

Cherry ST-1506 Licenses of used OpenSource packages OS_LICENSES

Contents

1	Free	Free Software Licenses			
	1.1	Used Free Software packages	2		
	12	Software licenses	6		

1 Free Software Licenses

1.1 Used Free Software packages

Table 1.1: Target packages

Package	Version	Licenses
FreeRTOS	v10.1.1	MIT
aho-corasick - rust	0.7.18	Unlicense/MIT
ansi_term - rust	0.12.1	MIT
arm-trusted-firmware	84d36e1719 2082ed80ed a66b0e0082 cdfc4aa2b5	BSD-3-Clause
atty - rust	0.2.14	MIT
autocfg - rust	1.0.1	Apache-2.0 OR MIT
base64 - rust	0.13.0	MIT/Apache-2.0
bindgen - rust	0.59.2	BSD-3-Clause
bitflags - rust	1.3.2	MIT/Apache-2.0
bitstream-vera	1.10	BitstreamVera
busybox	1.33.2	GPL-2.0, bzip2-1.0.4
byteorder - rust	1.4.3	Unlicense OR MIT
bzip2	1.0.8	bzip2 license
cantarell	0.0.25	OFL-1.1
cbindgen - rust	0.9.1	MPL-2.0
cc - rust	1.0.72	MIT/Apache-2.0
ccid	1.4.34	LGPL-2.1+
cexpr - rust	0.6.0	Apache-2.0/MIT
cfg-if - rust	1.0.0	MIT/Apache-2.0
chrono - rust	0.4.19	MIT/Apache-2.0
clang-sys - rust	1.3.0	Apache-2.0
clap - rust	2.34.0	MIT
coreutils	8.32	GPL-3.0+
crossbeam - rust	0.8.1	MIT OR Apache-2.0
crossbeam-channel - rust	0.5.2	MIT OR Apache-2.0
crossbeam-deque - rust	0.8.1	MIT OR Apache-2.0
crossbeam-epoch - rust	0.9.6	MIT OR Apache-2.0
crossbeam-queue - rust	0.3.3	MIT OR Apache-2.0
crossbeam-utils - rust	0.8.6	MIT OR Apache-2.0
davici	1.3	LGPL-2.1+
dejavu	2.37	BitstreamVera, Arev Fonts License
dfu-util	0.9	GPL-2.0+, LGPL-3.0
e2fsprogs	1.45.6	GPL-2.0, MIT-like with advertising clause (libss and libet)
either - rust	1.6.1	MIT/Apache-2.0
env_logger - rust	0.9.0	MIT/Apache-2.0
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Table 1.1 – continued from previous page

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Package	Version	Licenses		
eudev	3.2.9	GPL-2.0+ (programs), LGPL-2.1+ (libraries)		
expat	2.4.7	MIT		
fastrand - rust	1.6.0	Apache-2.0 OR MIT		
font-awesome	4.7.0	OFL-1.1 (font), MIT (CSS, LESS and Sass files)		
fontconfig	2.13.1	fontconfig license		
form_urlencoded - rust	1.0.1	MIT/Apache-2.0		
freetype	2.10.4	Dual FTL/GPL-2.0+		
gawk	5.1.0	GPL-3.0+		
getrandom - rust	0.2.3	MIT OR Apache-2.0		
getrandom-0.1.16 - rust	0.1.16	MIT OR Apache-2.0		
ghostscript-fonts	8.11	GPL-2.0		
glob - rust	0.3.0	MIT/Apache-2.0		
gpio - rust	0.4.1	MIT		
grep	3.6	GPL-3.0+		
hermit-abi - rust	0.1.19	MIT/Apache-2.0		
hex - rust	0.4.3	MIT OR Apache-2.0		
humantime - rust	2.1.0	MIT/Apache-2.0		
i2c-linux - rust	0.1.2	MIT		
i2c-linux-sys - rust	0.2.0	MIT		
icu	69-1	ICU License		
idna - rust	0.2.3	MIT/Apache-2.0		
inconsolata	001.010	OFL-1.0		
instant - rust	0.1.12	BSD-3-Clause		
itoa - rust	1.0.1	MIT OR Apache-2.0		
jpeg-turbo	2.0.6	IJG (libjpeg), BSD-3-Clause (TurboJPEG), Zlib (SIMD)		
jq	a17dd3248a 666d01be75 f6b16be37e 80e20b0954	MIT (code), ICU (decNumber), CC-BY-3.0 (documentation)		
json-pointer - rust	0.3.4	MIT		
jsonway - rust	2.0.0	MIT		
kmod	28	LGPL-2.1+ (library)		
lazy_static - rust	1.4.0	MIT/Apache-2.0		
lazycell - rust	1.3.0	MIT/Apache-2.0		
libc - rust	0.2.112	MIT OR Apache-2.0		
libcap	2.48	GPL-2.0 or BSD-3-Clause		
libcap-ng	0.8.2	GPL-2.0+ (programs), LGPL-2.1+ (library)		
libcurl	7.79.1	curl		
libdrm	2.4.105	MIT		
liberation	2.1.2	OFL-1.1		
libevdev	1.11.0	MIT		
libifdse	280ecbela2 cd5a62c7fa dc602ea525 26edca35d4	MIT		
libloading - rust	0.7.2	ISC		
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Table 1.1 – continued from previous page

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Package	Version	Licenses	
libopenssl	1.1.1m	OpenSSL or SSLeay	
libpng	1.6.37	Libpng-2.0	
libpthread-stubs	0.4	MIT	
libusb	1.0.24	LGPL-2.1+	
libwebsockets	4.0.21	MIT with exceptions	
libzlib	1.2.11	Zlib	
linux	281cb0931b 9db630fa44 8620294f81 dd6a7a8b1c	GPL-2.0	
log - rust	0.4.14	MIT OR Apache-2.0	
matches - rust	0.1.9	MIT	
mbed TLS	v2.23.0	Apache-2.0	
memchr - rust	2.4.1	Unlicense/MIT	
memoffset - rust	0.6.5	MIT	
mesa3d	21.0.2	MIT, SGI, Khronos	
minimal-lexical - rust	0.2.1	MIT/Apache-2.0	
ncurses	6.1	MIT with advertising clause	
newlib	v3.0.0	Various, see licenses file below.	
nix - rust	0.23.1	MIT	
nom - rust	7.1.0	MIT	
num-integer - rust	0.1.44	MIT OR Apache-2.0	
num-traits - rust	0.2.14	MIT OR Apache-2.0	
optee-client	3.11.0	BSD-2-Clause	
optee-os	3b54dde4d7 d192724a44 93f159f32a 748e9d9da0	BSD-2-Clause	
pcre2	10.35	BSD-3-Clause	
pcsc-lite	1.9.0	BSD-2-Clause (auth), BSD-3-Clause, GPL-3.0+ (demo, spy, tests), ISC (simclist)	
peeking_take_while - rust	0.1.2	Apache-2.0/MIT	
percent-encoding - rust	2.1.0	MIT/Apache-2.0	
pkg-config - rust	0.3.24	MIT/Apache-2.0	
ppv-lite86 - rust	0.2.16	MIT/Apache-2.0	
proc-macro2 - rust	1.0.36	MIT OR Apache-2.0	
publicsuffix - rust	1.5.6	MIT/Apache-2.0	
qt5base	5.15.2	GPL-2.0+ or LGPL-3.0, GPL-3.0 with exception(tools), GFDL-1.3 (docs)	
qt5declarative	5.15.2	GPL-2.0+ or LGPL-3.0, GPL-3.0 with exception(tools), GFDL-1.3 (docs)	
qt5graphicaleffects	5.15.2	GPL-2.0+ or LGPL-3.0, GPL-3.0 with exception(tools), GFDL-1.3 (docs)	
qt5quickcontrols	5.15.2	GPL-2.0 or GPL-3.0 or LGPL-3.0, GFDL-1.3 (docs)	
qt5quickcontrols2	5.15.2	GPL-3.0 or LGPL-3.0, GFDL-1.3 (docs)	
qt5svg	5.15.2	GPL-2.0+ or LGPL-3.0, GPL-3.0 with exception(tools), GFDL-1.3 (docs)	
quote - rust	1.0.14	MIT OR Apache-2.0	
quote-0.3.15 - rust	0.3.15	MIT/Apache-2.0	
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Table 1.1 – continued from previous page

Package Version Licenses			
rand - rust	0.8.4	MIT OR Apache-2.0	
rand-0.7.3 - rust	0.7.3	MIT OR Apache-2.0	
rand_chacha - rust	0.3.1	MIT OR Apache-2.0	
rand_chacha-0.2.2 - rust	0.2.2	MIT OR Apache-2.0	
rand_core - rust	0.6.3	MIT OR Apache-2.0	
rand_core-0.5.1 - rust	0.5.1	MIT OR Apache-2.0	
rand hc - rust	0.3.1	MIT OR Apache-2.0	
rand_hc-0.2.0 - rust	0.2.0	MIT/Apache-2.0	
rand_pcg - rust	0.2.0	MIT OR Apache-2.0	
readline	8.1	GPL-3.0+	
redox_syscall - rust	0.2.10	MIT	
regex - rust	1.5.4	MIT OR Apache-2.0	
regex-syntax - rust	0.6.25	MIT/Apache-2.0	
remove_dir_all - rust	0.5.3	MIT/Apache-2.0	
resize-slice - rust	0.5.5	MIT/Apache-2.0	
rustc-hash - rust	1.1.0	Apache-2.0/MIT	
	1.0.9	Apache-2.0 OR BSL-1.0	
ryu - rust scopeguard - rust	1.1.0	MIT/Apache-2.0 MIT/Apache-2.0	
serde - rust	1.0.133	MIT OR Apache-2.0	
	1.0.133	MIT OR Apache-2.0	
serde_derive - rust serde_json - rust	1.0.133	MIT OR Apache-2.0 MIT OR Apache-2.0	
shlex - rust	1.0.74	MIT OR Apache-2.0	
signal-hook - rust	0.3.13	Apache-2.0/MIT	
		Apache-2.0/MIT Apache-2.0/MIT	
signal-hook-registry - rust	1.4.0		
siphasher - rust	0.3.7	MIT/Apache-2.0	
squashfs	4.4	GPL-2.0+	
strongswan	5.9.5	GPL-2.0+	
strsim - rust	0.8.0	MIT	
syn - rust	1.0.85	MIT OR Apache-2.0	
syn-0.11.11 - rust	0.11.11	MIT/Apache-2.0	
synom - rust	0.11.3	MIT/Apache-2.0	
synstructure - rust	0.12.6	MIT	
tempfile - rust	3.3.0	MIT OR Apache-2.0	
termcolor - rust	1.1.2	Unlicense OR MIT	
textwrap - rust	0.11.0	MIT	
tinyvec - rust	1.5.1	Zlib OR Apache-2.0 OR MIT	
tinyvec_macros - rust	0.1.0	MIT OR Apache-2.0 OR Zlib	
toml - rust	0.5.8	MIT/Apache-2.0	
toolchain-external-arm- aarch64	2020.11	GPL-2.0+ (programs), LGPL-2.1+, BSD-3-Clause, MIT (library)	
uboot	54cdb0cae2 c6d5a15833 4434aafc2f 9ceecle818	GPL-2.0+	
unicode-bidi - rust	0.3.7	MIT / Apache-2.0	
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Table 1.1 – continued from previous page

Package	Version	Licenses
unicode-normalization - rust	0.1.19	MIT/Apache-2.0
unicode-width - rust	0.1.9	MIT/Apache-2.0
unicode-xid - rust	0.2.2	MIT OR Apache-2.0
unicode-xid-0.0.4 - rust	0.0.4	MIT/Apache-2.0
uninitialized - rust	0.0.2	MIT
uritemplate-next - rust	0.2.0	BSD-3-Clause
url - rust	2.2.2	MIT/Apache-2.0
util-linux	2.37.4	GPL-2.0+, BSD-4-Clause, LGPL-2.1+ (libblkid, libfdisk, libmount), BSD-3-Clause (libuuid), ISC (rfkill)
util-linux-libs	2.37.4	LGPL-2.1+ (libblkid, libfdisk, libmount), BSD-3-Clause (libuuid)
uuid - rust	0.8.2	Apache-2.0 OR MIT
vec_map - rust	0.8.2	MIT/Apache-2.0
version_check - rust	0.9.4	MIT/Apache-2.0
wasi - rust	0.10.2+wasi- snapshot- previewl	Apache-2.0 WITH LLVM-exception OR Apache-2.0 OR MIT
wasi-0.9.0+wasi- snapshot-preview1 - rust	0.9.0+wasi- snapshot- previewl	Apache-2.0 WITH LLVM-exception OR Apache-2.0 OR MIT
which - rust	4.2.2	MIT
winapi - rust	0.3.9	MIT/Apache-2.0
winapi-util - rust	0.1.5	Unlicense/MIT
zeroize - rust	1.4.3	Apache-2.0 OR MIT
zeroize_derive - rust	1.2.2	Apache-2.0 OR MIT

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1.2.2 aho-corasick - rust

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1.2.3 ansi term - rust

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1.2.4 arm-trusted-firmware

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1.2.5 atty - rust

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1.2.6 autocfg - rust

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1.2.7 base64 - rust

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1.2.8 bindgen - rust

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1.2.9 bitflags - rust

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2. I want to package these fonts separately for distribution and sale as part of a larger software package or system. Can I do so?

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 Yes!
- 4. Can I change or add to the font(s)?
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- 5. Under what terms are derivative works allowed?

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6. If I have improvements for Bitstream Vera, is it possible they might get adopted in future versions?

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7. I want to sell a software package that uses these fonts: Can I do so?

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8. If applications have built the names "Bitstream Vera" into them, can I override this somehow to use fonts of my choosing?

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1.2.11 busybox

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Julian Seward, Cambridge, UK. jseward@bzip.org bzip2/libbzip2 version 1.0.4 of 20 December 2006

1.2.12 byteorder - rust

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1.2.13 bzip2

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Julian Seward, jseward@acm.org bzip2/libbzip2 version 1.0.8 of 13 July 2019

1.2.14 cantarell

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1.2.15 cbindgen - rust

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1.2.18 cexpr - rust

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1.2.19 cfg-if - rust

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1.2.22 clap - rust

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1.2.23 coreutils

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1.2.24 crossbeam - rust

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1.2.25 crossbeam-channel - rust

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1.2.26 crossbeam-deque - rust

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1.2.28 crossbeam-queue - rust

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1.2.29 crossbeam-utils - rust

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1.2.30 davici

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1.2.31 dejavu

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\$Id\$

1.2.32 dfu-util

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1.2.33 e2fsprogs

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Theodore Ts'o 23-June-2007

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```

```
/*
  * internal include file for com_err package
  *
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  */

#include <errno.h>

#ifdef NEED_SYS_ERRLIST
extern char const * const sys_errlist[];
extern const int sys_nerr;
#endif
```

1.2.34 either - rust

```
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1.2.35 env_logger - rust

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1.2.36 eudev

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1.2.38 fastrand - rust

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1.2.39 fontconfig

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1.2.40 form_urlencoded - rust

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1.2.41 freetype

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1.2.42 gawk

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1.2.43 getrandom - rust

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1.2.44 getrandom-0.1.16 - rust

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1.2.45 ghostscript-fonts

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1.2.46 glob - rust

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1.2.47 gpio - rust

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1.2.48 grep

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1.2.49 hermit-abi - rust

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1.2.50 hex - rust

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1.2.51 humantime - rust

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1.2.52 i2c-linux - rust

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1.2.54 icu

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1.2.59 jpeg-turbo

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libjpeg-turbo note: This file has been modified by The libjpeg-turbo Project to include only information relevant to libjpeg-turbo, to wordsmith certain sections, and to remove impolitic language that existed in the libjpeg v8 README. It is included only for reference. Please see README.md for information specific to libjpeg-turbo.

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DOCUMENTATION ROADMAP

This file contains the following sections:

OVERVIEW General description of JPEG and the IJG software.

LEGAL ISSUES Copyright, lack of warranty, terms of distribution.

REFERENCES Where to learn more about JPEG.

ARCHIVE LOCATIONS Where to find newer versions of this software.

FILE FORMAT WARS Software *not* to get.

TO DO Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

usage.txt Usage instructions for cjpeg, djpeg, jpegtran,

rdjpgcom, and wrjpgcom.

*.1 Unix-style man pages for programs (same info as usage.txt).

wizard.txt Advanced usage instructions for JPEG wizards only.

change.log Version-to-version change highlights.

Programmer and internal documentation:

libjpeg.txt How to use the JPEG library in your own programs.

example.txt Sample code for calling the JPEG library.

structure.txt Overview of the JPEG library's internal structure.

coderules.txt Coding style rules --- please read if you contribute code.

Please read at least usage.txt. Some information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.

OVERVIEW

This package contains C software to implement JPEG image encoding, decoding, and transcoding. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and grayscale images. JPEG's strong suit is compressing photographic images or other types of images that have smooth color and brightness transitions between neighboring pixels. Images with sharp lines or other abrupt features may not compress well with JPEG, and a higher JPEG quality may have to be used to avoid visible compression artifacts with such images.

JPEG is lossy, meaning that the output pixels are not necessarily identical to the input pixels. However, on photographic content and other "smooth" images, very good compression ratios can be obtained with no visible compression artifacts, and extremely high compression ratios are possible if you are willing to sacrifice image quality (by reducing the "quality" setting in the compressor.)

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application.

We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

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The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent (now expired), GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

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REFERENCES

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We recommend reading one or more of these references before trying to understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is Wallace, Gregory K. "The JPEG Still Picture Compression Standard", Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44. (Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PDF file containing a revised version of Wallace's article is available at http://www.ijg.org/files/Wallace.JPEG.pdf. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections and some added material. Note: the Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in "The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

The best currently available description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US\$59.95, 638 pp. The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2).

The original JPEG standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details, we follow the "JFIF" conventions, revision 1.02. JFIF version 1 has been adopted as ISO/IEC 10918-5 (05/2013) and Recommendation ITU-T T.871 (05/2011): Information technology - Digital compression and coding of continuous-tone still images: JPEG File Interchange Format (JFIF). It is available as a free download in PDF file format from https://www.iso.org/standard/54989.html and http://www.itu.int/rec/T-REC-T.871. A PDF file of the older JFIF 1.02 specification is available at http://www.w3.org/Graphics/JPEG/jfif3.pdf.

The TIFF 6.0 file format specification can be obtained from http://mirrors.ctan.org/graphics/tiff/TIFF6.ps.gz. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from http://www.ijg.org/files/. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library

uses our library to implement TIFF/JPEG per the Note.

ARCHIVE LOCATIONS

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The "official" archive site for this software is www.ijg.org. The most recent released version can always be found there in directory "files".

The JPEG FAQ (Frequently Asked Questions) article is a source of some general information about JPEG. It is available at http://www.faqs.org/faqs/jpeg-faq.

FILE FORMAT COMPATIBILITY

This software implements ITU T.81 | ISO/IEC 10918 with some extensions from ITU T.871 | ISO/IEC 10918-5 (JPEG File Interchange Format-- see REFERENCES). Informally, the term "JPEG image" or "JPEG file" most often refers to JFIF or a subset thereof, but there are other formats containing the name "JPEG" that are incompatible with the DCT-based JPEG standard or with JFIF (for instance, JPEG 2000 and JPEG XR). This software therefore does not support these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on a common, interoperable format standard for JPEG files.

JFIF is a minimal or "low end" representation. TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) can be used for "high end" applications that need to record a lot of additional data about an image.

TO DO

Please send bug reports, offers of help, etc. to jpeg-info@jpegclub.org.

1.2.60 jq

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1.2.61 json-pointer - rust

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1.2.62 jsonway - rust

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1.2.63 kmod

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That's all there is to it!

1.2.64 lazy static - rust

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1.2.65 lazycell - rust

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1.2.66 libc - rust

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1.2.67 libcap

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1.2.68 libcap-ng

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1.2.70 libdrm

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1.2.74 libloading - rust

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1.2.77 libpthread-stubs

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1.2.78 libusb

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1.2.79 libwebsockets

```
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```

1.2.80 libzlib

```
ZLIB DATA COMPRESSION LIBRARY
zlib 1.2.11 is a general purpose data compression library. All the code is
thread safe. The data format used by the zlib library is described by RFCs
(Request for Comments) 1950 to 1952 in the files
http://tools.ietf.org/html/rfc1950 (zlib format), rfc1951 (deflate format) and
rfc1952 (gzip format).
All functions of the compression library are documented in the file zlib.h
(volunteer to write man pages welcome, contact zlib@gzip.org). A usage example
of the library is given in the file test/example.c which also tests that
the library is working correctly. Another example is given in the file
test/minigzip.c. The compression library itself is composed of all source
files in the root directory.
To compile all files and run the test program, follow the instructions given at
the top of Makefile.in. In short "./configure; make test", and if that goes well, "make install" should work for most flavors of Unix. For Windows, use
one of the special makefiles in win32/ or contrib/vstudio/ . For VMS, use
make_vms.com.
Questions about zlib should be sent to <zlib@gzip.org>, or to Gilles Vollant
<info@winimage.com> for the Windows DLL version. The zlib home page is
\verb|http://zlib.net/|. Before reporting a problem, please check this site to
verify that you have the latest version of zlib; otherwise get the latest
version and check whether the problem still exists or not.
PLEASE read the zlib FAQ http://zlib.net/zlib_faq.html before asking for help.
Mark Nelson <markn@ieee.org> wrote an article about zlib for the Jan. 1997
issue of Dr. Dobb's Journal; a copy of the article is available at
http://marknelson.us/1997/01/01/zlib-engine/ .
The changes made in version 1.2.11 are documented in the file ChangeLog.
Unsupported third party contributions are provided in directory contrib/ .
zlib is available in Java using the java.util.zip package, documented at
http://java.sun.com/developer/technicalArticles/Programming/compression/ .
A Perl interface to zlib written by Paul Marquess  pmqs@cpan.org> is available
at CPAN (Comprehensive Perl Archive Network) sites, including
http://search.cpan.org/~pmqs/IO-Compress-Zlib/ .
A Python interface to zlib written by A.M. Kuchling <amk@amk.ca> is
available in Python 1.5 and later versions, see
http://docs.python.org/library/zlib.html
zlib is built into tcl: http://wiki.tcl.tk/4610 .
An experimental package to read and write files in .zip format, written on top
of zlib by Gilles Vollant <info@winimage.com>, is available in the
contrib/minizip directory of zlib.
Notes for some targets:
- For Windows DLL versions, please see win32/DLL_FAQ.txt
- For 64-bit Irix, deflate.c must be compiled without any optimization. With
  -0, one libpng test fails. The test works in 32 bit mode (with the -n32
```

compiler flag). The compiler bug has been reported to SGI.

- zlib doesn't work with gcc 2.6.3 on a DEC 3000/300LX under OSF/1 2.1 it works when compiled with cc.
- On Digital Unix 4.0D (formely OSF/1) on AlphaServer, the cc option -std1 is necessary to get gzprintf working correctly. This is done by configure.
- zlib doesn't work on HP-UX 9.05 with some versions of /bin/cc. It works with other compilers. Use "make test" to check your compiler.
- gzdopen is not supported on RISCOS or BEOS.
- For PalmOs, see http://palmzlib.sourceforge.net/

Acknowledgments:

The deflate format used by zlib was defined by Phil Katz. The deflate and zlib specifications were written by L. Peter Deutsch. Thanks to all the people who reported problems and suggested various improvements in zlib; they are too numerous to cite here.

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```
Jean-loup Gailly Mark Adler jloup@gzip.org madler@alumni.caltech.edu
```

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1.2.81 linux

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                            Preamble
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1.2.82 log - rust

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1.2.83 matches - rust

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1.2.84 mbed TLS

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1.2.85 memchr - rust

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1.2.86 memoffset - rust

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1.2.87 mesa3d

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1.2.88 minimal-lexical - rust

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`src/bellerophon.rs` is loosely based off the Golang implementation, found [here](https://github.com/golang/go/blob/b10849fbb97a2244c086991b4623ae9f32c212d0/src/strconv/wextfloat.go).

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1.2.91 nix - rust

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1.2.92 nom - rust

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1.2.93 num-integer - rust

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1.2.94 num-traits - rust

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1.2.95 optee-client

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1.2.97 pcre2

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1.2.98 pcsc-lite

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1.2.99 peeking_take_while - rust

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1.2.100 percent-encoding - rust

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1.2.101 pkg-config - rust

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1.2.102 ppv-lite86 - rust

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1.2.103 proc-macro2 - rust

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1.2.113 rand - rust

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1.2.114 rand-0.7.3 - rust

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1.2.115 rand chacha-rust

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1.2.116 rand chacha-0.2.2 - rust

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1.2.117 rand_core - rust

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1.2.118 rand_core-0.5.1 - rust

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1.2.119 rand_hc - rust

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1.2.120 rand_hc-0.2.0 - rust

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1.2.121 rand_pcg - rust

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1.2.122 readline

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1.2.123 redox syscall - rust

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1.2.125 regex-syntax - rust

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1.2.127 resize-slice - rust

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1.2.128 rustc-hash - rust

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1.2.129 ryu - rust

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1.2.130 scopeguard - rust

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1.2.133 serde_json - rust

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1.2.134 shlex - rust

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1.2.135 signal-hook - rust

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1.2.136 signal-hook-registry - rust

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1.2.137 siphasher - rust

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1.2.140 strsim - rust

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1.2.141 syn - rust

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1.2.142 syn-0.11.11 - rust

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1.2.143 synom - rust

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1.2.144 synstructure - rust

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1.2.145 tempfile - rust

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1.2.146 termcolor - rust

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1.2.147 textwrap - rust

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1.2.148 tinyvec - rust

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1.2.149 tinyvec_macros - rust

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1.2.150 toml - rust

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1.2.151 toolchain-external-arm-aarch64

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1.2.153 unicode-bidi - rust

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1.2.154 unicode-normalization - rust

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1.2.155 unicode-width - rust

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1.2.156 unicode-xid - rust

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1.2.157 unicode-xid-0.0.4 - rust

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1.2.158 uninitialized - rust

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1.2.159 uritemplate-next - rust

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1.2.160 url - rust

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1.2.161 util-linux

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
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For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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1.2.162 util-linux-libs

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1.2.163 uuid - rust

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1.2.164 vec_map - rust

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1.2.165 version_check - rust

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1.2.166 wasi - rust

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1.2.167 wasi-0.9.0+wasi-snapshot-preview1 - rust

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1.2.168 which - rust

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1.2.169 winapi - rust

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1.2.170 winapi-util - rust

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1.2.171 zeroize - rust

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1.2.172 zeroize_derive - rust

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