

**NAME**

**rgbfix** — Game Boy header utility and checksum fixer

**SYNOPSIS**

```
rgbfix [-jsVv] [-C | -c] [-f fix_spec] [-i game_id] [-k licensee_str]
      [-l licensee_id] [-m mbc_type] [-n rom_version] [-p pad_value]
      [-r ram_size] [-t title_str] [file ...]
```

**DESCRIPTION**

The **rgbfix** program changes headers of Game Boy ROM images, typically generated by **rgbblink(1)**, though it will work with *any* Game Boy ROM. It also performs other correctness operations, such as padding. **rgbfix** only changes the fields for which it has values specified. Developers are advised to fill those fields with 0x00 bytes in their source code before running **rgbfix**, and to have already populated whichever fields they don't specify using **rgbfix**.

Note that options can be abbreviated as long as the abbreviation is unambiguous: **--color-o** is **--color-only**, but **--color** is invalid because it could also be **--color-compatible**. Options later in the command line override those set earlier. Accepted options are as follows:

**-C, --color-only**

Set the Game Boy Color-only flag (0x143) to 0xC0. This overrides **-c** if it was set prior.

**-c, --color-compatible**

Set the Game Boy Color-compatible flag: (0x143) to 0x80. This overrides **-c** if it was set prior.

**-f *fix\_spec*, --fix-spec *fix\_spec***

Fix certain header values that the Game Boy checks for correctness. Alternatively, intentionally trash these values by writing their binary inverse instead. *fix\_spec* is a string containing any combination of the following characters:

- l** Fix the Nintendo logo (0x104–0x133).
- L** Trash the Nintendo logo.
- h** Fix the header checksum (0x14D).
- H** Trash the header checksum.
- g** Fix the global checksum (0x14E–0x14F).
- G** Trash the global checksum.

**-i *game\_id*, --game-id *game\_id***

Set the game ID string (0x13F–0x142) to a given string. If it's longer than 4 chars, it will be truncated, and a warning emitted.

**-j, --non-japanese**

Set the non-Japanese region flag (0x14A) to 0x01.

**-k *licensee\_str*, --new-licensee *licensee\_str***

Set the new licensee string (0x144–0x145) to a given string. If it's longer than 2 chars, it will be truncated, and a warning emitted.

**-l *licensee\_id*, --old-licensee *licensee\_id***

Set the old licensee code (0x14B) to a given value from 0 to 0xFF. This value is deprecated and should be set to 0x33 in all new software.

**-m *mbc\_type*, --mbc-type *mbc\_type***

Set the MBC type (0x147) to a given value from 0 to 0xFF. This value may also be an MBC name from the Pan Docs.

- n** *rom\_version*, **--rom-version** *rom\_version*  
Set the ROM version (*0x14C*) to a given value from 0 to 0xFF.
- p** *pad\_value*, **--pad-value** *pad\_value*  
Pad the ROM image to a valid size with a given pad value from 0 to 255 (0xFF). **rgbfix** will automatically pick a size from 32 KiB, 64 KiB, 128 KiB, ..., 8192 KiB. The cartridge size byte (*0x148*) will be changed to reflect this new size. The recommended padding value is 0xFF, to speed up writing the ROM to flash chips, and to avoid "nop slides" into VRAM.
- r** *ram\_size*, **--ram-size** *ram\_size*  
Set the RAM size (*0x149*) to a given value from 0 to 0xFF.
- s**, **--sgb-compatible**  
Set the SGB flag (*0x146*) to 0x03. This flag will be ignored by the SGB unless the old licensee code is 0x33! If this is given as well as **-l**, but is not set to 0x33, a warning will be printed.
- t** *title*, **--title** *title*  
Set the title string (*0x134–0x143*) to a given string. If the title is longer than the max length, it will be truncated, and a warning emitted. The max length is 11 characters if the game ID (**-i**) is specified, 15 characters if the CGB flag (**-c** or **-C**) is specified but the game ID is not, and 16 characters otherwise.
- v**, **--version**  
Print the version of the program and exit.
- v**, **--validate**  
Equivalent to **-f lhg**.

## EXAMPLES

Most values in the ROM header do not matter to the actual console, and most are seldom useful anyway. The bare minimum requirements for a workable program are the header checksum, the Nintendo logo, and (if needed) the CGB/SGB flags. It is a good idea to pad the image to a valid size as well (“valid” meaning a power of 2, times 32 KiB).

The following will make a plain, non-color Game Boy game without checking for a valid size:

```
$ rgbfix -v foo.gb
```

The following will make a SGB-enabled, color-enabled game with a title of “foobar”, and pad it to a valid size. (The Game Boy itself does not use the title, but some emulators or ROM managers do.)

```
$ rgbfix -vcs -l 0x33 -p 255 -t foobar baz.gb
```

The following will duplicate the header of the game “Survival Kids”, sans global checksum:

```
$ rgbfix -cjsv -k A4 -l 0x33 -m 0x1B -p 0xFF -r 3 -t SURVIVALKIDAVKE SurvivalKids.gbc
```

## BUGS

Please report bugs on *GitHub*: <https://github.com/gbdev/rgbds/issues>.

## SEE ALSO

`rgbasm(1)`, `rgblink(1)`, `rgbds(7)`

## HISTORY

**rgbfix** was originally released by Carsten Sørensen as a standalone program called `gbfix`, and was later packaged in RGBDS by Justin Lloyd. It is now maintained by a number of contributors at <https://github.com/gbdev/rgbds>