

# 让测试更真实

## 插桩驱动的干扰测试



熊伟伦/夏鸣远

AppetizerIO

# Push notifications

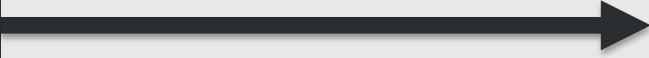
Would you like to receive push

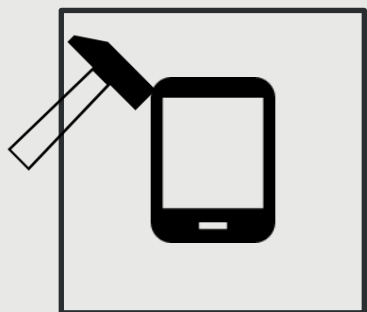
Unfortunately, BBC News has stopped.

OK

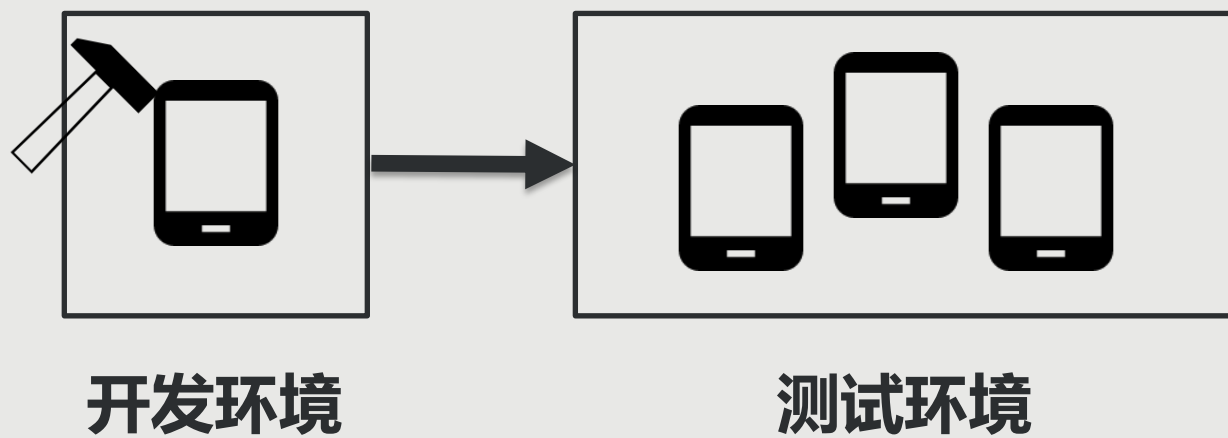
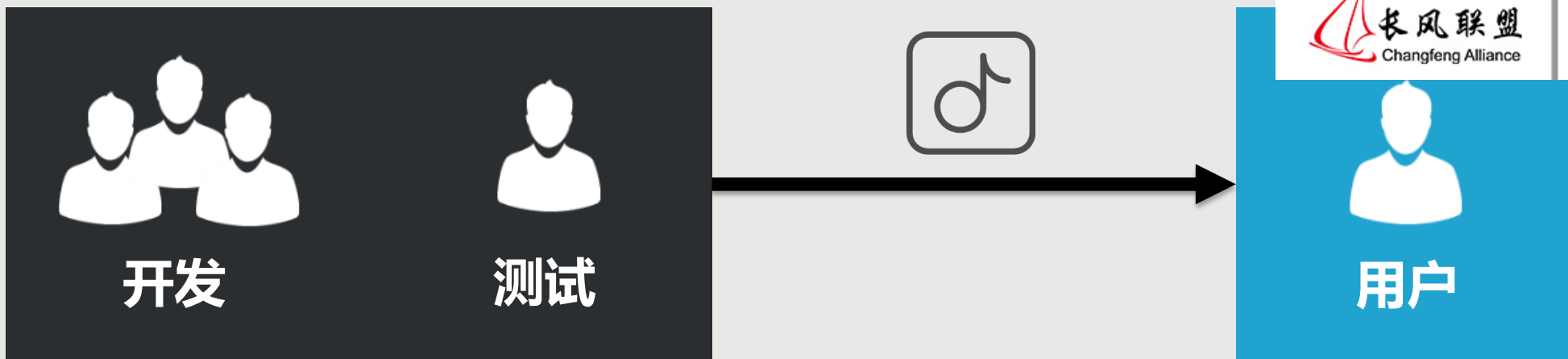
No

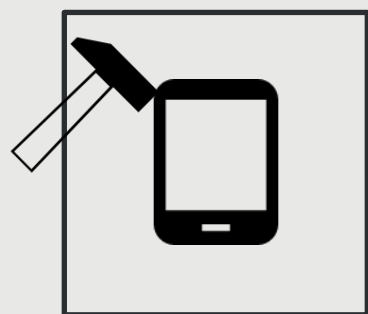




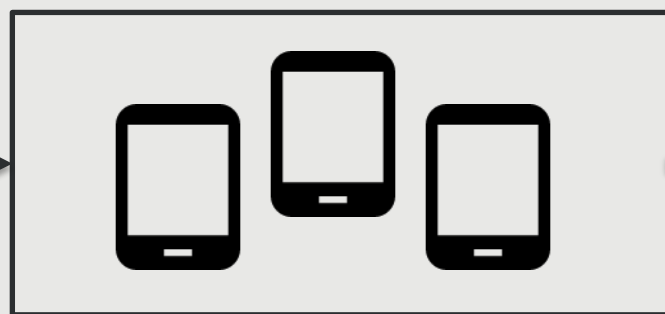


开发环境





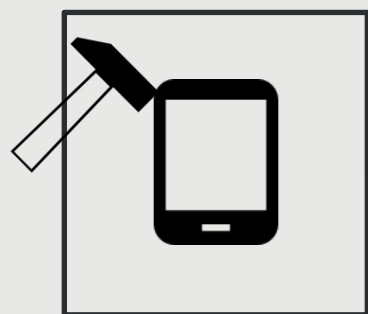
开发环境



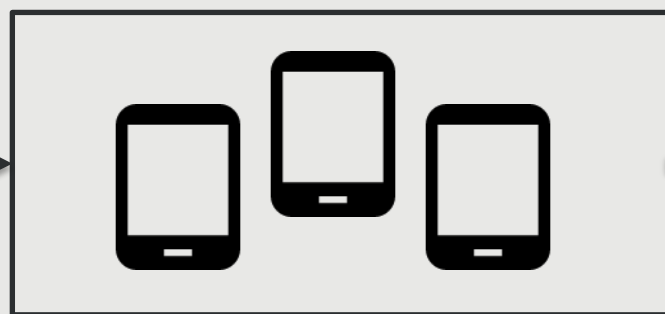
测试环境



预发环境



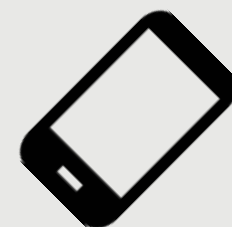
开发环境



测试环境

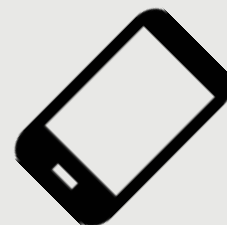
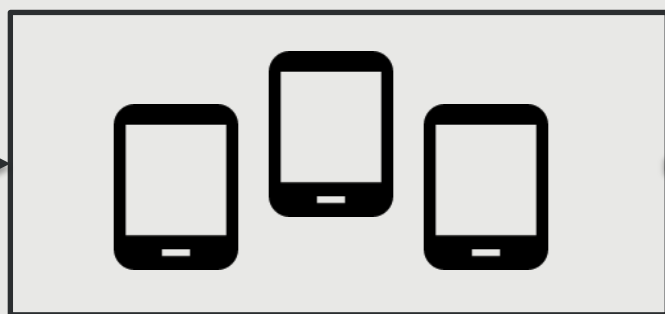
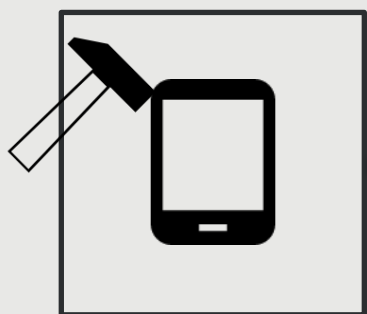


预发环境



用户环境



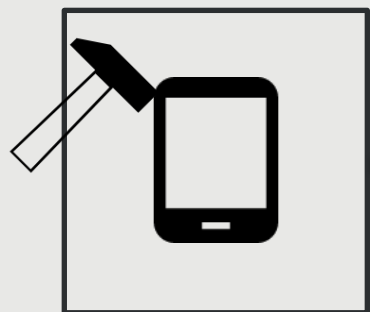


开发环境

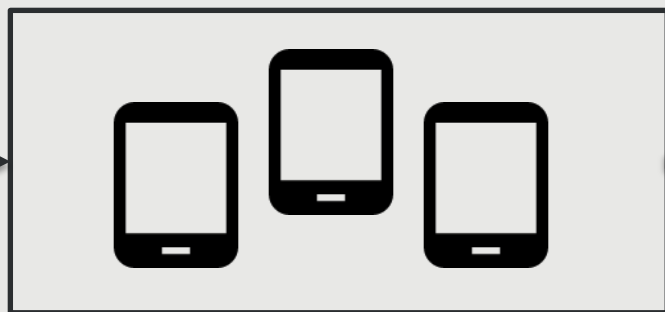
测试环境

预发环境

用户环境



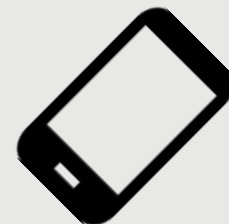
开发环境



测试环境

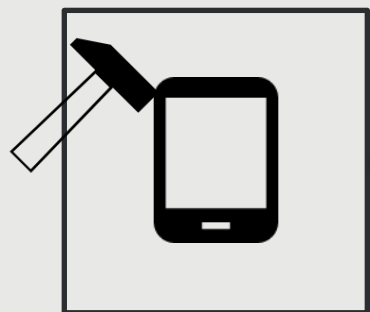


预发环境

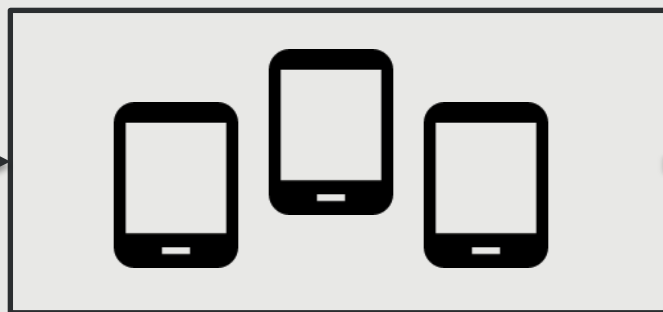


用户环境





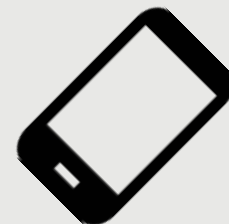
开发环境



测试环境



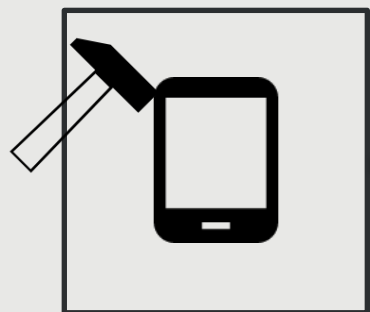
预发环境



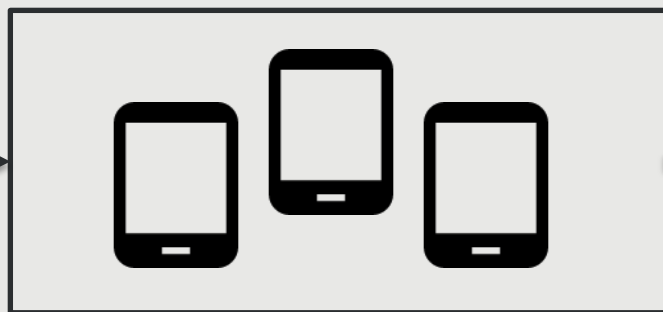
用户环境



安稳、平静  
Wi-Fi 网络  
无 SIM 卡  
无 4G 网络  
电量充足



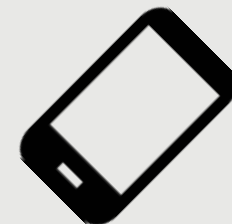
开发环境



测试环境



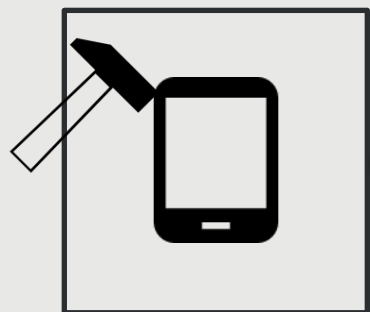
预发环境



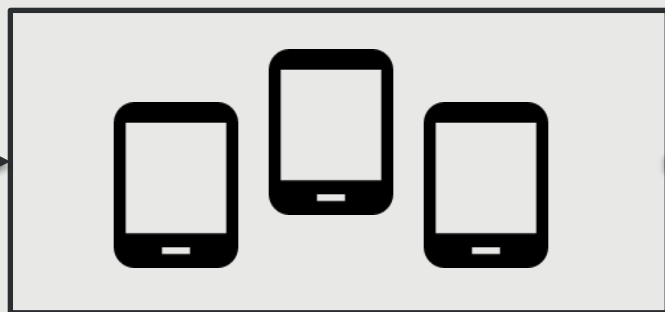
用户环境

安稳、平静  
Wi-Fi 网络  
无 SIM 卡  
无 4G 网络  
电量充足

安稳、平静  
网络切换  
弱网模拟



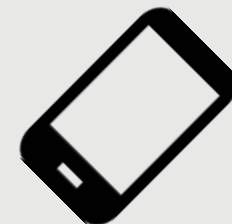
开发环境



测试环境



预发环境

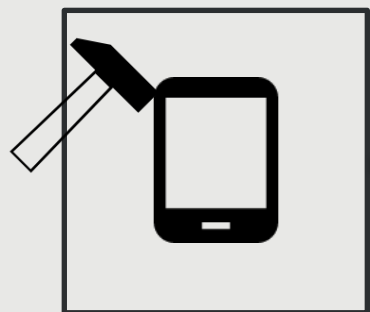


用户环境

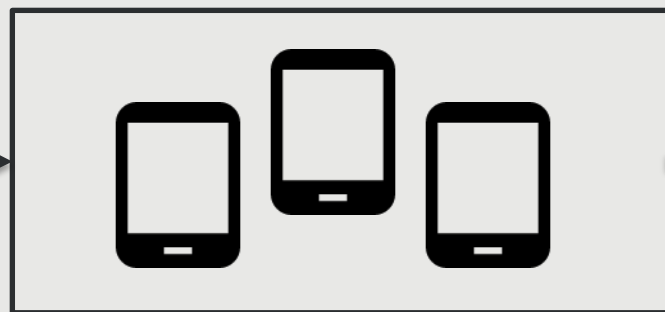
安稳、平静  
Wi-Fi 网络  
无 SIM 卡  
无 4G 网络  
电量充足

安稳、平静  
网络切换  
弱网模拟

异动、嘈杂  
延迟、丢包  
频繁网络切换  
来电、闹钟  
其他 App 干扰



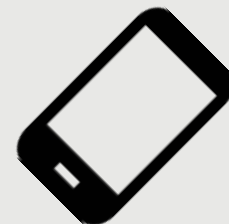
开发环境



测试环境



预发环境



用户环境

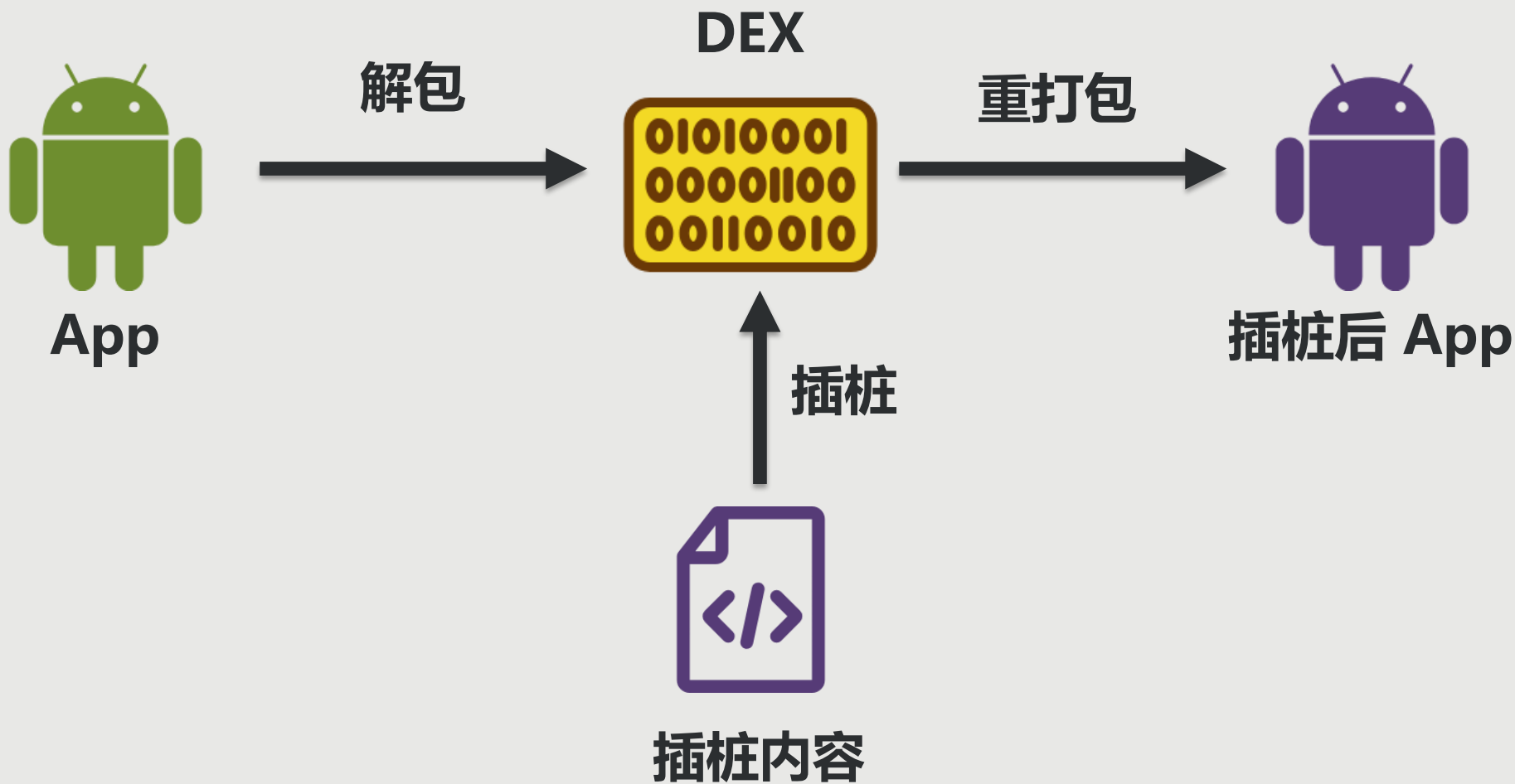
# All in One

## 将干扰放到发布前

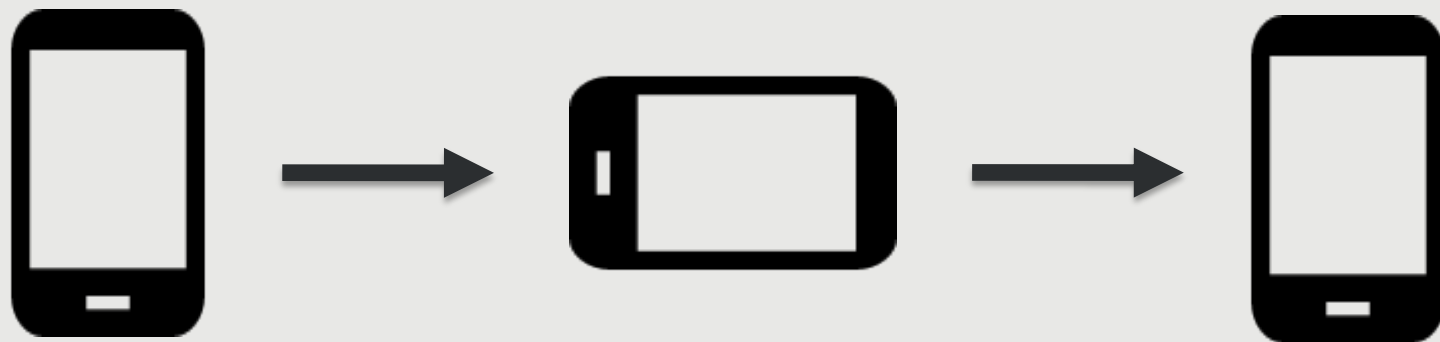
# 干扰测试



# DEX 插桩







屏幕旋转，页面重新渲染



后台进程抢占计算、存储资源

## 埋入周期触发点

```
// Application  
public static void onCreate() {  
    TroubleThread.run();  
    ...  
}
```



## 周期触发点

```
if (random() <= config.background) {  
    Date start = new Date();  
    do {  
        depleteCpuDisk();  
    } while(new Date() - start >  
            config.backgroundTime)  
}
```

```
// View lifecycle  
public static void onResume() {  
    saveForeground(this);  
    ...  
}
```

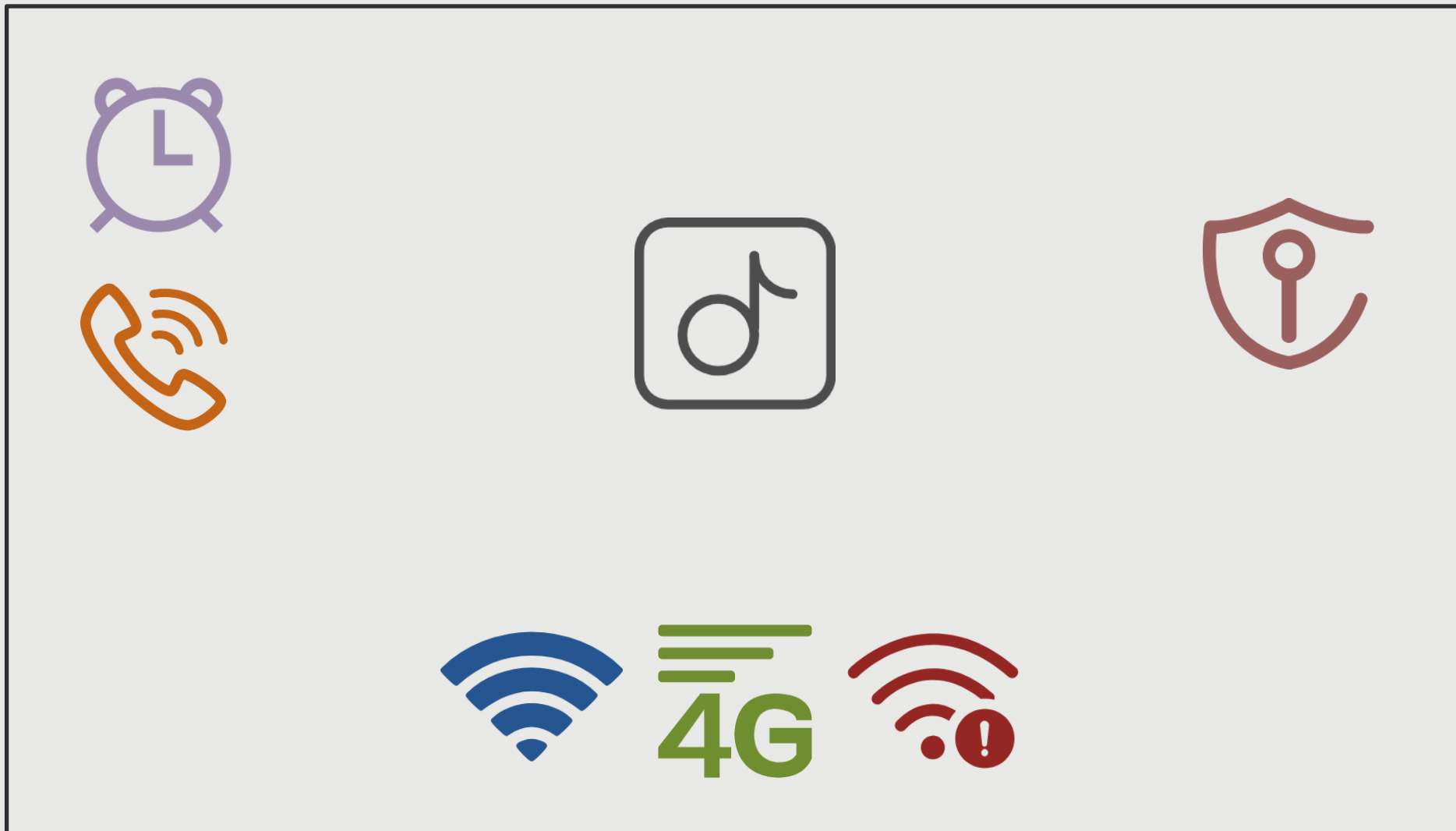


判断该页面是否支持横屏  
5 种禁止转屏的方式



周期触发点

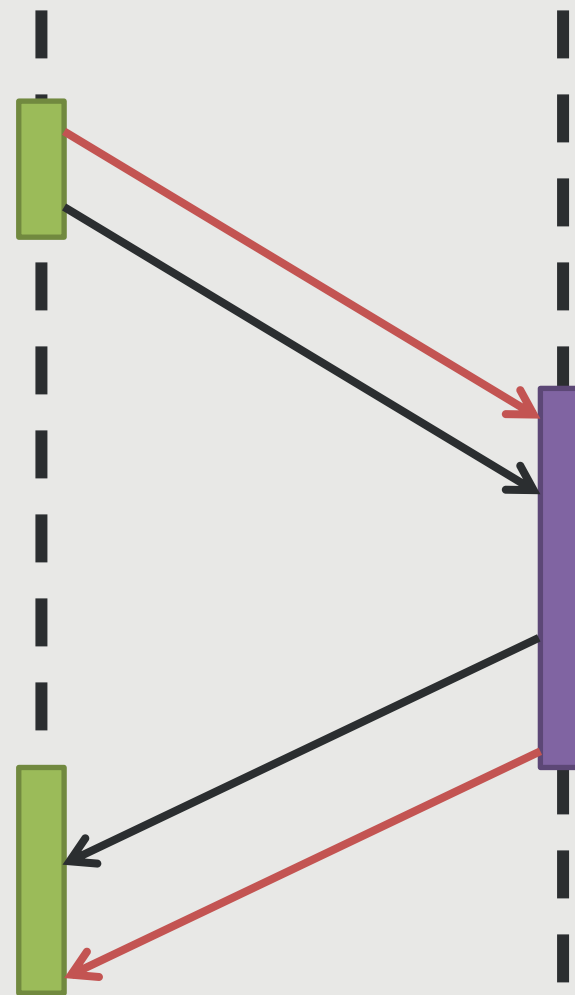
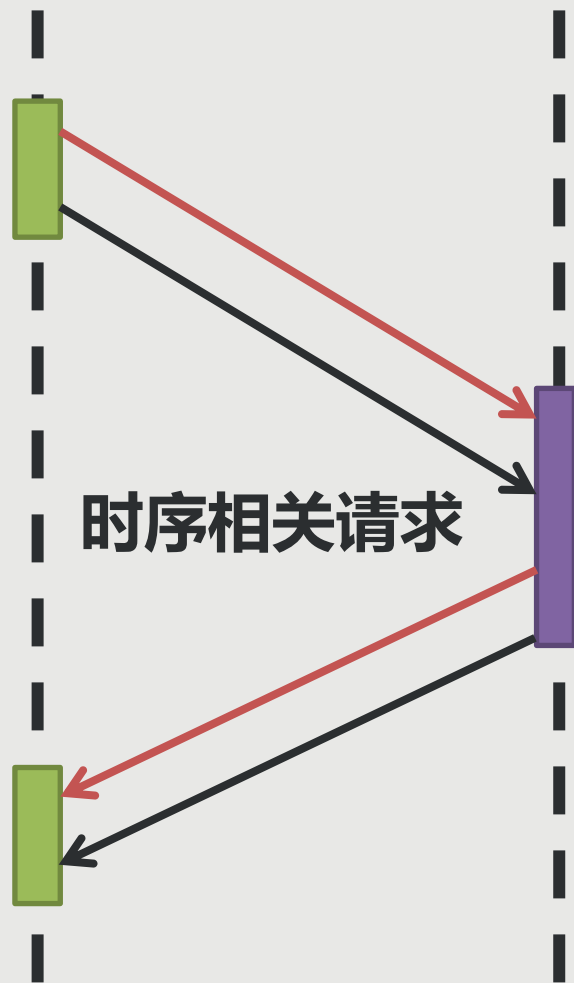
```
if (random() <= config.rotate) {  
    foreground.rotateOrientation();  
}
```



## 周期触发点

```
if (random() <= config.networkChange) {  
    Intent intent = new Intent();  
    intent.setAction(WifiManager.WIFI_STATE_CHANGE_ACTION);  
    intent.putExtra(WifiManager.EXTRA_WIFI_STATE, WifiManager.WIFI_STATE_DISABLE);  
    foreground.sendBroadcast(intent);  
}
```





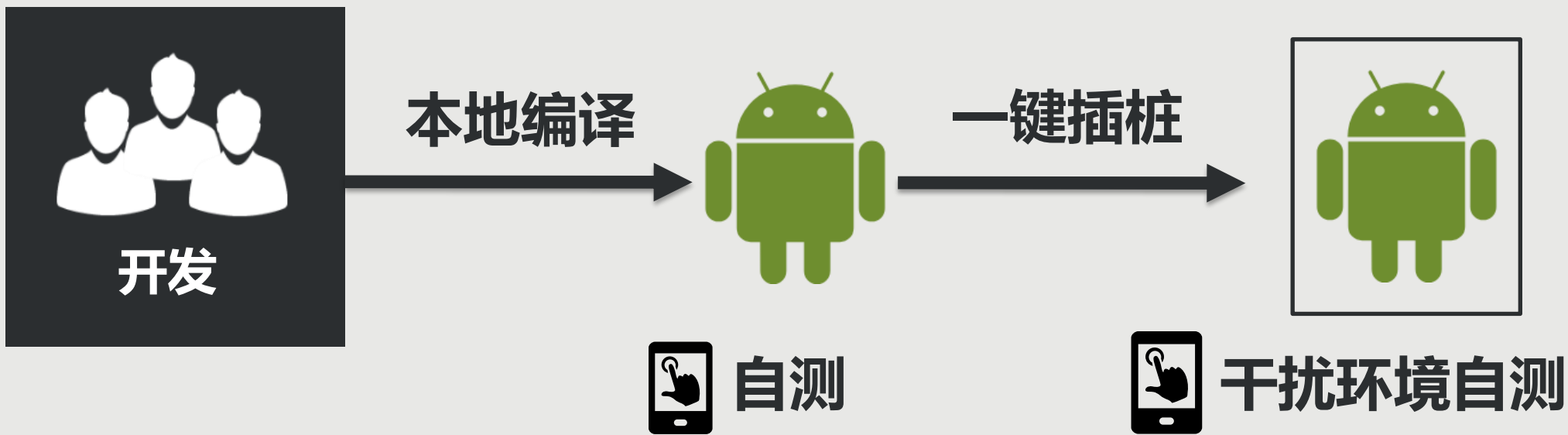
插桩延迟收包

## 网络库收包函数

```
public static void onOkHTTP() {  
    ...  
    Interceptor.intercept(this.content)  
}
```

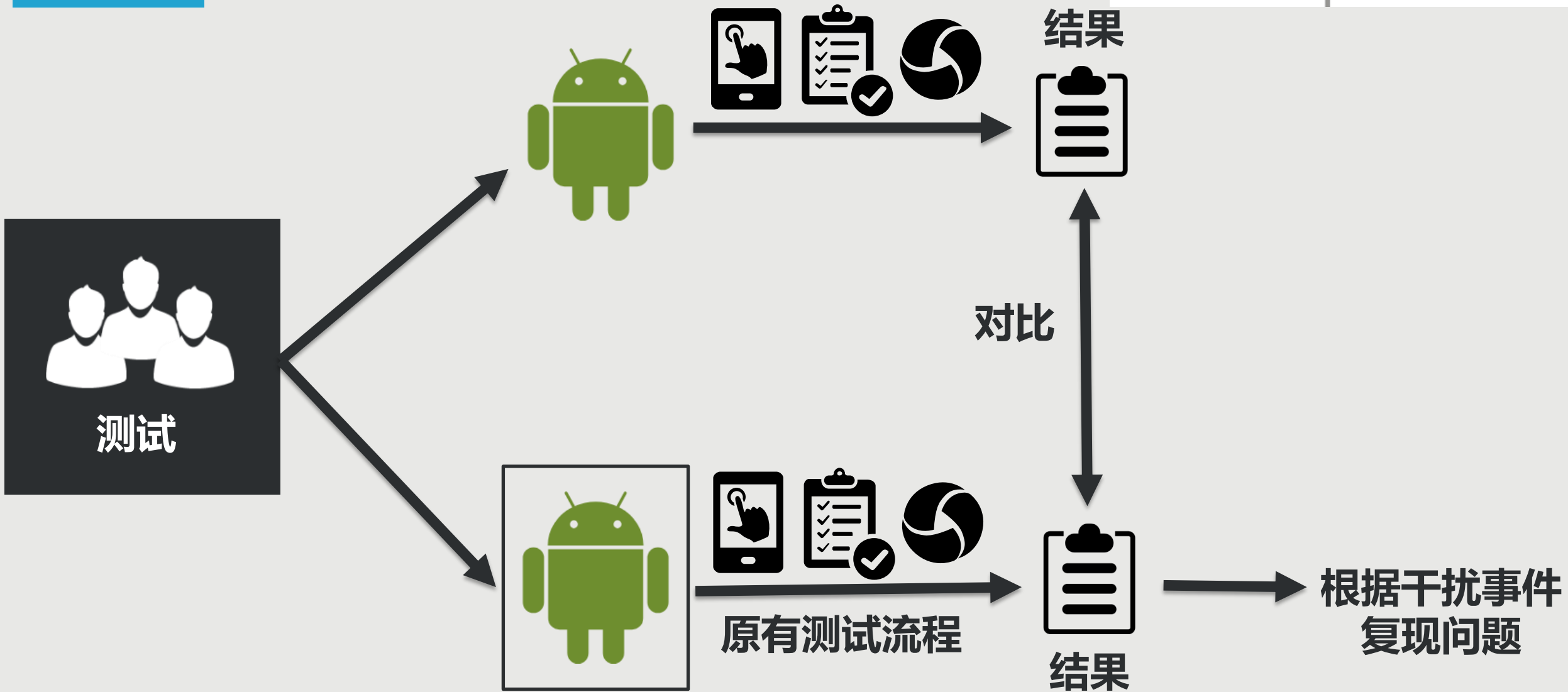


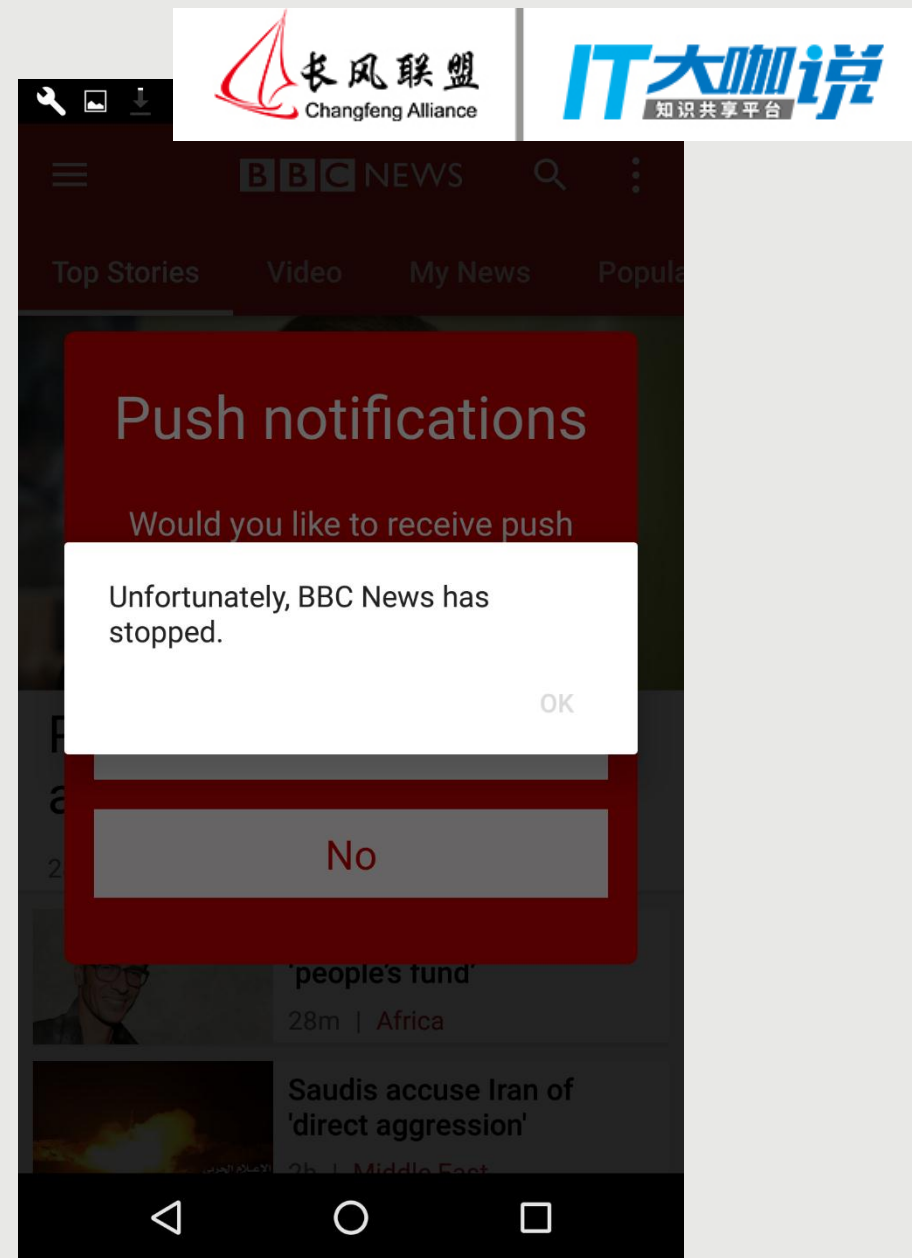
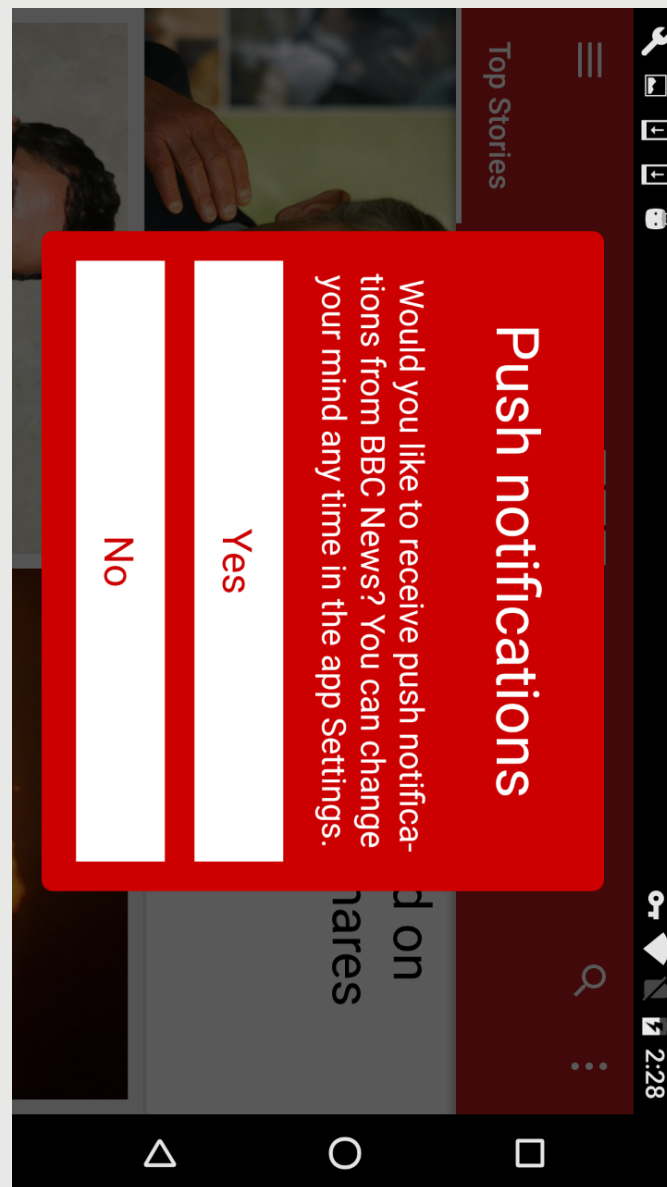
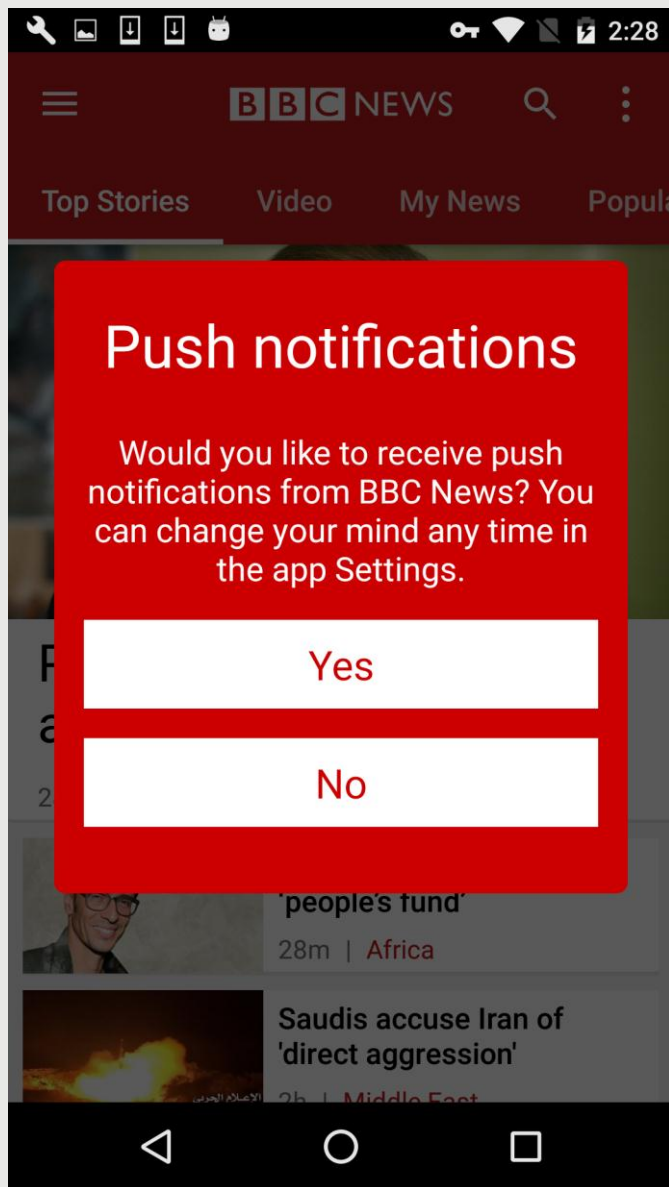
```
intercept(OkHTTP3Content content) {  
    if (!config.whitelist.prefix(content.url)) {  
        if (random() < config.networkDelay) {  
            sleep(config.networkDelayTime);  
        } else (random() < config.networkLoss) {  
            throw new IOException();  
        }  
    }  
}
```





# 流程





### 会员特权

云字体 输出为长图片 图片转文字

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使用优惠券 无优惠券 >

实付: **¥179.0** 360.0

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### 会员特权

云字体 输出为长图片 图片转文字

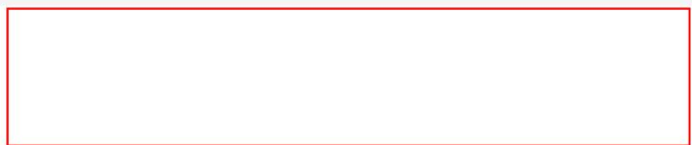
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壳会员

立即开通

### WPS超级会员



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确认开通



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**平均发现 6 倍的问题**

谢谢！