CFMutableBitVector Reference

Core Foundation

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CFMutableBitVector Reference

Derived From:	CFBitVector : CFType
Framework:	CoreFoundation/CoreFoundation.h
Companion guide	Collections Programming Topics for Core Foundation
Declared in	CFBitVector.h

Overview

CFMutableBitVector objects manage dynamic bit vectors. The basic interface for managing bit vectors is provided by CFBitVector. CFMutableBitVector adds functions to modify the contents of a bit vector.

You create a mutable bit vector object using either the `CFBitVectorCreateMutable` (page 6) or `CFBitVectorCreateMutableCopy` (page 6) function. You add to and remove from a bit vector by altering the size of the bit vector with the `CFBitVectorSetCount` (page 9) function

Functions by Task

Creating a CFMutableBitVector Object

`CFBitVectorCreateMutable` (page 6)
Creates a mutable bit vector.

`CFBitVectorCreateMutableCopy` (page 6)
Creates a new mutable bit vector from a pre-existing bit vector.

Modifying a Bit Vector

`CFBitVectorFlipBitAtIndex` (page 7)
Flips a bit value in a bit vector.

`CFBitVectorFlipBits` (page 7)
Flips a range of bit values in a bit vector.

`CFBitVectorSetAllBits` (page 8)
Sets all bits in a bit vector to a particular value.

`CFBitVectorSetBitAtIndex` (page 8)
Sets the value of a particular bit in a bit vector.

`CFBitVectorSetBits` (page 9)
Sets a range of bits in a bit vector to a particular value.

`CFBitVectorSetCount` (page 9)
Changes the size of a mutable bit vector.

Functions

CFBitVectorCreateMutable

Creates a mutable bit vector.

```
CFMutableBitVectorRef CFBitVectorCreateMutable (
   CFAllocatorRef allocator,
   CFIndex capacity
);
```

Parameters

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

capacity
The maximum number of values that can be contained by the new bit vector. The bit vector starts empty and can grow to this number of values. If `0`, the new bit vector can grow to any size.

Return Value

A new bit vector. Ownership follows the Create Rule.

Availability

Available in Mac OS X v10.0 and later.

Declared In

`CFBitVector.h`

CFBitVectorCreateMutableCopy

Creates a new mutable bit vector from a pre-existing bit vector.

```
CFMutableBitVectorRef CFBitVectorCreateMutableCopy (
   CFAllocatorRef allocator,
   CFIndex capacity,
   CFBitVectorRef bv
);
```

Parameters

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

capacity

The maximum number of values that can be contained by the new bit vector. The bit vector starts with the same number of values as *bv* and can grow to this number of values. If 0, the new bit vector can grow to any size. If non-zero, *capacity* must be large enough to hold all bit values from *bv*.

bv

The bit vector to copy.

Return Value
A new bit vector holding the same bit values as *bv*. Ownership follows the Create Rule

Availability
Available in Mac OS X v10.0 and later.

Declared In
CFBitVector.h

CFBitVectorFlipBitAtIndex

Flips a bit value in a bit vector.

```
void CFBitVectorFlipBitAtIndex (
   CFMutableBitVectorRef bv,
   CFIndex idx
);
```

Parameters

bv

The bit vector to modify.

idx

The index of the bit value to flip.

Availability
Available in Mac OS X v10.0 and later.

Declared In
CFBitVector.h

CFBitVectorFlipBits

Flips a range of bit values in a bit vector.

```
void CFBitVectorFlipBits (
   CFMutableBitVectorRef bv,
   CFRange range
);
```

Parameters

bv

The bit vector to modify.

range

The range of bit values in *bv* to flip.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFBitVector.h`

CFBitVectorSetAllBits

Sets all bits in a bit vector to a particular value.

```
void CFBitVectorSetAllBits (
   CFMutableBitVectorRef bv,
   CFBit value
);
```

Parameters

bv
The bit vector to modify.

value
The bit value to which to set all bits in *bv*.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFBitVector.h`

CFBitVectorSetBitAtIndex

Sets the value of a particular bit in a bit vector.

```
void CFBitVectorSetBitAtIndex (
   CFMutableBitVectorRef bv,
   CFIndex idx,
   CFBit value
);
```

Parameters

bv
The bit vector to modify.

idx
The index of the bit value to set.

value
The bit value to which to set the bit at index *idx*.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFBitVector.h`

CFBitVectorSetBits

Sets a range of bits in a bit vector to a particular value.

```
void CFBitVectorSetBits (
   CFMutableBitVectorRef bv,
   CFRange range,
   CFBit value
);
```

Parameters

bv

The bit vector to modify.

range

The range of bits to set.

value

The bit value to which to set the range of bits.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFBitVector.h`

CFBitVectorSetCount

Changes the size of a mutable bit vector.

```
void CFBitVectorSetCount (
   CFMutableBitVectorRef bv,
   CFIndex count
);
```

Parameters

bv

The bit vector to modify.

count

The new size for *bv*. If *count* is greater than the current size of *bv*, the additional bit values are set to `0`.

Discussion
If *bv* was created with a fixed capacity, you cannot increase its size beyond that capacity.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFBitVector.h`

Data Types

CFMutableBitVectorRef

A reference to a mutable bit vector object.

```
typedef struct __CFBitVector *CFMutableBitVectorRef;
```

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFBitVector.h`

Document Revision History

This table describes the changes to *CFMutableBitVector Reference*.

Date	Notes
2006-02-07	Made formatting changes.
2005-12-06	Made minor changes to text to conform to reference consistency guidelines.
2005-08-11	Cosmetic changes to conform to documentation guidelines.
2003-01-01	First version of this document.

Document Revision History

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