

Replace transparency in PNG images with white background

Asked 10 years, 3 months ago Active 4 months ago Viewed 188k times

293

I've got some PNG images with transparency, and I need to create versions with the image layer composed onto a white background. I've tried various things with Image Magick "convert" operations, but either nothing happens at all or I get an error. I don't want to go to an intermediate JPG form because I don't want the artifacts. Of course it's easy to do this in Gimp or Photoshop or whatever, but I'd really rather script it from the command line because there are many of these things.

63

An example of a non-working Image Magick command is:



```
convert img1.png -background white -flatten img1-white.png
```

That results in an error.

Thanks!

[png](#) [imagemagick](#) [alpha-transparency](#)

asked Feb 24 '10 at 0:04



[Pointy](#)

352k

51

499

559



In my specific case the transparency layer in PNG conflicted when going through a (Apache) FO processor to create a PDF/A. PDF/A does not allow transparency. The hack I used is to turn to JPG instead. – [Wivani](#) May 19 '14 at 12:03

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"That results in an error." What is the error message? – [Aaron McDaid](#) Nov 28 '16 at 12:49



That command should work fine. If it does not, then you may have a buggy install of Imagemagick or libpng or your versions of either are too old. What is your version of Imagemagick and libpng? – [fmw42](#) Sep 12 '18 at 16:41

16 Answers

Active	Oldest	Votes
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253

This works for me:

```
convert -flatten img1.png img1-white.png
```

Documentation references:



- [-flatten command-line option](#)
- [-layers command-line option](#) (`-flatten` is equivalent to `-layers flatten`)



edited Sep 21 '16 at 16:34

answered Feb 24 '10 at 0:27



Flimm

81.8k 28 174 186



remosu

4,403 1 20 16

- 3 ▲ Somehow this doesn't work for me... I tried "-transparent-color white", but got an exception/warning. – William Niu Aug 9 '10 at 4:49
- 1 ▲ It turns out that I need to set the -background to white as well. I also had to download the colors.xml, which was missing. – William Niu Aug 9 '10 at 4:59
- 9 ▲ Check out my answer below. It was added 2 years after this one. – Rok Kralj Apr 3 '13 at 8:34
- 42 ▲ **DO NOT** try to convert multi-page documents with `-flatten`. It will flatten the pages into one page. – Tim S. May 28 '15 at 15:39
- 8 ▲ If you want to do it on all files from your folder you can do it this way: `mogrify -flatten *.png` just in case, do not forget to do backup. More info here: imagemagick.org/script/mogrify.php – troyane Jun 22 '17 at 17:28

|



`-background white -alpha remove -alpha off`

372

Example:



`convert image.png -background white -alpha remove -alpha off white.png`



Feel free to replace `white` with any other color you want. Imagemagick documentation says this about the [-alpha remove](#) operation:

This operation is simple and fast, and does the job without needing any extra memory use, or other side effects that may be associated with alternative transparency removal techniques. **It is thus the preferred way of removing image transparency.**

edited Mar 27 '19 at 22:48

answered Dec 8 '11 at 20:53



Rok Kralj

37.8k 9 58 74

- 3 ▲ Seems that `-background white` is not needed (it likely is for other colors though). – Skippy le Grand Gourou Oct 13 '15 at 15:23
- 5 ▲ @SkippyleGrandGourou: It is needed, as the transparency fallback color for PNG is not always white. – Rok Kralj Oct 14 '15 at 11:35
- 3 ▲ better than the accepted answer (which in case of more than one layer doesn't do the right thing) – axkibe Sep 28 '17 at 13:01
- 5 ▲ The resulting image will still have an alpha channel. It will be empty but it will still be there. To completely remove the channel add `-alpha off`. – josch Mar 27 '18 at 6:46
- 2 ▲ Doesn't work. I made a new PNG with a transparent background and a red dot in the middle. Always

produced a black background, no matter what color I specified. `convert image.png -background white -alpha off white.png` produced an image with a black background. `convert image.png -background "#00ff33" -alpha off 00ff33.png` produced a black background – [McNulty](#) Dec 17 '18 at 4:38

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Flattening image and applying background image is straight forward in ImageMagick

46

However, order of the commands is very important

To apply any background on a transparent image and flatten it, first apply the background than flatten it. The reverse doesn't work.



```
$ convert sourceimage.png -background BackgroundColor -flatten  
destinationimage.png
```

answered Jun 6 '11 at 15:13



[acpmasquerade](#)

1,692 1 16 14



For whatever reason, this worked fine for me. Not sure why your original attempt didn't work. – [Anthony](#)

Mar 26 '14 at 5:10

The only one that worked for me was a mix of all the answers:

23

```
convert in.png -background white -alpha remove -flatten -alpha off out.png
```



answered Feb 16 '15 at 3:51



[db0](#)

2,984 3 19 24

4 Cool, that worked. I actually needed another color than white and you can use `... -background "#010203" ...` instead of using white. – [Alexis Wilke](#) May 1 '15 at 23:18



here's how to replace the same image in all folders in a directory `mogrify -background white -flatten */*.png` – [Julian](#) Sep 28 '16 at 1:53



`-alpha remove` was what did it for me – [Stefan Dragnev](#) Nov 15 '18 at 14:07

here's how to replace the same image in all folders in a directory with white instead of transparent:

13

```
mogrify -background white -flatten */*.png
```

answered Sep 28 '16 at 4:04



Julian

880 1 11 22



10



Using `-flatten` made me completely mad because `-flatten` in combination with `mogrify crop` and `resizing` simply doesn't work. The official and for me only correct way is to "remove" the alpha channel.

`-alpha remove -alpha off` (not needed with JPG)



See documentation: <http://www.imagemagick.org/Usage/masking/#remove>



answered Apr 21 '14 at 10:07



Tjarko Rikkerink

109 1 2

▲ so how would become the command? this did not work here: `convert imgWithTranspBkg.png -alpha remove -alpha off bkg.jpg resultImg.png` – [Aquarius Power](#) Jun 30 '14 at 18:39

▲ I only wanted to remove alpha. Convert to JPG did it, nice and easy. Thanks for the tip. – [Roger C S Wernersson](#) Nov 14 '14 at 12:18 ✎

▲ This is the only solution of the above that worked for me. Now the iTunes store is happy with my image. – [Bill Cheswick](#) Jan 2 '15 at 3:34



7



The [Alpha Remove](#) section of the [ImageMagick Usage Guide](#) suggests using the `-alpha remove` option, e.g.:

```
convert in.png -background white -alpha remove out.png
```



...using the `-background` color of your choosing.



The guide states:

This operation is simple and fast, and does the job without needing any extra memory use, or other side effects that may be associated with alternative transparency removal techniques. It is thus the preferred way of removing image transparency.

It additionally adds the note:

Note that while transparency is 'removed' the alpha channel will remain turned on, but will now be fully-opaque. If you no longer need the alpha channel you can then use `Alpha Off` to disable it.

Thus, if you do not need the alpha channel you can make your output image size smaller by adding the `-alpha off` option, e.g.:

```
convert in.png -background white -alpha remove -alpha off out.png
```

There are more details on other, often-used techniques for removing transparency described in the [Removing Transparency from Images](#) section.

Included in that section is mention of an important caveat to the usage of `-flatten` as a technique for removing transparency:

However this will not work with "mogrify" or with a sequence of multiple images, basically because the "-flatten" operator is really designed to merge multiple images into a single image.

So, if you are converting several images at once, e.g. generating thumbnails from a PDF file, `-flatten` will not do what you want (it will flatten all images for all pages into one image). On the other hand, using the `-alpha remove` technique will still produce multiple images, each one having transparency removed.

answered Jun 22 '16 at 16:37



[Gary](#)

2,645 20 17

This is not exactly the answer to your question, but I found your question while trying to figure out how to remove the alpha channel, so I decided to add this answer here:

5

If you want to remove alpha channel using imagemagick, you can use this command:

```
mogrify -alpha off ./*.png
```

answered Apr 17 '15 at 8:22



[FreeNickname](#)

6,984 2 22 54

It appears that your command is correct so the problem might be due to missing support for PNG (). You can check with `convert -list configure` or just try the following:

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```
sudo yum install libpng libpng-devel
```

answered Jul 1 '13 at 11:10



[Alastair](#)

6,143 3 32 29

1 Yes, thanks; this (old) issue was a bug in "graphicks magick", which is a fork/rewrite/whatever of "image magick". – [Pointy](#) Jul 1 '13 at 13:40

@Pointy I see! Out of curiosity, what was the actual cause of the issue (that was only in one version)? – [Alastair](#) Jul 2 '13 at 2:24

Well I really don't know exactly; it was just a bug. I'm not a maintainer of Graphicks Magick so I have no insight into their code. I need to try again at some point I guess. – [Pointy](#) Jul 2 '13 at 3:11



ubuntu doesnt have it? here is libpng12-0 but still doesnt work :(– [Aquarius Power](#) Jun 30 '14 at 18:36



I'm using Ubuntu 13.04 with `libpng12-0` installed and working. Can you see png if you run this?

`convert -list configure | grep \png` – [Alastair](#) Jul 8 '14 at 10:49



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Welp it looks like my decision to install "graphics magick" over "image magick" has some rough edges - when I reinstall genuine crufty old "image magick", then the above command works perfectly well.



edit, a long time later — One of these days I'll check to see if "graphics magick" has fixed this issue.



edited May 17 '13 at 20:42

answered Feb 24 '10 at 0:21



[Pointy](#)

352k

51

499

559



2

I needed either: both `-alpha background` and `-flatten`, or `-fill`.

I made a new PNG with a transparent background and a red dot in the middle.



`convert image.png -background green -alpha off green.png` failed: it produced an image with black background



`convert image.png -background green -alpha background -flatten green.png` produced an image with the correct green background.

Of course, with another file that I renamed `image.png`, it failed to do anything. For that file, I found that the color of the transparent pixels was "#d5d5d5" so I filled that color with green:

`convert image.png -fill green -opaque "#d5d5d5" green.png` replaced the transparent pixels with the correct green.

edited Dec 17 '18 at 5:32

answered Dec 17 '18 at 4:48



[McNulty](#)

319

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the proper command with current ImageMagick would be `convert image.png -background green -alpha background -alpha off green.png` or `convert image.png -background green -alpha background -alpha remove green.png` or `convert image.png -background green -flatten green.png` – [fmw42](#) Dec 17 '18 at 6:35



1

Non-command line option: open the PNG file in Windows Paint and click Save.



answered Feb 12 at 23:02



[hber](#)

81

1

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To actually remove the alpha channel from the file, use the [alpha off](#) option:

0

```
convert in.png -background white -alpha off out.png
```

answered Sep 9 '14 at 15:41



[Nick Dowell](#)

1,857 16 17

1 Actually, the link you provided says: "It does not actually delete or destroy the alpha channel attached to the image, it just turns off any effect that channel has on the image." To really remove the alpha channel, see my answer. – [Rok Kralj](#) Nov 6 '15 at 9:09



0

I saw this question and answers which really help me but then I was needed to do it for a lot of files, So in case you have multiple images (PNG images) in one folder and you want to do it for all:

```
find ./ -name "*.png" -exec convert {} -flatten {} \;
```

answered Sep 12 '18 at 15:52



[talsibony](#)

6,578 4 36 37



0

this creates an image just placing the 1st with transparency on top of the 2nd

```
composite -gravity center ImgWithTransp.png BackgroundSameSizeOfImg.png  
ResultImg.png
```

originally found the tip on [this post](#)

edited Jul 9 '14 at 8:52

answered Jun 30 '14 at 18:46



[Aquarius Power](#)

2,802 4 24 52



-1

It's -alpha off, NOT -alpha remove! iOS app store upload fails when there is an alpha channel in any icon!!

Here's how to do it: mogrify -alpha off *.png

answered Nov 13 '18 at 23:54



[railsfanatic](#)

59 1 4

