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 5.8.5.190423

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.