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Mobile App Infrastructure library Integration

|  |  |
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1. INTRODUCTION 3

2. INTEGRATION 3

2.1 Maven repository Integration 3

2.2 Library Integration 3

2.3 Library versioning 4

2.4 Root gradle changes 4

2.5 Gradle dependencies 4

2.6 Proxy dependencies 5

2.7 Configuration File 5

3. INITIALIZATION 6

6. Android Manifest Changes 7

6.1 Other User Permissions 7

7. **Design Document Reference 7**

# INTRODUCTION

This document provides an overview of integration procedure for Mobile App Infra library in android mobile applications.

# INTEGRATION

There are two ways to integrate “Mobile App Infrastructure” library with any Android app.

* + 1. **Maven repository based**: At compile time, machine has to be connected with Philips network. Do not follow section 2.2
    2. **Library Integration**: If unable to connect with Philips network then include libraries to your root application. Do not follow section 2.4, 2.5

## Maven repository (Artifactory based) Integration

The easiest and preferred way to use these components is using maven.

All dependent libraries should be downloaded from artifactory.

**Artifactory Path:**

<http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/libs-release-local-android/com/philips/cdp/AppInfra/1.2.0-rc.9/>

If you are inside Philips network then you can directly refer “**2.5 Gradle dependencies**” section. It will automatically download all nested dependencies from artifactory.

## Library Integration

Need to copy all aar files in libs folder; below are the libraries needed, Please make gradle changes

dependencies {  
 compile fileTree(**dir**: **'libs'**, **include**: [**'\*.jar'**])  
 androidTestCompile **'org.mockito:mockito-core:1.9.5'** androidTestCompile **'com.google.dexmaker:dexmaker:1.2'** androidTestCompile **'com.google.dexmaker:dexmaker-mockito:1.2'** compile **'com.android.support:appcompat-v7:23.4.0'** compile **'adobeMobileLibrary:adobeMobileLibrary:4.8.3'** compile(**group**: **'com.philips.cdp'**, **name**: **'prx'**, **version**: **'2.4.0-SNAPSHOT'**, **ext**: **'aar'**, **changing**: **true**)  
 {  
 transitive = **true** }   
   
 compile(**group**: **'com.philips.cdp'**, **name**: **'localeMatch'**, **version**: **'2.2.0-SNAPSHOT'**, **ext**: **'aar'**, **changing**: **true**)  
 {  
 transitive = **true** }  
  
 compile **'com.android.volley:volley:1.0.0'**}

## Library versioning

Library version can be obtained by using below API

version = objcdp.getVersion()

## .Root gradle changes

buildscript {  
 repositories {  
maven { url **'http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/jcenter'** }  
 }  
  
 dependencies {  
 classpath **'com.android.tools.build:gradle:2.1.0'** *// NOTE: Do not place your application dependencies here; they belong  
 // in the individual module build.gradle files* }  
}  
  
allprojects {  
 repositories {  
 maven { url **'http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/jcenter'** }  
 maven {  
 url **'http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/ext-release-local'** }  
 maven {  
 url **'http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/libs-release-local-android'** }  
 maven {  
 url **'http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/libs-stage-local-android'** }  
 maven {  
 url **'http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/libs-release-local'** }  
 maven { url **'http://maartens-mini.ddns.htc.nl.philips.com:8081/artifactory/libs-snapshot-local-android'** }  
 }  
}  
task clean(**type**: Delete) {  
 delete rootProject.buildDir  
}

## Gradle dependencies

Just by adding below gradle dependencies, digitalcare and nested possible libraries will be downloaded from artifcatory. But it has to be inside Philips network.

compile(group: **'com.philips.cdp'**, name: **'prx'**, version: **'2.0.0'**, ext: **'aar'**){  
 exclude group: **'com.android.support'** transitive=**true** }  
 compile(group: **'com.philips.cdp'**, name: **'localeMatch'**, version: **'2.0.0'**, ext: **'aar'**){  
 exclude group: **'com.android.support'** transitive=**true** }

## Proxy dependencies

Gradle dependencies can get some network/proxy related issues. In order to fix this issue, we are using below proxy settings in gradle.properties of root folder.

**systemProp.https.proxyHost**=**42.99.164.34  
systemProp.https.proxyPort**=**10015**

We are using this proxy settings locally. But Eindhoven, does not use above proxy settings.

## Configuration Files:

1. **logging.properties**

Copy **logging.properties** file from Documents\Internal folder to integrating Demo/vertical/Library assets folder. Developer can configure/filter/modify console/file logging properties by editing this file. “FileNotFoundException” will be thrown if this file is missing under application assets folder.

1. **ADBMobileConfig.json**

Keep this json file in Assets folder. Make sure SSL is “true” for secure HTTPS requests.

Change rsids tag accordingly to dev or release. batchlimit is another tag where one can define the count of requests.

{  
 **"version"** : **"1.0"**,  
 **"acquisition"**: {  
 **"server"**: **"c00.adobe.com"** },  
  
 **"analytics"** : {  
 **"referrerTimeout"**: 5,   
 **"rsids"** : **"philipsmobileappsdev"**,  
  
*// "server" : "localhost:50000",* **"server"** : **"philips.112.2o7.net"**,  
 **"charset"** : **"UTF-8"**,  
 **"ssl"** : **true**,  
 **"offlineEnabled"** : **false**,  
 **"lifecycleTimeout"** : 30,  
 **"batchLimit"** : 0,  
 **"privacyDefault"** : **"optunknown"**,  
 **"poi"** : [  
 ]  
 },  
 **"target"** : {  
 **"clientCode"** : **"amsdk"**,  
 **"timeout"** : 5  
 },  
 **"audienceManager"** : {  
 **"server"** : **""** }  
}

1. **AppConfig.json**

Developer needs to be crerate AppConfig.json and add microsite, sector & AppState key value. Remaining AppVersion and AppName will be written from gradle & AppLocalName will be written manifest file.

**{**

**"UserRegistration": {**

**"JanRainConfiguration.RegistrationClientID.Development": "8kaxdrpvkwyr7pnp987amu4aqb4wmnte",**

**"JanRainConfiguration.RegistrationClientID.Testing": "g52bfma28yjbd24hyjcswudwedcmqy7c",**

**"JanRainConfiguration.RegistrationClientID.Evaluation": "f2stykcygm7enbwfw2u9fbg6h6syb8yd",**

**"JanRainConfiguration.RegistrationClientID.Staging": "f2stykcygm7enbwfw2u9fbg6h6syb8yd",**

**"JanRainConfiguration.RegistrationClientID.Production": "9z23k3q8bhqyfwx78aru6bz8zksga54u",**

**"PILConfiguration.MicrositeID": "77000",**

**"PILConfiguration.CampaignID": "CL20150501\_PC\_TB\_COPPA",**

**"PILConfiguration.RegistrationEnvironment": "PRODUCTION",**

**"Flow.EmailVerificationRequired" : true,**

**"Flow.TermsAndConditionsAcceptanceRequired" : true,**

**"Flow.MinimumAgeLimit" : { "NL":12 ,"GB":0,"default": 16},**

**"SigninProviders.default": ["facebook","googleplus"],**

**"SigninProviders.NL": ["facebook","googleplus"]**

**},**

**"AI": {**

**"MicrositeID": "77000",**

**"RegistrationEnvironment": "PRODUCTION",**

**"NL": ["googleplus", "facebook" ],**

**"US": ["facebook","googleplus" ],**

**"EE": [123,234 ]**

**},**

**"IAP": {**

**"hostport": "www.occ.shop.philips.com",**

**"propositionid": "Tuscany2016"**

**},**

**"appinfra": {**

**"appidentity.micrositeId" : "77000",**

**"appidentity.sector" : "b2c",**

**"appidentity.appState" : "PRODUCTION",**

**"appidentity.serviceDiscoveryEnvironment" : "PRODUCTION"**

**}**

**}**

1. proguard-rules-pro

Proguard rules of AppInfra to be included in application proguard rules.

# INITIALIZATION

AppInfra object should be created in the class which extend Application or anywhre from which is can be consumed as dependency injection.

**public class** FrameworkApplication **extends** Application {  
 **public static** AIAppTaggingInterface *mAIAppTaggingInterface*;

**public static** LoggingInterface AILoggingInterface;

**public static** AppInfraInterface *gAppInfra*;

@Override  
 **public void** onCreate() {  
 **super**.onCreate();  
  
***gAppInfra*=new AppInfra.Builder().build(getApplicationContext());**

*mAIAppTaggingInterface* = *gAppInfra*.getTagging().createInstanceForComponent(**"Component name"**,**"Component ID"**);  
AILoggingInterface=*gAppInfra*.getLogging().createInstanceForComponent(“Component name”,”ID”);

}  
  
}

# Android Manifest Changes

<**uses-permission android:name="android.permission.INTERNET"** />  
<**uses-permission android:name="android.permission.ACCESS\_NETWORK\_STATE"** />  
<**uses-permission android:name="android.permission.ACCESS\_WIFI\_STATE"** />

## Other User Permissions

No special Permission required:

# Supporting apps with Over 65K Methods

This is special case if app which has more than 65K methods do follow below link for reference.

<https://developer.android.com/tools/building/multidex.html>

According to this do following changes in gradle and application class

In Gradle file:

android {  
    compileSdkVersion 21  
    buildToolsVersion "21.1.0"  
  
    defaultConfig {  
        ...  
        minSdkVersion 14  
        targetSdkVersion 21  
        ...  
  
        // Enabling multidex support.  
        multiDexEnabled true  
    }  
    ...  
}  
  
dependencies {  
  compile 'com.android.support:multidex:1.0.1'  
}

In Application Class:

@Override  
public void onCreate() {  
   MultiDex.install(this);

  Super.onCreate();

}

# Third Party Library used:

# AdobeMobileLibrary

https://marketing.adobe.com/resources/help/en\_US/mobile/android/

# Volley

https://developer.android.com/training/volley/index.html?hl=pt-br

**Module Examples:**

**SecureStorage:**

SecureStorageInterface ssInterface = ***gAppInfra***.getSecureStorage();

SecureStorageInterface.SecureStorageError ssError = **new** SecureStorageInterface.SecureStorageError();

**boolean** result = ssInterface.storeValueForKey(“key”, “Value”, ssError);

**if**(**null**==sseStore.getErrorCode() && result==true)  
{  
 // success  
}**else**{  
Toast.makeText(context,sseStore.getErrorCode().toString(),Toast.**LENGTH\_SHORT**).show();  
}

SecureStorageInterface.SecureStorageError ssError = **new** SecureStorageInterface.SecureStorageError();

String decryptedData= ssInterface.fetchValueForKey(“key”,ssError);  
**if**(**null**==sse.getErrorCode() && null!=decryptedData)  
{ context  
 // success   
}**else**{  
 Toast.makeText(context,sse.getErrorCode().toString(),Toast.**LENGTH\_SHORT**).show();  
}

**boolean** result = ssInterface.removeValueForKey(“key”);

**AppTagging:**

AIAppTaggingInterface mAIAppTaggingInterface = ***gAppInfra*** .getTagging().createInstanceForComponent("Component name","Component ID");

mAIAppTaggingInterface.setPreviousPage("SomeXpreviousPage");

mAIAppTaggingInterface.trackPageWithInfo("AppTaggingDemoPage", keyValuePair);

**Logging:**

LoggingInterface loggingInterface= ***gAppInfra***.getLogging().createInstanceForComponent(“Component name”,” Component ID”);

loggingInterface.enableConsoleLog(true);

loggingInterface.enableFileLog(true);

loggingInterface.log (LoggingInterface.LogLevel.INFO,”Event”,message”);

1. Filter Logs:

Developer can use logging.properties file to filter Logs based on:

a)Log level

{VERBOSE, DEBUG, INFO, WARNING, ERROR}

*java.util.logging.ConsoleHandler.level=FINE // all five log Levels*

*java.util.logging.FileHandler.level = INFO // INFO, WARNING & ERROR*

*java.util.logging.ConsoleHandler.level=OFF // no output*

b) Component Level

philips.di.cl.appframework.UiKit.level=WARNING // only WARNING and ERROR log will output

philips.di.cl.appframework.UiKit.level=OFF // No log output for this component

Logging can be completely disabled from app by disabling file and console logging in logging.properties file irrespective of release and debug mode as follow:

java.util.logging.ConsoleHandler.level=OFF

java.util.logging.FileHandler.level = OFF

Note:It is the proposition’s responsibility to disable logging when releasing to the market. Most certainly the console logging.  But also for file as we are not safe guarding the log files as of yet (or if they want to live dangerously ensure that no sensitive data ends up in the file log).

App Identity:

The App identity feature shall provide an API to get the app release status: development, test, acceptance, production.

The App identity feature shall obtain the technical app name, app version and app release status automatically from the build application build process.

Values will be picked from the AppConfiguration file .

For testing purpose , AppIdentity values can be configured dynamically using setPropertyForKey API from AppConfiguration.

If AppState/ServiceDiscoveryEnvironment is set to PRODUCTION , it cannot be modified by AppConFiguration.

*{  
 "micrositeId" : "12345",  
 "sector" : "B2C",   
 "AppState" : "DEVELOPMENT"  
}*

Remaining AppVersion and AppName will be written from gradle & AppLocalName will be picked from gradle file.

**API:**

*public String getAppName();*

returns technical App name.

*public String getAppVersion();*

Validates and returns App version. Throws Exception if not in proper format.

*public String getAppState();*

Validated and returns App state (development, test, acceptance, production).Throws Exception if appstate is other the mentioned states.

*public String getAppLocalizedNAme();*

returns app localized commercial app name.

*public String getMicrositeId();*

Validates and returns micrositeID. Throws Exception if not in proper format

*public String getSector();*

Validates and returns sector. Throws Exception if Sector is other than the mentioned states.

Note :

Microsite ID should be  [a-zA-Z0-9]+

Sectors should be from B2C, B2B\_HC, corporate, B2B\_LI (Comparison should be case insensitive)

App State should be from TEST, DEVELOPMENT, STAGING, ACCEPTANCE, PRODUCTION (Comparison should be case insensitive)

Service Discovery Environment should be from TEST, DEVELOPMENT, STAGING, ACCEPTANCE, PRODUCTION (Comparison should be case insensitive)

App version should be  [0-9]+\.[0-9]+\.[0-9]+([\_-].\*)

IllegalArgumentException will be thrown in case of not invalid values.

**Service Discovery:**

1. void getHomeCountry(OnGetHomeCountryListener listener)

GetHomeCountry will get the country either from SIM or GEOIP. The country is saved in preferences. The listener, OnGetHomeCountryListener will get the results back.

1. void getServiceUrlWithLanguagePreference(String serviceId, OnGetServiceUrlListener listener)

getServiceUrlWithLanguagePreference will get the URL’s from the response filtering with given ServiceID. The listener, OnGetServiceUrlListener will get the results back.

1. void getServiceUrlWithCountryPreference(String serviceId, OnGetServiceUrlListener listener)

getServiceUrlWithCountryPreference will get the URL’s from the response filtering with given ServiceID. The listener, OnGetServiceUrlListener will get the results back.

1. void getServiceLocaleWithLanguagePreference(String serviceId, OnGetServiceLocaleListener listener)

getServiceLocaleWithLanguagePreference will get the URL’s from the response filtering with given ServiceID. The listener, OnGetServiceLocaleListener will get the results back.

1. void getServiceLocaleWithCountryPreference(String serviceId, OnGetServiceLocaleListener listener)

getServiceLocaleWithCountryPreference will get the URL’s from the response filtering with given ServiceID. The listener, OnGetServiceLocaleListener will get the results back.

1. void getServicesWithLanguagePreference(String serviceIds, OnGetServicesListener listener)

getServicesWithLanguagePreference will get the URL’s from the response filtering with given ServiceID. The listener, OnGetServicesListener will get the results back.

1. void getServicesWithCountryPreference(String serviceIds, OnGetServicesListener listener);

getServicesWithCountryPreference will get the URL’s from the response filtering with given ServiceID. The listener, OnGetServicesListener will get the results back.

1. void refresh(OnRefreshListener listener)

The refresh to Webservice call happens here. And the results will get back to OnRefreshListener.

1. public String getservice(OnRefreshListener listener)

Call the service discovery hard coded single URL without(first run) country code and fetch the country code and save it in shared preference.

There after this service discovery hard coded single URL is called with ‚country‘ also as a parameter to get complete list of service urls

for given service.

**Internal Document Reference:**

<https://atlas.natlab.research.philips.com/confluence/display/MAIL/Interface+Document>

**App Configuration:**

This component provides API to get and set the configurations for all micro apps. Configuration file will be in JSON format which will be placed in the assets of the vertical applications for the first time. Later it will be stored in device memory using secure storage.

Sample Json file:

{  
 "UR": {  
  
 "Development": "ad7nn99y2mv5berw5jxewzagazafbyhu",  
 "Testing": "xru56jcnu3rpf8q7cgnkr7xtf9sh8pp7",  
 "Evaluation": "4r36zdbeycca933nufcknn2hnpsz6gxu",  
 "Staging": "f2stykcygm7enbwfw2u9fbg6h6syb8yd",  
 "Production": "mz6tg5rqrg4hjj3wfxfd92kjapsrdhy3"  
  
 },  
 "AI": {  
 "MicrositeID": 7750,  
 "RegistrationEnvironment": "Staging",  
 "NL": ["googleplus", "facebook" ],  
 "US": ["facebook","googleplus" ],  
 "EE": [123,234 ]  
 }  
}

API’s:

1. Object getPropertyForKey(String key, String group, ConfigError configError) throws IllegalArgumentException;

This method is used to fetch the value from the configuration file. User has to pass the Coco Name, Key which they are interested in and ConfigError as OUT parameter. The return value will the value for the key mapped.

This method throws IllegalArgumentException if key/groupname are null or improper format.

Example usage of this method:

ConfigInterface.ConfigError configError = new ConfigInterface.ConfigError ();

Object object = mConfigInterface.getPropertyForKey (“UR”, “Development”, configError);

2) boolean setPropertyForKey(String key, String group, Object object, ConfigError configError) throws IllegalArgumentException;

This method is used to set values and update values to the configuration file. User has to pass the Coco Name, Key which they are interested / in case if they want to add new key, Value – it can be any primitive data type, array list of String and Integer and ConfigError as OUT parameter.

User can also add new CoCo and corresponding key-values in the config file.

The return value is true/ false.

This method throws IllegalArgumentException if key/groupname/values are null or improper format.

Example usage of this method:

ConfigInterface.ConfigError configError = new ConfigInterface.ConfigError ();

boolean success = mConfigInterface.setPropertyForKey (“UR”, “newKey”, “newvalue”, configError);

**ConfigError can be: {Invalid Key, GroupNotExists, KeyNotExists, ErrorKeyExists, Fatal Error, DeviceStoreError , NoDataFoundForKey}**

Note:

* For key’s in both app identity and app config:
  + [a-zA-Z0-9\_.-]+
* For values in config:
  + .\* (no check)
* For app identify values:
  + micrositeID,sector: [a-zA-Z0-9]+
  + appstate: enum
  + app name: .\* (no check)
  + app version: [a-zA-Z0-9\_./-]+
* all CocoName/Key/Values is case sensitive
* **To delete any key, pass the null value for the given key:**

boolean setPropertyForKey(“key”, “group”, null, configError);

3)

Object getDefaultPropertyForKey(String key, String group, AppConfigurationError configError) throws IllegalArgumentException;

This method is used to fetch the value from the configuration file always. User has to pass the Key, Coco Name, which they are interested in and ConfigError as OUT parameter. The return value will the value for the key mapped.

This method throws IllegalArgumentException if key/groupname are null or improper format.

Example usage of this method:

ConfigInterface.ConfigError configError = new ConfigInterface.ConfigError ();

Object object = mConfigInterface.getPropertyForKey (“appidentity.appState”, “appinfra”, configError);

**Demo App link:**

<https://atlas.natlab.research.philips.com/bitbucket/projects/MAIL/repos/app-infra_android/browse/Source/DemoApp/app/src/main/java/com/philips/platform/appinfra/demo/AppConfigurationActivity.java?at=Develop>

**REST Client:**

Volley library is customized for Rest Client and modified class are:

* StringRequest
* JsonObjectRequest
* ImageRequest
* DiskBasedCache

Component and vertical should import above classes from AppInfra pakage:

Eg. **import** com.philips.platform.appinfra.rest.request.StringRequest;

**Note: http calls are deprecated in this REST Client, use https calls only**

If http url is passed to any of above requests then **HttpForbiddenException** is thrown.

Enable/Disable Caching

By Default Volley enables Cache, to disable it component need to call setShouldCache method on StringRequest, JsonObjectRequest, ImageRequest & Custom Request.

Eg. StringRequest.setShouldCache(false); // set false to disable cache

Encrypt/Decrypt Cache:

Encryption and Decryption is implemented in Appinfra customised **DiskBasedCache** class.

Cache size is taken from App Configuration json file:

**"appinfra"**: {  
 **"appidentity.micrositeId"** : **"77000"**,  
 **"appidentity.sector"** : **"b2c"**,  
 **"appidentity.appState"** : **"Staging"**,  
 **"appidentity.serviceDiscoveryEnvironment"** : **"Production"**,  
 **"restclient.cacheSizeInKB": 1024**}

Public API:

**public RequestQueue getRequestQueue(); // returns volley queue**

**RestInterface mRestInterface** = AppInfraApplication.*gAppInfra*.getRestClient();

**mRestInterface**.getRequestQueue().add(mStringRequest);

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**public** RequestQueue getRequestQueue() {  
 **if** (**mRequestQueue** == **null**) {  
**mAppConfigurationInterface** = **mAppInfra**.getConfigInterface();  
 AppConfigurationInterface.AppConfigurationError configError = **new** AppConfigurationInterface.AppConfigurationError();  
 Integer cacheSizeinKB = (Integer)**mAppConfigurationInterface**.getPropertyForKey(**"restclient.cacheSizeInKB"**,**"appinfra"**,configError);  
 **if**(cacheSizeinKB==**null** ) {  
 cacheSizeinKB = 1024; *// default fall back* }  
 Cache cache = **new** DiskBasedCache(getCacheDir(), cacheSizeinKB, **mAppInfra**); *//  
// Set up the network to use HttpURLConnection as the HTTP client.* Network network = getNetwork();  
 **mRequestQueue** = **new** RequestQueue(cache,network);  
 **mRequestQueue**.start();  
 }  
 **return mRequestQueue**;  
 }

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**public HashMap<String, String> setTokenProvider(TokenProviderInterface provider);**

Components will call this method inside getHeaders() mthod before making network call and token service provider has to be implements by Vertical/User registration team

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@Override  
**public** HashMap<String, String> setTokenProvider(TokenProviderInterface provider) {  
 HashMap<String, String> header = **new** HashMap<String, String>();  
 TokenProviderInterface.Token token = provider.getToken();  
 String scheme = **""**;  
 **if** (token.getTokenType() == TokenProviderInterface.TokenType.***OAUTH2***)  
 scheme = **"Bearer"**;  
 **else  
 throw new** IllegalArgumentException(**"unsupported token type"**);  
 *// String header = "Authorization: " + scheme + " " + token.getTokenValue();* header.put(**"Authorization"**, scheme + **" "** + token.getTokenValue());  
  
 **return** header;  
}

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**Demo App link:**

<https://atlas.natlab.research.philips.com/bitbucket/projects/MAIL/repos/app-infra_android/browse/Source/DemoApp/app/src/main/java/com/philips/platform/appinfra/demo/RestClientActivity.java?at=refs%2Fheads%2FDevelop>

**A/B Testing:**

A/B (Alpha/Beta) testing feature is to facilitate the other micro apps or vertical application to make a choice of their Application flow to be considered for execution. It could be an alternate UI flow, Theme settings etc.

The A/B library will use ADOBE SDK which in turn will talk to Test and Target infrastructure to retrieve the flow ID's for a given flow keys. These keys will come from the other micro apps via the interface exposed by the A/B library component.

A/B will expose an API to receive the Key. So the A/B will handover the key to the API exposed by Adobe and expect a value in return. This value is then handed over to the calling application.

API’s:

1)void updateCache(OnRefreshListener listener);

 This API downloads the experience value from the server. Test names should be mentioned in the Appconfiguration. It accepts only ArrayList of Strings.

"abtest.precache": ["philipsmobileappabtest1content","philipsmobileappabtest1success"]

Refresh will not happen if there are no tests defined in configuration or when experiences are already updated.

This method gives error/ success callback based on the response.

2) CACHESTATUSVALUES getCacheStatus ();

This method returns the status of the cached experiences for the configured list of tests. At initialization of the module, the status is either NO\_TESTS\_DEFINED, NO\_CACHED\_EXPERIENCES, or EXPERIENCES\_NOT\_UPDATED.

An updateCache () may change the state to EXPERIENCES\_PARTIALLY\_UPDATED or EXPERIENCES\_UPDATED.

Cache Status can be any one of these:

NO\_TESTS\_DEFINED, NO\_CACHED\_EXPERIENCES, EXPERIENCES\_NOT\_UPDATED,

EXPERIENCES\_PARTIALLY\_UPDATED, EXPERIENCES\_UPDATED

3) String getTestValue (String testName, String defaultValue, UPDATETYPES updateType, Map<String, Object> parameters);

This method returns the value for the given test either from the memory cache / persistent cache.

Default value will be returned if there is no value present in the cache.

Parameters:

testName: TestName for which the testValue is needed.

defaultValue: default value to be returned .

updateTypes: updateType can be App restart and App Update .

**Note :**

**If testname is Apprestart type - it will be only stored in cache.**

**If testname is Appupdate type – it will be stored in both cache and disk.**