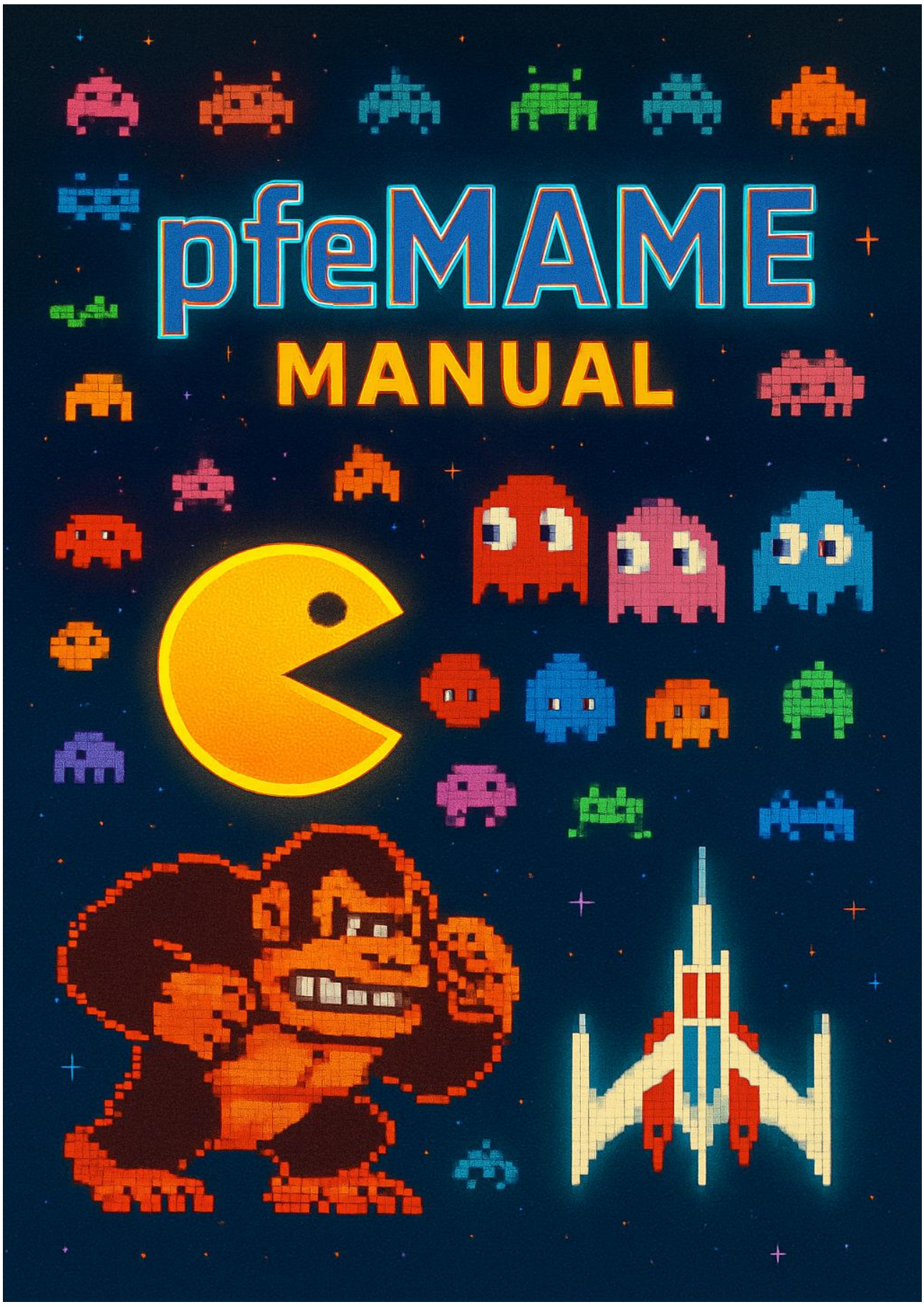

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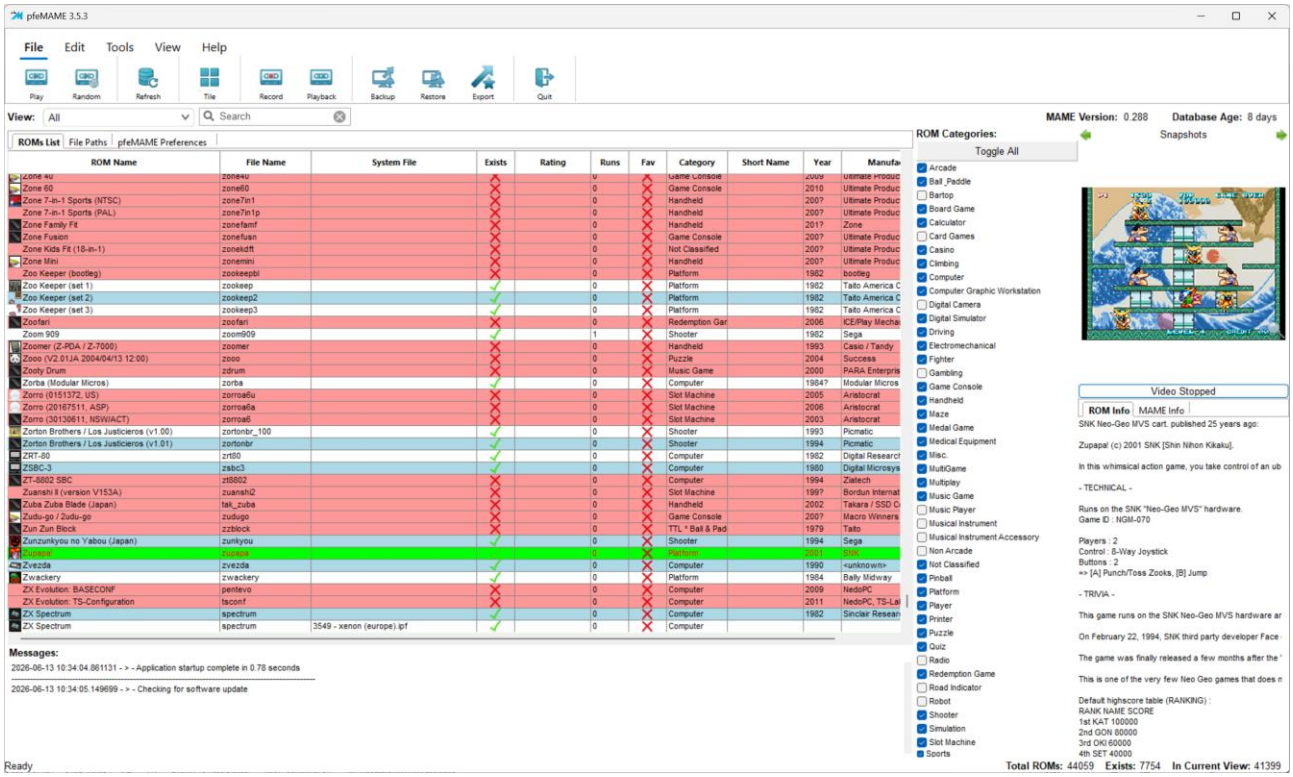

Written By Gareth Finch

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1 ABOUT

pfeMAME is a cross-platform MAME front-end written in (wx)Python. It has been tested to run on Linux (Ubuntu), WSL2-Ubuntu, Windows 8 / 10 / 11, and MacOS, but should be able to run on any platform supporting Python and wxWidgets as long as it is 64 bit.

pfeMAME requires a minimum of Python 3.10 and wxPython 4.2.2 if you are running from source. The versions must also be 64 bit as 32 bit is no longer supported.

There are notable differences in the Linux / Windows / MacOS versions due to the way that the different platforms handle graphics. That said, the differences are minimal. There are still some ongoing challenges in the different widget support under wxPython on the various platforms and this has led to some possible odd behavior.

2 SUPPORTED VERSION OF MAME

pfeMAME currently requires a minimum MAME version of 0.206 to run reliably. Earlier versions may cause issues due to additional features added to MAME and the support for these features in pfeMAME.

3 MERGED ROMSETS

pfeMAME support merged romsets. It will handle a few different formats.

- All clone files within the parent compressed file
- As above but each clone has its own subfolder
- Clone files in uncompressed folders within the MAME ROMs folder

4 PREREQUISITES

a. If running the source Python version (i.e. not a packaged EXE version);

- Python 3.10 (64 bit) or newer
- wxPython phoenix 4.2.0 or newer (not classic)
- pypubsub (load with pip install pypubsub)
- pillow (load with pip install pillow)
- python-docx (load with pip install python-docx)
- Optionally, you can use ffprobe to retrieve the video file meta data for the fullscreen video player. See the Full Screen Videos section for more detail.
- ffmpeg for playback of audio embedded in game video files
- pyopengl
- pyopen_accelerate
- py7zr
- opencv-python
- pyaudio

b. A version of the MAME command line executable (version 0.206 and above)

c. The MAME INI file must be configured correctly at least for the ROM file path. If you can run the MAME exe and play a ROM then the rest will work ok.

d. An up-to-date copy of the following (Just get the versions matching your version of MAME). You will need to put them in the same folder as the MAME executable in Windows. For Linux, put them in the root location where all your other MAME support folders are (like ROMs, samples, etc.);

- `history.xml`
- `catver.ini`

e. Some MAME compatible ROMs

5 DEPENDENCIES

5.1 WINDOWS

The following DLL files are required for the Windows distribution, and it is assumed that they are present on your system. You will typically find that installing the **Microsoft Visual C++ 2008 Redistributable** package will resolve most of them.

DLL Name	Typical Path
OLEAUT32.dll	C:\WINDOWS\system32\OLEAUT32.dll
USER32.dll	C:\WINDOWS\system32\USER32.dll
COMCTL32.dll	C:\WINDOWS\system32\COMCTL32.dll
SHELL32.dll	C:\WINDOWS\system32\SHELL32.dll
ole32.dll	C:\WINDOWS\system32\ole32.dll
WINMM.dll	C:\WINDOWS\system32\WINMM.dll
WSOCK32.dll	C:\WINDOWS\system32\WSOCK32.dll
COMDLG32.dll	C:\WINDOWS\system32\COMDLG32.dll
ADVAPI32.dll	C:\WINDOWS\system32\ADVAPI32.dll
WS2_32.dll	C:\WINDOWS\system32\WS2_32.dll
WINSPOOL.DRV	C:\WINDOWS\system32\WINSPOOL.DRV
GDI32.dll	C:\WINDOWS\system32\GDI32.dll
MSVCP90.dll	C:\WINDOWS\System32\MSVCP90.dll
KERNEL32.dll	C:\WINDOWS\system32\KERNEL32.dll
RPCRT4.dll	C:\WINDOWS\system32\RPCRT4.dll

5.2 LINUX

The distribution version of pfeMAME requires that the same or newer version of GLIBC be on the Linux system that you run it on. If an older one exists, then you will likely end up with a runtime error. To fix this you must update your Linux system to the latest version or build pfeMAME yourself.

6 INSTALLING

6.1 INSTALLING UNDER WINDOWS

There is nothing special required for installing under Windows. Just copy the files to a location that you like and run the pfeMAME.exe file. There is a possibility that you will get an error saying that it can't find a dll of some kind. Please see the dependencies section of this manual for help.

6.2 INSTALLING UNDER MAC OS

There is nothing special required for installing under Mac OS. Extract the pfeMAME.app from the downloaded ZIP/7z file and double click to execute it. The operating system may ask you to grant permissions depending upon the folder you have copied it into.

6.3 INSTALLING UNDER LINUX

Installing under Linux can sometimes require setting file permissions before running. This goes for distribution and source code versions. If you're having any issues with getting pfeMAME to run, set all files in the pfeMAME folder to have read/write access for all users. Different distros have different ways of doing this from the GUI – in Ubuntu you can run Nautilus as SUDO from a terminal and then right click the pfeMAME folder and set all permissions to read/write.

You may also need to set the pfemame executable file to be executable by running chmod u+x pfemame from the command line.

Run the application using ./pfemame from the command line.

If you get an SDL not found error, install the library using sudo apt-get install sdl1.2-dev.

It can be difficult to find the MAME executable file in Linux. Under Ubuntu it is typically located at /usr/games. The auto-find feature under file paths will try and work this out for you.

The MAME INI file is typically located in a hidden folder in your home directory called

.mame

(See the dot in front of the name).

Sometimes when copying the distribution version of pfeMAME to your Linux distro, you must right click the pfeMAME executable and select it to 'allow executing file as program'.

I have also seen an issue when the pfeMAME application runs ok, but when you try to run a game ROM the following error is displayed in the messages log window.

```
/lib/libstdc++.so.6: version `GLIBCXX_3.4.15' not found
```

If you get this error, then there is a library mismatch between the distribution version and your distro. In this situation, the only way to rectify is to download the pfeMAME source code and build it yourself. See the chapter later in this manual on how to build from source.

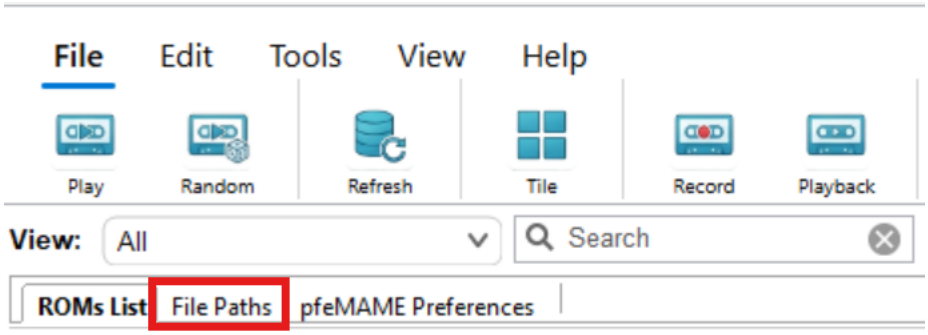
7 FIRST-TIME RUN

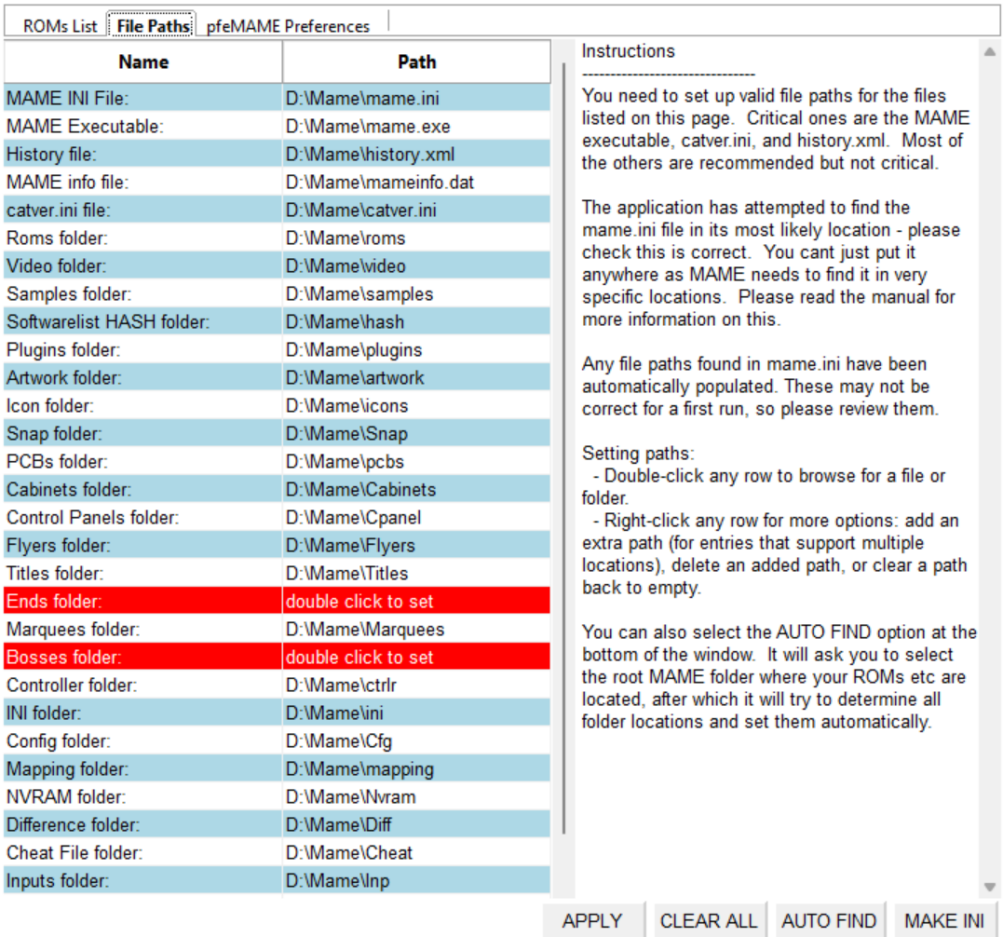
The first time you run pfeMAME you need to select the language and then set up the default file paths and any preferences. NOTE: The language can be later changed from the pfeMAME preferences window.

7.1 FILE PATHS

This sets up the paths / folders for various support files and core application type files. As a minimum, the first 8 should always be set up, although the application will work without Icons and Samples.

You can access the file paths from the tab next to the main ROM list.





To manually select a folder / path, double click on the row to open a file / folder selection window.

There is an Auto Find feature that will ask you to select the root folder for MAME, after which it will look for all logical folder matches and populate those that it finds. It will also look for the support files. In Linux it also checks the /usr folder for the MAME executable.

The MAME INI file location is critical. MAME will always look for its mame.ini file in a very specific location on Windows and Linux. On Windows it's always to be in the same root folder as the MAME executable. In Linux, it 'should' be in the users HOME directory in a folder called '.mame'. This is a hidden folder in Linux and is created when you install MAME. You don't have to worry about creating the mame.ini file (Which MAME can do if you ask it to) – the pfeMAME application will create it if it can't find it. When you first run pfeMAME, it will look for the mame.ini file in the locations where it should be and will show that location in the Edit File Paths window. If that location is blank, then you need to do some investigating as things are not as they should be.

Please note that the Auto Find feature will not locate files for other emulation engines (model2/3 and Visual Pinball) as they can be pretty much anywhere.

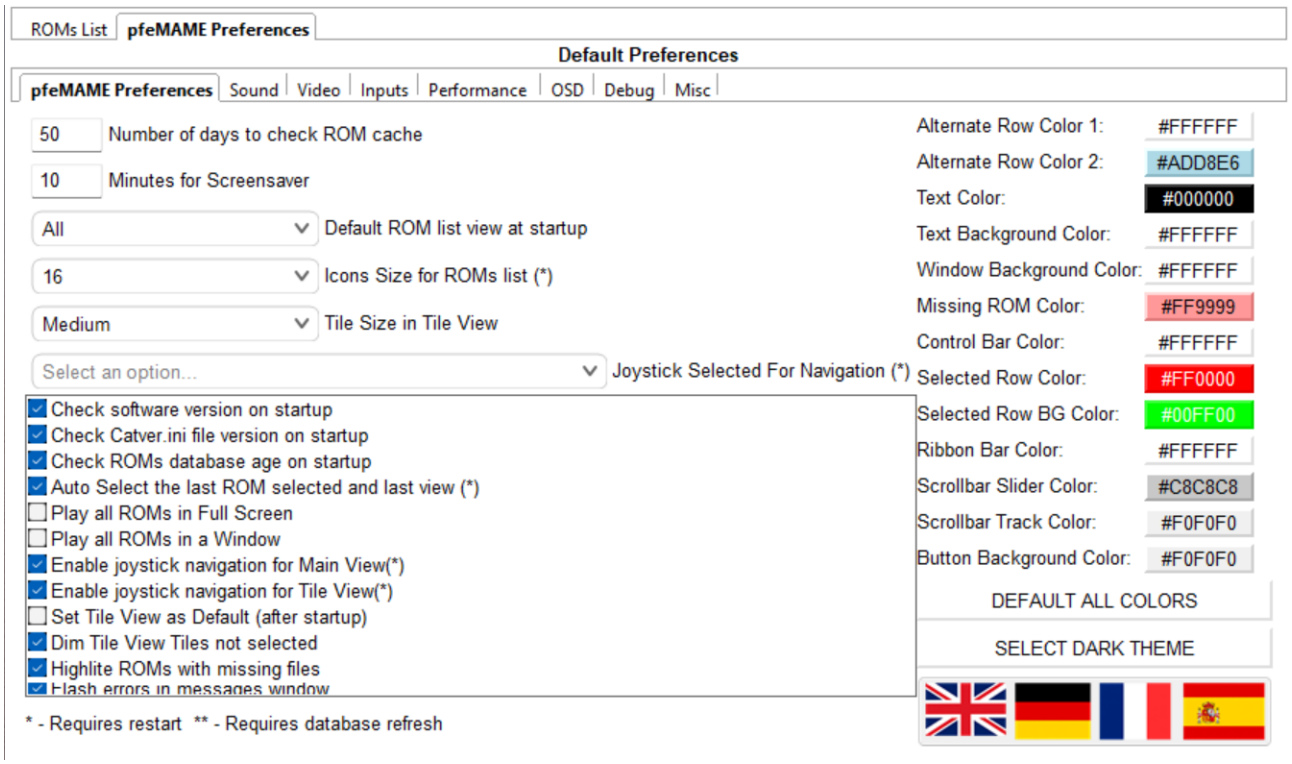
The file paths window supports multiple folders for some folder types. The types are pretty much defined by MAME itself. Folders like ROMS and SAMPLES can have more than one path. If a folder does support multiple paths, then you will see an 'Add' option next to it. Click on 'Add' and an additional row will be created. Then double click on that row to select the folder path. Additionally, you can delete the additional folder paths by clicking on the 'Delete' option.

Any file paths that a missing or invalid will be highlighted in RED. This doesn't necessarily mean there is a critical issue (MAME executable, INI files, and ROMs would be critical), but that you might need to investigate it.

7.2 PREFERENCES

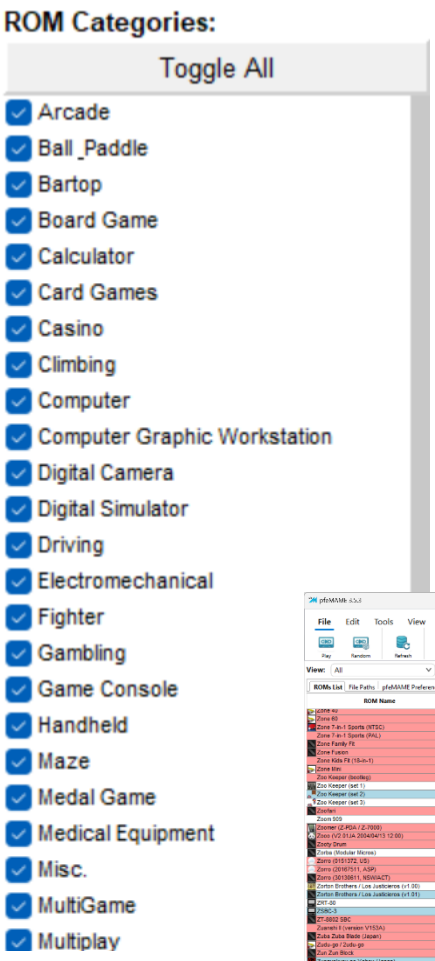
These are the system-wide default preferences for the application. The MAME related preferences are in the other tabs. The preferences window is in a separate tab on the main screen.

Some of the preferences require the application to be restarted after setting them.



7.3 ROM CATEGORY FILTER

The ROM category selections are on the main window to the right of the ROMs list (see below). These allow you to select what ROM categories are shown in the main window. To select all, double click in a free space in the list, and likewise do the same to de-select all.

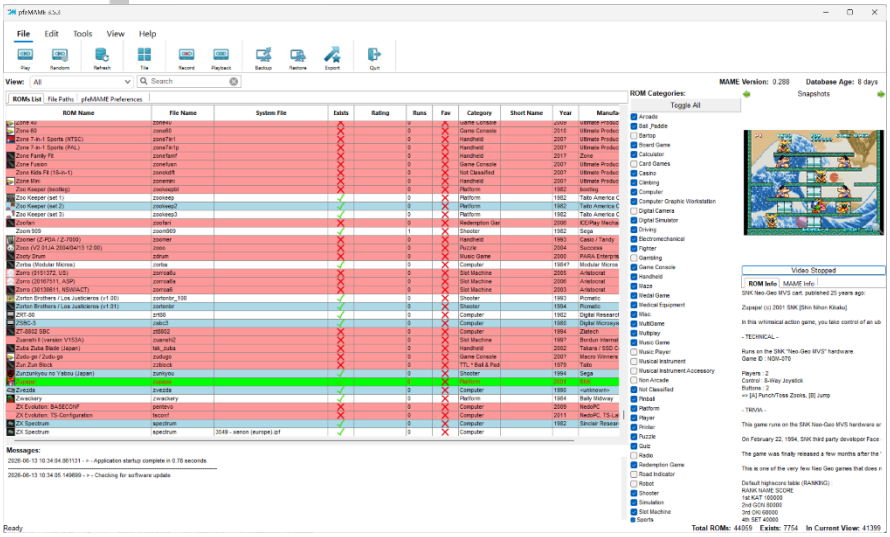


Once the preferences and file paths are set up, restart pfeMAME. If needed, manually refresh the ROMs database (click on the refresh toolbar icon or select VIEW > Refresh ROMs Database).

Refreshing the database will force a full read and set up of the database which is then saved in a cache file to speed up the application startup next time.

The application will check the age of the cache based upon the setting in 'Preferences' and will recommend that you manually refresh the database to keep this up to date (do this if you add / change ROMs, etc.).

You should be presented with something that looks like the screen below.



Use the ‘View’ filter drop-down to adjust the view (e.g. show only ROMs that exist, or All, or just ROMs you have marked as favorite).

8 BUILDING THE ROMS DATABASE

The first time you run pfeMAME, after setting up the necessary preferences etc., if a valid ROMs database doesn't already exist, the application will automatically create one. Once a database is created, every time you restart the application, it will load the database from a cache file.

In preferences you can set the number of days to check for updating the cache (Number of days to check cache file).

You can manually force a database refresh at any time by pressing F5 or selecting the refresh icon on the toolbar from the 'File' menu.

When the database is refreshed, there are some additional options in the preferences as follows.

8.1 SYSTEMS SUPPORT

This allows the application to look for systems programs in the MAME ROMs folder. Systems are things like home computers and consoles – basically hardware that loads other programs. In the MAME ROMs folder, you create folders called the same as the system program, however some of the names need to be quite specific and can be found in the XML file (HASH file) for that MAME ROM. For example, ZX Spectrum home computer programs need to be stored in folders called spectrum_cass (and a few others). You need to work this out yourself as MAME doesn't provide any hints.

As an example of a file path layout, see below.

For the ZX spectrum program 'The Birds and The Bees'; The program file name is 'the birds and the bees.tzx', while the short name in the XML file is 'birdsbee'. Your ROMs folder structure needs to look like this.

```
ROMS
└── spectrum_cass
    └── birdsbee
        └── the birds and the bees.tzx
```

If you were to structure as per the above, and from the command line run the following.

```
mame.exe spectrum birdsbee
```

Then MAME will execute the program using the settings stored in the XML file. When you refresh the pfeMAME database it will assume the program is stored as per above, but if you have not stored it correctly it will still try to find it for you but executing it with XML HASH file support likely won't work.

All the necessary info is in the XML file so happy hunting.

8.2 USE MULTI-PROCESSOR FOR BUILD

This tells the application to create a pool of worker objects when building the ROMs database, and to feed each worker to a separate CPU or core. It can be faster on slower systems but really comes into its own when used with the following setting (Let's just say that it's pretty much compulsory in this instance).

8.3 BUILD DATABASE WITH FULL SYSTEMS SUPPORT METHOD

This is a bit hard to explain, but when MAME looks for folders to find systems programs, as mentioned above it looks for the name in the system XML file.

The tag in the file is 'softwarelist name='.

In my first implementation of systems support, I only allowed folders to be called the same as their systems name, or with a suffix after an underscore. This works for a lot of systems, but not all.

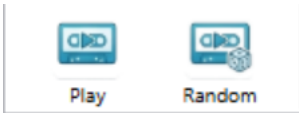
Some systems also expect to see programs in a totally different named folder. The only way to support that was to look for the folder name in the XML file for every system. This is the thorough method but is very slow – on my computer it can take 700 seconds.

When you enable the multi-processor build above, the time to build a database using the full system method can drop substantially. This depends on many factors, including the number of processors / cores and how fast your file system is (SSD will be much faster than a mechanical drive).

9 RUNNING A ROM

There are multiple ways to run a ROM once everything is set up. NOTE: You must have selected a ROM in the window and that ROM must exist.

- From the FILE menu, select ‘Play ROM’ or ‘Play Random ROM’



- Pressing the ‘ENTER’ key while a ROM is selected
- Right click the ROM to bring up the context menu, and select
    - ‘Play ROM’
    - ‘Play ROM without softlist HASH support’
    - ‘Play ROM with different engine’

10 CONTROLLER INPUT MAPPING

MAME supports controller input mapping – which is great for setting the various buttons on your gamepads, etc. to work nicely with a game you are running. The problem is that it is quite generic in nature and doesn't allow you to have different configurations for different ROMs.

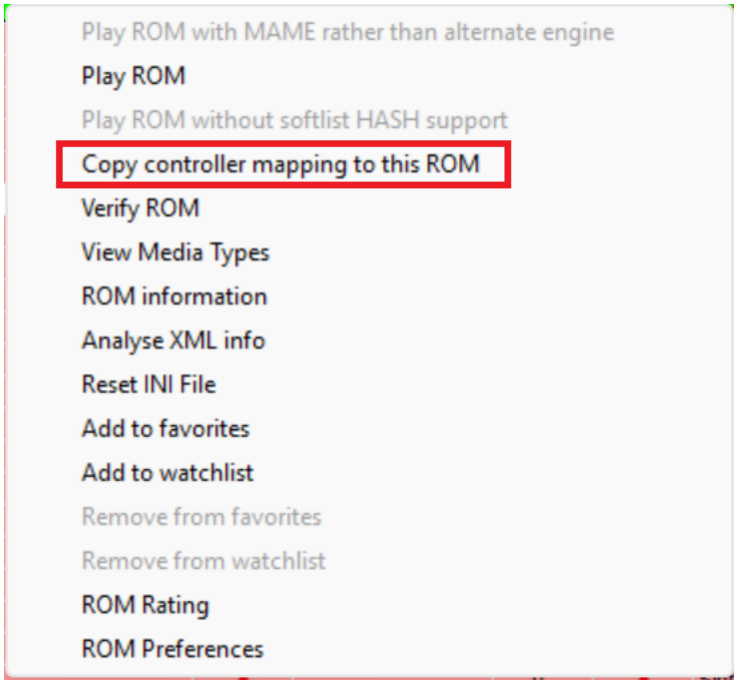
You can mess around with creating custom controller files for various bios or system types, but I find that's very messy and, at least for me, quite confusing.

pfeMAME supports per-ROM input mapping via what I think is a nice and easy method.

Firstly, you must create a 'Mapping' folder within your MAME folder. This isn't a standard MAME folder and is instead used by pfeMAME. I could have put it within the pfeMAME distribution, but I didn't like that idea.

In pfeMAME, use File Paths to select the 'Mapping' folder you created.

Now run a ROM file and define the input mapping using the MAME built-in Tab menu and Input Mapping. Once you are done, exit MAME. Then in pfeMAME, right click the ROM you have just run and select 'Copy controller mapping to this ROM'. If you have other ROMs that you want to use the same mapping, then select each one in turn and do the same.



What the above process is doing is copying the default.cfg file that MAME created when you first defined the Input mapping within MAME. The file is renamed to match the ROM name and stored in the Mapping folder. Then when you run that ROM next, the file is copied back across and overwrites the default.cfg file.

Now with the process above you can have different ROMs with different input mapping just by selecting another ROM, defining its inputs differently as you require, then using the right click menu to copy its mapping for later.

Easy – I hope!

11 KEYBOARD SHORTCUTS

The following is a list of keyboard shortcuts that can be accessed via the main window.

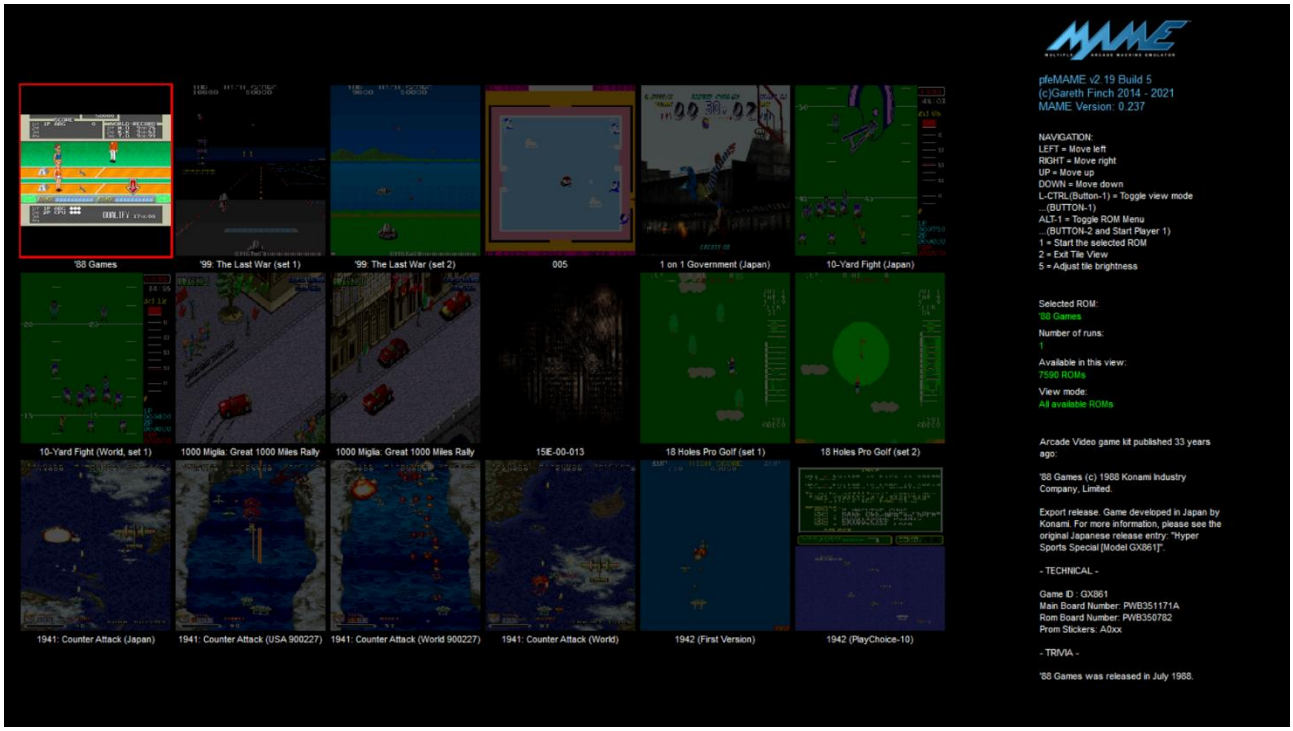
ESC	This will close the active window (Except for Tile View where you must use the ‘2’ key and the main window where you must use CTRL-Q)
CTRL-P	Brings up the default pfeMAME preferences
CTRL-SHIFT-P	Brings up the ROM specific preferences
CTRL-Q	Quits pfeMAME from the main window
CTRL-F	Find a ROM
SHIFT-V	Launch the full screen video player
F5	Refresh ROM database

12 TILE VIEW

This is an alternate view for the application primarily designed for stand-alone MAME cabinets. It provides an image 'tile' of the ROMs. You can navigate with the arrow keys or a joystick / gamepad. It defaults to showing the ROMs you have flagged in your favorites list, although you can toggle to the full (existing) list – but obviously a very large list will be hard to navigate.

NOTE: If no ROMs are visible then check that you have assigned any to your favorites list.

The pfeMAME application can be set up to automatically launch into Tile View after startup by checking the appropriate box in the preferences section – this again is designed with MAME cabinets in mind.



A note about the mouse while in Tile View; As this view is designed for MAME cabinets with joysticks, use of the mouse is assumed to be a 'no go'. Unfortunately, wxPython doesn't have a global way of disabling the mouse pointer. What I have done is to turn the mouse pointer into a blank image when it hovers over any control. This sort of works, although not all controls seem to support this feature, so if you move the mouse around you will see it at times.

In addition, DO NOT USE THE MOUSE TO CLICK ON ANYTHING. If you do it may cause the 'tiles' to lose focus, or you will change the focus to a spot the program doesn't understand. This can make life difficult when you try to close the window.

13 Star Rating

Right click a ROM and select ROM Rating'. This allows you to rate your ROMs (0 ~ 5 with 0 being default). You can also double click in the rating column to bring up the star rating prompt (if this has been selected in preferences).

14 Favorites

Right click a ROM and select 'Add to Favorites'. You can then filter by favorites using the 'View' drop down box. You can also double click in the favorites column to add / remove a favorite flag (if this has been selected in preferences).

15 Watchlist

Right click a ROM and select 'Add to Watchlist'. You can then filter by watchlist using the 'View' drop down box. This allows you to flag ROMs that you are interested in reviewing but don’t want to clutter up your favorites list before you know if you actually like them.

You can turn a watchlist item into a favorite by right clicking and adding it to the favorites. You will then be asked if you want to also remove it from the watchlist (Which you can also do later from the right-click menu).

16 Number of Runs

This displays the number of times a ROM has been run. It only considers a ROM 'run' if you load all the way into the ROM.

17 Searching

To search for ROM name, rom file name, or system file name, just type your search into the search field. You can use CTRL-F to set focus in the search box. It uses a 'type ahead' search, so it dynamically resizes the list as you type. As the search is performed on the full ROMs list it also sets the 'View' drop down filter to 'ALL' as soon as you start typing.

You can enter a series of search words that don't have to be in a specific order in to get the right match – useful if you don't exactly know the right format of a long name e.g.

looking for rom name: blah blah (bootleg of whatever)

search for: blah bootleg

18 SORT ORDER

By default, the application will show the ROMs list sorted by the ROM Name. You can change this to sort by any column by clicking on that column's header.

19 BACKUP AND RESTORE

Under the File menu you can backup or restore various application files. This is useful if moving from one platform to another and you want to for example back up your favorites.dat file.

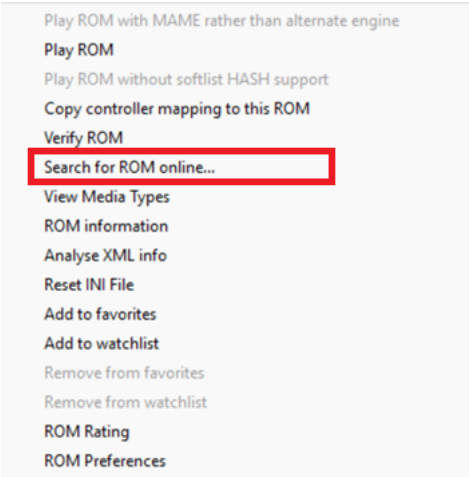
The application will search for all the DAT files and the pfemame.ini file and back up what it can find.

You must select an existing folder to back up to.

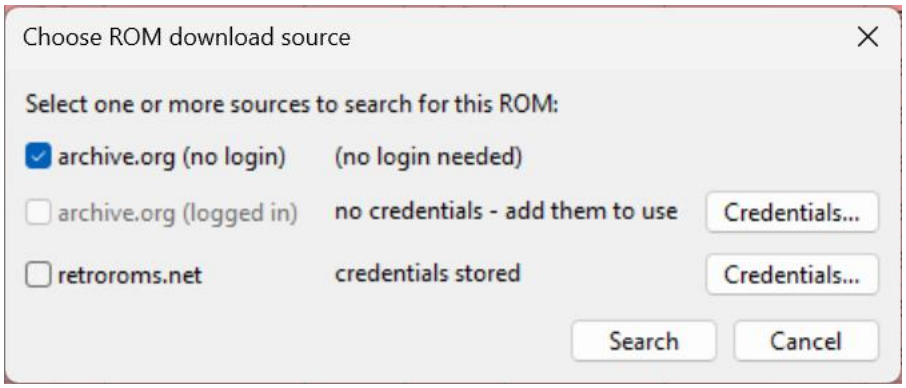
When restoring it will ask you to specify a folder, and it will restore all the relevant DAT files and the pfemame.ini file that it finds.

20 ROM AUTO DOWNLOAD

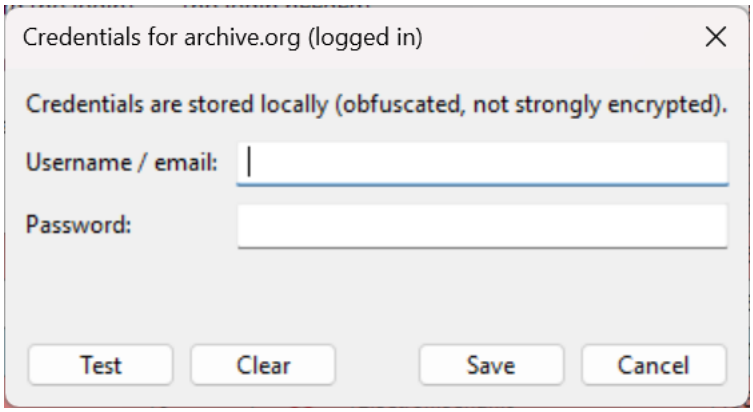
A feature exists from the ROM list right-click menu where you can attempt to search online and download a missing ROM file automatically.



Selecting this option will open a window where you can select from a list of available download locations.

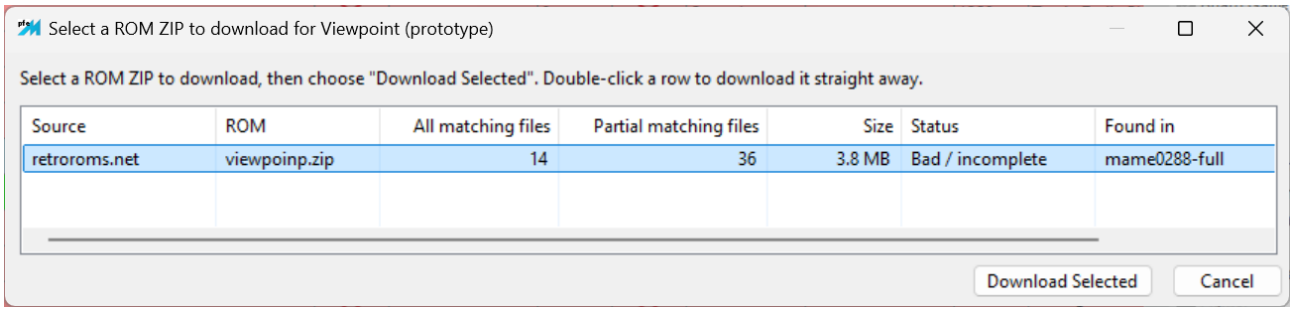


If the location requires authentication, then select the 'Credentials' button and enter your username & password for the site.



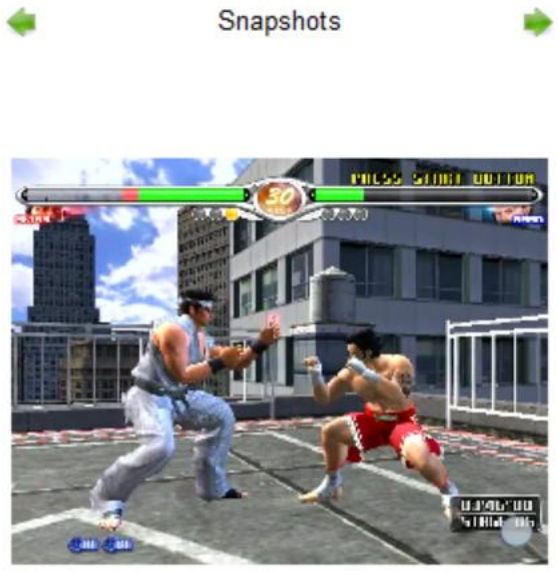
NOTE: The 'Test' feature doesn't work with all web sites as it will depend upon the authentication method used.

If a successful match is found online, the file is downloaded to a temp folder and checked for validity against the version of MAME you are using. You are then presented a list of matching files that you can select to copy to your ROMs folder.

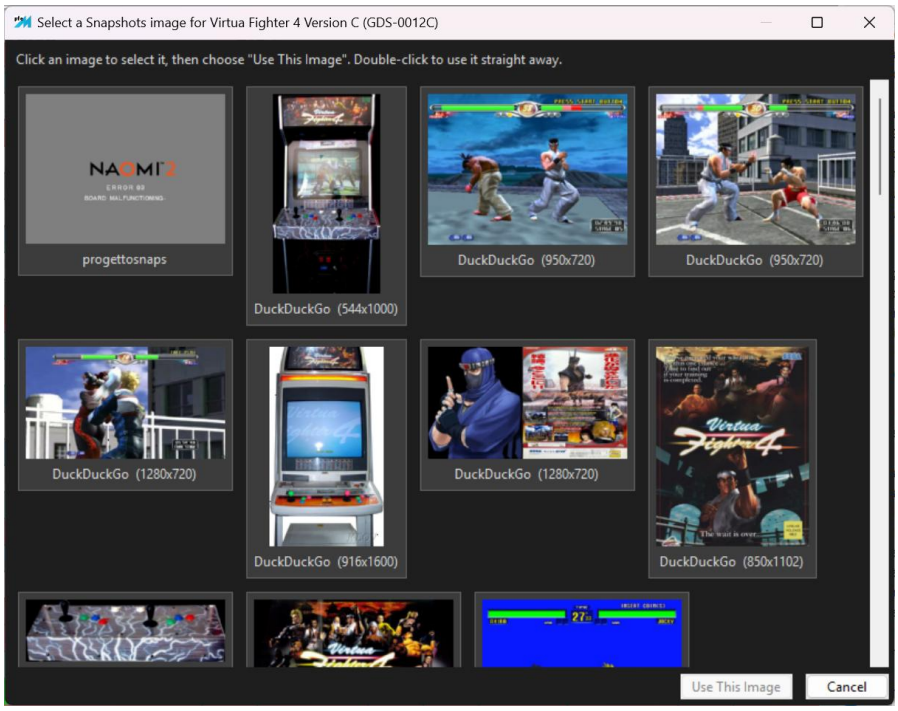


21 ROM IMAGES (PICTURES)

In the main view, when you select a ROM, the application will attempt to display the ROM image for the ingame snapshot, control, PCB, cabinet etc depending upon what view you have selected. The necessary file paths must be set up for this to work.



If you right click the ROM image, you will get an option to search online for matching images based on the view selected. These will be downloaded to the snapshots, cabinets etc folders automatically.



If you click on the displayed ROM image, a larger view will pop up.

22 ROM VIDEOS

If ROM videos are found in the 'videos' folder, a message under the ROM image will say 'Video Available – Click to play'. Clicking this message will load and play the video over the top of the ROM image. If in the pfeMAME preferences you have selected to auto-play the video, then it will load and automatically play 5 seconds after selecting the ROM. The video file format must be a valid one for the operating system.

The video file will be played over the top of the ROM image.

If the video doesn't play, e.g. just a black window, check the video format. Try opening the video using the operating system's default video player (Media Player under MS Windows). If it doesn't work there, then it's not the right format.

23 VIDEO PLAYBACK

Video playback in pfeMAME uses internal decoding and sound sync of the video file. While it doesn't require hardware acceleration, it is highly recommended.

If you are finding issues launching pfeMAME due to video playback issues or the playback is corrupted, you can start the application with the -novid option and then in Preferences you can disable video playback.

For the audio portion of the video playback, pfeMAME uses ffmpeg to decode the audio from the video file. On Windows, download and copy this file to the pfeMAME folder. On Linux & macOS you need to install this using

```
sudo apt install ffmpeg
```

24 FULL SCREEN VIDEOS

The application has a setting to launch a full screen video player after a set period of time (If a valid video playback backend exists). This acts like a screen saver. The videos played are random videos stored in the 'Videos' folder.

The playback time setting is found on the main Preferences window called 'Minutes For Screensaver' and the default is 10 minutes.

During playback, pressing the SPACE key will skip to the next video, while pressing any other key will exit the full screen player.

You can manually activate the video player by selecting VIEW -> Full Screen Player from the menu, or press SHIFT – V.

Note, to display proper meta-data for the video being played, you need to manually ensure that ffprobe.exe (for Windows & MacOS) or ffmpeg (for Linux) is available.

- For Windows you can just download the ffprobe.exe file and place it in the pfeMAME folder
- For Linux you can install ffmpeg (For Ubuntu you can sudo apt install ffmpeg -y)
- For MacOS you can just download the ffprobe executable file and place it in the pfeMAME folder

25 JOYSTICK NAVIGATION

If a joystick or gamepad is connected to the system, it can be used to navigate on the main screen and within Tile View.

Button 1 will run the selected ROM.

The bumper buttons on a gamepad will navigate up / down a page in the Main View.

By default, on first installation no Joystick is selected. This can be changed from the main preferences window.

In Preferences you can selectively enable joystick navigation in the Main and Tile views. For Tile View if you are using a cabinet with USB controller mapped to the cursor keys, you may want to disable joystick navigation support if you have any issues.

25.1 JOYSTICK POLLING

The library performing the joystick detection works based on a polling time. This means that you can speed up or slow down how fast it is polling. Polling faster can slow down the application responsiveness due to higher CPU load so you can adjust the default polling value (20) if you want. There is a trade-off though. A higher value increases the polling delay but will also reduce the responsiveness of the joystick. I have found that the default value of 20 seems to work best and as such have not included a preference that you can adjust within the application, however you can still adjust this if you want via the pfemame.ini file. You will need to restart the application after each change. If you wish to adjust this manually, open the pfemame.ini file and look for the entry below and change it as required.

```
joystick_polling_freq = 20
```

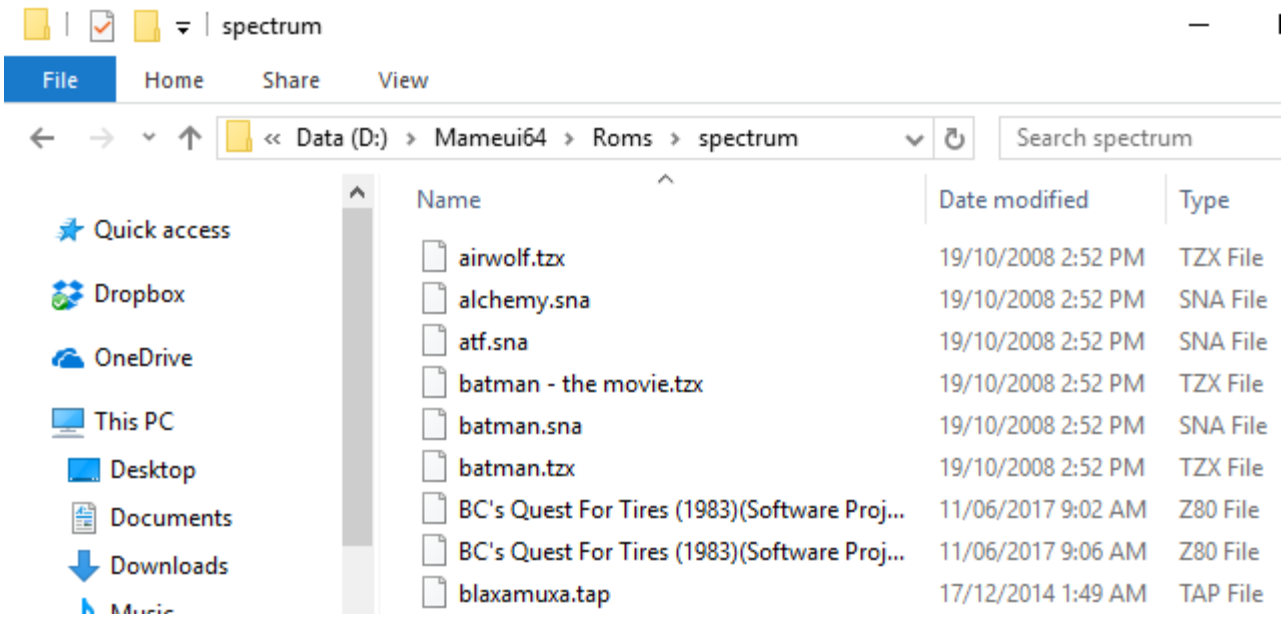
26 SOFTWARE LISTS FOR SYSTEMS

pfeMAME includes support for software list systems / home computers / consoles etc. with the inclusion of MESS into MAME. It is a selectable option in the preferences settings to support systems (by default when first installed this is disabled – once enabled you must restart pfeMAME and refresh the ROMs database).

To use the system support you MUST have a catver.ini file that includes systems in it. This is the only way that pfeMAME can tell that a file is a system.

When building the ROMs database, if pfeMAME finds a file that is listed as a system, it then looks in the ROMs folder for a subfolder with that systems name. If one exists, it then indexes all files in the subfolder and adds them to the database. To find programs for that system, just search for the system name, or the program name. For every system program that it finds, it then does a search in the hash folder XML file for that system to see if the program is listed. If it is listed, then it gets the program short name. The short name is needed to support soft list cheats for systems – this is an aspect of system support that is hardcoded in MAME and that's just the way it works.

NOTE: In the Tile View, systems will only work properly as 'favorites' - if you try running a system program under the 'All' view then it will run the top-level system (e.g. ZX Spectrum ROM) but not the system program – this is because under the 'All' view it will see the base system name first and just run that.



As systems are based upon MESS, they try to look up an XML 'hash' file stored in the HASH folder (distributed with MAME). These XML files list all details about the various programs / ROMs for the system. As systems (especially home computers) can have literally thousands of different programs and ROMs, many have not been put into these HASH files. pfeMAME looks for the hash file for the system program. If it can find it, then it stores the short name for that program. When running the program, it uses the short name – this allows cheats to be supported for systems.

NOTE: Some system programs just currently won't work with the short name and come up with an error that it can't find the file. The reason this usually happens is because the file you have does not match what is specified in the XML file. It may be the file size or CRC is incorrect. You can check this by right clicking the file and selecting Analyse XML Info. This will tell you if anything is mismatched with the file.

If you want to bypass using the short name, then just right click the program and select 'Play ROM without softlist HASH support'. You can also select 'Suppress Short Names' from the pfeMAME Preferences.

27 Alternate Emulation Engines

As of pfeMAME 2.27 the alternate emulation engine support feature has been redesigned allowing expansion to any other emulation engine that supports command line running. I won't go into the details of how to install and use other emulation engines, but at a basic level just set them up and make sure that on their own they work and can run ROMs before you try to integrate them into pfeMAME.

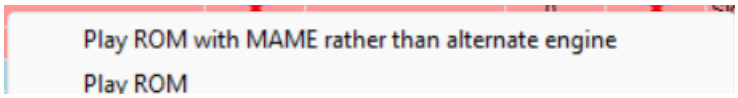
Alternate emulation engines are supported in two different modes:

- Supplemental
- Additional

27.1 Supplemental Mode

This mode is for alternate emulation engines that support the same ROMs as MAME. It may be that their emulation is more playable due to the nature of MAME being more focused on the accuracy of the hardware emulation first, and speed second.

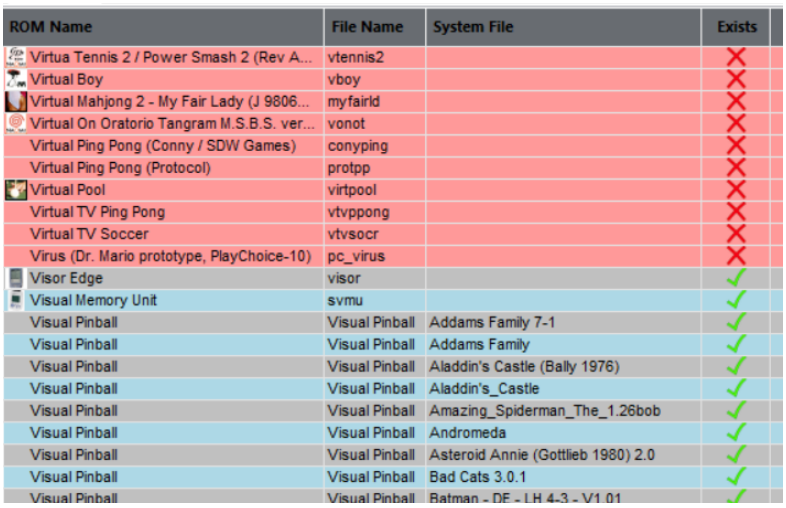
In Supplemental mode, the engine has specific ROMs associated so that pfeMAME knows that when that ROM is selected to run, it uses the alternate emulation engine rather than MAME. This can be overridden on a case-by-case basis by selecting 'Play ROM with MAME rather than alternate engine' from the right-click menu as shown below.



27.2 Additional Mode

This mode is for emulation engines that emulate systems that MAME does not. A good example is Visual Pinball. Visual Pinball doesn't just emulate the pinball ROMs, it also provides a graphical play area that MAME cannot.

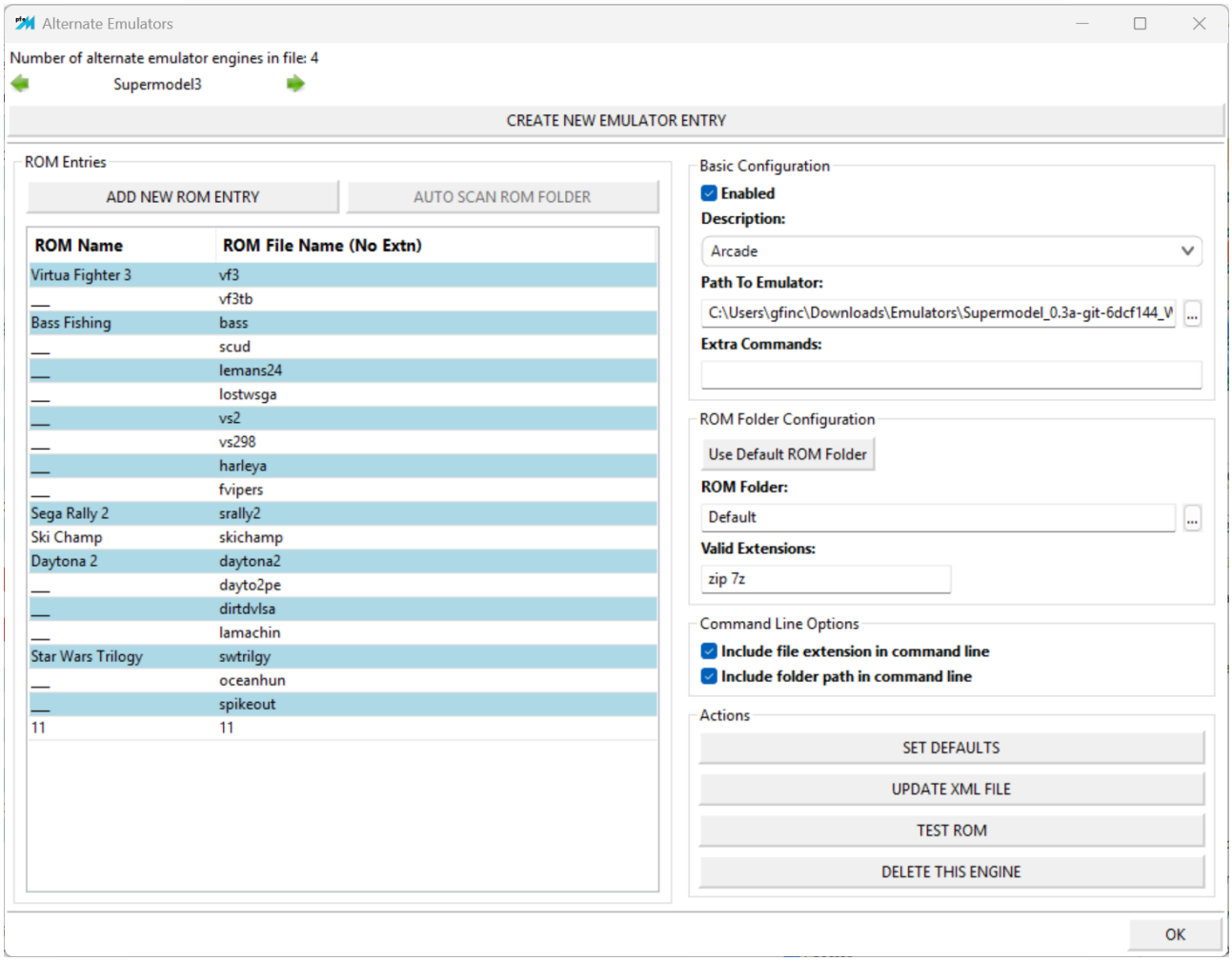
In Supplemental mode, the ROMs (or in the case of Visual Pinball the Tables) are listed separately in the main ROMs list. See the example below for Visual Pinball.



ROM Name	File Name	System File	Exists
Virtua Tennis 2 / Power Smash 2 (Rev A...	vtennis2		✗
Virtual Boy	vboy		✗
Virtual Mahjong 2 - My Fair Lady (J 9806...	myfairld		✗
Virtual On Oratorio Tangram M.S.B.S. ver...	vonot		✗
Virtual Ping Pong (Conny / SDW Games)	conyping		✗
Virtual Ping Pong (Protocol)	protpp		✗
Virtual Pool	virtpool		✗
Virtual TV Ping Pong	vtvppong		✗
Virtual TV Soccer	vtvsocr		✗
Virus (Dr. Mario prototype, PlayChoice-10)	pc_virus		✗
Visor Edge	visor		✓
Visual Memory Unit	svmu		✓
Visual Pinball	Visual Pinball	Addams Family 7-1	✓
Visual Pinball	Visual Pinball	Addams Family	✓
Visual Pinball	Visual Pinball	Aladdin's Castle (Bally 1976)	✓
Visual Pinball	Visual Pinball	Aladdin's_Castle	✓
Visual Pinball	Visual Pinball	Amazing_Spiderman_The_1.26bob	✓
Visual Pinball	Visual Pinball	Andromeda	✓
Visual Pinball	Visual Pinball	Asteroid Annie (Gottlieb 1980) 2.0	✓
Visual Pinball	Visual Pinball	Bad Cats 3.0.1	✓
Visual Pinball	Visual Pinball	Batman - DE - LH 4-3 - V1.01	✓

27.3 Setting up Additional Emulation Engines

From the main menu, select EDIT -> Setup Alternate Emulators. This will present the screen below.



By default, there is nothing to enter. To create a new entry, carry out the process below.

- Click on 'Create New Emulator Entry'. When prompted, give your emulation engine a name.
- Next you must set up the options for this engine.
- Tick the 'Enabled box'. Later you can un-tick this to disable this emulator globally.
- From the drop-down list, select the 'Description' that best matches.
- Browse to and select the executable file for the emulator.
- Enter any required command line entries – for example, '-play'. These are usually used to tell the emulator to run the selected ROM or to run full screen. If you have multiple commands, then separate them with a space.
- Set the ROM folder. If it is the same ROM folder as MAME (i.e. this emulator uses the same ROMs as MAME) then click the 'Setup' button to just make the ROM Folder 'Default'. If not, then select the folder where the ROMs for this alternate emulator are stored. In the case of Visual Pinball you want to select the 'Tables' folder.
- Enter valid extensions allowed for the ROMs / Tables (e.g. zip, 7z, vpt, vpx…). Separate additional extensions with space. Do NOT include the decimal point '.' before the extension.

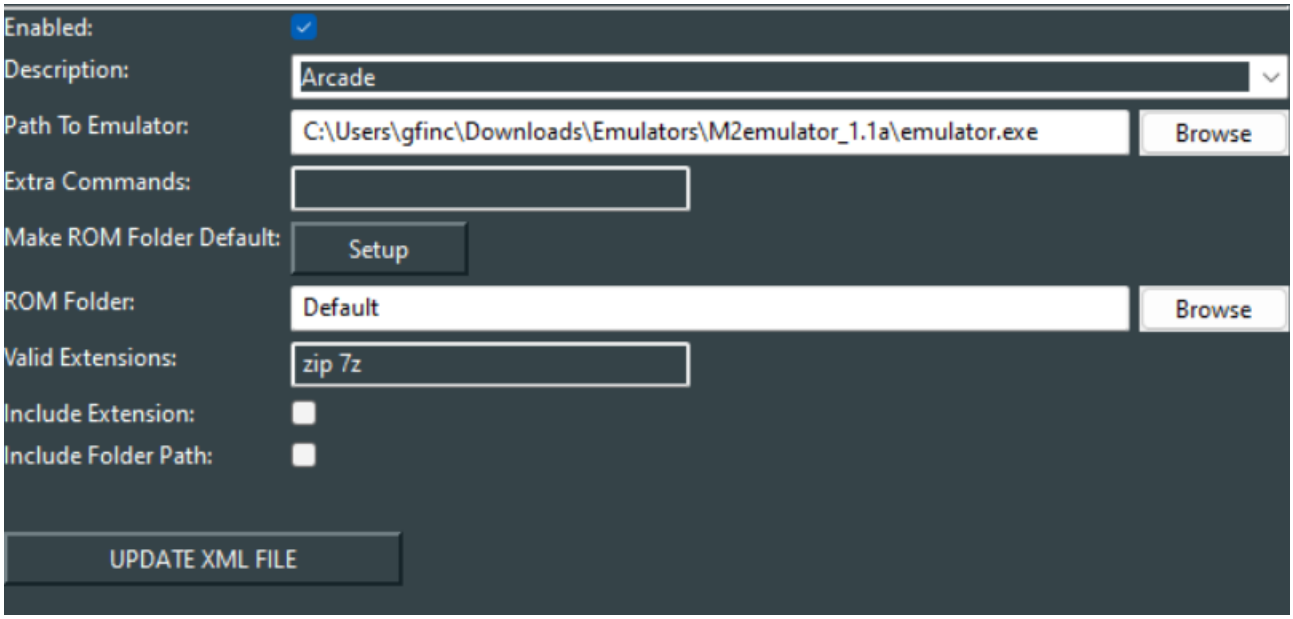
- Select ‘Include Extension’ if this emulator requires you to specify the extension when running the ROM (e.g. a command line may look like ‘jaguar.exe – play daytona.zip’).
- Select the ‘Include Folder Path’ if the emulator requires that in the command line. This is usually for emulators that don’t have their own INI file specifying where the ROM is located (or you have not set it up) but just require it to be specified in the command line.
- Click on ‘Update XML File’ to store your settings.
- Next you may need to specify the actual ROMs associated with this emulator. If the ROMs / Tables are in their own folder, then just click on ‘AUTO ADD NEW ROM ENTRIES’. Note, that is only available if you have specified a ROMs folder. This will add all entries from that folder into the ROMs list. Alternatively, you can just add a single entry by clicking on ‘ADD NEW ROM ENTRY’. Once all entries are complete you need to update the XML file again.

You can test the setup by clicking on the ‘Test ROM’ button.

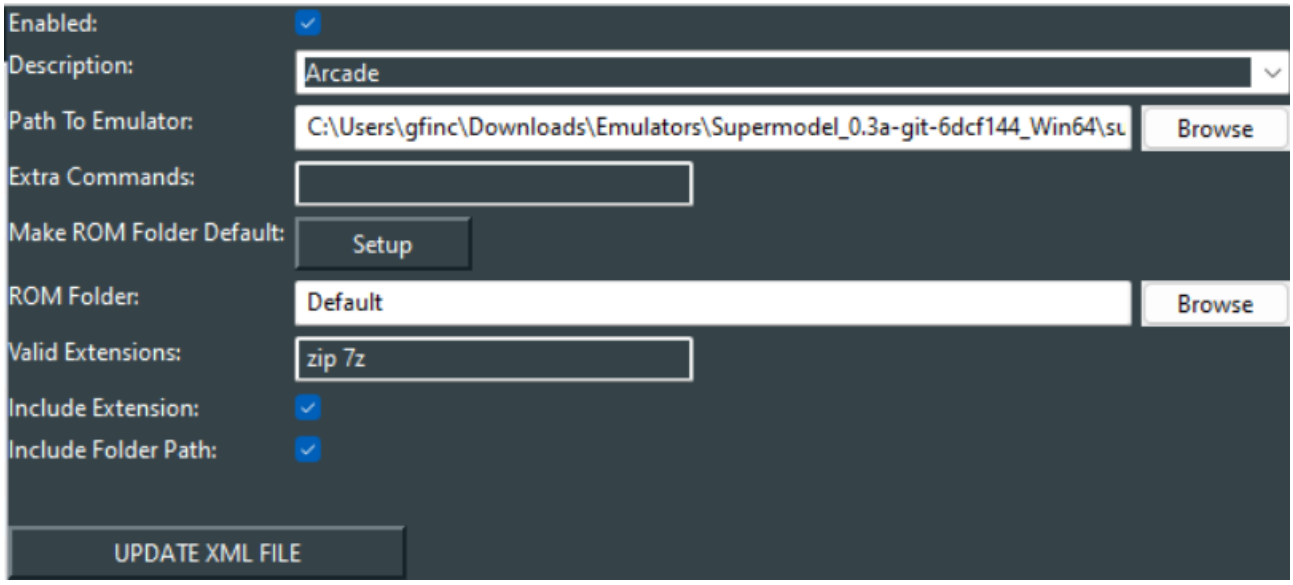
Once you have set everything up, return to the main screen and refresh the database. If you have followed the steps correctly your new emulator engine should be available.

Below I have shown some example setups for various alternate emulators.

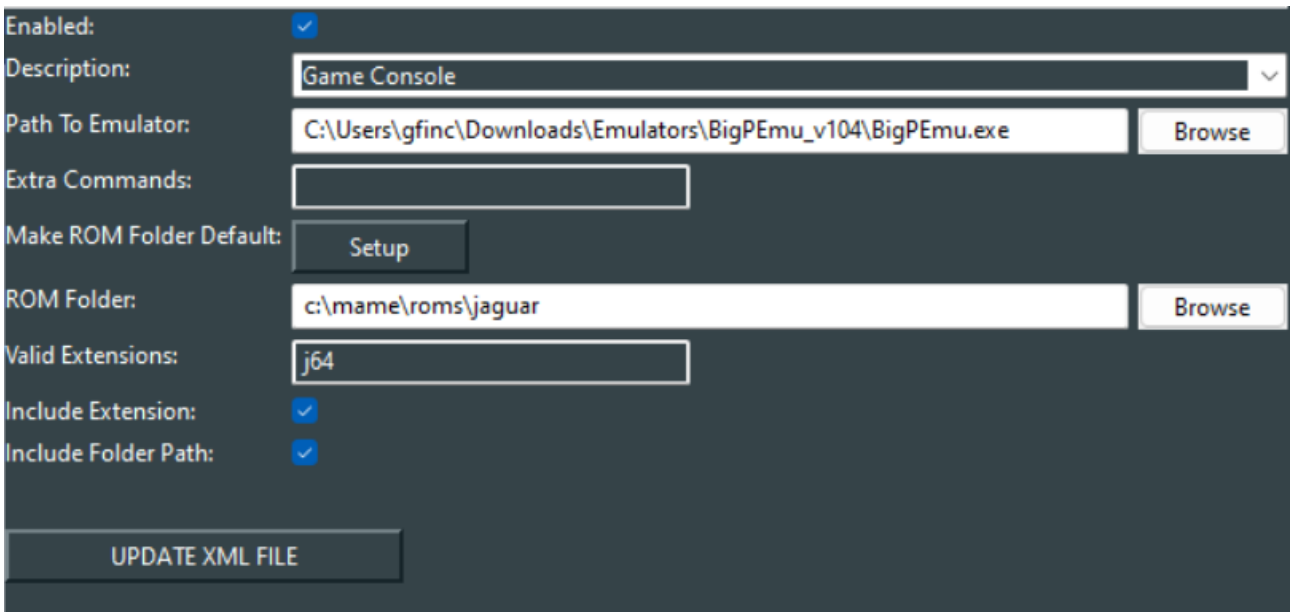
M2Emulator (For Sega Model 1 & 2)



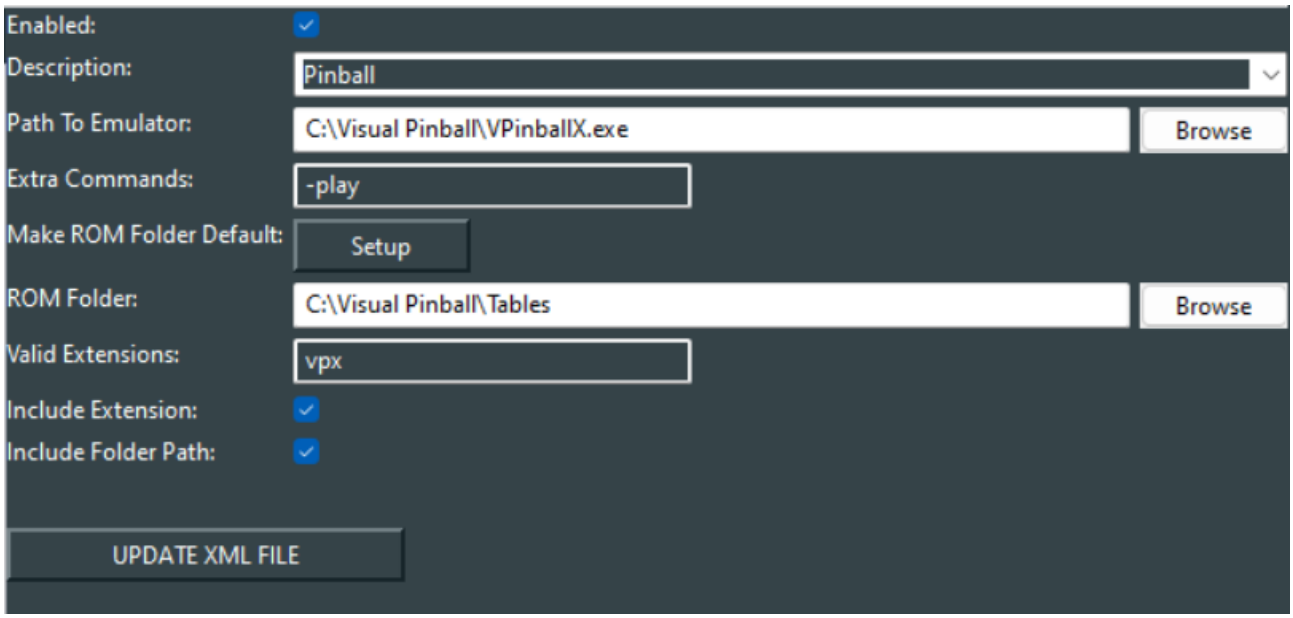
Supermodel3 (Sega Model 3)



Jaguar (Atari Jaguar)



Visual Pinball X (Pinball Tables)



28 LOG FILE

Located in the pfeMAME folder, the log file (logfile.log) contains useful startup and debug information. When the logfile gets too large the application will automatically create additional log files with a file suffix of .1, .2, .3, etc. You can view this logfile within pfeMAME by selecting VIEW > Log File.

29 INI FILES

The way pfeMAME uses the MAME and ROM INI files is detailed below.

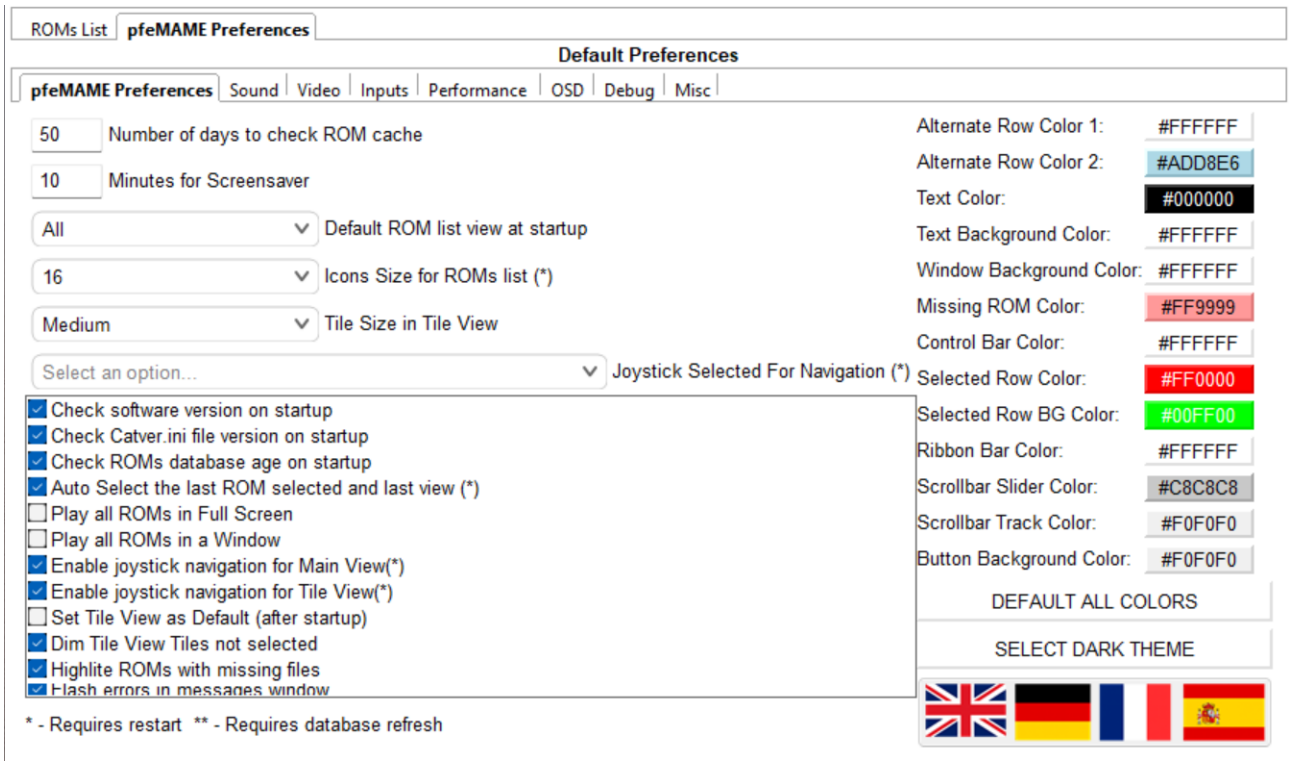
The pfeMAME application utilises the MAME INI file for storing all MAME specific preferences, file locations, etc. The application will look for the mame.ini file where it should be when you set the file paths.

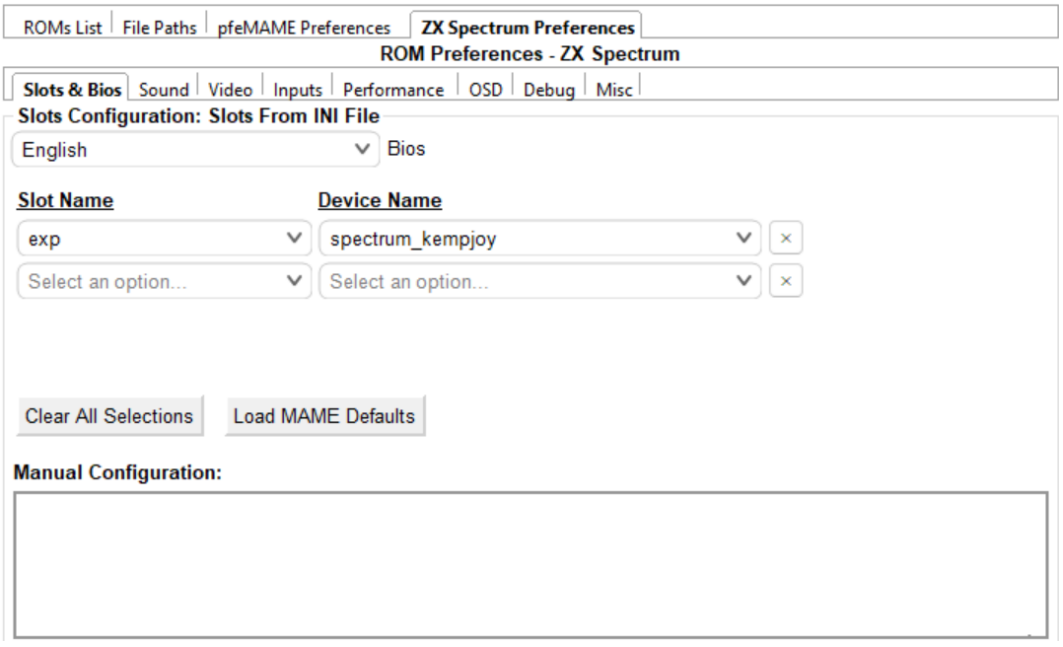
ROM specific preferences are stored in the INI folders path (In windows this is usually in the same location as the MAME executable). You can create these INI files manually, or change the ones created by pfeMAME. pfeMAME will always maintain existing information in these files and only overwrites preferences values that pfeMAME supports.

Being able to add your own options in the ROM specific INI files is very useful as you can support options that are not included in pfeMAME.

30 PREFERENCES

The pfeMAME application supports default preferences, and ROM specific preferences. Default preferences can be found in a separate tab on the main screen. ROM specific preferences can be found by right clicking a ROM name and selecting ROM Preferences – a new tab will appear and be automatically selected. The two different views are shown below, including a view with slot configurations for systems.





30.1 ROM Preferences

ROM preferences allow you to set preferences that are specific to a ROM file. This includes systems (e.g. ZX Spectrum, C64, etc), and even the programs that you run on those systems. A ROM specific INI file will be created and stored in the INI folder (This must be defined in the file paths window). When MAME runs the rom, it loads this INI file and any preferences found will take priority over the default preferences. This means that you can personalise any ROM preferences and have it remember those preferences for next time.

30.2 Slot Configuration & Bios Selection

Slots

This allows you to store system program specific slots (e.g. computer expansion cards). These can be saved per-system program, so for example different ZX Spectrum programs can have different slot configurations saved to take advantage of add-on-modules that provided speech, sound, joystick, etc.

There is an option to reset the slots to empty – this will erase any slot information and set the number of slots available based upon the XML information for the system type. There is also the option to reset the slots to default – this is similar to the reset slots to empty except that it erases the slots information and then loads any default settings that are noted in the XML file – this feature is not currently working perfectly (as of version 2.8) due to some consistency issues in how slots data are defined and used.

The Slots Configuration heading will make it clear if the slots have been loaded from the ROM INI file or set based upon default data in the XML file, or if they are just empty (No default info in the XMl file).

It is important to note that the XML file I refer to is created by MAME by running the -listxml option. This is all managed automatically by pfeMAME.

Bios

On the Slots & Bios tab there is a Bios drop down box that allows you to select the Bios (or in the case of old 8-Bit computers the actual ROM) that will be run when you run the ROM. As an example, it allows you to select Kickstart 3.1 ROM for the Amiga 500.

If nothing is found in the ROM specific INI file then the drop-down will default to the first Bios in the list.

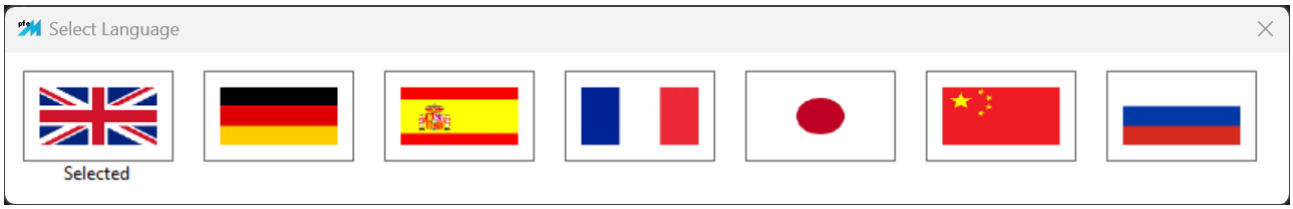
30.3 Manual Configuration

Any additional configuration options specific to a ROM or system can be stored here. This is useful for options that are not currently supported in pfeMAME, as well as cascading slots hardware.

31 LANGUAGES

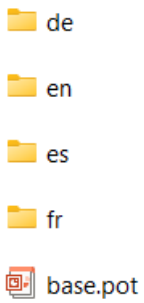
pfeMAME supports multiple languages, but it's not perfect. I'd say more of a work-in-progress.

When the application is run for the first time you are asked to select your language.



Once selected, if English is not your default language, then you will need to restart the application for the selected language to take effect. You can change this selection later from the pfeMAME preferences window.

Language support is managed through pythons' built-in features. The language files are stored in the 'locales' folder as per below.



I have used Google to perform automatic translations as I don't speak other languages and don't know anyone that can do this for me. If you're not happy with the translations (and I am sure they are not great as Google doesn't really understand context) then you can update them yourself. You need to edit the 'base.po' file that is located within the language folder. For French it would be here.

```
Locales
└── fr
    └── LC_MESSAGES
        ├── base.mo
        └── pase.po
```

The 'base.po' file is just a text file. You will find the English versions of messages listed with the translated versions underneath. Once updated, you need to run the 'create_mo_file.bat' file. This will convert the PO file into the binary MO file that python needs. NOTE: the batch file is only available from the distribution source.

Can I please ask that if you do update the translations that you send the updated translation file to pfemame@gmail.com so that I can update for the next release.

32 COMMAND LINE OPTIONS

When running pfeMAME, either from the development source or from the distribution build EXE files, you can include some command line arguments as per below.

```
pfemame -d
```

This puts the application into developer mode. This displays additional staged startup times of various parts of the application. This is used for startup improvements and finding bottlenecks.

```
pfemame -r romname
```

This causes the application to run the defined romname after startup is complete.

```
pfemame -novid
```

This suppresses all video playback features. This is useful for platforms that don't support video playback or if you are having issues with it and cannot get to the preferences menu to switch the playback feature off in time to prevent issues from arising.

```
pfemame -v
```

Displays various version information.

```
pfeMAME -c
```

Displays the total number of ROMs and the number of ROMs flagged as existing in the database file

```
pfeMAME -l language
```

Sets the application to the desired language (English, Spanish, German, French)

```
pfemame -h
```

Displays the available command line options.

33 DAT FILES

pfeMAME uses several DAT files to store information about ROMs. These include the files below.

- runs.dat
- favorites.dat
- watchlist.dat
- ratings.dat
- enginetouse.dat

You must not manually edit these files unless you are sure you know what you are doing. The most important thing is that the very last line should be blank, i.e. there must be a carriage return or linefeed after the very last line.

34 SOURCE FILES

Source files for pfeMAME are available from the sourceforge page.

35 LINUX FILE LOCATIONS

It can be difficult to find the MAME executable file in Linux. Under Ubuntu it is typically located at /usr/games. In the case of SNAP installs of MAME it could be in a few different places but almost always exists in the system $PATH variable so you can just execute it at the command line using 'mame'.

The MAME ini file is typically located in a hidden folder in your home directory called

.mame

(See the dot in front of the name).

36 REPORTING PROBLEMS, BUGS, ISSUES, IMPROVEMENTS

All suggestions for changes / improvements are welcome (No guarantee of implementing them though).

If you find a bug or problem, please do report it along with the following.

- Screen shot if possible
- Detailed description of what you saw / what happened and any events leading up to it
- Copy of the files below.
  - logfile.log
  - mylist.db
  - pfemame.ini
  - mame.ini
  - categories.dat
  - favorites.dat
  - watchlist.dat
  - ratings.dat
  - runs.dat

Send it to

pfemame@gmail.com

37 BUILDING PFEMAME FROM SOURCE

37.1 INSTALLING CX_FREEZE

Before you can build a distribution from the pfeMAME source, you need to install cx_Freeze. There are a few methods to do this as follows;

METHOD 1: Using PIP

```
pip install -U cx_Freeze
```

METHOD 2: Download the wheel for your version of python

This example is assuming you have python 3.7 and a 64-bit operating system. Download the cx_Freeze wheel listed below – NOTE: Always go for the latest version of cx_Freeze;

- cx_Freeze-5.1.1-cp37-cp37m-win_amd64.whl

METHOD 3: Download from GIT

This method seems to be the most reliable. Firstly, you have to go to GIT and download it. Then open a GIT bash prompt and execute the following.

```
pip install --upgrade git+https://github.com/anthony-
tuininga/cx_Freeze.git@master
```

NOTE:

If you are installing cx_Freeze under Linux and you encounter the following error.

```
/usr/bin/ld: cannot find -lz
collect2: error: ld returned 1 exit status
error: command 'x86_64-linux-gnu-gcc' failed with exit status 1
```

```
You are missing a file – install it using the following.
sudo apt install zlib1g-dev
```

37.2 Building for Mac OS

Ensure you have cx_freeze installed as per the section above.

Open a terminal window, change to the source folder you wish to build and execute the following (it is suggested you copy your source folder to a temporary folder so that you don't add unwanted build files to your main source folder).

```
python3 setup.py build
```

The deployment package will be transferred to a subfolder named 'build'. To run this under macOS you can either double-click the python executable file, or open a command prompt to the location of the files, and use the './pfemame' command to run the application.

37.3 Building for Linux

Ensure you have cx_freeze installed as per the section above.

```
python3 -m pip install cx_Freeze --upgrade
```

Open a terminal window, change to the source folder you wish to build and execute the following (it is suggested you copy your source folder to a temporary folder so that you don't add unwanted build files to your main source folder).

```
python3 setup.py build
```

The deployment package will be transferred to a subfolder named 'build'. To run this under Linux, open a command prompt to the location of the files, and use the './pfemame' command to run the application.

37.4 Building for Windows

To build pfeMAME from source under Windows, you must have the following installed.

- Python3
- wxPython phoenix
- cx_Freeze
- pywin32 extensions

Open the python folder (e.g. python3).

Copy your source files into this folder (Note: this isn't necessary if you have python set up in the system path so that you can invoke it from anywhere).

Run the setup.bat file included in the source files. This file invokes the cx_Freeze builder.

The deployment package will be transferred to a subfolder named 'build'. From there you can just copy them wherever you like and run the pfeMAME.exe file.

That's it. You should be able to run your pfeMAME application.

38 KNOWN ISSUES

38.1 KNOWN ISSUES SPECIFIC TO WINDOWS OPERATING SYSTEMS

- Startup can be a little slow (sometimes looks like nothing is happening). I have found no specific reason for it other than generic references to security software scanning it and slowing things down.

38.2 KNOWN ISSUES SPECIFIC TO LINUX OPERATING SYSTEMS

- Getting wxPython phoenix installed on Linux can be difficult at the best of times. There is a lot of information on the internet about how to do this. I have also written a procedure in this manual that always works for me.
- Video playback support is a problem now due to Wayland not being fully supported by all of the wxPython support modules. Specifically, mediactrl and python.vlc.

39 HELP WITH INSTALLING WXPYTHON PHOENIX IN LINUX

To use pfeMAME in Linux, you have to be running python3 (which comes with most distributions these days) and wxPython phoenix (4.0.0 and above). The new version of wxPython can be quite difficult to install in Linux as unlike windows, you may have to build it from source.

If you are lucky, a build for your platform will already exist. Check the link below and see what's available.

https://extras.wxpython.org/wxPython4/extras/linux/gtk3

Try to find the version that most closely matches your platform and install as shown below (I'm using Ubuntu 18.04 as an example. This installed just fine on my Ubuntu 19.04 box).

```
pip3 install -U -f
https://extras.wxpython.org/wxPython4/extras/linux/gtk3/ubuntu-18.04
wxPython
```

If this doesn't work, then you can try building from scratch. This comes will all sorts of dependency issues. I have listed below what I have been able to get working myself. If it doesn't work, then you need to look at the errors on the screen which should guide you toward the dependency that's missing. It is also important to point out that you are going to install wxPython under python3, NOT python2.7.

The following guide is based on using a virtual environment that is the best way to perform python library installs on Linux. On newer Linux variants, some distributions force you to use a virtual environment. I'm also advising you to use the latest Python so the instruction to download and install that is also included. NOTE: This will not replace the base Python version in your OS which would be very bad indeed.

Install the latest gtk library for python3:

```
sudo apt-get install python3-wxgtk4.0
```

Install some critical dependencies:

(NOTE: At present, to have video playback support in a system using Wayland, you need to install a different libgstreamer version than what is shown below. This is because the maintainers of Wxpython patched it to support the wrong gstreamer version – no idea why. Please use this version rather than what is shown below: `libgstreamer-plugins-bad1.0-dev`)

```
sudo apt-get install build-essential python3-dev libwebkit2gtk-4.1-dev
libtiff-dev libnotify-dev freeglut3-dev libsdl1.2-dev libgstreamer-
plugins-base1.0-dev
```

Install the Python PPA and install the latest version of Python (The example uses 3.12 but replace that with whatever version is the latest):

```
sudo apt install software-properties-common
sudo add-apt-repository ppa:deadsnakes/ppa
sudo apt update
sudo apt install python3.12
```

Install the virtual environment for the new version of Python and create a virtual environment folder (the example uses 'example-env' but name it whatever you like and put it wherever you want:

```
sudo apt-get install python3.12-venv
python3.12 -m venv example-env
```

Activate the virtual environment:

```
source example-env/bin/activate
```

Install wxPython:

The following will download & compile wxPython.

```
pip install wxPython
```

Note, if you get an error saying unable to find GTK+ then install the gtk dev library

```
sudo apt install libgtk-3-dev
```

Then run python using:

```
python3
```

Import wx using:

```
import wx
```

Check the version using;

```
wx.version()
```

If everything went well, you should have a valid wxPython version number. If it didn't go well then search the internet. The wxPython install log is pretty good at telling you what is missing as well so if you have any issues, please have a good read through the output of that log first.

When you are done, the following is how you disable the virtual environment:

```
deactivate
```

40 A NOTE ABOUT WINDOWS XP

If you plan to build a distribution from source yourself, the highest version of python that Windows XP supports is 3.4. I have tested that this works ok with wxPython phoenix, at least for now. You will need to alter quite a bit of code manually as pfeMAME incorporates new features not found in older versions of python.