

20210331 FB 7.0.5

<http://www.brilorsoftware.com/fb/index.html> [you will need to reload the page if your browser cached a page mentioning a prior version]

General

Resolved - Turning off NSLog, via the Debug/NSLog menu, in a project would only remove NSLog.incl if it was in the project's Headers group.

Resolved - Apps including a private framework with a path containing unix escape characters would fail to compile.

Resolved - Enclosing `openpanel` or `savepanel` keyword parameters in the optional parentheses would throw error.

The `instr` keyword is now for CFStrings only and can no longer be used with pascal strings. Pascal strings must now use `instr$` instead. See FutureBasic Reference for more info.

Note: This change will break existing code.

Select block now handles CFStrings

```
select ( myCFString )
  case @"Charlie"
    // ...
  case @"Foxtrot"
    // ...
  case @"Sierra"
    // ...
end select
```

NSLog

Additional keyboard shortcuts when NSLog window is key:

cmd-F shows find bar

cmd-S displays save log panel

NSLog calls can now be made from a background thread.

Translation

Resolved - PSstr() crashed because CopyDbToString() didn't return a valid string (i.e. it had already been released). Can occur for any parsing and translation calling PSstr()

Note: PSstr() supports legacy pascal strings (typically for FB's 'str\$' keyword) and is part of the old pascal string stack logic.

WARNING: Pascal string support will eventually be removed from FB.

The warnings have been there for years, so this shouldn't be a surprise.

You have time to convert now. We won't have much sympathy for those who wait and complain when they are "surprised" by the change.

Headers

The following headers are deprecated and will be removed in the next release. Please use equivalent CocoaUI functions or FB keywords instead.

Util_FileManager.incl

Util_PathUtilities.incl

Util_RunningApplications.incl

Util_String.incl

Util_URL.incl

Util_UserDefaults.incl

CocoaUI

Application - more functions

Calendar - more functions

ScrollView - added function

TableView - more functions

View - convenience functions added for working with radio button groups: ViewSelectedButton, ViewSelectedButtonTag, ViewSelectedButtonTitle

ViewController - more functions

New Demos

Graphics/CA/

CAEmitter/Fire

CAEmitter/Earth Moon and Stars

CAEmitter/Longitude Demo

CALayer/CALayerMask
CALayer/Clock Demo
CALayer/CALayer Demo

Processes and Threads/Timer
Let's Dance

Views and Controls/TableView/Header Font and Colors/
TableViewHeaderColors 1
TableViewHeaderColors 2
TableViewHeaderFont

20210202 FB 7.0.4

<http://www.brilorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version]

New keywords

To assist in the transition from Pascal strings, a few extra string handling keywords have been added. See FutureBasic Reference for more info.

<u>CFString</u>	<u>Pascal</u>
bin	
cvi	cvi\$
date	
hex	
lcase	
left	
len	len\$
mid	
mki	
oct	
right	
space	
str	
time	
ucase	

Note 1: The pascal string versions of [cvi](#) and [len](#) have now become [cvi\\$](#) and [len\\$](#). This change will break existing code.

Note 2: If your app uses any of the new keywords as variable names or function names, they'll need to be changed in your code.

Note 3: The dollar sign '\$' suffix indicates the keyword either accepts and/or returns a pascal string. Conversely, keywords in this group without a '\$' suffix indicate CFString usage only.

STR\$ Keyword Change

- [str\\$](#) was completely rewritten to address old(2009) deprecated code. It continues to convert a double to a pascal string and its usage is unchanged.

However, there are some important differences which [str\\$](#) users **should review carefully**.

1. [gFBFloatMaxDigits](#) still defaults to a value of 10 but it now specifies the maximum number of decimal(i.e. fractional) digits the resulting string should contain.

It does not influence digits in the integer portion. The global's description in 'FB Help appendix D - Numeric Expressions' was not clear on this distinction.

2. [str\\$](#) will remove trailing decimal zeros. So if the the double is '123.980000', it will return '123.98'. The same is true for leading zeros on the integer portion of the double.

3. If [gFBFloatMaxDigits](#) is set to 3, '-8001.102' will deliver '-8001.102' but if [gFBFloatMaxDigits](#) is set to 2, then it only looks at two decimal digits (the '.10' and not the 2).

Since '-8001.10' has a trailing zero it would return a string of '-8001.1'.

4. [str\\$](#) also rounds decimal digits, as appropriate, based on [gFBFloatMaxDigits](#) and the double's value.

With [gFBFloatMaxDigits](#) set to 3, '-83.123789' results in a pascal string of '-83.124' because the '7' rounds the 3 to 4 and the global specifies three decimal digits.

5. If [str\\$](#) is used with the global unchanged (i.e. left at the default of 10 digits), the results should be the same as the previous version of [str\\$](#).

Old behavior of prefixing an output string space for non-negative numbers is retained.

6. Fbers are responsible for setting or not setting [gFBFloatMaxDigits](#) appropriately in their code. The following table shows output differences with [gFBFloatMaxDigits](#)

as shown. The 10 digit output also reflects the original input data (sans any leading space).

New STR\$ with 3 digits	Old STR\$ with 3 digits	New STR\$ with 10 digits	Old STR\$ with 10 digits
- 3 4 . 1 2 3	- 3 4 . 1 2	- 3 4 . 1 2 3 4 5 6 7 8	- 3 4 . 1 2 3 4 5 6 7 8
2 8 4 9	2 8 4 9	2 8 4 9	2 8 4 9
- 1 . 6 5	- 1 . 6 5	- 1 . 6 5	- 1 . 6 5
1 2 . 3 4 5	1 2 . 3 4 5	1 2 . 3 4 5	1 2 . 3 4 5
- 1 2 3 4 . 2 2	- 1 2 3 4 . 2	- 1 2 3 4 . 2 2	- 1 2 3 4 . 2 2
- 8 0 0 1 . 1 0 2	- 8 0 0 1 . 1	- 8 0 0 1 . 1 0 2	- 8 0 0 1 . 1 0 2
- 8 3 . 1 2 4	- 8 3 . 1 2	- 8 3 . 1 2 3 7 8 9	- 8 3 . 1 2 3 7 8 9

NSLog

- NSLog has been rewritten and is now a framework. Its standard usage within FB hasn't changed. Just include "NSLog.incl" and you're good.
- Many ancillary functions, such as NSLogSetShowsDate, have been dropped and most settings must now be done via NSLog's settings popover on log window.

The dropped functions are:

NSLogSetShowsDate
 NSLogSetShowsTime
 NSLogSetShowsAppName
 NSLogSetShowsProcessID
 NSLogRestoreDefaultFont
 NSLogIsSuppressed
 NSLogSuppress
 NSLogSetFrame
 NSLogFrame
 NSLogShow
 NSLogHide
 NSLogSetFloatingWindow
 NSLogWindow
 NSLogSetBecomesKeyOnlyIfNeeded
 NSLogSetTerminateAppWhenWindowClosed
 NSLogSetTextWrap
 NSLogSettingsButtonSetHidden
 NSLogWrapTextButtonSetHidden
 NSLogFindButtonSetHidden
 NSLogSaveButtonSetHidden
 NSLogClearButtonSetHidden
 NSLogButtonsSetHidden
 NSLogSetForwardToConsole
 NSLogBeginEditing
 NSLogEndEditing
 NSLogStartProgressIndicator
 NSLogStopProgressIndicator

- The default font can no longer be set programmatically, and must be done manually via the font panel in the settings popover. The NSLogSetFont call now sets a temporary font.
- The log window can now be closed (cmd-w) even when a File > Close menu item does not exist.
- Please note a special usage case: Using NSLog.incl in an Xcode project requires an NSLog framework copy in the project...
 1. Make Xcode Project.
 2. Option-drag(to make a copy) NSLog.framework to the Xcode project's "General/Frameworks, Libraries, & Embedded Content" section.
 3. Ensure the Embed popup is set to either "Embed & Sign" or "Embed Without Signing".

Help menu

String Format Specifiers are vital part of string usage, so a link to them on Apple's web page with that same title has been added.

Project

Automate Build Number. A new feature that automatically increases the prior build number by one. Especially helpful meeting Apple's MAS submission requirements.

To enable automatic build number increment, a project must have an Info.plist. The steps are:

Choose 'Automate Build Number' in the project context menu and the automate build number sheet will be displayed.

Choose a build number type (integer, decimal or hexadecimal - your choice).

The initial build number, the increment value, and the number of digits can be set in this sheet.

Each build or run of the project will increment the "CFBundleVersion" value in the Info.plist.

Document

New document files now default to ".fb" extension. This can be overridden but must be one of the standard FB extensions (fb, main, glbl, incl, bas).

Examples window

- Double clicking an item in the results table now scrolls to and highlights the first occurrence of the search string in the opened document.
- Resolved: After using the search field on the Examples window to create a 'found' list of source files, the 'Show in Finder' contextual menu command fails.

CocoaUI

- NibWindow

Resolved - A window with toolbar would fail to set a toolbar item's `_toolbarItemClick` dialog action if the item did not have an attached view.

- Function names beginning `XxxxIsEqual` have now been standardised. For example, `StringIsEqualToString` has now become `StringIsEqual`.

Headers affected are: [Array](#), [Data](#), [Date](#), [DateInterval](#), [OrderedSet](#), [Set](#), [SKNode](#), [String](#), [Value](#).

Note: The old functions remain in the headers so as not to break existing code.

- TableView

For convenience, any table columns that have not been given an identifier are automatically set to the column header title (if any) when the tableview is loaded from the nib.

Translation

- A build will now skip subsequent steps (copy resources, compile, link etc.) when translation errors are found. In other words, an error-free translation is required for a compile/link.

Translation *warnings* do not impact the compile/link steps. This should save time for big projects with lots of errors.

FB Examples

All stand-alone FB demo files have now been given an ".fb" extension.

New Unfixed Bugs Since last release

- The FB example at: FB Examples/Strings and Text/HTML does not respond correctly when system Dark Mode is set on.
- Embedded `'/'` in user code math calculation causes all source past that point to show as commented. Workaround is to put a space between the slash and asterisk.

20210113 FB 7.0.3

<http://www.briliorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version]

Menu

- Show Examples item added to View menu (see Examples Window below)

Examples window

- The Examples window can be used to display and search demos in the FB Examples folder.

To show the Examples window, choose View > Examples from the main menu.

If the examples folder cannot be found, you will be asked to locate it. The folder location is remembered for next launch.

CocoaUI

- TextView

New dialog event constant `_textViewShouldChangeTextInRange`

Translation and Build

- Rebuilds with the same `build_temp` directory skip compiles for unchanged user files. Implemented in FB 7.0.2
- FB 7.0.3 implements the above feature for the FB runtime.

N.B.

If Source-file combining is used, keep in mind a small change in one file forces the recompile of all files that are combined. Setting Source-file combining to "Off" avoids this.

20210105 FB 7.0.2

<http://www.briliorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version]

New keyword

The ***available*** keyword is used to check availability in a conditional statement. Example:

```
if ( available(11.0) )
    // use macOS 11.0 APIs
else
    // alternative code for earlier versions of macOS
end if
```

Build Log window

- Filter field added to bottom content border
- Circular progress indicator now displayed during build
- Contextual menu added
 - Save As... save the log as an rtf file
 - Clear Log


Constants and File Info popovers

- The detached windows for these popovers now become active immediately when detached

Project

- A project window frame and its file window frames are now remembered between launches
- On opening a project file, item names are matched to same case as their filenames

Translation and Build

- Rebuilds with the same build_temp skip unchanged files.
FB 7 releases broke this previously-working (FB 6) feature. We're happy it's back!
Note: Works for user files but not for the translated runtime file.
- Known issue: All FB 7 single architecture builds are slightly slower compared to FB 6.0.16.
Brian thinks he knows the cause. Bernie is readying Starbucks delivery to keep him focused.
- Translator code cleanup and minor bug fixes.
One fix: the built app's icon now appears without the  symbol at build completion.
- Future possibilities:
Speed improvements for universal builds(parallel builds) and FB runtime (skip if not changed).
These are still just ideas, so don't get excited yet.

20201231 FB 7.0.1

<http://www.brilorssoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version]

Bug Fix

Labels (as used in 'goto') failed to convert from C strings to CFStrings resulting in a nil pointer and crash when subsequent code tried to use it.

Errors file

Errors encountered during build are no longer saved to an Errors file. The Errors and Warnings window displays errors as before.

Menu

Clean Build Folder now closes the Build Log window, if it's showing

Errors window

Save button added to errors window bottom border

20201229 FB 7.0

<http://www.brilorssoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version]

FBtoC

FBtoC and the Editor are now combined. There is no longer a separate FBtoC app - Farewell FBtoC!

Universal runs on Intel and M1 Macs

ToDo

- Update the translator to accept passing of 'NS' types instead (or in addition to) of 'CF' types (i.e function header could accept: local fn Dolt (str as NSString *) vs. local fn Dolt(str as CFStringRef)
- Run 'Make Xcode Project' on background thread

Bugs

- Simple apps (for example with no UI) built with optimize and dead code stripping are significantly larger than the same code built in Xcode

For example, a single source Brian uses, when built with FB , is over 500k but 150k in Xcode.

- When a string containing backslash double-quote is used somewhere in an 'if' statement, FBtoC hangs if (fn CFStringHasSuffix(s, @"\\"")) // hangs when backslash double-quote is used in an 'if' statement

workaround - don't used backslash double-quote anywhere in an 'if' statement

dim as Boolean flag

flag = fn CFStringHasSuffix(s, @"\\"")

if (flag)

- Inline assignment fails for shift operator
long k = (500 + 0) >> 1 // this fails translation

workaround #1 - put all in parenthesis

long k = ((500 + 0) >> 1)

workaround #2 - put on separate lines

long k

k = (500 + 0) >> 1

- Inline assignment fails for certain CG contants such as CGPointZero, CGSizeZero, CGRectZero
CGPoint pt1 = CGPointZero // fails

workaround 1:

CGPoint pt2

pt2 = CGPointZero

workaround 2:

CGPoint pt3 = {0,0}

Editor

- FB7 now builds Apple Silicon, Intel or Universal apps. See Build Settings

General

- On FutureBasic launch, it now checks if Xcode exists in the Applications directory. If it doesn't, an alert is thrown up with a button that links to the Xcode page in the App Store

Menu

- Make Xcode Project item added to Command menu

Document

- Unified Toolbar item added to contextual menu. Choosing this item will toggle all open document window toolbar styles between expanding and unified

Note: This menu item is only available when running on macOS 11.0+ BigSur

Project

- Unified Toolbar item added to contextual menu. Choosing this item will toggle all open project window toolbar styles between expanding and unified

Note: This menu item is only available when running on macOS 11.0+ BigSur

Build Settings window

- New 'Architecture' popup button with items: "Apple Silicon", "Intel", "Universal"
Note that Apple Silicon and Universal items are only visible when Base SDK is set to 11.0+

CocoaUI

- Nib Menu - When creating a nib menu, the About, Hide, Quit and Help items default to "NewApplication".
With this release, these item titles are automatically changed to the app name on launch

20201107 FB 6.0.16

<http://www.briliorsoftware.com/fb/index.html> [you will need to reload the page if your browser cached a page mentioning a prior version]

Editor

- Command/Help Book menu
 - Create item added - Creates a help book shell
 - Help book menu items are now only enabled for projects
- Project
 - Resolved - project window would sometimes forget its previous size and location
 - Find and Replace
 - Replace All is now carried out on a background thread and the Find/Replace window cannot be closed during a Replace All operation
 - Holding option key whilst expanding/collapsing an item now expands/collapses all items
- Document
 - Resolved - one or two predefined types would not highlight
 - Resolved - when editor launched by double-clicking a file, some toolboxes would not be highlighted

CocoaUI

- General
 - Resolved - some calls would crash when an app built with base SDK higher than the OS of the Mac running the app.
- Toolbar
 - More functions
 - ToolbarSelectedItemIdentifier
 - ToolbarSetSelectedItemIdentifier
 - ToolbarSelectedItem
 - ToolbarSetSelectedItem
 - ToolbarSetSelectableItemIdentifiers
- ToolbarItem
 - Extra function - ToolbarItemSetSelectable
- Window
 - Extra function - WindowSetKeyViewLoop

New demos

- EventHandling/KeyViewLoop
 - WindowSetKeyViewLoop

FBtoC

- Obsolete TBAliasStatement, TroffStatement and TronStatement: Not supported for many years but now turned off.
- Fixed: Memory overwrite when strings used as labels exceeded 64 characters caused FBtoC crash.
- Pascal String Stack: Effort to eliminate continues.
- Symbol table search speed tweak. An older function character by character string compare was replaced with one call to `CFStringCompare()`

Bugs(and in some cases workarounds)

- Simple apps (for example with no UI) built with optimize and dead code stripping are significantly larger than the same code built in Xcode
Status: awaiting investigation

- When a string containing backslash double-quote is used somewhere in an 'if' statement, FBtoC hangs
if (fn CFStringHasSuffix(s, @"\\")) // hangs when backslash double-quote is used in an 'if' statement

workaround - don't use backslash double-quote anywhere in an 'if' statement
dim as Boolean flag
flag = fn CFStringHasSuffix(s, @"\\")
if (flag)
Status: awaiting investigation

- Inline assignment fails for shift operator
long k = (500 + 0) >> 1 // this fails translation

workaround #1 - put all in parenthesis
long k = ((500 + 0) >> 1)

workaround #2 - put on separate lines
long k
k = (500 + 0) >> 1
Status: awaiting investigation

- Inline assignment fails for certain CG constants such as CGPointZero, CGSizeZero, CGRectZero
CGPoint pt1 = CGPointZero // fails

workaround 1:
CGPoint pt2
pt2 = CGPointZero

workaround 2:
CGPoint pt3 = {0,0}
Status: awaiting investigation

20200824 FB 6.0.15

<http://www.brilorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version]

FBtoC

- Translation capabilities are no longer dependent on the editor. Any editor capable of communicating with FBtoC will work.

- Syntax

- Inline C

- A new convenience keyword, **cln**, allows a *single* line of C code to be inserted. This keyword avoids having to enclose a line in a BeginCCode...EndC block. e.g.

- ```
cln [btn setMaxAcceleratorLevel:4];
```

is equivalent to

```
BeginCCode
[btn setMaxAcceleratorLevel:4];
EndC
```

**Please note:** the FBtoC translator does not check 'cln' C code lines for correct C/Objective-C syntax; that responsibility lies with the programmer just as it is with the block style. ( i.e. BeginCCode/endC )



- Inline record assignment
  - With FB6.0.14 came inline assignment for the more common records (CGRect, CGSize, CGPoint and CFRange). With this release, *all* records (predefined and user-defined) can use inline assignment
  - The parentheses around a record assignment became a problem when the new 'all records' feature was implemented. Setting a field value with a parenthesised expression would cause ((may)hem)
 

```
MyRecord myRec = ((x+10)*20, 30) // << nope!
```

so with this release braces (not parentheses) are required around record assignments

```
MyRecord myRec = { (x+10)*20, 30 } // << yep
```
  - Subrecords - With the exception of CGRect, subrecord fields must also be enclosed in braces
 

```
begin record ItemPrice
 float buy
 float sell
end record

begin record ItemInfo
 long itemID
 long qty
 ItemPrice price
 long order
end record

ItemInfo info = { 54321, 23, { 12.34, 17.53 }, 9 }
```

## Editor

- Preferences
  - 'Show bookmarks in functions menu' checkbox added to the Text Editing pane of the Preferences window. When checked, bookmarks are added to the document toolbar functions menu (see notes in Project and Document below)
- Project
  - Find and replace window
    - Find/Replace popup button added. The replace field and buttons are now only visible when the popup's 'Replace' item is selected
    - Clicking the Replace All button now throws up a confirmation alert
    - The search word is now highlighted in each line in the results table
  - Find menu
    - Find in Project... (⇧⌘F) now always shows the Find window in 'Find' mode
    - Find and Replace in Project... (⇧⇧⌘F) added. Displays the Find window in Replace mode
  - Toolbar Find in Project item (magnifying glass) shows the Find window in the mode it was last displayed. Holding option key whilst clicking the magnifying glass will display the window in Replace mode.
  - Project window functions menu (opt-click item)
    - In previous releases, the function names were always sorted. With this release, sort/unsort is determined by document functions toolbar item setting
    - This menu can now optionally show bookmarks as well as functions (see Preferences above)
- Document
  - The toolbar functions menu can now optionally show bookmarks as well as functions (see Preferences above). When the menu is unsorted, an item separator is inserted before each bookmark. Separators do not appear in a sorted menu
  - Choosing an Editor > Font Size item (⌘+, ⌘-) now briefly pops up the current font size

## CocoaUI

- PDFAnnotation - extra function
- PDFAnnotationUtilities - fixes for NS/CFString compiler warnings
- 

20200813 FB 6.0.14

<http://www.brilorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

## FBtoC

- 'long if' produces a deprecation warning. Please update code to use 'if' instead.

## Editor

- Project
  - Organization Identifier field added to save panel. Entering a value in this field generates an Info.plist and sets its CFBundleIdentifier value. The Info.plist is added to the project's Resources group
  - Project find/replace  
As this is a new feature, please make a backup of your project before doing a project-wide find/

replace

### Usage

1. Click on the project toolbar magnifying glass or choose Find > Find in Project... (⇧⌘F)
2. Select your search options in the two popup menus
3. Enter the search text and hit return
4. Results are displayed in a table below the fields
5. Double click a table item to open the document
6. To replace items
  - a) Enter the replacement text (if any) in the Replace field
  - b) Select one or more items in the table (drag select, shift-click, cmd-click, Edit > Select
7. Hitting the Replace All button replaces all items, even those in collapsed groups

All, etc.)

- c) Hit the Replace button

N.B. Any items in a collapsed group will not be replaced

### Important Find/Replace Usage Note:

Project find/replace currently finds and replaces text *in files*, **not text in open documents**, so be sure to save and close any open documents that are part of the project *before* doing project find/replace

- Document
  - File menu Save All (⇧⌘S) item added
  - Resolved - Some actions would corrupt the contents of the general pasteboard
  - Divider line and bookmark special characters are now converted to their old character sequence in the saved file. This prevents the divider lines/bookmarks being lost when editing the file in an old editor.

- Dim statement enhancements (**dim as** syntax only)

- Declaration and assignment can be done at the same time

```
dim as long value = 12
dim as CFStringRef s1 = @"One", s2 = @"Two", s3 = @"Three", s4 =
@"0'Leary"
dim as CGRect r = fn CGRectMake(14, 13, 110, 32)
```

- 'dim as' keywords are now optional

```
long state
CFStringRef string
double d1 = 123.456, d2 = 987.654
BOOL flag = YES
```

- CGRect, CGPoint, CGSize and CFRange structures can be initialised like this
 

```
CGRect r = (0, 0, 360, 270)
CGPoint pt = (120, 50)
CGSize size = (187, 42)
CFRange range = (NSNotFound, 0)
```

## CocoaUI

- Array - More functions

## New Demos

- Shows new 'dim as' syntax: FB\_6\_0\_14\_Examples/Miscellaneous

20200731FB 6.0.13

<http://www.brilorssoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

## FBtoC

Keywords removed

- 'cocoa' & 'cocoaalert' keywords, deprecated in August 2019, now generate a build error. The shortened version without the 'cocoa' prefix should be used ( i.e. 'alert' ) instead

Pre-Defined Constants file change

- \_constants file's values, updated to decimal instead of hexadecimal, allows faster FBtoC processing
- New editor functionality ( see below ) helps manage both pre-defined and user-defined constant use within your project.
- Most of the pre-defined constants ( over 5300 of them ) in the \_constants file are obsolete, no longer applicable and in some cases provide incorrect/misleading results.
- They date back to pre- OS X days ( QuickDraw ). We strongly suggest reviewing your code's usage of these pre-defined constants and find alternatives such as your own constants.
- Most of these pre-defined constants from the \_constants file will be removed in a future release, so please plan accordingly and take advantage of the new editor functionality.

Pascal String Stack

- Effort to eliminate commences.

## NSLog

Resolved - Settings would sometimes fail to be stored in the correct preferences plist

'Appearance' popup added to settings. Allows the NSLog window to be displayed in the user's preferred appearance (light or dark). Available macOS 10.14+

## Editor

Preferences window

- General pane
  - 'Appearance' popup added. This popup gives the user the option to work with the Editor in light mode or dark mode, irrespective of system setting. Available macOS 10.14+
- Fonts & Colors pane
  - Line numbers checkbox now defaults to checked
  - Line numbers checkbox no longer shows/hides line numbers in documents. To hide/show line numbers in documents, use the Editor menu item or the document toolbar Line Numbers item (if configured)
  - Divider line width and color options added

File Menu

- File Info - File attributes list now include line count and character count

Editor Menu

- There is now just one divider line style. The default divider line style is one pixel wide and text color. Opening a document or pasting text into a document will convert any old divider line styles to the one style

#### Command Menu

- The 'Trash build\_temp' item renamed to 'Clean Build Folder.' In addition to trashing the build\_temp folder, this action now trashes an Errors file and the built app linked to the front document or project

#### Debug Menu

- Resolved - Switching NSLog on or off would resave unchanged project documents. With this release, only *changed* documents are resaved
- 'Show Constants' item added. Displays all user-defined and predefined constants used in the front project or document

#### Document

- Resolved issues
  - Switching to dark mode would intermittently fail to switch already open documents to that appearance
  - After pasting text into a document, text insertion would often fail to appear in the correct location
  - When a new version of the editor is launched by double-clicking a document file, the document would appear (unformatted) behind the EULA window. Now, the document window is not displayed until the EULA window has been closed
  - During live resize of a document window, revealed text would appear unformatted until the mouse released
- Toolbar
  - Resolved - In FB 6.0.12, the line number label displayed a bad range when only one line selected
  - The FN menu and Function name toolbar items are now combined. Note this change may reset the toolbar to default items on first launch of this editor version
  - The function menu's "Sort" item title no longer changes its name but displays as either ticked (✓) or unticked
  - When no selected function in the document, the function menu now displays "Functions" instead of three dots (...)
  - The character count in the line number label looked too ugly (IMO) so has been removed. Character information is now displayed as a tooltip (hover over the toolbar line number label)
- Documents now respond to click-through. i.e. clicking on an inactive document now activates the text view with one click instead of clicking first to make the window active and then clicking again in the text view
- Divider line
  - Historically, FB uses a special character sequence to flag divider lines and bookmarks, e.g. '~'1. As this multi-character sequence required a nasty workaround to silence glyph warnings, divider lines and bookmarks are now flagged by a single, invisible character (\2, \3 respectively). Saved files will contain these new characters and old character sequences will be converted to the new single character when opening a file.  
However... for backwards compatibility:
    - Old character sequences will be converted to the new single character when pasting text into a document
    - Text copied from a document converts the new divider line character to the old 1 pixel character sequence (~'1) on the clipboard. Useful for sharing code with those who are running an earlier version of FB
  - Divider line lengths now grow/shrink with the window width or text line length
  - A single click on a divider line highlights the whole line
- Contextual menu - 'Show Constants' item added

#### Errors window

- New filter field at the bottom of the window's border limits the text display to errors containing the entered text

#### Project window

- Contextual menu - 'Show Constants' item added

#### New exception handling keywords ( variables with same names as keywords will need updating )

- try, catch, finally, throw. See FutureBasic Reference and demos.
- User variables matching the new keyword names will be flagged as errors.
- N.B. Editor-based feature.

#### Usage Notes for the Editor's new Show Constants Window

1. The "User-Defined" column shows the constants added by the user to the document/project.
2. The "Predefined" column shows constants the project/document uses from the `_constants` file & the FB Headers.
3. If a predefined constant is colored **red**, a floating popover indicates it is "not a valid constant" ( see #4 for definition of "invalid" )
4. Except for a small subset of valid constants( see below ), most of the `_constants` file's constants are invalid.  
Invalid means: obsolete, no longer applicable and might provide incorrect/misleading results ( `maxInt` is an example of the latter ).

#### Valid Constant List from `_constants` ( still evolving )

```

btnclick
definedincarbon
definedincocoa
definedincruntime
false
fbtoc
fnferr
itemid
menuid
nil
noerr
nslog
sysvers
toprinter
true
zblack
zblue
zcyan
zgreen
zmagenta
zred
ztrue
zwhite
zyellow

```

#### CocoaUI

Cell - More functions

Dictionary - More functions

Exception - New header

Expression - Extra function

Number - Extra functions for handling 32-bit numbers: `NumberWithInt`, `NumberWithUnsignedInt`, `NumberIntValue`, `NumberUnsignedIntValue`

ViewController - More functions

Window

- New function, *WindowPerformWindowDragWithEvent*. A new demo (see below) uses this function
- New dialog event, *\_windowCanBecomeKey*. A new demo (see below) uses this event

## New Demos

Debug/try\_catch\_finally\_throw examples

Filters and Sorting/Expression

- Expression Demo
- Expression Demo (with exception handler)

Views and Controls/

- ImageView/DropImage
- PopUpButton/Variable Width/Variable Width Popup

Windows and Panels/Window/Custom/Custom

## New FB 5.8.5 Demos

MFromArray ( multi-dimensional array ) demo was updated. See: [FB\\_5\\_8\\_5\\_Examples/Non-CocoaUI demos/CoreFoundation/MFromArray 1.0.6](#)

New Util\_String.incl header includes a replacement for FB's bin\$ that returns a CFStringRef instead of a pascal string. See: [FB\\_5\\_8\\_5\\_Examples/Non-CocoaUI demos/CoreFoundation/CoreFoundation/Strings and Numbers/Strings/Demo of Replacement String functions/BinStringDemo.bas](#)

20200703FB 6.0.12

<http://www.brilorssoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

## FBtoC

Build Settings

- Min deployment and Base SDK popups now handle the macOS 11.0 SDK correctly.

NSLog

- Adding a \b or \t to the end of the format string puts the next NSLog message on the same line.
- Appending the format string with \a pauses the app and displays an alert. This is identical to calling NSLogAlert.
- The log font (set by calling *NSFontSetFont*) is now remembered between launches and after clearing the log.
- Code clean up.

## Editor

Project

- Min deployment and Base SDK popups in Build Settings now handle the macOS 11.0 SDK correctly.
- Existing files in the project window are no longer highlighted during drop operation.
- Project window contextual menu rearranged with new items: Open in New Tab, Delete. Context menu now shows any links found in clicked document. Shows first word in the line with the link, or the link itself if no word found.
- With two or more projects open, and build settings sheet displayed in one of the projects, a click on another project's settings cog would switch the sheet to the clicked window. Now, only one build settings can be displayed at any one time.

Document

- Improved scrolling and text editing response with large files.
- BeginC block text now retains its leading space characters after Re-Indent or Trim Whitespace.
- C code text coloring has been dropped. C code is now displayed the same as other text.
- Contextual menu now contains any links found in document. Shows first word in the line or the link itself if no word found.
- Standalone file build settings (FBtoC settings) are now displayed in the editor. Therefore, the FBtoC app is no longer launched to display its settings.
- Lines/chars toolbar label now displays total number of characters in the file.

## CocoaUI

PopUpButton

- A nib popup button stopped issuing \_btnClick dialog event in FB 6.0.11. Fixed.

MenuItem

- The second parameter of MenuItemSetMenu can now take a menu index or CocoaMenuRef.

StatusItem

- *StatusItemSetMenuIndex* function has been removed and its operation combined with *StatusItemSetMenu*. *StatusItemSetMenu* now accepts a menu index or a menu ref. This change will break existing apps that call *StatusItemSetMenuIndex*.

#### UserDefaults

- UserDefaultsSetFont now stores the font's font descriptor rather than the font object itself (recommended by Apple).
- More functions

#### Widget menus

- Widget menu handling has been updated.
  - If appropriate for the widget (PopUpButton, etc.), choosing a menu item triggers a `_btnClick` dialog event and the item chosen can be got by calling `PopUpButtonIndexOfSelectedItem( tag )`, etc.
  - Submenus (hierarchical menus) in the widget menu always trigger an on menu event. i.e. they do not generate a `_btnClick` event.

#### Window

- New dialog event constant `_windowShouldPopUpDocumentPathMenu`.

### New Demos

- Miscellaneous/  
ObjectProperty
- Views and Controls/PopUpButton/  
Submenu

20200622 FB 6.0.11

<http://www.brilorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

### Editor

#### Debug Menu

- The way the NSLog menu item works has changed. In addition to adding/removing the `NSLog.incl` header to/from the front project or document, turning the NSLog item off (unchecked) comments any code lines starting with "NSLog" with double-slash-squiggle `///~". Turning the NSLog item ON (checked) removes these special comment characters from any code lines beginning with ///~NSLog".`

Notes:

- NSLog calls that don't appear at the start of a line are ignored. For example, the NSLog call in this line is ignored: **`if ( a == b ) then NSLog(@"equal")`**
- Existing NSLog statements commented by the regular double-slash comment `///NSLog" are ignored.`

#### Help Menu

- 'FutureBasic Help' item renamed 'FutureBasic Reference'.

#### Document

- Bug fix. Comment blocks would lose their space character indent when the insertion location was next to the slash character in the start comment block (`/*`).
- The text insertion location is now correctly restored after Re-Indent or Trim Whitespace action.

#### Show Headers Window

- Contextual menus for the CocoaUI headers now contain links to Apple's online documentation.

### CocoaUI

#### Alert

- More functions.

#### AppleEventDescriptor

- More functions.

#### Array

- *ArrayShuffledArray* function has now been moved to its correct header: `GameplayKit/GKRandomSource.incl`. In previous versions, to gain access to this function required including the GK framework (`include library "GameplayKit"`). With this release, we need to include a header instead: `include "Tltx GameplayKit.incl"`. This change will break existing apps that call this function.

#### Box

- Omitting or passing NULL in the title param of the box statement now sets the box title position to `NSNoTitle`. Note: setting the box title to `NSNoTitle` does not change the box coordinates but *visually* changes its height.
- More functions.

#### Button

- More functions.

#### CATransform3D

- More functions.

#### ComparisonPredicate

- Extra function.

#### Data

- Extra function.

#### Geometry

- More functions.

#### Menu

- *MenuItem* and *MenuItemWithTitle* have been renamed to *MenuItemWithTitle* and *MenuItemWithTitle* respectively. Also the new functions return a *MenuItemRef* so require the 'fn' keyword before the function name. These changes will break existing apps that call these functions.
- *MenuItemSetSubmenu* now also removes any action assigned to the parent item.
- More functions.

#### MenuItem

- More functions.

#### Operation

- *OperationSetCompletionFunction* now takes an extra parameter, *userData* (can be NULL). This change will break existing apps that call this function.

Also, the user completion function now has two optional parameters:

```
void local fn MyCompletionFunction(ref as OperationRef, userData as ptr)
 // ...
end fn
```

#### OperationQueue

- The *OperationQueue.incl* header has been removed and its functions transferred to *Operation.incl*.

#### PathComponent

- More functions.

#### PathComponent

- The path control now triggers its dialog events by default so the *PathComponentSetDelegate* function has been removed. This change will break existing apps that call this function.
- New dialog event constant *\_PathComponentDoubleAction*.

#### PopUpButton

- *PopUpButtonSetMenuItem* function has been removed and its operation combined with *PopUpButtonSetMenu*. *PopUpButtonSetMenu* now accepts a menu index or a menu ref. This change will break existing apps that call *PopUpButtonSetMenuItem*.

#### PrintOperation

- New on dialog event constant *\_PrintOperationDidRun*. Triggered on completion of the print operation after calling *PrintOperationRunModal*. See header for more information.

#### Set

- More functions.

#### TableView

- More functions.
- Table data can now hold CFNumbers. Any CFNumber objects found in the table data are automatically entered in the text field cell.
- New dialog event constant *\_tableViewCellTextDidEndEditing*. Called when an editable text field has done editing.
- Reorder single row has been available for a while but with this release *multiple* rows can be reordered. See demo.
- Drag copy row implemented. This feature is off by default but can be turned on by calling the convenience function *TableViewSetAllowsDragCopy*.
- The behaviour of drag reorder has changed. Previously, when *NSTableViewDropOn* was enabled (default) dragging an item *down* would move the item immediately *below* the highlighted item. With this release, dragging up or down always puts the item *above* the highlighted item.
- Although the table view's drop operation can be handled in the *\_tableViewValidateDrop* dialog event, a new convenience function (*TableViewSetDropOperation*) will do the same thing without the need to intercept the dialog event.
- Drag drops are now animated.

#### TabView

- More functions.

#### TabViewItem



- New header.

#### TextCheckingController

- New header.

#### TextField

- More functions.

#### TextStorage

- More functions.

#### UserDefaults

- More functions.

#### Value

- More functions.
- CATransform3D value function moved to the CATransform3D.incl header.
- Geometry value functions moved to Geometry.incl.
- Range value functions moved to Range.incl.

#### View

- More functions.

#### General

- Nib view menu indexes would occasionally fail to be identified. Fixed.

### New Demos

- Collections/Array/Sort/  
Array/Sort/Array Sort
- Views and Controls/TableView/  
InsertRemove

20200506 FB 6.0.10

<http://www.brilorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

### FBtoC

#### build\_goodies files removed

- EditFields.c
- FilesDollarFunction.c
- Prefs.c
- SystemDirectoryCopyURL.h
- SystemDirectoryCopyURL.m
- Util\_FileDirectory.h
- Util\_FileDirectory.c

#### Headers removed

- Subs Help tags.incl
- Subs Prefs File.incl
- Tlxb Aliases.incl
- Rntm Completion.incl
- Subs Files.incl

#### Make Xcode Project Options Reduced

- Make Xcode Project's dual options are reduced to one "without Stripping" option and renamed to simply: "Make Xcode Project" in FBtoC's file menu. Changed to run on a background thread.

### Editor

#### Project

- Double-clicking a folder in Resources group now opens the folder in the Finder
- Bug fix. The optimization label would not update when build settings window loaded.

#### Document

- Hitting return in a comment block would remove leading whitespace from entered line. Fixed.
- Lines with '#' prefix are no longer indented.
- On re-indent, lines in comment blocks would march to the right. Fixed.
- Re-indented comment block lines now retain any leading space characters.

#### Help Menu

- Files or apps dropped in the Application Support/FutureBasic/Help Menu Items/ directory now appear in the Help menu immediately. i.e. there's no need to quit and relaunch FutureBasic.

## FutureBasic Help

### Additions

## CocoaUI

### Animation

- New header

### Application

- Extra function

### Bundle

- For convenience, *NULL* can be used instead of *fn BundleMain* in *BundleXxxx* functions. e.g.  
dict = fn BundleInfoDictionary( NULL )  
is equivalent to  
dict = fn BundleInfoDictionary( fn BundleMain )

### Button

- More functions

### CAAnimation

- More functions

### FileHandle

- Bug fix. FileHandleSeekToEnd would crash when second param NULL.

### Responder

- Extra function

### String

- Extra function
- Function name corrections: StringByReplacingOccurrencesOfString, StringByReplacingOccurrencesOfStringWithOptions  
Note: these corrections may break existing apps.

### TableView

- The dialog events: *\_tableViewSelectionShouldChange*, *\_tableViewShouldSelectRow* and *tableViewShouldSelectTableColumn* all default to YES but can now be manipulated by calling *DialogEventSetBool(NO)*. Also, in *\_tableViewShouldSelectRow*, the row number can be got with: *row = fn DialogEventLong*.
- It is now possible to add custom views to one or more columns. See demos.

### TextFinder

- More functions

### TextView

- More functions

### UndoManager

- Extra function

### URL

- More functions

### View

- More dialog events
- More functions

### VisualEffectView

- More material types (macOS 10.14+)

### Window

- More functions

### Workspace

- More functions
- *WorkspaceOpenConfiguration* class added (macOS 10.15+)

### General

- Programmer error alert window
  - Now runs on main thread to avoid crash when triggered from background thread.
  - 'Quit' button added. Useful for when the alert is triggered in a loop.

## New Demos

- Miscellaneous/
  - UndoManager
- Views and Controls/SKView/
  - Animated Fruit
  - Bouncing Robot
  - Flowers
  - GIF Animation
- Views and Controls/TableView/Custom Views/
  - Button
  - Checkbox
  - DatePicker
  - MultipleViews
  - PopUpButton
- Windows and Panels/
  - Shake

20200316 FB 6.0.9

<http://www.briliorsoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

## FBtoC

Bug fix: A block comment ( i.e. those beginning with `/*` and ending with `*/` ) where an individual line( defined as all the characters up to the first end-of-line character -ascii 13 ) within the block exceeds 255 characters would cause unpredictable behavior - usually a loop/hang. Pascal-dependent code and pascal- influenced limitations were replaced to remove constraints.

Note: The maximum line length inside a block comment is now the same as any other ( non-comment ) FB source line( 1500 characters per line ). To clarify: Overall block comment length is still unlimited but each line within the block must be less than the maximum per line.

## Editor

Editor Menu

- This new menu contains *Divider Line*, *Dated Comment*, *Comment Block*, *Trim Whitespace*, *Re-Indent* (moved from the Edit menu) and *Hide Line Numbers*, *Wrap Text* (moved from Views menu).  
It also contains new items: *Font Size/Increase*, *Font Size/Decrease*, *Create Code Snippet*, *Edit Snippet Name*.

Application Support - Help Menu Items

- Files or apps can now be added to the Editor's Help menu by dropping them in `~/Library/Application Support/FutureBasic/Help Menu Items` directory. Added items will appear in the Help menu on the next launch of the Editor.

Code Snippets

- Code snippets are displayed under the Snippets tab in the Library panel.  
Note: Currently only supports files but a later version of FB will allow folders too.

To create a new code snippet:

- either
  - Drag a text file on to the snippets panel
  - or
  - Drag text from a document window to the snippets panel
  - or
  - Select text in a document and choose Editor>Create Code Snippet

To edit a snippet name:

- Ctrl-click a snippet name in the snippets panel and choose Edit Snippet Name from the contextual menu.
  - or
  - Select an item in the snippets panel and choose Editor>Edit Snippet Name

Project

- QuickLook preview enabled. Press space bar to show selected items in QLPreview.

## CocoaUI

AppleScript

- Error dictionarykeys added. See header.

Application

- *AppEnumerateWindows* params and its callback function have changed.
  - Note: This change may break existing apps that use this function. Please see header.

## Array

- *ArrayIndexOfObjectPassingTest* & *ArrayEnumerateObjects* function params and their callback functions have changed.
  - Note: These changes may break existing apps that use these functions. Please see header.

## AVKit

- More functions. See headers.

## CALayer

- More functions. See header.

## Color

- More functions. See header.

## Control

- More functions. See header.
- A new custom function, *ControlSetActionID( controlTag, actionID )*, can be used to separate radio button groups. Previously, multiple groups would have to be embedded in separate superviews. Note: The actionID value must be in the range 1-10.

## CIFilter

- *CIFilterWithNameAndInputParamters* function name (missing 'e') corrected to *CIFilterWithNameAndInputParameters*.
  - Note: This change may break existing apps that use this function. Please see header.

## CoreImage

- More headers.

## Data

- More functions.

## DialogEvent

- New constant, *\_viewMenuForEvent*. Call *DialogEventSetMenu( cocoaMenuRef )* to set the menu.
- The *\_viewUpdateTrackingAreas* event is now hooked up. Note: When responding to this event, call *DialogEventSetBool(YES)* to let the runtime know you've handled it.

## Dictionary

- *DictionaryEnumerateKeysAndObjects*, *DictionaryKeysOfEntriesPassingTest* & *DictionaryKeysWithOptionsOfEntriesPassingTest* params and their callback functions have changed.
  - Note: This change may break existing apps that use these functions. Please see header.

## FileHandle

- Many name changes and parameter changes which may break existing apps that use these functions. Please see header.

## FileManager

- Extra function.

## Font

- Extra function.

## FontDescriptor

- Extra function.

## FoundationErrors

- More constants.

## JSONSerialization

- Additional writing option.

## ListFormatter

- New header and demo.

## MenuItem

- Attempting to configure a menu item that doesn't exist would occasionally hangs - fixed.

## Number

- More functions. See header.

## Object

- Extra function. See header.

## Operation

- Extra function.

## QuickLookThumbnailing

- New framework. Requires: macOS 10.15+ and Tlbx QuickLookThumbnailing.incl.

## QuickLookUI

- New headers and demo.

## PersonNameComponents & PersonNameComponentsFormatter

- New headers and demo.

## RelativeDateTimeFormatter

- New header and demo.

## Responder

- More functions. See header.

## Screen

- More functions. See header.

## SpellChecker

- New headers.

## Storyboard

- New headers and demo (the beginnings of storyboard handling).

## String

- *StringEnumerateLines*, *StringEnumerateSubstringsInRange* & *StringEnumerateLinguisticTags* functions were broken. Fixed.

## TableView

- Dialog event *\_tableViewDidAddRowView*. The row number and *TableRowViewRef* can now be got with *DialogEventLong* and *DialogEventView* respectively. See demo: Row Background Color.
- Subclassed tableview dialog event, *\_tableViewAcceptsFirstResponder*, now defaults to *\_true*.
- Unused dialog event constants removed.
- The *TableViewSelectedRowIndex* function now correctly returns an *IndexSetRef*, rather than a *CFArrayRef*. This change may break existing apps that use this function.

## TextView

- Extra function. See header.

## ToolbarItem

- More functions. See header.

## TouchBar

- New headers and demo.

## TrackingArea

- *TrackingAreaWithRect* now returns a valid *TrackingAreaRef*.

## URLError

- More constants. See header.

## View

- Subclassed views no longer automatically respond to *\_viewMouseEntered*, *\_viewMouseExited* & *\_viewMouseMoved* events. In order to receive these events, you must now call *ViewInitTrackingArea( viewTag )* at build time.

## WebKit

- More functions. See headers.

## General

- Most subclassed widgets can now respond to *\_viewMouseEntered*, *\_viewMouseExited* & *\_viewMouseMoved* events. Note: in order to receive these events a new custom function, *ViewInitTrackingArea( tag )*, must be called on the view at build time.
- Callback functions which optionally returned *\_true* (YES) to stop enumeration now no longer return a value but take an extra param, *stp as ^BOOL*. For example, the callback function for *AppEnumerateWindows...*

was:

```
local fn MyEnumerateWindows(wndTag as NSInteger, userData as ptr)
 // ...
end fn // = YES // stop enumeration
```

now:

```
void local fn MyEnumerateWindow(wndTag as NSInteger, stp as ^BOOL, userData as ptr)
```

```
// ...
/**stp = YES // stop enumeration
end fn
```

Objects affected:

Application, Array, NSAttributedString, Calendar, Contacts, Dictionary, DraggingInfo, DraggingSession, EventKit, LinguisticTagger, NaturalLanguage, OrderedSet, RegularExpression, SpriteKit, String

## New demos

- Collections/Array/
  - ArrayByApplyingDifference
- Collections/Dictionary/
  - KeysOfEntriesPassingTest
- Data Formatting/
  - ListFormatter
  - PersonNameComponents
- Dates and Times/
  - RelativeDateTimeFormatter
- Graphics/
  - BezierPath/ImageWithDrawingHandler
  - Core Image/... lots of lovely demos - thanks Ken!
  - JuliaSet Viewer
- Windows and Panels/
  - QLPreviewPanel
  - TouchBar
  - Storyboard
- Views and Controls/TableView/
  - Row Background Color

20200114 FB 6.0.8

<http://www.brilorssoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

## FBtoC

Compiler options

- The '-Wno-unguarded-availability' compiler option is now issued on every build by default.
- This compiler option eliminates the need to set min deployment to 10.13+ in order to take advantage of features introduced in macOS 10.13+.  
This option can be turned off by entering: '-Wunguarded-availability' in compiler options. However, this will give hundreds of warnings when building apps.
- Non-MacRoman characters, such as 'č', in a Pascal or CFString literal/constant would generate failing CFSTR() macro code. Fixed

## Editor

TouchBar support

- A MacBook Pro's TouchBar now displays relevant controls for most of the Editor's windows.

•

Note: Those FBers who don't have a MacBook Pro with TouchBar can get an idea of what it looks like by...

1. Launching Xcode
2. Choosing Window>Show Touch Bar (cmd-shift-8)
3. Switching back to FutureBasic

Application menu

- License Agreement item added. Opens license agreement in Preview.

File menu

- File Info item added - displays file attributes in detachable popover.

Help menu

- FBtoC Website bad link fixed.
- Release Notes item added.
- FutureBasic Help
- **subclass** keyword page updated.
- Bad links to FBtoC website fixed.

## Project

- Toolbar would intermittently forget configuration - fixed.
- File Info contextual menu item and File Info toolbar item added - displays file attributes in detachable popover.

## Document

- File Info contextual menu item and File Info toolbar item added - displays file attributes in detachable popover.
- Text completion enabled for toolbox functions. Start typing function name then hit 'esc' key to display list of functions that begin with word.
- Non-MacRoman characters, such as 'č', in a Pascal or CFString literal/constant would cause document save failure leaving the source file empty. All now saved as UTF-8.

## Objects Panel

- Filter field added to object panel's content border.

## CocoaUI

### Application

- NSApp global variable added.
- More functions.

### BackgroundActivityScheduler

- New header and demo. Requires macOS 10.10+.

### Button

- Extra function.

### ByteCountFormatter

- More functions.

### ColorSampler

- New header and demo. Requires macOS 10.15+.

### CompoundPredicate

- More functions.

### Control

- More functions.

### Error

- More functions.

### ImageRep

- More functions.

### LinkPresentation

- New framework. See headers and demo. Requires "Tlbx LinkPresentation.incl" header and macOS 10.15+

### Measurement, MeasurementFormatter Unit

- New headers and demos. Requires macOS 10.12+.

### MenuIndex

- All MenuIndexXxxx functions now optionally accept a MenuIndexRef for the itemIndex param. Note: if a MenuIndexRef is entered, the menuIndex param value is ignored.

### NaturalLanguage

- New framework. See headers and demos. Requires "Tlbx NaturalLanguage.incl" header and macOS 10.14+

### OrderedSet

- More functions.
- SearchField
- Convenience functions added: SearchFieldSetSearchButtonImage, SearchFieldSetCancelButtonImage. See demo.

### StackView

- StackView added. See header and demos. Requires macOS 10.9+.

### Switch

- Switch control added. See header and demos. Requires macOS 10.15+.

### View

- More functions.

## Demos

### New

- Data Formatting/
  - Measurement
- Collections/
  - OrderedSet
- Strings and Text/
  - NaturalLanguage
- Views and Controls/
  - LinkPresentation
  - SearchField ButtonImage
  - StackView
  - Switch
- Windows and Panels/
  - ColorSampler

Minor cleanups.

- removed all "Requires -m64 compiler options" comments.
- Changed links from the old FBtoC website to the new one.
- All images for Graphics/DrawThreePartImage and Graphics/DrawNinePartImage enclosed in "images" folders.
- Views and Controls/TabView \_tabViewDidSelectTabViewItem added to on dialog function.
- Fixed a couple of comment typos.

---

20191219 FB 6.0.7

<http://www.brilorssoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

## Editor

- Fixed a bug where Find in Project would sometimes hang.
- Drag and drop failed to update FB's project file in some circumstances.
- Key words ending in a dollar sign, '\$', are now highlighted in an editor document.
- An app's Help Book can be indexed by choosing Command/Index Help Book
  - Choosing that menu item indexes the help book if the following are true:
    - Project/document folder contains an Info.plist
    - The Info.plist contains a help book folder
    - The help book folder exists
- The following bugs were fixed after first 6.0.7 release:
  - Header include file specified within project window was incorrectly treated as a resource
  - Reopening a project which has been set to a Base SDK that no longer exists leaves the Base SDK popup blank
- \* dialog(0) and dialog(ev) functionality restored
 

```
i.e. dim as long ev, id, wnd
 ev = dialog(0)
 id = dialog(ev)
 wnd = dialog(-1)
 select (ev)
```

## CocoaUI

- Clicking TabView now triggers \_tabViewDidSelectTabViewItem dialog event instead of \_btnClick.
- AVPlayerView subviews now trigger these dialog events:
  - \_viewPerformDragOperation
  - \_viewDraggingEntered
  - \_viewDraggingExited dialog event

## Runtime & Other

- Calls using FSRefs removed from header file, Tlbox LSOpen.incl
- Clean up of General.c, Runtime.h
- FixSDK's broken import/export in Catalina now fixed. FixSDK is a separate download on the FBtoC web site
- Internal FBtoC changes to omit the include files EditFields.c, FilesDollarFunction.c
- AppThings.c reduced to only the live code it uses. Most of the conditional compiles removed.
- AppThings.c updated to restore PRINT # support

---

20191002 FB 6.0.6

<http://www.brilorssoftware.com/FB/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

## Overview

FB 6.0.6 adds some nice new features, continues the effort to streamline and simplify FB, and continues the effort to remove FB's runtime Carbon code. More work remains on the last two items. Please note the warnings for the User Interface items.



## FBtoC 5.8.10, runtime and general internals

Sixty five FB headers were removed because they rely on 32-bit code and/or other obsolete technologies. build\_goodies also updated. This process is ongoing.

FB continues to link against the Carbon.framework because Apple's recent Catalina beta includes some bits of Carbon. There is little to no build time speed penalty for linking against the Carbon.framework with most Fbers using CocoaUI. Please note: FB no longer includes Apple's Carbon headers, so your code might need them if Carbon calls are made. One way to include the Carbon headers is shown below. Linking against Carbon will be removed when Apple discontinues its inclusion in the OS.

```
beginCDeclaration
#import <Carbon/Carbon.h>
endC
```

### User Interface related

#### File handling - OSPanel

OSPanelOpen, OSPanelSave and their ancillary functions are now deprecated. Use CocoaUI's openpanel and savepanel instead. As usual, deprecation is a prelude to removal, so update your code accordingly.

#### Printing - PrintInfo

In earlier releases, PrintInfo functions would configure the shared PrintInfo object. With this release, all PrintInfo functions require a PrintInfoRef parameter. **Warning: this change may break existing apps**

#### Views and Controls -

ViewController - The ViewControllerView function now returns a ViewRef, rather than a tag value. **Warning: this change may break existing apps**

PathControl - The PathControl widget is now available. See PathControl in FBHelp, PathControl.incl header and the PathControl Demo

### Editor related

#### Menu Bar

Now has a Debug menu which currently contains just one item, 'Include NSLog'. Choosing this item adds NSLog.incl to the top group of the front project or inserts an include statement at the top of the front document

#### User Keywords Panel

The User Keywords Panel now has a contextual menu containing one item, 'Show in Finder'. Choosing this item reveals the UserKeywords.plist file in the Application Support folder

#### Project

Option-clicking a project window file item now displays a list of the file's functions (three-finger trackpad touch does same thing)

#### Show Headers Folder ( on View menu )

Option-clicking a header reveals all its functions. Choosing a function from the list opens the header to that function and highlights it. (three-finger trackpad touch does same thing)

### Examples

**New example-** Views and Controls/PathControl

#### Updated 'Non-CocoaUI' demos are:

Non-CocoaUI demos/CoreFoundation/MDArray( multi-dimensional )  
Non-CocoaUI demos/CoreFoundation/CoreFoundation/CFThings in FB console  
Non-CocoaUI demos/Games/Connect4

---

20190830 FB 6.0.5

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

### Overview

This release reflects a major effort to consolidate the CocoaUI Reference and the FB Help Reference. Older FB Help Reference entries were updated only when necessary. Help is now html-based.

As noted in the 6.0.4 Explanatory Comments ( see release notes for 6.0.4 ), FB 6.0.5 continues the ongoing effort to streamline and simplify FB. Many of FB 6.0.4's cautionary notes still apply and Fbers should take action with their source. A review of those release notes is recommend with particular attention to the plan to remove linking against the Carbon.framework .

### FBtoC 5.8.9

Shows deprecation warnings for 'cocoa' keyword and 'cocoaalert' statement/function

'window close' and 'window output' statements now work with Cocoa windows  
Simpler macro declaration

## Editor 6.0.5

### Menus

Find menu moved out of Edit menu to menu bar  
Menus rearranged

### Project

New Project template updated  
Fixed: Internal drag/drop had stopped working in 6.0.3 and 6.0.4

### Document

More keywords supported in ctrl-click word  
Dragging a Headers file to a document window now adds an include statement in the document (e.g. **include** "NSLog.incl"), rather than the contents of the header.

### Preferences

Options to notify of build success or failure

### Find in Headers window ( opened via the 'Find' menu )

'Find in Apple Headers' added. Note: the older 'Search Apple Headers' app is retired, redundant and no longer included in bundle

### Help

HTML-based FBHelp updated and included in editor  
FB Reference.pdf file removed from help menu  
CocoaUI Reference.pdf removed from help menu

### General

Application Support directory name changed from "FBEditor" to "FutureBasic"  
Path for System.framework as used in Open "C" corrected  
Runtime bug fix corrects Open "C" failure

Minor bug fixes and improvements

## CocoaUI

### Changes that may break existing apps

1. CNContactPicker dialog event constant names changed. Now have 'cn' prefix such as `_cnContactPickerDidSelectContact`, etc.
2. CLLocationManager dialog event constant names changed. Now have 'cl' prefix such as `_clLocationManagerDidUpdateLocations`, etc.

The **cocoa** keyword is no longer required and will be removed soon

~~cocoa~~ box  
~~cocoa~~ button  
~~cocoa~~ menu  
~~cocoa~~ window

The **cocoaalert** statement/function is deprecated and will be removed soon. Use **alert** instead

### Headers changed

Graphics.incl

### New headers

SpeechRecognizer.incl  
SpeechSynthesizer.incl  
Stream.incl (includes InputStream + OutputStream)  
UbiquitousKeyValueStore.incl  
UserActivity.incl

---

20190808 FB 6.0.4

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

FB 6.0.0+ requires OS X 10.13+

**N.B.** Please read the following carefully *BEFORE* updating to this release.

## Overview and Explanatory Comments

This release is the first phase of an effort to streamline and simplify FB. Goals/Accomplishments:

1. Focus FB to create only 64-bit apps and not 32-bit. This release creates only 64-bit binaries.

2. Focusing on 64-bit only allows a significant reduction in the number of runtime headers FBtoC processes that are no longer necessary.

- a) FB Runtime headers were changed to exclude old Carbon code and in some cases ( serial I/O ) update code for 64-bit Cocoa.
- b) As noted above, this is the first phase. There is more work in the runtime but this is a good start.
- c) Internal testing shows better build times after reducing the includes processed. Makes sense right?

3. Reduce complexity and simplify where possible.

- a) it is no longer necessary to specify -m64 -DDECARBONATE. FBtoC adds those options automatically
- b) FBtoC finds the path to the developer folder automatically, so that popup has been removed from build settings
- c) it is no longer necessary to include Tlxb CocoaUI.incl or code 'cocoainit'.
- d) other improvements are planned but not implemented.

4. **Utility Headers N.B.** This release removes many of the 'Util\_xxxx.incl' headers ( see list below ).

These headers have been discouraged since CocoaUI's introduction ( because of the duplication and incompatibilities ) but many Fbers might still be using them. Many of the removed 'Util\_xxxx.incl' headers have incompatibilities with the current runtime, so keep this in mind if you elect option '4b' below.

Your options, with most preferred first, are:

- a) Switch to CocoaUI calls and remove your project's references to the old 'Util\_xxxx.incl' headers. Recommended approach.
- b) Make copies of the 'Util\_xxxx.incl' headers your project uses and store them in your project or the FB User Libraries directory ( i.e. /Users/yourUserID/Library/Application Support/FutureBasic/User Libraries ). Fber is responsible for resolving any incompatibilities ( see note above ) with existing runtime.
- c) Use the prior FB release ( 6.0.3 )

5. This release continues to link against the Carbon framework to allow some old structures ( FB records ) to build without errors but that will change in the next release or so. Some examples of these records are: EventRecord, RGBColor, Rect, DateTimeRec, LongDateRec, FSRef, AEDesc and others. If you're still using those or any Carbon-defined records, consider making your own local copies.

#### **FBtoC 5.8.8**

Build settings

- Path to Developer Folder popup removed
- -m64 -DDECARBONATE compiler options no longer required

Util\_xxxxxx.incl Headers removed:

Util\_CE.incl  
Util\_CFPrefs.incl  
Util\_CFPrefsCFStrings.incl  
Util\_CFUN.incl  
Util\_Dictionary.incl  
Util\_EUTCKeyFilter.incl  
Util\_FileDirectory.incl  
Util\_Files.incl  
Util\_Folders.incl  
Util\_MouseTracking.incl  
Util\_Nib.incl  
Util\_NibCFStrings.incl  
Util\_Number.incl  
Util\_Sound.incl  
Util\_Toolbar.incl  
Util\_UI.incl  
Util\_Workspace.incl

#### **FutureBasic 6.0.4**

General

- Builds only 64-bit apps. 32-bit app builds removed and not supported.
- "Tlxb CocoaUI.incl" header included automatically
- 'cocoainit' statement no longer required
- Bug fixes and tweaks

20190722FB 6.0.3

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

FB 6.0.0+ requires OS X 10.13+

#### **FBtoC 5.8.7**

Maximum function ( i.e. FB function 'fn' ) parameters increased to 40 (Brian)  
Cosmetic: log window scrollview border removed

## FutureBasic

### Preferences

Redesigned window. Prefs items split into three tabs: General, Fonts & Colors, Text Editing  
Document background color option added

### Document

Click in toolbar fn name label goes to first line of function only when click is within the function name label text  
Click in toolbar line number label brings up goto line number window only when click is within the line number label text  
Jump to Definition now does not select word but briefly shows find indicator and puts cursor at beginning of word  
Fix: cmd-double-click calls Jump to Definition, rather than its own code  
Line numbers and text wrap items removed from toolbar default set

### Project

Fix: dragging a header file to the project would copy the header file to the project directory  
Drag to project now shows 'Link' icon for Header files, 'Copy' icon for other files  
File icon size increased for Regular font size

### Headers window

Drag from Headers window to project enabled

### Errors window

Fix: double-click now opens \*.m file reliably (if appropriate)

### License agreement window

Redesigned

### FBEditor User Guide

Updated

Other minor bug fixes and tweaks

---

20190713 FB 6.0.2

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

FB 6.0.0+ requires OS X 10.13+

FB 6.0.2 release notes:

- Drag (move) and option-drag (copy) selection within document
- Drag copy selection between documents
- Document contextual menu for one-word widget statement show template syntax (select to paste)
- Find Definition for one-word widget statements opens widget header file
- Show Headers Folder displays Headers directory and CocoaUI directory in tabbed window
- Bug fixes and improvements

CocoaUI and FBtoC are unchanged for this release and carry forward from FB 6.0.1

---

20190702 FB 6.0.1

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached a page mentioning a prior version ]

FB 6.0.0+ requires OS X 10.13+

FB6.0.1 release notes:

### Project

- double-clicking an FB file item now opens the file in FB6, rather than FB5.
- option-clicking a group's expand/collapse triangle expands/collapses all groups
- two font sizes choices (small & regular) - set via preferences or project contextual menu

- find in project now has its own panel (project find & replace will be in next release)

#### Document

- Edit menu 'copy' removes leading tab characters and replaces divider line attachments with text equivalent before putting on pasteboard

### CocoaUI changes that may break existing apps

#### TextView

The textview statement's *subclass* parameter has been removed. Syntax is now:

*textview tag, rect, scrollViewTag, textContainerRef, wndTag*

N.B. to subclass a textview, use the **subclass** keyword (see CocoaUI Reference)

#### View

The view statement's *subclass* parameter has been removed. Syntax is now:

*view tag, rect, wndTag*

N.B. to subclass a view, use the **subclass** keyword (see CocoaUI Reference)

---

### CocoaUI Additions and changes

#### MenuItem

*additions*

#### TextView

*parameter removed*

The textview statement's *subclass* parameter has been removed. Use the subclass keyword instead (see CocoaUI Reference).

#### View

*parameter removed*

The view statement's *subclass* parameter has been removed. Use the subclass keyword instead (see CocoaUI Reference).

---

20190618 FB 6.0.0

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.8.5]

FB 6.0.0 requires OS X 10.13+

[01] The FBtoC website has been revamped/reorganized with links to 64-bit editors

---

20190610 FB 5.8.5

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.8.4]

FB 5.8.5 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI requires 10.6

### CocoaUI changes/additions and new demos

#### Changes that may break existing apps

##### OutlineView

Function name changed from `OutlineItemAddChild` to `OutlineItemAddChildWithString`

##### Tag value upper limit

Window and widget tag values must now be less than 1000000

---

### Additions and changes

#### Application

*additions*

#### Array

*additions*

#### AVPlayer

*addition*

## **AVPlayerView**

*additions*

## **Dictionary**

*additions*

## **IndexSet**

*additions*

## **NumberFormatter**

*additions*

## **OutlineView**

*additions and changes*

## **SplitView**

*additions*

## **SpriteKit**

*new*

See SpriteKit.pdf documentation in FB's Help menu and SKView demos

## **String**

*additions*

## **subclass**

*new keyword*

When placed next to a window or widget statement, a subclass of the window/widget is created.

Please read about the *subclass* statement in CocoaUI documentation.

## **TableViewCell**

*new*

## **TableColumn**

*new*

## **TableHeaderView**

*new*

## **TableView**

*additions*

## **TextView**

*parameter deprecation*

The textview statement's *subclass* parameter will be removed in the next release. Use the 'subclass' statement instead

## **Toolbar**

*change*

## **ToolbarItem**

*additions*

## **View**

*parameter deprecation*

The view statement's *subclass* parameter will be removed in the next release. Use the 'subclass' statement instead

## **Window**

*addition*

---

## **New demos**

Views and Controls/OutlineView/DragDrop/

DragDrop 1

DragDrop 2

DragDrop 3

Views and Controls/SKView

SK Demo 1

SK Demo 2

Views and Controls/SplitView  
SplitView - subview sizes  
SplitView - custom1  
SplitView - custom2  
SplitView - custom3

---

20190429 FB 5.8.4

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.8.3]

FB 5.8.4 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI requires 10.6

[01] New examples added:

- (a) 'List Metal-capable Devices' in Graphics directory
- (b) Timer examples in Processes and Threads/Timer
- (c) Several KeyLoop demos in /EventHandling/KeyViewLoop

[02] SQLiteDemoExpanded.bas demo and its companion Tlxb SQLite3Expanded.incl updated. Still in "Non-CocoaUI Demos" because it doesn't require CocoaUI.

[03] In addition to code signing, FBtoC is now notarized and uses Apple's "hardened" runtime. FBtoC has been code signed for a while now.

## **CocoaUI changes/additions and new demos**

### **Changes that may break existing apps**

#### **AVKit**

Header name changed from "Tlxb CocoUI\_AVKit.incl" to "Tlxb AVKit.incl"

#### **Contacts**

Header name changed from "Tlxb CocoUI\_Contacts.incl" to "Tlxb Contacts.incl"

#### **ContactsUI**

Header name changed from "Tlxb CocoUI\_ContactsUI.incl" to "Tlxb ContactsUI.incl"

#### **CoreLocation**

Header name changed from "Tlxb CocoUI\_CoreLocation.incl" to "Tlxb CoreLocation.incl"

#### **KeyedUnarchiver**

KeyedUnarchiverInitForReadingFromData function name changed to KeyedUnarchiverForReadingFromData

#### **MapKit**

Header name changed from "Tlxb CocoUI\_MapKit.incl" to "Tlxb MapKit.incl"

#### **Metal**

Header name changed from "Tlxb CocoUI\_Metal.incl" to "Tlxb Metal.incl"

#### **MTKView**

MTKViewInitWithFrame function name changed to MTKViewWithFrame

#### **PDFKit**

Header name changed from "Tlxb CocoUI\_PDFKit.incl" to "Tlxb PDFKit.incl"

---

### **Application**

*additions*

### **AttributedString**

*additions*

### **Calendar**

*addition*

### **CharacterSet**

*additions*

### **Color**

*addition*

**Control**  
*additions*

**FileManager**  
*additions*

**Font**  
*additions*

**Image**  
*additions*

**KeyedArchiver**  
*additions*

**KeyedUnarchiver**  
*additions*

*change*  
KeyedUnarchiverInitForReadingFromData function name changed to KeyedUnarchiverForReadingFromData

**Locale**  
*additions*

**MTKView**  
*change*  
MTKViewInitWithFrame function name changed to MTKViewWithFrame

**Port**  
*new*

**RunLoop**  
*new*

**Sound**  
*additions*

**TextContainer**  
*additions*

**TextField**  
*additions*

**TextStorage**  
*additions*

**TextView**  
*additions*

**Thread**  
*additions*

**Timer**  
*change*  
For convenience, a timer callback function now takes an optional *userInfo* param

**TimeZone**  
*additions*

**URL**  
*additions*

**View**  
*addition*

**Window**  
*additions*

---

## **New demos**

Dates and Times  
CalendarEnumerateDates



EventHandling/KeyViewLoop  
DoCommandBySelector  
KeyViewLoop by Tag  
KeyViewLoop ordered by tag

Views and Controls/MapView/  
MapView  
MapView - directions  
MapView (nib)

Views and Controls/WebView/  
WebView  
WebView (nib)

---

20190319 FB 5.8.3

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.8.2]

FB 5.8.3 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI requires 10.6

[01] Util\_String.incl conditionally includes( via the new \_COCOAUI constant ) NSNotFound only when not previously defined ( usually by CocoaUI ). This fix and similar changes in Util\_FileManager.incl, Util\_PathUtilities.incl and Util\_URL.incl should eliminate redefined errors when implementing a new FB release.

[02] FBtoC's "Make Xcode Project" option use a new 64-bit template for those converting to Xcode.

## **CocoaUI changes/additions and new demos**

### **Changes that may break existing apps**

#### **AVKit**

All function names and variable types renamed to have 'AV' prefix.

---

#### **Appearance**

*addition*

#### **AttributedString**

*additions*

#### **AVKit**

*changes*

All function names and variable types now have 'AV' prefix.

#### **Contacts**

*new*

#### **ContactsUI**

*new*

#### **CoreLocation**

*new*

#### **Image**

*addition*

#### **MapKit**

*new*

#### **TableView**

*fix*

Editable cells in a multi-column table view didn't update table data.

#### **URLRequest**

*new*

#### **URLSession**

*new*

#### **View**

*change*

ViewEffectiveAppearance function can now take zero tag value. When zero is specified, an off-screen, autoreleased view will be used.

## **WebKit**

*new*

---

## **New demos**

Networking/

URLSession

---

FB 5.8.2 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] Build Settings' Compiler Options popup menu defaults to '-m64 -DDECARBONATE' instead of 'None' and 10.14( if available ) BaseSDK.

Primary goal: Decrease newbie's steps to run an initial simple app( like "Hello World" ) by avoiding 32-bit options and the folderol entailed such as the 10.6 SDK quest and FixSDK's subsequent voodoo.

[02] FB now supports Objective-C's literal syntax ( i.e. without resorting to BeginC/EndC ). Numbers, Arrays and Dictionaries are all supported. 'Literal Syntax Demos' is available in CocoaUI Demos

[03] NSLog.incl updated to display white text in Mojave's dark mode.

[04] A 'IsDarkMode' example is now available ( CocoaUI Demos - miscellaneous directory ).

[05] FinderInfo keyword translation fixed.

---

20190212 FB 5.8.1

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.8]

FB 5.8.1 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] Crash using FBtoC's "Make Xcode Project" caused by index out of bounds. Fix was applied to 5.8 binary shortly after its release. However, this doesn't fix the overall broken state of the "Make Xcode Project" ( with stripping )

[02] Apple Carbon Help calls such as AHGotoPage() were failing to link during a build. Carbon framework was omitted from link commands but will have to be removed when macOS 10.15 arrives ( because Carbon will be gone ). Fix was applied to 5.8 binary shortly after its release.

[03] New version ( 1.30 ) of FixSDK fixes two issues:

A. Clicking Fix All or Restore All would attempt to fix/restore a 10.14 sdk.

B. Fix All or Restore All buttons would sometimes be active even when all sdks were fixed or restored.

FB 5.8.0 was updated with the new FixSDK and supplied to the list on 5-Feb-2019.

[04] Couple more characters added to FBtoC's filename character whitelist. Added apostrophe.

[05] Bug: 'Edit Menu 2' translated incorrectly. Fixed.

[06] Internal buglet: Function prototypes and code with no parameters now generates '(void)' instead of '()'.  
Also some static cleanup of same issue for files within build\_goodies/CocoaUI.

[07] TWM, after an illustrious career building Carbon user interfaces, is retired and no longer available in FB.

Those still building Carbon user interfaces should save their own private copy.

N.B. TWM is obsolete and its author no longer supports it.

## **CocoaUI changes/additions and new demos**

--- Changes that may break existing apps ---

**StringFromRange** function name changed to **RangeToString**

---- New stuff/changes ----

**Array**

*addition*

**Bundle**

*additions*

**CharacterSet**

*additions*

**ComparisonPredicate**

*new*

**CompoundPredicate**

*new*

**DataDetector**

*new*

**Expression**

*new*

**Graphics**

*additions*

**KeyedArchiver**

*additions*

**KeyedUnarchiver**

*additions*

**LinguisticTagger**

*addition*

**NibMenu**

**NibPopover**

**NibToolbar**

**NibView**

**NibWindow**

*change:*

The *nibName* param in the above statements can now optionally take a file extension.  
If a file extension is not specified, either *.xib* or *.nib* is used.

**Range**

*new*

**Text**

*additions*

**UserDefaults**

*additions*

**View**

*additions*

---- New demos ---

Collections/Array

    ShuffledArray

Filters and Sorting/Expression

    Expression Evaluator

Strings and Text/HTML

    TextView HTML

Strings and Text/RegularExpression/

    Regex Find Link

---

20190127 FB 5.8.0

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.120]

FB 5.8.0 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

FB's version bump to 5.8.0 reflects a gradual move to exclusively 64-bit builds. It also includes early steps to update various aspects of internal code.

[01] FBtoC now accepts and builds CFString constants and DATA statements longer than 255 characters. Key internal data structures and dependent code were switched away from length-limited pascal strings to achieve this.

[02] 32-bit builds are now deprecated and now generate a warning to switch to 64-bit builds. Please note: FBtoC/FB will build 64-bit apps exclusively at some future date and will **not** generate 32-bit apps.

Users with 32-bit apps have a couple of choices:

- a. Save an FB version that supports 32-bit builds
- b. Update your code to support 64-bit builds.

[03] FBtoC now accepts both .xib and .nib files.

[04] Crash using FBtoC's "Make Xcode Project..." caused by early object release is fixed.

[05] FBtoC's unix utility, mkdir(), fails if the path name contains any unacceptable characters; this failure can generate obscure FBtoC crashes. Code now rejects with an error message any source path containing characters not in:

A-Z( upper/lower case ) digits 0-9, underscore, hyphen, asterisk, percent symbol, hash symbol, '\$' sign, close/open parenthesis, backslash, forward slash and space. Since I haven't found a list of characters mkdir() accepts, it's possible this character list will need amending. From my experience one unacceptable is 'f'. If any of the "acceptable" characters are found "unacceptable" by mkdir(), please post on list so FBtoC can be updated. Thank you.

[06] Redundant includes( for FBtoC.h and Runtime.h ) removed from FBtoC's internal versions of General.c, Containers.c, FileHandling.c, FileHandlingUtils.h/.m and AppThings.m. Please note: these changes were tailored to FBtoC's needs and were not made to build\_goodies versions of these files.

07] Several internal FBtoC bugs fixed.

---

20181112 FB 5.7.120

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.119]

FB 5.7.120 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] FixSDK updated to prevent fixing or restoring a 10.14 SDK by hiding the Fix/Restore button for it.

This update was pushed out on 26-Oct-2018 and updated the FB 5.7.119 download.

## **CocoaUI changes/additions and new demos**

### **Changes that may throw up warnings**

#### **TextView**

TextViewTextStorage function return value changed from CFMutableAttributedStringRef to TextStorageRef  
A cast may now be required to silence compiler warning

---

### **Changes that may break existing apps**

#### **FontManager**

FontManagerSetSelectedFont( CTNSFontRef font ) now takes an extra param FontManagerSetSelectedFont( CTNSFontRef font, Boolean isMultiple )

#### **TextView**

The textview statement now has an extra 'subclass' param. **textview tag, rect, scrollViewTag, textContainerRef, subclass, wndTag**

#### **Workspace**

WorkspaceFileTypeConformToType name changed to WorkspaceFileTypeConformsToType (typo fix)

---

### **Application**

*addition*

**Array**

*additions*

**AttributedString**

*additions*

**BitmapImageRep**

*additions*

**Color**

*additions*

**ColorList**

*additions and change*

**ColorSpace**

*new*

**Compiler**

*new*

**Dictionary**

*additions*

**DraggingInfo**

*additions*

**Error**

*addition*

**FileManager**

*additions*

**FontDescriptor**

*additions*

**FontManager**

*additions*

*change:*

FontManagerSetSelectedFont now takes an extra param FontManagerSetSelectedFont( CTNSFontRef font, Boolean isMultiple )

**Geometry**

*additions:*

StringFromRange( CFRange range ) = CFStringRef

RangeFromString( CFStringRef string ) = CFRange

**GestureRecognizer**

*additions*

**GlyphGenerator**

*new*

**Gradient**

*additions*

**Image**

*addition*

**LayoutManager**

*additions*

**Menu**

*additions*

**MenuItem**

*additions*

**PopUpButton**

*additions*

**RegularExpression**

*new*

**Scroller**  
*additions*

**ScrollView**  
*additions*

**SecureTextField**  
*addition*

**SearchField**  
*additions*

**SegmentedControl**  
*additions*

**SplitView**  
*additions*

**String**  
*additions*

**TextCheckingResult**  
*new*

**TextList**  
*new*

**TextStorage**  
*additions*

**TextTable**  
*new*

**TextView**  
*changes:*

TextViewTextStorage now returns a TextStorageRef

The textview statement now has an extra 'subclass' param. **textview** *tag, rect, scrollViewTag, textContainerRef, subclass, wndTag*

*additions*

**TokenField**  
*additions*

**Toolbar**  
*additions*

**ToolbarItem**  
*additions*

**UserDefaultsController**  
*new*

**View**  
*additions*

**Window**  
*additions*

**WindowTab**  
*new*

**WindowTabGroup**  
*new*

**Workspace**  
*additions*

*typo fix:*

WorkspaceFileTypeConformToType name corrected to WorkspaceFileTypeConformsToType

---

## **New demos**

Graphics/Gradient  
  Gradient3  
  Gradient4

Numbers  
  Value Demo

Processes and Threads/Task  
  Codesign Verifier II

Strings and Text/Regular Expression  
  Regex Find Years.bas  
  Regex Find Numbers.bas  
  Regex Email Verifier

Views and Controls/TextView  
  Table Thingy

Views and Controls/View  
  ShowDefinition

Windows and Panels/Window  
  WindowTab AccessoryView

Files/Workspace  
  Workspace Notifications

---

20180928 FB 5.7.119

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.118]

FB 5.7.119 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] Building 64-bit and targeting an 'unfixed' SDK produces a warning sheet( 'missing Quickdraw headers' ) when setting FBtoC's BaseSDK. Fixed.

Note: as of FB 5.7.117, 'fixing' SDKs is *not* necessary when building 64-bit apps. i.e. unfixed SDKs can be used.

## **CocoaUI changes/additions and new demos**

### **Changes that may break existing apps**

#### **Dictionary**

DictionaryWithContentsOfURL now takes an extra param: DictionaryWithContentsOfURL( CFURLRef url, ErrorRef \*err ) = CFDictionaryRef

DictionaryWriteToURL last param type changed: DictionaryWriteToURL( CFDictionaryRef dict, CFURLRef url, ErrorRef \*err ) = Boolean

#### **FileManager**

FileManagerURLForTemporaryDirectory name change to match NSFileManager method: FileManagerTemporaryDirectory

#### **Window**

WindowSetFrame now takes two additional params. WindowSetFrame( NSInteger tag, CGRect frame, Boolean display, Boolean animate )

---

### **Appearance**

*additions*

### **Application**

*additions*

### **AttributedString**

*additions*

### **CAAnimation**

*new*

### **CAKeyframeAnimation**

*new*

## **CAMediaTiming**

*new*

## **CAMediaTimingFunction**

*new*

## **CAPropertyAnimation**

*new*

## **CAValueFunction**

*new*

## **Dictionary**

*changes:*

DictionaryWithContentsOfURL now takes an extra param: DictionaryWithContentsOfURL( CFURLRef url, ErrorRef \*err ) = CFDictionaryRef

DictionaryWriteToURL last param type changed: DictionaryWriteToURL( CFDictionaryRef dict, CFURLRef url, ErrorRef \*err ) = Boolean

## **FileManager**

*change:*

FileManagerURLForTemporaryDirectory name change to match NSFileManager method: FileManagerTemporaryDirectory

## **FileWrapper**

*new*

## **JSONSerialization**

*new*

## **TableRowView**

*new*

## **TextAttachment**

*new*

## **View**

*additions*

## **Window**

*change:*

WindowSetFrame now takes two additional params. WindowSetFrame( NSInteger tag, CGRect frame, Boolean display, Boolean animate )

## **Workspace**

*addition*

---

## **New demos**

Menu

    Override Edit menu

UserDefaults

    UserDefaults

Views and Controls/VisualEffectView

    VisualEffectView

Windows and Panels/Window

    Overlay window

---

20180823 FB 5.7.118

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.117]

FB 5.7.118 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] ToolbarItemExists throws up a 'duplicate symbol' error due to a function of the same name in Util\_Toolbar.incl when building 5.7.117. For now the CocoaUI function is commented out and awaiting a possible later introduction.

[02] Reorganized CocoaUI runtime caused compile errors due to missing declarations in the .h file. Fixed in an updated 5.7.117



[03] Tlxb Dispatch.incl and Tlxb clock\_types.incl included in an update 5.7.117  
[04] FB Help for time\$/TimeCFString and date\$/DateCFString updated. Included in an update 5.7.117  
[05] Stray unwanted files (build\_temp, invisibles ) removed from build. Included in an update 5.7.117  
[06] TWM.app replaced with one that doesn't crash on quit. Included in an update 5.7.117  
[07] Some of FB's Help menu items were not showing up. Code updated to NSFileManager. Included in an update 5.7.117

## **CocoaUI changes/additions and new demos**

### **Changes that may break existing apps**

#### **1. Application**

AppSetTimer now returns a CFRunLoopTimerRef so calls to this function must be preceded by 'fn'

#### **2. OperationQueue**

OperationQueueAddOperationWithFunction now takes an extra 'obj' param (can be NULL)

#### **3. Window**

WindowCascadeTopLeftFromPoint now returns a CGPoint value therefore calls to this function must be preceded by 'fn'

---

### **Alert**

*changes:*

An alert is automatically removed from the alert list once dismissed so there is now no need to call AlertRemove.

*addition:*

AlertWindow( NSInteger tag ) = CocoaWindowRef

### **Application**

*change:*

AppSetTimer now returns a CFRunLoopTimerRef

### **AVKit**

New headers and additions to existing headers.

### **ColorList**

*new:*

See ColorList.incl header and demo

### **ColorPanel**

*addition:*

ColorPanelAttachColorList( ColorListRef cl )

ColorPanelDetachColorList( ColorListRef cl )

### **Date**

*addition:*

DateStringWithFormat( CFStringRef format ) = CFStringRef

### **LevelIndicator**

*fix:*

The value of an existing levelindicator can now be changed using the levelindicator statement

### **MenuItem**

*addition:*

MenuItemSetTitle( NSInteger menuIndex, NSInteger itemIndex, CFStringRef title )

### **Object**

*additions:*

ObjectPerformSelector( CTypeRef obj, CFStringRef selector, CTypeRef withObj, CFTimeInterval afterDelay )

ObjectCallFunction( ptr fnAddress, CTypeRef withObj, CFTimeInterval afterDelay )

### **OperationQueue**

*change:*

OperationQueueAddOperationWithFunction now takes a third param (obj)

### **Pasteboard**

*additions:*

PasteboardWithName( CFStringRef name ) = CocoaPasteboardRef

PasteboardWithUniqueName = CocoaPasteboardRef

PasteboardReleaseGlobally( CocoaPasteboardRef pb )

## PopUpButton

*change:*

When an array or semicolon delimited list of strings is used in the popupbutton statement's items parameter, a dash character (-) is now converted to a menu separator.

## ProgressIndicator

*fix:*

The value of an existing progressindicator can now be changed using the progressindicator statement

## RulerMarker

*new:*

See RulerMarker.incl header

## RulerView

*new:*

See RulerView.incl header and demo

## ScrollView

*additions:*

```
ScrollViewHorizontalRulerView(NSInteger tag) = RulerViewRef
ScrollViewSetHorizontalRulerView(NSInteger tag, RulerViewRef ruler)
ScrollViewVerticalRulerView(NSInteger tag) = RulerViewRef
ScrollViewSetVerticalRulerView(NSInteger tag, RulerViewRef ruler)
```

## Slider

*fix:*

The value of an existing slider can now be changed using the slider statement

## Stepper

*fix:*

The value of an existing stepper can now be changed using the stepper statement

## TextView

*additions:*

```
TextViewDefaultParagraphStyle(NSInteger tag) = ParagraphStyleRef
TextViewSetDefaultParagraphStyle(NSInteger tag, ParagraphStyleRef style)
```

## Window

*change:*

WindowCascadeTopLeftFromPoint now matches the NSWindow method and returns a CGPoint value

*additions:*

```
WindowIsOpaque(NSInteger tag) = Boolean
WindowSetOpaque(NSInteger tag, Boolean flag)
WindowEndSheetAlert(NSInteger tag, NSInteger alertTag)// macOS 10.9+
```

---

## New demos

Views and Controls/TextView/  
RulerViewRegisterUnit  
TextView Selection

Windows and Panels/ColorPanel/  
ColorListDemo

---

20180724 FB 5.7.117

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.116]

FB 5.7.117 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] FBtoC's "Make Xcode Project..." would warn to add the Quartz.framework manually to the generated Xcode project. FBtoC now asks clang to link against the Quartz.framework which solves the problem and eliminates the warning. The 'include library "Quartz"' line of code was removed from Rntm Appearance.incl since the FBtoC change renders it unnecessary. This fix applies to standard FB user app builds too.

[02] The multi-dimensional object array ( MDAArray.incl ) utilities were updated to support multiple indices. See FB Examples ( FB\_5\_7\_117\_Examples/Non-CocoaUI demos/CoreFoundation/MDAArray ( multi-dimensional) ) for the include and demos.

[03] FB Help Additions and Changes

- (a) FB's new 'for..in' object iterator loop now documented in the 'for' loop section
- (b) FB's dialog function and user-designated event handling function ( i.e. fn DoDialog ) are detailed more in the dialog( CocoaUI ) section.
- (c) The 'on dialog' page was updated.

[04] Renamed header, TextServices.tlxb, to Tlxb TextServices.incl

[05] IOKit Headers ( OSX IOKitLib.incl, OSX IOSerialKeys.incl, OSX termios.incl ) updated

[06] 'AccessoryView with CocoaUI' example ( Examples/Non-CocoaUI demos/Files/OSPanel examples ) fails in 64-bit updated to use cocoainit.

[07] New NSLog example shows debugging macro usage. Currently in: Non-CocoaUI demos/Debug/Debugging Macros and /CocoaUI demos/Debug

## **CocoaUI changes/additions and new demos**

### **Changes that may break your app**

1. AffineTransform  
AffineTransform function name changed to AffineTransformInit
2. BezierPath  
BezierPath function name changed to BezierPathInit
3. IndexSet  
IndexSet function name changed to IndexSetInit
4. PrintPanel  
PrintPanel function name changed to PrintPanelInit
5. ProcessInfo  
ProcessInfo function name changed to ProcessInfoInit
6. TextContainer  
TextContainerInit function name changed to TextContainerWithSize
7. TextView  
The **textview** statement change - now takes an extra param  
textview tag, rect, scrollTag, textContainerRef, wndTag

### **AffineTransform**

*function name change:*

AffineTransformInit - was AffineTransform

### **AttributedString**

*addition:*

AttributedStringAppendCharacters( CFMutableAttributedStringRef aString, CFStringRef string )

### **BezierPath**

*function name change:*

BezierPathInit - was BezierPath

### **BitmapImageRep**

*new:*

See BitmapImageRep.incl header

### **CIDetector**

*new:*

See CIDetector.incl header and demo

### **CIFilter**

*new:*

See CIFilter.incl header and demo

### **CImage**

*new:*

See CImage.incl header and demo

### **CIQRCodeFeature**

*new:*

See CIQRCodeFeature.incl header and demo

### **ImageRep**

*new:*

See ImageRep.incl header

### **ImageView**

*dialog event:*

The imageview now triggers \_btnClick dialog event when an image file is dropped onto an editable view

## **IndexSet**

*function name change:*

IndexSetInit - was IndexSet

## **LayoutManager**

*new:*

See LayoutManager.incl header and demo

## **Menu**

*param change:*

MenuSetTag( NSInteger menuIndex, NSInteger tag ) - itemIndex param removed

*additions:*

MenuBarVisible = Boolean

MenuIsHidden( NSInteger menuIndex ) = Boolean

MenuSetHidden( NSInteger menuIndex, Boolean flag )

MenuIsHiddenOrHasHiddenAncestor( NSInteger menuIndex ) = Boolean

## **MenuItem**

*additions:*

MenuItemIsHidden( NSInteger menuIndex, NSInteger itemIndex ) = Boolean

MenuItemSetHidden( NSInteger menuIndex, NSInteger itemIndex, Boolean flag )

MenuItemIsHiddenOrHasHiddenAncestor( NSInteger menuIndex, NSInteger itemIndex ) = Boolean

## **Number**

*addition:*

NumberObjCType( CFNumberRef number ) = CFStringRef

## **OpenPanel**

*new:*

See OpenPanel.incl header and demos

## **PDFInfo**

*new:*

See PDFInfo.incl header

## **PDFPanel**

*new:*

See PDFPanel.incl header

## **PrintPanel**

*function name change:*

PrintPanelInit - was PrintPanel

## **ProcessInfo**

*function name change:*

ProcessInfoInit - was ProcessInfo

## **SavePanel**

*new:*

See SavePanel.incl header and demos

## **String**

*additions:*

StringWithCString( const char \*cString, NSStringEncoding encoding ) = CFStringRef

StringWithUTF8String( const char \*cString ) = CFStringRef

StringCStringUsingEncoding( CFStringRef string, NSStringEncoding enc ) = ptr

## **Text**

*additions:*

TextMaxSize( NSInteger tag ) = CGSize

TextSetMaxSize( NSInteger tag, CGSize size )

TextMinSize( NSInteger tag ) = CGSize

TextSetMinSize( NSInteger tag, CGSize size )

TextIsVerticallyResizable( NSInteger tag ) = Boolean

TextSetVerticallyResizable( NSInteger tag, Boolean flag )

TextIsHorizontallyResizable( NSInteger tag ) = Boolean

TextSetHorizontallyResizable( NSInteger tag, Boolean flag )

TextSizeToFit( NSInteger tag )

## **TextContainer**

*change:*

TextContainerWithSize( CGSize size ) = TextContainerRef - was TextContainerInit

## **TextStorage**

*new:*

See TextStorage.incl header and demo

## **TextView**

*addition:*

TextViewSetWordWrap( NSInteger tag, Boolean flag )

*statement change:*

textView tag, rect, scrollTag, textContainerTag, wndTag

## **Timer**

*new:*

See Timer.incl header and demos

## **View**

*addition:*

ViewExists( NSInteger tag ) = Boolean

ViewVisibleRect( NSInteger tag ) = CGRect

## **New demos**

Graphics/Core image

QR Coder

QR Code Reader

Graphics/Images and PDF

BitmapImageRep Demo

Task Management/Timer

TimerScheduledWithInterval

TimerWithFireDate

Views and Controls/TextView

TextView - Wordwrap

TextView - Two Columns

---

20180618 FB 5.7.116

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.115]

FB 5.7.116 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01]Fast Enumeration 'For...in' Loop

Collection types currently supported: CFArray, CFMutableArray, CFDictionary, CFMutableDictionary, CFSet, CFMutableSet, OrderedSet, MutableOrderedSet, CountedSet, PointerArray.

[02] Stop statement changed (AppThings.c) to use kCFStringEncodingUTF8 for message string

[03] Bug fix to OPEN "I" to allow 'file not found' reporting with FB's file I/O error handling.

## **CocoaUI changes/additions and new demos**

### **Changes that may break your app**

1. BundleExecutableURL name changed due to typo.
2. GraphicsShowAnimationEffect name changed to NSGraphicsShowAnimationEffect

## **Alert**

*addition:*

AlertAddButtonWithTitle( NSInteger tag, CFStringRef title )

## **AppleEventDescriptor**

*new:*

See AppleEventDescriptor.incl header

## **Array**

*additions:*

ArrayFirstObjectCommonWithArray( CFArrayRef array1, CFArrayRef array2 ) = CFTypeRef

ArraysEqualToArray( CFArrayRef array1, CFArrayRef array2 ) = Boolean

ArrayByAddingObject( CFArrayRef array, CFTypeRef obj ) = CFArrayRef

ArrayByAddingObjectsFromArray( CFArrayRef array1, CFArrayRef array2 ) = CFArrayRef

ArraySubarrayWithRange( CFArrayRef array, CFRange range ) = CFArrayRef  
ArraySortedArrayUsingSelector( CFArrayRef array, CFStringRef selector ) = CFArrayRef

## **Bundle**

*typo fix:*

BundleExecutableURL

*additions:*

BundleURLsForResources( BundleRef bundle, CFStringRef extension, CFStringRef subdirectory ) = CFArrayRef  
BundleImageForResource( BundleRef bundle, CFStringRef name ) = ImageRef  
BundleURLForResource( BundleRef bundle, CFStringRef name ) = CFURLRef  
BundleLocalizedString( BundleRef bundle, CFStringRef key, CFStringRef value, CFStringRef table ) = CFStringRef  
BundleContextHelp( BundleRef bundle, CFStringRef key ) = CFAttributedStringRef  
BundleExecutableURL( BundleRef bundle ) = CFURLRef  
BundlePrivateFrameworksURL( BundleRef bundle ) = CFURLRef  
BundleSharedFrameworksURL( BundleRef bundle ) = CFURLRef  
BundleBuiltInPlugInsURL( BundleRef bundle ) = CFURLRef  
BundleURLForAuxiliaryExecutable( BundleRef bundle, CFStringRef name ) = CFURLRef  
BundleSharedSupportURL( BundleRef bundle ) = CFURLRef  
BundleAppStoreReceiptURL( BundleRef bundle ) = CFURLRef  
BundleLocalizations( BundleRef bundle ) = CFArrayRef  
BundlePreferredLocalizations( BundleRef bundle ) = CFArrayRef  
BundleDevelopmentLocalization( BundleRef bundle ) = CFStringRef  
BundleLocalizedInfoDictionary( BundleRef bundle ) = CFDictionaryRef  
BundlePreferredLocalizationsFromArray( CFArrayRef localizationsArray ) = CFArrayRef  
BundlePreferredLocalizationsFromArrayForPreferences( CFArrayRef localizationsArray, CFArrayRef preferencesArray ) = CFArrayRef

## **ByteCountFormatter**

*new:*

See ByteCountFormatter.incl header and demo

## **CAGradientLayer**

*new:*

See CAGradientLayer.incl header and demo

## **CALayer**

*new:*

See CALayer.incl header and demos

## **Calendar**

*new:*

See Calendar.incl header

## **CAReplicatorLayer**

*new:*

See CAReplicatorLayer.incl header and demos

## **CAScrollLayer**

*new:*

See CAScrollLayer.incl header and demo

## **CAShapeLayer**

*new:*

See CAShapeLayer.incl header and demo

## **CATextLayer**

*new:*

See CATextLayer.incl header and demo

## **CATransform3D**

*new:*

See CATransform3D.incl header

## **CATransformLayer**

*new:*

See CATransformLayer.incl header and demos

## **ClickGestureRecognizer**

*new:*

See ClickGestureRecognizer.incl header and demos

## **ColorPanel**

*new:*

\_colorPanelChangeColor dialog event

*additions:*

ColorPanellsContinuous = Boolean  
ColorPanelSetContinuous( Boolean flag )  
ColorPanelMode = NSColorPanelMode  
ColorPanelSetActionCallback( ptr callback, ptr userData )  
ColorPanelShowsAlpha = Boolean

### **CountedSet**

*new:*

See CountedSet.incl header and demo

### **Calendar**

*new:*

See Calendar.incl header

### **ColorPanel**

*additions:*

ColorPanellsContinuous = Boolean  
ColorPanelSetContinuous( Boolean flag )  
ColorPanelMode = NSColorPanelMode  
ColorPanelSetActionCallback( ptr callback, ptr userData )  
ColorPanelShowsAlpha = Boolean

### **ComboBox**

*additions:*

ComboBoxHasVerticalScroller( NSInteger tag ) = Boolean  
ComboBoxIntercellSpacing( NSInteger tag ) = CGSize  
ComboBoxIsBordered( NSInteger tag ) = Boolean  
ComboBoxItemHeight( NSInteger tag ) = CGFloat  
ComboBoxNumberOfVisibleItems( NSInteger tag ) = NSInteger  
ComboBoxDeselectItemAtIndex( NSInteger tag, NSInteger index )

### **Control**

*addition:*

ControlLineBreakMode( NSInteger tag ) = NSLineBreakMode

### **Data**

*new:*

See Data.incl header

### **Date**

*additions:*

DateDistantFuture = CFDateRef  
DateDistantPast = CFDateRef  
DateIsEqualToDate( CFDateRef dt1, CFDateRef dt2 ) = Boolean  
DateEarlierDate( CFDateRef dt1, CFDateRef dt2 ) = CFDateRef  
DateLaterDate( CFDateRef dt1, CFDateRef dt2 ) = CFDateRef  
DateCompare( CFDateRef dt1, CFDateRef dt2 ) = NSComparisonResult  
DateTimeIntervalSinceDate( CFDateRef dt1, CFDateRef dt2 ) = CFTimeInterval  
DateTimeIntervalSinceNow( CFDateRef dt ) = CFTimeInterval  
DateTimeIntervalSinceReferenceDate( CFDateRef dt ) = CFTimeInterval  
DateTimeIntervalSince1970( CFDateRef dt ) = CFTimeInterval  
DateByAddingTimeInterval( CFDateRef dt, CFTimeInterval secs ) = CFDateRef  
DateDescription( CFDateRef dt ) = CFStringRef  
DateDescriptionWithLocale( CFDateRef dt, CFLocaleRef locale ) = CFStringRef

### **DateComponents**

*new:*

See DateComponents.incl header and demo

### **DateComponentsFormatter**

*new:*

See DateComponentsFormatter.incl header

### **DateFormatter**

*new:*

See DateFormatter.incl header and demo

### **DateInterval**

*new:*

See DateInterval.incl header

## **DateIntervalFormatter**

*new:*

See DateIntervalFormatter.incl header

## **DatePicker**

*additions:*

DatePickerCalendar( NSInteger tag ) = CFCalendarRef

DatePickerSetCalendar( NSInteger tag, CFCalendarRef cal )

## **DecimalNumber**

*new:*

See DecimalNumber.incl header and demos

## **DialogEvent**

*addition:*

DialogEventColor = ColorRef

## **Dictionary**

*additions:*

DictionaryKeysSortedByValueUsingSelector( CFDictionaryRef dict, CFStringRef selector ) = CFArrayRef

DictionaryFileSize( CFDictionaryRef dict ) = UInt64

DictionaryFileType( CFDictionaryRef dict ) = CFStringRef

DictionaryFileCreationDate( CFDictionaryRef dict ) = CFDateRef

DictionaryFileModificationDate( CFDictionaryRef dict ) = CFDateRef

DictionaryFilePosixPermissions( CFDictionaryRef dict ) = NSUInteger

DictionaryFileOwnerAccountID( CFDictionaryRef dict ) = CFNumberRef

DictionaryFileOwnerAccountName( CFDictionaryRef dict ) = CFStringRef

DictionaryFileGroupOwnerAccountID( CFDictionaryRef dict ) = CFNumberRef

DictionaryFileGroupOwnerAccountName( CFDictionaryRef dict ) = CFStringRef

DictionaryFileExtensionHidden( CFDictionaryRef dict ) = Boolean

DictionaryFilesImmutable( CFDictionaryRef dict ) = Boolean

DictionaryFilesAppendOnly( CFDictionaryRef dict ) = Boolean

DictionaryFileSystemFileNumber( CFDictionaryRef dict ) = NSUInteger

DictionaryFileHFSTypeCode( CFDictionaryRef dict ) = OSType

DictionaryFileHFSCreatorCode( CFDictionaryRef dict ) = OSType

## **FileHandle**

*new:*

See FileHandle.incl header and demo

## **Font**

*additions:*

FontUserFontOfSize( CGFloat size ) = FontRef

FontBoldSystemFontOfSize( CGFloat size ) = FontRef

FontControlContentFontOfSize( CGFloat size ) = FontRef

FontLabelFontOfSize( CGFloat size ) = FontRef

FontMenuFontOfSize( CGFloat size ) = FontRef

FontMenuBarFontOfSize( CGFloat size ) = FontRef

FontMessageFontOfSize( CGFloat size ) = FontRef

FontMonospacedDigitSystemFontOfSize( CGFloat size, CGFloat weight ) = FontRef

FontPaletteFontOfSize( CGFloat size ) = FontRef

FontSystemFontOfSize( CGFloat size ) = FontRef

FontSystemFontOfSizeAndWeight( CGFloat size, CGFloat weight ) = FontRef

FontTitleBarFontOfSize( CGFloat size ) = FontRef

FontToolTipsFontOfSize( CGFloat size ) = FontRef

FontDescriptor( FontRef font ) = FontDescriptorRef

FontLabelFontSize = CGFloat

FontSmallSystemFontSize = CGFloat

FontSystemFontSize = CGFloat

FontSystemFontSizeForControlSize( NSControlSize size ) = CGFloat

FontAscender( FontRef font ) = CGFloat

FontBoundingRectForFont( FontRef font ) = CGRect

FontCapHeight( FontRef font ) = CGFloat

FontDescender( FontRef font ) = CGFloat

FontItalicAngle( FontRef font ) = CGFloat

FontLeading( FontRef font ) = CGFloat

FontMatrix( FontRef font ) = ptr

FontSize( FontRef font ) = CGFloat

FontUnderlinePosition( FontRef font ) = CGFloat

FontUnderlineThickness( FontRef font ) = CGFloat

FontXHeight( FontRef font ) = CGFloat

FontDisplayName( FontRef font ) = CFStringRef

FontFamilyName( FontRef font ) = CFStringRef

FontName( FontRef font ) = CFStringRef



FontSetUserFont( FontRef font )

## FontManager

*additions:*

FontManagerAvailableFonts = CFArrayRef

FontManagerAvailableFontFamilies = CFArrayRef

FontManagerAvailableFontNamesWithTraits( NSFontTraitMask traits ) = CFArrayRef

FontManagerAvailableMembersOfFontFamily( CFStringRef fam ) = CFArrayRef

## GestureRecognizer

*new:*

See GestureRecognizer.incl header and demos

## Graphics

*additions:*

NSDrawThreePartImage( CGRect frame, ImageRef startCap, ImageRef centerFill, ImageRef endCap, Boolean vertical, NSCompositingOperation op, CGFloat alphaFraction, Boolean flipped )

NSDrawNinePartImage( CGRect frame, ImageRef tl, ImageRef t, ImageRef tr, ImageRef l, ImageRef c, ImageRef r, ImageRef bl, ImageRef b, ImageRef br, NSCompositingOperation op, CGFloat alphaFraction, Boolean flipped )

NSEraseRect( CGRect r )

NSFrameRect( CGRect r )

NSFrameRectWithWidth( CGRect r, CGFloat frameWidth )

NSFrameRectWithWidthUsingOperation( CGRect r, CGFloat frameWidth, NSCompositingOperation operation )

NSRectFillUsingOperation( CGRect r, NSCompositingOperation operation )

NSRectFill( CGRect r )

*change:*

GraphicsShowAnimationEffect function name changed to NSShowAnimationEffect

## IndexPath

*new:*

See IndexPath.incl header

## IndexSet

*additions:*

IndexSetEnumerateRangesInRange( IndexSetRef set, CFRange range, NSEnumerationOptions options, ptr callback, ptr userData )

IndexSetEnumerateRanges( IndexSetRef set, ptr callback, ptr userData )

IndexSetEnumerateRangesWithOptions( IndexSetRef set, NSEnumerationOptions options, ptr callback, ptr userData )

IndexSetIndexLessThan( IndexSetRef set, NSUInteger value ) = NSUInteger

IndexSetIndexLessThanOrEqualTo( IndexSetRef set, NSUInteger value ) = NSUInteger

IndexSetIndexGreaterThanThanOrEqualTo( IndexSetRef set, NSUInteger value ) = NSUInteger

IndexSetIndexGreaterThan( IndexSetRef set, NSUInteger value ) = NSUInteger

IndexSetEnumerateIndexes( IndexSetRef set, ptr callback, ptr userData )

IndexSetEnumerateIndexesWithOptions( IndexSetRef set, NSEnumerationOptions options, ptr callback, ptr userData )

IndexSetEnumerateIndexesInRange( IndexSetRef set, CFRange range, NSEnumerationOptions options, ptr callback, ptr userData )

## LinguisticTagger

*new:*

See LinguisticTagger.incl and demo

## Locale

*new:*

See Locale.incl header

## MagnificationGestureRecognizer

*new:*

See MagnificationGR.incl header and demos

## NSDecimal

*new:*

See NSDecimal.incl header and demo

## NSHFSFileTypes

*new:*

See NSHFSFileTypes.incl header

## OrderedSet

*new:*

See OrderedSet.incl header

## PanGestureRecognizer

*new:*

See PanGestureRecognizer.incl header and demos

## ParagraphStyle

*new:*

See ParagraphStyle.incl header

## Pasteboard

*additions:*

PasteboardRefClearContents( CocoaPasteboardRef pb ) = NSInteger  
PasteboardRefWriteObjects( CocoaPasteboardRef pb, CFArrayRef objects ) = Boolean  
PasteboardRefSetStringForType( CocoaPasteboardRef pb, CFStringRef string, CFStringRef type ) = Boolean  
PasteboardRefItems( CocoaPasteboardRef pb ) = CFArrayRef  
PasteboardRefPropertyListForType( CocoaPasteboardRef pb, CFStringRef type ) = CFTypeRef  
PasteboardRefStringForType( CocoaPasteboardRef pb, CFStringRef type ) = CFStringRef  
PasteboardRefTypes( CocoaPasteboardRef pb ) = CFArrayRef  
PasteboardRefName( CocoaPasteboardRef pb ) = CFStringRef  
PasteboardRefChangeCount( CocoaPasteboardRef pb ) = NSInteger  
PasteboardSetStringForType( CFStringRef string, CFStringRef type ) = Boolean  
PasteboardStringForType( CFStringRef type ) = CFStringRef

## PDFThumbnailView

*new:*

The PDFThumbnailView can now be built programmatically  
**pdfthumbnailview** tag, rect, pdfViewTag, wndTag

## PDFView

*new:*

The PDFView can now be built programmatically  
**pdfview** tag, rect, pdfDocRef, wndTag

## Pipe

*new:*

See Pipe.incl header and demo

## PointerArray

*new:*

See PointerArray.incl header

## PointerFunctions

*new:*

See PointerFunctions.incl header

## PressGestureRecognizer

*new:*

See PressGestureRecognizer.incl header and demos

## Printer

*addition:*

PrinterDeviceDescription( PrinterRef printer ) = CFDictionaryRef

## PrintOperation

*addition:*

PrintOperationRunModal( PrintOperationRef printOperation, NSInteger wndTag, ptr callback, ptr userData )

## PrintPanel

*addition:*

PrintPanelBeginSheet( PrintPanelRef pp, PrintInfoRef printInfo, NSInteger wndTag, ptr callback, ptr userData )

## ProcessInfo

*new:*

See ProcessInfo.incl header

## ProgressIndicator

*additions:*

ProgressIndicatorUsesThreadedAnimation( NSInteger tag ) = Boolean  
ProgressIndicatorControlSize( NSInteger tag ) = NSControlSize  
ProgressIndicatorControlTint( NSInteger tag ) = NSControlSize  
ProgressIndicatorSetControlTint( NSInteger tag, NSControlTint tint )  
ProgressIndicatorIsBezeled( NSInteger tag ) = Boolean  
ProgressIndicatorSetBezeled( NSInteger tag, Boolean flag )  
ProgressIndicatorIsIndeterminate( NSInteger tag ) = Boolean  
ProgressIndicatorStyle( NSInteger tag ) = NSUInteger  
ProgressIndicatorSizeToFit( NSInteger tag )  
ProgressIndicatorIsDisplayWhenStopped( NSInteger tag ) = Boolean

## PropertyListSerialization

*new:*

See PropertyList.incl header and demo

## RotationGestureRecognizer

*new:*

See RotationGestureRecognizer.incl header and demos

## Scanner

*new:*

See Scanner.incl header and demo

## Scroller

*new:*

See Scroller.incl header

## ScrollView

*additions:*

ScrollViewHorizontalScroller( NSInteger tag ) = ScrollerRef

ScrollViewHasHorizontalScroller( NSInteger tag ) = Boolean

ScrollViewVerticalScroller( NSInteger tag ) = ScrollerRef

ScrollViewHasVerticalScroller( NSInteger tag ) = Boolean

ScrollViewAutohidesScrollers( NSInteger tag ) = Boolean

## Set

*new:*

See Set.incl header and demos

## Slider

*additions:*

SliderKnobThickness( NSInteger tag ) = CGFloat

SliderIsVertical( NSInteger tag ) = Boolean

SliderMaxValue( NSInteger tag ) = double

SliderSetMaxValue( NSInteger tag, double value )

SliderMinValue( NSInteger tag ) = double

SliderSetMinValue( NSInteger tag, double value )

SliderAllowsTickMarkValuesOnly( NSInteger tag ) = Boolean

SliderIndexOfTickMarkAtPoint( NSInteger tag, CGPoint pt ) = NSInteger

SliderNumberOfTickMarks( NSInteger tag ) = NSInteger

SliderSetNumberOfTickMarks( NSInteger tag, NSInteger value )

SliderRectOfTickMarkAtIndex( NSInteger tag, NSInteger index ) = CGRect

SliderTickMarkPosition( NSInteger tag ) = NSTickMarkPosition

SliderTickMarkValueAtIndex( NSInteger tag, NSInteger index ) = double

## StatusBar

*new:*

See StatusBar.incl header and demo

## StatusBarButton

*new:*

See StatusBarButton.incl header

## StatusItem

*new:*

See StatusItem.incl header and demo

## String

*additions:*

StringWithBytes( ptr bytes, NSUInteger length, NSStringEncoding encoding ) = CFStringRef

StringWithData( CFDataRef dta, NSStringEncoding encoding ) = CFStringRef

## TableView

*additions:*

TableViewType( NSInteger tag ) = NSTableViewType

TableViewControlTint( NSInteger tag ) = NSControlTint

TableViewDrawsBackground( NSInteger tag ) = Boolean

TableViewMinimumSize( NSInteger tag ) = CGSize

TableViewControlSize( NSInteger tag ) = NSControlSize

TableViewAllowsTruncatedLabels( NSInteger tag ) = Boolean

TableViewSetAllowsTruncatedLabels( NSInteger tag, Boolean flag )

TableViewPosition( NSInteger tag ) = NSTabPosition

TableViewSetPosition( NSInteger tag, NSTabPosition position )

TableViewBorderStyle( NSInteger tag ) = NSTableViewBorderStyle

TabViewSetBorderType( NSInteger tag, NSTabViewBorderType position )

### **Task**

*new:*

See Task.incl header and demo

### **Text**

*additions:*

TextReplaceCharactersInRangeWithString( NSInteger tag, CFRange range, CFStringRef string )

TextScrollRangeToVisible( NSInteger tag, CFRange range )

### **TextContainer**

*new:*

See TextContainer.incl header and demo

### **TextTab**

*new:*

See TextTab.incl header

### **TextView**

*additions:*

TextViewTextContainer( NSInteger tag ) = TextContainerRef

TextViewSetTextContainer( NSInteger tag, TextContainerRef tc )

TextViewReplaceTextContainer( NSInteger tag, TextContainerRef tc )

TextViewTextContainerInset( NSInteger tag ) = CGSize

TextViewSetTextContainerInset( NSInteger tag, CGSize inset )

TextViewTextContainerOrigin( NSInteger tag ) = CGPoint

TextViewInvalidateTextContainerOrigin( NSInteger tag )

### **URL**

*addition:*

URLIsEqual( CFURLRef url1, CFURLRef url2 ) = Boolean

### **UserNotification**

*new:*

See UserNotification.incl header and demos

### **UserNotificationAction**

*new:*

See UserNotificationAction.incl header and demos

### **UserNotificationCenter**

*new:*

See UserNotificationCenter.incl header and demos

### **Value**

*addition:*

ValueWithCATransform3D( CATransform3D t ) = ValueRef

### **View**

*additions:*

ViewLayer( NSInteger tag ) = CALayerRef

ViewSetLayer( NSInteger tag, CALayerRef layer )

ViewGestureRecognizers( NSInteger tag ) = CFArrayRef

ViewAddGestureRecognizer( NSInteger tag, GestureRecognizerRef ref )

ViewRemoveGestureRecognizer( NSInteger tag, GestureRecognizerRef ref )

ViewSetClickGestureRecognizerCallback( NSInteger tag, ptr callback, ptr userData )

ViewSetMagnificationGestureRecognizerCallback( NSInteger tag, ptr callback, ptr userData )

ViewSetPanGestureRecognizerCallback( NSInteger tag, ptr callback, ptr userData )

ViewSetPressGestureRecognizerCallback( NSInteger tag, ptr callback, ptr userData )

ViewSetRotationGestureRecognizerCallback( NSInteger tag, ptr callback, ptr userData )

### **Window**

*addition:*

WindowScreen( NSInteger tag ) = ScreenRef

### **Workspace**

*additions:*

WorkspaceLaunchApplicationAtURL( CFURLRef url, NSWorkspaceLaunchOptions options, CFDictionaryRef configuration, ErrorRef \*err ) = Boolean

WorkspaceDesktopImageURLForScreen( ScreenRef screen ) = CFURLRef

WorkspaceSetDesktopImageURLForScreen( CFURLRef url, ScreenRef screen, CFDictionaryRef options, ErrorRef \*err )

WorkspaceDesktopImageOptionsForScreen( ScreenRef screen ) = CFDictionaryRef

---

## New demos

### Collections/FastEnumeration ForLoop

- Array1...Array4
- CountedSet
- Dictionary
- OrderedSet
- Set1...Set3

### Data Formatting

- ByteCountFormatter

### Data Formatting/Locale

- NativeCurrency

### Dates and Times

- DateComponents
- DateFormatter
- DateInterval

### EventHandling/Gestures

- ClickGestureRecognizer1
- ClickGestureRecognizer2
- ClickGestureRecognizer3
- MagnificationGestureRecognizer
- PanGestureRecognizer
- PressGestureRecognizer
- RotationGestureRecognizer

### Files

- PropertyListSerialization

### Files/FileHandle

- FileHandle Demo

### Graphics/CA

- CAGradientLayer
- CALayer
- CAReplicatorLayer
- CAScrollLayer
- CAShapeLayer
- CATextLayer

### Menu

- StatusBarItem

### Miscellaneous/Task

- BitStatus

### Notifications

- UserNotificationCenter

### Numbers

- DecimalNumber1
- DecimalNumber2
- NSDecimal

### Strings and Text

- LinguisticTagger

### Views and Controls/TextView

- TextContainer

---

20180502 FB 5.7.115

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.114]

FB 5.7.115 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

- [01] CocoaUI scripts palette content updated
- [02] Release Notes pdf rebuilt with an export from Pages instead of TextEdit
- [03] CocoaUI's StringApplyTransform requires macOS 10.12+ but was incorrectly included for any OS version. Please note: the FB programmer is still responsible for using an appropriate SDK ( 10.12+ ). This fix was also applied and announced on list for an interim 5.7.114 build.
- [04] DateCFString/TimeCFString added to runtime. Similar to date\$/time\$ ( now deprecated ) but accepts and returns CFStrings instead of pascal strings. See FBHelp and Examples/Miscellaneous/DateCFString Demo for more details.
- [05] YAST ( Yet Another Scrolling TextView ) example removed from 'Examples/Text/Scrolling text views' because the bundle it depends on is 32-bit and the code is obsolete 'TXN' calls.
- [06] FixSDK version 1.2.7 includes miscellaneous fixes and is now code signed for Apple's Gatekeeper.
  - import/export alert sheet
  - missing 10.6 SDK alert
  - non-recursive search of export directory
  - remember export directory after exporting a single SDK

## **CocoaUI changes/additions**

### **Changes that may break existing apps**

1. SegmentedControlSetSegment function - imageName (CFStringRef) param changed to image (ImageRef).
2. CharacterSetXxxx function name changes (see below).
3. ControlSetActionCallback now has a third param (userData).
4. WindowSetDelegateCallback now has a third param (userData).
5. WorkspaceShowSearchResultsForQueryString now returns a bool, therefore calls to this function must now be preceded by **fn**.

### **Alert**

*new:*

AlertButtonSetKeyEquivalent( NSInteger alertTag, NSUInteger btnIndex, CFStringRef key )  
 AlertButtonSetKeyEquivalentModifierMask( NSInteger alertTag, NSUInteger btnIndex, NSUInteger mask )

### **AppleScript**

*new:*

AppleScriptWithContentsOfURL( CFURLRef url, CFDictionaryRef \*errInfo ) = AppleScriptRef  
 AppleScriptWithSource( CFStringRef source ) = AppleScriptRef  
 AppleScriptIsCompiled( AppleScriptRef script ) = Boolean  
 AppleScriptSource( AppleScriptRef script ) = CFStringRef  
 AppleScriptRichTextSource( AppleScriptRef script ) = CFAttributedStringRef  
 AppleScriptCompile( AppleScriptRef script, CFDictionaryRef \*errInfo ) = Boolean  
 AppleScriptExecute( AppleScriptRef script, CFDictionaryRef \*errInfo ) = AppleEventDescriptorRef  
 AppleScriptExecuteAppleEvent( AppleScriptRef script, AppleEventDescriptorRef aeDesc, CFDictionaryRef \*errorInfo ) = AppleEventDescriptorRef

### **CharacterSet**

*function name changes:*

CharacterSetAlphanumericSet  
 CharacterSetCapitalizedLetterSet  
 CharacterSetControlSet  
 CharacterSetDecimalDigitSet  
 CharacterSetDecomposableSet  
 CharacterSetIllegalSet  
 CharacterSetLetterSet  
 CharacterSetLowercaseLetterSet  
 CharacterSetNewlineSet  
 CharacterSetNonBaseSet  
 CharacterSetPunctuationSet  
 CharacterSetSymbolSet  
 CharacterSetUppercaseLetterSet  
 CharacterSetWhitespaceAndNewlineSet  
 CharacterSetWhitespaceSet

### **Control**

*param change:*

ControlSetActionCallback( NSInteger tag, ptr callback, **ptr userData** )

### **DirectoryEnumerator**

*new:*

DirectoryEnumeratorDirectoryAttributes( DirectoryEnumeratorRef enumerator ) = CFDictionaryRef  
 DirectoryEnumeratorFileAttributes( DirectoryEnumeratorRef enumerator ) = CFDictionaryRef  
 DirectoryEnumeratorLevel( DirectoryEnumeratorRef enumerator ) = NSUInteger  
 DirectoryEnumeratorSkipDescendants( DirectoryEnumeratorRef enumerator )

## Enumerator

*new:*

EnumeratorAllObjects( EnumeratorRef enumerator ) = CFArrayRef  
EnumeratorNextObject( EnumeratorRef enumerator ) = CTypeRef

## Geometry

*new:*

StringFromPoint( CGPoint pt ) = CFStringRef  
StringFromSize( CGSize size ) = CFStringRef  
StringFromRect( CGRect rect ) = CFStringRef  
PointFromString( CFStringRef string ) = CGPoint  
SizeFromString( CFStringRef string ) = CGSize  
RectFromString( CFStringRef string ) = CGRect

## KeyedArchiver

*new:*

KeyedArchiverArchivedDataWithRootObject( CTypeRef obj ) = CFDataRef  
KeyedArchiverArchiveRootObjectToURL( CTypeRef obj, CFURLRef url ) = Boolean

## KeyedUnarchiver

*new:*

KeyedUnarchiverUnarchiveObjectWithData( CFDataRef dta ) = CTypeRef  
KeyedUnarchiverUnarchiveObjectWithURL( CFURLRef url ) = CTypeRef

## MenuItem

*new:*

MenuItemTag( NSInteger menuItemIndex, NSInteger itemIndex ) = NSInteger  
MenuItemSetTag( NSInteger menuItemIndex, NSInteger itemIndex, NSInteger tag )  
MenuItemSetActionCallback( NSInteger menuItemIndex, NSInteger itemIndex, ptr callback, ptr userData )  
MenuItemImage( NSInteger menuItemIndex, NSInteger itemIndex ) = ImageRef  
MenuItemSetImage( NSInteger menuItemIndex, NSInteger itemIndex, ImageRef image )  
MenuItemOnStateImage( NSInteger menuItemIndex, NSInteger itemIndex ) = ImageRef  
MenuItemSetOnStateImage( NSInteger menuItemIndex, NSInteger itemIndex, ImageRef image )  
MenuItemOffStateImage( NSInteger menuItemIndex, NSInteger itemIndex ) = ImageRef  
MenuItemSetOffStateImage( NSInteger menuItemIndex, NSInteger itemIndex, ImageRef image )  
MenuItemMixedStateImage( NSInteger menuItemIndex, NSInteger itemIndex ) = ImageRef  
MenuItemSetMixedStateImage( NSInteger menuItemIndex, NSInteger itemIndex, ImageRef image )  
MenuItemIndentationLevel( NSInteger menuItemIndex, NSInteger itemIndex ) = NSInteger  
MenuItemSetIndentationLevel( NSInteger menuItemIndex, NSInteger itemIndex, NSInteger level )

## NumberFormatter

*new:*

See NumberFormatter.incl header

## PDFView

*new:*

See PDFKit headers and PDFView demos

## PopUpButton

*new:*

PopUpButtonSelectItemWithTag( NSInteger popUpTag, NSInteger itemTag )  
PopUpButtonIndexOfItemWithTag( NSInteger popUpTag, NSInteger itemTag ) = NSInteger  
PopUpButtonIndexOfItemWithTitle( NSInteger tag, CFStringRef title ) = NSInteger

## ScrollView

*new:*

ScrollViewFindBarPosition( NSInteger tag ) = NSScrollViewFindBarPosition  
ScrollViewSetFindBarPosition( NSInteger tag, NSScrollViewFindBarPosition position )

## SegmentedControl

*function param change:*

SegmentedControlSetSegment( NSInteger tag, NSInteger index, NSInteger enabled, CFStringRef label, **ImageRef image**, NSInteger imageScaling, NSInteger width )

## String

*new:*

StringComponentsSeparatedByCharactersInSet( CFStringRef string, CFCharacterSetRef set ) = CFArrayRef  
StringByTrimmingCharactersInSet( CFStringRef string, CFCharacterSetRef set ) = CFStringRef  
StringRangeOfString( CFStringRef string, CFStringRef searchString ) = CFRange

## Text

*new:*

TextSetAlignment( NSInteger tag, NSTextAlignment alignment )  
TextSetFontWithName( NSInteger tag, CFStringRef name, CGFloat size )

TextSetFontWithNameInRange( NSInteger tag, CFStringRef name, CGFloat size, CFRange range )

## **TextView**

*new:*

TextViewOrderFrontLinkPanel( NSInteger tag )  
TextViewOrderFrontListPanel( NSInteger tag )  
TextViewOrderFrontSpacingPanel( NSInteger tag )  
TextViewOrderFrontTablePanel( NSInteger tag )  
TextViewOrderFrontSubstitutionsPanel( NSInteger tag )

## **URL** - see demos

*new:*

URLByResolvingBookmarkData( CFDataRef bookmarkData, NSURLBookmarkResolutionOptions options, CFURLRef relativeURL, Boolean \*isStale, ErrorRef \*err ) = CFURLRef  
URLBookmarkDataWithContentsOfURL( CFURLRef url, ErrorRef \*err ) = CFDataRef  
URLBookmarkDataWithOptions( CFURLRef url, NSURLBookmarkCreationOptions options, CFArrayRef resourceKeys, CFURLRef relativeURL, ErrorRef \*err ) = CFDataRef  
URLResourceValuesForKeysFromBookmarkData( CFArrayRef resourceKeys, CFDataRef bookmarkData ) = CFDictionaryRef  
URLWriteBookmarkData( CFDataRef bookmarkData, CFURLRef toURL, NSURLBookmarkFileCreationOptions options, ErrorRef \*err ) = Boolean

## **UserDefaults**

*new:*

UserDefaultsColor( CFStringRef key ) = ColorRef  
UserDefaultsSetColor( CFStringRef key, ColorRef col )  
UserDefaultsFont( CFStringRef key ) = FontRef  
UserDefaultsSetFont( CFStringRef key, FontRef font )

## **Window**

*param change:*

WindowSetDelegateCallback( NSInteger tag, ptr callback, **ptr userData** )

## **Workspace**

*change:*

WorkspaceShowSearchResultsForQueryString( CFStringRef string ) = **Boolean**

## **- New demos -**

Scripting/AppleScript/

    AppleScriptWithSource  
    AppleScriptWithContentsOfURL

Application/AppShouldTerminate/

    AppShouldTerminate1  
    AppShouldTerminate2

Collections/Array/

    ObjectEnumerator

Collections/Dictionary/

    KeyEnumerator  
    ObjectEnumerator

Collections/

    SortDescriptors1  
    SortDescriptors2

Files/FileManager/

    DirectoryEnumerator

UserDefaults/

    Color

Views and Controls/PDFView/

    PDFView1  
    PDFView2  
    PDFView3

Views and Controls/Field/

    SearchField w menu

Views and Controls/TextView/

    TextView w findbar



---

20180326 FB 5.7.114

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.113]

FB 5.7.114 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] Building a single source file with compile options -m64 and -DDECARBONATE failed with a NSFileHandle clang error in the FBInforForOpenFile struct inside FBtoC.h. Changing the struct field declartion to void\* ( which makes it consistent with OSX SerialIO.incl ) solves it.

[02] TWM was crashing on quit. Hopefully fixed.

[03] Similar fix for RECORD, LOF statements as described in FB 5.7.113's item #2 release notes ( below )

[04] PrintFloat(), PrintTab(), PrintLong(), PrintSpC() runtime functions were excluded for 64-bit builds. Now included for both 32 and 64-bit builds<sup>WARNING/N.B</sup>

WARNING/N.B.: This change supports PRINT to file and PRINT to buffer for 64-bit builds. PRINT to screen and PRINT to printer are **not** supported in 64-bit builds.

### CocoaUI changes/additions

#### **Changes that may break existing apps**

1. Function name changes due to typos: BezierPathStrokeFillOvallnRect, BezierPathStrokeOvallnRect and BezierPathFillOvallnRect
2. Function name change: ButtonSetSound( tag, sndName ) is now named ButtonSetSound**Named**( tag, sndName )
3. Function name change: PopUpButtonSetMenu( tag, menuIndex ) is now named PopUpButtonSetMenu**Index**( tag, menuIndex )
4. Function name change due to typo: ScrollViewSetHorizontalLineScroll

---

#### **User on dialog function**

The user on dialog function can now optionally receive the event type, id and wndNum values as parameters instead of calling dialog(0), dialog(ev) and dialog(-1). This applies to both Carbon and CocoaUI apps.

*This:*

```
local fn DoDialog
 dim as long ev, id, wnd

 ev = dialog(0)
 id = dialog(ev)
 wnd = dialog(-1)
 //
end fn
```

*can now be:*

```
local fn DoDialog(ev as long, id as long, wnd as long)
 //.....
end fn
```

This on dialog change is optional. Your existing apps will continue to function as they did before.

---

#### **User on menu function**

The user on menu function can now optionally receive the menuID and itemID values as parameters instead of calling menu(\_menuID) and menu(\_itemID). This applies to both Carbon and CocoaUI apps.

*This:*

```
local fn DoMenu
 dim as long menuID, itemID

 menuID = menu(_menuID)
 itemID = menu(_itemID)
 //
end fn
```

*can now be:*

```
local fn DoMenu(menuID as long, itemID as long)
 //.....
end fn
```

This on menu change is optional. Your existing apps will continue to function as they did before.

---

### User on appevent function

The user on appevent function can now optionally receive the app event type as a parameter instead of calling AppEvent(0).

*This:*

```
local fn DoAppEvent
 dim as long ev

 ev = AppEvent(0)
 //.....
end fn
```

*can now be:*

```
local fn DoAppEvent(ev as long)
 //.....
end fn
```

This on appevent change is optional. Existing apps will continue to function as they did before.

---

### AffineTransform

*new:*

```
AffineTransformStruct(AffineTransformRef tx) = NSAffineTransformStruct
```

### Alert

*new:*

```
AlertInformativeText(NSInteger tag) = CFStringRef
AlertSetInformativeText(NSInteger tag, CFStringRef string)
AlertMessageText(NSInteger tag) = CFStringRef
AlertSetMessageText(NSInteger tag, CFStringRef string)
```

### Application

*new:*

```
AppTerminate
AppCurrentEvent = CocoaEventRef
AppIsRunning = Boolean
AppRun
AppStop
AppSendEvent(CocoaEventRef evnt)
AppPostEvent(CocoaEventRef evnt, Boolean atStart)
AppRunModal(NSInteger wndTag) = NSInteger
AppStopModal
AppStopModalWithCode(NSInteger returnCode)
AppAbortModal
AppRunPageLayout
AppUserInterfaceLayoutDirection = NSUserInterfaceLayoutDirection
AppWindowWithWindowNumber(NSInteger number) = CocoaWindowRef
AppWindows = CFArrayRef
AppMainMenu = CocoaMenuRef
AppWindowsMenu = CocoaMenuRef
AppDockTile = DockTileRef
AppHelpMenu = CocoaMenuRef
AppMiniaturizeAll
AppArrangeInFront

-- convenience functions --
AppDockTileContentView = ViewRef
AppDockTileSize = CGSize
AppDockTileShowsApplicationBadge = Boolean
AppDockTileSetShowsApplicationBadge(Boolean flag)
AppDockTileBadgeLabel = CFStringRef
AppDockTileSetBadgeLabel(CFStringRef label)
AppDockTileDisplay
```

### BezierPath

*typo fixes:*

```
BezierPathStrokeFillOvalInRect
BezierPathStrokeOvalInRect
BezierPathFillOvalInRect
```

## Bundle

*new:*

BundleMain = BundleRef  
BundleWithURL( CFURLRef url ) = BundleRef  
BundleURLForResource( BundleRef bundle, CFStringRef name, CFStringRef extension, CFStringRef subdirectory ) = CFURLRef  
BundleURLForImageResource( BundleRef bundle, CFStringRef name ) = CFURLRef  
BundleExecutableURL( BundleRef bundle ) = CFURLRef  
BundleURL( BundleRef bundle ) = CFURLRef  
BundleIdentifier( BundleRef bundle ) = CFStringRef  
BundleInfoDictionary( BundleRef bundle ) = CFDictionaryRef  
BundleObjectForInfoDictionaryKey( BundleRef bundle, CFStringRef key ) = CTypeRef

## Button

*new:*

ButtonType( NSInteger tag, NSButtonType type )  
ButtonGetPeriodicDelay( NSInteger tag, float \*delay, float \*interval )  
ButtonAlternateTitle( NSInteger tag ) = CFStringRef  
ButtonAttributedTitle( NSInteger tag ) = CFAttributedStringRef  
ButtonAttributedAlternateTitle( NSInteger tag ) = CFAttributedStringRef  
ButtonSetTitle( NSInteger tag, CFStringRef title )  
ButtonSound( NSInteger tag ) = SoundRef  
ButtonSetSoundNamed( NSInteger tag, CFStringRef name )  
ButtonImage( NSInteger tag ) = ImageRef  
ButtonAlternateImage( NSInteger tag ) = ImageRef  
ButtonImagePosition( NSInteger tag ) = NSCellImagePosition  
ButtonIsBordered( NSInteger tag ) = Boolean  
ButtonIsTransparent( NSInteger tag ) = Boolean  
ButtonBezelStyle( NSInteger tag ) = NSBezelStyle  
ButtonSetBezelStyle( NSInteger tag, NSBezelStyle style )  
ButtonBezelColor( NSInteger tag ) = ColorRef// macOS 10.12.1+  
ButtonSetBezelColor( NSInteger tag, ColorRef col )// macOS 10.12.1+  
ButtonShowsBorderOnlyWhileMouseInside( NSInteger tag ) = Boolean  
ButtonImageHugsTitle( NSInteger tag ) = Boolean// macOS 10.12+  
ButtonSetImageHugsTitle( NSInteger tag, Boolean flag )// macOS 10.12+  
ButtonImageScaling( NSInteger tag ) = NSImageScaling  
ButtonAllowsMixedState( NSInteger tag ) = Boolean  
ButtonSetState( NSInteger tag, NSCellStateValue state )  
ButtonKeyEquivalent( NSInteger tag ) = CFStringRef  
ButtonKeyEquivalentModifierMask( NSInteger tag ) = NSUInteger  
ButtonImageDimsWhenDisabled( NSInteger tag ) = Boolean

*change:*

ButtonSetSound( NSInteger tag, **SoundRef snd** )

## CharacterSet

*new:*

CharacterSetAlphanumeric = CFCharacterSetRef  
CharacterSetCapitalizedLetter = CFCharacterSetRef  
CharacterSetControl = CFCharacterSetRef  
CharacterSetDecimalDigit = CFCharacterSetRef  
CharacterSetDecomposable = CFCharacterSetRef  
CharacterSetIllegal = CFCharacterSetRef  
CharacterSetLetter = CFCharacterSetRef  
CharacterSetLowercaseLetter = CFCharacterSetRef  
CharacterSetNewline = CFCharacterSetRef  
CharacterSetNonBase = CFCharacterSetRef  
CharacterSetPunctuation = CFCharacterSetRef  
CharacterSetSymbol = CFCharacterSetRef  
CharacterSetUppercaseLetter = CFCharacterSetRef  
CharacterSetWhitespaceAndNewline = CFCharacterSetRef  
CharacterSetWhitespace = CFCharacterSetRef  
CharacterSetWithCharactersInString( CFStringRef string ) = CFCharacterSetRef  
CharacterSetWithRange( CFRange range ) = CFCharacterSetRef  
CharacterSetInvertedSet( CFCharacterSetRef set ) = CFCharacterSetRef

## Color

*new:*

ColorWithAlphaComponent( ColorRef col, CGFloat alpha ) = ColorRef  
ColorGetCMYK( ColorRef col, CGFloat \*c, CGFloat \*m, CGFloat \*y, CGFloat \*k, CGFloat \*a )  
ColorGetHSB( ColorRef col, CGFloat \*h, CGFloat \*s, CGFloat \*b, CGFloat \*a )  
ColorGetRGB( ColorRef col, CGFloat \*r, CGFloat \*g, CGFloat \*b, CGFloat \*a )  
ColorGetWhite( ColorRef col, CGFloat \*w, CGFloat \*a )  
ColorNumberOfComponents( ColorRef col ) = NSInteger

ColorGetComponents( ColorRef col, CGFloat \*components )

## Control

*new:*

ControlDrawWithExpansionFrameInView( NSInteger ctrlTag, CGRect contentFrame, NSInteger vwTag )// macOS 10.10+  
ControlAllowsExpansionToolTips( NSInteger tag ) = Boolean// macOS 10.8+  
ControlSetAllowsExpansionToolTips( NSInteger tag, Boolean flag )// macOS 10.8+  
ControlIgnoresMultiClick( NSInteger tag ) = Boolean  
ControlSetIgnoresMultiClick( NSInteger tag, Boolean flag )

## Cursor

*new:*

CursorWithImage( ImageRef image, CGPoint hotSpot ) = CursorRef  
CursorImage( CursorRef cursor ) = ImageRef  
CursorHotSpot( CursorRef cursor ) = CGPoint  
CursorPop  
CursorPush( CursorRef cursor )  
CursorSet( CursorRef cursor )  
CursorCurrent = CursorRef  
CursorCurrentSystem = CursorRef  
CursorArrow = CursorRef  
CursorContextualMenu = CursorRef  
CursorClosedHand = CursorRef  
CursorCrosshair = CursorRef  
CursorDisappearingItem = CursorRef  
CursorDragCopy = CursorRef  
CursorDragLink = CursorRef  
CursorIBeam = CursorRef  
CursorOpenHand = CursorRef  
CursorOperationNotAllowed = CursorRef  
CursorPointingHand = CursorRef  
CursorResizeDown = CursorRef  
CursorResizeLeft = CursorRef  
CursorResizeRight = CursorRef  
CursorResizeUp = CursorRef  
CursorResizeUpDown = CursorRef  
CursorIBeamForVerticalLayout = CursorRef

## DockTile

*new:*

DockTileContentView( DockTileRef tile ) = ViewRef  
DockTileSize( DockTileRef tile ) = CGSize  
DockTileShowsApplicationBadge( DockTileRef tile ) = Boolean  
DockTileSetShowsApplicationBadge( DockTileRef tile, Boolean flag )  
DockTileBadgeLabel( DockTileRef tile ) = CFStringRef  
DockTileSetBadgeLabel( DockTileRef tile, CFStringRef label )  
DockTileDisplay( DockTileRef tile )

## Font

*new:*

FontSet( FontRef font )  
FontWithDescriptor( FontDescriptorRef descriptor, CGFloat size ) = FontRef

## FontDescriptor

*new:*

FontDescriptorWithAttributes( CFDictionaryRef attributes ) = FontDescriptorRef

## Image

*new:*

ImageByReferencingURL( CFURLRef url ) = ImageRef  
ImageLockFocus( ImageRef ref )  
ImageLockFocusFlipped( ImageRef ref, Boolean flag )  
ImageUnlockFocus( ImageRef ref )

## Menu

*new:*

MenuItemArray( NSInteger menuItemIndex ) = CFArrayRef

## MenuItem

*new:*

MenuItemAttributedTitle( NSInteger menuItemIndex, NSInteger itemIndex ) = CFAttributedStringRef  
MenuItemSetAttributedTitle( NSInteger menuItemIndex, NSInteger itemIndex, CFAttributedStringRef title )

## Object

*new:*

ObjectPerformSelectorOnMainThread( CTypeRef obj, CFStringRef selector, CTypeRef withObj, Boolean waitUntilDone )  
ObjectPerformSelectorInBackground( CTypeRef obj, CFStringRef selector, CTypeRef withObj )  
ObjectCallFunctionOnMainThread( NSInteger objTag, ptr fnAddress, CTypeRef withObj, Boolean waitUntilDone )  
ObjectCallFunctionInBackground( ptr fnAddress, CTypeRef withObj )

## **OperationQueue**

*new:*

OperationQueueInit = OperationQueueRef  
OperationQueueAddOperation( OperationQueueRef queue, ptr fnAddress, CTypeRef obj )

## **OutlineView**

*new:*

OutlineViewWithTag( NSInteger tag ) = OutlineViewRef  
OutlineViewIsItemExpandable( NSInteger tag, OViewItemRef item ) = Boolean  
OutlineViewIsItemExpanded( NSInteger tag, OViewItemRef item ) = Boolean  
OutlineViewExpandItem( NSInteger tag, OViewItemRef item )  
OutlineViewExpandItemAndChildren( NSInteger tag, OViewItemRef item, Boolean expandChildren )  
OutlineViewCollapseItem( NSInteger tag, OViewItemRef item )  
OutlineViewCollapseItemAndChildren( NSInteger tag, OViewItemRef item, Boolean collapseChildren )  
OutlineViewReloadItem( NSInteger tag, OViewItemRef item )  
OutlineViewReloadItemAndChildren( NSInteger tag, OViewItemRef item, Boolean reloadChildren )  
OutlineViewItemAtRow( NSInteger tag, NSInteger row ) = OViewItemRef  
OutlineViewRowForItem( NSInteger tag, OViewItemRef item ) = NSInteger  
OutlineViewLevelForItem( NSInteger tag, OViewItemRef item ) = NSInteger  
OutlineViewLevelForRow( NSInteger tag, NSInteger row ) = NSInteger  
OutlineViewParentForItem( NSInteger tag, OViewItemRef item ) = OViewItemRef  
OutlineViewChildIndexForItem( NSInteger tag, OViewItemRef item ) = NSInteger  
OutlineViewChildOfItem( NSInteger tag, NSInteger index, OViewItemRef item ) = OViewItemRef  
OutlineViewNumberOfChildrenOfItem( NSInteger tag, OViewItemRef item ) = NSInteger

## **Player**

*new:*

PlayerWithURL( CFURLRef url ) = PlayerRef

## **PlayerView**

*new:*

PlayerViewWithTag( NSInteger tag ) = PlayerViewRef  
PlayerViewSetPlayer( NSInteger tag, PlayerRef player )

## **Popover**

*new:*

PopoverBehavior( NSInteger tag ) = NSPopoverBehavior  
PopoverSetBehavior( NSInteger tag, NSPopoverBehavior behavior )  
PopoverPositioningRect( NSInteger tag ) = CGRect  
PopoverSetPositioningRect( NSInteger tag, CGRect rect )  
PopoverAnimates( NSInteger tag ) = Boolean  
PopoverSetAnimates( NSInteger tag, Boolean flag )  
PopoverContentSize( NSInteger tag ) = CGSize  
PopoverSetContentSize( NSInteger tag, CGSize size )  
PopoverIsDetached( NSInteger tag ) = Boolean// macOS 10.10+

## **PopUpButton**

*new:*

PopUpButtonMenu( NSInteger tag ) = CocoaMenuRef  
PopUpButtonSetMenuIndex( NSInteger tag, NSInteger menuIndex )  
PopUpButtonArrowPosition( NSInteger tag ) = NSPopUpArrowPosition  
PopUpButtonSetArrowPosition( NSInteger tag, NSPopUpArrowPosition position )  
PopUpButtonItemArray( NSInteger tag ) = CFArrayRef

change:

PopUpButtonSetMenu( NSInteger tag, **CocoaMenuRef menu** )

## **RunningApplication**

*new:*

RunningApplicationIcon( RunningApplicationRef ra ) = ImageRef

## **Screen**

*new:*

ScreenMainScreen = ScreenRef  
ScreenDeepestScreen = ScreenRef  
ScreenScreens = CFArrayRef  
ScreenDepth( ScreenRef scrn ) = NSWindowDepth  
ScreenFrame( ScreenRef scrn ) = CGRect

ScreenDeviceDescription( ScreenRef scrn ) = CFDictionaryRef  
ScreenVisibleFrame( ScreenRef scrn ) = CGRect  
ScreenCanRepresentDisplayGamut( ScreenRef scrn, NSInteger gamut ) = Boolean// macOS 10.12+  
ScreenScreensHaveSeparateSpaces = Boolean// macOS 10.9+  
ScreenBackingAlignedRect( ScreenRef scrn, CGRect rect, NSTextAlignmentOptions options ) = CGRect  
ScreenBackingScaleFactor( ScreenRef scrn ) = CGFloat  
ScreenConvertRectFromBacking( ScreenRef scrn, CGRect rect ) = CGRect  
ScreenConvertRectToBacking( ScreenRef scrn, CGRect rect ) = CGRect  
ScreenMaximumExtendedDynamicRangeColorComponentValue( ScreenRef scrn ) = CGFloat// macOS 10.11+

## ScrollView

*new:*

ScrollViewAddFloatingSubview( NSInteger scrollTag, NSInteger subviewTag, NSEventGestureAxis axis )// macOS 10.9+  
ScrollViewReflectScrolledClipView( NSInteger tag )  
ScrollViewScrollToPoint( NSInteger tag, CGPoint pt )

*typo fix:*

ScrollViewSetHorizontalLineScroll was ScrollViewSetLHorizontalLineScroll

## SegmentedControl

*new:*

SegmentedControlImageScaling( NSInteger tag, NSInteger index ) = NSImageScaling  
SegmentedControlSetImageScaling( NSInteger tag, NSInteger index, NSImageScaling scaling )

## String

*new:*

StringComponentsSeparatedByString( CFStringRef string, CFStringRef separator ) = CFArrayRef  
StringByRemovingPercentEncoding( CFStringRef string ) = CFStringRef// macOS 10.9+

## TableView

*new:*

TableViewBeginUpdates( NSInteger tag )  
TableViewEndUpdates( NSInteger tag )  
TableViewHideRow( NSInteger tag, NSInteger rowIndex, NSTableViewAnimationOptions animation )// macOS 10.11+  
TableViewHideRows( NSInteger tag, IndexSetRef indexes, NSTableViewAnimationOptions animation )// macOS 10.11+  
TableViewUnhideRow( NSInteger tag, NSInteger rowIndex, NSTableViewAnimationOptions animation )// macOS 10.11+  
TableViewUnhideRows( NSInteger tag, IndexSetRef indexes, NSTableViewAnimationOptions animation )// macOS 10.11+  
TableViewHiddenRowIndexes( NSInteger tag ) = IndexSetRef// macOS 10.11+

## Text

*new:*

TextShowGuessPanel( NSInteger tag )

## Toolbar

*new:*

ToolbarIsVisible( NSInteger tag ) = Boolean  
ToolbarRunCustomizationPalette( NSInteger tag )  
ToolbarCustomizationPalettesRunning( NSInteger tag ) = Boolean

## View

*new:*

ViewIsFlipped( NSInteger tag ) = Boolean  
ViewAutoresizingMask( NSInteger tag ) = NSAutoresizingMaskOptions

## Window

*new:*

WindowAlphaValue( NSInteger tag ) = CGFloat  
WindowBackgroundColor( NSInteger tag ) = ColorRef  
WindowCanHide( NSInteger tag ) = Boolean  
WindowHidesOnDeactivate( NSInteger tag ) = Boolean  
WindowHasShadow( NSInteger tag ) = Boolean  
WindowPreventsApplicationTerminationWhenModal( NSInteger tag ) = Boolean  
WindowNumber( NSInteger tag ) = NSInteger  
WindowNumbersWithOptions( NSWindowNumberListOptions options ) = CFArrayRef// array of CFNumbers  
WindowContentRectForFrameRectAndStyle( CGRect r, NSInteger styleMask ) = CGRect  
WindowFrameRectForContentRectAndStyle( CGRect r, NSInteger styleMask ) = CGRect  
WindowMinFrameWidthWithTitle( CFStringRef title, NSInteger styleMask ) = CGFloat  
WindowAspectRatio( NSInteger tag ) = CGSize  
WindowShowsResizeIndicator( NSInteger tag ) = Boolean  
WindowResizeIncrements( NSInteger tag ) = CGSize  
WindowContentSize( NSInteger tag ) = CGSize  
WindowContentMinSize( NSInteger tag ) = CGSize  
WindowContentSize( NSInteger tag ) = CGSize  
WindowContentMaxSize( NSInteger tag ) = CGSize  
WindowContentResizeIncrements( NSInteger tag ) = CGSize

WindowMaxFullScreenContentSize( NSInteger tag ) = CGSize// macOS 10.11+  
WindowMinFullScreenContentSize( NSInteger tag ) = CGSize// macOS 10.11+  
WindowLevel( NSInteger tag ) = NSWindowLevel  
WindowFrameAutosaveName( NSInteger tag ) = CFStringRef  
WindowIsExcludedFromWindowsMenu( NSInteger tag ) = Boolean  
WindowTitlebarAppearsTransparent( NSInteger tag ) = Boolean// macOS 10.10  
WindowAutorecalculatesKeyViewLoop( NSInteger tag ) = Boolean  
WindowAcceptsMouseMovedEvents( NSInteger tag ) = Boolean  
WindowSetAcceptsMouseMovedEvents( NSInteger tag, Boolean flag )  
WindowIgnoresMouseEvents( NSInteger tag ) = Boolean  
WindowSetIgnoresMouseEvents( NSInteger tag, Boolean flag )  
WindowTitleVisibility( NSInteger tag ) = NSWindowTitleVisibility// macOS 10.10+  
WindowIsMovableByWindowBackground( NSInteger tag ) = Boolean  
WindowIsMovable( NSInteger tag ) = Boolean  
WindowMiniwindowImage( NSInteger tag ) = ImageRef  
WindowMiniwindowTitle( NSInteger tag ) = CFStringRef  
WindowDockTile( NSInteger tag ) = DockTileRef

---

### New demos

Application  
    AppDockTile  
EventHandlers  
    App  
    Menu  
    Window  
Graphics  
    Gradient  
Graphics/BezierPath  
    DotView  
    DrawImage  
    DrawInScrollingView  
    RotatedRect  
Miscellaneous/Threads  
    Simple Background Thread 1  
    Simple Background Thread 2  
    Simple Background Thread 3  
Miscellaneous/Threads/Thread Alternatives  
    OperationQueue  
Views and Controls/ImageView  
    DrawIntoImage  
Views and Controls/OutlineView  
    Single column  
    Two column  
Views and Controls  
    PlayerView  
Views and Controls/PopUpButton  
    ModifyPopUpButton 1  
    ModifyPopUpButton 2  
Views and Controls/TableView/Images  
    Images 1  
    Images 2  
    Images 3  
Windows and Panels/Window  
    DockTile  
Windows and Panels/Alert  
    Alert suppression button

---

FB 5.7.113 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.112]

[01] Replacement call, PMPrintSettingsSetJobName(), added to Tlhx Printing.incl.

PMSetJobNameCFString, now removed by Apple, commented out.

[02] Long, tight loop in FB file I/O ( PRINT#, READ, WRITE etc. ) exhausted file descriptors, so I/O fails. Note: see list post on 28-Feb-2018 with subject "File I/O update and news regarding Carbon/Cocoa" for more information on nature of the issue and the implications of the fix.

[03] Built application unexpected quits. An explanation follows:

Testing new file I/O highlighted another issue. The app would unexpectedly quit. Bernie did some good investigative work and he remembered a quitting issue right after a file open/save panel's display. *Bottom line: mixing carbon events and cocoa events was causing the quit problem.* CocoaUI code was not involved. Two things discovered:

a. Removing a call to `NSApplicationLoad` fixes it BUT that isn't a solution for those needing Cocoa in Carbon apps. See #2b for that.

b. Enclosing `HandleEvents` in a 'do/until' loop also fixes it:

The following snippet( courtesy Bernie ) demonstrates the bug and fix:

```
//-----
toolbox fn NSApplicationLoad = Boolean
fn NSApplicationLoad // removing this call fixes it, but that's not good for Cocoa in Carbon
apps.

local fn ShowAlert
 '~'1
 BeginCCode
 NSAlert *alert = [[NSAlert alloc] init];
 [alert setAlertStyle:NSWarningAlertStyle];
 [alert setMessageText:@"Hello"];
 [alert setInformativeText:@"Something happened."];
 [alert runModal];
 EndC
end fn

void local fn DoMenu
 '~'1
 if (menu(_menuID) == 1 and menu(_itemID) == 1) then fn ShowAlert
end fn

menu 1,0,1,@"File"
menu 1,1,1,@"Show Alert/A"

on menu fn DoMenu

// enclosing HandleEvents in the do until loop also fixes it
//do
HandleEvents
//until gFBQuit
//-----
```

## CocoaUI changes

Likely causes of failure this time:

1. All widget functions that took RGB values (`TextFieldSetTextRGB`, `WindowSetBackgroundRGB`, etc.) have been removed. Make a `ColorRef` with `ColorWithRGB` and use `XxxSetColor` instead.

2. Widget functions that took a `CGImageRef` have been removed. Convert the `CGImage` to an `ImageRef` with `ImageWithCGImage` and use `XxxSetImage` instead.

3. String function extra param(s).

`StringWriteToURL( CFStringRef string, CFURLRef url, Boolean atomically, NSStringEncoding enc, ErrorRef *err ) = Boolean` // err can be NULL

`StringWithContentsOfURL( CFURLRef url, NSStringEncoding enc, ErrorRef *err ) = CFStringRef` // err can be NULL

## Alert

*new:*

`AlertSetIconNamed( NSInteger tag, CFStringRef imageName )`

## Application

*new:*

`AppOrderFrontColorPanel`

`AppOrderFrontCharacterPalette`

*fix:*

`_applicationShouldTerminate` now works for application events

## Array

*new:*



ArrayContainsObject( CFArrayRef array, CTypeRef obj ) = Boolean  
ArrayCount( CFArrayRef array ) = NSUInteger  
ArrayObjectAtIndex( CFArrayRef array, NSUInteger index ) = CTypeRef  
ArrayObjectsAtIndexes( CFArrayRef array, IndexSetRef indexes ) = CFArrayRef  
ArrayIndexOfObject( CFArrayRef array, CTypeRef obj ) = NSUInteger  
ArrayIndexOfObjectInRange( CFArrayRef array, CTypeRef obj, CFRange range ) = NSUInteger  
ArrayComponentsJoinedByString( CFArrayRef array, CFStringRef separator ) = CFStringRef  
ArrayAddObject( CFMutableArrayRef array, CTypeRef obj )  
ArrayAddObjectsFromArray( CFMutableArrayRef array, CFArrayRef otherArray )  
ArrayInsertObjectAtIndex( CFMutableArrayRef array, CTypeRef obj, NSUInteger index )  
ArrayInsertObjectsAtIndexes( CFMutableArrayRef array, CFArrayRef objects, IndexSetRef indexes )  
ArrayRemoveAllObjects( CFMutableArrayRef array )  
ArrayRemoveLastObject( CFMutableArrayRef array )  
ArrayRemoveObject( CFMutableArrayRef array, CTypeRef obj )  
ArrayRemoveObjectInRange( CFMutableArrayRef array, CTypeRef obj, CFRange range )  
ArrayRemoveObjectAtIndex( CFMutableArrayRef array, NSUInteger index )  
ArrayRemoveObjectsAtIndexes( CFMutableArrayRef array, IndexSetRef indexes )  
ArrayRemoveObjectsFromArray( CFMutableArrayRef array, CFArrayRef objects )  
ArrayRemoveObjectsInRange( CFMutableArrayRef array, CFRange range )  
ArrayReplaceObjectAtIndex( CFMutableArrayRef array, CTypeRef obj, NSUInteger index )  
ArrayReplaceObjectsAtIndexes( CFMutableArrayRef array, CFArrayRef objects, IndexSetRef indexes )  
ArraySetArray( CFMutableArrayRef array, CFArrayRef otherArray )  
ArrayExchangeObjects( CFMutableArrayRef array, NSUInteger index1, NSUInteger index2 )

## BezierPath

*new:*

BezierPathGetLineDash( BezierPathRef path, CGFloat \*pattern, NSInteger \*count, CGFloat \*phase )  
BezierPathDefaultWindingRule = NSWindingRule  
BezierPathDefaultLineCapStyle = NSLineCapStyle  
BezierPathDefaultLineJoinStyle = NSLineJoinStyle  
BezierPathDefaultLineWidth = CGFloat  
BezierPathDefaultMiterLimit = CGFloat  
BezierPathDefaultFlatness = CGFloat  
BezierPathControlPointBounds( BezierPathRef path ) = CGRect

## Box

*changes:*

BoxSetBorderRGB & BoxSetFillRGB removed. Use BoxSetBorderColor & BoxSetFillColor instead.

## Button

*new:*

ButtonSetImageNamed( NSInteger tag, CFStringRef imageName )  
ButtonSetAlternateImageNamed( NSInteger tag, CFStringRef imageName )

*changes:*

ButtonSetTitleRGB & ButtonSetBackgroundRGB removed. Use ButtonSetColor & ButtonSetBackgroundColor instead.  
ButtonIsEnabled removed. Use ControlsEnabled instead.

## Color

*new:*

// system colors

ColorAlternateSelectedControl = ColorRef  
ColorAlternateSelectedControlText = ColorRef  
ColorForControlTint( NSControlTint tint ) = ColorRef  
ColorControlBackground = ColorRef  
ColorControl = ColorRef  
ColorControlAlternatingRowBackground = CFArrayRef  
ColorControlHighlight = ColorRef  
ColorControlShadow = ColorRef  
ColorControlDarkShadow = ColorRef  
ColorControlText = ColorRef  
ColorCurrentControlTint = NSControlTint  
ColorDisabledControlText = ColorRef  
ColorGrid = ColorRef  
ColorHeader = ColorRef  
ColorHeaderText = ColorRef  
ColorHighlight = ColorRef  
ColorKeyboardFocusIndicator = ColorRef  
ColorKnob = ColorRef  
ColorScrollBar = ColorRef  
ColorScrubberTexturedBackground = ColorRef// macOS 10.11+  
ColorSecondarySelectedControl = ColorRef  
ColorSelectedControl = ColorRef  
ColorSelectedControlText = ColorRef

ColorSelectedItem = ColorRef  
ColorSelectedItemText = ColorRef  
ColorSelectedTextBackground = ColorRef  
ColorSelectedText = ColorRef  
ColorSelectedKnob = ColorRef  
ColorShadow = ColorRef  
ColorSystemBlue = ColorRef// macOS 10.11+  
ColorSystemBrown = ColorRef// macOS 10.11+  
ColorSystemGray = ColorRef// macOS 10.11+  
ColorSystemGreen = ColorRef// macOS 10.11+  
ColorSystemOrange = ColorRef// macOS 10.11+  
ColorSystemPink = ColorRef// macOS 10.11+  
ColorSystemPurple = ColorRef// macOS 10.11+  
ColorSystemRed = ColorRef// macOS 10.11+  
ColorSystemYellow = ColorRef// macOS 10.11+  
ColorTextBackground = ColorRef  
ColorText = ColorRef  
ColorWindowBackground = ColorRef  
ColorWindowFrame = ColorRef  
ColorWindowFrameText = ColorRef  
ColorUnderPageBackground = ColorRef// macOS 10.8+

// system label colors

ColorLabel = ColorRef// macOS 10.10+  
ColorSecondaryLabel = ColorRef// macOS 10.10+  
ColorTertiaryLabel = ColorRef// macOS 10.10+  
ColorQuaternaryLabel = ColorRef// macOS 10.10+

// pattern

ColorWithPatternImage( ptr image ) = ColorRef  
ColorPatternImage( ColorRef col ) = ImageRef

// retrieving individual components

ColorAlphaComponent( ColorRef col ) = CGFloat  
ColorWhiteComponent( ColorRef col ) = CGFloat  
ColorRedComponent( ColorRef col ) = CGFloat  
ColorGreenComponent( ColorRef col ) = CGFloat  
ColorBlueComponent( ColorRef col ) = CGFloat  
ColorCyanComponent( ColorRef col ) = CGFloat  
ColorMagentaComponent( ColorRef col ) = CGFloat  
ColorYellowComponent( ColorRef col ) = CGFloat  
ColorBlackComponent( ColorRef col ) = CGFloat  
ColorHueComponent( ColorRef col ) = CGFloat  
ColorSaturationComponent( ColorRef col ) = CGFloat  
ColorBrightnessComponent( ColorRef col ) = CGFloat

*changes:*

ColorSetWithCGColor, ColorSetFillWithCGColor, ColorSetStrokeWithCGColor removed. Use ColorSet, ColorSetFill, ColorSetStroke instead.

### **ColorPanel**

*change:*

ColorPanelColor = **ColorRef**  
ColorPanelSetRGB removed. Use ColorPanelSetColor instead

### **ColorWell**

*new:*

ColorWellsBordered( NSInteger tag ) = Boolean  
ColorWellSetBordered( NSInteger tag, Boolean flag )  
ColorWellsActive( NSInteger tag ) = Boolean

*changes:*

ColorWellColor( NSInteger tag ) = **ColorRef**  
ColorWellSetRGB removed. Use ColorWellSetColor instead

### **Control**

*new:*

ControlSetTargetAction( NSInteger ctrlTag, NSInteger targetTag, CFStringRef actionName )

### **Cursor**

*new:*

CursorSetImageNamed( CFStringRef imageName, CGPoint hotSpot )

### **DatePicker**

*changes:*

DatePickerSetTextRGB & DatePickerSetBackgroundRGB removed. Use DatePickerSetTextColor & DatePickerSetBackgroundColor instead.

## **Dictionary**

*new:*

DictionaryWithObjectsForKeys( CFArrayRef objects, CFArrayRef keys ) = CFDictionaryRef  
DictionaryCount( CFDictionaryRef dict ) = NSUInteger  
DictionaryIsEqual( CFDictionaryRef dict, CFDictionaryRef otherDict ) = Boolean  
DictionaryAllKeys( CFDictionaryRef dict ) = CFArrayRef  
DictionaryAllKeysForObject( CFDictionaryRef dict, CFTyperef obj ) = CFArrayRef  
DictionaryAllValues( CFDictionaryRef dict ) = CFArrayRef  
DictionaryObjectForKey( CFDictionaryRef dict, CFStringRef key ) = CFTyperef  
DictionarySetObject( CFMutableDictionaryRef dict, CFTyperef obj, CFStringRef key )  
DictionaryAddEntriesFromDictionary( CFMutableDictionaryRef dict, CFDictionaryRef otherDict )  
DictionarySetDictionary( CFMutableDictionaryRef dict, CFDictionaryRef otherDict )  
DictionaryRemoveObjectForKey( CFMutableDictionaryRef dict, CFStringRef key )  
DictionaryRemoveAllObjects( CFMutableDictionaryRef dict )  
DictionaryRemoveObjectsForKeys( CFMutableDictionaryRef dict, CFArrayRef keys )

## **Error**

*new:*

ErrorCode( ErrorRef err ) = NSInteger  
ErrorDomain( ErrorRef err ) = CFStringRef  
ErrorUserInfo( ErrorRef err ) = CFDictionaryRef

## **Gradient**

*new:*

GradientWithStartEndColors( ColorRef startColor, ColorRef endColor ) = GradientRef  
GradientWithColors( CFArrayRef colors ) = GradientRef  
GradientDrawFromPoint( GradientRef ref, CGPoint pt1, CGPoint pt2, NSGradientDrawingOptions options )  
GradientDrawFromCenter( GradientRef ref, CGPoint startCenter, CGFloat startRadius, CGPoint endCenter, CGFloat endRadius, NSGradientDrawingOptions options )  
GradientDrawInRect( GradientRef ref, CGRect rect, CGFloat angle )  
GradientDrawInBezierPath( GradientRef ref, BezierPathRef path, CGFloat angle )  
GradientDrawInRectRelativeCenterPosition( GradientRef ref, CGRect rect, CGPoint position )  
GradientDrawInBezierPathRelativeCenterPosition( GradientRef ref, BezierPathRef path, CGPoint position )  
GradientNumberOfColorStops( GradientRef ref ) = NSInteger  
GradientDrawFromPointWithStartEndColors( CGPoint pt1, CGPoint pt2, ColorRef startColor, ColorRef endColor, NSGradientDrawingOptions options )  
GradientDrawFromCenterWithStartEndColors( CGPoint startCenter, CGFloat startRadius, CGPoint endCenter, CGFloat endRadius, ColorRef startColor, ColorRef endColor, NSGradientDrawingOptions options )  
GradientDrawInRectWithStartEndColors( CGRect rect, CGFloat angle, ColorRef startColor, ColorRef endColor )  
GradientDrawInBezierPathWithStartEndColors( BezierPathRef path, CGFloat angle, ColorRef startColor, ColorRef endColor )  
GradientDrawInRectRelativeCenterPositionWithStartEndColors( CGRect rect, CGPoint position, ColorRef startColor, ColorRef endColor )  
GradientDrawInBezierPathRelativeCenterPositionWithStartEndColors( BezierPathRef path, CGPoint position, ColorRef startColor, ColorRef endColor )

## **Graphics**

*new:*

GraphicsShowAnimationEffect( NSAnimationEffect animationEffect, CGPoint centerLocation, CGSize size, ptr didEndCallback, ptr contextInfo )

## **GraphicsContext**

*new:*

GraphicsContextSaveGraphicsState  
GraphicsContextRestoreGraphicsState

## **Image**

*new:*

ImageWithCGImage( CGImageRef image, CGSize size ) = ImageRef

## **ImageView**

*new:*

ImageViewSetImageNamed( NSInteger tag, CFStringRef imageName )  
ImageViewImage( NSInteger tag ) = ImageRef

*changes:*

The **imageView** statement *image* param value can now be any of the following:

- The name of a resource image
- The path to a resource image
- An ImageRef (NSImage)

ImageViewCGImage removed. Use ImageViewImage instead.

UIImageViewSetCGImage removed. Use UIImageViewSetImage instead.

### LevelIndicator

*new:*

LevelIndicatorSetImageNamed( NSInteger tag, CFStringRef imageName )

LevelIndicatorSetRatingPlaceholderImageNamed( NSInteger tag, CFStringRef imageName )

### PathUtilities

*new:*

NSUserName = CFStringRef

NSFullUserName = CFStringRef

NSHomeDirectory = CFStringRef

NSHomeDirectoryForUser( CFStringRef userName ) = CFStringRef

NSTemporaryDirectory = CFStringRef

NSOpenStepRootDirectory = CFStringRef

### Printer

*new:*

PrinterWithName( CFStringRef name ) = PrinterRef

PrinterWithType( NSPrinterTypeName type ) = PrinterRef

PrinterNames = CFArrayRef

PrinterTypes = CFArrayRef

PrinterName( PrinterRef printer ) = CFStringRef

PrinterType( PrinterRef printer ) = NSPrinterTypeName

PrinterPageSizeForPaper( PrinterRef printer, NSPrinterPaperName paperName ) = CGSize

PrinterLanguageLevel( PrinterRef printer ) = NSInteger

### PrintInfo

*new:*

PrintInfoShared = PrintInfoRef

PrintInfoLeftMargin = CGFloat

PrintInfoSetLeftMargin( CGFloat value )

PrintInfoTopMargin = CGFloat

PrintInfoSetTopMargin( CGFloat value )

PrintInfoRightMargin = CGFloat

PrintInfoSetRightMargin( CGFloat value )

PrintInfoBottomMargin = CGFloat

PrintInfoSetBottomMargin( CGFloat value )

PrintInfoImageablePageBounds = CGRect

PrintInfoOrientation = NSPaperOrientation

PrintInfoSetOrientation( NSPaperOrientation orientation )

PrintInfoPaperName = NSPrinterPaperName

PrintInfoSetPaperName( NSPrinterPaperName string )

PrintInfoLocalizedPaperName = CFStringRef

PrintInfoPaperSize = CGSize

PrintInfoSetPaperSize( CGSize size )

PrintInfoHorizontalPagination = NSPrintingPaginationMode

PrintInfoSetHorizontalPagination( NSPrintingPaginationMode value )

PrintInfoVerticalPagination = NSPrintingPaginationMode

PrintInfoSetVerticalPagination( NSPrintingPaginationMode value )

PrintInfoIsHorizontallyCentered = Boolean

PrintInfoSetHorizontallyCentered( Boolean flag )

PrintInfoIsVerticallyCentered = Boolean

PrintInfoSetVerticallyCentered( Boolean flag )

PrintInfoPrinter = PrinterRef

PrintInfoSetPrinter( PrinterRef printer )

PrintInfoJobDisposition = NSPrintJobDispositionValue

PrintInfoSetJobDisposition( NSPrintJobDispositionValue value )

PrintInfoSetUpPrintOperationDefaultValues

PrintInfoDictionary = CFDictionaryRef

PrintInfoIsSelectionOnly = Boolean

PrintInfoSetSelectionOnly( Boolean flag )

PrintInfoScalingFactor = CGFloat

PrintInfoSetScalingFactor( CGFloat value )

PrintInfoPrintSettings = CFMutableDictionaryRef

### PrintOperation

*new:*

PrintOperationEPSWithViewToData( NSInteger viewTag, CGRect rect, CFMutableDataRef data ) = PrintOperationRef

PrintOperationEPSWithViewToDataPrintInfo( NSInteger viewTag, CGRect rect, CFMutableDataRef data, PrintInfoRef printInfo ) = PrintOperationRef

PrintOperationEPSWithViewToPath( NSInteger viewTag, CGRect rect, CFStringRef path, PrintInfoRef printInfo ) = PrintOperationRef

PrintOperationPDFWithViewToData( NSInteger viewTag, CGRect rect, CFMutableDataRef data ) = PrintOperationRef

PrintOperationPDFWithViewToDataPrintInfo( NSInteger viewTag, CGRect rect, CFMutableDataRef data, PrintInfoRef printInfo ) = PrintOperationRef  
 PrintOperationPDFWithViewToPath( NSInteger viewTag, CGRect rect, CFStringRef path, PrintInfoRef printInfo ) = PrintOperationRef  
 PrintOperationWithView( NSInteger viewTag ) = PrintOperationRef  
 PrintOperationWithViewPrintInfo( NSInteger viewTag, PrintInfoRef printInfo ) = PrintOperationRef  
 PrintOperationCurrent = PrintOperationRef  
 PrintOperationIsCopying( PrintOperationRef printOperation ) = Boolean  
 PrintOperationPrintInfo( PrintOperationRef printOperation ) = PrintInfoRef  
 PrintOperationSetPrintInfo( PrintOperationRef printOperation, PrintInfoRef printInfo )  
 PrintOperationView( PrintOperationRef printOperation ) = NSInteger  
 PrintOperationPreferredRenderingQuality( PrintOperationRef printOperation ) = NSPrintRenderingQuality  
 PrintOperationRun( PrintOperationRef printOperation ) = Boolean  
 PrintOperationDeliverResult( PrintOperationRef printOperation ) = Boolean  
 PrintOperationShowsPrintPanel( PrintOperationRef printOperation ) = Boolean  
 PrintOperationSetShowsPrintPanel( PrintOperationRef printOperation, Boolean flag )  
 PrintOperationShowsProgressPanel( PrintOperationRef printOperation ) = Boolean  
 PrintOperationSetShowsProgressPanel( PrintOperationRef printOperation, Boolean flag )  
 PrintOperationJobTitle( PrintOperationRef printOperation ) = CFStringRef  
 PrintOperationSetJobTitle( PrintOperationRef printOperation, CFStringRef title )  
 PrintOperationPrintPanel( PrintOperationRef printOperation ) = PrintPanelRef  
 PrintOperationSetPrintPanel( PrintOperationRef printOperation, PrintPanelRef printPanel )  
 PrintOperationContext( PrintOperationRef printOperation ) = GraphicsContextRef  
 PrintOperationCreateContext( PrintOperationRef printOperation ) = GraphicsContextRef  
 PrintOperationCurrentPage( PrintOperationRef printOperation ) = NSInteger  
 PrintOperationPageRange( PrintOperationRef printOperation ) = CFRange  
 PrintOperationPageOrder( PrintOperationRef printOperation ) = NSPrintingPageOrder  
 PrintOperationSetPageOrder( PrintOperationRef printOperation, NSPrintingPageOrder pageOrder )  
 PrintOperationCanSpawnSeparateThread( PrintOperationRef printOperation ) = Boolean  
 PrintOperationSetCanSpawnSeparateThread( PrintOperationRef printOperation, Boolean flag )

## RunningApplication

*new:*

WorkspaceMenuBarOwningApplication = RunningApplicationRef

## ScrollView

*changes:*

ScrollViewBackgroundColor( NSInteger tag ) = **ColorRef**

ScrollViewSetBackgroundRGB removed. Use ScrollViewSetBackgroundColor instead.

## SegmentedControl

*new:*

SegmentedControlSetSegmentWidth( NSInteger tag, NSInteger index, CGFloat value )

SegmentedControlSetSegmentImage( NSInteger tag, NSInteger index, ImageRef image )

SegmentedControlSetSegmentLabel( NSInteger tag, NSInteger index, CFStringRef string )

SegmentedControlSetSegmentMenu( NSInteger tag, NSInteger index, MenuRef menu )

SegmentedControlSetSegmentSelected( NSInteger tag, NSInteger index, Boolean flag )

SegmentedControlIsSegmentSelected( NSInteger tag, NSInteger index ) = Boolean

SegmentedControlSetSegmentEnabled( NSInteger tag, NSInteger index, Boolean flag )

SegmentedControlIsSegmentEnabled( NSInteger tag, NSInteger index ) = Boolean

SegmentedControlIndexOfSelectedItem( NSInteger tag ) = NSInteger // macOS 10.13+

SegmentedControlSetSegmentDistribution( NSInteger tag, NSSegmentDistribution value ) // macOS 10.13+

SegmentedControlSetSelectedSegmentBezelColor( NSInteger tag, ColorRef col ) // macOS 10.12.1+

SegmentedControlSetAlignment( NSInteger tag, NSInteger index, NSTextAlignment value ) // macOS 10.13+

SegmentedControlSetShowsMenuIndicator( NSInteger tag, NSInteger index, Boolean flag ) // macOS 10.13+

SegmentedControlSetToolTip( NSInteger tag, NSInteger index, CFStringRef string ) // macOS 10.13+

*change:*

SegmentedControlSetMenu changed to SegmentedControlSetSegmentMenuIndex

## Shadow

*new:*

ShadowInit = ShadowRef

ShadowOffset( ShadowRef shadow ) = CGSize

ShadowSetOffset( ShadowRef shadow, CGSize offset )

ShadowBlurRadius( ShadowRef shadow ) = CGFloat

ShadowSetBlurRadius( ShadowRef shadow, CGFloat radius )

ShadowColor( ShadowRef shadow ) = ColorRef

ShadowSetColor( ShadowRef shadow, ColorRef col )

ShadowSet( ShadowRef shadow )

ShadowWithAttributes( CGSize offset, CGFloat blurRadius, ColorRef col ) = ShadowRef

ShadowSetWithAttributes( CGSize offset, CGFloat blurRadius, ColorRef col )

## Stepper

*change:*

StepperSetContinuous removed. Use ControlSetContinuous instead.

## **String**

*new:*

StringLength( CFStringRef string ) = NSUInteger  
StringCharacterAtIndex( CFStringRef string, NSUInteger index ) = unichar  
StringCaseInsensitiveCompare( CFStringRef string, CFStringRef otherString ) = NSComparisonResult  
StringCompare( CFStringRef string, CFStringRef otherString ) = NSComparisonResult  
StringHasPrefix( CFStringRef string, CFStringRef prefix ) = Boolean  
StringHasSuffix( CFStringRef string, CFStringRef suffix ) = Boolean  
StringIsEqualToString( CFStringRef string, CFStringRef otherString ) = Boolean  
StringDrawAtPoint( CFStringRef string, CGPoint pt, CFDictionaryRef attributes )  
StringDrawInRect( CFStringRef string, CGRect rect, CFDictionaryRef attributes )  
StringSizeWithAttributes( CFStringRef string, CFDictionaryRef attributes ) = CGSize  
StringLowercaseString( CFStringRef string ) = CFStringRef  
StringLocalizedLowercaseString( CFStringRef string ) = CFStringRef// macOS 10.11+  
StringUppercaseString( CFStringRef string ) = CFStringRef  
StringLocalizedUppercaseString( CFStringRef string ) = CFStringRef// macOS 10.11+  
StringCapitalizedString( CFStringRef string ) = CFStringRef  
StringLocalizedCapitalizedString( CFStringRef string ) = CFStringRef// macOS 10.11+  
StringDoubleValue( CFStringRef string ) = double  
StringFloatValue( CFStringRef string ) = float  
StringIntegerValue( CFStringRef string ) = NSInteger  
StringLongLongValue( CFStringRef string ) = SInt64  
StringBoolValue( CFStringRef string ) = Boolean  
StringPathWithComponents( CFArrayRef array ) = CFStringRef  
StringPathComponents( CFStringRef string ) = CFArrayRef  
StringLastPathComponent( CFStringRef string ) = CFStringRef  
StringPathExtension( CFStringRef string ) = CFStringRef  
StringByAbbreviatingWithTildeInPath( CFStringRef string ) = CFStringRef  
StringByAppendingPathComponent( CFStringRef string, CFStringRef component ) = CFStringRef  
StringByAppendingPathExtension( CFStringRef string, CFStringRef extension ) = CFStringRef  
StringByDeletingLastPathComponent( CFStringRef string ) = CFStringRef  
StringByDeletingPathExtension( CFStringRef string ) = CFStringRef  
StringByExpandingTildeInPath( CFStringRef string ) = CFStringRef  
StringAppendFormat( CFMutableStringRef string, CFStringRef format, ... )  
StringAppendString( CFMutableStringRef string, CFStringRef otherString )  
StringApplyTransform( CFMutableStringRef string, NSStringTransform transform, Boolean reverse, CFRange range, CFRange \*resultingRange )// macOS 10.11+  
StringDeleteCharacters( CFMutableStringRef string, CFRange range )  
StringInsertString( CFMutableStringRef string, CFStringRef otherString, NSUInteger index )  
StringReplaceCharacters( CFMutableStringRef string, CFStringRef otherString, CFRange range )  
StringReplaceOccurrencesOfString( CFMutableStringRef string, CFStringRef targetString, CFStringRef replacementString, NSStringCompareOptions options, CFRange range )  
StringSetString( CFMutableStringRef string, CFStringRef otherString )  
StringWithContentsOfURLUsedEncoding( CFURLRef url, NSStringEncoding \*enc, NSErrorRef \*err ) = CFStringRef

*changes:*

StringWriteToURL now has an extra param, NSErrorRef \*err. Those not interested in details of errors may pass NULL for this param.

StringWithContentsOfURL now has two extra params:

NSStringEncoding enc. See String.incl header for possible values.

NSErrorRef \*err. Those not interested in details of errors may pass NULL for this param.

## **TableView**

*changes:*

For convenience, the table data array for a single-column tableview may now optionally contain an array of strings rather than an array of dictionaries.

## **Text**

*change:*

TextColor( NSInteger tag ) = **ColorRef**

## **TextField**

*change:*

TextFieldSetTextRGB & TextFieldSetBackgroundRGB removed. Use TextFieldSetColor & TextFieldSetBackgroundColor instead.

## **TextView**

*change:*

TextViewSetBackgroundRGB removed. Use TextViewSetBackgroundColor instead.

## **ToolbarItem**

*change:*

The *image* param value of the **toolbaritem** statement can now be the name of a resource image, the path to a resource image or an ImageRef (NSImage).

## View

*new:*

ViewSubviews( NSInteger tag ) = NSArrayRef  
ViewTag( ViewRef view ) = NSInteger

## Window

*new:*

WindowOcclusionState( NSInteger tag ) = NSWindowOcclusionState// macOS 10.9+  
WindowSetMiniwindowImageNamed( NSInteger tag, CFStringRef imageName )  
WindowSetMovableByWindowBackground( NSInteger tag, Boolean flag )  
WindowSetMovable( NSInteger tag, Boolean flag )

*change:*

WindowSetBackgroundRGB removed. Use WindowSetBackgroundColor instead

## Workspace

*new:*

WorkspaceIconForFileAtURL( CFURLRef url ) = ImageRef  
WorkspaceIconForFileType( CFStringRef type ) = ImageRef  
WorkspaceShowSearchResultsForQueryString( CFStringRef string )

-----  
-----  
20180213 FB 5.7.112

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.111]

FB 5.7.112 requires OS X 10.7+ for CocoaUI apps. Non-CocoaUI require 10.6

[01] FBtoC now accepts up to forty parameters inside a function call. The previous maximum was 16.

[02] \_kHIWindowBitTextured added to standard headers inside Tlhx MacWindows.incl

## CocoaUI changes

Please note the following:

1. Many of the more recent Util\_xxxx.incl files are now integrated into CocoaUI. Those includes are no longer required because Tlhx CocoaUI.incl makes them available. Even though they are integrated, the function names have changed slightly. For example, instead of calling FM\_TrashItemAtURL(url) and using the Util\_FileManager.incl, call fn FileManagerTrashItemAtURL( url ) and use only Tlhx CocoaUI.incl. Impacted Util\_xxxx.incl files are shown below and are still available for those not using CocoaUI.

- Util\_Array.incl
- Util\_Dictionary.incl
- Util\_FileManager.incl
- Util\_Number.incl
- Util\_PathUtilities.incl
- Util\_RunningApplications.incl
- Util\_String.incl
- Util\_URL.incl
- Util\_UserDefaults.incl
- Util\_Workspace.incl

2. Because of the changes in #1, some apps will break and will need changes. The CocoaUI user will need to:

- Remove any old include statements ( i.e. Util\_FileManager.incl )
- Rename the function calls (FM\_Xxx -> FileManagerXxxx, etc.).

3. A name change for function GraphicsCurrentCGContext. It is now GraphicsContextCurrentCGContext

4. Examples for the former Util\_xxx.incl functions noted in #1 have been updated and copied to FB Examples/Cocoa/CocoaUI Demos

## General

*changes:*

SInt32 and UInt32 types are now replaced by NSInteger and NSUInteger respectively.

## Array

*new:*

ArrayWithCapacity( NSUInteger numItems ) = CFMutableArrayRef  
ArrayWithContentsOfURL( CFURLRef url ) = CFArrayRef  
ArrayWithObject( CTypeRef obj ) = CFArrayRef  
ArrayWithObjects( CTypeRef obj, ... ) = CFArrayRef  
ArrayFirstObject( CFArrayRef array ) = CTypeRef  
ArrayLastObject( CFArrayRef array ) = CTypeRef  
ArrayWriteToURL( CFArrayRef array, CFURLRef url, Boolean atomically ) = Boolean

## BezierPath

*new:*

BezierPath = BezierPathRef  
BezierPathWithOvalInRect( CGRect r ) = BezierPathRef  
BezierPathWithRect( CGRect r ) = BezierPathRef  
BezierPathWithRoundedRect( CGRect r, CGFloat xRadius, CGFloat yRadius ) = BezierPathRef  
BezierPathByFlatteningPath( BezierPathRef path ) = BezierPathRef  
BezierPathByReversingPath( BezierPathRef path ) = BezierPathRef  
BezierPathMoveToPoint( BezierPathRef path, CGPoint pt )  
BezierPathLineToPoint( BezierPathRef path, CGPoint pt )  
BezierPathCurveToPoint( BezierPathRef path, CGPoint pt, CGPoint cp1, CGPoint cp2 )  
BezierPathClose( BezierPathRef path )  
BezierPathRelativeMoveToPoint( BezierPathRef path, CGPoint pt )  
BezierPathRelativeLineToPoint( BezierPathRef path, CGPoint pt )  
BezierPathRelativeCurveToPoint( BezierPathRef path, CGPoint pt, CGPoint cp1, CGPoint cp2 )  
BezierPathAppendPath( BezierPathRef path1, BezierPathRef path2 )  
BezierPathAppendPathWithPoints( BezierPathRef path, CGPoint \*points, NSInteger count )  
BezierPathAppendPathWithOvalInRect( BezierPathRef path, CGRect r )  
BezierPathAppendPathWithArcFromPoint( BezierPathRef path, CGPoint pt1, CGPoint pt2, CGFloat radius )  
BezierPathAppendPathWithArcWithCenter( BezierPathRef path, CGPoint center, CGFloat radius, CGFloat startAngle, CGFloat endAngle, Boolean clockwise )  
BezierPathAppendPathWithRect( BezierPathRef path, CGRect r )  
BezierPathAppendPathWithRoundedRect( BezierPathRef path, CGRect r, CGFloat xRadius, CGFloat yRadius )  
BezierPathSetWindingRule( BezierPathRef path, NSWindingRule windingRule )  
BezierPathSetLineCapStyle( BezierPathRef path, NSLineCapStyle style )  
BezierPathSetLineJoinStyle( BezierPathRef path, NSLineJoinStyle style )  
BezierPathSetLineWidth( BezierPathRef path, CGFloat lineWidth )  
BezierPathSetMiterLimit( BezierPathRef path, CGFloat limit )  
BezierPathSetFlatness( BezierPathRef path, CGFloat limit )  
BezierPathSetLineDash( BezierPathRef path, CGFloat \*pattern, NSInteger count, CGFloat phase )  
BezierPathSetDefaultWindingRule( NSWindingRule rule )  
BezierPathSetDefaultLineCapStyle( NSLineCapStyle style )  
BezierPathSetDefaultLineJoinStyle( NSLineJoinStyle style )  
BezierPathSetDefaultLineWidth( CGFloat lineWidth )  
BezierPathSetDefaultMiterLimit( NSWindingRule limit )  
BezierPathSetDefaultFlatness( NSWindingRule flatness )  
BezierPathStroke( BezierPathRef path )  
BezierPathFill( BezierPathRef path )  
BezierPathAddClip( BezierPathRef path )  
BezierPathSetClip( BezierPathRef path )  
BezierPathClipRect( CGRect r )  
BezierPathContainsPoint( BezierPathRef path, CGPoint pt ) = Boolean  
BezierPathBounds( BezierPathRef path ) = CGRect  
BezierPathCurrentPoint( BezierPathRef path ) = CGPoint  
BezierPathIsEmpty( BezierPathRef path ) = Boolean  
BezierPathTransformUsingAffineTransform( BezierPathRef path, CGAffineTransform tx )  
BezierPathElementCount( BezierPathRef path ) = NSInteger  
BezierPathElementAtIndex( BezierPathRef path, NSInteger index ) = NSBezierPathElement  
BezierPathElementAtIndexAssociatedPoints( BezierPathRef path, NSInteger index, CGPoint \*points ) = NSBezierPathElement  
BezierPathRemoveAllPoints( BezierPathRef path )  
BezierPathSetAssociatedPointsAtIndex( BezierPathRef path, CGPoint \*points, NSInteger index )  
BezierPathStrokeFillOvalInRect( CGRect r, CGFloat lineWidth, ColorRef strokeCol, ColorRef fillCol )  
BezierPathStrokeFillRect( CGRect r, CGFloat lineWidth, ColorRef strokeCol, ColorRef fillCol )  
BezierPathStrokeFillRoundedRect( CGRect r, CGFloat xRadius, CGFloat yRadius, CGFloat lineWidth, ColorRef strokeCol, ColorRef fillCol )  
BezierPathStrokeFillPolygon( CFArrayRef pts, CGFloat lineWidth, ColorRef strokeCol, ColorRef fillCol )  
BezierPathStrokeOvalInRect( CGRect r, CGFloat lineWidth, ColorRef strokeCol )  
BezierPathStrokeRect( CGRect r, CGFloat lineWidth, ColorRef strokeCol )  
BezierPathStrokeRoundedRect( CGRect r, CGFloat xRadius, CGFloat yRadius, CGFloat lineWidth, ColorRef strokeCol )  
BezierPathStrokeRotatedRect( CGRect r, CGFloat x, CGFloat y, CGFloat angle, CGFloat lineWidth, ColorRef strokeCol )  
BezierPathStrokeLine( CGPoint pt1, CGPoint pt2, CGFloat lineWidth, ColorRef strokeCol )  
BezierPathStrokeCurve( CGPoint pt1, CGPoint pt2, CGPoint cp1, CGPoint cp2, CGFloat lineWidth, ColorRef strokeCol )  
BezierPathStrokePolygon( CFArrayRef pts, CGFloat lineWidth, ColorRef strokeCol )



BezierPathFillOvalnRect( CGRect r, ColorRef fillCol )  
BezierPathFillRect( CGRect r, ColorRef fillCol )  
BezierPathFillRoundedRect( CGRect r, CGFloat xRadius, CGFloat yRadius, ColorRef fillCol )  
BezierPathFillPolygon( CFArrayRef pts, ColorRef fillCol )

## Color

new:

ColorBlack = ColorRef  
ColorBlue = ColorRef  
ColorBrown = ColorRef  
ColorClear = ColorRef  
ColorCyan = ColorRef  
ColorDarkGray = ColorRef  
ColorGray = ColorRef  
ColorGreen = ColorRef  
ColorLightGray = ColorRef  
ColorMagenta = ColorRef  
ColorOrange = ColorRef  
ColorPurple = ColorRef  
ColorRed = ColorRef  
ColorWhite = ColorRef  
ColorYellow = ColorRef

ColorWithCalibratedHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha ) = ColorRef  
ColorWithDeviceHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha ) = ColorRef  
ColorWithHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha ) = ColorRef// macOS 10.9+  
ColorWithSRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha ) = ColorRef  
ColorWithDisplayP3( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha ) = ColorRef// macOS 10.12+  
ColorWithRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha ) = ColorRef// macOS 10.9+  
ColorWithCalibratedRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha ) = ColorRef  
ColorWithDeviceRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha ) = ColorRef  
ColorWithWhite( CGFloat white, CGFloat alpha ) = ColorRef// macOS 10.9+  
ColorWithCalibratedWhite( CGFloat white, CGFloat alpha ) = ColorRef  
ColorWithDeviceWhite( CGFloat white, CGFloat alpha ) = ColorRef  
ColorWithGenericGamma22White( CGFloat white, CGFloat alpha ) = ColorRef  
ColorWithDeviceCMYK( CGFloat cyan, CGFloat magenta, CGFloat yellow, CGFloat black, CGFloat alpha ) = ColorRef  
ColorWithCGColor( CGColorRef col ) = ColorRef// macOS 10.8+  
ColorCGColor( ColorRef col ) = CGColorRef// macOS 10.8+

ColorSet( ColorRef col )  
ColorSetFill( ColorRef col )  
ColorSetStroke( ColorRef col )

ColorSetBlack  
ColorSetBlue  
ColorSetBrown  
ColorSetClear  
ColorSetCyan  
ColorSetDarkGray  
ColorSetGray  
ColorSetGreen  
ColorSetLightGray  
ColorSetMagenta  
ColorSetOrange  
ColorSetPurple  
ColorSetRed  
ColorSetWhite  
ColorSetYellow

ColorSetWithCalibratedHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )  
ColorSetWithDeviceHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )  
ColorSetWithHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )// macOS 10.9+  
ColorSetWithSRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetWithDisplayP3( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )// macOS 10.12+  
ColorSetWithRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )// macOS 10.9+  
ColorSetWithCalibratedRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetWithDeviceRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetWithWhite( CGFloat white, CGFloat alpha )// macOS 10.9+  
ColorSetWithCalibratedWhite( CGFloat white, CGFloat alpha )  
ColorSetWithDeviceWhite( CGFloat white, CGFloat alpha )  
ColorSetWithGenericGamma22White( CGFloat white, CGFloat alpha )  
ColorSetWithDeviceCMYK( CGFloat cyan, CGFloat magenta, CGFloat yellow, CGFloat black, CGFloat alpha )  
ColorSetWithCGColor( CGColorRef col )// macOS 10.8+

ColorSetFillBlack  
ColorSetFillBlue  
ColorSetFillBrown  
ColorSetFillClear  
ColorSetFillCyan  
ColorSetFillDarkGray  
ColorSetFillGray  
ColorSetFillGreen  
ColorSetFillLightGray  
ColorSetFillMagenta  
ColorSetFillOrange  
ColorSetFillPurple  
ColorSetFillRed  
ColorSetFillWhite  
ColorSetFillYellow

ColorSetFillWithCalibratedHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )  
ColorSetFillWithDeviceHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )  
ColorSetFillWithHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )// macOS 10.9+  
ColorSetFillWithSRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetFillWithDisplayP3( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )// macOS 10.12+  
ColorSetFillWithRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )// macOS 10.9+  
ColorSetFillWithCalibratedRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetFillWithDeviceRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetFillWithWhite( CGFloat white, CGFloat alpha )// macOS 10.9+  
ColorSetFillWithCalibratedWhite( CGFloat white, CGFloat alpha )  
ColorSetFillWithDeviceWhite( CGFloat white, CGFloat alpha )  
ColorSetFillWithGenericGamma22White( CGFloat white, CGFloat alpha )  
ColorSetFillWithDeviceCMYK( CGFloat cyan, CGFloat magenta, CGFloat yellow, CGFloat black, CGFloat alpha )  
ColorSetFillWithCGColor( CGColorRef col )// macOS 10.8+

ColorSetStrokeBlack  
ColorSetStrokeBlue  
ColorSetStrokeBrown  
ColorSetStrokeClear  
ColorSetStrokeCyan  
ColorSetStrokeDarkGray  
ColorSetStrokeGray  
ColorSetStrokeGreen  
ColorSetStrokeLightGray  
ColorSetStrokeMagenta  
ColorSetStrokeOrange  
ColorSetStrokePurple  
ColorSetStrokeRed  
ColorSetStrokeWhite  
ColorSetStrokeYellow

ColorSetStrokeWithCalibratedHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )  
ColorSetStrokeWithDeviceHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )  
ColorSetStrokeWithHSB( CGFloat hue, CGFloat saturation, CGFloat brightness, CGFloat alpha )// macOS 10.9+  
ColorSetStrokeWithSRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetStrokeWithDisplayP3( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )// macOS 10.12+  
ColorSetStrokeWithRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )// macOS 10.9+  
ColorSetStrokeWithCalibratedRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetStrokeWithDeviceRGB( CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )  
ColorSetStrokeWithWhite( CGFloat white, CGFloat alpha )// macOS 10.9+  
ColorSetStrokeWithCalibratedWhite( CGFloat white, CGFloat alpha )  
ColorSetStrokeWithDeviceWhite( CGFloat white, CGFloat alpha )  
ColorSetStrokeWithGenericGamma22White( CGFloat white, CGFloat alpha )  
ColorSetStrokeWithDeviceCMYK( CGFloat cyan, CGFloat magenta, CGFloat yellow, CGFloat black, CGFloat alpha )  
ColorSetStrokeWithCGColor( CGColorRef col )// macOS 10.8+

## **DialogEvent**

*new:*

DialogEventFont = CTFontRef

## **Dictionary**

*new:*

DictionaryWithCapacity( NSUInteger numItems ) = CFMutableDictionaryRef

DictionaryWithContentsOfURL( CFURLRef url ) = CFDictionaryRef

DictionaryWithObject( CTypeRef obj, CFStringRef key ) = CFDictionaryRef

DictionaryWithObjects( CTypeRef obj, ... ) = CFDictionaryRef

DictionaryWriteToURL( CFDictionaryRef dict, CFURLRef url, Boolean atomically ) = Boolean

## FileManager

*new:*

FileManagerURLForTemporaryDirectory = CFURLRef  
FileManagerURLForDirectory( NSSearchPathDirectory whichDirectory, NSSearchPathDomainMask domain ) = CFURLRef  
FileManagerURLForPreferencesDirectory = CFURLRef  
FileManagerURLForApplicationDirectory = CFURLRef  
FileManagerContentsOfDirectoryAtURL( CFURLRef url, CFArrayRef keys, NSDirectoryEnumerationOptions options ) = CFArrayRef  
FileManagerCreateDirectoryAtURL( CFURLRef url, Boolean withIntermediateDirectories, CFDictionaryRef attributes ) = Boolean  
FileManagerCreateFileAtURL( CFURLRef url, CFDataRef contents, CFDictionaryRef attributes ) = Boolean  
FileManagerRemoveItemAtURL( CFURLRef url ) = Boolean  
FileManagerReplaceItemAtURL( CFURLRef origURL, CFURLRef newURL ) = Boolean  
FileManagerTrashItemAtURL( CFURLRef url )  
FileManagerCopyItemAtURL( CFURLRef srcURL, CFURLRef dstURL ) = Boolean  
FileManagerMoveItemAtURL( CFURLRef srcURL, CFURLRef dstURL ) = Boolean  
FileManagerFileExistsAtURL( CFURLRef url ) = Boolean  
FileManagerIsReadableFileAtURL( CFURLRef url ) = Boolean  
FileManagerIsWritableFileAtURL( CFURLRef url ) = Boolean  
FileManagerIsExecutableFileAtURL( CFURLRef url ) = Boolean  
FileManagerIsDeletableFileAtURL( CFURLRef url ) = Boolean  
FileManagerIsDirectoryAtURL( CFURLRef url ) = Boolean  
FileManagerAttributesOfItemAtURL( CFURLRef url ) = CFDictionaryRef  
FileManagerSetAttributesOfItemAtURL( CFURLRef url, CFDictionaryRef attributes ) = Boolean  
FileManagerContentsAtURL( CFURLRef url ) = CFDataRef

## FontManager

*new dialog event:*

\_fontManagerChangeFont

## Graphics

*change:*

GraphicsCurrentCGContext renamed GraphicsContextCurrentCGContext

## Image

*new:*

ImageNamed( CFStringRef name ) = ImageRef  
ImageSetName( ImageRef ref, CFStringRef name )  
ImageName( ImageRef ref ) = CFStringRef  
ImageSize( ImageRef ref ) = CGSize  
ImageSetSize( ImageRef ref, CGSize size )  
ImageTypes = CFArrayRef  
ImageUnfilteredTypes = CFArrayRef  
ImageDrawInRect( ImageRef ref, CGRect rect )  
ImageDrawAtPoint( ImageRef ref, CGPoint pt, CGRect fromRect, NSCompositingOperation operation, CGFloat fraction )  
ImageBackgroundColor( ImageRef ref ) = ColorRef  
ImageSetBackgroundColor( ImageRef ref, ColorRef col )  
ImageAlignmentRect( ImageRef ref ) = CGRect  
ImageSetAlignmentRect( ImageRef ref, CGRect rect )  
ImageTIFFRepresentation( ImageRef ref ) = CFDataRef  
ImageCGImageForProposedRect( ImageRef ref, CGRect rect, GraphicsContextRef context, CFDictionaryRef hints ) = CGImageRef

## ImageView

*new:*

ImageViewCGImage( NSInteger tag ) = CGImageRef

## IndexSet

*new:*

IndexSetWithIndex( NSUInteger value ) = IndexSetRef  
IndexSetWithIndexesInRange( CFRange range ) = IndexSetRef  
IndexSetContainsIndex( IndexSetRef set, NSUInteger index ) = Boolean  
IndexSetContainsIndexes( IndexSetRef set, IndexSetRef subset ) = Boolean  
IndexSetContainsIndexesInRange( IndexSetRef set, CFRange range ) = Boolean  
IndexSetIntersectsIndexesInRange( IndexSetRef set, CFRange range ) = Boolean  
IndexSetCount( IndexSetRef set ) = NSUInteger  
IndexSetCountOfIndexesInRange( IndexSetRef set, CFRange range ) = NSUInteger  
IndexSetIsEqual( IndexSetRef set1, IndexSetRef set2 ) = Boolean  
IndexSetFirstIndex( IndexSetRef set ) = NSUInteger  
IndexSetLastIndex( IndexSetRef set ) = NSUInteger

IndexSet() = MutableIndexSetRef  
IndexSetAddIndex( MutableIndexSetRef set, NSUInteger index )  
IndexSetAddIndexes( MutableIndexSetRef set, IndexSetRef otherSet )  
IndexSetAddIndexesInRange( MutableIndexSetRef set, CFRange range )  
IndexSetRemoveIndex( MutableIndexSetRef set, NSUInteger index )

IndexSetRemoveIndexes( MutableIndexSetRef set, IndexSetRef otherSet )  
IndexSetRemoveAllIndexes( MutableIndexSetRef set )  
IndexSetRemoveIndexesInRange( MutableIndexSetRef set, CFRange range )  
IndexSetShiftIndexes( MutableIndexSetRef set, NSUInteger index, NSInteger delta )

## Number

*new:*

NumberWithBool( Boolean value ) = CFNumberRef  
NumberWithChar( char value ) = CFNumberRef  
NumberWithShort( short value ) = CFNumberRef  
NumberWithLong( long value ) = CFNumberRef  
NumberWithLongLong( SInt64 value ) = CFNumberRef  
NumberWithUnsignedChar( unsigned char value ) = CFNumberRef  
NumberWithUnsignedShort( unsigned short value ) = CFNumberRef  
NumberWithUnsignedLong( unsigned long value ) = CFNumberRef  
NumberWithUnsignedLongLong( UInt64 value ) = CFNumberRef  
NumberWithFloat( float value ) = CFNumberRef  
NumberWithDouble( double value ) = CFNumberRef

NumberBoolValue( CFNumberRef number ) = Boolean  
NumberCharValue( CFNumberRef number ) = char  
NumberShortValue( CFNumberRef number ) = short  
NumberLongValue( CFNumberRef number ) = long  
NumberLongLongValue( CFNumberRef number ) = SInt64  
NumberUnsignedCharValue( CFNumberRef number ) = unsigned char  
NumberUnsignedShortValue( CFNumberRef number ) = unsigned short  
NumberUnsignedLongValue( CFNumberRef number ) = unsigned long  
NumberUnsignedLongLongValue( CFNumberRef number ) = UInt64  
NumberFloatValue( CFNumberRef number ) = float  
NumberDoubleValue( CFNumberRef number ) = double

NumberStringValue( CFNumberRef number ) = CFStringRef  
NumberCompare( CFNumberRef number1, CFNumberRef number2 ) = NSComparisonResult  
NumberIsEqualToNumber( CFNumberRef number1, CFNumberRef number2 ) = Boolean

## RunningApplication

*new:*

RunningApplicationWithProcessIdentifier( pid\_t pid ) = RunningApplicationRef  
RunningApplicationsWithBundleIdentifier( CFStringRef identifier ) = CFArrayRef  
RunningApplicationCurrentApplication = RunningApplicationRef  
RunningApplicationIsActive( RunningApplicationRef ra ) = Boolean  
RunningApplicationActivate( RunningApplicationRef ra, NSApplicationActivationOptions options ) = Boolean  
RunningApplicationActivationPolicy( RunningApplicationRef ra ) = NSApplicationActivationPolicy  
RunningApplicationHide( RunningApplicationRef ra ) = Boolean  
RunningApplicationUnhide( RunningApplicationRef ra ) = Boolean  
RunningApplicationIsHidden( RunningApplicationRef ra ) = Boolean  
RunningApplicationLocalizedString( RunningApplicationRef ra ) = CFStringRef  
RunningApplicationBundleIdentifier( RunningApplicationRef ra ) = CFStringRef  
RunningApplicationBundleURL( RunningApplicationRef ra ) = CFURLRef  
RunningApplicationExecutableArchitecture( RunningApplicationRef ra ) = NSInteger  
RunningApplicationExecutableURL( RunningApplicationRef ra ) = CFURLRef  
RunningApplicationLaunchDate( RunningApplicationRef ra ) = CFDateRef  
RunningApplicationIsFinishedLaunching( RunningApplicationRef ra ) = Boolean  
RunningApplicationProcessIdentifier( RunningApplicationRef ra ) = pid\_t  
RunningApplicationOwnsMenuBar( RunningApplicationRef ra ) = Boolean  
RunningApplicationForceTerminate( RunningApplicationRef ra ) = Boolean  
RunningApplicationTerminate( RunningApplicationRef ra ) = Boolean  
RunningApplicationIsTerminated( RunningApplicationRef ra ) = Boolean  
RunningApplicationsTerminateAutomaticallyTerminableApplications

## String

*new:*

StringWithCapacity( NSUInteger capacity ) = CFMutableStringRef  
StringWithFormat( CFStringRef format, ... ) = CFStringRef  
StringWithContentsOfURL( CFURLRef url ) = CFStringRef  
StringWriteToURL( CFStringRef string, CFURLRef url, Boolean atomically, NSStringEncoding encoding ) = Boolean  
StringSubstringFromIndex( CFStringRef string, CFIndex index ) = CFStringRef  
StringSubstringWithRange( CFStringRef string, CFRange range ) = CFStringRef  
StringSubstringToIndex( CFStringRef string, CFIndex index ) = CFStringRef  
StringByAppendingFormat( CFStringRef string, CFStringRef format, ... ) = CFStringRef  
StringByAppendingString( CFStringRef string1, CFStringRef string2 ) = CFStringRef  
StringByPaddingToLength( CFStringRef string, NSUInteger newLength, CFStringRef padString, NSUInteger padIndex ) = CFStringRef  
StringContainsString( CFStringRef string1, CFStringRef string2 ) = Boolean

StringPropertyList( CFStringRef string ) = CTypeRef

## Text

*new:*

TextSelectAll( NSInteger tag )

TextCopy( NSInteger tag )

TextCut( NSInteger tag )

TextPaste( NSInteger tag )

TextCopyFont( NSInteger tag )

TextPasteFont( NSInteger tag )

TextDelete( NSInteger tag )

TextAlignment( NSInteger tag ) = NSTextAlignment

TextAlignCenter( NSInteger tag )

TextAlignLeft( NSInteger tag )

TextAlignRight( NSInteger tag )

TextColor( NSInteger tag ) = CGColorRef

TextSetColor( NSInteger tag, CGColorRef col )

TextSetColorInRange( NSInteger tag, CGColorRef col, CFRange range )

TextSuperscript( NSInteger tag )

TextSubscript( NSInteger tag )

TextUnscript( NSInteger tag )

TextUnderline( NSInteger tag )

TextSetFont( NSInteger tag, CFontRef font )

TextSetFontInRange( NSInteger tag, CFontRef font, CFRange range )

TextReadRTFDFromURL( NSInteger tag, CFURLRef url ) = Boolean

TextWriteRTFDToURL( NSInteger tag, CFURLRef url, Boolean atomically ) = Boolean

## TextView

*new dialog events:*

\_textViewDidChangeSelection

\_textViewDoCommandBySelector

## URL

*new:*

URLWithString( CFStringRef string ) = CFURLRef

URLFileURLWithPath( CFStringRef string ) = CFURLRef

URLPath( CFURLRef url ) = CFStringRef

URLLastPathComponent( CFURLRef url ) = CFStringRef

URLPathExtension( CFURLRef url ) = CFStringRef

URLByAppendingPathComponent( CFURLRef url, CFStringRef pathComponent ) = CFURLRef

URLByAppendingPathExtension( CFURLRef url, CFStringRef extension ) = CFURLRef

URLByDeletingLastPathComponent( CFURLRef url ) = CFURLRef

URLByDeletingPathExtension( CFURLRef url ) = CFURLRef

URLResourceValuesForKeys( CFURLRef url, CFArrayRef keys ) = CFDictionaryRef

## UserDefaults

*new:*

UserDefaultsObject( CFStringRef key ) = CTypeRef

UserDefaultsBool( CFStringRef key ) = Boolean

UserDefaultsInteger( CFStringRef key ) = long

UserDefaultsDouble( CFStringRef key ) = double

UserDefaultsSetObject( CFStringRef key, CTypeRef obj )

UserDefaultsSetBool( CFStringRef key, Boolean value )

UserDefaultsSetDouble( CFStringRef key, double value )

UserDefaultsSetInteger( CFStringRef key, long value )

UserDefaultsRemoveObject( CFStringRef key )

UserDefaultsRegisterDefaults( CFDictionaryRef defaults )

UserDefaultsSynchronize = Boolean

UserDefaultsStoreWindowViewValues( NSInteger wndTag, CFStringRef key )

UserDefaultsRestoreWindowViewValues( NSInteger wndTag, CFStringRef key )

UserDefaultsRemoveWindowViewValues( NSInteger wndTag, CFStringRef key )

## Value

*new:*

ValueWithPointer( ptr p ) = ValueRef

ValuePointer( ValueRef v ) = ptr

ValueWithRange( CFRange range ) = ValueRef

ValueRange( ValueRef v ) = CFRange

ValueWithPoint( CGPoint pt ) = ValueRef

ValuePoint( ValueRef v ) = CGPoint

ValueWithSize( CGSize size ) = ValueRef

ValueSize( ValueRef v ) = CGSize

ValueWithRect( CGRect r ) = ValueRef

ValueRect( ValueRef v ) = CGRect

## Workspace

*new:*

```
WorkspaceOpenURL(CFURLRef url) = Boolean
WorkspaceOpenURLWithApplication(CFURLRef url, CFStringRef appName, Boolean deactivate) = Boolean
WorkspaceOpenURLsWithApplicationAtURL(CFArrayRef urls, CFURLRef appURL, NSWorkspaceLaunchOptions options,
CFDictionaryRef configuration) = Boolean
WorkspaceOpenURLWithApplicationAtURL(CFURLRef url, CFURLRef appURL, NSWorkspaceLaunchOptions options,
CFDictionaryRef configuration) = Boolean
WorkspaceLaunchApplication(CFStringRef appName) = Boolean
WorkspaceHideOtherApplications
WorkspaceDuplicateURLs(CFArrayRef urls)
WorkspaceRecycleURL(CFURLRef url)
WorkspaceRecycleURLs(CFArrayRef urls)
WorkspaceTypeOfFileAtURL(CFURLRef url) = CFStringRef
WorkspacePreferredFilenameExtensionForType(CFStringRef typeName) = CFStringRef
WorkspaceFilenameExtensionIsValidForType(CFStringRef filenameExtension, CFStringRef typeName) = Boolean
WorkspaceFileTypeConformToType(CFStringRef firstTypeName, CFStringRef secondTypeName) = Boolean
WorkspaceGetInfoForFileAtURL(CFURLRef url, CFStringRef *appName, CFStringRef *type) = Boolean
WorkspaceURLForApplicationToOpenURL(CFURLRef url) = CFURLRef
WorkspacesFilePackageAtURL(CFURLRef url) = Boolean
WorkspaceFrontmostApplication = RunningApplicationRef
WorkspaceRunningApplications = CFArrayRef
WorkspaceURLForApplicationWithIdentifier(CFStringRef identifier) = CFURLRef
WorkspaceNoteFileSystemChangedAtURL(CFURLRef url)
```

-----  
-----  
20171202 FB 5.7.111

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.110]

FB 5.7.111 requires OS X 10.6 or higher

[01] OSPanelSave accessory view example using CocoaUI added to Examples/Files/OSPanel examples  
[02] New CocoaUI demos: TextField Arrow Keys, TableView Sort, MiniwindowImage, FontPanel, AboutPanelWithOptions

## CocoaUI changes

### General

The `imageName` param of the following functions and statements now optionally accepts a path to a resource image.

*Functions:*

```
AlertsetIcon
ButtonsetImage
ButtonSeAlternatetImage
CursorsetImage
LevelIndicatorSetRatingPlaceholderImage
LevelIndicatorsetImage
SegmentedControlSetSegment
```

*Statements:*

```
imageview
toolbaritem
```

### Application

*new:*

```
AppOrderFrontStandardAboutPanel
AppOrderFrontStandardAboutPanelWithOptions(CFDictionaryRef options) // see
AboutPanelWithOptions demo
AppReplyToApplicationShouldTerminate(Boolean flag)
```

### DialogEvent

*new:*

```
_controlDoCommandBySelector // see TextField Arrow Keys demo
DialogEventString = CFStringRef
```

### FontManager // see FontPanel demo

*new:*

```
FontManagerSetSelectedFont(CTFontRef font)
FontManagerSelectedFont = CTFontRef
FontManagerShowPanel
```

FontManagerClosePanel

### **MenuItem**

*new:*

MenuItemSetOnMenuAction( SInt32 menuIndex, SInt32 itemIndex )

### **SearchField**

*new:*

SearchFieldRecentSearches( SInt32 tag ) = CFArrayRef

### **SegmentedControl**

*new:*

SegmentedControlSelectSegmentWithTag( SInt32 ctrlTag, SInt32 segTag ) = Boolean

### **ScrollView**

*new:*

ScrollViewContentSize( SInt32 tag ) = CGSize

ScrollViewDocumentVisibleRect( SInt32 tag ) = CGRect

ScrollViewBackgroundColor( SInt32 tag ) = CGColorRef

ScrollViewSetBackgroundColor( SInt32 tag, CGColorRef col )

ScrollViewSetBackgroundRGB( SInt32 tag, CGFloat red, CGFloat green, CGFloat blue, CGFloat alpha )

ScrollViewDrawsBackground( SInt32 tag ) = Boolean

ScrollViewSetDrawsBackground( SInt32 tag, Boolean flag )

ScrollViewBorderStyle( SInt32 tag ) = NSBorderStyle

ScrollViewSetBorderStyle( SInt32 tag, NSBorderStyle type )

ScrollViewDocumentCursor( SInt32 tag ) = CursorRef

ScrollViewSetDocumentCursor( SInt32 tag, CursorRef ref )

ScrollViewHasHorizontalRuler( SInt32 tag ) = Boolean

ScrollViewSetHasHorizontalRuler( SInt32 tag, Boolean flag )

ScrollViewHasVerticalRuler( SInt32 tag ) = Boolean

ScrollViewSetHasVerticalRuler( SInt32 tag, Boolean flag )

ScrollViewRulersVisible( SInt32 tag ) = Boolean

ScrollViewSetRulersVisible( SInt32 tag, Boolean flag )

ScrollViewLineScroll( SInt32 tag ) = CGFloat

ScrollViewSetLineScroll( SInt32 tag, CGFloat value )

ScrollViewHorizontalLineScroll( SInt32 tag ) = CGFloat

ScrollViewSetLHorizontalLineScroll( SInt32 tag, CGFloat value )

ScrollViewVerticalLineScroll( SInt32 tag ) = CGFloat

ScrollViewSetVerticalLineScroll( SInt32 tag, CGFloat value )

ScrollViewPageScroll( SInt32 tag ) = CGFloat

ScrollViewSetPageScroll( SInt32 tag, CGFloat value )

ScrollViewHorizontalPageScroll( SInt32 tag ) = CGFloat

ScrollViewSetHorizontalPageScroll( SInt32 tag, CGFloat value )

ScrollViewVerticalPageScroll( SInt32 tag ) = CGFloat

ScrollViewSetVerticalPageScroll( SInt32 tag, CGFloat value )

ScrollViewScrollsDynamically( SInt32 tag ) = Boolean

ScrollViewSetScrollsDynamically( SInt32 tag, Boolean flag )

ScrollViewAllowsMagnification( SInt32 tag ) = Boolean// macOS 10.8+

ScrollViewSetAllowsMagnification( SInt32 tag, Boolean flag )// macOS 10.8+

ScrollViewMagnification( SInt32 tag ) = CGFloat// macOS 10.8+

ScrollViewSetMagnification( SInt32 tag, CGFloat value )// macOS 10.8+

ScrollViewMagnifyToFitRect( SInt32 tag, CGRect r )// macOS 10.8+

ScrollViewMaxMagnification( SInt32 tag ) = CGFloat// macOS 10.8+

ScrollViewSetMaxMagnification( SInt32 tag, CGFloat value )// macOS 10.8+

ScrollViewMinMagnification( SInt32 tag ) = CGFloat// macOS 10.8+

ScrollViewSetMinMagnification( SInt32 tag, CGFloat value )// macOS 10.8+

ScrollViewSetMagnificationCenteredAtPoint( SInt32 tag, CGFloat value, CGPoint pt )// macOS 10.8+

### **Slider**

*new:*

SliderType( SInt32 tag ) = NSSliderType

SliderAltIncrementValue( SInt32 tag ) = double

SliderSetAltIncrementValue( SInt32 tag, double value )

### **TableView**

*new:*

Column sorting // see TableView Sort demo

*changes:*

TableViewSetData now retains the array

### **TextField**

*new:*

```
TextFieldSetSelectedRange(SInt32 tag, CFRange range)
TextFieldSelectedRange(SInt32 tag) = CFRange
```

## Window

new:

```
WindowIsKey(SInt32 tag) = Boolean
WindowCanBecomeKey(SInt32 tag) = Boolean
WindowMakeKey(SInt32 tag)
WindowMakeKeyAndOrderFront(SInt32 tag)
WindowIsMain(SInt32 tag) = Boolean
WindowCanBecomeMain(SInt32 tag) = Boolean
WindowMakeMain(SInt32 tag)
WindowPerformClose(SInt32 tag)
WindowIsMiniaturized(SInt32 tag) = Boolean
WindowPerformMiniaturize(SInt32 tag)
WindowMiniaturize(SInt32 tag)
WindowDeminiaturize(SInt32 tag)
WindowSetMiniwindowImage(SInt32 tag, CFStringRef imageName) // see MiniwindowImage demo
WindowSetMiniwindowTitle(SInt32 tag, CFStringRef title)
WindowPrint(SInt32 tag)
WindowContentBorderThickness(SInt32 tag, CGRectEdge edge) = CGFloat
WindowSetPreventsApplicationTerminationWhenModal(SInt32 tag, Boolean flag)
WindowIsSheet(SInt32 tag) = Boolean
WindowOrderOut(SInt32 tag)
WindowOrderFront(SInt32 tag)
WindowOrderFrontRegardless(SInt32 tag)
WindowSaveFrameUsingName(SInt32 tag, CFStringRef name)
```

-----  
-----  
20171202 FB 5.7.110

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.109]

FB 5.7.110 requires OS X 10.6 or higher

[01] FB's I/O commands ( like LINE INPUT ) would only read or write a partial file and not all of it. This was caused by inappropriate accumulation of file handles ( NSFileHandle ) which resulted in exhaustion of available file descriptors. Typically this only occurred when FB file I/O was transferring one byte at a time. Fixed ( I hope ).

-----  
-----  
20171130 FB 5.7.109

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.108]

FB 5.7.109 requires OS X 10.6 or higher

[01] FB's EOF() function failed.  
[02] TitlebarAccessoryViewWithTag() causes crash when attempting titlebar access for a window without one.

-----  
-----  
20171120 FB 5.7.108

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.107]

FB 5.7.108 requires OS X 10.6 or higher  
[01] Lots of CocoaUI additions and changes - see "CocoaUI changes" below for details  
[02] New CocoaUI demos for  
    GCD dispatch  
    TextView Attributed strings  
    TitlebarAccessoryView  
    DragDrop View  
    Several CocoaUI demos received bug fixes and updates to reflect current CocoaUI syntax.  
[03] FB I/O keyword code ( i.e. OPEN, READ/WRITE, LOF, RECORD, APPEND etc. ) updated  
    It should deliver more consistent cooperative advisory locking on local storage. Network advisory locking not supported.  
    Watch for a separate list post.



[04] FBtoC crashes instead of reporting a Bad Factor on 'end fn = r' where 'r' is an undefined record name.  
[05] FBtoC's Make Xcode Project( *with stripping* ) now works.  
[06] A unix function changed its parameter order. FBtoC code adjusted to conform.

## CocoaUI changes

### Application

*new:*  
AppSetOutputWindow( SInt32 tag )

### Box

*new:*  
BoxContentViewMargins( SInt32 tag ) = CGSize  
BoxSetContentViewMargins( SInt32 tag, CGSize size )

### ColorWell

*new:*  
ColorWellSetColor( SInt32 tag, CGColorRef col )

### Control

*new:*  
ControlSetFormat( SInt32 tag, CFStringRef characters, Boolean pass, UInt32 maxLength, Boolean caseSensitive )

### DialogEvent

*new:*  
DialogEventArray = CFArrayRef

### Menu

*new:*  
MenuItemSetAlternate( SInt32 menuIndex, SInt32 itemIndex, Boolean flag )  
MenuAddItem( SInt32 menuIndex, CFStringRef title, CFStringRef keyEquivalent, NSEventModifierFlags keyEquivalentModifierMask )  
MenuInsertItem( SInt32 menuIndex, SInt32 itemIndex, CFStringRef title, CFStringRef keyEquivalent, NSEventModifierFlags keyEquivalentModifierMask )

### SplitView

*fix:*  
Unable to modify embedded views in nib splitview.

*new:*  
standard menu statements  
**filemenu, findmenu, formatmenu, fontmenu, textmenu, viewmenu, helpmenu**

### TableView

*new:*  
TableViewSelectRow( SInt32 tag, SInt32 rowIndex )

### Text

*new:*  
TextSetString( SInt32 tag, CFStringRef string )  
TextSelectedRange( SInt32 tag ) = CFRange  
TextSetSelectedRange( SInt32 tag, CFRange range )

### TextField

*new:*  
TextFieldSetAllowsUndo( SInt32 tag, Boolean flag )

*changes:*  
TextFieldSetFormat removed - use ControlSetFormat instead.

*fix:*  
Focus ring appeared in wrong place when field's parent view flipped.

### TextView

*new:*  
TextViewSetAllowsUndo( SInt32 tag, Boolean flag )  
TextViewSetImportsGraphics( SInt32 tag, Boolean flag )  
TextViewSetAllowsImageEditing( SInt32 tag, Boolean flag )  
TextViewSetAutomaticLinkDetectionEnabled( SInt32 tag, Boolean flag )  
TextViewToggleAutomaticLinkDetection( SInt32 tag )

```
TextViewSetDisplaysLinkToolTips(SInt32 tag, Boolean flag)
TextViewSetAutomaticQuoteSubstitutionEnabled(SInt32 tag, Boolean flag)
TextViewToggleAutomaticQuoteSubstitution(SInt32 tag)
```

*changes:*

Default AllowsUndo setting is now `_true`.  
TextViewString and TextViewSetString removed - use TextString and TextSetString instead.

**View**

*new:*

```
ViewAutoresizesSubviews(SInt32 tag) = Boolean
ViewSetAutoresizesSubviews(SInt32 tag, Boolean flag)
ViewRegisterForDraggedFiles(SInt32 tag)
```

dialog constants

```
_viewDraggingEntered
_viewDraggingExited
_viewPerformDragOperation
```

**Window**

*new:*

```
WindowViewWithTag(SInt32 wndTag, SInt32 viewTag) = ptr
WindowSetAutorecalculatesKeyViewLoop(SInt32 tag, Boolean flag)
WindowRecalculateKeyViewLoop(SInt32 tag)
WindowRecalculateKeyViewLoopByTagOrder(SInt32 tag)
WindowFirstResponder(SInt32 tag) = SInt32
WindowInitialFirstResponder(SInt32 tag) = SInt32
WindowSetInitialFirstResponder(SInt32 wndTag, SInt32 responderTag)
WindowContentRectForFrameRect(SInt32 tag, CGRect r) = CGRect
WindowFrameRectForContentRect(SInt32 tag, CGRect r) = CGRect
WindowSheetParent(SInt32 tag) = SInt32// macOS 10.9+
WindowSetResizeIncrements(SInt32 tag, CGSize size)
WindowSetContentSize(SInt32 tag, CGSize size)
WindowSetContentSizeIncrements(SInt32 tag, CGSize size)
WindowOrderRelativeTo(SInt32 wndTag, NSWindowOrderingMode order, SInt32 otherWndTag)
WindowSetLevel(SInt32 tag, NSWindowLevel level)
WindowStandardWindowButton(SInt32 tag, NSWindowButton btn) = ptr
WindowSetTitleVisibility(SInt32 tag, NSWindowTitleVisibility visibility)
WindowResizeFlags(SInt32 tag) = NSEventModifierFlags
```

-----  
-----  
20171030 FB 5.7.107

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.106]

FB 5.7.107 requires OS X 10.6 or higher

General Fixes & Additions

[01] Util\_Array.incl's ArrayFirstObject() now works with 10.6+  
[02] Editor crash opening a file when using `_kFBProjTypeAlt1 = "_FB^π"` because this constant translates to zero in C.  
[03] New 'Abstract' demo and ViewSetNeedsDisplay demo added to CocoaUI Demos/Graphics.

[04] A later(Brian 20171101) supplement to 5.7.107 fixed a bad structure bug that causes FBtoC to quit. Issue happens when user fails to complete a block ( like 'end select' ). Code fix by Michelle.

**CocoaUI changes 20171030( addendum to .107 by adding to .107's bundle )**

**Box**

*new:*

```
BoxSetBorderRGB(SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a)
BoxSetFillRGB(SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a)
BoxSetTitleFontWithName(SInt32 tag, CFStringRef fontName, CGFloat size)
```

**Button**

*new:*

```
ButtonSetTitleRGB(SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a)
ButtonSetBackgroundRGB(SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a)
```

**CocoaAlert**

*changes:*

Previously, a sheet alert's tag value and return code would appear in dialog(-1), dialog(ev) respectively. They're now the other way around: returnCode = dialog(ev), alertTag = dialog(-1).

### **ColorPanel**

*new:*

ColorPanelSetRGB( CGFloat r, CGFloat g, CGFloat b, CGFloat a )

### **ColorWell**

*new:*

ColorWellSetRGB( SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a )

### **Control**

*new:*

dialog event constants - these are same values as \_textFieldDidBeginEditing, etc

\_controlTextDidBeginEditing

\_controlTextDidChange

\_controlTextDidEndEditing

ControlSetDoubleValue( SInt32 tag, double value )

ControlSetIntegerValue( SInt32 tag, SInt32 value )

ControlSetStringValue( SInt32 tag, CFStringRef string )

*changes:*

ControlSetActionCallback. The order of the callback function parameters has changed:

was: MyControlCallback( ctrlTag, wndTag, event )

now: MyControlCallback( event, ctrlTag, wndTag )

### **DatePicker**

*new:*

DatePickerSetTextRGB( SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a )

DatePickerSetBackgroundRGB( SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a )

### **Menu**

*new:*

MenuNumberOfItems( SInt32 menuIndex ) = SInt32

### **PopUpButton**

*new:*

PopUpButtonSetTitle( SInt32 tag, CFStringRef title )

PopUpButtonSetPreferredEdge( SInt32 tag, CGRectEdge edge )

PopUpButtonSetAutoenablesItems( SInt32 tag, Boolean flag )

PopUpButtonItemSetEnabled( SInt32 tag, SInt32 index, Boolean flag )

### **TextField**

*new:*

TextFieldSetTextRGB( SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a )

TextFieldSetBackgroundRGB( SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a )

### **TextView**

*new:*

TextViewSetBackgroundRGB( SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a )

### **View**

*new:*

ViewScrollRect( SInt32 tag, CGRect r, CGSize size )

ViewSetNeedsDisplayInRect( SInt32 tag, CGRect r )

ViewFrameRotation( SInt32 tag ) = CGFloat

ViewBoundsRotation( SInt32 tag ) = CGFloat

ViewsEmbedInView( SInt32 tag, ... )

ViewSetAcceptsFirstResponder( SInt32 tag, Boolean flag )

*dialog events:*

\_viewKeyDown

\_viewKeyUp

\_viewFlagsChanged

### **Window**

*new:*

WindowSetBackgroundRGB( SInt32 tag, CGFloat r, CGFloat g, CGFloat b, CGFloat a )

WindowSubclassContentView( SInt32 tag )

---

CocoaUI Changes/Additions( for .107 )

### **Application**

*new:*

AppSetTimer( CTimeInterval interval, ptr callback, Boolean repeats )

## **Button**

*new:*

ButtonSetImageScaling( SInt32 tag, NSImageScaling scaling )

ButtonSetBackgroundColor( SInt32 tag, CGColorRef )// macOS 10.8+

ButtonSetImageDimsWhenDisabled( SInt32 tag, Boolean flag )

*change:*

A new button given a title of "OK" (caps) is made the default (blue) button and responds to the return key.

A new button given a title of "Cancel" (case-sensitive) is made the cancel button and responds to the esc key and cmd-<full stop>.

## **CocoaAlert**

*new function and statement:*

cocoaalert( tag, style, msg, info, buttonTitles ) = SInt32 // currently requires Cocoa runtime (CocoaInit)

cocoaalert tag, style, msg, info, buttonTitles, sheetFlag

## **Control**

*new:*

ControlSetAction( SInt32 tag, CFStringRef actionName )

ControlSetActionCallback( SInt32 tag, ptr callback )

ControlSetEnabled( SInt32 tag, Boolean flag )

*changes:*

ControlSetFontWithName - if name is null or zero-length, previous font is used. If size == 0, previous size is used.

## **DatePicker**

*new:*

DatePickerSetBezeled( SInt32 tag, Boolean flag )

DatePickerSetBordered( SInt32 tag, Boolean flag )

## **Menu**

*new:*

windowmenu statement - puts up default Window menu in menu bar.

MenuItemSetAction( SInt32 menuItemIndex, SInt32 itemIndex, CFStringRef actionName )

MenuBarSetVisible( Boolean flag )

MenuBarHeight = CGFloat

MenuItemRemoveItem( SInt32 menuItemIndex, SInt32 itemIndex )

MenuItemRemoveAllItems( SInt32 menuItemIndex )

MenuItemWithTitle( SInt32 menuItemIndex, CFStringRef title ) = SInt32

MenuItemPopUp( SInt32 menuItemIndex, SInt32 itemIndex, CGPoint location, SInt32 viewTag ) = Boolean

MenuItemShowsStateColumn( SInt32 menuItemIndex, Boolean flag )

MenuItemSetFont( SInt32 menuItemIndex, CTFontRef font )

MenuItemSetFontWithName( SInt32 menuItemIndex, CFStringRef name, CGFloat size )

MenuItemSetState( SInt32 menuItemIndex, SInt32 itemIndex, NSControlStateValue state )

MenuItemSetValidateItemsCallback( ptr callback )

*changes:*

The cocoa menu statement no longer needs '-1' item index to refer to the menu itself - simply omit the item index param from the statement. e.g. cocoa menu 1,,, @"File"

Menus with index value > 100 are not added to the menu bar but stored elsewhere for later use (submenus, etc).

*fix:*

MenuItemSetSubmenu now works

## **NibMenu**

*change:*

A menu assigned a tag value > 100 is given that same value to its index (see Menu changes above)

## **Panel**

*change:*

options param removed from statement. Options are now set by function calls (see below)

*new:*

PanelSetFloatingPanel( SInt32 tag, Boolean flag )

PanelSetBecomesKeyOnlyIfNeeded( SInt32 tag, Boolean flag )

PanelSetWorksWhenModal( SInt32 tag, Boolean flag )

## **Popover**

*new:*

dialog events

\_popoverDetachableWindow  
\_popoverShouldClose  
\_popoverWillShow  
\_popoverDidShow  
\_popoverWillClose  
\_popoverDidClose  
\_popoverDidDetach// macOS 10.10  
\_popoverShouldDetach// macOS 10.10

PopoverSetDetachableWindow( SInt32 popoverTag, SInt32 wndTag )

### **PopUpButton**

*new:*

PopUpButtonSetMenu( SInt32 tag, SInt32 menuIndex )

### **ProgressIndicator**

*change:*

style param removed from statement. Style is now set by function calls (see below)

*new:*

ProgressIndicatorSetStyle( SInt32 tag, UInt32 style )

ProgressIndicatorSetIndeterminate( SInt32 tag, Boolean flag )

### **ScrollView**

*change:*

options parameter removed from statement. Options are now set by functions (see below)

*new:*

ScrollViewSetHasHorizontalScroller( SInt32 tag, Boolean flag )

ScrollViewSetHasVerticalScroller( SInt32 tag, Boolean flag )

ScrollViewSetAutohidesScrollers( SInt32 tag, Boolean flag )

ScrollViewFlashScrollers( SInt32 tag )

### **SearchField**

*change:*

options parameter removed. Options are now set by functions (see below)

*new:*

SearchFieldSetSendsSearchStringImmediately( SInt32 tag, Boolean flag )// macOS 10.10

SearchFieldSetSendsWholeSearchString( SInt32 tag, Boolean flag )// macOS 10.10

SearchFieldSetCentersPlaceholder( SInt32 tag, Boolean flag )// macOS 10.11

SearchFieldSetMaximumRecents( SInt32 tag, SInt32 value )// macOS 10.10

SearchFieldSetRecentsAutosaveName( SInt32 tag, CFStringRef name )

SearchFieldSetSearchMenuTemplate( SInt32 tag, SInt32 menuIndex )// macOS 10.10

### **SegmentedControl**

*change:*

style and mode parameters removed from statement. Style and mode are now set by functions (see below)

*new:*

SegmentedControlSetMenu( SInt32 tag, SInt32 segmentIndex, SInt32 menuIndex )

SegmentedControlSetStyle( SInt32 tag, NSSegmentStyle style )

SegmentedControlSetTrackingMode( SInt32 tag, NSSegmentSwitchTracking mode )

### **Slider**

*change:*

style parameter removed from statement. Style now set by functions (see below + ControlSetContinuous)

*new:*

SliderSetType( SInt32 tag, NSSliderType type )

SliderSetAllowsTickMarkValuesOnly( SInt32 tag, Boolean flag )

SliderSetTickMarkPosition( SInt32 tag, NSTickMarkPosition position )

### **Stepper**

*change:*

valueWraps value defaults to `_false`

### **TableView**

*new:*

now issues dialog event `_btnClick`

`_tableViewDoubleAction` dialog event

`_tableViewSelectionDidChange` dialog event

TableViewData( SInt32 tag ) = CFMutableArrayRef

TableViewReloadData( SInt32 tag )  
TableViewScrollRowToVisible( SInt32 tag, SInt32 row )  
TableViewScrollColumnToVisible( SInt32 tag, SInt32 col )  
TableViewSelectedRowIndex( SInt32 tag ) = CFArrayRef  
TableViewNumberOfSelectedRows( SInt32 tag ) = SInt32  
TableViewIsRowSelected( SInt32 tag, SInt32 row ) = Boolean  
TableViewClickedRow( SInt32 tag ) = SInt32  
TableViewClickedColumn( SInt32 tag ) = SInt32

*changes:*

Now allows unlimited number of columns  
Editable columns supported  
TableViewAddRow function removed

**TextField**

*new:*

TextFieldSetAllowsEditingTextAttributes( SInt32 tag, Boolean flag )  
TextFieldSetImportsGraphics( SInt32 tag, Boolean flag )

*changes:*

TextFieldStringValue function removed - use ControlStringValue instead

**TextView**

*new:*

TextViewPerformFindPanelAction( SInt32 tag, NSTextFinderAction action )

**Toolbar**

*change:*

displayMode and options parameters removed from statement. These are now set by functions (see below)

*new:*

ToolbarSetDisplayMode( SInt32 tag, NSToolbarDisplayMode mode )  
ToolbarSetAllowsUserCustomization( SInt32 tag, Boolean flag )  
ToolbarSetShowsBaselineSeparator( SInt32 tag, Boolean flag )  
ToolbarSetAutosavesConfiguration( SInt32 tag, Boolean flag )  
ToolbarSetAllowsExtensionItems( SInt32 tag, Boolean flag )

**ToolbarItem**

*new:*

ToolbarItemSetToolTip( SInt32 toolbarTag, SInt32 itemTag, CFStringRef toolTip )

**View**

*new:*

ViewIsHidden( SInt32 tag ) = Boolean  
ViewIsHiddenOrHasHiddenAncestor( SInt32 tag ) = Boolean  
ViewNextKeyView( SInt32 tag ) = SInt32  
ViewNextValidKeyView( SInt32 tag ) = SInt32  
ViewPreviousKeyView( SInt32 tag ) = SInt32  
ViewPreviousValidKeyView( SInt32 tag ) = SInt32

**Window**

*new:*

WindowSetDelegateCallback( SInt32 tag, ptr callback )  
WindowAddChildWindow( SInt32 parTag, SInt32 childTag, NSWindowOrderingMode ordered )  
WindowRemoveChildWindow( SInt32 parTag, SInt32 childTag )  
WindowParentWindow( SInt32 tag ) = SInt32  
WindowSetHidesOnDeactivate( SInt32 tag, Boolean flag )  
WindowSetHasShadow( SInt32 tag, Boolean flag )  
WindowSetFrameOrigin( SInt32 tag, CGPoint pt )  
WindowSetFrame( SInt32 tag, CGRect frame )  
WindowCascadeTopLeftFromPoint( SInt32 tag, CGPoint pt )  
WindowIsZoomed( SInt32 tag ) = Boolean  
WindowPerformZoom( SInt32 tag )  
WindowZoom( SInt32 tag )  
WindowSetShowsResizeIndicator( SInt32 tag, Boolean flag )  
WindowSetMaxFullScreenContentSize( SInt32 tag, CGSize size )// macOS 10.11+  
WindowSetMinFullScreenContentSize( SInt32 tag, CGSize size )// macOS 10.11+  
WindowOrderBack( SInt32 tag )  
WindowIsVisible( SInt32 tag ) = Boolean  
WindowRemoveFrameUsingName( CFStringRef name )  
WindowSetExcludedFromWindowsMenu( SInt32 tag, Boolean flag )

-----  
-----  
20171005 FB 5.7.106

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.105]

FB 5.7.106 requires OS X 10.6 or higher

#### General Fixes & Additions

- [01] Programmatically creating toolbars with Source-file combining set to OFF had a bug.
- [02] TWM ( The Window Maker ) updated to version 1.9.15
- [03] Apple macro name changed causing crash in FileHandling.c ( \_\_Require\_noErr is new name )
- [04] CFIndex.incl header and its runtime file index.c now 64-bit compatible
- [05] New Util\_Sound.incl header and examples.
- [06] Get/Put/Kill Prefences statements now are 64-bit.  
Note: this work did NOT involve the headers Util\_CFPrefs.incl and Util\_CFPrefsCFStrings.incl.
- [07] Util\_Array.incl updated with two new convenience accessors, ArrayFirstObject() and ArrayLastObject()
- [08] Quartz Cocoa.bas demo ( for Quartz 1.15 in FB Examples/Graphics/CoreGraphics(Quartz) ) updated to use GraphicsCurrentCGContext and ViewBounds().
- [09] FB's file I/O OPEN statement does not honor POSIX advisory locking when data files are located on a server ( either macOS Server or macOS File Sharing ). This means OPEN "N" and OPEN "R" will not return appropriate errors if the file is already locked by another process. Paolo C. suggested a runtime change which works in his environment ( see "File Bug in 5.7.105" list thread in late September 2017 for details ) but it isn't a general solution. FBers needing to access server files should consider other file access methods other than OPEN if their files are on servers.

#### CocoaUI Changes/Additions

##### **Application**

*New:*

\_appOpenURLs event constant

AppEventString = CFStringRef  
AppEventArray = CFArrayRef  
AppEventDictionary = CFDictionaryRef  
AppEventURL = CFURLRef

*Changes:*

\_appOpenFile and \_appOpenFiles constants removed. Use \_appOpenURLs instead.

##### **ColorPanel**

*New:*

ColorPanelColor = CGColorRef  
ColorPanelSetColor( CGColorRef col )  
ColorPanelSetMode( NSColorPanelMode mode )  
ColorPanelSetShowsAlpha( Boolean flag )  
ColorPanelAlpha = CGFloat  
ColorPanelShow  
ColorPanelClose

##### **Control**

*New:*

ControlStringValue( SInt32 tag ) = CFStringRef  
ControlTakeDoubleValueFrom( SInt32 tag, SInt32 fromViewTag )  
ControlTakeIntegerValueFrom( SInt32 tag, SInt32 fromViewTag )  
ControlIsEnabled( SInt32 tag ) = Boolean  
ControlSizeThatFits( SInt32 tag, CGSize size ) = CGSize // macOS 10.10  
ControlSetContinuous( SInt32 tag, Boolean flag )  
ControlPerformClick( SInt32 tag )  
ControlSetLineBreakMode( SInt32 tag, NSLineBreakMode mode )

##### **Dialog**

*Changes:*

DialogEventCGContext removed. Use GraphicsCurrentCGContext instead.

DialogEventRect no longer returns the view rect, and now returns its dirtyRect. To get the view rect, use either ViewFrame or ViewBounds, whichever is appropriate.

## Event

*New:*

EventLocationInWindow = CGPoint

EventModifierFlags = NSEventModifierFlags

EventTimestamp = CFTimeInterval

EventType = NSEventType

EventWindow = ptr

EventKeyRepeatDelay = CFTimeInterval

EventKeyRepeatInterval = CFTimeInterval

EventCharacters = CFStringRef

EventCharactersIgnoringModifiers = CFStringRef

EventIsARepetition = Boolean

EventKeyCode = unsigned short

EventPressedMouseButtons = UInt32

EventDoubleClickInterval = CFTimeInterval

EventMouseLocation = CGPoint

EventClickCount = SInt32

EventLocationInView( SInt32 tag ) = CGPoint

## Geometry

Geometry.incl header removed. That header contained NSRectEdge constants NSMinXEdge, NSMinYEdge, NSMaxXEdge & NSMaxYEdge. Use: CGRectXxxx. instead.

## Graphics

*New:*

GraphicsCurrentCGContext = CGContextRef

## ImageView

*Syntax change:*

*options* param removed. Attributes are now set with functions (see below).

*New:*

ImageViewSetAnimates( SInt32 tag, Boolean flag )

ImageViewSetEditable( SInt32 tag, Boolean flag )

ImageViewSetAllowsCutCopyPaste( SInt32 tag, Boolean flag )

## LevelIndicator

*Syntax change:*

*options* param removed. Attributes are now set with functions (see below).

*New:*

LevelIndicatorSetEditable( SInt32 tag, Boolean flag )

LevelIndicatorSetTickMarkPosition( SInt32 tag, NSTickMarkPosition position )

## Menu

*Change:*

If tag values are given to menus and items, those values are now returned to FB's on menu function instead of their index values.

*New:*

MenuSetTag( SInt32 menuIndex, SInt32 itemIndex, SInt32 tag )

MenuSetAutoenablesItems( SInt32 menuIndex, Boolean flag )

## SegmentedControl

Fixed: Crash when setting segment image. This crash only occurred on machines running macOS 10.12 or earlier and when multiple segmented controls in a window.

## Stepper

*Syntax change:*

*options* param removed. These attributes are now set with functions (see below).

StepperSetAutorepeat( SInt32 tag, Boolean flag )

StepperSetValueWraps( SInt32 tag, Boolean flag )

StepperSetContinuous( SInt32 tag, Boolean flag )

## TextField

*Syntax changes:*

*behavior* param removed. These attributes are now set with functions (see below).

*lineBreakMode* param removed. This attribute is now set with a function (see Control.incl).

*New:*

TextFieldSetEditable( SInt32 tag, Boolean flag )



TextFieldSetSelectable( SInt32 tag, Boolean flag )

**TextLabel**

*Syntax change:*

*lineBreakMode* param removed. This attribute is now set with a function (see Control.incl).

**View**

*Syntax change:*

subclass param added (default = `_false`). Enabling subclass allows the user to pick up `_viewDrawRect` plus other dialog events (see below).

*New:*

ViewAddSubviewPositioned( SInt32 superviewTag, SInt32 subviewTag, NSWindowOrderingMode position, SInt32 otherViewTag )

ViewSetWantsLayer( SInt32 tag, Boolean flag )

ViewSetFrame( SInt32 tag, CGRect r )

ViewSetFlipped( SInt32 tag, Boolean flag )

ViewAnimator( SInt32 tag ) = ptr

ViewAnimatorSetFrame( SInt32 tag, CGRect r )

ViewAnimatorSetFrameOrigin( SInt32 tag, CGPoint origin )

ViewAnimatorSetFrameSize( SInt32 tag, CGSize size )

ViewAnimatorSetFrameRotation( SInt32 tag, CGFloat rot )

ViewAnimatorSetBounds( SInt32 tag, CGRect r )

ViewAnimatorSetBoundsOrigin( SInt32 tag, CGPoint origin )

ViewAnimatorSetBoundsSize( SInt32 tag, CGSize size )

ViewAnimatorSetBoundsRotation( SInt32 tag, CGFloat rot )

ViewAnimatorSetFrameCenterRotation( SInt32 tag, CGFloat rot )

ViewAnimatorSetAlphaValue( SInt32 tag, CGFloat value )

dialog events:

`_viewMouseDown`

`_viewMouseDragged`

`_viewMouseUp`

`_viewMouseMove`

`_viewMouseEntered`

`_viewMouseExited`

`_viewRightMouseDown`

`_viewRightMouseDragged`

`_viewRightMouseUp`

**Window**

*New:*

`_windowContentViewTag` - this constant identifies a window's content view

WindowSetTitle( SInt32 tag, CFStringRef title ) // this now works for both Carbon and Cocoa windows

**Demos:**

Couple of new graphic demos showing GraphicsCurrentCGContext() and ViewBounds() usage

FB Runtime Status

| 64-bit Runtime           | Comments |
|--------------------------|----------|
| AppThings.m              |          |
| CocoaUI.m                |          |
| Containers.c             |          |
| FileHandling.c           |          |
| FileHandlingUtils.m      |          |
| General.c                |          |
| Index.c                  |          |
| OSPanel.m                |          |
| Prefs.c                  |          |
| StringUtils.m            |          |
| SystemDirectoryCopyURL.m |          |
| 32-bit Runtime           | Comments |

|                       |                                                                       |
|-----------------------|-----------------------------------------------------------------------|
| AppThings.c           | mostly supplanted by CocoaUI                                          |
| ConsoleApp.c          | conditionally included from FBtoCConsole.incl. No longer supported    |
| EditFields.c          | essentially replaced by CocoaUI - remains available for 32-bit builds |
| FilesDollarFunction.c | supplanted by OSPanel. Obsolete/removed in current FB builds          |
| Util_FileDirectory.c  | All functions except FD_PathCreateCFURL are 32-bit only               |

-----  
 20170919 FB 5.7.105

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.104]

FB 5.7.105 requires OS X 10.6 or higher

-----  
**Introduction to New Containers**

This release's container update could prevent your app from compiling and could cause it to malfunction.

Continuing the on-going work to move the FB runtime to 64-bit, FB containers were updated to remove Handles and use pointers.

Because containers are now based on pointers, container usage relying directly on Handles needs updating to work correctly.

Creating a container directly from a Handle won't work but dereferencing the Handle and using a helper function ( see below ) will.

Creating/modifying containers is basically the same except for the following:

- a. Toolbox Handle-involved calls ( Set/GetHandleSize, PtrToHand etc. ) cannot be used to manipulate containers.
- b. Reading/Writing to/from a container changes slightly because a container is a pointer
- c. Passing container pointers to other functions changes slightly.
- d. Code **CANNOT** dereference containers directly. The helper functions **MUST** be used ( see 'To/From Pointer/Container' below )

Container size is limited based on whether the app is 32-bit( approx. 2 GB ) or 64-bit( > 2GB ).

- a. 32-bit user interface widgets like edit fields might have size limitations
- b. using 32-bit edit fields ( or any other 32-bit UI widget ) precludes a 64-bit app.

**Containers and Edit fields. Unchanged**

1. Put container contents in an edit field.      `edit$(_myEditField) = #gC`
2. Load container from edit field.            `gC = edit$( edit_field_id )`
3. Load edit field from container.           `edit$( id ) = #gC`

**To/From Pointer/Container. New**

- 1.
2. // get a pointer from a container.
3. Replaces handle syntax: 'myHandle = [@gC]'
- 4.
5. `fn ContainerFromPointer( @gC, p, size ) // load container from pointer.`
6. Replaces handle syntax: 'gC = &h'

*Both may be found in Util\_Containers.incl*

**Old Handle syntax NOT supported**

1. Loading containers from handle data. Use `fn ContainerFromPointer` instead of `gC = &h`
2. Loading a handle from a container. Use `fn ContainerToPointer` instead of `h = [@ gC]`
3. Adding TEXT resource data to a container doesn't work. There is no replacement.      `gC = %128`
4. Handle toolbox calls won't work on containers ( i.e. DisposeHandle, NewHandle, GetHandleSize, SetHandleSize ).

**File I/O to/from a container**

1. NEW - reading using FB file I/O  
     **dim as pointer p**

```

open "I", 1, @url
size = lof(1, 1)
p = fn malloc(size)
read file #1, p, size
fn ContainerFromPointer(@gC, p, size)
fn free(p)

```

2. *NEW - writing using FB file I/O*

```

// Create a pointer from a container and write the file from the pointer.
dim as pointer p
dim as container gC
open "O", 1, @url
size = len(gC)
p = fn ContainerToPointer(@gC)
write file #1, p, size
fn free(p)

```

3. *New I/O functions from Util\_Containers.incl don't require FB I/O statements*

```

fn ContainerWriteToURL(@gC1, url) // Write
fn ContainerReadFromURL(@gC2, url) // Read

```

Note: "Util\_Containers.incl" must be in the project if these new functions are used.

**Most of the FB container statements and Util Container.incl have the same usage even though internals have changed**

Statements and functions with same usage are:

right\$\$, left\$\$, mid\$\$, len, asc, ucase\$\$, string\$\$, FBCompareContainers(),

Util\_Containers.incl continues to have some functional overlap with FB keywords.  
Those functions are listed below with FB equivalents

|                                        |                                     |
|----------------------------------------|-------------------------------------|
| fn ContainerUppercase                  | ucase\$\$                           |
| fn ContainerInsertPascalString         | mid\$\$ statement                   |
| fn ContainerFindPascalString           | instr                               |
| fn ContainerAppendPascalString         | gC += "some pascal string"          |
| fn ContainerFindAndReplacePascalString | instr followed by mid\$\$ statement |

-----  
**CocoaUI Updates and Additions**

**Application**

*New:*

```

AppKeyWindow
AppMainWindow
AppIsHidden
AppHide
AppUnhide
AppUnhideWithoutActivation
AppIsActive
AppActivateIgnoringOtherApps
AppHideOtherApplications
AppUnhideAllApplications
AppShowHelp

```

**Box**

*New:*

```

BoxSetTransparent
BoxSetTitleFont
BoxSizeToFit

```

**Button**

*New:*

```

ButtonSetTitleColor
ButtonSetAttributedTitle
ButtonSetAlternateTitle
ButtonSetPeriodicDelay
ButtonSetAttributedAlternateTitle
ButtonSetAlternateImage
ButtonSetTransparent
ButtonSetAllowsMixedState
ButtonSetNextState
ButtonHighlight

```

**ColorWell**

*New:*

ColorWellActivate  
ColorWellDeactivate  
ColorWellDrawWellInside

### **Control**

*New:*  
ControlSizeToFit  
ControlSetFont  
ControlSetFontWithName  
ControlTakeStringValueFrom

### **DatePicker**

*New:*  
DatePickerSetBackgroundColor(  
DatePickerSetTextColor(  
DatePickerSetLocale  
DatePickerTimeInterval  
DatePickerSetTimeInterval  
DatePickerMinDate  
DatePickerMaxDate

### **Dialog**

*Changes:*

1. Dialog events get/set functions consolidated, e.g. CocoaWindowEventXxxx, TabViewEventXxxx, SplitViewEventXXX, etc. are all now DialogEventXxxx.

2. on dialog fn now receives window content view \_viewDrawRect event for CG drawing. Obtain the CGContextRef with DialogEventCGContext and content view rect with DialogEventRect.

### **CocoaUI Header files**

*Changes:*  
Removed 'Cocoa' prefix from filenames

### **ImageView**

*New:*  
ImageViewSetCGImage

### **LevelIndicator**

*New:*  
LevelIndicatorMinValue  
LevelIndicatorMaxValue  
LevelIndicatorWarningValue  
LevelIndicatorCriticalValue  
LevelIndicatorSetStyle

*Changes:*

1. Style param removed from LevelIndicator statement. Style is now set by LevelIndicatorSetStyle function.

### **Menu**

*Changes:*  
MenuItemEventSetBool renamed MenuEventSetBool

### **NibView**

*Changes:*  
viewIdentifier param now optional. If this param is omitted, the first NSView found in the nib will be used.

### **NibWindow**

*Changes:*  
wndIdentifier param now optional. If this param is omitted, the first NSWindow or NSPanel found in the nib will be used.

### **SecureTextField**

*New:*  
SecureTextFieldSetEchosBullets

### **SplitView**

*New:*  
SplitViewAdjustSubviews

### **Text**

*New:*  
TextString

## **TextField**

### *New:*

TextFieldSetTextColors  
TextFieldSetBackgroundColor  
TextFieldSetFormat

## **TextView**

### *New:*

TextViewSetBackgroundColor  
TextViewSetDrawsBackground  
TextViewSetUsesRuler  
TextViewSetRulerVisible  
TextViewSetUsesInspectorBar  
TextViewSetSelectedRange  
TextViewSetContinuousSpellCheckingEnabled  
TextViewSetGrammarCheckingEnabled  
TextViewStartSpeaking  
TextViewStopSpeaking  
TextViewSetUsesFontPanel  
TextViewSetUsesFindPanel  
TextViewSetUsesFindBar  
TextViewTextStorage  
TextViewSetRichText

## **View**

### *New:*

ViewWithTag - returns view ref for issuing direct obj-c calls  
SInt32 ViewSuperview  
Sint32 ViewWindow  
void ViewSetFrameOrigin  
void ViewSetFrameSize  
void ViewSetFrameRotation  
CGRect ViewBounds  
void ViewSetBounds  
void ViewSetBoundsOrigin  
void ViewSetBoundsSize  
void ViewSetBoundsRotation  
CGFloat ViewAlphaValue  
void ViewSetAlphaValue  
CGFloat ViewFrameCenterRotation  
void ViewSetFrameCenterRotation  
void ViewPrint  
void ViewSetNeedsDisplay  
void ViewRotateByAngle

## **Window**

### *New:*

WindowWithTag - returns NSWindow ref which can be used for issuing direct obj-c calls  
WindowSetAspectRatio  
WindowSetContentAspectRatio  
WindowSetDocumentEdited  
WindowDocumentEdited  
WindowToggleFullScreen  
WindowSetAllowsToolTipsWhenApplicationIsInactive  
WindowSetTitlebarAppearsTransparent  
WindowSetTitleWithRepresentedFilename  
WindowSetTitleWithRepresentedURL  
WindowAttachedSheet

### *Changes:*

Previously, only non-Cocoa apps would subclass window content views in order to draw focus rings around fields. Now, Cocoa apps also subclass the content view and intercept the drawRect method for CG drawing. Obviously, focus ring drawing is not applied to fields in Cocoa apps.

## **NibWindow**

### *Changes:*

A negative tag value in the nibwindow statement now works same as cocoa window statement (loads window invisibly).

## **General**

### *Changes:*

Functions requiring a higher macOS than set in Base SDK no longer silently fail and now report "implicit declaration of function 'xxxx'..."

---

## Fixes & Additions

- [01] Added InstallCocoaUIScripts app to FB Help menu
- [02] Writing data in "R" mode could truncate file length ( FH\_WriteData truncateFileAtOffset:) - reported by B.G.
- [03] FBDelay() within General.c had a value conversion issue
- [04] FBLOf() within FileHandling.c. Added conditional compile for 32/64-bit to silence compiler warnings
- [05] PrintContainerWnd() in AppThings.c updated to use pointers instead of handles.
- [06] Util\_String.incl updated to silence warning for containsString: method.
- [07] MidStmt\_Ctnr() in containers.c was not doing the stack pop. reported by Mark.
- [08] New version of Quartz (1.14) and demos for use with CocoaUI or Carbon.
- [09] Editor source updated to use new pointer-based containers
- [10] "Unknown type name 'FBMenuEventInfo' when compiling -DDECARBONATE -m64 and CocoaUI.

---

20170625 FB 5.7.104

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.102]

FB 5.7.104 requires OS X 10.6 or higher

## Summary

**Note:** This release contains one or two updates which may prevent your app from compiling.

## Updates:

- Bug fixes.
- 64-bit updates.
- New project template updated to new window statement syntax.
- Run statement now accepts CFString path or CFURL. The old 'path\$' syntax is deprecated.
- Kill Field statement removed. Those needing to continue with this functionality should either use an older release or use the direct toolbox call:  
if ( h ) { if ( ( HGetState( h ) & 0x20 ) == 0 ) DisposeHandle( h ); }
- System() function updated. Many old selectors removed.
- New FB header, Util\_RunningApplication.incl, provides information about running application(s). See FB Examples/CoreFoundation & Cocoa/Cocoa/Util\_RunningApplication.incl example(s)/RunningAppDemo.bas.
- TWM updated to version 1.9.14.
- New FB Header, Util\_UserDefaults.incl, is a functional replacement for Util\_CFPrefs.incl.
- On a dialog \_btnClick event, dialog(-1) now returns the button's window number.

## More Details

- [01] Run statement updated to Run a CFString path or a CFURLRef. Old syntax deprecated. FBHelp updated too. Brian/Bernie
- [02] Delay statement updated to 64-bit. Uses nanosleep(). Brian
- [03] Kill Field removed for same reasons Read/Write Field were in FB 5.7.99.  
Those needing to continue with this functionality should either use an older release or the direct toolbox call:  
if ( h ) { if ( ( HGetState( h ) & 0x20 ) == 0 ) DisposeHandle( h ); }
- [04] System() function updated. Many old selectors removed. \_aplActive updated to modern 64-bit code.  
\_scrnWidth, \_scrnHeight, \_sysVers, \_crntDepth are the other remaining selectors. FB Help updated accordingly & FBtoC reports errors  
for any other selectors.
- [05] FBGetProcessInfo() is now conditionally compiled only in 32-bit compiles. This assures the old code won't be there for 64-bit compiles.  
FBHelp updated to reflect #5 and #6
- [06] New FB Header, Util\_RunningApplication.incl, provides information about running applications ( duh! ).  
See FB Examples/CoreFoundation & Cocoa/Cocoa/Util\_RunningApplications.incl example(s)/RunningAppsDemo.bas
- [07] FBKillPicture() for now is within #if !\_\_LP64\_\_ to make sure it is NOT included on 64-bit builds.  
At some point all of the PICTURE commands need review. Either update to use a non-Quickdraw graphic or remove.
- [08] Bug fixes for AddKeywordToSymbolTable() and AddSubKeywordToSymbolTable() Symbol Table Implementation. Brian
- [09] TWM ( The Window Maker ) updated to version 1.9.14. Bernie
- [10] A new Util\_UserDefaults.incl functionally replaces Util\_CFPrefs.incl and is 64-bit. Note: the older Util\_CFPrefs.incl has older Handle code in it. Bernie.
- [11] dialog(-1) now returns the window number on \_btnClick events. Bernie
- [12] Various code cleanup in General.c. AppThing.c Brian

- [13] Some parenthesized coordinates in Window statement fail. Bernie
- [14] Window attributes fixes for new Window statement when attributes are missing or NULL. Bernie
- [15] New Project template updated to new Window statement syntax. Brian
- [16] Save panel 'Cancel' button not honored when saving a new editor window. Bernie
- [17] New reserved words introduced. Note that reserved words cannot be used as variable names and will fail when building with "Bad factor in expression in line xxxx". The most likely new words to cause a failure are: 'imageview', 'panel', 'scrollview', 'slider', 'toolbar' and 'view'. For more information on these new reserved words, see CocoaUI.pdf in FB's Help menu

Note: Containers are unchanged in this release but an upgrade effort to 64-bit is in progress. If raw pointer speed isn't required, a 13-July-2017 list post, "Feedback request FB's containers", suggests alternatives.

-----  
20170625 FB 5.7.102

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.101]

FB 5.7.102 requires OS X 10.6 or higher

#### New

[01] Window & Appearance Window statements changes: Brian/Bernie  
(a) **Appearance Window** statement is **deprecated** and the translator warns and suggests moving to the Window statement.

(1) Otherwise same as FB 5.7.101.

(b) **Window** statement's parameters are identical to Appearance Window except the rectangle and window attribute have changed.

(1) Rectangle parameter: If used, must be a 'CGRect'; a QuickDraw 'Rect' is no longer accepted. (x1,y1)-(x2-y2) format still available.

(2) Window attributes: Are specified in a standard array instead of OR'ing into a integer. Also, the attribute constant names have changed.

[02] New Grand Central Dispatch ( GCD ) demo ( at: FB\_5\_7\_102\_Examples/CoreFoundation & Cocoa/GrandCentralDispatch(GCD)/GCD Timer Demo )- Steve VV

[03] OSPanelSave now defaults to hiding the file extension - Bernie

[04] FB header, Tlxb CFString.incl, updated to include CFStringInitInlineBuffer and CFStringGetCharacterFromInlineBuffer which are designed for fast access to string characters. - Brian

[05] New CoreText include with demo now in FB\_5\_7\_102\_Examples/Text/CoreText/CTTextFrame - Bernie

[06] FB's "Printing Without a Window" feature now uses anti-aliased text for PRINTing. Implemented via QDSwapTextFlags() and srcOr text transfer mode.

This was added as a convenience for those who need to run a quick test. It does not upgrade general window code. FBers are still responsible for windows they create.

[07] FinderInfo example using CFURL added. See: FB\_5\_7\_102\_Examples/Files/Droplet apps/FinderInfo replacement( CFURL-based ) - Bernie

[08] An example showing how to configure an info.plist for app and document icons. See: FB\_5\_7\_102\_Examples/Miscellaneous/info\_plist for doc & app icons - Bernie

Was discussed on the list on 8-June-2017 and 10-April-2017

[09] New CFString and CFNumber utilities contained in two new headers ( Util\_String.incl and Util\_Number.incl )

Provides the power of Cocoa/Objective-C methods but wrapped in easy-to-use FB functions.

Examples are in: FB\_5\_7\_101\_Examples/CoreFoundation & Cocoa/CoreFoundation/Strings and Numbers

Note: the content of the older Util\_String(s).incl was combined with the new Util\_String.incl

#### Fixes/Updates

[10] Editor source files with forward '/' slashes in the names silently fail to save file contents. Brian

Within the Editor's source code, OSPanel was substituted for files\$ and any file name slashes converted to ':' ( as NSSavePanel does ) as noted by Bernie and Ken

The issue arises due to the the Editor code's need to concatenate a parent and file name URL.

Once/If FSSpec usage is replaced with CFURLRefs in the editor's global array, URL concatenation and the scan to check for forward slash ( / ) will be unnecessary.

[11] Tlxb MoreFilesX.incl ( supports deprecated file calls and structures) has been removed from the Headers. All FBers should switch to more modern calls. Brian

[12] ConsoleWindow support removed. Recommend using NSLog.

[13] Launching the Editor by double-clicking a single source file sometimes fails if old TYPE/CREATOR ( specifically TYPE ) is zero

Editor was incorrectly interpreting such a file as a package project file, and then ReadProjectIntoDataBase() fails because it isn't a project. Brian  
[14] gNewWndPositionMethod global within Rntm Appearance.glbl was causing an "unknown type" error for '-m64 -DDECARBONATE' builds. Bernie.

Solution: Restore gNewWndPositionMethod's definition to within the '#if ndef \_\_LP64' so it is only used in 32-bit builds.

[15] Open "O" now defaults to OSTypes of zero for Type/Creator. Also see Def Open below.

[16] Def Open now defaults to NULL OSTypes for Type and Creator and can be requested explicitly( e.g. Def Open "" )

Def Open's FBHelp updated to reflect changes.

Note: Def Open is deprecated. Recommend not using it and instead specifying UTIs and file extensions for icons in the application's info.plist. Bernie/Brian

Apple Documentation includes UTIs that have been standard since OS X 10.4:

[https://developer.apple.com/library/content/documentation/Miscellaneous/Reference/UTIRef/Articles/System-DeclaredUniformTypeIdentifiers.html#//apple\\_ref/doc/uid/TP40009259-SW1](https://developer.apple.com/library/content/documentation/Miscellaneous/Reference/UTIRef/Articles/System-DeclaredUniformTypeIdentifiers.html#//apple_ref/doc/uid/TP40009259-SW1)

also: <http://tinyurl.com/jd7uj2l>

[17] Updated FBHelp and FBtoC to reject Read/Write Field ( per change in FB 5.7.99 ) a little more gracefully. Brian

[18] FixSDK updated to version 1.2.5. Bernie

(a) Fixes a bug that caused some tableview buttons to vanish.

(b) Now can Export/Import SDKs to to/from an external directory(s). See FixSDK Help for more details.

(c) FixSDK now launches fully when the 10.6 SDK is not in Xcode (the previous version told the user to quit and install the 10.6 SDK).

If a 10.6 SDK is not installed, all buttons are disabled except for Import which allows the user to locate a 10.6 backup. Once installed, the buttons become enabled.

(d) Button enabling logic bug fix

(e) Alert sheets warn users that existing SDKs will not be overwritten

(f) 'Show SDKs in Finder' file menu item.

[19] Search Apple Headers(SAH) app updated to version 1.0.5. The SDK popup menu showed '0.0' due to Apple's use of alises in their SDKs. Fixed. Bernie

[20] TWM ( The Window Maker ) updated to version 1.9.13 supports the new Window Statement syntax. Bernie

[21] NSLog.incl updates: settings window is a popover instead of drawer if available. Also implemented a bug fix- Bernie

[22] Introduced as an option in release 5.7.42 ( February 2016 ), the following statements now require CFString titles and no longer accept pascal strings

(a) Appearance Window

(b) Window

(c) Appearance Button

(d) Button

(e) apple menu ( also accepts CFArray of titles )

(f) Edit Field

(g) Menu statement

(h) Shutdown statement

-----  
20170425 FB 5.7.101

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.100]

FB 5.7.101 requires OS X 10.6 or higher

#### New

[01] Util\_Workspace now a standard FB Header - Bernie

a) Access to many NSWorkspace options in simple FB functions

b) See the examples at FBExamples/Files/Util\_Workspace examples

[02] Util\_Array.incl now a standard FB Header

a) Useful helper functions call to some of NSArray's methods. Bernie

b) One cool function is ArrayWithObjects() and could be used to pass UTIs to the new OSPanelOpen() as Bernie showed on list on 21-April-2017

c) See the examples at FBExamples/CoreFoundation & Cocoa

[03] Util\_Dictionary.incl now a standard FB Header

a) Useful helper functions call to some of NSDictionary's methods. Bernie

b) See the examples at FBExamples/CoreFoundation & Cocoa

#### Fixes/Updates



[04] OSPanelOpen/OSPanelSave's FBHelp received some minor modifications to clarify the type of parameters it accepts. Brian ( pushed out in later update to .100 too )  
[05] FB 5.7.100 issues files\$ deprecation warnings and suggests OSPanelOpen/OSPanelSave. Brian  
[06] Files\$'s FBHelp updated to issue deprecation warnings. Brian  
[07] Minor updates to FBtoCConsole.incl to use OSPanel instead of files\$. Bernie  
[08] Minor update to MDArray.incl in FBExamples. Bernie  
[09] FBtoC printed a double "Warning:". Bernie  
[10] Apple's new file alias inclusion in its SDKs generates a Base SDK popup with a nameless first item. Bernie.  
[11] Editor file save crashes when user selects Cancel. Bernie  
[12] FBtoC crashes trying to execute showAlert() and its subordinate [NSAlert runModal]. Needs to run on main thread. Brian  
[13] Editor updated to use OSPanel for File==>Open... menu option. Modernizes code and allows it to remember the last directory the FBer opened when used next time. Brian  
[14] Minor updates to OSPanel's FB Help to clarify allowFileTypes are file extensions and UTIs and not OSTypes  
[15] VAList in FBExamples updated to use the C macros.

-----  
20170413 FB 5.7.100

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.99]

FB 5.7.100 requires OS X 10.6 or higher

#### New

[01] OSPanelOpen/OSPanelSave are new built-in FB keywords. They offer more options than files\$ but don't use the Carbon framework. Bernie with some nudges from Brian  
[02] FBHelp updated to include OSPanelOpen/OSPanelSave. Bernie/Brian

#### Fixes

[01] 'redefined variable' errors if both Util\_FileDirectory.incl & Util\_FileManager used in same project/file. Bernie  
[02] DEFSTR long incorrectly generates '8' instead of '4', so any functions using the gPSDefStrSize global receive the wrong size. Brian  
[02] TWM - The Window Maker - builds graphical window and generates FB source - now included in FB5. Bernie

ALSO: the following copy of the on-list announcement contains good information:

Hello Everyone,

This release introduces OSPanel and its new FB keywords, OSOpenPanel and OSSavePanel. Since they are keywords, there are no extra includes to remember and are part of the standard FB runtime. They provide the functional equivalent of the old files\$ plus additional features. Here are some ( but not all ) new features:

- Designate a starting directory for the panel(dialog)
- Remembering directory from last open
- Designate tags
- Extending a dialog with your own controls
- Sheet use<sup>1</sup>

Additionally, the new keywords are very flexible ( parentheses and all parameters optional ). Plus there are other subordinate new keywords that can be used to prepare the panel's appearance and other related needs.

The best way to learn about all the new keywords is exercise the demos at 'FBExamples/Files/OSPanel examples' and review the FBHelp.

#### Recommendation:

OSPanel is now recommended instead of files\$ or the ( carbon-based ) NavDialog calls and both of the latter are deprecated and should not be used going forward. files\$ is available in 5.7.100

#### Reason for change:

Even though files\$ was limited to using CFURLRefs in the last release, it continued to use Carbon-based NavDialog calls for the dialog UI. The change to OSPanel makes all the code Carbon-free.

1. Sheets attached to FB-created ( i.e. appearance window ) parent windows may exhibit detachment of the parent window in some specific scenarios and other undesirable window drawing artifacts. Apparently, not every OS releases exhibits this problem but the issue is rooted in a

parent Carbon window ( i.e. parent Cocoa windows are fine ). The demos show two ways of doing sheets both with/without Cocoa windows.

-----  
20170320 FB 5.7.99

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.97]

FB 5.7.99 requires OS X 10.6 or higher

[01] FileHandling.c updated to 64-bit - Brian

All FB's I/O verbs no longer accept FSSpecs/FSRefs and only accept CFURLRefs. See Jan/Feb 2017 FB list discussions for details.

a) the file-based version of the OPEN statement must specifically use the CFURLRef version ( OPEN UNIX and OPEN "C" excepted because not file-based )

b) READ/WRITE FIELD are removed and no longer supported due to use of deprecated Handles. Replacement options were discussed in Jan/Feb 2017 FB list discussions.

c) FB Help's 'Appendix A - File Object Specifiers' updated to reflect removal of FSRef/ FSSpec support and sample code updated.

d) FB's Rename verb now accepts only CFURLRefs. Syntax is: rename urlForCurrentFile urlForNewFile.

e) FB's Kill now accepts only a CFURLRef for the file name.

f) FB's files\$ now only uses/returns a CFURLRef for each of the three major options listed in FB Help. FB Help updated to reflect changes.

1) "ConsoleWindow"'s usage of files\$ updated to use URL. I don't like it because ConsoleWindow depends on an FSSpec for its TXNSave() use.

2) New constants for files\$ \_URLOpen, \_URLFolder and \_URLSave are preferred over their predecessors \_CFURLRefOpen, \_CFURLRefFolder and \_CFURLRefSave but have the same values.

3) OPEN/FILES\$ changes to Editor source to allow it to build with FB 5.7.99.

4) FBtoC flags non-CFURLRef files\$ usage for the variable but does not check the mode constant; but runtime honors only valid modes.

a) Make sure to check files\$'s returned fileName for non-zero length. Zero indicates failure and possible bad mode constant.

g) Apps crashing with a "Bad file descriptor" message indicates a file i/o attempt which isn't allowed by the OPEN mode (i.e. opening in mode "I" and trying to WRITE the file ).

h) A second attempt ( either within the app or another app ) to OPEN "N" on a file currently/already open in "N" mode has specific new behavior compared to prior FB5 versions:

1) The second attempt process/code is given read-only access ( essentially "I" mode ) to the file.

2) The FB runtime sends a "file already open with with write permission" ( \_opWrErr ) error code which can be used by the caller ( must be trapped with 'on error' and "error" )

3) Even though opened for "I" after a request for OPEN "N", it must be closed or any subsequent exclusive OPEN requests will fail.

4) Fbers should always check the error status returned by any file OPEN and take appropriate steps.

5) N.B. OPEN code only provides access; it does not provide any data integrity protection when there are concurrent readers and writers of the same file.

[02] Util\_FileManager additions - Bernie

a) File access functions written with only modern 64-bit code. Eventual replacement for Util\_FileDirectory.

b) Only supports CFURLRefs and does not support FSRefs or FSSpecs.

c) Several demos available in the FB Examples

d) Util\_FileManager.incl includes Util\_PathUtilities.incl and Util\_URL.incl

d) Util\_FileDirectory is still available for those who need it but folks should plan to migrate to Util\_FileManager.

e) For fn FM\_TrashItemAtURL ( but not the other functions in the include ). The Fber has two choices:

1. Its current implementation uses a method requiring OS X 10.8+

2. Another method, which is currently commented out and doesn't have the 10.8+ requirement, is possible but it is deprecated in OS X 10.11.

Once you've decided which constraints are best for you, simply comment out the one you don't want and uncomment the other ( or vice-versa ).

Consider using the user includes folder if maintaining it yourself.

[03] New/Changed Headers and Examples - Bernie, Steve VV, Brian

a) A slick multi-dimensional Core Foundation array implementation handles all the details. See: FB\_Examples/CoreFoundation and Cocoa/MDArray( multi-dimensional )

b) Tlhx CFUUID.incl and Tlhx CFStringTokenizer.incl added to Headers

c) CFMeasurement headers and demo added to FB Examples

d) Superscript/Subscript demos added to FB Examples

e) Util\_Files.incl uses outdated ( parameter block ) file functions. N.B. IF YOUR CODE USES FUNCTIONS FROM THIS INCLUDE, IT WON'T BUILD.

[04] Default error function - Brian

( i.e. when it isn't supplied via 'on error fn yourErrorHandler' in your own code ) updated to include:

a) error string and comment

b) N.B. Carbon calls GetMacOSStatusErrorString() and GetMacOSStatusCommentString() were NOT used. Cocoa's NSError used [NSError errorWithDomain:NSOSStatusErrorDomain

[05] NSLog.incl updates - Bernie

a) silence a clang 'dealloc' warning ( accidentally omitted in 5.7.97 )

b) Copy & Copy All items added to text view's contextual menu

c) NSLogBeginEditing & NSLogEndEditing. Bernie's explanation follows:

Multiple NSLog calls in big loops can make it appear that your app is hanging. After issuing NSLogBeginEditing, the NSLog text view is only updated at the point NSLogEndEditing is called.

```
// - Example 1 ---
```

On my machine, this takes about 95 seconds for the text to appear.

```
for i = 0 to 150000
 NSLog(@"string %d",i)
next i
```

```
// - Example 2 ---
```

Enclosing the code in an NSLogBeginEditing/NSLogEndEditing pair takes less than 4 seconds.

```
NSLogBeginEditing
```

```
for i = 0 to 150000
 NSLog(@"string %d",i)
next i
```

```
NSLogEndEditing
```

Fixes - Brian

[06] FBtoC Help, inadvertently omitted in 5.7.97, is back again.

[06] Editor scrolls source view to an incorrect line number but FBtoC's line number is accurate ( captured value of global in local before doing a dispatch async )

[08] Comparing an FB container to a string constant resulted in string stack failure ( changed gFBStk to SInt16 in Runtime.h and General.c so it can go to -1 instead of 65535 )

[09] FBtoC's Settings dialog would not show up when requested via the Editor's preference pane option. Thanks to RC and BW for noting and reminding.

Internal: Added source for "Error Codes" app to FB project source

ALSO: the following copy of the on-list announcement contains good information:

Hello Everyone,

Please read the following introduction before downloading and replacing your current FB; it is important to know the impact. Download link at the bottom.

Introduction

Unlike some FB5 releases, this one contains several changes which impact your current FB source code. Depending on your code, it may not compile with this FB version.

Internally, all of FB runtime disk-based file I/O system ( with some specific exceptions which will be noted later ) was updated and is now 64-bit compatible. In some cases the updates impact the operation and syntax of specific FB file I/O keywords. Most FB file I/O keyword's operation and syntax are exactly the same while a few have slightly different syntax/requirements and behavior. It is important for FBers to understand these impacts, assess the work involved, and decide how/when to implement this new FB release. Like usual, old releases and the prior release ( 5.7.97 ) are available. Hopefully, this moves us closer to a "Future" BASIC. The design goal was to keep the language in familiar territory with the same keywords while upgrading the supporting runtime.

Overview of Changes to FB File I/O

As usual, the Release History Notes detail the changes but here is an overview.

[A] File-based versions of the OPEN statement( open modes "I", "O", "A", "R" and "N" ) must specifically use the CFURLRef version. OPEN no longer supports FSSpec or FSRef.

[B] OPEN "N" now provides an automatic read-only open when a file is already open in "N" mode. It notifies the code of the automatic selection of "I" mode, when "N" was requested, via FB's standard ERROR functions. See code below at note:<sup>1</sup>

[C] READ/WRITE FIELD are removed due to use of deprecated Handles and potential links/associations with old code.

Replacement options were discussed in Jan/Feb 2017 FB list discussions. See this link for a possible replacement strategy: <http://freegroups.net/groups/futurebasic/0:67289read.html>

[D] FB's FILES\$ now uses/returns only a CFURLRef for each of the three major options( i.e. selecting a file, a folder, or save location/name )

[E] Util\_Files.incl uses outdated ( parameter block ) file functions. N.B. IF YOUR CODE USES FUNCTIONS FROM THIS INCLUDE, IT WON'T BUILD.

In all cases this include's functions can either be replaced with similar URL functionality or the functionality is obsolete ( Resource fork stuff ). If you can't find modern replacements, please ask on the list. One replacement example: fn FSSendFileToTrash( sourceObj as ^FSSpec ) can be replaced with one of the new Util\_FileManager.incl code. ( see FB Examples==>Files==>Util\_FileManager Demos==>TrashItemAtURL

[F] Coding errors can cause crashes because the error isn't found until it runs.

For example:

(1) A "Bad file descriptor" crash message indicates a file i/o attempt which isn't allowed by the OPEN mode (i.e. opening in mode "I" and trying to WRITE the file )

(2) Using the wrong fileID. i.e. opening file #1 for read and then trying to read file #2 when fileID #2 doesn't exist.

The [Release History Notes](#) detail many other additions and changes and FBers are strongly encouraged to read and understand their impact.

#### What didn't change in FB File I/O

[F] Even though their underlying code changed a lot, most FB file I/O verbs/keywords use the same syntax. For example, Error, Close, Write#, Input#, Print#, Record, LOF, EOF, Rec, Loc, Read File, Write File, Append, Open "C" and Open "UNIX" all have the same syntax. Such is the benefit of an abstracted high-level language.

[G] The relative performance and usage recommendations remain the same. For example, using read# with multiple variables generates more code( potentially a lot more ) than doing a read file# into a FB record ( C structure ) or pointer. Read# generates one physical read per variable versus one read for the entire FB Record in Read File#. Here is an example with an FB record reading four variables with Read File vs. Read:

```
begin Record myRec
dim as short a
dim as long b
dim as Str255 c
dim as double d
end Record
dim as myRec aRec
```

This FB: read file #2, @aRec, fileSize  
Generates this C: FBReadFile( 2, (void\*)(void\*)&aRec, false, fileSize );

This FB: read #2, aRec.a,aRec.b,aRec.c;13,aRec.d  
Generates this C: aRec.a = FBReadSwapShort( 2 );  
aRec.b = FBReadSwapLong( 2 );  
FBReadString( 2, (char\*)&aRec.c, 13 );  
aRec.d = FBReadSwapDouble( 2 );

[H] This FB release brings lots of new headers, updates and bug fixes. Most timely is the new addition of Util\_FileManger to assist with the new OPEN and FILES\$. Thank you Bernie.

-----  
-----  
Notes:

1. Code below shows interception of an OPEN "N" notification and how to determine if "I" mode was assigned because file is in use.

```
//-----
include "NSlog.incl"

dim as CFURLRef url
dim as short ioError : ioError = 0
dim as CFIndex fileSize
dim as CFStringRef s
dim as dim as p

s = @"/Users/brians/Desktop/mytextfile2.txt"
url = fn CFURLCreateWithFilePath(NULL, s, _kCFURLPOSIXPathStyle, _false)

on error end
error = _noErr
open "N",1, @url
ioError = error
error = _noErr
// _opWrErr (-49) file already open with with write permission*/
// in this case another process has the same file open in mode "N"(since this process does
not),
// so the runtime opens the file for you in read-only mode (like mode "I") and notifies
// the FBer of this action by sending back the _opWrErr code. Brian 20170303

select switch (ioError)

case _noErr
 // No problem, your code has the file open in "N"

case _opWrErr
 // other code (or code in another process) already has the file open in "N"
 // so your code now has this file open in "I" mode
 NSLog(@"ioError = %d", ioError)
 fileSize = lof(1,1)
 p = fn malloc(fileSize)
 read file #1, p, fileSize
 s = fn CFStringCreateWithBytes(NULL, #p, fileSize, _kCFStringEncodingMacRoman, _false)
 free(p)
 NSLog (@"%@",s)
 CFRelease(s)
 Close #1
end select

CFRelease(url)

RunApplicationEventLoop
//-----
```

General note: Several FBers contribute to the update effort and the release notes now identify the persons mostly ( approximately 95%+ of the effort ) responsible for the coding effort in each area, even though others not mentioned might have contributed.

-----

20161228 FB 5.7.97

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.94]

FB 5.7.97 requires OS X 10.6 or higher

[01] FBtoC is now a 64-bit app. This means we have a translator that will run even if Apple removes Carbon - Brian

Bonus: removal of more runtime code reduced FBtoC's disk size.

[a] Translate/Compile runs on a separate queue/thread( libdispatch driven ) to reduce/eliminate FBtoC's previous 'beachball' cursor.

Note: Macs with fewer than two cores will not see all the benefits of concurrent multi-thread processing but the 'beachball' should be (mostly) gone.

[03] Remaining 'route\_toBuffer' and associated Handle management code replaced with CFMutableStringRef( one for errors and one for code ).

[04] NSTabView convenience functions added to Util\_UI.incl header.

[05] FBtoC app is codesigned ( FB editor is not codesigned ) for Apple Gatekeeper compatibility.

[06] FBtoC now copies story board files created in Xcode into the app package. See Storyboard Demos in FB Examples/Cocoa.

[07] Minor update to NSLog.incl silences a clang 'dealloc' warning.

#### Fixes - Brian

[08] Long constants ( > 255 characters ) within BeginCxxxx/EndC would be flagged as errors ( string too long ).

[09] Multiple successive invalid ids passed to Edit\$ statement in user program overflows gFBStk's maximum value.

[10] fn AddConstantsFromResourcesToSymbolTable incorrectly converted old built-in constants to unsigned long instead of signed long. This resulted in "implicit conversion" compiler warnings and could cause bugs.

[11] Building an empty ( or with one line like 'print' ) single source file over twenty times would crash. Forty successive tests succeeded without a crash. \*Might\* be fixed.

[12] fn WriteCodeToURL would crash CFReleaseing a null CFURLRef. The problem is the path passed to WriteCodeToURL() was longer than the 1024 characters allowed, so the conversion to CFURLRef fails. Same potential issue fixed in fn WriteCharToURL too. N.B. note the path length limitation.

Coding and implementation: Bernie, Brian and Deep

-----  
2016xxxx FB 5.7.95

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.94]

FB 5.7.95 requires OS X 10.6 or higher

[01] FBtoC now copies story board files created in Xcode into the app package. See Storyboard Demos in FB Examples/Cocoa.

[02] Minor update to NSLog.incl silences a clang 'dealloc' warning. In Headers.

[03] Bug: fn WriteCodeToURL would crash CFReleaseing a null CFURLRef.

The problem is the path passed to WriteCodeToURL() was longer than the 1024 characters allowed, so the conversion to CFURLRef fails. Fixed

Same potential issue fixed in fn WriteCharToURL too.

N.B. 5.7.94 and 5.7.95(internal) are the last FBtoC versions to be all FB source code. Most of 5.7.97 is FB source but it was converted to Xcode before 5.7.97 was released. Bottom line: if you want source for 5.7.97+, look at the Xcode source and NOT the FB source. Brian 20170111

Coding and implementation: Bernie, Brian and Deep

-----  
20160916 FB 5.7.94

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.69]

FB 5.7.94 requires OS X 10.6 or higher

[01] Updated fn GetNumber in Lexical Analysis - internally it's all CF but it still returns a pascal string. A start on the last conversion phase, lexical analysis.

[02] Remaining left\$, right\$, mid\$, ucase\$ and instr usage converted to CF. One 'hex\$' remains.

[03] Consolidated five functions ( fn GetLeftParenthesis, right parens, brackets, equals, comma ) into one function

[04] Updated GetLexeme\_Priv in lexical analysis to CF and remove all the 'exit "GetLexeme\_Priv"' so it will generate a normal C switch statement

[05] CFStringFromPStr() changed to accept pointer to Str255 instead of just Str255. Saves an extra copy for every call to it.

[06] Code buffers updated directly instead of using intermediate string. Translation speed improves 40 to 50% in some cases.

[07] New FixSDK app updated to handle Xcode 8 SDK changes. Thanks to Bernie for the research and updates.

#### Fixes

(08) An 'xref @' variable translates incorrectly. Fixed. ( thank you to Paolo C. for reporting )

Coding and implementation: Bernie, Brian and Deep

-----  
20160815 FB 5.7.69

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.49]

FB 5.7.69 requires OS X 10.6 or higher

#### Fixes

- (01) After reporting user code errors, FBtoC would lock up and not finish. Fixed. ( thank you to Peter B. for reporting )
- (02) Crash when launching FBtoC from desktop( i.e. without the Editor ) with no build\_goodies/Headers files. Fixed
- (03) HexString() incorrectly truncated when honoring some 'defstr' ( i.e. byte, word, long ) settings. Fixed.

#### FBtoC internal code updated to 64-bit

- (04) fn EmitData updated to use CF and remove FB's dynamic array
- (05) fn GotoStatement updated and its subordinate fn FixLabel ( now named fn FixLabelCreateCF )
- (06) fn GosubStatement updated and its subordinate fn FixLabel ( now named fn FixLabelCreateCF )
- (07) fn ReadQuotedString updated to CF and renamed fn ReadCreateQuotedString
- (08) Miscellaneous global pascal strings used in 'Exit' code changed to CF mutable strings - see fn ClearMiscGlobalStrings
- (09) Prefix labels for both generated and source ( i.e. 'LL' and 'L' ) changed to CF - see kprefixForLabelFromFBSource/kprefixForGeneratedLabel
- (10) All 'Exit' related code updated to CF including fn UniqueLabel
- (11) Changes to fn BSComparePStr() and fn BinarySearch() to use CFStrings. Superficial changes at the moment.
- (12) Many fn InString calls replaced with fn CFStringFind for slight performance boost.
- (13) Some Unix functions, such as fn CopyUnixCommandFirstLineResponse, updated to not use FB runtime
- (14) Replaced Handles with CFStrings for fn StringExpressionContinuation and other 'String Expression & Assignment' functions
- (15) FSp LongName File Utilities removed and its only active function, fn FSpTrashObject, moved to Cocoa File Utils.incl
- (16) SendTextFragmentToCommentBuffer() updated to Core Foundation
- (17) Various 'Copy Resources Phase' FNs changed to CFStringGetCharacterAtIndex() for small speed gains.
- (18) Prelexical State: PrelexicalState record changed to use CFStringRef instead of Str255. PushPrelexicalState(), PopPrelexicalState() changed to manage the CFStringRef memory appropriately.

Coding and implementation: Bernie, Brian and Deep

-----  
20160711 FB 5.7.49

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.48]

FB 5.7.49 requires OS X 10.6 or higher

- (1) Tlxb CFSet.incl, Tlxb CFBag.incl and Tlxb AppThings.incl added to Headers
- (2) CF replacement functions for right\$, left\$, mid\$, instr and hex\$ now easily accessible via new header file, Util\_Strings.incl.
- (3) Crash converting old project file format to new. Fixed.
- (4) Error reporting fn was releasing the error string too early ( fn BuildStringAndReportError ) which could cause unexplained crashes. Fixed.
- (5) Build Settings: edit buttons for 'Path to Developer folder' and 'Compiler Options' were inoperative. Fixed.
- (6) Several translation bugs fixed related to 'def fn using', dynamic arrays and other issues. These were coding errors made while converting FBtoC source. Mark( LabHelper X ) and Peter's( Drafting ) source were instrumental in identifying issues.
- (7) Smart tabs: If the user enters an initial tab value on creation, it failed to select the tab correctly: Fixed.

appearance button \_cTabs,, 2,,, @"Tab 1;Tab 2", @r, \_kControlTabLargeNorthProc

Coding and implementation: Bernie, Brian and Deep

-----  
20160527 FB 5.7.48

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.47]

FB 5.7.48 requires OS X 10.6 or higher

Thanks to Bernie's prolific coding efforts, tab control and radio group implementation is totally easy.  
SmartTabs/SmartRadioGroups are implemented in the FB runtime, so all the messy work is done for you there.

If you'd like to try it, download the example at: [FB\\_5\\_7\\_48\\_Examples/Controls/SmartTabs+RadioGroup1](#)

Important: Please Note (N.B.)

FB 5.7.42, in February 2016, announced the next FB release will not support pascal strings in appearance window, appearance button, apple menu and menu statements. That change is still planned but there is no firm schedule yet. Those statements continue to support both pascal and CF strings in 5.7.48 but FBers should be making changes if not done already.

Coding and implementation: Bernie, Brian and Deep

---

20160527 FB 5.7.47 rev 2

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.47]

FB 5.7.47 requires OS X 10.6 or higher

- (1) read # and write # were not translating correctly causing the build to fail with compile errors. Fixed.
- (2) Two 'Quit' items on FBtoC's menu negatively impacted operation. Fixed
- (3) Added CFRelease( msg ) to STACK\_PUSH() to quiet the analyze warning
- (4) Build Setting, 'Check Array Bounds', failed to generate compilable C code in some scenarios. Fixed.

Coding and implementation: Bernie, Brian and Deep

---

20160516 FB 5.7.47

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.46]

FB 5.7.47 requires OS X 10.6 or higher

- (1) New Stack\_Push() function replaces older macro because clang was emitting hundreds of warnings about potential unsequenced errors. Function not only avoids any sequence errors but checks stack pointer to make sure it is within the stack array bounds. If not, it alerts the user and quits FBtoC.
- (2) FBtoC would spew errors after multiple(20+) builds of same project( see 5.7.45 notes #3 ). Stack pointer not being decremented in FBOpenUnix(). Fixed.

Coding and implementation: Bernie, Brian and Deep

---

20160515 FB 5.7.46 - development only

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.45]

FB 5.7.46 requires OS X 10.6 or higher

- (1) SmartTabs plus SmartRadioGroups - temporarily turned off until serious bug can be fixed.

Coding and implementation: Bernie, Brian and Deep

---

20160504 FB 5.7.45 - development only



<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.44]

FB 5.7.45 requires OS X 10.6 or higher

- (1) Tltx ControlDefinitions.incl updated to fix errors in GetDataBrowserUserState() and SetDataBrowserUserState()
- (2) Four code buffers( declarations, main, functions and comments ) converted to CFArrays of CFMutableStrings ( formerly arrays of allocated Handles ).
- (3) Crash building FBtoC source with "source combining" turned off resulted in crash when memmove() overwrote the end of the array and corrupted another variable.  
Increasing gFBStrStk's size from 32 to 128 via kMaxStringStackLevel constant \*bypasses\* the bug. Bug was found/fixed in 5.7.47
- (4) Edit Field's FB Help updated to reflect option to use Core Foundation string in title/text

Coding and implementation: Bernie, Brian and Deep

-----  
20160411 FB 5.7.44 - development only

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.43]

FB 5.7.44 requires OS X 10.6 or higher

- (1) build\_goodies now contains AppThings.m to support new FBFullStop()

Coding and implementation: Bernie, Brian and Deep

-----  
20160408 FB 5.7.43 - development only

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.42]

FB 5.7.43 requires OS X 10.6 or higher

- (1) Project Template ( i.e. the default project when File>>>New Project is selected ) now uses Core Foundation strings.
- (2) DEFINEDINCOCA constant now recognized
- (3) Util\_UI.incl header updated
- (4) Printing folder added to FB Examples. Contains "Print info using NSPrintInfo" and other Cocoa and Carbon ( i.e. "PM" ) printing examples.
- (5) Bug fix: FBtoC crashed in fn SendHandleFragmentToOutputStream when an 'end if' was used to terminate an fn and a local variable wasn't dimmed.
- (6) Getter/Setter for gCurrFileName and other related code updated to use CFString
- (7) ChkBounds() updated to use CFString

Coding and implementation: Bernie, Brian and Deep

-----  
20160229 FB 5.7.42

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.41]

FB 5.7.42 requires OS X 10.6 or higher

Thanks to Bernie's prolific coding efforts, we now have new title syntax for some primary FB Statements.

- (1) Completely rewritten version of 'Search Apple Headers' application
- (2) Similar to the Menu statement changes of FB 5.7.39, the following FB statements now accept either Core Foundation(CF) or Pascal title strings:

- appearance button
- appearance window
- button
- window
- apple menu ( also accepts CFArray of titles )
- Edit Field ( FB Help does not reflect this capability yet )

(3) The following helper functions are available to get/set CFString text in the menu, appearance window and appearance button statements:

For Menus:       MenuSetTitle  
                  fn MenuCopyTitle  
                  MenuItemSetText  
                  fn MenuItemCopyText

For Windows:     WindowSetTitle  
                  fn WindowCopyTitle

For Buttons:     ButtonSetText  
                  fn ButtonCopyText

(4) FB Help now reflects #2's syntax

(5) CFMenuWndBtnTitles.bas demonstrates #2's CFString capabilities and may be found in FB\_5\_7\_42\_Examples/Dialogs and Windows/

(6) Deprecated usage ( see N.B. next ) based on #2 fixed in FB Editor code, the header FBtoCConsole.incl and ( hopefully ) the all the example code in FB\_5\_7\_42\_Examples

Important: Please Note (N.B.)

FB's next release will not support pascal strings in appearance window, appearance button, apple menu and menu statements, so FBers are strongly encouraged to upgrade those statements to the new CFString syntax.

Apple has not deprecated Pascal strings( but are discouraged due to limitations ) but FB's Runtime Pascal support uses older 32-bit code. The goal is to nudge our code toward 64-bit compatibility as much as possible without disrupting FBers; small incremental runtime changes should make this easier on everyone.

As a reminder, FB 5.7.42 displays a deprecation message during a build/run: "Warning: Pascal string title is deprecated; use Core Foundation strings instead in line 97 of CFMenuWndBtnTitles.bas"

Coding and implementation: Bernie, Brian and Deep

-----  
20160214 FB 5.7.41

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.40]

FB 5.7.41 requires OS X 10.6 or higher

- Fixed: framework included from /Library/Frameworks not working
- Header, Util\_UI.incl, added to include Cocoa nib loading & corresponding demo, CocoaNibDemo, added to FB Examples/Cocoa
- FB\_5\_7\_41\_Examples/CoreFoundation now includes a demo of replacement CoreFoundation/Foundation string functions( i.e. CF functions to replace, left\$, right\$, mid\$, instr, space\$, string\$ )
- Help menu now includes links to the FBtoC web page and FutureBASIC mailing list on associate.com
- Better help message for first-time users seeing the "Could not get read/write access to preferences" message.

-----  
201600121 FB 5.7.40

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.39]

FB 5.7.40 requires OS X 10.6 or higher

- Fixed: FBtoC crashed when launched in OS X 10.7
- Added to Tlxb StdCLib.incl: toolbox fn memcpy( ptr dest, ptr src, UInt32 n ) = ptr

-----  
20160108 FB 5.7.39

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.38]

FB 5.7.39 requires OS X 10.6 or higher

(1) Bernie implemented new CFString/CFArray support for the Menu statement. There is a nice demo in FB Examples/Menus. Thanks Bernie.  
( now get back to work on that new editor! ;- )

(2) help folder message eliminated for now

-----  
20160105 FB 5.7.38

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.14]

FB 5.7.38 requires OS X 10.6 or higher

Introduction: The following notes don't adequately capture the significant depth and breadth of FB's (mostly all in FBtoC ) changes but hopefully conveys a little of the effort involved.

-With this release, approximately 50%+ of FBtoC is 64-bit ( compare to approximately 10% for 5.7.14 )

-The editor returns with only minor updates to maintain FBtoC compatibility ( Style files, .rsrc resources ).

-Lexical code is the next area for FBtoC 64-bitness.

-Several Fbers are working on a new 64-bit editor and results are encouraging. Please wish them luck & give thanks; it's a lot of work.

#### SUMMARY

##### Items of interest for Fbers:

- FBHelp's Begin/end globals now describes the possibility to create C static local variables in local functions.

- Milestone: FBtoC now uses CFString file paths and urls exclusively; there are no FSSpecs.

- FB's generated apps now includes the NSHighResolutionCapable key set to true in their info.plist

- Mid\$ function updated to honor numChars variable. If numChars is zero, Mid\$ returns zero characters and not the whole string as it did before.

- RUN command updated to accept:

(a) a CFString literal

(b) a CFString variable

(c) CFURLRef variable

(d) FB Help for Run command updated to reflect new syntax shown

- FB Help Appendix A: File object specifiers updated to recommend CFURLRefs and not FSRefs or FSSpecs.

- 'kill resources' statement isn't supported and is ignored.

- FBHelp's Files\$ doc corrected for options (2) Selecting a Folder and (3) For Selecting a File Name and Folder where a file may be Saved.

this was noted by Bernie and RC in a list discussion 18-June-2013.

- Replaced use of old '.rsrc' resources in editor because FBtoC doesn't process .rsrc files

- fn CompilerPath, fn CopyUnixCommandFirstLineResponse and some others changed to accept CFString input

- Support for .rsrc old style resource fork files removed.

- FBtoC used to combine data from all resource fork files and create an AppName.rsrc with only a data fork. This is now gone

- Removed copying of 'Localized.rsrc' as it is no longer needed.

- 'rsrc' resource processing fns removed

##### Major Areas of Code Conversion to 64-bit

- All file I/O related functions are now use Core Foundation or Foundation. This includes all cached file paths, constants and file reads.

- FB Dynamic arrays replaced with CFMutableArrays

- All "Output Stream" which is all code to copy resources, include files, build files, manage PCH and more

- All error handling

- All TranslateBuild Utilities, including all calls to unix utilities and building buffers for those utilities ( i.e. AppendToBuf() )

- All FSSpecs removed from all build-related code. Now all CFURLs and CFString file paths.

List of all ( mostly ) Enhancements:

- Mostly INTERNAL UPDATES ONLY( blue-colored text indicate items of general interest - reverse chronological order with most recent changes first )
  - FBHelp's Begin/end globals now describes the possibility to create C static local variables in local functions.
  - FB dynamic array sFBRuntimeFunctionsToStrip in Symbol Table Implementation replaced.
  - Dynamic array, sIncludedFileNames in Prelexical State replaced
  - More FBtoC internal code updates
    - [01] FB dynamic arrays gCRuntimeIncludeFiles, gFrameworks, gFrameworkPlusHeaders and associated processing in "Conditional Inclusion" replaced with CFMutableArrays
    - [02] Replaced FB string constants in Conditional Inclusion file ( and code impacted by them ) with CF versions
    - [03] fn WriteTranslatedCodeToFile now accepts CFString input
    - [04] ReadSourceFile now accepts CFString input
    - [05] fn CopyProjectFileURL replaces fn GetProjectSpec
    - [06] Milestone: FBtoC now uses CFString file paths and urls exclusively; there are no FSSpecs.
    - [07] Remaining FB dynamic arrays in Write Translation file converted.
    - [08] FB's generated apps now includes the NSHighResolutionCapable key set to true in their info.plist
    - [09] fn RenameOutput and associated arrays converted
    - [10] Cleanup of fn SendMsgToEditor - seven lines of code reduced to one using Foundation instead of CF
    - [11] fn EmitData converted - this handles FB's DATA statements and associated READ and RESTORE support
    - [12] fn WriteTranslatedCodeToFile - more work
    - [13] fn SaveSourceUserHeaderSearchPaths replaces fn SaveFBSourceFolderReference and uses a CF mutable array instead of an array of FSSpecs
    - [14] fn SetUpFilePathsForThisProject now uses CFStrings.
    - [15] fn WriteTranslatedCodeToFile - updated to use CFStrings and MoveCFStringToRouteBuffer() instead of FB's PRINT
    - [16] ReadSourceFile processing converted but still accepts Str255 input
    - [17] WriteCTypeTableFile converted
    - [18] WriteHandleToFile.( now named: SplitHandleToHeader\_C\_Line ) converted
    - [19] fn SaveSourceUserHeaderSearchPaths replaces fn SaveFBSourceFolderReference. It saves CFString search paths in a global array sCFSearchPaths
    - [20] Mid\$ function updated to honor numChars variable. If numChars is zero, Mid\$ returns zero characters and not the whole string as it did before.
    - [21] fn LastFileExists/fn BuildTempExists now accept a CFURLRef. Calls using it modified to send CFURLRef.
    - [22] fn ProcessOpenedFile now accepts CFStrings and passes them to a primary function: fn TranslateAndBuild
    - [23] FBtoC's Main changed: dictionary now created & sent when this code calls ProcessNotification()
    - [24] fn WriteErrorsFileForEditor now accepts CFURLRef input
    - [25] fn PrintErrorMessageToBuffer updated to use CFStrings and new fn MoveCFStringToRouteBuffer
    - [26] fn WriteErrorsFileForEditor update internally but still receives FSSpec input :-(
    - [27] All PRINT \_toBuffer in fn PrintCompilerMessageToBuffer now uses a CFMutableString.
    - [28] The CFString in #27 is moved to the appropriate gFBBuffer via fn MoveCFStringToRouteBuffer which calls FB runtime FBCheckBuffer().
    - [29] Note: this approach relies on the existing ROUTE \_toBuffer +(n)/ ROUTE \_toScreen logic and doesn't require the new code to figure out which buffer is the current target of the ROUTE. Also note: Since buffer logic is mostly building and expanding a handle to allocated storage it doesn't impede 64-bit compiles.
    - [30] For later: update FBCheckBuffer() and associated code to use allocated pointers instead of allocated handles to avoid all the older SetHandlexxx calls.
    - [31] Fixed crash on a DisposePtr() in fn ReleaseSourceFileText caused by bug in fn TranslateFileRecursive
    - [32] More work on CompileFiles, CompileSource
    - [33] More work to replace gUnixPathToSourceFolder(pascal) with gCFUnixPathToSourceFolder(CF)
      - Right now fn SetUpFilePathsForThisProject uses CF internally but accepts FSSpecs and Str255. Next step is to have it accept CF input.
    - [34] fn CompileFiles converted to CFString usage and input
    - [35] fn CompileSource converted to CFString usage and input
    - [36] RUN command updated to accept:
      - (a) a CFString literal
      - (b) a CFString variable
      - (c) CFURLRef variable
    - [37] FB Help for Run command updated to reflect new syntax shown in #36
    - [38] FB Help Appendix A: File object specifiers updated to recommend CFURLRefs and not FSRefs or FSSpecs.

[39] fn MakeDSym now accepts CFStrings  
 [40] Time display and calcs in fn TranslateAndBuild now CF instead of pascal/carbon  
 [41] fn CopyHelpBookFolderName now accepts, uses and returns CF objects  
 [42] 'kill resources' statement isn't supported and is ignored.  
 [43] fn AddConstantsFromResourcesToSymbolTable is ALMOST 64-bit clean but still passes a pascal string to AddNumericConstToSymbolTable()  
 [44] cleanup from 5.7.21. More direct use of fn CFStringFromPStr( pascalString ) instead of letting returned value go stale before being used.  
 [45] from 5.7.16 - "all 'shutdown' and 'stop' code converted to call to 'ShowAlert' followed by [NSApp terminate:nil]"-- cleaned up.  
 [46] fn CopyUNIXPath activated as replacement for older FSSpec-based fn PathForUNIX.  
 [47] fn CopyObject now both accepts CFString input and processes CFStrings  
 [48] fn MakeDir now both accepts CFString input and processes CFStrings  
 [49] fn FileObjectExists now accepts CFStringRef input  
 [50] fn FileObjectExists reverted back to 'test -e' command because it is less code. Internally uses CFStrings.  
 [51] Editor's fn ReadTextFile and fn SaveTextFile updated to use new Cocoa ReadFile() and WriteFile(). Still returns a Handle and accepts an FSSpec.  
 [52] FBHelp's Files\$ doc corrected for options (2) Selecting a Folder and (3) For Selecting a File Name and Folder where a file may be Saved.  
 this was noted by Bernie and RC in a list discussion 18-June-2013.  
 [53] Replaced use of old '.rsrc' resources in editor because FBtoC doesn't process .rsrc files

- Editor window icons changed from cicon resources to pngs.
- Menu resources changed to toolbox menu calls ( FB menu statements not used but possible for those converting from menu resource use )
- CFSwapInt16HostToBig() & CFSwapInt16BigToHost() was needed in 2008 but now removed for writing Editor Style Files.incl
- CFSwapInt16BigToHost() for reading existing version 2 style files remains.
- FB's Style file I/O using FB's OPEN, READ, WRITE, WRITE FILE, READ FILE changed to Foundation calls
- Minor update to SystemDirectoryCopyURL() to use signed 'domain' variable and quiet clang warning.
- fn CompilerPath, fn CopyUnixCommandFirstLineResponse and some others changed to accept CFString input

[54] fn CopyResources now accepts CFURL and CFStringRef input.

- Support for copying .rsrc old style resource fork files removed.
- FBtoC used to combine data from all resource fork files and create an AppName.rsrc with only a data fork. This is now gone
- Removed copying of 'Localized.rsrc' as it is no longer needed.
- 'rsrc' resource processing fns removed
- Some other misc small functions updated and added

[55] Editor incorrectly labeled text include files ( with extension '.incl' ) as 'resources' inside data.fbproj ( within projectname.fbproj )

- Happens only if the '.incl' file does not have a file type of 'TEXT'
- Building a project once cleans up the projectname.fbproj
- Editor code that decides whether to write 'include' vs. 'resources' in data.fbproj is fn WriteFileListToProjectDataFork(

[56] All 'shutdown' and 'stop' code converted to call to 'ShowAlert' followed by [NSApp terminate:nil];  
 [57] fn SendErrorMessageToLogAndEditor, fn SendInformativeMessageToLogAndEditor converted to CFStrings

[58] FBtoC's 'AppendToBuf()' upgraded to use CFString input. Used this approach ( versus just loading a CFMutableString and passing it around ) because all the AppendToBuf() code just uses pointers and doesn't invoke Carbon code. This way the logic is maintained and code can continue to call all the command line utilities( especially the compiler, linker, dsymutil, sed and strip ). Other commands like 'rm' and 'mkdir' can be switched out for Cocoa but there is no pressing need for that. Tested with FBtoC/Editor source. Bernie's tests on some large projects also works fine.

[59] Lots of minor stuff just to clean up code, update comments and fix broken code.

Coding and implementation: Brian & Bernie

-----  
 20150801 FB 5.7.14

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.13]

FB 5.7.14 requires OS X 10.6 or higher.

FB5 bug fixes:

- 'Appearance Window' inappropriately overwrote window attributes when the statement omitted window attributes.
- Editor and Project Manager window resizing was broken in OS X 10.6
- The hidden grow box change, implemented in 5.7.13, now hides grow boxes only for compositing windows.
- Turned off some debugs left on in prior release.

Enhancements:

- OSMajorMinor() returns both major and minor OS version in one call. Example: running in 10.7.5 it returns: major = 10 and minor = 7. Look for a usage example in a later list post.

- Tlxb MacWindows.incl header updated with drawer window and other helpful window calls:

```
// Drawer Window calls now recognized automatically in FB 5.7.14
toolbox fn GetDrawerPreferredEdge(WindowRef inDrawerWindow) = OptionBits
toolbox fn SetDrawerPreferredEdge(WindowRef inDrawerWindow, OptionBits inEdge) = OSStatus
toolbox fn GetDrawerCurrentEdge(WindowRef inDrawerWindow) = OptionBits
toolbox fn GetDrawerState(WindowRef inDrawerWindow) = WindowDrawerState
toolbox fn GetDrawerParent(WindowRef inDrawerWindow) = WindowRef
toolbox fn SetDrawerParent(WindowRef inDrawerWindow, WindowRef inParent) = OSStatus
toolbox fn SetDrawerOffsets(WindowRef inDrawerWindow, CGFloat inLeadingOffset, CGFloat
inTrailingOffset) = OSStatus
toolbox fn GetDrawerOffsets(WindowRef inDrawerWindow, CGFloat * outLeadingOffset, CGFloat *
outTrailingOffset) = OSStatus
toolbox fn ToggleDrawer(WindowRef inDrawerWindow) = OSStatus
toolbox fn OpenDrawer(WindowRef inDrawerWindow, OptionBits inEdge, Boolean inAsync) = OSStatus
toolbox fn CloseDrawer(WindowRef inDrawerWindow, Boolean inAsync) = OSStatus
```

```
// Helpful window-related calls now recognized automatically in FB 5.7.14
toolbox fn IsWindowActive(WindowRef inWindow) = Boolean
toolbox fn ActivateWindow(WindowRef inWindow, Boolean inActivate) = OSStatus
toolbox fn CopyWindowTitleAsCFStringRef(WindowRef inWindow, CFStringRef * outString) = OSStatus
toolbox fn HIWindowGetBounds(WindowRef inWindow, WindowRegionCode inRegion, HICoordinateSpace
inSpace, HIRect * outBounds) = OSStatus
toolbox fn HIWindowSetBounds(WindowRef inWindow, WindowRegionCode inRegion, HICoordinateSpace
inSpace, const HIRect * inBounds) = OSStatus
toolbox fn SetWindowResizeLimits(WindowRef inWindow, const HISize * inMinLimits, const HISize *
inMaxLimits) = OSStatus
toolbox fn DetachSheetWindow(WindowRef inSheet) = OSStatus
toolbox fn HIWindowSetToolbarView(WindowRef inWindow, HIViewRef inView) = OSStatus
toolbox fn MacGetNextWindow(WindowRef window) = WindowRef
```

Coding and implementation: Bernie, Brian

-----  
20150622 FB 5.7.13

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.12]

FB 5.7.13 requires OS X 10.6 or higher.

FB5 changes:

- System( \_sysVers ) changed to use modern Foundation calls instead of Gestalt.
  - N.B.: this call returns exactly what Apple's NSProcessInfo's operatingSystemVersionString provides. It concatenates the major, minor and bugfix version numbers
    - and returns that number as a string: for OS X 10.9.4 major = 10, minor = 9, bugfix = 4, so 1094 would be returned as a SInt32. OS X 10.7.2 returns 1072, OS X 10.10.3 returns 10103 etc. Apple omits the bugfix version if it is zero, so 10.9.0 returns 109 and 10.10.0 returns 1010. This could impact code comparisons if the raw returned value is used as is.
  - This change was prompted by Console log error messages like: "5/6/15 12:30:01.938 PM FutureBasic 5[1755]: WARNING: The Gestalt selector gestaltSystemVersion is returning 10.9.3 instead of 10.10.3. Use NSProcessInfo's operatingSystemVersion property to get correct system version number."
- Windows created with FB's 'Appearance Window' statement now omit the dated visible grow box.
- Garbled warnings for unused functions and unused forward declarations fixed
- 'dim as ptr pl, 2' caused crash. Fixed

- FB 5.7.13 source released to public.

Coding and implementation: Bernie, Brian, Michele

Notes: Items #3 and #4 are fixed in 5.7.13 re-released on 9-July-2015

-----  
20150219 FB 5.7.12

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.11]

FB 5.7.12 requires OS X 10.6 or higher.

FB5 changes:

- Many FBtoC source changes adopt Core Foundation and do specific replacements such as pascal string==>CFStringRef & FSSpec==>CFURLRefs.
  - in progress & mostly complete - UNIX source file fns are converted and some feeders and subordinates changed too.
  - in progress & mostly complete - ERROR HANDLING source file fns are either converted to Core Foundation or prepared for it
  - FSSpec replacement with CFURLRef/NSURL started ( in progress, incomplete & not activated )
- Fixed: 'dim qs windowref wr' caused a crash.
- Fixed: 'File Not Found' error when a source file directory name contains a higher ASCII symbol ( in this case 'f' )
- Fixed: Typed pointer treated as untyped generates clang "invalid operands to binary expression" error when used in binary 'and'.

Coding and implementation: Bernie, Brian and Michele

Notes:

-----  
20141117 FB 5.7.11

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.10]

FB 5.7.11 requires OS X 10.6 or higher.

FB5 changes:

- FBtoC's log window rewritten in Cocoa nib and Objective-C
  - (a) Find bar added for searching the log after the build
- FBtoC's menus rewritten in Cocoa nib and Objective-C
- FB5's command menu now has "Analyze" and "Build" options.
  - (a) Analyze allows for easy one-off clang analyzes regardless of the Build Settings.
  - (b) Build omits the target app launch after the compile/link
  - (c) Superfluous "analyze" and "Launch after build" build settings options removed
- Tool tips added to the Build Settings window
- Added: Reminder warning "Compile as 'Objective-C'" is superfluous
- User is warned of a missing Quickdraw framework when choosing Build Settings' base SDK.
- Opening an old project is now smarter and checks if a previous path to a developer folder still exists
- Superfluous FBtoC option "Debug Last App in Xcode" removed.
- More general FBtoC code cleanup
- fn FD\_SpecialDirectoryCreateCFURL now allows the programmer to check a returned OSStatus for an error
- Messaging from FBtoC to editor updated to use CFNotificationCenter instead of Apple Events
- NSLog updates:
  - (a) "Compile as Objective-C" removed from NSLog.incl
  - (b) NSLog window bounds now stored in user app's preferences instead of com.berniewylde.nslog.plist
  - (c) Requires 10.6+
- Fix: Path to Developer folder popup failed when more than one path present.
- Fix: Log options now appear only in FBtoC build settings window similar to version 5.7.8
- Fix: 'compilerVersion' now available for use again
- Fix: "Make Xcode without project Stripping" was unresponsive when selected immediately after an "analyze" build of the same code.
- Fix: SystemDirectoryCopyURL(), which supports the File Directory include, updated to support kPreferencesFolderType, kTemporaryFolderType plus a couple bug fixes.
- Fix: Editor incorrectly displays code block ( if/else/endif, while/wend local fn/end fn ) mismatching error in specific scenario(\*). Visual problem only. It does compile.
- Fix: Find Again ( CMD-G ), after closing source window, find window and project window, opens unexpected "untitled" window and does a find. Should find nothing.
- Fix: Build Settings window fails to display in OS X 10.6.x

- Fix: More helpful editor error message when is unable to open project file. Thanks Michele.
- Workaround: when project with valid developer path is moved to another Mac, build crashes due to invalid path. A warning dialog is now displayed.

Coding and implementation: Bernie and Brian

Notes:

\* A line of code exactly 35 characters long triggers a bug when code looks for '#' as the previous character. Turns out 35 is ASCII for the '#' char and comparison with the length byte of a pascal string causes the problem. Code changes for 'if' and 'else'

-----  
20141006 FB 5.7.10

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.9]

FB 5.7.10 requires OS X 10.6 or higher.

FB5 changes:

1. Cleanup from new Build Settings window implementation.
2. Cosmetic bug: log would show "FBtoC: build settings from project" when it was from FBtoC preferences. Right preferences being used but the log message was wrong.
3. New triple slash comment '///' allows FBer to select which comments to send to C/Objective-C generated code
4. FBtoC now generates NSBeep() for 64-bit builds
5. Bug fix: Any included resource with a plist file extension is now correctly put in /Contents/Resources and not /Contents \*
6. Bug fix: Crash when Xcode and/or appropriate directories aren't available and Build Settings not consulted by user.
7. Added: Reminder warning "Compile as 'Objective-C'" is superfluous

Comments:

\* the info.plist is correctly placed in /Contents

Coding and implementation by Bernie, Brian and Robert C.

-----  
20141003 FB 5.7.9

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.8]

FB 5.7.9 requires OS X 10.6 or higher. Please note the following changes before implementing 5.7.9.

FB5 changes:

1. The Build Settings window has been redesigned and re-written in Objective-C/Cocoa with a Cocoa nib with more options and flexibility.
  - (a) clang is the compiler. Compiler selection is gone.
  - (b) Formerly deprecated 'Allow dim a%, a&, a#, a\$' is now gone. Attempts to use will generate a "Redefined variable".
  - (c) The Settings window does all SDK confirmation/coordination/existence checking. This eliminates build-time checking and also gives the programmer immediate SDK availability feedback.
  - (d) Objective-C compile always used. No other option.
  - (e) Intel architecture always used. PowerPC and Universal builds are gone and not supported
  - (f) First build with PCH does not use anything in "Compiler Options". Subsequent builds use the PCH and any compiler options.
  - (g) Clang analyze works. A bug reported on the list could not be reproduced but current clang analysis output looks normal.
  - (h) Bug fix: "Min Deployment" all OS X releases in popup are selectable. Note: The SDK popup is still limited to those SDKs installed on the machine.
  - (i) "-F/Library/Frameworks" now included automatically in compiler search paths \*
  - (j) Table views for 'Path to Developer folder' and 'Compiler options' enable the developer to save and quickly switch to other options without retyping.
  - (k) New FB projects inherit current FBtoC Build Settings
  - (l) Many FB Header, Editor and FBtoC source files were updated to squelch clang warnings about "illegal characters..."  
All FB source compiles with no warnings.

Comments:

This is the first major FBtoC change in years. Bernie and I are excited the new 64-bit Build Settings coexists nicely with the older Carbon code.



FWIW: Overall code size decreased compared to the prior version.

Coding and implementation by Brian and Bernie.

\* For some unknown reason, Xcode 5.1's clang sometimes doesn't find the framework when Build Settings specifies a 10.6 SDK. SDK 10.9 works ok. Clang from Xcode 6 works in either scenario. Bernie's testing was successful in all scenarios but mine wasn't.

---

20140703 FB 5.7.8

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.7]

FB 5.7.8 requires OS X 10.6 or higher.

FB5 changes:  
Build Settings:

(1) For the Min OS deployment and Base SDK popup menus: Enabled menu items correspond to installed SDKs on the machine. Disabled menu items indicate SDKs not installed. For example, if the OS X 10.7 SDK is not installed, the 10.7 menu item will be visible but disabled.

(2) 'Path to Developer folder" defaults to: /Applications/Xcode.app/Contents/Developer

N.B. In order to use 10.7, 10.8 and 10.9 in these popups, users must make SDK changes to support QuickDraw headers that don't exist in the 10.7+ OS X releases. See the FBtoC [webpage](#) section titled "Optional QuickDraw headers support in OS X 10.7+" for more information.

New/Updated Headers/Runtime file(s):  
NSLog.incl replaces the former FBLog.incl. See Bernie's [list post](#) for more NSLog information

New/Updated examples:  
(1) FB\_5\_7\_8\_Examples/Miscellaneous/NSLog 1.2.8 -Updates and replaces the former FBLog

---

20140430 FB 5.7.7

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.6]

FB 5.7.7 requires OS X 10.6 or higher.

FB5 changes:  
The 'Min OS deployment' and 'Base SDK' popups in Build Settings now support OS X 10.7, 10.8 and 10.9.

N.B. In order to use 10.7, 10.8 and 10.9 in these popups, users must make SDK changes to support QuickDraw headers that don't exist in the higher SDK releases. See the FBtoC [webpage](#) section titled "Optional QuickDraw headers support in OS X 10.7+" for more information.

New/Updated Headers/Runtime file(s):  
Tlxb Aliases.incl: fn FSResolveAliasFile added  
Tlxb HICocoaView.incl added

---

20121120 FB 5.7.6

<http://www.4toc.com/fb/index.htm> [you will need to reload the page if your browser cached the page mentioning FB 5.7.5]

FB 5.7.6 (like 5.7.5 and several releases before it ) requires OS X 10.5 or higher.

FB5 changes:  
718 Error Missing commas between function params not flagged  
197 Error Malformed date/time in editor build log.

New/Updated Headers/Runtime file(s):  
FBLog.incl: C printf commands are redirected to FBLog's window.  
Minor FB Help updates for dialog function

New/Updated examples:  
(1) FB\_5\_7\_6\_Examples/Miscellaneous/FBLog\_and NSLog/printf test

Demonstrates the redirect of printf with FBlog.incl

(2)FB\_5\_7\_6\_Examples/Cocoa/FBNS

Demonstrates Cocoa calls in FB. Both .incl files and FB project version included.

(3)FB\_5\_7\_6\_Examples/Files/Bookmarks

Demonstrates bookmarks. Bookmarks are the successor to Alias Manager

(4)FB\_5\_7\_6\_Examples/Text/Scrolling text views/YAST folder

YAST( Yet Another Scrolling Text ) uses Apple core code to build scrolling text fields.

Notes:

(a) Note the other scrolling text demos in YAST's parent directory

(b) Scrolling text demos in general are, in part, aimed at shortcomings in FB5's Scroll Button

(c) YAST uses Carbon's MLTE which is not recommended by Apple.

(5)FB\_5\_7\_6\_Examples/Cocoa/CocoaShell.bas

A basic Cocoa shell( no FB code but can run from FB )

Note: Steve Van Voorst has posted( on fbcocoa but some on the main list ) a series of Cocoa/Objective-C demos which are effectively a shell/template. Those exploring Cocoa should check out Steve's demos too.

(6) FB\_5\_7\_6\_Examples/Graphics/CoreGraphics (Quartz)/Quartz 1.12

-----  
20120918 FB 5.7.5

FB 5.7.5 (like 5.7, 5.7.1, 5.7.2, 5.7.3 and 5.7.4 ) requires OS X 10.5 or higher.

FB5 changes:

716 Error Util\_EUTCKeyFilter.incl misidentified as a resource

717 Error Symbol table overflow. Table size increased by 8k

Please note: FB 5.7.4+ is required for use with OS X 10.8 ( see bug #196 )

New/Updated Headers/Runtime file(s):

Util\_FileDirectoryII.incl:

This new include updates the runtime code for the special directory calls by replacing the now deprecated FSFindFolder() calls. The special directory ( e.g. FD\_SpecialDirectoryGetXXXXX ) parameters have changed slightly. Please see the new example for details. The old include is still available

New/Updated examples:

FB\_5\_7\_5\_Examples/Files/File\_Directory examples/FileDirectory-SpecDirsUpdated.bas

-----  
20120802 FB 5.7.4

FB 5.7.4 (like 5.7, 5.7.1, 5.7.2 and 5.7.3 ) requires OS X 10.5 or higher.

Please note: FB 5.7.4 is required for use with OS X 10.8 ( see bug #196 )

FB5 changes:

196 Crash Clicking on project window icons causes crash in OS X 10.8

713 Error Appending pascal string in 'end fn = ' fails

714 Error Error message for non-terminated '#if' is poor

-----  
20120528 FB 5.7.3

FB 5.7.3 (like 5.7, 5.7.1 and 5.7.2) requires OS X 10.5 or higher.

FBtoC changes:

704 Error Changes in FBtoC.h not propagated for clang+pch builds

706 Cleanup When save button clicked, fix common user mistakes for 'Path to Developer folder'

708 Error Long variable(symbol) names generate translation and compiler errors

709 Error Make Xcode Project -> Warning: '/\*' in block comment

710 Cleanup Remove '\_A' suffix from translated array names

711 Error Using 'double' variable type with Input fails in FB 5.7.2+

712 Error Cursor not changing from arrow to I-Beam and back in some cases.

New/Updated Headers file:

New - FBlog.incl

Updated - Util\_EUTCKeyFilter.incl

Updated - Util\_CE.incl

New examples:

FB\_5\_7\_Examples/Miscellaneous/FBLog\_and NSLog/NSLog Demo

-----  
20120310 FB 5.7.2

FB 5.7.2 (like 5.7 and 5.7.1) requires OS X 10.5 or higher.

Editor changes:

191 Feature Compiler warnings/errors jump to FB code

FBtoC changes:

670 Nicety C files should have UNIX LF line endings only, not mixed with CR  
690 Feature Provide FB line info with compiler warnings/errors  
691 Feature 'Unused function' warning should jump to definition  
692 Error Window title corrupted  
695 Feature dialog(-1) returns wndNum for all window events [including \_preview]  
696 Nicety 'Debug Last App' should attempt to open Xcode 3  
701 Cleanup -DDECARBONATE should require -m64  
702\* Feature Support Xcode 4.3  
703 Error Frozen menus from 'window output 0' in DoDialog

Updated Headers file:

Tlhx CFByteOrder.incl

New examples:

FB\_5\_7\_Examples/Graphics/CoreGraphics (Quartz)/CGGradient\_demo  
FB\_5\_7\_Examples/Graphics/CoreGraphics (Quartz)/RoundRect+CGGradient  
FB\_5\_7\_Examples/Graphics/CoreGraphics (Quartz)/UserPaneGrids

\* Xcode 4.3 is installed in the Applications folder. To use with FB 5.7.2, Settings > Advanced must indicate the new location.

Path to Developer folder: /Applications/Xcode.app/Contents/Developer

The checkbox 'Use compiler from developer folder' checkbox should be ON.

-----  
20120120 FB 5.7.1

FB 5.7.1 (like its predecessor 5.7) requires OS X 10.5 or higher.

Editor changes:

184 Cosmetic Source code drawn in project window  
185 Error void functions don't show in function pop-ups  
186 Cleanup Bad horiz scrolling of background window by mouse wheel

FBtoC changes:

343 Error gcc error from pointer.offsetConst\$ arg to toolbox Str255 param  
505 Error internal error from dim a as ^Point, b&  
558 Error Compiler error from block comment in BeginC...EndC  
566 Error Comment ending in opt-L eats next line of code  
617 Error inc( p ) and p++ are different if p is ^Type  
619 Error Make Xcode Project strips main() from command-line tool  
666 Error 'dim as ..FooType bar' is pointer but should be Handle  
667 Error Can't cast address arguments freely and correctly  
669 Error Repeated 'clear local' gives internal fatal error  
672 Error Build error 'no include path in which to search for Carbon/Carbon.h'  
673 Error Default compiler in OS X 10.7 should be clang  
674 Error 'void clear local fn Foo as long' should be error  
675 Feature Allow spaces in path to Developer folder  
676 Error Can't cast to (float)  
677 Error Record assignment wrongly disallowed  
678 Error Return value from function of type float treated as integer  
679 Error 'not( a binop b )' wrongly translated  
680 Feature Maximum number of dynamic arrays doubled to 64  
681 Error Allow record field as file specifier in 'open' statement  
682 Feature Add 'Crash' button to all error alerts  
683 Error Buffer overflow when linking huge project  
684 Error Generate Localizable Strings fails when compiled as Objective-C  
686 Error Unsigned function type wrongly disallowed  
687 Error Crash from invalid syntax for 'button', 'appearance button' and 'appearance window'  
688 Error FD\_SpecialDirectoryXxxx() should create directory if absent

Note:

Projects and standalone builds that used clang with the precompiled header option will encounter an error when first built with FB 5.7.1

Error: clang:

redefinition of 'gFBDynArrayInfo' with a different type [line 115:14 of...]

The simplest workaround is to trash the build\_temp folder. An alternative is to switch temporarily to another compiler.

New Examples:

FB\_5\_7\_Examples/Graphics/CoreGraphics (Quartz )/SelfCenteringHIImageView

-----  
20111115 FB 5.7

FB 5.7 requires OS X 10.5 or higher.

Editor changes:

140 Error Tab key moves focus to toolbar and prevents subsequent editor window typing  
142 Error 'REM' slider in document window's toolbar misbehaves  
162 Error Wrong indentation from opt-space between 'end' and 'fn|select|record...'  
174 Error Edit menu first item is always 'Can't Undo'  
088 Feature Allow mouse wheel/trackpad scrolling of background window  
177 Feature Headers ('H') button in doc window's toolbar  
179 Feature Adding file to project should make copy if not in project folder  
180 Feature Project menu item: New Project File...  
181 Feature Help menu item: Search Apple Headers.app

FBtoC changes:

656 Error Hang from missing right parenthesis in 's\$ = edit\$( 1'  
650 Cleanup Deprecate type-identifier suffices (except '\$') on function names  
651 Cleanup Deprecate same name for scalar and array variable: 'dim as long a, a(100)'  
652 Cleanup Deprecate vars with same base-name but different type-identifier suffices: 'dim a%, a#, a\$...'  
653 Cleanup Deprecate FB 16-bit 'int' type  
657 Cleanup Passing pointer instead of record argument should be warning  
654 Feature New keyword 'float' as synonym for 'single'  
658 Feature Allow pass-by-value records in user-defined functions  
665 Feature Allow C's dereferencing syntax for typed pointers  
647\* Feature New 'if.../else.../endif' syntax  
671 Nicety Add Bundle identifier to default Info.plist

New Headers file:

Tlxb CFURLEnumerator.incl

Updated Headers files:

Tlxb CFURL.incl  
Tlxb Controls.incl  
Tlxb MacWindows.incl  
Util\_Containers.incl

New functions in Console runtime:

fn ConsolePrintCFTYPE( typeRef as CFTYPERef ) // any CFTYPE  
fn ConsolePrintCFSTRING( string as CFSTRINGRef ) // CFSTRING only; fast

New examples:

FB\_5\_7\_Examples/Files/CFURLEnumerator  
FB\_5\_7\_Examples/Files/NSOpenPanel & NSSavePanel  
FB\_5\_7\_Examples/Files/Search Apple Headers  
FB\_5\_7\_Examples/Graphics/CoreGraphics (Quartz)/ImageEdit skeleton

\* The new syntax:

```
if (1 == 1)
 beep
else
 stop
end if
```

is equivalent to the traditional (and still supported) syntax:

```
long if (1 == 1)
 beep
xelse
```

```
stop
end if
```

---

20110912 FB 5.6.2

Major bug-fixes:

```
641 Error Crash from DynamicNextElement()
642 Error DynamicRemoveItems() attempts to remove non-existent items
```

Feature introducing type safety to FB:

```
621 Feature Allow compiler to warn of some type-mismatched pointer assignments
```

Cleaning up FB:

```
636 Cleanup Deprecate shorthands '& % |' for poke
637 Cleanup Deprecate 'enterproc ... exitproc'
638 Cleanup Disallow 'def' and 'usr' function declarations and calls
```

Improvements in translated C code:

```
622 Cosmetic Better translation of 'if (pointerVar) ...'
627 Cosmetic Pointers to scalar types should not be void*
628 Cosmetic Fewer parentheses in expressions with bitwise operators
634 Cosmetic Translate '++' as such, not '+= 1'
640 Cosmetic Translate 'rec = ptrVar' as 'rec = *ptrVar;'
```

Feature allowing improvement in translated C code:

```
635 Cosmetic Void keyword for functions ('void local fn Foo...')
```

Minor bug-fixes and other changes:

```
620 Error Function type mistranslated when ^Type or ^^Type
625 Feature Allow 'include "BarFolder:foo.c"'
626 Error Arguments to variadic functions should not be cast
639 Feature Use of 'fn ToolboxProcedure' as rval should be error
645 Cleanup Warn against fn CFSTR(stringVar)
```

New example:

```
FB_5_6_2_Examples/Controls/Custom text browser
```

---

20110827 FB 5.6.1

FBtoC general changes:

```
599 Feature Optional translation of _constants to symbols, not magic numbers
600 Feature New directive: compile [as] "Objective-C"
601 Feature New 'select switch' statement
603 Feature NULL keyword
615* Nicety Warn of long var dereferenced as though pointer
616† Nicety Warn of implied addition of _constants
```

\* Until now, longs and pointers were treated almost interchangeably.

```
local fn bar(@foo&)
 foo.nil& = 0
end fn
```

This abuse is now deprecated.

?? Warning: long var 'foo' used as pointer in line 4 of ...

† The weird syntax '\_foobar = \_foo\_bar' is now deprecated.

?? Warning: implied addition of constants; suggested form: '\_foo + \_bar' in ...

FBtoC changes relating to Make Xcode Project:

```
604 Error Resource files copied as empty data-fork by Make Xcode Project
607 Feature Warn of 'include library' framework not passed to Xcode project
609 Error Xib files wrongly converted to nib by Make Xcode Project
611 Feature Warn of library linker commands not passed to Xcode project
613 Error Nibs give ibtool error in Xcode 4 after Make Xcode Project
```

Updated Headers files:

```
Tlxb CarbonEvents.incl [fixes RegisterEventHotKey()]
Tlxb CFCharacterSet.incl [fixes CFCharacterSetXxxx constants]
Others too numerous to list.
```

New examples:

```
FB_5_6_1_Examples/Menus/CFStatusItem
FB_5_6_1_Examples/Miscellaneous/CalCalendar
```

Updated examples:  
Too numerous to list.

Deleted example:  
FB\_5\_6\_x\_Examples/Text/SpellCheck [crashes mysteriously]

-----  
20110722 FB 5.6

Editor feature:  
New menu item Tools > Open Headers Folder

FBtoC bug-fixes and features:  
591 Nicety Default compiler should be gcc 4.2  
592 Nicety Show compiler path in error message when it cannot be found  
593 Cosmetic Increase ConsoleWindow's height and font size  
594 Feature Complex arithmetic, variables and functions  
595 Error Wrong formatting of signed zero by 'using'  
597 Cosmetic Change 'Max OS features' to 'Base SDK', matching Xcode  
598 Error Crash after multiple 'input' in ConsoleWindow

New Headers files:  
Tltx CFCalendar.incl  
Tltx complex.incl  
Tltx MDItem.incl

Updated Headers files:  
Tltx CoreGraphics.incl now has CGDisplayFade functions  
Util\_CFPrefsCFStrings.incl now has CFPrefsGet/SetCGRect()

New examples:  
FB\_5\_6\_Examples/Calculations/complex arithmetic  
FB\_5\_6\_Examples/Cocoa/CocoaControls\_noNIB  
FB\_5\_6\_Examples/Files/Metadata demo  
FB\_5\_6\_Examples/Miscellaneous/CFCalendar demo  
FB\_5\_6\_Examples/Miscellaneous/Fade screen to black  
FB\_5\_6\_Examples/Text/Print Columnar Data

Updated example:  
FB\_5\_6\_Examples/CoreFoundation/CFArray of Dicts Proj  
FB\_5\_6\_Examples/Miscellaneous/FBLog  
Editor feature:  
New menu item Tools > Open Headers Folder

FBtoC bug-fixes and features:  
591 Nicety Default compiler should be gcc 4.2  
592 Nicety Show compiler path in error message when it cannot be found  
593 Cosmetic Increase ConsoleWindow's height and font size  
594 Feature Complex arithmetic, variables and functions  
595 Error Wrong formatting of signed zero by 'using'  
597 Cosmetic Change 'Max OS features' to 'Base SDK', matching Xcode  
598 Error Crash after multiple 'input' in ConsoleWindow

New Headers files:  
Tltx CFCalendar.incl  
Tltx complex.incl  
Tltx MDItem.incl

Updated Headers files:  
Tltx CoreGraphics.incl now has CGDisplayFade functions  
Util\_CFPrefsCFStrings.incl now has CFPrefsGet/SetCGRect()

New examples:  
FB\_5\_6\_Examples/Calculations/complex arithmetic  
FB\_5\_6\_Examples/Cocoa/CocoaControls\_noNIB  
FB\_5\_6\_Examples/Files/Metadata demo  
FB\_5\_6\_Examples/Miscellaneous/CFCalendar demo  
FB\_5\_6\_Examples/Miscellaneous/Fade screen to black  
FB\_5\_6\_Examples/Text/Print Columnar Data

Updated example:  
FB\_5\_6\_Examples/CoreFoundation/CFArray of Dicts Proj  
FB\_5\_6\_Examples/Miscellaneous/FBLog

---

20110421 FB 5.5.1

Editor bug-fix:

167 Error Strange beep on double-clicking symbol preceded by option-space

FBtoC bug-fixes and features:

584 Error Freeze with 'Wrong number of arguments' error  
585 Nicety More compact representation of 'data' strings  
586 Error Crash on multi-line strings > 255 chars  
588 Feature Advanced settings in drawer  
588 Feature 'system long' should allow comma-separated variable list

Updated header:

Tlxb CoreGraphics.incl now includes CGImageSource functions

New examples:

FB\_5\_5\_1\_Examples/Cocoa/NoNib\_FBtoCocoa  
FB\_5\_5\_1\_Examples/Cocoa/NSTableView\_FBtoCocoa  
FB\_5\_5\_1\_Examples/Controls/bmpImage\_btn/  
FB\_5\_5\_1\_Examples/Controls/HICustomView  
FB\_5\_5\_1\_Examples/Controls/ThumbnailButton/  
FB\_5\_5\_1\_Examples/Games/Connect4/  
FB\_5\_5\_1\_Examples/Graphics/CoreGraphics (Quartz)/CGPathContainsPoint  
FB\_5\_5\_1\_Examples/Graphics/CoreGraphics (Quartz)/Floodfill  
FB\_5\_5\_1\_Examples/Graphics/CoreGraphics (Quartz)/ImageResizer  
FB\_5\_5\_1\_Examples/Text/CoreText styled text  
FB\_5\_5\_1\_Examples/Text/CoreText with CGColor

Updated example:

FB\_5\_5\_1\_Examples/Games/Spandrel\_1\_4/

---

20110122 FB 5.5

Major changes:

[1] FutureBasic 5.app is now a self-contained IDE; its supporting file objects (FBtoC.app and the folders build\_goodies and editor\_support) are inside the app bundle.

[2] An Xcode project is created in the project source folder instead of build\_temp as previously. This change makes it less liable to inadvertent deletion. The Xcode project is contained in a folder named <project\_name>\_XcodeProject.

[3] The User Libraries folder has moved to ~/Library/Application Support/FutureBasic/, alongside Scripts and Style Files.

FBtoC bug-fixes and features:

573 Error Hangs when parsing conditional with @nonexistent\_var  
574 Feature Make Xcode project in source folder, not build\_temp  
575 Error FlushWindowBuffer doesn't  
576 Error apndstr() wrongly byte-swaps the count field  
578 Error val() and val&() return wrong value for 16-digit hex strings  
579 Error 'read' gets wrong value for 16-digit hex numbers in 'data' statement  
581 Error Link error from Xcode project containing Objective-C code  
582 Error NavDialog() releases saveFileName and message wrongly

New examples:

FB\_5\_5\_Examples/Cocoa/DotView\_FBtoCocoa  
FB\_5\_5\_Examples/Cocoa/GaussianBlur\_demo  
FB\_5\_5\_Examples/Cocoa/SndPlayer\_FBCocoa  
FB\_5\_5\_Examples/Controls/HISegmentedView  
FB\_5\_5\_Examples/Graphics/CoreGraphics (Quartz)/HIImageView\_swipe  
FB\_5\_5\_Examples/Text/Programmatic HITextView

Updated example:

FB\_5\_4\_9\_Examples/Games/Spandrel\_1\_3

---

20101116 FB 5.4.8 and FBtoC 1.4.8

Editor bug-fix:

A long-standing 'dangling handle' bug has been found, that could cause a variety of crashes.

FBtoC bug fixes and new features:

570 Error Resources not passed to Xcode project  
571 Error Make Xcode Project gives error 'FBtoC\_Placeholder\_RETURN' undeclared  
572 Cleanup Code inflation by numerous gosub/returns\*

New example:

FB\_5\_4\_8\_Examples/Controls/BrowserCustomItem

\*The new implementation of gosub/return does not support optimized compilation. If your code uses gosub/return and needs optimization, you will have to replace every subroutine by an ordinary local fn.

-----  
20101008 FB 5.4.7 and FBtoC 1.4.7

FBtoC bug fixes and new features:

536 Cleanup Redundant files copied to XcodeProject  
556 Cleanup Editor Errors window garbles multiple errors/comments on same line  
557 Error gosub/return broken  
559 Error route \_toBuffer does not work with ConsoleWindow  
560 Feature Support llvm-gcc 4.2 compiler  
561 Error \_controlkey constant missing  
563 Feature Preference setting to control source-file combining

New Headers file:

Util\_NibCFStrings.incl

New example:

FB\_5\_4\_7\_Examples/Sound/Record\_sound\_with\_QuickTime

Updated examples:

FB\_5\_4\_7\_Examples/Games/Spandrel\_1\_2 (chess)  
FB\_5\_4\_7\_Examples/Sound/Play Sound file

-----  
20100707 FB 5.4.6 and FBtoC 1.4.6

Editor changes:

Two new features mean that you will no longer lose your scripts and style files on updating to new versions of FutureBasic 5.

[1] Scripts now reside in ~/Library/Application Support/FutureBasic/Scripts. When the editor starts it looks for this folder. If the folder does not exist, it is created and the sample scripts are copied from the current editor\_support folder.

[2] Style files now reside in ~/Library/Application Support/FutureBasic/Styles. When the editor starts it looks for this folder. If the folder does not exist, it is created and the style files are copied from the current editor\_support folder.

FutureBasic 5 Help:

This now includes most of the material formerly contained in the FBtoC Help Book. The latter is largely obsolete.

FBtoC bug fixes and new features:

400 Error preprocessor bug for comments with quote char  
463 Feature pass comments on to C source  
519 Error Misleading error for missing project  
522 Feature Strip unused FB runtime and C runtime functions when making Xcode project  
527 Nicety Cleaner translation of simple 'if' conditions  
535 Nicety Make Xcode Project should set optimization -O0  
538 Feature Send runtime errors to console.log instead of showing fatal alert  
539 Cleanup Compiler warning from A\$ = "(?)"  
540 Cleanup Warnings from Subs Quick Event Loop.Incl  
541 Error write# stringVar gives strange results  
542 Error 'line input #' should terminate on <lf> as well as <cr>  
543 Feature Allow casting e.g. x = (double)y  
544 Error instr() treats chr\$(0) and chr\$(1) alike  
545 Feature Allow 64-bit integer literals such as 1ULL, -1LL  
548 Error 'Warn of unused functions' sometimes didn't  
549 Error FSCatalogInfo.permission wrongly defined in Headers  
550 Error LP64 types should have size 8 in static expressions  
553 Error inkey\$ for command line tool not implemented  
554 Error 'Use precompiled header' breaks with clang 1.5  
555 Feature Allow static string expression (\_foo\$ + "bar") as 'output' filename

New Headers file:



Tlxb CFNumberFormatter.incl

New examples:

FB\_5\_4\_6\_Examples/Controls/CustomShapedControl  
FB\_5\_4\_6\_Examples/Controls/CustomDrawnControl (Quartz)  
FB\_5\_4\_6\_Examples/CoreFoundation/PrintCFString  
FB\_5\_4\_6\_Examples/Files/FileObjectPermissions

Updated examples:

FB\_5\_4\_6\_Examples/AppleScript/LaunchMailPressSendII  
FB\_5\_4\_6\_Examples/Controls/CustomDrawnControl (QuickDraw)  
FB\_5\_4\_6\_Examples/Files/Droplet apps/Accept folder drop  
FB\_5\_4\_6\_Examples/Files/Droplet apps/FinderInfo  
FB\_5\_4\_6\_Examples/Files/Droplet apps/FinderInfo replacement  
FB\_5\_4\_6\_Examples/Games/Spandrel 1.1 (chess)

-----  
20100406 FB 5.4.5 and FBtoC 1.4.5

Editor changes:

[1] 'Find in Next File' item (Command-option-G) in Edit menu.  
[2] A crash from typing '#if def \_someLongConstant' is fixed.

FBtoC bug fixes and new features:

510 Error edit\$( without closing parenthesis crashes FBtoC  
516 Error Dim syntax error not flagged  
521 Error Function declared as Str63 is unusable  
522 Feature Strip unused FB runtime and C runtime functions during Make Xcode Project  
523 Nicety Insert spaces around '\*' in C translation of typed pointer parameters  
524 Nicety Symbolise boolean constants in C translation  
525 Nicety C translation should have NULL instead of (void\*)(0)  
526 Cleanup Remove trigraphs and their support  
528 # Feature Option to build command line tool instead of app  
530 # Feature Allow 64-bit compilation of command line tool  
531 Feature Bounds checking should work for record fields that are arrays  
532 Error Hang when parsing call to undefined function  
533 Feature Allow dereference of pointer that is a record field and a pointer to another record  
537 Cleanup Remove thousands of obsolete predefined constants

# see the 'tool' example below. Also see FB5 Help: Appendix J - Command Line Tools.

Function change:

GetFormattedDateTimeAsString() has been replaced by DateFormatCreateStringWithAbsoluteTime().

Note the difference in parameter order:

```
//toolbox fn GetFormattedDateTimeAsString(CFAbsoluteTime at, CFStringRef formatString) =
CFStringRef
```

```
toolbox fn DateFormatCreateStringWithAbsoluteTime(CFStringRef formatString, CFAbsoluteTime at)
= CFStringRef
```

Revised Headers file:

Tlxb HIView.incl [fixes definition of HIViewContentInfo]

New examples:

FB\_5\_4\_5\_Examples/Command Line Tool/tool  
FB\_5\_4\_5\_Examples/CoreFoundation/CFString left, right, mid  
FB\_5\_4\_5\_Examples/CoreFoundation/CFArray of Dicts Proj  
FB\_5\_4\_5\_Examples/CoreFoundation/CFStrings in FB console  
FB\_5\_4\_5\_Examples/Dialogs and Windows/ImageView as window background  
FB\_5\_4\_5\_Examples/Miscellaneous/CFDateFormatter test

Updated examples:

FB\_5\_4\_5\_Examples/Miscellaneous/DateExample  
FB\_5\_4\_5\_Examples/CFPrefs Demos/CF string version/Prefs w/Nib & CE  
FB\_5\_4\_5\_Examples/CoreFoundation/CFAdditions  
FB\_5\_4\_5\_Examples/Games/Spandrel 1.0 (chess) [replaces RChess 3]

-----  
20100214 FB 5.4.4 and FBtoC 1.4.4

Editor changes:

[1] Document windows are now live-resizing.

- [2] The text of items in the Errors window can now be copied with Command-C.
- [3] A text selection bug is fixed. It occurred when the mouse was dragged into the left margin. (Thanks to Robert C.)
- [4] Navigation arrows in the Help Book now work as expected.

FBtoC bug fixes:

```

414 Nicety 'Make Xcode Project' leaves stray .proj in build/NewProjectTemplate/
513 Error Mouse clicks in compositing window with FB Events and 'on mouse' vector not
detected
514 Error Orphan 'case' statement not identified as error
515 Error Xcode project template not deleted after Xcode project created
517 Error mki$ function can return wrong values
518 Error edit$(ef) crashes if the field has not been created
520 Error Linker warning shows as pseudo error

```

New date\$ and time\$ functions:

These are now implemented via Core Foundation. They can optionally retrieve both the date and time in one call, and format it in almost any conceivably useful way. See FutureBasic 5 Help for details. The runtime code for date\$/time\$ may be called directly to format any date/time (not just the current one). See DateExample below.

New examples:

```

FB_5_4_4_Examples/Miscellaneous/DateExample
FB_5_4_4_Examples/Miscellaneous/DockTileBadge
FB_5_4_4_Examples/Files/EnumerateDirectory
FB_5_4_4_Examples/Files/Alias demo
FB_5_4_4_Examples/Text/CFAdditions
FB_5_4_4_Examples/Text/CFAdditions/CFScanner

```

Updated examples:

```

FB_5_4_4_Examples/Nib to FB wndNum & btnNum
FB_5_4_4_Examples/App with icon
FB_5_4_4_Examples/Games/RChess_3.0 [replacing RChess_3.0a2]

```

-----  
20091221 FB 5.4.3 and FBtoC 1.4.3

Important Changes for 5.4.3 ( note: minor bug fixes and other internal fixes are not shown ):

| <u>Type</u> | <u>Description</u> |
|-------------|--------------------|
|-------------|--------------------|

|     |                                                                                                                                                                                                                                                                                                                          |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| New | new xib format support added. This is the newer XML nib used in Xcode.                                                                                                                                                                                                                                                   |
| New | BeginCCode, BeginCFunction, BeginCDeclaration and EndC are improved methods for including C source directly..<br>Many examples & documentation updated to use the new BeginCCode BeginCFunction BeginCDeclaration keywords.                                                                                              |
| New | .c, .h, .m files are now selectable in "Add to project" file dialog.                                                                                                                                                                                                                                                     |
| New | _FBConsoleWndNum constant allows Console window customization .<br>The user may modify the default window in useful ways, for instance:<br>include "ConsoleWindow"<br>window _FBConsoleWndNum, "My tall debug stuff", (5,47)-(500, system( _scrnHeight ) - 5 )<br><br>See new console application demo in Examples/Games |
| Fix | open "A" and open "R" now create the file if it did not exist.                                                                                                                                                                                                                                                           |
| Fix | Menu items ending with '!' or '^' or '<' or '/' no longer crash the app.                                                                                                                                                                                                                                                 |
| Fix | Linker errors are now passed to editor                                                                                                                                                                                                                                                                                   |

New examples:

```

FB_5_4_3_Examples > CarbonEvents > EventMonitorTarget
FB_5_4_3_Examples > Games > RChess_3.0a2

```

-----  
20091107 FB 5.4.2 and FBtoC 1.4.2

This release is being made early, because of the severity of bug #506 (introduced in 5.4.1).

Editor is unchanged.

Bug-fixes and minor features in FBtoC 1.4.2:

```

323 Error input "prompt"; x does not work in console mode
422 Error 'dim as long a$' should be an error
467 Error gCntr = edit$(1) should work for > 255 chars

```

```

471 Error missing '"' gives bad C code
484 Error bad C code from @"\"
493 Error str$("should be translation error")
498 Nicety include "ConsoleWindow" (alternative to include "FBRuntime.incl")
499 Error str$(fpNum) and 'print fpNum' give different results
500 Error prevent clang Universal build with <10.5 deployment
501 Error in Console Window, 'print fpNum' ignores gFBFloatMaxDigits
502 Error can't access 3D array in record
503 Error prevent array declaration with >4 dimensions
506 Error can't type upper-case letters in edit fields

```

New examples:

```

FB_5_4_2_Examples > Calculations > fast sin() and cos()
FB_5_4_2_Examples > Calculations > Expression Evaluator
FB_5_4_2_Examples > Calculations > Measurement of code performance

```

---

20091021 FB 5.4.1 and FBtoC 1.4.1

Main changes in FB 5.4.1

[1] Warnings for a common mistake: forgetting to assign a return value (end fn = someValue) to a function whose value is used elsewhere in the program.

```

local fn bar
dim as OSStatus err
err = _paramErr
end fn // oops, should have '= err'

```

```

dim as OSStatus err
err = fn bar
if (err != _noErr) then stop "bar() failed" // oops, never get here

```

```

?? Warning: Returned value of bar() is always 0 in line 9 of test.bas
?? Warning: Function should have explicit return value: bar()

```

[2] Choice of compiler. Build settings window has a pop-up menu with four options.

- gcc 4.0 is the default.
- gcc 4.2 is available on 10.5 and 10.6. It cannot build apps to run on 10.3 or 10.4.
- clang is available on 10.6 only. Very fast but somewhat flaky. Best used for development only (change to gcc 4.0 for release build).
- clang (analysis) performs static analysis of your code, giving interesting warnings; nothing is actually compiled.

Minor changes in Editor 5.4.1:

[1] The menu item Project > Remove Item has been deleted.  
[2] Bug-fixes in the following areas: text drawing, menus, Find/Replace window.

Bug-fixes and minor features in FBtoC 1.4.1:

```

476 edit field with filter fn receives Cmd-chars
486 default MinOS deployment 10.4; remove 10.2 target from UI
490 >1-dimension array parameter wrongly translated
492 warn of unused fn prototypes as well as unused fns
494 allow fn instead of def and usr function calls
495 deprecate usr and def function calls
496 terabyte file access; lof(), loc() and rec() return SInt64
497 implement open "N" to give shared access

```

New examples:

```

FB_5_4_1_Examples > Graphics > QuickDraw > Image dithering
FB_5_4_1_Examples > Graphics > QuickDraw > Ray Tracing
FB_5_4_1_Examples > Graphics > CoreGraphics > CGGlyphs

```

---

20090729 FutureBasic 5.3 and FBtoC 1.3

Issues arising during beta testing of the editor have been resolved. Thanks to all who reported bugs.

Notable changes from FB 5.2:

1. Universal binary editor runs native on Intel.
2. Editor's Build Log shows progress of translation and subsequent build steps.
3. Editor doc windows are useable when toolbar hidden.
4. Editor has Help Book that in part describes FB5, not FB4.
5. New icons for editor, FBtoC, and FB documents (log out/in to see).
6. Find/Change window is resizeable.

- 7. Source code text is drawn with the casing in which it was typed.
- 8. New projects have extension .fbproj.

Note that FutureBasic 5.3 editor requires FBtoC 1.3 and vice versa; you can't mix and match with earlier versions.

Bug fixes and minor features in FBtoC:

```

421 Error setting gFBQuit true in DoDialog() doesn't quit
443 Error unhelpful error msg from malformed _constant
444 Error string[pointer] should be translation error
445 Error *.m files not copied during Make Xcode Project
446 Error string stack bug from 'input z'
447 Feature 'Hide on suspend' preference checkbox
448 Error Objective-C source files become *.m.m
450 Error flag missing commas in argument list
452 Error 'Bad case statement' error could force recompilation
453 Feature allow constants to start with numeral
455 Error nested index with 'Check array bounds' gives various bugs
456 Feature change 'Use DWARF' radio button to 'Put line # in app'
457 Error .c, .m and .h files could open in FB when double-clicked
458 Error edit$(btnNum) returns nothing if text len > 255
459 Feature Save Log As...
460 Nicety 'More warnings' should not include -Wunused-parameter
462 Feature @"some
string" --> CFSTR("some
string")
464 Error output window wrong for _btnClick in floating window
470 Nicety explicit error for protoype illegally in local fn

```

New Headers files:

```

Util_CFUN.incl
Util_Nib.incl

```

New examples:

```

FB_5_3_Examples > Carbon in Cocoa
FB_5_3_Examples > Graphics > CoreGraphics (Quartz) > AceOfHearts, ImageMask and ColorMask
FB_5_3_Examples > Files > Accept folder drop

```

Some old kludgy declarations in Toolbox CFDate.incl have changed to match the official Apple declarations:

```

CFGregorianDateIsValid()
CFGregorianDateGetAbsoluteTime()
CFAbsoluteTimeGetGregorianDate()
CFAbsoluteTimeAddGregorianUnits()
CFAbsoluteTimeGetDifferenceAsGregorianUnits()

```

-----  
20090625 Beta version ( beta 03 ) of Universal FB Editor Available

-----Overview-----

The FBtoC team is pleased to announce beta testing for a new universal binary version of the FB Editor. The beta editor is a conversion of the older editor ( included with the 'FB\_5\_2\_Package' ) and thus retains most of the old editor's basic design and functionality. Many of the changes are internal to facilitate a universal binary build but some features were upgraded. Please note: Even though there are many proposed ( but not implemented yet ) upgrades ( many internal ) to this new UB editor, the team believes putting a Universal editor in the hands of the FB community is a higher priority than waiting for a 'finished' product. Even though it seems unlikely Apple will remove support of Rosetta in OS X 10.6, they have yet to clarify if it will be included, so having a universal binary editor protects the FB community for now.

-----Changes-----

- (1) Feature: Look up of Apple toolbox calls in Xcode Docs by highlighting the call and using either the contextual menu or the help menu to initiate.
- (2) Bug fix: High level project level disclosure arrow ( flipper ) showed only "File" label when project closed & re-opened
- (3) Bug fix: Warnings and errors from gcc are mishandled by showDbClickedError() as reported by Andy P. and RC.

-----Installation-----

- (1) Unzip the executable which is named 'FutureBasic\_5\_3beta' ---do NOT rename
- (2) Put it in the same folder( which is typically 'FB\_5\_2\_Package' for the current release of FB5 ) as your current 'FutureBasic 5' application.
- (3) Launch 'FutureBasic\_5\_3beta' instead of 'FutureBasic 5'

Notes:

- (a) The beta editor requires FB5 and does not support FB4 or older FB releases
- (b) The beta editor is built with debugging symbols turned on to provide more debugging information in the event of a failure. The included debugging symbols increase the size of the executable but should not otherwise impact operation.

-----  
20090619 Beta version 02 of Universal FB Editor Available

-----Overview-----

The FBtoC team is pleased to announce beta testing for a new universal binary version of the FB Editor. The beta editor is a conversion of the older editor ( included with the 'FB\_5\_2\_Package' ) and thus retains most of the old editor's basic design and functionality. Many of the changes are internal to facilitate a universal binary build but some features were upgraded. Please note: Even though there are many proposed ( but not implemented yet ) upgrades ( many internal ) to this new UB editor, the team believes putting a Universal editor in the hands of the FB community is a higher priority than waiting for a 'finished' product. Even though it seems unlikely Apple will remove support of Rosetta in OS X 10.6, they have yet to clarify if it will be included, so having a universal binary editor protects the FB community for now.

-----Fixes for Beta 02-----

[1] Crash at startup on PowerPC Mac in fn AddToTLBXList  
The crash was the primary reason for releasing another beta so soon after the first beta.

- [2] Compile info window doesn't show \*.c files
- [3] Match compile info format from FB 5.2

[4] Various changes to help menu to reinstate "Apple Web Reference" & other functionality  
It is now possible to highlight an Apple toolbox call in the editor window and do a find on Apple's developer site by selecting "Apple Web Reference"

- [5] Wrong fn name at top of editor window
- [6] Initialize fn name and line info fields on doc open
- [7] Re-opening a project should make the PM window front
- [8] Help menu should allow access to miscellaneous files
- [9] horiz scroll bug
- [10] Compile Info window elides some <cr>s

-----Installation-----

- (1) Unzip the executable which is named 'FutureBasic\_5\_3beta' ---do NOT rename
- (2) Put it in the same folder( which is typically 'FB\_5\_2\_Package' for the current release of FB5 ) as your current 'FutureBasic 5' application.
- (3) Launch 'FutureBasic\_5\_3beta' instead of 'FutureBasic 5'

Notes:

- (a) The beta editor requires FB5 and does not support FB4 or older FB releases
- (b) The beta editor is built with debugging symbols turned on to provide more debugging information in the event of a failure. The included debugging symbols increase the size of the executable but should not otherwise impact operation.

-----Reporting Bugs-----

Post to the FB list with the subject: 'FB Editor: yourBug'  
To speed the bug reporting process, please include basic environmental information with the bug post. For example, my post would start:  
Intel iMac running OS X 10.5.7

-----  
20090617 Beta version of Universal FB Editor Available

-----Overview-----

The FBtoC team is pleased to announce beta testing for a new universal binary version of the FB Editor. The beta editor is a conversion of the older editor ( included with the 'FB\_5\_2\_Package' ) and thus retains most of the old editor's basic design and functionality. Many of the changes are internal to facilitate a universal binary build but some features were upgraded. Please note: Even though there are many proposed ( but not implemented yet ) upgrades ( many internal ) to this new UB editor, the team believes putting a Universal editor in the hands of the FB community is a higher priority than waiting for a 'finished' product. Even though it seems unlikely Apple will remove support of Rosetta in OS X 10.6, they have yet to clarify if it will be included, so having a universal binary editor protects the FB community for now.

-----Regarding Beta Status-----

Please note: this editor is a \*\*\*\*\* BETA \*\*\*\*\*. This should NOT be interpreted as 'release'. There are identified unfixed bugs and new bugs/failures are possible. Proceed accordingly with saving your work, backups etc.

-----Changes-----

(1) Mac Intel users will generally notice a lot more zip because of the native executable. Speed increases for opening files ( via double clicks on projects/files and via open dialogs ) is particularly noticeable for me.

(2) The Find/Change dialog was improved and now works more reliably. Also, the Find/Change window is resizable.

(3) The split window ( index on left ) help window is used to display help. The content of help has been revamped to reflect FB5 instead of older FB, but is not complete and a work in progress. Other help manuals used to be available on the help window but are not in this version. Again, in progress.

(4) Several broken features in the old editor were fixed. For example, quadruple click on a long if now correctly highlights the entire structure from long if to end if. This also works for similar Start/End structures like while/wend, local fn/end fn etc.

-----Installation-----

- (1) Unzip the executable which is named 'FutureBasic\_5\_3beta' ---do NOT rename
- (2) Put it in the same folder( which is typically 'FB\_5\_2\_Package' for the current release of FB5 ) as your current 'FutureBasic 5' application.
- (3) Launch 'FutureBasic\_5\_3beta' instead of 'FutureBasic 5'

Notes:

- (a) The beta editor requires FB5 and does not support FB4 or older FB releases
- (b) The beta editor is built with debugging symbols turned on to provide more debugging information in the event of a failure. The included debugging symbols increase the size of the executable but should not otherwise impact operation.

-----  
20090612 FutureBasic 5.2 and FBtoC 1.2

Editor is unchanged.

Bug fixes in FBtoC:

|     |        |                                                         |
|-----|--------|---------------------------------------------------------|
| 431 | Closed | string stack bug from 'open "O", 1, name, @parFSRef'    |
| 432 | Closed | 'include "foo.c"' could give bad C code                 |
| 433 | Closed | log window shrinks each time FBtoC is launched          |
| 435 | Closed | out-of-order menu items become spacers                  |
| 436 | Closed | hang from 'if 1 then pen 1 else pen 2'                  |
| 437 | Closed | Overlong path to project file should give helpful error |
| 438 | Closed | allow 16 parameters in function definitions             |
| 439 | Closed | array bounds error translating 'for i=1to 6'            |
| 441 | Closed | spurious translation error from 'stop fSpec.name'       |
| 442 | Closed | stale gcc warning shown by editor                       |

New feature:

p.0@ dereferences a pointer to a 64-bit integer (like p.0& for 32 bit)

New examples:

FB\_5\_2\_Examples > Graphics > OpenGL > OpenGLTestBed  
FB\_5\_2\_Examples > Graphics > QuickDraw > (de)convolve img  
FB\_5\_2\_Examples > Miscellaneous > SortDescriptor

-----  
20090321 FutureBasic 5.1.5 and FBtoC 1.1.10

Editor changes:

- [1] An unsaved standalone file can now be built and run (Command-R); see note 1 below.
- [2] Compile Info window shows progress of both translation and compilation.

Bug fixes in FBtoC 1.1.10:

|     |        |                                                          |
|-----|--------|----------------------------------------------------------|
| 426 | Closed | inkey\$ does not return                                  |
| 427 | Closed | val&( "01" ) and val&( " 1" ) should return 1            |
| 428 | Closed | spurious error from 'if...then edit\$(1) = "" else stop' |
| 429 | Closed | 'text' statement with no parameters hangs FBtoC          |
| 430 | Closed | Tltx glu.incl could not be included                      |

New example:

FB\_5\_1\_5\_Examples > Text > HITextView+FontPanel > HITextView  
An HITextView with the FontPanel allows multistyled text with shadow, colour, double-underline and other eye-candy.

Note 1:

This is a normal Run in every way, except that the various files required by FBtoC are in your TemporaryItems folder, which (in OS X 10.5) is somewhere like /private/var/folders/88/88AKX+F62RWmd++8ZOxBkU+++TI/TemporaryItems.

-----  
20090216 FutureBasic 5.1.4 and FBtoC 1.1.9

Editor 5.1.4 changes

- 1. Scripts '#if 1/#endif' and '#if 0/#endif' fixed.

FBtoC 1.1.9 changes

- 1. Typed functions without a suffix are allowed, for example  
    local fn Name as Str255  
    end fn = "Ann"  
2. FB4 kludges removed from toolbox declarations (see below).  
3. The setting 'Use precompiled header' works for universal builds.  
4. The build system determines which pieces of a large program need to be compiled, and compiles only those pieces.

Bug fixes

|     |        |                                                     |
|-----|--------|-----------------------------------------------------|
| 415 | Closed | Make Xcode Project wrongly quotes/escapes nib names |
| 417 | Closed | dropping file on FBtoC spoils log window position   |
| 420 | Closed | Allow files with no OSType to be opened.            |
| 424 | Closed | input # bug                                         |
| 425 | Closed | record # should set file mark when extending        |

FB4 kludges removed

-----  
The Carbon C definition of these five functions includes a 64-bit parameter, which in FB4 had to be split into two 32-bit halves:

```
HUIViewFindByID()
HUIViewSetID() // rarely used
CreateMouseTrackingRegion()
HUIViewNewTrackingArea()
HUIViewChangeFeatures() // rarely used
```

You will have to change your code from, for example:

```
fn HUIViewFindByID(fn HUIViewGetRoot(w), myHUIViewID.signature, myHUIViewID.id, @myView) // old
syntax
```

to the simpler correct form:

```
fn HUIViewFindByID(fn HUIViewGetRoot(w), myHUIViewID, @myView) // FB5.1.4 syntax
```

-----  
20090109 FutureBasic 5.1.3 and FBtoC 1.1.8

Editor 5.1.3 is unchanged from 5.1.2.

FBtoC 1.1.8 changes:

-----  
'on FinderInfo fn Xxxx' implemented [see FB\_5\_1\_3\_Examples > Files > FinderInfo]  
The Headers file Util\_CE.incl has been extensively commented for easier use.

New Headers files and examples:

-----  
Util\_EUTCKeyFilter.incl [see FB\_5\_1\_3\_Examples > Text > EUTC Key filter]  
Util\_Toolbar.incl [see FB\_5\_1\_3\_Examples > Carbon Toolbar > The easy way]  
Tlxb\_HITheme.incl [see FB\_5\_1\_3\_Examples > Controls > HITheme\_demos]  
Tlxb\_CoreText.incl [see FB\_5\_1\_3\_Examples > Text > CoreText xxxx]

CoreGraphics headers changes

-----  
The special FB4 syntax for a handful of CG functions (CGRectMake, CGRectOffset, CGContextGetCTM ...) has been discarded. You will need to change the way you call these functions in your source code. For example:

```
fn CGRectMake(r, 0.0, 0.0, 10.0, 20.0) // old FB4 syntax
r = fn CGRectMake(0.0, 0.0, 10.0, 20.0) // new FB5 syntax similar to C
```

Additions to the CG headers:

```
CGDataProvider.incl
CGError.incl
CGFont.incl
CGGradient.incl
```

CGPath.incl  
CGPDFArray.incl  
CGPDFDictionary.incl  
CGPDFDocument.incl  
CGPDFObject.incl  
CGPDFPage.incl  
CGPDFStream.incl  
CGPDFString.incl

The FB4 'local fn' wrappers have been removed from all CoreGraphics functions. This change makes 'fn' optional when calling CG procedures (functions that do not return a value).

```
fn CGContextFillRect(ctx, r) // 'fn' formerly required; now optional
CGContextFillRect(ctx, r) // new simpler syntax
```

Bug-fixes:

-----  
370 button statements uncheck a checked checkbox  
404 scroll button mishandles Rect param at creation  
406 key chars with high bit set are negative in \_evKeys dialog event  
409 I-beam cursor persists after click in FBtoC Log window  
410 gcc error from struct/record field named 'index'  
412 gcc error from pi if prefs 'Allow dim a#,a\$,a%'  
413 val&() should return 0 if first char is alphabetic

-----  
20081117 FutureBasic 5.1.2 and FBtoC 1.1.6

Important change in HandleEvents

-----  
The default behaviour of HandleEvents is now to block (i.e. not return) unless an event is dispatched.

It is no longer necessary (but is harmless), to suppress null events with:  
poke long event - 8, 0xFFFFFFFF // no null events

The original behaviour of returning 30 times a second, if required for old polling code, can be restored by:

```
poke long event - 8, 2 // null events every 2 ticks, like FB4
do
fn PollForSomething
HandleEvents
until gFBQuit
```

Editor (FutureBasic 5.1.2) changes

-----  
Fixes to text display in the Errors window.

A bug has been fixed that caused the cursor to change to an arrow over the Scripts Palette even when the latter was hidden.

FBtoC 1.1.6 changes

- 
1. Default behaviour of HandleEvents changed.
  2. The rarely-used 'system' statement is no longer equivalent to 'end'. Please change your code to use 'end'.
  3. The 'menu' statement now allows an optional 5th parameter (commandID).
  4. New/revised Headers files: Tlxb CFBase.incl, Tlxb CFString.incl, Tlxb CFArray.incl, Tlxb CFData.incl, Tlxb CFDate.incl, Tlxb CFNumber.incl. These header files are more complete than previously; if you get redefined function errors for your own CFxxxx declarations, just comment out your declarations.
  5. New Headers file: Util\_Containers.incl [for use see FB\_5\_1\_2\_Examples > Containers > Util\_Containers example].
  6. New Headers file: Util\_Toolbar.incl [for use see FB\_5\_1\_2\_Examples > Carbon Toolbar > Toolbar Example].
  7. FB\_5\_1\_2\_Examples > Sorting [FB3/FB4 CD examples updated for FB5]
  8. build\_temp folders created by FBtoC are excluded from Time Machine backups.

Bug fixes

390 Closed left\$\$, mid\$\$, right\$\$ give \_zTrue when comparing chars  
391 Closed mid\$\$ ( c, 1 ) gives "comma expected error"  
392 Closed scrollbar of console app lacks down-arrow  
393 Closed garbled error from proc "NoSuchFunction"  
394 Closed prHndl..prInfo.rPage fields are byte-reversed on Intel  
396 Closed default edit field is \_framedNoCR instead of \_framed  
398 Closed can't access 2-D array inside record  
399 Closed def apndstr has endian bug (on Intel)



401 Closed crash from print after front window closed  
402 Closed 'Array bounds error' alert shows as 'Quit'

-----  
20081020 FutureBasic 5.1.1 and FBtoC 1.1.5

Editor (FutureBasic 5.1.1) changes

- 
1. Script Palette replaces Script submenus.
  2. Project window has Headers button, which opens the Headers folder in the Finder.

FBtoC 1.1.5 changes

- 
1. New File menu item: Make Xcode Project.
  2. New feature and setting: Warn of unused functions.
  3. Domain and folder type constants (`_kUserDomain`, `_kApplicationSupportFolderType...`) are now defined.
  4. New Headers file `Util_CE.incl` provides a simplified method to implement Carbon Events in your code; for demos see `FB_5_1_1_Examples > CarbonEvents`.

Bug fixes

|     |        |                                                                                          |
|-----|--------|------------------------------------------------------------------------------------------|
| 314 | Closed | make strings in *.c runtime localizable                                                  |
| 378 | Closed | elided error message from include library "NoSuchFile"                                   |
| 381 | Closed | editor ignores some translation errors                                                   |
| 382 | Closed | aliased source file prevents translation of main                                         |
| 383 | Closed | editor's Stop button does not affect build by FBtoC                                      |
| 384 | Closed | I-beam cursor stays after click in Prefs 'More gcc options'                              |
| 385 | Closed | unusable <code>CreateMouseTrackingRegion()</code> in <code>Tltx CarbonEvents.incl</code> |
| 386 | Closed | 'picH = picture' gives translation error                                                 |
| 387 | Closed | <code>_useWFont</code> fails for some appearance buttons                                 |

-----  
20090924 FutureBasic 5.1 and FBtoC 1.1.4

Important change in FBtoC

-----

Until now, the build process would automatically copy every nib (\*.nib) from the source folder into the built app package. This greedy and surreptitious copy risked the inadvertent inclusion of files like "OldRubbish.nib" and "embarrassingly bad.nib". Now, nibs are ignored unless specified in an 'include resources' statement or in the editor project window (see below).

This means that every project or standalone file that uses a nib interface needs modification. The most straightforward fix is to add a line of code resembling this:  
`include resources "main.nib"`  
for each nib used by your project.

Editor (FutureBasic 5.1) changes

- 
1. New menu items give better integration with FBtoC

-----  
20080912 FutureBasic 5 and FBtoC 1.1.3

The FutureBasic 5 editor is FBtoC-only as previously discussed.

After downloading the FB 5 package, please double-click `FBtoC.app` then click Open in the "downloaded from the Internet" warning dialog. Otherwise this dialog may interfere with your first Run from the editor.

-----  
20080722 FBtoC 1.1.2

1.1.2 build 140

Two helpful additions:

- [1] `VAList` - Variable number of function arguments support and examples added
- [2] `FBSHELL` - Basic program shell with more modern nib and carbon events

Bug Fixes:

|     |        |     |       |                                    |                                                       |
|-----|--------|-----|-------|------------------------------------|-------------------------------------------------------|
| 362 | Closed | 140 | Error | <code>if 1 then</code>             | does not produce FBtoC error message                  |
| 363 | Closed | 140 | Error | <code>menu 127, 1, _disable</code> | does not work in FBtoC                                |
| 364 | Closed | 140 | Error | Menu cmd keys                      | don't auto repeat when created with FB menu statement |
| 366 | Closed | 140 | Error | <code>Record#</code>               | should extend fork size without error                 |

-----  
20080618 FBtoC 1.1.1

#### New Features:

- (1) The new NavDialog function, an FBtoC-only option, is similar to the FB Files\$ keyword but provides substantially more functionality. NavDialog offers new functionality via Navigation Services but the details are hidden in the C runtime, so it is easy to call NavDialog ( and several other NavDialogxxxxxx helper functions ). Several resources are available for learning to use NavDialog(). They are:
  - (a) The demos - see Examples/Files/NavDialog\_Demos,
  - (b) FBtoC help - see Language Enhancements
  - (c) Browsing the NavDialogxxxxxx functions in FilesDollarFunction.c and some new FSRef / CFURL helpers in FileHandling.c ( both in the build\_goodies folder )
- (2) FBtoC now uses NavDialog( \_kNavDialogChooseFile + \_kNavDialogSheet,...) internally.
- (3) FBtoC Help for include statement revised
- (4) Internal AppleScript arrangements simplified for debugging in Xcode

#### Bug Fixes:

- 246 Closed PM sheets beep in FBtoC-built app
- 359 Closed Appearance button btnNum, \_activeBtn did nothing
- 360 Closed NavDialog sheets retract at once

Closed files\$( \_FSRefSave,...) now returns parent folder ref always  
361 Closed open "O", 1, s, @fsRef fails if fsRef is parent folder but file exists  
362 Closed Architecture: Current Mac should disable OS min/max pop-ups

-----  
20080525 FB 4.4.3

The change most folks will appreciate is the ability to compile directly with either the FBtoC translator/gcc compiler or with the FB compiler. It is available now on the command menu.

Download FB 4.4.3 here

New Features for FutureBASIC 4.4.3 ( aka: changes since 4.4.2 )

-----  
4.4.3 (24 May 2008)

[1] Command menu has Run [FBtoC]

Note: if you're planning to use the new Run [FBtoC] command from within the FB Editor, please refer to the "Connecting to FBtoC" document for one-time setup steps.

[2] Obsolete 680x0 and FAT items removed from command menu

[3] New Headers files, matching FBtoC:

Subs FloatByteSwapping.incl

Tlxb AppleHelp.incl

Util\_AppleHelp.incl

[4] Rntm Appearance.incl update fixes little-arrows-wrong-way-counting

[5] Subs Appearance Btns.Incl update supports viewsize for scroll bars.

[6] Subs Compiler.Incl update suppresses double-beep when adding too much text to an edit field.

[7] Subs Graphics.incl fixed for PPC compile.

[8] Definition of CFStringAppendPascalString corrected in Tlxb CFString.incl.

[9] FB Compiler v4.6 no longer emits "Warning: Your source code is ignoring the result of this toolbox function".

Special note for OS X 10.5 users

-----  
Before using FB 4.4.3 for the first time, locate the new FB Compiler.app in the Finder (the path is: FB\_pkg\_4\_4\_3/FB Extensions/Compiler/FB Compiler.app) and launch it by double-clicking its icon. If an alert appears ("FB Compiler.app is an application which was downloaded from the Internet. Are you sure you want to open it?"), click the Open button.

P.S. Currently, the 4.4.3 version is only available in English.

-----  
20080524 FBtoC 1.1

#### New features:

[1] files\$ supports \_FSRefFolder and \_CFURLRefFolder as alternatives to \_FSSpecFolder.  
See Examples > Files > open/files\$ FSSpec/FSRef/CFURLRef

[2] MakeIntoFBWindow() has been improved to handle tracking controls correctly (scroll bars, little-arrows and sliders, both live and non-live).

The improvements required the code to be moved to the C runtime instead of being user FB code.

See Examples > Nib to FB wndNum & btnNum > Nib demo.bas

See also NibToFB.incl in the same folder, in which MakeIntoFBWindow() is now declared:

```
toolbox MakeIntoFBWindow(WindowRef w, SInt32 wNum)
```

The syntax fn MakeIntoFBWindow( wRef, wNum ) is unchanged.

[3] FBtoC can now be invoked from the FutureBASIC editor (v4.4.3 whose release is expected soon).

New Header files:

Tlhx AppleHelp.incl and Util\_AppleHelp.incl

Bug fixes:

```
355 Closed files$(_FSSpecFolder,...) should produce no-name variant FSSpec
356 Closed nib sliders and little-arrows don't send dialog events
357 Closed edit$(n) = "ABC" blows string stack
358 Closed 'input #1, longvar' gives 0 for -ve number strings
```

This procedure converts a nib-based window and its controls to behave as though created programmatically with 'appearance window' and 'appearance button' statements. After a call to MakeIntoFBWindow(), the window has an FB wNum and its controls have FB btnNums, and generate FB dialog events.

-----  
20080508 FBtoC 1.0.9

The 1.0.9 release of FBtoC (English only) repairs some important bugs. The French localization, already outdated in 1.0.8, became severely dysfunctional in 1.0.9 and has been temporarily removed.

Bug fixes:

```
351 Closed 'input #fileID, stringVar, singleVar, doubleVar' gives null string and 0s
352 Closed 'on mouse fn DoMouse' interferes with button handling
353 Closed little-arrows and sliders should give correct FB dialog events
354 Closed 'edit field' blows string stack
```

-----  
20080424 FBtoC 1.0.8

New special constant `_forLoopsAlwaysExecutedAtLeastOnce`:

```
for j = 1 to 0
 print "Never get here"
next
override _forLoopsAlwaysExecutedAtLeastOnce = _true
for j = 1 to 0
 print "Do get here (legacy FB behaviour)"
next
```

Division symbols:

```
/ and double-backslash: always mean the same thing (integer division if appropriate)
\ always means force floating point division
```

Bug fixes:

```
345 Closed close box doesn't close window
347 Closed performance issue with container += string + string
348 Closed crash from edit$(1, _maxInt, _maxInt) = "a"
349 Closed performance issue with hex$()
```

-----  
20080327 FBtoC 1.0.7

New feature:

- for/next loops may be executed zero times

```
for j = 1 to 0
 print "Never get here"
next
```

New examples:

Examples > Calculations > Counting for 1 second

Examples > CoreGraphics (Quartz) > CGBitmap demo

New documentation:

Build system caching.rtf [a file in the FBtoC\_1.0.7 folder]

Bug fixes:

```
284 Closed can't assign a string const to another
327 Closed 'print myUInt64Var/1024/1024/1024' prints 0
336 Closed line continuation bug
337 Closed def open "TYPE" does nothing
338 Closed default file type should be 'TEXT'
339 Closed crash from 'print test.r.left'
```

342 Closed some labels become illegal C code  
344 Closed wrong number of decimal places sometimes printed

Open bugs:

314 Open make strings in \*.c runtime localizable  
323 Open input "prompt"; x does not work in console mode  
343 Open gcc error from pointer.offsetConst\$ arg to toolbox Str255 param

---

20080307 FBtoC 1.0.6

New feature:

- menu item "Move build\_temp to Trash"

New examples:

Examples > Mandelbrot set  
Examples > Carbon Toolbar > Toolbar.proj

Bug fixes:

077 Closed fix the 'as pointer/Handle to type' mess  
212 Closed crash when global var 'err' is used (OS X 10.4)  
216 Closed app gets generic icon if project name contains '&'  
329 Closed 'stop' decrements the string stack  
330 Closed 'picture' statement can crash in OS X 10.2.8  
331 Closed gcc error from global vars j0, j1, jn, y0, y1, yn  
332 Closed Template error if FB-built app is in source directory  
333 Closed spurious error from 'long color' inside 'long if' block  
334 Closed error: 'index' redeclared as different kind of symbol

Notes:

With bug #077 closed, you can now write code like this:

```
'-----
#define MyFunkyType as Handle to Rect

begin record DemoRec
dim as MyFunkyType h1, h2
dim as pointer to Rect p1, p2
end record

dim as DemoRec myFunkyVar

myFunkyVar.h1 = fn NewHandle(sizeof(Rect))
myFunkyVar.h1..top = 99
'-----
```

which was impossible in FB owing to bugs (that remained unfixed throughout the compiler's entire lifespan).

FBtoC also fixes this related FB bug:

```
'-----
dim myPtrToSpec as .FSSpec
print "Should be 4 because it's pointer:", sizeof(myPtrToSpec)
'-----
```

---

20080222 FBtoC 1.0.5

New features:

- French localization of FBtoC  
- simplified debugging with Xcode, via menu item File > Debug Last App

New example:

Examples > Debug > DemoCrash

DemoCrash crashes at the line:  
poke address, value.

When run under Xcode's debugger, the crashing code and variable values are shown

---

20080205 FBtoC 1.0.4

New features:

on edit fn MyDoEdit  
tekey\$ function  
support for localization of string literals

New example:  
Localizable strings

Bugs fixed:  
304 Closed int(1/3\*100) evaluates as 0  
306 Closed print #fileID spc( 10 ) prints nothing to file  
307 Closed comma-tabling and tab() broken for print #fileID  
308 Closed remember Finder-dropped file for 'Open Last File' command  
310 Closed pos( fileID ) returns nonsense  
311 Closed closing a \_scrollVert button makes window( \_width ) off by 1  
313 Closed close box should not close window if 'on dialog fn  
DoDialog' is in effect  
318 Closed text statement can't be followed by a colon  
319 Closed gcc warning from picture statements  
320 Closed inc() / dec() can't be applied to record fields

---

20080129 FBtoC 1.0.3

Updated Headers file:  
CFIndex.incl

Bugs closed:  
279 Closed \_scrollVert and \_scrollHoriz scroll buttons not fully working  
301 Closed custom-sized string vars can wrongly be Str255  
302 Closed button value can't be set with 'appearance button...'  
303 Closed files\$( \_FSSpecFolder... ) returns invalid FSSpec

---

20080126 FBtoC 1.0.2

Updated Headers file:  
CFIndex.incl

New feature:  
\_scrollVert and \_scrollHorz scroll buttons can now be created. They resize automatically with the window. But the apparent window size (from window( \_width ) etc) is not yet adjusted for presence of scroll bars.

Bugs closed:  
283 Closed problems from source file with long name  
293 Closed allow drag and drop from Finder  
296 Closed 'input' gets character on key-up  
297 Closed DIM 4 MTBold% should be a translation error  
298 Closed \_wndRefresh, \_wndActivate FB events not received  
299 Closed 'unterminated comment' gcc error for some division expressions  
300 Closed FB dialog handler signals \_evKey instead of \_evCmdKey

---

20080116 FBtoC 1.0.1

Now implemented:  
page lprint, read dynamic, write dynamic, scroll

New section in FBtoC Help:  
Byte order

Headers files now available:  
Subs AppleScript.incl, Tlbx CFByteOrder.incl

Bugs closed:  
285 Closed 'window 1' resets print position to top left  
287 Closed 'on mouse' disabled  
289 Closed printed text wrongly split over several lines  
292 Closed built app has old creation date  
294 Closed last member of STR# resource not retrieved  
295 Closed crash from input "test"; x

---

20080102 FBtoC 1.0

Changes since preview 1a126:  
Translates 'on timer fn DoTimer'  
SInt64 and UInt64 are now integer types, not records

Bugs closed:  
265 'dim dynamic' fails for custom-sized string array

281 custom-sized string vars can't be suffixed with '\$'  
282 allow kEventRawKeyRepeat to reach fn DoDialog as \_evKey