

Darwin Library Release Notes

As of version 6.8.0 the Comscore library binaries are delivered as XCFramework. The libraries are no longer available as a fat binary.

Library Version 6.12.0+2403080805

Release Date: March 8, 2024

Data Collection Model Version: 6.7

Supported iOS Versions: 11 - 17

Supported iPadOS Versions: 11 - 17

Supported tvOS Versions: 11 - 17

Binaries compiled with: Xcode 15.2

Feature changes:

1. (TAG-8581) Include a Privacy Manifest.

Description: As of OS version 17 SDKs can include a Privacy Manifest. Any information present in Privacy Manifests of SDKs will be rolled up into the Privacy Manifest of the application. This makes the task of maintaining things like collected data types easier for developers as they do not have to manually populate what is used by SDKs included in their application.

Resolution: Include a Privacy Manifest in the SDK and include which data types are collected by the SDK.

Bug fixes:

1. (TAG-8773) Prevent JUCE leak detection assertions from impacting unit test execution of tvOS applications.

Description: The tvOS framework of version 6.11.0 of the library was built using the DEBUG flag. This causes symbols that do not belong in a production build to be included. Additionally there are memory leaks due to how some static test variables are used.

Resolution: Remove the DEBUG flag from the tvOS framework compilation target and ensure memory allocated to test variables is released at the end of each test.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.11.0+2309120921

Release Date: September 19, 2023

Data Collection Model Version: 6.6

Supported iOS Versions: 11 - 17

Supported iPadOS Versions: 11 - 17

Supported tvOS Versions: 11 - 17

Binaries compiled with: Xcode 14

Feature changes:

1. (TAG-3761) Ensure transmissions which are triggered while the application is being closed are added to offline cache.
Description: Transmissions which are triggered while the application is being closed can potentially unnecessarily slow down the application shutdown process.
Resolution: Add these transmissions to the offline cache so they will be transmitted when the application is restarted.
2. (TAG-3647, TAG-8308, TAG-8316, TAG-8386) Update Shared C++ code from C++ 11 to C++ 14.
Description: The thread sanitizer reported problems with the integrated JUCE code. Updating to C++ 14 change will help resolve those problems.
Resolution: Update to C++ 14.

Bug fixes:

1. (TAG-8442) Prevent application crashes when the Comscore library is started and then disabled before startup is completed.
Description: When the Comscore library is started in the implementation and subsequently disabled before startup is completed the application could crash because of background tasks that continue to run.
Resolution: Ensure all background tasks are terminated when Comscore library is disabled.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.10.1+2305240730**Release Date:** May 31, 2023**Data Collection Model Version:** 6.5**Supported iOS Versions:** 11 - 16**Supported iPadOS Versions:** 11 – 16**Supported tvOS Versions:** 11 - 16**Binaries compiled with:** Xcode 14**Feature changes:**

1. (TAG-8348) Adhere to deployment target restrictions.
Description: As of Xcode 14 building for deployment to OS releases older than iOS 11, iPadOS 11 and tvOS 11 is no longer supported.
Resolution: Apply minimum target versions iOS 11, iPadOS 11, tvOS 11.

Bug fixes:

- There were no known bugs prior to this release.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.10.0+220128**Release Date:** February 14, 2022

Data Collection Model Version: 6.5

Supported iOS Versions: 9 - 14

Supported iPadOS Versions: 13, 14

Supported tvOS Versions: 9 - 14

Binaries compiled with: Xcode 13

Feature changes:

1. (TAG-7629, TAG-7654) Improve bandwidth consumption of transmission for offline cache flushes.

Description: Transmission of offline cache flushes are currently not compressed. Applying compression will cause less bandwidth to be used.

Resolution: Apply compression to transmission of offline cache flushes.

Bug fixes:

1. (TAG-7514) Prevent deadlock during application termination.

Description: Some of the environment details can only be retrieved from the application's main thread. When the library tries to retrieve a value when the application is being terminated - and therefore the library's processes are being terminated - this can lead to a deadlock.

Resolution: Cache last-retrieved values and reuse these values when the application is being terminated.

2. (TAG-7560) Prevent potential EXC_BAD_ACCESS crashes in Content Activation tagging implementations.

Description: If Content Activation tagging implementations call the associated API methods before configuring and starting the library there is a risk of causing EXC_BAD_ACCESS crashes.

Resolution: Ensure processing of any API method calls related to Content Activation tagging is postponed until the library is configured and started.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.9.0+210826

Release Date: September 2, 2021

Data Collection Model Version: 6.5

Supported iOS Versions: 9 - 14

Supported iPadOS Versions: 13, 14

Supported tvOS Versions: 9 - 14

Binaries compiled with: Xcode 12.2

Feature changes:

- There were no feature changes in this release.

Bug fixes:

1. (TAG-7346) Ensure threads running background tasks do not crash from accessing objects that have already been deallocated.

Description: Threads that are trying to run tasks crash because their task object was already deallocated (these work as a dynamic array).

Resolution: Add a lock for this scenario, ensuring this new lock cannot result in a deadlock situation.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.8.1.210531**Release Date:** June 9, 2021**Data Collection Model Version:** 6.5**Supported iOS Versions:** 9 - 14**Supported iPadOS Versions:** 13, 14**Supported tvOS Versions:** 9 - 14**Binaries compiled with:** Xcode 12.2**Feature changes:**

- There were no feature changes in this release.

Bug fixes:

1. (TAG-7133) Ensure transmission of `ns_ap_lastrun` adheres to its functional specification.
Description: Transmission of `ns_ap_lastrun` collects a 0 value instead of the identifier of the previous application run.
Resolution: Correct the business logic for transmitting `ns_ap_lastrun`.
2. (TAG-7172) Prevent crashes from garbage collection of C++ objects which are still used when the application is being terminated.
Description: Garbage collection starts freeing up application memory and destructs the library core object while threads might still be executing their tasks. A crash occurs when the execution of these threads subsequently uses the library core object.
Resolution: Ensure all running tasks are cancelled once the library core object is being destructed.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.8.0.210414**Release Date:** April 19, 2021**Data Collection Model Version:** 6.5**Supported iOS Versions:** 9 - 14**Supported iPadOS Versions:** 13, 14**Supported tvOS Versions:** 9 - 14**Binaries compiled with:** Xcode 12.2**Feature changes:**

1. (TAG-6782) Deliver library binaries as XCFramework.
Description: The libraries used to be delivered as fat binary which prevented Apple Silicon architecture for simulators to be included. Apple presented XCFramework as the preferred method for packing libraries. XCFrameworks can include all architectures.
Resolution: Deliver the library binaries as XCFramework and introduce the Apple Silicon architecture for simulators.
2. (TAG-6801) Prevent data collection from extensions.
Description: The libraries should not be implemented in extensions. Even though it is not possible to enforce this, data collection from

such scenarios should be prevented.

Resolution: Disable data collection when the libraries are implemented in an extension.

Bug fixes:

- There were no known bugs prior to this release.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.7.1.210208

Release Date: February 17, 2021

Data Collection Model Version: 6.5

Supported iOS Versions: 9 - 14

Supported iPadOS Versions: 13, 14

Supported tvOS Versions: 9 - 14

Binaries compiled with: Xcode 12.2

The fat binary delivered for this version does not include the Apple Silicon architecture for simulators.

Feature changes:

- There were no feature changes in this release.

Bug fixes:

1. (TAG-6722, TAG-6769) Improve integrated documentation.

Description: Doxygen documentation report tool triggers warnings from inclusion of incomplete and outdated elements integrated API documentation.

Resolution: Improve the integrated documentation.

2. (TAG-6744) Prevent negative application analytics metrics delta values from being collected.

Description: Session calculation business logic historically had to cover a lot of different entry points for usage time calculation. A reasonable amount of these cases are related to workaround to cover for platform inconsistencies and problematic application life cycle scenarios. Platforms have improved over the years and now some of these workarounds cause negative value calculations in edge case scenarios.

Resolution: Prevent the negative values as much as possible by collecting 0 delta values instead. When this occurs internal error codes in label `ns_ap_ie` will include value 8 to indicate the library has treated this occurrence as an internal error.

3. (TAG-6753) Align automatically collected screen names on Darwin with other solutions.

Description: Different solutions capture different application state values in the `name` label.

Resolution: Align the solutions to capture either `foreground`, `background` or `Application` while continuing implementations to override the collected value.

4. (TAG-6763) Ensure all-zero `advertisingIdentifier` values are not collected.

Description: There are cases where value `00000000-0000-0000-0000-000000000000` is returned as the `advertisingIdentifier` value, which should not be collected by the library.

Resolution: Ensure the library does not collect this value.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.7.0.201204**Release Date:** December 8, 2020**Data Collection Model Version:** 6.5**Supported iOS Versions:** 9 - 14**Supported iPadOS Versions:** 13, 14**Supported tvOS Versions:** 9 - 14**Supported watchOS Versions:** 1 - 3**Supported iOS Extensions:** *today-extension, share, action, photo-editing, document-provider, custom-keyboard, watchapp, audio-unit***Binaries compiled with:** Xcode 12.2

The fat binary delivered for this version does not include the Apple Silicon architecture for simulators.

Feature changes:

1. (TAG-6579) Make libraries available through Swift Package Manager.
Description: As of Xcode 12, our libraries can be delivered as package within Swift Package Manager, Apple's new dependency management tool.
Resolution: Make the libraries available through Swift Package Manager.
2. (TAG-6580) Collect Playback session identifier (label `ns_st_id`) as GUID.
Description: Playback session identifiers have historically been collected as timestamp values. Reporting will benefit from a Playback session identifier with a higher degree of uniqueness by using GUID values. GUID values are also timestamp-based but have added randomness.
Resolution: Change the collected Playback session identifier values from timestamp values to GUID values.
3. (TAG-6617) Increase minimum supported iOS version from 6 to 9.
Description: Apple's lowest supported iOS version is 9. Our source code and project settings contain settings and APIs from iOS 6 - 8 which cause warnings in Xcode 12.
Resolution: Remove the deprecated APIs and update project settings to have iOS 9 as the minimum iOS version.

Bug fixes:

1. (TAG-6616) Prevent crashes from `ClientConfiguration` object synchronization between ObjectiveC and C++.
Description: There are cases where object synchronization will cause an error due to a `nil` object being inserted into an array.
Resolution: Prevent these cases from occurring.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.6.0.200921**Release Date:** September 21, 2020**Data Collection Model Version:** 6.5

Supported iOS Versions: 6 - 14

Supported iPadOS Versions: 13, 14

Supported tvOS Versions: 9 - 14

Supported watchOS Versions: 1 - 3

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

Binaries compiled with: Xcode 12 GM

The fat binary delivered for this version does not include the Apple Silicon architecture for simulators.

Feature changes:

1. (TAG-6491, TAG-6533, TAG-6536, TAG-6538) Ensure cross-publisher unique device identifier values are collected on Darwin OS 14.

Description: Apple has deprecated [advertisingTrackingEnabled](#) on [ASIdentifierManager](#) as part of policy changes for iOS, iPadOS and tvOS 14, thus preventing collection of [advertisingIdentifier](#) with previous Comscore library versions in applications running on devices with this OS version.

Resolution: To continue to be able to collect [advertisingIdentifier](#) values following Apple's policies on Darwin OS 14 the Comscore library can now use the new [AppTrackingTransparency](#) framework alongside a fallback which inspects the [advertisingIdentifier](#) value to determine if its collection is allowed. For Darwin OS 13 and lower the Comscore library continues to use [advertisingTrackingEnabled](#).

Bug fixes:

- There were no known bugs prior to this release.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.5.1.200805

Release Date: August 5, 2020

Data Collection Model Version: 6.4

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*

Binaries compiled with: Xcode 11.1

Feature changes:

- There were no feature changes in this release.

Bug fixes:

1. (TAG-6451) Ensure Consent Management Platform's purpose 9 consent values are correctly collected.

Description: Purpose 9 consent value is read from purpose 8.

Resolution: Read purpose 9 consent value from purpose 9.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.5.0.200721

Release Date: July 21, 2020

Data Collection Model Version: 6.4

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*

Binaries compiled with: Xcode 11.1

Feature changes:

1. (TAG-6280, TAG-6291, TAG-6325, TAG-6328, TAG-6380, TAG-6406) Add integration with Consent Management Platforms which implement IAB's Transparency and Consent Framework (TCF) version 2.0 for automatic collection of user consent.
Description: When a Consent Management Platform (CMP) is present in the application and the CMP implements TCF 2.0 then the library should integrate with the CMP to automatically collect user consent values.
Resolution: Implement CMP integration following TCF 2.0 specification.

Bug fixes:

1. (TAG-6403) Ensure calls to [StreamingAnalytics](#) notification methods prior to start event transmission do not cause crashes.
Description: Calling [StreamingAnalytics](#) notification methods prior to transmission of the start event causes a crash.
Resolution: Prevent the crash from occurring.
3. (TAG-6415) Remove code potential deadlock or crash when using [persistentLabels](#) or [startLabels](#).
Description: The use of [persistentLabels](#) or [startLabels](#) configuration settings could lead to deadlock or crash in some scenarios.
Resolution: Change the code structure and behavior.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.4.1.200701

Release Date: July 6, 2020

Data Collection Model Version: 6.3

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*

Binaries compiled with: Xcode 11.1

Feature changes:

- There were no feature changes in this release.

Bug fixes:

1. (TAG-6395) Correct the measurement label order.

Description: A typo in code comments in the label order caused a set of labels to be ignored which means they are placed in alphabetical order at the end of the measurement URLs.

Resolution: Correct the typo.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.4.0.200628

Release Date: June 29, 2020

Data Collection Model Version: 6.3

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*

Binaries compiled with: Xcode 11.1

Feature changes:

1. (TAG-6353) Update label order.

Description: An issue related to the panel meter on PC and Windows desktop collecting specific dictionary values caused the label order to be updated.

Resolution: This does not affect Darwin, but as label order is shared amongst all solutions, Darwin was updated accordingly.

2. (TAG-6360) Add child-directed application configuration setting.

Description: Child-directed applications have different data collection requirements. Until now, publishers received specific instructions for this purpose which involved multiple code statements to align library data collection behavior with the different requirements. These instructions can be simplified by making this a feature of the library.

Resolution: Add a configuration setting to simplify appropriate tagging of child-directed applications.

Bug fixes:

1. (TAG-6188) Ensure calls to [StreamingAnalytics](#) notification methods prior to starting the library do not cause crashes.

Description: Calling [StreamingAnalytics](#) notification methods prior to calling [Analytics'](#) [Start](#) method causes a crash.

Resolution: Prevent the crash from occurring.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.3.2.200511**Release Date:** May 14, 2020**Data Collection Model Version:** 6.2**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***Binaries compiled with:** Xcode 11.1**Feature changes:**

- There were no feature changes in this release.

Bug fixes:

1. (TAG-6240) Ensure [autoResumeStateOnAssetChange](#) setting is exposed on the [StreamingAnalytics](#) configuration builder.

Description: The [autoResumeStateOnAssetChange](#) setting cannot be used due to not being exposed.**Resolution:** Expose the setting on the configuration builder.**Known issues and limitations:**

- There were no known issues for this release.

Library Version 6.3.1.200320**Release Date:** March 20, 2020**Data Collection Model Version:** 6.2**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***Binaries compiled with:** Xcode 11.1**Feature changes:**

- There were no feature changes in this release.

Bug fixes:

1. (TAG-6171) Correct Streaming Analytics Content Media Format enum symbol names.

Description: Version 6.3.0.200309 introduced new enum values. Their names accidentally followed a format that differs from the

existing enum values.

Resolution: Correct the enum names.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.3.0.200309

Release Date: March 16, 2020

Data Collection Model Version: 6.2

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*

Binaries compiled with: Xcode 11.1

Feature changes:

1. (TAG-6115) Add event-independent re-buffer count for consistency with other metrics.
Description: Streaming Analytics metrics typically are collected as a three-part values. For re-buffering only two parts are present.
Resolution: Include the missing re-buffer count.
2. (TAG-6122) Add content media format metadata values for podcasts.
Description: Streaming Analytics content metadata does not have values for full and partial podcast content.
Resolution: Add an enum value for full podcast content and an enum value for partial podcast content.

Bug fixes:

1. (TAG-6060) Ensure configuration settings are collected with the correct format.
Description: With the data collection model 6.1 changes the format of collected configuration settings was unintentionally modified by removing the Swizzling configuration value.
Resolution: Reintroduce the Swizzling configuration value.
2. (TAG-6062, TAG-6065) Ensure customized System Clock Jump Detection Interval and Precision configuration setting values are collected with the appropriate format.
Description: Values for System Clock Jump Detection Interval and Precision configuration values are not converted to multiples of 100. This causes the provided values to be incorrectly populated in the collected data.
Resolution: Ensure the System Clock Jump Detection Interval and Precision configuration values are sanitized before they are applied.

Known issues and limitations:

- There were no known issues for this release.

Library Version 6.2.0.200128

Release Date: January 30, 2020

Data Collection Model Version: 6.1

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*

Binaries compiled with: Xcode 11.1

Feature changes:

1. (TAG-5994) Remove functionality from vCE component.

Description: Some of the reported issues with Comscore library behavior originate from the requirement for vCE component to support a wide variety of advertisement viewability tagging use cases. Given the adoption of the Open Measurement SDK there no longer is a requirement for viewability measurement in the Comscore library.

Resolution: Disable the vCE component by default and remove its business logic. This has the following effects on the library API:

- The `vce` configuration setting is deprecated and no longer has any effect.
- All vCE-related methods are deprecated and no longer execute any business logic.
- All vCE-related getters that return a `String` value — such as `[SCORVCE sdkVersion]` and `[SCORAnalytics vceVersion]` — now return an empty string.
- All vCE-related getters that return a `Boolean` value now return `false`.
- The `[SCORVCE sharedInstance]` and `[SCORAnalytics sharedInstance]` methods return `null`, which aligns with vCE being disabled.

Bug fixes:

1. (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: This has been resolved indirectly by the changes for feature change TAG-5994. The alternative library deliverable which was provided as a short-term resolution is no longer needed.

2. (TAG-6019) Ensure configuration label is included with a complete value in all measurement requests.

Description: The configuration value of the first block, fifth position is missing on the configuration label.

Resolution: This has been resolved indirectly by the changes for feature change TAG-5994.

Known issues and limitations:

- There were no known issues for this release.