports (a copy of) the selected playlist file along their tracks to the given path[35], the final playlist filename may be changed.

[34] If the folder does not exists, it will be created too.

[35] It's obviously recommended to choose a new folder without any content, since it will be filled with all tracks plus the playlist.

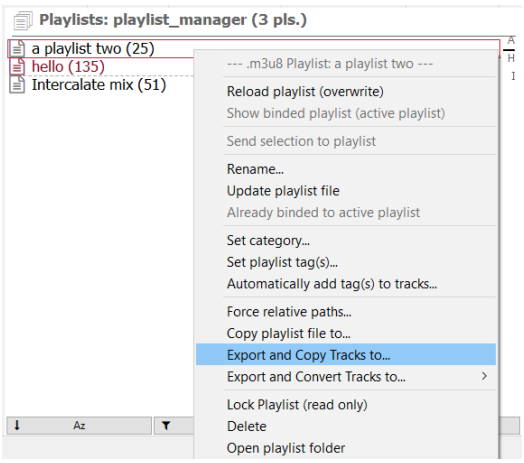


Figure 49: Copy selected playlist file and its tracks.

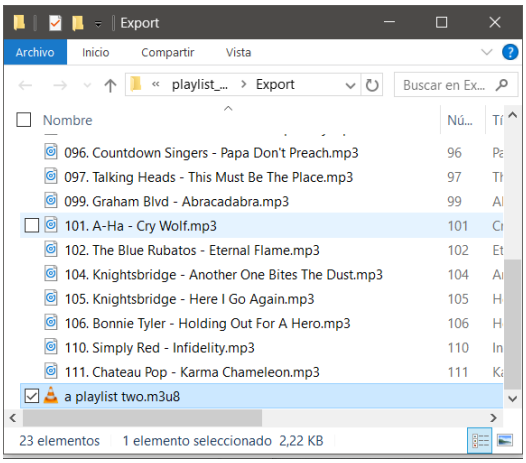


Figure 50: Output folder with all media files along the exported playlist.

Since the tracks are exported 'as is'[36] along the playlist, the exported playlist will be edited to use relative paths, no matter what the original used. This is done to easily load the playlist at any point along its files as a portable solution.

[...]
#EXTINF:259,Jaki Graham - Round And Around
D:\My library\Big Retro Hits 90s\004. Round And Around.mp3
[...]

⇓⇓⇓

[...]
#EXTINF:259,Jaki Graham - Round And Around
.\004. Round And Around.mp3
[...]

This exporting option is not available for readable-only formats [V]. To use it on Auto-playlist, first clone it as standard playlist [8.3], then proceed as usual. To do something similar with .fpl playlists, manually convert them to a writable format and then proceed as usual.

9.3 Export and convert tracks to

Exports (a copy of) the selected playlist file along their tracks to the given path, the final playlist filename may be changed. The tracks are converted on the process[37] and the exported playlist is edited to use relative paths [9.2].

Since the files are converted, instead of being copied, they are ready to use not only on other PCs of Foobar2000 instances but also on portable players, phones, etc. i.e. it may be used as a one way sync tool integrated within the manager and working directly on playlists.

[36] No conversion is done, so the file formats will remain the same and they will be perfect copies of the original files.
[37] Using pre-defined Converter presets.

The feature allows to save predefined sets of converter preset + destination folder on the menu for easy access[38]. The entries may be configured, added or removed on the header menu [12].

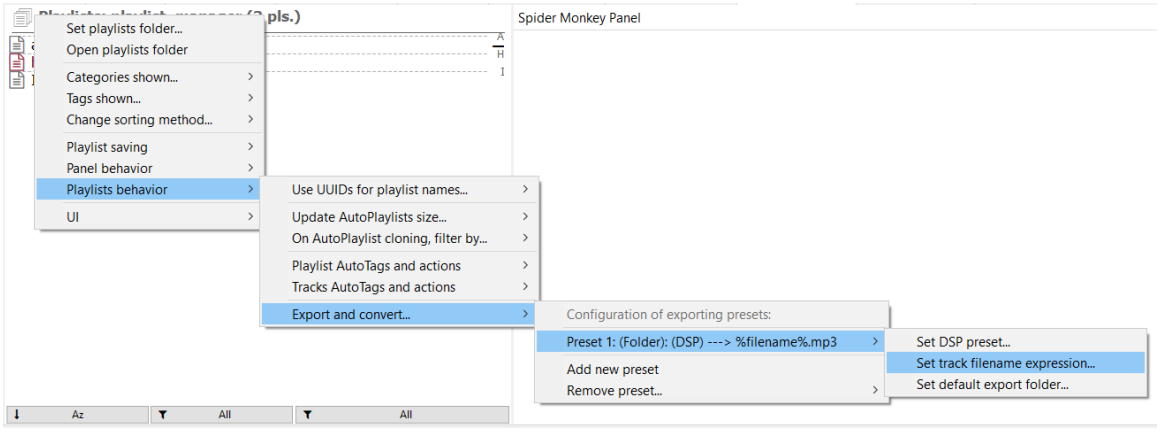


Figure 51: Setting export and convert presets: converter preset, filename mask and output folder.

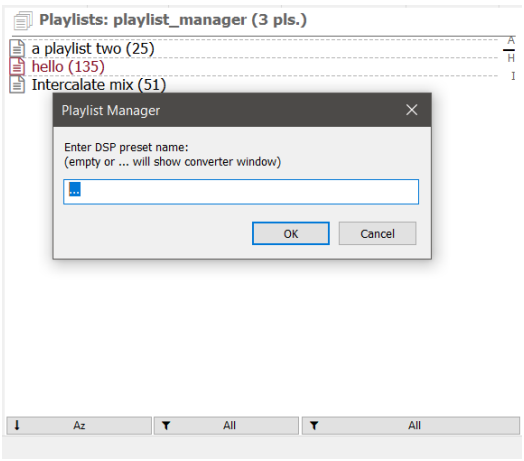


Figure 52: Converter window will be shown at execution.

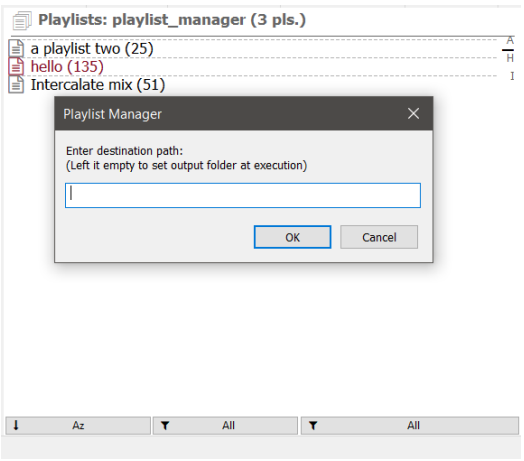


Figure 53: Output path will be asked at execution.

[38]For ex. it's possible to have an entry to export playlist to the Ipod and another one for the server, both with different converter configurations and destination folders.

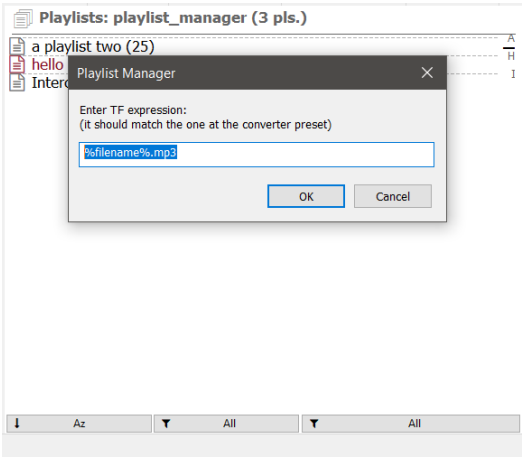


Figure 54: Filename mask must match the one at the converter preset to properly modify names on the output playlist file.

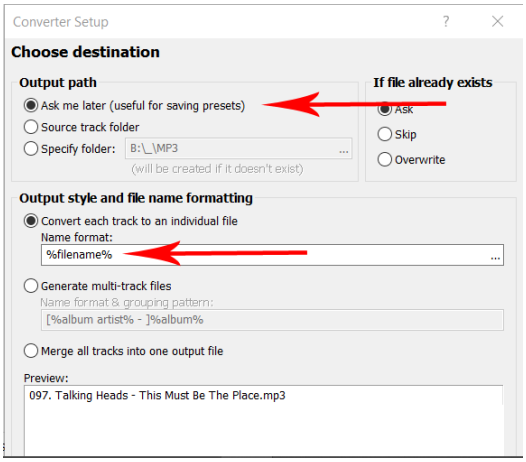


Figure 55: The converter preset can be set to ask for the output path at execution. Note filemask matches the previous one.

On the selected playlist contextual menu, every entry shows the destination folder[39], the converter preset name and the filename mask[40]. When the folder or the preset is not set, '(Folder)' and/or '(DSP)' is shown instead (and they will have to be manually set at execution).

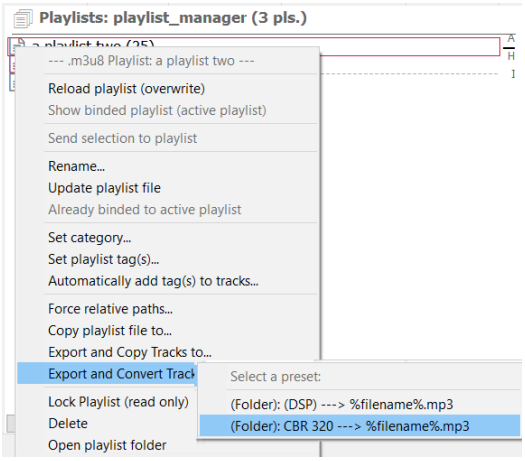


Figure 56: The current preset has a converted preset defined and the filemask, but output folder will be asked at execution.

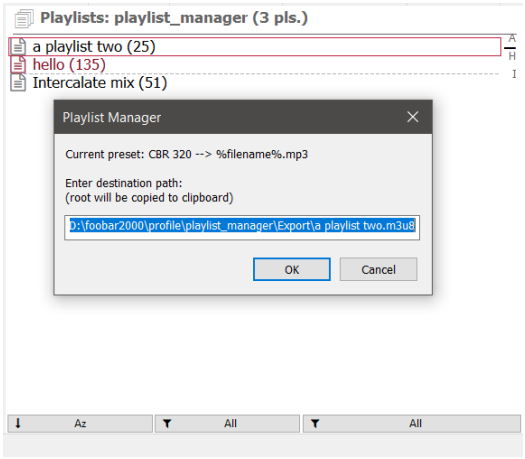


Figure 57: Setting output path. Converter preset should be set to also ask output path before conversion to reuse it in both windows.

This exporting option is not available for readable-only formats[V]. To use it on Auto-playlist, first clone it as standard playlist [8.3], then proceed as usual. To do something similar with .fpl playlists, manually convert them to a writable format and then proceed as usual.

[39] Along the disk letter in parenthesis.
[40] Must match the one found at the converter preset to work as intended.

10 Additional tools

10.1 On selected playlist

The following tools can be found on the selected playlist contextual menu [12].

10.1.1 Force relative paths

Paths within a playlist can be converted to relative paths stripping all but the filenames[41]. It's a destructive action, which edits the playlist file and can not be undone... although a backup can be found at the Recycle Bin as usual [4.8]:

[...]
#EXTINF:259,Jaki Graham - Round And Around
D:\library\Big Retro Hits 90s\004. Round And Around.mp3
[...]

⇓⇓⇓

[...]
#EXTINF:259,Jaki Graham - Round And Around
.\004. Round And Around.mp3
[...]

10.2 On entire list

The following tools can be found on the list contextual menu [12]. Executed asynchronously [VI].

10.2.1 Mixed absolute and relative paths

The manager can check all the playlists currently tracked to ensure there are no playlist files with both absolute and relative paths at the same time. Such files are probably an error, whether intentional or not, and should be fixed in most cases. For ex:

[...]
#EXTINF:141,Jeffery Mykals - Gyal Bad
..\music\Jeffery Mykals - Gyal Bad.mp3
#EXTINF:271,Jeffery Mykals - Chico & Voicemail
D:\music\Jeffery Mykals - Chico & Voicemail.mp3

The tool will span a popup reporting a list of playlists with such 'problem'. If all items exist (no dead items), as soon as the playlist is rewritten by the manager it will be automatically fixed[42].

[41] It's easy to see this is equivalent to using the 'export and copy tracks' feature [9.2] without copying the tracks and overwriting the original playlist file

[42] It will use the current path configuration, thus converting all paths to absolute or relative paths, after loading the playlist within Foobar2000, on auto-update or via manual update on selected playlist menu [12].

10.2.2 Dead items

The manager can check all the playlists currently tracked for dead items on them, whether the tracks are on current Foobar2000's library or not. Dead items are considered files which don't exist at their path, no matter if it's a relative or absolute path.

The tool will span a popup reporting a list of playlists with dead items (but will not list the items their-selves). To find such items or replace them with items from current library use a dedicated tool like the one found at Playlist-Tools-SMP[43].

10.2.3 External items

The manager can check all the playlists currently tracked for external items on them, i.e. tracks not present on Foobar2000's library but which exists at their path. Note external items are technically not dead items, since they do exist outside Foobar2000 database.

10.2.4 Duplicated items

The manager can check all the playlists currently tracked for duplicated items on them, i.e. two tracks with the same path. Note there is a limit though, if absolute and relative paths are intentionally mixed and 2 paths point to the same physical file, they will not be considered duplicated. For ex[44]:

[...]
#EXTINF:141,Jeffery Mykals - Gyal Bad
..\music\Jeffery Mykals - Gyal Bad.mp3 ∗
#EXTINF:141,Jeffery Mykals - Gyal Bad
D:\music\Jeffery Mykals - Gyal Bad.mp3
[...]
#EXTINF:141,Jeffery Mykals - Gyal Bad
..\music\Jeffery Mykals - Gyal Bad.mp3 ∗

The tool will span a popup reporting a list of playlists with duplicated items (but will not list the items their-selves). To find such items or remove them use a dedicated tool like the one found at Playlist-Tools-SMP[45]

[43] Look for 'Playlist Revive'.
[44] Only the tracks with an ∗will be considered duplicates.
[45] Look for 'Duplicates and tag filtering'. Foobar2000's main menu 'Edit/Remove duplicates', after loading the playlist, can also be used.

11 Manual refresh

Since auto-loading may be disabled [5.2] or the refresh time set too high, there is an option on the list contextual menu [12] to force updating the tracked folder and its playlists. Any new file found will be added to the list.

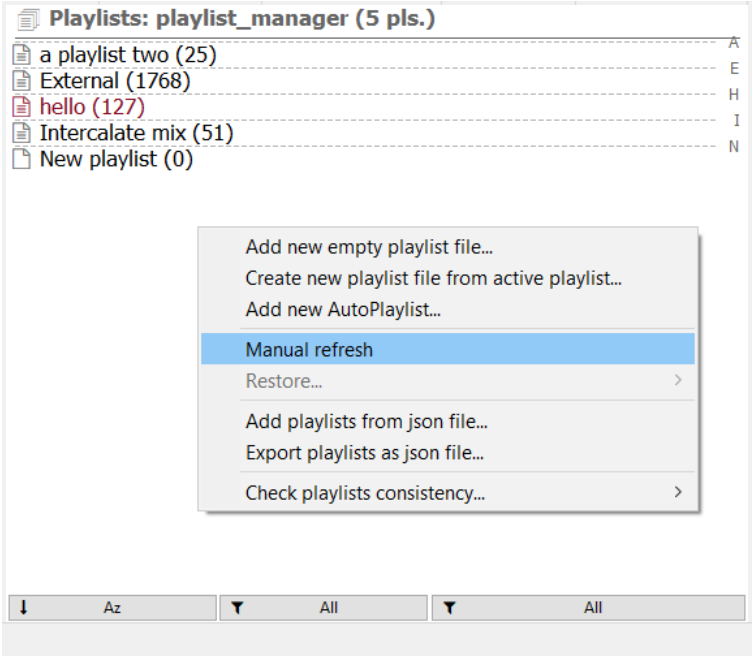


Figure 58: Force manual refresh of list.

As a side effect, Auto-playlists's metadata will be refreshed (size). Note this is the only way to do it unless configured to do so automatically [15.2] at startup or individually loading them. Since doing it at startup may involve a small increase in loading time [VI], it may be better to refresh them manually from time to time using this option on resource constrained PCs,

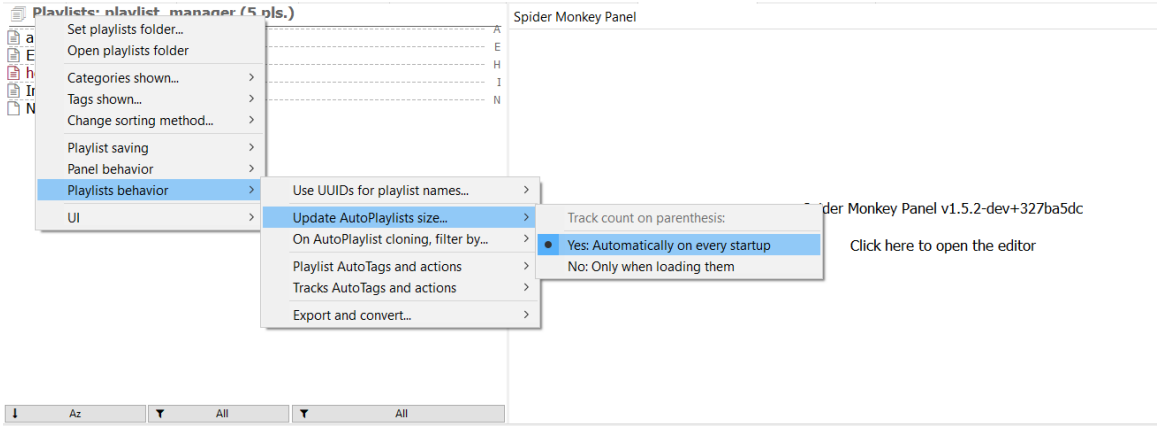


Figure 59: Automatically update Auto-playlists size on startup.

12 Shortcuts

All features can be reached using the following mouse and keyboard shortcuts:

- **Open menus (*clicking on item within parentheses*)**:
  + **Left Click (*playlist*)**: Open selected playlist contextual menu.
  + **Right Click (*list*)**: Open list menu; new playlist and other playlist tools.
  + **Right Click (*header*)**: Open header menu. General manager configuration.
- **Playlist actions (*clicking on playlists*)**:
  + **Double Click**: Load selected playlist / Make bound playlist active.
  + **Ctrl + Left Click**: Load selected playlist / Make bound playlist active.
  + **Shift + Left Click**: Send current selection to selected playlist.
  + **Ctrl + Shift + Left Click**: Recycle selected playlist.
- **Current view actions (*clicking on header*)**:
  + **Double Click**: Category cycling.

Note selected playlist related actions are always assigned to left click, while the rest are usually assigned to right click (except category cycling).

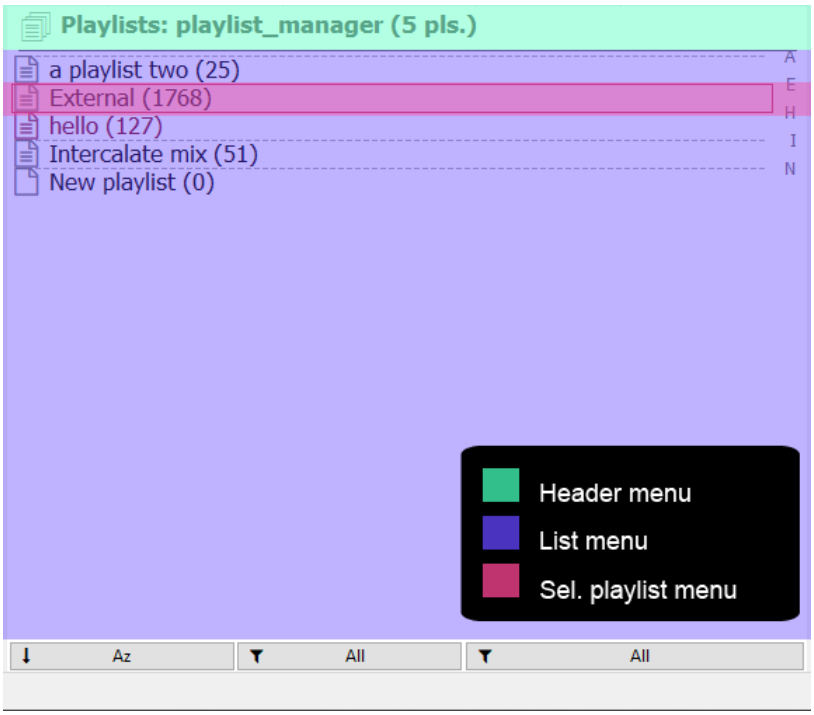


Figure 60: Opened menus change according to mouse position while clicking.

Part III

UI

13 Features

- UI re-sizable on the fly. i.e. it will adjust layout to panel size.
- Selection indicators.
- Now playing playlist indicator: ◁
- Loaded playlist indicator: —
- Empty / not empty playlist indicators. To be used as fallback when size is not shown.
- Font Size (configurable).
- Separators between different names/categories (configurable).
- Colors for different playlists types, status, text, background and selection (configurable).

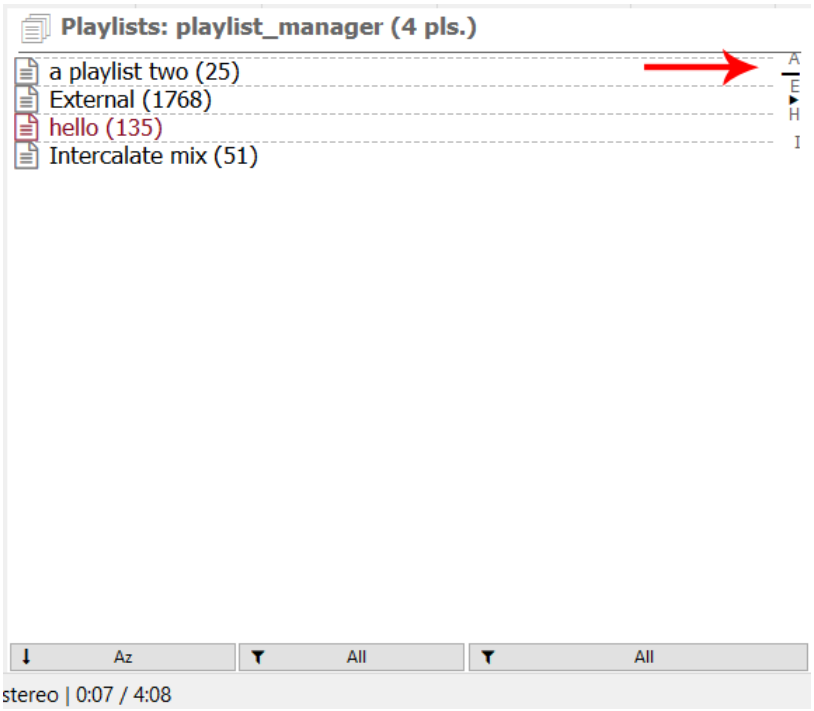


Figure 61: Now playling ('External'), loaded ('a playlist two') and two non loaded playlist.

14 List view

The main panel view features a simple listing of all currently tracked playlists (whether they are physical or virtual -json- files). This view can be filtered according to these parameters:

- Show all / Only Auto-playlists / Only standard playlists.
- Show all / Not locked / Locked.
- By selectable categories (virtual folders).
- By selectable tags.

The current view is always maintained on subsequent foobar startups unless changed. Note tag filtering is always reset since it's meant for informative purposes only[46], not for playlist categorization.

14.1 Category filtering -permanent-

Playlists may be filtered by category (like virtual folders) and multiple individual selections are allowed via menu (for ex. to display all but one specific category). When lists are being filtered by category, an indicator is shown in the header text. The configured category filtering is maintained on subsequent startups.

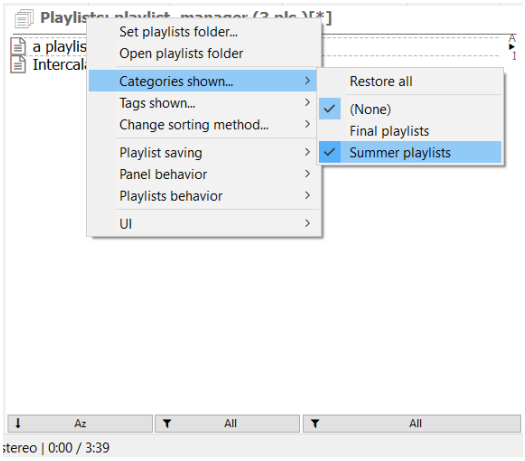


Figure 62: 'Final playlists' category has been exluded.

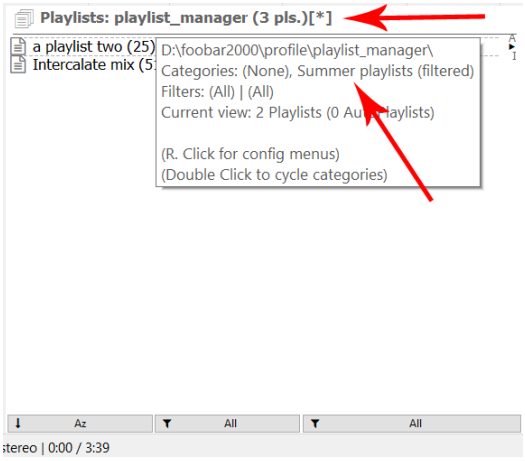


Figure 63: The header and tooltip indicates a filter is active.

An additional way to filter by category is cycling the current category being shown (one by one) [12]. This works in conjunction with playlists being allowed to only have one category at the same time, so no playlist will be shown more than one time.

[46] In fact is also used for some complex playlist automatic actions.

14.2 Tag filtering -temporal-

Playlists may also be filtered temporarily by tags; it gets reset on subsequent startups. Therefore tags should only be used for informative purposes but not for categorization. Note a playlist may have multiple tags at the same time.

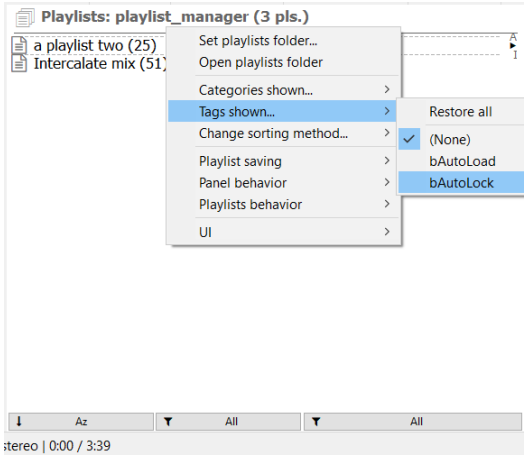


Figure 64: 2 tags have been exluded, showing only playlists without tags.

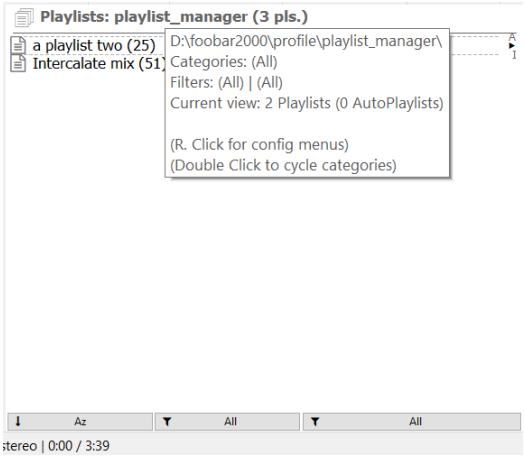


Figure 65: Note the header does not warn about filtering for tags.

14.3 Sorting

List view may be sorted by name, category or size. By default playlists are sorted by name, using natural sorting (Az). Ordering may be changed using the appropriate buttons. The selected sorting mode is maintained on subsequent startups.

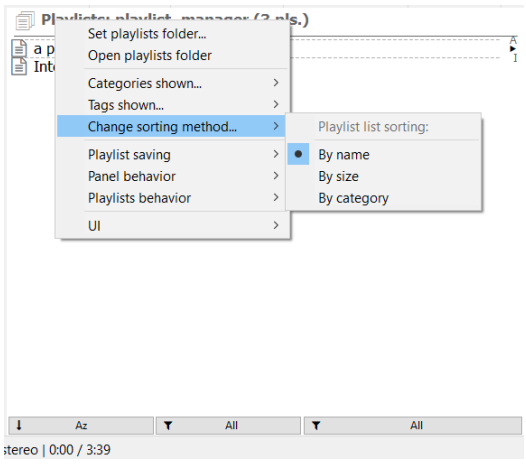


Figure 66: Sorting menu on header menu with the different modes.

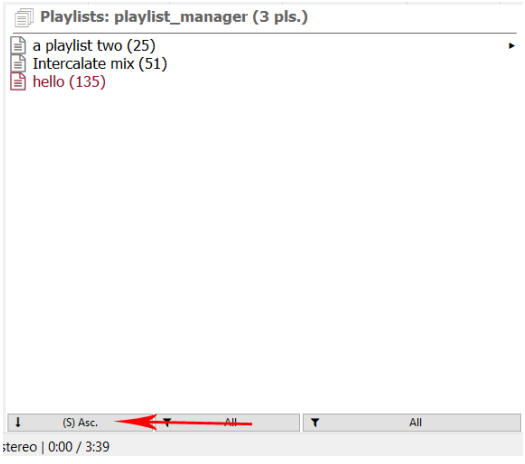


Figure 67: Sorted by size (note the '(S)' on the sorting order button).

Additionally, name / category separators may be shown on the UI to easily identify where the next char begins (123, A, B, ...). 'Size' mode does not make use of this feature.

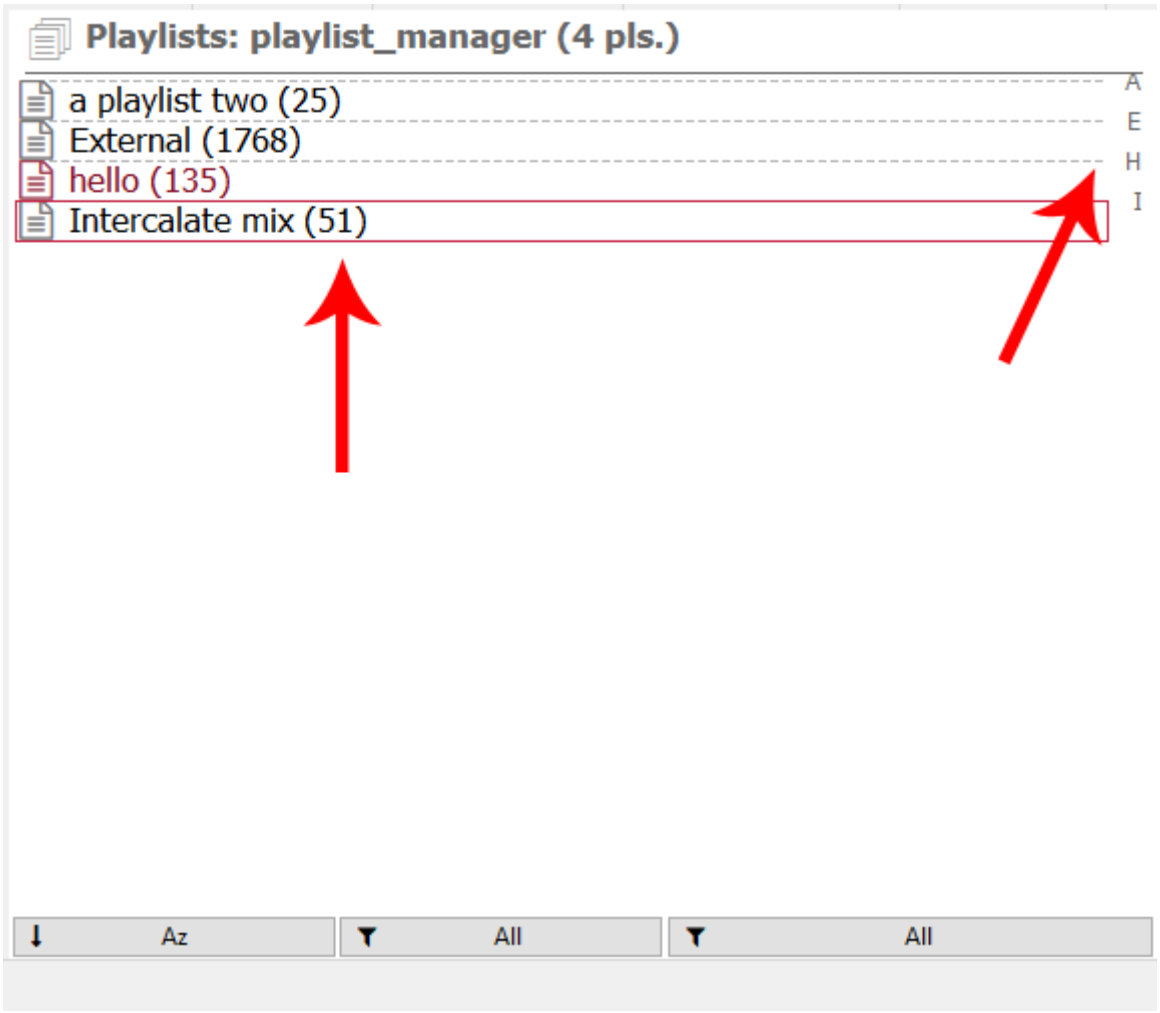


Figure 68: 'A', 'H' and 'I' separators are shown for names.

14.4 Tooltip

Tooltips show different info according to the mouse position:

- Header:
  * Absolute path of currently tracked playlist folder.
  * Filters used on current view.
  * Categories shown.
  * Playlist and Auto-playlists shown on current view.
  * Shortcuts info (configurable).

- Playlists:
    * Playlist type: Playlist / Auto-Playlist
    * Name plus UUID.
    * Playlist size (tracks). Configurable for Auto-playlists (output by query).
    * File name with extension.
    * Status (lock).
    * Category / Tag(s).
    * Track Tag(s).
    * Query. Sort Pattern. (only Auto-playlists)
    * Shortcuts info (configurable).

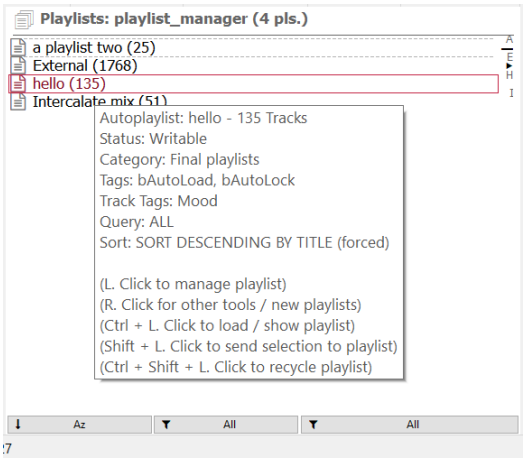


Figure 69: Playlist tooltip.

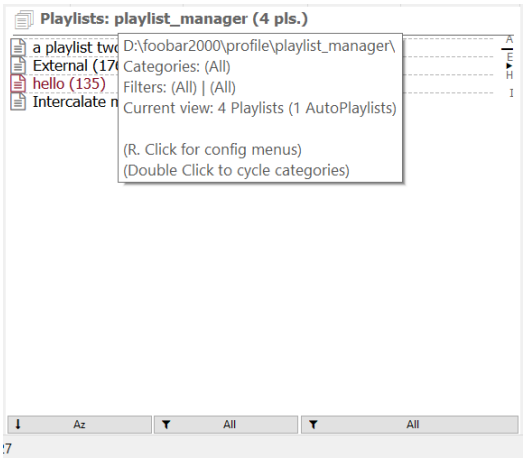


Figure 70: Header tooltip.

15 Customization

15.1 Custom color

- Background: panel background.
- Standard text: for standard playlists and header.
- Auto-playlists: different color for Auto-playlists.
- Locked playlists: different color for non editable (locked) playlists.
- Current selection: currently selected playlist rectangle.

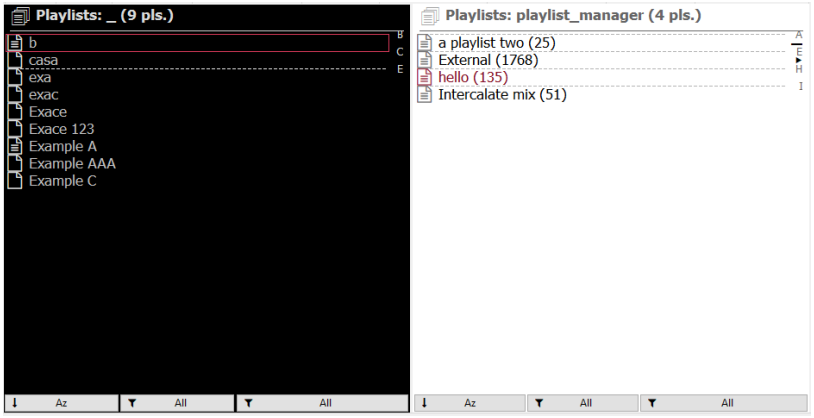


Figure 71: 2 panel instances with different UI colors set.

15.2 Others

- Tooltip: Shortcuts info [12] can be shown or hidden.

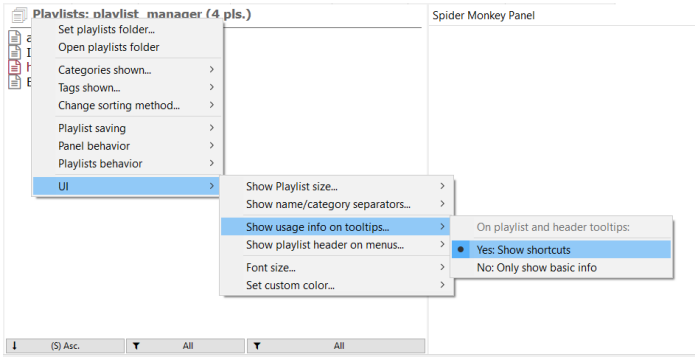


Figure 72: Header menu to enable shortcuts info.

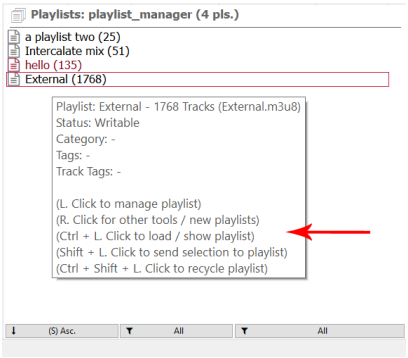


Figure 73: Tooltip.

- Menus: menu header for selected playlist contextual menu [12] can be shown or hidden.

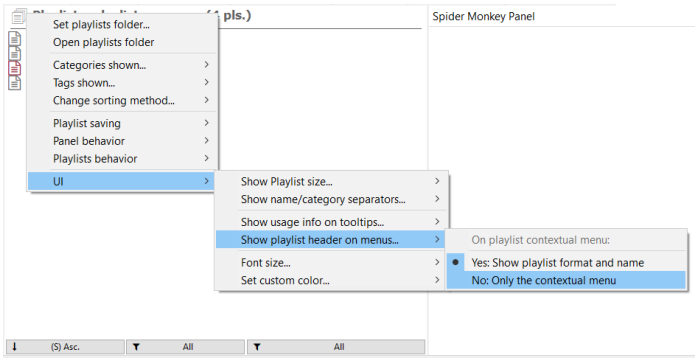


Figure 74: Header menu to enable playlist headers.

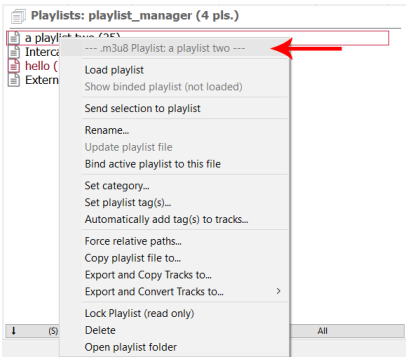


Figure 75: Contextual menu.

- Separators: Name or Category separators may be shown when sorting by those values.
- Font size: applies to all text within the panel.
- Playlist size: Track count may be shown on parenthesis along playlist names. An additional configuration allows to refresh Auto-playlists on startup.

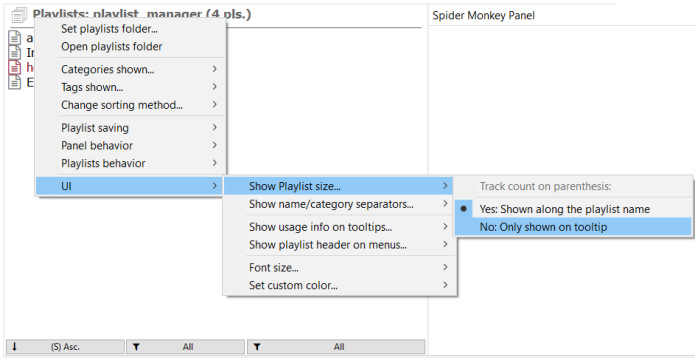


Figure 76: Show size on list.

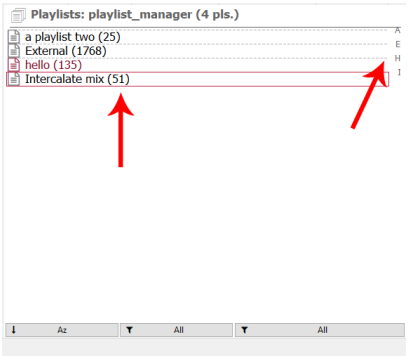


Figure 77: Size and separators are shown for playlists.

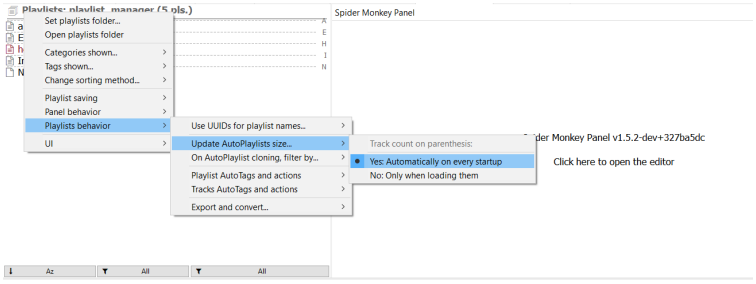


Figure 78: Automatically update Auto-playlists size on startup.

Part IV

Other scripts integration

This is a non comprehensive list of other Spider Monkey Scripts or plugins which may be used along the manager or whose features are designed to work together:

- Playlist-Tools-SMP:
  * **Random Pools:** Pools may use tracks from playlists files tracked by the manager, not requiring to have the playlists loaded within foobar. i.e. Random Pools component-like playlist creation, using not only queries as sources, but also other playlists or playlists files. See [25].
  * **Playlist Revive:** Finds and replaces dead items on loaded playlists or selection. Meant to be used along dead items checks on playlist files [10.2.2]. First check all playlist files, then load those with dead items and use Playlist Revive.
  * **Duplicates and tag filtering:** The manager allows to report playlists with duplicated items, but it's limited to entries with same path. This tool expands Foobar2000 native functionality of removing duplicates, allowing to find duplicates by tags (for ex. any track with same Title - Artist).[47]
  * **Import track list:** Takes a plain text list of tracks (for ex. Title - Artist) and finds matches on library to create a playlist. Meant to be used for playlist importing when the track list does not follow an standard format or there are no paths provided[48]. Instead of sharing a list of files, list of tracks may be used which work universally no matter your configuration. Non found items are simply discarded.

[47] A limited functionality version has been included which applies when cloning Auto-playlists if configured to do so [8.3].

[48] Technically that is not a playlist. But note playlists with relative paths may easily be considered a track list as long as you discard the '.\' part. In other words, a plain-text list can be retrieved from playlists in many cases.

Part V

Playlist formats

- Writable formats: .m3u, .m3u8 and .pls.
- Readable only formats[49]: .fpl and Auto-Playlists.

In general, writable formats work with more features than their readable only counterparts[50]. This is specially true for .fpl playlists, which are pretty limited on all aspects[51]. Therefore, the use of .m3u8 playlists is preferred over other formats (.fpl or .pls) whenever it is possible.

16 Playlist metadata

16.1 Lock state

Playlist files may be locked or not. Locked files are considered read only for all purposes and therefore never rewritten unless forced to do so [by the user]. Native foobar playlists files (.fpl) are locked by default.

16.2 [Playlist] Tags

Playlists may have multiple tags, i.e. keywords for informative purposes. There are some special purpose tags which are associated to some actions performed by the manager automatically as soon as it loads a playlist with such keywords.

- Playlists may be tagged with 'bAutoLoad', 'bAutoLock' or a custom set of tags (for arbitrary purposes).
- 'bAutoLoad' makes the playlist to be loaded within foobar automatically (on the UI). Meant to be used on remote servers with online controllers.
- 'bAutoLock' locks the playlist as soon as it's loaded on the panel.

[49] For all purposes, locked playlists may be considered into this category, no matter their extension.
[50] There are some more exceptions to this rule. For example, .m3u8 playlists have more features than .pls ones.
[51] Neither exporting [9], nor additional tools [10] work with them. And obviously, since they are a readable only format, no new tracks may be added to them using the manager.

16.3 Track tags

["tagName":"tagValue"]

Playlists may have multiple track tags, i.e. tag presets which are meant to be applied to the tracks within the playlist. Note this has nothing to do with the [Playlist] Tags which are just keywords. Allows multiple conditions (must follow json format) [VI] where the tag value(s) can be any of the following:

- Foobar2000 Title Format expressions (or %tags%)[52].
- JavaScript functions (defined at 'helpers\helpers_xxx_utils.js'), prefixed by 'JS:'.
- Value (string or number).

16.4 Category

Playlists may have a single category for easy classification or which can be used as virtual folder. For informative purposes or arbitrary keywords use [playlist] tags instead]16.2].

16.5 UUID

Suffixes added to the playlist names to separate them from non tracked playlists when loaded in foobar. Some also allow some level of name duplication.

- Invisible Unicode chars plus (*)[53]
- (a-f)[54]
- (*)[55]
- Or none[56].

[52]https://wiki.hydrogenaud.io/index.php?title=Foobar2000:Titleformat_Reference

[53]Allows the highest degree of name duplication. For ex. multiple playlists with name 'Summer' would have different invisible UUID's... Experimental feature.

[54]Allows some degree of name duplication. The UUID will be visible along the name, thus being less useful than the Unicode version... but more stable.

[55]Duplication is not allowed but serves as a indicator of playlist being tracked by the manager.

[56]The only way to know if the playlist is tracked by the manager is by looking at the manager panel and checking the loaded or now playling indicators[13].

17 .m3u & .m3u8

M3U (MP3 URL) is a file format for a multimedia playlist. Although originally designed for audio files, such as Flac, it is commonly used to point media players to audio and video sources, including online sources, without distinction. There is no formal specification for the M3U format, it is a de facto standard.

An M3U file is a plain text file that specifies the locations of one or more media files. The file is saved with the 'm3u' filename extension if the text is encoded in the local system's default non-Unicode encoding (e.g., a Windows code-page), or with the 'm3u8' extension if the text is UTF-8 encoded. Within the manager, for all purposes, files generated by it are equivalent since '.m3u' files are also UTF-8 encoded[57].

Each entry carries one specification. The specification can be any one of the following:

- An absolute local path-name; e.g., C:\My Music\Listen.mp3
- A local path-name relative to the M3U file location; e.g., Listen.mp3
- A URL; e.g., http://www.example.com:8000/Listen.mp3

Position	Description	Entries
Header:	Required if using Extended M3U.	#EXTM3U,#EXTENC[,...]
Track(s)	Track entries, arbitrary number allowed.	[#EXTINF,]file path or url
	...	

Table 2: M3U structure.

17.1 Extended M3U

The M3U file can also include comments, prefaced by the '#' character. In extended M3U, '#' also introduces extended M3U directives which are terminated by a colon ':' if they support parameters.

Directive	Description	Example
#EXTM3U	File header, first line	#EXTM3U
#EXTENC:	Text encoding, second line	#EXTENC:UTF-8
#PLAYLIST:	Playlist display title	#PLAYLIST:My Playlist
#EXTINF:	Track information: seconds and title	#EXTINF:256,Chateau Pop - Maniac

Table 3: Standard M3U extensions.

[57] Although this 'breaks the standard', it's indicated with the appropriate extended M3U directive so it should be totally safe. Also note the 2015 proposal for HTTP Live Streaming follows the same convention.

Since arbitrary comments can be prefaced by '#' and custom directives are allowed, the manager includes its own set of directives to support additional playlist metadata [16]:

Directive	Description	Example
#UUID	Playlist UUID [16.5]	#UUID: (*)
#LOCKED:	Lock state	#LOCKED:false
#CATEGORY:	Playlist category	#CATEGORY:Summer
#TAGS:	Playlist tags (sep by ';')	#TAGS:Celtic;Chill
#TRACKTAGS:	Tags to apply tracks (json) [16.3]	#TRACKTAGS:["Mood":"Chill"]
#PLAYLISTSIZE:	Playlist size (# of tracks)	#PLAYLISTSIZE:2

Table 4: Additional M3U extensions for playlist metadata support.

The use of Extender M3U along the additional custom directives allows the manager to make use of all features without restrictions. For ex. playlists may have UUIDs independently of their playlist name, categories may be used to filter the list, etc.

An example of a full .m3u8 playlist with relative paths[58] can be found below:

```
#EXTM3U
#EXTENC:UTF-8
#PLAYLIST:My playlist
#UUID: (*)
#LOCKED:false
#CATEGORY:Summer
#TAGS:Celtic;Chill
#TRACKTAGS:["Mood":"Chill"]
#PLAYLISTSIZE:2
#EXTINF:256,Chateau Pop - Maniac
.\Music\Big Retro Hits 90s\007. Chateau Pop - Maniac.mp3
#EXTINF:259,Jaki Graham - Round And Around
.\Music\Big Retro Hits 90s\004. Jaki Graham - Round And Around.mp3
```

[58] Playlist file would be at current folder and tracks within 'music' subfolder.

18 .pls

PLS is a file format for a multimedia playlist. Used with audio and video sources, including online sources, without distinction.

PLS is a more expressive playlist format than the basic M3U playlist, as it can store information on the song title and length (supported in extended M3U only)[59].

The format is case-sensitive and essentially that of an INI file structured as follows:

Position	Description	Entries
Header:	Always required. 'As is'	[playlist]
Track(s)	File entries, arbitrary number allowed. X equals entry number	FileX[,TitleX,LengthX]
	...	
Footer	Always required.	NumberOfEntries,Version

Table 5: PLS structure.

Key-value pairs are separated by '=':

Entry	Description	Example
[playlist]	Always required	[playlist]
FileX	Location of media file/stream.	File1=http://stream2.streamq.net:8020/
TitleX	Track title (optional)	Title1=My radio station
LengthX	Seconds (-1 equals indefinite) (optional)	Length1=-1
NumberOfEntries	Playlist size (# of tracks). Required	NumberOfEntries=3
Version	only a value of 2 is valid. Required	Version=2

Table 6: PLS entries.

Since the pls format follows a pretty strict format, additional metadata like categories or UUID's can not be used with them (playlist name is the same than the filename). Switch to another format to make use of those features.

An example of a full .pls playlist with relative paths[60] can be found below:

```
[playlist]
File1=.\foobar2000\Big Retro Hits 90s\004. Jaki Graham - Round And Around.mp3
Title1=Round And Around
Length1=259

File2=.\foobar2000\Big Retro Hits 90s\007. Chateau Pop - Maniac.mp3
Title2=Maniac
Length2=256

NumberOfEntries=2
Version=2
```

[59] This is only true for basic M3U playlists usually found on the net. Within the manager context, M3U playlists are always richer in metadata and features since they make use of extended M3U and the additional custom directives.

[60] Playlist file would be at current folder and tracks within 'music' subfolder.

19 .fpl

FPL is a file format for a multimedia playlist by Foobar2000. Used with audio and video sources, including online sources, without distinction.

It's a closed source format whose structure has not been shared publicly, although it's known it uses a binary format to store the metadata of the tracks included to greatly speed up its loading time within the program[61].

Although it looks as an improvement over plain text playlist formats, the 'closed source & binary' format requirements no longer holds true to offer short loading times. Plain text playlist formats may be used perfectly fine, as long as the files are matched with those on the library, without speed penalties[62]. This is the behavior followed by manager and it has been already reported to Foobar2000 developers [63] to properly implement playlist loading if desired. Loading speed penalties only happen when some items are not on library (whether they are external items or dead items) [10].

To allow additional metadata for .fpl playlists, considering the files are non-editable, an external json file is used [VI]. The same applies to Auto-Playlists. The following keys-values pairs are used:

Entry	Description	Example
id	UUID	"id": " (*)"
name	Playlist name	"name": "example"
nameId	Playlist display name	"nameId": "example (*)"
extension	Playlist file extension	"extension": ".fpl"
path	Playlist file path	"path": ".\profile\playlist_manager\example.fpl"
size	Playlist size (# of tracks)	"size": 2
fileSize	Playlist file path	"fileSize": 20739
isLocked	Lock status	"isLocked": true
isAutoPlaylist	Is an Auto-Playlist?	"isAutoPlaylist": false
query	Auto-Playlist query	"query": ""
sort	Auto-Playlist sort(optional)	"sort": ""
bSortForced	Auto-Playlist sort forced?	"bSortForced": false
category	Playlist category	"category": "Summer"
tags	Playlist tags (sep by ';')	"tags": ["bAutoLoad","bAutoLock"]
trackTags	Tags to apply tracks (json)	"trackTags": ["Rating": 5]

Table 7: FPL (and Auto-Playlist) json format.

Note all Auto-playlist related metadata is empty, the path points to the physical .fpl file and its file-size is cached[64]. Apart from those differences, it can be easily checked that all playlist metadata is present (the same it was in M3U format). In fact, all playlists are converted -for internal use- to this format within the code.

[61] Instead of loading the tracks and retrieving their metadata from the physical files.

[62] Which is one of the most common use-case of playlists within Foobar2000.

[63] Check Why m3u8 loading is so slow on hydrogenaud.io-

[64] For Auto-playlists, it would be the contrary. No physical file is associated and the query and sorting is used instead... but -essentially- they use the same format.

An example of a full .fpl playlist associated json file can be found below. In real files, every playlist would be concatenated to the same file, thus having multiple {playlists objects}, separated by comma (','), between the brackets [{...}, {...}]:


```
[
    {
        "id": " (*)",
        "name": "Example",
        "nameId": "Example (*)",
        "extension": ".fpl",
        "path": ".\profile\playlist_manager\Intercalate mix.fpl",
        "size": 51,
        "fileSize": 20739,
        "isLocked": true,
        "isAutoPlaylist": false,
        "query": "",
        "sort": "",
        "bSortForced": false,
        "category": "Summer",
        "tags": ["bAutoLoad","bAutoLock"],
        "trackTags": ["Mood": "Chill"]
    }
]
```

20 Auto-Playlists

Structure and format is exactly the same than .fpl use-case, so check it for reference [19]. Specifics for Auto-Playlists are listed below:

Entry	Description	Example
extension	Playlist file extension	"extension": ""
path	Playlist file path	"path": ""
fileSize	Playlist file path	"fileSize": 0
isAutoPlaylist	Is an Auto-Playlist?	"isAutoPlaylist": true
query	Auto-Playlist query	"query": "ALL"
sort	Auto-Playlist sort (optional)	"sort": "SORT DESCENDING BY TITLE"
bSortForced	Auto-Playlist sort forced?	"bSortForced": true

Table 8: Auto-Playlist json format changes.

Extension and path are empty, since there is no physical file associated. File-size is therefore equal to zero. 'isAutoPlaylist' boolean is true and the query related value must be filled. Sorting is optional.

An example of a full Auto-playlist associated json file can be found below[65]. In real files, Auto-Playlists are mixed with .fpl playlists... the only distinction being the 'isAutoPlaylist' boolean value:


```
[
    {
        "id": "",
        "name": "Entire Library",
        "nameId": "Entire Library",
        "extension": "",
        "path": "",
        "size": 132,
        "fileSize": 0,
        "isLocked": false,
        "isAutoPlaylist": true,
        "query": "ALL",
        "sort": "SORT DESCENDING BY TITLE",
        "bSortForced": true,
        "category": "Summer",
        "tags": [],
        "trackTags": []
    }
]
```


[65] For ex. if the panel is set to track 'H:\My Music\Playlists', then the playlist json file (at foobar profile folder) will be at '.\js_data\playlistManager_Playlists.json'.

Part VI

FAQ

- **Writing playlists to files fails due to permissions problems?** Use something like this:

  attrib -r D:\YOUR_PLAYLIST_PATH* /D /S

- **How to use native foobar playlists (.fpl) without changing their format?** .fpl playlists are locked by default, so they will never be auto-saved (and thus reformatted) without user intervention. Just save all your foobar playlists on the tracked folder and load them when needed using the manager. Whenever you make a change on any of them, re-save it manually using main menu (File/Save playlist...). This way the native format is maintained, while some neat features are still available for use (not cluttering the UI with all playlists on tabs, categories, tags, etc.).

- **To create/track a folder in the same folder Foobar2000 resides in, relative paths may be used (.\playlist_manager\server\):** Note this will allow the manager to work properly on portable/network installations where the drive letter or absolute path changes.

- **Native playlists are too limited in features?** The use of .m3u8 playlists is preferred since it allows the full use of all features. This is by design, and nothing can be done unless the format becomes open source or Spider Monkey Panel supports directly editing/saving them. Nothing is lost using .m3u8 playlists, since they load as fast as native playlists when using the manager.

- **Playlist metadata is lost on format switch**: Since only .m3u8 supports the full set of metadata and features, converting those playlists to .pls necessarily implies discarding of not supported metadata. Converting those playlists back to .m3u8 format will not restore it once is lost!

- **What's json?** It's a standard file structure. Check https://en.wikipedia.org/wiki/JSON for more info.

- **What's asynchronous execution?** Execution of some code done on the background (usually on iterative steps), thus not blocking the UI on the process. For ex. external playlist files loading on native Foobar2000 [4.6].

- **Can't edit or update a playlist:** Check the playlist status. It's probably locked, unlock it to be able to make changes.

- **How to "disable" the selection rectangle?:** Just change its color to the one set at the background. It has been coded to be omitted in that case.

- **How to duplicate a playlist?:** Load the playlist you want to duplicate, then use the list menu [12] to "Create new playlist file from active playlist" [4.5]. Just input a different name and as result it will be duplicated using the new name.

- **Some items in a playlist are not being found on library although they are present:** That probably points to code-page detection errors while reading the playlist file. Some UTF8 files (without BOM) may be identified wrong and thus incorrectly parsed. Consider adding BOM [4.5] or using m3u formats which have a flag to notify their code-page [17]. .m3u8 files are always read as UTF8 files by design (whether they have BOM or not). These tips only

apply to playlists created within the playlist manager, for files generated by other software similar considerations may apply. Unix users may prefer non BOM files and use .m3u8 or .m3u in any case.

- **How is Auto-playlists size calculation processed at start-up?:** Contrary to native Foobar2000, Auto-playlists are calculated fully asynchronously since the playlists are not loaded in the UI. Therefore there is no need to finish the process to show the main program or panel and it can be done in the background. In other words, enabling Auto-playlist size updating at startup [15.2] is essentially performance-wise free at start-up in most cases.

- **How is Auto-playlists automatic tagging processed at start-up?:** Idem [7].

Part VII

Tips

21 Sharing

- As noted on [4], **Autoplaylist's json file is saved using the tracked playlist folder name**. Instead of using an arbitrary UUID to avoid collisions between multiple panels, this can be used to **easily share playlists between different foobar instances**. Just create SymLinks[66] or use some cloud syncing tool (like Dropbox) to easily share the same playlists when tracking the same folder on different foobar instances or panels. Note only the folder name is used, so it would work even on shared network folders.

22 Multiple views

- Following the same principle, it's possible to have **multiple panels tracking the same folder in the same foobar instance**. It may be used to have different filters enabled at the same time. For ex. one view for Auto-playlists only and another for .m3u8 playlists.
- **Categories may be used as virtual folders, even if all playlists are in the same physical folder**. Note every playlist can only have one category at the same time, so cycling the categories allows to easily see different 'virtual sub-folders'. Double clicking on the header allows to easily do that. Alternatively, the multiple panel tracking the same folder trick can be used to show 2 views of the same physical folder but with different categories filters, again working as sub-folders.

23 Tag automation

- **Tracks are never tagged twice using the Track tags feature**, so there is no need to check if any of them has been already tagged or not before.
- **Using Auto-playlists along the Track tags feature, items on library can be auto-tagged on startup** according to some conditions without any user input. For ex. tagging all tracks with 'Rock' and 'Acoustic' as genre and BPM lower than 90 with an specific mood or occasion tag. Just set it and forget, it will be done on every new track added on library as soon as it matches the conditions.
- **Using standard playlist along the Track tags feature is an easy way to manually tag tracks on batches** while listening to them. For ex. to add tags like 'Instrumental' or 'Acoustic', 2 playlists may be used for auto-tagging with these conditions and just listen to the music; as soon as one track must be tagged it takes a second to send the current track to any of the 2 playlist (Shift + L. Click) to tag it.

[66] Symbolic links are virtual links created by the OS which may be used to have multiple virtual files pointing to the same physical file. It's similar to a shortcut, although the extension doesn't change in this case... and the file properties are those of the original one.

- **Use category filtering to have a virtual folder of 'tagging playlists' which would only be shown when needed**, thus not convoluting the UI the rest of the time. This has some improvements and limits compared to the use of custom buttons and Mass-tagger presets.

24 Pools using Auto-playlists and tags

- **Native Foobar2000 limits the sourcing of Auto-playlists to the library, not allowing to create playlists from playlists**... although this can be simulated copying the original query and using in the new playlist, it becomes easily convoluted as soon as you do it 2 or 3 times. **As an alternative, Track tags feature may be used**. If you **set any playlist to automatically tag its tracks with an specific tag**, for ex. playlist = 'Summer', you can **then create another Autoplaylist with a query for that tag** 'PLAYLIST IS Summer'.

- The same trick can be used to **merge multiple playlist sources into one** ('PLAYLIST IS Summer OR PLAYLIST IS Chill OR PLAYLIST IS BEST'), **effectively using other playlists as pools**. Note 'sources' are not limited to Auto-playlists and that's the real power of this solution, both standard playlists and Auto-playlists which automatically tag tracks this way may be used.

- Alternatively, **Playlist-Tools-SMP [IV] allows to directly use playlists as sources for pools without requiring the use of intermediate tags**.

- Used along Playlist-Tools-SMP [IV], the emulation of pools can be greatly enhanced with the Remove Duplicates or X random selection features to create playlists in a matter of seconds from your pre-selected set of tracks.

25 Pools using Playlist-Tools-SMP

- **Feature is enabled automatically when using both scripts in the same foobar2000 instance**. As previously noted, Playlist-Tools-SMP [IV] has a random pools feature which can use playlists as sources to output a random list of tracks from all its pools. Playlist-Tools-SMP checks periodically if there is a Playlist Manager panel and retrieves the list of playlist being tracked to use them as source if required. In other words: there is no difference between loaded playlists within the UI or playlist files.

- There is a **preset example at "presets\Playlist Tools\pools\test_playlisManager.json"** which uses a playlist named "test" as source (after importing it). The file may be used as reference to create your own presets.

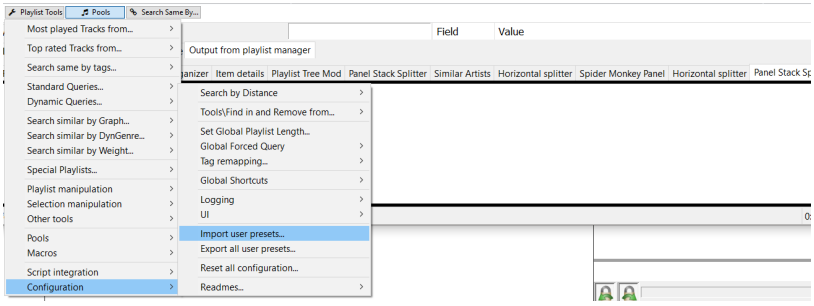
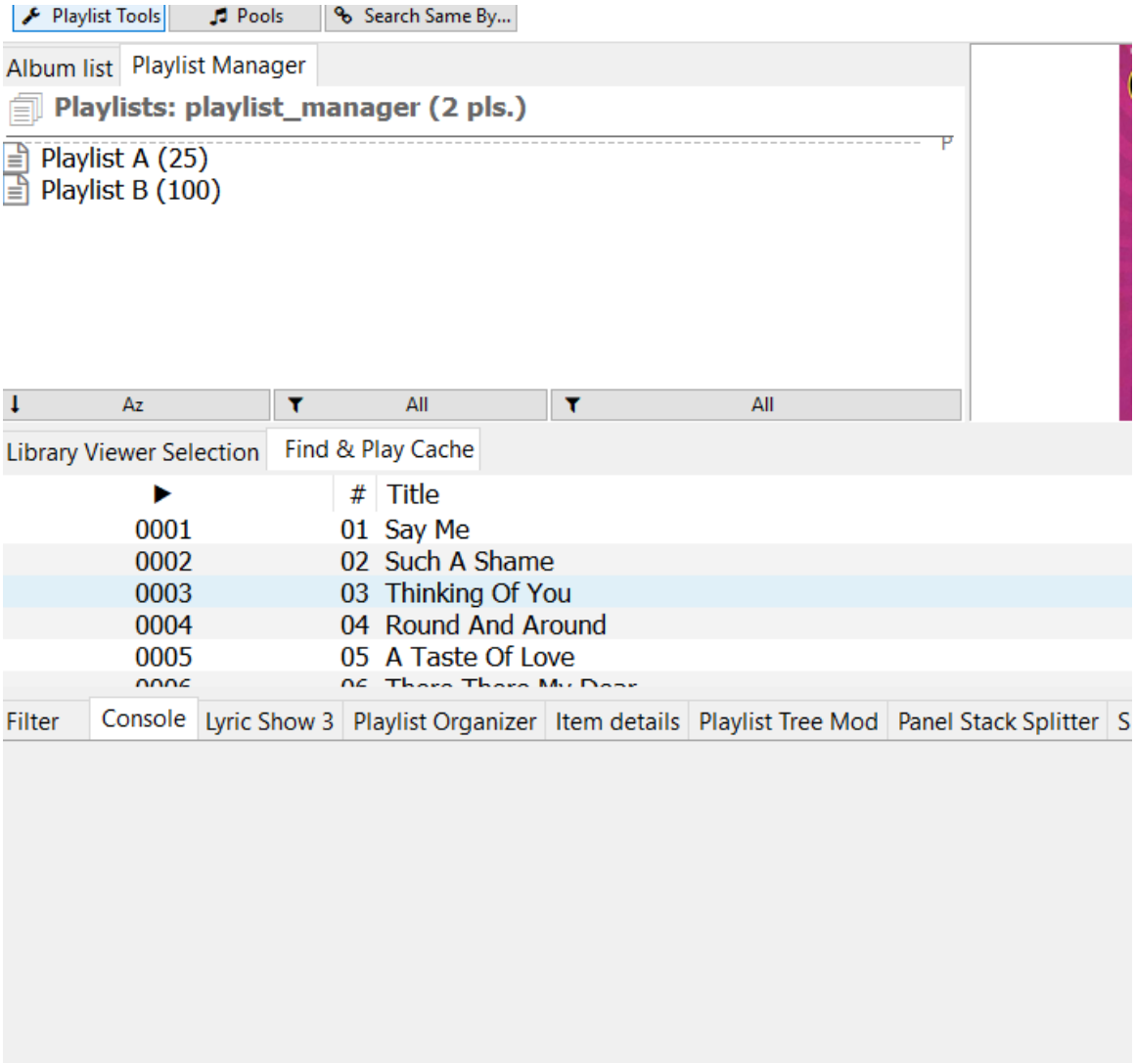


Figure 79: Importing a preset file in Playlist-Tools-SMP.

- For example **to use "Playlist A" and "Playlist B" as sources, a preset file would have to be set like this**:

```
{
    "readme": "Playlist A and Playlist B as sources, 25 tracks per playlist.",
    "pools": [{
        "name": "Playlist Manager test V2",
        "pool": {
            "fromPls": {
                "Playlist A": 25,
                "Playlist B": 25
            },
            "query": {
                "Playlist A": "ALL",
                "Playlist B": "ALL"
            },
            "toPls": "Output playlist",
            "sort": "%playlist_index%",
            "pickMethod": {
                "Playlist A": "random",
                "Playlist B": "random"
            }
        }
    }]
}
```

- Alternatively, a **custom pool may be directly executed once via menus -or added as a new entry for later use-** (click on gif):



- **Playlists tracked by the manager(s) may be used along other sources** like playlists within the UI, library (+query) and other complex functions:

```
[...]
"fromPls": {
    "Playlist A": 25,
    "_LIBRARY_0": 7,
    "_SEARCHBYGRAPH_0": 13
},
```

- Playlist follow this rule when **trying to find a match: loaded playlist first, then matching playlists by name (metadata) and finally by filename**.

26 Working with locked playlists

- **Forget about lock status on Foobar2000 playlists.** There are some plugins or even Spider Monkey Panel scripts which allow to lock/unlock native playlists in some way or another. While it may come useful for advanced users, regular users should simply stick to the manager lock features. Playlists now have a physical file counterpart which can be locked, so there is no need to lock playlists within UI for changes[67].

- **Instead of forbidding edits, just reload the playlist.** The native approach focuses on forbidding specific actions on playlists (reordering, adding, removing items, etc.). Locking the playlist file allows any of those edits on the loaded playlist and if you want to revert them just undo them or reload the playlist to discard all of them and revert it to the original version.

- **Edits on locked playlists can be saved if forced to do so but never automatically.** By default, any change made to a locked playlist loaded within Foobar2000 is not auto-saved and therefore only temporarily stored while the playlist remains opened... but this can be bypassed on demand without unlocking the playlist using the 'Force playlist file update' entry on the selected playlist contextual menu [12].

27 Portable 'plug&play' installation

- **Real portable installations (i.e. on a external drive, network installations, etc.) may need to track playlist folders using their relative paths** instead of absolute paths to work properly... otherwise they will not found the tracked folder as soon as the drive letter changes. e.g, .\profile\playlist_manager\server\

- **Relative paths for files always are checked against foobar path**; this is true only at places like the properties panel, etc.[68] i.e. '.\profile\playlist_manager\server\' equals to 'D:\foobar2000\profile\playlist_manager\server\'.

- **Relative paths on playlists should be preferred**... this is specially a must when the music is stored along the disk Foobar2000 resides in. Otherwise the files would not be found as soon as the drive letter changes (see previous tip). This may greatly affect the speed of the loading playlist process or even make it fail.

- Use the **'Check playlists consistency...'** (right button menu) to ensure all is properly set (library, configuration, playlists, ...) **on portable installations**; also handy to ensure all playlists items are found and within the library.

- Once the panel is set properly, it just takes a matter of seconds to copy the entire manager 'as is' to other installations: the config files (FOOBAR_PROFILE_PATH\js_data*.json), properties panel (can be saved as json) and playlists folder (along its files) can be transferred without changes.

[67] This also simplifies some quirks about playlist locks which involve the type of lock and owners...
[68] When checking tracks, their root is considered to be the playlist path.