Oracle Banking Digital Experience

Mobile Application Builder – Android Release 17.2.0.0.0

Part No. E88573-01

July 2017



Mobile Application Builder – Android July 2017

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1. Preface

1.1 Intended Audience

This document is intended for the following audience:

- Customers
- Partners

1.2 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=accandid=docacc.

1.3 Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit

http://www.oracle.com/pls/topic/lookup?ctx=accandid=info or visit

http://www.oracle.com/pls/topic/lookup?ctx=accandid=trs if you are hearing impaired.

1.4 Structure

This manual is organized into the following categories:

Preface gives information on the intended audience. It also describes the overall structure of the User Manual.

The subsequent chapters describes following details:

- Prerequisites
- Configuration / Installation.

1.5 Related Information Sources

For more information on Oracle Banking Digital Experience Release 17.2.0.0.0, refer to the following documents:

• Oracle Banking Digital Experience Licensing Guide

2. **OBDX Servicing Application**

2.1 **Prerequisites**

Download and Install node Js a.

Install node is from https://nodejs.org

b. Download and Install Android Studio

Download and install Android Studio from https://developer.android.com/studio/index.html

Download and Install Android platforms C.

Update Android SDK to latest API Level.

d. Set Environment variables

Set following system variables:

1. NODEJS <nodejs_path> Example: "C:\Program Files\nodejs\".

Add the above variables in "PATH" system variable. 🚽 🎝 - 🙂) - n X 17-2_app_document_Final.docx - Microsoft Word 8 Home Insert Page Layout References Mailings Review 👌 🐰 Cut 🗿 Find 🔹 A Calibri (Body) - 11 - A AaB AaBbCc. AaBbCcDu X ab Replace Paste В *I* <u>U</u> → abe x, x² Aa → 🤣 Title Subtitle Subtle Em... Change Styles * I Format Painter Select 🕈 Clipboard Font User variables for MGARI Editing Variable Value ΡΔΤΗ C:\Users\MGARI\AppData\Roaming\npm %USERPROFILE%\AppData\Local\Temp TEMP тмр %USERPROFILE%\AppData\Local\Temp Ivanced System Protection Remote inistrator to make most of these changes ory usage, and virtual memory New User Variable Х Settings... NODEJS Variable <u>n</u>ame: C:\Program Files\nodejs Variable value: Browse File... OK Cancel Browse Directory... Settings... NUMBER_OF_PROCESSORS ind debugging infor OS Windows_NT Path C:\ProgramData\Oracle\Java\javapath;C:\app\MGARI\product\11.2.. Settings... PATHEXT .COM; EXE; .BAT; .CMD; .VBS; .VBE; .JS; .JSE; .WSF; .WSH; .MSC PERL5LIB Environment Variables... New... Edit... Delete OK Cancel Appl OK Cancel Page: 1 of 22 Words: 1,206 🕉 100% P 🗆 🔚 🌖 🤮 🧾 🧶 🐼 🌖 🖪 🐓 🎒 🖉 12:39 PN へ 恒 臣 (1) 尾 12:39 \pm

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2.2 Create project

1. Install cordova using the command

npm install -g cordova



a. If you face above error then set proxy using following commands on command line.
 npm config set proxy <provide your proxy value here>
 npm config set https-proxy <provide your proxy value here>





2. Create project using following command

cordova create <directory name> <package name> <project name>

Eg: cordova create zigbank com.ofss.zigbank ZigBank



3. All subsequent commands need to be run within the project's directory

cd <directory name>

Eg: cd zigbank

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Thanks for opting into telemetry to help us improve cordova. Creating a new cordova project.			
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4. Add platform android to the project using following command cordova platform add android



- 5. Extract OBDX_Installer.zip and perform the following steps
 - a. Copy and replace res directory from OBDX_Installer/installables/mobile/service/android into zigbank\platforms\android
 - b. Copy assets directory from OBDX_Installer/installables/mobile/service/android and paste it into zigbank\platforms\android
- 6. Import zigbank\platforms\android in android studio by clicking on Open an Existing Project.



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- 7. Open AndroidManifest.xml and make following changes
 - a. Change android:minSdkVersion to "21" and remove android:targetSdkVersion="25"
 - b. Add following permissions

```
<uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />
<uses-permission android:name="android.permission.USE_FINGERPRINT" />
<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
<uses-permission android:name="android.permission.READ_PHONE_STATE" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<uses-permission android:name="android.permission.RECEIVE_SMS" />
<uses-permission android:name="android.permission.RECEIVE_SMS" />
<uses-permission android:name="android.permission.READ_SMS" />
<uses-permission android:name="android.permission.READ_SMS" />
<uses-permission android:name="android.permission.READ_SMS" />
</uses-permission android:name="android.permission.READ_SMS" />
</uses
```



c. Add following provider inside <application> tag, Just before </application>

- d. Go to https://developer.android.com/training/safetynet/attestation.html#add-api-key and follow the steps to generate the api key. Once the key is ready, add the following to AndroidManifest.xml inside https://developer.android.com/training/safetynet/attestation.html#add-api-key and follow the steps to generate the api key. Once the key is ready, add the following to AndroidManifest.xml inside https://developer.android.com/training/safetynet/attestation.html#add-api-key and follow the steps to generate the api key. Once the key is ready, add the following to AndroidManifest.xml inside https://developer.android.com/training/safetynet/attestation.html#add-api-key and follow the steps to generate the api key. Once the key is ready, add the following to AndroidManifest.xml inside https://developer.android.com/training/safetynet/attestation.
- <meta-data android:name="com.google.android.safetynet.ATTEST_API_KEY" android:value="ENTER YOUR API KEY"/>

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- e. Delete index.html, css, js and img folders from zigbank\platforms\android\assets\www
- f. Go to build.gradle file for android project(Not for CordovaLib) and add the following to dependencies. Refer below screen shot.

```
compile 'com.squareup.okhttp3:okhttp:3.6.0'
               compile 'com.android.support:support-v4:25.3.0'
                compile 'com.google.code.gson:gson:2.8.0'
               compile 'com.google.android.gms:play-services-safetynet:10.2.1'
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                                  if (cdvDebugSigningPropertiesFile) {
addSigningProps(cdvDebugSigningPropertiesFile, signingConfigs.debug)
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                          dependencies
                                   compile fileTree(dir: 'libs', include: '*.jar')
                                  --weisite(urre(urr: libs', include: '*.jar')
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debugGospile(project(path: "Gordwallb', confugration: "debug"))
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// URD=ROATCD RESERVENCES EUD
compile 'com.android.support:support.v4:25.3.0'
compile 'com.android.support:support.v4:25.3.0'
compile 'com.android.gospile.com.gon(gan:2.8.0')
compile 'com.android.gospile.support.v4:25.3.0'
compile.support.
                          def promptForReleaseKeyPassword() {
    if (!cdvReleaseSigningPropertiesFile) {
                                           return;
                                   if ('__unset'.equals(android.signingConfigs.release.storePassword)) {
    android.signingConfigs.release.storePassword = privateRelpers.promptForPassword('Enter key store password: ')
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- g. Update application urls at location "android/assets/app.properties" file

- h. Copy & replace MainActivity.java and SplashActivity.java from OBDX_Installer/installables/mobile/service/android and paste it into zigbank\platforms\android\src\<your_package_name>
- Fix package name errors by changing it your package name. and making any imports if necessary in MainActivity.java and SplashActivity.java



j. Add the following to the AndroidManifest.xml after </activity> of MainActivity

```
<activity android:name=".SplashActivity"
android:configChanges="orientation|keyboardHidden|keyboard|screenSize|locale"
android:label="@string/activity_name"
android:launchMode="singleTop"
android:theme="@style/SplashTheme"
android:windowSoftInputMode="adjustResize">
<intent-filter android:label="@string/launcher_name">
<action android:label="@string/launcher_name">
<action android:label="@string/launcher_name">
<action android:name="android.intent.action.MAIN" />
<category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
```



k. In Android studio open AndroidManifest.xml and remove from <activity> tag of MainActivity as shown in the screen shot.





I. Delete org folder from Zigbank/platforms/android/src

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2.3 Adding Custom Library:

1. Go File -> New -> New Module -> Import .JAR/.AAR package and click Next.



2. In file name text box, navigate to **OBDX_Installer/installables/mobile/service/android** and select app-release.aar

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3. Enter Sub project name as "ObdxLib"

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- 4. Click Finish
- 5. Go to build.gradle of android project -> search for dependencies -> add

compile project(":ObdxLib") -→ Refer Screenshot.

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- 6. Build the UI from channel by running following commands on command line/terminal
 - a. Add "image_base_path_css":"../../images", to OBDX_Installer/installables/ui/channel/_build/ mobile_properties.json

Note: Please notice the comma at the end.



b. For OAM based Authentication

```
npm install -g grunt-cli
npm install
node render-requirejs/render-requirejs.js
grunt androidbuild
```

For Non-OAM based Authentication

```
npm install -g grunt-cli
npm install
node render-requirejs/render-requirejs.js
grunt androidbuild-nonoam
```

 Copy the ui generated in dist folder (components, corporate, framework, images, index, pages, partials, resources, retail, index.html, manifest.jason, sw.js) inside channel to zigbank\platforms\android\assets\www

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8. Copy and paste proguard-rules.pro from OBDX_Installer/installables/mobile/service/android into zigbank\platforms\android using explorer.

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9. In Android Studio, on the menu bar Click on Build -> Edit Build Types -> select release

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10.Set Minify Enabled -> True & click on Proguard File selection -> Navigate to proguardrules.pro file copied and pasted in step 8

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Click on OK -> again click on OK

- 11. For Generating Signed Apk: To Generate release-signed apk as follows:
 - a. On menu bar click on Build -> Generate Signed Apk
 - b. If you have an existing keystore.jks file then select choose **Existing** else click on **Create New**

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Favo	🖬 project.properties	121		1	Hidow.Filewriter	Ĩ.
Ni A	settings.gradle	122	6 1			10de
*	Wrapper.gradle	123	b 1			£
🖷 🤹	§: Android Monitor 🛛 🧮 🛿: Message	s 🗵 Ten	minal	TODO		📿 Event Log 🔳 Gradle Console
🔲 Grad	dle build finished in 13s 657ms (52 mi	nutes ago)			73:10) CRLF‡ UTF-8‡ Context: < no context> 🛚 🚡
4	А П 🤗 📒	A	0	⊳∕	📗 📼 🚳 🛜 😔 🗶 📠 🛷 🛤 🔼 💉 🔳	へ 📼 🖽 🕼 3:15 PM

c. Select **Build Type** as **Release**, **Signature Version as V2(Full APK Signature)** and Change APK Destination folder if you want and click on Finish

۰	android - [C:\Users\vpenta\Desktop\17.2 d	locumentaion	n\demo app\zigba	ink\platforms\android] - android - Android Studio 2.3.3	o ×
Eile	Edit View Navigate Code Analyze	<u>R</u> efactor	Build Run Ioo	Is VC <u>S W</u> indow Help	
	H 🖸 🛩 🔶 🔏 🛅 🗖	ଛ ◆ ⇒	> 🔨 🔚 andre	oid 🛫 🕨 4 🕸 🕼 🖬 🖳 🧟 🖙 🤽 ?	Q, [1]
	android) 💽 build.gradle)				
g	🗊 Project 🔹 😨 幸 🖗	C SplashA	Activity.java ×	🖟 gradle.properties 🗴 🕐 android 🗴 🔓 project.properties 🗴 🔓 local.properties 🗴 🙆 login-form-bindings.js 🗴 🗟 cordova_plugins.js 🗴 🗃 json.js	5 × →≡2 📀
riants 💿 Captures 📢]: Structure 📴]: Proje	Pugins Pipugins Pi	293 294 C 295 295 295 299 299 300 C 303 301 302 C 303 304 C 305 C 309 C 309 C 309 C 309 C 310 C 311 C 312 313 C	<pre>throw igningC igningC igningC def store if (istore if (istore))))))))))))))))))))))))))))))))))))</pre>	v new FileNotFoundException('Keystore file does not exist: ' + storeFile.getAbsolutePath()) nfig.keyPassword = props.get('key.alias') friveteBelbers.eenuxeYaluEExists(propFilePath, props, 'keyAlias') nfig.keyPassword = props.get('key.alias.password', signingConfig.keyPassword)) © GenerateSigned APK Note:Proguast settings are specified using the Project Structure Dialog APK Destination Folder: _pp\172 documentaion/demo applzigbank/platforms\android _ Build Type: Elevors: No product flavon defined Signature Versions: Ut I (Jar Signature) Z V2 (Full <u>A</u> PK Signature) <u>Signature Help</u>	Grade
Id Var	build.gradle	316	// ext.po if (basProper	rry('nostBuildExtras')) /	
🗰 2: Favorites 🛛 👘 Buil	gradie.properties gradiew.bat Gradiew.bat Gradiew.bat Gradiew.bat proguard-rules.pro project.properties Froject.properties Fro	318 319 È 320	postBuild	Extras()	Android Model
	🐳 🕼 Android Monitor 🛛 🧮 🕼 Message	s 📧 Termin	inal 🔮 TODO	4 Event Log 🔳 Grad	lle Console
	Executing tasks: [:assembleRelease] (mon	nents ago)		🤿 Gradle Build Running 🛛 🕢 🐼 🖓 🐼 🖓 🐼 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓	xt> 🔓 🕀
1	A 🛛 🤤 🥫	A		235 🙊 🛌 🚳 👳 2 🗱 🖳 🛷 👫 📙 📭 👘 359	PM

12. This will generate **release-signed.apk** in the Given APK Destination folder. Default APK Destination folder is

zigbank\platforms\android\ build\outputs\apk

3. OBDX Authenticator Application

3.1 Building Authenticator UI

1. Extract OBDX_Installer.zip and go to **OBDX_Installer/installables/mobile/authenticator/ui**. The folder structure is as shown:

Name	Date modified	Туре	Size	
🤞 _build	7/21/2017 1:15 PM	File folder		
🥏 components	7/14/2017 5:04 PM	File folder		
🥏 css	7/14/2017 5:04 PM	File folder		
🥏 framework	7/14/2017 5:04 PM	File folder		
🥏 images	7/14/2017 5:04 PM	File folder		
🥏 ios	7/14/2017 5:04 PM	File folder		
🕏 non-oam	7/21/2017 4:54 PM	File folder		
🥏 pages	7/14/2017 5:04 PM	File folder		
👼 resources	7/14/2017 5:04 PM	File folder		

2. Build UI based on selected Authentication mechanism.

a. OAM based Authentication

- 1. Open command prompt at "OBDX_Installer/installables/mobile/authenticator/ui /_build" level.
- 2. Run following command :

```
npm install -g grunt-cli
```

npm install

node render-requirejs/render-requirejs.js

grunt authenticator --verbose

3. After running above commands and getting result as "Done, without errors." a new folder will be created in "ui" with name as "dist".

Select C\Windows\System32\cmd.exe	-	٥	×
D:\172AppBuild\Authenticator\ui_build>node render-requirejs/render-requirejs © requirejs file rendered successfully!			î
D:\172AppBuild\Authenticator\ui_build> <mark>grunt authentiCator</mark> Grunt and task output will also be logged to "./build_logs/grunt_log.txt"			
Running "clean:preBuildCleanUp" (clean) task >> 0 paths cleaned.			
Running "copy:main" (copy) task Created 124 directories, copied 200 files			
Running "sass:dist" (sass) task			
Running "htmlmin:min" (htmlmin) task Minified 16 files			
Running "inlinecss:main" (inlinecss) task >> src must be a single string			
Running "uglify:updatedBuild" (uglify) task >> 42 files created 192.22 kB - 75.22 kB			
Running "string-replace:genericReplacements" (string-replace) task			
2 files created			
Running "require" task			
Running "requirejs:compile" (requirejs) task			
Running "clean:postBuildCleanUp" (clean) task >> 20 paths cleaned.			
Running "authenticator-tasks" task authenticator build tasks loaded			
Running "add-cordova" task			
Done, without errors.			
Execution Time (2017-07-25 19:04:02 UTC+5:30) loading tasks 1m 29.3s copy:main 29.4s 23%			~
. =	= =	7:06	PM

b. NON-OAM Based Authentication

- 1. Copy "non-oam/android/login" folder and paste it at location "components/modules" location. This will replace existing "login" folder.
- 2. Open command prompt at "_build" level.
- 3. Run following command :

```
npm install -g grunt-cli
npm install
node render-requirejs/render-requirejs.js
grunt authenticator --verbose
```

4. After running above commands and getting result as "Done, without errors." a new folder will be created in "ui" folder with name as "dist".

C:\WINDOWS\system32\cmd.exe				-	×
Running "add-cordova" task Reading/dist/framework/js/pages/r Writing/dist/framework/js/pages/r	require-co require-co	nfig.js. nfig.js.			^
Done, without errors.					
Execution Time (2017-07-21 13:12:29	UTC+5:30)				
loading tasks					
clean:preBuildCleanUp					
copy:main					
sass:dist					
htmlmin:min					
inlinecss:main					
uglify:updatedBuild					
<pre>string-replace:genericReplacements</pre>					
require					
requirejs:compile					
clean:postBuildCleanUp					
authenticator-tasks					
add-cordova Total 2m 42.4s					

Name	Date modified	Туре	Size
🥏 _build	7/21/2017 5:14 PM	File folder	
🦻 components	7/14/2017 5:04 PM	File folder	
🥏 css	7/14/2017 5:04 PM	File folder	
📕 dist	7/21/2017 5:14 PM	File folder	
🦻 framework	7/14/2017 5:04 PM	File folder	
🥏 images	7/14/2017 5:04 PM	File folder	
🥏 ios	7/14/2017 5:04 PM	File folder	
🥏 non-oam	7/21/2017 4:54 PM	File folder	
🦻 pages	7/14/2017 5:04 PM	File folder	
🦻 resources	7/14/2017 5:04 PM	File folder	

3.2 Authenticator Application Workspace Setup

1. Extract OBDX_Installer.zip. It contains "OBDX_Installer/installables/mobile/authenticator" folder.



2. Open OBDX_Installer/installables/mobile/authenticator/android folder in Android Studio.



3. Open gradle.properties file and update following properties with relevant proxy address



```
systemProp.http.proxyHost = <proxy_address>
systemProp.https.proxyPort = <port_number>
systemProp.https.proxyHost = <proxy_address>
systemProp.http.proxyPort = <port_number>
```

4. Open "assets app. properties" file and update following properties as per requirement



connection_timeout = <timeout_in_milliseconds>
ssl_pinning_enabled = <YES or NO>
shared_server_url = <server_url>
shared_oam_url = <oam_url>
otp_type = <hotp or totp>



Note: If selected authentication mechanism is not OAM based then remove "*shared_oam_url*" property.

5. Delete "assets/www/css" folder.

Ð	android - [D:\172AppBuild\Authenticator\android] - [an	roid]\assets\app.properties - Android Studio 2.3.3	- 0 X
<u>F</u> ile	Edit View Navigate Code Analyze Refactor Build	Run Iools VCS Window Help	
	H 🖉 🛩 🖈 🗶 🛅 🗖 🔍 🗶 💠 🕏	🔨 🖙 android 🛛 🕨 🧍 🙀 📕 👢 🧕 📬 💺 ?	Q, 🔲
~	Project ▼ ③ ÷ 幸・!*	a gradle.properties × a app.properties ×	0
诸 1: Projec	Gandroid D:\172AppBuild\Authenticator\android Gandroid Gandle Gandle	<pre>1 # This file contains all the app level configurations. 2 connection_timeout=1500 3 ssl_ptning_enable47es 4 shared_server_url=http://llld37c2.ngrok.io</pre>	Gradie
ture	V La assets	5 shared_oam_url=http://c0463ae2.ngrok.io	
📢 Z: Strud	 www cordova-js-src css 	0 0.0 ⁻¹ .17ee10.05	
Captures	 E ing E plugins cordova js cordova "plugins.js settings.html app.propettes cert_keys.json 	Delete X Delete X Delete Delete Delete Delete Cancel	
ints 🔰 2: Favorites			**
🌵 Build Varia		@ TOPO Q Event Log	Gradie Console
	Gradle build finished in 3s 620ms (2 minutes ago)	6:14 CRLF\$ windows-1252 Context: <r< td=""><td>io context> 🚡 🖶 🔵</td></r<>	io context> 🚡 🖶 🔵
	E P 🗆 🚍 🤤 🧯	• 🐼 # 🦛 🖻 👧 🗞 🕷 🗸 👘 🔺 🦛 •	7:20 PM 7/25/2017

6. Copy generated UI files from "OBDX_Installer/installables/mobile/authenticator/ui/dist" folder.

File Home Share View															\sim
>	(D:) > 172AppBuild	> Authenticat	or > ui > d	list ≯									νŪ	Search dist	م
📌 Quick access	Nan	ne	^		C	Date modified		Туре		Size					
This PC		components			7	/25/2017 7:06	5 PM	File folder							
- Darkton	[] [ISS			7	/25/2017 7:06	5 PM	File folder							
Desktop	🗹 📜 f	ramework			7	/25/2017 7:00	5 PM	File folder							
11 Documents	🗹 📜 i	mages			7	/25/2017 7:06	5 PM	File folder							
Downloads	📜 i	os			7	/25/2017 7:06	5 PM	File folder							
Dusic 🐌 Music	📜 r	non-oam			7	/25/2017 7:06	5 PM	File folder							
🔚 Pictures	🗹 📜 ı	oages			7	/25/2017 7:06	5 PM	File folder							
🔚 Videos	🗹 📜 r	esources			7	/25/2017 7:06	5 PM	File folder							
System (C:)	🗎 t	ouild.txt			7	/25/2017 7:06	5 PM	Text Documen	it		9 KB				
Data (D:)															
🐂 Libraries															
Documents															
e: Git															
h Marsia															
S Pictures															
🐗 Subversion															
I Videos															
🧼 Network															
															BEE .

- 7. Copy following folders:
- components
- CSS
- framework
- images
- pages
- resources
- 8. Paste copied folders at location "OBDX_Installer/installables/mobile/authenticator /android/assets/www"

• Quick access	Name ^	Date modified	T In PC > Uata (UC) > 1/2AppBuild > Authenticator > android > assets > www >											
This PC		o ate mounieu	Туре	Size										
	Components	7/25/2017 7:22 PM	File folder											
- Deskton	cordova-js-src	7/25/2017 6:57 PM	File folder											
Desktop	🗹 📕 css	7/25/2017 7:22 PM	File folder											
Documents	✓ ³ framework	7/25/2017 7:22 PM	File folder											
Downloads	✓ images	7/25/2017 7:22 PM	File folder											
Music	img	7/25/2017 6:57 PM	File folder											
E Pictures	Dages	7/25/2017 7:22 PM	File folder											
Videos	plugins	7/25/2017 6:57 PM	File folder											
System (C:)	resources	7/25/2017 7:22 PM	File folder											
Data (D:)	cordova.js	7/24/2017 4:37 PM	JS File	70 KB										
	cordova_plugins.js	7/24/2017 4:37 PM	JS File	2 KB										
Libraries	settings.html	7/24/2017 4:37 PM	Chrome HTML Docu	7 KB										
Documents														
💕 Git														
🕹 Music														
🛼 Pictures														
at Subversion														
Videos														
Network														

9. To update Application name change string "app_name" value located in "OBDX_Installer/installables/mobile/authenticator/res/values/strings.xml" file in Andriod Studio.

Projec	t v ⊕ ‡ \$* [~	🙆 strings	xml ×		۲
Þ	🔁 drawable-port-xxxhdpi	Edit trans	lations for all locales in the translations editor. Open edit	or Hide notification	Grad
	drawable-xhdpi				
	🔁 layout		resources		
▶	💼 mipmap-hdpi	1	xml version='1.0' encoding='utf-8'?		-
▶	🔁 mipmap-ldpi	2	<resources></resources>		
I ►	i minman-mdni	3	<pre>\$ string name="app_name">OBDX Secure </pre>		
	i minman-yhdni	4	<string name="launcher_name">@string/app_name</string>		
		5	<string name="activity_name">@string/launcher_name</string>		
P	mipmap-xxhdpi	6			
► ►	mipmap-xxxhdpi	7	<string name="dialog_positive_button">Yes</string>		
	values	8	<pre><string name="dialog_negative_button">No</string></pre>	-	-
	strings.xml	9	<string name="dialog_neutral_button"><mark>Ok</mark></string>		
	styles.xml	10	<string name="dialog_header_error">Error</string>		
▶	💷 xml	11			

10.To update Application icon update icons in respective "mipmap" folders in Android Studio.

🗊 Project	• •	⊕≑‡+
v 🗖	res	
►	💼 drawable	
	🛅 drawable-hdpi	
	🛅 drawable-land-hdpi	
	🛅 drawable-land-ldpi	
	🛅 drawable-land-mdpi	
►	🛅 drawable-land-xhdpi	
►	🛅 drawable-land-xxhdpi	
►	🛅 drawable-land-xxxhdpi	
	🛅 drawable-Idpi	
	🛅 drawable-mdpi	
	🛅 drawable-port-hdpi	
	🛅 drawable-port-ldpi	
	🛅 drawable-port-mdpi	
►	🛅 drawable-port-xhdpi	
►	🛅 drawable-port-xxhdpi	
►	🛅 drawable-port-xxxhdpi	
	🛅 drawable-xhdpi	
	🛅 layout	
T	🛅 mipmap-hdpi	
	icon.png	
►	🛅 mipmap-ldpi	
►	🛅 mipmap-mdpi	

11.To change splash screen image update "splash_image.png" file in respective "drawable" folders.



12. Change android:minSdkVersion to "21"



13. To change application package name, update package name in AndroidManifest.xml file.

Project ▼ 🕀 ≑ 🏘 🖈 🖿	Real Android Manifest.xml ×
icon.png	manifest
🕨 🛅 mipmap-xxhdpi	1 <2xml version="1.0" encoding="utf-8"2>
🕨 🛅 mipmap-xxxhdpi	2 <manifest <="" td="" xmlns:android="http://schemas.android.com/apk/res/android"></manifest>
values	3 package="com.ofss.digx.mobile.authenticator"
Strings.xml	4 android:hardwareAccelerated="true"
styles.xml	5 android:versionCode="10000"
Image: Second	6 android:versionName="1.0.0">
Transformed and the second	7
workspace	8 - <uses-sdk< td=""></uses-sdk<>
android.iml	android:minsdkversion="19"
android ison	
AndroidManifest xml	12 Supports-screens
authenticator iml	13 android:anyDensity="true"
build gradle	14 android:largeScreens="true"
	15 android:normalScreens="true"
	16 android:resizeable="true"
	17 android:smallScreens="true"
gradlew.bat	18 android:xlargeScreens="true" />
2 keystore.jks	19

14.Go to <u>https://developer.android.com/training/safetynet/attestation.html#add-api-key</u> and follow the steps to generate the api key. Once the key is ready, add the following to AndroidManifest.xml inside <application> tag

<meta-data android:name="com.google.android.safetynet.ATTEST_API_KEY" android:value="ENTER_YOUR_API_KEY"/>



3.3 Building Authenticator Application

a. Debug build - To debug Issues

1. Delete existing

"OBDX_Installer/installables/mobile/authenticator/android/res/xml/config.xml" file.

2. Rename

"OBDX_Installer/installables/mobile/authenticator/android/res/xml/config_debug.x ml" file as "config.xml"

- 3. Delete "OBDX_Installer/installables/mobile/authenticator/android/build" folder if it already exists.
- 4. Open command prompt at "authenticator" folder level.
- 5. Run following command

gradlew assembleDebug



6. After getting message "BUILD SUCCESSFUL" debug apk is generated at path "OBDX_Installer/installables/mobile/authenticator/android/build\outputs\apk\authe nticator-debug.apk".

🗸 🧿 authenticator	^	Name	Date modified	Туре	Size
> 📙 .gradle		authenticator-debug.apk	7/21/2017 3:25 PM	APK File	1,741 KB
> 📙 .idea					
🗸 🧿 assets					
> 🧿 www					
🗸 📙 build					
📕 android-profile					
> 📙 generated					
> 📙 intermediates					
🗸 📙 outputs					
📕 apk					
📕 logs					
> 📙 mapping					
reports					
> 📙 tmp					
> 🤞 cordova					

b. RELEASE build - For Release

- Delete existing "OBDX_Installer/installables/mobile/authenticator/ android/res/xml/config.xml" file.
- 2. Rename

"OBDX_Installer/installables/mobile/authenticator/android/res/xml/config_release. xml" file as "config.xml"

3. Replace "OBDX_Installer/installables/mobile/authenticator/android/keystore.jks" with your own keystore.

To generate key and keystore refer android developer site at location:

https://developer.android.com/studio/publish/app-signing.html#generate-key

= 👳 Android Studio		FEATURES USER GUIDE PREVIEW		Q Se	Q Search		
← User Guide		Generate a key and keystore					
Debug Your App	~	You can generate an app signing or upload key using Android Studio, using the following steps:					
Test Your App	~	1. In the menu bar, click Build > Generate Signed APK .					
Profile Your App	~	2. Select a module from the drop down, and click Next.					
Publish Your App	^	3. Click Create new to create a new key and keystore.					
Prepare for Release		 On the New Key Store window, provide the following information for your keystore and key, as shown in figure 3. Keystore 					
Version Your App		 Key store nath: Select the location where your keystore 	• • •	New Key Store			
Sign Your App		should be created.	Rey store path: /home Password:	e/user/keystores/android	.jks		
Command Line Tools	~	 Password: Create and confirm a secure password for your keystore. 	Key Alias: My	/AndroidKey			
Release Notes	~	Key	Password: ••• Validity (years):	Con	firm: •••••		
Troubleshoot		• Alias: Enter an identifying name for your key.	Certificate First and Last Name	E FirstName LastName			

4. Open "authenticator/keystore.properties file and update following properties

```
storePassword=<keystore_password>
keyPassword=<key_password>
keyAlias=<alias_for_key>
storeFile=<keystore_file_name>
```

5. Update proguard rules file located at "authenticator/proguard-rules.pro" to change package name with one provided in AndroidManifest.xml file.

Project ▼ 😯 🚔 🏘 🗜	🙀 Android Manifest xml × 📄 proguard-rules.pro ×
 mipmap-xxxbdpi mipmap-xxxbdpi 	88 @android.support.annotation.Keep <init>();</init>
values	89 }
🧕 strings.xml	<pre>90 -keep class com.ofss.digx.mobile.authenticator.** { *; }</pre>
styles.xml	<pre>91 -keep class com.ofss.digx.mobile.authenticator.dto.** { *; }</pre>
Image: Second	92 -keep class okhttp3.** { *; }
Src	<pre>93 -keep interface oknttp3.** { *; } 94 -keep class * owtends org apache cordeva Cordeva Divgin</pre>
workspace	95 -keep class org.apache.cordova.** {
android.iml	96 *;
android.json	97 }
AndroidManifest.xml	<pre>98 -keep class adobe.phonegap.fetch.** {*;}</pre>
authenticator.iml	99 -keep public class * extends org.apache.cordova.CordovaPlugin
o build.gradle	100 -dontwarn okhttp3.**
aradle.properties	101 -dontwarn okio.*
gradlew	103 #Stopping from obfuscating DeviceComplianc
gradlew.bat	<pre>104 -keep class com.google.android.gms.** { *; }</pre>
keystore.jks	<pre>105 -keep class com.google.gson.** { *; }</pre>
keystore.properties	106
local.properties	107
proguard-rules.pro	108
noject.properties	
settings.gradle	
-	

- 6. Open command prompt at "OBDX_Installer/installables/mobile/authenticator/android/" folder level.
- 7. Open build.gradle of Cordova Lib and add jcenter() to repositories as shown in the screen shot.



8. Run following command

gradlew assembleRelease

Select C:\WINDOWS\system32\cmd.exe X _ D:\mobile_svn\android\authenticator≻<mark>gradle assembleRelease</mark> 'gradle' is not recognized as an internal or external command, operable program or batch file. D:\mobile_svn\android\authenticator>gradlew assembleRelease NDK is missing a "platforms" directory.**ject** If you are using NDK, verify the ndk.dir is set to a valid NDK directory. It is currently set to D:\Softwares\AndroidSD K\sdk\sdk\ndk-bundle. If you are not using NDK, unset the NDK variable from ANDROID_NDK_HOME or local.properties to remove this warning. The Task.leftShift(Closure) method has been deprecated and is scheduled to be removed in Gradle 5.0. Please use Task.dol ast(Action) instead at build_4dnboh5w6aqrrk32cadizoefs.run(D:\mobile_svn\android\authenticator\build.gradle:137) at bulld_4dnbonswbaqrrK32cadl2cets.run(U:\mobile_svn\android\authenticator\bulld.gradle:13/) Observed package id 'add-ons;addon-google_apis-google-19' in inconsistent location 'D:\Softwares\AndroidSDK\sdk\add-ons\addon-google_apis-google-19-1' (Expected 'D:\Softwares\AndroidSDK\sdk\add\cons\addon-google_apis-google-19') Already observed package id 'add-ons;addon-google_apis-google-19' in 'D:\Softwares\AndroidSDK\sdk\sdk\add-ons\addon-googl e_apis-google-19'. Skipping duplicate at 'D:\Softwares\AndroidSDK\sdk\sdk\add-ons\addon-google_apis-google-19-1' NDK is missing a "platforms" directory.g dependencies ':_debugApk' > :CordovaLib > Resolving dependencies ':CordovaLib: If you are using NDK, verify the ndk.dir is set to a valid NDK directory. It is currently set to D:\Softwares\AndroidSD <\sdk\sdk\ndk-bundle. If you are not using NDK, unset the NDK variable from ANDROID_NDK_HOME or local.properties to remove this warning. Incremental java compilation is an incubating feature. preBuild UF extractProguardFiles preReleaseBuild checkReleaseManifest

> After getting message "BUILD SUCCESSFUL" release apk is generated at path "OBDX_Installer/installables/mobile/authenticator/android/build\outputs\apk\authenticator-release.apk".

🗸 🧿 authenticator	^	Name	Date modified	Туре	Size	
> 📙 .gradle		authenticator-release.apk	7/21/2017 3:53 PM	APK File	1,103 KB	
> 📜 .idea						
🗸 🧿 assets						
> 🧿 www						
🗸 📙 build						
android-profile						
> 📜 generated						
> 📜 intermediates						
🗸 📙 outputs						
📜 apk						
📒 logs						
> 📙 mapping						

10. To generate release signed apk :

- i. On menu bar click on Build -> Generate Signed Apk
- ii. If you have an existing keystore.jks file then select choose Existing else click on Create New



Select Build Type as Release, Signature Version as V2(Full APK Signature) and Change APK Destination folder if you want and click on Finish.



This will generate release-signed.apk in the Given APK Destination folder. Default APK Destination folder is OBDX_Installer/installables/mobile/authenticator/android\platforms\android\ build\outputs\apk