Mapping File Metadata to WordPress Fields with Media Library Assistant

Some image file formats such as JPEG DCT or TIFF Rev 6.0 support the addition of data about the image, or metadata, in the image file. In addition, many JPEG, TIFF and PDF files use the Extensible Metadata Platform (XMP) framework. XMP metadata varies from file to file but is often extensive. Many popular image processing programs such as Adobe Photoshop allow you to populate metadata fields with information such as a copyright notice, caption, the image author and keywords that categorize the image in a larger collection. WordPress uses some of this information to populate the Title, Slug and Description fields when you add an image to the Media Library.

The Media Library Assistant has powerful tools for copying, or mapping, metadata to:

- WordPress standard fields, e.g., Title, ALT Text and Caption
- Taxonomy terms, e.g., in categories, tags or custom taxonomies like Att. Categories and Att. Tags
- WordPress Custom Fields

This tutorial will show you how to find and extract metadata from your items and use MLA's mapping rules to populate the above destinations.

Types of File Metadata

There are seven primary types of file metadata, each defined by an official standard.

1. The International Press Telecommunications Council (IPTC) defined a set of metadata properties that can be applied to images, part of a broader standard developed in the early 1990s and known as the IPTC Information Interchange Model (IIM). Embedded IIM image information is often referred to as an "IPTC header". This basic set of metadata fields is branded as *IPTC Core*, in 2008 a second set branded as *IPTC Extension* was developed.

2. The Extensible Metadata Platform (XMP) has largely superseded IIM's image file header structure, but the properties of the IPTC Core are synchronized between the technical structures of XMP and IIM by a vast majority of imaging software. XMP metadata can also be found in non-image files such as PDF and Microsoft Office documents.

3. Exchangeable image file format (officially **Exif**, according to JEIDA/JEITA/CIPA specifications) is a standard that specifies formats for images, sound, and ancillary tags used by digital cameras (including smartphones), scanners and other systems handling image and sound files recorded by digital cameras.

4. Portable Document Format (PDF) files can contain two types of metadata. The first is the Document Information Dictionary, a set of key/value fields such as author, title, subject, creation and update dates. A small set of fields is defined and can be extended with additional text values if required. In PDF 1.4, support was added for Metadata Streams, using XMP to add XML standards-based extensible metadata as used in other file formats.

5. Newer versions of Microsoft Office documents may contain metadata defined by the Office Open XML file formats. The formats (e.g., docx, xlsx, pptx) were developed by Microsoft and first appeared in Microsoft Office 2007. Office Open XML uses the Dublin Core Metadata Element Set and DCMI Metadata Terms to store document properties.

6. Wikipedia says "**ID3** is a metadata container most often used in conjunction with the MP3 audio file format. It allows information such as the title, artist, album, track number and other

information about the file to be stored in the file itself." WordPress includes a subset of the getID3() PHP Media File Parser with support for audio and video file formats. A few values are available for other file types but they are not very useful.

7. For Microsoft Office documents, data defined by the Office Open XML file formats, if present. The formats (e.g., docx, xlsx, pptx) were developed by Microsoft and first appeared in Microsoft Office 2007.

WordPress adds metadata of its own to Media Library image items. This "Attachment Metadata" can be used in addition to the six types of metadata embedded in the file itself.

Accessing File Metadata

MLA provides "Field-level substitution parameters" that let you access metadata for display in an MLA gallery or in an MLA tag cloud. You can also use them in IPTC/EXIF or Custom Field mapping rules. Each type of file metadata is accessed by adding a prefix to the parameter value, e.g., "iptc:", "exif:" or "xmp:". The prefix is followed by the name of the field you want, such as "Title" or "Keywords". Metadata often includes multi-level nested arrays; array elements are accessed with a "dot notation", e.g., "Iptc4xmpCore.CreatorContactInfo.CiAdrCity".

The relevant prefix values are:

- **meta**   WordPress attachment metadata, if any, embedded in the image/audio/video file. The "image_meta" portion of the attachment metadata is of particular interest. This array contains some "extended image metadata" drawn from IPTC and EXIF fields by WordPress and improved a bit.

- **pdf**   The Document Information Dictionary (D.I.D.)and XMP metadata, if any, embedded in a PDF file. For this category, you can code any of the nine D.I.D. entries (Title, Author, Subject, Keywords, Creator, Producer, CreationDate, ModDate, Trapped). For many documents there is also a rich collection of additional metadata stored in XMP Metadata Streams.

- **iptc**   The IPTC (International Press Telecommunications Council) metadata, if any, embedded in the image file.

- **exif**   The EXIF (EXchangeable Image File) metadata, if any, embedded in a JPEG DCT or TIFF Rev 6.0 image file. WebP files may also contain an EXIF section.

- **xmp**   Data defined by the Extensible Metadata Platform (XMP) framework, if present. XMP metadata varies from image to image but is often extensive. XMP is supported in WebP images and in several non-image formats such as PDF documents.

- **png**   For PNG files, data defined by the Portable Network Graphics (PNG) Specification (Third Edition) is extracted.

- **mso**   For Microsoft Office documents, data defined by the Office Open XML file formats, if present. The formats (e.g., docx, xlsx, pptx) were developed by Microsoft and first appeared in Microsoft Office 2007.

- **id3**   Wikipedia says "ID3 is a metadata container most often used in conjunction with the MP3 audio file format. It allows information such as the title, artist, album, track number and other information about the file to be stored in the file itself." WordPress includes a subset of the getID3() PHP Media File Parser with support for audio and video file formats.

You can find more complete information on substitution parameters, prefixes and option/format values in the Settings/Media Library Assistant Documentation tab.

Viewing File Metadata

The type(s) and amount of metadata available varies quite a bit from one file to the next. Tools like Adobe Photoshop, Acrobat and the EXIF Data Viewer often use field titles/labels that differ from the field names actually used in the file. MLA provides the best way to see what's actually in each file, adding two text boxes you can find in the Media/Edit Media admin screen.

```
Attachment Metadata                                                    ∧  ∨  ▲

array (
  'width' => 2000,
  'height' => 1000,
  'file' => '2023/01/IPTC-PhotometadataRef-Std2022.1.jpg',
  'filesize' => 135133,
  'sizes' =>
  array (
    'medium' =>
    array (
      'file' => 'IPTC-PhotometadataRef-Std2022.1-300x150.jpg',
      'width' => 300
```

The Attachment Metadata text box displays the metadata array WordPress creates for each image item. The display format (generated by PHP's var_export() function) shows the multi-level nested arrays found in the metadata array. To access these values in MLA you would use the "meta:" prefix and dot notation. For example, "meta:filesize" or "meta:sizes.medium.width".

```
Attachment File Metadata                                               ∧  ∨  ▲

post_id => 8957
iptc:2#004 => 000:Actuality
iptc:2#005 => The Title (ref2022.1)
iptc:2#012.0 => IPTC:10020221
iptc:2#012.1 => IPTC:20020221
iptc:2#012.2 => IPTC:30020221
iptc:2#025.0 => Keyword1ref2022.1
iptc:2#025.1 => Keyword2ref2022.1
iptc:2#025.2 => Keyword3ref2022.1
iptc:2#040 => An Instruction (ref2022.1)
iptc:2#055 => 20221019
```

The Attachment File Metadata text box shows all six of the metadata types, if present, displayed in the notation you would use to access each value. In the above example the "object name" is accessed as "iptc:2#005" and the "keywords" (an array) as "iptc:2#025". You can find a complete list of the IPTC values in the "Field-level IPTC Identifiers and Friendly Names" section of the MLA Documentation tab.

Finding the Mapping Rules

You can find the place for managing mapping rules in either of two ways. First, you can navigate to the Plugins/Installed Plugins admin screen and click the "Settings" link under Media Library Assistant. You

can also access the Documentation tab by clicking "Guide". Second, you can navigate to the Settings admin screen and select the Media Library Assistant submenu.
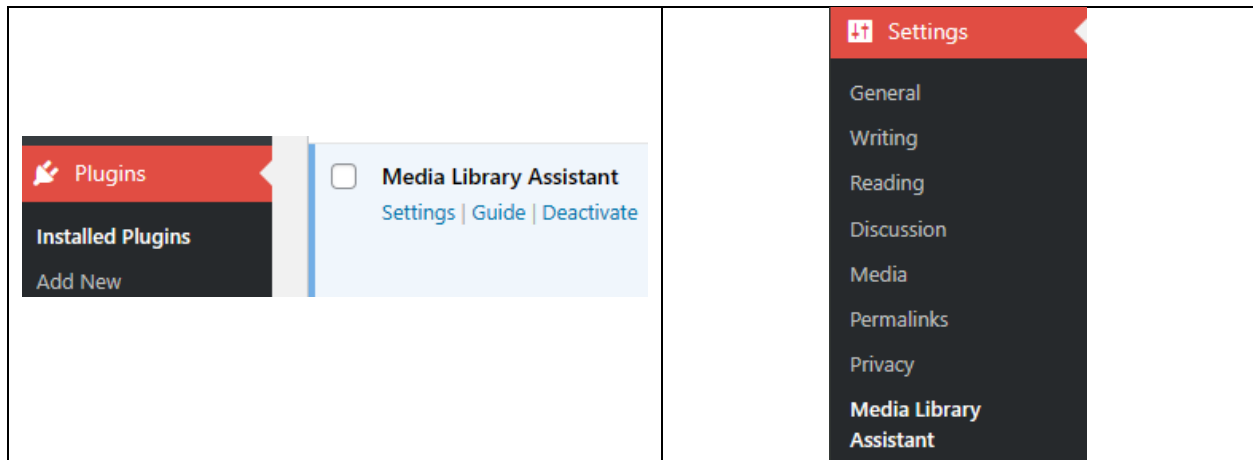
Once you have reached the MLA Settings screen you can select the tab for the type of rule(s) you want to manage:
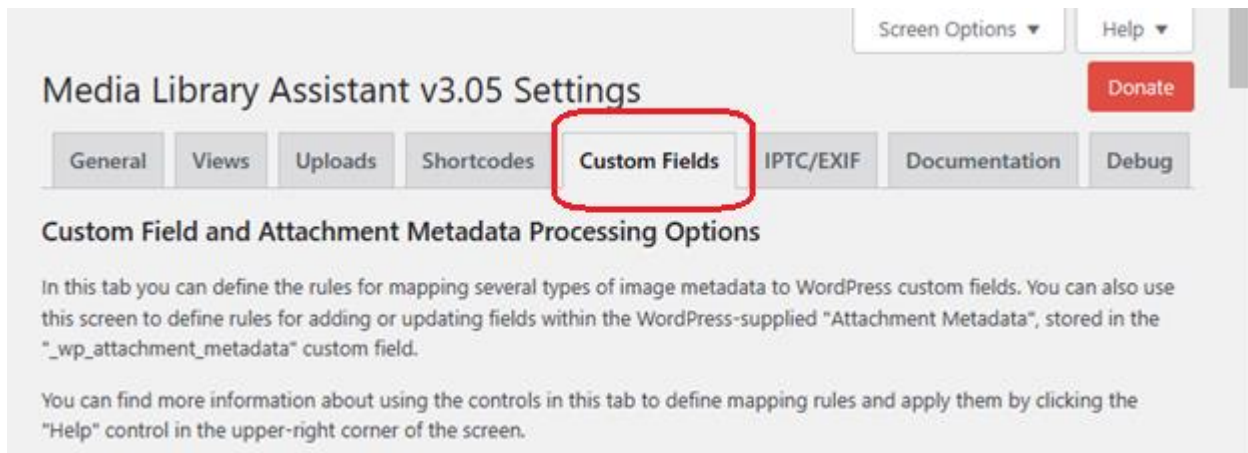
Rules for WordPress Standard Fields

MLA defines six mapping rules for WordPress Standard Fields: Title, Name/Slug, ALT Text, Caption, Description and the Uploaded on date. The rules are always present and set to Inactive by default. As an example, here are the steps required to populate the ALT Text field:

1. Go to the Settings/Media Library Assistant IPTC/EXIF tab.
2. If you want to apply the rule to new items as they are uploaded, check the "Enable IPTC/EXIF Mapping when adding new media" and "Enable IPTC/EXIF Mapping when updating media metadata" boxes.
3. Locate the "ALT Text" rule entry in the table. You can filter the table display to show only the standard fields by clicking the "Standard" view above the table.
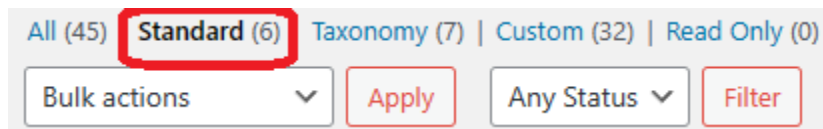
4. Hover over the rule Name and click the "Edit" rollover action. You can also click "Quick Edit" for an easy way to edit most (but not all) of the rule settings.
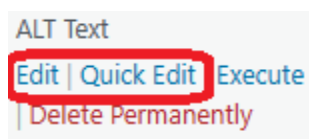
5. In the "Description" text box you can enter any notes or information you need for your application. You can display the Description in the rules table by checking a box in the Screen Options pulldown area.
6. In the "IPTC Value" dropdown control select the IPTC field you want, e.g., "2#105 headline". Leave the default "- None (select a value) -" value in place if you don't have an IPTC field for your application.

7. In the "EXIF/Template Value" text box, enter the name of an EXIF field if you have one for your application. Do NOT add the "exif:" prefix, just the field name. Leave the box blank if you don't have one.
8. In the "Priority" dropdown, select "IPTC" or "EXIF" to select the field you prefer if both are present in the image file.
9. In the "Existing Text" dropdown, select "Replace" to replace existing ALT Text values or "Keep" to retain any existing values.
10. In the "Status" text box, select "Active".
11. Scroll down to the bottom of the screen and click "Update".

Here's the Edit Rule screen for the finished rule:

Edit Rule: Standard field mapping

Name	ALT Text
Description	
	Notes for the IPTC/EXIF tab submenu table.
IPTC Value	2#105 headline ⌄
EXIF/Template Value	ImageDescription
	EXIF element name or Content Template (starting with "template:")
Priority	IPTC ⌄
Existing Text	Replace ⌄
Status	Active ⌄

Cancel   Update

You can also use the "Quick Edit" area to update the rule; it has all the settings except for "Description":

Quick Edit: ALT Text

IPTC Value	2#105 headline ⌄
EXIF/Template Value	ImageDescription

Priority IPTC ⌄   Existing Text Replace ⌄   Status Active ⌄

Cancel   Update

Rules for Taxonomy Terms

MLA defines mapping rules for each taxonomy that supports attachments. The rules are always present and set to Inactive by default. The MLA "Att. Categories" and "Att. Tags" taxonomies are supported by default. You can select additional taxonomies that support attachments by navigating to the "Taxonomy Support" section of the Settings/Media Library Assistant General tab and checking the appropriate box(es) in the "Support" column:

Taxonomy Support

☑ **Compute Attachments Column**
    Check this option to calculate attachments per term in the Attachments Column.

☐ **Show Count Column**
    Check this option to display the Count column on taxonomy edit screens.

Support	Inline Edit	Term Search	Checklist	Checked On Top	Inline Add Term	List Filter	Taxonomy
☑	☑	☐	☑	☐	☑	○	Categories
☑	☑	☐	☑	☐	☑	○	Tags
☐	☐	☐	☐	☐	☐	○	Link Categories
☑	☑	☑	☑	☑	☑	◉	Att. Categories
☑	☑	☑	☐	☐	☐	○	Att. Tags
	○ ASC ◉ DESC	Ref Issues ⌄				○	(Custom Field)

Check the "**Support**" box to add the taxonomy to the Assistant and the Edit Media screen.

Once that's done the corresponding rule will show up in the IPTC/EXIF tab. As an example, here are the steps required to populate the Att. Categories terms:

1. Go to the Settings/Media Library Assistant IPTC/EXIF tab.
2. Click the "Taxonomy" view to filter the table.
3. Hover over the rule Name and click the "Edit" rollover action.
4. In the "IPTC Value" dropdown control select the IPTC field you want, e.g., "2#025 keywords".
5. In the "EXIF/Template Value" text box, enter the name of an EXIF field if you have one for your application or enter a Content Template (see below) to source terms from an XMP field. For this example we'll enter "template:([+xmp:dc.subject+])".
6. Set the "Priority" and "Existing Text" dropdowns as described for Standard Fields above.
7. Set the "Option", "Delimiters" and "Parent" elements as described below.

8. In the "Status" text box, select "Active".
9. Scroll down to the bottom of the screen and click "Update".

The Taxonomy mapping rules have three additional elements:

1. **Option** - For most rules the default "Array" value will be the best option. For certain Content Templates the "Text" option will give better results. For example, if you want to combine two EXIF fields into one compound term name use the "Text" option and enter something like this in the EXIF/Template element: "`template:([+exif:Image.Make+] [+exif:Image.Model+])`" (without quotes). For this template the default "Array" option would create two terms, one for each EXIF field.

2. **Delimiter(s)** - In some cases multiple terms will be contained in a single IPTC or EXIF value. For example, Microsoft Windows stores its "Tags" in a single EXIF value (called Keywords) as a semicolon-separated list, e.g., "tag1; tag2". Other tools use a comma-separated list. For example, the IPTC standard allows either commas or semicolons in the "2#025 keywords" field. You can separate terms encoded in this way by entering one or more delimiter characters in this column.

3. **Parent** - For hierarchical taxonomies such as Categories you can select one of the existing terms in the taxonomy as the parent term for any terms you are mapping from metadata values. For example, you could define "IPTC Keywords" as a parent and then assign all of the 2#025 values under that parent term.

Here's the Edit Rule screen for the finished rule:

Edit Rule: Taxonomy term mapping

Name	Att. Categories
Description	EXIF was: template:([+wfu:Color Values+])
	Notes for the IPTC/EXIF tab submenu table.
IPTC Value	2#025 keywords ⌄
EXIF/Template Value	template:([+xmp:dc.subject+])
	EXIF element name or Content Template (starting with "template:")
Priority	IPTC ⌄
Existing Text	Replace ⌄
Option	Array ⌄
Delimiters	,;
Parent	— None (select a value) — ⌄
Status	Active ⌄

Cancel   Update

You can also use the "Quick Edit" area to update the rule; it has all the settings except for "Description".

Hierarchical Path (Multi-level) Mapping Support

For hierarchical taxonomies, the current MLA version allows new terms to be added at the root level or under a specified "Parent" term but does not support more general mapping of terms within multiple levels. You can add multi-level support by installing one of the MLA example plugins: "MLA Path Mapping Example". See the Documentation and Help section at the end of this document for more information on how to add MLA example plugins to your site.

The "MLA Path Mapping Example" plugin allows the specification of "Delimiters" (including a space character) to separate multiple terms within a metadata value. This example plugin adds a "Path Delimiter" that allows term parent and higher-level ancestor values to be specified, more precisely placing a term in the hierarchy. For example, a value such as "/grand parent/parent/child" denotes a specific term within a three-level hierarchy. In this example the delimiter at the start of the value means that "grand parent" must be a root term, i.e., it appears at the highest level and has no ancestors. This is

an absolute path specification. A path such as "parent/child" is a relative path specification, starting wherever "parent" appears in the hierarchy.

Once the example plugin is installed and activated, you can find details on the plugin operation and an extensive discussion of path mapping considerations in the Documentation tab of the Settings/MLA Path Mapping page.

Rules for Custom Fields

You can define mapping rules to create or update WordPress Custom Fields in either of two places, depending on your needs. The IPTC/EXIF tab is the original source of these rules and is the easiest way to source custom field values from, well, IPTC and/or EXIF fields. The Custom Fields tab was added later; it provides a convenient way to source custom field values from the wide variety of field-level data sources MLA makes available. Both tabs support the use of a Content Template for more complex sourcing applications. There are no custom field rules defined by default. Both tabs have a "Add New Custom Field Rule" area to the left of the submenu table.

In the IPTC/EXIF tab several of the settings in the "Add New…" area will be familiar to you from the descriptions for WordPress Standard Fields. The settings unique to custom fields are described here.

The Name setting is fixed for standard field and taxonomy rules, but for custom field rules you must select an existing field or define a new field. If the custom field is already populated in one or more of your items its name will appear in the Name dropdown control. If not, you will have to enter the field name manually. Advanced Custom Field (ACF) users should know that if you have defined a field in an ACF Field Group but not yet populated the field in any item you will not find it in the dropdown control; enter the ACF Field Name (not the Label) manually.

To enter the name manually click the "Enter new field" link below the dropdown control:

The dropdown control will change to a text box and the link will change as well:

You can enter the field name in the box or click the link to go back to the dropdown control.

There are three settings added to custom field rules. You can find complete information on their effect in the "The IPTC/EXIF rule elements" section of the Settings/Media Library Assistant Document tab. Here is a summary of their effect:

1. **Format** - The Format element has a "commas" value that can improve the results of sorting on numeric values and a "raw" value that changes the handling of "empty" values such as zero.
2. **Option** - Some metadata fields can contain more than one value. For example, the "Keywords" field can contain a list of terms that describe the item. The format option dropdown can further refine your specification where multiple values exist.
3. **Delete NULL Values** - The "Delete NULL values" checkbox lets you control what happens if the data source you've selected does not have a value for every attachment.

Here is the completed Add New… area for a new "Archive Date" custom field:

Once the rule is defined you can use the Edit or Quick Edit rollover actions to make changes.

In the Custom Fields tab you can define rules to map custom field values from the wide variety of "Field-level data sources", elements in the WordPress Attachment metadata or a Content Template. Rules in this tab are also used to add custom field values to the Media/Assistant submenu table, the Bulk Edit area and the Quick edit area. The "Add New Custom Field Rule area" shares several elements with the IPTC/EXIF tab area. Here are the elements unique to the Custom Fields tab:

1. **Data Source dropdown** – Contains a list of data elements you can map to the custom field. You can also select "Metadata" or "Template" and use the text box below the dropdown to specify

attachment metadata or a content template for the source. You can select "None" if you just want to add a custom field to the Media/Assistant submenu and/or the inline edit areas.

2. **Meta/Template text** – For the "Metadata" data source, enter the name of the WordPress Attachment Metadata element you want. For the "Template" data source, enter the Content Template from which to compose the data source value.

3. **MLA Column checkbox** – Check this box if you want a custom field to appear as a sortable column in the Media/Assistant submenu table. Attachment metadata elements cannot be used as a table column; this box is ignored if the Field Title contains the "meta:" prefix.

4. **Quick Edit checkbox** – Check this box if you want the field to appear in the Media/Assistant submenu Quick Edit area.

5. **Bulk Edit checkbox** – Check this box if you want the field to appear in the Media/Assistant submenu Bulk Edit area.

As an example, here is the completed Add New… area for a new "Archive Date" custom field using a Content Template with the same IPTC and EXIF values in the previous example:

Add New Custom Field Rule

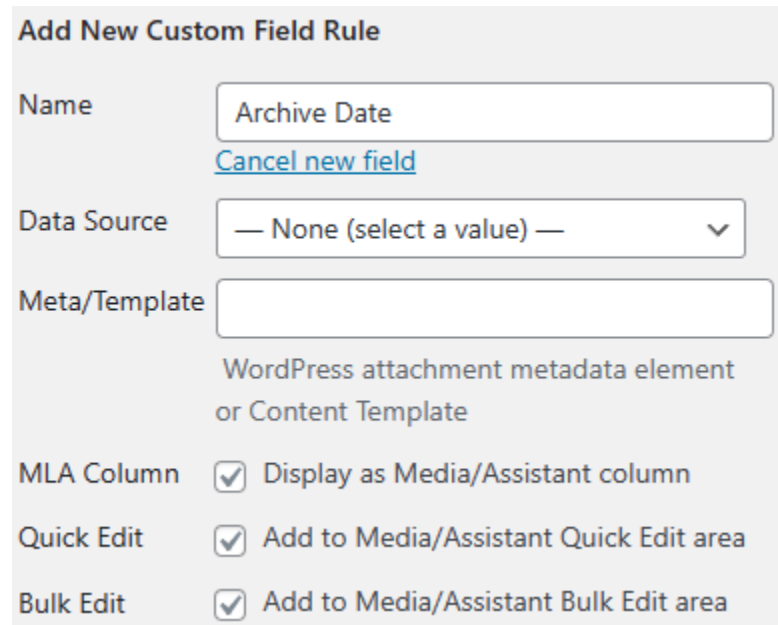|	
Name	Archive Date
	Cancel new field
Data Source	— Template (see below) — ⌄
Meta/Template	([+iptc:2#055+]|[+exif:DateTimeOriginal+]
	WordPress attachment metadata element or Content Template
MLA Column	☑ Display as Media/Assistant column
Quick Edit	☑ Add to Media/Assistant Quick Edit area
Bulk Edit	☑ Add to Media/Assistant Bulk Edit area
Existing Text	Keep ⌄
Format	Native ⌄
Option	Text ⌄
Delete NULL Values	☑ Do not store empty custom field values
Status	Active ⌄

Add Rule

The Content Template is truncated in the above image; the complete template is
"([+iptc:2#055+]|[+exif:DateTimeOriginal+])". You can find more information about
Content Templates later in this document.

If you had already defined the actual mapping rule for this field in the IPTC/EXIF tab you could add a rule
here to add the field to the display and inline edit areas:

Make sure the field name is exactly the same in both rules, of course.

Rules for the Attachment Metadata Array

WordPress stores an array of information for image, audio and video items in the
"_wp_attachment_metadata" custom field. Plugins such as "Fullscreen Galleria" also use this field to
store information like GPS coordinates.

Many of the array elements, such as the "sizes" array for images, are in turn arrays of more detailed
values. Compound names are used to access elements within arrays, e.g., "sizes.thumbnail.file" is used
to specify the file name for the thumbnail version of an image.

As explained in the Viewing File Metadata section above, you can access all of this data with the "meta:"
Field-level markup substitution parameter. By coding the "meta:" prefix in the Name column of a
custom field mapping rule you can add to or update this data as well.

Let's say, for example, that you want to add GPS coordinates to the "image_meta" element of the
Attachment Metadata.

1. Open the Settings/Media Library Assistant submenu and select the Custom Fields tab. Scroll
   down to the "Add a new Field and Mapping Rule" section.
2. In the Field Title text box, enter "meta:image_meta.latitude". The rule will store its results in the
   "latitude" element of the "image_meta" array within the Attachment Metadata field.

3. In the Data Source dropdown, select "-- Template (see below) --". In the text box below the dropdown, enter "([+exif:GPS.LatitudeSDD+])". This is a Content Template that extracts the "GPS.LatitudeSDD" value from the EXIF data embedded in an image file. The parentheses test the result to eliminate empty values; only non-empty values will be mapped into the image_meta array.

4. Set the other parts of the rule as needed. You can select "Keep" if some of your items already have this information or "Replace" to update all items. "Native" and "Text" are appropriate for this example. You can check "Delete NULL values" to remove any existing, empty values for this element. The "MLA Column", "Quick Edit" and "Bulk Edit" checkboxes have no meaning for Attachment Metadata elements and can be left blank; they will be ignored if checked.

If you are creating an IPTC/EXIF mapping rule the details are a bit different.

1. Open the Settings/Media Library Assistant submenu and select the IPTC/EXIF tab. Scroll down to the "Add a new Field and Mapping Rule" section.

2. In the Field Title text box, enter "meta:image_meta.latitude". The rule will store its results in the "latitude" element of the "image_meta" array within the Attachment Metadata field.

3. In the "EXIF/Template" text box, enter "template:([+exif:GPS.LatitudeSDD+])". This is a Content Template that extracts the "GPS.LatitudeSDD" value from the EXIF data embedded in an image file. The parentheses test the result to eliminate empty values; only non-empty values will be mapped into the image_meta array.

4. Set the other parts of the rule as needed. You can select "EXIF" unless you also select an IPTC value and want it to have priority. You can select "Keep" if some of your items already have this information or "Replace" to update all items.

Using Content Templates in Mapping Rules

Content templates are available in both the IPTC/EXIF and Custom Fields tabs to let you compose a mapping value in a variety of ways. A template can be used to access any IPTC, EXIF or XMP metadata your items contain, as well as any of the field-level data sources. For example:

```
template:([+xmp:Title+])

template:([+xmp:Regions.RegionList.*.*.Name,array+])
```

Note the use of parentheses around the XMP parameters, which replace missing values with an empty value to enable proper rule processing.

Within a template, all of the field-level data sources are available. For example, you can code `[+pixels+]` or `[+size_keys,single+]`.

You can use a template to compose a value from multiple data sources, e.g., "`Taken with [+meta:camera+] at [+dimensions+] using ISO [+exif:ISOSpeedRatings,single+] and [+exif:ExposureTime+] exposure time`".

You can use a template to compose a value from alternative data sources, depending on which fields are populated for a given attachment. For example, "`[+iptc:2#020+]|[+iptc:2#025+]|none`" will

use the IPTC supplemental-category field, if populated, then the IPTC keywords field, if populated, or the literal "none" if neither IPTC field contains a value.

For custom field rules, using a template with the Option Dropdown "Text" or "Single" values will yield a text result. For example, multiple IPTC keywords would be converted into a comma-delimited list as a string. If you combine a template with the "Export", "Array" or "Multi" values the template will deliver an array result if the fields inside the template have multiple values. For example, with "Multi" you can code "([+iptc:2#020,array+])([+iptc:2#025,array+])" to store each of the IPTC supplemental-category and keywords values (there is no "|" in the template) in a separate custom field value. Note the use of the ,array formatting option in each field; this is required to get an array result for the field. Also, note that each of the fields is enclosed in parentheses, so the field is suppressed if it contains no values.

There are some differences between the two tabs in the way you enter a template and how it is used; the next two subsections summarize them.

IPTC/EXIF/WP tab

As the label implies, you enter your template in the "EXIF/Template Value" text box. If you code the "template:" prefix at the beginning of the EXIF/Template value you have all the power of Content Templates at your disposal. Do not add the "[+" and "+]" delimiters; the prefix is all you need.

Using a template in a "Standard field mapping" or "Custom field mapping" rules will yield a text result. For example, multiple IPTC keywords would be converted into a comma-delimited list as a string. In a "Taxonomy term mapping" rule the template will deliver an array result if the fields inside the template have multiple values. For example, you can code "template:([+iptc:2#020+])([+iptc:2#025+])" to store each of the IPTC supplemental-category and keywords values (there is no "|" in the template) as a separate taxonomy term. Note that each of the fields is enclosed in parentheses, so the field is suppressed if it contains no values.

In the "Standard field mapping" table a special template:[+empty+] value supports deleting the content of the Title, Caption, Description and ALT Text fields. This value is also available in the Media/Assistant submenu table Bulk Edit area.

Note that the ,array formatting option is not required to get an array result for the field in a Taxonomy term mapping template; it is assumed. If you want a text, single or export result you can add one of those formatting options to your field specification.

Custom Fields tab

If you select "-- Template (see below) --" as the data source you must enter your template in the "Meta/Template" text box below the data source dropdown box. Do not code the "template:" prefix, just enter the template text.

Executing Your Rules

In both tabs there are three ways to execute one or more mapping rules for **ALL** of your Media Library items:

1. **Execute All Rules button** - just below the "Enable" checkbox controls in the upper-left portion of the tab. Click this button to immediately run ALL of the active rules. Rules marked as inactive will not be executed.
2. **Bulk Actions "Execute"** - Runs the rules you select by checking the box to the left of one or more rule names. Pull down the "Bulk Actions" control and select "Execute", then click the "Apply" button. Inactive rules will be executed; do not select them unless you want to execute them!
3. **"Execute"** rollover action - Runs the single rule you select by clicking the rule's "Execute" rollover action. Inactive rules will be executed.

These commands process your items in "chunks" to prevent timeout errors. You can pause/resume or cancel the operation between chunks. Note that rules with a Data Source of "none" (in the Custom Fields tab) are ignored because they can't change the custom field value.

There are two other ways you can perform custom field mapping for one or more existing attachments:

1. **Edit Media screen** - You can click the "Map Custom Field metadata" link in the "Image Metadata" postbox to apply the existing mapping rules to a single attachment.
2. **Bulk Action edit area** - To perform mapping for a group of attachments you can use the Bulk Action facility on the Media/Assistant screen. Check the attachments you want to map, select "Edit" from the Bulk Actions dropdown list and click "Apply". The bulk edit area will open with a list of the checked attachments in the left-hand column. You can click the "Map Custom Field metadata" button in the lower left corner of the area to apply the existing mapping rules to the attachments in the list.

Troubleshooting Your Rules

If you are not getting the results you expect from your mapping rules carefully inspecting the results of its operations can be a valuable exercise. You can activate some MLA debug logging to add information to the site error log that details what the rules are doing.

To limit the amount of log data recorded, MLA divides its messages into several categories. These are detailed in the "MLA Debug Tab" section of the Settings/Media Library Assistant Documentation tab. There are three categories of particular interest for mapping rules:

1. **1, or 0x0001** - activates the Debug tab. PHP messages and some MLA error messages (such as the [mla_gallery mla_debug=log] messages) will be written to the file.
2. **2, or 0x0002** - writes MLA-specific messages to the log for some of the "AJAX" functions such as bulk edit updates and mapping rule execution.
3. **16, or 0x0010** - writes MLA-specific messages to the log for IPTC, EXIF, XMP and PDF metadata generation.

Category selection is entered as a single numeric value. For example, to activate all three of the above categories you would enter "0x0013" or "19". The hexadecimal notation is somewhat easier to understand for this purpose.

To activate MLA's debug logging:

1. Navigate to the Settings/Media Library Assistant Debug tab.

2. Scroll down to the "MLA Reporting" text box and activate the logging categories you want e.g., **0x0013**.
3. Click the Save Changes button to record your new setting.
4. Optionally, scroll to the bottom of the screen and click "Reset" to clear the error log. You may not want to do this depending on how you manage your error log.

Once that's done you can run a test. The debug log can be very detailed, so restricting the test as best you can will be very helpful. You can use the Media/Edit Media screen to map a single file or use the Media/Assistant Bulk Edit area to map a small number of files.

When you've finished testing, go back to the Debug screen and:

1. Enter "0" in the MLA Reporting text box to turn debug logging off.
2. Click the Save Changes button to record your new setting.
3. Scroll to the bottom and click "Download" to get the log content in a text file.
4. Optionally, scroll to the bottom of the screen and click "Reset" to clear the error log.

There may be a lot of messages written to the log, so limit the amount of activity during the logging period. You should see messages in the log like these:

```
[31-Jan-2023 21:17:34 UTC] 694 MLACore::mla_plugins_loaded_action()
MLA 3.05 (20230121) mla_debug_level 0x0013
[31-Jan-2023 21:17:34 UTC] 698 MLACore::mla_plugins_loaded_action(  )
$_SERVER[REQUEST_URI] = '/wp-
admin/upload.php?mla_admin_action=single_item_map&mla_admin_nonce=e0c5
99d0fb&page=mla-menu&mla_item_ID=8957&mla_source=edit'
[31-Jan-2023 21:17:34 UTC] 3655
MLAData::mla_fetch_attachment_image_metadata getimagesize returns
array (
  0 => 2000,
  1 => 1000,
  2 => 2,
  3 => 'width="2000" height="1000"',
  'bits' => 8,
  'channels' => 3,
  'mime' => 'image/jpeg',
)
[31-Jan-2023 21:17:34 UTC] 3656
MLAData::mla_fetch_attachment_image_metadata getimagesize info keys =
array (
  0 => 'APP1',
  1 => 'APP13',
  2 => 'APP14',
)
[31-Jan-2023 21:17:34 UTC] 4075
MLAData::mla_fetch_attachment_image_metadata( PHP 8.0.9, 8957, D:\My
Data\Data Files\Web Design\VirtualHosts\mladev/wp-
content/uploads/2023/01/IPTC-PhotometadataRef-Std2022.1.jpg ) results
= array (
```

Of course, the details will be different. If you still have questions or discover a defect in MLA you can open a support topic or contact me at my web site so it can be investigated further. I may ask for a copy of the log file from your tests.

Documentation and Help

I hope this document has given you a solid understanding of how MLA's mapping rules can populate your site with information from the metadata found in your Media Library files. There is more information built into MLA.

The IPTC/EXIF and Custom Fields tabs have help menus you can access by pulling down the "Help" control at the top right of the tab's screen.

In the Settings/Media Library Assistant Documentation tab you can find useful sections:

- IPTC & EXIF Processing Options
- Custom Field and Attachment Metadata Processing Options
- Field-level substitution parameters
- Content Templates
- Regular Expression Features

There are several MLA Example Plugins that add optional features you might find useful. You can find all the Example Plugins by navigating to the Settings/Media Library Assistant Documentation tab and clicking the "Example plugins" towards the top of the page. Have a look at:

- MLA Bulk Edit Remap Example
- MLA CSV Data Source Example
- MLA Hierarchical Mapping Example
- MLA Mapping Hooks Example
- MLA Metadata Mapping Hooks Example
- MLA Path Mapping Example
- MLA Simple Mapping Hooks Example
- MLA Substitution Parameter Hooks Example

Example plugins with "Hooks" in the title show how to use the actions and filters (hooks) MLA provides to accomplish almost any task with a bit of PHP code.

The MLA Support Forum is a rich source of ideas and solutions for metadata and mapping applications. If you still have questions or discover a defect in MLA you can open a support topic or contact me at my web site .