

# How To Change Or Add Games In The Pandora's Box v3 Board

Text taken from <http://mengxipeng.blog.com/2015/08/07/how-to-change-or-add-games-in-pandoras-box-v3/>

First, I should say that the Pandora's Box v3 is a great item. This version supports CGA and VGA mode. If players use a CRT monitor, they can plug this board in a JAMMA harness, power on, and everything is OK. If players use a VGA monitor or an LCD TV, please plug this VGA wire in first then plug this board in JAMMA harness. This is because the board has two different programs to support VGA and CGA modes. When the board boots, it first detects whether VGA port is connected. If it is, it starts the VGA program. Otherwise, it starts the CGA program.

I have hacked this game board to allow you to change the built-in games. I bought my board from the link below:

<http://www.ebay.com/itm/540-in-1-arcade-cabinet-jamma-multi-games-board-VGA-CGA-output-for-LCD-CRT-/151764638296?hash=item2355e09a58>

PLEASE NOTE: I'm not sure whether this method will work on other Pandora's Box boards.

All data is stored in the TF card slot of the Pandora's Box v3 board including the software and games. This card has 2 partitions: partition 1 stores some boot files and is in FAT format, partition 2 stores all software and games and is in EXT3 format. So, we need to modify file in partition 2.

To add games, we need to prepare 4 files:

1. Game title image in selected mode, must be in .PNG format  
located in folder `/usr/apprc/resources-hres/name/select/`
2. Game title image in unselected mode, must be in .PNG format  
located in folder `/usr/apprc/resources-hres/name/unselect/`
3. Game intro video, must be in .FLV format  
located in folder `/usr/app/movies/`
4. Game ROM file, must be in .ZIP format  
located in folder `/usr/app/roms/`

Fortunately, we do not need not to prepare all the files for the board to run. Only the game rom file is required. If the other files are missing, the program will not crash.

I checked the game ROMs folder (located at `/usr/app/roms/`) and it has 650+ files but this game board only shows 520 games. So, I guess the manufacturer has hidden some of the games. I tried to play one of the hidden games. It has an entry for Black Tiger in the game intro video folder. The rom for the game (named `blktiger`) is also located in the correct folder but I could not find the title images. This is when I discovered that there is another file named "list.dat" in the folder `/usr/apprc/resources-hres/` and `/usr/apprc/resources-lres/` that allows you to change the available games on this board.

Here is the format of the "list.dat" file:

1. The first 16 byte is file header  
bytes 0-3 is 0x10  
bytes 4-7 is 0xfd20 (this is the game count related number, if we have 540 games this number is equal to  $(540 \ll 32 \ll 6) / 0x88888889$ )
2. The rest of this file is the games list (0x78 bytes for one game)  
for every game item:  
bytes 0-0x3f is the Chinese name of the game  
bytes 0x40-0x5f is the English name of the game  
bytes 0x60-0x6f is the rom name of the game  
bytes 0x70-0x78 I don't know what these bytes means. I just used the bytes from the kof97 game entry for my added game blktiger

I added Black Tiger in the first game slot on the board using this method and everything is OK. I can play the game fine with no problems. Since the titles were missing, those didn't show up on the selection screen but the game plays fine. The Pandora's Box v3 board uses Final Burn Alpha to emulate games. I check FBA's official website and it should support 1000+ games.