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 rgblink(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**