

Citrix MAM iOS SDKs - Containment SDK - Developer Guide

Overview

The Containment SDK will support the following policies:

- Cut and copy
- Paste
- Document exchange (Open In)
- Restricted Open-In exception list
- Inbound document exchange (Open In)
- Inbound document exchange whitelist <hidden>
- App URL schemes
- Allowed URLs
- Block camera
- Block Photo Library
- Block mic record
- Block dictation
- Block location services
- Block SMS compose
- Block email compose <hidden>
- Block iCloud
- Block look up
- Block file backup
- Block AirPrint
- Block AirDrop
- Block Facebook and Twitter APIs
- Obscure screen contents
- Block third-party keyboards (iOS 11+ only)
- Center point longitude
- Center point latitude
- Radius
- Mail Redirection

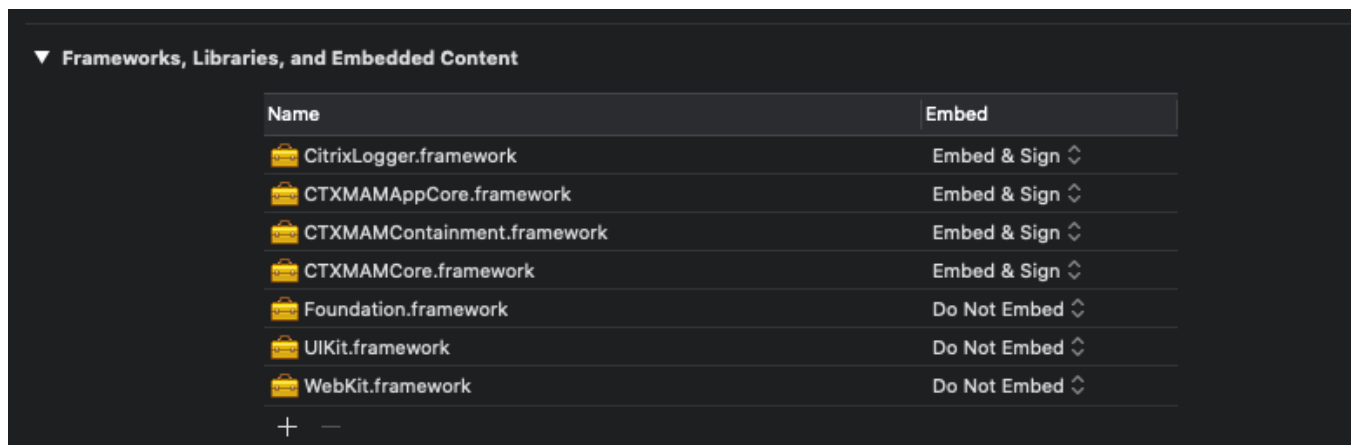
The legacy MDX policies related to Containment that will *not* be supported by the Containment SDK are:

- Domains excluded from URL filtering
- Allowed Secure Web domains"

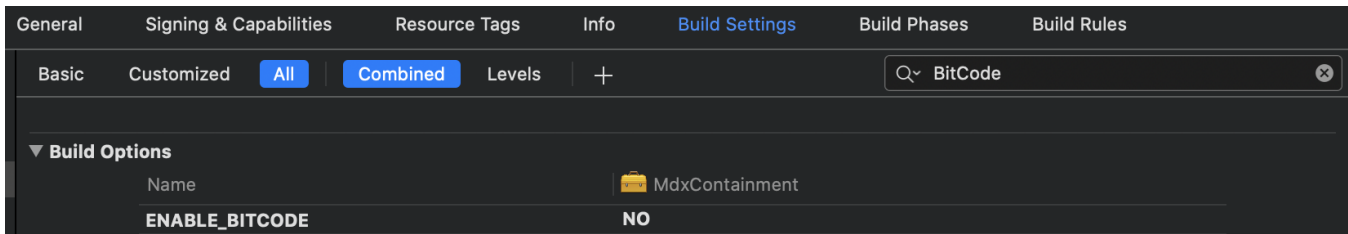
Steps to integrate Containment SDK

1. Add **CTXMAMCore.framework**, **CTXMAMAppCore.framework**, **CTXMAMNetwork.framework** and **CitrixLogger.framework** to your project.

On the project properties under the "**General**" tab add all 4 frameworks listed above to the "**Frameworks, Libraries, and Embedded Content**" section.

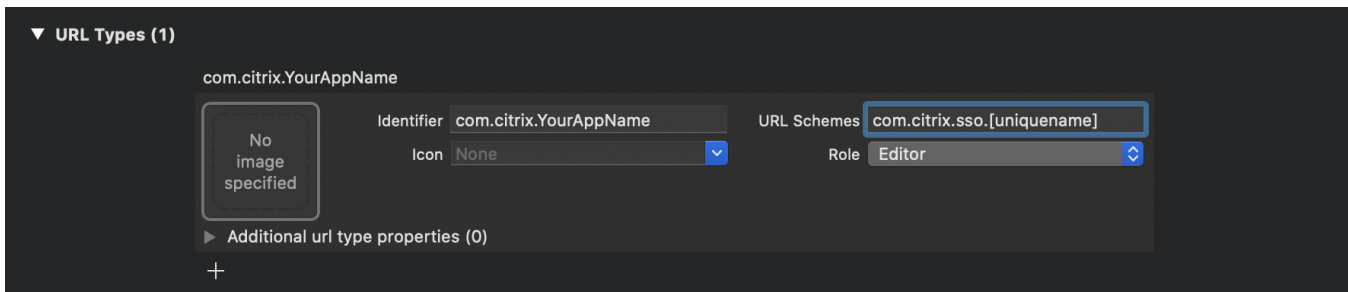


2. On the project properties under the "**Build Settings**" tab set "**Enable BitCode**" to "**No**"



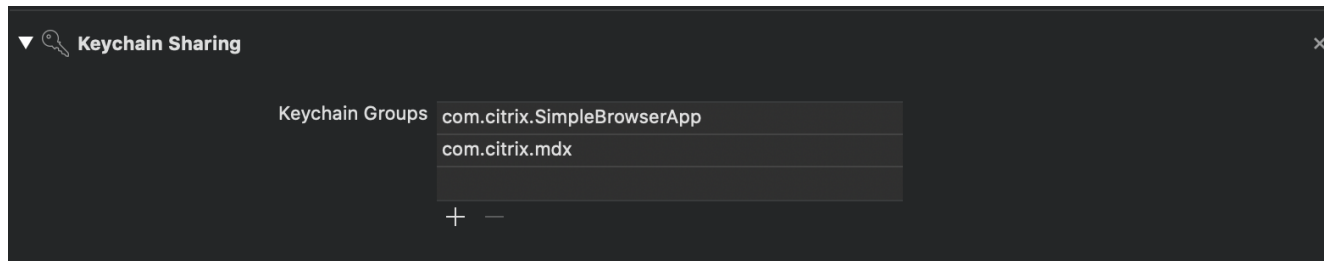
3. On the project properties under the "Info" tab add a new URL Type with URL Scheme which starts with **com.citrix.sso.**[PACKAGEID] (e.g. com.citrix.sso.22A955C3-237B-4952-A271-567BDFFA28BA). PACKAGEID can be generated by running "uuidgen" command in your MacOS Terminal. You may skip this step if a URL Scheme with "com.citrix.sso." prefix was previously added.

Note: Use this exact PACKAGEID in the Run Script mentioned in the subsequent step.



4. On the project properties under "Capabilities" tab set "Keychain Sharing" to "On"

4A. Add **com.citrix.mdx** to the list of "Keychain Groups:"



4B. Back on the project properties under the "Build Phases" tab add a new "Run Script" phase with the following script.

Run_Script

```
# Type a script or drag a script file from your workspace to insert its path.
export STOREURL="http://yourstore.yourdomain.com"
export APPTYPE="sdkapp"
export PACKAGEID="" #Please run uuidgen at the command line and paste the output value in the PACKAGEID
variable, This has be the same UUID which was generated in step 2.
export APPIDPREFIX=""#Your apps prefix id which can be found in your apple's developer account page.
export TOOLKIT_DIR="$PROJECT_DIR/../Tools"

if [ -z "${PACKAGEID}" ]
then
    echo "PACKAGEID variable was not found or was empty, please run uuidgen at the command line and paste the
output value in the PACKAGEID variable in your post build script."
    exit 1
fi

if [ -z "${APPIDPREFIX}" ]
then
    echo "APPIDPREFIX variable was not found or was empty, please refer to the \"how to\" document located in
the documentation folder of the SDK package on where to find your Apple's application prefix ID."
    exit 1
fi
if [ ! -d $TOOLKIT_DIR/logs ]
then
    mkdir $TOOLKIT_DIR/logs
fi

"$TOOLKIT_DIR/CGAppCLPrepTool" SdkPrep -in "$CONFIGURATION_BUILD_DIR/$EXECUTABLE_FOLDER_PATH" -out
"$CONFIGURATION_BUILD_DIR/$EXECUTABLE_NAME.mdx" -storeURL "${STOREURL}" -appType "${APPTYPE}" -packageId
"${PACKAGEID}" -entitlements "$SRCROOT/$PROJECT/$PROJECT.entitlements" -appIdPrefix "${APPIDPREFIX}" -
minPlatform "9.0"
```

4C. Ensure that you paste the same PACKAGEID used in the above step to add the new unique URL Scheme with the prefix "com.citrix.sso.", in the PACKAGEID field of this script.

4D. Ensure that you put your app id prefix in the **APPIDPREFIX** field. This ID can be found in the Apple Developer portal under the AppIDs section. This is usually the team ID but it can be different.

4E. Ensure that the **TOOLKIT_DIR** property points to the Tools folder in the SDK package.

5. Import **<CTXMAMCore/CTXMAMCore.h>** and **<CTXMAMContainment/CTXMAMContainment.h>** into your AppDelegate.m file.

```
//
// AppDelegate.m
// Your App Name here
//
// Created by Your Name Here on 3/21/19.
// Copyright © 2019 Your Company Name Here, LLC. All rights reserved.
//

#import "AppDelegate.h"
#import <CTXMAMCore/CTXMAMCore.h>
#import <CTXMAMContainment/CTXMAMContainment.h>
```

6. In the **AppDelegate.m** in your application `didFinishLaunchingWithOptions` add these calls:

```

- (BOOL)application:(UIApplication *)application didFinishLaunchingWithOptions:(NSDictionary*)launchOptions
{
    // Override point for customization after application launch.
    [CTXMAMCore initializeSDKs];

    [CTXMAMContainment setDelegate:self];

    return YES;
}

```

7. In your class register to the “**CTXMAMContainmentSdkDelegate**” protocol to change behavior in case of “**Location services disabled**” or “App is outside geofencing boundary”. For exiting behavior, please read Api docs.

Note: This delegate function are optional.

```

@interface ViewController : UIViewController <CTXMAMContainmentSdkDelegate>

- (void)viewDidLoad
{
    [super viewDidLoad];
    [CTXMAMContainment setDelegate:self];
}

- (void) appIsOutsideGeofencingBoundary
{
    // Your implementation goes here.
}

- (void) appNeedsLocationServicesEnabled
{
    // Your implementation goes here.
}

@end

```

8. If you want subscribe for notifications to receive any notification from the Containment SDK, source is “**CTXMAMNotificationSource_Containment**”.

```

@interface ViewController : UIViewController

- (void)viewDidLoad
{
    [super viewDidLoad];

    CTXMAMNotificationEventBlock notificationHandler = ^(CTXMAMNotification * _Nonnull notification)
    {
        //Do something with the notification
        if([[notification Source] isEqualToString:CTXMAMNotificationSource_Containment])
        {
            //Do something;
        }
    };

    [[CTXMAMNotificationCenter mainNotificationCenter] registerForNotificationsFromSource:
    CTXMAMNotificationSource_Containment usingNotificationBlock:notificationHandler];
}

@end

```

The above step will generate a .mdx package that can be uploaded to Citrix Endpoint Management (CEM). This package will have the following app policies for Containment SDK.

Policy	Value
Cut and copy	Unrestricted/Blocked/ Restricted
Paste in	Unrestricted/Blocked/ Restricted
Document exchange (Open In)	Unrestricted/Blocked
Restricted Open In exception list	String/Any Value
Inbound document exchange (Open In)	Unrestricted/Blocked
Inbound document exchange whitelist	String/Any Value
Block camera	True/False
Block Photo Library	True/False
Block mic record	True/False
Block location services	True/False
Block SMS compose	True/False
Block iCloud	True/False
Block look up	True/False
Block file backup	True/False
Block AirPrint	True/False
Block AirDrop	True/False
Block Facebook and Twitter APIs	True/False
Obscure screen contents	True/False
Block third-party keyboards (iOS 11+ only)	True/False
Center point longitude	String/Number value
Center point latitude	String/Number value
Radius	String/Number value
Mail Redirection	WorxMail/NativeMail/Blocked

Embedding your IPA file into the MDX file for publication on the CEM Server

1. Create you IPA by going thru the archiving process in Xcode.
2. Run the following command:

Embedding IPA File

```
export TOOLKIT_DIR="$PROJECT_DIR/../Tools"
export IPA_FILE_PATH="Provide IPA File Path"
export EXECUTABLE_NAME="Provide the name for your application's app folder."
#CONFIGURATION_BUILD_DIR comes from Xcode.

"$TOOLKIT_DIR/CGAppCLPrepTool" SetInfo -in "$CONFIGURATION_BUILD_DIR/$EXECUTABLE_NAME.mdx" -out
"$CONFIGURATION_BUILD_DIR/$EXECUTABLE_NAME.mdx" -embedBundle "${IPA_FILE_PATH}"
```

Extra Notes:

You are required to have icons set up for your app. In particular, your 60x60 icon (the 20x20@3x icon) must be in PNG format with the name "AppIcon60x60.png".

API Docs

CTXMAMContainmentSdkDelegate

```
@protocol CTXMAMContainmentSdkDelegate <NSObject>

@optional
/*!
 * @brief Method called when app geolocation is out of the bounds defined by the admin.
 * @discussion If the method is not implemented, the app is blocked, and an alert is shown stating that the app
 needs to be closed until the device meets the geofencing criteria. Otherwise, the method implemented by the app
 will be called when the current location of the device doesn't meet the boundary requirements.
 */
- (void) appIsOutsideGeofencingBoundary;

/*!
 * @brief Method called when location services are disabled.
 * @discussion If the method is not implemented, the app is blocked, and an alert is shown stating that the app
 needs to be closed until location services are enabled. Otherwise, the method implemented by the app will be
 called when location services are disabled.
 */
- (void) appNeedsLocationServicesEnabled;

@end

@interface CTXMAMContainment : NSObject

/*!
 * @brief Register a delegate to receive CTXMAMContainment SDK callbacks.
 */
+ (void) setDelegate: (id<CTXMAMContainmentSdkDelegate>) delegate;

@end
```