

iOS, tvOS and watchOS Library Release Notes

*As of version 5 the comScore libraries use a new public API.
Upgrading existing implementations of version 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 5.1.11.161223

Release Date: January 20, 2017

Data Collection Model Version: 2.11

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

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

Supported tvOS Versions: 9.x, 10.x

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

New features and improvements:

1. [TAGLDARW-12] Include label `ns_ap_sd` label which reports the device display resolution.

Bug fixes:

1. [TAGLDARW-5, TAGQA-1093] Prevent cyclic call chains – which create room for crashes – from occurring when the vCE component and code from the application or another library is trying to be a delegate to web views at the same time and forward calls in both directions. This resolves a known issue of version 5.1.10.161109 of the library.
2. [TAGLDARW-8] Ensure the live transmission mode is correctly applied when networking traffic from the device connection uses the cellular network.
3. [TAGLDARW-9] Ensure start event measurements are sent with an event counter value of 1.
4. [TAGLDARW-12] Ensure the `ns_ap_res` label accounts for the screen scale factor in the application screen dimensions value.
5. [TAGLCPPS-1] Prevent label values which represent numerical values beyond 999999 from being collected in scientific notation.
6. [TAGLCPPS-2] Ensure the library starts transmitting data when a `PublisherConfiguration` and `PartnerConfiguration` is added after the configuration windows is closed and the library was started without a `PublisherConfiguration` and `PartnerConfiguration`.
7. [TAGLCPPS-3] Ensure calls to `notifyBufferStop` to transition from *buffering during playback* state to *playing* state resume the collection of playing time.

Known issues and limitations:

- There were no known issues for this release.

Library Version 5.1.10.161109

Release Date: November 10, 2016

Data Collection Model Version: 2.11

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

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

Supported tvOS Versions: 9.x, 10.x

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

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-2850] Prevent calls to the `Aggregate` method from interpreting labels which are not provided in the arguments of the calls.
2. [TAG-2864] Provide the `notifyCustomEvent` method on the `StreamingAnalytics` class.
3. [TAG-2860] Rename the `notifyBufferEnd` method on the `StreamingAnalytics` class to `notifyBufferStop` to align with implementation documents and the API on other platforms.
4. [TAG-2848] Improve the logic for consuming `PublisherConfigurations` and `PartnerConfigurations` to ensure boolean configuration settings are applied correctly.
5. [TAG-2857] Ensure usage data is immediately stored to prevent the collected values from being corrupted.

Known issues and limitations:

1. [TAGQA-1093] When the vCE component and code from the application or another library are trying to be a delegate to web views at the same time and forward calls in both directions this can cause a cyclic call chain which creates room for crashes to occur.

Library Version 5.1.8.161026

Release Date: November 1, 2016

Data Collection Model Version: 2.11

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

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

Supported tvOS Versions: 9.x, 10.x

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

New features and improvements:

1. [TAG-2827] Add the armv7s slice separately in the iOS deliverable to support applications specifically developed for and targeting only the armv7s architecture.
2. [TAG-2803] Ensure the vCE component is immediately disabled – or not started – as soon as a provided `PublisherConfiguration` disables the vCE component.

Bug fixes:

1. [TAG-2831] Prevent the library from crashing when `start` is called without providing a `PublisherConfiguration` or `PartnerConfiguration`.
2. [TAG-2833] Ensure appropriate usage data is collected when the library migrates existing stored values.

3. [TAG-2835] Prevent the library from crashing if *Persistent Labels* are updated on an existing – i.e., already applied – [PublisherConfiguration](#) or [PartnerConfiguration](#).

Known issues and limitations:

- There were no known issues for this release.

Library Version 5.1.7.161004

Release Date: October 10, 2016

Data Collection Model Version: 2.11

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

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

Supported tvOS Versions: 9.x, 10.x

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

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-2770] Remove an undocumented unnecessary value in the enum used to indicate *ContentType* when using the streaming tag wrapper class for reduced requirements implementations.
2. [TAG-2807] Prevent the deployment of the tvOS library on a 9.0 target from triggering warnings inside Xcode.
3. [TAGQA-1041] Prevent applications of which the implementation uses the vCE component from crashing on iOS 10 when the application offers native video playback, is built with Xcode 7 and the user closes the native video playback component and taps on the <Home button after completing video playback in full screen.
4. [TAGQA-1042] Prevent applications from crashing when the implementation uses the vCE component and tries to use [updateMetaString](#).
5. [TAGQA-1043] Ensure the vCE component sends visibility information and updates dictionary values on the same thread to prevent data corruption.
6. [TAGQA-1044] Ensure the vCE component detects web views which it internally creates to prevent those web views from being included in visibility tracking.
7. [TAGQA-1054] Ensure the vCE component calculates correct viewability metrics when the native view loses or gains focus.
8. [TAGQA-1055] Prevent the vCE component from detecting false positives when native views are removed from the view hierarchy.
9. [TAGQA-1065] Prevent applications from crashing when the implementation uses the vCE component and the application is cold started on a network connection with low bandwidth or no connectivity.

Known issues and limitations:

- There were no known issues for this release.

Library Version 5.1.4.160907

Release Date: September 16, 2016

Data Collection Model Version: 2.11

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

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

Supported tvOS Versions: 9.x, 10.x

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

New features and improvements:

1. First public release of comScore library version 5.x.
2. [TAG-2020, TAG-2238, TAG-2243, TAG-2293, TAG-2506, TAG-2569] Refactor and re-implement the public API and underlying internal logic. This includes changes like:
 - Rename most public API methods to introduce a new naming scheme as well as adherence to platform-specific naming conventions.
 - Implement improvements for performance and stability as well as for futureproofing the public API for implementations for combinations of different comScore products.
 - Implement a new approach to configuring the library, including support for multiple partner and/or client configurations while collecting data only once.
3. [TAG-2169, TAG-2216, TAG-2491, TAG-2527, TAG-2596] Implement streaming analytics v5 API and data collection model features. This includes a completely new API for streaming analytics implementations.
4. [TAG-2193] Deliver the library as three separate frameworks: one for iOS applications and extensions, one for tvOS applications and one for watchOS applications.
5. [TAG-2201] Include instrumentation for mobile in-application ad viewability for campaigns tagged with a comScore vCE tag by introducing a vCE component.
This feature requires iOS 7 or higher to function properly. If the application is running on devices with iOS 6 or lower then this feature will not be enabled/available.
6. [TAG-2227] Introduce support for tvOS.
7. [TAG-2251] Include data collection model version label `ns_ap_smv` in the collected data.
8. [TAG-2292] Enable *Usage Properties Auto Update* by default.
9. [TAG-2577] Make a warning appear on the device console for debug builds of the hosting application when the *AdSupport* framework is not linked into the hosting application.
10. [TAG-2740] Include label `ns_st_li=1` for live media types when using the streaming tag wrapper class for reduced requirements implementations.

Bug fixes:

1. [TAG-2029] Ensure all characters which require URL encoding are properly encoded.
2. [TAG-2244] Ensure the public pod does not generating compile time errors when added as a transitive dependency from Cocoapods.
3. [TAG-2254] Modify the streaming tag wrapper class used for Reduced Requirements implementation to prevent incorrect hardcoded content type values from being reported.

Known issues and limitations:

1. [TAG-2770] There is an undocumented unnecessary value in the enum used to indicate *ContentType* when using the streaming tag wrapper class for reduced requirements implementations.

2. [TAGQA-1041] Certain applications that offer video playback using the native video playback component can crash on iOS 10 when the application is built with Xcode 7 and the following scenario occurs: after completing video playback in full screen, the user closes the native video playback component and navigates to a different application screen.
3. [TAGQA-1042] An application can crash when it uses the vCE component and the implementation tries to use `updateMetaString`.
4. [TAGQA-1043] The vCE component does not send visibility information on main thread while the dictionary values are updated on main thread. This causes data corruption.
5. [TAGQA-1044] The vCE component does not detect web views which it internally creates. This causes those web views to be included in visibility tracking which is undesirable.

Library Version 3.1607.27

Release Date: July 28, 2016

Supported iOS Versions: 6.x, 7.x, 8.x, 9.x

Supported watchOS Versions: 1.x

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

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-2559] Improved the changes implemented for version 3.1607.26.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1607.26

Release Date: July 26, 2016

Supported iOS Versions: 6.x, 7.x, 8.x, 9.x

Supported watchOS Versions: 1.x

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

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-2020] Modified the code responsible for dispatching measurements to prevent the occurrence of a race condition which could lead to sporadic crashes.
2. [TAG-2559] Fixed an issue which could cause exception messages related to overreleasing objects which are already being deallocated.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1605.03

Release Date: May 6, 2016

Supported OS Versions: 6.x, 7.x, 8.x, 9.x

Supported watchOS Versions: 1.x

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

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-2020] Fixed an issue related to the use of worker threads which could lead to a memory leak.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1510.23

Release Date: October 28, 2015

Supported OS Versions: 6.x, 7.x, 8.x, 9.x

Supported watchOS Versions: 1.x

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

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-1994] Added a compilation flag to prevent projects developed in Xcode 7.x from showing a warning due to the inclusion of the comScore library when performing *Archive*.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1509.15

Release Date: September 16, 2015

Supported OS Versions: 6.x, 7.x, 8.x, 9.x

Supported watchOS Versions: 1.x

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

New features and improvements:

1. [TAG-1764] Rebuilt the library binaries with Xcode 7 GM as Apple is now accepting apps for review if they are built with this Xcode version.

Bug fixes:

1. [TAG-1770] Changed compiler settings to prevent generating a precompiled header for the prefix header. The precompiled header of the prefix header was causing large amounts of warnings for projects using debug symbols for debugging.

This was applied as a work-around for a known issue with the *dsymutil* tool packaged with Xcode 7 beta and Xcode 7 GM.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1508.19

Release Date: August 27, 2015

Supported OS Versions: 6.x, 7.x, 8.x, 9.x

Supported watchOS Versions: 1.x

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

New features and improvements:

1. [TAG-1468] Added logic to automatically detect inclusion of the library inside an iOS extension.
The implementation inside an extension differs from the implementation of the library in an application. These differences are addressed in the implementation guide which has been updated together with this release.
2. [TAG-1620, TAG-1629] Added logic to enable secure measurement requests when the application is running on iOS 9. This change is in response to the iOS 9 / Xcode 7 requirement to use HTTPS with TLS 1.2 for HTTP connections when using *App Transport Security*.
This change also required code modifications to use `NSURLSession` instead of `NSURLConnection`.
`NSURLSession` cannot be used on iOS 6.x. For iOS 6.x the library will continue to use `NSURLConnection`.
3. [TAG-1628] Enabled the inclusion of *bitcode*. This change is in response to bitcode support which was introduced in Xcode 7. At time of writing Apple stated the following about bitcode: *"For iOS apps, bitcode is the default, but optional. If you provide bitcode, all apps and frameworks in the app bundle need to include bitcode. For watchOS apps, bitcode is required."*
4. [TAG-1663] Expanded the *new media* check in the wrapper class its new media change notification methods (`playVideoContentPart`, etc.) to be able to include extra metadata labels as part of the detection mechanism.
5. [TAG-1665] Expanded wrapper class with new media change notification methods (`playVideoContentPart`, etc.). The new methods add an enum parameter for the media type into the method signature. The implementation documentation has been updated to use these new methods. The previously existing methods have been marked as deprecated and will be removed in a future update.

Bug fixes:

1. [TAG-1570] Removed code that has become obsolete after the changes for [TAG-1526] which were released with version 3.1504.30.

2. [TAG-1658] Corrected logic for updating usage timings with the auto-update feature while the application is running in the background to fix a problem that was introduced with [TAG-1324] in version 3.1502.26.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1504.30

Release Date: June 1, 2015

Supported OS Versions: 6.x, 7.x, 8.x

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-1523] Modified method signature in response to a reported naming collision (improving the resolution of [TAG-1467]).
2. [TAG-1526] Modified how values which are provided in setter methods are applied. The values are now applied via the internal task executor (to ensure values are set in the chronological order) which allows for removal of `synchronized` code blocks that were used in previous versions. This improvement prevents potential locks of threads where `synchronized` code is being executed (which could be the main thread).

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1503.24

Release Date: March 31, 2015

Supported OS Versions: 6.x, 7.x, 8.x

New features and improvements:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-1462] Extracted Streaming Tag plugin classes from the library to prevent *CoreMedia*, *MediaPlayer* and *AVFoundation* frameworks from being required by the linker in projects that are compiled with linker flags `-ObjC` and/or `-all_load`.
2. [TAG-1467] Changed headers to make a symbol private in response to a reported naming collision.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1502.26

Release Date: March 3, 2015

Supported OS Versions: 6.x, 7.x, 8.x

New features and improvements:

1. [TAG-1285] Cleaned up the example projects by removing obsolete settings files.

Bug fixes:

1. [TAG-1295] Modified the logic used to determine the value of label `ns_radio` to fix an issue that leads to the value `wifi` being collected in scenario's where value `wwan` should have been collected.
2. [TAG-1312] Modified the logic to remove expired cache files to prevent a potential issue where measurement cache files could be removed without being flushed.
3. [TAG-1324] Improved the internal task executor – which runs queued tasks on a background thread – to also handle all timed tasks to fix an issue that could sporadically cause an app to hang during launch while on an internet connection with limited bandwidth.
4. [TAG-1347] Improved the internal Streaming Tag state machine to be able to properly handle scenarios where an *end* notification is triggered after a *play* notification but before the processing of that *play* notification is completed, which could allow the heartbeat timer to continue to run after the *end* measurement is sent.
5. [TAG-1354] Improved the logic used for generating the `c12` value to ensure that it correctly uses the *publisher secret* when the library is configured via API calls.
6. [TAG-1360] Improved the logic used in the Streaming Tag classes to throttle rapidly recurring *play* and *pause* event notifications.
7. [TAG-1366] Corrected the logic used for triggering the *keep-alive* event to be able to properly handle scenarios that have live transmission initially turned off (like scenarios with an *opt-in wall*).

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1412.05

Release Date: December 15, 2014

Supported OS Versions: 6.x, 7.x, 8.x

New features and improvements:

1. [TAG-844] Added support for non-`NSString` label values in `setLabels` and `setLabel` API method calls.
2. [TAG-1123] Added logic to collect the processor architecture in label `ns_ap_ar`.
3. [TAG-1172] Modified the `StreamingTag` wrapper class used by the *Reduced Requirements* Video Metrix implementation to include new API methods `playVideoAdvertisement`, `playAudioAdvertisement`, `playVideoContentPart` and `playAudioContentPart` to differentiate between *video+audio* and *audio-only* media consumption. The `playVideoAdvertisement` and `playAudioAdvertisement` methods accept a metadata object.
4. [TAG-1231] Integrated the Streaming Tag library classes into the Application Tag.

Bug fixes:

1. [TAG-1185] Modified the `setHeartbeatIntervals` method to accept `NSNull` for the playing time threshold property.

Known issues and limitations:

- There were no known issues for this release.

Releases prior to version 3.x have been removed from the release notes due to their age.