

JPEG image compression FAQ, part 2/2

Newsgroups: [comp.graphics.misc](#), [comp.infosystems.www.authoring.images](#), [comp.answers](#)
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This article answers Frequently Asked Questions about JPEG image compression. This is part 2, covering system-specific hints and program recommendations for a variety of computer systems. Part 1 covers general questions and answers about JPEG. As always, suggestions for improvement of this FAQ are welcome.

New since version of 14 March 1999:

- * Added entries for PIE (Windows digicam utility) and Cameraid (Macintosh digicam utility).
- * New version of VuePrint (7.3).

This article includes the following sections:

General info:

- [1] What is covered in this FAQ?
- [2] How do I retrieve these programs?

Programs and hints for specific systems:

- [3] X Windows
- [4] Unix (without X)
- [5] MS-DOS

- [6] Microsoft Windows
- [7] OS/2
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- [11] Acorn Archimedes
- [12] NeXT
- [13] Tcl/Tk
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Source code for JPEG:

- [15] Freely available source code for JPEG

Miscellaneous:

- [16] Which programs support progressive JPEG?
- [17] Where are FAQ lists archived?

This article and its companion are posted every 2 weeks. If you can't find part 1, you can get it from the news.answers archive at rtfm.mit.edu (see "[17] Where are FAQ lists archived?"). This article changes frequently; get a new copy if the one you are reading is more than a couple months old.

Subject: [1] What is covered in this FAQ?

This list describes programs that are of particular interest to JPEG users. For the most part, I concentrate on viewers, since a viewer program is the first thing you'll need. Some general image-editing programs are listed too, especially if they are useful as plain viewers (meaning that they can load and display an image as quickly and easily as a dedicated viewer). Programs that convert JPEG to and from other image file formats are also covered.

I list only freeware and shareware programs that are available on the Internet by FTP. Commercial products are intentionally excluded, to keep the list to a reasonable size and to avoid any appearance of advertising. Also, I try to list only programs that are popular among Usenet users, as indicated by comments and recommendations in news articles. I have no access to many of the types of systems covered here, so I have to rely on what other people say about a program to decide whether to list it. If you have an opinion pro or con on any program, I'd appreciate hearing it.

This FAQ also includes a few hints that are specific to a machine or program, and thus don't belong in the general discussion of part 1.

Subject: [2] How do I retrieve these programs?

Almost all the files mentioned in this FAQ are available by standard Internet FTP. If you don't know how to use FTP, please read the article "Anonymous FTP FAQ List", which you can get by sending e-mail to mail-server@rtfm.mit.edu with the single line "send faqs/ftp-list/faq" in the body. (See also "[17] Where are FAQ lists archived?") This section gives some quick reminders which are not meant as a substitute for reading the FTP FAQ.

If you use a WWW browser such as Netscape or Lynx, it will do FTP for you. To retrieve a file described here as "site.name:/path/to/file", tell the browser to open the URL "ftp://site.name/path/to/file". (If you are reading this FAQ in the WWW FAQ archive, the file names should appear as links that you can just click on.) Depending on your browser, you may have to shift-click or take some other special action to instruct the browser to save the file to disk, rather than trying to display the file to you.

If you do not have direct access to FTP, you can use an "ftpmail" server to obtain files by e-mail. See the FTP FAQ for details.

Many of the pointers given here refer to popular central archive sites, such as <ftp.simtel.net> for DOS software or <sumex-aim.stanford.edu> for Mac. These sites are often overloaded, and are likely to refuse your connection request when they are busy. You can try again at a less popular time of day, or you can look for a "mirror site". Most central archive sites have groups of mirror sites that keep copies of their files. Find out the name of the mirror site closest to you, and visit that site instead; it's good net citizenship and you'll get faster response. Check the FAQs for the newsgroups specific to your system type to find lists of mirror sites. (The archive site may list some mirror sites in its connection-refused error message. Unfortunately, some FTP programs won't show you the whole message. WWW browsers are often bad about this.)

If you are able to reach the archive site, but the file you want doesn't exist, most likely it's been replaced by a newer version. Get a directory listing of the directory that's supposed to contain the file, and look for a file with a similar name but a higher version number. In a WWW browser, you can get a directory listing by removing the file name, that is opening the URL consisting of everything up to and including the last slash. (If you find an out-of-date reference in a *current* version of the JPEG FAQ, I'd appreciate hearing about it by e-mail.)

Practically all of the files listed here are compressed archive files. This means you need to retrieve them in binary mode. (WWW browsers do this

automatically, but many older FTP programs must be told to use binary mode.) Once you've got the archive file, you'll need a decompressor/dearchiver to extract the program and documentation files inside it. Check the FAQs for your system type to find out where to get dearchiver programs.

Subject: [3] X Windows

XV is an excellent viewer for JPEG, GIF, and many other image formats. It can also do format conversion and some simple image manipulations. Current release is 3.10a, available from <http://www.trilon.com/xv/> or from <ftp.cis.upenn.edu:/pub/xv/>. Shareware, \$25. HINT: if you have an 8-bit display then you need to "lock 8-bit mode" to get decent display of JPEG images. (But do NOT do this if you intend to resave the image, because it'll be written from the 8-bit version, thus costing you image quality.) You can set this mode to be default by adding "xv.force8: true" to your .Xdefaults file. To override that default for editing, say "xv -24".

Another excellent choice is John Cristy's free ImageMagick package, currently at release 4.1; see <http://www.wizards.dupont.com/cristy/ImageMagick.html>. This software handles many image processing and conversion tasks. The ImageMagick package provides a C/C++-callable library and a set of command line processing/display programs. Perl and Python interfaces to the ImageMagick library are also available.

Both of the above are large, complex packages. If you just want a simple image viewer, try xloadimage or xli. xloadimage views and converts many image file types including JPEG. Version 4.1 has better JPEG support than prior versions and is easier to install. xloadimage is free and available from <ftp.x.org:/R5contrib/xloadimage.4.1.tar.gz>. xli is a variant version of xloadimage; xli is slightly better as an interactive viewer, but it can't be used as a converter, and it supports fewer file formats. xli is also free and available from <ftp.x.org:/contrib/applications/xli.1.16.tar.gz>.

Subject: [4] Unix (without X)

If you want a command-line JPEG conversion program, see the IJG source code described in section 15. (This code is included as a subdirectory in most of the X programs described above, although they may not have the latest version.)

Non-X viewers are hard to come by, since they are very hardware dependent. Linux users with VGA/SVGA displays may like zgv. Version 3.1 is available

from sunsite.unc.edu:/pub/Linux/apps/graphics/viewers/svga/zgv-3.1-bin.tar.gz.
(Several other alternatives are available in the same directory.)
If you use a less popular platform, you're probably out of luck.

Subject: [5] MS-DOS

This covers plain DOS; for Windows or OS/2 programs, see the next sections.

NOTE ABOUT SIMTEL FILES: The best-known Internet collection of PC-related programs is the Simtel archives (named for the original archive site, now defunct). The principal archive site for these files is ftp.simtel.net, which is the site referenced by the FTP pointers given below. However, there are numerous mirror sites that keep copies of the Simtel files. For quickest response you should use the mirror site closest to you. Consult the periodic postings in comp.archives.msdos.announce to find your nearest mirror site. If you have no FTP capability, the same postings will tell you how to retrieve Simtel files by e-mail. You can also access the Simtel archives via WWW at www.simtel.net.

QPV (formerly called QPEG) is an extremely fast JPEG viewer. In exchange for speed, QPV gives up some image quality, particularly on 256-or-less-color displays. Its best feature is a really-fast small preview window, which is great for searching through lots of image files. Also views GIF,TGA,BMP,PNG. Requires 386-or-better CPU and VGA-or-better display card. Current version is 1.7e, from ftp.tu-clausthal.de:/pub/msdos/graphics/view/qpv17e.zip. Shareware, \$20.

SEA is a new JPEG/PNG/GIF/etc viewer and file-format converter. It is very very fast --- faster than QPV in most cases, according to the authors. Also, it can read progressive JPEGs; QPV can't. Current version is 1.3, available from ftp.simtel.net:/pub/simtelnet/msdos/graphics/sea3.zip. Shareware, \$30. Requires 386-or-better CPU and VESA-compatible display.

DVPEG is a free viewer for JPEG, GIF, Targa, and PPM files. Current version is 3.01, available from sunee.uwaterloo.ca:/pub/jpeg/viewers/dvpeg301.zip. (That's lower case l, not digit 1.) This is a good basic viewer that comes in both 286 and 386-and-up versions. The user interface is clunky but functional. DVPEG is substantially faster than it used to be; on hi-color displays it is nearly as fast as QPV. On 8-bit displays, its two-pass quantization mode is slow but gives much better image quality than QPV can provide.

Lesser-used DOS viewers include:

* DISPLAY, alias DISP. The Swiss army knife of DOS viewers. Does almost everything, but a bit intimidating for newcomers. User interface is much improved over early versions, but still awkward in places. Requires 386

- or better. Freeware. Current version is 1.89, available from <ftp.simtel.net:/pub/simtelnet/msdos/graphics/disp189a.zip> and [disp189b.zip](#).
- * GDS. A well-done viewer and image converter for many image formats. Installation is simple, and the on-line documentation is very good. JPEG loading is a bit slower than the above viewers, though. Shareware, \$40. Current version is 3.1f. A slightly restricted demo version is available from <ftp.photodex.com:/qds31f.exe>.
 - * NVIEW. Views JPEG and half a dozen other image formats. Easy to use, very easy to install. Only moderately fast, but it has lots of options. Supports hi-color and true-color modes on some cards, but not mine :-(. Requires 386 or better. Current version is 1.50, available from <ftp.simtel.net:/pub/simtelnet/msdos/graphics/nview150.zip>. Shareware, \$29.
 - * CSHOW or CompuShow (recently renamed 2SHOW). This is a widely used viewer for GIF and other formats. Versions prior to CSHOW 9.00 or 2SHOW 2.00 had absolutely abysmal JPEG support; if you have one of those, toss it and get a newer version. The current release is still the slowest DOS JPEG viewer listed here, but it's faster than it used to be, and image quality and robustness have improved substantially. The main reason to use CSHOW as a JPEG viewer is that it supports a wide range of pre-VGA display hardware (most of the above viewers require VGA or better). Also, CSHOW doesn't require a 386. Current version is 2.04, available from <ftp.simtel.net:/pub/simtelnet/msdos/graphics/2show204.zip>. Shareware, \$39.

Due to the remarkable variety of PC graphics hardware, any one of these viewers might not work on your particular machine. If you can't get **any** of them to work, you'll need to use one of the following conversion programs to convert JPEG to GIF, then view with your favorite GIF viewer. (If you have hi-color hardware, don't use GIF as the intermediate format; try to find a hi-color BMP- or TARGA-capable viewer instead.)

The free IJG JPEG converters are available from <ftp.simtel.net:/pub/simtelnet/msdos/graphics/jpeg6b.zip> (or [jpeg6b32.zip](#) if you have a 386-or-better CPU and extended memory). These programs will convert JPEG to and from BMP, Targa, and PPM formats; they are DOS compilations of the free source code described in section 15.

Handmade Software offers free JPEG<=>GIF conversion tools, GIF2JPG/JPG2GIF. These are quite slow and are limited to conversion to and from GIF format; thus they can't produce 24-bit color output from a JPEG. The sole advantage of these tools is that they will read and write HSI's proprietary JPEG format as well as the Usenet-standard JFIF format. Since HSI-format files are rather widespread on BBSes, this is a useful capability. Version 2.0 of these tools is free (prior versions were shareware), and is available from <ftp.simtel.net:/pub/simtelnet/msdos/graphics/gif2jpg2.zip>.

NOTE: do not use HSI format for files to be posted on Usenet, since it is not readable by any non-HSI software.

Handmade Software also has a shareware image conversion and manipulation package, Image Alchemy. This will translate JPEG files (both JFIF and HSI formats) to and from many other image formats. It can also display images.

A demo version of Image Alchemy version 1.10 is available from <http://www.handmadesw.com/hsi/download.html>.

JPGINDEX is a useful tool for making indexes of JPEG image collections. Available from <ftp.simtel.net:/pub/simtelnet/msdos/graphics/jpgidx13.zip>.

Subject: [6] Microsoft Windows

ACDSee is a very fast, easy to use JPEG/GIF/PNG/etc viewer. Good viewing and browsing capabilities, including a fast preview display; but no image editing or conversion functions. Both Windows 95/NT and Windows 3.1 versions are available from <http://www.acdvictoria.com/acd/download.html> or <ftp.acdsystems.com:/pub/acdsee32/>. Shareware, \$30.

IrfanView is a popular viewer/converter for many formats including JPEG, PNG, and GIF. Requires Windows 95/NT. Current version is 2.83, available from <ftp.simtel.net:/pub/simtelnet/win95/graphics/iview283.zip>. Free.

LView Pro is a viewer/editor/converter for JPEG, GIF, BMP, and other formats. It offers a wide array of image editing functions and can load JPEGs in either fast/low-quality or slow/high-quality modes. Requires 386 or better CPU. The current version, 1.D, runs under Windows 95, Windows NT, or Windows 3.1 with Win32s 32-bit extension. It's available from <ftp.std.com:/ftp/vendors/mmedia/lview/lviewpro.zip>. Shareware, \$30.

An older version that can run under vanilla Windows 3.1 is <ftp.simtel.net:/pub/simtelnet/win3/graphics/lviewplb.zip>.

ThumbsPlus is an image browser and cataloger that handles many file formats. It can also do some editing and format conversion, but indexing a large image collection is what it's really aimed at. Current version is 3.20, at <ftp.cerious.com:/pub/cerious/thmpls32.exe>. Shareware, \$70. Requires Windows 95 or NT, or Windows 3.1 with Win32s.

VuePrint is a widely used viewer and printer for JPEG, GIF, BMP, and other formats. Shareware, \$40. Version 7.3 is available from <http://www.hamrick.com/>.

Another good viewer/browser/indexer is CompuPic, available from <ftp.photodex.com:/cpic32.exe> (Windows 95, NT, or 3.1+Win32s) or <ftp.photodex.com:/cpic.exe> (Windows 3.1). Shareware, \$40.

Many people like Paint Shop Pro. It's overkill as just a JPEG viewer (especially since image quality is not very good on 8-bit displays), but as an image editor and manipulator it is very strong. Current version is 4.1 for Windows 95 and Windows NT 4.0; an older version is still available for Windows 3.1. Available from <http://www.jasc.com/>. Shareware, \$69.

WinJPEG displays and converts JPEG, GIF, TIFF, BMP, and other file formats. It has some other nifty features including screen capture, color-balance adjustment, and slideshow. Shareware, \$25. The current version is 2.84, available from <http://www.pixvision.com/html/downloads.html>.

WinECJ is a fast, no-frills viewer with image quality noticeably worse than most other JPEG viewers. (You can purchase a version with better image quality for AUD\$30.) Version 1.2 is free and available from <ftp.coast.net:/coast/win3/graphics/winecjl2.zip>.

QPV and DVPEG (see previous section) work under Windows, but only in full-screen mode, not in a window. Also note that you can run the DOS conversion programs described earlier inside a Windows DOS window.

JPEG Optimizer is a standalone JPEG compression program that lets you interactively preview the results of different compression settings. It also has both automatic and manual selective-compression ability: parts of the image that have finer detail or are more important can be compressed less heavily than parts with less detail. Shareware, \$29. Requires Windows 95 or NT 4.0 or later. Available from <http://www.xat.com/>.

PIE is a utility program designed for digital camera users: it can extract auxiliary information (exposure data, etc) that most digicams include in their JPEG output files. PIE can also do lossless rotation of JPEGs, something that you cannot do with traditional image editors (because loading and resaving in an editor incurs at least roundoff error). Requires Win32. Version 2.8 is available from <http://www.snafu.de/~hoju/>. Shareware, \$19.

Photoshop 4.0 supports progressive JPEG. If you have an older version, you can get a plugin that enables progressive JPEG loading and saving from Pegasus, <http://www.jpg.com/>. The plugin is free for loading, shareware (\$29) for saving.

Other Windows 95 native releases include:

- * PolyView. Reads JPEG, PNG, GIF, BMP, Photo-CD. Current version is 3.03, available from <ftp.winsite.com:/pub/pc/win95/desktop/polyv303.zip>. Shareware, \$20.

Other popular Windows NT-only viewers include:

- * PolyView. Reads JPEG, GIF, BMP, Photo-CD. Current version is 1.70, available from <ftp.winsite.com:/pub/pc/winnt/misc/polyv170.zip>. Shareware, \$20.

If you're a programmer looking for JPEG support under Windows, consider the free JPEG source code in item 15, or these pre-canned alternatives:

TwistedPixel, an OCX component that reads and writes JPEG and other formats (and also does many other kinds of image manipulations), is available at <http://home.earthlink.net/~bananasoft/twisted.htm>. OCXs are usable by

Visual Basic, Delphi, and other non-C programs. Shareware, \$69. Requires Windows 95 or NT.

ImgDLL is a Win32 DLL that reads and writes JPEG, PNG, TIFF, and BMP files and provides various image processing functions. Shareware, \$15. Available from [ftp.simtel.net:/pub/simtelnet/win95/dll/imgdll33.zip](ftp:simtel.net:/pub/simtelnet/win95/dll/imgdll33.zip).

Subject: [7] OS/2

The most widely used OS/2 JPEG viewers are:

PMJPEG 1.83: OS/2 2.x port of WinJPEG, a popular viewer/converter for Windows (see description in previous section). Shareware, \$20. Available from <http://www.pixvision.com/html/downloads.html>.

PMView 1.00: JPEG/GIF/BMP/Targa/etc viewer. GIF viewing very fast, JPEG viewing roughly the same speed as the above two programs. Has image manipulation & slideshow functions. Shareware, \$35. Available from <hobbes.nmsu.edu:/pub/os2/apps/graphics/viewer/pmvw100.zip>.

Galleria 2.31: JPEG/BMP/PCX/Targa/TIFF viewer/editor/converter. Shareware, \$65. Available from <hobbes.nmsu.edu:/pub/os2/apps/graphics/viewer/galleria231.zip>.

All of these viewers require Palette Manager for best display quality. Opinion seems to be about equally split as to which is the best, so try them all to see which one you like.

JPEGPROC enables all OS/2 multimedia applications to read and write JPEG files. Available as part of the "Practice Viewer Upgrade" which also includes a multimedia browser alleged to be better than IB.EXE. Shareware. Available from <hobbes.nmsu.edu:/pub/os2/dev/mm/pvu110.zip>.

OS/2 executables of the free IJG conversion programs are available from hobbes.nmsu.edu:/pub/os2/apps/graphics/imagepro/jpeg6a_os2a.zip.

Note: the hobbes OS/2 collection is mirrored at <ftp-os2.cdrom.com>.

Subject: [8] Macintosh

Most Mac JPEG programs rely on Apple's JPEG implementation, which is part of the QuickTime system extension; so you need to have QuickTime installed.

To use QuickTime, you need a 68020 or better CPU and you need to be running System 6.0.7 or later. (If you're running System 6, you must also install the 32-bit QuickDraw extension; in later Systems, that is built in.) The latest officially released version of QuickTime is 3.0, available from <http://www.apple.com/quicktime/>.

QuickTime 3.0 can read progressive JPEGs (but not write them). Older versions of QuickTime can't handle them at all, and are also more likely to crash if fed a corrupted JPEG. If you're using QuickTime-dependent programs to handle JPEG then I recommend upgrading to 3.0 pronto. (Note that many of the programs recommended in this section contain their own JPEG codecs and don't depend on QuickTime.)

Mac users should keep in mind that QuickTime's JPEG format, PICT/JPEG, is not the same as the Usenet-standard JFIF JPEG format. (See part 1 for details.) If you post images on Usenet, make sure they are in JFIF format. Most of the programs mentioned here can handle either format.

The largest Internet collection of Mac software is the Info-Mac archive, which is mirrored in many places (the master site is only directly accessible by the archivists themselves). The pointers below cite Apple Computer's mirror site, but you may get better service from a mirror site closer to you. See "Introductory Macintosh Frequently Asked Questions" in the comp.sys.mac.* newsgroups for the current locations of mirrors.

JPEGView is an excellent free program for viewing JFIF,PICT/JPEG,GIF,TIFF, and other image files. It can convert between JFIF and PICT/JPEG and can create preview images for files. The current version is 3.3.1, available from <http://www.umich.edu/~archive/mac/graphics/graphicsutil/jpegview3.31.sit.hqx>. Requires System 7; QuickTime is optional. JPEGView is a fine viewer with an unusual but well-thought-out design (no scroll bars, for example). Unfortunately, it hasn't been updated in a long time, and is starting to show its age. There are reports of bugs under System 7.5.3 and later. Also, its built-in JPEG decoder doesn't know about progressive JPEG. If you like JPEGView, I suggest installing QuickTime 3.0 and setting JPEGView to use QuickTime.

Jade is a new, very promising freeware viewer for JPEG, GIF, PICT, and BMP images. It's fast, simple to use, and has preview and slideshow capabilities. And it supports progressive JPEGs. Since JPEGView is no longer being updated, Jade will probably supersede it as the most popular free Mac JPEG viewer before long. Current version is 1.2, available from <ftp://mirror.apple.com/mirrors/Info-Mac.Archive/gst/grf/jade-12.hqx>. Requires 68020 (or higher) or PowerPC, as well as System 7.5 (or later) or Thread Manager.

GIFConverter, a shareware (\$30) image viewer/editor/converter, supports JFIF,PICT/JPEG,PNG, and many other image formats. Current release is 2.4.4, available from <http://www.kamit.com/gifconverter/>. Requires System 6.0.5 or later. GIFConverter is not better than JPEGView as a plain JPEG/GIF viewer,

but it has much more extensive image manipulation and format conversion capabilities. Also, GIFConverter is your best bet if your machine is too old to run System 7 and/or QuickTime. Hint: if GIFConverter runs out of memory while loading a large JPEG, try converting the file to GIF with JPEG Convert, then viewing the GIF version.

GraphicConverter is another popular viewer/editor/converter. It has even more functionality than GIFConverter, but is correspondingly larger. Great if you like lots of options. Shareware, \$35. Current version is 3.6, available from the author's website <http://www.lemkesoft.de/> or various mirrors.

Sam Bushell has prepared a couple of simple but nicely done drag-and-drop converter applications, "To JPEG" and "Progressify". To JPEG converts any file format understood by QuickTime to regular or progressive JPEG; Progressify converts losslessly between regular and progressive JPEG formats. Both are free and require System 7.0 or later. Available from <http://www.pobox.com/~jsam/to-jpeg> and <http://www.pobox.com/~jsam/progressify>.

Cameraid is a useful utility program designed for users of digital cameras, but having general interest as well. It does image downloading from many makes of digicam, lossless rotation and other transformations of JPEGs, and display of auxiliary information that many digicams include in their JPEG output files. It's also a nice viewer. Version 1.1.1 is available from <http://www.clinet.fi/~jmunkki/cameraid/>. Shareware, \$15.

Photoshop 4.0 supports progressive JPEG. If you have an older version, you can get two different plugins that enable progressive JPEG support (they also work in other applications that support Photoshop plugins). One is ProJPEG, available from <ftp.boxtopsoft.com:/pub/ProJPEG2.1.2.sit.hqx> (shareware, \$25). The other is JPEG Transmogrifier's plugin version, available from <http://www.in-touch.com/jpeg.html> (shareware, \$22). ProJPEG is worthwhile even with PS 4.0, because it has a nifty preview of the results of different compression settings.

HINT: You must set the file type code of a downloaded JPEG file to 'JPEG' to allow Photoshop to recognize it. Most of the other programs suggested here are not so picky about file type codes.

HINT: if you use Fetch to retrieve files by FTP, make sure ".jpg" is in its list of binary file types under Customize/Suffix Mapping. Otherwise Fetch's "automatic" retrieval mode will retrieve JPEGs in text mode, thus corrupting the data. Old versions of Fetch do not include ".jpg" in the default list. Also, Fetch 3.0 is buggy; get 3.0.1 or later for reliable uploads.

Subject: [9] Amiga

Most programs listed in this section are available from "AmiNet" archive sites. The master AmiNet site is wuarchive.wustl.edu, but there are many mirror sites and you should try to use the closest one.

Osma Ahvenlampi posted a good review of Amiga picture viewers in comp.sys.amiga.reviews in March 1994. You can retrieve it from math.uh.edu:/pub/Amiga/comp.sys.amiga.reviews/software/graphics/PictureViewer. Opinions here are mostly stolen from his article.

CyberShow is a well-regarded viewer and converter for many image formats including JPEG. It can do truecolor/highcolor display with CyberGraphics software and a suitable graphics board. Shareware, \$25. Version 7.5 is available as a demo (displays grayscale only) from AmiNet sites, [/pub/aminet/gfx/board/cybershow75.lha](http://pub/aminet/gfx/board/cybershow75.lha). Requires OS3.0 or better.

FastView is a fast, high-quality JPEG/GIF/ILBM viewer. Works well on both ECS and AGA displays. Shareware, \$15; requires OS 2.0. Version 2.0 is available from Aminet sites, file [/pub/aminet/gfx/show/FView20.lha](http://pub/aminet/gfx/show/FView20.lha).

FastJPEG is a free JPEG viewer; it's fast and has good image quality, but it doesn't view any formats except JPEG. Somewhat faster than FastView on ECS machines, slower on AGA. Version 1.10 is available from Aminet sites, file [/pub/aminet/gfx/show/FastJPEG_1.10.lha](http://pub/aminet/gfx/show/FastJPEG_1.10.lha).

HamLab Plus is an excellent JPEG viewer/converter, as well as being a general image manipulation tool. It's cheap (shareware, \$20) and can read several formats besides JPEG. The current version is 2.0.8. A demo version is available from AmiNet sites, file [/pub/aminet/gfx/edit/hamlab208d.lha](http://pub/aminet/gfx/edit/hamlab208d.lha). The demo version will crop images larger than 512x512, but it is otherwise fully functional.

PPShow is a good free JPEG/GIF/ILBM/ANIM/Datatype viewer. Version 4.0 is available from Aminet sites, file [/pub/aminet/gfx/show/PPShow40.lha](http://pub/aminet/gfx/show/PPShow40.lha). For viewing JPEGs it is a little slower than FastJPEG, and image quality is not as good (particularly on ECS machines).

Rend24 (shareware, \$30) is an image renderer that can display JPEG, ILBM, and GIF images. The program can be used to create animations, even capturing frames on-the-fly from rendering packages like Lightwave. The current version is 1.05, available from AmiNet sites, file [/pub/aminet/gfx/aga/rend105.lha](http://pub/aminet/gfx/aga/rend105.lha).

Viewtek is a free JPEG/ILBM/GIF/ANIM viewer. The current version is 2.1, available from AmiNet sites, file [/pub/aminet/gfx/show/ViewTEK21.lha](http://pub/aminet/gfx/show/ViewTEK21.lha). Viewtek used to be the best free JPEG viewer for Amiga, but it now faces stiff competition. The choice depends on your display hardware and personal preferences. Viewtek has poor display quality on OCS/ECS (HAM6) screens; but it looks very good on AGA (HAM8).

Visage is a free JPEG/ILBM/PNG/Datatypes viewer with lots of features, including progressive JPEG support (it even does progressive rendering). Requires OS3.0 or better. Version 39.14 is available from Aminet sites, file [/pub/aminet/gfx/show/Visage.lha](#).

There is finally a good JPEG datatype for use with datatype-based viewers (such as Multiview or ShowDT). Available from AmiNet sites, file [/pub/aminet/util/dtype/jfif_dtc.lha](#). (The version dated 12/12/94 has a bug; you should also get [/pub/aminet/util/dtype/jfif_FIX.lha](#).)

A newer JPEG datatype is now available that supports progressive JPEG. See AmiNet sites, file [/pub/aminet/util/dtype/JFIFdt44.lha](#). Shareware.

The free IJG JPEG software is available compiled for Amigas from AmiNet sites, file [/pub/aminet/gfx/conv/jpegV6bin.lha](#). (Despite the name, this is now version 6a.) These programs convert JPEG to/from PPM, GIF, BMP, Targa formats.

If you have a DCTV box or a compatible display, try JPEGonDCTV. Available from AmiNet sites, file [/pub/aminet/gfx/show/JPEGonDCTV100.lha](#). Viewtek is also reported to work well with DCTV.

Subject: [10] Atari ST

GEM-View (shareware, \$26) displays JPEG, GIF, and other image formats. FTP from [atari.archive.umich.edu:/atari/Graphics/Gemview/gview248.lzh](ftp://atari.archive.umich.edu:/atari/Graphics/Gemview/gview248.lzh). This is a well regarded viewer. The English documentation tends to be a few versions behind, though.

MGIF is a good free viewer/editor for JPEG and many other image formats. It's particularly good on monochrome monitors, where it manages to achieve four-level gray-scale effect by flickering; but it works on all Ataris. Version 5.00 is at [atari.archive.umich.edu:/atari/Graphics/mgif500.lzh](ftp://atari.archive.umich.edu:/atari/Graphics/mgif500.lzh).

1stGuide is a small, fast viewer for all ST/TT/Falcon systems; it supports JPEG, PNG, and other file formats. Shareware, \$35. Available from [ftp.cs.tu-berlin.de:/pub/atari/View/1st-guide/1stguide.zip](ftp://ftp.cs.tu-berlin.de:/pub/atari/View/1st-guide/1stguide.zip).

The free IJG JPEG software is available compiled for Atari ST/TT/etc from [ftp.cs.tu-berlin.de:/pub/atari/Graphic/jpg6btos.zip](ftp://ftp.cs.tu-berlin.de:/pub/atari/Graphic/jpg6btos.zip). These programs convert JPEG to/from PPM, BMP, Targa formats.

Subject: [11] Acorn Archimedes

The Acorn archive at micros.hensa.ac.uk contains several JPEG-capable programs. Read the file [micros.hensa.ac.uk:/micros/arch/riscos/index](http://micros.hensa.ac.uk/micros/arch/riscos/index) for retrieval instructions. Recommended archive entries include:

b008 FYEO 2.02: For Your Eyes Only, fast JPEG/GIF image viewer (shareware)
a110 JPEG 6.a: IJG v6a software (JPEG<=>PPM,GIF,Targa) w/ desktop front end
a121 ChangeFSI 1.15: image format conversion and viewing
e018 SwiftJPEG 0.09: fast JPEG viewer, requires SpriteExtend 0.99

Another widely used image viewer/converter is Translator. Current release is 8.02, from <http://www.inter.nl.net/users/J.Kortink>. Shareware.

SpriteExtend 0.99 comes with ROS 3.6, and is available for ROS 3.5 from [ftp.acorn.co.uk:/pub/riscos/releases/spriteextend.arc](http://ftp.acorn.co.uk/pub/riscos/releases/spriteextend.arc). It provides very fast JPEG decoding, but sacrifices image quality on 256-color displays.

Subject: [12] NeXT

OmniImageFilter is a filter package that converts NeXTStep TIFF to and from about 30 image formats. It reads JPEG but does not write it. It works with most NeXTStep programs that handle drag-and-drop. OmniImage is a simple image viewer that uses the filter package. Both are free. Available from [ftp.omnigroup.com:/pub/software/OmniImageFilter-3.0.pkg.tar](http://ftp.omnigroup.com/pub/software/OmniImageFilter-3.0.pkg.tar) and [ftp.omnigroup.com:/pub/software/OmniImage-3.0.1.pkg.tar](http://ftp.omnigroup.com/pub/software/OmniImage-3.0.1.pkg.tar).

ImageViewer is a PD utility that displays images and can do some format conversions. The current version reads JPEG but does not write it. ImageViewer is available from the NeXT archives at sonata.cc.purdue.edu and [cs.orst.edu:/pub/next/3.0/bin/ImageViewer0.9i.tar.Z](http://cs.orst.edu/pub/next/3.0/bin/ImageViewer0.9i.tar.Z). Note that there is an older version floating around that does not support JPEG.

The "imagetools" archive at [ftp.thoughtport.com:/pub/next/graphics/](http://ftp.thoughtport.com/pub/next/graphics/) includes NeXTStep compiled binaries for a wide array of free image manipulation tools including the IJG JPEG tools.

NeXTStep includes built-in support for TIFF/JPEG, but not for the Usenet-standard JFIF format. Be warned that the TIFF/JPEG standard is about to change away from the flavor currently produced by NeXTStep, so compatibility with other platforms is doubtful.

Subject: [13] Tcl/Tk

Jan Nijtmans' "Img" package is a dynamically loadable Tcl/Tk extension that adds full support for JPEG, PNG, and TIFF images to the Tk photo widget. There are a number of incomplete JPEG Tk extensions floating around the net, but this is the only one I'd recommend. Version 1.1.4 is free and available from <http://home.wxs.nl/~nijtmans/img.html> (source code and some binary distributions). Works on Unix and Windows; no Mac port yet.

Subject: [14] Other systems

If you don't see what you want for your machine, check out the free IJG source code described in the next section. Assuming you have a C compiler and at least a little knowledge of compiling C programs, you should be able to prepare JPEG conversion programs from the source code. You'll also need a viewer program. If your display is 8 bits or less, any GIF viewer will do fine; if you have a display with more color capability, try to find a viewer that can read Targa, BMP, or PPM 24-bit image files.

Subject: [15] Freely available source code for JPEG

Free, portable C code for JPEG compression is available from the Independent JPEG Group. Source code, documentation, and test files are included. Version 6b is available from <ftp.uu.net:/graphics/jpeg/jpegsrc.v6b.tar.gz>. If you are on a PC you may prefer ZIP archive format, which you can find at <ftp.simtel.net:/pub/simtelnet/msdos/graphics/jpegsrc6b.zip> (or at any Simtel mirror site). On CompuServe, see the Graphics Learning forum (GO CIS:LEARN), library 12 "JPEG Tools", file jpegsrc6b.zip.

The IJG code includes a reusable JPEG compression/decompression library, plus sample applications "cjpeg" and "djpeg", which perform conversion between JPEG JFIF format and image files in PPM/PGM (PBPLUS), BMP, Utah RLE, and Targa formats. A third application "jpegtran" provides lossless transcoding between different JPEG formats --- for example, it can convert a baseline JPEG file to an equivalent progressive JPEG file. jpegtran can also do lossless rotation and flipping of JPEG files. Two small applications "wrjpgcom" and "rdjpgcom" insert and extract textual comments in JFIF files. The package is highly portable; it has been used successfully on many machines ranging from Apple IIs to Crays.

The IJG code is free for both noncommercial and commercial use; only an

acknowledgement in your documentation is required to use it in a product. (See the README file in the distribution for details.)

The IJG code has recently been translated into Pascal --- see <ftp.simtel.net:/pub/simtelnet/msdos/turbopas/pasjpg10.zip>. This version has been tested under Turbo Pascal and Delphi, and it should be portable to compatible Pascal compilers.

A different free JPEG implementation, written by the PVRG group at Stanford, is available from <havefun.stanford.edu:/pub/jpeg/JPEGv1.2.1.tar.Z>. The PVRG code is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but the PVRG code is easier to understand. Also, the PVRG code supports (the original form of) lossless JPEG, while the IJG code does not. But PVRG does not support progressive JPEG.

There's also a lossless-JPEG-only implementation available from Cornell, <ftp.cs.cornell.edu:/pub/multimed/ljpg.tar.Z>. Caution: the Cornell coder is known to have bugs for 16-bit data.

Neither the PVRG nor Cornell codecs are being actively maintained, but the IJG code is.

Subject: [16] Which programs support progressive JPEG?

With luck, this will only be a Frequently Asked Question for a short time, after which most JPEG-supporting programs will have been upgraded to include p-JPEG capability. But right now it's a hot topic. Here's the latest I've heard (if you have newer info, please send mail):

WWW Browsers:

Netscape 2.0b1 (Unix/X, Windows, Mac, OS/2): full implementation

Spyglass Enhanced Mosaic 2.1 (Unix/X, Windows, Mac): full implementation (Note: lots of other people license Spyglass' code, but I don't know which licensees are shipping the latest version.)

Netshark 1.1 (Windows, Mac): full implementation

Microsoft Internet Explorer 2.0 (Windows): no incremental display (there are rumors that MSIE 5 will finally do progressive display properly)

Microsoft Internet Explorer 2.0 (Mac): full implementation

AOL 3.0 (Windows, Mac): full implementation

Java 1.0 (Windows 95/NT, Solaris, more coming): full implementation

OmniWeb 2.0 (NeXTStep): full implementation

Wollongong's Emissary 1.1 (Windows): full implementation (? not sure)

I-Comm 1.09beta (Windows): full implementation (?)

UdiWWW 1.0.010 (Windows): full implementation

NCSA Mac Mosaic 3.0a2 (Mac): full implementation

NCSA Windows Mosaic 2.1.1 (Windows): reads p-JPEG, no incremental display

NCSA X Mosaic 2.7b2 (Unix/X): reads p-JPEG, no incremental display

Arena beta-1e (Unix/X): reads p-JPEG, no incremental display

Fresco 0.72 (Acorn): reads p-JPEG; full incremental display in Release II

(A browser that doesn't do incremental display of images won't be able to give you the progressive effect, but it's still useful to have p-JPEG compatibility so that you can at least see the image.)

See "BrowserWatch" at <http://www.browserwatch.com/> for contact information for these browsers. Versions mentioned are the first to support p-JPEG, not necessarily the current release.

Image Viewers & Converters:

See the appropriate prior sections for exact pointers to these programs. Note that image viewers generally won't bother with doing incremental display of p-JPEG files; they'll just read them in one pass for speed.

IJG command-line programs (almost any platform): see section 15 for source code. Precompiled executables are also available for some platforms; see subject heading for your system. You need v6 or later.

XV (Unix/X): recompile v3.10 with IJG v6 to read p-JPEG

ImageMagick (Unix/X): 3.6.6 or later

ACDSee16 (Windows 3.1): 2.0 or later

ACDSee32 (Windows 95/NT): 1.0 or later

LView Pro (Windows 95/NT, or Win 3.1 + Win32s): 1.C or later

Paint Shop Pro (Windows 95/NT): 4.0 or later

PolyView (Windows 95): 2.18 or later

ThumbsPlus (Windows 95/NT, or Win 3.1 + Win32s): 3.0c or later

VuePrint (Windows): 5.0 or later

DISPLAY (DOS): 1.89 or later

SEA (DOS): 1.2b or later

JPEGPROC (OS/2): 1.1.0 or later

PMView (OS/2): 0.92 or later

Adobe Photoshop (Mac, Windows): 4.0 or later

Jade (Mac): all versions

GIFConverter (Mac): 2.4 or later

GraphicConverter (Mac): 2.3.1 or later

ProJPEG (Mac Photoshop plugin): all versions

JPEG Transmogrifier (Mac Photoshop plugin): all versions

DeBabelizer (Mac): 1.6.5 or later

akJFIF datatype (Amiga): 40.1 or later

CyberShow (Amiga): 7.1 or later

Visage (Amiga): 39.12 or later

1stGuide (Atari): 10.Jan.96 or later

Subject: [17] Where are FAQ lists archived?

Many FAQs are crossposted to [news.answers](#). Well-run netnews sites will have the latest versions available in that newsgroup. However, there are a *lot* of postings in [news.answers](#), and they can be hard to sort through.

The latest versions of [news.answers](#) postings are archived at rtfm.mit.edu.

You can retrieve this FAQ by FTP as [rtfm.mit.edu:/pub/faqs/jpeg-faq/part1](ftp://rtfm.mit.edu/pub/faqs/jpeg-faq/part1) and [rtfm.mit.edu:/pub/faqs/jpeg-faq/part2](ftp://rtfm.mit.edu/pub/faqs/jpeg-faq/part2). If you have no FTP access, send e-mail to mail-server@rtfm.mit.edu containing the lines

```
send faqs/jpeg-faq/part1
send faqs/jpeg-faq/part2
```

(If you don't get a reply, the server may be misreading your return address; add a line such as "path myname@mysite" to specify your correct e-mail address to reply to.) For more info about the FAQ archive, retrieve the file [rtfm.mit.edu:/pub/faqs/news-answers/introduction](ftp://rtfm.mit.edu/pub/faqs/news-answers/introduction).

The same FAQs are also available from several places on the World Wide Web, of which my favorite is <http://www.faqs.org/faqs/>.

This FAQ is <http://www.faqs.org/faqs/jpeg-faq/>.

Other popular WWW FAQ archives include <http://www.cs.ruu.nl/cgi-bin/faqwais> and <http://www.lib.ox.ac.uk/internet/news/>.

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tom lane
organizer, Independent JPEG Group
tgl@netcom.com or tgl@sss.pgh.pa.us

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*Send corrections/additions to the FAQ Maintainer:
jpeg-info@uunet.uu.net*

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