

## NAME

convert - convert between image formats as well as resize an image, blur, crop, despeckle, dither, draw on, flip, join, re-sample, and much more.

## SYNOPSIS

**convert** [*input-options*] *input-file* [*output-options*] *output-file*

## OVERVIEW

The **convert** program is a member of the ImageMagick(1) suite of tools. Use it to convert between image formats as well as resize an image, blur, crop, despeckle, dither, draw on, flip, join, re-sample, and much more.

For more information about the convert command, point your browser to <file:///usr/local/share/doc/ImageMagick-7/www/convert.html> or <http://imagemagick.org/script/convert.php>.

## DESCRIPTION

Image Settings:

- adjoin           join images into a single multi-image file
- affine matrix    affine transform matrix
- alpha option     activate, deactivate, reset, or set the alpha channel
- antialias        remove pixel-aliasing
- authenticate value   decrypt image with this password
- attenuate value   lessen (or intensify) when adding noise to an image
- background color  background color
- bias value       add bias when convolving an image
- black-point-compensation  
                  use black point compensation
- blue-primary point   chromaticity blue primary point
- bordercolor color  border color
- caption string    assign a caption to an image
- cdl filename     color correct with a color decision list
- clip             clip along the first path from the 8BIM profile
- clip-mask filename  associate a clip mask with the image
- clip-path id      clip along a named path from the 8BIM profile
- colorspace type   alternate image colorspace
- comment string    annotate image with comment
- compose operator  set image composite operator
- compress type     type of pixel compression when writing the image
- decipher filename  convert cipher pixels to plain pixels

-define format:option  
    define one or more image format options

-delay centiseconds display the next image after pausing

-density geometry horizontal and vertical density of the image

-depth value image depth

-direction type render text right-to-left or left-to-right

-display server get image or font from this X server

-dispose method layer disposal method

-dither method apply error diffusion to image

-encipher filename convert plain pixels to cipher pixels

-encoding type text encoding type

-endian type endianness (MSB or LSB) of the image

-family name render text with this font family

-features distance analyze image features (e.g. contrast, correlation)

-fill color color to use when filling a graphic primitive

-filter type use this filter when resizing an image

-flatten flatten a sequence of images

-font name render text with this font

-format "string" output formatted image characteristics

-fuzz distance colors within this distance are considered equal

-gravity type horizontal and vertical text placement

-green-primary point chromaticity green primary point

-intensity method method to generate intensity value from pixel

-intent type type of rendering intent when managing the image color

-interlace type type of image interlacing scheme

-interline-spacing value  
    set the space between two text lines

-interpolate method pixel color interpolation method

-interword-spacing value  
    set the space between two words

-kerning value set the space between two letters

-label string assign a label to an image

-limit type value pixel cache resource limit

-loop iterations add Netscape loop extension to your GIF animation

-matte store matte channel if the image has one

-mattecolor color frame color

-metric type measure differences between images with this metric

-moments report image moments

-monitor monitor progress

-orient type image orientation

- page geometry     size and location of an image canvas (setting)
- ping             efficiently determine image attributes
- pointsize value   font point size
- precision value   maximum number of significant digits to print
- preview type      image preview type
- quality value     JPEG/MIFF/PNG compression level
- quiet             suppress all warning messages
- read-mask filename associate a read mask with the image
- red-primary point  chromaticity red primary point
- regard-warnings   pay attention to warning messages
- remap filename    transform image colors to match this set of colors
- repage geometry   size and location of an image canvas
- respect-parentheses settings remain in effect until parenthesis boundary
- sampling-factor geometry  
                  horizontal and vertical sampling factor
- scene value       image scene number
- seed value        seed a new sequence of pseudo-random numbers
- size geometry     width and height of image
- statistic type geometry  
                  replace each pixel with corresponding statistic from the neighborhood
- stretch type      render text with this font stretch
- stroke color      graphic primitive stroke color
- strokewidth value graphic primitive stroke width
- style type        render text with this font style
- support factor    resize support: > 1.0 is blurry, < 1.0 is sharp
- synchronize      synchronize image to storage device
- taint             declare the image as modified
- texture filename  name of texture to tile onto the image background
- tile-offset geometry  
                  tile offset
- treedepth value   color tree depth
- transparent-color color  
                  transparent color
- undercolor color  annotation bounding box color
- units type        the units of image resolution
- verbose           print detailed information about the image
- virtual-pixel method  
                  virtual pixel access method
- weight type       render text with this font weight
- white-point point chromaticity white point

-write-mask filename associate a write mask with the image

#### Image Operators:

-adaptive-blur geometry

adaptively blur pixels; decrease effect near edges

-adaptive-resize geometry

adaptively resize image with data dependent triangulation

-adaptive-sharpen geometry

adaptively sharpen pixels; increase effect near edges

-annotate geometry text

annotate the image with text

-auto-gamma automatically adjust gamma level of image

-auto-level automatically adjust color levels of image

-auto-orient automatically orient image

-auto-threshold method

automatically perform image thresholding

-bench iterations measure performance

-bilateral-blur geometry

non-linear, edge-preserving, and noise-reducing smoothing filter

-black-threshold value

force all pixels below the threshold into black

-blue-shift factor simulate a scene at nighttime in the moonlight

-blur geometry reduce image noise and reduce detail levels

-border geometry surround image with a border of color

-brightness-contrast geometry

improve brightness / contrast of the image

-canny geometry detect edges in the image

-channel mask set the image channel mask

-charcoal radius simulate a charcoal drawing

-chop geometry remove pixels from the image interior

-clahe geometry contrast limited adaptive histogram equalization

-clamp keep pixel values in range (0-QuantumRange)

-clip clip along the first path from the 8BIM profile

-clip-mask filename associate a clip mask with the image

-clip-path id clip along a named path from the 8BIM profile

-colorize value colorize the image with the fill color

-color-matrix matrix apply color correction to the image

-colors value preferred number of colors in the image

-color-threshold start\_color-stop\_color

force all pixels in the color range to white otherwise black

- connected-component connectivity
  - connected-components uniquely labeled
- contrast enhance or reduce the image contrast
- contrast-stretch geometry
  - improve contrast by 'stretching' the intensity range
- convolve coefficients
  - apply a convolution kernel to the image
- cycle amount cycle the image colormap
- deskew threshold straighten an image
- despeckle reduce the speckles within an image
- distort method args
  - distort images according to given method and args
- draw string annotate the image with a graphic primitive
- edge radius apply a filter to detect edges in the image
- emboss radius emboss an image
- enhance apply a digital filter to enhance a noisy image
- equalize perform histogram equalization to an image
- evaluate operator value
  - evaluate an arithmetic, relational, or logical expression
- extent geometry set the image size
- extract geometry extract area from image
- fft implements the discrete Fourier transform (DFT)
- flip flip image vertically
- floodfill geometry color
  - floodfill the image with color
- flop flop image horizontally
- frame geometry surround image with an ornamental border
- function name apply a function to the image
- gamma value level of gamma correction
- gaussian-blur geometry
  - reduce image noise and reduce detail levels
- geometry geometry preferred size or location of the image
- grayscale method convert image to grayscale
- hough-lines geometry
  - identify lines in the image
- identify identify the format and characteristics of the image
- ift implements the inverse discrete Fourier transform (DFT)
- implode amount implode image pixels about the center
- integral calculate the sum of values (pixel values) in the image
- interpolative-resize geometry

- resize image using interpolation
- kmeans geometry K means color reduction
- lat geometry local adaptive thresholding
- layers method optimize or compare image layers
- level value adjust the level of image contrast
- level-colors color,color
  - level image with the given colors
- linear-stretch geometry
  - improve contrast by 'stretching with saturation' the intensity range
- liquid-rescale geometry
  - rescale image with seam-carving
- mean-shift geometry delineate arbitrarily shaped clusters in the image
- median geometry apply a median filter to the image
- mode geometry make each pixel the 'predominant color' of the neighborhood
- modulate value vary the brightness, saturation, and hue
- monochrome transform image to black and white
- morphology method kernel
  - apply a morphology method to the image
- motion-blur geometry
  - simulate motion blur
- negate replace each pixel with its complementary color
- noise geometry add or reduce noise in an image
- normalize transform image to span the full range of colors
- opaque color change this color to the fill color
- ordered-dither NxN
  - add a noise pattern to the image with specific amplitudes
- paint radius simulate an oil painting
- perceptible epsilon
  - pixel value less than |epsilon| become epsilon or -epsilon
- polaroid angle simulate a Polaroid picture
- posterize levels reduce the image to a limited number of color levels
- print string interpret string and print to console
- profile filename add, delete, or apply an image profile
- quantize colorspace reduce colors in this colorspace
- radial-blur angle radial blur the image
- raise value lighten/darken image edges to create a 3-D effect
- random-threshold low,high
  - random threshold the image
- range-threshold values
  - perform either hard or soft thresholding within some range of values in an image

- region geometry apply options to a portion of the image
- render render vector graphics
- resample geometry change the resolution of an image
- resize geometry resize the image
- roll geometry roll an image vertically or horizontally
- rotate degrees apply Paeth rotation to the image
- sample geometry scale image with pixel sampling
- scale geometry scale the image
- segment values segment an image
- selective-blur geometry
  - selectively blur pixels within a contrast threshold
- sepia-tone threshold
  - simulate a sepia-toned photo
- set property value set an image property
- shade degrees shade the image using a distant light source
- shadow geometry simulate an image shadow
- sharpen geometry sharpen the image
- shave geometry shave pixels from the image edges
- shear geometry slide one edge of the image along the X or Y axis
- sigmoidal-contrast geometry
  - lightness rescaling using sigmoidal contrast enhancement
- sketch geometry simulate a pencil sketch
- solarize threshold negate all pixels above the threshold level
- sort-pixels sort each scanline in ascending order of intensity
- sparse-color method args
  - fill in a image based on a few color points
- splice geometry splice the background color into the image
- spread amount displace image pixels by a random amount
- strip strip image of all profiles and comments
- swirl degrees swirl image pixels about the center
- threshold value threshold the image
- thumbnail geometry create a thumbnail of the image
- tile filename tile image when filling a graphic primitive
- tint value tint the image with the fill color
- transform affine transform image
- transparent color make this color transparent within the image
- transpose flip image vertically and rotate 90 degrees
- transverse flop image horizontally and rotate 270 degrees
- trim trim image edges
- type type image type

- unique-colors    discard all but one of any pixel color
- unsharp geometry    sharpen the image
- vignette geometry    soften the edges of the image in vignette style
- wave geometry    alter an image along a sine wave
- wavelet-denoise threshold  
                      removes noise from the image using a wavelet transform
- white-balance    automatically adjust white balance of image
- white-threshold value  
                      force all pixels above the threshold into white

#### Image Channel Operators:

- channel-fx expression  
                      exchange, extract, or transfer one or more image channels
- separate        separate an image channel into a grayscale image

#### Image Sequence Operators:

- append        append an image sequence top to bottom (use +append for left to right)
- clut         apply a color lookup table to the image
- coalesce     merge a sequence of images
- combine     combine a sequence of images
- compare     mathematically and visually annotate the difference between an image and its reconstruction
- complex operator    perform complex mathematics on an image sequence
- composite    composite image
- copy geometry offset,  
                      copy pixels from one area of an image to another
- crop geometry    cut out a rectangular region of the image
- deconstruct    break down an image sequence into constituent parts
- evaluate-sequence operator  
                      evaluate an arithmetic, relational, or logical expression
- flatten     flatten a sequence of images
- fx expression    apply mathematical expression to an image channel(s)
- hald-clut    apply a Hald color lookup table to the image
- morph value    morph an image sequence
- mosaic      create a mosaic from an image sequence
- poly terms    build a polynomial from the image sequence and the corresponding terms (coefficients and degree pairs)
- process arguments    process the image with a custom image filter
- smush geometry    smush an image sequence together
- write filename    write images to this file



**Image Stack Operators:**

- clone indexes    clone an image
- delete indexes    delete the image from the image sequence
- duplicate count,indexes  
                  duplicate an image one or more times
- insert index      insert last image into the image sequence
- reverse            reverse image sequence
- swap indexes      swap two images in the image sequence

**Miscellaneous Options:**

- debug events      display copious debugging information
- distribute-cache port  
                  distributed pixel cache spanning one or more servers
- help              print program options
- log format        format of debugging information
- list type         print a list of supported option arguments
- version           print version information

Use any setting or operator as an *output-option*. Only a limited number of settings are *input-option*. They include: -antialias, -caption, -density, -define, -encoding, -font, -pointsize, -size, and -texture as well as any of the miscellaneous options.

By default, the image format of 'file' is determined by its magic number. To specify a particular image format, precede the filename with an image format name and a colon (i.e. ps:image) or specify the image type as the filename suffix (i.e. image.ps). Specify 'file' as '-' for standard input or output.

**SEE ALSO**

ImageMagick(1)

**COPYRIGHT**

**Copyright (C) 1999-2021 ImageMagick Studio LLC. Additional copyrights and licenses apply to this software, see <file:///usr/local/share/doc/ImageMagick-7/www/license.html> or <http://imagemagick.org/script/license.php>**