

# TVU Router SDK Lite Integration Guide

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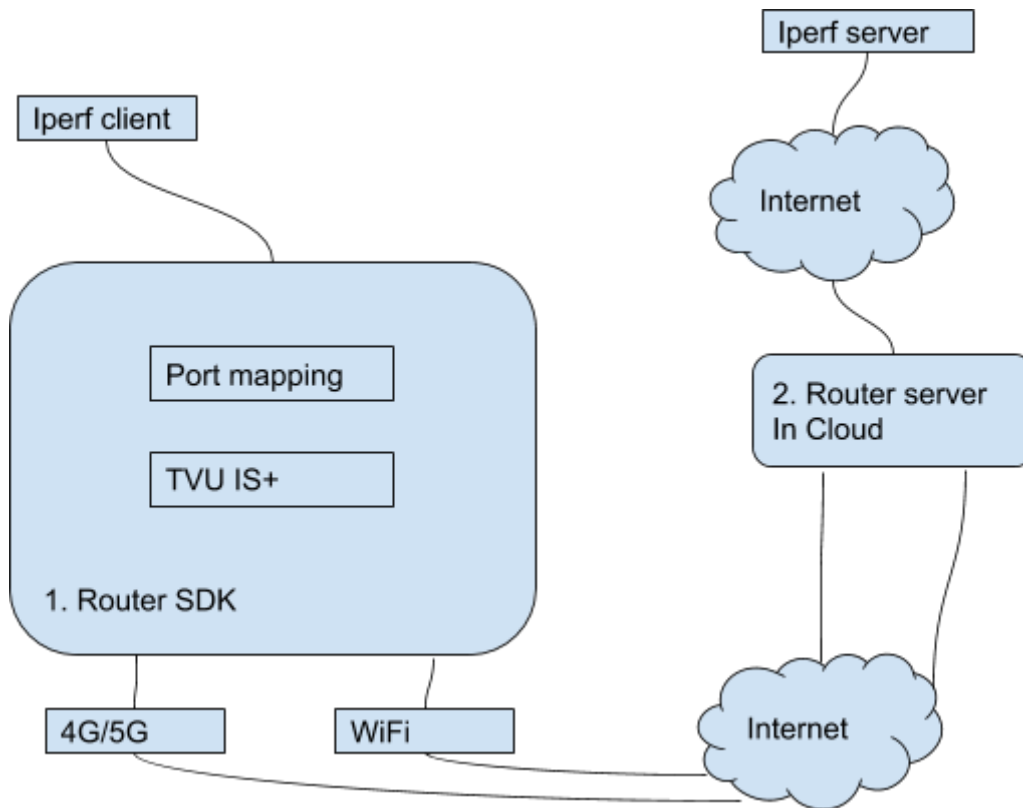
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# Overview

This guide help you integrate TVU router SDK into your application, generally the router SDK will aggregate WiFi and 4G network, and give your app a high bandwidth and reliable network environments.

# System Diagram



1. TVU Router SDK: which acts as router client to forward client app ip packets, then send it out or received by aggregate bandwidth on 5G/4G interface and WiFi interface.
2. TVU Router Server: which acts as a proxy server, can be deployed on all kinds of cloud (AWS, ALI), is responsible to forward ip packet between router client and remote site.

## TVU Account

Before integrating with our SDK, you need register tvu account for authentication, please contact TVU Networks to get support.

## Project Setting

1.Import module tvrouter-[version].aar to your project

(main package name : com.tvunetworks.android)

2.please add gson lib in your gradle like this:

```
dependencies {  
    implementation 'com.google.code.gson:gson:2.8.5'  
}
```

3. proguard for release: (can be found in our demo)

// TODO

## Required Permissions

1. It is recommended that you grant the following permissions in your application, or we will try to grant these permissions when init tvu router sdk and give you the result if these permissions are granted in [TVUPermissionCallBack](#).

```
Manifest.permission.READ_PHONE_STATE,  
Manifest.permission.READ_EXTERNAL_STORAGE,  
Manifest.permission.WRITE_EXTERNAL_STORAGE,  
Manifest.permission.ACCESS_COARSE_LOCATION,  
Manifest.permission.ACCESS_FINE_LOCATION
```

2. If your `targetSdkVersion ≥ 29`, add the following line in the `<application>` module in the `AndroidManifest.xml` file:

```
<application  
    android:requestLegacyExternalStorage="true">  
    ...  
</application>
```

## TVURouter API Usage

we will provide a demo app to illustrate the API usage.

1. get engine instance
2. Init SDK:

```
RouterRegisterConfiguration cfg = new RouterRegisterConfiguration();  
cfg.setAppKey("");  
cfg.setAppSecret("");  
cfg.setUserName("");  
cfg.setPassword("");  
cfg.setEnvironment(US); //cfg.setEnvironment(CN);
```

```
void registerEngine(RouterRegisterConfiguration config, RouterCallBack  
callback);
```

3. create configuration and set it

```
RouterServiceConfiguration cfg = new RouterServiceConfiguration();
cfg.setUniqueName("");
cfg.setIp("");
cfg.setPort("");
cfg.setProtocol("");
```

```
void setConfiguration(RouterServiceConfiguration config);
```

4. start service

```
void startService(StartServiceCallBack callback);
```

5. set log level when needed

```
void setLogLevel(TVURouterLogLevel logLevel);
```

6. stop service

```
void stopService(StopServiceCallBack callback);
```

7. destroy engine

```
void destroyEngine();
```

# TVURouter API Index

## 1.Api Instance:

```
/**
 * create a single instance of TVURouterManager
 * @return TVURouterManager
 */

1.public static TVURouterManager getInstance()
```

## 2.Sdk Initialize:

```
1.void registerEngine(RouterRegisterConfiguration cfg, RouterCallBack
callback));
```

## 3.router service

Throw Exception:

- 1.IllegalStateException if sdk has not been initialized
- 2.IllegalStateException if router service is running or is starting

```
1.public void setConfiguration(RouterServiceConfiguration config);
```

```
/**
 * start service
 */
```

```
2.public void startService(StartServiceCallBack callback)
```

```
/**
 * stop service
 */
```

3.public void stopService(StopServiceCallback callback)

```
/**  
 * destroy sdk  
 */
```

4.public void destroyEngine()

#### 4.device info

```
/**  
 * get device pid  
 *  
 * @return pid  
 */
```

1.public String getPeerId()

#### 5.Log level

```
/**  
 * set log level  
 * @param Constant.TVULog  
 *  
 */
```

1.public void setLogLevel(TVURouterLogLevel logLevel)

# Struct

## RouterRegisterConfiguration

String appKey;  
String appSecret;  
String userName;  
String passWord;  
TVURouterEnvironment env;

## RouterServiceConfiguration

String uniqueName;  
String ip;  
String port;  
String protocol;

# Enum

## TVURouterLogLevel

provide log level

## TVURouterEnvironment

provide supported service environment

# CallBack

## 1.RouterCallBack

1. onRegistered()  
Invoked when registering successfully.
2. onRegisterError(RouterError error)  
Invoked if an error occurs during initialization.
3. routerStatusChanged(boolean isConnected)  
Invoked if the connection to router is changed.(usually caused by poor network on device or network recovers.)
4. void stopBySDK(RouterError error);  
Invoked if the service is stopped by router server.



## 2. StartServiceCallBack

### 5. onStart()

Invoked when start service successfully.

### 6. onStartError(int errorCode, String errorMsg)

Invoked if an error occurs during starting service.

## 3. StopServiceCallBack

### 7. onStop()

Invoked when stop service successfully.

### 8. onStopError(int errorCode, String errorMsg)

Invoked if an error occurs during stopping service.

## ErrorCode

ErrorDescription	ErrorCode	ErrorMsg
Connect router server failed	-101	Can not connect to router server.
Permission denied	-102	Required permission(s) is(are) denied
Unauthorized user	-104	Unauthorized user!
No router server available	-105	Can't get server from router center!
No enough flow remain	-106	Account has no enough flow
User stop server from router center	-107	User stop server from router center.
Reconnect server failed	-108	Can not connect to server, reset router service.
Unexpected error	-109	Unexpected error.
No network	-201	Network is down.Please check your network connection.
Gps closed	-202	GPS is down
Can't get gps info(gps is on)	-203	Can't get Gps Info.

