

# DU Ad Platform\_SDK for Android Access Guide

---

Version: DUAd\_SDK\_CW1.1.1.2

## DU Ad Platform\_SDK for Android Access Guide

1. Introduction
2. Integration Workflow
3. Obtain Identity
  - 3.1 APP\_ID
  - 3.2 DAP Placement ID
  - 3.3 Facebook Placement\_ID(Optional)
  - 3.4 AdMob\_ID(Optional)
4. Load SDK and Configuration
  - 4.1 Load DU Ad Platform SDK
  - 4.2 Configure AndroidManifest.xml
  - 4.3 Obfuscate Code
5. Initialization
6. Request Single Native Ad
  - 6.1 Construct Du Native Ad
  - 6.2 Register the Callback Interface for Native Ad
  - 6.3 Retrieve Native Ad
  - 6.4 Destroy Ad Object
7. Native Ad Properties
  - 7.1 Introduction of Ad Properties
  - 7.2 Get the Ad Properties
  - 7.3 Get AdMob Ads Data
8. Register the Native Ad's View
9. Request Native Ad List
  - 9.1 Construct Manager Class of Native Ad List
  - 9.2 Construct Class of Sub-Native Ad
  - 9.3 Register the Listener for Manager Class
  - 9.4 Register a listener for each single ad in ad List
  - 9.5 Retrieve Native Ad
  - 9.6 Get the Ad Properties
  - 9.7 Destroy the Object and Listener Interface
10. Request Offerwall
  - 10.1 Configure AndroidManifest
  - 10.2 Mandatory Parameter
11. Request Interstitial Ad
  - 11.1 Constructor of Interstitial Ad
  - 11.2 Set listener for Interstitial Ad
  - 11.3 Retrieve Interstitial Ad
12. Request Banner Ad

- [12.1 Constructor of Banner Ad](#)
- [12.2 Set listener for Banner Ad](#)
- [12.3 Mandatory Parameter](#)
- [12.4 Add Banner Ad to Custom Layout](#)
- [12.5 Retrieve Banner Ad](#)

## 1. Introduction

---

This document describes how to integrate **DUAd Platform SDK** into Android apps.

[DAP\(short for DUAd platform\)](#) offers advertising services for helping apps to monetize. This version of SDK provides native ads, interstitial ads, offerwall and banner.

Prerequisites:

DU Ad Platform SDK currently supports Android 2.3 API level 9 (included) plus system versions.

## 2. Integration Workflow

---

This section describes the integration workflow of DU Ad Platform SDK.

1. Apply for App\_ID and DAP Placement\_ID.
2. Load SDK package; configure Androidmanifest.xml.
3. Initialize DU Ad Platform SDK.
4. Access Du ads.

## 3. Obtain Identity

---

This section describes the four IDs needed during DU Ad Platform SDK integration: APP ID, DAP Placement ID, Facebook Placement\_ID and AdMob\_ID.

### 3.1 APP\_ID

1. Definition

APP ID is a unique identifier of a developer's APP on **Du Ad Platform**. Each app has its own App ID.

2. Obtain method

Visit our [official website](#) and register your app on **Du Ad Platform**, the APP ID will be generated automatically

3. Code

```
app_license
```

## 3.2 DAP Placement ID

### 1. Definition

DAP Placement ID is a unique identifier of an ad slot on Du Ad platform. Developers can create multiple DAP Placement IDs for one app.

### 2. Obtain method

Visit our [official website](#) and after registered your app, you can create the placement for your app.

### 3. Code

```
pid
```

## 3.3 Facebook Placement\_ID(Optional)

### 1. Definition

Facebook Placement ID is the unique identifier of an ad slot on Facebook audience network. Only required if you use DAP to intergrate FAN.

### 2. Obtain method

Visit [Facebook Developers](#) to apply it.

### 3. Code

```
fbids
```

## 3.4 AdMob\_ID(Optional)

### 1. Definition

AdMob\_ID is the unique identifier of an ad slot on Google AdMob. Only required if you use DAP to intergrate AdMob.

### 2. Obtain method

Visit [AdMob Developers](#) to apply it.

### 3. Code

```
amid
```

## 4. Load SDK and Configuration

---

This section describes how to load the DU Ad Platform SDK into your android project, how to configure the *AndroidManifest.xml* file and how to obfuscate code against project needs.

## 4.1 Load DU Ad Platform SDK

1. Download the DU Ad Platform SDK package.
2. Unzip the package. Two folders are available in the subdirectory:
  - DUAd\_SDK:  
This folder stores DU Ad Platform SDK aar: DuappsAd-CW-xxxx-release.aar
  - DUAd\_SDK\_DEMO  
This folder stores a sample program, which integrates DU Ad Platform SDK. All interfaces in this document can be found in corresponding usage in this sample program.

3. Load DU Ad Platform SDK:

- When using Android Studio:

Copy the SDK aar to your Android Project, under the libs directory in root directory. Then configure build.gradle:

```
1 repositories {
2     flatDir {
3         dirs 'libs'
4     }
5 }
6
7 dependencies {
8     compile fileTree(include: ['*.jar'], dir: 'libs')
9     compile(name: 'DuappsAd-CW-xxx-release', ext: 'aar')
10 }
11 *Note: The assigned directory of flatDir is where the aar file is
    placed.
```

- When using Eclipse:

1. Create a new Eclipse Android library.
2. Change the suffix of DuappsAd-CW-xxx-release.aar to zip and unzip it, then you will get a classes.jar, an AndroidManifest.xml and a res folder.
3. Copy the classes.jar to the new created Android library, under the libs directory in root directory.
4. Replace the AndroidManifest.xml in the new created Android library with the AndroidManifest.xml in unzipped DuappsAd-CW-xxx-release.aar
5. Replace the res folder in the new created Android library with the res folder in unzipped DuappsAd-CW-xxx-release.aar.

Note: Please also add additional dependencies when you use DAP to integrate Facebook and AdMob ads.

## 4.2 Configure AndroidManifest.xml

Open the AndroidManifest.xml in your Android project and update it as below:

1. Add user-permission element. Least Privilege of DU Ad Platform SDK is shown below:

```
1 <uses-permission android:name="android.permission.INTERNET" />
2 <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
```

2. Add a meta-data element under the application element, and fill your DAP App ID as the value of "app\_license". Declare the com.duapps.ad.stats.DuAdCacheProvider in the manifest. Replace the below package name with your app's full package name.

```
1 <application
2     android:name="com.mobula.sample.MobulaApplication"
3     android:icon="@drawable/ic_launcher"
4     android:label="@string/app_name"
5     android:theme="@style/mobulaTheme" >
6     <meta-data
7         android:name="app_license"
8         android:value="xxxxxxxxxx" />
9     <provider
10        android:name="com.duapps.ad.stats.DuAdCacheProvider"
11        android:authorities="package-name.DuAdCacheProvider"
12        android:exported="false">
13    </provider>
14 </application>
```

Note: Please make sure the package name at here is exactly the same as the package name you filled on DAP when registering you app. Otherwise, it will fail to get ad from DAP.

3. Register the BroadcastReceiver for receiving app install event.

**Please add this receiver properly, Otherwise it might affect your monetization efficiency.**

```
1 <receiver android:name="com.duapps.ad.base.PackageAddReceiver" >
2     <intent-filter>
3         <action android:name="android.intent.action.PACKAGE_ADDED" />
4         <data android:scheme="package" />
5     </intent-filter>
6 </receiver>
```

4. Add this Activity when you use AdMob. Please ignore this if you don't need AdMob ads.

```

1 <!--Admob begin-->
2 <activity
3     android:name="com.google.android.gms.ads.AdActivity"
4
5     android:configChanges="keyboard|keyboardHidden|orientation|screenLayout|
6         uiMode|screenSize|smallestScreenSize"
7     android:theme="@android:style/Theme.Translucent" />

```

## 4.3 Obfuscate Code

Please follow the below rules to obfuscate code. Otherwise, there might be exceptions at run time.

1. Add below classes to proguard configuration:

```

1 -keep class com.duapps.ad.**{*;}
2 -dontwarn com.duapps.ad.**
3
4 -keep public class * extends android.content.BroadcastReceiver
5 -keep public class * extends android.content.ContentProvider
6 -keepnames @com.google.android.gms.common.annotation.KeepName class *
7 -keepclassmembernames class * {
8     @com.google.android.gms.common.annotation.KeepName *;}
9 -keep class com.google.android.gms.common.GooglePlayServicesUtil {
10     public <methods>;}
11 -keep class com.google.android.gms.ads.identifier.AdvertisingIdClient {
12     public <methods>;}
13 -keep class com.google.android.gms.ads.identifier.AdvertisingIdClient$Info
14     {
15     public <methods>;}
15 -keep class com.duapps.ad.banner.BannerListener { *; }

```

Note: For more about obfuscation methods, please refer to the official Android obfuscation document at: [\\${ android-sdk }/tools/proguard/](#)

2. If accessing Facebook ads, please add the below class to proguard configuration.

```

1 -keep class com.facebook.ads.NativeAd

```

3. If accessing Admob ads, please add the below class to proguard configuration.

```

1 -keep public class com.google.android.gms.ads.** {public *;}

```

## 5. Initialization

This section describes how to initialize DAP SDK. You need to initialize DAP SDK before you can use it.

### Placement id without initialization can not get ads.

1. Create a json file with mappings for the DAP Placement ID and other platform id.

```
1  {
2    "native": [
3      {
4        "pid": "YOUR_DAP_PLACEMENT_ID"
5      },
6      {
7        "pid": "YOUR_DAP_PLACEMENT_ID",
8        "fbids": [
9          "YOUR_FACEBOOK_PLACEMENT_ID"
10       ],
11       "amid": "YOUR_ADMOB_AD_ID"
12     }
13   ],
14   "list": [
15     {
16       "pid": "YOUR_DAP_PLACEMENT_ID",
17       "fbids": "YOUR_FACEBOOK_PLACEMENT_ID"
18     }
19   ]
20   "offerwall": [
21     {
22       "pid": "YOUR_DAP_PLACEMENT_ID",
23       "fbids": "YOUR_FACEBOOK_PLACEMENT_ID"
24     }
25   ]
26 }
```

#### Note:

1. If some of the DAP placements don't need ads from Facebook, the "fbids" part for that "pid" could be removed. If FBID is bound, please make sure the Facebook Audience Network sdk version is not lower than FB 4.23.0.
2. If some of the DAP placements don't need ads from AdMob, the "amid" part for that "pid" could be removed.
3. DAP native list, interstitial ads, offer wall, banner ads are not support ads from AdMob now. Banner ads is not support ads from Facebook now.

2. Add a call to `DuAdNetwork.init()` from `onCreate()` in your Application class.

Interface Instruction:

```
public static void init(Context context, String pidsjson)
```

| Parameters      | Description                                                   |
|-----------------|---------------------------------------------------------------|
| Context context | ACTIVITY CONTEXT                                              |
| String pidsjson | The relationship between DAP Placement ID and other platform. |

Code Sample:

```
1 public void onCreate() {
2     super.onCreate();
3     //Initialize the DAP SDK before executing any other operations
4     DuAdNetwork.init(this, getConfigJSON(getApplicationContext()));
5
6     //DuAdNetwork.setLaunchChannel("YOUR_APP_CHANNEL");
7 }
8
9 //Read the json.txt from assets
10 private String getConfigJSON(Context context) {
11     BufferedInputStream bis = null;
12     ByteArrayOutputStream bos = new ByteArrayOutputStream();
13     try {
14         bis = new BufferedInputStream(context.getAssets().open("json.txt"));
15         byte[] buffer = new byte[4096];
16         int readLen = -1;
17         while ((readLen = bis.read(buffer)) > 0) {
18             bos.write(buffer, 0, readLen);
19         }
20     } catch (IOException e) {
21         Log.e("", "IOException :" + e.getMessage());
22     } finally {
23         closeQuietly(bis);
24     }
25
26     return bos.toString();
27 }
```

3. Add a `DuAdNetwork.setLaunchChannel()` from `onCreate()` in your Application class, to distinguish your data by your app distribution channel. It's optional.

Interface Instruction:

```
public static void setLaunchChannel (String channelName)
```



| Parameters            | Description                                                  |
|-----------------------|--------------------------------------------------------------|
| String<br>channelName | Your own distribution channel name to distinguish your data. |

## 6. Request Single Native Ad

### 6.1 Construct Du Native Ad

Proceed as follows:

1. Create DuNative Ad Object.

Must specify the corresponding pid into the object. You will get different ad data with different pid.

2. Set ad cache size

Cache size could be set to 1-5. Recommend not to set cachesize. The default cachesize will be 1.

Note:Cache size only takes effect when integrating other platform through the DU Ad Platform.

Interface Instruction:

```
public DuNativeAd (Context context, int pid)
public DuNativeAd (Context context, int pid, int cacheSize)
```

| Parameters      | Description                                                            |
|-----------------|------------------------------------------------------------------------|
| Context context | ACTIVITY CONTEXT                                                       |
| int pid         | DAP placement ID, this pid must declared on json's <b>native</b> array |
| int cacheSize   | Ad cache size.                                                         |

### 6.2 Register the Callback Interface for Native Ad

Please register a callback interface for receiving the native ad data.

Interface Instruction:

```
public void setMobulaAdListener(DuAdListener adListener)
```

| Parameters                 | Description                                                       |
|----------------------------|-------------------------------------------------------------------|
| DuAdListener<br>adListener | Callback function returns: ad error, ad data, and ad click event. |

```
1 public interface DuAdListener {  
2     public void onError(DuNativeAd ad, AdError error);  
3     public void onAdLoaded(DuNativeAd ad);  
4     public void onClick(DuNativeAd ad);  
5 }
```

After called `load()`, three types of results could be returned:

- Retrieve ad successfully

Modify the `onAdLoaded()` function above to retrieve the ad properties.

- Get an error

Get specific error information in `onError()` function above. Error code and description are shown as below:

| Constants                      | Error Code | Description                      |
|--------------------------------|------------|----------------------------------|
| NETWORK_ERROR_CODE             | 1000       | Client network error             |
| NO_FILL_ERROR_CODE             | 1001       | No Ad data retrieved             |
| LOAD_TOO_FREQUENTLY_ERROR_CODE | 1002       | Too many interface requests      |
| IMPRESSION_LIMIT_ERROR_CODE    | 1003       | Reach the daily impression limit |
| SERVER_ERROR_CODE              | 2000       | Server error                     |
| INTERNAL_ERROR_CODE            | 2001       | Network error                    |
| TIME_OUT_CODE                  | 3000       | Retrieve Ad data timed out       |
| UNKNOW_ERROR_CODE              | 3001       | Unknown error                    |

- Retrieve a ad click event

Get informed when an ad is clicked in `onClick()` function.

## 6.3 Retrieve Native Ad

The ad retrieving process is asynchronous, so it will not block developers' threads.

Interface Instruction:

```
public void fill()
```

Use the `fill()` to pre-cache ad in advance for faster loading the ad when using `load()`.

Recommend using the `fill()` at the page before the ad showing page.

Note: Ad data will be cached in client device's memory. Since SDK only caches the image's URL address not the image data, the cache size is small.

```
public void load()
```

Acquire advertising object data **asynchronously**, making an ad request when there is no cache.

Recommend using `fill()` after `load()` to pre-cache again.

```
public DuNativeAd getCacheAd()
```

Acquire advertising object data **synchronously**. It could be traversed until the number of cached ads goes to 0.

Please make sure the cache pool is not null before showing ad.

Recommend using `fill()` after `get()` to pre-cache again.

```
public boolean isHasCached()
```

Check if there is cached ad. Return true for having cache.

Code Sample:

```
1 DuNativeAd nativeAd = new DuNativeAd(this, PID, CACHESZIE);
2
3 if (nativeAd != null) {
4     nativeAd.setMobulaAdListener (mListener);
5     nativeAd.load();
6 }
7
8 DuAdListener mListener = new DuAdListener () {
9     @Override
10    public void onError (DuNativeAd ad, AdError error) {
11        Log.d(TAG, "onError : " + error.getErrorCode());
12    }
13
14    @Override
15    public void onClick (DuNativeAd ad) {
16        Log.d(TAG, "onClick : click ad");
```

```

17     }
18
19     @Override
20     public void onAdLoaded (final DuNativeAd ad) {
21         Log.d(TAG, "onAdLoaded : " + ad.getTitle());
22     }
23 };

```

## 6.4 Destroy Ad Object

Recommend to destroy your ad object when exiting the native ad showing page.

Interface Instruction:

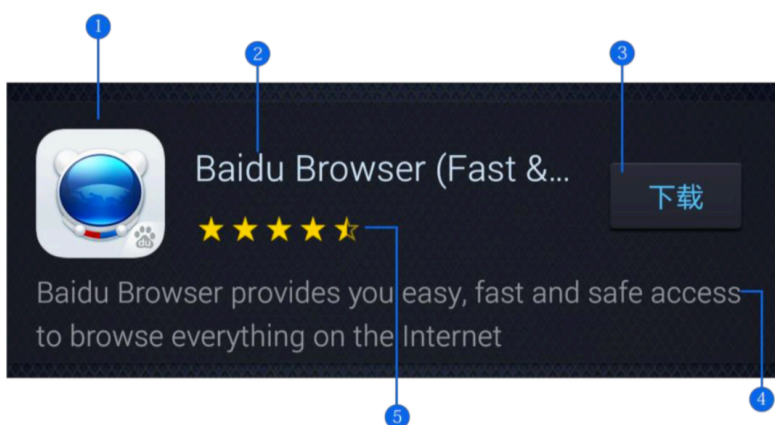
```
public void destroy()
```

## 7. Native Ad Properties

When using the Native Ad, instead of receiving an ad ready to be displayed, you will receive a group of ad properties such as a title, an image, a call to action, and you will have to use them to construct a custom view where the ad is shown. This section describes the ad properties and how to get them.

### 7.1 Introduction of Ad Properties

Ad properties include: Icon, title, Call to action (CTA) button, short description, rating, promotion image, etc.



1. Icon   2. Title   3. Call to action (CTA) button   4. Short description   5. Rating

### 7.2 Get the Ad Properties

The interfaces for retrieving the ad properties as shown below:

- Get Icon

```
public String getIconUrl()
```

Return the URL address of icon.

- Get Title

```
public String getTitle()
```

Return the title of ad.

Please reserve at least 20 characters' space to display the title. An ellipsis (...) can be used to indicate truncated text.

Note: The ad title must be included in your native ad design.

- Get Call to Action (CTA) button

```
public String getCallToAction()
```

Return the text of ad's CTA button.

Advertisers can specify the text of CTA button, e.g. Install Now. The max character length is 25. Please do not shorten or change the text. Note: The CTA button must be included in your native ad design.

- Get Short Description

```
public String getShortDesc()
```

Return the short description of ad.

Please reserve at least 72 characters' space to display the short description. If the space is not big enough, it is recommended to use scrolling text effects, or do not display the short description.

- Get Rating

```
public float getRatings()
```

Return the ad's rating on Google Play.

- Get Promotion Image

```
public String getImageUrl()
```

Return the URL address of ad's promotion image.

A promotion image can increase user's desire to click the ad. The image size is usually 796x416 pixels(1.91:1). You can zoom and cut part of the image, but do not distort or change it.

- DuAdChoicesView

This view is the AdChoices corner mark from by Facebook Native Ad. It's the mandatory element for Facebook native Ad. Please Note that the native ad which is not from Facebook doesn't have this.

Interface Instruction:

```
public DuAdChoicesView(Context mContext, DuNativeAd mNativeAd, boolean
isExpand)
```

| Parameters              | Description                                                                 |
|-------------------------|-----------------------------------------------------------------------------|
| Context<br>mContext     | ACTIVITY CONTEXT                                                            |
| DuNativeAd<br>mNativeAd | Native ad object                                                            |
| boolean<br>isExpand     | Controll whether AdChoises corner mark is expandable, recomment to be true. |

Code Sample:

```
1 import com.duapps.ad.DuAdMediaView;
2 import com.duapps.ad.DuAdChoicesView;
3
4 LinearLayout adChoicesContainer = (LinearLayout)
  findViewById(R.id.ad_choices_container);
5
6 if (mNativeAd.getAdChannelType() == DuNativeAd.CHANNEL_TYPE_FB) {
7     DuAdChoicesView choicesView = new
  DuAdChoicesView(getApplicationContext(), mNativeAd, true);
8     adChoicesContainer.addView(adChoicesView);
9     DuAdMediaView mMediaView = new DuAdMediaView(this);
10    mMediaView.setAutoPlay(true);
11    mMediaView.setNativeAd(mNativeAd.getRealSource());
12 }
```

## 7.3 Get AdMob Ads Data

There are two types of AdMob native ads: AppInstall and ContenAd. Please make the judgment after getting the ads data and call this method onAdLoaded () callback. For more details please see demo.

```
public int getAdChannelType()
```

```

1  if (ad.getAdChannelType() == DuNativeAd.CHANNEL_TYPE_AM_INSTALL) {
2      //If the type of Ad is "Admob- AppInstall", then dynamically use the
      "NativeAppInstallAdView" provided by Admob
3      if (lp == null) {
4          lp = new LayoutParams(LayoutParams.WRAP_CONTENT, LayoutParams.WRAP_CONTENT);
5      }
6      if (installAdView == null) {
7          installAdView = new NativeAppInstallAdView(ShowADCardActivity.this);
8      }
9      installAdView.setHeadlineView(titleView);
10     installAdView.setIconView(iconView);
11     installAdView.setBodyView(descView);
12     installAdView.setImageView(bigImgView);
13     installAdView.setStarRatingView(ratingView);
14     installAdView.setCallToActionView(btnView);
15     installAdView.addView(r1, lp);
16     fl.addView(installAdView);
17
18     nativeAd.registerViewForInteraction(installAdView);
19 } else if(ad.getAdChannelType() == DuNativeAd.CHANNEL_TYPE_AM_CONTENT){
20     //If the type of AD is "Admob- Content", then dynamically use the
      "NativeContentAdView" provided by Admob
21     if (lp == null) {
22         lp = new LayoutParams(LayoutParams.WRAP_CONTENT, LayoutParams.WRAP_CONTENT);
23     }
24     if (contentAdView == null) {
25         contentAdView = new NativeContentAdView(ShowADCardActivity.this);
26     }
27     contentAdView.setHeadlineView(titleView);
28     contentAdView.setLogoView(iconView);
29     contentAdView.setBodyView(descView);
30     contentAdView.setImageView(bigImgView);
31     contentAdView.setCallToActionView(btnView);
32     contentAdView.addView(r1, lp);
33     fl.addView(contentAdView);
34
35     nativeAd.registerViewForInteraction(contentAdView);
36 } else {
37     //If the type of Ad is "Facebook" or "DU", please use the below method to
      register the View.
38     fl.addView(r1);
39     nativeAd.registerViewForInteraction(bigImgContainer);
40 }

```

## 8. Register the Native Ad's View

The SDK will log the impression and handle the click automatically. Please note that you must register the ad's view with the DuNativeAd instance to enable that.

Interface Instruction:

```
public void registerViewForInteraction(View view)
public void registerViewForInteraction(View view, List<View> views)
```

| Parameters        | Description                  |
|-------------------|------------------------------|
| View view         | Clickable View in Adcontents |
| List <View> views | More detailed sub-View       |

Note: Don't recommend using this interface in multi-thread.

## 9. Request Native Ad List

Du Native Ad List is for showing multiple ads in one page at the same time. (Please note that Du Native Ad List has relatively poor monetization efficiency compared with single Du Native Ad. Please use this according to your situation.)

The whole workflow of getting the Ad is done in AsyncTask. Please use this function in the main thread.

### 9.1 Construct Manager Class of Native Ad List

Interface Instruction:

```
public DuNativeAdsManager(Context context, int pid, int cacheSize)
```

| Parameters      | Description                                                             |
|-----------------|-------------------------------------------------------------------------|
| Context context | ACTIVITY CONTEXT                                                        |
| int pid         | DAP placement ID, this pid must be declared on json's <b>list</b> array |
| int cacheSize   | Ad cache size.                                                          |

### 9.2 Construct Class of Sub-Native Ad

```
public NativeAd()
```



## 9.3 Register the Listener for Manager Class

Interface Instruction:

```
public void setListener(AdListArrivalListener adListener)
```

| Parameters                          | Description                                                                  |
|-------------------------------------|------------------------------------------------------------------------------|
| AdListArrivalListener<br>adListener | Listener for NativeAd list. Callback function returns: ad error and ad data. |

```
1 public interface AdListArrivalListener {  
2     public void onError(AdError error);  
3     public void onAdLoaded(List<NativeAd> mNativeAd);  
4 }
```

After called `load()`, two types of results could be returned:

- Retrieve ad successfully  
Modify the `onAdLoaded()` function above to retrieve the ad properties.
- Get an error  
Get specific error information in `onError()` function above.

## 9.4 Register a listener for each single ad in ad List

Interface Instruction:

```
public void setMobulaAdListener(DuAdDataCallBack mCallBack)
```

| Parameters                    | Description                                                                                                                                   |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| DuAdDataCallBack<br>mCallBack | Callback function returns: click event. There is no <code>onAdLoaded()</code> and <code>onAdError()</code> callback for single ad in ad list. |

```
1 public interface DuAdDataCallBack {  
2     public void onError(AdError error);  
3     public void onAdLoaded(NativeAd mNativeAd);  
4     public void onAdClick();  
5 }
```

- Retrieve a ad click event  
Get informed when an ad is clicked in `onClick()` function.

## Code Sample:

```
1 private NativeAd mNativeAD;
2 private LinkedList<NativeAd> lists = new LinkedList<NativeAd>();
3 private DuNativeAdsManager adsManager = new
DuNativeAdsManager(getApplicationContext(), PID, CACHESZIE);
4
5 @Override
6 protected void onResume() {
7     super.onResume();
8     if (adsManager != null) {
9         adsManager.setListener(listener);
10        adsManager.load();
11
12        mNativeAD = lists.get(mPosition);
13        mNativeAD.setMobulaAdListener(callback);
14        mNativeAD.registerViewForInteraction(btnView);
15    }
16 }
17
18 AdListArrivalListener listener = new AdListArrivalListener() {
19     NativeAd nativeAD;
20     //Return ad list
21     @Override
22     public void onAdLoaded(List arg0) {
23         for (int i = 0; i < arg0.size(); i++) {
24             //Get single ad object
25             nativeAD = (NativeAd) arg0.get(i);
26             if (!(nativeAD.equals(null))) {
27                 lists.add(nativeAD);
28             }
29         }
30     }
31
32     //Get the error
33     @Override
34     public void onAdError(AdError arg0) {
35         Log.d(TAG, "onError : " + arg0.getErrorCode());
36     }
37 };
38
39 DuAdDataCallBack callback = new DuAdDataCallBack() {
40     @Override
41     public void onAdLoaded(NativeAd data) {
42     }
43
44     @Override
```

```

45     public void onAdError(AdError error) {
46     }
47
48     @Override
49     public void onAdClick() {
50         Log.d(TAG, "onClick : click list ad");
51     }
52 };

```

## 9.5 Retrieve Native Ad

Interface Instruction:

```
public void fill()
```

Use the `fill()` to pre-cache ad in advance for faster loading the ad when using `load()`.

Recommend using the `fill()` at the page before the ad showing page.

Note: Ad data will be cached in client device's memory. Since SDK only caches the image's URL address not the image data, the cache size is small.

```
public void load()
```

Acquire advertising object data **asynchronously**, making an ad request when there is no cache.

Recommend using `fill()` after `load()` to pre-cache again.

## 9.6 Get the Ad Properties

- Get Icon

```
public String getAdIconUrl()
```

Return the URL address of icon.

- Get Title

```
public String getAdTitle()
```

Return the title of ad.

Please reserve at least 20 characters' space to display the title. An ellipsis (...) can be used to indicate truncated text. Please note the ad title must be included in your native ad design.

- Get Call to Action (CTA) button

```
public String getAdCallToAction()
```

Return the text of ad's CTA button.

Advertisers can specify the text of CTA button, e.g. Install Now. The max character length is 25. Please do not shorten or change the text. Please note the CTA button must be included in your native ad design.

- Get Short description

```
public String getAdShortDesc()
```

Return the short description of ad.

Please reserve atleast 72 charactors' space to display the short description. If the space isnot big enough, it is recommended to use scrolling text effects, or do notdisplay the short description.

- Get Rating

```
public float getAdRatings()
```

Return the ad's rating on Google Play.

- Get Promotion Image

```
public String getAdImageUrl()
```

Return the URL address of ad'spromotion image.

A promotion image can increase user's desire to click the ad. The image size is usually 796x416 pixels(1.91:1). You can zoom and cut part of the image, but do not distort or change it.

- DuAdChoicesView

This view is the AdChoices corner mark from by Facebook Native Ad. It's the mandatory element for Facebook native Ad. Please Note that the native ad which is not from Facebook doesn't have this.

Interface Instruction:

```
public DuAdChoicesView(Context mContext, DuNativeAd mNativeAd, boolean isExpand)
```

| Parameters              | Description                                                                 |
|-------------------------|-----------------------------------------------------------------------------|
| Context<br>mContext     | ACTIVITY CONTEXT                                                            |
| DuNativeAd<br>mNativeAd | Native ad object                                                            |
| boolean<br>isExpand     | Controll whether AdChoises corner mark is expandable, recomment to be true. |

## 9.7 Destroy the Object and Listener Interface

When exiting the native ad list showing page, the object(DuNativeAdsManager) and listener(AdListArrivalListener) must be destroyed.

Interface Instruction:

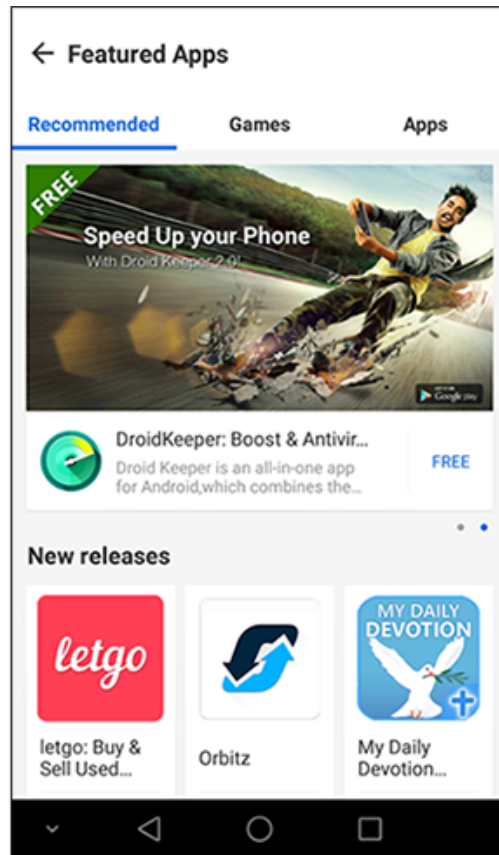
```
public void destroy()
```

Code Sample:

```
1 @Override
2 protected void onDestroy() {
3     super.onDestroy();
4     adsManager.setListener(null);
5     adsManager.destroy();
6 }
```

## 10. Request Offerwall

---



## 10.1 Configure AndroidManifest

Open AndroidManifest.xml and add the below code.

```
1 <activity  
2     android:name="com.duapps.ad.offerwall.ui.OfferWallAct"/>
```

## 10.2 Mandatory Parameter

OfferWallAct.KEY\_PID

OfferWallAct.class is the encapsulated activity class of offer wall. Please fill in your DAP placement ID before using it. this pid must declared on json's **offerwall** array.

Please make sure the Ad Format of this DAP placement ID is selected as 『Offerwall』 during creation on du ad platform. Otherwise, it will fail to get ad.

OfferWallAct.KEY\_TITLE\_ID

Customize your offerwall title text, The id of string defined in xml file. The default value is "Featured Apps" or the corresponding language text.

OfferWallAct.KEY\_TAB\_BACKGROUND\_COLOR

Customize the background color of title and tab. e.g #FFFFFF. The default value is #EDED.

OfferWallAct.KEY\_TAB\_INDICATOR\_COLOR

Customize the color of selected tab text. e.g #FFFFFF. The default value is #1C86EE.

OfferWallAct.KEY\_TAB\_TEXT\_COLOR

Customize the color of title text and the color of unselected tab text. e.g #FFFFFF. The default value is #000000.

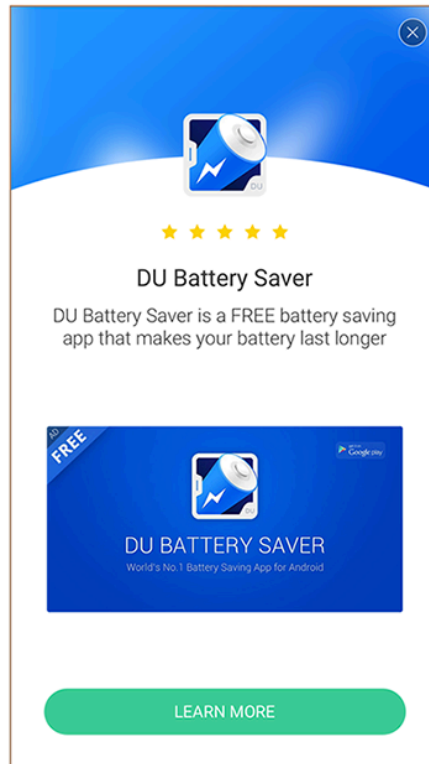
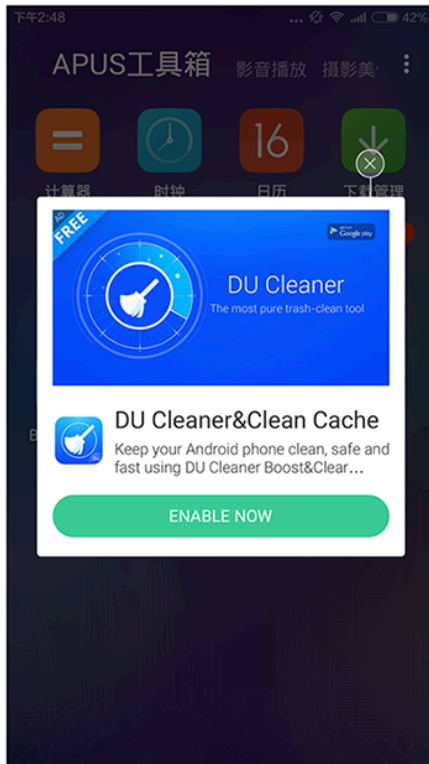
Code Sample:

```
1 Intent intent = new Intent(MainActivity.this, OfferWallAct.class);
2
3 Bundle b = new Bundle();
4 b.putInt("pid", YOUR_PID);
5 b.putInt(OfferWallAct.KEY_TITLE_ID, R.string.app_name); //Optional
6 b.putString(OfferWallAct.KEY_TAB_BACKGROUND_COLOR, "#EDED"); //Optional
7 b.putString(OfferWallAct.KEY_TAB_INDICATOR_COLOR, "#1C86EE"); //Optional
8 b.putString(OfferWallAct.KEY_TAB_TEXT_COLOR, "#000000"); //Optional
9
10 intent.putExtras(b);
11 startActivity(intent);
```

## 11. Request Interstitial Ad

---

A sample of interstitial ad:



## 11.1 Constructor of Interstitial Ad

Interface Instruction:

```
public InterstitialAd(Context context, int pid, int type)
```

| Parameters      | Description                                                                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Context context | ACTIVITY CONTEXT                                                                                                                                            |
| int pid         | DAP placement ID, this pid must declared on Json's <b>native</b> array                                                                                      |
| int type        | <code>InterstitialAd.Type.SCREEN</code> for fullscreen ad<br><code>InterstitialAd.Type.NORMAL</code> for half screen ad<br>The default value is half screen |

## 11.2 Set listener for Interstitial Ad

Interface Instruction:

```
public void setInterstitialListener (AbsInterstitialListener adListener)
```

| Parameters                            | Description                                                       |
|---------------------------------------|-------------------------------------------------------------------|
| AbsInterstitialListener<br>adListener | Callback function returns: ad error, ad data, and ad click event. |



```

1 public interface AbsInterstitialListener {
2     //Retrieve ad failed
3     public void onAdFail(int errorCode);
4
5     //Retrieve ad successfully
6     public void onAdReceive();
7
8     //Ad destroyed event
9     public void onAdDismissed();
10
11    //Ad impression event
12    public void onAdPresent();
13
14    //Ad click event
15    public void onAdClicked();
16 }

```

## 11.3 Retrieve Interstitial Ad

Interface Instruction:

```
public void fill()
```

Use the `fill()` to pre-cache ad in advance for faster loading the ad when using `load()`.

Recommend using the `fill()` at the page before the ad showing page.

Note: Ad data will be cached in client device's memory. Since SDK only caches the image's URL address not the image data, the cache size is small.

```
public void load()
```

Acquire advertising object data **asynchronously**, making an ad request when there is no cache.

Recommend using `fill()` after `load()` to pre-cache again.

```
public void show()
```

Show interstitial ad, Please use this interface in `onAdReceive()`.

```
public void close()
```

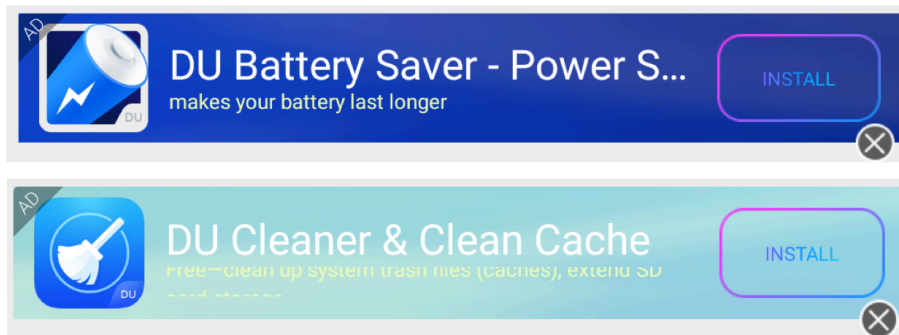
Close interstitial ad, this interface is disabled in this version.

```
public void destroy()
```

Destroy interstitial ad, Recommend to destroy your ad object when exiting the ad showing page.

## 12. Request Banner Ad

A sample of banner ad (blue and green background)



Banner Size: 320 x 50 px

### 12.1 Constructor of Banner Ad

Interface Instruction:

```
public BannerAdView(Context context, int pid, int cachesize, BannerListener listener)
```

| Parameters              | Description                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------|
| Context context         | ACTIVITY CONTEXT                                                                                       |
| int pid                 | DAP placement ID, this pid must declared on json's <b>native</b> array                                 |
| int cachesize           | Ad cache size.                                                                                         |
| BannerListener listener | BannerAd listener ( Only callback for the first time <code>Load()</code> result for each BannerAdView) |

### 12.2 Set listener for Banner Ad

Interface Instruction:

```
public BannerListener ()
```

```

1 public interface BannerListener {
2     //Retrieve ad failed
3     public void onError(String msg);
4
5     //Retrieve ad successfully
6     public void onAdLoaded();
7 }

```

Code Sample:

```

1 BannerAdView mBannerAdView = new BannerAdView(this, PID, CACHESIZE, new
BannerListener() {
2     @Override
3     public void onAdLoaded() {
4         Log.d(TAG, "onAdLoaded");
5     }
6     @Override
7     public void onError(String msg) {
8         Log.d(TAG, "onError:" + msg);
9     }
10 });

```

## 12.3 Mandatory Parameter

public void setBgStyle(int BannerStyle)

| Parameters      | Description                                                                                                                                      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Int BannerStyle | Set background color<br><span>BannerStyle.STYLE_BLUE</span> : for blue background<br><span>BannerStyle.STYLE_GREEN</span> :for green background; |

public void setCloseStyle(int BannerCloseStyle)

| Parameters           | Description                                                                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Int BannerCloseStyle | Setthe position of close button:<br><span>BannerCloseStyle.STYLE_BOTTOM</span> : bottom right corner<br><span>BannerCloseStyle.STYLE_TOP</span> : top right corner |

## 12.4 Add Banner Ad to Custom Layout

```
1 YourLayout.addView(mBannerAdView);
```

## 12.5 Retrieve Banner Ad

```
public void load()
```

Acquire advertising object data **asynchronously**, making an ad request when there is no cache.

```
public void destroy()
```

Destroy banner ad, Recommend to destroy your ad object when exiting the ad showing page.