

# ExifTool by Phil Harvey

## Read, Write and Edit Meta Information!

Also available --> [Utility to fix Nikon NEF images corrupted by Nikon software](#)

[Installing](#)

[Tag Names](#)

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**[Download Version 11.54 \(4.4 MB\) - July 2, 2019](#)**

ExifTool is a platform-independent [Perl library](#) plus a [command-line application](#) for reading, writing and editing meta information in a [wide variety of files](#).

ExifTool supports many different metadata formats including [EXIF](#), [GPS](#), [IPTC](#), [XMP](#), [JFIF](#), [GeoTIFF](#), [ICC Profile](#), [Photoshop IRB](#), [FlashPix](#), [AFCP](#) and [ID3](#), as well as the maker notes of many digital cameras by [Canon](#), [Casio](#), [DJI](#), [FLIR](#), [FujiFilm](#), [GE](#), [GoPro](#), [HP](#), [JVC/Victor](#), [Kodak](#), [Leaf](#), [Minolta/Konica-Minolta](#), [Motorola](#), [Nikon](#), [Nintendo](#), [Olympus/Epson](#), [Panasonic/Leica](#), [Pentax/Asahi](#), [Phase One](#), [Reconyx](#), [Ricoh](#), [Samsung](#), [Sanyo](#), [Sigma/Foveon](#) and [Sony](#).

ExifTool is also available as a **stand-alone Windows executable** and a **MacOS package**: (Note that these versions contain the executable only, and do not include the HTML documentation or other files of the full distribution above.)

**Windows Executable: [exiftool-11.54.zip](#) (6.1 MB)**

The stand-alone Windows executable does not require Perl. Just download and un-zip the archive then double-click on "[exiftool\(-k\).exe](#)" to read the application documentation, drag-and-drop files and folders to view meta information, or rename to "[exiftool.exe](#)" for command-line use. Runs on all versions of Windows.

**MacOS Package: [ExifTool-11.54.dmg](#) (2.8 MB)**

The MacOS package installs the ExifTool command-line application and libraries in /usr/local/bin. After installing, type "[exiftool](#)" in a Terminal window to run exiftool and read the application documentation.

Read the [installation instructions](#) for help installing ExifTool on Windows, MacOS and Unix systems.

- [Click here for the SHA1 and MD5 checksums to verify these distribution packages](#).
- The version number of the latest ExifTool release may be found [here](#).

## Features

- Powerful, fast, flexible and customizable
- [Supports a large number of different file formats](#)
- Reads [EXIF](#), [GPS](#), [IPTC](#), [XMP](#), [JFIF](#), MakerNotes, [GeoTIFF](#), [ICC Profile](#), [Photoshop IRB](#), [FlashPix](#), [AFCP](#), [ID3](#) and more...
- Writes [EXIF](#), [GPS](#), [IPTC](#), [XMP](#), [JFIF](#), MakerNotes, [GeoTIFF](#), [ICC Profile](#), [Photoshop IRB](#), [AFCP](#) and more...
- Reads and writes maker notes of many digital cameras
- Reads [timed metadata](#) (eg. GPS track) from MOV/MP4/M2TS/AVI videos
- Numerous output formatting options (including tab-delimited, HTML, XML and JSON)
- Multi-lingual output (cs, de, en, en-ca, en-gb, es, fi, fr, it, ja, ko, nl, pl, ru, sv, tr, zh-cn or zh-tw)
- [Geotags images](#) from GPS track log files (with time drift correction!)
- [Generates track logs](#) from geotagged images
- [Shifts date/time values](#) to fix timestamps in images
- [Renames files and organizes in directories](#) (by date or by any other meta information)

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- Extracts thumbnail images, preview images, and large JPEG images from RAW files
- Copies meta information between files (even different-format files)
- Reads/writes [structured XMP information](#)
- Deletes meta information individually, in groups, or altogether
- Sets the file modification date (and creation date in Mac and Windows) from EXIF information
- Supports alternate language tags in [XMP](#), [PNG](#), [ID3](#), [Font](#), [QuickTime](#), [ICC Profile](#), [MIE](#) and [MXF](#) information
- Processes entire directory trees
- Creates text output file for each image file
- Creates binary-format metadata-only (MIE, EXV) files for metadata backup
- Automatically backs up original image when writing
- Organizes output into groups
- Conditionally processes files based on value of any meta information
- Ability to [add custom user-defined tags](#)
- [Support for MWG](#) (Metadata Working Group) recommendations
- Recognizes [thousands of different tags](#)
- Tested with images from [thousands of different camera models](#)
- Advanced [verbose](#) and [HTML-based hex dump](#) outputs

## A Note to Unix Power-Users

If you find the need to use "find" or "awk" in conjunction with ExifTool, then you probably haven't discovered the full power of ExifTool. Read about the `-ext`, `-if`, `-p` and `-tagsFromFile` options in the [application documentation](#). (This is [common mistake number 3](#).)

## What People are Saying about ExifTool

*"In my experience, nothing but nothing is as complete, powerful, and flexible as Phil Harvey's exiftool ... I've never seen anything that's in the same ballpark for power."* - [dpreview forum](#)

*"While there are a lot of image tools available, nothing comes close for accessing/updating the metadata like ExifTool"* - [merg's blog](#)

*"Fast, reliable and amazingly comprehensive ..."* - [CPAN ratings](#)

*"... the one piece of free software that gets the most detailed exif data of /any/ tool I've found."* - [gnome mail archives](#)

*"ExifTool makes every other EXIF reader (and writer) than I've seen, including the camera manufacturers' readers, look lame."* - [photo.net Nikon forum](#)

*"Insanely great tool with a long learning curve ..."* - [Adobe Forums](#)

*"... it's super awesome, it's super reliable and after many years of development it's still being updated!"* - [P\\_W999 blog](#)

*"... it is the mother of all EXIF utilities; the BFG of meta-data extraction; the Pan Galactic Gargle Blaster of EXIF tools ... This thing will suck the last bit of metadata out of whatever image file you throw at it!"* - [Open Photography Forums](#)

*"... it is total fucking gibberish to me."* - [Reddit Linux Questions](#)

## Supported File Types

ExifTool can **Read**, **Write** and/or **Create** files in the following formats. Also listed are the support levels for EXIF, IPTC, XMP, ICC\_Profile and other metadata types for each file format.

File Type	Support	Description	<a href="#">EXIF</a>	<a href="#">IPTC</a>	<a href="#">XMP</a>	<a href="#">ICC</a> <sup>1</sup>	Other
3FR	R	Hasselblad RAW ( <a href="#">TIFF</a> -based)	R	R	R	R	-

3G2, 3GP2	R/W	3rd Gen. Partnership Project 2 a/v ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
3GP, 3GPP	R/W	3rd Gen. Partnership Project a/v ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
<a href="#">A</a>	R	Unix static library code Archive	-	-	-	-	R <a href="#">EXE</a>
<a href="#">AA</a>	R	Audible Audiobook	-	-	-	-	R <a href="#">Audible</a>
AAE	R	Apple edit information (XML <a href="#">PLIST</a> -based)	-	-	-	-	R <a href="#">PLIST</a>
AAX	R/W	Audible Enhanced Audiobook ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
<a href="#">ACR</a>	R	American College of Radiology ACR-NEMA (DICOM-like)	-	-	-	-	R <a href="#">DICOM</a>
<a href="#">AFM, ACFM, AMFM</a>	R	Adobe [Composite/Multiple Master] Font Metrics	-	-	-	-	R <a href="#">Font</a>
AI, AIT	R/W	Adobe Illustrator [Template] ( <a href="#">PS</a> or <a href="#">PDF</a> )	R/W/C <sup>4</sup>	R/W/C <sup>4</sup>	R/W/C <sup>5</sup>	R/W/C <sup>4</sup>	R/W/C <a href="#">PDF</a> <a href="#">PostScript</a> , R <a href="#">Photoshop</a>
<a href="#">AIFF, AIF, AIFC</a>	R	Audio Interchange File Format [Compressed]	-	-	-	-	R <a href="#">AIFF ID3</a>
<a href="#">APE</a>	R	Monkey's Audio	-	-	-	-	R <a href="#">APE ID3</a>
ARQ	R/W	Sony Alpha Pixel-Shift RAW ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Sony SonyIDC</a>
ARW	R/W	Sony Alpha RAW ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Sony SonyIDC</a>
<a href="#">ASF</a>	R	Microsoft Advanced Systems Format	-	-	R	-	R <a href="#">ASF</a>
AVI	R	Audio Video Interleaved ( <a href="#">RIFF</a> -based)	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
<a href="#">BMP, DIB</a>	R	Windows BitMaP / Device Independent Bitmap	-	-	-	-	R <a href="#">BMP</a>
<a href="#">BPG</a>	R	Better Portable Graphics	R	-	R	R	R <a href="#">BPG</a>
<a href="#">BTF</a>	R	BigTIFF (64-bit Tagged Image File Format)	R	R	R	R	-
<a href="#">CHM</a>	R	Microsoft Compiled HTML format	-	-	-	-	R <a href="#">EXE</a>
COS	R	Capture One Settings (XML-based)	-	-	-	-	R XML
CR2	R/W	Canon RAW 2 ( <a href="#">TIFF</a> -based) ( <a href="#">CR2 spec</a> )	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Canon</a> , R/W/C <a href="#">CanonVRD</a> <sup>2</sup>
CR3	R/W	Canon RAW 3 ( <a href="#">QuickTime</a> -based) ( <a href="#">CR3 spec</a> )	R/W/C	-	R/W/C	-	R/W <a href="#">Canon QuickTime</a> , R/W/C <a href="#">CanonVRD</a> <sup>2</sup>
CRM	R/W	Canon RAW Movie ( <a href="#">QuickTime</a> -based)	R/W/C	-	R/W/C	-	R/W <a href="#">Canon QuickTime</a>
<a href="#">CRW, CIFF</a>	R/W	Canon RAW Camera Image File Format ( <a href="#">CRW spec</a> )	-	-	R/W/C	-	R/W <a href="#">CanonRaw</a> , R/W/C <a href="#">CanonVRD</a> <sup>2</sup>
CS1	R/W	Sinar CaptureShop 1-shot RAW ( <a href="#">PSD</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R <a href="#">Photoshop</a>
<a href="#">DCM, DC3, DIC, DICM</a>	R	DICOM - Digital Imaging and Communications in Medicine	-	-	-	-	R <a href="#">DICOM</a>
DCP	R/W	DNG Camera Profile ( <a href="#">DNG</a> -like)	R/W/C	R/W/C	R/W/C	R/W/C	-
DCR	R	Kodak Digital Camera RAW ( <a href="#">TIFF</a> -based)	R	R	R	R	-
<a href="#">DFONT</a>	R	Macintosh Data Fork Font	-	-	-	-	R <a href="#">Font</a>
DIVX	R	DivX media format ( <a href="#">ASF</a> -based)	-	-	R	-	R <a href="#">ASF</a>
<a href="#">DJVU, DJV</a>	R	DjVu image (AIFF-like)	-	-	R	-	R <a href="#">DJVU</a>
<a href="#">DNG</a>	R/W	Digital Negative ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	-
DOC, DOT	R	Microsoft Word Document/Template ( <a href="#">FPX</a> -like)	-	-	R	R	R <a href="#">FlashPix</a>
<a href="#">DOCX, DOCM</a>	R	Office Open XML Document [Macro-enabled]	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">DOTX, DOTM</a>	R	Office Open XML Document Template [Macro-enabled]	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">DPX</a>	R	Digital Picture Exchange	-	-	-	-	R <a href="#">DPX</a>
<a href="#">DR4</a>	R/W/C <sup>2</sup>	Canon DPP version 4 Recipe	-	-	-	-	R/W/C <a href="#">CanonVRD</a> <sup>2</sup>
<a href="#">DSS, DS2</a>	R	Digital Speech Standard [2]	-	-	-	-	R <a href="#">Olympus</a>
<a href="#">DYLIB</a>	R	MacOS Mach-O executable and library files	-	-	-	-	R <a href="#">EXE</a>
<a href="#">DV</a>	R	Digital Video	-	-	-	-	R <a href="#">DV</a>
DVB	R/W	Digital Video Broadcasting ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
DVR-MS	R	Microsoft Digital Video Recording ( <a href="#">ASF</a> -based)	-	-	R	-	R <a href="#">ASF</a>

EIP	R	Capture One Enhanced Image Package ( <a href="#">ZIP</a> -based)	R	-	-	-	R XML <a href="#">ZIP</a>
<a href="#">EPS, EPSF, PS</a>	R/W	[Encapsulated] PostScript Format	R/W/C	R/W/C	R/W/C	R/W/C	R/W/C <a href="#">PostScript</a> , R <a href="#">Photoshop</a>
EPUB	R	Electronic Publication ( <a href="#">ZIP</a> / <a href="#">XML</a> -based)	-	-	-	-	R XML <a href="#">ZIP</a>
ERF	R/W	Epson RAW Format ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Olympus</a>
<a href="#">EXE, DLL</a>	R	DOS/Windows executable and library files	-	-	-	-	R <a href="#">EXE</a>
<a href="#">EXIF</a>	R/W/C	Exchangeable Image File Format metadata ( <a href="#">TIFF</a> -based)	R/W/C	-	-	-	-
<a href="#">EXR</a>	R	Open EXR (Extended Range)	-	-	-	-	R <a href="#">OpenEXR</a>
EXV	R/W/C	Exiv2 metadata file ( <a href="#">JPEG</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	<a href="#">Supported JPEG Meta Information</a>
F4A, F4B, F4P, F4V	R/W	Adobe Flash Player 9+ Audio/Video ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
FFF	R/W	Hasselblad Flexible File Format ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	-
<a href="#">FFF</a>	R	FLIR Systems thermal image File Format	-	-	-	-	R <a href="#">FLIR</a>
<a href="#">FITS</a>	R	Flexible Image Transport System	-	-	-	-	R <a href="#">FITS</a>
FLA	R	Macromedia/Adobe Flash project ( <a href="#">FPX</a> -like)	-	-	R	R	R <a href="#">FlashPix</a>
<a href="#">FLAC</a>	R	Free Lossless Audio Codec	-	-	-	-	R <a href="#">FLAC ID3</a>
<a href="#">FLIF</a>	R/W	Free Lossless Image Format	R/W/C	-	R/W/C	R/W/C	R <a href="#">FLIF</a>
<a href="#">FLV</a>	R	Flash Video	-	-	R	-	R <a href="#">Flash</a>
<a href="#">FPF</a>	R	FLIR Public image Format	-	-	-	-	R <a href="#">FLIR</a>
<a href="#">FPX</a>	R	FlashPix image	-	-	R	R	R <a href="#">FlashPix</a>
<a href="#">GIF</a>	R/W	Compuserve Graphics Interchange Format	-	-	R/W/C	R/W/C	R/W/C <a href="#">GIF</a>
GPR	R/W	GoPro RAW ( <a href="#">DNG</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	-
<a href="#">GZ, GZIP</a>	R	GNU ZIP compressed archive	-	-	-	-	R <a href="#">ZIP</a>
HDP, WDP, JXR	R/W	Windows HD Photo / Media Photo / JPEG XR ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	-
<a href="#">HDR</a>	R	Radiance RGBE High Dynamic-Range	-	-	-	-	R <a href="#">Radiance</a>
HEIC, HEIF	R/W	High Efficiency Image Format ( <a href="#">QuickTime</a> -based)	R/W/C	-	R/W/C	R/W	R/W <a href="#">QuickTime</a>
<a href="#">HTML, HTM, XHTML</a>	R	[Extensible] HyperText Markup Language	-	-	-	-	R <a href="#">HTML</a>
<a href="#">ICC, ICM</a>	R/W/C <sup>1</sup>	International Color Consortium color profile	-	-	-	R/W/C	-
<a href="#">ICS, ICAL</a>	R	iCalendar Schedule	-	-	-	-	R <a href="#">VCalendar</a>
IDML	R	Adobe InDesign Markup Language ( <a href="#">ZIP</a> / <a href="#">XML</a> -based)	-	-	-	-	R XML <a href="#">ZIP</a>
<a href="#">IIQ</a>	R/W	Phase One Intelligent Image Quality RAW ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">PhaseOne</a>
IND, INDD, INDT	R/W	Adobe InDesign Document/Template	-	-	R/W/C	-	-
INSV	R	Insta 360 Video ( <a href="#">QuickTime</a> -based)	-	-	R	-	R <a href="#">QuickTime</a>
INX	R	Adobe InDesign Interchange ( <a href="#">XML</a> -based)	-	-	R	-	-
<a href="#">ISO</a>	R	ISO 9660 disk image	-	-	-	-	R <a href="#">ISO</a>
<a href="#">ITC</a>	R	iTunes Cover Flow artwork	-	-	-	-	R <a href="#">ITC</a>
J2C, J2K, JPC	R	JPEG 2000 codestream	R <sup>3</sup>	R <sup>3</sup>	R	R	R <a href="#">Jpeg2000 Photoshop</a> <sup>3</sup>
<a href="#">JP2, JPF, JPM, JPX</a>	R/W	JPEG 2000 image [Compound/Extended]	R/W/C <sup>3</sup>	R/W/C <sup>3</sup>	R/W/C	R	R/W/C <a href="#">Jpeg2000</a> , R <a href="#">Photoshop</a> <sup>3</sup>
<a href="#">JPEG, JPG, JPE</a>	R/W	Joint Photographic Experts Group image	R/W/C	R/W/C	R/W/C	R/W/C	<a href="#">Supported JPEG Meta Information</a>
<a href="#">JSON</a>	R	JavaScript Object Notation	-	-	-	-	R <a href="#">JSON</a>
K25	R	Kodak DC25 RAW ( <a href="#">TIFF</a> -based)	R	R	R	R	-
KDC	R	Kodak Digital Camera RAW ( <a href="#">TIFF</a> -based)	R	R	R	R	R <a href="#">Kodak</a>
<a href="#">KEY, KTH</a>	R	Apple iWork '09 Keynote presentation/Theme	-	-	-	-	R <a href="#">XML ZIP</a>
LA	R	Lossless Audio ( <a href="#">RIFF</a> -based)	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
<a href="#">LFP, LFR</a>	R	Lytro Light Field Picture	-	-	-	-	R <a href="#">Lytro</a>
<a href="#">LNK</a>	R	Microsoft Shell Link (Windows shortcut)	-	-	-	-	R <a href="#">LNK</a>
LRV	R/W	Low-Resolution Video ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
<a href="#">M2TS, MTS, M2T, TS</a>	R	MPEG-2 Transport Stream (used for AVCHD video)	-	-	-	-	R <a href="#">M2TS H264</a>

M4A, M4B, M4P, M4V	R/W	MPEG-4 Audio/Video ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
MAX	R	3D Studio MAX ( <a href="#">FPX</a> -like)	-	-	R	R	R <a href="#">FlashPix</a>
MEF	R/W	Mamiya (RAW) Electronic Format ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	-
<a href="#">MIE</a>	R/W/C	Meta Information Encapsulation ( <a href="#">MIE specification</a> )	R/W/C	R/W/C	R/W/C	R/W/C	R/W/C <a href="#">MIE</a>
<a href="#">MIFF</a> , <a href="#">MIF</a>	R	Magick Image File Format	R	R	R	R	R <a href="#">MIFF</a> <a href="#">Photoshop</a>
<a href="#">MKA</a> , <a href="#">MKV</a> , <a href="#">MKS</a>	R	Matroska Audio/Video/Subtitle	-	-	-	-	R <a href="#">Matroska</a>
<a href="#">MOBI</a> , <a href="#">AZW</a> , <a href="#">AZW3</a>	R	Mobipocket electronic book ( <a href="#">Palm</a> -based)	-	-	-	-	R <a href="#">Palm</a> <a href="#">MOBI</a>
MODD	R	Sony Picture Motion metadata (XML <a href="#">PLIST</a> -based)	-	-	-	-	R <a href="#">PLIST</a>
<a href="#">MOI</a>	R	MOD Information file	-	-	-	-	R <a href="#">MOI</a>
<a href="#">MOS</a>	R/W	Creo Leaf Mosaic ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R <a href="#">Leaf</a>
<a href="#">MOV</a> , <a href="#">QT</a>	R/W	Apple QuickTime Movie	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
<a href="#">MP3</a>	R	MPEG-1 layer 3 audio	-	-	-	-	R <a href="#">MPEG ID3</a> <a href="#">APE</a>
MP4	R/W	Motion Picture Experts Group version 4 ( <a href="#">QuickTime</a> -based)	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
<a href="#">MPC</a>	R	Musepack Audio	-	-	-	-	R <a href="#">MPC ID3</a> <a href="#">APE</a>
<a href="#">MPEG</a> , <a href="#">MPG</a> , <a href="#">M2V</a>	R	Motion Picture Experts Group version 1 or 2	-	-	-	-	R <a href="#">MPEG ID3</a>
MPO	R/W	Extended Multi-Picture format ( <a href="#">JPEG</a> with <a href="#">MPF</a> extensions)	R/W/C	R/W/C	R/W/C	R/W/C	<a href="#">Supported JPEG Meta Information</a>
<a href="#">MQV</a>	R/W	Sony Mobile QuickTime Video	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
<a href="#">MRW</a>	R/W	Minolta RAW	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">MinoltaRaw</a> <a href="#">Minolta</a>
<a href="#">MXF</a>	R	Material Exchange Format	-	-	-	-	R <a href="#">MXF</a>
NEF	R/W	Nikon (RAW) Electronic Format ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Nikon</a> <a href="#">NikonCapture</a>
<a href="#">NMBTEMPLATE</a>	R	Apple iWork '09 Numbers Template	-	-	-	-	R <a href="#">XML</a> <a href="#">ZIP</a>
NRW	R/W	Nikon RAW (2) ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Nikon</a> <a href="#">NikonCapture</a>
<a href="#">NUMBERS</a>	R	Apple iWork '09 Numbers spreadsheet	-	-	-	-	R <a href="#">XML</a> <a href="#">ZIP</a>
<a href="#">O</a>	R	Unix compiled code Object	-	-	-	-	R <a href="#">EXE</a>
ODB, ODC, ODF, ODG, ODI, ODP, ODS, ODT	R	Open Document Database/Chart/Formula/Graphics/Image/Presentation/Spreadsheet/Text (ZIP/XML-based)	-	-	-	-	R XML <a href="#">ZIP</a>
OFR	R	OptimFROG audio ( <a href="#">RIFF</a> -based)	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
<a href="#">OGG</a> , <a href="#">OGV</a>	R	Ogg bitstream container	-	-	-	-	R <a href="#">FLAC ID3</a> <a href="#">Theora</a> <a href="#">Vorbis</a>
<a href="#">OPUS</a>	R	Ogg Opus audio	-	-	-	-	R <a href="#">FLAC ID3</a> <a href="#">Opus</a> <a href="#">Vorbis</a>
ORF	R/W	Olympus RAW Format ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Olympus</a>
<a href="#">OTF</a>	R	Open Type Font	-	-	-	-	R <a href="#">Font</a>
PAC	R	Lossless Predictive Audio Compression ( <a href="#">RIFF</a> -based)	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
<a href="#">PAGES</a>	R	Apple iWork '09 Pages document	-	-	-	-	R <a href="#">XML</a> <a href="#">ZIP</a>
<a href="#">PCD</a>	R	Kodak Photo CD Image Pac	-	-	-	-	R <a href="#">PhotoCD</a>
<a href="#">PCX</a>	R	PC Paintbrush	-	-	-	-	R <a href="#">PCX</a>
<a href="#">PDB</a> , <a href="#">PRC</a>	R	Palm Database	-	-	-	-	R <a href="#">Palm</a>
<a href="#">PDF</a>	R/W	Adobe Portable Document Format	R <sup>3</sup>	R <sup>3</sup>	R/W/C	R <sup>3</sup>	R/W/C <a href="#">PDF</a> , R <a href="#">Photoshop</a>
PEF	R/W	Pentax (RAW) Electronic Format ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Pentax</a>
<a href="#">PFA</a> , <a href="#">PFB</a>	R	PostScript Font ASCII/Binary	-	-	-	-	R <a href="#">Font</a>
<a href="#">PFM</a>	R	Printer Font Metrics	-	-	-	-	R <a href="#">Font</a>
<a href="#">PGF</a>	R	Progressive Graphics File	-	-	-	-	R <a href="#">PGF</a> <a href="#">PNG</a>
<a href="#">PICT</a> , <a href="#">PCT</a>	R	Apple Picture file	-	-	-	R	R <a href="#">PICT</a> <a href="#">Photoshop</a>
<a href="#">PLIST</a>	R	Apple Property List (binary and XML formats)	-	-	-	-	R <a href="#">PLIST</a>
<a href="#">PMP</a>	R	Sony DSC-F1 Cyber-Shot image	-	-	-	-	R <a href="#">Sony</a>

<a href="#">PNG, JNG, MNG</a>	R/W	Portable/JPEG/Multiple-image Network Graphics	R/W/C <sup>3</sup>	R/W/C <sup>3</sup>	R/W/C	R/W/C	R/W/C <a href="#">PNG</a>
PPM, PBM, PGM	R/W	Portable Pixel/Bit/Gray Map	-	-	-	-	R PPM, R/W/C Comment
PPT, PPS, POT	R	PowerPoint Presentation/Slideshow/Template ( <a href="#">FPX</a> -like)	-	-	R	R	R <a href="#">FlashPix</a>
<a href="#">POTX, POTM</a>	R	Office Open XML Presentation Template [Macro-enabled]	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">PPSX, PPSM</a>	R	Office Open XML Presentation Slideshow [Macro-enabled]	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">PPTX, PPTM</a>	R	Office Open XML Presentation [Macro-enabled]	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">PSD, PSB, PSDT</a>	R/W	PhotoShop Document / Large Document / Template	R/W/C	R/W/C	R/W/C	R/W/C	R <a href="#">Photoshop</a>
<a href="#">PSP, PSPIMAGE</a>	R	Paint Shop Pro	R	-	-	-	R <a href="#">PSP</a>
<a href="#">QTIF, QTI, QIF</a>	R/W	QuickTime Image File	R/W <sup>3</sup>	R/W <sup>3</sup>	R/W/C	-	R/W/C <a href="#">QuickTime</a>
<a href="#">R3D</a>	R	Redcode RAW video	-	-	-	-	R <a href="#">Red</a>
<a href="#">RA</a>	R	Real Audio	-	-	-	-	R <a href="#">Real ID3</a>
<a href="#">RAF</a>	R/W	FujiFilm RAW Format	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">FujiFilm</a>
<a href="#">RAM, RPM</a>	R	Real Audio/Plug-in Metafile	-	-	-	-	R <a href="#">Real</a>
<a href="#">RAR</a>	R	RAR Archive	-	-	-	-	R <a href="#">ZIP</a>
<a href="#">RAW</a>	R	Kyocera Contax N Digital RAW	-	-	-	-	R <a href="#">KyoceraRaw</a>
<a href="#">RAW</a>	R/W	Panasonic RAW ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">PanasonicRaw</a> <a href="#">Panasonic</a>
<a href="#">RIFF, RIF</a>	R	Resource Interchange File Format	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
<a href="#">RM, RV, RMVB</a>	R	Real Media/Video [Variable Bitrate]	-	-	-	-	R <a href="#">Real</a>
<a href="#">RSRC</a>	R	Mac OS Resource	-	-	-	-	R <a href="#">RSRC Photoshop</a> <a href="#">PostScript Font</a>
<a href="#">RTF</a>	R	Rich Text Format	-	-	-	-	R <a href="#">RTF</a>
<a href="#">RW2</a>	R/W	Panasonic RAW 2 ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">PanasonicRaw</a> <a href="#">Panasonic</a>
<a href="#">RWL</a>	R/W	Leica RAW ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">PanasonicRaw</a> <a href="#">Panasonic</a>
<a href="#">RWZ</a>	R	Rawzor compressed image	R	R	R	R	R <a href="#">Rawzor</a>
<a href="#">SEQ</a>	R	FLIR Systems image Sequence	-	-	-	-	R <a href="#">FLIR</a>
SKETCH	R	Sketch design file	-	-	-	-	R <a href="#">JSON ZIP</a>
<a href="#">SO</a>	R	Unix ELF executable and Shared Object files	-	-	-	-	R <a href="#">EXE</a>
SR2	R/W	Sony RAW 2 ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Sony</a>
SRF	R	Sony RAW Format ( <a href="#">TIFF</a> -based)	R	R	R	R	R <a href="#">Sony</a>
SRW	R/W	Samsung RAW format ( <a href="#">TIFF</a> -based)	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Samsung</a>
<a href="#">SVG</a>	R	Scalable Vector Graphics (XML-based)	-	-	-	-	R <a href="#">SVG</a>
<a href="#">SWF</a>	R	Shockwave Flash	-	-	R	-	R <a href="#">Flash</a>
THM	R/W	Thumbnail image ( <a href="#">JPEG</a> )	R/W/C	R/W/C	R/W/C	R/W/C	<a href="#">Supported JPEG Meta Information</a>
<a href="#">THMX</a>	R	Office Open XML Theme	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">TIFF, TIF</a>	R/W	Tagged Image File Format	R/W/C	R/W/C	R/W/C	R/W/C	R/W/C <a href="#">GeoTIFF</a> <sup>1</sup> , R/W <a href="#">Trailers</a>
<a href="#">TTF, TTC</a>	R	True Type Font/Collection	-	-	-	-	R <a href="#">Font</a>
<a href="#">TORRENT</a>	R	BitTorrent description file	-	-	-	-	R <a href="#">Torrent</a>
<a href="#">VCF, VCARD</a>	R	Virtual Card	-	-	-	-	R <a href="#">VCard</a>
VOB	R	Video Object ( <a href="#">MPEG</a> -based)	-	-	-	-	R <a href="#">MPEG</a>
<a href="#">VRD</a>	R/W/C <sup>2</sup>	Canon DPP Recipe Data	-	-	R/W/C	-	R/W/C <a href="#">CanonVRD</a> <sup>2</sup>
VSD	R	Microsoft Visio Drawing ( <a href="#">FPX</a> -like)	-	-	R	R	R <a href="#">FlashPix</a>
WAV	R	Windows digital audio WAVEform ( <a href="#">RIFF</a> -based)	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
WEBM	R	Google Web Movie ( <a href="#">Matroska</a> -based)	-	-	-	-	R <a href="#">Matroska</a>
WEBP	R	Google Web Picture ( <a href="#">RIFF</a> -based)	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
WMA, WMV	R	Windows Media Audio/Video ( <a href="#">ASF</a> -based)	-	-	R	-	R <a href="#">ASF</a>
<a href="#">WTV</a>	R	Windows recorded TV show	-	-	-	-	R <a href="#">WTV</a>
WV	R	WavePack lossless audio ( <a href="#">RIFF</a> -based)	R <sup>3</sup>	-	R	-	R <a href="#">RIFF</a>
<a href="#">X3F</a>	R/W	Sigma/Foveon RAW	R/W/C	R/W/C	R/W/C	R/W/C	R/W <a href="#">Sigma</a> , R



<a href="#">XCF</a>	R	GIMP native image format	R	R	R	R	<a href="#">SigmaRaw</a> R <a href="#">GIMP</a>
XLS, XLT	R	Microsoft Excel Spreadsheet/Template ( <a href="#">FPX</a> -like)	-	-	R	R	R <a href="#">FlashPix</a>
<a href="#">XLSX</a> , <a href="#">XLSM</a> , <a href="#">XLSB</a>	R	Office Open XML Spreadsheet [Macro-enabled/Binary]	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">XLTX</a> , <a href="#">XLTM</a>	R	Office Open XML Spreadsheet Template [Macro-enabled]	-	-	-	-	R <a href="#">XML ZIP</a>
<a href="#">XMP</a>	R/W/C	Extensible Metadata Platform sidecar file	-	-	R/W/C	-	-
<a href="#">ZIP</a>	R	ZIP archive	-	-	-	-	R <a href="#">ZIP</a>

<sup>1</sup> Block write only, <sup>2</sup> Block create only, <sup>3</sup> Non-standard format, <sup>4</sup> Only writable for PostScript-format file type, <sup>5</sup> Only writable for PDF-format file type

## Supported JPEG Meta Information

ExifTool can **Read**, **Write** and/or **Create** the following types of meta information in JPEG images:

JPEG Meta Information	Support	Description
APP0 - <a href="#">JFIF</a>	R/W/C	JPEG File Interchange Format
APP0 - <a href="#">JFXX</a>	R	Extended JFIF
APP0 - <a href="#">CIFE</a>	R/W	<a href="#">Camera Image File Format</a> (used by some Canon models)
APP0 - <a href="#">AVI1</a>	R	JPEG AVI information
APP0 - <a href="#">Ocad</a>	R	Photobucket Ocad segment
APP1 - <a href="#">EXIF</a>	R/W/C	Exchangeable Image File Format (multi-segment)
APP1 - <a href="#">XMP</a>	R/W/C	Extensible Metadata Platform (multi-segment)
APP1 - <a href="#">QVCI</a>	R	Casio QV-7000SX QVCI information
APP1 - <a href="#">FLIR</a>	R	FLIR thermal imaging data (multi-segment)
APP2 - <a href="#">ICC</a>	R/W/C	International Color Consortium (multi-segment)
APP2 - <a href="#">FPXR</a>	R	FlashPix Ready (multi-segment)
APP2 - <a href="#">MPF</a>	R	Multi-Picture Format
APP2 - PreviewImage	R	Samsung/GE APP2 preview image (multi-segment)
APP3 - <a href="#">Kodak Meta</a>	R/W	Kodak Meta information (EXIF-like)
APP3 - <a href="#">Stim</a>	R	Stereo Still Image format
APP3 - PreviewImage	R	Samsung/HP preview image (multi-segment)
APP4 - <a href="#">Scalado</a>	R	(presumably written by <a href="#">Scalado</a> mobile software)
APP4 - <a href="#">FPXR</a>	R	FlashPix Ready in non-standard location (multi-segment)
APP4 - PreviewImage	R	(continued from APP3)
APP5 - <a href="#">Ricoh RMETA</a>	R	Ricoh custom fields
APP5 - <a href="#">Samsung UniqueID</a>	R	Samsung Unique ID
APP5 - PreviewImage	R	(continued from APP4)
APP6 - <a href="#">EPPIM</a>	R	Toshiba PrintIM
APP6 - <a href="#">NITE</a>	R	National Imagery Transmission Format
APP6 - <a href="#">HP TDHD</a>	R	Hewlett-Packard Photosmart R837 TDHD information
APP6 - <a href="#">GoPro</a>	R	GoPro Metadata Format (GPMF) information
APP7 - <a href="#">Pentax</a>	R	Pentax APP7 maker notes
APP7 - <a href="#">Qualcomm</a>	R	Qualcomm Camera Attributes
APP8 - <a href="#">SPIFF</a>	R	Still Picture Interchange File Format
APP9 - <a href="#">Media Jukebox</a>	R	Media Jukebox XML information
APP10 - Comment	R	PhotoStudio Unicode Comment
APP11 - <a href="#">JPEG-HDR</a>	R	JPEG-HDR compressed ratio image
APP12 - <a href="#">Picture Info</a>	R	ASCII-based Picture Information
APP12 - <a href="#">Ducky</a>	R/W/C	Photoshop "Save for Web"
APP13 - <a href="#">Photoshop IRB</a>	R/W/C	Image Resource Block (multi-segment, includes <a href="#">IPTC</a> )
APP13 - <a href="#">Adobe CM</a>	R	Adobe Color Management
APP14 - <a href="#">Adobe</a>	R/W/C	Adobe DCT filter
APP15 - <a href="#">GraphicConverter</a>	R	GraphicConverter quality
COM	R/W/C	JPEG Comment (multi-segment)
DQT	R	(used to calculate the <a href="#">Extra:JPEGDigest</a> tag value)
<a href="#">SOF</a>	R	JPEG Start Of Frame
<b>Trailers <sup>1</sup></b>		
<a href="#">AFCP trailer</a>	R/W	AXS File Concatenation Protocol (includes <a href="#">IPTC</a> )

<a href="#">CanonVRD trailer</a>	R/W/C	Canon DPP Recipe Data (includes <a href="#">DR4</a> )
<a href="#">FotoStation trailer</a>	R/W	FotoWare FotoStation (includes <a href="#">IPTC</a> )
<a href="#">PhotoMechanic trailer</a>	R/W	Camera Bits Photo Mechanic
<a href="#">MIE trailer</a>	R/W	<a href="#">Meta Information Encapsulation</a>
<a href="#">Samsung trailer</a>	R	Samsung Galaxy trailer
PreviewImage trailer	R/W/C	(preview image written after JPEG EOI)
EmbeddedVideo trailer	R	(extracted only with ExtractEmbedded option)

<sup>1</sup> All trailers except Samsung, PreviewImage and EmbeddedVideo also have R/W support in TIFF images.

## System Requirements

Requires Perl 5.004 or later. No other libraries or software required, but some optional Perl modules may be added to enable certain ExifTool features (for details, see the DEPENDENCIES section of the README file included in the full distribution).

**Windows users:** A [stand-alone Windows executable](#) version of ExifTool is available which doesn't require Perl. You can also use the pure Perl version if you already have Perl installed. (You can get a good, free Perl interpreter from [activeperl.com](#).)

**Everyone else (Mac, Unix, etc):** Don't worry, you already have Perl installed.

## Running ExifTool

The [exiftool application](#) provides a convenient command-line interface for the [Image::ExifTool](#) Perl package (both included in the full distribution). Once you have downloaded and extracted the distribution, you can immediately run exiftool (without building or installing) by typing "*DIR/exiftool FILE*" (or "*perl DIR/exiftool FILE*" in Windows), where *DIR* is the exiftool directory and *FILE* is the name of an image file, including directory name. Read the [installation instructions](#) or the README file included in the full distribution for help installing ExifTool.

Many command-line options are available to allow you to access a wide range of features. Run exiftool with no arguments for a [complete list of available options with examples](#).

## Running in Windows

### i) From the command line:

The Perl application ("*exiftool*") is run by typing "*perl exiftool*". Alternately, you may be able to rename it to "*exiftool.pl*" and type "*exiftool.pl*", but this requires that the proper Windows associations have been made for the ".pl" extension.

The stand-alone version ("*exiftool(-k).exe*") should be renamed to "*exiftool.exe*" to allow it to be run by typing "*exiftool*" at the command line.

If the exiftool executable ("*exiftool.pl*" or "*exiftool.exe*") is not in the current directory or your system PATH, then its directory must be specified on the command line (eg. by typing "*c:\path\_to\_exiftool\exiftool.pl*" or "*c:\path\_to\_exiftool\exiftool*").

Note that when typing commands in the "cmd.exe" shell, you should use double quotes instead of single quotes as shown in some examples.

### ii) Stand-alone version in the Windows GUI:

Double-click on "*exiftool(-k).exe*" to read the application documentation, or drag-and-drop files and folders to run exiftool on the selected files.

Simple options may be added inside brackets in the name of the stand-alone executable. (But note that the characters */\?\*:|"<>* may not be used because they are invalid in Windows file names.) In this way, the



behaviour of the drag-and-drop application can be customized. For example:

Executable Name	Operation
<code>exiftool(-k).exe</code>	Print meta information in window and pause before terminating.
<code>exiftool(-k -a -u -g1 -w txt).exe</code>	Generate output ".txt" files with detailed meta information.
<code>exiftool(-k -o %d%f.xmp).exe</code>	Generate sidecar ".xmp" files.
<code>exiftool(-copyright='Phil Harvey').exe</code>	Add copyright information (and don't pause before terminating).

**Hint:** Options may also be added to the "Target" property of a Windows shortcut for the executable. Using a shortcut has 3 advantages over adding options in the file name: 1) different shortcuts may be created without requiring multiple copies of the executable, 2) characters which are invalid in file names may be used, and 3) the shortcuts can be given more meaningful (and convenient) file names.

As well, it may be useful to increase the window and buffer sizes to display more information: Right-click on the window's title bar then select "Properties" from the menu and change the window layout settings.

## Example Output

```
>
exiftool -h -canon t/images/Canon.jpg exiftool -lang de -h -canon t/images/Canon.jpg
```

File Name	Canon.jpg	Dateiname	Canon.jpg
Camera Model Name	Canon EOS DIGITAL REBEL	Kameramodell	Canon EOS DIGITAL REBEL
Date/Time Original	2003:12:04 06:46:52	Erstellungsdatum/-uhrzeit	2003:12:04 06:46:52
Shooting Mode	Bulb	Aufnahmemodus	Bulb
Shutter Speed	4	Belichtungsdauer	4
Aperture	14.0	Blende	14.0
Metering Mode	Center-weighted average	Belichtungsmessmethode	Mittenbetont
Exposure Compensation	0	Belichtungs Korrektur	0
ISO	100	ISO-Empfindlichkeit	100
Lens	18.0 - 55.0 mm	Objektiv	18.0 - 55.0 mm
Focal Length	34.0 mm	Brennweite	34.0 mm
Image Size	8x8	Bildgröße	8x8
Quality	RAW	Bildqualität	RAW
Flash	No Flash	Blitz	Blitz wurde nicht ausgelöst
White Balance	Auto	Weißabgleich	Automatisch
Focus Mode	Manual Focus (3)	Fokus-Modus	Manueller Fokus (3)
Contrast	+1	Kontrast	+1
Sharpness	+1	Schärfe	+1
Saturation	+1	Farbsättigung	+1
Color Tone	Normal	Farbton	Normal
Color Space	sRGB	Farbraum	sRGB
File Size	2.6 kB	Dateigröße	2.6 kB
File Number	118-1861	Dateinummer	118-1861
Drive Mode	Continuous Shooting	Aufnahmeart	Serienaufnahme
Owner Name	Phil Harvey	Name des Besitzers	Phil Harvey
Serial Number	0560018150	Seriennummer	0560018150

## Verbose and HtmlDump Output

The [Verbose](#) (-v) and [HtmlDump](#) (-htmlDump) options print additional information that can be very useful for debugging or when decoding new tags.

## Tag Names Explained

A tag name is a "handle" that is used to refer to a specific piece of meta information. Tag names are entered on the command line with a leading '-', in the order you want them displayed. Case is not significant. The tag name may be prefixed by a [group name](#) (separated by a colon) to identify a specific information type or location. A special tag name of "All" may be used to represent all tags, or all tags in a specified group. For example:

```
exiftool -filename -imagesize -exif:fnumber -xmp:all image.jpg
```

A complete list of [ExifTool Tag Names](#) accompanies this documentation. As well, current lists of available tag names and writable tag names may be obtained using the exiftool **-list** and **-listw** options. But perhaps the easiest way to determine a tag name is to use the **-s** option to print the tag names instead of descriptions for all information in a file. It may also be helpful to use the **-G** option to display the group names, and the **-H** or **-D** option to print the numerical tag ID's for reference.

### Notes:

1. Tag names sometimes differ from their descriptions. Use the **-s** command-line option to see the actual tag names instead of the descriptions shown when extracting information.
2. When extracting information, tags will not appear in the output unless they exist in the file, even if they are specified on the command line. The **-f** option may be used to force all specified tags to be displayed (not including tags specified with wildcards or by **-GROUP:all**).
3. Information for a given tag name may occur in multiple locations within a single file. By default these duplicate tags are suppressed, but the **-a** option may be used to extract all tags.
4. Tag names may be suffixed by a '#' character to disable the print conversion on a per-tag basis. See the [-n option](#) in the application documentation for more information.

## Shortcut Tags

Shortcut tags represent one or more other tags, and are used like any other tag when reading, writing or copying information.

ExifTool defines [a few shortcut tags](#) in the Image::ExifTool::Shortcuts module, and allows users to define their own shortcuts in a [configuration file](#) called ".ExifTool\_config" in their home directory or exiftool application directory. Here is a simple example that defines two shortcuts:

```
%Image::ExifTool::UserDefined::Shortcuts = (  
    MyShortcut => ['createdate','exposuretime','aperture'],  
    MyAlias => 'FocalLengthIn35mmFormat',  
);
```

In this example, MyShortcut is a shortcut for the CreateDate, ExposureTime and Aperture tags, and MyAlias is a shortcut for FocalLengthIn35mmFormat.

The current shortcuts may be listed with the **-list** option.

The `~/ExifTool_config` file may also be used to define new tags. For more information about the configuration file, see the [sample configuration file](#) included with the ExifTool distribution.

**Windows tip:** You may have difficulty generating a filename beginning with a '.' in the Windows GUI, but it can be done with the **rename** command at the cmd.exe prompt.

## Tag Groups

ExifTool classifies tags into groups in five different families. These groups are:

Family	Group Names
<b>0 (Information Type)</b>	AFCP, AIFF, APE, APP0, APP1, APP11, APP12, APP13, APP14, APP15, APP4, APP5, APP6, APP8, ASF, Audible, CanonVRD, Composite, DICOM, DNG, DV, DjVu, Ducky, EXE, EXIF, ExifTool, FITS, FLAC, FLIR, File, Flash, FlashPix, Font, FotoStation, GIF, GIMP, GeoTiff, GoPro, H264, HTML, ICC_Profile, ID3, IPTC, ISO, ITC, JFIF, JPEG, JSON, Jpeg2000, LNK, Leaf, Lytro, M2TS, MIE, MIFF, MNG, MOI, MPC, MPEG, MPF, MXF, MakerNotes, Matroska, Meta, Ogg, OpenEXR, Opus, PDF, PICT, PLIST, PNG, PSP, Palm, PanasonicRaw, PhotoCD, PhotoMechanic, Photoshop, PostScript, PrintIM, QuickTime, RAF, RIFF, RSRC, RTF, Radiance, Rawzor, Real, Red, SVG, SigmaRaw, Stim, Theora, Torrent, VCard, Vorbis, WTV, XML, XMP, ZIP
<b>1 (Specific Location)</b>	AC3, AFCP, AIFF, APE, ASF, AVI1, Adobe, AdobeCM, AdobeDNG, Apple, Audible, CIFF, CameraIFD, Canon, CanonCustom, CanonRaw, CanonVRD, Casio, Chapter#, Composite, DICOM, DJI, DNG, DV, DjVu, DjVu-Meta, Ducky, EPPIM, EXE, EXIF, ExifIFD, ExifTool, FITS, FLAC, FLIR, File, Flash, FlashPix, Font, FotoStation, FujiFilm, FujiIFD, GE, GIF, GIMP, GPS, GeoTiff, GlobParamIFD, GoPro, GraphConv, H264, HP, HTC, HTML, HTML-dc, HTML-ncc, HTML-office, HTML-prod, HTML-vw96, HTTP-equiv, ICC-chrm, ICC-clrt, ICC-header, ICC-meas, ICC-meta, ICC-view, ICC_Profile, ICC_Profile#, ID3, ID3v1, ID3v1_Enh, ID3v2_2, ID3v2_3, ID3v2_4, IFD0, IFD1, IPTC, IPTC#, ISO, ITC, InteropIFD, ItemList, JFIF, JFXX, JPEG, JPEG-HDR, JSON, JVC, Jpeg2000, KDC_IFD, Keys, Kodak, KodakBordersIFD, KodakEffectsIFD, KodakIFD, KyoceraRaw, LNK, Leaf, LeafSubIFD, Leica, Lytro, M2TS, MAC, MIE-Audio, MIE-Camera, MIE-Canon, MIE-Doc, MIE-Extender, MIE-Flash, MIE-GPS, MIE-Geo, MIE-Image, MIE-Lens, MIE-Main, MIE-MakerNotes, MIE-Meta, MIE-Orient, MIE-Preview, MIE-Thumbnail, MIE-UTM, MIE-Unknown, MIE-Video, MIFF, MNG, MOBI, MOI, MPC, MPEG, MPF0, MPImage, MS-DOC, MXF, MacOS, MakerNotes, MakerUnknown, Matroska, MediaJukebox, Meta, MetalIFD, Microsoft, Minolta, MinoltaRaw, Motorola, NITF, Nikon, NikonCapture, NikonCustom, NikonScan, Nintendo, Ocad, Ogg, Olympus, OpenEXR, Opus, PDF, PICT, PNG, PNG-pHYs, PSP, Palm, Panasonic, PanasonicRaw, Pentax, PhaseOne, PhotoCD, PhotoMechanic, Photoshop, PictureInfo, PostScript, PreviewIFD, PrintIM, ProfileIFD, Qualcomm, QuickTime, RAF, RAF2, RIFF, RMETA, RSRC, RTF, Radiance, Rawzor, Real, Real-CONT, Real-MDPR, Real-PROP, Real-RA3, Real-RA4, Real-RA5, Real-RJMD, Reconyx, Red, Ricoh, SPIFF, SR2, SR2DataIFD, SR2SubIFD, SRF#, SVG, Samsung, Sanyo, Scalado, Sigma, SigmaRaw, Sony, SonyIDC, Stim, SubIFD, System, Theora, Torrent, Track#, UserData, VCalendar, VCard, Version0, Vorbis, WTV, XML, XMP, XMP-DICOM, XMP-GAudio, XMP-GDepth, XMP-GFocus, XMP-GImage, XMP-GPano, XMP-GSpherical, XMP-LImage, XMP-MP, XMP-MP1, XMP-PixelLive, XMP-aas, XMP-acdsee, XMP-album, XMP-apple-fi, XMP-aux, XMP-cc, XMP-cell, XMP-creatorAtom, XMP-crs, XMP-dc, XMP-dex, XMP-digiKam, XMP-drone-dji, XMP-dwc, XMP-exif, XMP-exifEX, XMP-expressionmedia, XMP-extensis, XMP-fpv, XMP-getty, XMP-ics, XMP-iptcCore, XMP-iptcExt, XMP-lr, XMP-mediapro, XMP-microsoft, XMP-mwg-coll, XMP-mwg-kw, XMP-mwg-rs, XMP-pdf, XMP-pdfx, XMP-photomech, XMP-photoshop, XMP-plus, XMP-pmi, XMP-prism, XMP-pri, XMP-prm, XMP-pur, XMP-rdf, XMP-swf, XMP-tiff, XMP-x, XMP-xmp, XMP-xmpBJ, XMP-xmpDM, XMP-xmpMM, XMP-xmpNote, XMP-xmpPLUS, XMP-xmpRights, XMP-xmpTPg, ZIP
<b>2 (Category)</b>	Audio, Author, Camera, Document, ExifTool, Image, Location, Other, Preview, Printing, Time, Unknown, Video
<b>3 (Document Number)</b>	Doc#, Main
<b>4 (Instance Number)</b>	Copy#

The exiftool output can be organized based on these groups using the **-g** or **-G** option. See the [GetGroup](#) function in the ExifTool library for a description of the group families.

## Writing Meta Information

When writing information, ExifTool preserves the original file by adding "**\_original**" to the file name. Be sure to keep a copy of the original, or thoroughly validate the new file before erasing the original. ([Read here](#) for some ramblings on the subject of writing meta information.)

## Syntax

Tag values are written rather than being extracted if any tag name ends with a '=' symbol (or if the `-tagsFromFile` or `-geotag` options are used). The '=' may be prefixed by '+', '-' or '<' to add a value, remove a value or set a value from file. The following table outlines the different write syntaxes:

Syntax	Result
-TAG=	Deletes all occurrences of TAG
-all=	Deletes all meta information! <sup>†</sup>
-GROUP:TAG=	Deletes TAG only in specified group
-GROUP:all=	Deletes all information in specified group
-[GROUP:]TAG=VALUE	Sets value of TAG (only in GROUP if specified)
-[GROUP:]TAG+=VALUE	Adds item to a list, shifts a date/time, or increments a number
-[GROUP:]TAG-=VALUE	Removes item from a list, shifts a date/time, or deletes TAG if it has the specified value
-[GROUP:]TAG<=FILE	Sets tag value from contents of specified file

<sup>†</sup> See the [Writer Limitations](#) for some limitations of this feature.

Quotes are required around VALUE if it contains spaces or other special characters, and around the whole argument if the '<=' syntax is used (to prevent shell redirection).

A special feature allows the print conversion to be disabled on a per-tag basis by suffixing any tag name (including 'a11') with the '#' character. This has the same effect as the `-n` option, but for a single tag. See the [-n option](#) in the application documentation for more details.

**Note:** Changes to PDF files are reversible because the original metadata is never actually deleted from these files. See the [PDF Tags documentation](#) for details.

## Group Priorities

ExifTool prioritizes the following types of meta information when writing:

1) EXIF, 2) IPTC, 3) XMP

Many tag names are valid for more than one of these groups. If a group name is not specified when writing information, then the information is added only to the highest priority group for which the tag name is valid (however, the information is updated in all groups where the tag already existed). The priority of the groups is given by the list above. Specifically, this means that new information is added preferentially to the EXIF group, or to the IPTC group if no corresponding EXIF tag exists, or finally to the XMP group.

Alternatively, information may be written to a specific group only, bypassing these priorities, by providing a group name for the tag. The [Writing Meta Information](#) section above gave the syntax rules for exiftool command-line arguments to do this. Any family 0, 1 or 2 group name may be used when writing information, although not all groups are writable.

## The "-tagsFromFile" Option

A special ExifTool option allows copying tags from one file to another. The command-line syntax for doing this is `"-tagsFromFile SRCFILE"`. Any tags specified after this option on the command line are extracted from source file and written to the destination file. If no tags are specified, then all writable tags are copied. This option is very simple, yet very powerful. Depending on the formats of the source and destination files, some of tags read may not be valid in the destination file, in which case they aren't written.

This option may also be used to transfer information between different tags within a single image or between different images. See the [-tagsFromFile option](#) in the application documentation for more details.

## Writer Limitations

- ExifTool will **not rewrite a file if it detects a significant problem** with the file format.
- ExifTool has been tested with a wide range of different images, but since it is not possible to test it with every known image type, **there is the possibility that it will corrupt some files**. Be sure to keep backups of your files.
- Even though ExifTool does some validation of the information written, it is still **possible to write illegal values** which may cause problems when reading the images with other software. So take care to validate the information you are writing.
- ExifTool is **not guaranteed to remove metadata completely** from a file when attempting to delete all metadata. For JPEG images, all APP segments (except [Adobe APP14](#), which is not removed by default) and trailers are removed which effectively removes all metadata, but for other formats the results are less complete:
  - JPEG - APP segments (except [Adobe APP14](#)) and trailers are removed.
  - TIFF - XMP, IPTC, ICC\_Profile and the ExifIFD are removed, but some EXIF may remain in IFD0. (The CommonIFD0 [Shortcut tag](#) is provided to simplify removal of common metadata tags from IFD0.)
  - PNG - Only XMP, EXIF, ICC\_Profile and native PNG textual data chunks are removed.
  - PDF - The original metadata is never actually removed.
  - PS - Only XMP and some native PostScript tags may be deleted.
  - MOV/MP4 - Only XMP is deleted.
  - RAW formats - It is not recommended to remove all metadata from RAW images because this will likely remove some proprietary information that is necessary for proper rendering of the image.

## Known Problems

- [\[2019-05-29\]](#) **Canon Digital Photo Professional 4 (DPP4)** will destroy a **CR3** image when editing if it had previously been edited by DPP4 followed by ExifTool. *[ExifTool 11.45 fixes this by structuring the CR3 to make it safe for editing with DPP4, and may be used to restructure files written by older ExifTool versions.]*
- [\[2018-09-27\]](#) The **Sony Imaging Edge applications** give an error when trying to open **ARW** or **ARQ** images edited by ExifTool, although other RAW image utilities including Sony IDC (Sony's older RAW image converter), Adobe Photoshop, Lightroom and DNG Converter, Apple Preview, dcrw, Capture One, Affinity Photo, and LibRaw's SonyPixelShift2DNG have no problems with these.
- [\[2016-08-03\]](#) Some antivirus software has been known to cause problems for the **Windows** version of ExifTool. **Norton Antivirus** may delete ExifTool when it is run, **Windows Defender** may slow down launching of ExifTool or hang it altogether, and **Bitdefender Antivirus** may block ExifTool from writing files. Presumably this is due to the way the ExifTool package for Windows works -- it unpacks executable files into a temporary directory and runs from there, which apparently may be seen as a threat by antivirus software. A work-around is to add ExifTool to the exclusion list of the antivirus software.
- [\[2016-05-27\]](#) **Adobe Camera Raw and DNG Converter 9.5.1** fail to recognize edited **Samsung SRW** images from some models (NX30, NX300, NX2000 and EK-GN120). *[This problem was fixed for the NX models in ExifTool 10.26, and writing of EK-GN120 files was disabled in ExifTool 10.95]*
- In **Windows**, ExifTool will not process files with **Unicode characters in the file name**. This is due to an underlying lack of support for Unicode filenames in the Windows standard C I/O libraries. *[This deficiency was addressed in ExifTool 9.79, and ExifTool now supports Windows Unicode file names with some exceptions. See the [WINDOWS UNICODE FILE NAMES](#) section of the application documentation for details.]*
- [\[2013-11-08\]](#) **Apple Spotlight and Preview (OS X 10.8.5)** and **Adobe Photoshop CC (version 14.0)** **ignore XMP in PNG images** if it comes after the image data, which is where ExifTool adds new XMP. This should be considered as a bug in the Apple and Adobe software since XMP is allowed to exist after the image data according to the XMP and PNG specifications. *[ExifTool 9.40 provides the [PNGEarlyXMP API option](#) to allow writing XMP before the IDAT chunk, but there are caveats associated with its use]*
- [\[2013-04-21\]](#) Memory available to ExifTool in the **Windows EXE version** is limited to a few hundred MB. This limitation has been known to cause **unreasonably long processing times** (almost 7 minutes) for some large EPS files (> 200 MB) which are processed much faster by the Perl version (< 6 seconds).
- [\[2010-01-12\]](#) There is a bug in a number of **Adobe** utilities which causes some edited **Sony ARW** images to be displayed with the wrong tone curve. This problem has been observed in Photoshop CS4 Camera Raw 5.6, DNG Converter 5.6 and Lightroom 2.6 with ARW images from the A500, A550, A700, A850 and A900. Other software such as the Sony IDC utility, Apple RAW utilities, dcrw and Capture One have no problems with edited images. *[This bug is fixed in Camera Raw 6.3 and LR 3.3]*
- [\[2007-07-06\]](#) There is a bug in the **Apple** RAW file support (OS X 10.4.11) which prevents some edited **Pentax PEF** images from being displayed properly. Other software such as the Pentax Silkipix software



and ddraw have no problems with these images. *[This bug is fixed in OS X 10.5.4]*

## Security Issues

Some ExifTool options (`-config`, `-if`, `-p`, `-api filter`, `-api filterw` and copying arguments like `"-DSTTAG<STR"`) have the ability to execute Perl code from external files or within command-line arguments. This may be a security problem if ExifTool is executed from another application that blindly passes untrusted file names on the command line (since they may be interpreted as ExifTool options if they begin with a dash). To be secure, the calling application must ensure that input file names do not start with a dash (U+002D) or a Unicode minus sign (U+2212). The easiest way to accomplish this is to prefix input file names with a known directory name, eg.) `"./FILENAME"`.

## Date/Time Shift Feature

Have you ever forgotten to set the date/time on your digital camera before taking a bunch of pictures? ExifTool has a time shift feature that makes it easy to apply a batch fix to the timestamps of the images (eg. change the "Date Picture Taken" reported by Windows Explorer). Say for example that your camera clock was reset to 2000:01:01 00:00:00 when you put in a new battery at 2005:11:03 10:48:00. Then all of the pictures you took subsequently have timestamps that are wrong by 5 years, 10 months, 2 days, 10 hours and 48 minutes. To fix this, put all of the images in the same directory (`"DIR"`) and run exiftool:

```
exiftool "-DateTimeOriginal+=5:10:2 10:48:0" DIR
```

The example above changes only the `DateTimeOriginal` tag, but any writable date or time tag can be shifted, and multiple tags may be written with a single command line. Commonly, in JPEG images, the `DateTimeOriginal`, `CreateDate` and `ModifyDate` values must all be changed. For convenience, a [Shortcut tag](#) called **AllDates** has been defined to represent these three tags. So, for example, if you forgot to set your camera clock back 1 hour at the end of daylight savings time in the fall, you can fix the images with:

```
exiftool -AllDates-=1 DIR
```

See [Image::ExifTool::Shift.pl](#) ([download in PDF format](#)) for details about the syntax of the time shift string.

**Note:** Not all date/time information is covered by the **AllDates** shortcut. Specifically, the filesystem date/time tags are not included, and this command will reset `FileModifyDate` to the current date/time as it should when the file is modified, unless either the `-P` option is used, or `FileModifyDate` is set to something else. To shift `FileModifyDate` along with the other tags, add `-FileModifyDate-=1` to the command above.

## Renaming and/or Moving Files

By writing a new value to the **FileName** and/or **Directory** tags, files can be renamed and/or moved to different directories. This can be a very powerful tool in combination with the `-d` (date format) option for organizing images by date/time. For example, the following command renames all images in directory `"DIR"` according to the individual file's creation date in the form `"YYYYmmdd_HHMMSS.ext"`.

```
exiftool "-FileName<CreateDate" -d "%Y%m%d_%H%M%S.%e" DIR
```

Or a new directory can be specified by setting the value of the **Directory** tag. For example, the following command moves all images originally in directory `"DIR"` into a directory hierarchy organized by year/month/day:

```
exiftool "-Directory<DateTimeOriginal" -d "%Y/%m/%d" DIR
```

[Read here](#) for more details about this powerful feature.

## Improving Performance



There is a significant overhead in loading ExifTool, so performance may be greatly improved by taking advantage of ExifTool's **batch processing capabilities** (the ability to process multiple files or entire directories with a single command) to reduce the number of executed commands when performing complex operations or processing multiple files.<sup>†</sup> *[One exiftool user documented a 60x speed increase by processing a large number of files with a single command instead of running exiftool separately on each file.]* Also, the **-execute** option may be used to perform multiple independent operations with a single invocation of exiftool, and together with the **-stay\_open** option provides a method for calling applications to **avoid this startup overhead**.

It has also been observed that the loading time of ExifTool for Windows increases significantly when Windows Defender is active. **Disabling Windows Defender** may speed things up significantly.

The processing speed of ExifTool can be improved when extracting information by reducing the amount of work that it must do. Decrease the number of extracted tags by specifying them individually (**-TAG**) or by group (**-GROUP:all**), and disable the composite tags (**-e**) and the print conversions (**-n**) if these features aren't required. Note that the exclude options (**-x** or **--TAG**) are not very efficient, and may have a negative impact on performance if a large number of tags are excluded individually.

The **-fast** option can significantly increase speed when extracting information from JPEG images which are piped across a slow network connection. However, with this option any information in a JPEG trailer is not extracted. For more substantial speed benefits, **-fast2** may be used to also avoid extracting MakerNote information if this is not required.

When writing, avoid copying tags (with **-tagsFromFile**) or using the **-if** or **-fileOrder** option because these will add the extra step of extracting tags from the file. Without these the write operation is accomplished with a single pass of each file.

<sup>†</sup> However, note that when the **-csv** option is used, information from all files is buffered in memory before the CSV output is written. This may be very memory intensive and result in poor performance when reading a large number of files in a single command.

## The Image::ExifTool Perl Library Module

The **"exiftool"** script provides a command-line interface to the Image::ExifTool Perl library module which is part of the ExifTool distribution. The Image::ExifTool module can be used in any Perl script to provide easy access to meta information. Here is an example of a very simple script that uses Image::ExifTool to print out all recognized meta information in a file:

```
#!/usr/bin/perl -w
use Image::ExifTool ':Public';
my $file = shift or die "Please specify filename";
my $info = ImageInfo($file);
foreach (keys %$info) {
    print "$_ : $info->{$_}\n";
}
```

Note that some tag values may be returned as SCALAR references indicating binary data. The simple script above does not handle this case.

See the [Image::ExifTool Documentation](#) for more details.

## Additional Documentation and Resources

- [ExifTool Home Page](#)
- [ExifTool FAQ](#)
- [ExifTool Forum](#)
- [ExifTool Tag Names](#) (download in PDF format)
- [ExifTool Revision History](#) (RSS feed)

- [exiftool Application Documentation](#) ([download in PDF format](#))
- [Image::ExifTool API Documentation](#) ([download in PDF format](#))
- [Date/Time Shift Module](#) ([download in PDF format](#))
- [Sample ExifTool Configuration File](#) (custom user-defined tags)
- [Working with Metadata Sidecar Files](#)
- [Reading/Writing Structured Information](#)
- [Common Mistakes when using ExifTool](#)
- [Comments on the Subject of Writing Meta Information](#)
- [Problems with current Metadata Standards](#)
- ["Under the Hood" of ExifTool](#)
- [Canon RAW \(CRW\) File Format Specification](#)
- [MIE 1.1 File Format Specification \(pdf\)](#)
- [ExifTool source code on GitHub](#)
- [ExifTool SourceForge project page](#) ([alternate discussion forum](#))
- [JPEG Image Samples](#) (and [Table of Makernote Types](#))
- [Image::ExifTool at MetaCPAN](#)
- [ExifTool Bug Reports](#) (CPAN Request Tracker)
- [ExifTool Test Reports](#) (CPAN Testers)
- [CPAN Testers Matrix](#) (max version with a PASS)

## User-contributed Documentation

- [ExifTool Tutorial](#) (video in 4 parts by [AVP](#))
- [Using the ExifTool on Linux to read/write Exif Tags to your photo collection](#) (video by [Linux By Example](#))
- [Working with jpg Metadata Comments - Exiftool - BASH - Linux Command Line](#) (video by [Linux By Example](#))
- [Useful one-line ExifTool commands](#) (.txt file)
- [ExifTool tuto en français](#)

## Related Utilities

Below are some free utilities which take advantage of the ExifTool engine:

### Windows

- [ExifTool GUI for Windows](#): GUI for viewing meta information with some editing features
- [Metadata++](#): View, edit, extract, copy metadata metadata
- [Auto ISO Tool](#): GUI front-end for ExifTool to patch Canon ISO information
- [GeoSetter](#): Utility for showing and changing geo data of image files
- [ExifMixer](#): GUI extension for the exiftool command-line interface
- [AvPicFaceXmpTagger](#): Write Picasa 3.5 face recognition information as XMP to your images
- [FileTagSleuth](#): MP3, ID3 and EXIF viewer
- [PhotoMove](#): Automatically move photos to directories or folders based on Exif date taken
- [GUI2 for ExifTool](#): An ExifTool GUI with built-in editor and browser
- [AutoJpegTrunk](#): Tool to remove all metadata from JPEG images
- [AdvancedRenamer](#): Rename files and folders from metadata
- [Proxel EXIF Tool](#): Photoshop plugin based on ExifTool
- [EXIFCopy](#): Copy all EXIF information between files
- [Random Photo Screensaver](#): Photo screensaver with metadata display
- [PicaGeoTag](#): Geolocate your photos
- [PictureTools](#): Tools for viewing pictures and editing EXIF data or renaming files

### MacOS

- [Download](#) a stand-alone PPC droplet to extract preview images from RAW files (thanks to Brett Gross)
- [Download](#) three droplets to extract information [exiftool must be installed] (thanks to Rob Lewis)
- [MacMetaMod](#): Droplet for adding Keywords to images
- [GPSPhotoLinker](#): Geotagging on the Mac
- [PhotoGPSEditor](#) and [PhotoInfoEditor](#): Geocoding utilities
- [MetaDataMover](#) ([source](#)): GUI-based automator utility for moving/rename images
- [CS1ToCR2](#): Utility that uses Sony GPS-CS1 log files to add GPS information to CR2 images

- [Geotagger](#): Droplet for inserting GPS coordinates in your photos
- [Raw Photo Processor](#): Raw converter for MacOS
- [GraphicConverter](#): Full-featured image editor *[noteworthy, but not free]*
- [GeoTag](#): Geotagging application for iPhone and MacOS
- [ImageFuser](#): Fuses multiple exposures of a scene into one image with improved detail/exposure
- [GeoNamesTagger](#): Docklet to easily update image metadata with location specific information
- [SetEXIFData](#): Add/modify EXIF data in images
- [GeoTagster](#): Geotagging from GPX files (\$0.99 paid app)

## Linux

- [rawimage](#): A kfile plugin and thumbnail image handler for RAW formats
- [Hugin](#): Panorama photo stitcher
- [FotoPreProcessor](#): PyQt4-based frontend for exiftool to graphically edit metadata
- [ExZenToo](#): Script for basic ExifTool GUI using Zenity
- [PDFMted](#): A set of bash scripts for easy viewing and editing of PDF metadata
- [exiftool-zsh-completion](#): zsh completion for exiftool
- [Image MetaWriter](#): Batch processing Linux command-line program for adding metadata to images

## Multi-Platform

- [ImageIngester](#): Windows and MacOS image workflow automator
- [gpsPhoto](#): Geotag your images from a GPS (GPX) track log
- [renrot](#): Perl utility to perform various processing tasks on images
- [GPicSync](#): Windows/Linux utility to geocode photos from a GPX track log and create KML files
- [FlickFleck](#): Tool to transfer images from memory card, rotate, rename, and organize by date
- [Geotag](#): Open source Java-based geotagging application
- [PhotoGrok](#): Java-based GUI front-end for ExifTool to display images organized by any EXIF tag
- [XnView](#): View and convert graphic files
- [Mapivi](#): Open-source and cross-platform picture manager
- [ResourceSpace](#): Open source digital asset management system
- [fix\\_corrupted\\_nef](#): Utility to fix Nikon D4/D600/D800/D800E NEF images corrupted by Nikon Transfer 1
- [pyExifToolGUI](#): Python-based graphical frontend for ExifTool
- [MDQC: AVPreserve tool](#) for metadata quality control across large numbers of digital assets
- [FastPhotoTagger](#): Add metadata to images (requires Java runtime engine)
- [Digi-libris](#): Metadata centric software for the automatic organization of your own catalogue
- [FreezeFrame](#): Photo/video library manager (requires Java 8)

## Online

- [Jeffrey's Exif Viewer](#): Web utility to view meta information in online images
- [The eXif.er](#): Web-based EXIF editor
- [Get-IPTC-Photo-Metadata](#): Web service showing all IPTC metadata of web and local images ([source code](#))

## Lightroom Plugins

- [Jeffrey's Geoencoding Plugin for Lightroom](#): Geoencode your photos from within Lightroom
- [Metadata Wrangler](#): Strip selected metadata components from images as they are exported
- [ExifMeta](#): Make all exif metadata available in Lightroom for lib filtering and smart collections
- [FullMetaExport](#): Export JPEG images from Lightroom with full metadata
- [LensTagger](#): Add EXIF information like aperture and focal length for manual lenses
- [DeAspect](#): Remove aspect ratio information from DNG, CR2 and ORF images to restore full image
- [PhotoStation-Upload-Lr-Plugin](#): Export photos from LR directly to a Synology PhotoStation

## Programming

- [C++ ExifTool](#): Performance-oriented C++ interface for the exiftool application (by Phil Harvey)
- [Download](#) sample AppleScript to extract tags into AppleScript record (thanks to Rob Lewis)
- [Download](#) example of a simple Visual C++ wrapper for exiftool (thanks Mark Borg and 黄瑞昌)
- [Download](#) C# version of simple exiftool wrapper (thanks Willem Semmelink)
- [Download](#) Visual Basic 6.0 example script v1.01 for reading tags with exiftool (thanks Michael Wandel)
- [Sample VB.NET subroutine](#) to extract a preview image (thanks Claus Beckmann)

- [Sample VBA for Mac code](#) to extract start timecode from a WAV file (thanks Adam Newns)
- [tagInfoSql](#): SQLite database of ExifTool tag repository, including Perl script (thanks Wernfried)
- [ExifToolIO](#): .NET wrapper for ExifTool, optimized for speed (using VB.NET)
- [ExifToolWrapper](#): .NET wrapper for ExifTool (using C#)
- [MiniExiftool](#): Ruby library wrapper for ExifTool
- [exiftoolr](#): Ruby wrapper for ExifTool
- [pyexiftool](#): Python wrapper for ExifTool
- [PyExifInfo](#): Another Python wrapper for ExifTool
- [PHPExiftool](#): PHP wrapper for ExifTool (in development)
- [ExifTool\\_PHP\\_StayOpen](#): ExifTool PHP fast processing script using -stayOpen and Gearman
- [Moss](#): Collection of Java utilities which includes an exiftool interface
- [im4java](#): Java interface to ImageMagick, ExifTool, and other image utilities
- [Java ExifTool](#): Enhanced Java Integration for ExifTool
- [J-ExifTool](#): Open-source, cross platform Java7 library to read/write Exif tags in images
- [exiftool-vendored](#): Blazing-fast, cross-platform Node.js access to ExifTool
- [How to call ExifTool from Delphi](#), by Bogdan Hrastrnik

## Other Links

- [An interview with Phil Harvey](#) (in German), ([English translation in PDF format](#))

## Boldly Go where No Man has Gone Before...

There is still much unknown information in the maker notes for many camera models. (To see this information, run exiftool with the **-U** option.) In this area, ExifTool is very much a collaborative effort, and development relies heavily on the input from camera owners to help decode new meta information. If you manage to figure out what any of it means, send me an e-mail ([phil@owl.phy.queensu.ca](mailto:phil@owl.phy.queensu.ca)) and I'll **add your new discoveries to ExifTool**. Many thanks to all who have helped so far...

## Acknowledgements

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## Donate

ExifTool is free, but due to popular request I am providing a way for those who feel the need to send me some money. It is really not necessary, but thank you very much if you decide to make a contribution:

\$

*(Your generous donations have provided the funds used to purchase a backup [ExifTool Forum](#) server, allowing support to be maintained while the other machine was down for repairs.)*

## Contact Me

If you have any comments, suggestions or questions, please post to the [ExifTool Forum](#) so other people may benefit from your experiences. (I check the forum at least as often as my email.) Otherwise, if you must contact me directly, my e-mail address is on the first line of the README file in the full distribution. Thanks. - *Phil Harvey*

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