

# Darwin Library Release Notes

*As of version 5 the comScore libraries use a new public API.*

*Upgrading existing implementations of versions 2 and 3 of the comScore library will require a small amount of code changes.*

*These code changes are explained in an appendix of the implementation guides.*

## Library Version Darwin 5.8.7.190924

**Release Date:** October 3, 2019

**Application Tag Data Collection Model Version:** 2.19

**Streaming Tag Data Collection Model Version:** 5.10

**Supported iOS Versions:** 6.x, 7.x, 8.x, 9.x, 10.x, 11.x, 12.x, 13.x

**Supported iPadOS Versions:** 13.x

**Supported tvOS Versions:** 9.x, 10.x, 11.x, 12.x, 13.x

**Supported watchOS Versions:** 1.x, 2.x, 3.x

**Supported iOS Extensions:** *today-extension, share, action, photo-editing, document-provider, custom-keyboard, watchapp, audio-unit*

### Feature changes:

- There were no feature changes in this release.

### Bug fixes:

1. (TAG-5666) Prevent crashes related to threads trying to destroy themselves in Streaming Tag implementations.  
**Problem:** When the object instances used for Streaming Tag implementations are destroyed, helper object instances might still be finishing tasks. This situation can cause a memory leak which in turn can result in a crash.  
**Resolution:** Wait for the helper object instances to finish with their tasks before completing the destruction of any object instances.
2. (TAG-5777) Prevent potential sporadic crashes from memory leaks and missing termination actions.  
**Problem:** Some implementations encounter crashes when the application is being terminated or sporadically without any clear indicator of a key action that would cause the crash. These have been identified to be caused by memory leaks.  
**Resolution:** Fix the memory leaks and improve code execution when applications are being terminated.

### Known issues and limitations:

1. (TAGLCPPS-110) Related to (TAGLDARW-125) — mentioned in library version 5.8.0.180306 release notes — if the implementation destructs a `StreamingAnalytics` instance this can occasionally lead to crashes from a race condition when the instance is still processing notifications.  
**Description:** When the application is terminated while processing streaming notifications on a background thread this could lead to warnings. While (TAGLDARW-125) addresses the warnings, if the application destructs a `StreamingAnalytics` instance this can occasionally still result in a crash from a race condition when the instance is still processing notifications.  
**Expected Resolution:** This item will be resolved with the next library major version which includes internal redesign.
2. (TAG-5804) Resolve a deprecation warning related to code that uses `UIWebView`.  
**Description:** App submission causes warning ITMS-90809: Deprecated API Usage - Apple will stop accepting submissions of apps that use `UIWebView` APIs to be reported.

Although this is not blocking submissions, some publishers might want to submit their app(s) without any warning. That will require a different library deliverable.

**Expected Resolution:** The short-term resolution is to provide an alternative library deliverable which does not contain code that uses *UIWebView*. Please contact your client service representative if you want to receive this deliverable. Once the next library major version is delivered an update will follow that removes use of *UIWebView* in all library deliverables.

## Library Version Darwin 5.8.5.190423

**Release Date:** May 13, 2019

**Application Tag Data Collection Model Version:** 2.19

**Streaming Tag Data Collection Model Version:** 5.10

**Supported iOS Versions:** 6.x, 7.x, 8.x, 9.x, 10.x, 11.x, 12.x

**Supported tvOS Versions:** 9.x, 10.x, 11.x

**Supported watchOS Versions:** 1.x, 2.x, 3.x

**Supported iOS Extensions:** *today-extension, share, action, photo-editing, document-provider, custom-keyboard, watchapp, audio-unit*

### Feature changes:

- There were no feature changes in this release.

### Bug fixes:

1. (TAG-5417) Prevent potential sporadic crashes from incorrect use of smart pointers in advanced `StreamingAnalytics` use cases.

**Problem:** Tagging media player activity unrelated to playback state changes — for advanced analytics — could result in sporadic raise conditions when internal `PlaybackSession` objects are destroyed while their reference internally is still used.

**Resolution:** Ensure smart pointers are used correctly.

### Known issues and limitations:

1. (TAGLCPPS-110) Related to (TAGLDARW-125) — mentioned in library version 5.8.0.180306 release notes — if the implementation destructs a `StreamingAnalytics` instance this can occasionally lead to crashes from a race condition when the instance is still processing notifications.

**Description:** When the application is terminated while processing streaming notifications on a background thread this could lead to warnings. While (TAGLDARW-125) addresses the warnings, if the application destructs a `StreamingAnalytics` instance this can occasionally still result in a crash from a race condition when the instance is still processing notifications.

**Expected Resolution:** This item will be resolved with the next library major version which includes internal redesign.

## Library Version Darwin 5.8.4.190114

**Release Date:** February 14, 2019

**Application Tag Data Collection Model Version:** 2.19

**Streaming Tag Data Collection Model Version:** 5.10

**Supported iOS Versions:** 6.x, 7.x, 8.x, 9.x, 10.x, 11.x, 12.x

**Supported tvOS Versions:** 9.x, 10.x, 11.x

**Supported watchOS Versions:** 1.x, 2.x, 3.x

**Supported iOS Extensions:** *today-extension, share, action, photo-editing, document-provider, custom-keyboard, watchapp, audio-unit*

**Feature changes:**

- There were no feature changes in this release.

**Bug fixes:**

1. (TAG-3651) Prevent a race condition where listeners are referencing an object that is being de-allocated.  
**Problem:** The `Analytics` API internally uses an object instance with library business logic. A race condition can occur when this instance is being de-allocated, while still being referenced by configuration listeners.  
**Resolution:** The mechanism to manage configuration listeners was modified and it was confirmed the instance removes itself as a configuration listener when being de-allocated.
2. (TAG-3664, TAG-4965) Prevent crashes when `StreamingAnalytics` or `ReducedRequirementsStreamingAnalytics` API methods are called to notify of streaming events while the `Analytics` instance is already de-allocated.  
**Problem:** When an application starts its termination routine it calls the destructor of all static instances. The library internally uses a static instance which could end up being referenced from other threads while it is being destroyed, causing a crash.  
**Resolution:** Where possible the code of the library has been modified to prevent cases where different threads could reference the static instance while it is being destroyed.
3. (TAG-4972) Ensure implementation-provided values for label `c12` are collected in the measurement requests.  
**Problem:** Up to version 5.2.0.170216 of the library it was possible to provide label `c12` in the `PublisherConfiguration` to collect a customized publisher-specific unique device ID. In versions after 5.2.0.170216 support for this was unintentionally removed.  
**Resolution:** Reintroduce the ability to provide label `c12` in the `PublisherConfiguration` to collect a customized publisher-specific unique device ID.

**Known issues and limitations:**

1. (TAGLCPPS-110) Related to (TAGLDARW-125) — mentioned in library version 5.8.0.180306 release notes — if the implementation destructs a `StreamingAnalytics` instance this can occasionally lead to crashes from a race condition when the instance is still processing notifications.  
**Description:** When the application is terminated while processing streaming notifications on a background thread this could lead to warnings. While (TAGLDARW-125) addresses the warnings, if the application destructs a `StreamingAnalytics` instance this can occasionally still result in a crash from a race condition when the instance is still processing notifications.  
**Expected Resolution:** This item will be resolved with the next library major version which includes internal redesign.

## Library Version 5.8.2.180813

**Release Date:** September 24, 2018**Application Tag Data Collection Model Version:** 2.19**Streaming Tag Data Collection Model Version:** 5.10**Supported iOS Versions:** 6.x, 7.x, 8.x, 9.x, 10.x, 11.x, 12.x**Supported tvOS Versions:** 9.x, 10.x, 11.x**Supported watchOS Versions:** 1.x, 2.x, 3.x**Supported iOS Extensions:** *today-extension, share, action, photo-editing, document-provider, custom-keyboard, watchapp, audio-unit***Feature changes:**

- There were no feature changes in this release.

**Bug fixes:**

1. (TAGLCPPS-147) Ensure the position is calculated correctly in Live+DVR use cases where there are API playback state change notification calls for non-playback states before playback starts. Ensure DVR Window Offset values are not recalculated from `StreamingAnalytics` API playback state change notification calls which carry a playback position value.
2. (TAGLCPPS-178) Ensure specific patterns of `StreamingAnalytics` playback state changes that go to and from `Idle` state can finish their activities without a need to wait calls to `setAsset`, thus preventing occurrences of deadlocks.
3. (TAGLDARW-110) Ensure the `gg.js` file used by the vCE component is loaded from cache as often as possible.
4. (TAGLDARW-128) Prefix all C functions in the vCE component with 'VCE' to prevent symbol collisions with other libraries.
5. (TAGLDARW-156) Add support for a boolean key `SCORDisableSwizzling` in the application's `plist` file, allowing publishers to disable the vCE component's use of swizzling when needed.
6. (TAGLDARW-157) Ensure the vCE component call `removeScriptMessageHandlerForName` on a `WKUserContentController` with a certain name, before calling `addScriptMessageHandler` on the same `WKUserContentController` with the same name, thus preventing crashes.

**Known issues and limitations:**

1. (TAGLCCPS-110) Related to (TAGLDARW-125) — mentioned in library version 5.8.0.180306 release notes — if the implementation destructs a `StreamingAnalytics` instance this can occasionally lead to crashes from a race condition when the instance is still processing notifications. This will be addressed in a future update.

## Library Version 5.8.0.180306

**Release Date:** March 19, 2018

**Application Tag Data Collection Model Version:** 2.19

**Streaming Tag Data Collection Model Version:** 5.10

**Supported iOS Versions:** 6.x, 7.x, 8.x, 9.x, 10.x, 11.x

**Supported tvOS Versions:** 9.x, 10.x, 11.x

**Supported watchOS Versions:** 1.x, 2.x, 3.x

**Supported iOS Extensions:** *today-extension, share, action, photo-editing, document-provider, custom-keyboard, watchapp, audio-unit*

**Feature changes:**

1. (TAGLCPPS-59, TAGLDARW-103) Remove `uncaughtExceptionTracking` configuration setting to reflect removal of this functionality from the library.
2. (TAGLDARW-143) Add `preventAdSupportUsage` library configuration setting to ensure the use of `AdSupport.framework` can be prevented by the application publisher, as iOS 11 could load the framework even without explicit inclusion by the application (for example when loading `UIWebView` in the application).

**Bug fixes:**

1. (TAGLCPPS-102) Ensure label values with unicode characters are URL encoded in XML files for offline cache flushes.
2. (TAGLCPPS-114) Ensure `setDVRWindowLength` and `setDVRWindowOffset` API methods correctly process their argument values.
3. (TAGLDARW-125) Ensure terminating the application — and therefore the comScore library — while processing events on a background thread does not result in 'killing thread by force' warnings.

4. (TAGLDARW-149) Ensure the library can store properties when the device is locked and data protection is set to `NSFileProtectionComplete`.

**Known issues and limitations:**

1. (TAGLCCPS-110) Related to (TAGLDARW-125), if the implementation destructs a `StreamingAnalytics` instance this can occasionally lead to race conditions when the instance is still processing notifications. This will be addressed in a future update.

*Releases from 2017 and earlier have been removed from the release notes.*