

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 { | | | |
| 🛃 .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: \$kotlin_version " | | | |
| gradiew.bat | | | | |
| 📊 local.properties | | | | |
| 📊 qapm.properties | 15 θ } | | | |
| 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 { 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 | Required . The Key that needs to be set. | |
| public static QAPM setProperty(int key, Stringvalue) Functionality : | QAPM.PropertyKeyLogLevel | Optional . Enable log level. (It is recommended to use QAPM.LevelDebug for Debug versions and QAPM.LevelWarn for release versions). | - |
| Set QAPM parameters. | QAPM.PropertyNeedTranslate | Optional . 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 | Required . Scene name. | For official versions, it is recommended to enable QAPM.ModeStable; for |
| beginScene(String sceneName, int mode) | mode | Required . The feature to be | is recommended. |



| Functionality: | | enabled. | By default, the ModeStable featu | |
|--|---------------------------------|---|---|--|
| Enable monitoring. | QAPM.ModeStable | Optional . 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 | Optional . Enable WebView page load monitoring. | | |
| | QAPM.ModeJsError | Optional . Enable WebView JS exception monitoring. | | |
| | QAPM.ModeHTTPInWeb | Optional . Enable WebView network monitoring. | | |
| | QAPM.ModeHTTP | Optional . Enable network monitoring. | | |
| public static boolean endScene(String sceneName, long mode) | sceneName | Required . 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 | Optional . 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

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

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.

| ○ ○ ○ Insp ← → C ○ ○ ○ ○ | 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

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

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 <</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</th></tr><tr><td></td><td>🕐 🖿 manifests</td><td></td><td><pre><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 1 People |
|---|---|--|---|---|
| letric Analysis | | | | |
| Crash Rate Crashes Crash-affected User Rate Crash | n-affected Users | | | |
| Trend Analysis | | | | |
| Crash Rate 66.40 % | | | | |
| | | ₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩ | | ŧñ₩₩ĸ₩Ŵ₩ ^Ŷ ₩₩₩₩₩₩₩₩₩₩₩ |
| 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 ⁻ | 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 石 | Network Type: NoNetwork I | ISP 未知 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 | Move Forward | 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 ⁰ | 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 样本分析 统计分析 | | | | | | | |
|--|------------------------------|--|--------------------------------------|-------------------------------|--|-------------------------|---|
| 样本列表 ⑦ 请选择 🔻 | 上下文信息 | | | | | | |
| 设备ID: 2a0d55 000000510 用户ID: 123456 | 用户ID 123456 行 | 设备ID 2a0d558b9c3ed36b4c201308fe8 | 错误类型 后 Uncaught EvalError后 | 错误信息 Hello 币 | 错误JS文件名 file:///android_asset/monitor.html 而 | 应用版本 4.6.8 位 | 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 但 | 设备名称 vivo X9L 旧 | 网络类型 WIFI 凸 | 运营商 未知 | 地区 - 喧 | 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 后 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 | 堆枝信 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. |