CalRecurrenceRule Class Reference

Cocoa > Apple Applications

2009-03-04

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Simultaneously published in the United States and Canada.

Contents

CalRecurrenceRule Class Reference

Inherits from	NSObject
Conforms to	NSCopying NSObject (NSObject)
Framework	/System/Library/Frameworks/CalendarStore.framework
Availability	Available in Mac OS X v10.5 and later.
Companion guide	Calendar Store Programming Guide
Declared in	CalRecurrenceRule.h

Overview

The `CalRecurrenceRule` class is used to describe the recurrence pattern for a recurring event. The recurrence rules that you can create are restricted to the recurrence patterns that you have access to in iCal. It is not possible to directly modify a `CalRecurrenceRule` object or any of its propertiesâ properties defined in this class are read-only.

Use one of the `init...` methods to create the desired recurrence rule. These `init...` methods set the receiverâ properties. For example, if you invoke one of the `initMonthly...` methods, the `recurrenceType` property is set to `CalRecurrenceMonthly` (page 16). All recurrence rules have a value set for the `recurrenceType` and `recurrenceInterval` properties. If the `recurrenceEnd` property is `nil`, an event repeats forever. The rest of the properties defined in this class have values depending on the type of recurrence rule and initializer method used to create the recurring event pattern. If a property is not needed to describe a recurrence pattern, then itâ value is `nil`.

Every initializer method has an interval and a `CalRecurrenceEnd` object as arguments. The interval is a value greater than `0` that is the number of units between occurrences of an event. For example, if the `recurrenceType` property is `CalRecurrenceMonthly` (page 16), then the unit of measurement is one month. If the interval is `1`, the event occurs every month, but if it is `2`, it occurs every other month. The `CalRecurrenceEnd` object specifies when a recurring event ends. This can be specified using a counter or an end date (see *CalRecurrenceEnd Class Reference* for details). Pass `nil` as the recurrence end argument if the event never ends.

In addition, there are some initializers for more sophisticated recurrence patterns. However, these initializers are restricted to patterns that can be represented in iCal and include custom repeating patterns. For example, you can specify a pattern where an event occurs on the Friday of the 2nd week of every month, or the Monday of the 3rd week of every fourth month of a year. You can create custom patterns for weekly, monthly, and yearly recurrence rules.

After you create a recurrence rule, use the `recurrenceRule` `CalEvent` property to set the recurrence rule for an event. Use the `saveEvent:span:error:` method to save your changes to the iCal database.

Tasks

Initializing Recurrence Rules

`- initDailyRecurrenceWithInterval:end:` (page 9)
Initializes and returns a daily recurrence rule with the specified interval and ending rule.

`- initWeeklyRecurrenceWithInterval:end:` (page 12)
Initializes and returns a weekly recurrence rule with the specified interval and ending rule.

`- initWeeklyRecurrenceWithInterval:forDaysOfTheWeek:end:` (page 12)
Initializes and returns a weekly recurrence rule with the specified interval, ending rule, and specific days of the week.

`- initMonthlyRecurrenceWithInterval:end:` (page 10)
Initializes and returns a monthly recurrence rule with the specified interval and end rule.

`- initMonthlyRecurrenceWithInterval:forDaysOfTheMonth:end:` (page 11)
Initializes and returns a monthly recurrence rule that represents an event that occurs more than once a month in a monthly patternâ pattern repeats at the specified interval.

`- initMonthlyRecurrenceWithInterval:forDayOfTheWeek:forWeekOfTheMonth:end:` (page 10)
Initializes and returns a monthly recurrence rule that represents an event that occurs on a specific day of the week and week of the month patternâ pattern repeats at the specified monthly interval.

`- initYearlyRecurrenceWithInterval:end:` (page 13)
Initializes and returns a yearly recurrence rule with the specified yearly interval and end rule.

`- initYearlyRecurrenceWithInterval:forMonthsOfTheYear:end:` (page 14)
Initializes and returns a yearly recurrence rule representing an event that occurs multiple months within a year at a specified yearly interval.

`- initYearlyRecurrenceWithInterval:forDayOfTheWeek:forWeekOfTheMonth:forMonthsOfTheYear:end:` (page 14)
Initializes and returns a yearly recurrence rule that represents an event that has a weekly and monthly pattern that repeats at the specified yearly interval.

Getting Recurrence Properties

`firstDayOfTheWeek` (page 8) *property*
An integer value of `0` or `1` to `7` where `0` indicates no value is set, and `1` to `7` indicates the first day of the week where Sunday is represented by `1`. (read-only)

`recurrenceEnd` (page 8) *property*
An object that describes how a recurring event ends by specifying an end date or a counter. (read-only)

`recurrenceType` (page 9) *property*
The unit of time between intervals. See â `CalRecurrenceTypeâ` (page 15) for possible values. (read-only)

`recurrenceInterval` (page 9) *property*
: The number of intervals between the specified pattern of a recurring event. The actual time between a pattern depends on the value of the `recurrenceType` property. (read-only)

`daysOfTheWeek` (page 7) *property*
: If the `recurrenceType` property is `CalRecurrenceWeekly`, an integer value ranging from `1` to `7` representing the day of the week in the pattern where Sunday is equal to `1`; otherwise, `nil`. (read-only)

`daysOfTheMonth` (page 7) *property*
: If the `recurrenceType` property is `CalRecurrenceMonthly`, an array of integer values ranging from `1` to `31` representing days of the month in the pattern; otherwise, `nil`. (read-only)

`nthWeekDaysOfTheMonth` (page 8) *property*
: If the `recurrenceType` property is `CalRecurrenceMonthly` or `CalRecurrenceYearly`, an array of `CalNthWeekDay` objects representing the days within the weeks of a month; otherwise, `nil`. (read-only)

`monthsOfTheYear` (page 8) *property*
: If the `recurrenceType` property is `CalRecurrenceYearly`, an array of the months' integer values ranging from `1` to `12` representing the month of a year in which the event occurs; otherwise, `nil`. (read-only)

Properties

For more about Objective-C properties, see "Properties" in *The Objective-C 2.0 Programming Language*.

daysOfTheMonth

If the `recurrenceType` property is `CalRecurrenceMonthly`, an array of integer values ranging from `1` to `31` representing days of the month in the pattern; otherwise, `nil`. (read-only)

```
@property(readonly) NSArray *daysOfTheMonth
```

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

daysOfTheWeek

If the `recurrenceType` property is `CalRecurrenceWeekly`, an integer value ranging from `1` to `7` representing the day of the week in the pattern where Sunday is equal to `1`; otherwise, `nil`. (read-only)

```
@property(readonly) NSArray *daysOfTheWeek
```

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

firstDayOfTheWeek

An integer value of `0` or `1` to `7` where `0` indicates no value is set, and `1` to `7` indicates the first day of the week where Sunday is represented by `1`. (read-only)

```
@property(readonly) NSUInteger firstDayOfTheWeek
```

Discussion
This property only affects the way the recurrence is expanded for weekly recurrence rules with an interval greater than `1`. For those types of recurrence rules, Calendar Store sets this property to `2` (Monday). For all other recurrence rules, this property defaults to `0`.

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

monthsOfTheYear

If the `recurrenceType` property is `CalRecurrenceYearly`, an array of the months as integer values ranging from `1` to `12` representing the month of a year in which the event occurs; otherwise, `nil`. (read-only)

```
@property(readonly) NSArray *monthsOfTheYear
```

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

nthWeekDaysOfTheMonth

If the `recurrenceType` property is `CalRecurrenceMonthly` or `CalRecurrenceYearly`, an array of `CalNthWeekDay` objects representing the days within the weeks of a month; otherwise, `nil`. (read-only)

```
@property(readonly) NSArray *nthWeekDaysOfTheMonth
```

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

recurrenceEnd

An object that describes how a recurring event ends by specifying an end date or a counter. (read-only)

```
@property(readonly) CalRecurrenceEnd *recurrenceEnd
```

Discussion
If `nil`, the event never ends.

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

recurrenceInterval

The number of intervals between the specified pattern of a recurring event. The actual time between a pattern depends on the value of the `recurrenceType` property. (read-only)

```
@property(readonly) NSUInteger recurrenceInterval
```

Discussion
For example, if the `recurrenceType` property is `CalRecurrenceMonthly` and the `recurrenceInterval` property is `1`, then the event occurs every month. If the `recurrenceInterval` property is `2`, then the event occurs every other month.

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

recurrenceType

The unit of time between intervals. See `â CalRecurrenceTypeâ` (page 15) for possible values. (read-only)

```
@property(readonly) CalRecurrenceType recurrenceType
```

Availability
Available in Mac OS X v10.5 and later.

Declared In
`CalRecurrenceRule.h`

Instance Methods

initDailyRecurrenceWithInterval:end:

Initializes and returns a daily recurrence rule with the specified interval and ending rule.

```
- (id)initDailyRecurrenceWithInterval:(NSUInteger)interval end:(CalRecurrenceEnd
    *)end
```

Parameters

interval

The interval in days between occurrences of a recurring event. Must be a value greater than `0`.

end

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value

An initialized daily recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceDaily`. Returns `nil` if *interval* is `0` or a negative number.

Availability

Available in Mac OS X v10.5 and later.

Declared In

`CalRecurrenceRule.h`

initMonthlyRecurrenceWithInterval:end:

Initializes and returns a monthly recurrence rule with the specified interval and end rule.

```
- (id)initMonthlyRecurrenceWithInterval:(NSUInteger)interval end:(CalRecurrenceEnd
    *)end
```

Parameters

interval

The interval in months between occurrences of a recurring event. Must be a value greater than `0`.

end

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value

A newly initialized monthly recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceMonthly`. Returns `nil` if *interval* is `0` or a negative number.

Discussion

The returned recurrence rule defaults to the first day of the month.

Availability

Available in Mac OS X v10.5 and later.

See Also

- `initMonthlyRecurrenceWithInterval:forDaysOfTheMonth:end:` (page 11)
- `initMonthlyRecurrenceWithInterval:forDayOfWeek:forWeekOfMonth:end:` (page 10)

Declared In

`CalRecurrenceRule.h`

initMonthlyRecurrenceWithInterval:forDayOfTheWeek:forWeekOfTheMonth:end:

Initializes and returns a monthly recurrence rule that represents an event that occurs on a specific day of the week and week of the month patternâ pattern repeats at the specified monthly interval.

```
- (id)initMonthlyRecurrenceWithInterval:(NSUInteger)interval
    forDayOfTheWeek:(NSUInteger)weekDay forWeekOfTheMonth:(NSInteger)monthWeek
    end:(CalRecurrenceEnd *)end
```

Parameters

interval

The interval in months between occurrences of a recurring event. Must be a value greater than `0`.

weekDay

The day of the week that the event occurs. An integer value ranging from `1` to `7` representing the day of the week where Sunday is equal to `1`.

monthWeek

The week of the month that the event occurs. An integer value that is `1`, `2`, `3`, `4`, or `-1` representing the week of a month where `-1` is the last week of the month.

end

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value

A newly initialized monthly recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceMonthly`. Returns `nil` if *interval* is `0` or a negative number.

Discussion

For example, use this method to create a recurrence rule that represents an event that occurs on the first Monday of every month.

Availability

Available in Mac OS X v10.5 and later.

See Also

- `initMonthlyRecurrenceWithInterval:end:` (page 10)
- `initMonthlyRecurrenceWithInterval:forDaysOfTheMonth:end:` (page 11)

Declared In

`CalRecurrenceRule.h`

initMonthlyRecurrenceWithInterval:forDaysOfTheMonth:end:

Initializes and returns a monthly recurrence rule that represents an event that occurs more than once a month in a monthly patternâ pattern repeats at the specified interval.

```
- (id)initMonthlyRecurrenceWithInterval:(NSUInteger)interval
    forDaysOfTheMonth:(NSArray *)monthDays end:(CalRecurrenceEnd *)end
```

Parameters

interval

The interval in months between occurrences of a recurring event. Must be a value greater than `0`.

monthDays

An array of numbers specifying the days of the month pattern that repeats. The integer values can range from `1` to `31` representing the days of the month.

end

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value
A newly initialized monthly recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceMonthly`. Returns `nil` if *`interval`* is `0` or a negative number.

Availability
Available in Mac OS X v10.5 and later.

See Also
- `initMonthlyRecurrenceWithInterval:end:` (page 10)
- `initMonthlyRecurrenceWithInterval:forDayOfWeek:forWeekOfMonth:end:` (page 10)

Declared In
`CalRecurrenceRule.h`

initWeeklyRecurrenceWithInterval:end:

Initializes and returns a weekly recurrence rule with the specified interval and ending rule.

```
- (id)initWeeklyRecurrenceWithInterval:(NSUInteger)interval end:(CalRecurrenceEnd
    *)end
```

Parameters

`interval`

The interval in weeks between occurrences of a recurring event. Must be a value greater than `0`.

`end`

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value
An initialized weekly recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceWeekly`. Returns `nil` if *`interval`* is `0` or a negative number.

Availability
Available in Mac OS X v10.5 and later.

See Also
- `initWeeklyRecurrenceWithInterval:forDaysOfTheWeek:end:` (page 12)

Declared In
`CalRecurrenceRule.h`

initWeeklyRecurrenceWithInterval:forDaysOfTheWeek:end:

Initializes and returns a weekly recurrence rule with the specified interval, ending rule, and specific days of the week.

```
- (id)initWeeklyRecurrenceWithInterval:(NSUInteger)interval forDaysOfTheWeek:(NSArray
    *)days end:(CalRecurrenceEnd *)end
```

Parameters

`interval`

The interval in weeks between occurrences of a recurring event. Must be a value greater than `0`.

days

An array of numbers specifying the weekly pattern that repeats. The integer values can range from `1-7` where Sunday is equal to `1`.

end

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value
A newly initialized weekly recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceWeekly`. Returns `nil` if *`interval`* is `0` or a negative number, or any of the other arguments are invalid.

Discussion
This initializer allows you to specify a weekly pattern that repeats. For example, if *`days`* contains the numbers `2` and `4`, and interval is `2`, then an event occurs biweekly on Mondays and Wednesdays.

Availability
Available in Mac OS X v10.5 and later.

See Also
`- initWeeklyRecurrenceWithInterval:end:` (page 12)

Declared In
`CalRecurrenceRule.h`

initYearlyRecurrenceWithInterval:end:

Initializes and returns a yearly recurrence rule with the specified yearly interval and end rule.

```
- (id)initYearlyRecurrenceWithInterval:(NSUInteger)interval end:(CalRecurrenceEnd
    *)end
```

Parameters

interval

The interval in years between occurrences of a recurring event. Must be a value greater than `0`.

end

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value
A newly initialized yearly recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceYearly`. Returns `nil` if *`interval`* is `0` or a negative number.

Availability
Available in Mac OS X v10.5 and later.

See Also
`- initYearlyRecurrenceWithInterval:forMonthsOfTheYear:end:` (page 14)
`- initYearlyRecurrenceWithInterval:forDayOfWeek:forWeekOfMonth:forMonthsOfTheYear:end:` (page 14)

Declared In
`CalRecurrenceRule.h`

initYearlyRecurrenceWithInterval:forDayOfTheWeek:forWeekOfTheMonth:forMonthsOfTheYear:end:

Initializes and returns a yearly recurrence rule that represents an event that has a weekly and monthly pattern that repeats at the specified yearly interval.

```
- (id)initYearlyRecurrenceWithInterval:(NSUInteger)interval
    forDayOfTheWeek:(NSUInteger)weekDay forWeekOfTheMonth:(NSInteger)monthWeek
    forMonthsOfTheYear:(NSArray *)months end:(CalRecurrenceEnd *)end
```

Parameters

interval

The interval in years between this pattern of a recurring event. Must be a value greater than `0`.

weekDay

The day of the week that the event occurs. An integer value ranging from `1-7` representing the day of the week where Sunday is equal to `1`.

monthWeek

The week of the month that the event occurs. An integer value that is either `1`, `2`, `3`, `4`, or `-1` representing the week of a month where `-1` is the last week of the month.

months

The months of the year that the event occurs. An array of numbers where each number is an integer value ranging from `1-12` representing the month of a year.

end

Describes how a recurring event ends. Pass `nil` if the event never ends.

Return Value

A newly initialized yearly recurrence rule objectâ with `recurrenceType` property set to `CalRecurrenceYearly`. Returns `nil` if *interval* is `0` or a negative number.

Discussion

This method allows you to create a pattern for an entire year that repeatsâ where event occurs on the same day of the week, in the same week of a month, and possibly more than one month of a year. For example, use this method to represent an event that occurs every year on the first Friday of the sixth and twelfth months.

Availability

Available in Mac OS X v10.5 and later.

See Also

- `initYearlyRecurrenceWithInterval:end:` (page 13)
- `initYearlyRecurrenceWithInterval:forMonthsOfTheYear:end:` (page 14)

Declared In

`CalRecurrenceRule.h`

initYearlyRecurrenceWithInterval:forMonthsOfTheYear:end:

Initializes and returns a yearly recurrence rule representing an event that occurs multiple months within a year at a specified yearly interval.

```
- (id)initYearlyRecurrenceWithInterval:(NSUInteger)interval
    forMonthsOfTheYear:(NSArray *)months end:(CalRecurrenceEnd *)end
```

Parameters

interval

The interval in years between occurrences of a recurring event. Must be a value greater than 0.

end

Describes how a recurring event ends. Pass nil if the event never ends.

Return Value

A newly initialized yearly recurrence rule objectâ with recurrenceType property set to CalRecurrenceYearly. Returns nil if *interval* is 0 or a negative number.

Discussion

For example, use this method if you want to represent an event that occurs every year on the first day of the first and seventh month of the year. If you need to specify the day of the month that the event occurs, use the initYearlyRecurrenceWithInterval:forDayOfWeek:forWeekOfMonth:forMonthsOfTheYear:end: (page 14) method.

Availability

Available in Mac OS X v10.5 and later.

See Also

- initYearlyRecurrenceWithInterval:end: (page 13)
- initYearlyRecurrenceWithInterval:forDayOfWeek:forWeekOfMonth:forMonthsOfTheYear:end: (page 14)

Declared In

CalRecurrenceRule.h

Constants

Recurrence Rule Constants

Constants used by this class.

```
extern NSUInteger const CalDefaultRecurrenceInterval;
```

Constants

CalDefaultRecurrenceInterval

The default recurrence interval. The default value of 1 indicates that the event repeats daily, weekly, monthly, or yearly depending on the recurrence type.

Available in Mac OS X v10.5 and later.

Declared in CalRecurrenceRule.h.

Declared In

CalendarStore/CalRecurrenceRule.h

CalRecurrenceType

The unit of measurement between occurrences of a recurring event.

```
typedef enum {
    CalRecurrenceDaily,
    CalRecurrenceWeekly,
    CalRecurrenceMonthly,
    CalRecurrenceYearly
} CalRecurrenceType;
```

Constants

`CalRecurrenceDaily`

Indicates a daily unit of measurement.

Available in Mac OS X v10.5 and later.

Declared in `CalRecurrenceRule.h`.

`CalRecurrenceWeekly`

Indicates a weekly unit of measurement.

Available in Mac OS X v10.5 and later.

Declared in `CalRecurrenceRule.h`.

`CalRecurrenceMonthly`

Indicates a monthly unit of measurement.

Available in Mac OS X v10.5 and later.

Declared in `CalRecurrenceRule.h`.

`CalRecurrenceYearly`

Indicates a yearly unit of measurement.

Available in Mac OS X v10.5 and later.

Declared in `CalRecurrenceRule.h`.

Discussion

The four types of units are days, weeks, months, and years which correspond to the types of recurrence rules. For example, if the recurrence rule is `CalRecurrenceWeekly`, then an interval of `1` indicates the event repeats weekly. If the interval is `2`, the event repeats biweekly.

Declared In

`CalendarStore/CalRecurrenceRule.h`

Document Revision History

This table describes the changes to *CalRecurrenceRule Class Reference*.

Date	Notes
2009-03-04	Minor edits throughout.
2007-07-08	New document that describes the class used to initialize and get recurrence rules and properties.

Document Revision History

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