

---

# NSDate Reference

Core Foundation



2005-12-06



Apple Inc.  
© 2003, 2005 Apple Computer, 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, Carbon, Cocoa, Mac, and Mac OS are trademarks of Apple Inc., registered 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

---

## **CFDate Reference 5**

---

- Overview 5
- Functions 5
  - CFDateCompare 5
  - CFDateCreate 6
  - CFDateGetAbsoluteTime 6
  - CFDateGetTimeIntervalSinceDate 7
  - CFDateGetTypeID 7
- Data Types 8
  - CFDateRef 8

---

## **Document Revision History 9**

---

## **Index 11**

---



# CFDate Reference

---

<b>Derived From:</b>	CFPropertyList : CType
<b>Framework:</b>	CoreFoundation/CoreFoundation.h
<b>Declared in</b>	CFDate.h
<b>Companion guides</b>	Dates and Times Programming Guide for Core Foundation Property List Programming Topics for Core Foundation

## Overview

CFDate objects store dates and times that can be compared to other dates and times. CFDate objects are immutable—there is no mutable counterpart for this opaque type.

CFDate provides functions for creating dates, comparing dates, and computing intervals. You use the [CFDateCreate](#) (page 6) function to create CFDate objects. You use the [CFDateCompare](#) (page 5) function to compare two dates, and the [CFDateGetTimeIntervalSinceDate](#) (page 7) function to compute a time interval. Additional functions for managing dates and times are described in *Time Utilities Reference*

CFDate is “toll-free bridged” with its Core Foundation counterpart, NSDate. What this means is that the Core Foundation type is interchangeable in function or method calls with the bridged Foundation object. In other words, in a method where you see an NSDate \* parameter, you can pass in a CFDateRef, and in a function where you see a CFDateRef parameter, you can pass in an NSDate instance. This also applies to concrete subclasses of NSDate. See *Interchangeable Data Types* for more information on toll-free bridging.

## Functions

### CFDateCompare

Compares two CFDate objects and returns a comparison result.

```
CFComparisonResult CFDateCompare (
    CFDateRef theDate,
    CFDateRef otherDate,
    void *context
);
```

#### Parameters

*theDate*

The date to compare to *otherDate*.

*otherDate*

The date to compare to *theDate*.

*context*

Unused. Pass NULL.

**Return Value**

A `CFComparisonResult` value that indicates whether *theDate* is equal to, less than, or greater than *otherDate*.

**Availability**

Available in CarbonLib v1.0 and later.

Available in Mac OS X v10.0 and later.

**Declared In**

`CFDate.h`

**CFDateCreate**

Creates a `CFDate` object given an absolute time.

```
CFDateRef CFDateCreate (  
    CFAllocatorRef allocator,  
    CFAbsoluteTime at  
);
```

**Parameters**

*allocator*

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

*at*

The absolute time to convert to a `CFDate` object.

**Return Value**

A date object that represents the absolute time *at*. Ownership follows the Create Rule.

**Discussion**

`CFDate` objects must always be created using absolute time. Time intervals are not supported.

**Availability**

Available in CarbonLib v1.0 and later.

Available in Mac OS X v10.0 and later.

**Related Sample Code**

`CFPrefTopScores`

`NSOperationSample`

**Declared In**

`CFDate.h`

**CFDateGetAbsoluteTime**

Returns a `CFDate` object's absolute time.

```
CFAbsoluteTime CFDateGetAbsoluteTime (
    CFDateRef theDate
);
```

**Parameters***theDate*

The date to examine.

**Return Value**The absolute time of *theDate*.**Discussion**

Absolute time is measured in seconds relative to the absolute reference date of Jan 1 2001 00:00:00 GMT. A positive value represents a date after the reference date, a negative value represents a date before it. For example, the absolute time -32940326 is equivalent to December 16th, 1999 at 17:54:34.

**Availability**

Available in CarbonLib v1.0 and later.

Available in Mac OS X v10.0 and later.

**Declared In**

CFDate.h

**CFDateGetTimeIntervalSinceDate**

Returns the number of elapsed seconds between the given CFDate objects.

```
CFTimeInterval CFDateGetTimeIntervalSinceDate (
    CFDateRef theDate,
    CFDateRef otherDate
);
```

**Parameters***theDate*The date to compare to *otherDate*.*otherDate*The date to compare to *theDate*.**Return Value**

The number of elapsed seconds between *theDate* and *otherDate*. The result is positive if *theDate* is later than *otherDate*.

**Availability**

Available in CarbonLib v1.0 and later.

Available in Mac OS X v10.0 and later.

**Declared In**

CFDate.h

**CFDateGetTypeID**

Returns the type identifier for the CFDate opaque type.

```
CTypeID CFDateGetTypeID (  
    void  
);
```

**Return Value**

The type identifier for the CFDate opaque type.

**Availability**

Available in CarbonLib v1.0 and later.

Available in Mac OS X v10.0 and later.

**Related Sample Code**

CFFTPSample

CFPrefTopScores

**Declared In**

CFDate.h

## Data Types

### CFDateRef

A reference to an immutable CFDate object.

```
typedef const struct __CFDate *CFDateRef;
```

**Availability**

Available in Mac OS X v10.0 and later.

**Declared In**

CFDate.h



# Document Revision History

---

This table describes the changes to *CFDate Reference*.

Date	Notes
2005-12-06	Corrected links to companion documentation.
	Corrected links to companion documentation.
2005-08-11	Cosmetic changes to conform to documentation guidelines.
2003-08-01	Added link to Carbon-Cocoa integration document.
2003-01-01	First version of this document.

## REVISION HISTORY

### Document Revision History

# Index

---

## C

---

- CFDateCompare **function** [5](#)
- CFDateCreate **function** [6](#)
- CFDateGetAbsoluteTime **function** [6](#)
- CFDateGetTimeIntervalSinceDate **function** [7](#)
- CFDateGetTypeID **function** [7](#)
- CFDateRef **data type** [8](#)