Mobile Application Builder-Android Guide Oracle Banking Digital Experience Patchset Release 22.2.1.0.0

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ORACLE

Mobile Application Builder-Android Guide May 2023

Oracle Financial Services Software Limited Oracle Park Off Western Express Highway Goregaon (East) Mumbai, Maharashtra 400 063 India Worldwide Inquiries: Phone: +91 22 6718 3000 Fax:+91 22 6718 3001

www.oracle.com/financialservices/

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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=acc&id=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=acc&id=info or visit

http://www.oracle.com/pls/topic/lookup?ctx=acc&id=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:

- Introduction
- Preferences & Database
- Configuration / Installation.

1.5 <u>Related Information Sources</u>

For more information on Oracle Banking Digital Experience Patchset Release 22.2.1.0.0, refer to the following documents:

Oracle Banking Digital Experience Installation Manuals



2. OBDX Servicing Application

2.1 **Prerequisites**

OBDX Android App is supported only on versions n (current) and n-1 release.

- a. Download and Install node Js (will be downloaded to default path)
- b. Install node js from https://nodejs.org
- c. DOWNLOAD AND INSTALL ANDROID STUDIO
- d. Download and install Android Studio from https://developer.android.com/studio/index.html
- e. Download and Install Android platforms
- f. Update Android SDK to latest API Level.
- g. Gradle Version: gradle-4.6
- h. Android Gradle Plugin Version (3.4.0): 'com.android.tools.build:gradle:3.4.0' or above
- i. Set Environment variables
- j. Set following system variables:
 - 1. Click on Windows key and type Environment Variables.
 - 2. A dialog box will appear. Click on the Environment Variables button as shown below

System Properties	\times
Computer Name Hardware Advanced System Protection Remote	
You must be logged on as an Administrator to make most of these changes Performance Visual effects, processor scheduling, memory usage, and virtual memory <u>Settings</u>	5.
User Profiles Desktop settings related to your sign-in S <u>e</u> ttings	
Startup and Recovery System startup, system failure, and debugging information Settings	
Environment Variables	
OK Cancel Appl	у

- 3. NODEJS <nodejs_path> Example: "C:\Program Files\nodejs\".
- k. Add the above variables in "PATH" system variable.



OBDX Servicing Application

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		Settings
	Variable name: NODEJS	Touristic
	Variable value: C:\Program Files\nodejs	
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	Browse Directory Browse File OK Cancel	I Settings
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In 20.1, you can create app in two ways-using local UI or using remote UI (if want to create using remote go to section **Create project using Remote UI2.2** else directly to section **Local UI**)



2.2 Create project using Remote UI

a. Index.html changes(use Android Studio or any other editor)

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- 1. In var server_url ,put the same KEY_SERVER_URL to be used in app.properties.xml
- 2. In workspace create a copy of index.html in the same folder and rename it to home.html. In index.html/home.html in workspace update jet_url = "<u>https://static.oracle.com/cdn</u>"
- 3. On the server side where UI is deployed in framework/js/configurations/config.js set Jet "baseUr1" as <u>https://static.oracle.com/cdn/jet</u>

After this proceed to **2.4 Importing in Android Studio** directly.

2.3 Local UI

2.3.1 Adding UI to workspace

Use any 1 option below of a/b

- Building un-built UI (required in case of customizations)
 (UI is same for internet and mobile, same build process of internet to be followed)
- b. Using built UI (out of box shipped with installer)

Available at --

OBDX_Installer/installables/ui/deploy (Main release, OBDX installer), OBDX_Patch_Installer/installables/ui/deploy (Patchsets)

• Create a copy of index.html in the same folder and rename it to home.html.



• Copy folders(components,extensions,framework,images,flows,lzn,home.html ,partials,resource, index.html,build.fingerprint) to workspace (platforms/android/app/android/app/src/main/assets/www/)

Note: When copying to www, index.html already present in the workspace should be replaced)

Ensure webhelp folder is not copied.

Download oraclejet-x.y.source zip file

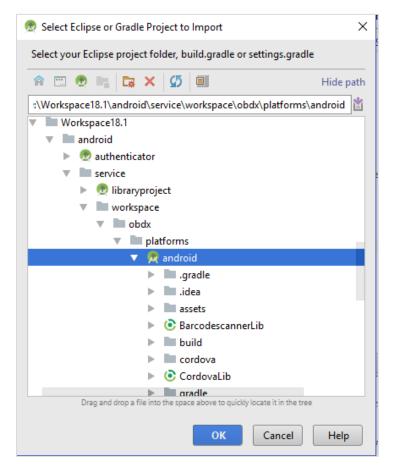
x.y refer to the version of Oracle JET used

- 1. Unzip & copy js & css folders to workspace as below
 - a. assets\www\framework\js\libs\oraclejet\x.y.0\js
 - b. assets\www\framework\js\libs\oraclejet\x.y.0\css
- 2. In config.js update values as highlighted below
 - a. {hostedAt:"local",baseUrl:"framework/js/libs/oraclejet"
- 3. In index.html update require.js path
 - a. framework/js/libs/oraclejet/x.y.0/js/libs/require/require.js

2.4 Importing in Android Studio

Open Android Studio

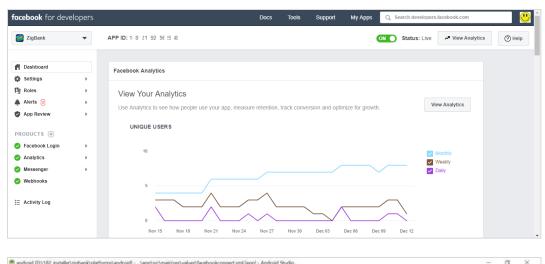
1. Import zigbank/platforms/android in android studio by clicking on Open an Existing Project.

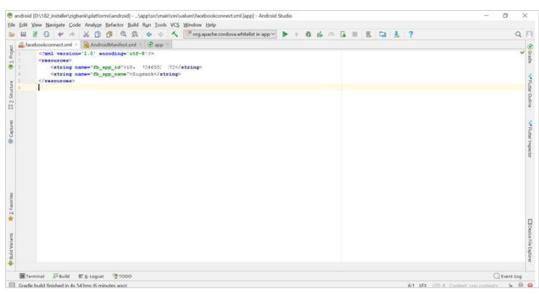


- 2. For Adding Facebook (Required for social payments only)
 - a. Open facebookconnect.xml
 - b. Replace FB_APP_ID with your fb app id generated from facebook developer console
 - c. Replace FB_APP_NAME with the App name

As shown below









2.5 <u>Widget Functionality</u>

Wigets are Android native feature. Below widgets are vailable in the application

- 1. All Accounts Widgets Widget, showing all accounts balances & account numbers.
- 2. Account Details Widget Widget, showing account balance of default account and last 5 transactions of the same account, can be added to the phone home screen. If default account is not set, then the details of the account fetched first is shown.
- Multi-Functional Widget Widget showing default account balance. If default account is not present, it shows details of account fetched first. Additionally, it has option to scan to pay feature
- 4. Scan to Pay Widget Widget which allows to scan to pay.

Prerequisite :

Quick Snapshot feature needs to be enabled in the app. Please enable below property in app.properties file <bool name="ENABLE_WIDGET">true</bool>

2.6 Scan to Pay from Application Icon –

Users can long press on bank's application icon on home screen and click on scan-to-pay option to scan QR and make payments.

To enable this feature uncomment below from app's AndroidManifest.xml

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2.6 Scan Card using Augmented Reality

Users can scan card and view account details and transactions of the account associated with the card.

To enable this feature do the same step which is mentioned on 2.6 section.

2.7 Passkey (Passwordless login)

Passkeys are a safer and easier replacement for passwords. With passkeys, users can sign in to apps and websites using a biometric sensor (such as a fingerprint or facial recognition), PIN, or pattern. This provides a seamless sign-in experience, freeing your users from having to remember usernames or passwords.

Passkeys are supported only on devices that run Android 9 (API level 28) or higher

To disable this option – By doing this, user will not be able to register for passkey and also will not be able to login using passkey. Follow below steps:

a. Remove RTM access from Client Servicing -> Authentication - > Passkey Setup for Mobile Application/Mobile (Responsive)/Internet touch points

Passkey Setup

b. Set this flag in channel-framework-js-configurations-config..js to false

thirdPartyAPIs -> passkey -> required -> false

Server-Side Setup:

1. Update the application-prod.properties file

Set the "Relying Part" in authn.hostname field

Set the origin in authn.origin field

2. Note – Relying partId is the domain name if the website to which credentials will be associated. (Eg google.com, example.com etc)

Relying party origin is the relying party of website prefixed with protocol without the port.

(E,g, <u>https://google.com</u>, https://example.com)

a) Create assetlinks file (assetlinks.json) A Digital Asset Links JSON file must be published on your website to indicate the Android apps that are associated with the website and verify the app's URL intents.

The following example assetlinks.json file grants link-opening rights to a com.example Android app:



[{

```
"relation": ["delegate_permission/common.handle_all_urls"],
```

"target": {

"namespace": "android_app",

"package_name": "com.example",

```
"sha256_cert_fingerprints":["14:6D:E9:83:C5:73:06:50:D8:EE:B9:95:2F:34:FC:64:16:A0:8
3:42:E6:1D:BE:A8:8A:04:96:B2:3F:CF:44:E5"]
```

```
}
```

}]

The JSON file uses the following fields to identify associated apps:

package_name: The application ID declared in the app's build.gradle file. sha256_cert_fingerprints: The SHA256 fingerprints of your app's signing certificate. You can use the following command to generate the fingerprint via the Java keytool:

keytool -list -v -keystore my-release-key.keystore

b) Publish assestlinks.json file-

This file needs to be on https server with valid SSL certificate

You must publish your JSON verification file at the following location:

https://domain.name/.well-known/assetlinks.json

For example, if your sign-in domain is signin.example.com, host the JSON file at https://signin.example.com/.well-known/assetlinks.json.

The MIME type for the Digital Assets Link file needs to be JSON. Make sure the server sends a Content-Type: application/json header in the response.

Need to change host and port in Obdx.conf as,

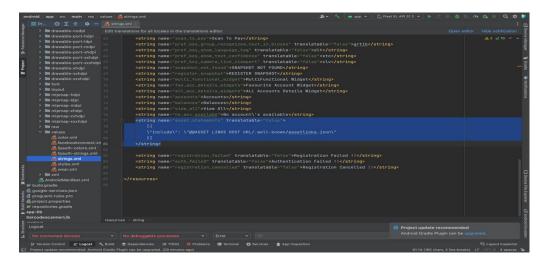
ProxyPass "/.well-known" "http://100.76.157.55:7003/digx-admin/sms/v1/.wellknown"

ProxyPassReverse "/.well-known" "http://100.76.157.55:7003/digxadmin/sms/v1/.well-known"

After the setup is done, this file must be accessible on mobile browser with this url. There should not by any redirects for accessing this file.

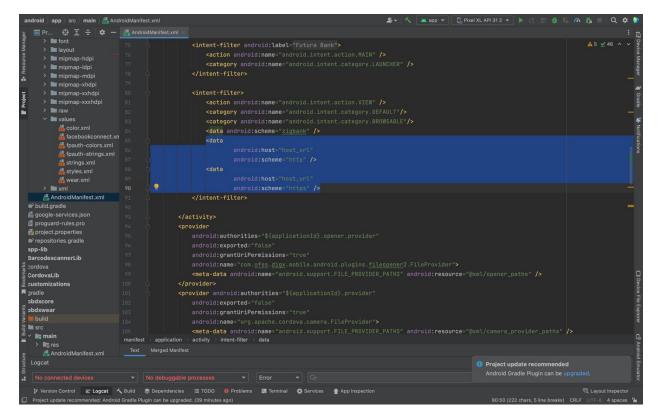
c) Add assetlinks.json file host in app's strings.xml file.





2.8 <u>Deeplinking - To open reset password, claim money</u> <u>links with the application</u>

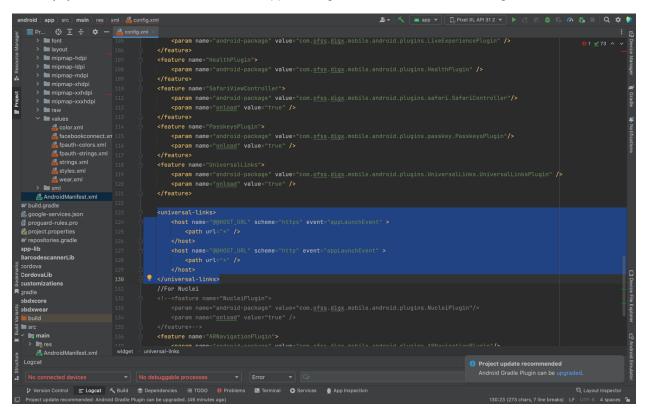
Please add host url under data tag in app's AndroidManifest.xml as,



Note - Please add host url without https or http.

For eg. If your deeplink url is <u>https://exmple.com/test</u> then you can add only example.com in the data tag





Similary you can add the same host url in app's config.xml under universal-links tag as,

Home



3. Google Play Integrity

- a. Go to URL <u>https://console.developers.google.com/</u>
- b. Create a new Project and set name of you project

New Project		
Project name 📀		
SafetyNet		
Your project ID will be safetynet-161214 🕐 Edit		

- c. Choose 'API's & Services' option from side bar.
- d. In API's & Services > Dashboard > Choose 'Enable APIS AND SERVICES'.

API	APIs & Services	APIS & Services + ENABLE APIS AND SERVICES
	Dashboard	
ш	Library	You don't have any APIs available to use yet. To get started, c
0-	Credentials	
:12	OAuth consent screen	
~	Domain verification	
≡¢	Page usage agreements	

e. This will redirect to 'Library' where we need to search 'Google Play Integrity API'.

\leftarrow \rightarrow C \triangleq console.c	loud.google	a.com/apis/libra	ry/browse?organizationId=0&project=symmetric-sylph-374507&q=Google%20Play%20Integrity	*	3 :
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RPI API Library			Q, Google Play Integrity/		
API Library > "Google Play In	tegrity"				
= Filter Type to filter		2 results			
Visibility	^		Google Play Integrity API Google		
Public	(2)		The Play Integrity API helps you check that you're interacting with your genuine app on a genuine Android device powered by Google Play services. The Play Integrity API has replaced SafetyNet Attestation and Android Device Verification.		
Category	(2)		Android Device Verification (DEPRECATED)		
			Google DEPRECATED. The SafetyNet Attestation API is deprecated and has been replaced by the Google Play Integrity API. Please see the link below for more information.		

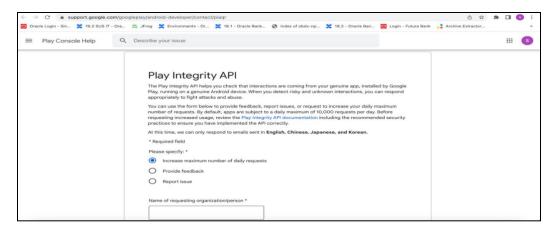
f. Click on Google Play Integrity API and enable it



	le.cloud.google.com/apis/library/playintegrity.googleapis.com?pro		💢 18.2 - Oracle Ban	🖸 Login - Futura Bank		Archive	Extract	☆ or	*		s : »
	🐉 Sample Project 👻				۹		5.	3	0	÷	S
- Product details											
	Google Play Integrity API Google Check that interactions are coming from your genuine app runni genuine Android device. ENABLE TRY THIS API (2	ng on a									
OVERVIEW	SUPPORT										
genuine app on a	API helps you check that you're interacting with your genuine Android device powered by Google Play services. API has replaced SafetyNet Attestation and Android Device	Additional details Type SaaS & APie Last updated: 23/12/2022 Category: Woblie Service name: playintegrity goog	leapis.com								

g. If the application usage is high, the quota request form needs to be submitted. Please fill quota request form from below site. Also select below options.

https://support.google.com/googleplay/android-developer/contact/piagr





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≡ Play Console Help Q	Describe your issue			5
	How are you calling the Play Integrity API? * Image: My app is calling the API directly Image: A third party fm using in the app is calling the API, please specify Image: Mow often will you call the API for each user? * Image: Once per day or less Image: Once per hour Image: Once per 5 min Image: Once per 5 min or more Is there any Pli or SPII used for the nonce (e.g. user id, user name, phone number, Android ID, SSN, etc)? * Image: Yes, but hashed or encrypted Image: Yes, in plain-text Image: No			

Play Console Help	Q Describe your issue	
	How are you validating Play integrity API responses? * Server side - by calling Play's server to decrypt and verify Server side - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify In my app - by calling Play's server to decrypt and verify lay the server ser	
Login - Sin 🎽 19.2 SUS IT - Ora	leplay/android-developer/contact/plagr ≥ JFrog ≥ Environments - Or ≥ 18.1 - Oracle Bank ⊗ Index of obdx-np ≥ 18.2 - Oracle Ban © Login - Futura Bank Archive Extractor Describe your issue How will your app act when the Play Integrity API detects risky traffic? * Please answer with your end goal in mixed even if your app is not acting yet. As a reminder, your app should also be able to deal with your terrors and the API being unavailable.	
Login - Sin 🎽 19.2 SUS IT - Ora	 JFrog X Environments - Or. X 18.1 - Oracle Bank Onlease of obdx-np X 18.2 - Oracle Ban Login - Futura Bank Archive Estracts Describe your issue How will your app act when the Play Integrity API dects risky traffic?* How some with your and goal in mind even if your app is not acting yet. As a reminder, your app should also be able to deal with Play Integrity API dects risky traffic?* Onery access to functionality (for example, users won't be able to log-in). I want unauthorized usage of my app to go down. Alter or limit specific features (for example, only users on good devices will be allowed on a leaderboard). Overall usage of my app to go down. An hir - demy access for some responses and change features for other responses. I want some unauthorized usage of my app to go down. No action. I'm only collecting data. 	or
a Login - Sin 🎽 19.2 SUS IT - Ora	 JFrog X Environments - Or. X 18.1 - Oracle Bank Ondex of obdx-np X 18.2 - Oracle Ban Login - Futura Bank Archive Estract Describe your issue How will your app act when the Play Integrity API detects risky traffic?* Hease nonew with your end goal in mind even if your app in not acting yet. As a reminder, your app should also be able to deal with Play Integrity API detects risky traffic?* Play access to functionality (for example, users won't be able to log-in). I want unauthorized usage of my app to go down. A Inter or limit specific features (for example, only users on good devices will be allowed on a leaderboard). Overall usage of my app to go down. A mix - demy access for some responses and change features for other responses. I want some unauthorized usage of my app to go down.	or

Quota request - Estimated total queries per day $* \rightarrow$ The approximate load, Play Integrity API is called once each time the app in opened



Quota request - Estimated peak queries per second \rightarrow Leave blank

h. To enable Play Integrity responses please follow below steps-

Go to Google Play Console->Side Menu->Setup->App Integrity

> :>) > i.⊡ (≝)	lesting Reach and devices App bundle explorer	App integrity Protect your app and your users Show more
- 🐵	Setup	Integrity API responses off 🛛 🧭 Releases signed by Google Play
	App integrity	
	Internal app sharing	Integrity API App signing
	Advanced settings	
Gro	w	*
• 🔊	Store presence	Protect your apps and games from risky and fraudulent interactions with the Play integrity API. Link to a Google
	Main store listing	Cloud project to get started. Learn more
	Custom store listings	Link project
	Store listing experiments	
	Store settings	
	Translation service	

Click on **Link project** and then link your existing google cloud project. If it is not created then create new and link the same.

Release	A	op integrity
Link Google	Cloud project	×
Link your Google Clou	ud project to use the integrity	API
Google Cloud project	•	Link existing project By inking your Boogle Cloud project, you agree to the Terms of Service. Sample Project Enter project number manually Create new project
P Build Variants		Discard changes Link project

i. Add project number in below property of app.properties

<string name="GOOGLE_CLOUD_PROJECT_NO">@@GOOGLE_CLOUD_PROJECT NO</string>

You will get the project number on google cloud console project



■ Google Cloud * Play Integrity ▼ Search (/) for resources, docs, products a	and more Q. Search 🗄 🗔 🕢 🗇 🕴 🔇
• 🛆 Welcome	
You're working in Play Integrity Project number: 420817979115 To Project ID: play-integrity-t4q4qu1he3dectm To Dashboard Recommendations	• 1/ •
Create a VM Run a query in BigQuery Create a GKE cluster	Create a storage bucket

j. Mention the time in seconds to which app can hit the play integrity api. By default it is 300seconds but you can configure as per the requirement. Please use below property in RootCheckFlags.java(workspace_installer/zigbank/platforms/android/app/src/main/java/com/ofs s/digx/mobile/android/)

long playIntegrityAPICallTime = your_time_in_seconds;



4. FCM Push Notifications

- a. Go to URL <u>https://firebase.google.com/</u>
- b. Traverse to console and create a project

😕 Firebase		Go to docs 🧃	0
	Welcome to Firebase!		
	Tools from Google for developing great apps, engaging with your users, and earning more through mobile ads.		
	Q Learn more ■ Documentation □ Support		
	Recent projects		
	OBDX obdx:639e5		
	Add project		
	💋 Explore a demo project 🖷 i05		

c. Download google-services.json from below page and save to (zigbank\platforms\android\app) directory.

d. Remember to keep the projects package name and firebase package name same.

<u>></u>	Firebase	OBDX 👻	Settings				Go to docs	¢	0	
A	Project Overview 🌼		Project name Project ID (?)	OBDX pbdx-639e5						
Dev	relop		Cloud Firestore location	us-central						l
	Authentication		Web API Key	AlzaSyBnym	Fz0dRmembxyXWJt87mS9HdaneE0Gg					
	Database									
	Storage		Public settings							
S	Hosting		These settings control instances	of your project	shown to the public					
()	Functions		Public-facing name 🕥 OBDX 🧨							
ML	ML Kit		Support email oraclefcdbmobiledev@gmail.com						ł	
	Quality Crashlytics, Performance, Test Lab Your apps									
Ana	lytics									
	Dashboard						Add app			
Spa Free	rk Upgrade \$0/month		Android apps		Download the latest config file	👤 google-servi	ces.json			
	<		com.ofss.digx.mobile.an	droid	This file contains configuration details such as keys and identifiers, for the services you just enabled.					Ŧ



e. Traverse to cloud messaging tab Enable Firebase Cloud Messaging API(V1) by clicking on Manage API in Google Cloud Console.

\leftrightarrow \rightarrow C $$ console.firebase.g	oogle.com/project/obdx-639e5/settings/cloudmessaging/android:com.ofss.zigbank	₫ ☆	â	* [1 0 :		
😵 Oracle Login - Sin 🎽 19.2 SUS IT	Ora 🎽 JFrog 🗶 Environments - Or 🎽 18.1 - Oracle Bank 🎽 18.2 - Oracle Ban 🧧 Login - Futura Bank 🔒 Ar	Archive Extractor 💿 React Native	39	🗎 A	II Bookmarks		
と Firebase	OBDX -	6 (2	7			
A Project Overview	Project settings						
Project shortcuts	General Cloud Messaging Integrations Service accounts Data privacy Users and permissions						
🗹 Test Lab							
Crashlytics	Firebase Cloud Messaging API (V1) 🔮 Enabled						
. Analytics Dashboard		Manage API in Google Cloud	1				
App Check	Recommended for most use cases. Learn more						
C Messaging	Sender ID Service Account						
Product categories	1062626365675 Manage Service Accounts 🖸						
Build ~							

f. Get the Project ID from Project Setting in Firebase console

🗧 🔆 C 🕯 console.firebase.google.com/project/obdx-639e5/settings/general/android.com.ofss.zigbank							
😵 Oracle Login - Sin 💥 19.2 SUS IT - Ora 🎽 JFrog 💥 Environments - Or 💥 18.1 - Oracle Bank 🎽 18.2 - Oracle Ban 🧕 Login - Futura Bank 📫 Archive Extractor 📓 React Native 👥 🔹 🌐 All							
と Firebase	OBDX -	• •	F	۰ (
A Project Overview	Project settings						
Project shortcuts	General Cloud Messaging Integrations Service accounts Data privacy Users and permissions						
🕑 Test Lab							
🐔 Crashlytics	Your project						
Analytics Dashboard							
App Check	Project name OBDX 🥕						
C Messaging	Project ID ⑦ obdx-639e5						
Product categories	Project number ① 1062626365675						
Build ~	Default GCP resource location ③ nam5 (us-central)						
Release & Monitor 🗸 🗸	Web API Key AlzaSyBnymFz0dRmembxyXWJt87mS9HdaneE0Gg						
Analytics ~	Environment	Environment					
Engage ~	This setting customizes your project for different stages of the app lifecycle						
	Environment type Unspecified 🧨						
Spark Upgrade							
	Public settings						
<	These settings control instances of your project shown to the public		_				

g. Update FCM URL in below table as-

update DIGX_FW_CONFIG_ALL_B set prop_value = 'https://fcm.googleapis.com/v1/projects/YOUR_PROJECT_ID/messages:send' where prop_id = 'FCM_URL';

Add YOUR_PROJECT_ID in url which is captured on above step

h. If proxy address is to be used, provide the same in database as mentioned in point 3.

i.Generate private key for your service account by using below steps-

- In the Firebase console, open **Settings** > <u>Service Accounts</u>



- Click Generate New Private Key, then confirm by clicking Generate Key

You can also follow below google doc -

https://firebase.google.com/docs/cloud-messaging/auth-server#provide-credentials-manually

Sr. No.	Table	PROP_ID	CATEGORY _ID	PROP_VALUE	Purpose
1	DIGX_FW_C ONFIG_VAR _B	FCM	DispatchDeta ils	<server_key></server_key>	Service account json file content captured in above step
2	DIGX_FW_C ONFIG_ALL_ B	FCMKeyStore	DispatchDeta ils	DATABASE or CONNECTOR	Specifies whether to pick server key from database or from connector. Default DB (No change)
3	DIGX_FW_C ONFIG_ALL_ B	Proxy	DispatchDeta ils	<protocol,proxy _address></protocol,proxy 	Provides proxy address, if any, to be provided while connecting to APNS server. Delete row if proxy not required. Example: HTTP,148.50.60.8



If CONNECTOR is selected in Step 2 update password as below

ORACLE WebLogic Server Ad	ministration Console 12c					
Change Center	🔒 Home Log Out Preferences 🖾 Record Help					
View changes and restarts	Home >Summary of Deployments >com.ofsu.dig.com.ector.rar > Roles					
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.	Create a Hew Security Credential Happing Back Treed Fanah Cancel					
Domain Structure	ETS User Name and Password					
obdx_domain B-Domain Partitions B-Environment Deployments	Configure the EIS User Name and Password that you would like to map the WebLogic Server User to ^a Indicates required fields	e				
Services Security Realms Difference of the security realms Difference of the security Difference of the security of the s	Enter the EIS User Name: * EIS User Name:	FCM				
	Enter the EIS Password: * EIS Password:					
How do L	* Confirm Password::					
Create outbound credential mappings	Back Neid Finish Gancel					
System Status						
Health of Running Servers as of 10:32 AM						
Failed (0) Critical (0) Overloaded (0) Warning (0) OK (2)						
WebLogic Server Version: 12.2.1.3.0 Copyright (c) 1996.2017. Oracle and/or its affiliates. /	Il rights reserved. and/or its afflitter. Other names may be insdemarks of their respective owners.					

Home



5. Build Release Artifacts

- 1. Clean and Rebuild your project in Android Studio.
- 2. In Android Studio, on the menu bar Click on Build -> Edit Build Types -> select release

😨 android - [C:\Users\vpenta\Desktop\17.2 docur	×	- 0 X
Eile Edit View Navigate Code Analyze Re		
🖿 🗑 🖉 🏕 🔉 🗂 🗂 🔍 🔍 🕇 🗕	Properties Signing Flavors Build Types Dependencies	Q. 🖪
android) 🕑 build.gradle) SDK Location	debug + Name: release	
n Project v ⊕ ÷ ☆ t+ c Project	release	cordova_plugins.js × 🝺 json.js × 🖃
B Project ▼ ⊕ ⊕ Project Project B Project ▼ ⊕ ⊕ ⊕ Project Developer Services Ads ▶ En resources.nls ■ ■ ■ ■		
Ads	Debuggable (false)	Gradle
Authentication Notifications	Jni Debuggable (false) 🔽	
E Configuration.html 6 Modules	Signing Config	
g cordova,js	signing comig	
Cordova_plugins.js	Renderscript Debuggable (false) 🔻	
🔛 index.html 🧃 🔁 ObdxLib	Renderscript Optim Level (3)	
[−] ▶ □ build 6		
8 ► Cordova 7 E Cordovalib 7	Minify Enabled (false)	
	Pseudo Locales Enabled	
i gradie 7	Proquard File	
▶ C ObdxLib		
▶ D platform_www 7	Application Id Suffix	
▶ 📴 res 7	Version Name Suffix	
▶ 🕞 src 🛛	Zip Align Enabled (true)	
igitignore		
android.iml e		
월 🏧 android.json 🛛 🕫		
📲 🧕 AndroidManifest.xml 💡		
te mandroid joon a android Manifest.xml a te te t		_
Gardie.properties Gardie.properties Gardie.properties		
gradiew.bat		
E gradiew.bat		And
Image: Second		Android Mode
N Settings.gradle		Moo
* 💽 wrapper.gradle		4
🐳 😥 Android Monitor 🛛 🔤 Q: Messages	OK Cancel	1 Event Log 🔄 Gradie Console
	7 chars 73:4	4 LF: UTF-8: Context: < no context> 🚡 🚆
A Run Via 1000 de Mondar O Manager alles Arnalis Dusion C 1 C C A Run Via C Via	🔊 💿 🔤 n ta 🎯 alla 🔯 lata 🚑 / con 🗱 dig 🕮 bita 🛷 did : 🚵 ta 🔼 soca 🐔 con 🔲 (today 11.59 AM) - 50:	3:33 PM mode 1 LF: ヘ 回 切 7/24/2017 司

3. Set Minify Enabled -> True & click on Proguard File selection -> Navigate to proguardrules.pro (zigbank\platforms\android\app)

@ android - [C\Users\vpenta\Desktop\17.2 docur File Edit View Navigate Code Analyze Be Project Structure	×	- Ø ×
🛅 🔛 🖉 🛹 🍌 🛅 🖄 🔍 🙊 + - Properties Signing Flavors 🖡	Build Types Dependencies	Q. 🗏
🗈 androi 🚈 Open File or Project X	Name: release	• cordova_plugins.js × 🔯 json.js × →=2 💽
Image: Second	Debuggable (false) In Debuggable (false) Signing Config Renderscript Debuggable (false) Renderscript Debuggab	. Goade
 build src app.iml build.gradle by google-services.json gradle.properties approputd-rules.pro 	Version Name Suffix Zip Afign Enabled (true)	-
	OK Cancel 7 Char. 734	Event Log E Grade Console F: UTF-9: Context:



- 4. Click on OK -> again click on OK.
- 5. Adding URLs to app.properties.xml (customizations/src/main/res/values/)
 - a. NONOAM (DB Authenticator setup)

SERVER_TYPE	NONOAM
KEY_SERVER_URL	Eg. https://mumaa012.in.oracle.com:18443
WEB_URL	Eg. https://mumaa012.in.oracle.com:18443
SERVER_CERTIFICATE_KEY	Refer point 6.7

b. OBDXTOKEN (Token based mechanism)

SERVER_TYPE	OBDXTOKEN
KEY_SERVER_URL	Eg. https://mumaa012.in.oracle.com:18443
WEB_URL	Eg. https://mumaa012.in.oracle.com:18443
SERVER_CERTIFICATE_KEY	Refer point 6.7

c. OAM Setup (Refer to installer pre requisite documents for OAuth configurations)

SERVER_TYPE	OAM
KEY_SERVER_URL	Eg. https://mumaa012.in.oracle.com:18443
	(This URL must be of OHS without webgate)
WEB_URL	Eg. https://mumaa012.in.oracle.com:18443
KEY_OAUTH_PROVIDER_URL	http://mum00aon.in.oracle.com:14100/oauth2/rest/token
APP_CLIENT_ID	<base64 clientid:secret="" of=""> of Mobile App client</base64>
APP_DOMAIN	OBDXMobileAppDomain
WATCH_CLIENT_ID	<base64 clientid:secret="" of=""> of wearables</base64>
WATCH_DOMAIN	OBDXWearDomain
SNAPSHOT_CLIENT_ID	<base64 clientid:secret="" of=""> of snapshot</base64>
SNAPSHOT_DOMAIN	OBDXSnapshotDomain
LOGIN_SCOPE	OBDXMobileAppResServer.OBDXLoginScope
SERVER_CERTIFICATE_KEY	Refer point 6.7



d. IDCS Setup

SERVER_TYPE	IDCS
KEY_SERVER_URL	Eg. https://mumaa012.in.oracle.com:18443 (This URL must be of OHS without webgate)
WEB_URL	Eg. https://mumaa012.in.oracle.com:18443
KEY_OAUTH_PROVIDER_URL	http://obdx- tenant01.identity.c9dev0.oc9qadev.com/oauth2/v1/token
APP_CLIENT_ID	<base64 clientid:secret="" of=""> of Mobile App client</base64>
WATCH_CLIENT_ID	<base64 clientid:secret="" of=""> of wearables</base64>
SNAPSHOT_CLIENT_ID	<base64 clientid:secret="" of=""> of snapshot</base64>
LOGIN_SCOPE	obdxLoginScope
OFFLINE_SCOPE	urn:opc:idm:myscopes offline_access
SERVER_CERTIFICATE_KEY	Refer point 6.7

6. Domain Based Setup (This is same for OBDX servicing App and Authenticator App)

To use domain based setup please enable below flag in app.properties file -

<string name="DOMAIN_BASED_CATEGORIZATION">true</string>

If you are using local UI then enable below flag in config.js(platforms/android/app/src/main/assets/www/framework/js/configurations/config.js) file -

```
domainDeployment: {
```

enabled: true

}

7. Adding chatbot support to mobile application (Optional)

CHATBOT_ID	The tenant ID
CHATBOT_URL	The URL for the ChatApp application in ODA

8. If using http protocol for development add (android:usesCleartextTraffic="true") to application tag of AndroidManifest.xml (on app & obdxwear target)



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i gradlew	38	android:launchMode="singleTop"	
🗑 gradlew.bat	39	android:name="com.ofss.digx.mobile.android.MainActivity"	
🚔 keystore.jks	40	android:theme="@android:style/Theme.DeviceDefault.NoAction	
📊 local.properties	41	android:windowSoftInputMode="adjustResize">	
project.properties	42	Activity>	
settings.gradle	43	<activity android:name="com.ofss.digx.mobile.android.SplashAct</p></td><td></td></tr><tr><td>wrapper.gradle</td><td>4.4</td><td>android:configChanges=" orientation keyboardhidden keyboard<="" td=""><td>Que Can't use Subversion command line client: svn</td></activity>	Que Can't use Subversion command line client: svn
III External Libraries	45	android:label="@string/launcher_name"	Probably the path to Subversion executable is wrong. Fix it.
IIII Externor cibraries	46	android:launchMode="singleTop"	wrong. PK IL
	47	android:theme="@style/SplashTheme"	
	48	android:windowSoftInputMode="adjustResize">	Platform and Plugin Updates
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9. For Generating Signed Apk: To Generate release-signed apk as follows:

On menu bar click on Build -> Generate Signed Apk

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CordovaLib	Build APK(s)	sion android:name="android.permission.CAMERA" />	
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project.properties		<pre>(/activity></pre>	
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10. If you have an existing keystore.jks file then select choose Existing else click on Create New



👳 Generate Signed APK	×
Key store path: C:\Us	ers\adipatel\My Documents\keystore.jks
	<u>C</u> reate new C <u>h</u> oose existing
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11. Select **Build Type** as **Release**, **Signature Version as V1(JAR Signature) and V2(Full APK Signature)** and Change APK Destination folder if you want and click on Finish



👳 Generate Signed E	Bundle or APK ×
Destination Folder:	\android\service\workspace\zigbank\platforms\android\app 🔚
	debug release
Build Variants:	
Signatura Varaiona	V14 (Jac Signature) V2 (Eull ADK Signature) Signature Hele
Signature versions:	✓ V1 (<u>J</u> ar Signature) ✓ V2 (Full <u>A</u> PK Signature) Signature Help
	Previous Finish Cancel Help

- 12. This will generate APK by the given name and destination folder. Default APK Destination folder is **zigbank\platforms\android\app\release**
- 13. Run the App and select Device or Simulator.
- 14. Repeat same steps (From step 8 and obdxwear as module) for OBDX Wear App for Release Signing. Use proguard-rules.pro from workspace_installer\zigbank\platforms\android\obdxwear using explorer. The select obdxwear as the module and follow same signing steps with same keystore.
- 15. The application has a config page at launch to enter the URL of the server (for development only). To remove this page, update the config.xml as shown below

The application has config page to add URL. This is for development purpose only and can be removed using below step. (Update content src tag)



Bit 1 */Tel version=1.9': executing************************************	🗰 Android 👻	0÷\$ -	AndroidManifest.xml ×	app.properties.xml ×	AndroidManifest.xml	AndroidManifest.xml	dia config.xml ×	
Build: Sync widget → content	BarcodescannerLib CordovaLib Coustomizations Baobdxcore Constructions		2	com.ofss.digs.mobile.ar kr/names- lian- lian- tion- medition- tion	<pre>droid" version="1.0.0" droid" version="1.0.0" blication that respond: /> //</pre>	to the deviceready eve ordova.io"> le" /> ordova.whitelist.Whitel	nt. İstPlugin" />	
	Builds Cone		indiger com					A
		at 19/04/19, 3:25 PM						
E 6: Logcat III TODO IZ Terminal Suite								

 Application will work on https only. If you want to run application on http then set targetSdkVersion, compileSdkVersion to 30 and buildToolsVersion to 30.0.3 in app's build.gradle(zigbank\platforms\android\app\) and remove remove below code from obdx.conf(config/obdx.conf).

IfModule mod_headers.c>

<If "%{HTTP_USER_AGENT} =~ /obdx-mobile-android/">

Header edit Set-Cookie ^(.*)\$ \$1;SameSite=None;Secure

</lf>

<If "%{HTTP_USER_AGENT} =~ /obdx-softtoken/">

Header edit Set-Cookie ^(.*)\$ \$1;SameSite=None;Secure

</lf>

</lfModule>

17. To enable App Widget, please enable below flag in app.properties file:

<bool name="ENABLE_WIDGET">true</bool>

Home



6. OBDX Authenticator Application

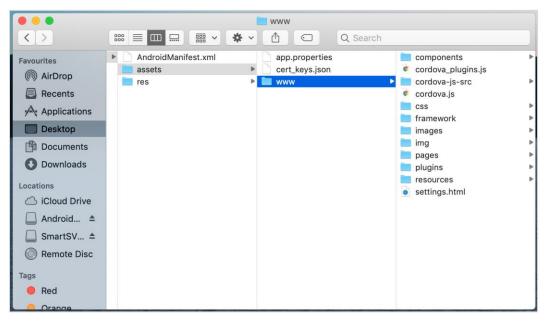
6.1 Authenticator UI (Follow any one step below)

Please refer section Authenticator UI (Follow any one step below) of Mobile Application Builder Guide-iOS Guide for Authenticator UI build steps. UI is same for Android & iOS.



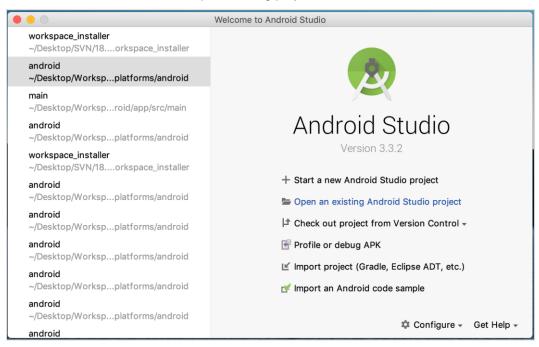
6.2 Authenticator Application Workspace Setup

 Copy UI (Directories – components, css, framework, images, pages, resources)from /dist directory to workspace/installer/app/src/main/assets/www/



In case any popup appears, click replace

2. Launch Android Studio and open existing project

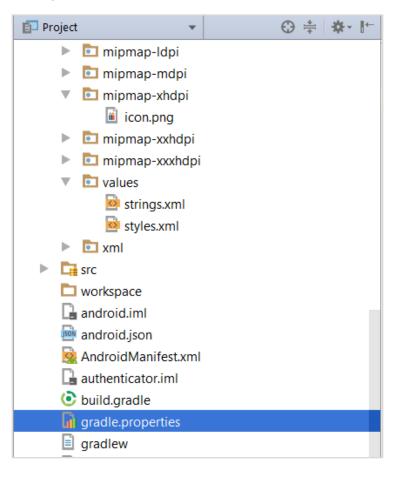




3. Open OBDX_Installer/workspace_installer folder in Android Studio.

Favorites Addroid I 12thApr Image: Installer Image: Installer Image: I			workspace_installer	\$	Q		
	 Recents Applications Desktop Documents Downloads Locations iCloud Drive Android Stu ≜ SmartSVN ≜ Remote Disc Media Music 	App		▶ Work	space_installer	app app-lib build build.gradle cordova CordovaLib gradle gradle,properties gradlew.bat keystore.jks keystore.properties platform_www proguard-rules.pro project.properties settings.gradle	Þ

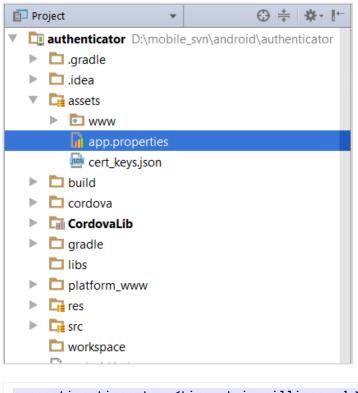
4. Open gradle.properties file and update following properties with relevant proxy address if required





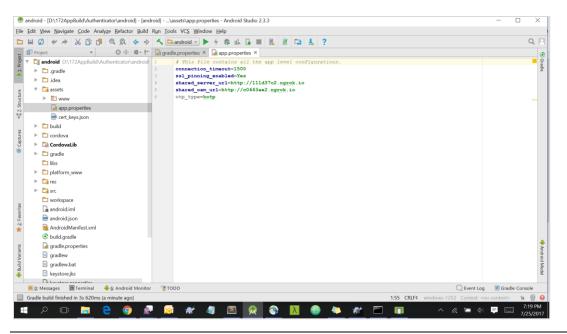
```
systemProp.http.proxyHost = <proxy_address>
systemProp.https.proxyPort = <port_number>
systemProp.https.proxyHost = <proxy_address>
systemProp.http.proxyPort = <port_number>
```

5. 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.

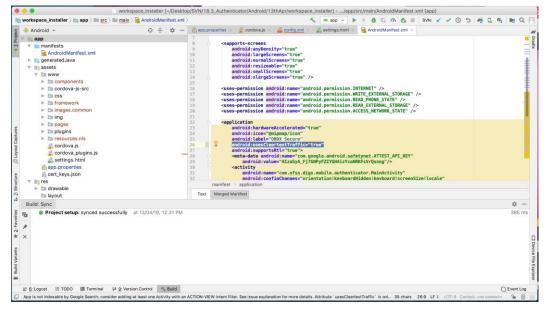
- 6. Click Build \rightarrow Clean & Build \rightarrow Rebuild project in Android Studio.
- 7. Click on Build \rightarrow Edit Build Type \rightarrow app \rightarrow release

Enable minify \rightarrow true

Add progurard file from workspace_installer/proguard-rules.pro

Click OK

8. If using http protocol for development add (android:usesCleartextTraffic="true") to application tag of AndroidManifest.xml



9. For Generating Signed Apk: To Generate release-signed apk as follows:



10. On menu bar click on Build -> Generate Signed Apk

•	Generate Signed Bundle or APK
🔿 Android App Bu	ndle
Generate a signe	d app bundle for upload to app stores for the following benefits:
 Smaller downloa On-demand app Asset-only mod 	o features
Learn more	
о арк	
Build a signed AF	K that you can deploy to a device
? Cancel	Previous Next
	Generate Signed Bundle or APK
Module	The app
Key store path	/Users/adi/Desktop/Android/keystore
	Create new Choose existing
Key store password	•••••
Key alias	key1 📂
Key password	•••••••
	Remember passwords
? Cancel	Previous Next
	Generate Signed Bundle or APK
Destination Folder:	18.3_Authenticator/Android/13thApr/workspace_installer/app 🗁
	debug
	release
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Signature Versions:	□ V1 (Jar Signature) V2 (Full APK Signature) Signature Help
? Cancel	Previous



Click Finish to generate .apk

The application has config page to add URL. This is for development purpose only and can be removed using below step. (Update content src tag)

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<u>Home</u>



7. Application Security Configuration

Root Check → Ensure Step 3.1 is completed

1. Open google developer console. Select your app then navigate to

Setup-> App Integrity-> change option of Response Encryption

In the window that appears, click Manage and download my response encryption keys and follow below steps to generate response encryption keys-

a. Create a new private-public key pair. RSA key size must be 2048 bits using below command-

openssl genrsa -aes128 -out your_path/private.pem 2048

Then use your password phrase for creating private.pem and also use the same password for verifying the private.pem. Then hit the below command.

openssl rsa -in your_path/private.pem -pubout -out your_path/public.pem

Enter the same password which you have used while creating private.pem. These two files will now appear on your mentioned path. Then upload the public.pem file on the window which was appeared after clicking on Manage and download my response encryption keys option.Once you upload the public.pem file it will automatically download your_app_pkg_name.enc file. Then hit below command as,

openssl rsautl -decrypt -oaep -inkey your_path/private.pem -in your_app_pkg_name.enc -out your_path/api_keys.txt

Enter the password for private.pem. It will create api_keys.tx file on your path. It must be consist of VERIFICATION_KEY and DECRYPTION_KEY.

2. Maintain this VERIFICATION_KEY and DECRYPTION_KEY in **DIGX_FW_CONFIG_ALL_B** table corresponding to the following keys respectivel:

PLAY_INTEGRITY_ENCRYPTION_KEY and PLAY_INTEGRITY_DECRYPTION_KEY

An example query will be:

update DIGX_FW_CONFIG_ALL_B set prop_value = 'YOUR_DECRYPTION_KEY' where prop_id = 'PLAY_INTEGRITY_DECRYPTION_KEY';

update DIGX_FW_CONFIG_ALL_B set prop_value = 'YOUR_ENCRYPTION_KEY' where prop_id = 'PLAY_INTEGRITY_ENCRYPTION_KEY';

3. Similarly, Obtain the same keys for authenticator app by using above step 1 and then maintain those in **DIGX_FW_CONFIG_ALL_B** table corresponding to the following keys respectivel:

PLAY_INTEGRITY_ENCRYPTION_KEY_AUTHENTICATOR and PLAY_INTEGRITY_DECRYPTION_KEY_AUTHENTICATOR



An example query will be:

update DIGX_FW_CONFIG_ALL_B set prop_value = 'YOUR_DECRYPTION_KEY' where prop_id = 'PLAY_INTEGRITY_DECRYPTION_KEY_AUTHENTICATOR';

update DIGX_FW_CONFIG_ALL_B set prop_value = 'YOUR_ENCRYPTION_KEY' where prop_id = 'PLAY_INTEGRITY_ENCRYPTION_KEY_AUTHENTICATOR';

4. Similarly, we also have to maintain package names of Servicing and Authenticator app in the same table, i.e. **DIGX_FW_CONFIG_ALL_B** corresponding to the following keys respectively:

ANDROID_SERVICING_PACKAGE and ANDROID_AUTHENTICATOR_PACKAGE

An example query will be:

insert into digx_fw_config_all_b (PROP_ID, CATEGORY_ID, PROP_VALUE, FACTORY_SHIPPED_FLAG, PROP_COMMENTS, SUMMARY_TEXT, CREATED_BY, CREATION_DATE, LAST_UPDATED_BY, LAST_UPDATED_DATE, OBJECT_STATUS, OBJECT_VERSION_NUMBER) values ('ANDROID_SERVICING_PACKAGE', 'mobileconfig', 'com.ofss.zigbank', 'N', ", 'Stores device id in OUD', 'ofssuser', sysdate, 'ofssuser', sysdate, 'Y', 1,);

SSL Pinning

 Get the list of Base 64 encoded SHA256 hashed certificates' public keys of server's valid certificates. Use below command to generate this hash for your certificate. Replace '<certificate.der>' with the path to your certificate.

openssl x509 -inform der -in <certificate.der> -pubkey -noout | openssl pkey -pubin -outform der | openssl dgst -sha256 -binary | openssl enc -base64

6. Add the hashed keys generated in point 6 to

zigbank\platforms\android\customizations\src\main\res\values\app.properties.xml file in 'certificate_public_keys' array. Append this key to 'sha256/' in an <item> tag as shown below. Multiple certificate keys can be added to 'certificate_public_keys' array by adding them in <item> tags.

Eg.:



Eg. for multiple certificates (In case OAM/IDCS is used):



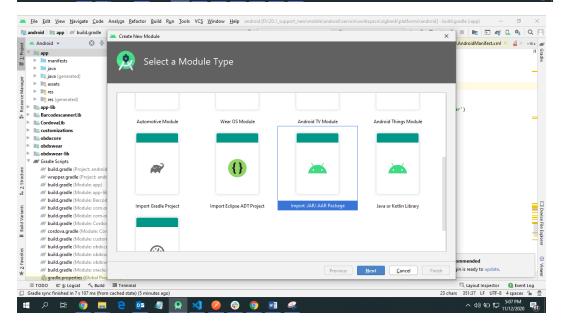
8. Live Experience With Jumio Integration

1. Download live experience android sdk from below download link.

https://www.oracle.com/downloads/cloud/oracle-live-experience-downloads.html

2. Import 'oracle.live.api-release' file as a New Module.

New 🕨	New Project	🔨 🛹 android:app-lib [assemble] 🔻 🕞 Android Wear Square Pie 💌	▶ 菱 ೄ @ 蔹 = H ⊡ @ ⊑ ጫ Q
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Profile or debug APK	Project from Version Control	<pre>c.biometric:1.0.1'</pre>	
Open <u>R</u> ecent Close Project	New Module	<pre>c.blometric:blometric:1.0.1 gle.android.gms:play-services-vision:19.0.0'</pre>	
Link C++ Project with Gradle	Import Module Import Sample	section of our gars proy set vices vision issues	
Settings Ctrl+Alt+S Project Structure Ctrl+Alt+Shift+S	Android Resource File Android Resource Directory Sample Data Directory	'i <mark>oracle.live.api-release')</mark> jislf4j-logdj12:1.7.25' ibs/oracle.wsc.feature.clientsdk.android-7.2.1.1-SNAPSHOT.jar')	
Import Settings Export Settings Settings Repository	File Scratch File Ctrl+Alt+Shift+Insert Directory	<pre>Dos/ndice.msc.reature.client.sok.andn.ou/or/22111-3md/3001.jm) ibs/peerconnection_android-84.0.4147.105.222cac74afc25f65d111771. bs/tyrus-standalone-client-1.13.jar) io.android:core:\$JUMIO_SDK_VERSION}@aar"</pre>	dbfabd6db25d2498.jar') =
Export to Zip File Convert Module Groups to Qualified Names	S C++ Class C/C++ Source File C/C++ Header File	lo.android:bam:\${JUMIO_SDK_VERSION}@aar" lo.android:nv:\${JUMIO_SDK_VERSION}@aar" lo.android:nv-mr2:\${JUMIO_SDK_VERSION}@aar"	
Sync Project with Gradle Files	 Image Asset Vector Asset 	lo.android:nv-nfc:\${JUMIO_SDK_VERSION}@aar" lo.android:nv-ocr:\${JUMIO_SDK_VERSION}@aar"	
Invalidate Caches / Restart Export to <u>H</u> TML	Rotlin Script	<pre>io.android:nv-barcode:\${JUMIO_SDK_VERSION}@aar" io.android:nv-barcode-vision:\${JUMIO_SDK_VERSION}@aar" io.android:face:\${JUMIO_SDK_VERSION}@aar"</pre>	
	AIDL Activity Automotive	io.android:dv:\${JUMIO_SDK_VERSION}@aar" <.cardview:cardview:1.0.0"	
Remove BOM Associate with File Type	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	<pre>>gle.android.gms:play-services-vision:19.0.0"){ .android.support', module:'support-v4'</pre>	
Line Separators Make File Read-Only	🛎 Other 🕨 🕨	çag.spongycastle:prov:1.58.0.0" prains.kotlin:kotlin-stdlib-jdk7:1.3.72"	1
Power Save Mode		scuba:scuba-sc-android:0.0.18"	
Exit	🛎 Wear 🕨 🕨	rtec:zoom-authentication:8.12.1@aar" (dir: 'libs', include: '*.jar')	Plugin Update Recommended Android Gradle Plugin is ready to update.
Global Properties Global Properties) TODO	➤ Widget ► ➤ XML ►		🗟 Layout Inspector 🛛 🕥 Event Log
dds a new module to the project	Config File		23 chars 351:37 LF UTF-8 4 spaces 🍟
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3. Add Live Experience Client ID and Cloud Address in below two properties under app.properties.xml(zigbank\platforms\android\customizations\src\main\res\values)

<string name="LX_CLIENT_ID">@@CLIENT_ID</string>

<string name="LX_ADDRESS">@@ADDRESS</string>

Note: Add LX_ADDRESS without https://

For example. If the LX_ADDRESS is <u>https://live.oraclecloud.com</u> then add only live.oraclecloud.com.

4. Click Next and navigate to oracle.live.api-release aar file location and click Finish.

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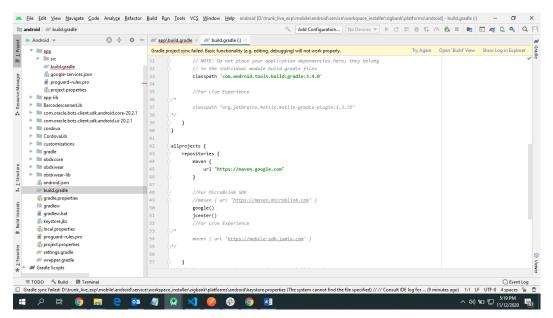
5. Un-comment the Live Experience SDK's from zigbank\platforms\android\app\build.gradle.



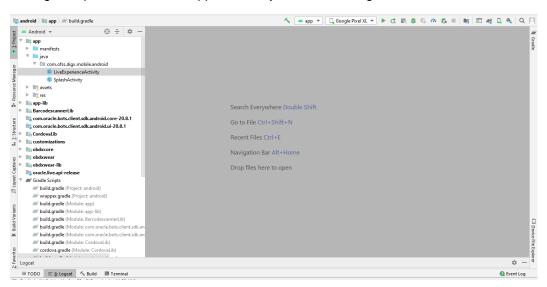
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▶ 🖿 .idea	352	//Live Experience SDK	
V mapp	353	/*implementation project(':oracle.live.api-release')	
Image: Second	354	implementation 'org.slf4j:slf4j-log4j12:1.7.25'	
a build.gradle	355	implementation files('libs/oracle.wsc.feature. <u>clientsdk</u> .android-7.2.1.1-SNAPSH0T.jar')	
google-services.json	356	implementation files('libs/peerconnection_android-84.0.4147.105-d25c2ac74afc25f65d111771dbfabd6db25d2498.jar')	
proguard-rules.pro	357	<pre>implementation files('libs/tyrus-standalone-client-1.13.jar')</pre>	
👘 project.properties	358	implementation "com.jumio.android:core:\${JUMIO_SDK_VERSION}@aar"	
app-lib	359	implementation "com.jumio.android:bam:\${JUMIO_SDK_VERSION}@aar"	
BarcodescannerLib	360	implementation "com.jumio.android:nv:\${JUMIO_SDK_VERSION}@aar"	
com.oracle.bots.client.sdk.android.core-20.2	2.1 361	implementation "com.jumio.android:nv-mrz:\${JUMI0_SDK_VERSION}@aar"	
com.oracle.bots.client.sdk.android.ui-20.2.1	362	implementation "com.jumio.android:nv-nfc:\${JUMIO_SDK_VERSION}@aar"	
cordova	363	implementation "com.jumio.android:nv-ocr:\${JUMI0_SDK_VERSION}@aar"	
CordovaLib	364	implementation "com.jumio.android:nv-barcode:\${JUMIO_SDK_VERSION}@aar"	
Customizations	365	implementation "com.jumio.android:nv-barcode-vision:\${JUMIO_SDK_VERSION}@aar"	
gradle	366	implementation "com.jumio.android:face:\${JUMIO_SDK_VERSION}@aar"	
block ore	367	implementation "com.jumio.android:dv:\${JUMIO_SDK_VERSION}@aar"	
obdxwear	368	implementation "androidx.cardview:cardview:1.0.0"	
obdxwear-lib	369	<pre>implementation ("com.google.android.gms:play-services-vision:19.0.0"){</pre>	
🚯 android.json	370	exclude group: 'com.android.support', module:'support-v4'	
@ build.gradle	371	}	
gradle.properties	372	implementation "com.madgag.spongycastle:prov:1.58.0.0"	
gradlew	373	implementation "org.jetbrains.kotlin:kotlin-stdlib-jdk7:1.3.72"	
i gradlew.bat	374	implementation "net.sf.scuba:scuba-sc-android:0.0.18"	
keystore.jks	375	implementation "com.facetec:zoom-authentication:8.12.1@aar"	
📊 local.properties	376	implementation fileTree(dir: 'Libs', include: '*.jar')	
proguard-rules.pro	377	*/	
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 Un-comment the gradle maven files for Live Experience from zigbank\platforms\android\ build.gradle



7. Add LiveExperienceActivity.java folder from AppExtensions\live experience\ at zigbank\platforms\android\app\src\main\java\com\ofss\digx\mobile\android





8. Add libs folder at zigbank\platforms\android\app and copy below jars from downloaded sdk folder in it.

i) oracle.wsc.feature.clientsdk.android-7.2.1.1-SNAPSHOT.jar

- ii) peerconnection_android-84.0.4147.105-25c2ac74afc25f65d111771dbfabd6db25d2498.jar
- iii) tyrus-standalone-client-1.13.jar

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9. Un-comment LiveExperienceActivity and NetverifyActivity from zigbank\platforms\android\app\src\main\AndroidManifest.xml

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9. Adding Custom Cordova Plugin

Step 1 -

Create java folder and add yout package under app(zigbank\platforms\android\app)

Create java file under your package which will extends CordovaPlugin

Override execute method with JsonArray as a parameter

Retrive jsonobject from JsonArray and get the data which passed from js file

Example:

public class GetDirectionMapPlugin extends CordovaPlugin {

@Override

public boolean execute(String action, JSONArray args, CallbackContext callbackContext)

throws JSONException {

try{

```
JSONObject object = args.getJSONObject(0);
```

```
String yourKey = object.getString("your_key");
```

```
}catch (Exception e){
```

```
Log.e(TAG,e.getMessage());
```

```
}
```

return true;

```
}
```

Step 2 –

Create plugin file under plugins folder of

www(zigbank\platforms\android\service\workspace\app\src\main\assets\www\plugins) Example:

cordova.define("cordova-plugin-getdirection", function(require, exports, module) {
 var exec = cordova.require('cordova/exec');

exports.navigate = function(args, successCallback, errorCallback) {

cordova.exec(successCallback, errorCallback, "GetDirectionMapPlugin", "direction",



[args]);

};

});

cordova-plugin-getdirection.getDirectionPlugin -> user defined id from

cordova_plugin.js(zigbank\platforms\android\service\workspace\app\src\main\assets\ww

w\cordova_plugin.js)

GetDirectionMapPlugin-> name of java plugin class

direction -> action

navigate -> this can be use in js file to this function

Step 3 -

Make entry of plugin in

cordova_plugin.js(zigbank\platforms\android\service\workspace\zigbank\platforms\android\app\sr c\main\assets\www) as below ->

Example:

{

"id": "cordova-plugin-getdirection.getDirectionPlugin", -> user defined id

"file": "plugins/cordova-plugin-getdirection/www/mapgetdirection.js", -> path of plugin js

file

"pluginId": "cordova-plugin-getdirection",

```
"clobbers": [
```

"window.getDirection" -> this can be used in js file to call plugin

```
]
}
```

Step 4 -

Make entry of java plugin class in

config.xml(zigbank\platforms\android\service\workspace\zigbank\platforms\android\app\src\main\r

es\xml) file of app as below -

Example:



```
<feature name="GetDirectionMapPlugin">
```

<param name="android-package" value="Your_Plugin_Java_Class_Path" />

</feature>

GetDirectionMapPlugin -> Name of java plugin class

Step 5 -

```
Plugin calling in js file ->
```

Example:

window.getDirection.navigate({

originLatLng: origin,

destinationLatLng: location

})

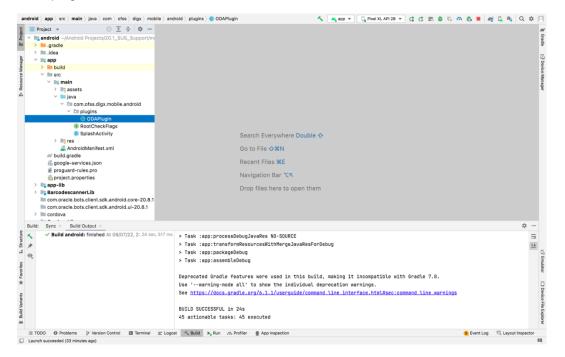
window.getDirection -> clobber define in the cordova_plugin.js file navigate -> name of the function defined in plugin js file



10. ODA Chatbot Inclusion

To enable ODA Chatbot services in the mobile app, the following changes needs to be made:

 Copy ODAPlugin.java from workspace_installer/AppExtension/oda to workspace_installer/zigbank/platforms/android/app/src/main/java/com/ofss/digx/mobile/androi d/plugins/

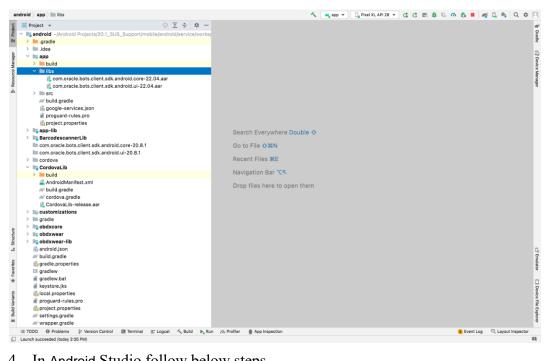


2. Download ODA Android sdk from below link-

https://www.oracle.com/downloads/cloud/amce-downloads.html

- 3. Add libs folder at zigbank\platforms\android\app and copy below files from downloaded sdk folder in it.
 - a. com.oracle.bots.client.sdk.android.core-xx.aar
 - b. com.oracle.bots.client.sdk.android.ui-22.04.aar





4. In Android Studio follow below steps-

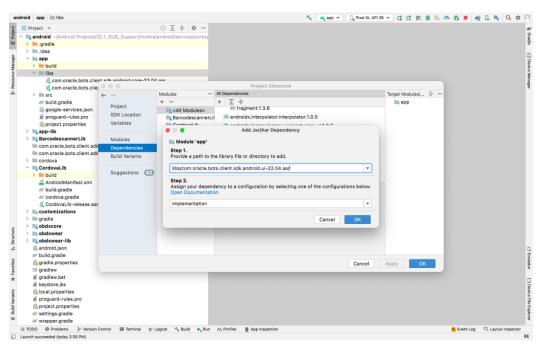
File -> Project Structure -> Dependencies

5. Click on "+" icon and select JR/AAR Dependency and select app module and click Ok.

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6. Add both .aar file paths from step3. Then click Apply and Ok.



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7. Add Chatbot ID and Chatbot URL in app.properties.xml(zigbank\platforms\android\customizations\src\main\res\values)

<string name="CHATBOT_ID">@@CHATBOT_ID</string>

<string name="CHATBOT_URL">@@CHATBOT_URL</string>



11. Live Experience Integration

1. Download live experience android sdk from below download link.

https://www.oracle.com/downloads/cloud/oracle-live-experience-downloads.html

- 2. Add libs folder at zigbank\platforms\android\app and copy below jars from downloaded sdk folder in it.
 - oracle.wsc.feature.clientsdk.android-7.2.1.1-SNAPSHOT.jar
 - peerconnection_android-84.0.4147.105-25c2ac74afc25f65d111771dbfabd6db25d2498.jar
 - tyrus-standalone-client-1.13.jar
 - oracle.live.api-release.aar

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 Add Live Experience Client ID and Cloud Address in below two properties under app.properties.xml(zigbank\platforms\android\customizations\src\main\res\values) <string name="LX_CLIENT_ID">@ @CLIENT_ID</string> <string name="LX_ADDRESS">@ @ADDRESS</string>

Note: Add LX_ADDRESS without https://

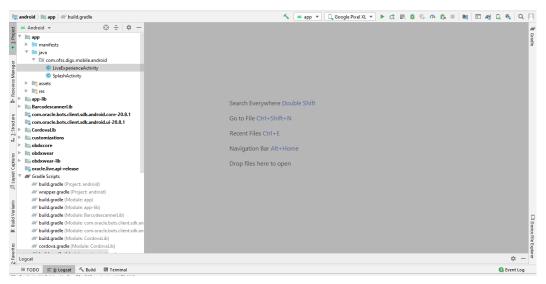
For example. If the LX_ADDRESS is https://live.oraclecloud.com then add only live.oraclecloud.com.



4. Un-comment the Live Experience SDK's from zigbank\platforms\android\app\build.gradle.

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5. Add LiveExperienceActivtiy.java folder from AppExtensions\live experience\ at zigbank\platforms\android\app\src\main\java\com\ofss\digx\mobile\android



6. Un-comment LiveExperienceActivity from

zigbank\platforms\android\app\src\main\AndroidManifest.xml



12. Push Notification 2FA configuration

If Push notification 2fa is enabled at bank side for any transaction then, the screen displays message to wait for the push notification to accept/reject the transaction authentication. The message as well contains a timer of 5 minutes displayed on the UI. This value is set in the UI code. If bank needs to change this value, bank needs to update the value in UI code:

File path: channel/metadata/user-components/push-out-of-band/push-out-of-band/hook.js

Code to be changed: const mins = <<value>>;

Update the value to what bank needs to set it. This value is in minutes.

So, ideally 5 minutes (existing value in base UI code) is an ideal time. Any changes made in this value should satisfy below pre-condition.

- 1. There is an OTP expiration time set in "digx_fw_config_ALL_b" table.
- 2. Also, there is business policy check set to 10 minutes for validation of the generated 2fa token. Bank can write their own business policy where they can modify the 10 minutes time.

So, the time in UI code should not exceed 10 minutes and OTP expiration time in "digx_fw_config_ALL_b" table.

