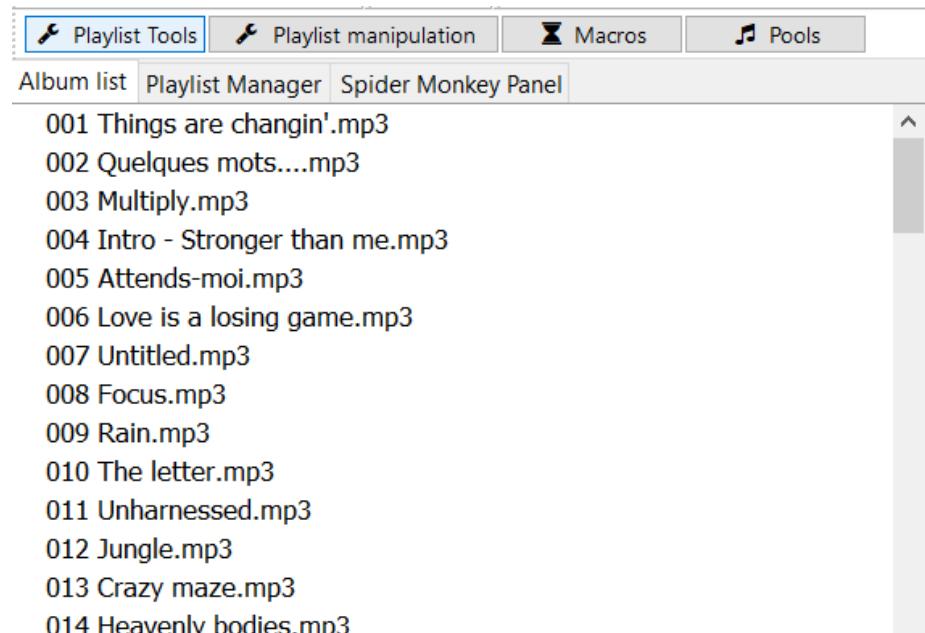


Playlist Tools

A SWISS-KNIFE TOOL FOR FOOBAR2000
USING SPIDER MONKEY PANEL AND JAVASCRIPT

BY
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The screenshot shows a software interface titled 'Playlist Tools'. At the top, there is a navigation bar with tabs: 'Playlist Tools' (selected), 'Playlist manipulation', 'Macros', and 'Pools'. Below the navigation bar, there is a sub-navigation bar with tabs: 'Album list', 'Playlist Manager' (selected), and 'Spider Monkey Panel'. The main area displays a list of 14 MP3 files, each with a small icon and a file name. The files are listed vertically:

- 001 Things are changin'.mp3
- 002 Quelques mots....mp3
- 003 Multiply.mp3
- 004 Intro - Stronger than me.mp3
- 005 Attends-moi.mp3
- 006 Love is a losing game.mp3
- 007 Untitled.mp3
- 008 Focus.mp3
- 009 Rain.mp3
- 010 The letter.mp3
- 011 Unharnessed.mp3
- 012 Jungle.mp3
- 013 Crazy maze.mp3
- 014 Heavenly bodies.mn3

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Part I

Introduction

1 Why do we need more tools with so many components already available?

1.1 Full fledged HTTP controller integration

There are multiple Foobar2000 controllers out there, like foo_httpcontrol. Obviously, they are limited to the features integrated on the component so many advanced tools are out of question. SMP integration could bypass that limitation since it essentially allows to work around almost any Foobar2000 feature in multiple contexts (playlists, library, etc.), even the file system.

Regrettably, SMP is not integrated into any of those HTTP controllers... but that can be remediated with the use of 'ajquery-xxx' controller. Since the component allows to call arbitrary main menu entries, the 9 hardcoded menus by SMP can be called with the online controller when using the appropriate template.

The interesting part comes when using Playlist Tools along the controller, since the scripts can dynamically set those menus, provide names and descriptions, icons, allow output device and DSP selection, etc. Essentially full server control or running any of these tools from any device.

1.2 Expand Foobar2000 queries: dynamic queries

Ever wanted to search tracks with same artist than the current track? Some people may know foo_quicksearch, which lets you predefine some tags to look for. Problem? They don't work with multi-value tags (order changes results), neither with multiple selections nor are integrated with queries.

Lets talk about Dynamic Queries: queries which adapt to the currently selected track. i.e. placeholders tags are substituted with the actual values of the currently selected track (expanded in case multi-values are present), then the query is evaluated as usual. Queries created this way are pretty situational, save a lot of writing time and are meant to be used by multiple playlist creation tools.

While 'foo_quicksearch' may come handy for easy lookups, like searching for 'Same artist' than one track, Dynamic queries allow you to look for things like 'Same artist with different date' or 'Tracks which contain the selected artist as composer'. As can be seen, the sky is the limit.

ARTIST IS #ARTIST# AND NOT DATE IS #DATE#

COMPOSER IS #ARTIST#

Also they are fully compatible with multiple selections. If current selection contains multiple tracks by artists 'Bob Dylan' and 'Pedro Pastor', they would expand oto

(COMPOSER IS Bob Dylan) OR (COMPOSER IS Pedro Pastor)

(ARTIST IS Bob Dylan AND NOT DATE IS 1970) OR (ARTIST IS Pedro Pastor AND NOT DATE IS 2016)

And a track with multiple artists:

(ARTIST IS Bob Dylan AND ARTIST IS Johnny Cash) AND NOT DATE IS 1970

Note this is totally different to what other quick-search tools do. Because simply matching all tag values enumerated with commas leads to errors when values are not sorted the same.

%ARTIST% IS Bob Dylan, Johnny Cash

Does not retrieve the same results than

%ARTIST% IS Johnny Cash, Bob Dylan

But the next one covers all cases (even if the track has 3+ artists...).

ARTIST IS Bob Dylan AND ARTIST IS Johnny Cash

Also when one set of tags contains another one but also include extra values:

%Mood% IS Acoustic, Sad

Is different to the next one, which would also include tracks with additional mood values.

Mood IS Acoustic AND Mood IS Sad

Imagine using this tool in 10 artists a few times; how much it would take manually on different set of artists and values?

1.3 Smart duplication removal

Did you ever create an auto-playlist with all Rock tracks from the 60s only to found later that you have 4 versions of the same track by Hendrix? Well I do, many times in many use cases. And usually I don't want to have the same track repeated in a playlist... According to Foobar2000, duplicates are only physical files which match. i.e. adding the same exact file 2 times to a playlist.

Did you ever tried to remove those duplicates by hand? Good luck in a playlist with thousand of tracks. This set of tools provide multiple ways to remove (and filter) playlist or selection using TF and RegExp. For ex: finding duplicates by same ARTIST—DATE—TITLE. It doesn't matter if they come from different album, paths, are in mono or any format...

1.4 Playlists and pools: auto-playlists are thing of the past

The script includes tools for playlist creation similar to Random Pools component. Multiple playlists \library sources (pools) can be set to fill a destination playlist.

Configurable selection length per source, query filtering, picking method (random, from start, from end) and final sorting of destination playlist. They may even use dynamic queries changing the way the pools behave according to selection (for ex. a pool which outputs tracks with same key than selected track + another one which outputs same genre tracks), one of the main limitations of Random Pools component (which would require to create a pool for every desired genre for ex). Duplicates are also removed (see above).

Not only the library or playlists may be used as source but also the output of other playlist generation tools, like Search-by-Distance-SMP, to create smart mixes. Final playlist can also be sorted with special rules, like harmonic mixing.

1.5 Expand Foobar2000 automation: macros and configurable menus

Macros feature allow to record and save the menus entries used, as a macro, to be called later. Automatic custom playlist creation and edits without limits. It works with all tools (only limitation are popups, which still require user input).

Many tools allow you to add your own presets (for ex. Standard Queries) as menu entries for later use. They may be used along macros to greatly expand their functionality, exported and imported as "addons".

Menus and tools can be disabled/enabled on demand, associated to keyboard shortcut which work globally within Foobar2000 context (so they are essentially equivalent to native menus), and much more...

1.6 FLS slots limit (DLL's): Reduce components loaded with better replacements

One of the main limitations of windows (and thus Foobar2000) is the maximum number of plugins (DLL's) that can be associated to a given process. Thus, in some installations, specially those using VSTs, when the limit is reached strange things start happening: random crashes, bugs, etc. Something I have experienced myself while running or installing a few VSTs as DSPs within the software.

It's not so hard to reach that limit since many components use multiple DLL's! When you count the ones by foobar itself, VSTs, etc. as soon as you configure a bit your installation you come into problems. Therefore, Playlist Tools is a solution that can help in that sense, replacing multiple components whose functionality is not only included but also improved: Random Pools, Playlist Revive, Best version picker, Database Search, ...

Part II

Installation

2 Scripts files and dependencies

Spider Monkey Panel 1.5.2 or higher is required. Only stable releases are supported.

Copy all files from the zip into 'YOUR_FOOBAR_PROFILE_PATH\scripts\SMP\xxx-scripts: If the folders don't exist, create them. Any other path WILL NOT work without editing the scripts. (see '_TIPS and INSTALLATION_vX.X.jpg'). Multiple scripts may share some files (specially helpers) so overwrite if asked to do so. Then load the script named '**buttons_toolbars**' into a SMP panel within foobar [4].

- For **standard installations:** 'C:\Users\yourUser\AppData\Roaming\foobar2000\scripts\SMP\xxx-scripts\...'
- For **portable installations >= 1.6:** '.\foobar2000\profile\scripts\SMP\xxx-scripts\...'
- For **portable installations <= 1.5:** '.\foobar2000\scripts\SMP\xxx-scripts:.'

If you upgraded to >1.6 from an older portable version then it may be possible that the 'profile' folder does not exist. In such case you have to create it and move all the configuration folders/files to it, where they should reside (instead of the root of foobar2000 installation path). If you don't move all the configuration folders/files, then, on startup, default values will be used for things not found, probably "losing" the theme or other customization. You may "fix" it later moving the missing files which still reside in the root. May take some tries to do them all.

- **Some native folders and files which must be moved include:** index-data, js.data, component-updates, configuration, crash reports, user-components, foo_spider_monkey_panel, library, playlists, theme.fth, LargeFieldsConfig.txt, version.txt
- **Some extra folders from other components which must be moved include (non extensive list):** autobackup, dvda_metabase, foo_httpcontrol_data, foo_youtube, images, lastfm, python, sacd_metabase, vst-presets, yttm, minibar.db, playlist-tree-0.pts, playlist-tree-1.pts

Additionally, some fonts are required on the system. They can be installed by double clicking on the '.ttf' files and then selecting the 'install' option (requires Admin rights):

- **Font Awesome:** found at '.\resources\fontawesome-webfont.ttf'

3 Portable installations tip

When the script finds it's being loaded within a portable installation, it will set the default paths using relative paths. It will also warn with popups and/or the console about the -non recommended- use of absolute paths on portable installations. For more info see [18].

4 Installation within Foobar2000's UI

Once all files have been installed to the right paths, along their dependencies, an Spider Monkey Panel must be added to the current layout anywhere on the UI. There are some minor differences between the Default UI (DUI) and Columns UI (CUI), but in both cases the layout can be edited using the menu 'View\Layout\Live editing':

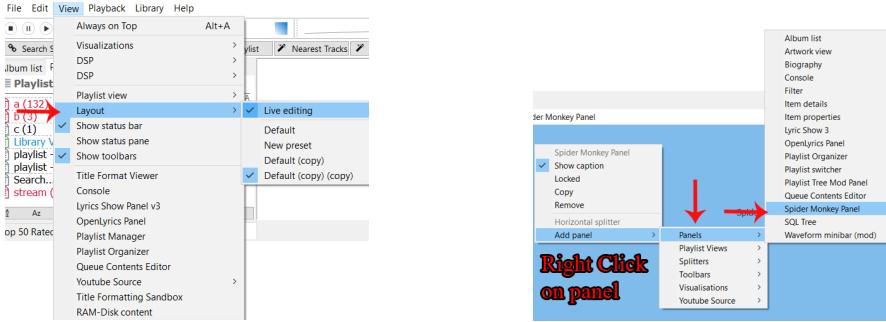


Figure 1: Editing the layout (CUI).

Figure 2: Adding a new SMP panel.

An SMP panel is only a blank UI panel with no further functionality until a '.js' script file is loaded. Multiple SMP panels can be added to a layout and they may point to the same script files without any problem; every panel is considered an independent entity. Multiple panels with Playlist Tools button are not supported (but the other tools are fine). After the panel has been added to the current UI, it must be configured to load the main '.js' script file. It can be done by right clicking on the blank SMP panel:

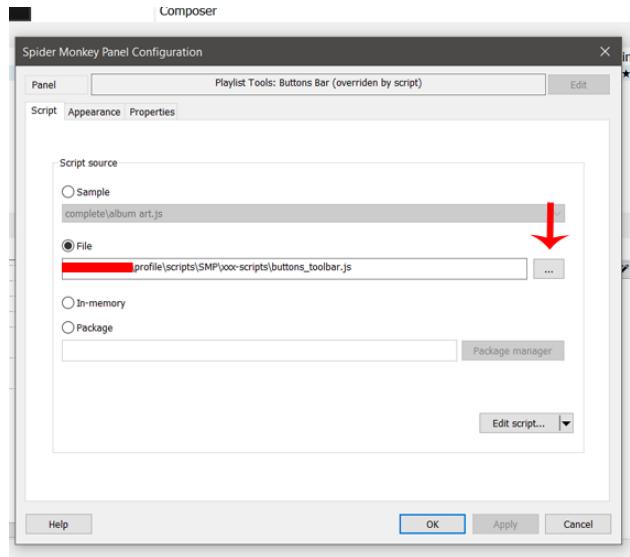


Figure 3: Loading the '**buttons_toolbar.js**' script within a SMP panel.

Once the script has been installed, buttons may be added [12] and presets used [11].

5 Installation as a toolbar panel

-requires CUI-

This installation variant requires Columns UI to be used. Foobar2000 allows to display at top an indefinite number of toolbars (rows), and it's possible to integrate SMP panels into them using CUI.

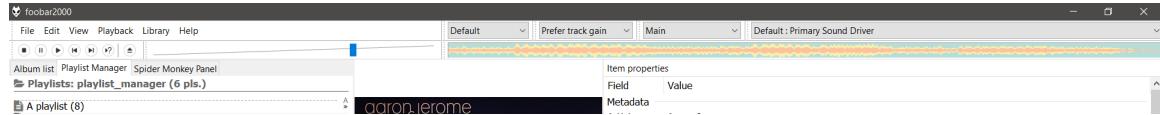


Figure 4: A pretty standard installation with 8 toolbar panels (see dotted lines) in 2 rows.

To do so, right click on the main menus toolbar (the blank space or even the menus), and click on 'Panels\Spider Monkey Panel'. It also works clicking on the dotted line at left of every row (to insert it on specific rows). Afterwards, follow the default installation steps [4] seen before, by right clicking on the new panel.

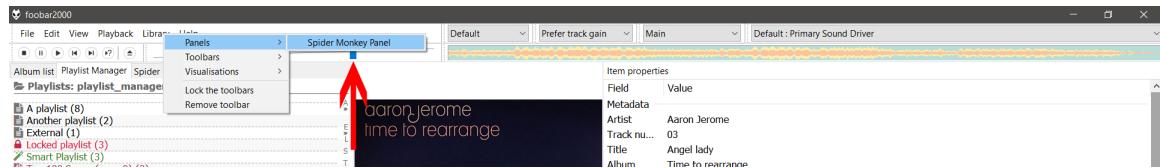


Figure 5: Toolbar configuration menu at right click.

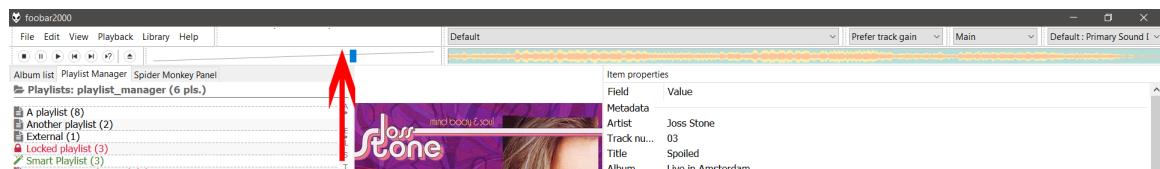


Figure 6: A new toolbar SMP panel will appear, with a white background.

Clicking again on the same menu entry will remove the panel but **there is a trick to create more panels: Press shift while clicking on 'Panels\Spider Monkey Panel'**. It will append new toolbar panels to the existing ones. Pressing without shift, when there are multiple panels created this way, will remove the first one available starting from the current row.

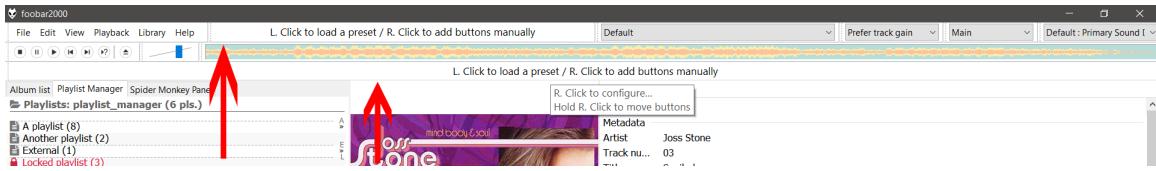


Figure 7: 2 SMP buttons toolbar panels already installed.

As any native toolbar, they may be moved, configured or resized clicking on the dotted line at their left.

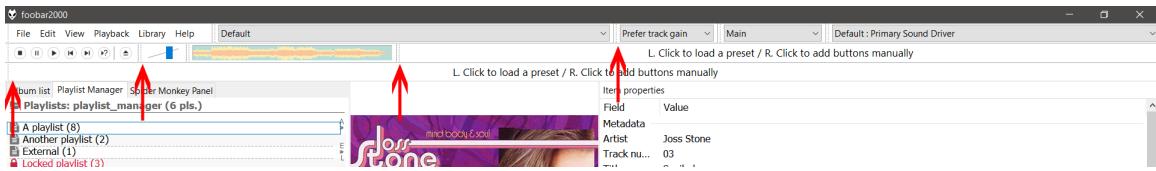


Figure 8:

It may be wise to set the edge style to 'None' and check 'Use pseudo-transparency' at the SMP configuration panel\Appearance, so the panel is integrated following the current global theme (instead of the white background seen below).

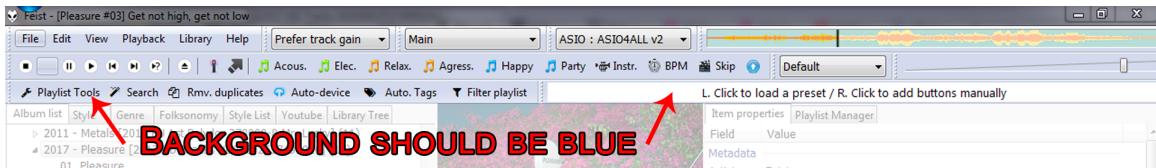


Figure 9: In case Windows uses a colored theme, the panel color mismatch will be obvious.

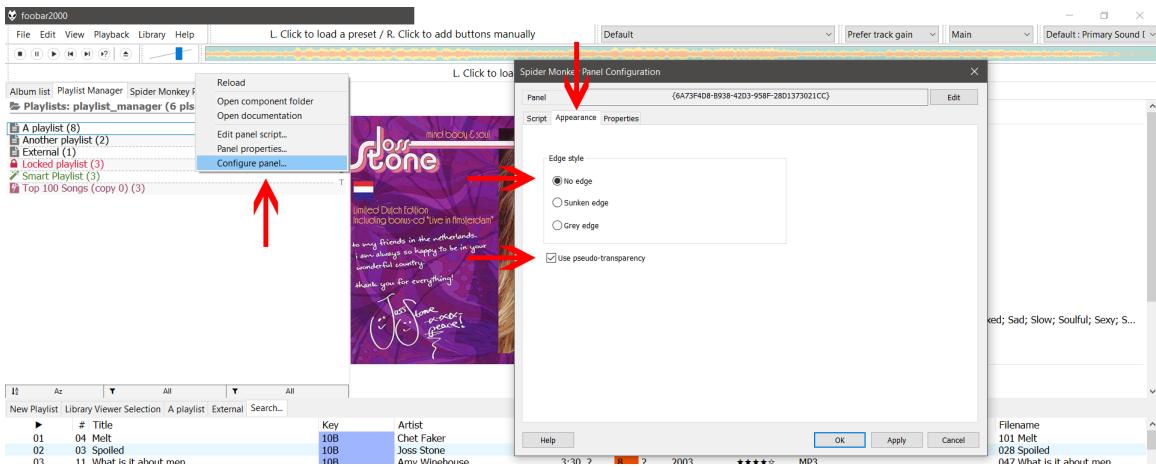


Figure 10: Configuring appearance.

5.1 Advantages over standard panels

Following all these steps, SMP buttons panels work exactly the same than native buttons. This installation variant has also multiple advantages:

- Theme is managed by native Foobar2000.
- Size is automatically adjusted and standardized between all toolbars.
- There is no need to rearrange the current layout for new panels, it works in any layout as an ad-hoc toolbar.
- Panel(s) can be easily moved or resized as the default toolbars without affecting the layout.
- It's trivial to create multiple toolbar panels in the same row. This could be done for performance reasons when using resource intensive-tools (since one button may be blocked "processing" but the other panels are independent).
- While the same results may be achieved using the layout installation method, it usually requires a lot more of work or thought to integrate it properly on complex themes.

6 Installation along Buttons framework compatible scripts

When using this script or other button tools, you may want to use the tools within an existing toolbar panel (instead of creating another independent panel). To do so skip loading the button file within a new panel and go to the toolbar section [III] for further instructions. A non comprehensive list of compatible button-scripts includes:

- Fingerprint-Tools-SMP
- Device-Priority-SMP
- ListenBrainz-SMP
- Search-by-Distance-SMP
- ...
- For the full list look [here](#).

7 Wine installations

Script is 100% compatible with unix systems although some points should be taken into consideration:

- 'Segoe UI' must be present, as it is the font by default on the script's UI.
- In case the font is not found (check console log), revise your default font on Wine. Changing it to a different one than 'Segoe UI' may give problems or crashes in some cases.
- [Additional] required fonts must be installed to avoid crashes. Is not only eyecandy.
- At some point the script may use external CMD tools which must be compatible with 32 bit systems in Wine (since that's the most popular version, with IE). In this case 32 bit binaries for 7z and CmdUtils are bundled.
- Script may throw an error after installation (either a foobar crash or panel crash) due to 'missing files'. There is a fix for that, check [IX] and [X]. It's a SMP bug, don't report it.
- Wine installations are specially sensible to missing files, wrong paths, etc. which may lead to crashes or bugs usually not found on Windows installations. Have that in mind and double check your installation procedure before reporting an error [X].
- All scripts try to use wine-friendly methods, focusing on configuration settings that can be changed via menus or the UI panel, instead of using HTML (which only works on Windows), known working fonts, etc.
- Please read SMP Wine page and feel free to report (me) any additional problem with these scripts.
- Read Wine foobar thread for more info and tips.

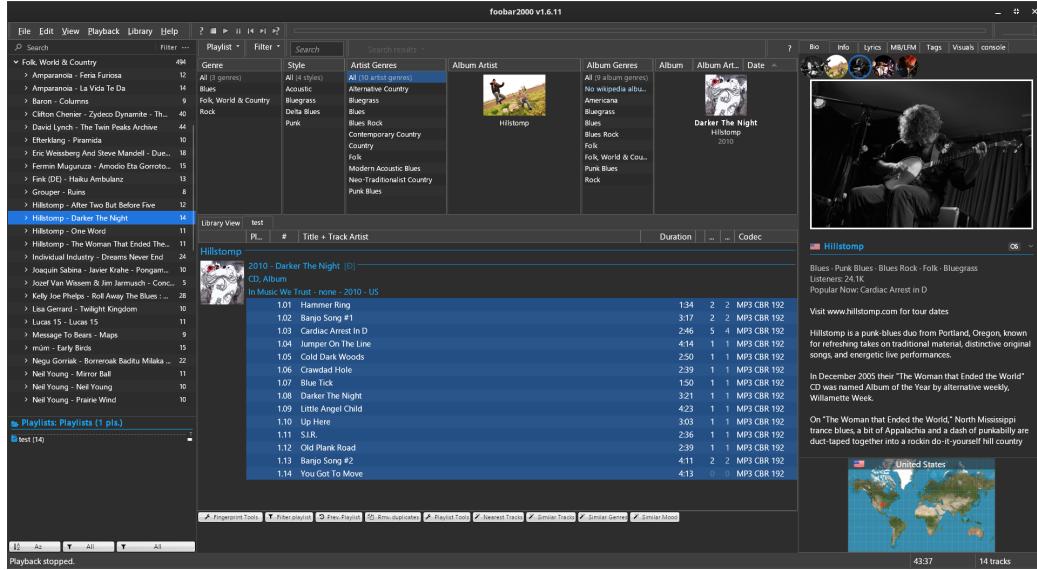


Figure 11: Script working on Wine along Playlist Tools and World Map.

8 Updating from older script versions

There is nothing special to do but following the standard installation steps and overwriting all [old] files as needed. In case an update changes something relevant or requires an additional step, that will be warned on the release itself.

9 Nightly versions

it's possible to download the more recent version directly from the repository, instead of the releases page.

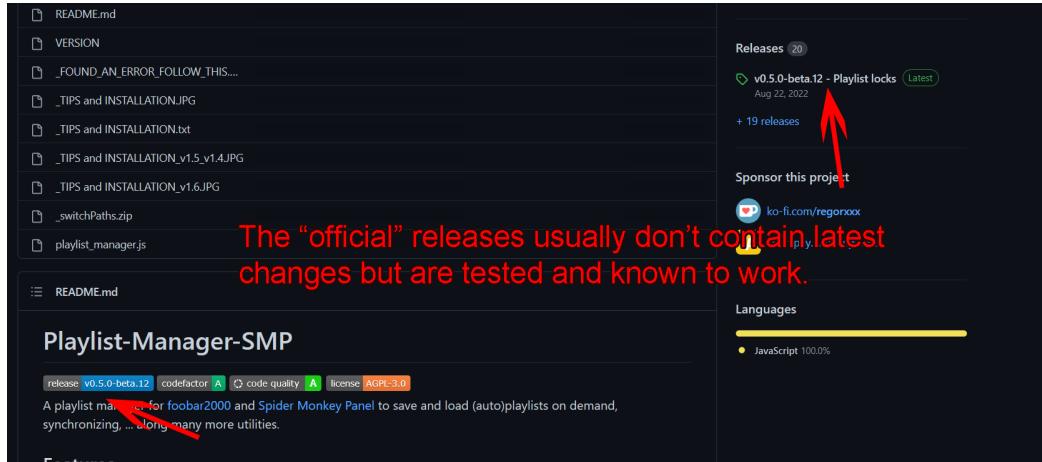


Figure 12: Releases vs WIP.

In such case it's possible that some changes are not fully tested; the list of "unreleased" changes is always shown -and updated- at the changelog. The installation instructions are the same than the other cases. To download the current repository, look below:

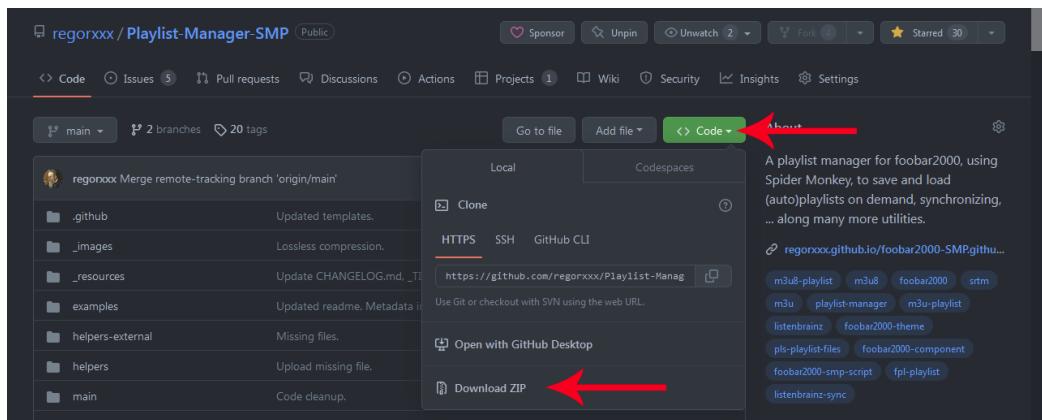


Figure 13: Downloading most recent files on repository as zip.

Part III

Buttons and Toolbar framework

10 Introduction

A quick lookup to most of my scripts would reveal many of them are meant to be used as buttons on a toolbar. In consequence, installing them as independent panels would easily clutter most layouts... to solve this inconvenience, all my button scripts have been built to be loaded on a single panel (if desired) over a single toolbar SMP script panel.

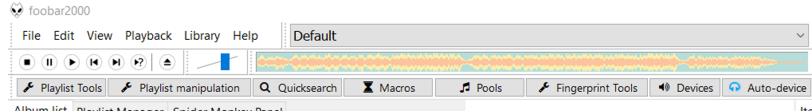


Figure 14: Multiple tools on the same panel/toolbar.

11 Loading preset

On first installation a popup should appear (or when clicking on the panel) asking to load a preset. Presets are just pre-defined layouts for the toolbar, where some tools are pre-configured.

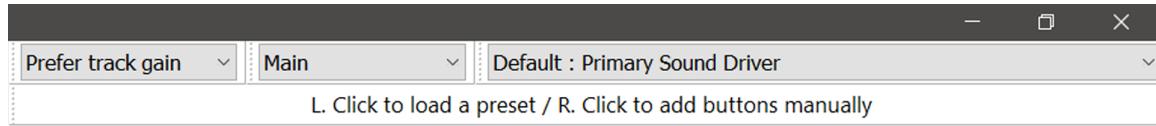


Figure 15: A toolbar without buttons loaded.

Available presets are dependent on the scripts installed, i.e. if some of the tools listed here [6] are missing, then those presets are hidden. Nothing stops you to add/remove buttons at a later stage though.

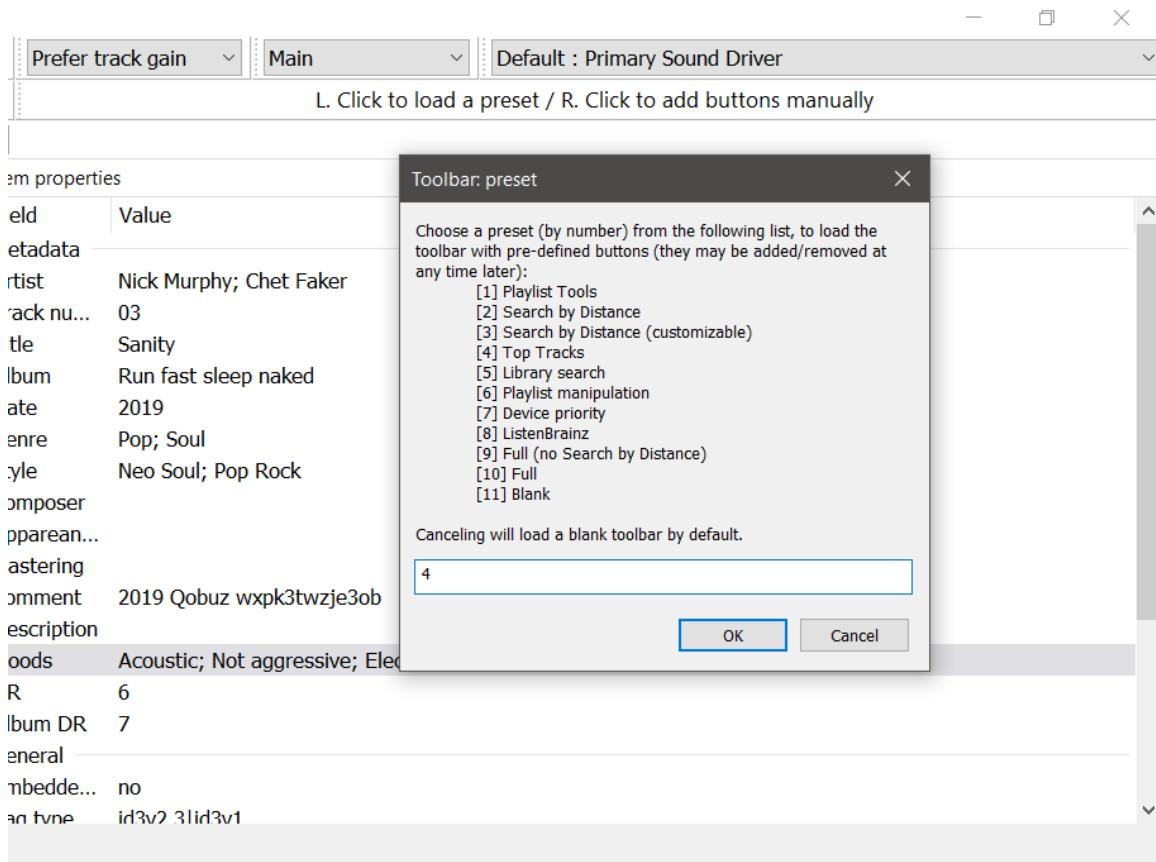


Figure 16: List of available presets.

12 Adding buttons

In case loading manually some buttons is desired, it doesn't matter whether the actual toolbar is using a preset or not. Right click -anywhere- on the toolbar and use the 'Add buttons' sub-menu. Buttons are categorized by functionality so they can be easily found.

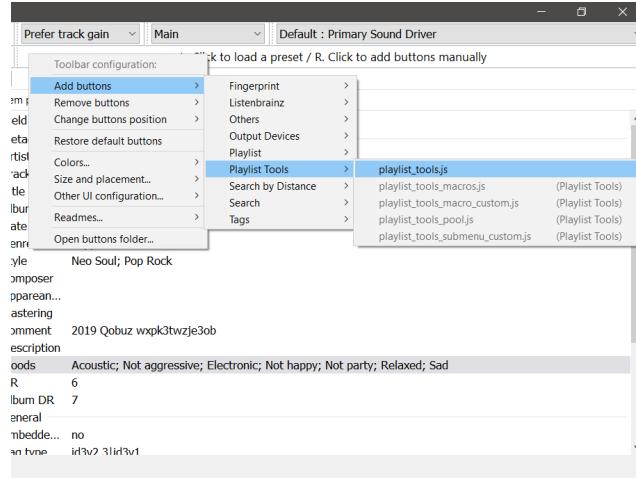


Figure 17: Sub-menu to add buttons. Some of them require others added first.

Some buttons may allow only one copy per panel, in such case the entry will be greyed out if there is already one. Also when a pre-requisite button is not present yet (see above).

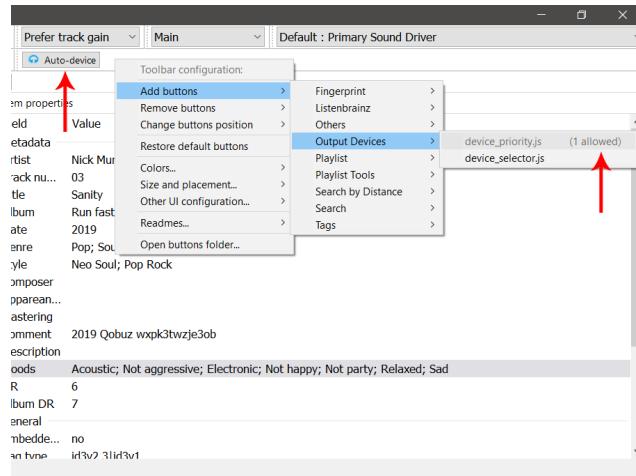


Figure 18: Only one copy of some button is allowed.

13 Removing buttons

Buttons may be easily removed using the appropriate sub-menu. The number displayed at right correspond to the position of the button (relevant when there are multiple copies).

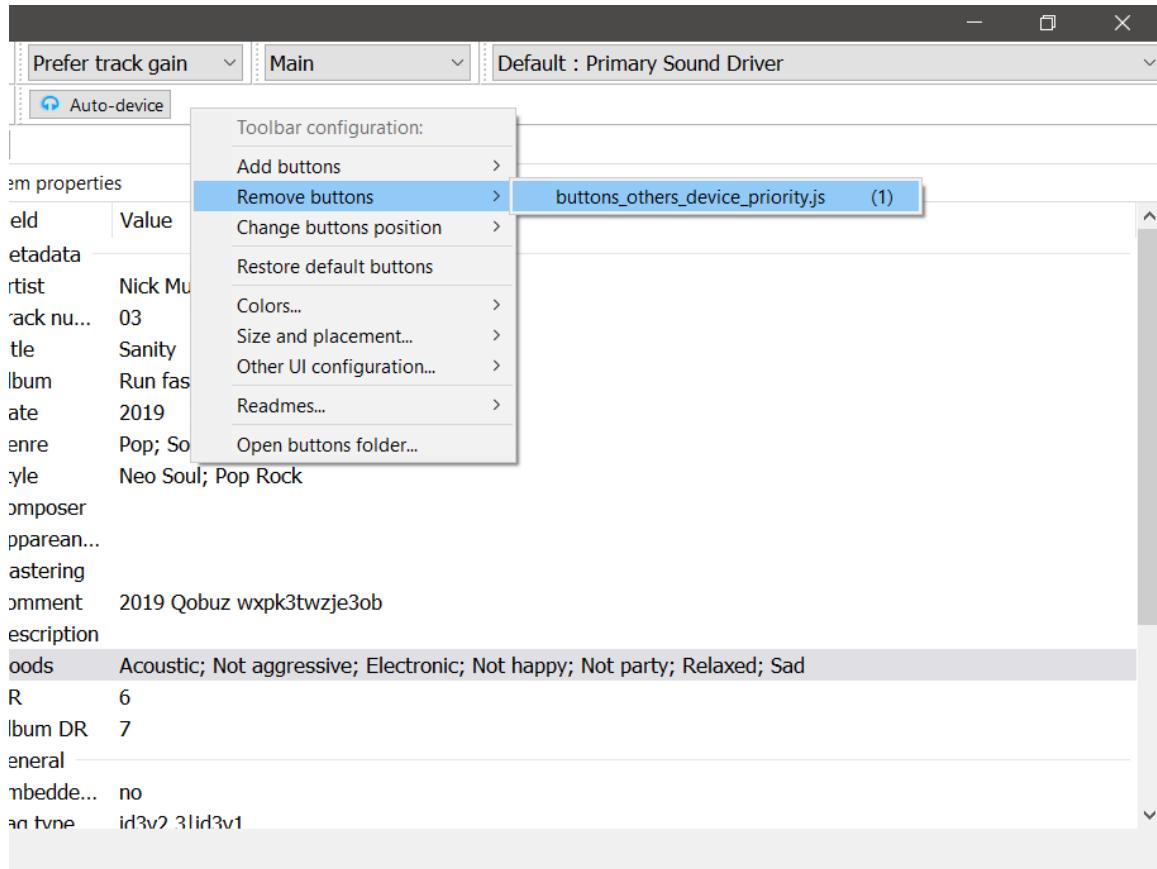


Figure 19:

14 Changing buttons position

There are 2 ways to move buttons, menu or drag-n-drop. The former uses the 'Change buttons position' sub-menu, which will ask the user to enter the new position via popups. The selected button will be inserted at such position and the others shifted as necessary.

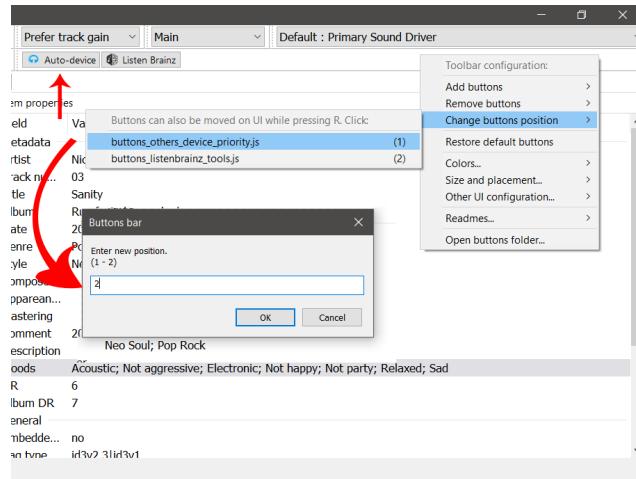


Figure 20: Moving buttons with menu.

The later allows to move buttons while pressing R. Click. A box will appear on the currently selected slot, and releasing the mouse will move the button to it.

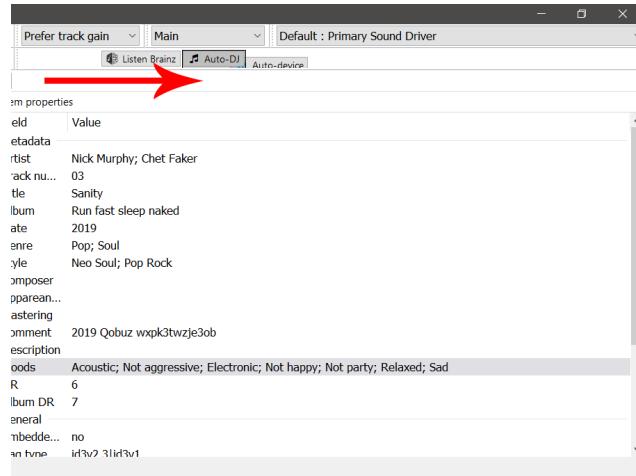


Figure 21: Drag-n-drop button to new position (black box).

Part IV

UI

15 Features

-WIP-

15.1 Tooltip

-WIP-

16 Customization

16.1 Custom color

-WIP-

Part V

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-Manager-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 [19].
- * **Playlist Revive:** Finds and replaces dead items on loaded playlists or selection. Meant to be used along dead items checks on playlist files. 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).
- * **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 provided¹. 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.

¹Technically 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 VI

FAQ

- **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
- **Some lines in imported text files are not displayed/recognized properly:** That probably points to code-page detection errors by SMP on reading. UTF-8 files without BOM may be incorrectly identified and thus not parsed as intended, consider using UTF-8 with BOM before importing track lists. Multiple code checks have been added to minimize these situations in any case.
- **The tools don't work as expected at random instances:** Check the installation process and paths. Take a look at the file named '*_TIPS and INSTALLATION.txt*' which should be found along this readme.
- **I have found a possible bug not related to a wrong installation:** please, create a new issue at github: <https://github.com/regorxxx/Playlist-Tools-SMP>.

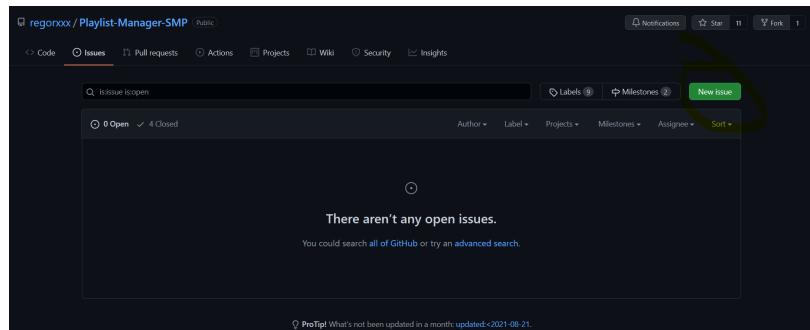


Figure 22: Opening a new issue at github.

Part VII

Advanced tips

17 Example

- -WIP-

18 Portable 'plug&play' installation

- **Real portable installations (i.e. on a external drive, network installations, etc.) may need to track some configuration files using their relative paths instead of absolute paths to work properly... otherwise they will not be found the tracked folder as soon as the drive letter changes.**
- **Relative paths for files always are checked against foobar path:** this is true only at places like the properties panel, etc. i.e. '.\profile\js_data\' equals to 'D:\foobar2000\profile\js_data\'.
- Once the panel is set properly, it just takes a matter of seconds to copy the entire panel 'as is' to other installations: the config files (FOOBAR_PROFILE_PATH\js_data*.json) and properties panel (can be saved as json) can be transferred without changes.

19 Pools using Playlist-Manager-SMP

- Feature is enabled automatically when using both scripts in the same foobar2000 instance. As previously noted, Playlist-Tools-SMP [V] 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_playlistManager.json" which uses a playlist named "test" as source (after importing it). The file may be used as reference to create your own presets.

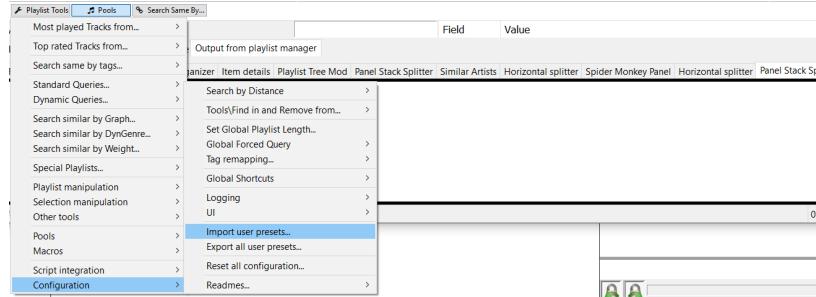


Figure 23: Importing a preset file in Playlist-Tools-SMP.

- 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-:

If animation doesn't work, click to open the gif file on external viewer.

- **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.

Part VIII

Technical notes

- -WIP-

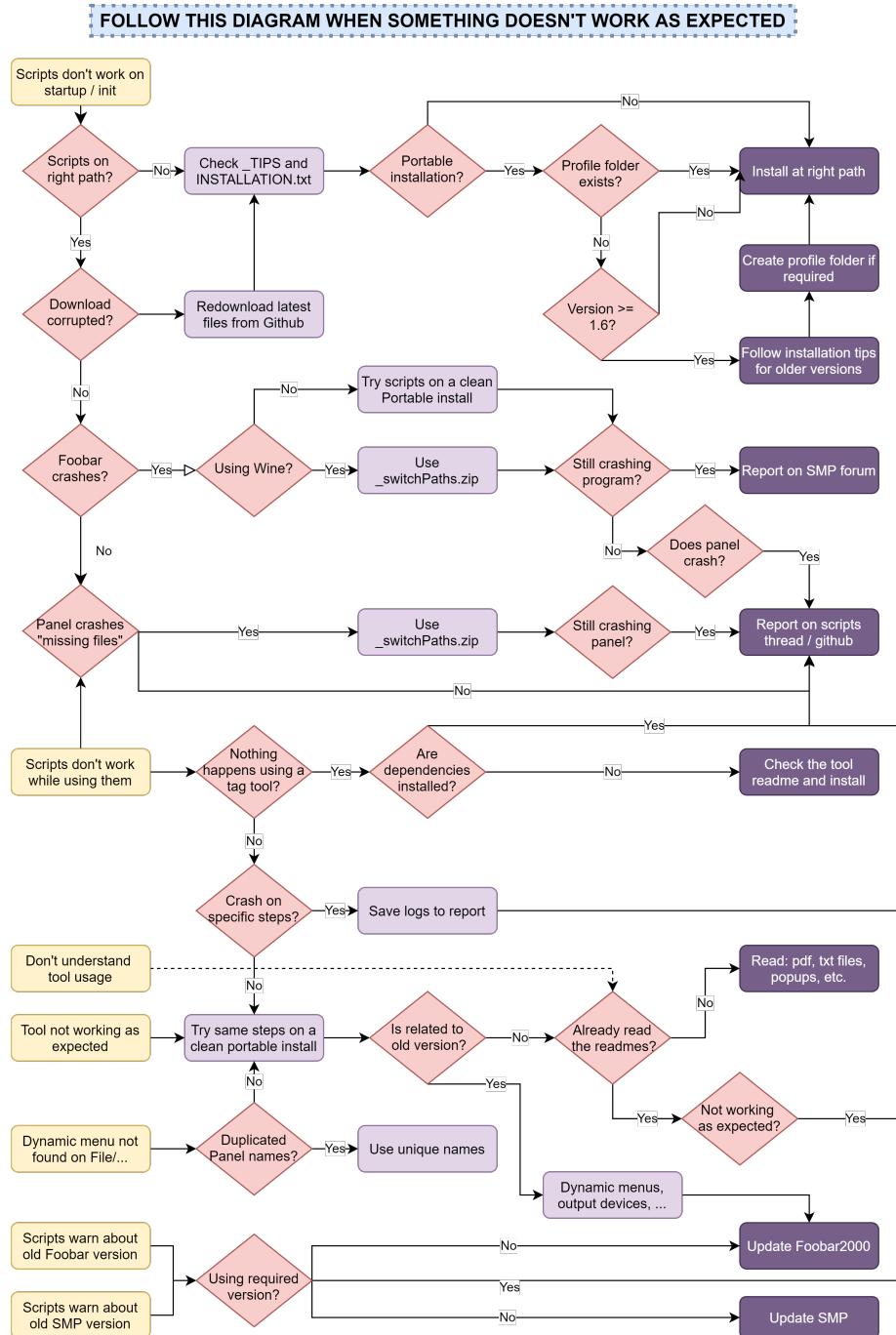
Part IX

Known problems

- Spider Monkey Panel 1.5.2 may crash -without known reason- at startup when trying to install the manager. The error will warn about script files not being found, although they are in place. This is due to incorrect relative path handling on some systems. In such case, take a look at the '`switchPaths.zip`', decompress it and follow its instructions. Scripts will be automatically edited to use absolute paths at script loading, thus fixing the problem. The cmd file (.bat) will have to be rerun on future playlist manager updates. Obviously this is only a workaround and a proper fix is expected on posterior SMP releases.
- Spider Monkey Panel (any version) may incorrectly identify code-page while reading text files, thus reporting wrong values at some instances. This usually happens while reading playlist files or importing tracks lists, with track names or artists using exotic chars (ä,å, ...) getting corrupted. Multiple code checks have been added to minimize these situations in any case. See FAQ [VI].

Part X

Bug procedure



Part XI

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Figure 24: License abstract.

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