



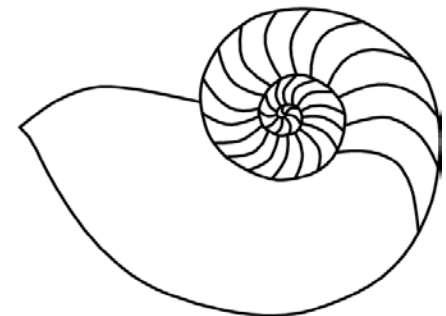
UNIVERSITY
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Computer Science

UNIX Command RTFM: ImageMagick convert(1)

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Compare to Netpbm Suite

Commands	Purpose	Examples
*top?m	Convert foreign formats to p?m	jpegtopnm, pstopnm
p?m* (w/o "to")	Processing p?m files	pnmrotate, pamscale
p?mto*	Convert p?m formats to foreign formats	ppmtogif, pnmtopng

P?m... WTF?

Extension	Full Name	Content
pbm	Portable Bit Map	Single-bit (“bilevel”) B/W images
pgm	Portable Gray Map	Multi-bit (up to 16) greyscale images
ppm	Portable Pixel Map	Multi-bit RGB (up to 3x16) images
pnm	Portable Any Map	Abstraction of above formats
pam	Portable Arbitrary Map	Higher-level abstraction

Not to be confused with PNG...

- Newer, incompatible format
 - Portable Network Graphics
- More widely adopted
 - Meant as a replacement for GIF, but not entirely so
- Support for meta-data
 - No standard EXIF support, but can be embedded
- Support for compressed data
 - DEFLATE (non-patented, lossless)
- Convert with pngtopnm/pnmtopng

Netpbm features/flaws

- Simple set of filter commands
 - Very UNIX-like pipeline structure
- Quite old now, but still supported
 - Mostly on UNIX hosts, but ported to others (Windows)
- Various formats can be confusing to remember
- Large, uncompressed data formats
- Some loss of information
 - No EXIF support (e.g. for JPEG)

ImageMagick Approach



- Fewer, more monolithic commands
 - Not very UNIX-like options, no pipelining
- Still actively supported, and ported
 - UNIX/Linux, MacOS X, Windows, iOS, Android,...
- All commands use same *libMagick*
 - All work on same file formats
- Support for all common image formats
- “convert” command does heavy lifting:
 - Format conversions
 - Image manipulation (scale, rotate, crop, etc.)
 - Preserves EXIF data when possible (e.g. for JPEG)

convert(1) Man Page

■ 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-file [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/share/doc/ImageMagick-6.2.8/www/convert.html> or <http://www.imagemagick.org/script/convert.php>.

- Run “convert –help” to get a summary of the convert command options.

■ SEE-ALSO

- ImageMagick(1)

■ COPYRIGHT

- Copyright (C) 1999-2005 ImageMagick Studio LLC. Additional copyrights and licenses apply to this software, see <http://www.imagemagick.org/script/license.php>



ImageMagick **convert** Features

- Auto-detect input file format
 - Many image formats supported
 - Can override with file extension
 - Can override with “*format:*” prefix
- Output file extension determines format
- Std. in/out specified using “-”
- Non-getopt compatible options
 - Single hyphen followed by keyword
- Can chain multiple options for multiple conversions

ImageMagick **convert** Options

- **-append** (*join images top-to-bottom*)
- **+append** (*left-to-right*)
- **-crop** *geometry*
- **-flip/-flop** (*vert./horiz. mirroring*)
- **-rotate** *degrees* (*clockwise rotation*)
- **-resize** *geometry*
- **-quality** *percent* (*for JPEG compression*)
- ... and many, many more...



ImageMagick Demo

- **convert** command:

- Format conversion (e.g. EPS to GIF)
- Flip/flop
- Rotate (positive and negative angles)
- Resize

- **display** command

- **identify** command



Questions?