

# Tencent Cloud Observability Platform Mobile App Performance Monitoring Product Documentation





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# Mobile App Performance Monitoring Overview

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### Overview

Mobile App Performance Monitoring is a comprehensive tool for positioning, detecting app performance, and user experience, automatically analyzing suspicious performance defects in multiple dimensions. It helps you accurately measure the app performance and discover various issues with low cost and high efficiency.

Feature Name	Description
Crash	By aggregating key characteristics of individual crash cases, it facilitates the locating and analysis of the root cause.
Startup	Supports startup metric analysis such as startup duration and slow startup percentage, allowing you to locate and analyze the root cause of slow startups through the slow startup issue list.
Latency	Metrics like smoothness help you analyze the performance of app pages.
ANR	Multi-dimensional restoration of the real experience of online users. It collects ANR issues encountered during the real use of the app and the thread stack information upon the occurrence of the issue to extract key features for clustering.
Network	Supports network problem analysis based on request duration, slow request proportion, network error rate, and other metrics.
WebView	Supports WebView metric analysis based on page load time, slow loading proportion, and JS error rate, and dives into WebView and JSError issues through the issue list.

### App Monitoring Feature Description

### Data Storage Description

Individual case data (slow startup and requests): stored for 60 days 15-minute metric data (metric analysis interface): stored for 30 days



1-hour metric data (metric analysis interface): stored for 30 days

# Access Guide Android Use Cases Integration and Initialization

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### Overview

This document guides you through integrating and initializing with the Android SDK.

### Directions

#### Step 1: Configure Gradle integration.

- 1. Add Maven dependency in the project-level build.gradle.
- i. Add buildscript and allprojects (For Gradle 7.0 and later, adding allprojects is not necessary).

Configuration for Gradle 7.0 and earlier is as follows:



#### Configuration for Gradle 7.0 and later is as follows:

Gradle 7.0 and later do not support allprojects. Maven dependency of allprojects must be configured in setting.gradle, as shown below.



Refer to the code:



maven {url'https://qapm-maven.pkg.coding.net/repository/qapm\_sdk/android\_release/'}

ii. In buildscript, com.android.tools.build:gradle:\*.\*.\* should be filled in with your Gradle plugin
version, as shown below.



#### Note:

1. The Gradle version and Gradle plugin version can be viewed in the menu file > project structure, as shown below.

• • •	Project Structure
	Android Gradle Plugin Version
Project	7.2.2
SDK Location Variables	Gradle Version 7.3.3
Modules Dependencies Build Variants	
Suggestions 6	

2. The corresponding relationship between Gradle and Gradle plugin is as shown below.

plugin version	minimum required Gradle version
8.1	8
8	8
7.4	7.5
7.3	7.4
7.2	7. 3. 3
7.1	7.2
7	7
4.20+	6. 7. 1

2. Introduce the module in the app's build.gradle (For studio 3.0 and earlier, use the compile reference header).

📄 Project 👻 😳 🛬 🖈 —	🗬 build.gradle (:app) 🔀
Y MyApplication8 [My Application8]	Gradle files have changed since last project sync. A project sync may be necessary for the IDE to work proper
> 📕 .gradle	JI CAUCUUG HETA INTANCETO
> 🖿 .idea	52 P }
🕆 📑 app	53 🗢 compileOptions 🕻
> 🖿 build	54 sourceCompatibility JavaVersion.VERSION_1_8
> 🖿 libs	55 targetCompatibility JavaVersion.VERSION_1_8
> 🖿 src	56 🛱 🕽
🛃 .gitignore	57 4}0
a build.gradle	58
proguard-rules.pro	59 Edependencies {
> gradle	AR implementation 'androidy approximation compatil 6 R'
🧓 .gitignore	41 implementation loom google android material material: 1.8.84
e build.gradle	implementation com.google.anuroid.materiat.materiat.i.o.o
gradle.properties	62 implementation 'androidx.constraintlayout:constraintlayout:2.1.4'
gradlew	63 testImplementation 'junit:junit:4.13.2'
aradlew.bat	64 androidTestImplementation 'androidx.test.ext:junit:1.1.5'
local.properties	65 androidTestImplementation 'androidx.test.espresso:espresso-core:3.5.1
apm.properties	66 implementation 'com.tencent.qapm:qapmsdk:5.3.3-pub'
Settings.gradle	67
> IIIII External Libraries	68 (1)
Scratches and Consoles	

Refer to the code:





implementation 'com.tencent.qapm:qapmsdk:5.3.9-pub'

#### 3. Introduce Kotlin dependencies.

i. Add the following code under the project-level build.gradle:

	oradio neo nave onangea since last project syne. A project syne may be necessary for the lot to work property.			
> 📕 .gradle	1 // Too-level build file where you can add configuration options common to all sub-projects			
> 🖿 .idea				
🕆 📑 app				
> 📕 build	S Obulascript {			
> 🖿 libs	4 ext.kotlin_version = '1.3.41'			
> 🖿 src	5 👳 repositories <b>{</b>			
🛃 .gitignore	6 google()			
R build.gradle	7 jcenter()			
自 proguard-rules.pro	8 maven { url 'https://gapm-maven.pkg.coding.net/repository/gapm sdk/android release			
> In gradle				
,gitignore				
a build.gradle				
ille gradle properties	11 classpath 'com.android.tools.build:gradle:7.2.2'			
	12 classpath 'com.tencent.qapmplugin:qapm-plugin:2.38'			
	13 classpath "org.jetbrains.kotlin:kotlin-gradle-plugin: <b>\$kotlin_version</b> "			
gradiew.bat				
📊 local.properties				
📊 qapm.properties	15 <b>θ</b> }			
av settings.gradle				

Refer to the code:



ext.kotlin\_version = '1.3.41'
classpath "org.jetbrains.kotlin:kotlin-gradle-plugin:\$kotlin\_version"

ii. Add the following code to the app's build.gradle:

	applv	/ pluain:	'com.and	droid.application'	
	apply	/ plugin:	'kotlin-	-android'	
	apply	/ plugin:	'kotlin-	-android-extensions'	
Ę	andro c	oid <b>{</b> compileSd lefaultCor	<version< th=""><th>26</th><th></th></version<>	26	
	_	applic	cationId	"com.example.sdkapp"	
		minSdł	Version	16	
		target	SdkVers	ion 26	

Refer to the code:





apply plugin: 'kotlin-android'
apply plugin: 'kotlin-android-extensions'

4. Add the following configuration in the project-level build.gradle file.

🔲 Project 👻 😳 포 🛪 —	🔊 build.gradle	(:app) × 🔐 build.gradle (My Application8) × 🙀 qapm.properties ×		
Y MyApplication8 [My Application8]	Gradle files ha	ave changed since last project sync. A project sync may be necessary for the IDE to work properly.		
> gradle	1 //	Top-level build file where you can add configuration options common to all sub-p		
> idea				
	3 🖯 bui	3 ⊝buildscript {		
> Dulia		ext.kotlin_version = '1.3.41'		
		repositories {		
		google()		
w build.gradle		icenter()		
🖞 proguard-rules.pro		mayen { url 'https://dapm-mayen.pkg.coding.pet/repository/dapm_sdk/android		
> Egradle		}		
🥵 .gitignore		dependencies {		
🗬 build.gradle		classnath 'com android tools build gradle 7 2 2'		
📊 gradle.properties		classnath 'com tancent ganmolugio ganm-olugio:2 38'		
击 gradlew		alesanath "eng isthesing ketlin ketlin godle slugin ketlin version"		
🗐 gradlew.bat		classpath "org.jetorains.kottin:kottin-gradie-plugin:\$kottin_version"		
📊 local.properties		3		
🛃 qapm.properties	15 斗			
anttingo gradla				

Refer to the code:





classpath 'com.tencent.qapmplugin:qapm-plugin:2.39'

#### 5. Add the following configuration in the app's build.gradle file.

Refer to the code:



```
apply plugin: 'qapm-plugin'
QAPMPluginConfig{
    // Optional, and empty by default. Enter attachBaseContext in the class where the
}
```

#### Note:

If items 4–5 are not configured, it will affect the data reporting of "App launch".

#### Step 2: Configure parameters.

1. Add the following permissions in AndroidManifest.xml.



```
<!--Required for information reporting-->
<uses-permission android:name="android.permission.INTERNET" />
<!--Required for information collection-->
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.ACCESS_WIFI_STATE" />
```

2. To avoid confusion with the SDK, add the following configuration in the app's proguard-rules.pro file:



```
-keep class com.tencent.qapmsdk.**{*;}
# If network monitoring is needed, ensure okhttp3 is not obfuscated.
-keep class okhttp3.**{*;}
```

#### Step 3: Initialize the SDK.

1. Log in to TCOP console, navigate to the **Mobile App Performance Monitoring** page, select Application Management > Application Settings, and then obtain the Appkey (reporting ID).

Application Management				
Business System	Application Settings	Allow	list Management	
Business System : rum-lr	′uQGZfQxnBZ0K.现网测试  ▼	ļ.	Application Access	
Application Name			Report ID	Application ID
现网测试- Android			7f7073be-491	500347
云监控- android demo	)		cdf07086-10344 🗖	500348
Total items: 2				

2. Copy the code below and modify some of the fields. The following items are mandatory interface settings; for additional interface configurations, refer to the initialization interface analysis (Initializing QAPM in Application is recommended).





// Set the mobile phone model and device ID. // Device identifier required, in the form of any string. deviceId (mandatory). // The deviceId can be used to enable an allowlist, avoiding data sampling (Except QAPM.setProperty(QAPM.PropertyKeyDeviceId, "Device identifier"); // The mobile phone model is required (mandatory). QAPM.setProperty(QAPM.PropertyKeyModel, "Enter mobile phone model");

 $//\ {\rm Set}$  Application (mandatory).

QAPM.setProperty(QAPM.PropertyKeyAppInstance, getApplication());

// Set AppKey (mandatory, used to distinguish the reporting products. The value is QAPM.setProperty(QAPM.PropertyKeyAppId, "YourAppKey"); 🔗 Tencent Cloud

// Set the product version, which is used for background retrieval field (mandatory QAPM.setProperty(QAPM.PropertyKeyAppVersion, "YourApp Version"); // Set the UUID to pull the obfuscated stack's mapping (mandatory. If QAPM Symbol T // This variable is generated during the build time, ignore if it shows errors. QAPM.setProperty(QAPM.PropertyKeySymbolId, BuildConfig.QAPM\_UUID); // Set the user ID, in the form of any string, which is used for background retriev // The userId can be used to enable an allowlist, avoiding data sampling (except fo QAPM.setProperty(QAPM.PropertyKeyUserId, "123456"); // Set the Log level (optional). For the production environment version, set it to QAPM.setProperty(QAPM.PropertyKeyLogLevel, QAPM.LevelInfo); // Set the QAPM external network reporting domain (required). Chinese Mainland: htt QAPM.setProperty(QAPM.PropertyKeyHost, "https://app.rumt-zh.com"); QAPM.setProperty(QAPM.PropertyKeyHost, "https://app.rumt-sg.com"); // Enable QAPM. QAPM.beginScene(QAPM.SCENE\_ALL, QAPM.ModeStable);

#### Note:

The AppKey can be obtained from the **Mobile App Performance Monitoring** > **Application Management** page as in Step 1.

Crash and start data are reported in full, while other data is sampled due to its large volume, at a rate of 0.1% (one in a thousand). To report all data, an allowlist can be enabled, and the app will change the sampling rate at the next start. The preset userId or deviceId can be added to the allowlist through the Application Management page to enable the allowlist.

Multiple processes need to initialize QAPM, separately.

#### Step 4: Access verification.

1. If the following log is printed, it indicates that the user has not been sampled, and the sampling rate needs to be reset:



#### See TAG: QAPM\_manager\_QAPMLauncher

2. If the following log is printed, it indicates that the initial access succeeded. You can verify data reporting and try to enable the advanced feature:



See TAG: QAPM\_manager\_QAPMPluginManager

### Initialized Interface Analysis

API Name	Parameter	Parameter Description	Notes
	key	<b>Required</b> . The Key that needs to be set.	
public static QAPM setProperty(int key, Stringvalue) <b>Functionality</b> :	QAPM.PropertyKeyLogLevel	<b>Optional</b> . Enable log level. (It is recommended to use QAPM.LevelDebug for Debug versions and QAPM.LevelWarn for release versions).	-
Set QAPM parameters.	QAPM.PropertyNeedTranslate	<b>Optional</b> . Whether stack translation is needed, which by default is required. If the apk is not obfuscated, then pass in 'false'. Otherwise the frontend may display everything as 'unTranslated'.	
public static boolean	sceneName	<b>Required</b> . Scene name.	For official versions, it is recommended to enable QAPM.ModeStable; for
beginScene(String sceneName, int mode)	mode	<b>Required</b> . The feature to be	is recommended.



Functionality:		enabled.	By default, the ModeStable featu	
Enable monitoring.	QAPM.ModeStable	<b>Optional</b> . Enable all features (Recommended for external releases. Includes interval performance, crash, ANR, WebView page load, JsError, and network).	features on ModeStable by using operation, for example, to enable and memory ceiling: beginScene("Stable&Ceiling", QAPM.ModeStable  QAPM.ModeCeiling). The XOR c can be used to exclude unnecess features, such as disabling the ne QAPM.ModeStable^QAPM.Mode	
	QAPM.ModeWebView	<b>Optional</b> . Enable WebView page load monitoring.		
	QAPM.ModeJsError	<b>Optional</b> . Enable WebView JS exception monitoring.		
	QAPM.ModeHTTPInWeb	<b>Optional</b> . Enable WebView network monitoring.		
	QAPM.ModeHTTP	<b>Optional</b> . Enable network monitoring.		
public static boolean endScene(String sceneName, long mode)	sceneName	<b>Required</b> . The name of the scene to be turned off (Required to correspond to the beginScene).		
Functionality: End monitoring (Only effective for frame drops and	QAPM.ModeDropFrame	<b>Optional</b> . Turn off frame drop monitoring.	-	
interval performance collection).	iance on). QAPM.ModeResource	Optional. Turn off interval performance monitoring.		

#### Others

#### Note:

When compiling and packaging the app through the qapm plugin, the app needs a UUID as the Build ID. If there is a qapm.properties file in the project directory, and the value of the qapm\_uuid property exists, this value will be used as the Build ID; otherwise, the plugin will randomly generate a Build ID.

qapm-plugin Version 2.39 and earlier will report an IO Error during the app compiling process:

java.io.FileNotFoundException, qapm.properties (No such file or directory) .

canıncı	rement= · true · }
java.i	p.FileNotFoundException Create breakpoint : , and a second a second a second properties (No such file or directory
at	java.base/java.io.FileInputStream.open0( <u>Native Method</u> )
at	java.base/java.io.FileInputStream.open( <u>FileInputStream.java:219</u> )
at	java.base/java.io.FileInputStream. <init>(<u>FileInputStream.java:157</u>)</init>
at	com.tencent.qapm.QAPMTransformerTask.loadBuildId(QAPMTransformerTask.java:201)
at	com.tencent.gapm.QAPMTransformerTask.beforeTransform(QAPMTransformerTask.java:147)
at	com.tencent.qapm.QAPMTransformerTask.transform(QAPMTransformerTask.java:91)
at	<pre>com.android.build.gradle.internal.pipeline.TransformTask\$2.call(TransformTask.java:281)</pre>
at	com.android.build.gradle.internal.profile.NoOpAnalyticsService.recordBlock(NoOpAnalyticsService.kt:72)
∃ at	com.android.build.gradle.internal.pipeline.TransformTask.transform(TransformTask.java:239) <61 internal lines>
∃ at	java.base/java.util.Optional.orElseGet( <u>Optional.java:369</u> ) <13 internal lines>
∃ at	java.base/java.util.Optional.orElseGet( <u>Optional.java:369</u> ) <49 internal lines>

This error only occurs during compilation and does not affect the running of the app.

# Feature Configuration Network Monitoring

Last updated : 2024-05-14 12:36:06

### **Enabling Feature**

Network monitoring requires the use of the qapm-plugin for instrumentation and is by default inserted at various entry and exit points of the network layer.

### Prerequisites

A user allowlist or device allowlist, which is used to initialize the SDK, has been added through the Mobile App Performance Monitoring > Application Management > Allowlist Management page. The qapm-plugin has been configured in the app-level build.gradle. See Integration and Initialization. Currently, only okhttp3 monitoring is supported. The okhttp3 also requires okio version 1.14.0 or later.

### **Configuration Process**

Add obfuscation rules in the proguard-rules.pro file in the app directory to prevent okttp3 code from being obfuscated.





-keep class com.squareup.okhttp3.\*\*{\*;}

		" higher artes sectring the pottorial ages
		#
> build		# For more details, see
> 🖿 libs		<pre># http://developer android com/quide/</pre>
> 🖿 src		
🛃 .gitignore		
🗬 build.gradle		# If your project uses WebView with JS,
🖆 proguard-rules.pro		# and specify the fully qualified class
> 🖿 gradle		# class:
🐻 .gitignore		#-keepclassmembers class fqcn.of.javasc
🗬 build.gradle		# public *;
📊 gradle.properties		#}
🚓 gradlew		
自 gradlew.bat	15	# Uncomment this to preserve the line o
📊 local.properties	1.5	# debugging stock traces
📊 qapm.properties		
🗬 settings.gradle		#-Keepattributes SourceFile,LineNumberi
> IIllı External Libraries		
Scratches and Consoles		# If you keep the line number informati
		# hide the original source file name.
		#-renamesourcefileattribute SourceFile
		<pre>-keep class com.tencent.gapmsdk.**{*;}</pre>
		-keep class com.squareup.okhttp3.**{*;}
Build Variants 📩 📩 📥		-keep class java.net.**{*;}

### Verifying Whether the Feature Is Working Properly

#### Retrieval tag:QAPM\_manager\_QAPMPluginManager

The log message that appears one minute after each network request indicates successful reporting of network data:



Retrieval tag: [plugin::142]

_		
Logcat		
[	□ HUAWEI ANG-AN00 Android 10, . ▼ No debuggable processes ▼ Verbose ▼ Q- [pługin::14:	2]
	≡ logcat	
ĩ	2022-05-18 15:53:46.883 24174-24254/com.example.sdkapp I/QAPM_base_JsonUploadRunnableWithNewProtocol: [p]	lugin::1

#### Note:

It requires the use of the qapm-plugin for instrumentation. Otherwise, it will not work.

The SDK is only responsible for capturing information related to network requests. The backend analyzes issue data, such as slow requests (with the request time being greater than xxs) and network errors (with the request response code being greater than 400).

Data can be viewed in Mobile Performance Monitoring > Network > Slow Requests and Error Requests List. If the correct allowlist is not configured, the SDK will not enable network monitoring.

# WebView, JsError, and Web Network Monitoring

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### **Enabling Feature**

Initialization requires enabling WebView, JsError, and Web network monitoring. Below is how to enable these three features based on Stable. The code is as follows:



QAPM.beginScene(QAPM.SCENE\_ALL, QAPM.ModeStable | QAPM.ModeWebView | QAPM.ModeJsErr

In addition, the following code needs to be configured:

WebView Monitoring requires enabling interaction with JavaScript. Call the following code during WebView initialization to enable:





```
WebSettings webSetting = webView.getSettings();
webSetting.setJavaScriptEnabled(true);
```

After WebView initialization, add a call interface channel for Java and JS. The purpose is to allow the JS layer to obtain some configuration information from the Java layer:



webView.addJavascriptInterface(QAPMJavaScriptBridge.getInstance(),"QAPMAndroidJsBri

Add the following method in the WebView's shouldInterceptRequest code to intercept web-sdk and replace it with local SDK resources. Make sure to call the following code at the earliest position in this callback. If it is x5, use the following code:



```
@Overridepublic
public WebResourceResponse shouldInterceptRequest(WebView webView, String s) {???
    Object response = QAPMJavaScriptBridge.getInstance().shouldInterceptRequestWith
    if (response != null) {??????
        return (WebResourceResponse)response;???
        ??? }
        return super.shouldInterceptRequest(webView, s);
        ??? }
```

If it is Native WebView, use the following code:



```
@Overridepublic
public WebResourceResponse shouldInterceptRequest(WebView webView, String s) {???
    WebResourceResponse response = QAPMJavaScriptBridge.getInstance().shouldInterce
    if (response != null) {??????
        return response;???
        ??? }
        return super.shouldInterceptRequest(webView, s);
        ??? }
```

Add the following method in the WebView's onPageFinished code to inject JS script:


```
webView.setWebViewClient(new WebViewClient(){
    ??? @Override
    ??? public void onPageFinished(WebView view, String url) {
        ??????? super.onPageFinished(view, url);
        ??????? QAPMJavaScriptBridge.getInstance().initFileJS(view);
    ??? }
});
```

## Verifying Whether the Feature Is Working Properly

Native WebView, JsError monitoring:

1. Include the following code in the code (for remote debugging purposes).



WebView.setWebContentsDebuggingEnabled(true);

2. Open Google Chrome, and enter chrome://inspect in the address bar. In the devices that appear, click inspect.

<ul> <li>○ ○ ○ Insp</li> <li>← → C ○</li> <li>○ ○ ○</li> </ul>	Chrome Develope × + Chrome chrome://inspect,#devices
DevTools Devices	✓ Discover USB devices Port forwarding
Pages Extensions Apps	Discover network targets     Open dedicated DevTools for Node
Shared workers Service workers Other	Remote Target #LOCALHOST MI 5X #B7359B950604 WebView in com example solkann (71.0.3578.99), trace
	<pre>@sentry/browser SDK examples file:///android_asset/monitor.html at (0, 1063) size 1080 × 693 inspect pause @sentry/browser SDK examples file:///android_asset/monitor.html at (0, 371) size 1080 × 692 inspect pause</pre>

3. Find the Console module query log. If web start success, vxxx is displayed, it indicates the WebSDK inject succeeded.

• • •	DevTools - file:///android_asset/a.html
← → C file:///androi	🕞 🔂 Sources Elements Application Lighthouse Console Security Network Performance Redux Memory
	🔴 🛇 😽 Q. 🗹 Preserve log 🗹 Disable cache No throttling 🔻 😪 🟦 🛨
lien:	Filter Hide data URLs All KHR JS CSS Img Media Font Doc WS Manifest Other Has blocked cookies Blocked Reque
	10 ms         20 ms         30 ms         40 ms         50 ms         60 ms         70 ms         80 ms         90 ms
	Recording network activity
	Perform a request or hit % R to record the reload.
	Learn more
	Console What's New Search
	U C Op C Finder Delaborations (Noissues) QAPM, track-js, qapinsetrieto contectkespbooy Taitse
	► := 56 messages QAPM, track-js, value is empty, sdk will not set value collectRespBody false
	▶
	O No errors QAPM, track-js, qapmSetField switch 193277767180
	<pre>A 1 warning QAPM, track-js, qapmSetField ubsConfig {"sample_ration":1,"upload_cumulative":200,"upload_interval":60000,"upload_type":"json","is_collect_data ncrvption":"true","max report count":100}</pre>
	♣ No verbose QAPM, track-js, qapmSetField usrConfig {"sample_ration":1,"max_report_count":1000}
	QAPM, track-js, qapmSetField webLaunchConfig {"max_report_count":100,"sample_ration":1,"upload_cumulative":200,"upload_interval":60000,"upload_type": ryption":"false"}
	QAPM, track-js, qapmSetField jserrorConfig {"upload_interval":60000,"upload_type":"json","is_encryption":"false","max_report_count":100,"sample_rat _cumulative":200}
	QAPM, track-js, qapmSetField networkConfig {"upload_interval":60000,"upload_type":"json","is_encryption":"false","max_report_count":100,"sample_rat _cumulative":200}
	QAPM, track-js, function switch is ▶ Object
	QAPM, track-js, document ready!!
	QAPM, track-js, timing ⊳ Object
	QAPM, track-js, event ▶ Object
	QAPM, track-js, event ▶ Object
	QAPM, track-js, web sdk start success, SDK_VER: v5.1.13, app_key is 34
	QAPM, track-js, uploadWebLaunchData ⊧Object
	QAPM, track-js, customPageState stop
	>

4. Check whether all features are reporting normally. Consider JsError reporting as an example, as follows: Retrieval tag: [plugin::143].

The occurrence of a JsError, such as the following log message, indicates successful reporting of JsError data.



The other retrieval tags are as follows:

Page load: plugin::141 (reported immediately after each Web page load is complete).

Network request: plugin::154 (reported when there are network errors and slow requests).

#### Note:

1. To check whether WebView monitoring is normal, examine through browsers like Chrome for debugging.

- 2. Page load is reported in the Issue Case Details only if the page load duration exceeds 3.5s.
- 3. Network requests are reported in cases of network errors and slow networks.

# Crash and ANR Monitoring

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## **Enabling Feature**

Initialization requires enabling Crash and ANR monitoring, which by default monitors Crash and ANR information.



 $//\ensuremath{\,\text{ModeStable}}$  mode by default includes Crash and ANR monitoring.



QAPM.beginScene(QAPM.SCENE\_ALL, QAPM.ModeStable);

QAPM provides APIs for uploading custom log files in case of crashes or ANRs, if necessary. An example is as follows:



```
QAPM.setProperty(QAPM.PropertyExtraDataListener, new IExtraDataListener() {
    // This callback is executed when an ANR occurs.
    @Override
    public List<String> onAnrExtraFileHandler() {
        List<String> files = new ArrayList<>();
        File[] fileArray = new File("xxxx").listFiles();//Enter the folder name at
```

```
for (File file : fileArray) {
            files.add(file.getAbsolutePath());
        }
        return files;
    }
    // This callback is executed when a crash occurs.
    @Override
    public List<String> onCrashExtraFileHandler() {
        List<String> files = new ArrayList<>();
        File[] fileArray = new File("xxxx").listFiles();//Enter the folder name at
        for (File file : fileArray) {
            files.add(file.getAbsolutePath());
        }
        return files;
    }
});
```

## Verifying Whether the Feature Is Working Properly

Retrieval tag: QAPM\_manager\_QAPMPluginManager



Retrieval tag: QAPM\_crash

The following log message in case of crashes or ANRs indicates that QAPM has collected this exception:

L	Logcat
	🕒 Emulator Nexus_S_API_31 Andro 🔻 com.example.myapplication8 (124 👻 Verbose 💌 🔍 QAPM_crash
	<pre>tenulator Nexus_SLP_STANOS &lt;</pre>
	1¢ Version Control ▶ Run :≡ TODO ❸ Problems 2 Terminal = Logcat ≺ Build ? Profiler ∰ App Inspection

#### Retrieval tag: plugin::144

The following log message indicates that QAPM has successfully reported this exception. An example is as follows:



The other crash retrieval tags are as follows:

ANR: [plugin::140].

NativeCrash: [plugin::146].

#### Note:

To avoid lagging, keep the logic in the interface callbacks as simple and straightforward as possible.

Uploaded files must be less than 20 MB in size. Files larger than the limit will not be uploaded. Select helpful log files.



Crash events can be viewed on the Mobile Monitoring Crash page, and ANR rates can be viewed in the Overview page.

# Lag and Frame Rate Monitoring

Last updated : 2024-05-14 12:36:06

## Prerequisites

Integration and Initialization has been Integration and Initialization.

## Feature Configuration

#### Enabling Monitoring

Initialization requires enabling lag monitoring. Lag doesn't need instrumentation, while frame loss rate requires additional instrumentation. It is recommended to add tracking on scrolling lists, such as (ListView, GridView, and RecyclerView).

#### Frame Loss Rate Instrumentation

Call QAPM.beginScene("xxx scrolling", QAPM.ModeDropFrame) before each scroll.

Call QAPM.endScene("xxx scrolling", QAPM.ModeDropFrame) after a scroll ends.

This can generally be achieved by overriding the scrolling component's onScrollStateChanged method, as shown below:









```
@Override
public void onScrollStateChanged(AbsListView view, int scrollState) {
    if (scrollState == AbsListView.OnScrollListener.SCROLL_STATE_IDLE) {
        QAPM.endScene("xxx scrolling", QAPM.ModeDropFrame); //xxx scrolling name ca
    } else {
        QAPM.beginScene("xxx scrolling", QAPM.ModeDropFrame); //xxx scrolling name c
    }
}
```

Verifying Whether the Feature Is Working Properly



Retrieval tag:QAPM\_dropframe\_DropFrameMonitor

After a scroll ends (endScene calling), the following log message indicates that the frame loss rate data has been stored in the local database:



Retrieval tag: [plugin::101]

The following log message indicates successful reporting of frame loss data that is stored in the app's local database.

cat				_
HUAWEI ANG-AN00 Android 10, .   No debuggable processes	-	Verbose	•	
ogcat				
2022-05-18 15:50:58.944 24174-24254/com.example.sdkapp I/QAPM_base	_JsonUplo	adRunnable	e: [p	lugi

Retrieval tag: QAPM\_looper\_LooperPrinter

The following log message indicates that Lag Monitoring is functioning properly:

Image: Strate	
<pre>     logcat     /// Control in the set of the set</pre>	
2020-06-24 16:39:40.947 6202-6202/com.example.sdkapp I/0APM_looper_LooperPrinter main, cost=2003, >>>>> Dispatching to Handler (android. 2020-06-24 16:39:43.949 6202-6202/com.example.sdkapp I/0APM_looper_LooperPrinter main, cost=2002, >>>>> Dispatching to Handler (android. 2020-06-24 16:39:46.952 6202-6202/com.example.sdkapp I/0APM_looper_LooperPrinter main, cost=2003, >>>>> Dispatching to Handler (android.cost=2003, >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	
2020-06-24 16:39:49.954 6202-6202/com.example.sdkapp I/QAPM_looper_LooperPrinter main, cost=2002, >>>>> Dispatching to Handler (android. 2020-06-24 16:39:52.957 6202-6202/com.example.sdkapp I/QAPM_looper_LooperPrinter main, cost=2003, >>>>> Dispatching to Handler (android.	ler) {9255f9f} com. ler) {9255f9f} com. ler) {9255f9f} com. ler) {9255f9f} com. ler) {9255f9f} com. ler) {9255f9f} com.

The following log message indicates that Lag Reporting is functioning properly:



# Startup Monitoring

Last updated : 2024-05-14 12:36:06

Startup monitoring requires the use of the qapm-plugin plugin for instrumentation during compilation. The default instrumentation points are the various lifecycles of the Application and Activity. In the App SDK, the default startup time is measured from Application's attachBaseContext to the end of onResume of the first Activity.

## Prerequisites

The qapm-plugin has been configured in the app-level build.gradle.

#### **Configuration Process**

1. Manually add an Application subclass, such as BaseApplication (the name is not restricted, and the subclass does not need to implement any methods or add any attributes).

2. In the AndroidManifest.xml file, add the android:name attribute to the application node, with the value being "package name+Application subclass name".

~ I	app	7	<uses-permission android.pe<="" android:name="android.pe&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;🕐 🖿 manifests&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;pre&gt;&lt;uses-permission android:name=" pre=""></uses-permission>
	AndroidManifest.xml		<pre>vses-permission android:name="android.pe</pre>
	🖌 🖿 java		
	> Com.example.myapplication8		conlication
	> 🖿 com.example.myapplication8 (androidTest)		
	> com.example.mvapplication8 (test)		android:allowBackup="true"
1	💦 java (generated)		android:dataExtractionRules="@xml/dat
			android:fullBackupContent="@xml/backu
1	jniLibs	15 🖃	android:icon="@mipmap/ic_launcher"
	P Tes		android:label="My Application8"
	res (generated)		android:name="com
> 6	Gradle Scripts		android:networkSecurityConfig="@xml/r
		19 🖃	android:roundIcon="@mipmap/ic_launche
			android:supportsRtl="true"
			android:theme="@style/Theme.MyApplica
			android:usesCleartextTraffic="true"

## Additional Tracking



If you want to measure the execution time of certain methods within the startup interval, additional tracking is required, as shown below:

Refer to the code:



QAPM.beginScene(StageConstant.QAPM\_APPLAUNCH, "Method Name", QAPM.ModeResource);
/\*\*Service logic\*/
QAPM.endScene(StageConstant.QAPM\_APPLAUNCH, "Method Name", QAPM.ModeResource);

If you want to set your own end point for the startup, additional tracking must be done within 20s after the first Activity calls on Resume, as shown below:



Refer to the code:





/\*\*
 \* Users who need to customize the end point must do so within 20s after onResume.
 \*/
QAPM.endScene(StageConstant.QAPM\_APPLAUNCH, QAPM.ModeResource);

## Verifying Whether the Feature Is Working Properly



If the following log message appears 20 seconds after each startup or switch to background, it indicates successful reporting of startup metric data.

Retrieval tag: [plugin::114]



#### Note:

It requires the qapm-plugin for instrumentation and you must manually add an Application subclass. Otherwise, it will not work.

Individual event data will be reported only if the total startup time exceeds 2.5s.

Launch issue data can be viewed in Mobile App Performance Monitoring > Startup > Issue List.

#### Calculation

#### **Cold Startup:**

Occurs after the app starts from the device or after the system terminates the app for the first time. Android calculation method: mainActivityOnResume\_end - attachBaseContext\_start. iOS calculation method: Time of the first frame of the first page UI displayed on screen - App process creation time.

#### **Initial Startup:**

Indicates the first launch after the app installation, which is a special case of cold startup. Android calculation method: mainActivityOnResume\_end - attachBaseContext\_start iOS calculation method: Time of the first frame of the first page UI displayed on screen - App process creation time.

#### Warm Startup:

Under the premise that process and Activity instances still exist (for iOS, the app is in the background and alive). If the app switches to the background for three minutes and then switches back to the foreground, it is defined as a warm startup.

Android calculation method: activityOnResume\_end - activityOnRestart\_start.

iOS calculation method: ApplicationDidBecomeActive - ApplicationWillEnterForeground.

#### Startup Duration:



Total boot time / Total boot count

# Operation Guide Crash

Last updated : 2024-05-13 18:03:25

Terminal Performance Monitoring aggregates key characteristics from individual crash incidents, facilitating root cause analysis of App crashes.

## Feature Entry

1. Log in to Tencent Cloud Observability Platform.

2. In the left navigation bar, select **Mobile App Performance Monitoring > Crash**. Select the business system, app, and time range to analyze crashes.

Crash Rate 53.18 %	Crashes 24.02 K times	SDK Startups 45.17 K times	Crash-affected User Rate 100 %	Crash-affected Users <b>1 People</b>
letric Analysis				
Crash Rate Crashes Crash-affected User Rate Crash	n-affected Users			
Trend Analysis				
Crash Rate 66.40 %				
		₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩		ŧñ₩₩ĸ₩Ŵ₩ <sup>Ŷ</sup> ₩₩₩₩₩₩₩₩₩₩₩
44.27 %				
22.13 %				
04/2/17:55 04/2/16:55 04/2/19:55 04/2/20:55	5 04/27/21:55 04/27/22:55 04/27/25:55 04/20/00:55	U4/20 U1:55 U4/20 U2:55 U4/20 U3:55 U4/20 U4:55 U4/2	5 US:SS U4/20 U0:SS U4/20 U1:SS U4/20 U0:SS U4/20 U9:SS	04/2010:35 04/2011:35 04/2012:35 04/2013:35
ttidimensional Analysis rash Rate v				
Application Version		Barchart List	System Version	
4,2,4		onion vol postannest nino vol		
4.2.7		59.51 %   489times(1.08 %)	12	
4.2.4		59.14 %   602times(1.33 %)	10	
4.1.4		58.21 %   481times(1.06 %)	11	
448			۵.	
4.4.0		57.50 %   5 fournes(1.14 %)	,	

## Multidimensional Analysis

The Multidimensional Analysis page shows the analysis of key metrics from multiple dimensions such as app version, system version, crash type, device type, and app status. It facilitates targeted root cause analysis of specific crash events.



Mutitidimensional Analysis Crashes •		
Application Version	Barchart List	System Version
4.2.4	1.48 %   356times 🛛	10
4.8.8	1.43 %   343times	12
4.7.7	1.39 %   335times	6
428	1.37 %   328times	7
465	1.36 %   327times	
Crash Type	Barchart List	Device Type
Java	94.06 %   22.59Ktimes	vivo X9L

#### Crash Issue List

The crash issue list shows crashes of all devices. You can quickly filter crashes by error type, device ID, function, or filename. You can also click **Issue Description** to view the details of crashes and pinpoint the root causes of crashes.

Crash Issue List	All Exception Types		
	Issue Description	Crash-affected Users (Proportion) \$	Crashes (Propc
	ID: 8 java lang UnsatisfiedLinkError	1 (20%)	3559 (20.06%)
	java.lang.System.laad.Library(System java) com.te ourceFile) comteex.un.te android view.View.j		
	ID: control co	1 (20%)	3549 (20.00%)
	ID: 3c java.lang.OutOMemoryError com tencent.tml.damo.performance.activity.bl/SourceFile1 cor antouwause vere.petformCICk(View.java)	1 (20%)	3547 (19.99%)
	ID: ( java.lang.RuntimeException com.te com.teriorm.tim.damo.geniofinanis.securry.utacurre.eveny android.view.View.performClick(View.java)	1 (20%)	3545 (19.98%)
	ID: 3 Java Jang KullivinineException com for the neutromatic activity (clashActivity (closurceFile) com for the neutromatic (clashWei (clash) clashCommentation (clash) (clash)	1 (20%)	3542 (19.96%)

#### **Metrics Description**

#### Related Metrics are as follows:

Metric Name	Metrics Description

Crash Rate	Number of crashes/Number of app launches within a specified time range
Crash-affected User Rate	Number of users affected by crashes/Number of users launching the app within a specified time range
Crashes	Number of crashes within a specified time range
Crash-affected Users	Number of users affected by crashes within a specified time range
Crash Type	Classified into Java crashes and Native crashes based on the location of the crash occurrence
SDK Startups	Number of app launches

# ANR

Last updated : 2024-05-13 18:03:25

Mobile Performance Monitoring (MPM) aggregates key characteristics of individual Application Not Response (ANR) cases, facilitating root cause analysis of ANR issues for your app.

## Feature Entry

- 1. Log in to Tencent Cloud Observability Platform.
- 2. In the left sidebar menu, select Mobile App Performance Monitoring > Anr.
- 3. Select the business system, app, and time range to analyze ANR issues.



## **Multidimensional Analysis**

The Multidimensional analysis page shows the analysis of key metrics from multiple dimensions such as ANR count, number of launches, and ANR rate. It facilitates targeted root cause analysis of specific ANR issues.

ANR Times	*		
AMD Timor			
ANIC TIMES			
SDK Startups	n	Barchart List	System Version
ANR Rate			
4.8.4		1.53 %   216 times	10
4.5.2		1.48 %   208 times	13
4.6.1		1.46 %   206 times	6
4.9.5		1.46 %   206 times	11
4.5.8		1.45 % 204 times	8
-			

#### ANR Issue List

The ANR issue list allows you to view, search, sort, and manage clustering issues. You can enter the issue details page by clicking the View Details button.

# ARR lasse List Reserved in the served in the serv

## ANR Issue Details

The details page provides multi-dimensional statistics for a category of issues and analysis of individual cases. You can check the details of an issue by clicking the corresponding issue description.

ANR Issue Analysis Sample Analysis Statistical Analysis										
Sample List   Please select  v	Contextual Information									
Device ID: 2/ b610	User ID 1234561	Device ID 2 Bfe8	ANR Type ID ANR ID	Exception Type java lang RuntimeException	Exception Cause ANR Input dispatching timed out (	Maximum Total Memory of the Java VM 384 M P	Total Unused Memory of the JVM 2.47 MB	Total Memory Occupied by the Current JVM 8.59 MT	Application Version 4.2.6股	
Application Version: 42.6	System Version 11 12	Page com tencent tmf module gapm per.	Device Name	Application Status Frontend	CPU Architecture arm64-v8a	Reporting Time 2024-04-28 17:58:16 0	Occurrence Time 2024-04-28 17:58:04 1	Root or Not Not	Translation Status Translated	
User ID: 123456 Reporting Time: 2024-04-28 17:58:04	APM Identifier 674 :	Build ID Ma 936	.SDK Version 5.3.2-pub-private 12							
Application Version: 4.2.6 Device ID: 2/	Error Information Stack Information									Upload
User ID: 123456 Reporting Time: 2024-04-28 17:57:40 Application Version: 4.3.5	Translate Expand All									O Restored Stack
Device ID:	#1 main TIMED_WAITING									
User ID: 123458 Reporting Time: 2024-04-28 17:57:28	1 java.lang.Thread.sleep(Native N	(ethod)								
Application Version: 4.3.5	2 java.lang.Thread.sleep(Thread.	(ava:443)								

## Metrics Description

ANR-related Metrics are described as follows:

Metric Name	Metrics Description
ANR Rate	Number of devices experiencing ANR/Total number of devices within a specified time range
ANR Times	Number of ANRs occurring in the app within a specified time range
SDK Startups	Number of app launches
ANR-affected User Rate	Number of users affected by ANR/Total number of users launching the app within a specified time range
ANR-affected Users	Number of users affected by ANR within a specified time range
Users	Total number of users launching the app

# Network

Last updated : 2024-05-13 18:03:25

Network issues are analyzed using metrics such as Throughput, Requests, Network Response Time, Slow Request Proportion, HTTP Error Rate, Network Error Rate, and TCP Connection Establishment Time.

## Feature Entry

1. Log in to Tencent Cloud Observability Platform..

2. In the left navigation bar, select **Mobile App Performance Monitoring** > **Network**, You can check network issue analysis from multiple dimensions such as business system, app, and time range.

#### **Multidimensional Analysis**

The multidimensional analysis page shows the analysis of key metrics from multiple dimensions such as app version, system version, domain name, URL, device type, network type, region, and internet service provider. It facilitates targeted root cause analysis of specific slow/error requests.

#### **Slow Requests**

Multidimensional Analysis Requests  v			
Request Duration n Sent Bytes d		Barchart List	System Version
Received BytesSlow Requests		1.45K times(1.57 %)   1501.82 ms	11
Cherr Damport Honer		1.39K times(1.50 %)   1496.56 ms	6
4.1.3	4.2.9 Requests:1.39K times Proportion:1.50 %	1.35K times(1.46 %)   1500.03 ms	8
4.3.7	Request Duration:1496.56 ms	1.34K times(1.45 %)   1499.33 ms	10
Device Type		Barchart List	Network Type:
MI 5X		31.82K times(34.38 %)   1503.93 ms	With

#### **Error Requests**

Multidimensional Analysis		
Error Requests +		
Error Requests n	Barchart List	System Version
426	169 times   1.58 % 🎚	11
433	166 times   1.55 %	13
4.13	159 times   1.49 %	6
47.6	156 times   1.46 %	8
497	155 times   1.45 %	10

#### Slow Request Issue List

The slow request list shows slow requests of all devices. You can quickly filter slow-loading devices by issue type, device ID, specific function, or file name. You can also click the related link under **Issue Description** to view details of slow requests and pinpoint the root cause of slow app requests.

Notes at			
Network			
Slow Requests Slow Request Issue List Error Requests Error Request Issue List			
Rumsteel/500353.nm.android.demn v Move Forward 2024-04-27.17-58 ~ 2024-04-28.17-58 The Granularity Time Granularity	Application Version Please select	System Version Please select	Domain Name Please select  VURI Please
Device Type Please select   Network Type: Please select   Region Please select   ISP Please select			
Slow Request Issue List () All Issue Statuses * Device ID * Please enter the device ID			
Issue Description	Slow Request Users (Proportion) \$	Slow Requests (Proportion) \$	Request Duration (ms) \$
ID:	1 (25%)	14198 (57.02%)	2151
m.zhipin.com/wapi/zpgeel rch/joblist.jsön			
ID: a <sup>-</sup>	1 (25%)	3568 (14.33%)	2109.00
www.m-toy.com.tw 001			
	4 (2020)	2000 (44.22%)	2670
ID: 5	1 (20%)	3300 (14.33%)	2019
ID: 4	1 (25%)	3568 (14.33%)	2315.00
tcc.taobaonimobile_tel_segment.htm			

An HTTP request sample is considered a slow request if the transmitted data is over 50 KB and the transfer speed is below 10 KB/s, or if the transmitted data is 50 KB or less and the response time is over 2s. Slow request samples will be shown in the issue list.

Slow Request Issue Analysis								
Sample Analysis Statistical Analysis								
Sample List ⑦ Please select *	Contextual Information							
Device ID.	User ID	Device ID	URL	Parameter Information	Status Code	Local DNS Server Address	Request Method	Protocol
User ID: 123456	123456 10	2	https://m.	city=1010000001.mon/Source=1	后 404 后	- 12	GETID	http 🖺
Request Duration: 2151ms	DNS Query Time	TCP Handshake Time	SSL Duration	TTFB	Response Time	Sent Bytes	Received Bytes	Host IP
Reporting Time: 2024-04-28 17:58:17	0ms līg	Oms 🛅	0ms 🛅	266ms 1	1876ms 🛅	108B F	24.50KB 🛅	· 15
Application Version: 4.6.4	Pustam Varsian	Davice Name	Mehuark Tune:	Client side seurce ID	country.	16.0	Desion	CDU Architectur
Davies ID:	61 <u>6</u>	vivo X9L	WEIG	Cilent-side source in	美国石	未知后	- 6	arm64-v8a
User ID: 123458								
Request Duration: 2151ms	Occurrence Time	Root or Not	APM Identifier	Build ID	SDK Version			
Reporting Time: 2024-04-28 17:58:01	2024-04-28 17:58:051	NOID	53C83582-242e-487e-8003-C8e92)	0 939596t 8398-0888	ID 5.1.0_jemteriD			
Application Version: 4.6.8	Error Information							

## Error Request Issue List

Network errors such as HTTP request errors, DNS resolution errors, failure to establish connection, and connection timeout will be displayed in the error request list. You can click the related link under **Issue Description** to view error request details and pinpoint the root cause of error requests.

Network		
Slow Requests Slow Request Issue List Error Requests Error Request Issue List		
Rum NextS500553 rum android demo         •         Move Forward         2024-04-21 1758         •         2024-04-21 1758         •         Application Wersion         Plasma select           Device Type         Peans select         •         Regim         Plasma select         •         ISP         Plasma select         •         Stays         Plasma select         •         ISP         Flasma select         •         ISP         Flasma select         •         ISP         ISP         ISP         ISP         ISP </th <th>System Version Please select</th> <th>Domain Name Please solect     VIL Please</th>	System Version Please select	Domain Name Please solect     VIL Please
Exception Request Issue List All Issue Statuses * Device ID * Please enter the device ID		
Issue Description	Error-affected Users (Proportion) \$	Error Requests (Proportion) \$
ID: C Territoria de la constante d	1 (33.33%)	7129 (40.08%)
404/The remaining w=5205 uni uuvusu x/ work106 sites NIO5 qifeye com/		
ID: 122713106 664 free not exist.1 m. altipin.com/wepurgets.mousfoblist.jeon	1 (33.33%)	7062 (39.87%)
ID: ar segt gant.lov	1 (33 33%)	3568 (20.09%)

You can also click **Issue Description** to view error request details and analyze the cause of errors.

Error Request Issue Analysis Sample Analysis Statistical Analysis								
Sample List 🕥 Flease select 💌	Contextual Information							
Device ID: 2a1 User ID: 123456	User ID 123456 🔂	Device ID 2e 8	URL.	Parameter Information	Status Code 404 🛅	Local DNS Server Address	Request Error Type	Re GE
Reporting Time: 2024-04-28 17:58:18 Application Version: 4.2.3	Application Version	System Version	Device Name MI 5X I	Client-side source IP 11.142.213.271	country 美国 <b>石</b>	Network Type: NoNetwork I	ISP 未知 <b></b> 面	Re - 17
Device ID: 2af User ID: 123458 Reporting Time: 2024-04-28 17:58 00 Anterization Versian: 4.6.7	Reporting Time 20 3:1810 Error Information 2024-04	Occurrence Time 2024-04-28 17:58:061	Root or Not NoT	APM Identifier 081418cd- 195-e293	Build ID 939598bc-1	SDK Version		
Device ID: 22 58db510 User ID: 123456 Reporting Time: 2024-04-28 17.57.55 Application Version: 4.7.7	Response Information ⑦							

#### **Metrics Description**

Related Metrics are as follows:

Metric Name	Metrics Description
Request Duration	App request duration
Slow Request Proportion	The proportion of slow requests to the total number of requests within a selected time range. A request is considered a slow request:



	When the transmitted data is over 50 KB and the transmission speed is below 10 KB/s. When the transmitted data is 50 KB or less and the response time is over 2s.
Slow Requests	The number of slow requests within a selected time range. A request is considered a slow request: When the transmitted data is over 50 KB and the transmission speed is below 10 KB/s. When the transmitted data is 50 KB or less and the response time is over 2s.
Requests	Total application requests
Slow-request Users Proportion	The ratio of the number of users affected by slow requests to the total number of users within a specified time range
Slow Request Users	The number of users affected by slow requests within a specified time range
Request Error Rate	Number of error requests / Total number of requests
Error Requests	Number of network errors in the selected time period Error requests refer to HTTP request errors, DNS resolution errors, inability to establish connection, connection timeout, and other network-related errors
Error-affected User Proportion	Ratio of users affected by error requests to total users within a specified time range
Error-affected Users	Number of users affected by error requests within a specified time range

# Webview

Last updated : 2024-05-13 18:03:25

This feature provides WebView metric analysis based on page loading time, slow loading proportion, and JavaScript error rate. It allows you to drill down into WebView and JavaScript errors through the issue list.

## Feature Entry

1. log in to Mobile App Performance Monitoring Console.

2. In the left navigation bar, select **WebView**. Select the business system, app, and time range to analyze WebView issues.

#### Slow loading and JavaScript Error Multidimensional Analysis

The multidimensional analysis page shows the analysis of key metrics from multiple dimensions such as app version, system version, device type, page, network type, internet service provider, and region. It facilitates targeted root cause analysis of specific slow loading issues or JavaScript errors.

Multidimensional Analysis		
Page Loading Times 👻		
Page Loading Times		
Full Loading Duration n	Barchart List	System Version
4.5.7	112 times(1.58 %)   4839 ms	13
4.1.8	112 times(1.58 %)   4839 ms	9
447	110 times(1.55 %)   4839 ms	11
4.7.7	110 times(1.55 %)   4839 ms	12
•		
4.1.1	108 times(1.53 %)   4839 ms	7
-		
Device Type	Barchart List	Page
vivo X9L	2.44 K times(34.51 %)   4839 ms	https://www.nasa.gov/

#### Slow Loading Issues List

The slow loading issue list shows slow loading issues of all devices. You can quickly filter slow-loading devices by error type and device ID. You can also click **Issue Description** to view the details of slow loading and pinpoint and



analyze the root causes of slow loading for your app.

#### Note:

The default sampling rate for slow loading sample reporting is 0.1%, so it is normal for the number of issue samples in the issue list to not match the metric statistics.

Webview							
Slow Loading Slow Loading Issue List	JavaScript Error	JavaScript Error Issue List					
Rum-test/500353.rum-android-demo	<ul> <li>Move Forward</li> </ul>	2024-04-27 17:58 ~ 2024-04-28	7:58 📩 Move Backward	Time Granularity	5-Minute Granularity	Application Version Please select	System Version Please select
Network Type: Please select	Region Please select	▼ ISP Please	elect 👻				
The default sampling rate is 0.1% for slow load	ding sample reporting. Therefo	re, it is normal that the number of probler	samples in the issue list is diffe	rent from that in the me	ric statistics. Any increas	a in the sample rate may involve resource scale-out. I	Please contact the mobile monitoring team if you need scaling.
Slow Loading Issue List ③ All Issue Stat	ISES V Device ID V						
Issue Description						Slow Loading User (Proportion) \$	Slow Loading Times (Proportion) \$
ID: 536 https://www.lov/						1(100%)	3528(100%)
Total items: 1							

For each page loading sample, a full loading time greater than 3,500 ms is considered slow loading, and slow loading samples will be displayed in the issue list.

Slow Loading Issue Analysis						
Sample Analysis Statistical Analysis						
Sample List ⑦ Please select •	Contextual Information					
Device ID: 2e <sup>0</sup>	User ID	Device ID	Full Loading Duration	Application Version	System Version	Page
User ID: 123456	1234561	ste8	10 4845ms10	4.1.91	810	https://ww
Reporting Time: 2024-04-28 17:58:10	Network Type:	ISP	Region	CPU Architecture	ua	Reporting Time
Full Loading Time: 4845ms	WIFI	未知喧	-15	arm64-v8a 🗗	Mozilla/5.0 (Linux; Android	0; AN 🗈 2024-04-28 17:58:10
Application Version: 4.1.9	Puild ID	CDK Version				
	039598hc.3405.494h.8398.0a	SDK version				
Device ID: 2200						
Departing Time: 2024-04-28-17:57:47	Error Information					
Full Loading Time: 4845ms	Time Sequence Analysis					
Application Version: 4.9.4		<u> </u>				
	Page Loading Waterfall Curve					
Device ID: 2		First Byte: 225ms				DOMReady: 3
User ID: 123456						
Reporting Time: 2024-04-28 17:57:22						
Full Loading Time: 4845ms	_					
Application Version: 4.6.2	DNS Query 3	8ms				
Device ID: 2: 1 b510	TCP Connection	93ms				
User ID: 123456						
Reporting Time: 2024-04-28 17:56:58	SSL Connection	81ms				
Full Loading Time: 4845ms	Network Request Fir	70ms				
Application Version: 4.5.3						
	Network Transmission	20ms				
Device ID:	DOM Parsing					0
User ID: 123456	Dominalsing					2
Reporting Time: 2024-04-28 17:56:34	Loading resources.					
Full Loading Time: 4845ms						
Application Version: 4.1.9						

#### JavaScript Error Issues List

You can view all JavaScript errors in the JavaScript error Issues list.



#### Note:

The default sampling rate for JavaScript error reporting is 0.1%, so it is normal for the number of issue samples in the issue list to not match the metric statistics.

Webview	
Slow Loading Slow Loading Issue List JavaScript Error JavaScript Error Issue List	
Rum-test500353 rum-android-demo 🔹 Move Forward 2024-04-27 17:58 - 2024-04-28 17:58 🖬 Move Backward Time Granularity 5-Minute Granularity 💌 Application Virsion Please select	System Version Please select
Device Type Please select    Network Type: Please select   Network	
O The default sampling rate is 0.1% for JavaScript error sample reporting. Therefore, it is normal that the number of problem samples in the issue list is different from that in the metric statistics. Any increase in the sample rate may involve resource scale-out.	t. Please contact the mobile monitoring team if you need
JavaScript Error Issue List All Error Types	
Issue Description	JavaScript Error-affected Users (Proportion) \$
D. 6 10 202020 1/2	1 (14.29%)
Uncaught Evilientor	
Hello file://imdroid_asset/monitor.html	
ID: 71 Te20c	1 (14.29%)
Onedgin Rengello	
file///androihtml	
ID: feb	1 (14.29%)
Uncaught TypeError	

You can also click **Issue Description** to view details of JavaScript errors and pinpoint and analyze the causes of JavaScript errors.

JS错误问题分析 <b>样本分析</b> 统计分析							
<b>样本列表</b> ⑦ 请选择 🔻	上下文信息						
设备ID: 2a0d55 000000510 用户ID: 123456	用户ID 123456 <b>行</b>	设备ID 2a0d558b9c3ed36b4c201308fe8	错误类型 后 Uncaught EvalError后	错误信息 Hello <b>币</b>	错误JS文件名 file:///android_asset/monitor.html <b>而</b>	应用版本 4.6.8 <b> 位</b>	1
上版时间: 2024-04-28 17:53:31 应用版本: 4.6.8	浏览器版本 78.0.6.8 <b>但</b>	设备名称 vivo X9L <b>旧</b>	网络类型 WIFI <b>凸</b>	运营商 未知 <b></b>	地区 - <b>喧</b>	CPU架构 arm64-v8a唱	2
说品(D: 2a) 用户(D: 123456 上服時期): 2024-04-28 17:51:55 应用版本: 4.2.1	翻译状态 已翻译 <b>后</b> 错误信息	APM65단 104ae98b-87d8-4325-8031-8b57	构建ID 佰 5a379973-e977-455c-a13e-7c	SDK版本 357 阳 5.1.0-jmeter 阳			
段発用日: 2mb4555maのようの55555555555555555555555555555555555	<b>堆枝信</b> 思 全部折叠 #						
设备ID:2a04555 用户ID:123456 上限时间:2024-04-28 17:48:45	1 at HTMLButtonElemen	t. <anonymous> (file.///android_asset/monitor.html</anonymous>	17:15)				
雇用版本: 4.5.6 设备ID: 2a0d556	2 at http://localhost:5000	(static/js/main.dd03d93d.chunk.js:1:398)					

#### **Metrics Description**

Related Metrics are as follows:

Metric Name	Metrics Description
Page Loading Times	Number of times a page is opened or refreshed
Full Loading Duration	Time taken for the entire web page to be fully loaded
JavaScript Errors	Total number of JavaScript errors within a specified time range
JavaScript Error Rate	Number of users experiencing JavaScript errors/Total number of users accessing the WebView page. Due to computational resource limitations, the numerator and denominator of this metric are not deduplicated.
JavaScript Error- affected User Proportion	Number of users affected by JavaScript errors/Total number of users within a specified time range
JavaScript Error- affected Users	Number of users affected by JavaScript errors within a specified time range

# **Application Management**

Last updated : 2024-05-13 18:03:25

## Use Cases

On the app management page, you can view your connected end-user apps, new app access, and app IDs, and set an allowlist.

#### Directions

#### Accessing App

1. Log in to Tencent Cloud Observability Platform.

2. In the left sidebar, select **Mobile App Performance Monitoring > Overview**.

3. click **Application Access**, fill in the app name, set the app type to Android or iOS, set the business system, and click **Next**.

1 Create Application >	2 Application Access		
Application Name (4 to 50 Characters)	example		$\odot$
Application Type	iOS	•	$\odot$
Business System	rum-Z8u7RytMIQgd4e.0425test	•	No business system yet? Cli

#### **Obtaining App ID**

On the **Application Management > Application Settings** to enter the app settings page and obtain app IDs from the list.
Application Management			
Business System	Application Settings	Allowlist Management	
Business System: rum-	36uJ0ycDx8qRVY.Rum-test ▼	Application Access	
Application Name			Report ID
rum-android-demo			7 17/56
rum-ios-demo			: J712 🖬

## **Allowlist Configuration**

Select **Application Management > Allowlist Management** to enter the allowlist configuration page. Click **Add** on the allowlist configuration page. Configure a user ID/device ID allowlist to prevent data reporting from being affected by sampling. That is, users/devices in the allowlist are not affected by the sampling rate and will all be sampled. You can select a user or device type and fill in the relevant ID.

ser ID	Please enter the user ID.
lemarks	Please enter remarks for the user allowlist.