Ant Technology

Mobile Delivery Service User Guide







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Document conventions

Style Description		Example		
<u>À</u> Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	Danger: Resetting will result in the loss of user configuration data.		
O Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.		
C) Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	Notice: If the weight is set to 0, the server no longer receives new requests.		
? Note	A note indicates supplemental instructions, best practices, tips, and other content.	Note: You can use Ctrl + A to select all files.		
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings> Network> Set network type.		
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click OK.		
Courier font	Courier font is used for commands	Run the cd /d C:/window command to enter the Windows system folder.		
Italic	Italic formatting is used for parameters and variables.	bae log listinstanceid Instance_ID		
[] or [a b]	This format is used for an optional value, where only one item can be selected.	ipconfig [-all -t]		
{} or {a b} This format is used for a required value, where only one item can be selected.		switch {active stand}		

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1.Service announcement

To provide a highly-efficient real-time delivery service, starting from 21:00 on July 14, 2022 in UTC+8, the domain name used by the Mobile Delivery Service (MDS) for delivery was changed from mcube-prod.cn-hangzhou.oss.aliyuncs.com to mcube-prod.mpaascloud.com. Use the new domain name to obtain released packages.

After this change, to use the acceleration capability of the MDS, you must modify the second-level directory name to mcube-prod.mpaascloud.com.

2.About Mobile Delivery Service

Mobile Delivery Service (MDS for short) is one of the core basic service components of the mPaaS platform. It provides management and release services for version upgrade packages, hotpatch packages, and H5 offline packages, and supports configurations management, whitelists, release rules and other management functions.

Mobile Delivery Service serves to manage and release the version upgrade and hotpatch packages. After you integrate Mobile Delivery Service on your client, you can generate a new package in mPaaS plugin and release the new package on the Mobile Delivery Service console, then the client receives the package and starts upgrade. Mobile Delivery Service also supports implementing gray release by means of whitelist. You can use advanced filtering rule to make the gray release more accurate, e.g. specifying a device type.

Functions

Function	Description
Gray release	Before formal release, launch a small-scale release (for example: only released to internal staff) by means of whitelist to validate if the new package's functions meet the expectation; or implement time-window gray release to release the package to a specified number of users in a specified time period. If it all works, the package can be pushed network-wide.
Advanced filter	When you perform gray release, you can utilize the advanced filtering rule to define a more accurate whitelist. For example, only send the package to the users of MI phones. Multiple filtering rules can be superposed, that means only when all filtering rules are matched can the package be pushed.
Realtime rollback	Only available in Hotpatch. During formal release, problems may arise despite of gray release. At that moment, execute real-time rollback to revert the package to previous version.
Custom signature verification	To ensure security, hotpatch has a custom signature verification flow to ensure the correctness of script source. mPaaS plugin provides the function of generating hotpatch resource packages and signing the packages.

Advantages

• Delivery management of multiple products, tasks, and dimensions

Multiple apps are supported for delivery management. It further provides features such as official release, hotpatch, offline packages, and real-time push.

For more information about using the hotpatch feature, please search for the group number 41708565 with DingTalk to join DingTalk group for further communication.

• Intelligent grey release, and three upgrade modes available

Internal grey release, external grey release, release targeted at specified population, regions, phone types, and networks are available.

• Push upgraded capabilities of offline packages only

It helps reduce data redundancy and bandwidth occupied by devices. It plays a pivotal role when the network on the mobile devices is unstable.

• High sensitivity and high availability

The client-side RPC interface capability is upgraded, with an availability rate up to 99.95%. The target devices can be reached within several minutes.

• High performance system

The reach rate is up to 99.95%, and the daily UV exceeding 0.2 billion can be supported.

3.Process of Mobile Delivery Service

You can conveniently integrate the function of Mobile Delivery Service to your client by installing the client SDK provided by the Mobile Delivery Service platform.

The process of Mobile Delivery Service is as follows:

- 1. Add the corresponding SDK on the client, the capability of integrating Mobile Delivery Service upgrade or H5 offline packages.
- 2. Package and generate version upgrade packages, offline packages, etc. in the mPaaS plug-in, and upload them to the release console.
- 3. Create a release task on the console for gray release, official release, etc.
- 4. The client then pulls the new release package for upgrade and offline release.

In addition, you can use the switch configuration service to modify the client-side code processing logic. By adding the required switch configuration items on the console, targeted distribution can be achieved.

Operation flow

The following diagram shows the process of Mobile Delivery Service release of version upgrade packages and offline packages:



Operations on console

You can perform the following operations on the Mobile Delivery Service console:

- Version upgrade packages > Manage releases: Manage and release the configuration of new client version.
- Offline packages > Manage offline packages: Package different businesses into different offline packages, and deliver the offline packages through the Mobile Delivery Service platform to update the client-side resources.
- Switch configuration > Manage configurations: Configure, modify or push various switches. You can deliver the packages by platform, whitelist, percentage or other condition.
- Manage whitelists: Manage whitelists so that you can easily create hundreds of thousands of whitelist data for the use in Mobile Delivery Service.

• Manage release rules: Pedefine various configuration data required for Mobile Delivery Service so that you don't have to manually input the data every time, with work efficiency improved and error rate decreased.

4.Manage version upgrade 4.1. Android

4.1.1. Quick start

This topic describes how to add the **Upgrade** SDK related to the release management. After adding the SDK and complete the necessary configurations, you can release a new version of an App is released in the mPaaS console, and the client can detect the new version through the upgrade API and remind users to download and upgrade.

Currently, Upgrade SDK supports access through Native AAR, mPaaS Inside, and Portal & Bundle.

The complete access process mainly includes the following 4 steps:

- 1. Add SDK
- 2. Configure project
- 3. Initialize mPaaS(only required for Native AAR and mPaaS Inside)
- 4. Check for update

Prerequisites

- If you access MDS through Native AAR, ensure that you have added mPaaS to project.
- If you access MDS through mPaaS inside, ensure that you have completed the mPaaS inside access process.
- If you access MDS in componentized access mode (through Portal & Bundle projects), ensure that you have completed the componentized access process.

Add SDK

Native AAR mode

Follow the instructions in AAR component management to install the UPGRADE component in the project through Component management (AAR).

mPaaS Inside mode

Install the UPGRADE component in the project through Component management (AAR).

For more information, see Manage component dependencies > Add/delete component dependencies.

Componentized access mode

Install the UPGRADE component in the Portal and Bundle projects through Component management (AAR).

For more information, see Manage component dependencies > Add/delete component dependencies.

Configure project

Configure AndroidManifest

1. Add the following permissions in the AndroidManifest.xml file.

<uses-permission android:name="android.permission.REQUEST_INSTALL_PACKAGES" />

2. Add the following configuration in the AndroidManifest.xml file:



<provider

```
android:name="android.support.v4.content.FileProvider"
android:authorities="${applicationId}.fileprovider"
android:exported="false"
android:grantUriPermissions="true">
<meta-data
android:name="android.support.FILE_PROVIDER_PATHS"
android:resource="@xml/file_paths" />
</provider>
```

? Note

For more information about the configuration of AndroidManifest.xml , please see App Manifest Overview.

3. Create the file_paths.xml file in the src/main/res/xml directory in the main module of the Portal project with the following content:

```
<?rxml version="1.0" encoding="utf-8"?>
<resources>
<paths>
<external-files-path
name="download"
path="com.alipay.android.phone.aliupgrade/downloads" />
<external-path
name="download_sdcard"
path="ExtDataTunnel/files/com.alipay.android.phone.aliupgrade/downloads" />
</paths>
</resources>
```

Add resources

? Note

If you access the UPGRADE SDK through mPaaS Inside or Native AAR, you need to add the following resources to your App, otherwise, the upgrade component will not work. Click hereto get the resource file.

Merge the content of	strings.xml ,	styles.xml	, and	colors.xml	under the	values	directory.

$\mathbf{\nabla}$		res	
	$\mathbf{\nabla}$	🚞 drawable-hdpi	
		🛞 downloadormal.png	
		Ø downloadpress.png	
	▼	🔁 values	
		strings.xml	
		styles.xml	
		colors.xml	
	▼	🚞 layout	
		downloadogress.xml	
	▼	📄 drawable	
		downloadlector.xml	5
		🧧 downloadizontal.xml	
		download_icon.png	1

Initialize mPaaS

If you access the UPGRADE SDK through Native AAR or mPaaS Inside, you must initialize mPaaS.

Add the following codes in the object Application :

public class MyApplication extends Application {

```
@Override
  protected void attachBaseContext(Context base) {
    super.attachBaseContext(base);
    // Set mPaaS initialization callback
    QuinoxlessFramework.setup(this, new IInitCallback() {
      @Override
      public void onPostInit() {
         // This callback indicates that mPaaS initialization has been done, and relevant mPaaS calls can be performe
d here
      }
    });
  }
  @Override
  public void onCreate() {
    super.onCreate();
    // Initialize mPaaS
    QuinoxlessFramework.init();
  }
}
```

Check for update

Quickly check for an update, and only the checking result is returned.

```
MPUpgrade mMPUpgrade = new MPUpgrade();
// The synchronization method, which is called in a subthread.
int result = mMPUpgrade.fastCheckHasNewVersion();
if (result == UpgradeConstants.HAS_NEW_VERSION) {
    // New version available
} else if (result == UpgradeConstants.HAS_NO_NEW_VERSION) {
    // No new version available
} else if (result == UpgradeConstants.HAS_SOME_ERROR) {
    // Error
}
```

4.1.2. Advanced operations

After integrating the SDK, you can set whitelist, use the SDK to detect upgrades and notify users of any upgrades based on business requirements.

Set whitelist

Set whitelist user ID:

```
MPLogger.setUserId("your whitelist ID");
```

Detect new version

• Detect new versions quickly and remind users with a pop-up:

? Note

Only the upgrade popup is displayed quickly, and the forced upgrade logic is not included. If you need to force an upgrade, please use a custom upgrade to implement it.

MPUpgrade mMPUpgrade = new MPUpgrade(); mMPUpgrade.fastCheckNewVersion(activity, drawable);

• Detect new versions quickly and return the detection result only:

```
MPUpgrade mMPUpgrade = new MPUpgrade();
// The synchronous method, which is called in the subthread.
int result = mMPUpgrade.fastCheckHasNewVersion();
if (result == UpgradeConstants.HAS_NEW_VERSION) {
    // A new version is available.
} else if (result == UpgradeConstants.HAS_NO_NEW_VERSION) {
    // No new version is available.
} else if (result == UpgradeConstants.HAS_SOME_ERROR) {
    // An error occurs.
}
```

Obtain upgrade details

Call the fastGetClientUpgradeRes method to obtain more information.

```
MPUpgrade mMPUpgrade = new MPUpgrade();
// The synchronization method, which is called in a subthread.
ClientUpgradeRes clientUpgradeRes = mMPUpgrade.fastGetClientUpgradeRes();
```

The returned example displays information such as the new version number, download address, etc. Some of the parameters have the following meanings:

- downloadURL : Download address
- guideMemo : Upgrade information
- newestVersion : Latest version number
- resultStatus : Upgrade mode
 - 202: Single reminder
- 204: Multiple reminders
- 203/206: Forced update

Other custom detections

For more information about custom detections, see the following example:

• Implement the MPaaSCheckCallBack interface to respond to requests created by the upgrade SDK, such as displaying a pop-up:

```
MPUpgrade mMPUpgrade = new MPUpgrade();
mMPUpgrade.setUpgradeCallback(new MPaaSCheckVersionService.MPaaSCheckCallBack() {
    ........
});
```

• Call the MPUpgrade.checkNewVersion method to detect upgrades.

? Note

 MPUpgrade
 encapsulates the call of
 MPaaSCheckVersionService
 You can also customize the

 implementation method. For information about
 MPaaSCheckVersionService
 and
 MPaaSCheckCallBack
 ,

 see API reference.
 and
 MPaaSCheckVersionService
 and
 MPaaSCheckCallBack
 ,

Customize the download directory of installation package (for 10.1.60 and later versions)

The configuration is as follows:

File dir = getApplicationContext().getExternalFilesDir("Custom directory"); MPUpgrade mpUpgrade = new MPUpgrade(); mpUpgrade.setDownloadPath(dir.getAbsolutePath());

Add the following configurations in the file_path.xml file:

```
// external-files-path corresponds to the directory of getExternalFilesDir
// Use the element corresponding to your custom directory. If you are not sure about how to select an element, searc
h for "Adapt FileProvider" on the Internet
<external-files-path
    name="download"
    path="custom directory" />
```

Handle the SDK package parsing failure upon forced upgrade

Some ROMs may fail to parse the SDK package after forced upgrade. This is because the ROMs need to access the corresponding App process when installing the package. However, the App process will be forcibly stopped during forced upgrade. As a result, the package fails to be parsed. Although such custom ROM behavior is incompliant with the native Android platforms, you can still solve the problem by implementing UpgradeForceExitCallback to return false in needForceExit.

1. Implement a callback.

```
public class UpgradeForceExitCallbackImpl implements UpgradeForceExitCallback {
    @Override
    public boolean needForceExit(boolean forceExitApp, MicroApplicationContext context) {
        // If false is returned, the app process will not be forcibly stopped, and the installation package will be parsed
successfully. If true is returned, you need to call the doForceExit method below to stop the process.
        return false;
    }
    @Override
    public void doForceExit(boolean forceExitApp, MicroApplicationContext context) {
        // If you need to stop the process, ensure that the needForceExit method above returns true, and then stop th
e process in this method.
    }
}
```

2. Set the callback.

MPUpgrade mpUpgrade = new MPUpgrade(); mpUpgrade.setForceExitCallback(new UpgradeForceExitCallbackImpl()); ↓ Important

Use the same MPUpgrade instance to set a callback or request an upgrade.

After setting the callback, you can avoid the failure of parsing the package, but the upgrade component will no longer automatically kill the process for you. Therefore, when the user does not click Install but returns to the application, please set an irrevocable pop-up cover layer by yourself to prevent the user from bypassing the forced upgrade.

4.1.3. Default storage path

Since Baselines V10.2.3.3 and V10.1.68.53, the default path to download a component APK of mPaaS is changed from an external storage path to an internal storage path.

If targetSdkVersion is 24 or later, you must add the following code to the file_paths.xml file:

```
<files-path
name="files-path"
path="." />
```

If you want to retain the original download path unchanged, add the following metadata to the manifest file:

<meta-data android:name="use_external" android:value="yes" />

4.2. iOS

4.2.1. Add SDK

This topic describes how to add the **Release upgrade** SDK related to release management. After adding the SDK and complete necessary configurations (refer to Use SDK for details), you can release new versions of an App in the mPaaS console.

- When releasing a version in the mPaaS console, you can customize release settings such as update reminder and release type.
- After a new app version is released in the mPaaS console, the client can detect the new version through the upgrade API and remind users to download the update.

Note : App Store does not allow online apps to contain the built-in upgrade detection function. In this case, do not release new versions in the mPaaS console when the App is under review.

Prerequisite

You have integrated mPaaS to your project. For more information, refer to Access based on native framework and using Cocoapods.

Add SDK

1. In the **Podfile** file, use mPaaS_pod "mPaaS_Upgrade" to add dependency.





2. Execute pod install to complete integrating the SDK.

What to do next

Use SDK

4.2.2. Use SDK

After adding the SDK, perform the following steps to connect the delivery service to the iOS client:

- 1. Detect new version: Call the SDK API method in the code to check whether new versions are available.
- 2. Configure whitelist gray release: Configure the functions such as the update reminder and gray release.
- 3. Online release: Generate an .ipa file in the mPaaS console, and release a new version.

Procedure

Detect new version

The upgrade detection SDK provides an API file to check available App upgrades. The method header file is intheAliUpgradeCheckService.framework > Headers > MPCheckUpgradeInterface.hfile.

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typedef NS_ENUM(NSUInteger, AliUpdateType) { AliUpgradeNewVersion = 201, /*The latest version is currently in use.*/ AliUpgradeOneTime, /*A new version of the client is available, and a single reminder is sent.*/ AliUpgradeForceUpdate, /*A new version of the client is available, and forced upgrade is implemented (obs oleted).*/ /*A new version of the client is available, and multiple reminders are sent.*/ AliUpgradeEveryTime, /*Restricted login (obsoleted)*/ AliUpgradeRejectLogin, AliUpgradeForceUpdateWithLogin /*A new version of the client is available, and forced upgrade is implemented .*/ }; /** The successful callback of upgrade detection during UI customization @param upgradeInfos The upgrade information @{upgradeType:202, downloadURL:@"itunes://downLoader.xxxcom/xxx", message:@"New version available, please upgrade", upgradeShortVersion:@"9.9.0", upgradeFullVersion:@"9.9.0.0000001" needClientNetType:@"4G,WIFI", userId:@"admin" } */ typedef void(^AliCheckUpgradeComplete)(NSDictionary *upgradeInfos); typedef void(^AliCheckUpgradeFailure)(NSException *exception); @interface MPCheckUpgradeInterface : NSObject /** The interval between two single reminders, in days. Default value: 3. */ @property(nonatomic, assign) NSTimeInterval defaultUpdateInterval; /** Modify the UI proxy of the default pop-up window. */ @property (nonatomic, weak) id<AliUpgradeViewDelegate> viewDelegate; /** * Initialize the instance. */ + (instancetype)sharedService; /** Detect updates proactively. If there is an update, the default prompt of mPaaS is displayed in the pop-up. */ - (void)checkNewVersion; /** Detect updates proactively. No pop-up is displayed. This method is usually used for UI customization, update detectio n, and red dot reminder. @param complete Callback succeeds, and the upgrade information dictionary is returned. @param failure Callback fails. */ - (void)checkUpgradeWith:(AliCheckUpgradeComplete)complete failure:(AliCheckUpgradeFailure)failure; @end

Developers can call the corresponding API to detect updates after the app is started. We recommend that you call the API after the homepage is displayed so that the startup time of the app is not affected. The following three calling methods are provided for different UI requirements for the display of upgrade prompt information:

• Use the default pop-up of mPaaS to display the upgrade prompt information.

```
    - (void)checkUpgradeDefault {
        [[MPCheckUpgradeInterface sharedService] checkNewVersion];
        }
```

• Customize the pop-up icon, network prompt toast, or progress bar of the network request group based on the default pop-up of mPaaS.

```
- (void)checkUpgradeWithHeaderImage {
   MPCheckUpgradeInterface *upgradeInterface = [MPCheckUpgradeInterface sharedService];
   upgradeInterface.viewDelegate = self;
   [upgradeInterface checkNewVersion];
}
- (Ullmage *)upgradeImageViewHeader{
   return APCommonUILoadImage(@"ilustration_ap_expection_alert");
}
- (void)showToastViewWith:(NSString *)message duration:(NSTimeInterval)timeInterval {
   [self showAlert:message];
}
- (void)showAlert:(NSString*)message {
   AUNoticeDialog* alertView = [[AUNoticeDialog alloc] initWithTitle:@"Information" message:message delegate:nil
cancelButtonTitle:@"OK" otherButtonTitles:nil, nil];
   [alertView show];
}
```

• Call the following API to obtain the upgrade information and customize the UI if the pop-up styles provided by mPaaS do not meet your requirements.

```
- (void)checkUpgradeWIthCustomUI {
    [[MPCheckUpgradeInterface sharedService] checkUpgradeWith:^(NSDictionary *upgradeInfos) {
        [self showAlert:[upgradeInfos JSONString]];
    } failure:^(NSException *exception) {
     }];
}
```

Configure whitelist gray release

To use the whitelist gray release function in release management, ensure that you have obtained the unique identity of the client on the server. Configure the unique user identity in category of **MPaaSInterface** on the client, and return a unique identity of the app in the userid method, for example, the user name, mobile phone number, email address, etc.

```
@implementation MPaaSInterface (Portal)
- (NSString *)userId
{
   return @"mPaaS";
}
@end
```

For details on how to configure the whitelist in the mPaaS console, see Delivery Service > Manage whitelist.

Online release

Generate an .ipa file

• Use Xcode to generate an .ipa installation package.



- Alternatively, generate an .ipa installation package with the packaging function provided by the mPaaS plug-in. The generated package will be stored in the product directory under your current project.
 - Bundle Identifier: It must be consistent with bundle Id in the cloud configuration file.
 - Bundle Version: It must be consistent with info.plist in the Production Version file for the project.
 - **Provisioning Profile:** Signature configuration file. It must be consistent with bundle Id , or package generation will fail.
 - Debug: Specifies whether to generate the debug installation package.
 - App Store: Specifies whether to generate a package for release in the App Store.

Release a new version

Use the release management function of the release platform to release a new version. For details about the release process, see Release management.

Upgrade mode:

When creating a release task in the mPaaS console, choose one of the following upgrade modes:

- Single reminder: After a new version is released in the mPaaS console, the client calls the version upgrade API once and displays the pop-up only once in the silence period to avoid disturbing users.
 - This upgrade mode is suitable for instructing users to perform an upgrade upon the release of a new version.
 - By default, the silence period is 3 days, during which a user is notified only once. To change the length of the silence period, set the following properties before calling the upgrade detection API:

```
- (void)checkUpgradeDefault {
  [MPCheckUpgradeInterface sharedService].defaultUpdateInterval = 7;
  [[MPCheckUpgradeInterface sharedService] checkNewVersion];
}
```

• Multiple reminders: After a new version is released in the mPaaS console, the client displays a pop-up reminder each time it calls the version upgrade API. This upgrade mode is suitable for instructing users to upgrade the app to the new version as soon as possible after the new version has been released for a period of time.

• Mandatory reminder: After a new version is released in the mPaaS console, the client displays a pop-up reminder without the Cancel button each time it calls the version upgrade API. Users can no longer use the app without an upgrade. This upgrade mode is suitable for forcing users to upgrade the app to the new version and unpublishing the earlier app version.

Related link

Code sample

4.3. Manage Android releases

Release management is the configuration backend for upgrading the client to a new version, which allows you to create multi-task and multi-dimensional upgrade configuration.

About this task

Android release management provides the following functions:

- Add upgrade resources and provide the QR code of the download link.
- Create and modify the task of the new version resource package.
- Create multiple types of release tasks for added release packages, such as whitelist gray release, timewindow gray release, and official release. One upgrade package can have multiple release tasks.
- Support upgrade filtering by multiple criteria, such as the city, model, device system version, network, and release package version.

Add release packages

Log in to the mPaaS console and complete the following steps:

- 1. On the left navigation bar, choose Mobile Delivery Service > Release management. The release management list is displayed.
- 2. Click Add a package, and complete the following configuration in the pop-up window:
 - **Platform: Select Android.**
 - Package: Upload a local .apk release package.
 - Version: Enter the version number of this package, which contains digits and characters.
 - Release description: Describe this release package. Optional.
 - **Download verification:** When enabled, after the QR code is scanned, the package can be downloaded only after the verification code is verified.
- 3. Click OK. The new release package is displayed on the top of the list.

Note: After the release package is added, a QR code is generated in the QR code column for users to download the .apk release package. You can scan the QR code to download the release package to your phone.

4. In the release management list, click the plus icon (

+

) in front of the release package to view the release task of the upgrade package:

- If the upgrade package has never been released, the status of the package is **To be released**, and there is no release task.
- If the upgrade package has been released, the status of the package is the release status of the latest task, and there are release tasks.

Create a release task

Create a release task for the added release package. Multiple release tasks are supported for one upgrade package. Up to 10 release tasks are allowed for one upgrade package concurrently.

Rules for delivering release tasks:

- When the client request matches multiple tasks, the higher version task takes priority.
- If a release package have multiple release tasks, by task type, the priority of the tasks is: Formal release > Whitelist gray release > Time window gray release.
- For a specific version release package, if the task type of the release tasks are same, the latest released task shall prevail.

For example, for version 5.0 upgrade package, a whitelist release task A was created on the console to perform upgrade for version 4.0 app with single reminder; then a whitelist task B was created to perform a forced upgrade for version 4.0. With the two tasks performing at the same time, when a 4.0 version client requests an upgrade, task B is delivered first, and after task B is terminated or suspended, task A takes effect.

• If a grayscale task and a formal task are performed concurrently for a release package, the release status shows "Official release" in the release task list, and when the formal task is paused or ended, the release status changes to "Gray release". If all tasks are finished, it shows "Finished".

The operation steps are as follows:

Create a release task

- 1. Locate the release package for which you want to create a release task.
- 2. In the Operation column, click Create release task.
- 3. On the Create a release task page, select or enter the following information:

* Release	e type: 🖲 Gray rele	ase 🔿 Official release	
* Upgrade m	ode(): 💿 Single	O Multiple O Forced upgrade	
* Release r	nodel: 💿 Whitelist	gray release 🔿 Time-window gray release	
* Whitelist configu	ration: Enter the whi	telist name to search	If the number of users in a selected whitelist exceeds 100,000, only the first 100,000 will be taken.
Upgrade prompt me	ssage: Welcome to	the new version	
Release descri	iption : Enter the rele	ease description. Up to 200 characters allowed.	
	Advanced rule :	Add	

- Release type: You can select Gray release and Official release.
- Upgrade mode: You can select Single, Multiple, and Forced upgrade.
 - Single: After the app is started, it displays an upgrade message based on the silent strategy.

Silent strategy means that after the upgrade reminder pops up, after the user cancelled it, the reminder will be in Silent state for a period of time, and no longer reminds the upgrade. The default silent period is 3 days, which can be customized. To customize the silent period, see setIntervalTime.

- Multiple: The app displays an upgrade message every time it is started. Users can close the message window.
- Forced upgrade: The app displays an upgrade message each time it is started, and the message window cannot be closed.
- Release model (only when Gray release is selected): You can select Whitelist gray release and Timewindow gray release.
 - If you select Whitelist gray release, you can configure a whitelist below.

Note: You can configure a whitelist on the Whitelist management page. For more information, see Manage whitelist.

[?] Note

- If you select Time-window gray release, you can set End time and Users count.
- Upgrade prompt message: Specify a message to be displayed upon an upgrade. Optional.
- Release description: Describe this release. Optional.
- Advanced rule: For Gray release only. Click Add. In the displayed dialog box, select a rule type such as City, Device model, or Network in Type, set Operation type to Include or Exclude, and set Resource value corresponding to the type you selected.

~		
		_
	v	~

4. After completing the configuration, click OK. To view the release task that you have created, click the plus icon (

```
+
```

) on the left of the release package.

5. Repeat the steps above if you need to create multiple release tasks.

Other operations

After creating a release task for the upgrade package, you can change the task status.

- 1. In the release management list, click the plus icon (
 - +

) in front of the release package.

- 2. Perform the following operation based on your needs:
 - Click Pause to suspend the release task. To continue the task, click Continue.
 - Click End to terminate the release task. After the task is terminated, you can no longer operate it.

4.4. Manage iOS releases

Release management is the configuration backend for upgrading the client to a new version, which allows you to create multi-task and multi-dimensional upgrade configuration.

About this task

iOS release management provides the following functions:

- Add upgrade resources and provide the QR code (for Enterprise distribution only) for downloading the app .
- Create and modify the task of the new version resource package.
- Create multiple types of release tasks for added release packages, such as whitelist gray release, timewindow gray release, and official release. One upgrade package can have multiple release tasks.
- Support upgrade filtering by multiple criteria, such as the city, model, device system version, network, and release package version.

Add release packages

> Document Version: 20230209

Log in to the mPaaS console and perform the following steps:

- 1. In the left navigation bar, choose **Mobile Delivery Service** > **Release management**. The release management list is displayed.
- 2. Click Add a package, and complete the following configuration in the pop-up window:
 - Platform: Select iOS.
 - Release type: The options include App Store, Enterprise distribution, and TestFlight.
 - App Store: Upgrade prompts for apps downloaded from the App Store will be displayed.
 - Enterprise distribution: Upgrade prompts for apps distributed within enterprises will be displayed.
 - TestFlight: Gray release verification will be performed on a new version before its release in the App Store.
- 3. Click OK. The new release package is displayed on the top of the list.
- 4. In the release management list, click the plus icon (

+

) in front of the release package to view the release task of the upgrade package:

- If the upgrade package has never been released, the status of the package is **To be released**, and there is no release task.
- If the upgrade package has been released, the status of the package is the release status of the latest task, and there are release tasks.

App Store

? Note

To use App Store release, first launch your App in the App Store.

If you select App Store, you should provide the following information:

- App Store address: Enter the address of your App in the App Store.
- Version: Enter the version number of current release.

Note: The version number must keep consistent with the Product Version in info.plist file in the iOS project.

• Release description: Describe this release. Optional.

Enterprise distribution

If you select Enterprise distribution, you should provide the following information:

- Upload icon(optional): Upload a picture in the .jpg or .png format. Optional.
- Package: Upload a local .ipa release package.
- **bundleId(optional)**: App bundleId. If left empty, the bundleId you entered in the the bundleId you entered on the code configuration page when downloading the configuration file will be used.
- Version: Enter the version number of this release.

Note: The version number must keep consistent with the Product Version in info.plist file in the iOS project.

- Release description(optional): Describe this release. Optional.
- **Download verification:** When enabled, after the QR code is scanned, the package can be downloaded only after the verification code is verified.

? Note

After the **Enterprise distribution** release package is added, a QR code is generated in the **QR code** column in the release management list for users to download the **.ipa** release package.

TestFlight

? Note

To use TestFlight testing features, you must have created and enabled public links in App Store Connect.

TestFlight is only available in clients with version \ge 10.1.32.

The Package Expiration Time and Tester Limit you enter must match what you set in App Store Connect.

If you select **TestFlight**, provide the following information:

- App Store Connect address: Enter the public link address that you have created on App Store Connect. Ensure that the link is enabled.
- Valid days: Enter the number of valid days of the TestFlight package. It must be consistent with that you have set on App Store Connect.
- Tester limit: Enter the maximum number of persons involved in the test. It must be consistent with that you have set on App Store Connect.
- Version: Enter the version number of this release.

Note: The version number must keep consistent with the Product Version in info.plist file in the iOS project.

• Release description: Describe this release. Optional.

Create a release task

Create a release task for the added release package. Multiple release tasks are supported for one upgrade package. Up to 10 release tasks are allowed for one upgrade package concurrently.

Rules for delivering release tasks:

- When the client request matches multiple tasks, the higher version task takes priority.
- If a release package have multiple release tasks, by task type, the priority of the tasks is: Formal release > Whitelist gray release > Time window gray release.
- For a specific version release package, if the task type of the release tasks are same, the latest released task shall prevail.

For example, for version 5.0 upgrade package, a whitelist release task A was created on the console to perform upgrade for version 4.0 app with single reminder; then a whitelist task B was created to perform a forced upgrade for version 4.0. With the two tasks performing at the same time, when a 4.0 version client requests an upgrade, task B is delivered first, and after task B is terminated or suspended, task A takes effect.

• If a grayscale task and a formal task are performed concurrently for a release package, the release status shows "Official release" in the release task list, and when the formal task is paused or ended, the release status changes to "Gray release". If all tasks are finished, it shows "Finished".

The operation steps are as follows:

- 1. Locate the release package for which you want to create a release task.
- 2. In the Operation column, click Create release task.
- 3. On the Create a release task page, select or enter the following information:



Create a release task				
* Release type:	Gray release 🛛 Official re	elease		
* Upgrade mode():	Single OMultiple O	Forced upgrade		
* Release model :	🕽 Whitelist gray release 🛛 Ti	me-window gray release		
* Whitelist configuration :	Enter the whitelist name to search		If the number of users in a selected wh	telist exceeds 100,000, only the first 100,000 will be taken.
Upgrade prompt message:	Welcome to the new version			
Release description :	Enter the release description. Up to	200 characters allowed.		
Adv	nced rule:	Add		

- Release type: You can select Gray release and Official release.
 - Gray release: Before the official release, release the package to some of the users to test and validate the functionality of the new package.
 - Official release: Release the package officially to all the users.

? Note

TestFlight and enterprise distribution types of distributions only support gray release. The TestFlight release page does not display the release type option, and the release package of the enterprise distribution type is fixed to the gray type and cannot be selected.

- Upgrade mode: You can select Single, Multiple, and Forced upgrade.
 - Single: After the App is started, it displays an upgrade message based on the silent strategy.

? Note

Silent strategy means that the reminder will be in silent state for a period of time, and no longer reminds the upgrade after the user cancelled the pop-up upgrade reminder. The default silent period is 3 days, which can be customized. To customize the silent period, see **Release a new version**.

- Multiple: The App displays an upgrade message every time it is started.
- Forced upgrade: The App displays an upgrade message each time it is started. You cannot close the message window.

? Note

For TestFlight release packages, only Single and Multiple are available.

- Release model (only when Gray release is selected): You can select Whitelist gray release and Timewindow gray release.
 - If you select Whitelist gray release, you can configure a whitelist below.

? Note

You can configure a whitelist on the Whitelist management page. For more information, see Manage whitelist.

■ If you select Time-window gray release, you can specify End time and Users count.

⑦ Note
For Enterprise distribution release packages, only Whitelist gray release is available.

- Upgrade prompt message: Specify a message to be displayed upon an upgrade. Optional.
- Release description: Describe this release. Optional.
- Advanced rule: For Gray release only. Click Add. In the displayed dialog box, select a rule type such as City, Device model, or Network in Type, set Operation type to Include or Exclude, and set Resource value corresponding to the type you selected.

dd an advanced rule				×
*Type:	City	~		
Operation type:	Include Exclude			
* Resource value :	Select a resource value			
			Cancel	ОК

- 4. After completing the configuration, click OK. To view the release task that you have created, click the plus icon (
 - +

) on the left of the release package.

Other operations

- Upload symbol table. In the release management list, upload a symbol table to an added release package.
 - One .ipa release package corresponds to one symbol table file.
 - Only symbol tables in the dSYM format are supported. Before uploading a symbol table, compress it into a .tgz package.
- Change the release task of an upgrade package. Click the plus icon (

+

) in front of the release package in the release management list to view the release task of the upgrade package.

- Click Pause to suspend the release task. To continue the task, click Continue.
- Click End to terminate the release task. After the task is terminated, you can no longer operate it.

5.Manage offline packages 5.1. Configure offline packages

Before creating an offline package, you must add relevant configurations of the offline package on the Manage Configuration page.

Procedure

Log in to the mPaaS console, and complete the following steps:

- 1. From the navigation bar on the left, click Delivery Service > Manage offline packages.
- 2. On the offline package list page, click the Manage configuration tab.
- 3. In the Manage domain section, enter the virtual domain name, for example h5app.com.

Notes:

- 4. Check I've confirmed the above information is accurate, and submit without any further change., and then click Save.
- 5. In the Manage keys section, upload the key file.

Notes:

• Generate private key:

openssl genrsa -out private_key.pem 2048

• Generate public key:

```
openssl rsa -in private_key.pem -outform PEM -pubout -out public.pem
```

6. Check I've confirmed the above information is accurate, and submit without any further change., and then click Upload. Offline package configuration is completed.

What to do next

• Generate offline packages

5.2. Generate offline packages

Based on different requirements, you can encapsulate different businesses into an offline package, and then distribute the package through the release platform to update the client-side resource.

Generating an offline package mainly includes the following two steps:

- 1. Build a frontend .zip package
- 2. Generate an .amr package online

Build a frontend .zip package

The paths of the resource packages vary by package type:

- Global resource package
- Normal resource package

? Note

- Global resource package and normal resource package cannot coexist in the same H5 offline package.
- Offline package ID (namely the top-level directory mentioned below) must be a 8-digit number.

Global resource package

You can place the common resource which is referenced by other normal resource packages in the global resource package. It is required to specify the resource path within the package with following rules:

- Top-level directory: Offline package ID, for example: 7777777.
- Second-level directory: The server's domain address that is accessible to the resource.
 - For public cloud: The secondary directory should be fixed as mcube-prod.mpaascloud Otherwise, the acceleration capability of real-time publishing and docking will not be available.
 - For private cloud: Refer to the domain address of mdsweb server deployed in the private cloud.
- Third-level directory: In the format of appld_workspaceId , for example 53E5279071442_test .

Avoid using special characters in folder names, file names, and files for public resource files. Special characters are characters that will be converted by the urlencode function. What follows the third-level directory is your custom public resource.

After the resource files are organized according to the above rules, you can fast locate the paths of resource files as in the following formats.

- Resource files on public cloud: http://domain/appID_workspace/resource file path
- Resource files on private cloud: http://domain/mcube/appID_workspace/resource file path

? Note

For the resource files on private cloud, you need to add /mcube after the second-level directory (server domain name) in the file path.

Example:

 In public cloud, the second-level directory is fixed to path of the resource file common.js in the following figure is hangzhou.aliyuncs.com/53E5279071442_test/common.js

E 77777777 •	📄 mcube-prod.oss-cn-hangzhou.aliyuncs.com 🕨	E 53E5279071442_test ►	common.js

• In private cloud, the second-level directory is the domain name of the mdsweb server deployed in private cloud. Taking mdsweb-outer.alipay.net as an example, the path of the resource file common.js in the following figure is https://mdsweb-outer.alipay.net/mcube/53E5279071442_test/common.js .

7777777	mdsweb-outer.alipay.net	🚞 mcube	53E5279071442_test	▶ common.js

? Note

- The absolute length of the public resource cannot exceed 100 characters, otherwise the client might fail to load the resource and the page goes blank.
- The server does not control the global resource package version. You can customize the version by adding a file directory structure after the third-level directory according to actual needs.
- In private cloud, if the file storage format used by the server is hdfs or afs, you need to add a directory before the third-level directory mentioned above. The new directory name is the name of the storage space (bucket) in the mdsweb server.
- To reference public resources, it means accessing the content of global resource packages via normal offline packages, so the access path must be absolute path, such as https://mcube-prod.oss-cn-hangzhou.aliyuncs.com/53E5279071442_test/common.js

	index.html — 20171228
FOLDERS V 20171228 V www CSS js index.html ui-button-1.html ui-button-2.html ui-list-2.html ui-list-2.html ui-message-1.html ui-message-2.html	<pre>1 <!DOCTYPE html> <head><meta charset="utf-8"/><titl>>Demo<meta name="viewport" content="width=device=width,initial-scale=1,minimum-
scale=1,maximum=scale=1,warset=scale=1,warset=1,maximum=scale=1</titl></head></pre>

Normal resource package

You can place the relevant frontend resources such as HTML, CSS, and JavaScript into an offline package based on your business. The directory structure is as follows:

• Top-level directory: Offline package ID, for example: 20171228.

• Second-level and the following directories are your custom public resource. It is best to save all frontend files in a /www directory, and set a main entry file, for example: /www/index.html .



Generate the .zip package

After configuring the path of resource package, you can directly compress the whole directory where the appld is located into a _____ package.



Generate an .amr package on line

Log in to the mPaaS console, navigate to Mobile Delivery Service > Manage offline packages, and upload the .zip package generated in the previous step to the Mobile Delivery Service platform to generate a .amr package. For detailed steps, see Mobile Delivery Service > Create offline packages.

Important

- When you create an offline package, the minimum version of iOS client must be lower than the **Product Version** field (see the figure below) in the **info.plist** file. You are recommended to set the minimum version of iOS client to **1.0.0**.
- The Product Version in the info.plist file should be consistent with the value of Bundle versions string, short, otherwise the offline package may not take effect.

InfoDictionary version	0	String	6.0
Bundle name	0	String	\$(PRODUCT_NAME)
Bundle OS Type code	0	String	APPL
Bundle versions string, short	٥	String	2.5.4
Bundle creator OS Type code	\$	String	????
Bundle version	\$	String	
App Transport Security Settings	$\hat{\mathbf{x}}$	Dictionary	(1 item)
Privacy - Camera Usage Description	0	String	是否允许此App使用你的相机?
Privacy - Location Always Usage D	0	String	我们需要通过您的地理位置信息获取您周边的相关数据
Privacy - Location When In Use Us	0	String	我们需要通过您的地理位置信息获取您周边的相关数据
Product iD	\$	String	Johnson, The dia aast
Product Version 🗘 🕻)0	String	♦ 2.5.4
UIApplicationShortcutItems	\$	Array	(2 items)
Required background modes	\$	Array	(1 item)
Supported interface orientati 🗘 🕻	70	Array	(Tittem)
View controller-based status bar a	\$	Boolean	NO
▶ mPaaS	\$	Dictionary	(4 items)
▶ mDoo€Crunt			
▶ mPaaSCrypt	$\hat{\mathbf{x}}$	Dictionary	(4 items)

5.3. Create offline packages

When creating an HTML5 offline package, you must complete the basic configuration of the offline package.

Prerequisites

You have configured an offline package on the Manage configurations page. For more information, see Configure offline packages.

About this task

You can create a single HTML5 offline package, or create multiple offline packages at a time by batch importing HTML5 offline package files.

When you upload the first offline package for an HTML5 app, you must select the offline package type. Once the offline package type is selected, it can not be changed. Each HTML5 app has only one type of offline package.

Procedure

Create a single offline package

Go to the mPaaS console, and perform the following steps:

- 1. On the left navigation bar, click Mobile Delivery Service > Offline package management.
- 2. On the offline package list page, click Create an HTML5 app. You can skip this step if an HTML5 application already exists.
- 3. In the Create an HTML5 app window, enter the HTML5 app ID and HTML5 app name, and then click Submit. You can skip this step if an HTML5 application already exists.

HTML5 app ID must be a 8-digit number.

- 4. Select the HTML5 app from the HTML5 app list, and click Add an offline package on the right.
- 5. Configure the following information in the Basic information section:
 - Resource package type: Select Global resource package or Normal resource package.

- HTML5 app version: Enter the version of the offline package, for example, 1.0.0.1.
- File: Upload the offline package file in .zip format.
- **Client version**: Select the type of the client and set the version range. Only the clients within the version range can receive the new offline packages.

? Note

- At least one client type is required. If both Android and iOS are selected, you should ensure that the both clients adopt the same strategy on the maximum version. Namely, the maximum versions of both clients should be either kept empty (system default) or customized consistently.
- If the maximum version is kept empty, it means all future versions will be supported. It is recommended to use the default version, because the client version after upgrade may be higher than that you filled and cause that offline package becomes ineffective.
- The version of iOS client must be lower than the value of Product Version field in the project's info.plist file.

6. In the **Configuration information** section, configure the following information:

- URL of main entrance: Optional. The homepage of the offline package.
 - ? Note

A complete path is required, such as <u>/www/index.html</u>, where <u>/www</u> is the name of second-level directory you customized.

- Virtual domain: The virtual domain name that you enter when you configure the offline package is automatically displayed.
- Extended information: Optional. Enter the page loading parameters in key-value (KV) formats. Separate multiple KV pairs with commas (,).

? Note

On the mPaaS platform, you can configure a request interval for HTML5 offline packages. You can apply the settings to a single offline package or globally.

- Single package configuration: Apply to the current offline package only. In the Extended information field, you can enter {"asyncReqRate":"1800"} to set the request interval, where
 1800 indicates the interval. The interval is measured in seconds and ranges from 0 to 86400 seconds (0 to 24 hours). Value 0 indicates no limit on request interval.
- Global configuration: Apply to all offline packages. This parameter is specified in the client code. For more information, see Access Android client and Access iOS client.
- Network for download: Choose the network environment for downloading the offline package. You can choose Wi-Fi only or All networks.
 - If you select Wi-Fi only, the offline package will be automatically downloaded in the background only with Wi-Fi connection.
 - If you select All networks, in non-Wi-Fi network, the offline package will still be automatically downloaded consuming user's mobile data. Thus, set it with caution.
- Time of installation: Select the time to install the offline package.
 - If you select Not preload, the offline package will be installed only when the offline package is opened.

If you select Preload, the offline package will be automatically installed after the offline package is downloaded.

7. Check I confirm the above information is accurate, and submit without any further change, then click Submit.

Batch import offline packages

When creating multiple offline packages, you can choose to import the packages in batch to improve efficiency and avoid errors during configuration.

? Note

- After importing, if the app to which the offline package belongs does not exist on mPaaS, an HTML5 app will be created automatically.
- After importing, if the app to which the offline package belongs already exists on mPaaS, the package will be added to the HTML5 app when configuration is complete.

Go to the mPaaS console, and perform the following steps:

- 1. On the left navigation bar, click Mobile Delivery Service > Offline package management, then click Batch import HTML5 app.
- 2. In the popup window, follow the on-screen instructions to upload the ZIP offline package file and the configuration file.

? Note

- The file size cannot exceed 300 MB, and the number of offline packages cannot exceed 100.
- The offline package resource file must be named after the offline package ID, which must be 8digit number.
- 3. In the import result list, click Edit in the Operation column to edit the offline package. Refer to Create a single offline package for details about the configurations.

? Note

The default version of imported offline packages follow the rules below, and you can edit the versions based on your needs.

- If the app to which the offline package belongs does not exist on mPaaS, the default version of the package is 0.0.0.1.
- If the app to which the offline package belongs already exists on mPaaS, the default version of the package is to add 1 to the currently highest version number.
- 4. After completing editing all the packages, check The information can't be modified after submission, and click Submit.

The submitted offline package information will be verified. If verification fails, error message will appear. If verification succeeds, the HTML5 offline package appears on the HTML5 offline package management page, which indicates that the offline package has been created successfully.

What to do next

Release offline packages

5.4. Release offline packages

To release the offline package that you created, you must create a release task and complete relevant configurations.

Procedure

Log in to the mPaaS console, and complete the following steps:

- 1. On the left navigation bar, click **Delivery Service** > Manage offline packages.
- 2. On the offline package list page, select the offline package and version to be released, and then click Create a release task.
- 3. On the Create a release task page, complete the following configurations:
 - Release type: You can choose Gray release or Official release.
 - **Gray release:** Before the official release, release the package to some of the users to test and validate the functionality of the new package.
 - Official release: Release the package officially to all the users.
 - Release model: Select Whitelist or Time window. Available only when Gray release is selected.
 - If you select Whitelist, select a whitelist in Whitelist.
 - Note: About creating whitelists, see Manage whitelists.
 - If you select Time window, select the End time and Users count.
 - Release description: Enter the description about the offline package release task.
 - Advanced rule: You can add one or more advanced rules for the release task. Optional field, available only when **Gray release** is selected.
 - Type: Select City, Model, Network or Device OS version.
 - Operation type: Select the operation type.
 - Resource value: From the drop-down menu, select the resource value that corresponds to the selected operation type.

4. Click OK.

Result

On the offline package list page, you can find the status of the released package: Gray releasing or Official releasing.

Note: Due to the cache refresh mechanism of the server, the client will not receive it until about 1 minute later after you release the the offline package from the console.

What to do next

Manage the released offline packages

5.5. Manage offline packages

You can manage the released HTML5 offline packages. The management operations include viewing, suspending and ending release tasks, and deleting HTML5 offline packages.

View offline package release tasks

Log in to the mPaaS console, and complete the following steps:

- 1. On the left navigation bar, click Mobile Delivery Service > Offline package management.
- 2. In the HTML5 app list, select the target app, choose the offline package version that you want to view from the corresponding offline package list, and click unfold icon (+) left to the offline package version.
- 3. In the unfolded task list, click View to view the release task details.

Suspend offline package release tasks

Log in to the mPaaS console, and complete the following steps:

- 1. On the left navigation bar, click **Mobile Delivery Service > Offline package management**.
- 2. In the HTML5 app list, select the target app, choose the offline package version that you want to suspend from the corresponding offline package list, and click unfold icon (+) left to the offline package version.
- 3. Click Pause, and then click OK to confirm the operation.

To resume releasing the offline package, click Continue.

Terminate offline package release tasks

Log in to the mPaaS console, and complete the following steps:

- 1. On the left navigation bar, click Mobile Delivery Service > Offline package management.
- 2. In the HTML5 app list, select the target app, choose the offline package version that you want to suspend from the corresponding offline package list, and click unfold icon (+) left to the offline package version.
- 3. Click End, and then click OK to confirm the operation.

? Note

- After terminating a release task, to release the offline package again, you need to create a new release task.
- The offline package cannot be downloaded when its release task is terminated. But other versions of the package will not be affected. For example, the release of offline package V1.1 is terminated, and offline package V1.0 is still in release, then package V1.1 cannot be downloaded on the client, while package V1.0 can still be downloaded.

Export offline packages

You can download the resource file (.arm) or configuration file (.json) of a single offline package

Log in to the mPaaS console, and complete the following steps:

- 1. On the left navigation bar, click Mobile Delivery Service > Offline package management.
- 2. In the HTML5 app list, select the target app, choose the offline package version from the corresponding offline package list, and click Download AMR file or Download configuration file to download the resource file or configuration file.

Delete an HTML5 app

Log in to the mPaaS console, and complete the following steps:

- 1. On the left navigation bar, click Mobile Delivery Service > Offline package management.
- In the HTML5 app list, select the target app that you want to delete, hover mouse over the app, and click the deletion icon to delete it. When the app is deleted, all the offline packages and resource files of the app will be deleted.

? Note

The HTML5 app cannot be restored once deleted.

5.6. OpenAPI

5.6.1. Overview and preparation
MDS provides Java SDK for offline package release, enabling developers to configure, create, release, and manage offline packages by calling the API.

Overview

MDS provides Java SDK for offline package release, enabling developers to configure, create, release, and manage offline packages by calling the API.

Preparation

Before using the open API, you need to obtain AccessKey, App ID, Workspace ID and Tenant ID, configure Maven dependencies and configure file uploading.

Obtain AccessKey

AccessKey includes AccessKey ID and AccessKey Secret. Click here for obtaining method.

- AccessKey ID: used to identify users.
- AccessKey Secret: used for user authentication. MUST be kept safe.

Obtain App ID, Workspace ID and Tenant ID

- 1. Log in to mPaaS console, and enter the App.
- 2. In Overview page, click Code configurations (choose Android or iOS based on your needs)> Download configuration file > Download now. You can view App ID and Workspace ID in the Code configurations panel.

Configure Maven dependencies

Before using the API, you need to complete the following Maven dependency configurations.

```
<dependency>
<groupId>com.aliyun</groupId>
<artifactId>aliyun-java-sdk-mpaas</artifactId>
<version>3.0.5</version>
</dependency>
<groupId>com.aliyun</groupId>
<artifactId>aliyun-java-sdk-core</artifactId>
<optional>true</optional>
<version>[4.3.2,5.0.0)</version>
</dependency>
```

Code sample

The following shows the code sample of using Client in Maven:

private static final String REGION_ID = "cn-hangzhou"; //Region ID, the default is cn-hangzhou private static final String ACCESS_KEY_ID = "*************; //AccessKey ID of RAM account private static final String ACCESS_SECRET = "**************; //AccessKey Secret of RAM account private static final String PRODUCT = "mpaas"; //Product name private static final String END_POINT = "mpaas.cn-hangzhou.aliyuncs.com"; //The endpoint that is called DefaultProfile.addEndpoint(REGION_ID, PRODUCT, END_POINT); DefaultProfile profile = DefaultProfile.getProfile(REGION_ID, ACCESS_KEY_ID, ACCESS_SECRET); IAcsClient iAcsClient = new DefaultAcsClient(profile); QueryMcubeVhostRequest queryMcubeVhostRequest = new QueryMcubeVhostRequest(); queryMcubeVhostRequest.setAppId(APP_ID); queryMcubeVhostRequest.setWorkspaceId(WORKSPACE_ID); queryMcubeVhostRequest.setTenantId(TENANT_ID); QueryMcubeVhostResponse acsResponse = null; try { acsResponse = iAcsClient.getAcsResponse(queryMcubeVhostRequest); System.out.println(acsResponse.getResultCode()); System.out.println(acsResponse.getQueryVhostResult()); } catch (ClientException e) { e.printStackTrace(); }

Configure file uploading

Since file streaming is not allowed in all APIs, to upload a file, you need to upload it to OSS first by calling the upload tool class, and then send the returned OSS address as a parameter to the specified API.

You can download the file upload tool class OssPostObject.java.zip.

Code sample

The following shows the code sample of file uploading:

```
GetMcubeFileTokenRequest getMcubeFileTokenRequest = new GetMcubeFileTokenRequest();

getMcubeFileTokenRequest.setAppId(APP_ID);

getMcubeFileTokenRequest.setOnexFlag(true);

getMcubeFileTokenRequest.setTenantId(TENANT_ID);

getMcubeFileTokenRequest.setWorkspaceId(WORKSPACE_ID);

GetMcubeFileTokenResponse acsResponse = iAcsClient.getAcsResponse(getMcubeFileTokenRequest);

System.out.println(JSON.toJSONString(acsResponse));

GetMcubeFileTokenResponse.GetFileTokenResult.FileToken fileToken = acsResponse.getGetFileTokenResult().ge

tFileToken();
```

```
OssPostObject ossPostObject = new OssPostObject();
ossPostObject.setKey(fileToken.getDir());
ossPostObject.setHost(fileToken.getHost());
ossPostObject.setOssAccessId(fileToken.getAccessid());
ossPostObject.setPolicy(fileToken.getPolicy());
ossPostObject.setSignature(fileToken.getSignature());
ossPostObject.setFilePath("your/local/file/path");
String s = ossPostObject.postObject();
```

Refer to Obtain upload file token for descriptions about GetMcubeFileTokenRequest .

5.6.2. API description

General parameter description

All interfaces contain three parameters: appld , workspaceld and tenantid . The meanings of these three parameters are as follows. The three parameters will be omitted in subsequent interface descriptions of this document.

Parameter	Туре	Description
appld	String	App ID.
workspaceId	String	Workspace ID.
tenantid	String	Tenant ID.

General response description

Parameter	Туре	Description
resultCode	String	Normally, the code returned is OK . Other values indicate that the API request is abnormal.
requestId	String	Request ID.
resultMessage	String	Returned value after query failure.
***Result	Object	The objects returned. The actual meaning varies with the value returned.

The objects returned include the following fields:

Name	Туре	Description
resultMsg	String	Returned value after query failure.
success	Boolean	Whether the query is successful.

Create virtual domain

Request - CreateMcubeVhostRequest

Parameter	Туре	Description
vhost	String	Virtual domain name.

Response - CreateMcubeVhostResponse

{	
	"createVhostResult":{
	"data":"success",
	"resultMsg":"",
	"success":true
	},
	"requestId":"F9C681F2-6377-488D-865B-1144E0CE69D2",
	"resultCode":"OK"
ı	

Response description

Name	Туре	Description
createVhostResult	Object	The objects returned, includes general response only. See General response description for details.

Query virtual domain

Request - QueryMcubeVhostRequest

Includes general parameters only. See General parameter description for details.

Response - QueryMcubeVhostResponse

```
{
    "queryVhostResult":{
        "data":"test.com",
        "resultMsg":"",
        "success":true
    },
    "requestId":"637D5BE0-0111-4C53-BCEE-473CFFA0DBAD",
        "resultCode":"OK"
}
```

Response description

Response name	Туре	Description
queryVhostResult	Object	The objects returned. See the table below for meanings.

The objects returned include the following fields:

Name	Туре	Description
data	String	The virtual domain name queried.

Query if key file exists

Request - ExistMcubeRsaKeyRequest

Includes general parameters only. See General parameter description for details.

Response - ExistMcubeRsaKeyResponse

```
{
    "checkRsaKeyResult":{
        "data":"fail",
        "resultMsg":"",
        "success":false
    },
    "requestId":"8F76783A-8070-4182-895D-14E5D66F8BA3",
    "resultCode":"OK"
}
```

Response description

Response name	Туре	Description
checkRsaKeyResult	Object	The objects returned. See the table below for meanings.

The objects returned include the following fields:

Name	Туре	Description
data	String	Query result: fail indicates the key does not exist, and success indicates the key exists.

Obtain upload file token

Request - GetMcubeFileTokenRequest

Parameter	Туре	Description
onexFlag	Boolean	The fixed value is true .

Response - GetMcubeFileTokenResponse

```
{
  "getFileTokenResult":{
    "fileToken":{
      "accessid":"LTAI7z7XPfKU****",
      "dir":"mds/tempFileForOnex/ONEXE9B092D/test/PUQYHL/8b574cb7-3596-403f-a0e9-208660fc2081/",
      "expire":"1584327372",
      "host":"https://mcube-test.oss-cn-hangzhou.aliyuncs.com",
      "policy":"QwM2YtYTBlOS0yMDg2NjBmYzIwODEvIl1dfQ==",
      "signature":"kisfP5YhbPtmES8+w="
   },
    "resultMsg":"",
    "success":true
 },
  "requestId":"8BAA3288-662E-422C-9960-2EEBFC08369F",
  "resultCode":"OK"
}
```

Response description

Response name	Туре	Description
getFileTokenResult	Object	The objects returned, includes general response only. See General response description for details.

Upload key file

Request - UploadMcubeRsaKeyRequest

Parameter	Туре	Description
onexFlag	Boolean	The fixed value is true .
fileUrl	String	The save address of the key file in OSS.

Response - UploadMcubeRsaKeyResponse

```
{
    "requestId":"519E35CF-CC60-4890-8C8E-89A98CEA6BB0",
    "resultCode":"OK",
    "uploadRsaResult":{
        "data":"processed successfully",
        "resultMsg":"",
        "success":true
    }
}
```

Response description

Response name	Туре	Description
uploadRsaResult	Object	The objects returned, includes general response only. See General response description for details.

Obtain offline package app list

Request - ListMcubeNebulaAppsRequest

Includes general parameters only. See General parameter description for details.

Response - ListMcubeNebulaAppsResponse

{	
	"listMcubeNebulaAppsResult":{
	"nebulaAppInfos":[
	{
	"h5ld":"12345678",
	"h5Name":"12345678"
	},
	{
	"h5ld":"12345679",
	"h5Name":"openapiTest"
	}
],
	"resultMsg":"",
	"success":true
	},
	"requestId":"BE728F09-6EBD-4688-9329-896813EAD075",
	"resultCode":"OK"
}	

Create offline package app

Request - CreateMcubeNebulaAppRequest

Parameter	Туре	Description
h5Name	String	Offline package name.
h5ld	String	Offline package ID. 8 digits.

Response - CreateMcubeNebulaAppResponse

```
{
    "createNebulaAppResult":{
        "resultMsg":"",
        "success":true
    },
    "requestId":"5B588AFE-8D58-4460-B0AA-6A48A9FD0852",
    "resultCode":"OK"
}
```

Delete offline package app

Request - DeleteMcubeNebulaAppRequest

Parameter	Туре	Description
h5ld	String	Offline package ID. 8 digits.

Response - DeleteMcubeNebulaAppResponse

```
{
   "deleteMcubeNebulaAppResult":{
    "resultMsg":"",
    "success":true
   },
   "requestId":"E24C760E-4849-4341-91C6-6DA97F5B6B76",
   "resultCode":"OK"
}
```

Upload offline package

Request - CreateMcubeNebulaResourceRequest

Name	Туре	Description	
h5Id	String	ID of the HTML5 app.	
h5Name	String	Name of the HTML5 app.	
h5Version	String	Version of the offline package. Must be unique in an HTML5 app.	
mainUrl	String	Main URL of the offline package. Should satisfy the regular expression pattern: ^/[\w /]+\.html\$	
vhost	String	Virtual domain name of the HTML5 app.	
extendInfo	String	Extended fields in JSON format.	
autoInstall	Integer	Specify the network in which downloads are allowed. 0: Wi-Fi only (Without Wi-Fi connection, download starts only when users use the app). 1: All networks (Consumes cellular data. Do not choose this mode unless in special situations.)	
resourceType	Integer	Resource type. One HTML5 app can have only one resource type. 0: Global resource. 1: Private resource.	

Name	Туре	Description	
installType	Integer	Specify whether to preload the offline package before installing it. 0: Not preload (install only when the user enters the offline package page) 1: Preload (automatically install after the offline package is downloaded)	
platform	String	Platform. Includes all, Android and iOS.	
clientVersionMin	String	Minimum client version. Minimum version is required when platform is chosen. The format is aaa;bbb . aaa indicates iOS client version, and bbb indicates Android client version. The semicolon ; cannot be omitted. If Android is chosen as the platform, then the value is ;bbb .	
clientVersionMax	String	Maximum client version. Can be empty. If the value of platform is all, then this value must appear in pairs. That is, iOS and Android version must both be included, or neither of them is included.	
fileUrl	String	The OSS URL of the offline package file. The package must be a ZIP file.	
repeatNebula	Integer	Whether to reuse the global package. Required when the resource package is global resource. 0: No, 1: Yes.	
onexFlag	Boolean	The fixed value is true .	

Response - CreateMcubeNebulaResourceResponse

```
{
    "createMcubeNebulaResourceReslult":{
        "nebulaResourceId":"4154",
        "resultMsg":"",
        "success":true
    },
    "requestId":"DFCA28DF-0F97-4C41-B3D4-351D284B51E7",
        "resultCode":"OK"
}
```

nebulaResourceId is the ID of the offline package uploaded.

Obtain resource package list

Request - ListMcubeNebulaResourcesRequest

Parameter	Туре	Description
h5id	String	HTML5 app ID.

Response - ListMcubeNebulaResourcesResponse

Response description

Response name	Туре	Description
appCode	String	appld+"-"+workspaceld
autoinstall	Integer	The meaning is the same as the parameter in the offline package upload request. See Upload offline package for details.
clientVersionMax	String	The meaning is the same as the parameter in the offline package upload request. See Upload offline package for details.
clientVersionMin	String	The meaning is the same as the parameter in the offline package upload request. See Upload offline package for details.
creator	String	Creator. Currently not in use.
debugUrl	String	Has no meaning in current response.
downloadUrl	String	Download address of offline package ARM file.
extendInfo	String	The extended fields passed in the offline package upload request.
extraData	String	Extended parameters.

Response name	Туре	Description	
fallbackBaseUrl	String	Offline package fallback address, delimited by semicolon (;). The address before; is intranet address, and the address after; is internet address.	
fileSize	String	File size	
gmtCreate	Date	Time of creation	
gmtModified	Date	Time of update	
h5ld	String	ID of the HTML5 app.	
h5Name	String	Name of the HTML5 app.	
h5Version	String	Version of the current offline package package	
id	Long	Primary key.	
installType	Integer	The meaning is the same as the parameter in the offline package upload request. See Upload offline package for details.	
lazyLoad	Integer	Lazy loading. Currently the value is 0.	
mainUrl	String	The meaning is the same as the parameter in the offline package upload request. See Upload offline package for details.	
md5	String	md 5 of the offline package file.	
memo	String	Download address of the offline package h5.json file.	
metald	Long	Has no meaning in current response.	
modifier	String	Modifier. Currently not in use.	

Response name	Туре	Description	
platform	String	The meaning is the same as the parameter in the offline package upload request. See Upload offline package for details.	
publishPeriod	Integer	Release status. 1: Internal gray release 2: External gray release 3: Formal release 4: Rollback release 5: Release task ends.	
releaseVersion	String	Release version.	
resourceType	Integer	The meaning is the same as the parameter in the offline package upload request. See Upload offline package for details.	
status	Integer	Status	

Create Offline package release task

Request - CreateMcubeNebulaTaskRequest

Parameter	Туре	Required	Description
publishType	Integer	Yes	Release type. • 2: Gray release • 3: Official release
publishMode	Integer	Yes	Release mode. If publishType is 3, this field should be empty. • 1: Whitelist • 2: Time window
memo	String	No	Release note.
id	Long	Yes	Only 0 is allowed. The ID indicates creation, and cannot be modified.

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Parameter	Туре	Required	Description
greyEndtimeData	String	No	End time of time window grey release. Required when publishMode is 2 . Format: YYYY-MM- dd HH:mm:ss .The time must be greater than the current time and less than 7 days from the current time.
greyEndTime	Date	No	Date type. The value is same as that of greyEndTimeData .
greyNum	Integer	No	Number of users in time window grey release. Required when publishMode is 2.
whitelistIds	String	No	Primary key ID of whitelist. Required when publishMode is 1. Separate multiple IDs with comma , .
packageld	Long	Yes	Primary key ID of the resource package.
greyConfigInfo	String	Νο	Advanced rule, JSON string. See the table below for meanings. Example: [{ "ruleElement" :" city", " operation" :1," value" : " Shanghai,Beijing,Tianjin " }, { "ruleElement" :" mobile Model"," operation" :2, " value" :" REDMI NOTE 3,VIVO X5M" }, { "ruleElement" :" osVers ion"," operation" :3," va lue2" :" 9.2.1"," value1 " :" 9.2.1"," value" :" 9. 2.1-9.2.1" }]

Advanced rule description

Name	Туре	Description
ruleElement	String	Rule type: • city: City • mobileModel: Mobile phone model • netType: Network • osVersion: Device OS version
value	String	Rule value. Separate multiple values with comma (,). When operation is 3 or 4, the value is in aa-bb format, in which aa is the smaller value, and bb is the greater value.
operation	Integer	Operation: • 1: Include • 2: Exclude • 3: Within range • 4: Out of range If ruleElement is city, mobileModel and netType, operation value can only be 1 or 2 If ruleElement is osVersion, the value of operation can be any one of the four value.

Response - CreateMcubeNebulaTaskResponse

```
{
    "createMcubeNebulaTaskResult":{
    "nebulaTaskId":"6664",
    "resultMsg":"",
    "success":true
    },
    "requestId":"BBDF54E1-2783-4E5A-AE19-F7BC3A1BB3C2",
    "resultCode":"OK"
}
```

nebulaTaskid is the created release task ID.

Obtain release task list

Request - ListMcubeNebulaTasksRequest

Parameter	Туре	Description
id	Long	ID of the offline package corresponding to the release task.

Response - ListMcubeNebulaTasksResponse

```
{
  "listMcubeNebulaTaskResult":{
    "nebulaTaskInfos":[
      {
        "appCode":"ONEX97C5D29290957-default",
        "bizType":"nebula",
        "creator":"",
        "gmtCreate":"2021-02-01 14:16:58",
        "gmtModified":"2021-02-01 14:16:58",
        "gmtModifiedStr":"2021-02-01 14:16:58",
        "greyConfigInfo":"",
        "greyEndtimeData":"",
        "greyNum":0,
        "greyUrl":"",
        "id":6664,
        "memo":"test",
        "modifier":"",
        "packageId":4154,
        "percent":0,
        "platform":"all",
        "productId":"ONEX97C5D29290957-default-12345678",
        "productVersion":"1.0.0.1",
        "publishMode":4,
        "publishType":3,
        "releaseVersion":"20210201141121",
        "status":1,
        "syncResult":"",
        "taskName":"12345678",
        "taskStatus":1,
        "taskType":0,
        "taskVersion":1612160218556,
        "upgradeNoticeNum":0,
        "upgradeProgress":"",
        "whitelistIds":""
     }
    ],
    "resultMsg":"",
    "success":true
  },
  "requestId":"B9A07543-4B8B-43D0-AB33-7F2ACB954909",
  "resultCode":"OK"
}
```

Response description

Name	Туре	Description
appCode	String	appld+workspaceId
bizType	String	The value for offline package is nebula .
bundles	Array	Currently not in use.

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Name	Туре	Description
creator	String	Currently not in use.
gmtCreate	Date	Time of creation.
gmtModified	Date	Time of update.
gmtModifiedStr	String	Update time string.
greyConfigInfo	String	Advanced rule string, different from that in the upload request. See greyConfigInfo explanation for details.
greyEndtime	Date	End time of time window grey release.
greyEndtimeData	String	End time string of time window grey release.
greyNum	Integer	Number of users in time window grey release.
id	Long	Primary key ID of current release task.
memo	String	Release note.
modifier	String	Modifier. Currently not in use.
packageld	Long	ID of the offline package corresponding to the current task.
percent	Integer	Grey percent. Currently the value is 0.
platform	String	Platform of the release task. Includes all, Android and iOS.
productId	String	Product ID. The format is appld + workspaceId + h5id .
productVersion	String	ID of the offline package.

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Name	Туре	Description
publishMode	Integer	Release mode: • 0: Default • 1: Whitelist • 2: Time window
publishType	Integer	Release type: • 2: Gray release • 3: Official release
releaseVersion	String	Internal release version.
resIds	String	ID of the corresponding offline package.
status	Integer	Status: • 0: Invalid • 1: Valid
syncResult	String	Currently not in use
taskName	String	Task name, same as the HTML5 app name.
taskStatus	Integer	Task status: • 0: To be released • 1: Release in progress • 2: Finished • 3: Paused
taskType	Integer	Task type: • 0: Ordinary task. • 1: Rollback task.
taskVersion	Long	Task version, uses the time of task creation.
upgradeNoticeNum	Integer	Currently not in use
upgradeProgress	String	Currently not in use

Name	Туре	Description
whitelistIds	String	Primary key ID of whitelist, delimited by comma (,).

greyConfigInfo explanation

Name	Туре	Description
operator	String	Relationship of the rules. and means all the rules in subRules must be met at the same time.
defaultResult	boolean	The default returned result.
subRules	List	Rule list.
operator	String	Rule name: • contains: Include • excludes: Exclude • vLimitIn: Within range • vLimitOut: Out of range
left	List <string>/Object</string>	 When operator value is contains or excludes , the value is a list of elements, and each element represents a rule value. When operator value is vLimitIn or vLimitOut , it is an object, and lower represents the smaller value, and upper represents the greater value.
right	String	Rule type name.
defaultResult	Boolean	Default result.

Obtain release task details by ID

Request - GetMcubeNebulaTaskDetailRequest

Parameter	Туре	Description
taskld	Long	Primary key ID of the release task.

Response - GetMcubeNebulaTaskDetailResponse

```
{
  "getMcubeNebulaTaskDetailResult":{
    "nebulaTaskDetail":{
      "appCode":"ONEX97C5D29290957-default",
      "appld":"",
      "atomic":0,
      "baseInfold":0,
      "bizType":"nebula",
      "creator":"",
      "cronexpress":0,
      "downloadUrl":"https://pre-mpaas.cn-hangzhou.oss.aliyuncs.com/ONEX97C5D29290957-default/12345678/1.0
.0.1_all/nebula/12345678_1.0.0.1.amr;https://pre-mpaas.cn-hangzhou.oss.aliyuncs.com/ONEX97C5D29290957-defau
lt/12345678/1.0.0.1_all/nebula/12345678_1.0.0.1.amr",
      "extraData":"{"resourceType":"1"}",
      "fileSize":"0",
      "fullRepair":0,
      "gmtCreate":"2021-02-01 14:16:58",
      "gmtModified":"2021-02-01 14:16:58",
      "gmtModifiedStr":"2021-02-01 14:16:58",
      "greyConfigInfo":"",
      "greyEndtimeData":"",
      "greyNum":0,
      "greyUrl":"",
      "id":6664,
      "issueDesc":"",
      "memo":"test",
      "modifier":"",
      "ossPath":"",
      "packageId":4154,
      "percent":0,
      "platform":"all",
      "productId":"ONEX97C5D29290957-default-12345678",
      "productVersion":"1.0.0.1",
      "publishMode":4,
      "publishPeriod":3,
      "publishType":3,
      "quickRollback":0,
      "releaseVersion":"20210201141121",
      "ruleJsonList":[
      l,
      "sourceId":"",
      "sourceName":"",
      "sourceType":"",
      "status":1,
      "syncResult":"",
      "syncType":0,
      "taskName":"12345678",
      "taskStatus":1,
      "taskType":0,
      "taskVersion":1612160218556,
      "upgradeNoticeNum":0,
      "upgradeProgress":"",
      "whitelistIds":"",
      "workspaceId":""
    },
    "resultMsg":"",
    "success":true
  },
  "reauestId":"072AE251-B9F8-4A44-A621-9F0325EECC1E".
```

"resultCode":"OK"

}

Response description

Response name	Туре	Description
appCode	String	appld+workspaceId
appld	String	Currently not in use.
atomic	Integer	Whether is package is atomic or not. Currently can be ignored. 1: Yes. 0: No.
baseInfold	Long	The primary key ID of basic information. Currently can be ignored.
bizType	String	The value is nebula for offline package.
bundles	List	Currently not in use.
creator	String	Currently not in use.
cronexpress	Integer	0: Execute once. 1: Execute multiple times. The value is 0 for iOS.
downloadUrl	String	Offline package download address. The address before ; is intranet address, and the address after ; is internet address.
extraData	String	Extended data in JSON format.
fileSize	String	File size
gmtCreate	Date	Time of creation
gmtModified	Date	Time of update
greyConfigInfo	String	Advanced rule string.

Response name	Туре	Description
greyEndTime	Date	End time of time window grey release.
greyEndtimeData	String	End time string of time window grey release.
id	Long	Primary key ID
issueDesc	String	Issue description. Currently not in use.
mds	String	md 5 of the offline package file.
memo	String	Release note.
modifier	String	Modifier. Currently not in use.
ossPath	Stirng	Currently not in use.
packageld	Long	Offline package ID.
percent	Integer	Gray percent. Currently not in use.
platform	String	Platform, all, iOS, Android.
product_id	Sting	appld+workspaceld + H5Appid
productVersion	String	Offline package version.
resIds	String	Offline package ID.
ruleJsonList	List	Release advanced rules. See the sample above for details.
sourceld	String	Source ID. Currently not in use for offline package.
sourceName	String	Currently not in use for offline package.
sourceType	String	Source type. Currently not in use for offline package.

Response name	Туре	Description

status	Integer	Status. 0: Invalid, 1: Valid.
syncResult	String	Currently not in use for offline package.
syncType	String	Currently not in use for offline package.
taskName	String	Task name
taskStatus	Integer	Task status: • 0: To be released • 1: Release in progress • 2: Finished • 3: Paused
taskType	Integer	Task type: • 0: Ordinary task. • 1: Rollback task.
taskVersion	Long	Task version, uses the time of task creation.
upgradeNoticeNum	Integer	Currently not in use
upgradeProgress	String	Currently not in use
vmT ype	Stirng	Android emulator type, separated by comma. 1: art 2: dalvik 3: lemur 4: aoc
whitelist	List	Whitelist information of the offline package release task. Refer to Manage whitelists for detalis.

Change offline package task status

Request - ChangeMcubeNebulaTaskStatusRequest

Parameter	Туре	Description	
bizType	String	Pass nebula for offline package.	
packageld	Long	Offline package ID.	
taskid	Long	Release task ID.	
taskStatus	Integer	The status to change to. 0: To be released 1: Release in progress 2: Finished 3: Paused	

Response - ChangeMcubeNebulaTaskStatusResponse

```
{
    "changeMcubeNebulaTaskStatusResult":{
        "resultMsg":"",
        "success":true
    },
    "requestId":"595F4CB4-ACFE-4A5B-AF5B-4ED837CAEF95",
    "resultCode":"OK"
}
```

6.Configuration Management 6.1. Android

This topic briefly describes how to fast integrate the switch configuration function to the Android client.

The switch configuration service enables a client to dynamically modify the processing logic in the client code without releasing a new client version. The client controls related processing based on the switch value dynamically obtained from the backend. With the switch configuration service, you can configure, modify, and push various switches. A switch is a key-value pair.

Currently, you can access switch configuration function through Native AAR, mPaaS Inside, or Portal & Bundle.

The complete access process mainly includes the following 3 steps:

- 1. Add SDK
- 2. Initialize mPaaS (only required for Native AAR and mPaaS Inside)
- 3. Use the SDK

Prerequisites

- If you access switch configuration through Native AAR, ensure that you have added mPaaS to project.
- If you access switch configuration through mPaaS Inside, ensure that you have completed the mPaaS Inside access process.
- If you access switch configuration in componentized access mode (through Portal & Bundle projects), ensure that you have completed the componentized access process.

Add SDK

Native AAR mode

Follow the instructions in AAR component management to install the **CONFIGSERVICE** component in the project through **Component management (AAR)**.

mPaaS Inside mode

Install the CONFIGSERVICE component in the project through Component management (AAR).

For more information, see Manage component dependencies > Add/delete component dependencies.

Componentized access mode

Install the **CONFIGSERVICE** component in the Portal and Bundle projects through **Component management** (AAR).

For more information, see Manage component dependencies > Add/delete component dependencies.

Initialize mPaaS

If you access MAS through Native AAR or mPaaS Inside, you must initialize mPaaS.

Add the following codes in the object Application :



public class MyApplication extends Application { @Override protected void attachBaseContext(Context base) { super.attachBaseContext(base); // Set mPaaS initialization callback QuinoxlessFramework.setup(this, new IInitCallback() { @Override public void onPostInit() { //This callback indicates that mPaaS initialization has been done, and relevant mPaaS calls can be performed here }); } @Override public void onCreate() { super.onCreate(); // Initialize mPaaS QuinoxlessFramework.init(); } }

Use the SDK

mPaaS provides the switch configuration management API MPConfigService to implement switch configuration.

Complete the following steps to implement switch configuration:

- In the mPaaS console, go to the Mobile Delivery Service > Manage configuration page, add desired switch configuration items, and set them based on information such as the platform, whitelist, percentage, version number, model, and Android version. For more information, see Configuration management.
- 2. After a switch key is released in the console, the client can call the specified API to obtain the value of the switch key.

The switch configuration management API MPConfigService provides many APIs externally. You can understand the function of each API based on its name. A list of APIs is provided as follows:

```
public class MPConfigService {
  /**
   * Obtain switch configurations
   * @param key
   * @return
   */
  public static String getConfig(String key);
  /**
   * Load switch configurations. The latest switch configurations are obtained every half an hour by default.
   */
  public static void loadConfig();
  /**
   * Load switch configurations immediately.
   * @param delay Delay after which switch configurations are loaded, in ms. 0 indicates that switch configurations
are loaded immediately.
   */
  public static void loadConfigImmediately(long delay);
  /**
   * Register a listener for listening to switch configuration changes.
   * @param configChangeListener listener
   * @return
   */
  public static boolean addConfigChangeListener(ConfigService.ConfigChangeListener configChangeListener);
   * Remove the listener for listening to switch configuration changes
   * @param configChangeListener listener
   */
  public static void removeConfigChangeListener(ConfigService.ConfigChangeListener configChangeListener);
}
```

Important

As a soft reference object, the listener will be reclaimed when the system has run out of memory. Therefore, please perform switch monitoring instead of global monitoring; meanwhile, register the listener at regular intervals and remove it after use.

6.2. iOS

Important: Since June 28, 2020, mPaaS has stopped support for the baseline 10.1.32. Please use 10.1.68 or 10.1.60 instead. For how to upgrade the baseline from version 10.1.32 to 10.1.68 or 10.1.60, see mPaaS 10.1.68 upgrade guide or mPaaS 10.1.60 upgrade guide.

Switch configuration refers to the capability of dynamically modifying client-side code processing logic without releasing a new version on the client. The client controls relevant processing according to the extracted switch value that is dynamically configured at backend. By using the switch configuration service, you can configure, modify and push various types of switches. The switch refers to key/value pair.

mPaaS provides the configuration management service ConfigService to realize switch configuration. By default, the syncing logic is syncing a switch value at the cold start of the application, or syncing a switch value if half an hour passed since last sync after the application returns to the foreground. In addition, ConfigService also provides an interface for immediate sync and the logic for monitoring configuration changes, by which configuration can be refreshed as soon as it is changed.

To realize switch configuration management, you need to add the corresponding iOS SDK, configure the project and read the configuration.

Prerequisites

The project is connected to mPaaS. For more information, refer to: Access based on native framework and using Cocoapods.

About this task

This document introduce how to integrate the switch configuration in details based on the switch configuration code sample.

Add an SDK

1. In the Podfile, define mPaaS_pod "mPaaS_Config" to add the dependencies of the switch configuration component.



2. Based on requirements, run the pod install or pod update command.

Configure a project

Note: This step is applicable to baseline 10.1.32. The project configuration feature is built in baselines 10.1.60 and 10.1.68. Therefore, you can ignore this step when baseline 10.1.60 or 10.1.68 is used.

mPaaS encapsulates the switch configuration capability to a service. and you need to register this service in service manager before using it, as shown in the following figure.



Read the configurations

Values of switch keys can be dynamically released in the mPaaS console. On the left navigation pane, choose Mobile Delivery Service > Configuration management. Click Configuration Keys to view the detailed configurations.

What to do next

Obtain switch value

In the mPaaS Console, add necessary switch configuration items in **Mobile Delivery Service** > **Configuration** management, and deliver the configuration items by platform, whitelist, percentage, version, device model, iOS version and other information. For detailed operations, see <u>Manage configurations</u>.

When the switch key is released through the console, the client can get the key value corresponding to the switch key by calling relevant interface.

```
+ (void)testStringForKey
{
    id<APConfigService>configService = [DTContextGet() findServiceByName:@"APConfigService"];
    NSString *configValue = [configService stringValueForKey:@"BillEntrance"];
    assert (configValue && [configValue isKindOfClass:[NSString class]]);
}
```

Note: Switch key values are obtained by calling the RPC API. The call to the RPC API is not necessarily successful. Therefore, you must consider the local processing logic on the client to deal with failures in obtaining key values. We recommend that you set a default switch value in the local logic on the client. You can enable the client to use a new configuration logic when the console delivers a new switch value and use the local default logic when the client fails to obtain a key value.

Advanced operations

- Set the time when the client pulls a switch value:
 - During cold start of the application

\circ 30 minutes later than last pull after the application returns to the foreground

? Note

The interval of 30 minutes is the default value. You can modify the interval by adding switch
Load_Config_Interval on the Configuration Switch Management page under Mobile Delivery Service in
the mPaaS console. For more information about the steps, see Manage configurations.

	default		×
* Note:	The interval in minutes to f values. The maximum is 30 greater than 30 minutes do	etch configuration minutes. A value wes not take effect.	
	+A(id	
* Resource value: 1			
* Platform: All	Android iOS		
* Platform: All * Type: Ful	Android iOS amount Whitelist	Percentage	

- Dynamically monitor switch value changes
 - You can add an observer for a specified key to dynamically monitor switch value changes.



• When the client pulls switch configurations, you can obtain the latest switch value of the specified key in the callback method.

詔	<	APConfig > Sources > h APConfigService.h > B APConfigObserverProtocol	
	20		
	21	/**	
	22	Monitor the callback where the switch value changes, so that you won't be * frequently nofitied of the changes of other switch values.	
	23	* The observer serves as a weak reference, and thus a notification will not be	
	24	*/	
	25	@protocol APConfigObserverProtocol <nsobject></nsobject>	
	26		
	27	@required	
	28	– (void)configChangedForKey:(NSString *)key value:(NSString *)value;	
	29		
	30	@end	
	21		

• You can forcibly pull a switch value from the console by using an SDK.

<	APConfig > bources > h APConfigService.h > M -fetchConfigFromRPC
79	/**
80	* Actively pull configuration from servers via RPC call
81	*/
82	 – (void)fetchConfigFromRPC;
83	

6.3. Manage configurations

As a developer, you can add necessary switch configuration items in **Mobile Delivery Service > Configuration** management in the mPaaS Console and deliver the configuration items by platform, whitelist or percentage, version, device model, Android or iOS version and other information.

Prerequsite

Install the switch configuration service SDK on the Android or iOS client.

Add configuration items

You can add configuration items one by one, or import a JSON file to add the configuration items in batches.

The switch configuration list shows information including the configuration keys, creation time, update time, creator, and modifier. The newly created configuration item is activated by default.

Add a configuration item

Log in to the mPaaS console, and complete the following steps:

- 1. From the navigation bar on the left, click Mobile Delivery service > Configuration management.
- 2. Click Add configuration, add Configuration key, Resource value, and choose Platform and Type. The resource value is the value of the configuration key. A configuration key may have multiple resource values. Click the Add button to set multiple resource values.

Service Mobile Delivery Service

- configuration key:	Configuration key is required. Enter a combination
* Business line :	default
* Note :	* *
	+Add
* Resource value : Enter t	the configuration value, within 4000 characters.
* Resource value: Enter t * Platform: All	Android iOS
* Resource value: Enter t * Platform: All * Type: Full	Android iOS amount Whitelist Percentage

- 3. (Optional) Click Add on the right of Advanced rule, and set version, osVersion, device model, and city to deliver the configuration selectively.
- 4. Click Finished after you complete the configurations, and the items will appear in the configuration list.

Batch import

On the **Configuration Switch Management** page, click **More operations** > **Import file**, and import a JSON file containing configuration items. The configuration items will appear in the list after import succeeded.

↓ Important

If the configuration item in the file already exists in the file, the item will not be imported.

In addition to batch import function, MDS also supports exporting the configuration items. On the **Configuration Switch Management** page, click **More Operations**> **Configuration Export** to download the JSON configuration file to the local.

Search for a configuration item

On the Configuration switch management page, enter a keyword to search for the configuration item.

Modify a configuration item

Complete the following steps to modify a configuration item:

- 1. On the Configuration switch management page, select the target configuration item and click Modify.
- 2. Edit the Note, Resource value, Platform, Type or Advanced rule field based on your needs, and click Finished. The configuration key cannot be modified.

Activate/Deactivate a configuration item

The newly created configuration item is activated by default. If you don't need a configuration, you can click **Disable** to deativate the configuration item. Likewise, for disabled configuration items, click **Activate** to make them take effect again.

What to do next

After the switch key is released through the console, the client can obtain the key value corresponding to the switch key by calling interfaces:

- Android client
- iOS client

7.Manage whitelists

Whitelist management is a basic function of Mobile Delivery Service, which provides a whitelist management platform where you can easily create hundreds of thousands of whitelist data for the use by real-time release.

On the whitelist management page, you can perform the following operations:

- Create a whitelist
- Add user information to a whitelist
- Delete a whitelist

Create a whitelist

- 1. Log in to the mPaaS console, and click Mobile Delivery Service > Whitelist management on the left navigation bar.
- 2. On the Whitelists page, click Add a whitelist, and enter a whitelist name, select a whitelist type and click OK in the dialog box to create a whitelist.
 - Normal: Contents of the whitelist are user IDs. The whitelist is hit only when there is an exact match.
 - **Regular expression mode:** Contents of the whitelist are multiple regular expressions. The whitelist is hit if any of the regular expressions is matched.

Add user information to a whitelist

- 1. Click Add right to the target whitelist in the whitelist list, and then enter the user IDs or regular expressions to be added to the whitelist in the dialog box.
 - $\circ~$ Add users to a whitelist of normal type

User IDs are configured by the clients. To learn how to do so, see User ID configuration. Multiple user IDs must be separated by commas or line breaks. You can also upload a whitelist file containing user information to add whitelist users in batch.

• Add users to a whitelist of regular expression mode

Enter regular expressions. Separate with line breaks. Up to 20 expressions are allowed.

Regular expression:	^d(0-9)*S	G
	Up to 20 regular expressions are	e allowed, separate with line
	breaks.	

2. Click OK after you have entered the information.

Delete a whitelist

Click Delete right to the target whitelist in the whitelist list to delete it.

8.Manage release rules

Resource configuration management is a basic function of Mobile Delivery Service. With this function, you can predefine various configuration data required for Mobile Delivery Service and don't have to manually input the data every time, with work efficiency improved and error occurrence decreased.

The configuration data, such as city and device model, is also referred to as resources. When adding configuration data, the resource name is shown to users. Only the resource value is used to match request parameters of clients.

On the resource configuration management page, you can perform the following operations:

- Add a resource
- Modify resource configurations
- Delete a resource

Add a resource

- 1. Log in to the mPaaS console, and click **Mobile Delivery Service** > **Release rule management** from the navigation bar on the left to go to the resource rule management page.
- 2. On the release rule management page, click Add resource. In the pop-up window, select resource type and platform type, enter the resource name and resource value, and then click OK to create the resource.
 - Resource type: The type of the resource. City, Device Model, Network, and Device System Version are supported.
 - Platform type: Select a mobile platform. You can choose Android, iOS, or All.
 - Resource name: The name of the resource. You can define the name as needed. The resource name is shown to users and generally consistent with the resource value.
 - **Resource value**: Only one resource value is supported. The following content describes the values of various types of resources:
 - City: The name of the city at the prefecture and city level. The name must contain the administrative unit, such as the city, region, autonomous prefecture, league. For example, the name can be Shanghai Municipality, Haidong District, Qiannan Buyi and Miao Autonomous Prefecture, and Xing'an League.
 - Model: The model of the mobile device, such as VIVO X5M and iPhone 6S.
 - Network: The type of the network. Valid values: 2G, 3G, 4G, 5G, Wi-Fi, and WLAN.
 - Device OS version: The system version of the mobile device, such as 10.0.1 and 5.1.1.

* Resource type:	City	×	
* Platform type:	Platform independent	~	
* Resource name:			
* Resource value :			

If you do not know the model, network, and device system version of the mobile device, you can query the information about the mobile client by calling the specified API. For more information, see Call API operations to query resource configurations.

Modify resource configurations

To modify resource configurations, find the resource and click **Modify** in the **Operation** column. Edit the resource configurations as required. Click **OK** to save the modification.

Delete a resource

To delete a resource, find the resource and then click **Delete** in the **Operation** column. To delete multiple resources, select multiple resources, click **Batch delete**, and then click **OK**.

Call API operations to query resource configurations

When you add a resource, if you do not know the resource values of the network, device model, and device system version, you can call the API to query configurations of the resource.

Perform the following steps:

- 1. Open a local project and call the following API to obtain the information of the mobile client:
 - Android clients

DeviceInfo deviceInfo = DeviceInfo.createInstance(context); AppInfo appInfo = AppInfo.createInstance(context);

deviceInfo.getOsVersion(); //The version of the device system.
deviceInfo.getmMobileModel(); //The model of the device.
appInfo.getmProductVersion(); //The version of the device.

int networkType = NetworkUtils.getNetworkType(context);//The network type of the device. networkType = 1 (2G) networkType = 2 (3G) networkType = 3 (Wi-Fi) networkType = 4 (4G)

• iOS clients

Туре	Network	Device system version (system API)	Device model (mPaaS- encapsulated API)
Switch configuration	None	[[UIDevice currentDevice] systemVersion]	 Baseline version before 10.1.68.32: [APMobileIdentifier shareIdentifier].device Model Baseline version 10.1.68.32 and later: [MPaaSDVInfo sharedInstance].device Model
Upgrade detection	Wireless networks: Wi-Fi Mobile networks: WWAN	[[UIDevice currentDevice] systemVersion]	 Baseline version before 10.1.68.32: [APMobileIdentifier shareIdentifier].device Model Baseline version 10.1.68.32 and later: [MPaaSDVInfo sharedInstance].device Model

🕲 🕬 🕺 🖞 🖏 🕹 Świe Strain Strain

Hotfix management Offline package management Mini Program management	[DTReachability networkName]	[[UIDevice currentDevice] systemVersion]	 Baseline version before 10.1.68.32: [APMobileIdentifier shareIdentifier].device Model Baseline version 10.1.68.32 and later: [MPaaSDVInfo sharedInstance].device Model
--	---------------------------------	---	---

2. Report the client resource information to the server by uploading the log, and then view the resource configuration information on the server.
9.Reference

9.1. API

Learn about how to use the relevant APIs of Android update SDK.

Learn about how to use the relevant APIs of Android update SDK.

- MPaaSCheckVersionService API
- MPaaSCheckCallBack API

MPaaSCheckVersionService API

checkNewVersion

Check if a new version is available. This method starts an asynchronous task to check the updates and calls the relevant callback method of MPaaSCheckCallBack whether or not a new version is available.

void checkNewVersion(Activity activity)

setIntervalTime

Set the interval of reminder:

void setIntervalTime(long interval202)

3 days by default, in milliseconds.

setMPaasCheckCallBack

An example of the callback to be called when setting the update SDK for checking updates:

```
void setMPaaSCheckCallBack(MPaaSCheckCallBack mPaaSCheckCallBack)
```

installApk

To install the package of the new version, in MPaaSCheckCallBack.alreadyDownloaded method, you can call:

```
void installApk(String filePath)
void installApk(ClientUpgradeRes res)
```

update

To download the package of the new version, in MPaaSCheckCallBack.showUpgradeDialog method, you can call:

void update(ClientUpgradeRes res)

MPaaSCheckCallBack API

startCheck

Called after calling the update checking interface. In this method, you can prompt the users that the checking is in loading:

void startCheck()

isUpdating

> Document Version: 20230209

Called when the update checking interface is repeatedly called:

void isUpdating()

onException

Called when exceptions occur in update checking:

void onException(Throwable throwable)

dealDataInValid

Called if the returned update information is valid:

```
void dealDataInValid(Activity activity, ClientUpgradeRes result)
```

dealHasNoNewVersion

Called if the returned update information is invalid:

```
void dealHasNoNewVersion(Activity activity, ClientUpgradeRes result)
```

alreadyDownloaded

Called if the new version package has already been downloaded: You can prompt users to install this package at this time. If users choose to install, then MPaaSCheckVersionService.installApk method is called for installation:

```
void alreadyDownloaded(Activity activity, ClientUpgradeRes result)
```

showUpgradeDialog

Called when a new version is available, but the package is not downloaded. You can prompt and ask users whether to update, if users choose to update, then MPaaSCheckVersionService.update method is called for triggering download:

void showUpgradeDialog(Activity activity, ClientUpgradeRes result)

onLimit

Called when a new version is available, but the time from the last checking is less than the set interval. It is valid only when the configuration is **Single reminder**.

void onLimit(Activity activity, ClientUpgradeRes result, String reason)

9.2. Code sample

9.2.1. Version update code sample

Android code sample

To check the style and interaction effect of this function in mobile device, download Android code sample, then compile bundle in local Android Studio and install .apk file in you mobile device. See Get code sample for more information.

iOS code sample

Check for updates

mPaaS automatically connect the release function by calling update check interface to check whether a new version is available. If a new version is available, a update window automatically pop up to remind user for update. User tap **Update** to start auto update, no other encoding is required. To custom update prompt window, see **UI of custom update prompt** below.

```
- (void)checkUpdate
{
    UpgradeCheckService *service = [UpgradeCheckService sharedService];
    service.delegate = self;
    [service checkUpgradeAndShowAlertWith:YES];
}
```

? Note

Note: When you add SDK, the dependency on release service gateway mPaaS > Targets > MPHttpClient > DTRpcInterface+upgradeComp.m is automatically added, thus you only need to call checkUpgradeAndShowAlertWith method, the release component automatically connect the release service in background.

UI of custom update prompt

You can custom the update prompt by implementing delegate.

```
# pragma mark UpgradeViewDelegate
- (Ullmage *)upgradeViewHeader
{
  return [UIImage imageNamed:@"FinancialCloud"];
}
- (void)showProgressHUD:(BOOL)animation
{
  self.toast = [APToastView presentToastWithin:self.view withIcon:APToastIconLoading text:nil];
}
- (void)hideProgressHUD:(BOOL)animation
{
  [self.toast dismissToast];
}
- (void)showToastViewWith:(NSString *)message duration:(NSTimeInterval)timeInterval
{
  [self showAlert:message];
}
```

9.2.2. Hotpatch Code Sample

Android code sample

mPaaS framwork based

See Get Code Sample to obtain code sample.

Native framework based

Demo address

See Get Code Sample to obtain code sample.

Download App to experience hotpatch function

In Android device, scan the following QR code with Alipay or DingTalk to install the App:



The procedure is as follows:

1. At the first time of starting the App, once you tap a button, an error message pops up to remind you that a bug exists in the current version of the App.

Since this App has the hotpatch component accessed, the hotpatch package will be downloaded when the bug is detected after App startup.

2. Kill the process of the App and restart it, tap a button in the App again, a message like **Bug fixed** pops up to indicate that the bug is fixed.

The package downloaded in the first startup takes effect when the App restarts to fix the bug.

iOS code sample

For details about Hotpatch, See Mobile Delivery Service > Manage Hotpatch > Introduction to Accessing iOS.

Get started

- 1. Run the project directly, click Create Crash and program crashes.
- 2. Upload Test.js repair script in project directory to Mobile Delivery Service platform and create a release task. For how to create a release task, see Mobile Delivery Service > Hotpatch > Manage Hotpatch.

3. Click Create Crash again, the program runs normally and the crash is fixed.

Saviged Ant GROUP Mobile Delivery Service

Carrier 🗢	3:13 PM	-
	Hotpatch Demo	
	Create Crash	
	Crash is fixed by Hotpatch	
	ok ok	

9.2.3. Switch configuration code sample

Download the code sample corresponding to your client type:

Download the code sample corresponding to your client type:

- iOS: Switch configuration code sample (For accessing using Cocoapods)
- Android: Switch configuration code sample (For accessing through mPaaS Inside and Native AAR)

For more information, refer to iOS Code Sample and Android Code Sample.