Preferences Utilities Reference

Core Foundation



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Preferences Utilities Reference

Framework: CoreFoundation/CoreFoundation.h

Companion guide Preferences Programming Topics for Core Foundation

Declared in CFPreferences.h

Overview

Core Foundation provides a simple, standard way to manage user (and application) preferences. Core Foundation stores preferences as key-value pairs that are assigned a scope using a combination of user name, application ID, and host (computer) names. This makes it possible to save and retrieve preferences that apply to different classes of users. Core Foundation preferences is useful to all applications that support user preferences. Note that modification of some preferences domains (those not belonging to the "Current User") requires Admin privileges—see *Authorization Services Programming Guide* for information on how to gain suitable privileges.

Unlike some other Core Foundation types, CFPreferences is not toll-free bridged to its corresponding Cocoa Foundation framework class (NSUserDefaults).

Functions by Task

Several functions return a preference value as a Core Foundation property list object. You can use the function CFGetTypeID to determine the value's type. For more information about property lists, see *Property List Programming Topics for Core Foundation*.

Getting Preference Values

CFPreferencesCopyAppValue (page 9)

Obtains a preference value for the specified key and application.

CFPreferencesCopyKeyList (page 10)

Constructs and returns the list of all keys set in the specified domain.

CFPreferencesCopyMultiple (page 10)

Returns a dictionary containing preference values for multiple keys.

CFPreferencesCopyValue (page 11)

Returns a preference value for a given domain.

CFPreferencesGetAppBooleanValue (page 12)

Convenience function that directly obtains a boolean preference value for the specified key.

CFPreferencesGetAppIntegerValue (page 13)

Convenience function that directly obtains an integer preference value for the specified key.

Setting Preference Values

CFPreferencesSetAppValue (page 14)

Adds, modifies, or removes a preference.

CFPreferencesSetMultiple (page 15)

Convenience function that allows you to set and remove multiple preference values.

CFPreferencesSetValue (page 15)

Adds, modifies, or removes a preference value for the specified domain.

Synchronizing Preferences

CFPreferencesAppSynchronize (page 7)

Writes to permanent storage all pending changes to the preference data for the application, and reads the latest preference data from permanent storage.

CFPreferencesSynchronize (page 16)

For the specified domain, writes all pending changes to preference data to permanent storage, and reads latest preference data from permanent storage.

Adding and Removing Suite Preferences

CFPreferencesAddSuitePreferencesToApp (page 6)

Adds suite preferences to an application's preference search chain.

CFPreferencesRemoveSuitePreferencesFromApp (page 13)

Removes suite preferences from an application's search chain.

Miscellaneous Functions

CFPreferencesAppValueIsForced (page 8)

Determines whether or not a given key has been imposed on the user.

CFPreferencesCopyApplicationList (page 8)

Constructs and returns the list of all applications that have preferences in the scope of the specified user and host.

Functions

CFPreferencesAddSuitePreferencesToApp

Adds suite preferences to an application's preference search chain.

```
void CFPreferencesAddSuitePreferencesToApp (
    CFStringRef applicationID,
    CFStringRef suiteID
);
```

```
applicationID
```

The ID of the application to which to add suite preferences, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, com. foosoft. suiteID

The ID of the application suite preferences to add. Takes the form of a Java package name, com.foosoft.

Discussion

Suite preferences allow you to maintain a set of preferences that are common to all applications in the suite. When a suite is added to an application's search chain, all of the domains pertaining to that suite are inserted into the chain. Suite preferences are added between the "Current Application" domains and the "Any Application" domains. If you add multiple suite preferences to one application, the order of the suites in the search chain is non-deterministic. You can override a suite preference for a given application by defining the same preference key in the application specific preferences.

Availability

Available in Mac OS X v10.0 and later.

Declared In

CFPreferences.h

CFPreferencesAppSynchronize

Writes to permanent storage all pending changes to the preference data for the application, and reads the latest preference data from permanent storage.

```
Boolean CFPreferencesAppSynchronize (
    CFStringRef applicationID
);
```

Parameters

applicationID

The ID of the application whose preferences to write to storage, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, com. foosoft.

Return Value

true if synchronization was successful, otherwise false.

Discussion

Calling the function CFPreferencesSetAppValue (page 14) is not in itself sufficient for storing preferences. The CFPreferencesAppSynchronize function writes to permanent storage all pending preference changes for the application. Typically you would call this function after multiple calls to

CFPreferencesSetAppValue (page 14). Conversely, preference data is cached after it is first read. Changes made externally are not automatically incorporated. The CFPreferencesAppSynchronize function reads the latest preferences from permanent storage.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

ComboBoxPrefs

DTSCarbonShell

HID Config Save

QTCarbonShell

RecentItems

Declared In

CFPreferences.h

CFPreferencesAppValueIsForced

Determines whether or not a given key has been imposed on the user.

```
Boolean CFPreferencesAppValueIsForced (
    CFStringRef key,
    CFStringRef applicationID
);
```

Parameters

key

The key you are querying.

applicationID

The application's ID, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, com.foosoft.

Return Value

true if value of the key cannot be changed by the user, otherwise false.

Discussion

In cases where machines and/or users are under some kind of management, you should use this function to determine whether or not to disable UI elements corresponding to those preference keys.

Availability

Available in Mac OS X v10.2 and later.

Declared In

CFPreferences.h

CFPreferencesCopyApplicationList

Constructs and returns the list of all applications that have preferences in the scope of the specified user and host.

```
CFArrayRef CFPreferencesCopyApplicationList (
   CFStringRef userName,
   CFStringRef hostName
);
```

userName

kCFPreferencesCurrentUser (page 18) to search the current-user domain, otherwise kCFPreferencesAnyUser (page 18) to search the any-user domain.

hostName

kCFPreferencesCurrentHost (page 18) to search the current-host domain, otherwise kCFPreferencesAnyHost (page 18) to search the any-host domain.

Return Value

The list of application IDs. Ownership follows the Create Rule.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

CFPrefsDumper

Declared In

CFPreferences.h

CFPreferencesCopyAppValue

Obtains a preference value for the specified key and application.

```
CFPropertyListRef CFPreferencesCopyAppValue (
  CFStringRef key,
   CFStringRef applicationID
);
```

Parameters

key

The preference key whose value to obtain.

applicationID

The identifier of the application whose preferences to search, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, com. foosoft.

Return Value

The preference data for the specified key and application. If no value was located, returns NULL. Ownership follows the Create Rule.

Discussion

Note that values returned from this function are immutable, even if you have recently set the value using a mutable object.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

CFPreferences

DockBrowser

GrabBag

QTCarbonShell

RecentItems

Declared In

CFPreferences.h

CFPreferencesCopyKeyList

Constructs and returns the list of all keys set in the specified domain.

```
CFArrayRef CFPreferencesCopyKeyList (
    CFStringRef applicationID,
    CFStringRef userName,
    CFStringRef hostName
);
```

Parameters

applicationID

The ID of the application whose preferences to search. Takes the form of a Java package name, com.foosoft.

userName

kCFPreferencesCurrentUser (page 18) to search the current-user domain, otherwise kCFPreferencesAnyUser (page 18) to search the any-user domain.

hostName

kCFPreferencesCurrentHost (page 18) to search the current-host domain, otherwise kCFPreferencesAnyHost (page 18) to search the any-host domain.

Return Value

The list of keys. Ownership follows the Create Rule.

Availability

Available in Mac OS X v10.0 and later.

Declared In

CFPreferences.h

CFPreferencesCopyMultiple

Returns a dictionary containing preference values for multiple keys.

```
CFDictionaryRef CFPreferencesCopyMultiple (
    CFArrayRef keysToFetch,
    CFStringRef applicationID,
    CFStringRef userName,
    CFStringRef hostName
);
```

keysToFetch

An array of preference keys the values of which to obtain.

applicationID

The ID of the application whose preferences are searched. Takes the form of a Java package name, such as com. foosoft.

userName

kCFPreferencesCurrentUser (page 18) to search the current-user domain, otherwise kCFPreferencesAnyUser (page 18) to search the any-user domain.

hostName

kCFPreferencesCurrentHost (page 18) to search the current-host domain, otherwise kCFPreferencesAnyHost (page 18) to search the any-host domain.

Return Value

A dictionary containing the preference values for the keys specified by keysToFetch for the specified domain. If no values were located, returns an empty dictionary. Ownership follows the Create Rule.

Discussion

Note that values returned from this function are immutable, even if you have recently set the value using a mutable object.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

CFPrefsDumper

Declared In

CFPreferences.h

CFPreferencesCopyValue

Returns a preference value for a given domain.

```
CFPropertyListRef CFPreferencesCopyValue (
    CFStringRef key,
    CFStringRef applicationID,
    CFStringRef userName,
    CFStringRef hostName
);
```

Parameters

key

Preferences key for the value to obtain.

```
applicationID
```

The ID of the application whose preferences are searched. Takes the form of a Java package name, such as com. foosoft.

userName

kCFPreferencesCurrentUser (page 18) if to search the current-user domain, otherwise kCFPreferencesAnyUser (page 18) to search the any-user domain.

hostName

kCFPreferencesCurrentHost (page 18) if to search the current-host domain, otherwise kCFPreferencesAnyHost (page 18) to search the any-host domain.

Return Value

The preference data for the specified domain. If the no value was located, returns NULL. Ownership follows the Create Rule.

Discussion

This function is the primitive get mechanism for the higher level preference function CFPreferencesCopyAppValue (page 9) Unlike the high-level function, CFPreferencesCopyValue (page 11) searches only the exact domain specified. Do not use this function directly unless you have a need. All arguments must be non-NULL. Do not use arbitrary user and host names, instead pass the pre-defined domain qualifier constants.

Note that values returned from this function are immutable, even if you have recently set the value using a mutable object.

Availability

Available in Mac OS X v10.0 and later.

Declared In

CFPreferences.h

CFPreferencesGetAppBooleanValue

Convenience function that directly obtains a boolean preference value for the specified key.

```
Boolean CFPreferencesGetAppBooleanValue (
    CFStringRef key,
    CFStringRef applicationID,
    Boolean *keyExistsAndHasValidFormat
);
```

Parameters

key

The preference key whose value to obtain. The key must specify a preference whose value is of type Boolean.

applicationID

The identifier of the application whose preferences are searched, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, such as com. foosoft.

keyExistsAndHasValidFormat

On return, true if the preference value for the specified key was located and found to be of type Boolean, otherwise false.

Return Value

The preference data for the specified key and application, or if no value was located, false.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

DTSCarbonShell QTCarbonShell RecentItems

Declared In

CFPreferences.h

CFPreferencesGetAppIntegerValue

Convenience function that directly obtains an integer preference value for the specified key.

```
CFIndex CFPreferencesGetAppIntegerValue (
    CFStringRef key,
    CFStringRef applicationID,
    Boolean *keyExistsAndHasValidFormat
);
```

Parameters

key

The preference key whose value you wish to obtain. The key must specify a preference whose value is of type int.

```
applicationID
```

The identifier of the application whose preferences you wish to search, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, com. foosoft.

keyExistsAndHasValidFormat

On return, indicates whether the preference value for the specified key was located and found to be of type int.

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Return Value

The preference data for the specified key and application. If no value was located, 0 is returned.

Availability

Available in Mac OS X v10.0 and later.

Declared In

CFPreferences.h

CFPreferencesRemoveSuitePreferencesFromApp

Removes suite preferences from an application's search chain.

```
void CFPreferencesRemoveSuitePreferencesFromApp (
    CFStringRef applicationID,
    CFStringRef suiteID
);
```

```
applicationID
```

The ID of the application from which to remove suite preferences, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, com. foosoft. suiteID

The ID of the application suite preferences to remove. Takes the form of a Java package name, com. foosoft.

Availability

Available in Mac OS X v10.0 and later.

Declared In

CFPreferences.h

CFPreferencesSetAppValue

Adds, modifies, or removes a preference.

```
void CFPreferencesSetAppValue (
    CFStringRef key,
    CFPropertyListRef value,
    CFStringRef applicationID
);
```

Parameters

key

The preference key whose value you wish to set.

value

The value to set for the specified key and application. Pass NULL to remove the specified key from the application's preferences.

```
applicationID
```

The ID of the application whose preferences you wish to create or modify, typically kCFPreferencesCurrentApplication (page 18). Do not pass NULL or kCFPreferencesAnyApplication (page 18). Takes the form of a Java package name, com. foosoft.

Discussion

New preference values are stored in the standard application preference location, ~/Library/Preferences/. When called with kCFPreferencesCurrentApplication (page 18), modifications are performed in the preference domain "Current User, Current Application, Any Host." If you need to create preferences in some other domain, use the low-level function CFPreferencesSetValue (page 15).

You must call the CFPreferencesAppSynchronize (page 7) function in order for your changes to be saved to permanent storage.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

DockBrowser

DTSCarbonShell

GrabBag

QTCarbonShell

RecentItems

Declared In

CFPreferences.h

CFPreferencesSetMultiple

Convenience function that allows you to set and remove multiple preference values.

```
void CFPreferencesSetMultiple (
    CFDictionaryRef keysToSet,
    CFArrayRef keysToRemove,
    CFStringRef applicationID,
    CFStringRef userName,
    CFStringRef hostName
);
```

Parameters

keysToSet

A dictionary containing the key/value pairs for the preferences to set.

keysToRemove

An array containing a list of keys to remove.

applicationID

The ID of the application whose preferences you wish to modify. Takes the form of a Java package name, com.foosoft.

userName

kCFPreferencesCurrentUser (page 18) to modify the current user's preferences, otherwise kCFPreferencesAnyUser (page 18) to modify the preferences of all users.

hostName

kCFPreferencesCurrentHost (page 18) to modify the preferences of the current host, otherwise kCFPreferencesAnyHost (page 18) to modify the preferences of all hosts.

Discussion

Behavior is undefined if a key is in both keysToSet and keysToRemove

Availability

Available in Mac OS X v10.0 and later.

Declared In

CFPreferences.h

CFPreferencesSetValue

Adds, modifies, or removes a preference value for the specified domain.

```
void CFPreferencesSetValue (
    CFStringRef key,
    CFPropertyListRef value,
    CFStringRef applicationID,
    CFStringRef userName,
    CFStringRef hostName
);
```

key

Preferences key for the value you wish to set.

value

The value to set for key and application. Pass NULL to remove key from the domain.

applicationID

The ID of the application whose preferences you wish to modify. Takes the form of a Java package name, com. foosoft.

userName

kCFPreferencesCurrentUser (page 18) to modify the current user's preferences, otherwise kCFPreferencesAnyUser (page 18) to modify the preferences of all users.

hostName

kCFPreferencesCurrentHost (page 18) to modify the preferences of the current host, otherwise kCFPreferencesAnyHost (page 18) to modify the preferences of all hosts.

Discussion

This function is the primitive set mechanism for the higher level preference function CFPreferencesSetAppValue (page 14). Only the exact domain specified is modified. Do not use this function directly unless you have a specific need. All arguments except value must be non-NULL. Do not use arbitrary user and host names, instead pass the pre-defined constants.

You must call the CFPreferences Synchronize (page 16) function in order for your changes to be saved to permanent storage. Note that you can only save preferences for "Any User" if you have Admin privileges.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

CFPrefTopScores

Declared In

CFPreferences.h

CFPreferencesSynchronize

For the specified domain, writes all pending changes to preference data to permanent storage, and reads latest preference data from permanent storage.

```
Boolean CFPreferencesSynchronize (
    CFStringRef applicationID,
    CFStringRef userName,
    CFStringRef hostName
);
```

applicationID

The ID of the application whose preferences you wish to modify. Takes the form of a Java package name, com.foosoft.

userName

kCFPreferencesCurrentUser (page 18) to modify the current user's preferences, otherwise kCFPreferencesAnyUser (page 18) to modify the preferences of all users.

hostName

kCFPreferencesCurrentHost (page 18) to search the current-host domain, otherwise kCFPreferencesAnyHost (page 18) to search the any-host domain.

Return Value

true if synchronization was successful, false if an error occurred.

Discussion

This function is the primitive synchronize mechanism for the higher level preference function CFPreferencesAppSynchronize (page 7); it writes updated preferences to permanent storage, and reads the latest preferences from permanent storage. Only the exact domain specified is modified. Note that to modify "Any User" preferences requires Admin privileges—see *Authorization Services Programming Guide*.

Do not use this function directly unless you have a specific need. All arguments must be non- NULL. Do not use arbitrary user and host names, instead pass the pre-defined constants.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

CFPrefTopScores

Declared In

CFPreferences.h

Constants

Application, Host, and User Keys

Keys used to specify the common preference domains.

Constants 17

```
const CFStringRef kCFPreferencesAnyApplication;
const CFStringRef kCFPreferencesAnyHost;
const CFStringRef kCFPreferencesCurrentApplication;
const CFStringRef kCFPreferencesCurrentHost;
const CFStringRef kCFPreferencesCurrentHost;
const CFStringRef kCFPreferencesCurrentUser;
```

Constants

kCFPreferencesAnyApplication

Indicates a preference that applies to any application.

Available in Mac OS X v10.0 and later.

Declared in CFPreferences.h.

kCFPreferencesAnyHost

Indicates a preference that applies to any host.

This domain is currently unsupported.

Available in Mac OS X v10.0 and later.

Declared in CFPreferences.h.

kCFPreferencesAnvUser

Indicates a preference that applies to any user.

This domain is currently unsupported.

Available in Mac OS X v10.0 and later.

Declared in CFPreferences.h.

kCFPreferencesCurrentApplication

Indicates a preference that applies only to the current application.

Available in Mac OS X v10.0 and later.

Declared in CEPreferences.h.

kCFPreferencesCurrentHost

Indicates a preference that applies only to the current host.

Available in Mac OS X v10.0 and later.

Declared in CFPreferences.h.

kCFPreferencesCurrentUser

Indicates a preference that applies only to the current user.

Available in Mac OS X v10.0 and later.

Declared in CFPreferences.h.

Document Revision History

This table describes the changes to Preferences Utilities Reference.

Date	Notes
2007-10-31	Noted unsupported domains.
2007-02-21	Corrected description of return value for CFPreferencesCopyMultiple.
2005-12-06	Made minor text changes to conform to reference consistency guidelines.
2005-08-11	Cosmetic changes to conform to documentation guidelines.
2004-08-31	Added note about immutability of values returned from preferences.
	Added note about need for Admin privileges to modify "Any User" preferences.
	Corrected function result description for CFPreferencesAppValueIsForced (page 8).
2003-11-11	Clarification of use of CFPreferencesSynchronize (page 16).
2003-01-01	First version of this document.

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