

---

# MDItem Reference

Data Management: File Management



2010-04-29



Apple Inc.  
© 2004, 2010 Apple Inc.  
All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, mechanical, electronic, photocopying, recording, or otherwise, without prior written permission of Apple Inc., with the following exceptions: Any person is hereby authorized to store documentation on a single computer for personal use only and to print copies of documentation for personal use provided that the documentation contains Apple's copyright notice.

The Apple logo is a trademark of Apple Inc.

Use of the "keyboard" Apple logo (Option-Shift-K) for commercial purposes without the prior written consent of Apple may constitute trademark infringement and unfair competition in violation of federal and state laws.

No licenses, express or implied, are granted with respect to any of the technology described in this document. Apple retains all intellectual property rights associated with the technology described in this document. This document is intended to assist application developers to develop applications only for Apple-labeled computers.

Every effort has been made to ensure that the information in this document is accurate. Apple is not responsible for typographical errors.

Apple Inc.  
1 Infinite Loop  
Cupertino, CA 95014  
408-996-1010

Apple, the Apple logo, AppleWorks, Finder, iPod, iTunes, Mac, Mac OS, New York, Pages, and Spotlight are trademarks of Apple Inc., registered in the United States and other countries.

Aperture and Numbers are trademarks of Apple Inc.

Intel and Intel Core are registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Times is a registered trademark of Heidelberger Druckmaschinen AG, available from Linotype Library GmbH.

Simultaneously published in the United States and Canada.

**Even though Apple has reviewed this document, APPLE MAKES NO WARRANTY OR REPRESENTATION, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS DOCUMENT, ITS QUALITY, ACCURACY, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. AS A RESULT, THIS DOCUMENT IS PROVIDED "AS IS," AND YOU, THE READER, ARE ASSUMING THE ENTIRE RISK AS TO ITS QUALITY AND ACCURACY.**

**IN NO EVENT WILL APPLE BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT OR INACCURACY IN THIS DOCUMENT, even if advised of the possibility of such damages.**

**THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, ORAL OR WRITTEN, EXPRESS OR IMPLIED. No Apple dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.**

**Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.**

# Contents

## **MDItem Reference 5**

---

Overview	5
Functions by Task	5
Creating an MDItem	5
Getting the Type Identifier	5
Retrieving Metadata Attributes	5
Functions	6
MDItemCopyAttribute	6
MDItemCopyAttributeList	6
MDItemCopyAttributeNames	7
MDItemCopyAttributes	7
MDItemCreate	8
MDItemCreateWithURL	9
MDItemGetTypeID	9
Data Types	10
MDItemRef	10
Constants	10
Common Metadata Attribute Keys	10
Image Metadata Attribute Keys	18
Video Metadata Attribute Keys	23
Audio Metadata Attribute Keys	25
File System Metadata Attribute Keys	28

## **Document Revision History 31**

---



# MDItem Reference

---

<b>Derived From:</b>	CType
<b>Framework:</b>	CoreServices/CoreServices.h
<b>Declared in</b>	MDItem.h
<b>Companion guides</b>	Spotlight Overview Spotlight Query Programming Guide Spotlight Importer Programming Guide Spotlight Metadata Attributes Reference

## Overview

MDItem is a CF-compliant object that represents a file and the metadata associated with the file.

For functions that expect an MDItemRef parameter, if this parameter is not a valid MDItemRef, the behavior is undefined. NULL is not a valid MDItemRef.

## Functions by Task

### Creating an MDItem

[MDItemCreate](#) (page 8)

Creates an MDItem object for a file at the specified path.

[MDItemCreateWithURL](#) (page 9)

Creates an MDItem object for a file at the specified file URL.

### Getting the Type Identifier

[MDItemGetTypeID](#) (page 9)

Returns the type identifier of all MDItem instances.

### Retrieving Metadata Attributes

[MDItemCopyAttribute](#) (page 6)

Returns the value of the specified attribute in the metadata item.

[MDItemCopyAttributes](#) (page 7)

Returns the values of the specified attributes in the metadata item.

[MDItemCopyAttributeList](#) (page 6)

Returns the values of the specified attributes in the metadata item.

[MDItemCopyAttributeNames](#) (page 7)

Returns an array containing the attribute names existing in the metadata item.

## Functions

### MDItemCopyAttribute

Returns the value of the specified attribute in the metadata item.

```
CTypeRef MDItemCopyAttribute (  
    MDItemRef item,  
    CFStringRef name  
);
```

#### Parameters

*item*

The item to be queried.

*name*

The name of the requested attribute.

#### Return Value

A `CTypeRef`, or `NULL` if there was a failure reading the attribute or the attribute does not exist.

#### Availability

Available in Mac OS X version 10.4 and later.

#### Related Sample Code

SpotlightAPI

UnsharpMask

#### Declared In

MDItem.h

### MDItemCopyAttributeList

Returns the values of the specified attributes in the metadata item.

```
CFDictionaryRef MDItemCopyAttributeList (  
    MDItemRef item,  
    ...  
);
```

#### Parameters

*item*

The item to be queried.

...

A comma-separated varargs list of the string attribute names..

**Return Value**

A CFDictionary containing keys for the requested attribute names, and the corresponding values. If an attribute does not exist, or the attribute is unreadable, there will be no key-value pair for it in the dictionary. Returns NULL on failure.

**Availability**

Available in Mac OS X version 10.4 and later.

**Declared In**

MDItem.h

**MDItemCopyAttributeNames**

Returns an array containing the attribute names existing in the metadata item.

```
CFArrayRef MDItemCopyAttributeNames (
    MDItemRef item
);
```

**Parameters**

*item*

The item to be queried.

**Return Value**

A CFArray of CFString attribute names, or NULL on failure.

**Availability**

Available in Mac OS X version 10.4 and later.

**Related Sample Code**

SpotlightAPI

**Declared In**

MDItem.h

**MDItemCopyAttributes**

Returns the values of the specified attributes in the metadata item.

```
CFDictionaryRef MDItemCopyAttributes (
    MDItemRef item,
    CFArrayRef names
);
```

**Parameters**

*item*

The item to be queried.

*names*

A CFArray containing the names of the requested attributes.

**Return Value**

A `CFDictionary` containing keys for the requested attribute names, and the corresponding values. If an attribute does not exist, or the attribute is unreadable, there will be no key-value pair for it in the dictionary. Returns `NULL` on failure.

**Availability**

Available in Mac OS X version 10.4 and later.

**Related Sample Code**

SpotlightAPI

**Declared In**

`MDItem.h`

**MDItemCreate**

Creates an `MDItem` object for a file at the specified path.

```
MDItemRef MDItemCreate (
    CFAllocatorRef allocator,
    CFStringRef path
);
```

**Parameters**

*allocator*

The `CFAllocator` object to be used to allocate memory for the new object. Pass `NULL` or `kCFAllocatorDefault` to use the current default allocator.

*path*

A path to the file from which to create the `MDItem`. The path must exist.

**Return Value**

An `MDItem` object or `NULL` if there was a problem creating the object.

**Discussion**

Returns a metadata item for the given URL.

**Special Considerations**

In Mac OS X v 10.5 and later `MDItemRefs` may or may not be unique. You should always use `CFEqual` for comparison.

Prior to Mac OS X v 10.5 items were guaranteed to be unique and `==` could or `CFEqual` could be used for the comparison.

**Availability**

Available in Mac OS X version 10.4 and later.

**Related Sample Code**

SpotlightAPI

UnsharpMask

**Declared In**

`MDItem.h`



## MDItemCreateWithURL

Creates an MDItem object for a file at the specified file URL.

```
MDItemRef MDItemCreateWithURL (
    CFAllocatorRef allocator,
    CFURLRef url
);
```

### Parameters

*allocator*

The `CFAllocator` object to be used to allocate memory for the new object. Pass `NULL` or `kCFAllocatorDefault` to use the current default allocator.

*url*

A file URL to the file from which to create the `MDItem`. The file must exist.

### Return Value

An `MDItem` object or `NULL` if there was a problem creating the object.

### Discussion

Returns a metadata item for the given URL.

### Special Considerations

In Mac OS X v 10.5 and later `MDItemRefs` may or may not be unique. You should always use `CFEqual` for comparison.

Prior to Mac OS X v 10.5 items were guaranteed to be unique and `==` could or `CFEqual` could be used for the comparison.

### Availability

Available in Mac OS X version 10.6 and later.

### Declared In

`MDItem.h`

## MDItemGetTypeID

Returns the type identifier of all `MDItem` instances.

```
CTypeID MDItemGetTypeID (
    void
);
```

### Return Value

The type identifier for the `MDItem` opaque type.

### Availability

Available in Mac OS X version 10.4 and later.

### Declared In

`MDItem.h`

## Data Types

### **MDItemRef**

A reference to a MDItem object.

```
typedef struct __MDItem *MDItemRef;
```

### **Availability**

Available in Mac OS X v10.4 and later.

### **Declared In**

MDItem.h

## Constants

### **Common Metadata Attribute Keys**

Metadata attribute keys that are common to many file types.

```

const CFStringRef kMDItemAttributeChangeDate;
const CFStringRef kMDItemAudiences;
const CFStringRef kMDItemAuthors;
const CFStringRef kMDItemAuthorAddresses;
const CFStringRef kMDItemCity;
const CFStringRef kMDItemComment;
const CFStringRef kMDItemContactKeywords;
const CFStringRef kMDItemContentCreationDate;
const CFStringRef kMDItemContentModificationDate;
const CFStringRef kMDItemContentType;
const CFStringRef kMDItemContributors;
const CFStringRef kMDItemCopyright;
const CFStringRef kMDItemCountry;
const CFStringRef kMDItemCoverage;
const CFStringRef kMDItemCreator;
const CFStringRef kMDItemDescription;
const CFStringRef kMDItemDueDate;
const CFStringRef kMDItemDurationSeconds;
const CFStringRef kMDItemEmailAddresses;
const CFStringRef kMDItemEncodingApplications;
const CFStringRef kMDItemFinderComment;
const CFStringRef kMDItemFonts;
const CFStringRef kMDItemHeadline;
const CFStringRef kMDItemIdentifier;
const CFStringRef kMDItemInstantMessageAddresses;
const CFStringRef kMDItemInstructions;
const CFStringRef kMDItemKeywords;
const CFStringRef kMDItemKind;
const CFStringRef kMDItemLanguages;
const CFStringRef kMDItemLastUsedDate;
const CFStringRef kMDItemNumberOfPages;
const CFStringRef kMDItemOrganizations;
const CFStringRef kMDItemPageHeight;
const CFStringRef kMDItemPageWidth;
const CFStringRef kMDItemParticipants;
const CFStringRef kMDItemPhoneNumbers;
const CFStringRef kMDItemProjects;
const CFStringRef kMDItemPublishers;
const CFStringRef kMDItemRecipients;
const CFStringRef kMDItemRecipientAddresses;
const CFStringRef kMDItemRights;
const CFStringRef kMDItemSecurityMethod;
const CFStringRef kMDItemStarRating;
const CFStringRef kMDItemStateOrProvince;
const CFStringRef kMDItemTextContent;
const CFStringRef kMDItemTitle;
const CFStringRef kMDItemVersion;
const CFStringRef kMDItemWhereFroms;
const CFStringRef kMDItemSupportFileType;
const CFStringRef kMDItemAuthorEmailAddresses;
const CFStringRef kMDItemRecipientEmailAddresses;
const CFStringRef kMDItemTheme;
const CFStringRef kMDItemSubject;
const CFStringRef kMDItemCFBundleIdentifier;
const CFStringRef kMDItemFSHasCustomIcon;
const CFStringRef kMDItemFSIsStationery;
const CFStringRef kMDItemInformation;
const CFStringRef kMDItemURL;

```

## Constants

`kMDItemAttributeChangeDate`

The date and time of the last change made to a metadata attribute. A `CFDate`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAudiences`

The audience for which the file is intended. The audience may be determined by the creator or the publisher or by a third party. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAuthors`

The author, or authors, of the contents of the file. A `CFArray` of `CFStrings`.

The order of the authors is preserved, but does not represent the main author or relative importance of the authors.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAuthorAddresses`

This attribute indicates the author addresses of the document. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.6 and later.

Declared in `MDItem.h`.

`kMDItemCity`

Identifies city of origin according to guidelines established by the provider. A `CFString`.

For example, "New York", "Cupertino", or "Toronto".

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemComment`

A comment related to the file. This differs from the Finder comment, `kMDItemFinderComment`. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemContactKeywords`

A list of contacts that are associated with this document, not including the authors. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemContentCreationDate`

The date that the contents of the file were created. A `CFDate`.

This is different than the file creation date. Its can be used to store when the file contents were first created, or first modified.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemContentModificationDate`

The date and time that the contents of the file were last modified. A `CFDate`.

This is not necessarily the file modification date.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemContentType`

The UTI pedigree of a file. A `CFString`.

For example, a jpeg image file will have a value of `public.jpeg/public.image/public.data`. The value of this attribute is set by the `MDImporter`. Changes to this value are lost when the file attributes are next imported.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemContributors`

The entities responsible for making contributions to the content of the resource. A `CFArray` of `CFStrings`.

Examples of a contributor include a person, an organization or a service.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemCopyright`

The copyright owner of the file contents. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemCountry`

The full, publishable name of the country or primary location where the intellectual property of the item was created, according to guidelines of the provider. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemCoverage`

The extent or scope of the content of the resource. A `CFString`.

Coverage will typically include spatial location (a place name or geographic co-ordinates), temporal period (a period label, date, or date range) or jurisdiction (such as a named administrative entity).

Recommended best practice is to select a value from a controlled vocabulary, and that, where appropriate, named places or time periods be used in preference to numeric identifiers such as sets of co-ordinates or date ranges.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemCreator`

Application used to create the document content (e.g. "Word", "AppleWorks", etc.). A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemDescription`

A description of the content of the resource. The description may include an abstract, table of contents, reference to a graphical representation of content or a free-text account of the content. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemDueDate`

Date this item is due. A `CFDate`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemDurationSeconds`

The duration, in seconds, of the content of file. A value of 10.5 represents media that is 10 and 1/2 seconds long. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemEmailAddresses`

Email addresses related to this item. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemEncodingApplications`

Application used to convert the original content into its current form. For example, a PDF file might have an encoding application set to "Distiller". A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFinderComment`

Finder comments for this file. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFonts`

Fonts used in this item. You should store the font's full name, the postscript name, or the font family name, based on the available information. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemHeadline`

A publishable entry providing a synopsis of the contents of the file. For example, "Apple Introduces the iPod Photo". A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemIdentifier`

A formal identifier used to reference the resource within a given context. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemInstantMessageAddresses`

Instant message addresses related to this item. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemInstructions`

Editorial instructions concerning the use of the item, such as embargoes and warnings. For example, "Second of four stories". A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemKeywords`

Keywords associated with this file. For example, "Birthday", "Important", etc. An NSArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemKind`

A description of the kind of item this file represents. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemLanguages`

Indicates the languages of the intellectual content of the resource. Recommended best practice for the values of the Language element is defined by RFC 3066. A NSArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemLastUsedDate`

The date and time that the file was last used. This value is updated automatically by LaunchServices everytime a file is opened by double clicking, or by asking LaunchServices to open a file. A CFDate.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemNumberOfPages`

Number of pages in the document. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemOrganizations`

The company or organization that created the document. A NSArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemPageHeight`

Height of the document page, in points (72 points per inch). For PDF files this indicates the height of the first page only. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemPageWidth`

Width of the document page, in points (72 points per inch). For PDF files this indicates the width of the first page only. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemParticipants`

The list of people who are visible in an image or movie or written about in a document. A CFArray of CFStrings.

Available in Mac OS X v10.6 and later.

Declared in `MDItem.h`.

`kMDItemPhoneNumbers`

Phone numbers related to this item. A CFArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemProjects`

The list of projects that this file is part of. For example, if you were working on a movie all of the files could be marked as belonging to the project "My Movie". A CFArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemPublishers`

The entity responsible for making the resource available. For example, a person, an organization, or a service. Typically, the name of a publisher should be used to indicate the entity. A CFArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemRecipients`

Recipients of this item. A CFArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemRecipientAddresses`

This attribute indicates the recipient addresses of the document. A CFArray of CFStrings.

Available in Mac OS X v10.6 and later.

Declared in `MDItem.h`.

`kMDItemRights`

Provides a link to information about rights held in and over the resource. A CFString.

Contains a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights.

If this attribute is absent, no assumptions can be made about the status of these and other rights with respect to the resource.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemSecurityMethod`

The security or encryption method used for the file. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.



`kMDItemStarRating`

User rating of this item. For example, the stars rating of an iTunes track. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemStateOrProvince`

Identifies the province or state of origin according to guidelines established by the provider. For example, "CA", "Ontario", or "Sussex". A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemTextContent`

Contains a text representation of the content of the document. Data in multiple fields should be combined using a whitespace character as a separator. A `CFString`.

An application's Spotlight importer provides the content of this attribute. Applications can search for values in this attribute, but are not able to read the content of this attribute directly.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemTitle`

The title of the file. For example, this could be the title of a document, the name of a song, or the subject of an email message. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemVersion`

The version number of this file. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemWhereFroms`

Describes where the file was obtained from. A `CFArray` of `CFStrings`.

For example, a downloaded file may refer to the URL, files received by email may indicate the sender's email address, message subject, etc.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemSupportFileType`

A `CFArray` of `CFStrings`.

Available in Mac OS X v10.5 and later.

Deprecated in Mac OS X v10.5.

Declared in `MDItem.h`.

`kMDItemAuthorEmailAddresses`

This attribute indicates the author of the emails message addresses. (This is always the email address, and not the human readable version). A `CFArray` of `CFStrings`.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemRecipientEmailAddresses`

This attribute indicates the recipients email addresses. (This is always the email address, and not the human readable version). A CFArray of CFStrings.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemTheme`

Theme of the this item. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemSubject`

Subject of the this item. Type is a CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemCFBundleIdentifier`

If this item is a bundle, then this is the `CFBundleIdentifier`. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemFSHasCustomIcon`

Boolean indicating if this file has a custom icon. Type is a CFBoolean.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemFSIsStationery`

Boolean indicating if this file is stationery. Type is a CFBoolean.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemInformation`

Information about the item. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemURL`

Url of the item. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

## Image Metadata Attribute Keys

Metadata attribute keys that are common to image files.

```

const CFStringRef      kMDItemPixelHeight;
const CFStringRef      kMDItemPixelWidth;
const CFStringRef      kMDItemPixelCount;
const CFStringRef      kMDItemColorSpace;
const CFStringRef      kMDItemBitsPerSample;
const CFStringRef      kMDItemFlashOnOff;
const CFStringRef      kMDItemFocalLength;
const CFStringRef      kMDItemAcquisitionMake;
const CFStringRef      kMDItemAcquisitionModel;
const CFStringRef      kMDItemISOSpeed;
const CFStringRef      kMDItemOrientation;
const CFStringRef      kMDItemLayerNames;
const CFStringRef      kMDItemWhiteBalance;
const CFStringRef      kMDItemAperture;
const CFStringRef      kMDItemProfileName;
const CFStringRef      kMDItemResolutionWidthDPI;
const CFStringRef      kMDItemResolutionHeightDPI;
const CFStringRef      kMDItemExposureMode;
const CFStringRef      kMDItemExposureTimeSeconds;
const CFStringRef      kMDItemEXIFVersion;
const CFStringRef      kMDItemAlbum;
const CFStringRef      kMDItemHasAlphaChannel;
const CFStringRef      kMDItemRedEyeOnOff;
const CFStringRef      kMDItemMeteringMode;
const CFStringRef      kMDItemMaxAperture;
const CFStringRef      kMDItemFNumber;
const CFStringRef      kMDItemExposureProgram;
const CFStringRef      kMDItemExposureTimeString;
const CFStringRef      kMDItemEXIFGPSVersion;
const CFStringRef      kMDItemAltitude;
const CFStringRef      kMDItemLatitude;
const CFStringRef      kMDItemLongitude;
const CFStringRef      kMDItemTimestamp;
const CFStringRef      kMDItemSpeed;
const CFStringRef      kMDItemGPSTrack;
const CFStringRef      kMDItemImageDirection;
const CFStringRef      kMDItemNamedLocation;

```

### Constants

`kMDItemPixelHeight`

The height, in pixels, of the contents. For example, the image height or the video frame height. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemPixelWidth`

The width, in pixels, of the contents. For example, the image width or the video frame width. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemPixelCount`

The total number of pixels in the contents. Same as [kMDItemPixelWidth](#) (page 19) x [kMDItemPixelHeight](#) (page 19). A `CFNumber`.

Available in Mac OS X v10.6 and later.

Declared in `MDItem.h`.

`kMDItemColorSpace`

The color space model used by the document contents. For example, "RGB", "CMYK", "YUV", or "YCbCr". A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemBitsPerSample`

The number of bits per sample. For example, the bit depth of an image (8-bit, 16-bit etc...) or the bit depth per audio sample of uncompressed audio data (8, 16, 24, 32, 64, etc..). A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFlashOnOff`

Indicates if a camera flash was used. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFocalLength`

The actual focal length of the lens, in millimeters. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAcquisitionMake`

The manufacturer of the device used to acquire the document contents. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAcquisitionModel`

The model of the device used to acquire the document contents. For example, 100, 200, 400, etc. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemISOSpeed`

The ISO speed used to acquire the document contents. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemOrientation`

The orientation of the document contents. Possible values are 0 (landscape) and 1 (portrait). A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemLayerNames`

The names of the layers in the file. A CFArray of CFStrings.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemWhiteBalance`

The white balance setting used to acquire the document contents. Possible values are 0 (auto white balance) and 1 (manual). A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAperture`

The aperture setting used to acquire the document contents. This unit is the APEX value. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemProfileName`

The name of the color profile used by the document contents. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemResolutionWidthDPI`

Resolution width, in DPI, of this image. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemResolutionHeightDPI`

Resolution height, in DPI, of this image. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemExposureMode`

The exposure mode used to acquire the document contents. A CFNumber.

Possible values are 0 (auto exposure), 1 (manual exposure) and 2 (auto bracket).

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemExposureTimeSeconds`

The exposure time, in seconds, used to acquire the document contents. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemEXIFVersion`

The version of the EXIF header used to generate the metadata. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAlbum`

The title for a collection of media. This is analagous to a record album, or photo album. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemHasAlphaChannel`

Indicates if this image file has an alpha channel. A CFBoolean.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemRedEyeOnOff`

Indicates if red-eye reduction was used to take the picture. A CFBoolean.

Possible values are 0 (no red-eye reduction mode or unknown) and 1 (red-eye reduction used).

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemMeteringMode`

The metering mode used to take the image. A CFString.

Possible values are: Unknown, Average, CenterWeightedAverage, Spot, MultiSpot, Pattern, and Partial.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemMaxAperture`

The smallest f-number of the lens. Ordinarily it is given in the range of 00.00 to 99.99. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFNumber`

The diameter of the diaphragm aperture in terms of the effective focal length of the lens.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemExposureProgram`

The class of the exposure program used by the camera to set exposure when the image is taken.

Possible values include: Manual, Normal, and Aperture priority. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemExposureTimeString`

The time of the exposure. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemEXIFGPSVersion`

The version of GPSInfoFD in EXIF used to generate the metadata. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemAltitude`

The altitude of the item in meters above sea level, expressed using the WGS84 datum. Negative values lie below sea level. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemLatitude`

The latitude of the item in degrees north of the equator, expressed using the WGS84 datum. Negative values lie south of the equator. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemLongitude`

The longitude of the item in degrees east of the prime meridian, expressed using the WGS84 datum. Negative values lie west of the prime meridian. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemTimestamp`

The timestamp on the item. This generally is used to indicate the time at which the event captured by the item took place. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemSpeed`

The speed of the item, in kilometers per hour. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemGPSTrack`

The direction of travel of the item, in degrees from true north. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemImageDirection`

The direction of the item's image, in degrees from true north. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemNamedLocation`

The name of the location or point of interest associated with the item. The name may be user provided. A CFString.

Available in Mac OS X v10.6 and later.

Declared in `MDItem.h`.

## Video Metadata Attribute Keys

Metadata attribute keys that are common to video files.

```

const CFStringRef kMDItemAudioBitRate;
const CFStringRef kMDItemCodecs;
const CFStringRef kMDItemDeliveryType;
const CFStringRef kMDItemMediaTypes;
const CFStringRef kMDItemStreamable;
const CFStringRef kMDItemTotalBitRate;
const CFStringRef kMDItemVideoBitRate;
const CFStringRef kMDItemDirector;
const CFStringRef kMDItemProducer;
const CFStringRef kMDItemGenre;
const CFStringRef kMDItemPerformers;
const CFStringRef kMDItemOriginalFormat;
const CFStringRef kMDItemOriginalSource;

```

### Constants

`kMDItemAudioBitRate`

The audio bit rate. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemCodecs`

The codecs used to encode/decode the media. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemDeliveryType`

The delivery type. Values are “Fast start” or “RTSP”. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemMediaTypes`

The media types present in the content. A `CFArray` of `CFStrings`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemStreamable`

Whether the content is prepared for streaming. A `CFBoolean`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemTotalBitRate`

The total bit rate, audio and video combined, of the media. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemVideoBitRate`

The video bit rate. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemDirector`

Directory of the movie. A `CFString`.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.



`kMDItemProducer`

Producer of the content. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemGenre`

Genre of the movie. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemPerformers`

Performers in the movie. A CFArray of CFStrings.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemOriginalFormat`

Original format of the movie. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

`kMDItemOriginalSource`

Original source of the movie. A CFString.

Available in Mac OS X v10.5 and later.

Declared in `MDItem.h`.

## Audio Metadata Attribute Keys

Metadata attribute keys that describe an audio file.

```

const CFStringRef kMDItemAppleLoopDescriptors;
const CFStringRef kMDItemAppleLoopsKeyFilterType;
const CFStringRef kMDItemAppleLoopsLoopMode;
const CFStringRef kMDItemAppleLoopsRootKey;
const CFStringRef kMDItemAudioChannelCount;
const CFStringRef kMDItemAudioEncodingApplication;
const CFStringRef kMDItemAudioSampleRate;
const CFStringRef kMDItemAudioTrackNumber;
const CFStringRef kMDItemComposer;
const CFStringRef kMDItemIsGeneralMIDISequence;
const CFStringRef kMDItemKeySignature;
const CFStringRef kMDItemLyricist;
const CFStringRef kMDItemMusicalGenre;
const CFStringRef kMDItemMusicalInstrumentCategory;
const CFStringRef kMDItemMusicalInstrumentName;
const CFStringRef kMDItemRecordingDate;
const CFStringRef kMDItemRecordingYear;
const CFStringRef kMDItemTempo;
const CFStringRef kMDItemTimeSignature;

```

### Constants

`kMDItemAppleLoopDescriptors`

Specifies multiple pieces of descriptive information about a loop. A CFArray of CFStrings.

Besides genre and instrument, files can contain descriptive information that help users in refining searches.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAppleLoopsKeyFilterType`

Specifies key filtering information about a loop. Loops are matched against projects that often in a major or minor key. A CFString.

To assist users in identifying loops that will "fit" with their compositions, loops can be tagged with one of the following key filters: "AnyKey" "Minor" "Major" "NeitherKey" "BothKeys". "AnyKey" means that it fits with anything (whether in a major key, minor key or neither). "Minor" fits with compositions in a minor key. "NeitherKey" doesn't work well with compositions that are in major or minor key. "BothKeys" means it fits with major or minor key.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAppleLoopsLoopMode`

Specifies how a file should be played. A CFString.

Tagged files can either be loops or non-loops (e.g., a cymbal crash). "Looping" indicates if the file should be treated as a loop. "Non-looping" indicates the file should not be treated as a loop.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAppleLoopsRootKey`

Specifies the loop's original key. The key is the root note or tonic for the loop, and does not include the scale type. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAudioChannelCount`

Number of channels in the audio data contained in the file. A CFNumber.

This integer value only represents the number of discreet channels of audio data found in the file. It does not indicate any configuration of the data in regards to a user's speaker setup.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAudioEncodingApplication`

The name of the application that encoded the data contained in the audio file. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAudioSampleRate`

Sample rate of the audio data contained in the file. The sample rate is a float value representing hz (audio\_frames/second). For example: 44100.0, 22254.54. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemAudioTrackNumber`

The track number of a song or composition when it is part of an album. A CFNumber (integer).

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemComposer`

The composer of the music contained in the audio file. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemIsGeneralMIDISequence`

Indicates whether the MIDI sequence contained in the file is setup for use with a General MIDI device. A CFBoolean.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemKeySignature`

The key of the music contained in the audio file. For example: C, Dm, F#m, Bb. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemLyricist`

The lyricist, or text writer, of the music contained in the audio file. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemMusicalGenre`

The musical genre of the song or composition contained in the audio file. For example: Jazz, Pop, Rock, Classical. A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemMusicalInstrumentCategory`

Specifies the category of an instrument. A CFString.

Files should have an instrument associated with them ("Other Instrument" is provided as a catch-all). For some categories, such as "Keyboards", there are instrument names which provide a more detailed instrument definition, for example "Piano" or "Organ".

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemMusicalInstrumentName`

Specifies the name of instrument relative to the instrument category. A CFString.

Files can have an instrument name associated with them if they have certain instrument categories. For example, the "Percussion" category has multiple instruments, including "Conga" and "Bongo".

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemRecordingDate`

The recording date of the song or composition. A CFDate.

This is in contrast to `kMDItemContentCreationDate` which, could indicate the creation date of an edited or 'mastered' version of the original art.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemRecordingYear`

Indicates the year the item was recorded. For example, 1964, 2003, etc. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemTempo`

A float value that specifies the beats per minute of the music contained in the audio file. A CFNumber.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemTimeSignature`

The time signature of the musical composition contained in the audio/MIDI file. For example: "4/4", "7/8". A CFString.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

**Availability**

Available in Mac OS X version 10.4 and later.

**Declared In**

`MDItem.h`

## File System Metadata Attribute Keys

Metadata attribute keys that describe the file system attributes for a file.

```
const CFStringRef kMDItemDisplayName;  
const CFStringRef kMDItemFSContentChangeDate;  
const CFStringRef kMDItemFSCreationDate;  
const CFStringRef kMDItemFSExists;  
const CFStringRef kMDItemFSInvisible;  
const CFStringRef kMDItemFSIsExtensionHidden;  
const CFStringRef kMDItemFSIsReadable;  
const CFStringRef kMDItemFSIsWritable;  
const CFStringRef kMDItemFSLabel;  
const CFStringRef kMDItemFSName;  
const CFStringRef kMDItemFSNodeCount;  
const CFStringRef kMDItemFSOwnerGroupID;  
const CFStringRef kMDItemFSOwnerUserID;  
const CFStringRef kMDItemFSSize;  
const CFStringRef kMDItemPath;
```

### Constants

`kMDItemDisplayName`

The localized version of the file name. A CFString.

This is the localized version of the `LaunchServices` call `LSCopyDisplayNameForURL/LSCopyDisplayNameForRef`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSContentChangeDate`

The date the file contents last changed. A CFDate.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSCreationDate`

The date and time that the file was created. A CFDate.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSExists`

This attribute is deprecated and was never implemented.

Deprecated in Mac OS X v10.4.

Declared in `MDItem.h`.

`kMDItemFSInvisible`

Indicates whether the file is invisible. A CFBoolean.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSIsExtensionHidden`

Indicates whether the file extension of the file is hidden. A CFBoolean.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSIsReadable`

This attribute is deprecated and was never implemented.

Deprecated in Mac OS X v10.4.

Declared in `MDItem.h`.

`kMDItemFSIsWriteable`

This attribute is deprecated and was never implemented.

Deprecated in Mac OS X v10.4.

Declared in `MDItem.h`.

`kMDItemFSLabel`

Index of the Finder label of the file. Possible values are 0 through 7. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSName`

The file name of the item. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSNodeCount`

Number of files in a directory. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSOwnerGroupID`

The group ID of the owner of the file. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSOwnerUserID`

The user ID of the owner of the file. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemFSSize`

The size, in bytes, of the file on disk. A `CFNumber`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

`kMDItemPath`

The complete path to the file. A `CFString`.

Available in Mac OS X v10.4 and later.

Declared in `MDItem.h`.

**Availability**

Available in Mac OS X version 10.4 and later.

**Declared In**

`MDItem.h`

# Document Revision History

This table describes the changes to *MDItem Reference*.

Date	Notes
2010-04-29	Corrected MDItemCreateWithURL function.
2009-10-03	Added additional metadata types.
2009-08-28	Added new function MDItemCreateWithURL(). Added new attributes: kMDItemAuthorAddresses, kMDItemRecipientAddresses, and kMDItemParticipants.
2009-07-18	Updated for Mac OS X v10.6. Added kMDItemNamedLocation and kMDItemPixelCount.
2006-06-28	Marked kMDItemFSExists, kMDItemFSIsReadable, and kMDItemFSIsWriteable as deprecated in Mac OS X v10.4.
	Marked kMDItemFSExists, kMDItemFSIsReadable, and kMDItemFSIsWriteable as deprecated in Mac OS X v10.4.
2005-06-04	Corrected MDItemCopyAttributeList declaration.
2005-04-29	Added additional metadata attributes.
	Updated the available metadata attributes. First public version.
2004-06-29	Removed kMDItemFSNodeType constant and associated constants.
2004-06-28	New document that describes the opaque type that encapsulates the metadata attributes for a file.

## REVISION HISTORY

### Document Revision History