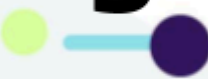


# **Payment Device SDK for iOS/Android Recent Change Guide**



For Software Version 4.0.6 (Starfish)

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# 1. Introduction

This document details recent SDK additions and the changes required by integrators when upgrading the Payment Device SDK for iOS/Android to the latest version. Migration changes are included for the last four releases. If you require migration notes or assistance to upgrade from an older version please contact the support team.

## 2. Release 4.0.6 (Starfish)

### IOS

- Added compatibility with iOS 26
  - Cloud Commerce SDK updated to version 2.1.1 with support for iOS 26.
- Payment Devices SDK is now built with Xcode 16.4
  - Integration using Xcode 15.3 is no longer supported. It is recommended to use Xcode 16.4 or later when integrating with this SDK.

### ANDROID

- Updated to SQLCipher 4.7.2.
- CloudCommerce SDK updated to version 5.3.1.
  - Resolved issue where production Discover contactless transactions caused an EMPTY CANDIDATE LIST error for Tap To Mobile.
- Resolved issue where the SDK could become stuck in an active transaction state after a bad card read when using an ID TECH VP3350 device.

## 3. Release 4.0.5 (Starfish)

### IOS

- Resolved issue where "No CVM" is displayed on receipt when CDCVM is performed for Tap To Mobile.
- Removed internal hard-coded transaction limit of 9,999,999 (minor units).

### ANDROID

- CloudCommerce SDK updated to version 5.3.0
- Resolved issue where "No CVM" is displayed on receipt when CDCVM is performed for Tap To Mobile.
- Added support for Online PIN for Tap To Mobile and updated the required app permissions
  - android.permission.RECORD\_AUDIO
  - android.permission.HIDE\_OVERLAY\_WINDOWS
  - android.permission.NFC
  - android.permission.VIBRATE

- Removed internal hard-coded transaction limit of 9,999,999 (minor units).

## 4. Release 4.0.4 (Starfish)

### IOS

- Resolved issue where during first-time configuration of an unconfigured VP3350 Device an unexpected error code was causing the SDK to disconnect from the device.

## 5. Release 4.0.3 (Starfish)

### IOS

- Payment Devices SDK now available as XCFramework in order to support Apple silicon simulator architecture.

### ANDROID

- Cloud Commerce SDK updated to version 5.2.0
- `transactionFinished` response for a Tap To Mobile transaction has been updated to return more information so the response matches those expected for payment devices. This includes:
  - Card Reference
  - Card Hash
  - PAR
  - Issue Number
  - Card Scheme ID
  - Card Scheme Account Type
  - Application ID
  - Application Name
  - Application Cryptogram
  - ATC
  - Terminal Verification Results
  - Issuer Application Data
  - PAN sequence number
- Tap To Mobile now supports TSYS receipt format and will return the required receipt data in the `transactionFinished` response when processing transactions via TSYS.
- Configuring Tap To Mobile has been improved so that a configuration cycle is no longer required as often.
- `smartCardRemovePrompted` and `smartCardRemoved` transaction update events are now returned at the end of EMV contact transaction for all PIN pads.

## 6. Release 4.0.2 (Starfish)

### IOS

- CloudCommerce.xcframework updated to version 2.1.1
- SQLCipher binaries minimum deployment version updated to iOS 15.
- Configuration of Tap To Mobile has been further improved to reduce the number of configuration cycles required.

### ANDROID

- Added support for Tap To Mobile

For more information on how to support Tap To Mobile within your integration please see the Payment Devices SDK for Android Tap To Mobile Supplement.

## 7. Release 4.0.1 (Starfish)

### IOS

- CloudCommerce.xcframework updated to version 2.0.1
- `Team Identifier` key in applications info.plist must now be defined as `PRODUCT_TEAM_IDENTIFIER` in order to support newer version of CloudCommerceSDK
- SQLCipher updated to version 4.6.1
- Fixed issue whereby invalid currency could be set when only a single currency is supported. `CurrencyNotFound` will now be returned as expected.
- Configuring Tap To Mobile has been improved so that a configuration cycle is no longer required as often.
  - `CCParamTapToMobileConfigurationPercentage` Will now only be returned during initial call to `connectAndConfigure()` and is a direct pass through of values returned from apples `PaymentCardReader.Event.updateProgress(_:)` events. This allows integrations to follow requirement 3.9.1 of the Apple User Experience Requirements detailed in the Tap To Mobile Supplement document for iOS.
- Improved error handling when configuring Tap To Mobile. New error codes have been added to help integrators to better diagnose the cause of the issue.
  - `AccessTokenExpired`

- `TeamIdentifierMissing`
  - `InvalidAppleAccount`
  - `MissingBundleIdentifier`
  - `CurrentCountryNotAllowed`
  - `NoLocationFound`
- **Tipping is now supported via Tap To Mobile. A new Merchant Tipping feature allows the `CCParamTipAmount` parameter to be passed into `startTransaction()` . Only available on supported processors. The following errors have also been added:**
  - `TipAmountInvalid`
  - `TipAmountNotAllowed`
  - `MerchantTippingNotSupported`
- **`TransactionUpdateCardTapped` will now be returned as a `transactionUpdate` event during a Tap To Mobile transaction when a card has been tapped to allow integrating applications to update their user interface.**
- **`TransactionUpdateOnlineAuthorisation` will now be returned as a `transactionUpdate` event during a Tap To Mobile transaction when it requests online authorization to allow integrating applications to update their user interface.**
- **`CheckingTapToMobileConfig` Configuration update now returned during calls to `connectAndConfigure()` when configuring Tap To Mobile to allow integrating applications to update their user interface.**
- **`transactionFinished` response for a Tap To Mobile transaction has been updated to return more formation so the response matches those expected for payment devices. This includes:**
  - `Card Reference`
  - `Card Hash`
  - `PAR`
  - `Issue Number`
  - `Card Scheme ID`
  - `Card Scheme Account Type`
  - `Application ID`
  - `Application Name`



- Application Cryptogram
- ATC
- Terminal Verification Results
- Issuer Application Data
- PAN sequence number
- TSYS receipts updated to the latest specification to support Tap To Mobile transaction processing via TSYS.
- Tap To Mobile now supports TSYS receipt format and will return the required receipt data in the `transactionFinished` response when processing transactions via TSYS.
- Deferred Authorizations can now be configured for each Card Scheme via TMS on payment devices that support deferred authorization in order to stay compliant with First Data Rapid Connect certification requirements.

## 8. Release 4.0.0 (Starfish)

### IOS

- Added support for Tap To Mobile

For more information on how to support Tap To Mobile within your integration please see the Payment Devices SDK for iOS Tap To Mobile Supplement

## 9. Release 3.16.5 (Familiar)

### IOS

- Added support for allowlisting on ID TECH VP3350 devices.
  - Renamed `WhitelistCardPresented` error code to `AllowlistedCardPresented`

### ANDROID

- Added support for allowlisting on ID TECH VP3350 devices.
  - Renamed `WhitelistCardPresented` error code to `AllowlistedCardPresented`
- Added support for USB-C female ID TECH VP3350 device connection type.

- Fixed issue where transactions could decline with `TransactionAlreadyInProgressError` on Miura PIN pads.

## 10. Release 3.16.4 (Familiar)

### ANDROID

- Added support for one way Card Tokens, allowing consistent, non-payment-specific tokenization of card PANs, to be used for a range of applications in integration.
  - Added Parameter Key `FeatureTokens` to allow parsing of feature tokens into `StartTransaction()`
  - Added transaction error `FeatureTokensInvalid` (returned by `StartTransaction()`) when an invalid feature token is supplied.
  - Added object `FeatureToken`. This contains data representing information about a generated feature token required for CardTokens to be returned for a transaction.
  - Added object `CardToken`. This contains data representing information about a generated card token for a transaction.
  - Added method `ChipDnaMobileSerializer.serializeFeatureTokens(List<FeatureToken>)` for serializing Card token lists to an XML string.
  - Added method `ChipDnaMobileSerializer.deserializeCardTokens(String)` for deserializing Card token lists from an XML string.

## 11. Release 3.16.3 (Familiar)

### IOS

- Resolved issue where during first-time configuration of an unconfigured VP3350 Device an unexpected error code was returned, causing the SDK to disconnect from the device.

### ANDROID

- Resolved issue with VP3350 incorrectly requesting an ARQC instead of an AAC when performing a contactless refund with Mastercard.

## 12. Release 3.16.2 (Familiar)

### IOS

- Added support for enabling Deferred Auths per card scheme. VP3350 on First Data will support Deferred Auths except on Amex and Discover card schemes.
- Resolved issue with First Data Discover Contactless performed on the VP3350. Unrecognized tag should be 0000 populated.
- Updated SQLCipher to version 4.6.1.

## ANDROID

- Added support for enabling Deferred Auths per card scheme. VP3350 on First Data will support Deferred Auths except on Amex and Discover card schemes.
- Resolved issue with First Data Discover Contactless performed on the VP3350. Unrecognized tag should be 0000 populated.

## 13.Release 3.16.1 (Familiar)

## IOS

- New requirement to include the IDTech.bundle resource for integrations using ID TECH VP3350 devices, this provides the latest features and bug fixes. If this is not included in the integration and a connect and configure is attempted with an ID TECH VP3350 device the error `IdTechBundleRequired` will be returned.
- Resolved issue with First Data Rapid Connect pre-formatted non-signature receipts being returned with a signature line. These now do not contain a signature line unless required.
- Added functionality to control the amount displayed for account verification transactions for Miura PIN pads via TMS.
  - The amount can now be configured to 0 or any other number, including if it is major or minor.
- Added functionality to control the amount displayed for `GetCardDetails` command for Miura PIN pads via TMS.
  - The amount can now be configured to 0 or any other number, including if it is major or minor.
- Resolved issue which prevented supplying both the OS and MPI to be updated for Miura PIN pads.
  - Both OS and MPI can be supplied for update via TMS at the same time. The PIN pad will then apply the updates in three parts: OS, MPI, and Configuration, rebooting after each.
- Added functionality to return more detailed progress for firmware updates for Miura devices.
  - Additional callback, `FirmwareUpdate`. Returns new keys:  
`FirmwareUpdateAvailable`, `FirmwareUpdateStatus`,  
`FirmwareDownloadPercentage`, `FirmwareFile`, `FirmwareUpdate`
- Resolved potential issues with Miura device getting out of sync with SDK when pressing Cancel(X) key during request to Present Card Again.

- This issue was found on MPI 1-58 and very rarely occurs on other MPI versions.

## ANDROID

- Resolved issue with First Data Rapid Connect pre-formatted non-signature receipts being returned with a signature line. These now do not contain a signature line unless required.
- Added functionality to control the amount displayed for account verification transactions for Miura PIN pads via TMS.
  - The amount can now be configured to 0 or any other number, including if it is major or minor.
- Added functionality to control the amount displayed for `GetCardDetails` command for Miura PIN pads via TMS.
  - The amount can now be configured to 0 or any other number, including if it is major or minor.
- Resolved issue which prevented supplying both the OS and MPI to be updated for Miura PIN pads.
  - Both OS and MPI can be supplied for update via TMS at the same time. The PIN pad will then apply the updates in three parts: OS, MPI, and Configuration, rebooting after each.
- Added functionality to return more detailed progress for firmware updates for Miura devices.
  - This feature is only for firmware update progress and does not enable delayed firmware updates for Miura devices.
  - Additional callback, `FirmwareUpdate`. Returns new keys: `FirmwareUpdateAvailable`, `FirmwareUpdateStatus`, `FirmwareDownloadPercentage`, `FirmwareFile`, `FirmwareUpdate`
- Resolved potential crash with Miura device during retry card whilst cancelling transaction via PinPad.
  - This issue was found on MPI 1-58 and very rarely occurs on other MPI versions.

## 14.Release 3.16 (Familiar)

### IOS

- Enhanced checks for applying configuration for ID TECH VP3350 devices, resulting in improved connection times.

- Added functionality to give integrating apps greater control for initiating the firmware update process for ID TECH VP3350 devices.
  - Additional optional parameter `ApplyFirmwareUpdate` can be passed into `connectAndConfigure()` and `requestTmsUpdate()`, this is used to indicate if firmware update is to take place given one is available.
  - Connect and Configure and TMS Update Finished events may now return new parameters: `FirmwareUpdateAvailable` and `FirmwareUpdateStatus`
  - Additional error code `FirmwareUpdateRequired`
  - `getStatus()` returns additional parameters `FirmwareUpdateStatus` and `FirmwareUpdateAvailable`
- Added functionality to return more detailed progress for firmware updates for ID TECH VP3350 devices.
  - Additional callback, `FirmwareUpdate`. Returns new keys: `FirmwareUpdateAvailable`, `FirmwareUpdateStatus`, `FirmwareDownloadPercentage`, `FirmwareFile`, `FirmwareUpdate`
- Added functionality to filter data returned in `getStatus` response.
  - If one or more valid `CCParameters` with a value of `CCValueTrue` are passed into the request, filtering is enabled, and only the filtered `CCParameters` will be returned if available. Previous functionality is maintained if no `CCParameters` are passed into the request. See `getStatus` response documentation for the names of the valid `CCParameters`.
- Resolved issue that could cause a TMS update to occur if the application identifier was set to the existing value in `setProperties`.
- Added functionality to return address verification result in `transactionFinished` response.
  - Additional new parameter keys: `CCParamAddressVerificationResult`, `CCParamZipCodeVerificationResult` and `CCParamCscVerificationResult`

These can have the following values: `Matched`, `NotChecked`, `NotMatched`, `NotSupplied` or `PartialMatch`

## ANDROID

- Enhanced checks for applying configuration for ID TECH VP3350 devices, resulting in improved connection times.
- Added functionality to give integrating apps greater control for initiating the firmware update process for ID TECH VP3350 devices.

- Additional optional parameter `ApplyFirmwareUpdate` can be passed into `connectAndConfigure()` and `requestTmsUpdate()`, this is used to indicate if firmware update is to take place given one is available.
- Connect and Configure and TMS Update Finished events may now return new parameters: `FirmwareUpdateAvailable` and `FirmwareUpdateStatus`
- Additional error code `FirmwareUpdateRequired`
- `getStatus()` returns additional parameters `FirmwareUpdateStatus` and `FirmwareUpdateAvailable`
- Added functionality to return more detailed progress for firmware updates for ID TECH VP3350 devices.
  - Additional callback, `FirmwareUpdate`. Returns new keys: `FirmwareUpdateAvailable`, `FirmwareUpdateStatus`, `FirmwareDownloadPercentage`, `FirmwareFile`, `FirmwareUpdate`
- Added functionality to filter data returned in `getStatus` response.
  - If one or more valid `ParameterKey` with a value of `True` are passed into the request, filtering is enabled, and only the filtered `ParameterKey` will be returned if available. Previous functionality is maintained if no `ParameterKey` is passed into the request. See `getStatus` response documentation for the names of the valid `ParameterKey`.
  - A `ParameterKey` of `Result` is now always returned in the `getStatus` response
- Added functionality to return address verification result in `transactionFinished` response.
  - Additional new parameter keys: `CCParamAddressVerificationResult`, `CCParamZipCodeVerificationResult` and `CCParamCscVerificationResult`

These can have the following values: `Matched`, `NotChecked`, `NotMatched`, `NotSupplied` or `PartialMatch`