

Adobe® XMP for Creative Professionals

Metadata and the Adobe Creative Suite

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Introduction

As a creative professional, you know that organizing and retrieving files can be just as important as the more creative aspects of a project. File management is one those organizational skills that can make or break efficient workflow. Content and media are created, repurposed, archived, scrapped, resurrected, approved, and revised again over the course of a project. Keeping track of documents and their corresponding materials at each stage can be an enormous challenge.

What is XMP?

What version of the file is this? Which file is the final version? Do we own the copyright for this image? Where's the caption for this image? These types of questions probably sound familiar. Adobe's powerful metadata language, Adobe XMP—the eXtensible Metadata Platform—can help.

XMP is a labeling technology that allows you to embed data about a file into the file itself. This data travels with your file, across workflows, networks, and even platforms, providing important information to your team along the way. The information can be read, updated, and modified during the production process.

With XMP, all of this information is openly accessible using industry standard XML (the eXtensible Markup Language). Also, because XMP is extensible and customizable, you can modify it to meet your needs. Best of all, this valuable metadata format is built into the applications that make up the Adobe Creative Suite.

Metadata and XMP

Metadata describes the content or characteristics of data (such as numbers or a graphic file). In general, metadata can either be embedded in a file or stored elsewhere (such as in a database, content management system, or as a separate file). XMP is an overarching standard that supports different types of metadata.

XMP metadata can provide descriptions about a file's attributes, such as its dimensions, format, creation and modification date, and other information. This type of data is added automatically to the file by the applications in the Adobe Creative Suite. Other metadata values that describe the content of the file, such as descriptions or keywords, can be added by Adobe Creative Suite users.

Existing metadata

Depending on a file's source, it may already contain embedded metadata. For example, most digital cameras attach some basic information about the file such as height, width, file format, and the time the image was taken. Additionally, many applications embed some basic information about a file such as its dimensions, color mode, and resolution. You may already be accustomed to viewing and perhaps even adding some basic metadata through an application's File Info or Document Properties dialog box.

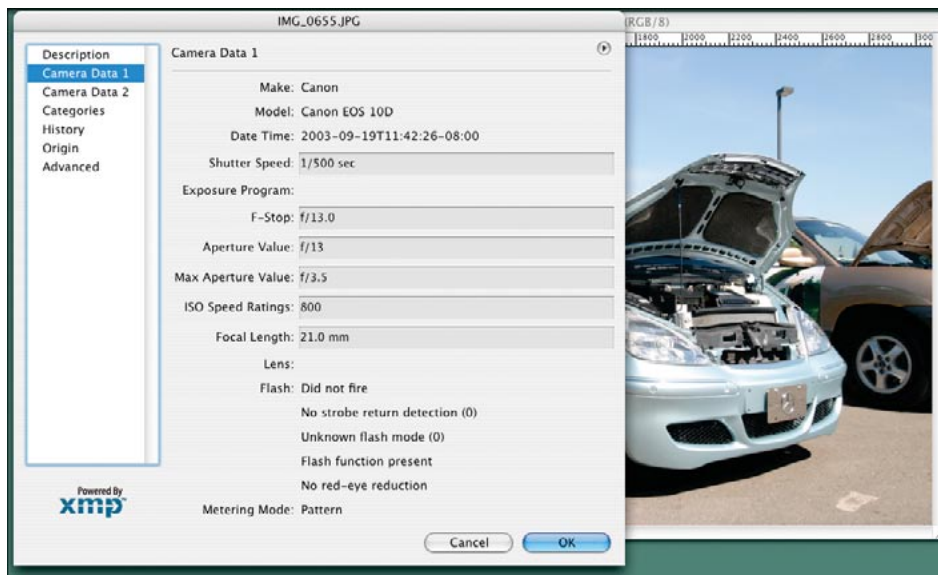
In Adobe Photoshop® and throughout the entire Creative Suite, metadata can easily be viewed, added, modified, and retrieved. These actions can occur multiple times, in multiple places, in your creative workflow.

Viewing metadata of a digital photo in the File Info dialog box in Photoshop

The simplest way to get started with XMP metadata is to view automatically generated metadata. For example, images from most digital cameras will have descriptive data embedded in the file. When you open an image in Photoshop, the File Info dialog box, accessed under the File menu, reveals information about the file.

The File Info dialog box is divided into a series of panels that can be accessed on the left side. Description is the first panel to appear in the dialog box. For a digital photo, the values of the various properties found in this dialog box are blank. You can add additional information to the Description panel.

Under the Camera Data 1 and Camera Data 2 panels, the Make and Model of the camera, Shutter Speed, F-Stop, Focal Length, and other properties are revealed. This data is known as Exchangeable Image File Format (EXIF) and is automatically generated by digital cameras. This data cannot be modified. Adobe XMP standard can read the EXIF data specification and can preserve this information as it travels through a workflow.



Camera Data 1 panel in the File Info dialog box
Notice the Make and Model of the camera, Shutter Speed, F-Stop and other information is available.

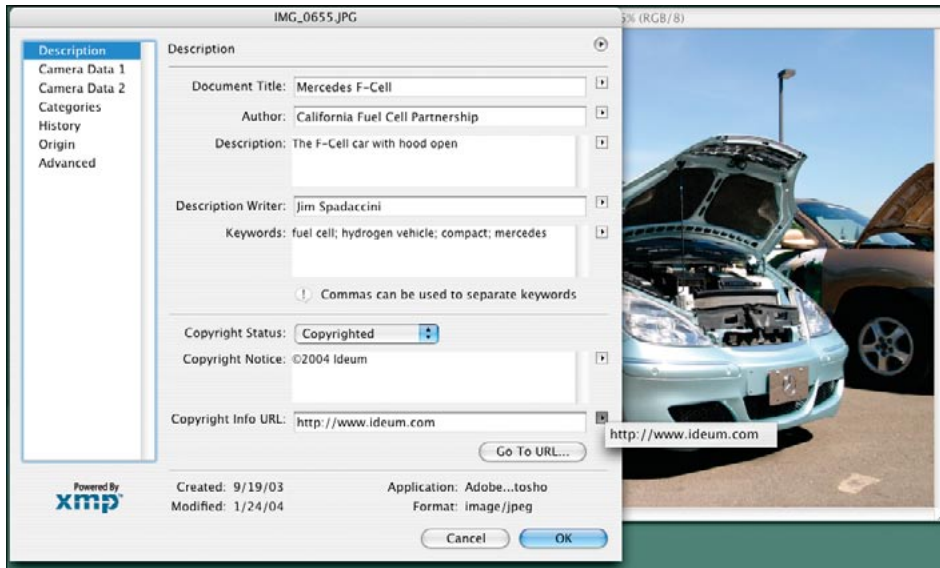
Adding and modifying metadata

While automatically generated metadata is useful, the best sources of descriptive information come from people. Metadata about the contents of the image need to be added by individuals. For example, you can tell what kind of camera was used to take a picture and even what its settings were, but you may have no information about the subject of the photo. This data becomes crucial when you want to retrieve information about the files or when you want to retrieve the files themselves.

The File Info dialog box in Photoshop

Adding metadata in Photoshop CS is easy. The simplest and perhaps most familiar way is through the File Info dialog box. In past versions of Photoshop (and many other Adobe applications), this was also the case.

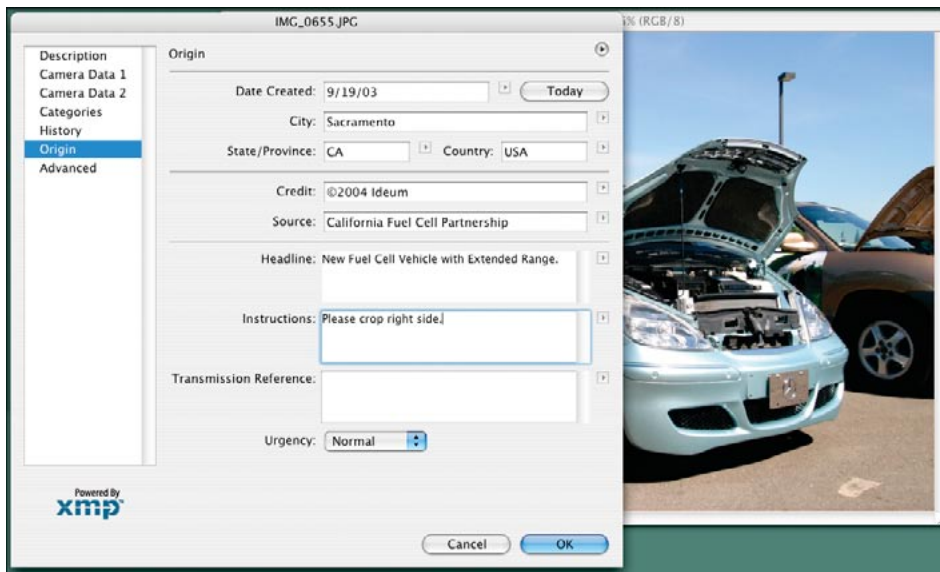
When you open the File Info dialog box, the Description panel appears. You can simply begin to enter the Document Title, Author, Description, Keywords, and other values. Once you've added information for one value, you'll notice the small triangle icons next to each field are populated with the descriptions you've entered. This saves time in adding terms to additional files that may share the same values.



Descriptive metadata for a photo from a digital camera

Notice the triangle icon for Copyright Info URL is already populated with a web address.

The Origin panel is also in the File Info dialog box. It provides a list of properties such as Source, Headline, and Instructions. These values can provide important information relating to the source of the file. Because this XMP metadata is embedded in the file, it is easily accessible throughout the design and production process.



“Origin” metadata is added to a photo

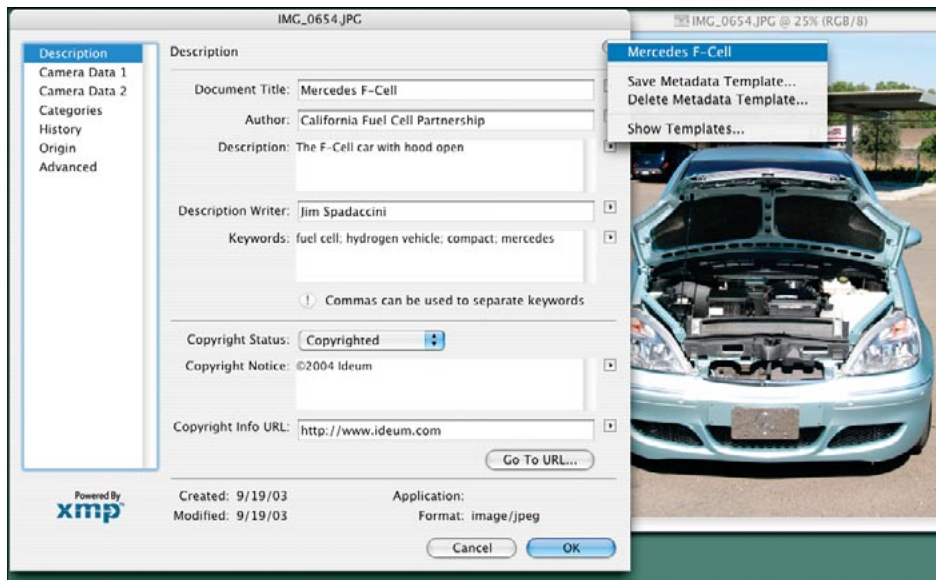
Notice the Headline and Instructions. Using metadata, you can provide important information about this image to other team members or even outside firms or agencies.

You can also export XMP metadata as a text file by selecting Save in the Advanced panel. Selecting Delete will remove the file's embedded metadata.

Creating and using metadata templates

You can simplify the process of adding descriptive metadata to documents in the Adobe Creative Suite by creating a metadata template. To create a template, simply fill in the values and select Save Metadata Template under the triangle menu in the upper right corner.

Once a template is saved, metadata values can easily be applied to another file. This method is particularly useful for working on a collection of files that share common metadata values.



Loading a metadata template for an additional image.

This method allows you to apply the same basic information to all your files.

Metadata templates can be saved and loaded from within any of the content creation applications found in the Adobe Creative Suite. For instance, a metadata template saved in Photoshop can be used in Adobe Illustrator®, Adobe InDesign®, and Adobe GoLive®. Conversely, any templates that are created in any of these applications are available in the others. All of the Adobe Creative Suite applications share a standardized File Info dialog box, which makes it easier for you to use metadata templates.

When you are creating metadata templates, create a new file as a starting point. This step will ensure that only the metadata values you enter will be saved to the template.

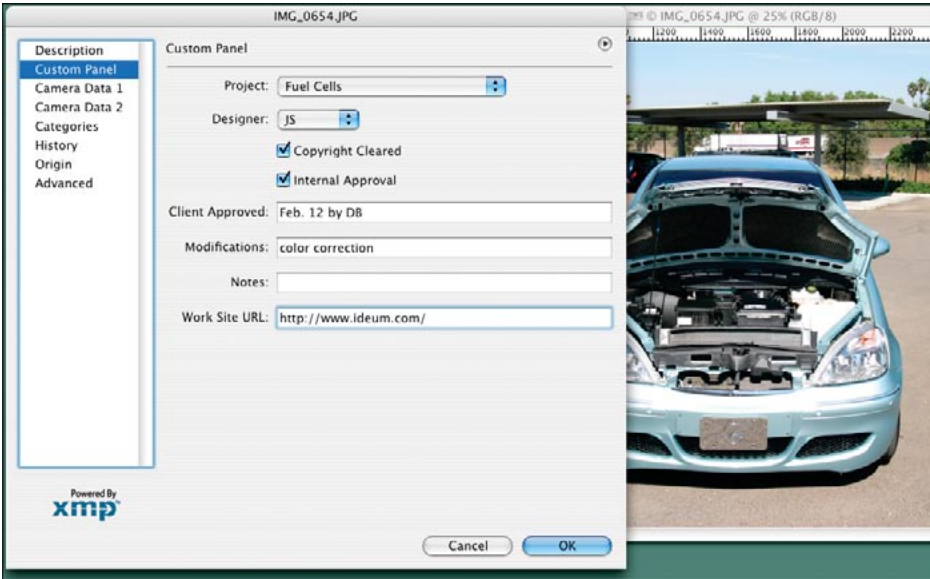
You can also install additional metadata templates by selecting Show Templates from the pop-up menu in the File Info panel. This feature is used by organizations like Creative Commons to embed licensing information that allows the author to convey the intent and use of the asset. For more information on how Creative Commons uses this technology, visit <http://creativecommons.org/technology/xmp>.

There are two ways of using metadata templates, Replace and Append. Replace inserts new values regardless of what previously existed. Append adds additional values to those already existing. These features can be accessed through the Advanced Panel in the File Info Dialog or through the Photoshop CS File Browser under the File menu.

Customizing metadata panels

The Adobe Creative Suite supports custom metadata panels that provide additional flexibility for industry-specific workflows requiring unique metadata values. Additionally, design firms and agencies can create their own panels to assist with file and project management.

Making your own XMP panel within the Creative Suite is simple. You can create a Custom Panel Description file by scripting or by downloading and using a free easy-to-use panel creation tool. To learn more, visit <http://www.adobe.com/products/xmp/custompanel.html>.



A custom panel can be used for a variety of purposes.

At left, a custom panel keeps track of client approval and other workflow issues.

XMP and Sidecar Metadata

There are occasions when embedding XMP metadata within a file is not possible or desirable. XMP provides an alternative in the form of "sidecar files." As the name implies, metadata is captured in a separate file that is stored in the same folder. The metadata file has the same name as the file but uses the .xmp extension.



sample_sidecar files.xmp

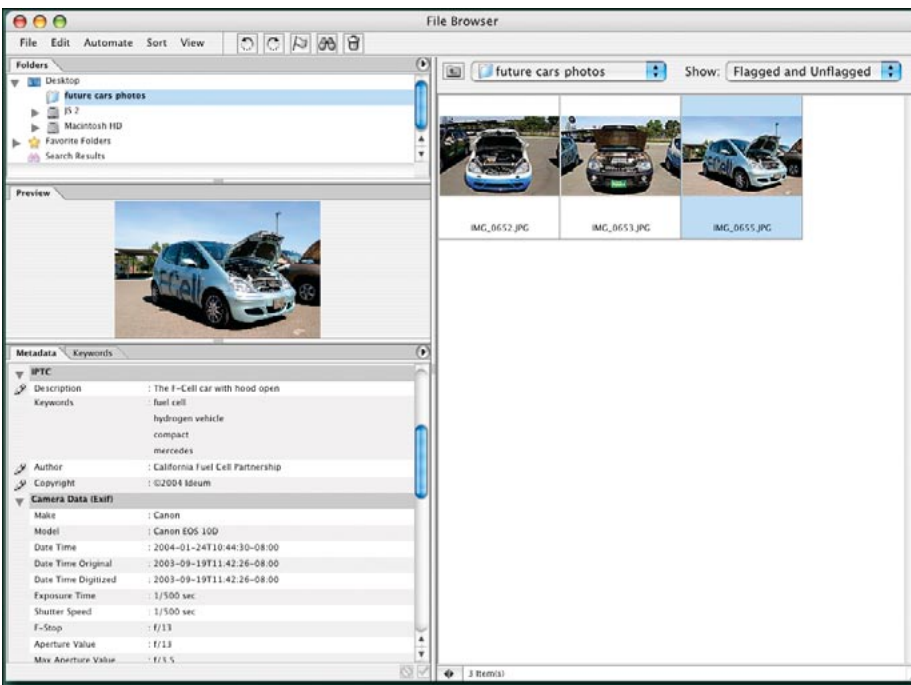
Viewing, adding, and modifying metadata through the Photoshop File Browser

XMP data can also be viewed and modified through the Photoshop File Browser. Much of what you can see and do in the File Info dialog box (with respect to XMP) is repeated, but here you can apply it to multiple images.

In the Photoshop File Browser, you'll see the Metadata and Keyword palettes just below the Preview palette. If you select a file, its properties and their associated values of the file are displayed in the Metadata palette. Notice that Description, Keywords, Author, and Copyright appear under the heading IPTC (International Press Telecommunications Council), a metadata specification that is commonly used by the news industry to tag content. This specification is supported by the XMP standard, allowing it to be utilized beyond the news industry.

A small pencil icon appears next to editable metadata in the Metadata palette. For example, under IPTC, values for Description, Author, and Copyright can be edited. Camera Data (EXIF) values generated from a digital camera are not editable.

Users working in the Camera Raw Format in Photoshop may already be familiar with XMP sidecar files. Camera Raw lets you open and edit a camera's raw digital image files. Having access to this data before it is processed can give you total control of the final image. (For example, you can adjust color values or white balance instead of leaving these settings to your camera's automatic settings.) These raw "master files" don't support embedded metadata, so XMP provides an alternative in the form of sidecar files.



The Metadata palette in the Photoshop File Browser

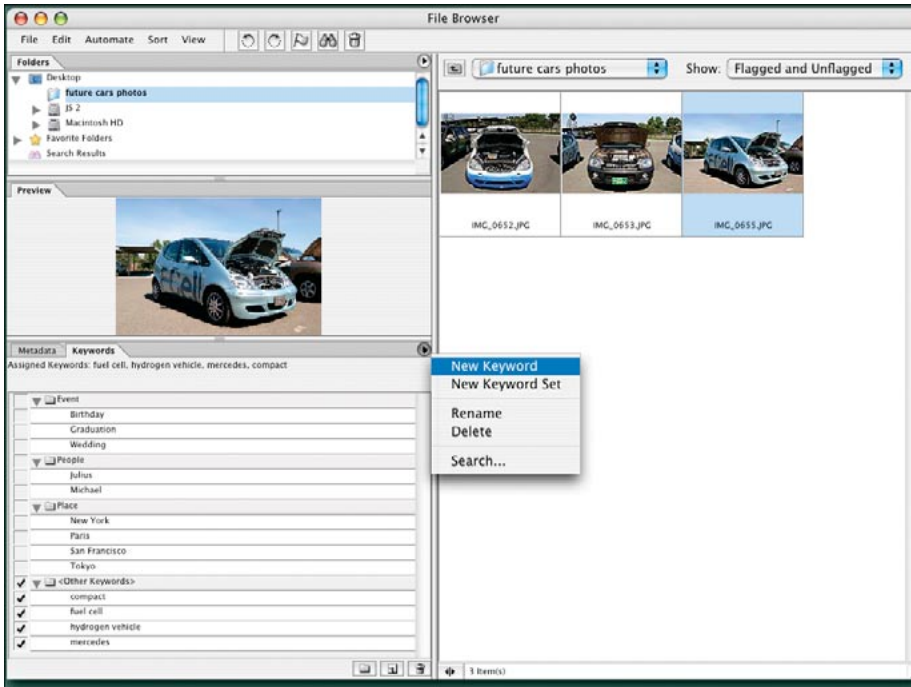
Notice that metadata values entered from the File Info dialog box appear. Values that can be edited are shown with a pencil icon.

The Keywords palette in the Photoshop File Browser

Selecting the Keywords tab exposes the Keywords palette. You'll find three default folders known

as Keyword Sets with example topics (Events, People, and Places) and keywords. To assign keywords, simply select them while an image or multiple images are selected in the browser window.

In the Keywords palette, you can select the triangle icon located on the top right and choose to add new keywords or modify or delete existing ones. You can also choose to add a new keyword set.

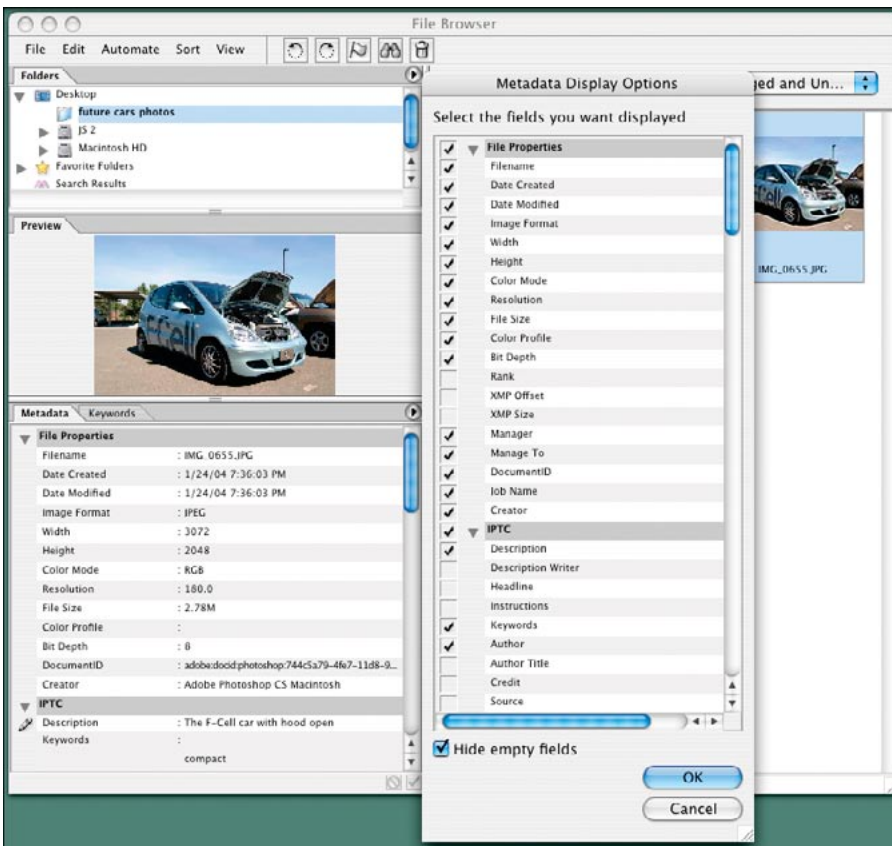


Adding a New Keyword to the Keyword palette in the File Browser

Once a keyword is added, it is available to be selected for any image or multiple images selected within the File Browser.

Display options for the Metadata palette in the Photoshop File Browser

Click the triangle menu on the top right of the palette to see the metadata display options. Select the properties you want displayed in the Metadata palette.



The Metadata Display Options window

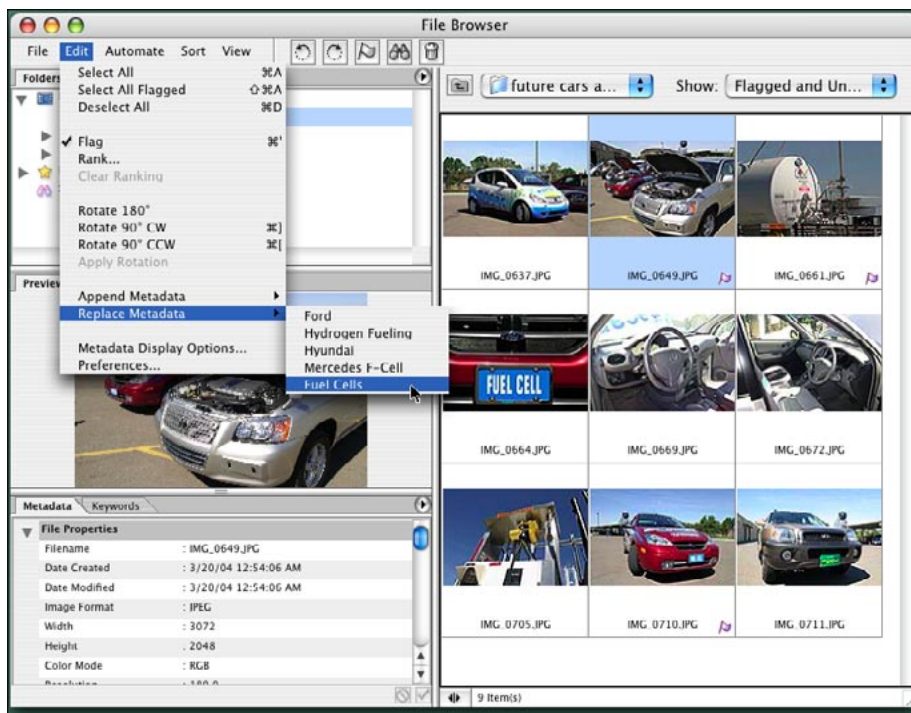
Only the selected items will appear within the Metadata palette.

There are additional options for handling metadata in the File Browser. The File Browser has its own menu bar. Under Edit, you'll find an additional way to view metadata display options. You'll also find the Append Metadata and Replace Metadata options. Here you can load metadata templates created in Photoshop or in other Adobe Creative Suite applications.

Adding and modifying metadata in multiple images through the Photoshop File Browser

The Photoshop File Browser allows users to add metadata simultaneously to collections of images. This feature is extremely useful for organizing and tagging photos and other images, including legacy collections. In addition, other file types, such as PDF or Illustrator files, can be updated in this way.

After you select multiple files in the File Browser, you can then either enter a new set of values for the file or load a preexisting metadata template. Note that when metadata is changed from within the File Browser, the files are not opened. Using the File Browser, you can update the metadata without recompressing the files. This process is especially useful with JPEG images, because opening and resaving compressed JPEG images can permanently degrade their appearance.

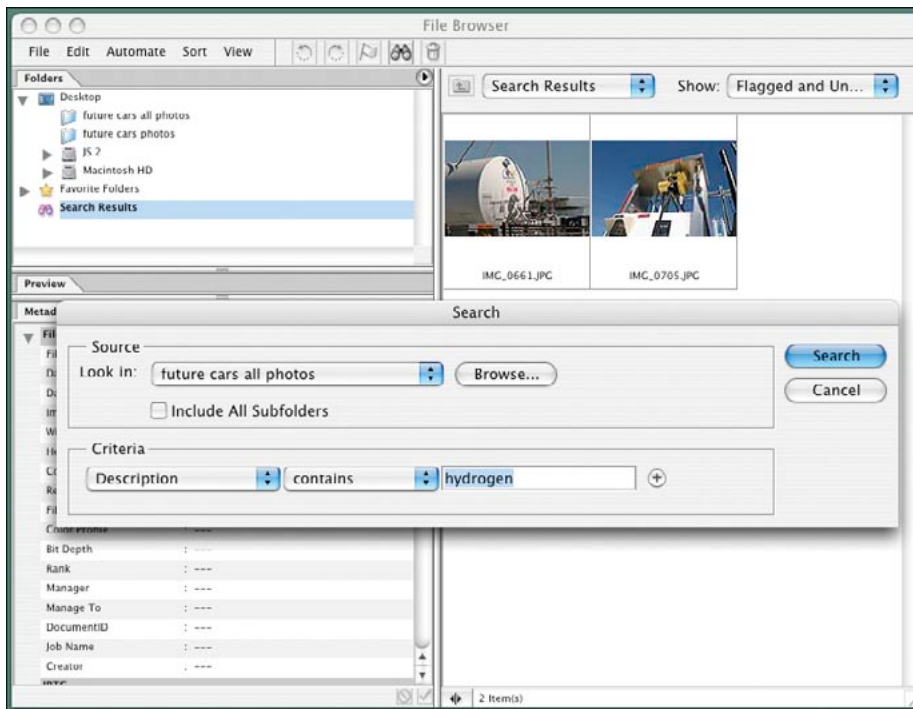


Batch updating metadata with the Photoshop File Browser

All flagged images will contain the same metadata value from the "Fuel Cells" metadata template.

Searching for files with the Photoshop File Browser

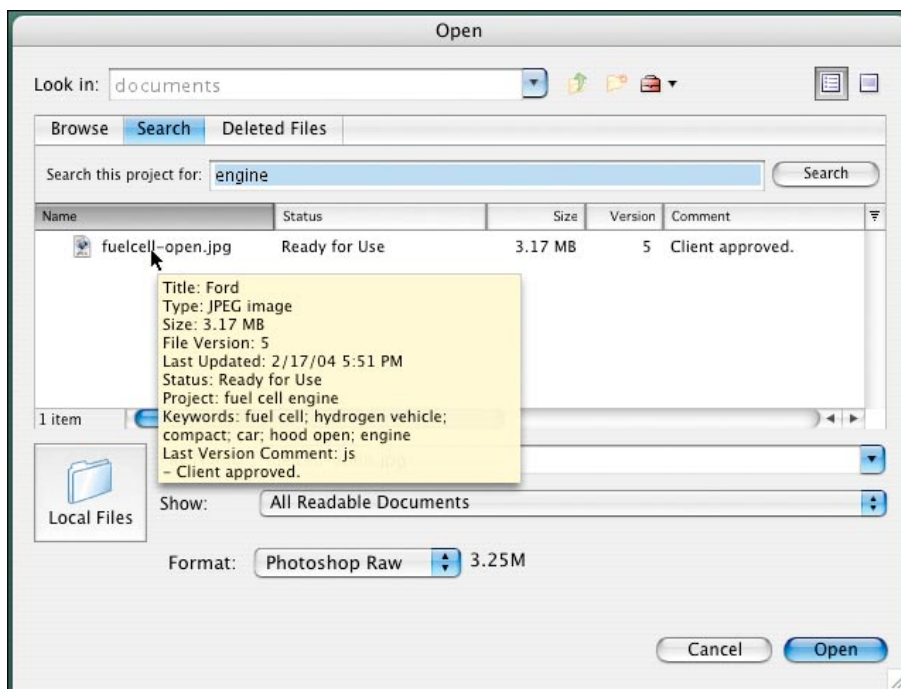
The ability to search for images is built into the Photoshop File Browser. You can select Search from the triangle menu on the right of the Keywords and Metadata tabs or from within the File Browser's File menu. This feature can save you time, particularly on projects that contain large amounts of assets. In addition, searching through archives of past projects can be streamlined, allowing you to rapidly retrieve important files.



Searching for the value "hydrogen" in Description property (Criteria) reveals two images.

XMP and Version Cue

Version Cue is a new feature in the Adobe Creative Suite. Built on the foundation of XMP, Version Cue lets individuals and creative teams manage versions of files, organize and access files simply, and share files and projects easily. You can search files using properties such as Keywords, Description, Author, Copyright, and others. You can also preview large files without opening them.



A view of the Version Cue Open dialog box. XMP metadata provides essential information to team members as they work collaboratively.

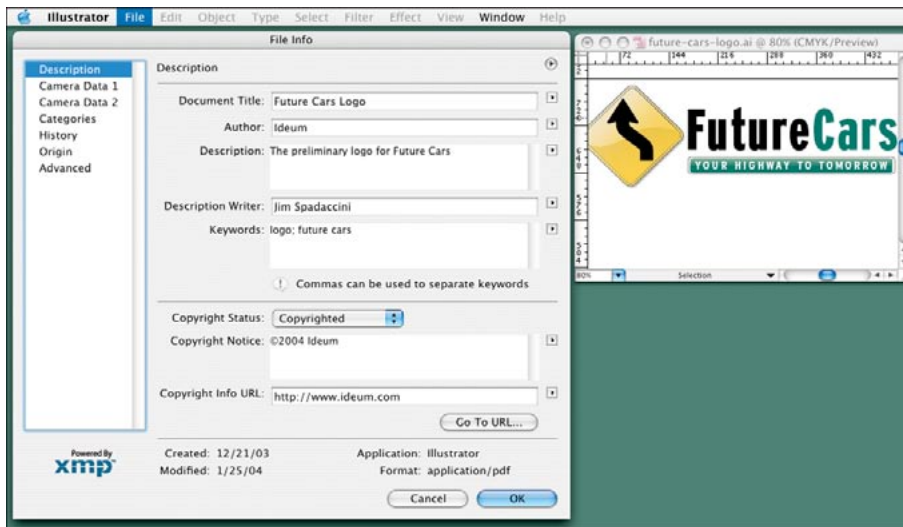
Since Version Cue manages changes to a file, there is no need for awkward naming schemes. All versions of a file are tracked in the Versions dialog box under the File menu. You can revert or save back to a previous version in any of the applications that make up the Adobe Creative Suite. Or you can promote to Current any previous version. In team settings, Version Cue provides multi-user controls, providing an efficient and productive workflow and ensuring that files are not accidentally overwritten.

XMP across the Adobe Creative Suite

We've already seen how XMP works in Photoshop, but most creative professionals work in multiple applications: creating files in one, modifying them in another, and perhaps assembling and distributing them in a third application. The Adobe Creative Suite provides wide support for XMP metadata between applications. In other words, your metadata tags and descriptive information can travel with the file as it moves from application to application.

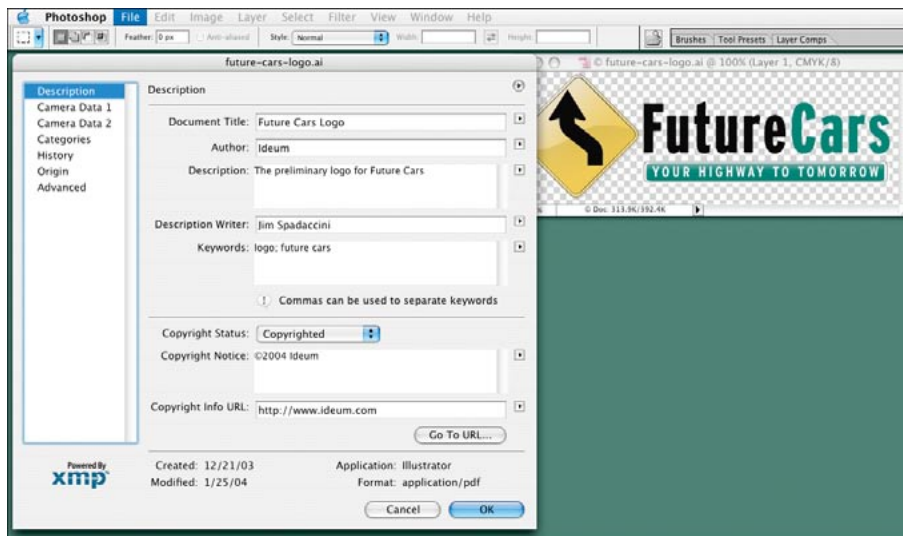
A common workflow example

A common workflow is to create original artwork in Adobe Illustrator, rasterize or modify it in Adobe Photoshop, and then finally place it in a print document in Adobe InDesign or on a web page with Adobe GoLive. Along the way, metadata is retained and can be modified as team members work on the file.



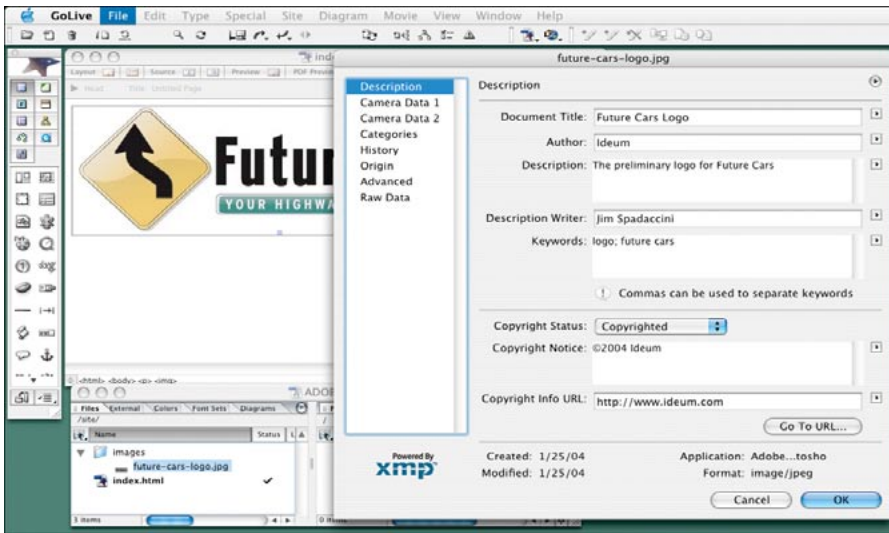
Logo Created in Illustrator

Descriptive metadata is added to the file, created in Adobe Illustrator. The file is saved in the Illustrator format.



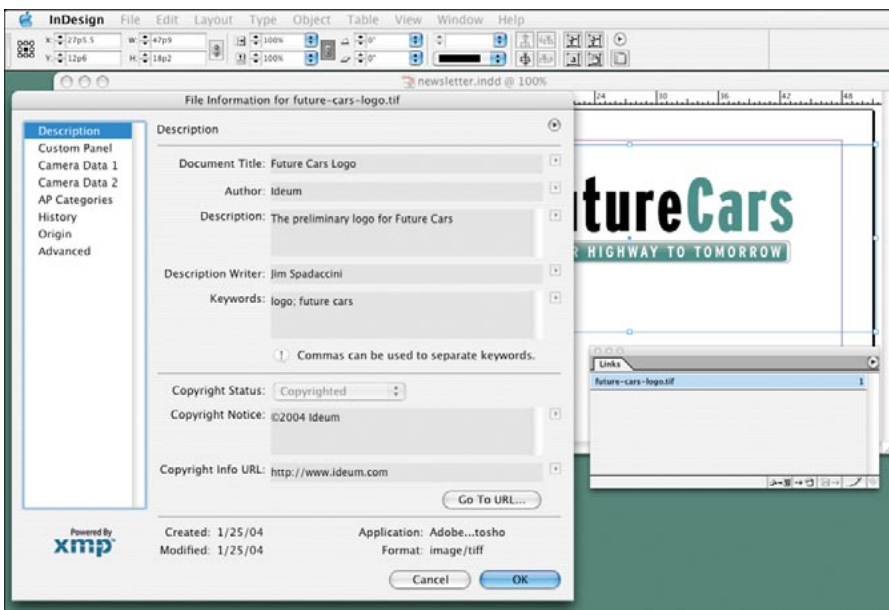
Logo Rasterized in Photoshop

The file is opened and rasterized in Adobe Photoshop. The metadata is retained and can even be modified in Photoshop. Two versions of the file are saved: one a TIFF file for a newsletter authored in InDesign, the other a JPEG file for placement on a web page authored in GoLive.



Logo Placed in GoLive Web Page

The logo was placed in an HTML page authored in Adobe GoLive. The metadata is viewed by selecting the image in the Site window, and then opening File Info. The metadata can be modified or updated from within GoLive.



Logo Placed in InDesign Layout

The file is placed into an InDesign document. Using the Links palette, the Link File Info dialog box appears, showing metadata for the placed object.

The example shown here is just one of many possible workflows. With XMP metadata, you can view, update, and retrieve descriptive information across a variety of points within your creative workflow. Whether you're working alone or in a team setting, this flexibility can help you become more efficient.

XMP across platforms

XMP is a platform-independent technology supported in both Mac and Windows environments. This is important as more and more creative professionals work in cross-platform studio settings. As files move across workflows, the metadata is preserved. Regardless of platform, users can view, edit, and save metadata.

Repurposing files, viewing and retrieving

The earlier examples showed how XMP is utilized within and between the applications that make up the Adobe Creative Suite. As an open and publicly documented technology, support for XMP is expanding to additional applications and systems. Metadata crosses applications and workflows, preserving important information, making file management simpler and more efficient for creative professionals.

With XMP, viewing and retrieving files is much easier. Using the Photoshop File Browser or Version Cue, you can skim through documents quickly when you know that the one you need has a particular job name, author, or keyword. Because retrieval is inherently simpler, archiving requires less attention—long, descriptive file naming schemes are less relevant, and with Version Cue they are not needed at all.

Metadata for Parent Documents and Placed Objects

Adobe InDesign provides the ability to view the metadata of "placed objects." In other words, beyond just viewing (and editing) the metadata of the parent document you can also view the metadata of the images found within it.

The metadata of the parent document can be viewed through the standard File Info dialog box found under the File menu. Metadata of placed objects can be viewed from Link File Info within the Links palette.

Open standards, extensible technology

XMP is an open technology based on standards that were created by the World Wide Web Consortium (W3C), the organization that helps develop recommendations for universal technologies such as HTML, XML, and Cascading Style Sheets (CSS) to name a few. Adobe developed XMP to establish an industry-wide standard for sharing metadata across applications, file formats, and devices. XMP is open source and it is freely available to developers and system integrators all over the world. This arrangement means that XMP can benefit from the innovations contributed by the developer community.

XMP is extensible, which means that it can be customized to meet the specific needs of an organization or work within a particular content management system. It can also accommodate existing metadata specifications, so systems don't need to be rebuilt from scratch. XMP is universal, international, and has multilingual support. It is not limited to a particular file format or database.

Conclusion

XMP provides an essential tool for streamlining and simplifying the workflow for creative professionals. The ability to view, edit, and save metadata across the production process facilitates communication and turns simple files into intelligent assets. In the Adobe Creative Suite you can access XMP metadata in any Adobe Creative Suite application. Metadata is embedded in the file, so it is preserved even if the file is moved to a new system or platform. When file embedding is not appropriate, XMP metadata can be contained in sidecar files or in a database.

Flexible and extensible, you can customize XMP to optimize your workflow and address specialized needs. It can be used to help manage and organize files, simplify permissions and copyright notices, or even to help view camera settings for digital photographs. It is a powerful tool for content management.

Archiving and retrieving files is much easier when you can scan relevant metadata. Using the Photoshop File Browser or Version Cue in any of the Adobe Creative Suite applications allows you to view metadata without opening large files.

Finally, all of the features of XMP enable a smoother workflow and simplify file management. It can be tuned to match the way you and your team work, and getting started with XMP is simple. Better file management and a streamlined workflow let you focus on the creative aspects of your job.

FOR MORE INFORMATION

For additional information on XMP, go to www.adobe.com/xmp

Metadata standards and specifications

XMP is an overarching standard that supports existing metadata specifications found within specific industries or domains. XMP can expand these specifications providing richer detail and more standardized information about the content. A few examples:

- Library Science
Dublin Core Metadata Initiative:
www.dublincore.org
- Digital Photography
Exchangeable Image File Format (EXIF):
www.exif.org
- News
International Press Telecommunications Council (IPTC): www.iptc.org

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