

Image File Properties

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Windows Metadata

- Applies to all files
- Image files have an editable EXIF subset
- This subset is searchable via Windows

Demos

- Windows Metadata Display
- Image Metadata – incorporating data from an EXIF compliant image
- Editing the Metadata with Windows
- Searching the Metadata with Windows
- Advance Metadata coding and searching
 - <http://advanced-renamer.updatestar.com/>
 - <http://www.windows8downloads.com/win8-folder-colorizer-fvhszyfb/>

Demo - Agent Ransack

- <http://www.mythicsoft.com/agentransack/>

EXIF Technicalities

- **EXchangeable Image File format**
- Standard that specifies the formats for images, sound, and ancillary tags used by digital cameras scanners and other systems handling image and sound files recorded by digital cameras
- The specification uses existing file formats e.g. JPEG, TIFF, WAV but not PNG, GIF or RAW with the addition of specific metadata tags
- The metadata tags defined in the Exif standard cover a broad spectrum:
 - Date and time information. Digital cameras will record the current date and time and save this in the metadata.
 - Camera settings. This includes static information such as the camera model and make, and information that varies with each image such as orientation, aperture, shutter speed, focal length, metering mode, and ISO
 - A thumbnail for previewing the picture on the camera's LCD screen, in file managers, or in photo manipulation software.
 - Descriptions
 - Copyright information

EXIF Metadata Problems

- Metadata can be spread anywhere within a file, most image editors damage or remove the Exif metadata to some extent upon saving
- “MakerNote” tag is used by camera manufacturers to store camera settings not listed in the Exif standard and it can be difficult to retrieve this information from an image or to properly preserve it when rewriting an image
- The standard only allows TIFF or JPEG files — not "raw" files type where manufacturers have proprietary, incompatible "raw" file formats
- Exif is very often used in images created by scanners, but the standard makes no provisions for any scanner-specific information
- Photo manipulation software sometimes fails to update the embedded thumbnail after an editing operation

Security Considerations

- A photo taken with a GPS-enabled camera can reveal the exact location and time it was taken and the unique ID number of the device
- The privacy problem of Exif data can be avoided by removing the Exif data using a metadata removal tool.
 - Integral metadata removal tools, which are included in some applications
 - Batch metadata removal tools, which can process multiple files.
 - E-mail client add-ins, which are designed to remove metadata from e-mail attachments just before they are sent.
 - Server based systems, which are designed to automatically remove metadata at the network gateway.

Demos

- Cross platform EXIF tag handling – FastStone – Photoshop – Flickr especially Magic View- [Shutterdial](#)
- EXIF Editing/Removal Software
 - <http://exifeditorapp.com/>
 - <http://www.opanda.com/en/pe/index.html>