

Huawei Cloud Meeting

Client SDK Reference

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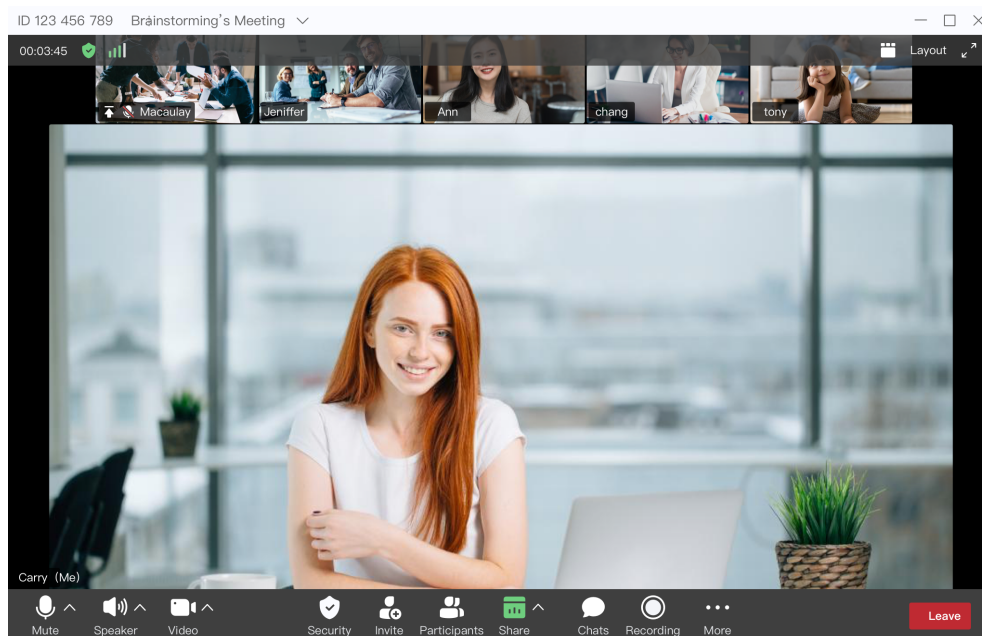
1 SDK Overview

Huawei Cloud Meeting provides Windows, Android, iOS, macOS, and Electron client SDKs for developers to quickly integrate the audio meeting, video meeting, and desktop sharing capabilities of Huawei Cloud Meeting into their own applications.

Client SDKs of Huawei Cloud Meeting have implemented UI functions, including participant image display, meeting control, and desktop sharing. You only need to call a few APIs to integrate Huawei Cloud Meeting capabilities. Client SDKs provide the following UIs. (The Windows SDK is used as an example. SDK capabilities of other platforms are the same, but the UI layouts are different.)

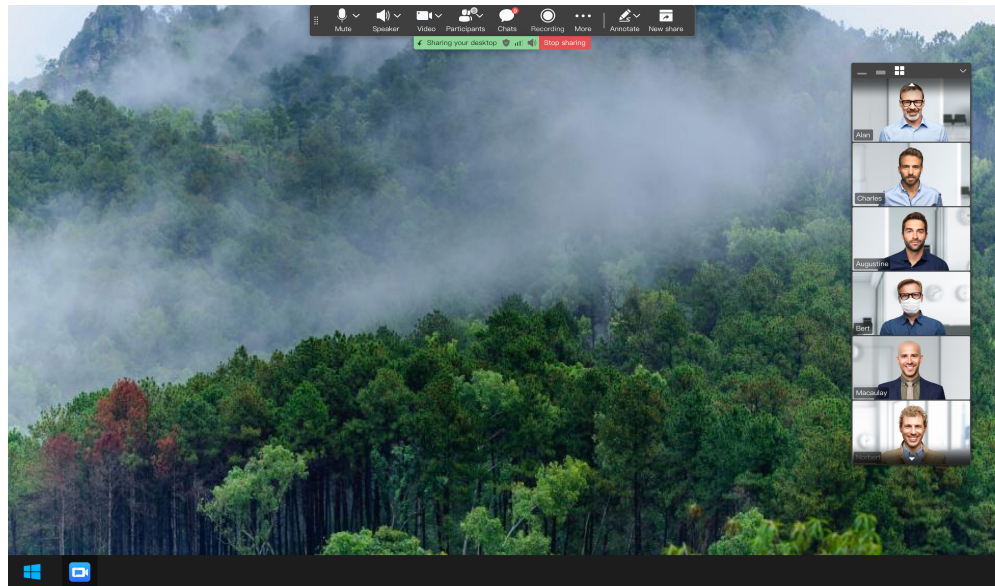
1. Main screen during a meeting

Figure 1-1 Main screen during a meeting



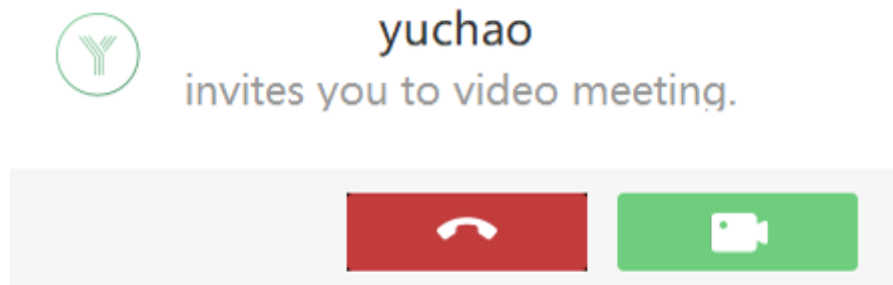
2. Desktop sharing screen

Figure 1-2 Desktop sharing screen



3. Incoming call screen

Figure 1-3 Incoming call screen



NOTE

- On the incoming call notification screen, incoming call notifications can only be received when the application process is not terminated by the system. The mobile app SDKs do not provide the VoIP Push capability.

2 Demos

2.1 Downloading Demo Installation Packages

 NOTE

After the demo is downloaded, verify the package integrity by referring to [Verifying the Demo Package Integrity](#).

1. **Download the Android demo installation package.**

Figure 2-1 QR code for downloading the Android demo installation package



 NOTE

Use a **browser on your mobile phone** to scan the QR code to download the package.

2. **Download the Windows demo installation package.**

Figure 2-2 Downloading the Windows demo installation package



Download link for 32-bit Windows demo: [hmwsdk-win-demo-win32.zip](#)

Integrity check: [hmwsdk-win-demo-win32-sha256](#)

Download link for 64-bit Windows demo: [hmwsdk-win-demo-x64.zip](#)

Integrity check: [hmwsdk-win-demo-x64-sha256](#)

3. **Download the macOS demo installation package.**

Figure 2-3 Downloading the macOS demo installation package



Download link for macOS demo: [hmwsdk-mac-demo.dmg](#)

Integrity check: [hmwsdk-mac-demo-sha256](#)

4. **Download the Electron demo installation package.**

Figure 2-4 Downloading the Electron demo installation package



Download link for 32-bit Windows Electron demo: [hwmsdk-electron-demo-win-ia32.zip](#)

Integrity check: [hwmsdk-electron-demo-win-ia32-sha256](#)

Download link for 64-bit Windows Electron demo: [hwmsdk-electron-demo-win-x64.zip](#)

Integrity check: [hwmsdk-electron-demo-win-x64-sha256](#)

Download link for macOS Electron demo: [hwmsdk-electron-demo-mac.dmg](#)

Integrity check: [hwmsdk-electron-demo-mac-sha256](#)

2.2 Verifying the Demo Package Integrity

Function

Check the integrity of downloaded demo packages, that is, check whether the packages are tampered with or packets are lost during download.

Procedure

1. Download a demo package based on the download path of the Android/Windows/macOS/Electron demo in [Downloading Demo Installation Packages](#).
2. Download the demo package to your device.
3. Open the CLI and run the following command to generate the SHA-256 value of the downloaded demo package. In the command, **D:\hmwsdk-win-demo-win32.zip** indicates the local path for storing the package and the package name. Replace it with the actual value.

```
certutil -hashfile D:\hmwsdk-win-demo-win32.zip SHA256
```

The following is an example of the command output:

```
SHA256 D:\hmwsdk-win-demo-win32.zip hash:  
67244236887ae862adbe2c8ee2f4612e5d483d0562087c7f084484318655d702  
CertUtil: -hashfile Command executed
```


Compare the generated SHA-256 value with that listed in the package download path table. If they are the same, no tampering or packet loss occurred during download.

3 Building the Demo in One Minute

3.1 Building the Android Demo

This section describes how to quickly compile and run the Android demo of the client SDK.

Environment Requirements

Ensure that the following environment requirements are met during the compilation and running of the Android demo.

Table 3-1 Environment requirements (mandatory)

Item	Requirement
JDK version	1.8.0 or later
Minimum Android API version	API 23
CPU architecture support	Arm64 and Armv7
Integration Tool	Android Studio (latest official version recommended)
Requesting test resources and app IDs	For details, see Preparations .

Table 3-2 Compilation configuration requirements (optional)

Item	Requirement
JDK configuration	sourceCompatibility JavaVersion.VERSION_11 targetCompatibility JavaVersion.VERSION_11
Gradle version	gradle-7.4-all

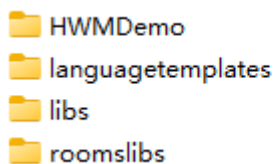
Item	Requirement
compileSdkVersion	31
Target SDK version	31
Gradle plugin version	com.android.tools.build:gradle:7.1.3
SDK Build-Tools version	31.0.0

Procedure

Step 1 Download the SDK and demo source code.

- Download the ZIP package of the SDK by following the instructions provided in [Table 4-1](#).
- Decompress the ZIP package to a folder named **DEMO**. [Figure 3-1](#) shows the files and directories in the folder.
- [Figure 3-2](#) shows the directory structure of the demo project.

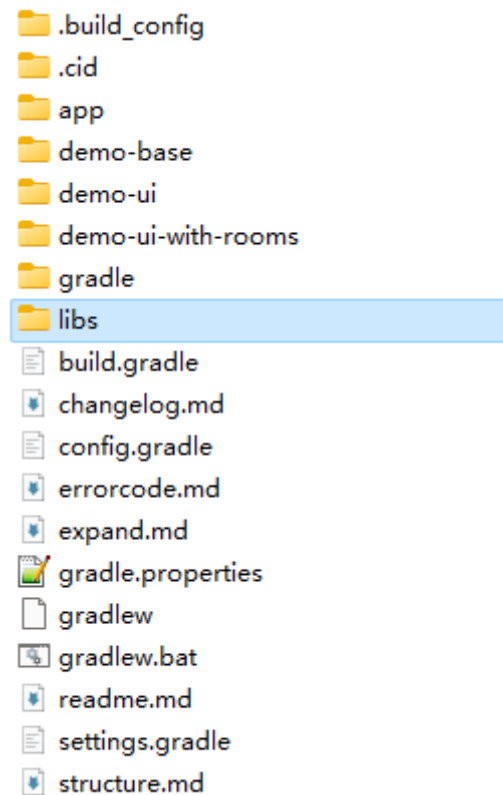
Figure 3-1 Directory structure after the SDK ZIP package is decompressed



Step 2 Copy the SDK AAR files.

- Copy all AAR resources in the **libs** folder in the SDK ZIP package to the **libs** folder of the demo project.

Figure 3-2 Directory structure of the demo project



Step 3 Edit and run the demo project.

- Start Android Studio.
- Open the demo project, as shown in [Figure 3-3](#).
The screen shown in [Figure 3-4](#) is displayed.

Figure 3-3 Project directories

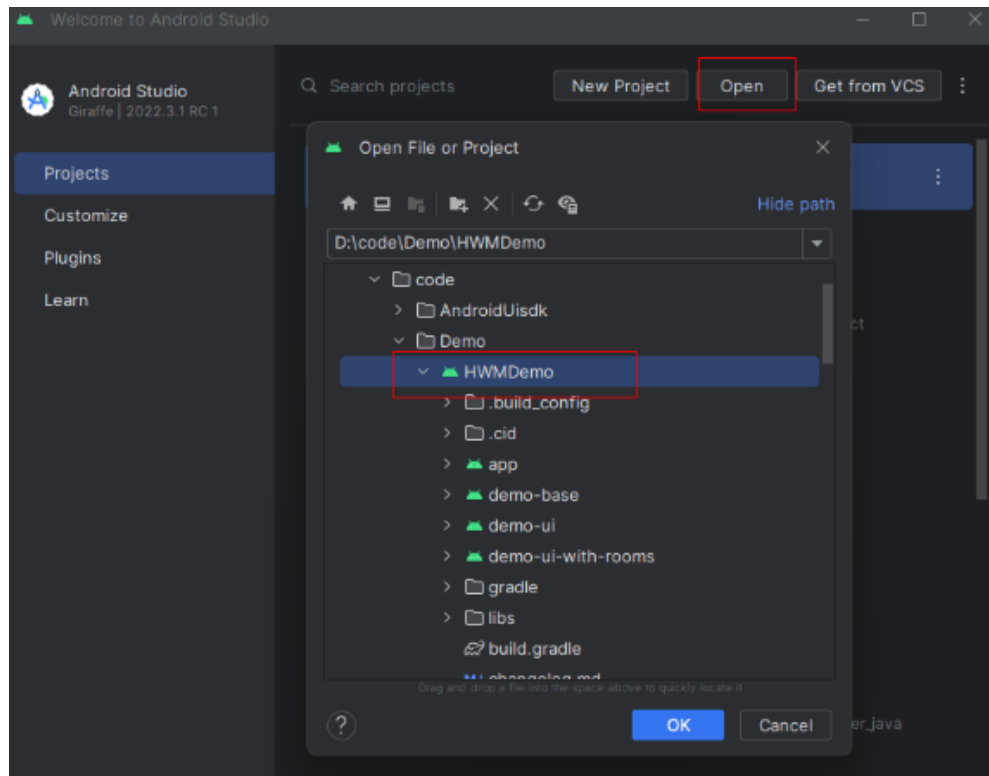
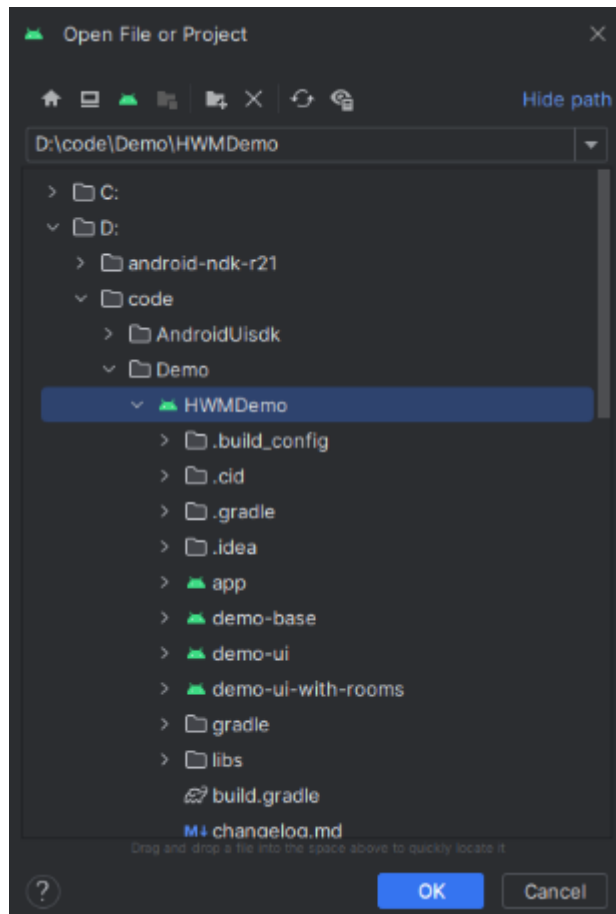


Figure 3-4 Project directories



- Open the **gradle-wrapper.properties** file and check whether Gradle can be downloaded. If Gradle cannot be downloaded, manually download it from the website specified in the file, and configure the local dependency.

Figure 3-5 Configuring gradle-wrapper.properties

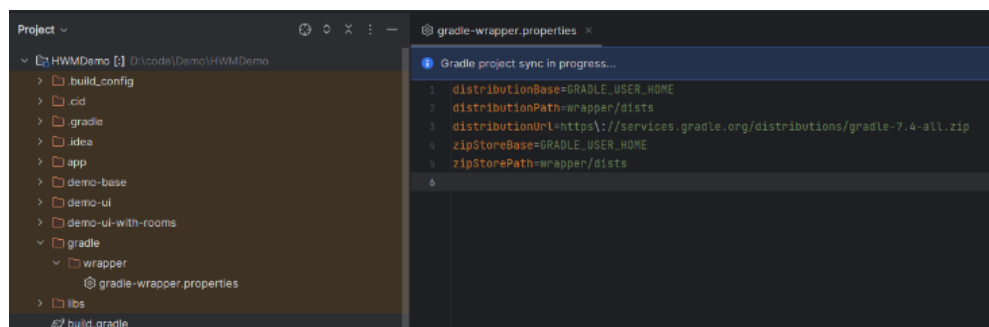
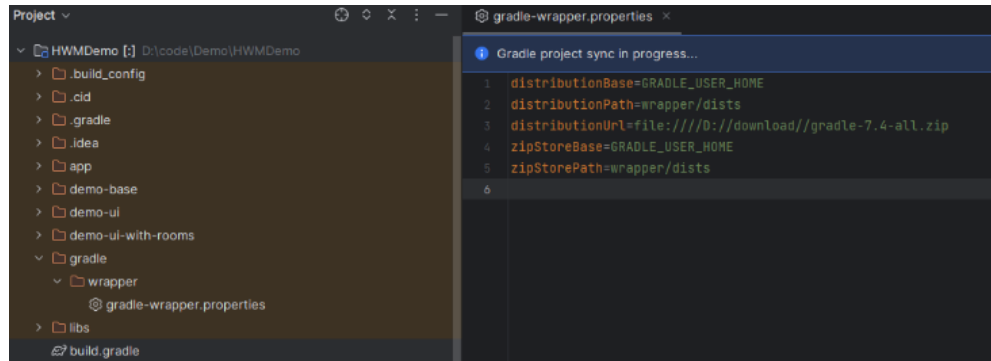
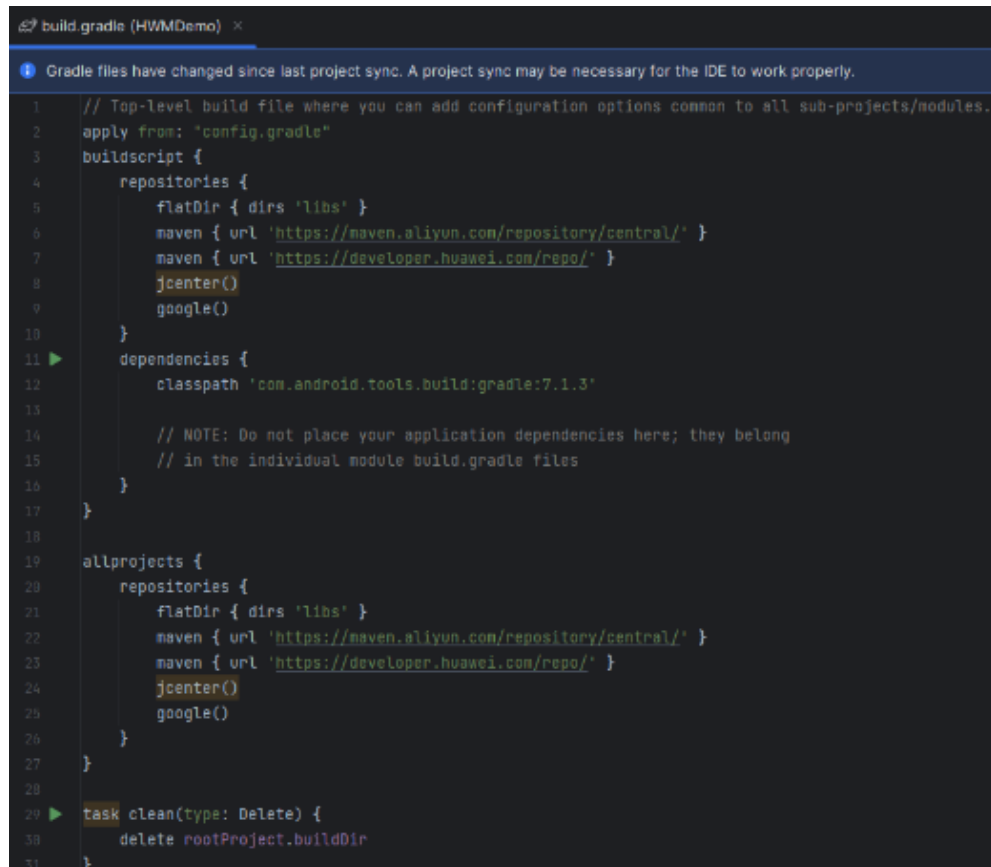


Figure 3-6 Configuring the local Gradle



- Open the **build.gradle** file and check whether Google can be connected. If no, comment out other information and add an available Maven repository.

Figure 3-7 Configure Maven.



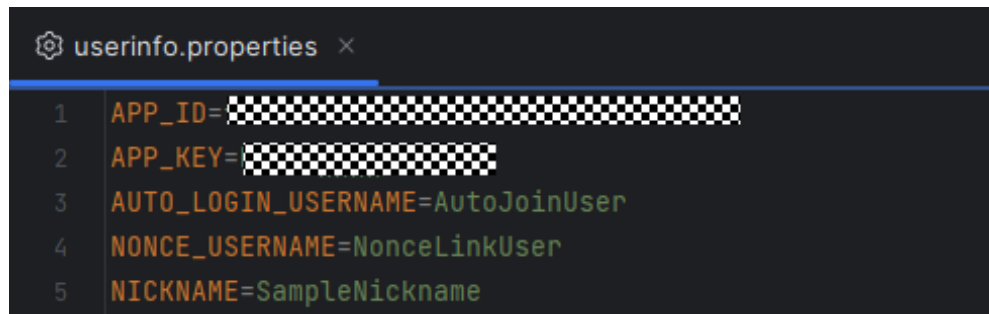
- Compile and run the demo project.

Step 4 Request an app ID.

For details about how to request an app ID, see [Introduction to App ID Authentication](#).

Replace **APP_ID** in the **userinfo.properties** configuration file with the obtained app ID.

Figure 3-8 Replacing the app ID

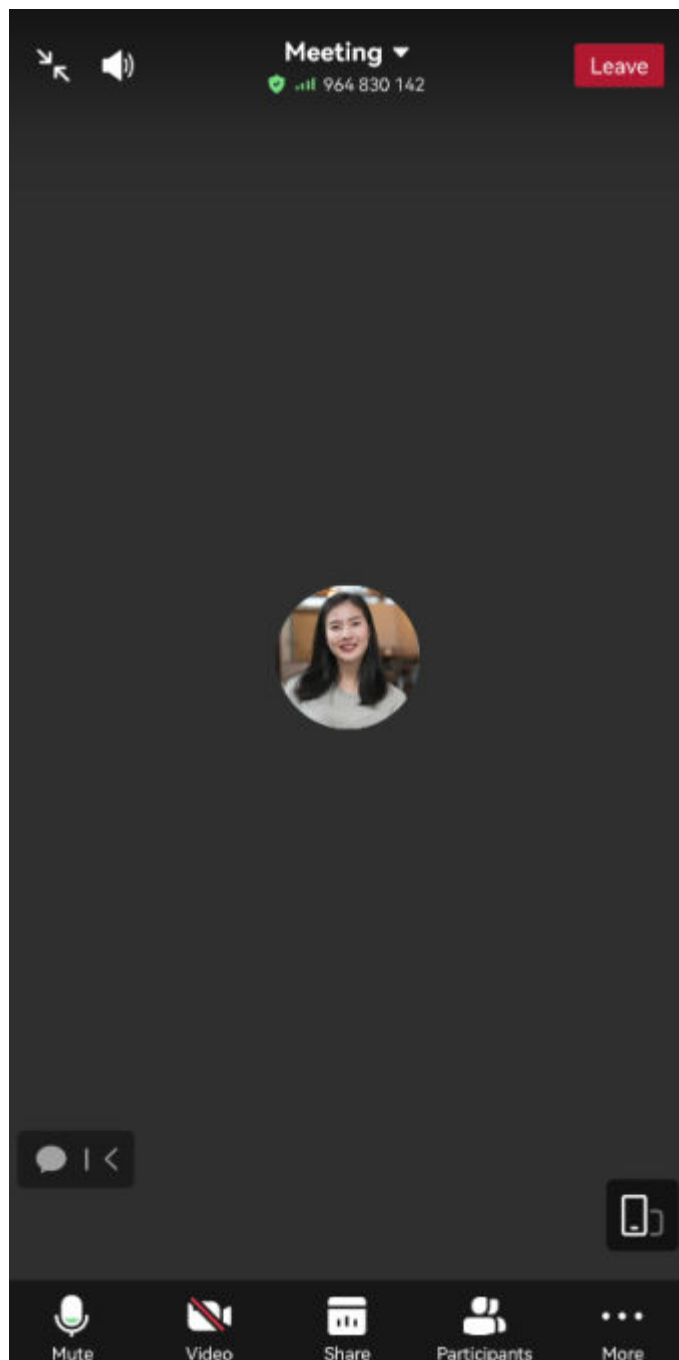


```
userinfo.properties x
1 APP_ID=
2 APP_KEY=
3 AUTO_LOGIN_USERNAME=AutoJoinUser
4 NONCE_USERNAME=NonceLinkUser
5 NICKNAME=SampleNickname
```

Step 5 Use the demo.

- Login
Touch **Log in** and enter a Huawei Cloud Meeting account and password.
- Creating a meeting
Touch **Create meeting** to create a meeting.
- In-meeting screen

Figure 3-9 In-meeting screen of the Android demo



----End

3.2 Building the iOS Demo

This section describes how to quickly compile and run the iOS demo of the client SDK.

Environment Requirements

Ensure that the following environment requirements are met during the compilation and running of the iOS demo.

Table 3-3 Environment requirements

Environment and Tool	Version	Description
OS	macOS High Sierra 10.14.4 or later	Requirement of Xcode on the macOS. The recommended version is 10.15 or later.
Xcode	Xcode 11 or later	Xcode 11.3.1 is used as an example in the demo and documentation.
iOS	iOS 11.0 or later, 64-bit device	The screen sharing function requires iOS 12 or later.
Requesting test resources and app IDs	-	For details, see Preparations .

Table 3-4 Project configuration requirements

Item	Requirement	Description
Enable Bitcode	No	Compilation code optimization is not supported.
Valid Architectures	Arm64	CPU architecture is supported.
Other Link Flags	-ObjC	Load all Objective-C classes and categories in the static library to the final executable file.

Table 3-5 Third-party open-source libraries

Open Source Library Name	Recommended Version
Masonry	The version must be 1.1.0 or later.
SSZipArchive	2.1.3
YYModel	1.0.4

Open Source Library Name	Recommended Version
CocoaLumberjack	3.4.1
libyuv	1.0.2
AFNetworking	4.0.1

Procedure

Step 1 Download the SDK and demo source code.

1. Download the ZIP package of the SDK by following the instructions provided in [Table 4-1](#).
2. Decompress the ZIP package to obtain the following files and directories:

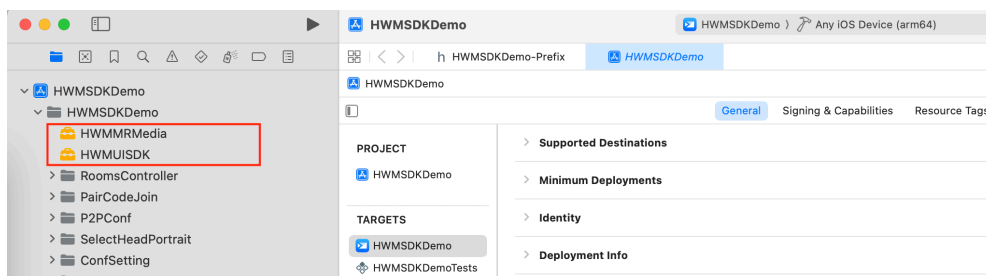
Figure 3-10 Directory structure of the SDK package

Name	Date Modified	Size	Kind
> HWMSDKDemo ← Demo	Today at 14:59	--	Folder
> libs ← SDK resources	Today at 14:59	--	Folder

Step 2 Add a dependency library.

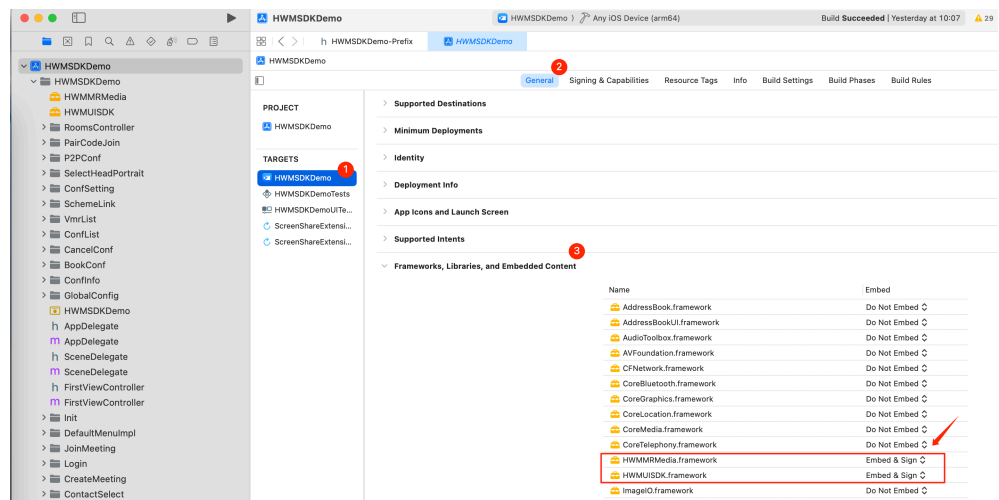
1. Open the demo project and copy **HWMUISDK.framework** and **HWMMRMedia.framework** to the demo project.

Figure 3-11 HWMUISDK.framework and HWMMRMedia.framework added



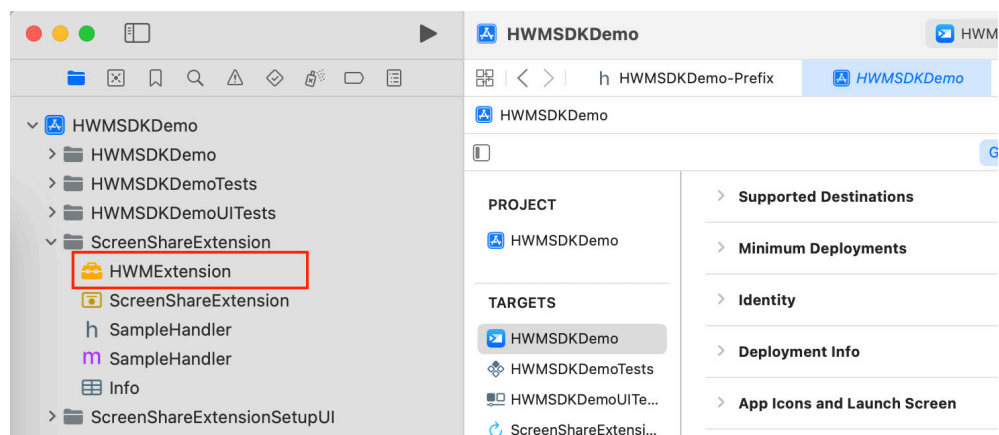
2. Choose **TARGETS > HWMSDKDemo > General**, choose **Frameworks, Libraries, and Embedded Content** separately, and change the value in the **Embed** column of **HWMUISDK.framework** and **HWMMRMedia.framework** to **Embed & Sign**.

Figure 3-12 HWMUISDK.framework and HWMRMedia.framework settings



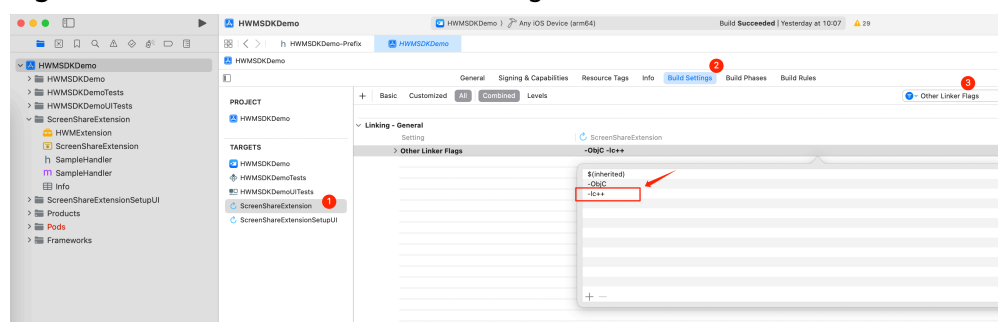
3. Copy **HWMExtension.framework** to the **ScreenShareExtension** directory.

Figure 3-13 HWMExtension.framework added



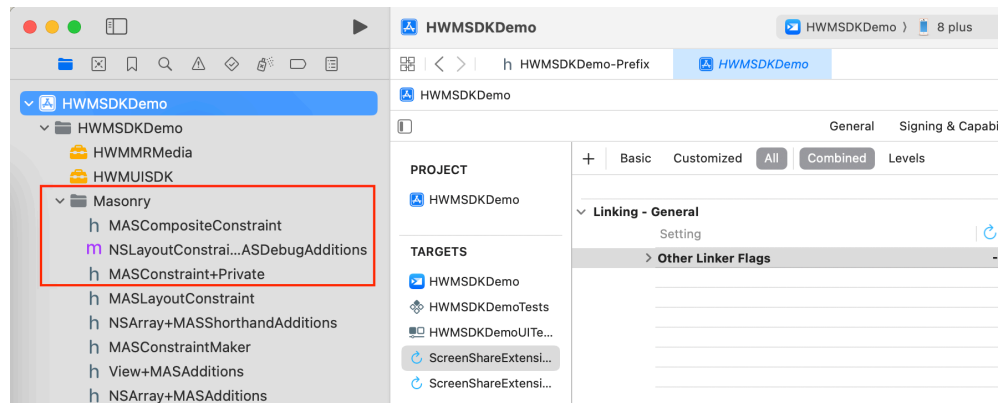
4. Added the **-lc++** configuration in **TARGETS > ScreenShareExtension > Build Settings > Other Linker Flags**.

Figure 3-14 ScreenShareExtension settings



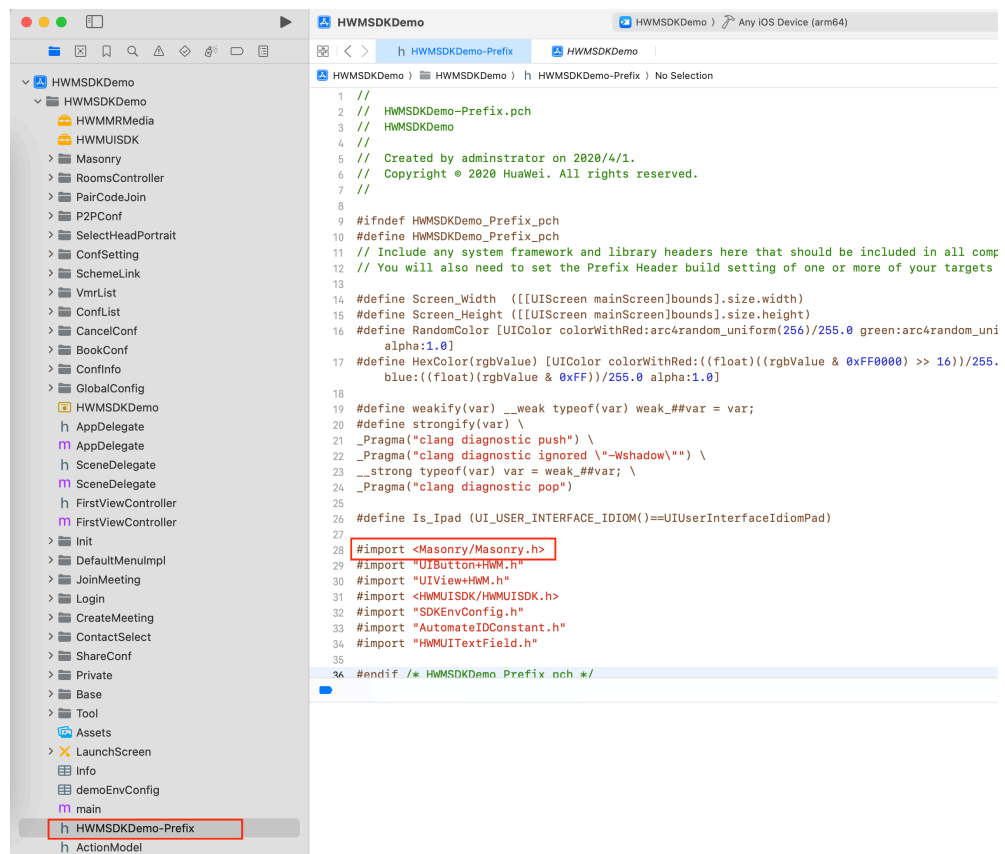
5. Download **Masonry** and copy the source code to the project.

Figure 3-15 Masonry added



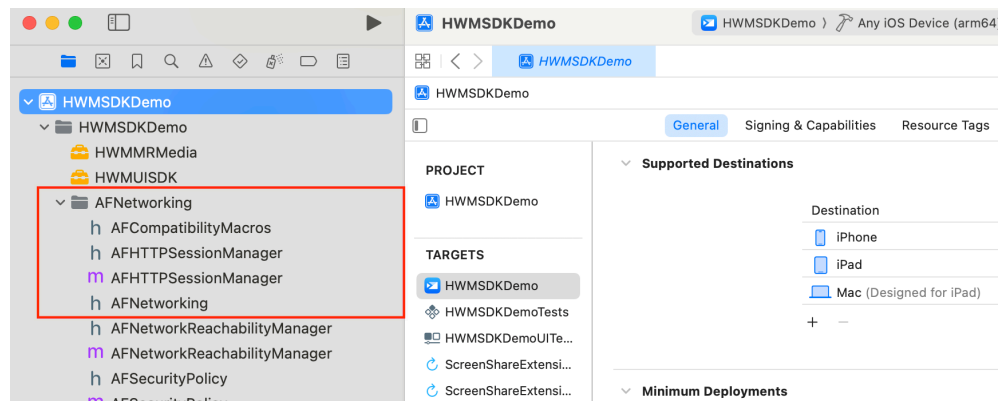
6. Modify the Masonry reference mode in **HWMSDKDemo-Prefix.h**.

Figure 3-16 Modifying the Masonry reference mode



7. Download **AFNetworking** and copy the source code to the project.

Figure 3-17 AFNetworking added



8. Modify the AFNetworking reference mode in **SchemeLinkViewController.m** and **APPIDLoginViewController.m**.

Figure 3-18 Modifying the AFNetworking reference mode in SchemeLinkViewController.m

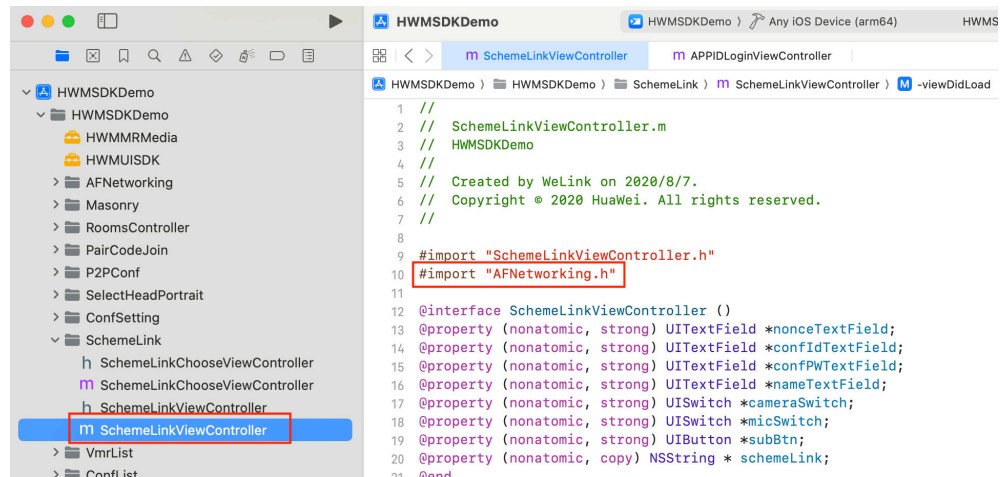
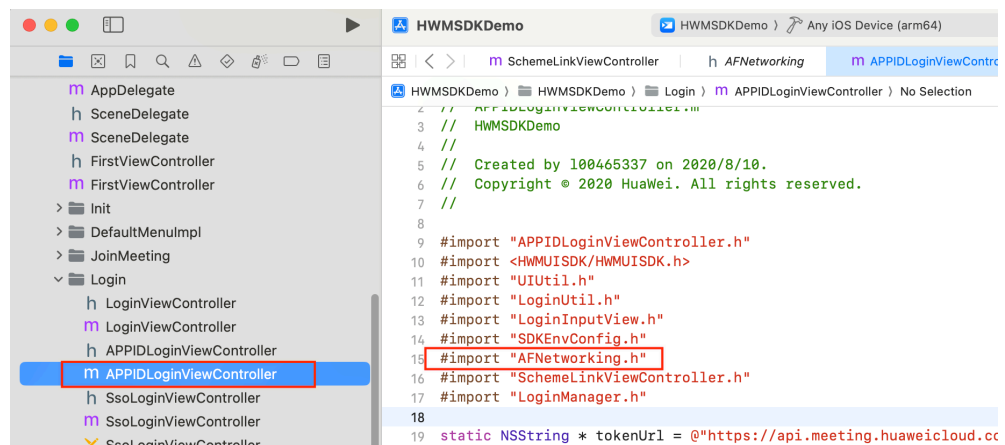


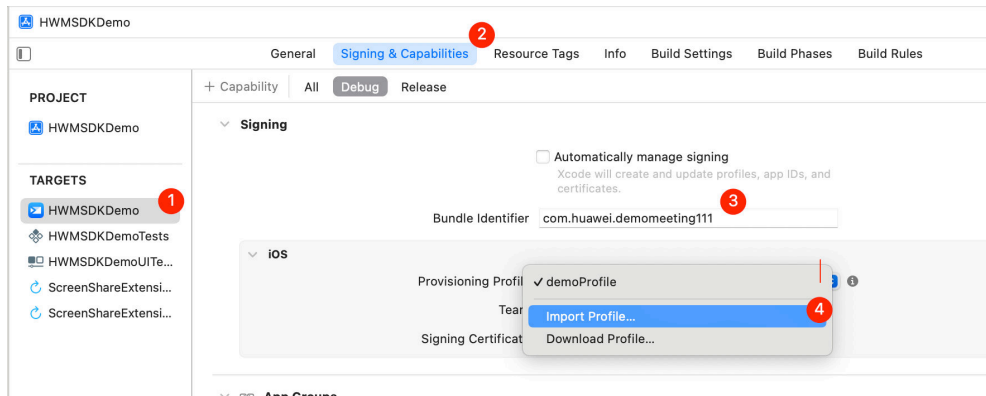
Figure 3-19 Modifying the AFNetworking reference mode in APPIDLoginViewController.m



Step 3 Configure the project.

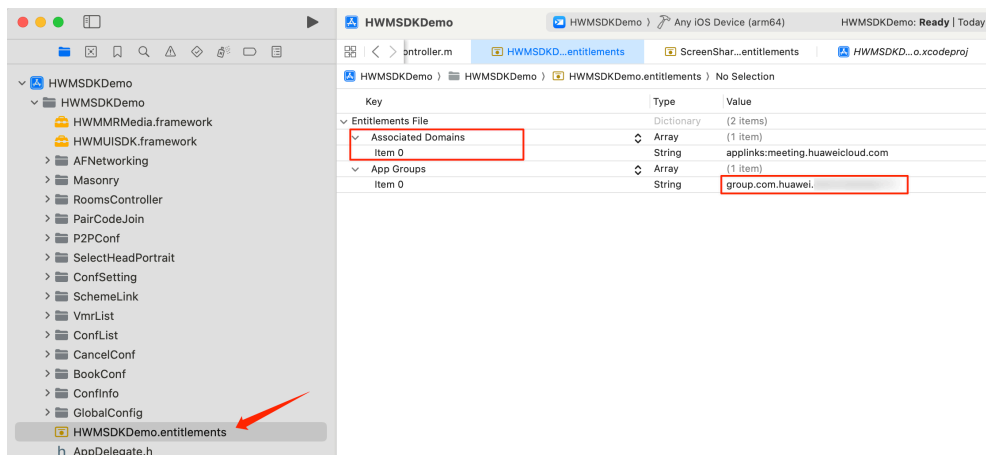
1. Modify the bundle ID in **HWMSDKDemo** and import the profile. For details about how to create a certificate and profile, see [How Do I Apply for a Certificate for iOS?](#)

Figure 3-20 Configuration page



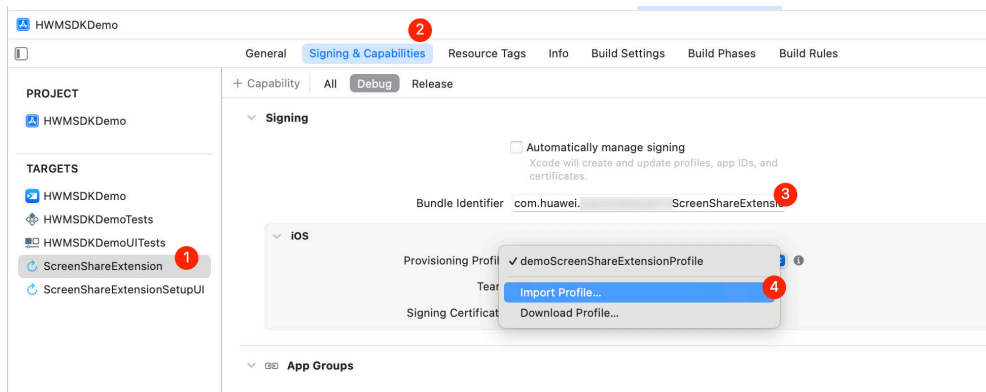
2. Edit **HWMSDKDemo.entitlements**, delete the items under **Associated Domains**, and change the value of **App Groups** to the app group corresponding to the bundle ID of **HWMSDKDemo**.

Figure 3-21 Configuration page of HWMSDKDemo.entitlements



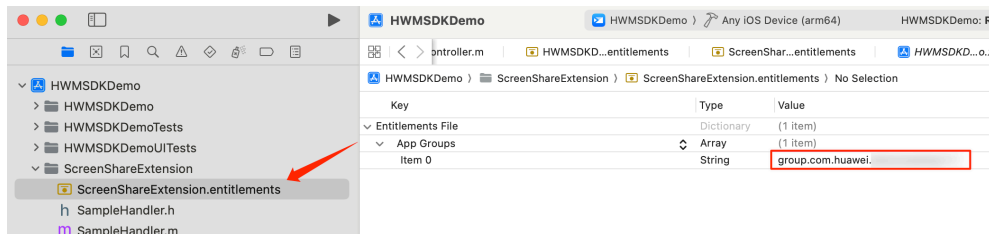
3. Modify the bundle ID in **ScreenShareExtension** and import the profile.

Figure 3-22 Configuration page



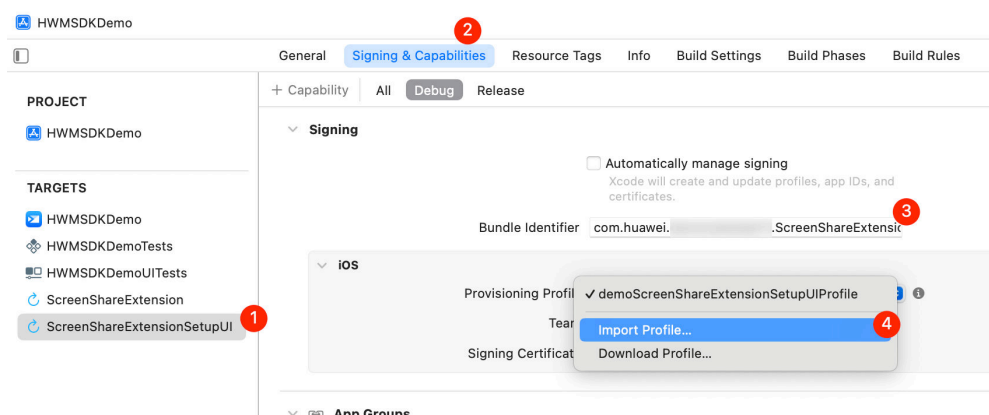
4. Edit **ScreenShareExtension.entitlements** and change the value of **App Groups** to the app group corresponding to the bundle ID of **ScreenShareExtension**.

Figure 3-23 Configuration page of ScreenShareExtension.entitlements



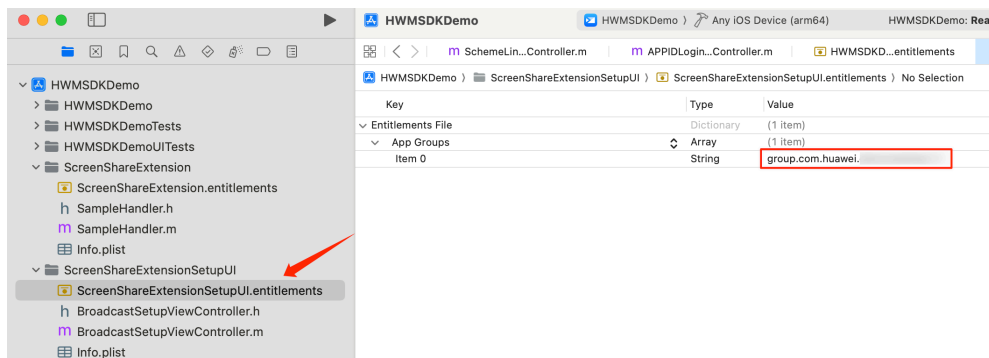
5. Modify the bundle ID in **ScreenShareExtensionSetupUI** and import the profile.

Figure 3-24 Configuration page



6. Edit **ScreenShareExtensionSetupUI.entitlements** and change the value of **App Groups** to the app group corresponding to the bundle ID of **ScreenShareExtensionSetupUI**.

Figure 3-25 Configuration page of ScreenShareExtensionSetupUI.entitlements



7. Compile and run the project.

Step 4 Use the demo.

The following describes how to create an instant meeting:

1. Touch **Initialization** to initialize the SDK.

2. Log in to the system.

Login using an account and password: Click the login button. On the login screen, enter the account and password and click **Log in**.

Login using an app ID

For details about how to request an app ID, see [Introduction to App ID Authentication](#).

Method 1: Change the default value in the code.

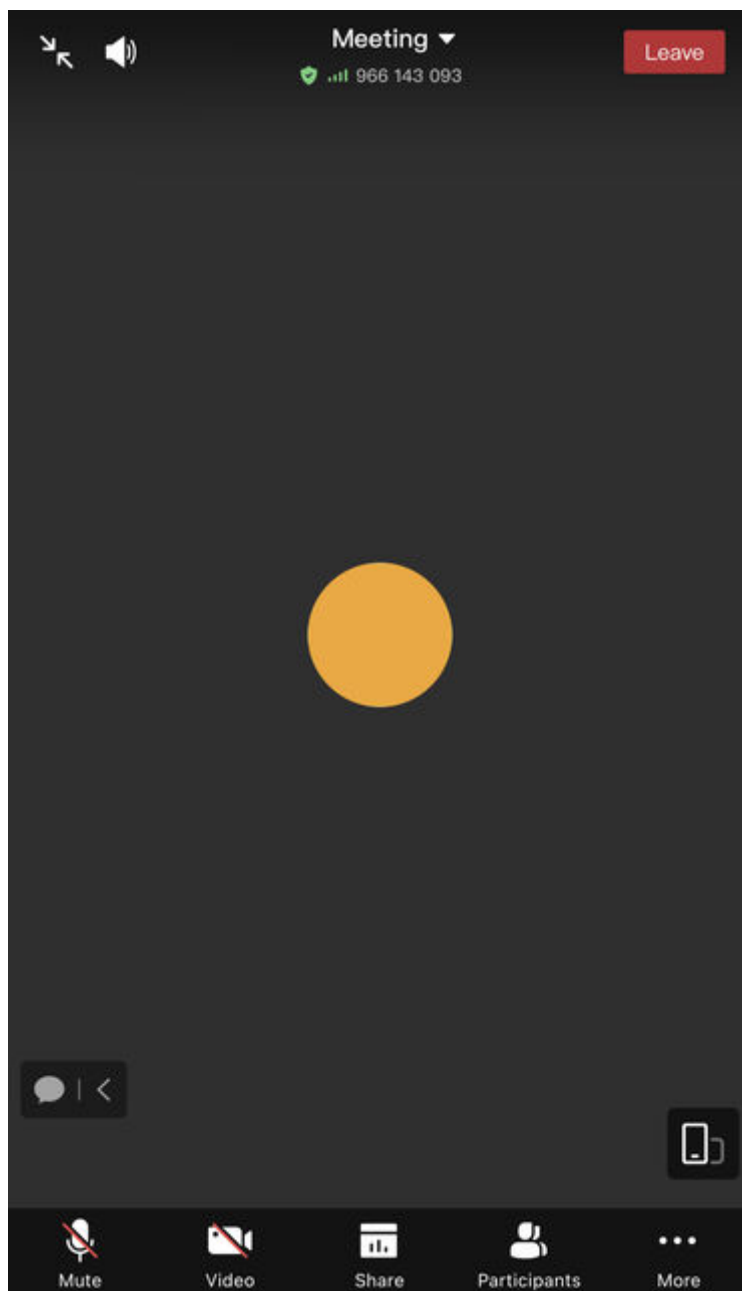
Replace **AppId** and **AppKey** in **HWMUISDKDemoConfig.plist** with the obtained app ID and key.

Method 2: Modify the app ID and initialize the SDK.

Open the demo, access the global configuration screen, configure the app ID and key, save the settings, initiate the SDK, and log in to the system.

3. Touch **Create meeting**.

Figure 3-26 In-meeting screen of the iOS demo



----End

3.3 Building the Windows Demo

This section describes how to quickly compile and run the Windows MFC demo of the client SDK.

Environment Requirements

Ensure that the following environment requirements are met during the compilation and running of the Windows MFC demo.

Table 3-6 Environment requirements

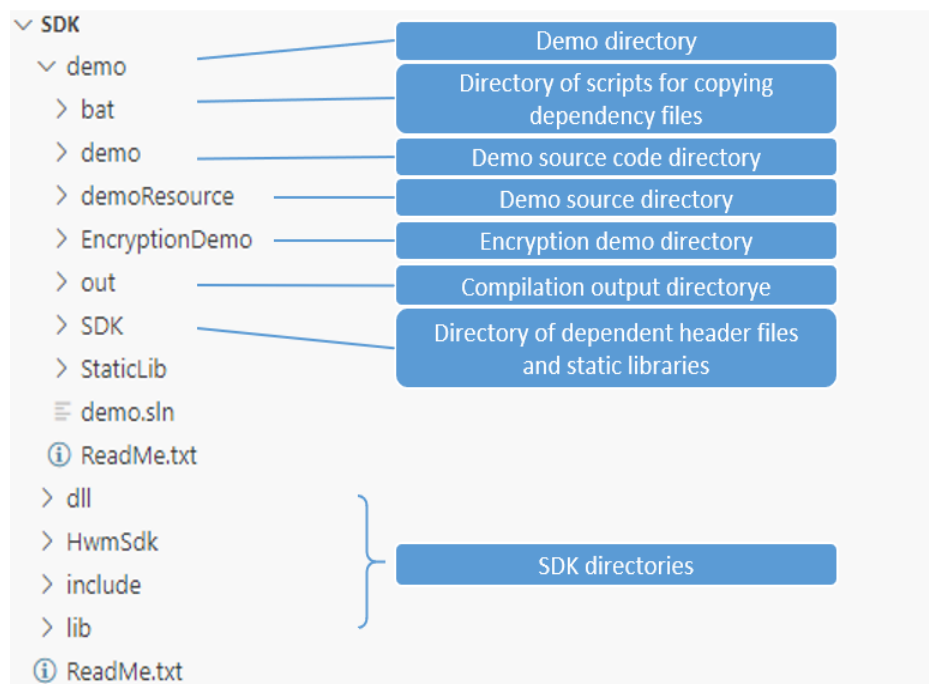
Environment and Tool	Version	Description
OS	Windows 10 Professional	Hardware requirements <ul style="list-style-type: none"> • CPU: i5-2400 quad-core, 3.1 GHz or above • Memory: 4 GB or above
Microsoft Visual Studio	Visual Studio 2017	During the installation, select Desktop development with C++, Visual C++ MFC for x86 and x64, and Windows 10 SDK (10.0.15063.0) .
Requesting test resources and app IDs	N/A	For details, see Preparations .

Procedure

Step 1 Download the SDK and demo source code.

1. Download the ZIP package of the SDK by following the instructions provided in [Table 4-1](#).
2. Decompress the ZIP package to obtain the following files and directories:

Figure 3-27 Directory structure of the SDK package



Step 2 Copy dependency files.

1. Run batch processing scripts in the **bat** directory. For example, to compile a 32-bit Release version, run the **copy_dependency_win32_release.bat** script. The script automatically performs the following steps:
 - Copy the header files and LIB files of the SDK to the **SDK** directory.
 - Copy the .dll files and resource files of the SDK to the **out** directory.

Step 3 Request an app ID and change the app ID in the demo to the requested one.

For details about how to request an app ID, see [Introduction to App ID Authentication](#).

Replace the app ID in **SDK\demo\demoResource\loginCfg.ini** with the obtained app ID.

Figure 3-28 Replacing the app ID

```
BOOL demoInitDlg::OnInitDialog()
{
    BOOL ret = CDialogEx::OnInitDialog();

    m_comboSiteType.InsertString(0, _T(""));
    m_comboSiteType.InsertString(1, _T(""));
    m_comboSiteType.SetCurSel(0);

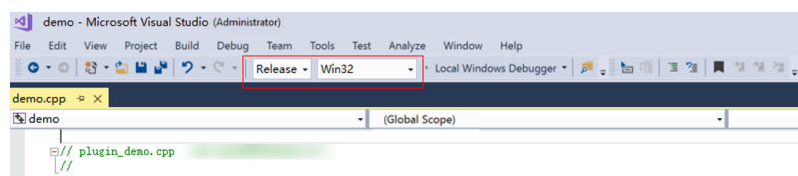
    m_comboLogLevel.InsertString(0, _T("INFO"));
    m_comboLogLevel.InsertString(1, _T("WARNING"));
    m_comboLogLevel.InsertString(2, _T("ERROR"));
    m_comboLogLevel.SetCurSel(0);

    CString defaultAppId = _T("");
    CTools::getIniConfigParam(_T("LoginConfig"), _T("defaultAppId"), defaultAppId);
    m_editAppId.SetWindowText(defaultAppId);
    m_editExeName.SetWindowText(_T("HwmSdk"));
    m_logKeepDays.SetWindowText(_T("0"));
    return ret;
}
```

Step 4 Compile and run the project.

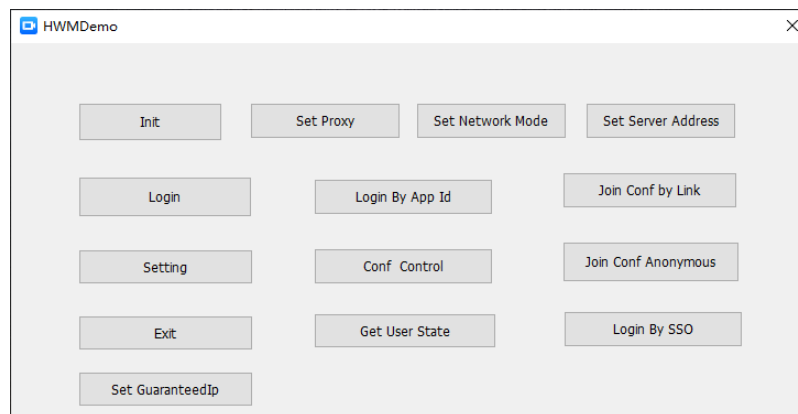
1. Double-click the **demo.sln** file in the **demo** directory.
2. Select the 32-bit Release version in the Visual Studio.

Figure 3-29 Selecting the 32-bit Release version



3. Compile and run the demo project.

Figure 3-30 Windows demo screen before login

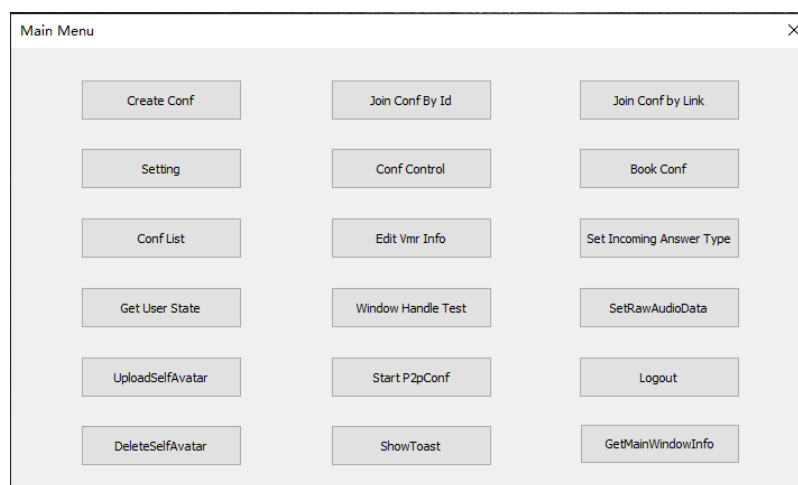


Step 5 Use the demo.

It is assumed that no proxy is deployed on the network, and the PC can directly access the public network. The following describes how to create an instant meeting:

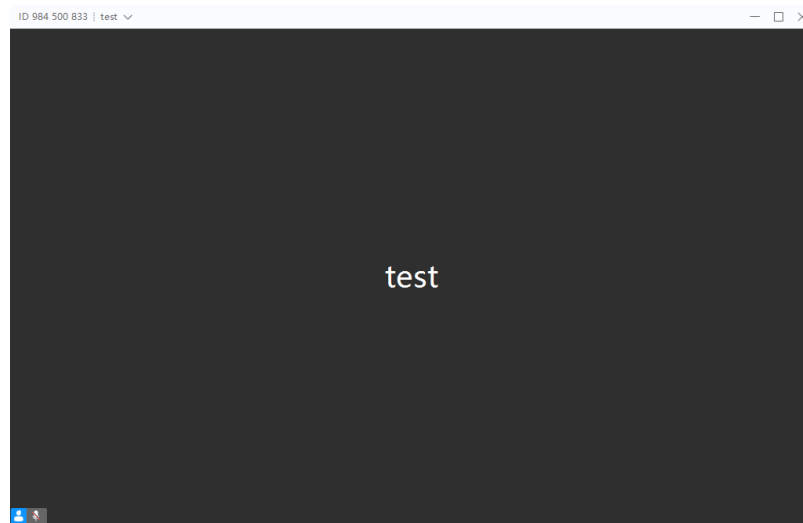
1. Click **Init**.
2. Click **Login** and enter a Huawei Cloud Meeting account and password.

Figure 3-31 Windows demo screen after login



3. Click **Create Conf** to create a meeting.

Figure 3-32 In-meeting screen



----End

3.4 Building the macOS Demo

This section describes how to quickly compile and run the macOS Native demo of the client SDK.

Environment Requirements

Ensure that the following environment requirements are met during the compilation and running of the macOS Native demo.

Table 3-7 Environment requirements

Environment and Tool	Version	Description
OS	macOS High Sierra 10.14.4 or later	Requirement of Xcode on the macOS. The recommended version is 10.15 or later.
Xcode	Xcode 11 or later	Xcode 12.0.1 is used as an example in the demo and documentation.
Requesting test resources and app IDs	-	For details, see Preparations .

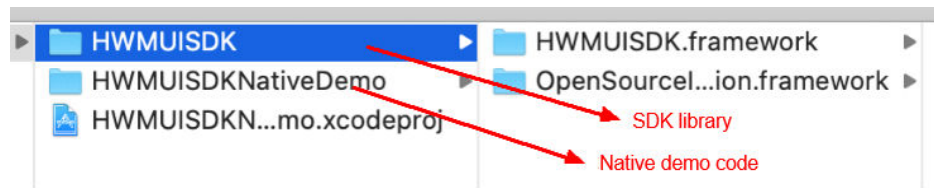
Procedure

Step 1 Download the SDK and demo source code.

1. Download the ZIP package of the SDK by following the instructions provided in [Table 4-1](#).

- Decompress the ZIP package to obtain the following files and directories:

Figure 3-33 Directory structure of the SDK package



Step 2 Request an app ID and change the app ID in the demo to the requested one.

For details about how to request an app ID, see [Introduction to App ID Authentication](#).

Replace the app ID in HWMAppKeyManager with the obtained app ID.

Figure 3-34 Changing the default app ID of the demo

```

- (NSString *)appId {
    if (_appId.length == 0) {
        // Replace AppID with the AppID that you have applied for.
        NSString *plistPath = [[NSBundle bundleForClass:[self class]] pathForResource:@"HWMUISDKDemoConfig"
                                ofType:@"plist"];
        NSMutableDictionary *plistDic = [[NSMutableDictionary alloc] initWithContentsOfFile:plistPath];
        _appId = [plistDic valueForKey:@"AppID"];
    }
    return _appId;
}

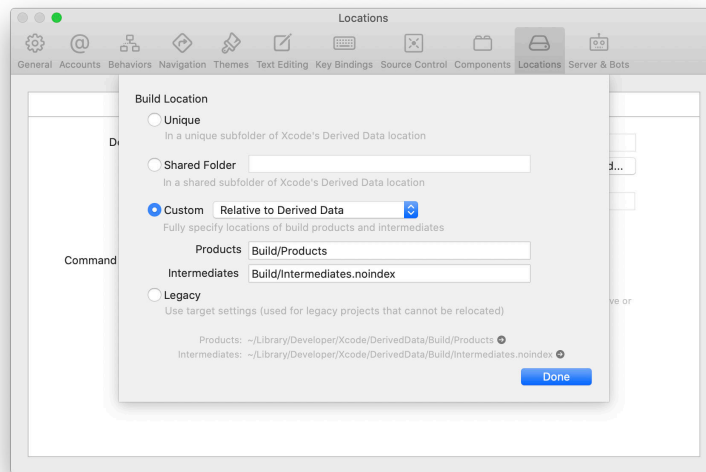
- (NSString *)appKey {
    if (_appKey.length == 0) {
        /*
        1. Replace AppKey with the AppKey you have applied for.
        2. The AppKey stored in the Demo is used only for demonstration. In actual commercial use, the AppKey must be
           encrypted and stored on the server, and the authentication signature must be calculated on the server.
        */
        NSString *plistPath = [[NSBundle bundleForClass:[self class]] pathForResource:@"HWMUISDKDemoConfig"
                                ofType:@"plist"];
        NSMutableDictionary *plistDic = [[NSMutableDictionary alloc] initWithContentsOfFile:plistPath];
        _appKey = [plistDic valueForKey:@"AppKey"];
    }
    return _appKey;
}

```

Step 3 Edit and run the demo project.

- Modify the bundle identifier and install the corresponding certificate. Replace it with the certificate of your company.
- Set **Build Location** to **Custom** under **Preferences** of Xcode.

Figure 3-35 Changing Xcode Build location



3. Compile and run the project.

Step 4 Use the demo.

The following describes how to create an instant meeting:

1. Click **Initialization** to initialize the SDK.
2. Log in to the system.
Login using an account and password: Click the login button. On the login screen, enter the account and password and click **Log in**.
3. Click **Create meeting**.

----End

3.5 Building the Electron Demo

This section describes how to quickly compile and run the Electron demo of the client SDK.

Environment Requirements

Ensure that the following environment requirements are met during the compilation and running of the Electron demo.

Table 3-8 Windows Environment Requirements

Environment and Tool	Version	Description
OS	Windows 10 Professional	Hardware requirements <ul style="list-style-type: none"> • CPU: i5-2400 quad-core, 3.1 GHz or above • Memory: 4 GB or above
Python	3.x	Optional. This tool is required only when add-ons need to be recompiled.
Microsoft Visual Studio	Visual Studio 2017	Optional. This tool is required only when add-ons need to be recompiled.
Node.js	16.20.0 or later, 64-bit	N/A
Electron	13.6.7 or later	N/A
Requesting test resources and app IDs	N/A	For details, see Preparations .

 **NOTE**

For details about the version mapping between Node.js and Electron, see <https://www.electronjs.org/docs/latest/tutorial/electron-timelines>.

Table 3-9 macOS environment requirements

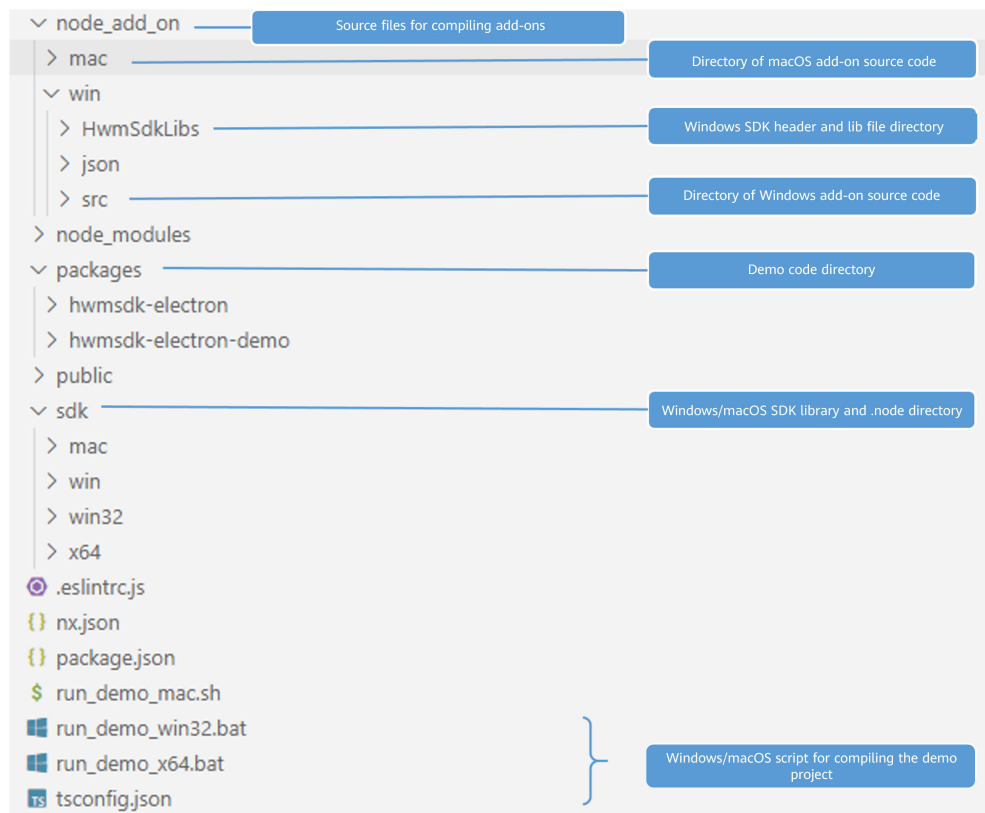
Environment and Tool	Version	Description
OS	macOS 10.15	N/A
Xcode	12.0 or later	N/A
Node.js	16.20.0 or later	N/A
Electron	13.6.7 to 24.8.8	N/A
Requesting test resources and app IDs	N/A	For details, see Preparations .

Procedure

Step 1 Download the SDK and demo source code.

1. Download the Electron SDK ZIP package (for example, **hwmsdk-electron-70.16.5.zip**) by referring to **Table 4-1**.
2. Decompress the ZIP package to obtain the following files and directories:

Figure 3-36 Directory structure of the SDK package



Step 2 Prepare for the environment.

1. Node.js
2. After installing Node.js, configure the npm mirror.

Before installing the dependency, run the following commands to configure the npm mirror to improve the installation speed.

```
npm config set registry http://registry.npm.taobao.org/  
npm config set electron_mirror https://npm.taobao.org/mirrors/electron/
```

NOTE

1. If Node.js has been installed, run the following command to check the Node.js version. The result **x64** indicates 64-bit and **ia32** indicates 32-bit.

```
$ node -p "process.arch"
```

2. If Node.js is not installed, download the required version from the [Node.js website](#).

3. If the preceding mirror addresses cannot be reached, change them to the following addresses:

```
registry=https://registry.npmmirror.com/
```

```
electron_mirror=https://npmmirror.com/mirrors/electron/
```

4. If error **npm error `electron_mirror` is not a valid npm option** is reported, manually add the addresses to the `.npmrc` file in `%HOMEDRIVE%%HOMEPATH%`. Example addresses: `registry=http://registry.npm.taobao.org/`

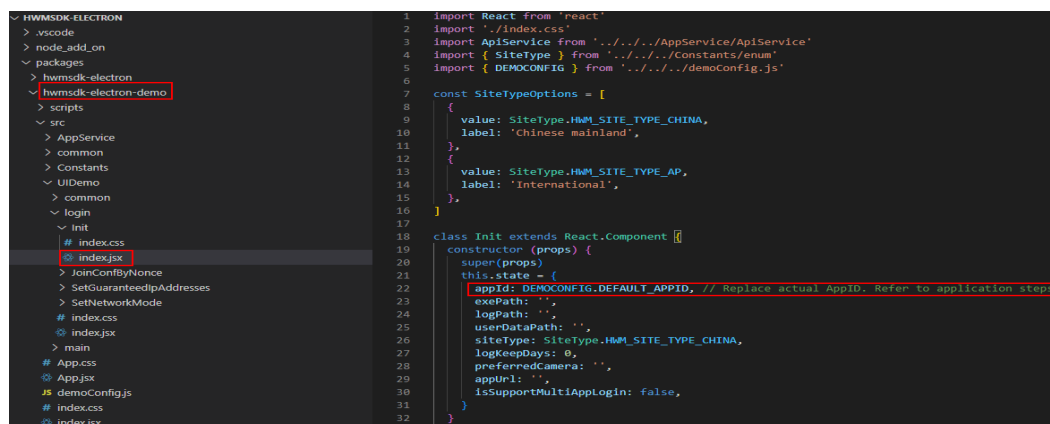
```
electron_mirror=https://npm.taobao.org/mirrors/electron/
```

Step 3 Request an app ID and change the app ID in the demo to the requested one.

For details about how to request an app ID, see [Introduction to App ID Authentication](#).

Replace `DEFAULT_APPID` in `hwmsdk-electron\packages\hwmsdk-electron-demo\src\demoConfig.js` with the obtained app ID.

Figure 3-37 Replacing the app ID



Step 4 Run the Electron demo.

1. Run the `.bat` or `.sh` script in the `hwmsdk-electron` directory to compile the demo project. The script installs the corresponding environment, copies the SDK library and `HwmUisdk.node`, converts TS files to JS files, triggers compilation, and runs the demo.

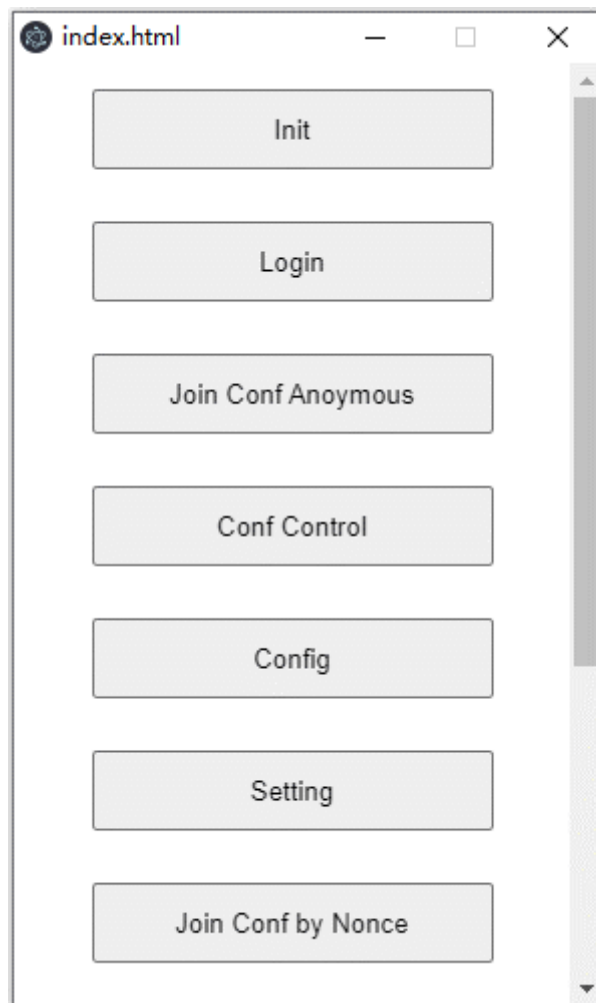
- To run the Windows 32-bit demo when the Node.js version is 32-bit, run **run_demo_win32.bat**.
- To run the Windows 64-bit demo when the node version is 64-bit, run **run_demo_x64.bat**.
- To run the macOS demo, run **run_demo_mac.sh**.

 **NOTE**

The .bat or .sh script can perform the following operations:

- Compile TS APIs and generate JS and types files.
- Copy the SDK files of the corresponding platform to the corresponding directory (**sdk/win32**, **sdk/x64**, or **sdk/mac**).
- Run the demo.

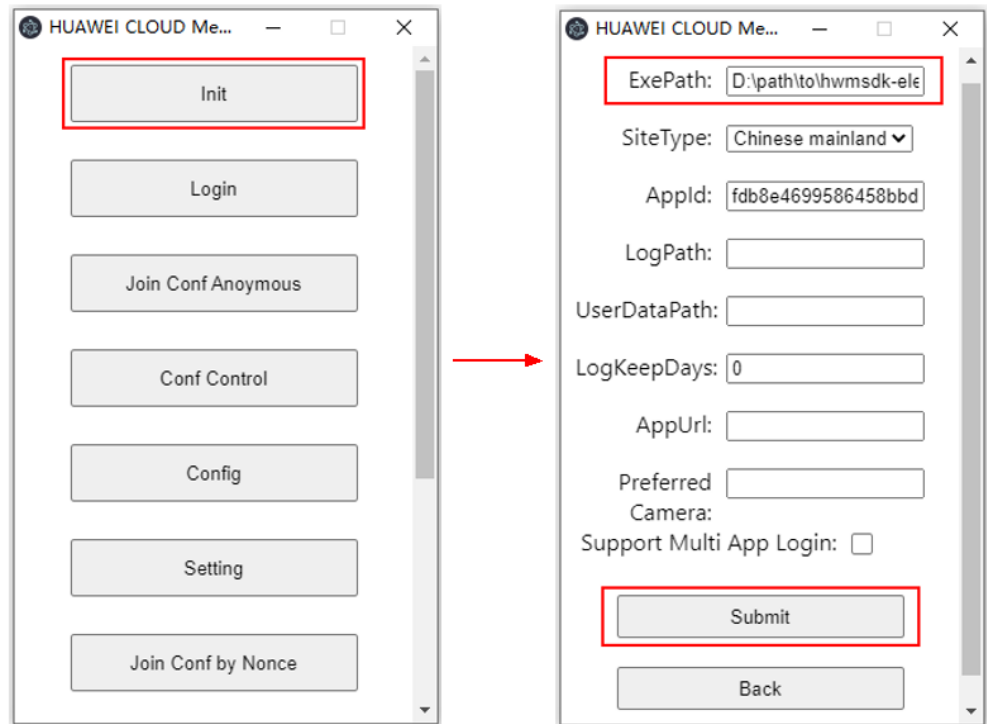
Figure 3-38 Electron demo main screen



Step 5 Use the Electron demo.

- Click **Init** to initialize the SDK. (**ExePath** is required only for the 64-bit demo.)

Figure 3-39 SDK initialization



NOTE

ExePath is the absolute path of HwmSdk of the Windows SDK, for example, **D:\path\to\hwmsdk-electron-demo-win-x64-100.5.5\hwmsdk-electron-x64\resources\sdk\x64\HwmSdk\HwmSdk.exe**.

Figure 3-40 Login

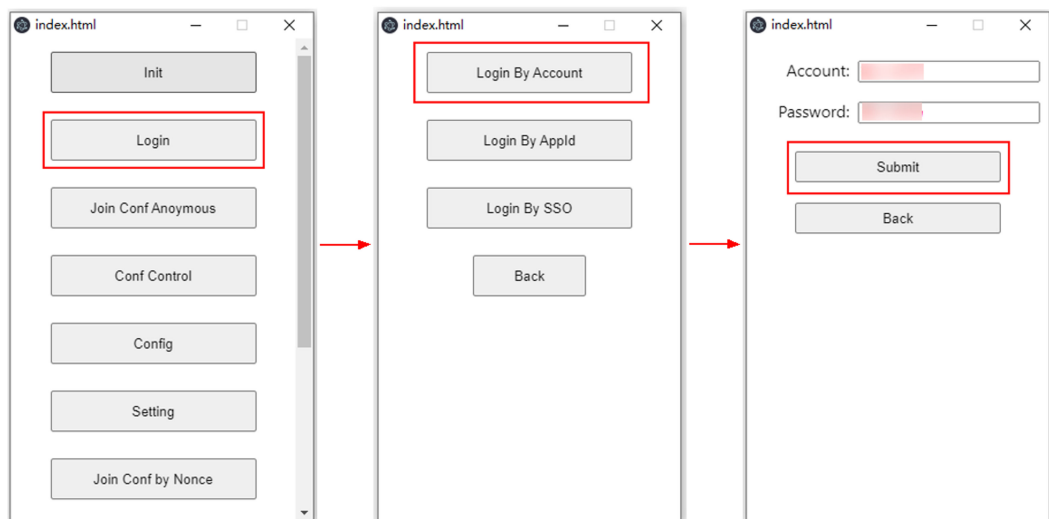
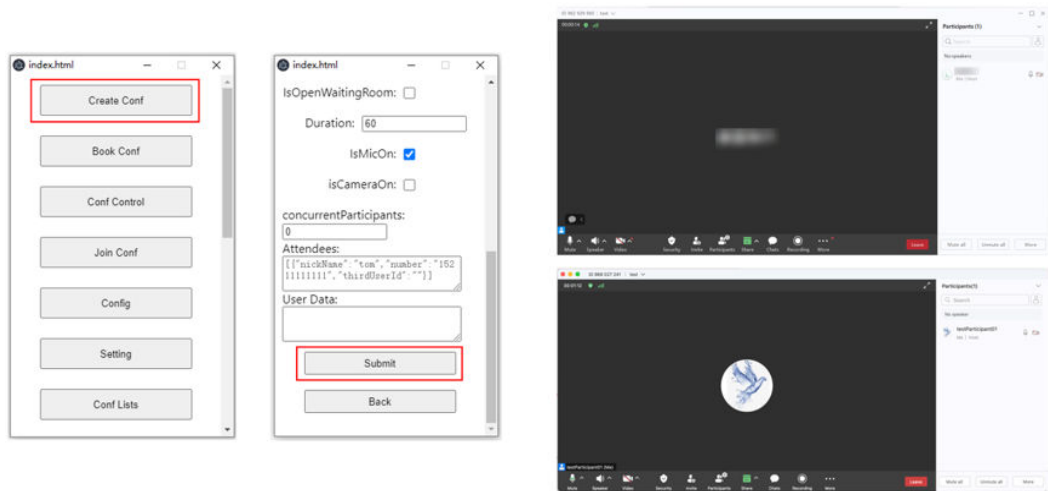


Figure 3-41 Creating a meeting



----End

4 Downloading SDKs

4.1 Downloading an App SDK

 NOTE

The maintenance period of UI SDKs of Huawei Cloud Meeting is one year. If an issue occurs in a UI SDK used for more than one year, upgrade the SDK to the latest version.

You can verify the package integrity of downloaded SDKs by referring to [Verifying Integrity of an App SDK Package](#).

Table 4-1 Android/iOS/Windows/macOS/Electron UI SDK download path

Version	Released On	Resource	Download Link	Incremental Installation Package Size	Description
100.5.5 (latest)	2024-06-13	Android UI SDK	hwmsdk-android-100.5.5.zip Integrity check: hwmsdk-android-100.5.5-sha256	32-bit: 34.7 MB 64-bit: 36.9 MB 32-bit + 64-bit: 56.8 MB	-
		iOS UI SDK	hwmsdk-ios-100.5.5.zip Integrity check: hwmsdk-iOS-100.5.5-sha256	30.5 MB	-

Version	Released On	Resource	Download Link	Incremental Installation Package Size	Description
		Windows UI SDK	hwmsdk-win-100.5.5.zip Integrity check: hwmsdk-win-100.5.5-sha256	About 102.9 MB	-
		macOS UI SDK	hwmsdk-mac-100.5.5.zip Integrity check: hwmsdk-mac-100.5.5-sha256	About 55.4 MB	-
		Electron UI SDK	hwmsdk-electron-100.5.5.zip Integrity check: hwmsdk-electron-100.5.5-sha256	Windows: about 102.9 MB macOS: about 55.4 MB	-
100.3.7 (in maintenance)	2024-05-21	Windows UI SDK	hwmsdk-win-100.3.7.zip Integrity check: hwmsdk-win-100.3.7-sha256	About 102.8 MB	-
	2024-05-09	Electron UI SDK	hwmsdk-electron-100.3.7.zip Integrity check: hwmsdk-electron-100.3.7-sha256	Windows: about 102.8 MB macOS: about 55.5 MB	The Electron UI SDK macOS patch package fixes the issue that custom profile pictures are not displayed in meetings.
100.3.6 (in maintenance)	2024-04-23	Android UI SDK	hwmsdk-android-100.3.6.zip Integrity check: hwmsdk-android-100.3.6-sha256	32-bit: 33.5 MB 64-bit: 35.3 MB 32-bit + 64-bit: 54.7 MB	-

Version	Released On	Resource	Download Link	Incremental Installation Package Size	Description
		iOS UI SDK	hwmsdk-ios-100.3.6.zip Integrity check: hwmsdk-ios-100.3.6-sha256	30.1 MB	-
		Windows UI SDK	hwmsdk-win-100.3.6.zip Integrity check: hwmsdk-win-100.3.6-sha256	About 102.8 MB	-
		macOS UI SDK	hwmsdk-mac-100.3.6.zip Integrity check: hwmsdk-mac-100.3.6-sha256	About 55.5 MB	-
		Electron UI SDK	hwmsdk-electron-100.3.6.zip Integrity check: hwmsdk-electron-100.3.6-sha256	Windows: about 102.8 MB macOS: about 55.5 MB	-
90.12.7 (in maintenance)	2024-02-17	Android UI SDK	hwmsdk-android-90.12.7.zip Integrity check: hwmsdk-android-90.12.7-sha256	32-bit: 34.3 MB 64-bit: 36.1 MB 32-bit + 64-bit: 59.4 MB	-
		iOS UI SDK	hwmsdk-ios-90.12.7.zip Integrity check: hwmsdk-ios-90.12.7-sha256	33.9 MB	-

Version	Released On	Resource	Download Link	Incremental Installation Package Size	Description
		Windows UI SDK	hwmsdk-win-90.12.7.zip Integrity check: hwmsdk-win-90.12.7-sha256	About 114.8 MB	-
		macOS UI SDK	hwmsdk-mac-90.12.7.zip Integrity check: hwmsdk-mac-90.12.7-sha256	About 60.4 MB	-
		Electron UI SDK	hwmsdk-electron-90.12.7.zip Integrity check: hwmsdk-electron-90.12.7-sha256	Windows: about 114.8 MB macOS: about 60.4 MB	-
90.12.5 (in maintenance)	2024-01-10	Android UI SDK	hwmsdk-android-90.12.5.zip Integrity check: hwmsdk-android-90.12.5-sha256	32-bit: 34.3 MB 64-bit: 36.1 MB 32-bit + 64-bit: 59.4 MB	-
		iOS UI SDK	hwmsdk-ios-90.12.5.zip Integrity check: hwmsdk-iOS-90.12.5-sha256	33.9 MB	-
		Windows UI SDK	hwmsdk-win-90.12.5.zip Integrity check: hwmsdk-win-90.12.5-sha256	About 114.8 MB	-

Version	Released On	Resource	Download Link	Incremental Installation Package Size	Description
		macOS UI SDK	hwmsdk-mac-90.12.5.zip Integrity check: hwmsdk-mac-90.12.5-sha256	About 60.4 MB	-
		Electron UI SDK	hwmsdk-electron-90.12.5.zip Integrity check: hwmsdk-electron-90.12.5-sha256	Windows: about 114.8 MB macOS: about 60.4 MB	-
90.10.8 (in maintenance)	2023-12-14	Android UI SDK	hwmsdk-android-90.10.8.zip Integrity check: hwmsdk-android-90.10.8-sha256	32-bit: 34.8 MB 64-bit: 36.4 MB 32-bit + 64-bit: 60.2 MB	-
		iOS UI SDK	hwmsdk-ios-90.10.8.zip Integrity check: hwmsdk-ios-90.10.8-sha256	33.7 MB	-
		Electron UI SDK	hwmsdk-electron-90.10.8.zip Integrity check: hwmsdk-electron-90.10.8-sha256	Windows: about 106.3 MB macOS: about 60.3 MB	-
90.10.5 (in maintenance)	2023-11-23	Electron UI SDK	hwmsdk-electron-90.10.5.zip Integrity check: hwmsdk-electron-90.10.5-sha256	Windows: about 106.3 MB macOS: about 60.3 MB	-

 NOTE

1. For details about how to select a 32-bit or 64-bit version for the Android SDK, see [How Do I Configure 64-bit Libraries?](#)

4.2 Verifying Integrity of an App SDK Package

Function

Check the integrity of downloaded SDK packages, that is, check whether the packages are tampered with or packets are lost during download.

Procedure

1. Obtain the download path of the Android/iOS/Windows/macOS/Electron UI SDK package from [Downloading an App SDK](#).
2. Download the SDK package to your device.
3. Open the CLI and run the following command to generate the SHA-256 value of the downloaded SDK package. In the command, **D:\hwmsdk-win-80.12.7.zip** indicates the local path for storing the SDK package and the SDK package name. Replace it with the actual value.

```
certutil -hashfile D:\hwmsdk-win-80.12.7.zip SHA256
```

The following is an example of the command output:

```
SHA256 D:\hwmsdk-win-80.12.7.zip hash:  
85a691c46a56572ea092945e9565f7927e6c1b4c612b35d01b1c8a9524f8c498  
CertUtil: -hashfile Command executed
```

Compare the generated SHA-256 value with that listed in the package download path table. If they are the same, no tampering or packet loss occurred during download.

5 Android SDK

5.1 Introduction

The Android SDK of Huawei Cloud Meeting provides a complete set of APIs for secondary development. You can call these APIs to quickly integrate voice and video meeting functions, including creating, scheduling, and joining meetings, and sharing screens.

NOTE

- The Android SDK can run only on mainstream mobile phones and tablets. If it runs on an Android device with custom hardware, issues such as low image resolution, incorrect image rotation angle, and audio feedback may occur.
- The Android SDK cannot be used for secondary development on HUAWEI Vision or IdeaHub.

5.2 Getting Started

This document is intended for developers who have mastered some Android native development knowledge. It describes how to use the SDK to perform secondary development by taking the process of logging in to Huawei Cloud Meeting and initiating and joining a video meeting as an example.

Preparations

Prepare the following environment:

Environment requirements (mandatory)

The following environment provides reference for the personnel who compile and run the source code:





Environment requirements (optional)

SDK Integration

Step 1 Decompress the SDK package.

Download and decompress the software package to obtain the files shown in the figure below.

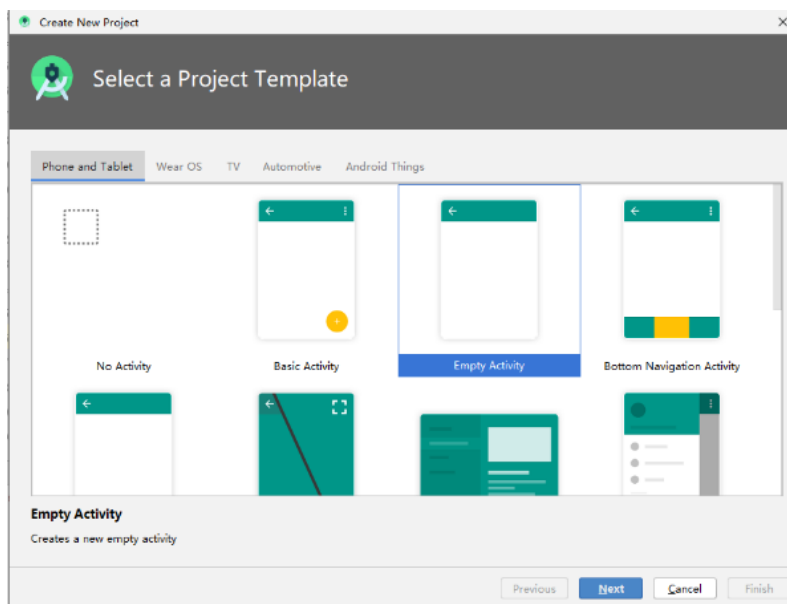
Figure 5-1 File directory

 HWMDemo	2024/7/11 3:17
 languagetemplates	2024/7/11 3:17
 libs	2024/7/11 3:17
 roomslibs	2024/7/11 3:17

Step 2 Create a project.

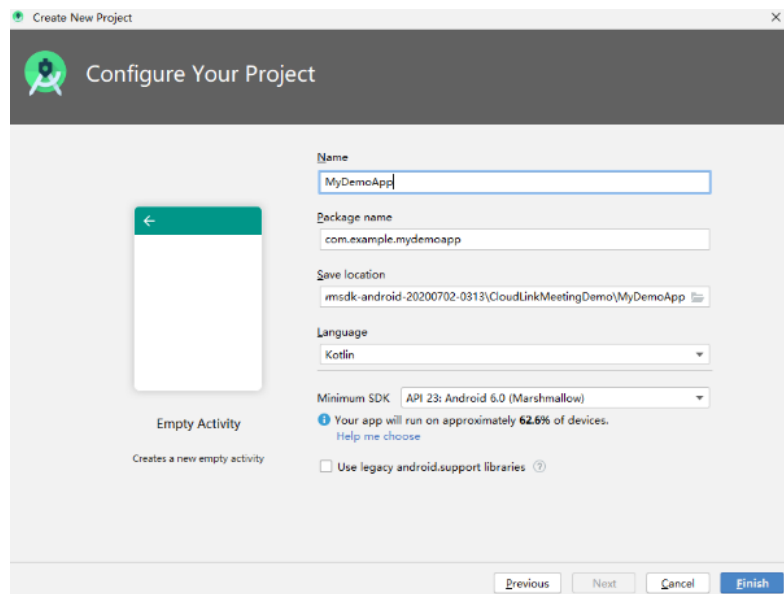
- Open Android Studio, choose **File > New > New Project**, choose **Phone and Tablet > Empty Activity**, and click **Next**.

Figure 5-2 Creating a project



- Enter project information and click **Finish**. (Note that the minimum Android API version is 23.)

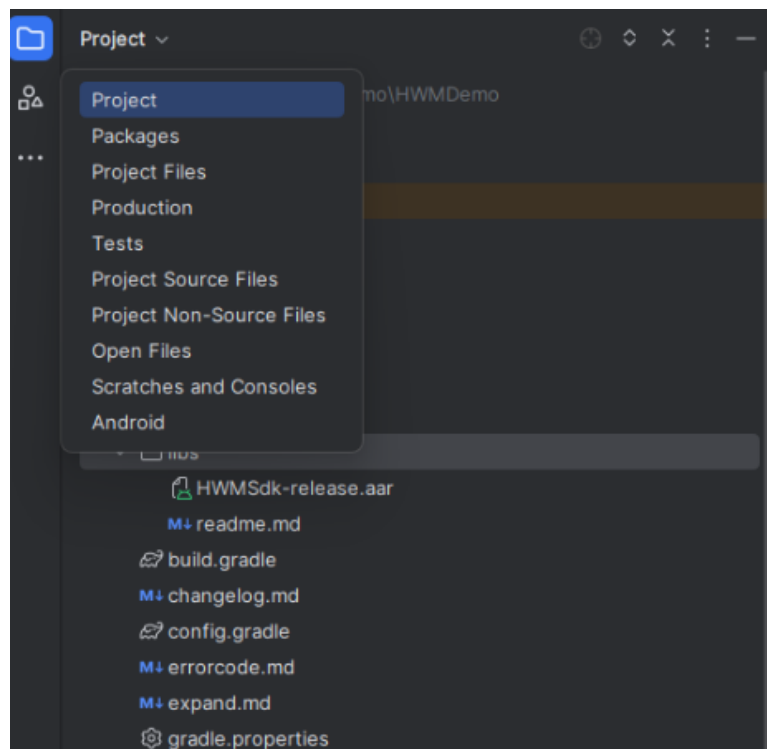
Figure 5-3 Setting project information



Step 3 Integrate the SDK.

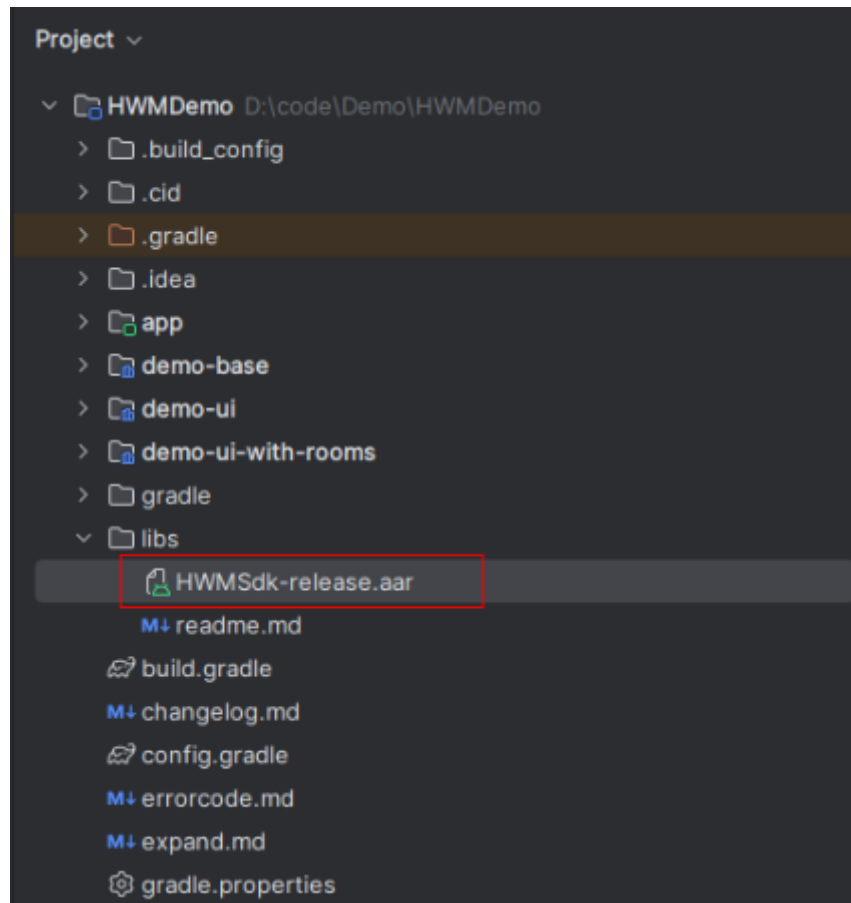
- In Android Studio, switch the project directory to **Project**.

Figure 5-4 Switching to Project



- Copy the **.aar** packages in the **libs** directory to your project directory.

Figure 5-5 Adding the .aar packages



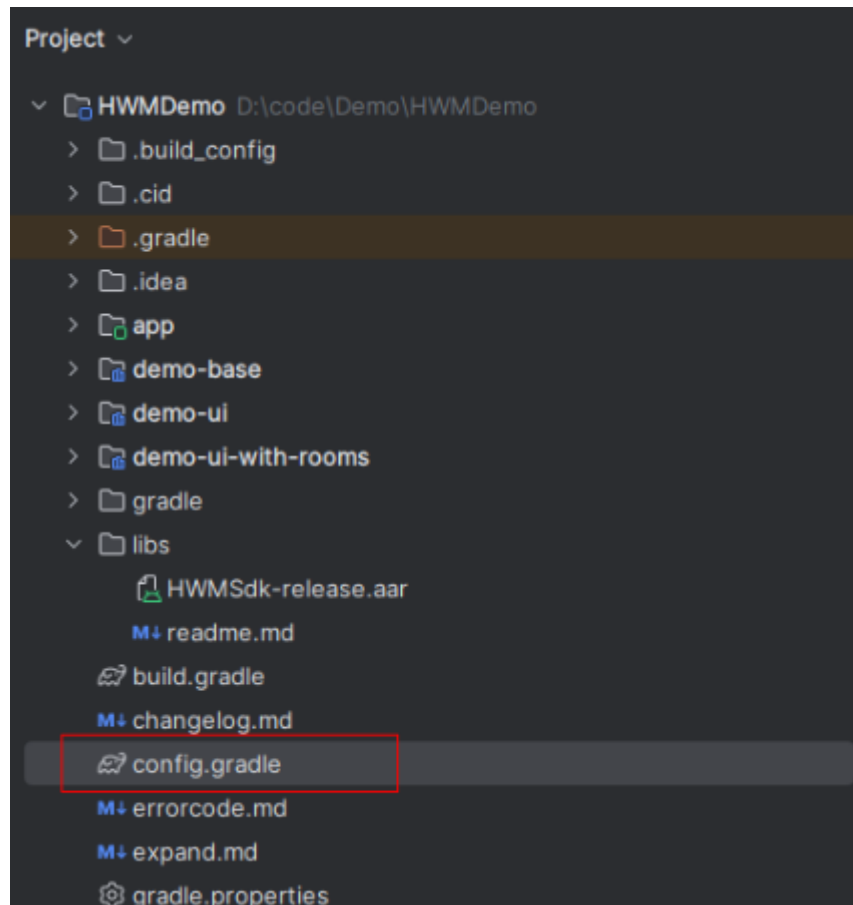
Step 4 Add dependencies.

- Add a third-party dependency.

The SDK depends on some open-source libraries. You must add dependencies on these libraries in Gradle as follows:

Create the **config.gradle** file in the root directory of the project. (If you have created a unified configuration file, refer to the **config.gradle** file in the demo to configure the version.)

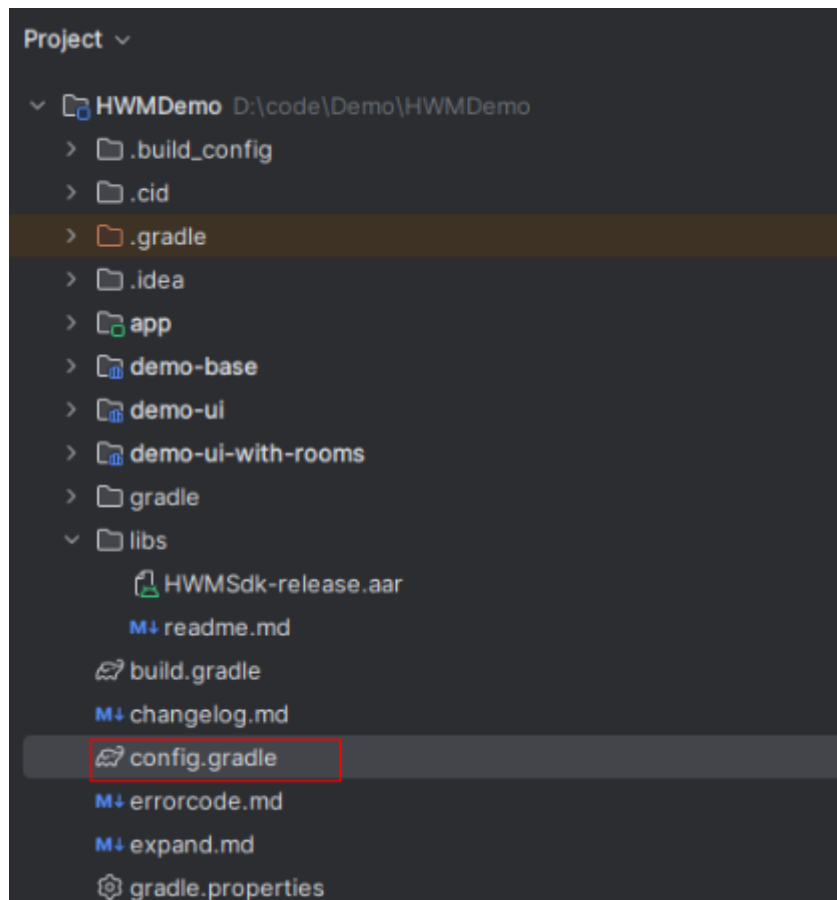
Figure 5-6 Opening the config.gradle file



- Add the following information to the first line of the **build.gradle** file:
apply from:"config.gradle"

The third-party dependency statement and version number used in config.gradle are as follows:

```
"rxandroid"      : 'io.reactivex.rxjava3:rxandroid:3.0.2',
"appcompat-v7"  : 'androidx.appcompat:appcompat:1.4.1',
"vectordrawable" : 'androidx.vectordrawable:vectordrawable:1.2.0-beta01',
"rxjava"        : 'io.reactivex.rxjava3:rxjava:3.0.13',
"recyclerview"  : 'androidx.recyclerview:recyclerview:1.2.1',
"palette"       : 'androidx.palette:palette:1.0.0',
"aspectjrt"     : 'org.aspectj:aspectjrt:1.9.6',
"okhttp"        : 'com.squareup.okhttp3:okhttp:4.11.0',
"gson"          : 'com.google.code.gson:gson:2.10.1',
"design"         : 'com.google.android.material:material:1.6.1',
"annotations"   : 'androidx.annotation:annotation:1.0.0',
"lifecycle-process" : 'androidx.lifecycle:lifecycle-process:2.5.1',
"eventbus"      : 'org.greenrobot:eventbus:3.2.0',
"tinypinyin"    : 'com.github.promeg:tinypinyin:3.0.0',
"constraint-layout" : 'androidx.constraintlayout:constraintlayout:2.0.4',
"glide"         : 'com.github.bumptech.glide:glide:4.11.0',
"glide:compiler" : 'com.github.bumptech.glide:compiler:4.11.0',
"hms:scan-kit"  : 'com.huawei.hms:scan:1.1.3.301',
"legacy"        : 'androidx.legacy:legacy-support-v13:1.0.0',
"swiperefreshlayout" : 'androidx.swiperefreshlayout:swiperefreshlayout:1.1.0',
"viewbinding"   : 'androidx.databinding:viewbinding:7.1.3'
```

Figure 5-7 Setting the project build.gradle

- Add the open-source package dependencies and meeting SDK dependencies to **app/build.gradle**.

NOTE

The original Android Support Library is no longer maintained or evolved by Google. Therefore, Android 28 will be upgraded to AndroidX.

Since the 70.8.5 version released in August, Huawei Cloud Meeting will no longer be developed based on the Support Library. Instead, AndroidX will be used for iteration.

If you are still using the original Android Support Library dependency:

- It is recommended that you change it to the AndroidX dependency. Otherwise, you may fail to connect to the AndroidX SDK version in subsequent development. For details, see [Getting Started](#).
- If you cannot upgrade to Android X as soon as possible, we will provide the original SDK developed based on the Support Library and maintain the SDK for six months. During the maintenance period, you can still integrate our SDK of 70.7.5 and earlier versions for development. Issues found in these versions will be fixed and updated. However, new functions in later iterations will be implemented only on the SDK of AndroidX.

```
// Some third-party frameworks used by the SDK
api rootProject.ext.dependencies["appcompat-v7"]
api rootProject.ext.dependencies["recyclerview"]
api rootProject.ext.dependencies["design"]
```

```
api rootProject.ext.dependencies["aspectjrt"]
api rootProject.ext.dependencies["rxandroid"]
api rootProject.ext.dependencies["constraint-layout"]
api rootProject.ext.dependencies["glide"]

implementation rootProject.ext.dependencies["rxjava"]
implementation rootProject.ext.dependencies["gson"]
implementation rootProject.ext.dependencies["eventbus"]
implementation rootProject.ext.dependencies["okhttp"]
implementation rootProject.ext.dependencies["hms:scan-kit"]
implementation rootProject.ext.dependencies["lifecycle-process"]
implementation rootProject.ext.dependencies["viewbinding"]
implementation rootProject.ext.dependencies["swiperefreshlayout"]
// Add the meeting dependencies.
implementation(name: 'hwmmediapicker-release', ext: 'aar')
implementation(name: 'HWMSdk-release', ext: 'aar')
```

- Add the following to **project/build.gradle allprojects/repositories**:
flatDir { dirs 'libs' }

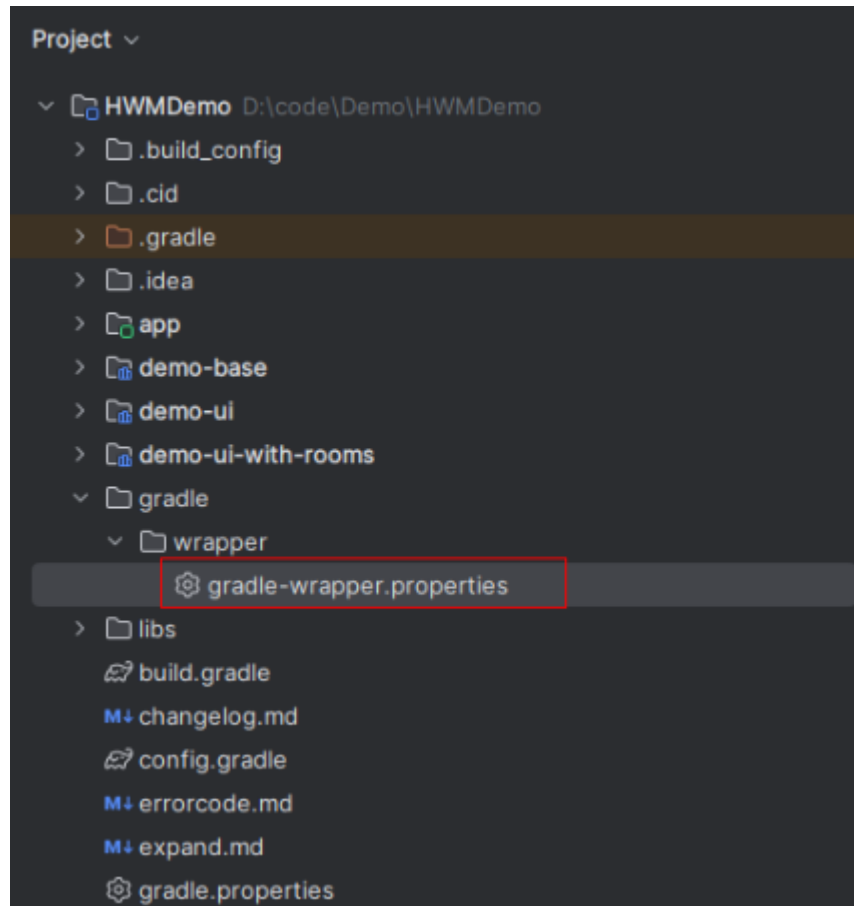
If Google cannot be connected, you can add your own Maven repository.

Figure 5-8 Adding a Maven repository

```
repositories {
    flatDir { dirs 'libs' }
    maven { url 'http://maven.aliyun.com/nexus/content/repositories/jcenter/' }
    maven { url 'http://developer.huawei.com/repo/' }
}
```

- Configure **gradle-wrapper.properties** by following the instructions provided in [Configuring gradle-wrapper.properties](#).

Figure 5-9 gradle-wrapper.properties



- Choose **Build > make project** and wait until the project compilation is complete.

NOTE

If **libc++_shared.so** is integrated into the application layer, no configuration is required. If the dynamic library is used in the **.aar** package of a third-party library, you only need to add the following configuration in the **build.gradle** file:

```
packagingOptions {
    merge lib/armeabi-v7a/libc++shared.so
}
```

Step 5 Configure the obfuscation script.

- Add the following information to the **build.gradle** file to configure the obfuscation script:

```
buildTypes {
    release {
        minifyEnabled true
        proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'
    }
}
```

- Add the following information to the **proguard-rules.pro** file:
Do not enable optimization, because Android dex does not require optimize and preverify.
-dontoptimize
Do not use case-sensitive class names. Windows users must set this option for ProGuard,

```
# because Windows is case-insensitive. For example, a.java and A.java are considered as the same file.
# If you do not do so and there are more than 26 classes in your project, ProGuard will use case-
insensitive file names by default, causing class files to overwrite.
-dontusemixedcaseclassnames
# Specify that non-public library classes and members are not ignored.
-dontskipnonpubliclibraryclasses
-dontskipnonpubliclibraryclassmembers
# If an exception is thrown, the code line number is kept unobfuscated to facilitate fault locating.
-keepattributes SourceFile,LineNumberTable
# Rename the file that throws an exception to facilitate fault locating.
-renamesourcefileattribute SourceFile
# A mapping file is generated after obfuscation.
# This file contains the mappings between the class names and the obfuscated class names.
# Use printmapping to specify the name of the file.
-verbose
# Preverify is not required. (Preverify is one of the four steps of ProGuard.)
# Android does not require preverify. Remove this step to speed up obfuscation.
-dontpreverify
# The dump.txt file lists the internal structure of all classes in the .apk package.
-dump class_files.txt
# The seeds.txt file lists the classes and members that are not obfuscated.
-printseeds seeds.txt
# The usage.txt file lists the code deleted from the .apk package.
-printusage usage.txt
# The mapping.txt file lists the mapping before and after the obfuscation.
-printmapping mapping.txt

# Ignore the classes that are not modified by public in the library.
# Non-public classes in the library cannot be used by programs. Ignore these classes to speed up
obfuscation.
# Note that this step cannot be performed in the following special case: The code written by the
developer is in the same package as the classes in the class library, and the non-public classes of the
package are used.
-skipnonpubliclibraryclasses

# Keep the annotation unobfuscated, because the annotation is implemented through the reflection
mechanism.
-keepattributes *Annotation*
# Keep the JavaScript interface unobfuscated.
-keepattributes *JavascriptInterface*
# Keep exceptions unobfuscated.
-keepattributes Exceptions
# Keep inner classes unobfuscated.
-keepattributes InnerClasses
# Keep the generics unobfuscated.
-keepattributes Signature

# Keep the local native methods unobfuscated.
-keepclasseswithmembernames class * {
    native <methods>;
}
# Keep enumeration classes unobfuscated.
-keepclassmembers enum * {
    public static **[] values();
    public static ** valueOf(java.lang.String);
}
# Keep the Parcelable class unobfuscated.
-keep class * implements android.os.Parcelable {
    public static final android.os.Parcelable$Creator *;
}
# Keep the Serializable class unobfuscated.
-keepclassmembers class * implements java.io.Serializable {
    static final long serialVersionUID;
    private static final java.io.ObjectStreamField[] serialPersistentFields;
    !static !transient <fields>;
    !private <fields>;
```

```
!private <methods>;
private void writeObject(java.io.ObjectOutputStream);
private void readObject(java.io.ObjectInputStream);
java.lang.Object writeReplace();
java.lang.Object readResolve();
}
# Keep the resource application name unobfuscated.
-keepclassmembers class **.R$* {
    public static <fields>;
}
# Ignore the warnings in the support package.
-dontwarn android.support.**
# Keep the animations in the support package unobfuscated.
-keep class android.support.annotation.Keep
-keep @android.support.annotation.Keep class * {*;}
-keepclasseswithmembers class * {
    @android.support.annotation.Keep <methods>;
}
-keepclasseswithmembers class * {
    @android.support.annotation.Keep <fields>;
}
-keepclasseswithmembers class * {
    @android.support.annotation.Keep <init>(…);
}
# Keep the system class libraries unobfuscated.
-keep public class * extends android.app.Activity
-keep public class * extends android.app.Application
-keep public class * extends android.app.Service
-keep public class * extends android.content.BroadcastReceiver
-keep public class * extends android.preference.Preference
-keep public class * extends android.content.ContentProvider
-keep public class * extends android.view.View {
    public <init>(android.content.Context);
    public <init>(android.content.Context, android.util.AttributeSet);
    public <init>(android.content.Context, android.util.AttributeSet, int);
    public void set*(…);
}
# Keep Huawei SDK-related configurations unobfuscated.
-keep class com.hianalytics.android.**{*;}
-keep class com.huawei.updatesdk.**{*;}
-keep class com.huawei.hms.**{*;}
-keep class com.huawei.android.hms.agent.**{*;}
# OKhttp obfuscation configuration.
#https://github.com/square/okhttp/blob/5fe3cc2d089810032671d6135ad137af6f491d28/
README.md#proguard
-dontwarn okhttp3.**
-dontwarn okio.**
-dontwarn javax.annotation.**
-dontwarn org.conscrypt.**
# A resource is loaded with a relative path so the package of this class must be preserved.
-keepnames class okhttp3.internal.publicsuffix.PublicSuffixDatabase
# EventBus obfuscation configuration.
#http://greenrobot.org/eventbus/documentation/proguard/
-keepclassmembers class ** {
    @org.greenrobot.eventbus.Subscribe <methods>;
}
-keep enum org.greenrobot.eventbus.ThreadMode { *; }
# Only required if you use AsyncExecutor
#-keepclassmembers class * extends org.greenrobot.eventbus.util.ThrowableFailureEvent {
#    <init>(java.lang.Throwable);
#}

# Keep HME java unobfuscated, because HMW-Video.jar will be invoked in C++.
-keep class com.huawei.media.audio.AudioDeviceAndroid { *;}
-keep class com.huawei.media.audio.AudioDeviceAndroidService { *;}
-keep class com.huawei.media.audio.JniAudioDeviceImpl { *;}
-keep class com.huawei.media.audio.JniAudioDeviceMeetingImpl { *;}
-keep class com.huawei.media.audio.JniAudioDeviceRtclImpl { *;}
```

```
-keep class com.huawei.media.video.Camera2Characteristic { *;}
-keep class com.huawei.media.video.CaptureCapabilityAndroid { *;}
-keep class com.huawei.media.video.DeviceInfo { *;}
-keep class com.huawei.media.video.H264Decoder { *;}
-keep class com.huawei.media.video.HmeDefinitions { *;}
-keep class com.huawei.media.video.JNIBridge { *;}
-keep class com.huawei.media.video.JNIBridgeImpl { *;}
-keep class com.huawei.media.video.JNIMeetingImpl { *;}
-keep class com.huawei.media.video.JNIRtcImpl { *;}
-keep class com.huawei.media.video.KirinMediaCodecEncoder { *;}
-keep class com.huawei.media.video.LogFile { *;}
-keep class com.huawei.media.video.MediaCodecDecoder { *;}
-keep class com.huawei.media.video.MediaCodecEncoder { *;}
-keep class com.huawei.media.video.ScreenCaptureImageActivity { *;}
-keep class com.huawei.media.video.SurfaceEncoder { *;}
-keep class com.huawei.media.video.VideoCapture { *;}
-keep class com.huawei.media.video.VideoCapture2Android { *;}
-keep class com.huawei.media.video.VideoCaptureAndroid { *;}
-keep class com.huawei.media.video.VideoCaptureDeviceInfo { *;}
-keep class com.huawei.media.video.VideoCaptureDeviceInfoAndroid { *;}
-keep class com.huawei.media.video.VideoRender { *;}
-keep class com.huawei.media.video.VideoRenderNoGLES { *;}
-keep class com.huawei.media.video.ViEAndroidGLES20 { *;}
-keep class com.huawei.media.video.ViERenderer { *;}
-keep class com.huawei.media.video.ViESurfaceRenderer { *;}
-keep class com.huawei.media.video.VtNativeDecoder { *;}
-keep class com.huawei.media.video.codec.KirinDecoder { *;}
-keep class com.huawei.media.video.codec.KirinEncoder { *;}
-keep class com.huawei.media.video.codec.** { *;}
-keep class com.huawei.media.video.Camera2VideoCapture { *;}
-keep class com.huawei.media.video.capture.Camera2EncodedImageReader { *;}
-keep class com.huawei.media.video.capture.Camera2TextureImageReader { *;}
-keep class com.huawei.media.video.capture.Camera2VideoCaptureImpl { *;}
-keep class com.huawei.media.video.capture.Camera2YUVImageReader { *;}
-keep class com.huawei.media.video.capture.CaptureRequestExKeyUtils { *;}
-keep class com.huawei.media.video.capture.StreamConfig { *;}
-keep class com.huawei.media.video.capture.StreamResolution { *;}
-keep class com.huawei.media.video.capture.VideoCaptureDevInfoCamera2Impl { *;}
-keep class com.huawei.media.mcuvideo.CaptureCapabilityAndroid { *;}
-keep class com.huawei.media.mcuvideo.HmeDefinitions { *;}
-keep class com.huawei.media.mcuvideo.JNIBridge { *;}
-keep class com.huawei.media.mcuvideo.LogFile { *;}
-keep class com.huawei.media.mcuvideo.MediaCodecDecoder { *;}
-keep class com.huawei.media.mcuvideo.MediaCodecEncoder { *;}
-keep class com.huawei.media.mcuvideo.VideoCapture { *;}
-keep class com.huawei.media.mcuvideo.VideoCaptureDeviceInfo { *;}
-keep class com.huawei.media.mcuvideo.VideoRender { *;}
-keep class com.huawei.media.mcuvideo.VideoRenderNoGLES { *;}
-keep class com.huawei.media.mcuvideo.ViERenderer { *;}
-keep class com.huawei.media.mcuvideo.codec.** { *;}
-keep class com.huawei.media.mcuvideo.capture.Camera2EncodedImageReader { *;}
-keep class com.huawei.media.mcuvideo.capture.Camera2TextureImageReader { *;}
-keep class com.huawei.media.mcuvideo.capture.Camera2VideoCaptureImpl { *;}
-keep class com.huawei.media.mcuvideo.capture.Camera2YUVImageReader { *;}
-keep class com.huawei.media.mcuvideo.capture.CaptureRequestExKeyUtils { *;}
-keep class com.huawei.media.mcuvideo.capture.StreamConfig { *;}
-keep class com.huawei.media.mcuvideo.capture.StreamResolution { *;}
-keep class com.huawei.media.mcuvideo.capture.VideoCaptureDevInfoCamera2Impl { *;}
-keep class com.huawei.media.oldvideo.CaptureCapabilityAndroid { *;}
-keep class com.huawei.media.oldvideo.HmeDefinitions { *;}
-keep class com.huawei.media.oldvideo.JNIBridge { *;}
-keep class com.huawei.media.oldvideo.LogFile { *;}
-keep class com.huawei.media.oldvideo.MediaCodecDecoder { *;}
-keep class com.huawei.media.oldvideo.MediaCodecEncoder { *;}
-keep class com.huawei.media.oldvideo.VideoCapture { *;}
-keep class com.huawei.media.oldvideo.VideoCaptureDeviceInfo { *;}
-keep class com.huawei.media.oldvideo.VideoRender { *;}
-keep class com.huawei.media.oldvideo.VideoRenderNoGLES { *;}
-keep class com.huawei.media.oldvideo.ViERenderer { *;}
```

```
-keep class com.huawei.media.oldvideo.codec.** { *;}
# Keep TUP Java unobfuscated, because it will be invoked in C++.
-keep class tupsdk.Tupmedia { *;} #TupCall.jar
-keep class com.huawei.media.data.Conference { *;} #TupConf.jar

-keep class imssdk.** { *;}
# RTC SDK obfuscation
-keep class com.huawei.mmr.**{*;}
-keep class com.huawei.mmrallplatform.**{*;}
### Native SDK obfuscation
-keep class com.huawei.hwmsdk.**{*;}
# Keep WebViewInterface unobfuscated.
-keepclassmembers class com.huawei.hwmlink.jsbridge.model.GHConfigModel {
    public *;
}
# Keep APIs unobfuscated.
-keep public class com.huawei.**Api { *;}
-keep class com.huawei.cloudlink.openapi.api.ICloudLinkOpenApi{*;}
-keep class com.huawei.cloudlink.openapi.api.impl.CloudLinkOpenApiImpl{*;}
-keep class com.huawei.hwmbiz.IBizOpenApi{*;}
-keep class com.huawei.hwmbiz.impl.BizOpenApiImpl{*;}
# Keep microservices unobfuscated. It is called using reflection. For details, see the Huawei Cloud
configuration.
-keep public class * extends com.huawei.hwmfoundation.microservice.HCMicroService
-keep public class * extends com.mapp.hcmobileframework.microapp.HCMicroApplicationDelegate
-keep public class * implements com.huawei.hwmlink.jsbridge.bridge.** { *;}
# Keep the constructors for the classes inherited from AbsCache unobfuscated, regardless of whether
they are being used. Otherwise, the constructors will be optimized.
-keepclassmembers class * {
    <init>(...);
}
# Keep RXJava unobfuscated, because there are hook operations inside it.
-keep class io.reactivex.**{*;}
# Keep custom annotations unobfuscated.
-keep public class com.huawei.hwmbiz.aspect.CheckToken
-keep public class com.huawei.hwmfoundation.hook.annotation.TimeConsume
-keep public class com.huawei.hwmfoundation.hook.annotation.HookDisable
-keep public class com.huawei.hwmfoundation.hook.annotation.HookNotNeeded
# Keep glide unobfuscated.
-keep class com.github.bumptech.glide.**{*;}
# Conversion from the JSON format into the javabean format is required. Obfuscation is not needed.
-keep public class * extends com.huawei.hwmfoundation.base.BaseModel{*;}
# Keep HMS SDK unobfuscated.
-ignorewarnings
-keepattributes *Annotation*
-keepattributes Exceptions
-keepattributes InnerClasses
-keepattributes Signature
-keepattributes SourceFile,LineNumberTable
-keep class com.hianalytics.android.**{*;}
-keep class com.huawei.updatesdk.**{*;}
-keep class com.huawei.hms.**{*;}
# AndroidX obfuscation configuration.
-keep class com.google.android.material.** { *;}
-keep class androidx.** { *;}
-keep public class * extends androidx.**
-keep interface androidx.** { *;}
-dontwarn com.google.android.material.**
-dontnote com.google.android.material.**
-dontwarn androidx.**
# Keep the route table unobfuscated. After the startup, the route table is summarized from the fixed
package.
-keep class com.huawei.cloudlink.router.routermap.** { *;}
# crashreport obfuscation configuration.
-keep public class com.huawei.crashreport.**{*;}
# IMSDK obfuscation configuration.
-keep class com.huawei.imsdk.ECSProxy { *;}
-keep class com.huawei.imsdk.msg.** { *;}
# Keep HWMUserState unobfuscated.
```



```
-keep public class com.huawei.cloudlink.openapi.model.HWMUserState{*;}
# Keep Netty unobfuscated. -keep class io.netty.**{*;} is required for projection.

# Keep demo code unobfuscated.
-keep class com.huawei.hwmdemo.** { *;}
```

Step 6 Add permissions.

Add permissions required in the **AndroidManifest.xml** file.

```
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.ACCESS_WIFI_STATE" />
<uses-permission android:name="android.permission.READ_PHONE_STATE" />
<uses-permission android:name="android.permission.CAMERA" />
<uses-permission android:name="android.permission.READ_CONTACTS" />
<uses-permission android:name="android.permission.MODIFY_AUDIO_SETTINGS" />
<uses-permission android:name="android.permission.RECORD_AUDIO" />
<uses-permission android:name="android.permission.WAKE_LOCK" />
<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
<uses-permission android:name="android.permission.DISABLE_KEYGUARD" />
<uses-permission android:name="android.permission.SYSTEM_ALERT_WINDOW" />
<uses-permission android:name="android.permission.REQUEST_INSTALL_PACKAGES" />
<uses-permission android:name="com.huawei.android.launcher.permission.CHANGE_BADGE" />
<uses-permission android:name="android.permission.BLUETOOTH" android:maxSdkVersion="30"/>
<uses-permission android:name="android.permission.BLUETOOTH_CONNECT" />
<uses-permission android:name="android.permission.VIBRATE" />
<uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />
<uses-permission android:name="android.permission.SYSTEM_OVERLAY_WINDOW" />
<uses-permission android:name="android.permission.QUERY_ALL_PACKAGES"/>
<!--Enable the foreground server to keep connections alive during the meeting.-->
<uses-permission android:name="android.permission.FOREGROUND_SERVICE" />
```

Step 7 Add the screen sharing service.

To use the screen sharing function, add the following service statement to the **AndroidManifest.xml** file:

```
<!-- Add the following configuration to the SDK. If the value of compileSdkVersion is greater than or equal to 29, add android:foregroundServiceType="mediaProjection". Otherwise, delete android:foregroundServiceType="mediaProjection".-->
<service android:name="com.huawei.hwmdemo.sdk.ScreenRecorderService"
    android:exported="false"
    android:enabled="true"/>
```

Step 8 Initialize the SDK.

- It is recommended that the initialization be placed in **onCreate** of the application and called as early as possible, so that the SDK can obtain the current activity and jump to a specified page by listening to the activity lifecycle.

```
OpenSDKConfig sdkConfig = new OpenSDKConfig(this)
    .setAppId(getAppId()) // Set a unique app ID. You can enter the application name. This
parameter is mandatory when the app ID is used for login.
HWMSdk.init(this,sdkConfig);
```

Step 9 Learn the examples.

- **Login API**
HWMSdk.getOpenApi(Application).login(LoginParam, HwmCallback<LoginResult>);
- **API for creating a meeting**
HWMSdk.getOpenApi(Application).createConf(CreateConfParam, HwmCancelableCallBack<ConfInfo>);
- **API for joining a meeting**
HWMSdk.getOpenApi(Application).joinConf(JoinConfParam, HwmCancelableCallBack<Void>);
- **Logout API**
HWMSdk.getOpenApi(Application).logout(HwmCallback<LoginCompletedResult>);

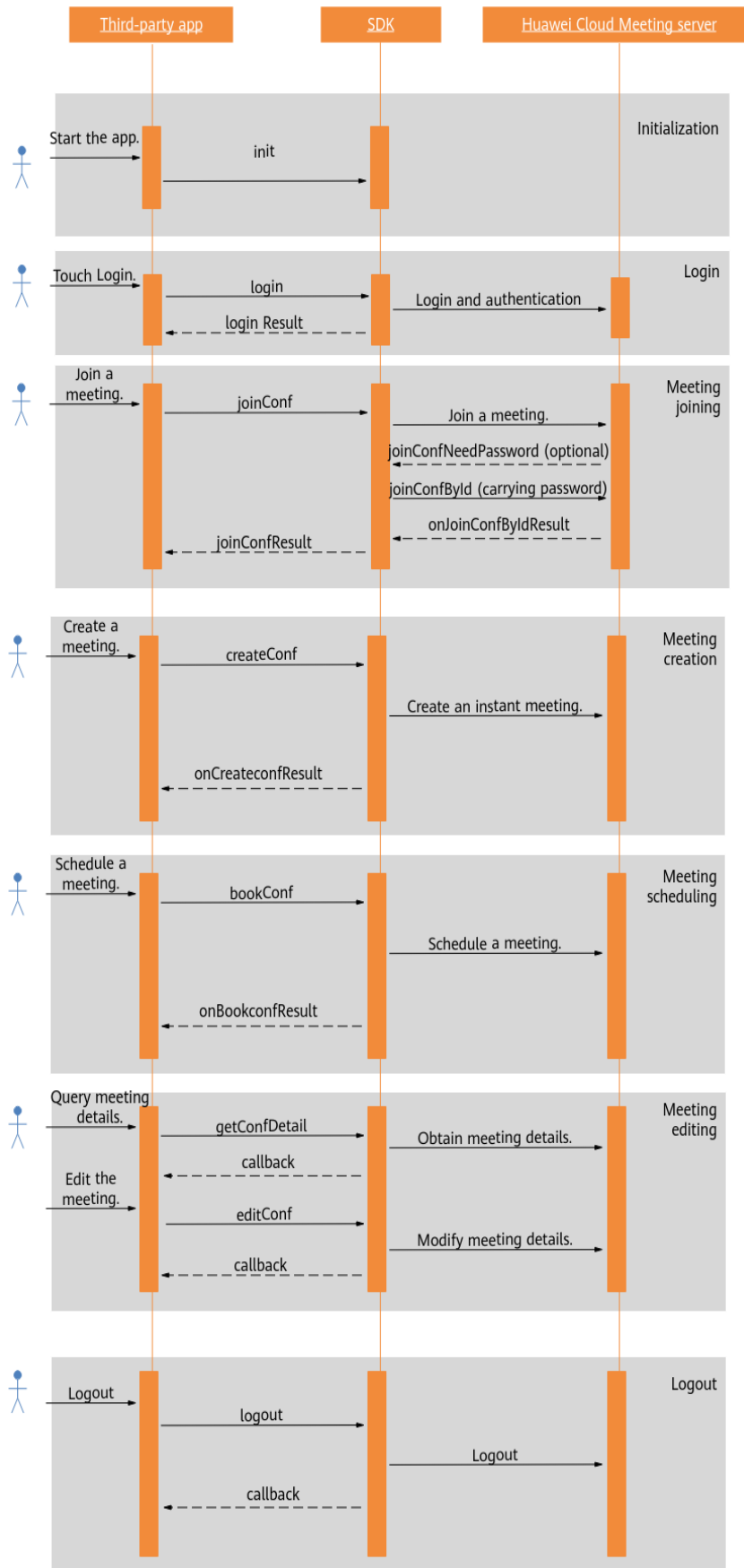
After the preceding steps are complete, you can run the new demo project.

----End

5.3 Typical Scenarios

5.3.1 API Call in Typical Scenarios

Figure 5-10 API call process



 NOTE

Login is not mandatory. You can use the meeting ID and password to join a created meeting without login.

APIs for starting sharing, ending sharing, leaving a meeting, and ending a meeting have been provided on the UI of the SDK. If a third-party application does not need these functions, it does not need to call the corresponding APIs.

5.3.2 Scenario 1: Initialization

Description

Before using SDK service components, initialize the basic components of the SDK.

There are synchronous initialization and asynchronous initialization APIs. The initialization takes about 1 to 2 seconds. If there are requirements on the app startup speed, use the asynchronous initialization API.

Synchronous Initialization Process

Call `HWMSdk.init(Application, OpenSDKConfig)` to initialize the SDK. Before initialization, you can customize the SDK. For details on the configuration procedure and sample code, see [8. Initialize the SDK](#).

Asynchronous Initialization Process

Step 1 Register a listener.

Listen to the activity lifecycle in Application.

```
registerActivityLifecycleCallbacks(new ActivityLifecycleHandle());
```

Step 2 Call an API.

Call `HWMSdk.initAsync(Application, OpenSDKConfig, SdkCallback)` to initialize the SDK asynchronously. Before initialization, you can customize the SDK. For details on the configuration procedure and sample code, see [8. Initialize the SDK](#).

Step 3 Process the callback.

Listen to the `onSuccess` callback and **call other APIs after the Android SDK is initialized.**

----End

Notes

1. During asynchronous initialization, you must listen to the activity lifecycle (step 1). If this step is skipped, multiple functions of the SDK will be affected. **Perform step 1 before calling the initialization API.**
2. Asynchronous initialization can be performed in a subthread. **Use other SDK functions after the initialization is complete.**
3. The **Application** parameter in the initialization API must be specified to ensure successful initialization. **If you log in to Huawei Cloud Meeting using an app ID, call `OpenSDKConfig.setAppId` to set the Application parameter.**

5.3.3 Scenario 2: Login Using an Account and Password

Description

Before using Huawei Cloud Meeting, you must complete login authentication on the server.

NOTE

If you have not logged in, you can only join created meetings.

Service Process

Step 1 Call the API.

1. Create a **LoginParam** object.
 - a. Select a proper login type.
 - b. Set the account and password.
2. Call the **login** API to log in. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Process the result in the callback.

----End

Sample Code

```
// Create a login object.
// It is recommended that accounts and passwords used for authentication be stored in ciphertext in the
// configuration file or as environment variables and be decrypted during usage.
LoginParam loginParam = new LoginParam()
    .setLoginAuthType(LoginAuthType.Account_And_Password)
    .setAccount(getAccount()) // Login account
    .setPassword(getPassword()); // Login password
// Start to log in.
HWMSdk.getOpenApi(getApplication()).login(loginParam, new HwmCallback<LoginResult>() {
    @Override
    public void onSuccess(LoginResult loginResult) {
        Log.i(TAG, "Login succeeded");
    }
    @Override
    public void onFailed(final int retCode, String desc) {
        HwmContext.getInstance().runOnMainThread(new Runnable() {
            @Override
            public void run() {
                Error error = HWMBizSdk.getLoginApi().convertErrorCodeToUI(retCode);
                Log.i(TAG, "Login failed: "+ error.getMessage());
            }
        });
    }
});
```

Precautions

The **login** API can be called only after **HWMSdk.init** is successfully called.

5.3.4 Scenario 3: Login Using an App ID

Description

If you have requested an app ID, you can use the app ID to log in to Huawei Cloud Meeting, without entering an account and password.

NOTE

If you have not logged in, you can only join created meetings.

Service Process

Step 1 Call the API.

1. Create an **AppIdAuthParam** object.
 - a. Set the unique ID of a third-party account.
 - b. Set a random character string.
 - c. Set signature information.
 - d. ID of the enterprise to which the user belongs. This parameter is mandatory only in **SP mode**.
 - e. Set the password expiration time.
 - f. Set the nickname of the login account.
 - g. Set the email address of the login account.
 - h. Set the mobile number of the login account.
2. Call the **loginByAppid** API to log in. The data in the preceding step is used as input parameters. The meeting server registers the user accordingly.

Step 2 Implement the callback.

Process the result in the callback.

----End

Sample Code

```
// Create a login object.
AppIdAuthParam appIdAuthParam = new AppIdAuthParam();
// Set the signature expiration time. The value is a Unix timestamp, in seconds. If the value is 0, the
signature will not expire.
appIdAuthParam.setExpireTime(1599618620);
// Set a random character string consisting of 32 to 64 characters.
appIdAuthParam.setNonce(getNonce());
// Set the ID of the enterprise to which the user belongs. This parameter is required only in the SP login
scenario.
appIdAuthParam.setCorpid(getCorpid());
// Set the ID of the third-party account. The value contains 1 to 64 characters.
appIdAuthParam.setUserId(getUserId());
// Set signature information.
appIdAuthParam.setSignature(getSignature());
// Set the user nickname.
appIdAuthParam.setUserName(getUserName());
// Set the email address, which must meet the format requirements.
appIdAuthParam.setUserEmail(getUserEmail());
// Set the mobile number, which must be in the correct format, for example, ^$|^+[0-9]+$$.
appIdAuthParam.setUserPhone(getUserPhone());
// Start to log in.
```

```
HWMSdk.getOpenApi(getActivity().getApplication()).loginByAppId(appIdAuthParam, new
HwmCallback<LoginResult>() {
    @Override
    public void onSuccess(LoginResult loginResult) {
        dismissLoading();
        dismiss();
        if (loginResult != null) {
            DemoUtil.showToast("Login succeeded" + loginResult.getUserUuid());
        }else{
            DemoUtil.showToast("Logged in");
        }
    }
}

@Override
public void onFailed(int retCode, String desc) {
    HwmContext.getInstance().runOnMainThread(() ->{
        dismissLoading();
        Error error = HWMBizSdk.getLoginApi().convertErrorCodeToUI(retCode);
        DemoUtil.showToast("Login failed: "+ getLoginErrTips(error));
        dismiss();
    });
}
});
```

Precautions

The **loginByAppId** API can be called only after **HWMSdk.init** is successfully called.

5.3.5 Scenario 4: Scheduling a Meeting

Description

After logging in to Huawei Cloud Meeting using an account, you can schedule a meeting. When scheduling the meeting, you can add participants in addition to setting mandatory meeting parameters.

Service Process

Process the meeting scheduling information entered on the UI, call the **bookConf** API, and then implement **hwmCallback** and **onConfListChanged** of **BizNotificationHandler**.

Step 1 Call the API.

1. Create a **BookConfParam** object.
2. Call the **bookConf** API to schedule a meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **hwmCallback** function.

Step 3 Implement the notification function.

Implement the **onConfListChanged** function.

----End

Sample Code

```
// Set a callback to receive the meeting scheduling result.
HwmCallback<ConfInfo> completeHandler = new HwmCallback<ConfInfo>() {
```



```
@Override
public void onSuccess(ConfInfo result) {
    dismissLoading();
    DemoUtil.showToast("Meeting scheduled");
}

@Override
public void onFailed(int retCode, String desc) {
    dismissLoading();
    dismiss();
    String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
    if (TextUtils.isEmpty(err)) {
        err = Utils.getApp().getString(R.string.hwmconf_book_conf_fail);
    }
    DemoUtil.showToast("Failed to schedule the meeting: " + retCode + ", desc: "+ err);
}

boolean needWithMember = true;
List<AttendeeModel> attendeeInfos = new ArrayList<>();
if (needWithMember) {
    // The following three methods are available:
    String name = getName();
    String number = getNumber();
    String thirdAccountId = getThirdAccountId();
    if (!TextUtils.isEmpty(thirdAccountId)) {
        attendeeInfos.add(AttendeeModel.buildAttendeeByThirdAccountId(thirdAccountId, name));
    } else if (number.startsWith("+99")) {
        // A SIP number is used to join the meeting.
        attendeeInfos.add(AttendeeModel.buildAttendeeBySipNumber(number, name));
    } else {
        // A mobile number or a fixed-line phone number is used to join the meeting.
        attendeeInfos.add(AttendeeModel.buildAttendeeByPhone(number, name));
    }
}
BookConfParam bookConfParam = new BookConfParam()
    .setConfSubject(getConfSubject())
    .setStartTime(1599574798)
    .setTimeZone(56)
    .setDuration(60)
    .setConfType(MeetingType.CONF_VIDEO)
    .setVmrlFlag(false)
    .setVmrlId("")
    .setNeedConfPwd(true)
    .setJoinConfRestrictionType(JoinConfPermissionType.PERMIT_EVERYONE)
    .setRecordOn(true)
    .setMailOn(true)
    .setSmsOn(true)
    .setEmailCalenderOn(true)
    .setAttendees(attendeeInfos);
HWMBizSdk.getBizOpenApi().bookConf(bookConfParam, this.completeHandler);
```

5.3.6 Scenario 5: Editing a Meeting

Description

After logging in to Huawei Cloud Meeting using an account, call the API for [Obtaining Meeting Details](#) to obtain the meeting details and then call the `editConf` API to edit the meeting.

Service Process

To start a meeting using the SDK, call the `editConf` API and then implement `hwmCallback`.

Step 1 Call the API.

Call the **editConf** API to edit a meeting.

Step 2 Implement the callback.

Implement **hwmCallback**.

----End

Sample Code

```
// Assemble parameters required for editing a meeting.
// Set the meeting topic.
String subject = getSubject();
// Set the start time, time zone, and duration of the meeting.
String startTimeLocal = startTimeText.getText().toString();
String startTime = BaseDateUtil.transTimeZone(startTimeLocal, TimeZone.getTimeZone("GMT+08:00"),
TimeZone.getTimeZone("GMT+00:00"), BaseDateUtil.FMT_YMDHMS);
long startTimeStamp = BaseDateUtil.dateToTimeStamp(startTime, BaseDateUtil.FMT_YMDHMS);
String timeZomeStr = timezomeText.getText().toString();
String timedurStr = timeDuartionText.getText().toString();
int timeZone = Integer.parseInt(timeZomeStr);
int timeDuration = Integer.parseInt(timedurStr);
// Set the meeting type.
MeetingType confType = audioBtn.isChecked() ? MeetingType.CONF_AUDIO : MeetingType.CONF_VIDEO;
String joinConfTypeStr = joinConfPerText.getText().toString();
// Set restrictions on participants.
int joinConfPermission = Integer.parseInt(joinConfTypeStr);
JoinConfPermissionType permissionType = JoinConfPermissionType.valueOf(joinConfPermission);
// Specify whether to record the meeting.
boolean needRecord = recordSwitch.isChecked();
// Specify whether to send email notifications.
boolean needEmail = sendEmailSwitch.isChecked();
// Specify whether to send SMS notifications.
boolean needSms = sendSmsSwitch.isChecked();
// Specify whether to send an email calendar.
boolean needEmailCalendar = sendEmailCalendarSwitch.isChecked();
// Set the participant list.
List<AttendeeModel> attendeeInfos = this.confDetailModel.getAttendeeModels();
Switch needWithMemberSwitch = findViewById(R.id.edit_switch_with_attend);
boolean needWithMember = needWithMemberSwitch.isChecked();
if (needWithMember) {
    // The following three methods are available:
    String name = getName();
    String number = getNumber();
    String thirdAccount = getThirdAccount();
    if (!TextUtils.isEmpty(thirdAccount)) {
        if (LoginStatusCache.getLoginAccountInfo() instanceof AppIdAuthParam) {
            // An app ID is used for login.
            attendeeList.add(AttendeeModel.buildAttendeeByThirdAccountId(thirdAccount,name));
        }
    } else if (number.startsWith("+99")){
        // A SIP number is used to join the meeting.
        attendeeList.add(AttendeeModel.buildAttendeeBySipNumber(number, name));
    } else {
        // A mobile number or a fixed-line phone number is used to join the meeting.
        attendeeList.add(AttendeeModel.buildAttendeeByPhone(number, name));
    }
}

EditConfParam editConfParam = new EditConfParam()
    .setConfId(this.confDetailModel.getConfId())
    .setVmridFlag(1 == this.confDetailModel.getVmridFlag())
    .setVmrid(this.confDetailModel.getVmrid())
    .setConfSubject(subject)
    .setStartTime(startTimeStamp)
```

```
.setTimeZone(timeZone)
.setDuration(timeDuration)
.setConfType(confType)
.setNeedConfPwd(!this.confDetailModel.getIsGuestFreePwd())
.setJoinConfRestrictionType(permissionType)
.setRecordOn(needRecord)
.setMailOn(needEmail)
.setSmsOn(needSms)
.setEmailCalenderOn(needEmailCalendar)
.setAttendees(attendeeInfos);
// Call the editConf API.
HWMBizSdk.getBizOpenApi().editConf(editConfParam, new HwmCallback<Integer>() {
    @Override
    public void onSuccess(Integer integer) {
        dismissLoading();
        DemoUtil.showToast("Meeting edited:" + integer);
    }

    @Override
    public void onFailed(int retCode, String desc) {
        dismissLoading();
        String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
        if (TextUtils.isEmpty(err)) {
            err = Utils.getApp().getString(R.string.hwmconf_edit_failed);
        }
        DemoUtil.showToast("Failed to edit the meeting: " + retCode + ", desc: "+ err);
    }
});
```

5.3.7 Scenario 6: Creating a Meeting

Description

Create an instant meeting and immediately join the meeting. You can specify whether the meeting is a voice or video meeting and whether a password is required by setting input parameters.

Service Process

Step 1 Define parameters required for creating a meeting.

Prepare parameters for creating a meeting. The type is `CreateConfParam`. For details, see the definition of `CreateConfParam`. The following parameters are required: meeting subject, meeting type, whether a password is required, participant list (passed when participants are carried), whether to enable the camera (disabled by default), whether to enable the microphone (disabled by default), cloud meeting room ID (passed when a cloud meeting room is used), and the scope of users who are allowed to join the meeting (mandatory. **0**: everyone; **2**: corporate users only; **3**: invited users only)

```
// Create a CreateConfParam object.
CreateConfParam createConfParam = new CreateConfParam()
    .setSubject(getSubject()) // Set the meeting topic.
    .setConfType(ConfType.CONF_AUDIO) // Set the meeting type. For details, see Table 5-49.
    .setVmrlId(getVmrlId()) // (Optional) Set the cloud meeting room ID.
    .setJoinConfRestrictionType(JoinConfPermissionType.PERMIT_EVERYONE) // Specify the scope of users
who are allowed to join the meeting.
    .setCameraOn(true) // Specify whether to enable the camera.
    .setMicOn(true) // Specify whether to enable the microphone.
    .setRecordOn(true) // Specify whether to enable meeting recording.
    .setNeedPassword(true); // Specify whether a password is required.
```

Step 2 (Optional) Specify whether to carry participant information.

If participant information needs to be carried when creating a meeting, set **members** in the parameters generated in the previous step to an array that carries participant information. If participant information does not need to be carried, the parameter **members** does not need to be carried.

```
List<AttendeeModel> attendeeList = new ArrayList<>();
// The following three methods are available:
String name = getName();
String number = getNumber();
String thirdAccount = getThirdAccount();
if (!TextUtils.isEmpty(thirdAccount)) {
    if (LoginStatusCache.getLoginAccountInfo() instanceof AppIdAuthParam) {
        // An app ID is used for login.
        attendeeList.add(AttendeeModel.buildAttendeeByThirdAccountId(thirdAccount,name));
    }
} else if(number.startsWith("+99")){
    // A SIP number is used to join the meeting.
    attendeeList.add(AttendeeModel.buildAttendeeBySipNumber(number, name));
} else {
    // A mobile number or a fixed-line phone number is used to join the meeting.
    attendeeList.add(AttendeeModel.buildAttendeeByPhone(number, name));
}
// Create a CreateConfParam object.
CreateConfParam createConfParam = new CreateConfParam()
    .setSubject(getSubject()) // Set the meeting topic.
    .setConfType(ConfType.CONF_AUDIO) // Set the meeting type. For details, see Table 5-49.
    .setVmrid(getVmrid()) // (Optional) Set the cloud meeting room ID.
    .setJoinConfRestrictionType(JoinConfPermissionType.PERMIT_EVERYONE) // Specify the scope of users
    who are allowed to join the meeting.
    .setCameraOn(true) // Specify whether to enable the camera.
    .setMicOn(true) // Specify whether to enable the microphone.
    .setRecordOn(true) // Specify whether to enable meeting recording.
    .setNeedPassword(true) // Specify whether a password is required.
    .setAttendeeMembers(attendeeInfos); // Add participant information.
```

Step 3 Call the API.

Use the meeting creation parameters generated in [Step 1](#) and [Step 2](#), and check and process the execution result based on the callback. In the callback, **onSuccess** indicates a success, **onFailed** indicates a failure, and **onCancel** indicates that the creation is canceled due to no network. You can use **ErrorMessageFactory.create** to convert the scenario-specific error code into an error message.

----End

Sample Code

```
// Create a meeting.
HWMSdk.getOpenApi(getActivity()).createConf(createConfParam, new HwmCancelableCallBack
<ConfInfo>() {
    @Override
    public void onSuccess(ConfInfo confInfo) {
        // The meeting details are displayed when the meeting is created.
        // Meeting ID: confInfo.getConfId();
        // Meeting password: confInfo.getConfPwd();
    }
    @Override
    public void onFailed(int retCode, String desc) {
        // Failed to create the meeting.
        String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
        if (TextUtils.isEmpty(err)) {
            err =
Utils.getApp().getString(com.huawei.hwmmobileconfui.R.string.conf_create_error);
        }
        Log.i(TAG, "Create meeting failed: "+ err);
    }
}
@Override
```

```
public void onCancel() {  
    Log.i(TAG, "Meeting creation canceled");  
}  
});
```

Precautions

The initialization and login are complete before you create a meeting.

5.3.8 Scenario 7: Joining a Meeting

Description

You can join a meeting using the meeting ID and password regardless of whether you have logged in.

Service Process

Step 1 Call the API.

1. Create a **JoinConfParam** object.
 - a. **PasswordJoinConfParam** is used to join a meeting based on the meeting ID.
 - b. **RandomJoinConfParam** is used to join a meeting in random mode.

```
// Create a JoinConfParam object.  
PasswordJoinConfParam passwordJoinConfParam = new PasswordJoinConfParam()  
    .setConfId(getConfId()) // Set the meeting ID.  
    .setConfName(getConfName()) // Set the name in the meeting.  
    .setCameraOn(true) // Specify whether to enable the camera.  
    .setMicOn(true); // Specify whether to enable the microphone.  
    .setPassword(true) // Set the password for joining the meeting.
```

2. Call the **joinConf** API to join the meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Process the result in the callback.

----End

Sample Code

```
// Join a meeting.  
HWMSdk.getOpenApi(getActivity()).joinConf(passwordJoinConfParam, new  
HwmCancelableCallBack<Void>() {  
    @Override  
    public void onSuccess(Void ret) {  
        Log.i(TAG, "Meeting joined");  
    }  
    @Override  
    public void onFailed(int retCode, String desc) {  
        String err = ErrorMessageFactory.create(Utils.getApp(), retCode);  
        if (TextUtils.isEmpty(err)) {  
            err = Utils.getApp().getString(com.huawei.hwmmobileconfui.R.string.conf_join_fail_tip);  
        }  
        Log.i(TAG, "Join meeting failed: "+ err);  
    }  
}  
@Override  
public void onCancel() {  
    Log.i(TAG, "Canceled the request to join the meeting");
```

```
}  
});
```

Precautions

If you call this API without logging in to Huawei Cloud Meeting, the **nickname** parameter must be specified.

5.3.9 Scenario 8: Logout

Description

You can log out of Huawei Cloud Meeting.

Service Process

Step 1 Call the API.

1. Call the **logout** API to log out of Huawei Cloud Meeting.

Step 2 Implement the callback.

Process the result in the callback.

----End

Sample Code

```
HWMSdk.getOpenApi(getActivity()).logout(new HwmCallback<LoginCompletedResult>() {  
    @Override  
    public void onSuccess(LoginCompletedResult result) {  
        DemoUtil.showToast(getContext(), "Logout succeeded");  
    }  
    @Override  
    public void onFailed(int retCode, String desc) {  
        DemoUtil.showToast(getContext(), "Logout failed: " + retCode + "; " + desc);  
    }  
});
```

5.4 API Reference

5.4.1 Basic Settings

5.4.1.1 Initializing the SDK Synchronously

Init

Initializing the SDK synchronously

```
HWMSdk.init(Application,OpenSDKConfig)
```

API Description

This API is used to initialize the SDK and prepare the environment. It must be called prior to other APIs. It needs to be called only once. You are advised to call

this API in **onCreate** of the application. Call this API as early as possible so that the SDK can obtain the current activity and jump to a specified page by listening to the activity lifecycle.

Precautions

1. Initializing the API takes about 1 to 2 seconds. If you have requirements on the initialization speed, use the [asynchronous initialization API](#).
2. Pass the correct **Application** and **OpenSDKConfig** objects.
3. If you do not want to call this API in **onCreate** of the application, set **openSDKConfig.setInitOnAppStart(false)**.

Method Definition

```
/**
 * Initializes the SDK.
 * @param application Indicates the application object.
 * @param sdkConfig Indicates the SDK configuration object.
 */
void init(@NonNull Application application, OpenSDKConfig sdkConfig);
```

Parameter Description

Table 5-1 Parameter description

Parameter	Mandatory	Type	Description
application	Yes	Application	Application object.
sdkConfig	Yes	OpenSDKConfig	SDK configuration object.

Table 5-2 Initialization information OpenSDKConfig

Parameter	Mandatory	Type	Description
appId	Yes	String	App ID. You need to request an app ID. For details, see Introduction to App ID Authentication in <i>Developer Guide</i> .
serverAddresses	No	String	Server address.
serverPort	No	String	Server port.
needConfChat	No	Boolean	Whether the in-meeting chat function is required.

Parameter	Mandatory	Type	Description
logKeepDays	No	Integer	Log storage duration. Valid value range is 3–30. The default value is 0 . 0 indicates that logs are not deleted by day. Note: 1 and 2 will be converted to 3 , and the values greater than 30 will be converted to 30 .
isDisableIncomingNotification	No	Boolean	Whether to disable automatic display of the notification when an incoming call is received.
isSupportMultiAppLogin	No	Boolean	Whether to support login to multiple applications on the same device.

Sample Code

```
OpenSDKConfig sdkConfig = new OpenSDKConfig(this)
    .setAppId(getAppId())
// Request an app ID. For details, see Requesting an App ID.
HWMSdk.init(this,sdkConfig);
```

5.4.1.2 Initializing the SDK Asynchronously

InitAsync

Initializing the SDK

```
HWMSdk.initAsync(Application,OpenSDKConfig, SdkCallback)
```

API Description

This API is used to asynchronously initialize the SDK and prepare the environment. Before calling other APIs, complete asynchronous initialization and receive the **onSuccess** callback. Call this API only once. Before calling this API, register a listener of the activity lifecycle in **onCreate** of **Application**, so that the SDK can obtain the current activity and jump to a specified page by listening to the activity lifecycle.

Precautions

1. If you have requirements on the initialization speed, use the asynchronous initialization API.
2. Complete initialization before using other SDK functions.
3. Before calling the asynchronous initialization API, register an activity lifecycle listener in **onCreate** of **Application** by referring to the sample code.

Method Definition

```
/**
 * SDK asynchronous initialization API. Complete initialization before using any other functions of the UISDK.
 *
 * @param application Indicates the input application, which is internally converted to applicationContext for
 * users to obtain system resources.
 * @param sdkConfig Indicates the SDK configuration.
 * @param sdkCallback Indicates the SDK callback.
 */
void initAsync(@NonNull Application application, OpenSDKConfig sdkConfig, SdkCallback<Integer>
sdkCallback)
```

Parameter Description

Table 5-3 Parameter description

Parameter	Mandatory	Type	Description
application	Yes	Application	Application object.
sdkConfig	Yes	OpenSDKCo nfig	SDK configuration object.
SdkCallback	Yes	SdkCallback <Integer>	Callback of the asynchronous initialization result.

Sample Code

```
// [Important] Register a listener of the activity lifecycle in onCreate of Application.
registerActivityLifecycleCallbacks(new ActivityLifecycleHandle());

// Demonstrate the initialization of subthreads.
new Thread(() -> HWMSdk.initAsync(mApp, sdkConfig, new SdkCallback<Integer>() {
    @Override
    public void onFailed(SDKERR sdkerr) {
        HLog.e(TAG, "init failed:" + sdkerr.getDescription());
    }

    @Override
    public void onSuccess(Integer integer) {
        HLog.i(TAG, "init success:" + integer);
        // Implement other SDK-related logic.
        mHandler.sendMessage(0);
    }
})).start();
```

5.4.1.3 Configuring an Access Site

You can configure a custom server access site (such as Asia Pacific and Chinese mainland) in OpenSDKConfig.

The default site is Chinese mainland.

Application Scenarios

Users outside the Chinese mainland can access the near Asia Pacific site.

Precautions

sdkConfig takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
public class MSiteTypeStrategy implements ISiteTypeStrategy {
    @Override
    public SiteType getSiteType() {
        return SiteType.SITE_TYPE_HEC_AP;
    }
}
sdkConfig.setSiteTypeStrategy(new MSiteTypeStrategy());
```

Table 5-4 SiteType description

Enumerated Value	Description
SiteType.SITE_TYPE_HEC_CN	Chinese mainland.
SiteType.SITE_TYPE_HEC_AP	Asia Pacific.

NOTE

- You can customize the default access site as the Chinese mainland or Asia Pacific site. The default login server address varies depending on the site.
- If no access site is set, the Chinese mainland site is used by default.

5.4.1.4 Customizing the Panel Used to Share a Meeting

You can customize the panel used to share a meeting in OpenSDKConfig.

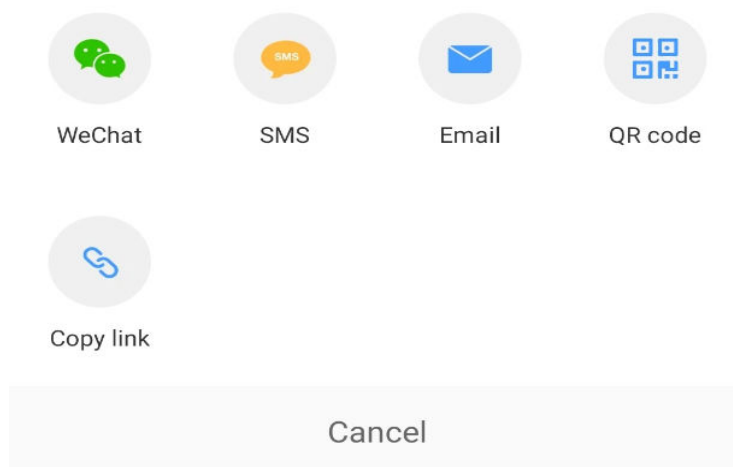
Figure 5-11 displays the sharing effect.

Application Scenarios

On the participant list screen, when a user touches the share button, the sharing panel is displayed. You can customize the style and content of the sharing panel.

Precautions

1. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Figure 5-11 Sample of a custom panel used to share a meeting

Sample Code

```
// Customize the menu used to share a meeting.
public class CustomShareHandle implements IShareHandle {
    @Override
    public List<IShareModel> buildShareItems(Context context, ConfInfo confInfo, ShareTypeEnum
shareTypeEnum) {
        String subject = confInfo.getConfSubject();
        String guestUrl = confInfo.getConfGuestUri();
        String time = DateUtil.getDateTimeStringForUi(confInfo.getConfStartTime(),
confInfo.getConfEndTime());
        String chairman = confInfo.getConfScheduserName();
        String confId = confInfo.getConfId();
        String guestPwd = TextUtils.isEmpty(confInfo.getConfPwd()) ?
Utils.getApp().getString(com.huawei.hwmmobileconfui.R.string.conf_no_pwd) : confInfo.getConfPwd();
        String content =
String.format(Utils.getApp().getString(com.huawei.hwmmobileconfui.R.string.conf_share_content), subject,
time, chairman, confId, guestPwd, guestUrl);
        // Set the SMS sharing menu.
        SmsShareModel smsShareModel = new SmsShareModel();
        smsShareModel.setContent(content);
        // Set the copy link.
        CopyShareModel copyShareModel = new CopyShareModel();
        copyShareModel.setContent(content);
        List<IShareModel> shareModels = new ArrayList<>();
        shareModels.add(smsShareModel);
        shareModels.add(copyShareModel);
        return shareModels;
    }
}
sdkConfig.setShareHandle(new CustomShareHandle());
```

5.4.1.5 Customizing a Log Storage Path

You can customize a path for storing SDK logs in OpenSDKConfig.

Application Scenarios

The default log path of the SDK is **`/sdcard/Android/data/Application_package_name/files/log`**.

You can change the path for storing logs as required.

Precautions

1. After customizing the log storage path, ensure that logs are obtained from the same path. For details about how to obtain logs, see [Collecting Android SDK Logs](#).
2. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
// Customize a log storage path.
public class CustomLoggerHandle implements ILoggerHandle {
    private Application application;
    public CustomLoggerHandle(Application application) {
        this.application = application;
    }
    // Customize a log storage address.
    @Override
    public String getLogPath() {
        return FileUtil.getExternalFilesDir(this.application) + "/log/meeting/";
    }
}
sdkConfig.setLoggerHandle(new CustomLoggerHandle());
```

5.4.1.6 Enabling or Disabling Chat for a Meeting

You can configure whether to enable the chat function for a meeting in OpenSDKConfig.

[Figure 5-12](#) displays the screen when the chat function is enabled in the meeting.

[Figure 5-13](#) displays the screen when the chat function is disabled in the meeting.

Application Scenarios

If in-meeting chat is not required in the application, you can disable in-meeting chat.

Precautions

1. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Figure 5-12 Chat enabled

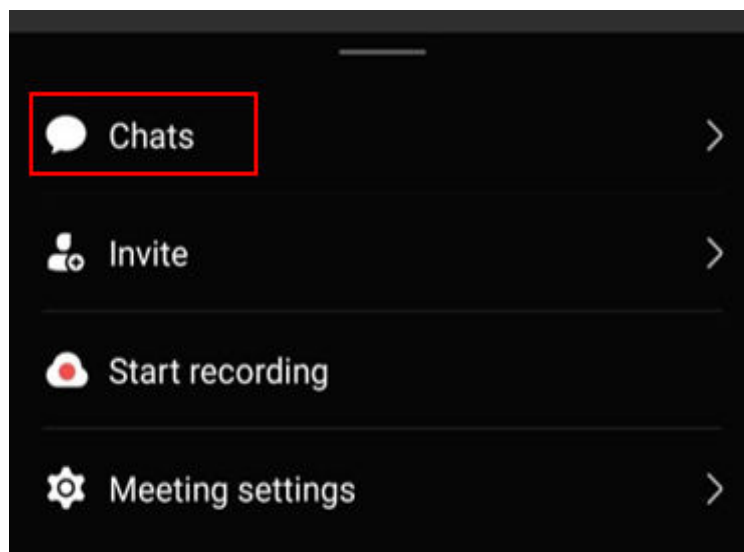
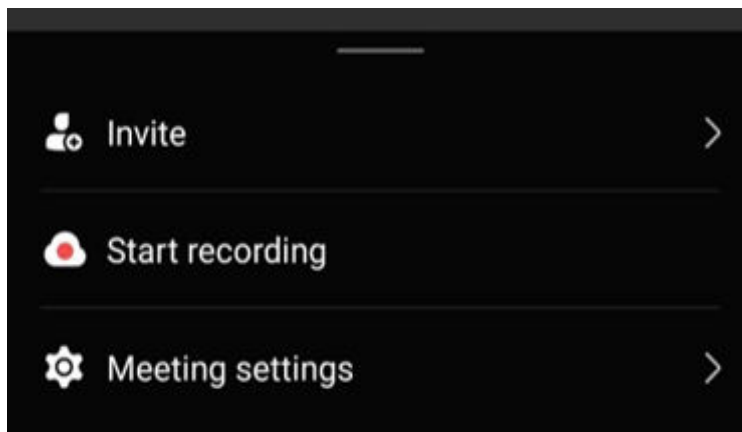


Figure 5-13 Chat disabled**Sample Code**

```
OpenSDKConfig sdkConfig = new OpenSDKConfig(Context)
    .setNeedConfChat(false)
```

5.4.1.7 Enabling or Disabling HD Video First for a Video Meeting

You can configure whether to enable the HD video first function in `OpenSDKConfig`.

When HD video first is enabled:

1. The local client can send HD video.
2. You can choose to watch HD video.
3. The sending resolution is not reduced based on factors such as mobile phone performance.

Application Scenarios

Scenarios that require HD video

Precautions

1. `sdkConfig` takes effect only when this configuration is passed during SDK initialization.

NOTE

Before the meeting starts, specify whether to enable the function of preferentially transmitting HD video images. After the function is enabled, HD video images are preferentially transmitted, with the network and mobile phone performance ignored.

Sample Code

```
OpenSDKConfig sdkConfig = new OpenSDKConfig(Context)
    .setHighResolutionFirst(true)
```

5.4.1.8 Enabling or Disabling the Camera and Microphone in a Meeting

You can configure whether to automatically enable the camera or microphone when joining a meeting in `OpenSDKConfig`.

When you join a meeting, the SDK uses this callback API to obtain whether the camera and microphone are enabled and configure whether to enable the camera and microphone.

Application Scenarios

Users can enable or disable the camera and microphone in the application settings. You can customize this callback API to ensure that the status of the camera and microphone is the same as that configured by users in the application settings when the users join a meeting.

Precautions

1. The application must have the permission to enable the camera. Otherwise, the camera cannot be enabled.
2. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
public class MyDeviceStrategyWhenConfAccept implements IDeviceStrategyWhenConfAccept {
    @Override
    public boolean isTurnOnCameraWhenConfAccept() {
        // Specify whether to turn on or off the camera.
        return false;
    }

    @Override
    public boolean isTurnOnMicWhenConfAccept() {
        // Specify whether to turn on or off the microphone.
        return false;
    }
}

sdkConfig.setDeviceStrategyWhenConfAccept(new MyDeviceStrategyWhenConfAccept());
```

5.4.1.9 Customizing the Ringing and Vibration for Incoming Meetings

```
HWMSdk.getOpenApi.changeInComingNotice(boolean isVibrate, boolean isRing, HwmCallback<Boolean>
callback);
```

API Description

This API is used to modify the incoming meeting notification mode.

Precautions

This API takes effect only after you log in and before you receive an incoming meeting.

Method Definition

```
/**
 * Changes the incoming meeting notification mode.
 * @param isVibrate Indicates whether to enable vibration.
 * @param isRing Indicates whether to enable ringing.
 */
void changeInComingNotice(boolean isVibrate, boolean isRing, HwmCallback<Boolean> callback);
```

Parameter Description

Table 5-5 Parameter description

Parameter	Mandatory	Type	Description
isVibrate	Yes	boolean	Whether to enable vibration.
isRing	Yes	boolean	Whether to enable ringing.
callback	Yes	HwmCallback	Callback of setting the incoming meeting notification mode.

Return Values

None

Sample Code

```
HWMSdk.getOpenApi(HWMBizSdk.getApplication()).changeInComingNotice(isOpenVibrate, isOpenRing,
new HwmCallback<Boolean>() {
    @Override
    public void onFailed(int retCode, String desc) {
        dismissLoading();
        dismiss();
        if (!TextUtils.isEmpty(desc)) {
            DemoUtil.showToast(desc);
        } else {
            DemoUtil.showToast("Failed to modify the incoming meeting notification mode.");
        }
    }

    @Override
    public void onSuccess(Boolean aBoolean) {
        dismissLoading();
        dismiss();
    }
});
```

5.4.1.10 Hiding the External Label

By default, the **External** label is displayed for external enterprise users and anonymous users in the participant list.

You can configure whether to hide the **External** label in OpenSDKConfig.

Application Scenarios

If you do not want to display the **External** label in your application, you can hide it.

Precautions

1. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
// Customize whether to hide the External label.
sdkConfig.setHideExternalLabelHandle(new IHideExternalLabelHandle() {
    @Override
    public boolean onHideExternalLabelEvent() {
```

```
// true: indicates to hide the label; false: indicates to display the label.
return DemoUtil.needCustom(NeedCustomType.HIDE_EXTERNAL_LABEL);
}
});
ConfUI.setHideExternalLabelHandle(sdkConfig.getHideExternalLabelHandle());
```

5.4.1.11 Disabling Prompt Tones

DisableVoicePrompts

API Description

This API is used to disable prompt tones.

Precautions

1. This API is optional. If it is not called, prompt tones are played by default.
2. This API is a synchronous API. The returned value is an error code.

Method Definition

```
SDKERR disableVoicePrompts(VoicePrompts voicePrompts);
```

Parameter Description

Table 5-6 Parameter description

Parameter	Man dato ry	Type	Description
voicePrompts	Yes	VoicePrompts	Prompt tone information.

Table 5-7 VoicePrompts parameter

Parameter	Man dato ry	Type	Description
disableMutePromp t	Yes	boolean	Whether to disable the mute prompt. The value true indicates that the mute prompt is disabled, and the value false indicates that the mute prompt is enabled.

Return Values

Sample Code

```
VoicePrompts voicePrompts = new VoicePrompts();
voicePrompts.setDisableMutePrompt(true);
SDKERR result = HWMBizSdk.getBizOpenApi().disableVoicePrompts(voicePrompts);
Log.i(TAG, "result code:" + result.getValue() + " desc:" + result.getDescription());
```


5.4.1.12 Setting the Network Mode

setNetworkMode

API Description

This API is used to set the network mode to enterprise intranet access if the media nodes of Huawei Cloud Meeting are deployed in an enterprise and management nodes are accessed through the proxy of the enterprise.

NOTE

This API needs to be called only when the app cannot directly access the public network (that is, when the media nodes and management nodes are deployed in the enterprise).

Precautions

1. This API is optional. If it is not called, the default mode is used.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
IHwmNetwork.getInstance().setNetworkMode(networkInfo)
```

Parameter Description

Table 5-8 NetWorkModelInfo description

Parameter	Mandatory	Type	Description
networkInfo	Yes	NetWorkModelInfo	Network mode information.

Table 5-9 NetWorkModelInfo parameter description

Parameter	Mandatory	Type	Description
accessType	Yes	NetWorkAccessType	Network access type.

Table 5-10 Enumerated values of NetworkAccessType

Value	Description
ACCESS_TYPE_AUTO	Default value. Currently, the value is the same as the extranet access mode.

Value	Description
ACCESS_TYPE_INNER	Intranet access, which is used when the media and signaling nodes are deployed in the enterprise. The app uses the intranet for access. Signaling and media messages access the Huawei Cloud Meeting server through the proxy server.
ACCESS_TYPE_OUTER	External network access, which is used when the media and signaling nodes are not deployed in the enterprise. The app uses the Internet for access. Signaling and media messages access the Huawei Cloud Meeting server through the proxy server.

Table 5-11 Return value

Value	Description
int	If 0 is returned, the operation is successful. If other values are returned, the operation fails.

Sample Code

```
NetworkModelInfo networkModelInfo = new NetworkModelInfo();  
networkModelInfo.setAccessType(NetworkAccessType.enumOf(NetworkAccessType.ACCESS_TYPE_AUTO));  
NativeSDK.getNetworkApi().setNetworkMode(networkModelInfo);
```

5.4.1.13 Enabling a Function

enableFeature

API Description

This API is used to enable a function.

Precautions

1. By default, the breakout room function is enabled. You can call this API to disable it.
2. Create an initialization object **HWMOpenSDKConfig** before calling this API, and call the initialization API after calling this API.

Method Definition

```
void enableFeature(HWMEnableFeatureType confCapabilityType, boolean enable)
```

Parameter Description

Table 5-12 Enumerated values of HWMEnableFeatureType

Value	Description
HWM_FEATURE_TYPE_BREAKOUT_CONF	Breakout room function.
HWM_FEATURE_TYPE_CONFIRM_RECORD	Displaying the recording security prompt. By default, it is not displayed.
HWM_FEATURE_TYPE_SAVE_NICK_NAME_WHEN_ANONYMOUS_JOIN	Saving the display name when you join a meeting anonymously.
HWM_ENABLE_FEATURE_TYPE_VIRTUAL_BACKGROUND	Virtual backgrounds.

Return Values

None

Sample Code

```
// Enable or disable a function.
openSDKConfig.enableFeature(HWMEnableFeatureType.HWM_FEATURE_TYPE_CONFIRM_RECORD, true);
```

5.4.1.14 Setting the Language

setLanguage

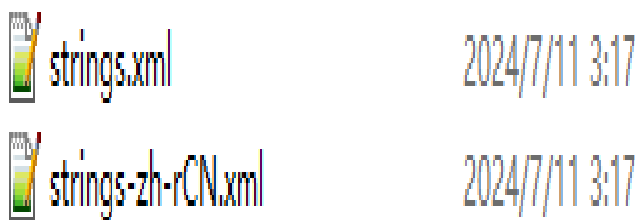
API Description

This API is used to set the SDK language. The default language is Chinese.

Precautions

To customize a language, create the corresponding internationalization file under `/src/main/res/` of the main project. For example, to add Arabic, you can create `/values-ar/string.xml`. Refer to the language templates in the **language templates** folder. The language set through this API must be the same as the system language.

Figure 5-14 Internationalization language templates



Method Definition

```
void setLanguage(LanguageType languageType, String language);
```

Parameter Description

Table 5-13 Parameter description

Parameter	Mandatory	Type	Description
languageType	Yes	LanguageType	Enumerated values of languages.
language	Yes	String	If LanguageType is set to Chinese or English, this parameter can be left empty or set to any value. If LanguageType is set to other languages, set this parameter to the language code, for example, ar (Arabic).

Table 5-14 Enumerated values of LanguageType

Enumerated Value	Description
LANGUAGE_TYPE_CN_ZH	Chinese.
LANGUAGE_TYPE_EN	English.
LANGUAGE_TYPE_CUSTOMIZED	Custom language.

Return Values

None

Sample Code

```
// Specify the enumerated value if you set the language to Chinese or English.
HWMSdk.getOpenApi(this).setLanguage(LanguageType.LANGUAGE_TYPE_EN, "");

// If you set the language to other languages, add the language code, for example, ar for Arabic, and add
the Arabic translation files to the resource folder of the main project.
HWMSdk.getOpenApi(this).setLanguage(LanguageType.LANGUAGE_TYPE_CUSTOMIZED, "ar");
```

5.4.1.15 Setting Guaranteed IP Addresses for Meeting Control

API Description

This API is used to set the guaranteed IP addresses for meeting control.

Precautions

1. This API is optional. If it is not called, the default IP address is used.

- Up to four IP addresses are supported. They are separated by semicolons (;).

Method Definition

```
SDKERR setGuaranteedIpAddresses(String addresses);
```

Sample Code

```
SDKERR sdkerr = HWMBizSdk.getBizOpenApi().setGuaranteedIpAddresses(ip);  
DemoUtil.showToast("Configuration result: " + sdkerr.getValue() + " " + sdkerr.getDescription());
```

5.4.2 UI Customization

5.4.2.1 Customizing the Bottom Menu Bar

You can add, delete, and customize menu items on the bottom menu bar of a meeting screen.

There are two types of bottom menu bars and customization methods:

- ConfAudioToolbar: customizes the bottom menu bar for voice meetings (see [Customizing a Menu for Voice Meetings](#)).
- ConfVideoToolbar: customizes the bottom menu bar for video meetings (see [Customizing a Menu for Video Meetings](#)).

Application Scenarios

Menu items on the bottom menu bar need to be adjusted.

Precautions

- sdkConfig takes effect only when this configuration is passed during SDK initialization.

Customizing Menu Settings

Sample Code

```
ToolBarMenuProxy toolBarMenuProxy = new ToolBarMenuProxy();  
toolBarMenuProxy.setConfAudioToolbarHandle(new CustomConfAudioToolbarHandle());  
toolBarMenuProxy.setConfVideoToolbarHandle(new CustomConfVideoToolbarHandle());  
sdkConfig.setToolBarMenuProxy(toolBarMenuProxy);
```

Customizing a Menu for Voice Meetings

Figure 5-15 Sample of a custom menu for voice meetings



Figure 5-16 Sample of a custom More menu for voice meetings

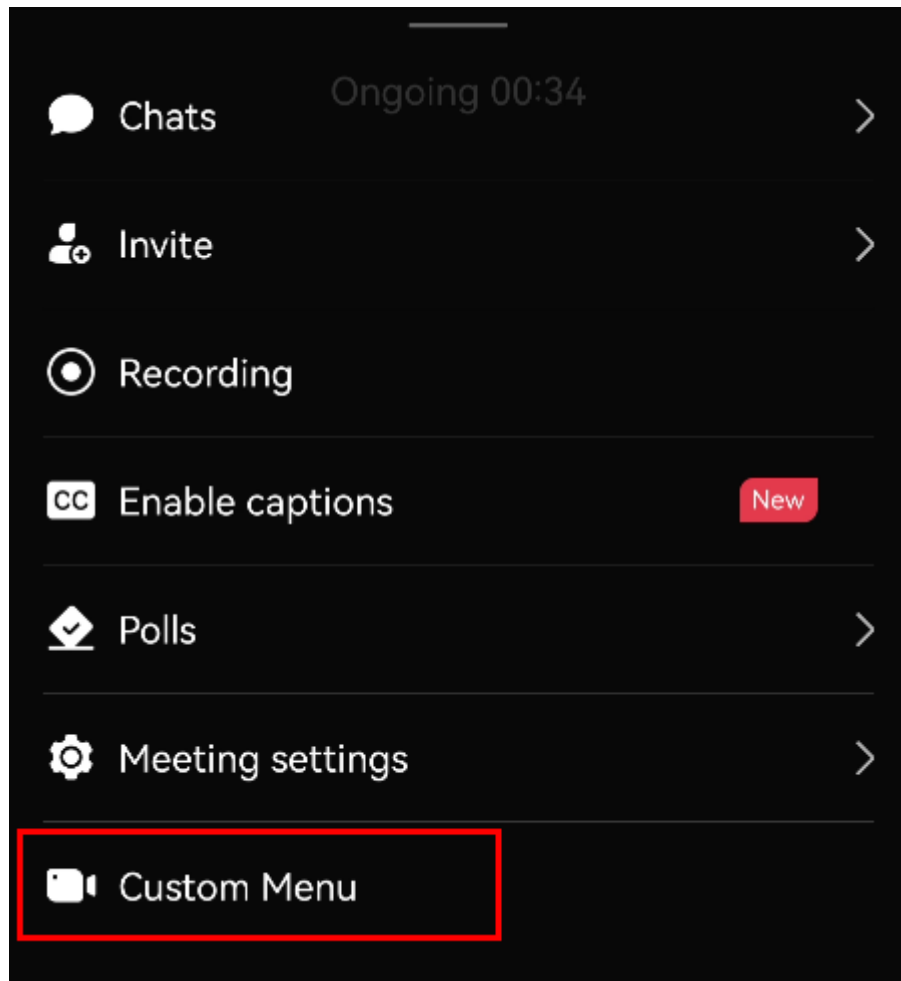
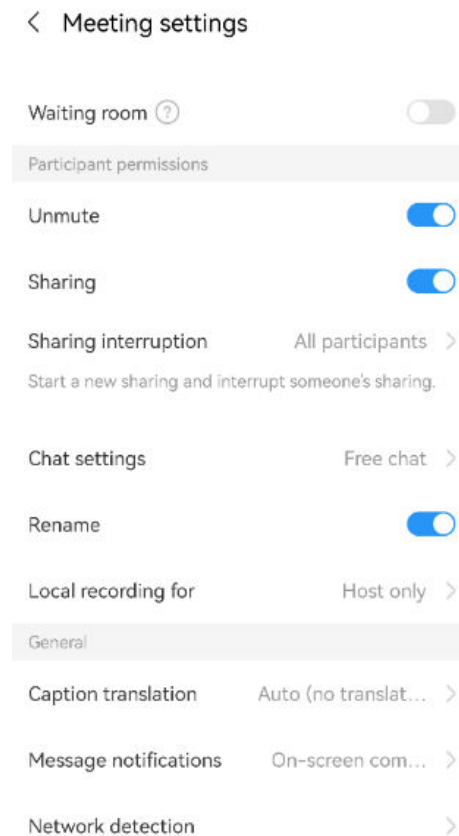


Figure 5-17 Sample of a custom Meeting settings menu for voice meetings

Sample Code

```
/**
 * Demo of customizing a toolbar for voice meetings
 */
public class CustomConfAudioToolbarHandle implements IToolbarMenuStrategy {
    @Override
    public List<IConfMenu> buildMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new MicMenu());
        confMenus.add(new SpeakerMenu());
        confMenus.add(new ParticipantMenu());
        // [Demo] Add a custom menu.
        confMenus.add(new CustomMenu());
        confMenus.add(new MoreMenu());
        return confMenus;
    }
    @Override
    public List<IConfMenu> buildMoreMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new ConnectAudioMenu());
        confMenus.add(new DisconnectAudioMenu());
        confMenus.add(new ChatMenu());
        confMenus.add(new InterpretMenu());
        confMenus.add(new HandsUpOrDownMenu());
        confMenus.add(new InviteMoreMenu());
        confMenus.add(new OpenOrCloseRecordMenu());
        confMenus.add(new SubtitlesMenu());
        confMenus.add(new CloudLiveMenu());
        confMenus.add(new VoteMenu());
        confMenus.add(new ConfSettingMenu());
        // [Demo] Add a custom menu.
        confMenus.add(new CustomMenu());
    }
}
```

```
        return confMenus;
    }
    @Override
    public List<IConfMenu> buildSettingMenuItems() {
        List<IConfMenu> menus = new ArrayList<>();

        List<IConfMenu> audioVideomenuChildren = new ArrayList<>();
        IConfMenu howlDetectMenu = new SwitchMenu(R.id.hwmmconf_confsetting_whistle_detection,
R.string.hwmmconf_mine_calling_setting_howl_auto_mute, true);
        IConfMenu noiseReductionMenu = new SwitchMenu(R.id.hwmmconf_confsetting_noise_reduction,
            R.string.hwmmconf_audio_noise_reduction, true);
        audioVideomenuChildren.add(howlDetectMenu);
        audioVideomenuChildren.add(noiseReductionMenu);
        MenuContainer audioVideoMenuContainer = new
MenuContainer(R.id.hwmmconf_setting_menu_audio_video, R.string.hwmmconf_setting_audio_video,
audioVideomenuChildren);

        List<IConfMenu> securityMenuChildren = new ArrayList<>();
        // Lock the meeting.
        IConfMenu lockConfMenu = new SwitchMenu(R.id.hwmmconf_confsetting_lock_meeting,
R.string.hwmmconf_lock, false);
        securityMenuChildren.add(lockConfMenu);
        // Set users who can join the meeting.
        IConfMenu allowJoinConfMenu = new TextMenu(R.id.hwmmconf_confsetting_allow_join_conf,
R.string.hwmmconf_allow_incoming_call, R.string.hwmmconf_everyone);
        securityMenuChildren.add(allowJoinConfMenu);
        // Enable the waiting room.
        IConfMenu enableWaitingRoomMenu = new
SwitchMenu(R.id.hwmmconf_confsetting_enable_waiting_room,
            R.string.hwmmconf_enable_waiting_room, false);
        securityMenuChildren.add(enableWaitingRoomMenu);
        MenuContainer securityMenuContainer = new MenuContainer(R.id.hwmmconf_setting_menu_security,
R.string.hwmmconf_setting_safe, securityMenuChildren);

        List<IConfMenu> attendeePermissionMenuChildren = new ArrayList<>();
        // Allow unmuting.
        IConfMenu allowReleaseMuteMenu = new SwitchMenu(R.id.hwmmconf_confsetting_allow_unmute,
R.string.hwmmconf_allow_ummute_self, false);
        IConfMenu allowShareMuteMenu = new SwitchMenu(R.id.hwmmconf_confsetting_allow_sharing,
R.string.hwmmconf_allow_sharing, false);
        // Set the sharing interruption permission.
        IConfMenu preemptShareTypeMenu = new TextMenu(R.id.hwmmconf_confsetting_preempt_share_type,
            R.string.hwmmconf_preempt_share_permission, R.string.hwmmconf_preempt_share_only_host);
        // Set the chat permission.
        IConfMenu chatPermissionMenu = new TextMenu(R.id.hwmmconf_confsetting_chat_permission,
            R.string.hwmmconf_chat_settings, R.string.hwmmconf_private_chat_free);
        // Allow renaming.
        IConfMenu allowRenameMenu = new SwitchMenu(R.id.hwmmconf_confsetting_allow_rename,
R.string.hwmmconf_set_allow_rename, true);
        IConfMenu allowLocalRecordMenu = new
RouterMenu(R.id.hwmmconf_confsetting_local_record_permission, R.string.hwmmconf_allow_record, "");
        attendeePermissionMenuChildren.add(allowReleaseMuteMenu);
        attendeePermissionMenuChildren.add(allowShareMuteMenu);
        attendeePermissionMenuChildren.add(preemptShareTypeMenu);
        attendeePermissionMenuChildren.add(chatPermissionMenu);
        attendeePermissionMenuChildren.add(allowRenameMenu);
        attendeePermissionMenuChildren.add(allowLocalRecordMenu);
        MenuContainer attendeePermissionMenuContainer = new
MenuContainer(R.id.hwmmconf_setting_menu_participant_permission,
R.string.hwmmconf_setting_participant_permission, attendeePermissionMenuChildren);

        List<IConfMenu> commonMenuChildren = new ArrayList<>();
        // Set the caption translation language.
        IConfMenu subtitlesLanguageMenu = new TextMenu(R.id.hwmmconf_confsetting_subtitles_language,
R.string.hwmmconf_subtitle_translation_language, R.string.hwmmconf_auto_no_translation);
        commonMenuChildren.add(subtitlesLanguageMenu);
        // Configure chat message notification.
        IConfMenu chatMessageRemindMenu = new
TextMenu(R.id.hwmmconf_confsetting_chat_message_remind,
```



```
R.string.hwmconf_message_notify_mode, R.string.hwmconf_bubble_message_mode);  
commonMenuChildren.add(chatMessageRemindMenu);  
// Check the network quality.  
IConfMenu networkDetectMenu = new RouterMenu(R.id.hwmconf_confsetting_network_detect,  
R.string.hwmconf_network_check, "cloudlink://hwmeeting/networkdetection");  
commonMenuChildren.add(networkDetectMenu);  
MenuContainer commonMenuContainer = new MenuContainer(R.id.hwmconf_setting_menu_common,  
R.string.hwmconf_setting_common, commonMenuChildren);  
  
menus.add(audioVideoMenuContainer);  
menus.add(securityMenuContainer);  
menus.add(attendeePermissionMenuContainer);  
menus.add(commonMenuContainer);  
return menus;  
}  
}
```

Customizing a Menu for Video Meetings

Figure 5-18 Sample of a custom menu for video meetings

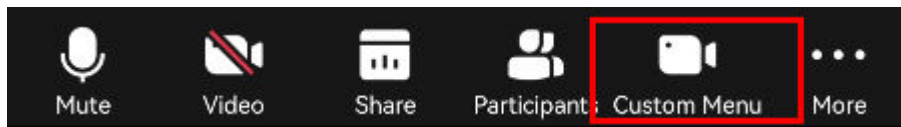


Figure 5-19 Sample of a custom More menu for video meetings

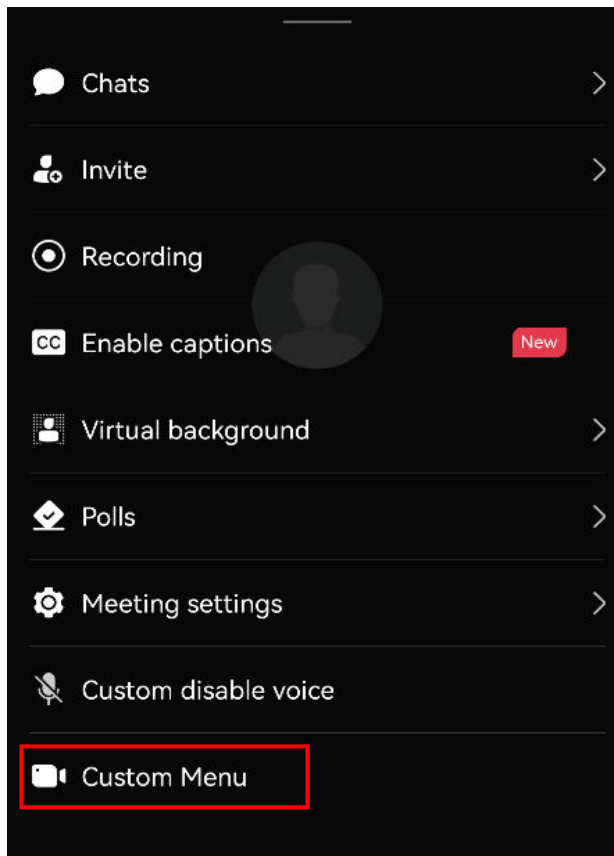
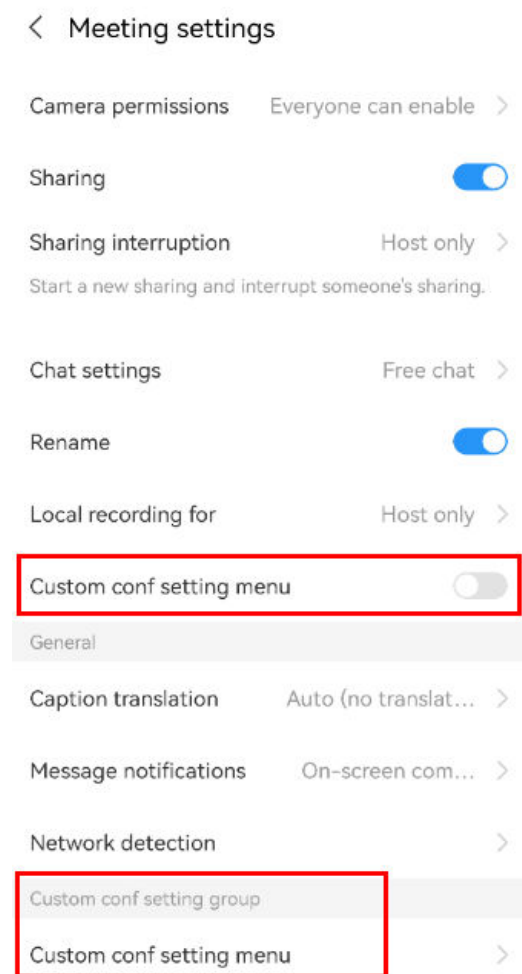


Figure 5-20 Sample of a custom Meeting settings menu for video meetings



Sample Code

```
/**
 * Demo of customizing a toolbar for video meetings
 */
public class CustomConfVideoToolbarHandle implements IToolbarMenuStrategy {
    @Override
    public List<IConfMenu> buildMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new MicMenu());
        confMenus.add(new CameraMenu());
        confMenus.add(new ParticipantMenu());
        // [Demo] Add a custom menu.
        confMenus.add(new CustomMenu());
        confMenus.add(new MoreMenu());
        return confMenus;
    }
    @Override
    public List<IConfMenu> buildMoreMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new ConnectAudioMenu());
        confMenus.add(new DisconnectAudioMenu());
        confMenus.add(new ChatMenu());
        confMenus.add(new InterpretMenu());
        confMenus.add(new HandsUpOrDownMenu());
        confMenus.add(new InviteMoreMenu());
        confMenus.add(new OpenOrCloseRecordMenu());
        confMenus.add(new SubtitlesMenu());
    }
}
```

```
confMenus.add(new CloudLiveMenu());
confMenus.add(new SwitchCameraMenu());
confMenus.add(new VirtualBackgroundMenu());
confMenus.add(new VoteMenu());
confMenus.add(new ConfSettingMenu());
// [Demo] Add a custom menu for disabling voice prompts.
confMenus.add(new CustomDisableVoicePromptsMenu());
// [Demo] Add a custom menu.
confMenus.add(new CustomMenu());
return confMenus;
}
@Override
public List<IConfMenu> buildSettingMenuItems() {
    List<IConfMenu> menus = new ArrayList<>();

    List<IConfMenu> audioVideomenuChildren = new ArrayList<>();
    IConfMenu howlDetectMenu = new SwitchMenu(R.id.hwmmconf_confsetting_whistle_detection,
R.string.hwmmconf_mine_calling_setting_howl_auto_mute, true);
    IConfMenu beautyMenu = new SwitchMenu(R.id.hwmmconf_confsetting_beauty,
R.string.hwmmconf_setting_beauty, true);
    IConfMenu mirrorMenu = new SwitchMenu(R.id.hwmmconf_confsetting_video_mirror,
R.string.hwmmconf_video_mirroring, true);
    IConfMenu pipMenu = new SwitchMenu(R.id.hwmmconf_confsetting_hide_self,
R.string.hwmmconf_setting_pip, true);
    IConfMenu directionMenu = new RouterMenu(R.id.hwmmconf_confsetting_camera_direction,
R.string.hwmmconf_auto, "cloudlink://hwmeeting/cameradirection");
    IConfMenu noiseReductionMenu = new SwitchMenu(R.id.hwmmconf_confsetting_noise_reduction,
R.string.hwmmconf_audio_noise_reduction, true);
    IConfMenu highResMenu = new SwitchMenu(R.id.hwmmconf_confsetting_high_resolution,
R.string.hwmmconf_mine_calling_setting_high_resolution, true);
    IConfMenu enableBrightenMenu = new SwitchMenu(R.id.hwmmconf_confsetting_enable_brighten,
R.string.hwmmconf_enhance_video_quality, false);
    IConfMenu pictureRatioMenu = new TextMenu(R.id.hwmmconf_confsetting_picture_ratio,
R.string.hwmmconf_picture_ratio, R.string.hwmmconf_picture_ratio_original_size);
    audioVideomenuChildren.add(directionMenu);
    audioVideomenuChildren.add(howlDetectMenu);
    audioVideomenuChildren.add(beautyMenu);
    audioVideomenuChildren.add(mirrorMenu);
    audioVideomenuChildren.add(pipMenu);
    audioVideomenuChildren.add(noiseReductionMenu);
    audioVideomenuChildren.add(highResMenu);
    audioVideomenuChildren.add(enableBrightenMenu);
    audioVideomenuChildren.add(pictureRatioMenu);
    MenuContainer audioVideoMenuContainer = new
MenuContainer(R.id.hwmmconf_setting_menu_audio_video, R.string.hwmmconf_setting_audio_video,
audioVideomenuChildren);

    List<IConfMenu> securityMenuChildren = new ArrayList<>();
    // Lock the meeting.
    IConfMenu lockConfMenu = new SwitchMenu(R.id.hwmmconf_confsetting_lock_meeting,
R.string.hwmmconf_lock, false);
    securityMenuChildren.add(lockConfMenu);
    // Set users who can join the meeting.
    IConfMenu allowJoinConfMenu = new TextMenu(R.id.hwmmconf_confsetting_allow_join_conf,
R.string.hwmmconf_allow_incoming_call, R.string.hwmmconf_everyone);
    securityMenuChildren.add(allowJoinConfMenu);
    IConfMenu enableWaitingRoomMenu = new
SwitchMenu(R.id.hwmmconf_confsetting_enable_waiting_room,
R.string.hwmmconf_enable_waiting_room, false);
    securityMenuChildren.add(enableWaitingRoomMenu);
    MenuContainer securityMenuContainer = new MenuContainer(R.id.hwmmconf_setting_menu_security,
R.string.hwmmconf_setting_safe, securityMenuChildren);

    List<IConfMenu> attendeePermissionMenuChildren = new ArrayList<>();
    // Allow unmuting.
    IConfMenu allowReleaseMuteMenu = new SwitchMenu(R.id.hwmmconf_confsetting_allow_unmute,
R.string.hwmmconf_allow_unmute_self, false);
    // Allow participants to enable the camera.
    IConfMenu cameraRestrictionSwitch = new
```

```
SwitchMenu(R.id.hwmconf_confsetting_allow_open_camera, R.string.hwmconf_allow_open_video, false);
    IConfMenu cameraRestrictionMenu = new RouterMenu(R.id.hwmconf_confsetting_camera_restriction,
R.string.hwmconf_camera_restriction, "");
    IConfMenu allowShareMuteMenu = new SwitchMenu(R.id.hwmconf_confsetting_allow_sharing,
R.string.hwmconf_allow_sharing, false);
    // Set the sharing interruption permission.
    IConfMenu preemptShareTypeMenu = new TextMenu(R.id.hwmconf_confsetting_preempt_share_type,
R.string.hwmconf_preempt_share_permission, R.string.hwmconf_preempt_share_only_host);
    // Set the chat permission.
    IConfMenu chatPermissionMenu = new TextMenu(R.id.hwmconf_confsetting_chat_permission,
R.string.hwmconf_chat_settings, R.string.hwmconf_private_chat_free);
    // Allow renaming.
    IConfMenu allowRenameMenu = new SwitchMenu(R.id.hwmconf_confsetting_allow_rename,
R.string.hwmconf_set_allow_rename, true);
    IConfMenu allowLocalRecordMenu = new
RouterMenu(R.id.hwmconf_confsetting_local_record_permission,
R.string.hwmconf_allow_record, "");
    attendeePermissionMenuChildren.add(allowReleaseMuteMenu);
    attendeePermissionMenuChildren.add(cameraRestrictionSwitch);
    attendeePermissionMenuChildren.add(cameraRestrictionMenu);
    attendeePermissionMenuChildren.add(allowShareMuteMenu);
    attendeePermissionMenuChildren.add(preemptShareTypeMenu);
    attendeePermissionMenuChildren.add(chatPermissionMenu);
    attendeePermissionMenuChildren.add(allowRenameMenu);
    attendeePermissionMenuChildren.add(allowLocalRecordMenu);
    /*
    * [Demo] Add a setting item to Meeting settings.
    */
    IConfMenu customeSettingMenuTest1 = new SwitchMenu(R.id.conf_setting_menu_test1,
R.string.menu_conf_setting_menu_test1, false);
    attendeePermissionMenuChildren.add(customeSettingMenuTest1);
    MenuContainer attendeePermissionMenuContainer = new
MenuContainer(R.id.hwmconf_setting_menu_participant_permission,
R.string.hwmconf_setting_participant_permission, attendeePermissionMenuChildren);

    List<IConfMenu> commonMenuChildren = new ArrayList<>();
    // Set the caption translation language.
    IConfMenu subtitlesLanguageMenu = new TextMenu(R.id.hwmconf_confsetting_subtitles_language,
R.string.hwmconf_subtitle_translation_language, R.string.hwmconf_auto_no_translation);
    commonMenuChildren.add(subtitlesLanguageMenu);
    // Configure chat message notification.
    IConfMenu chatMessageRemindMenu = new
TextMenu(R.id.hwmconf_confsetting_chat_message_remind,
R.string.hwmconf_message_notify_mode, R.string.hwmconf_bubble_message_mode);
    commonMenuChildren.add(chatMessageRemindMenu);
    // Check the network quality.
    IConfMenu networkDetectMenu = new RouterMenu(R.id.hwmconf_confsetting_network_detect,
R.string.hwmconf_network_check, "cloudlink://hwmeeting/networkdetection");
    commonMenuChildren.add(networkDetectMenu);
    MenuContainer commonMenuContainer = new MenuContainer(R.id.hwmconf_setting_menu_common,
R.string.hwmconf_setting_common, commonMenuChildren);

    menus.add(audioVideoMenuContainer);
    menus.add(securityMenuContainer);
    menus.add(attendeePermissionMenuContainer);
    menus.add(commonMenuContainer);

    /*
    * [Demo] Add a group of setting items to Meeting settings.
    */
    List<IConfMenu> customChildren = new ArrayList<>();
    // Check the network quality.
    IConfMenu customSettingMenuTest2 = new RouterMenu(R.id.conf_setting_menu_test2,
R.string.menu_conf_setting_menu_test1, "test");
    customChildren.add(customSettingMenuTest2);
    MenuContainer customContainer = new MenuContainer(R.id.conf_setting_menu_test_group,
R.string.menu_conf_setting_menu_test_group, customChildren);
    menus.add(customContainer);
    return menus;
```

```
}  
}
```

Customizing a Menu for Webinars

Figure 5-21 Sample of a custom menu for webinars



Figure 5-22 Sample of a custom More menu for webinars

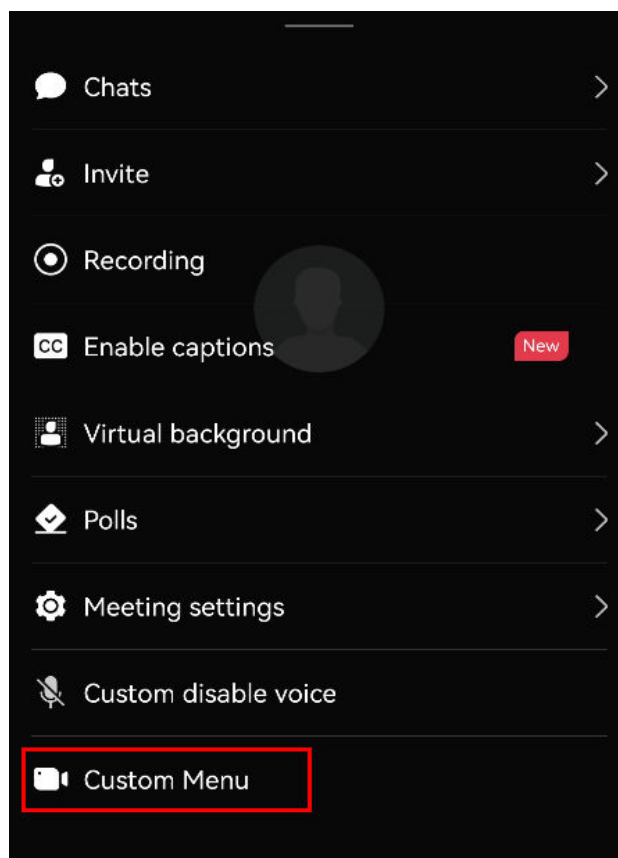
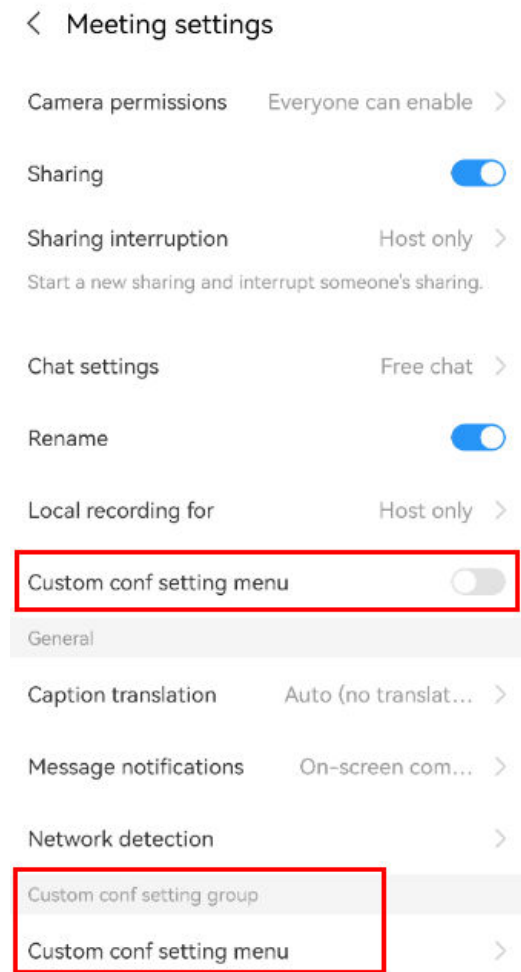


Figure 5-23 Sample of a custom meeting settings menu for webinars



Sample Code

```
/**
 * Demo of customizing a toolbar for webinars
 */
public class CustomConfWebinarToolbarHandle implements IToolbarMenuStrategy {

    @Override
    public List<IConfMenu> buildMenuItems() {

        if (!NativeSDK.getConfMgrApi().isInConf()) {
            return buildAllMenuItems();
        }

        if (NativeSDK.getConfStateApi().getSelfRole() == ConfRole.ROLE_AUDIENCE) {
            return buildAudienceMenuItems();
        }

        if (NativeSDK.getConfStateApi().getSelfRole() == ConfRole.ROLE_HOST) {
            return buildHostMenuItems();
        }

        return buildAttendeeMenuItems();
    }

    private List<IConfMenu> buildAllMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new MicMenu());
        confMenus.add(new CameraMenu());
    }
}
```

```
        if (TupConfig.isNeedConfChat()) {
            confMenus.add(new ChatMenu());
        }
        confMenus.add(new HandsMenu());
        if (TupConfig.isNeedScreenShare() &&
CpuLevelUtil.isHigherThan(CpuLevel.CALL_CPU_LEVEL_SUPER_LOW)) {
            confMenus.add(new ShareMenu());
        }
        if (ConfUIConfig.getInstance().isAudience()) {
            confMenus.add(new VoteBtnMenu());
        }
        confMenus.add(new AudienceJoinMenu());
        confMenus.add(new ParticipantMenu());
        confMenus.add(new MoreMenu());
        return confMenus;
    }

    private List<IConfMenu> buildAudienceMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new MicMenu());
        if (TupConfig.isNeedConfChat()) {
            confMenus.add(new ChatMenu());
        }
        confMenus.add(new HandsMenu());
        if (ConfUIConfig.getInstance().isAudience()) {
            confMenus.add(new VoteBtnMenu());
        }
        confMenus.add(new MoreMenu());
        return confMenus;
    }

    private List<IConfMenu> buildAttendeeMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new MicMenu());
        confMenus.add(new CameraMenu());
        if (TupConfig.isNeedScreenShare() &&
CpuLevelUtil.isHigherThan(CpuLevel.CALL_CPU_LEVEL_SUPER_LOW)) {
            confMenus.add(new ShareMenu());
        }
        confMenus.add(new ParticipantMenu());
        if (ConfUIConfig.getInstance().isAudience()) {
            confMenus.add(new VoteBtnMenu());
        }
        confMenus.add(new MoreMenu());
        return confMenus;
    }

    private List<IConfMenu> buildHostMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new MicMenu());
        confMenus.add(new CameraMenu());
        confMenus.add(new AudienceJoinMenu());
        confMenus.add(new ParticipantMenu());
        confMenus.add(new MoreMenu());
        return confMenus;
    }

    @Override
    public List<IConfMenu> buildMoreMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new ConnectAudioMenu());
        confMenus.add(new DisconnectAudioMenu());
        confMenus.add(new RenameMenu());
        confMenus.add(new StartOrStopShareMenu());
        confMenus.add(new ChatMenu());
        confMenus.add(new ShareConfLinkMenu());
        confMenus.add(new HandsUpOrDownMenu());
        confMenus.add(new InviteMoreMenu());
        confMenus.add(new OpenOrCloseRecordMenu());
    }
}
```

```
confMenus.add(new SubtitlesMenu());
confMenus.add(new CloudLiveMenu());
confMenus.add(new SwitchCameraMenu());
confMenus.add(new VirtualBackgroundMenu());
confMenus.add(new VoteMenu());
confMenus.add(new ConfSettingMenu());
// [Demo] Add a custom menu.
confMenus.add(new CustomMenu());
return confMenus;
}

@Override
public List<IConfMenu> buildSettingMenuItems() {

    List<IConfMenu> menus = new ArrayList<>();

    List<IConfMenu> audioVideomenuChildren = new ArrayList<>();
    IConfMenu howlDetectMenu = new SwitchMenu(R.id.hwmconf_confsetting_whistle_detection,
com.huawei.hwmdemo.R.string.hwmconf_mine_calling_setting_howl_auto_mute, true);
    IConfMenu beautyMenu = new SwitchMenu(R.id.hwmconf_confsetting_beauty,
com.huawei.hwmdemo.R.string.hwmconf_setting_beauty, true);
    IConfMenu mirrorMenu = new SwitchMenu(R.id.hwmconf_confsetting_video_mirror,
R.string.hwmconf_video_mirroring, true);
    IConfMenu pipMenu = new SwitchMenu(R.id.hwmconf_confsetting_hide_self,
com.huawei.hwmdemo.R.string.hwmconf_setting_pip, true);
    IConfMenu directionMenu = new RouterMenu(R.id.hwmconf_confsetting_camera_direction,
R.string.hwmconf_auto, "cloudlink://hwmeeting/cameradirection");
    IConfMenu noiseReductionMenu = new SwitchMenu(R.id.hwmconf_confsetting_noise_reduction,
R.string.hwmconf_audio_noise_reduction, true);
    IConfMenu highResMenu = new SwitchMenu(R.id.hwmconf_confsetting_high_resolution,
R.string.hwmconf_mine_calling_setting_high_resolution, true);
    IConfMenu enableBrightenMenu = new SwitchMenu(R.id.hwmconf_confsetting_enable_brighten,
R.string.hwmconf_enhance_video_quality, false);
    IConfMenu pictureRatioMenu = new TextMenu(R.id.hwmconf_confsetting_picture_ratio,
R.string.hwmconf_picture_ratio, R.string.hwmconf_picture_ratio_original_size);
    audioVideomenuChildren.add(howlDetectMenu);
    audioVideomenuChildren.add(beautyMenu);
    audioVideomenuChildren.add(mirrorMenu);
    audioVideomenuChildren.add(pipMenu);
    audioVideomenuChildren.add(directionMenu);
    audioVideomenuChildren.add(noiseReductionMenu);
    audioVideomenuChildren.add(highResMenu);
    audioVideomenuChildren.add(enableBrightenMenu);
    audioVideomenuChildren.add(pictureRatioMenu);
    MenuContainer audioVideoMenuContainer = new
MenuContainer(R.id.hwmconf_setting_menu_audio_video,
com.huawei.hwmdemo.R.string.hwmconf_setting_audio_video, audioVideomenuChildren);

    List<IConfMenu> securityMenuChildren = new ArrayList<>();
    // Lock the meeting.
    IConfMenu lockConfMenu = new SwitchMenu(R.id.hwmconf_confsetting_lock_meeting,
com.huawei.hwmdemo.R.string.hwmconf_lock, false);
    securityMenuChildren.add(lockConfMenu);
    // Set users who can join the meeting.
    IConfMenu allowJoinConfMenu = new TextMenu(R.id.hwmconf_confsetting_allow_join_conf,
R.string.hwmconf_allow_incoming_call, R.string.hwmconf_everyone);
    securityMenuChildren.add(allowJoinConfMenu);
    // Enable the waiting room.
    IConfMenu enableWaitingRoomMenu = new
SwitchMenu(R.id.hwmconf_confsetting_enable_waiting_room,
R.string.hwmconf_enable_waiting_room, false);
    securityMenuChildren.add(enableWaitingRoomMenu);
    MenuContainer securityMenuContainer = new MenuContainer(R.id.hwmconf_setting_menu_security,
com.huawei.hwmdemo.R.string.hwmconf_setting_safe, securityMenuChildren);

    List<IConfMenu> attendeePermissionMenuChildren = new ArrayList<>();
    // Allow unmuting.
```



```
        IConfMenu allowReleaseMuteMenu = new SwitchMenu(R.id.hwmdemo_confsetting_allow_unmute,
com.huawei.hwmdemo.R.string.hwmdemo_confsetting_allow_unmute_self, false);
        // Allow participants to enable the camera.
        IConfMenu cameraRestrictionSwitch = new
SwitchMenu(R.id.hwmdemo_confsetting_allow_open_camera, R.string.hwmdemo_confsetting_allow_open_video, false);
        IConfMenu cameraRestrictionMenu = new RouterMenu(R.id.hwmdemo_confsetting_camera_restriction,
R.string.hwmdemo_confsetting_camera_restriction, "");
        IConfMenu allowShareMuteMenu = new SwitchMenu(R.id.hwmdemo_confsetting_allow_sharing,
com.huawei.hwmdemo.R.string.hwmdemo_confsetting_allow_sharing, false);
        // Set the sharing interruption permission.
        IConfMenu preemptShareTypeMenu = new TextMenu(R.id.hwmdemo_confsetting_preempt_share_type,
R.string.hwmdemo_confsetting_preempt_share_permission, R.string.hwmdemo_confsetting_preempt_share_only_host);
        // Set the chat permission.
        IConfMenu chatPermissionMenu = new TextMenu(R.id.hwmdemo_confsetting_chat_permission,
R.string.hwmdemo_confsetting_chat_settings, R.string.hwmdemo_confsetting_private_chat_free); // Allow renaming.
        // Allow renaming.
        IConfMenu allowRenameMenu = new SwitchMenu(R.id.hwmdemo_confsetting_allow_rename,
com.huawei.hwmdemo.R.string.hwmdemo_confsetting_set_allow_rename, true);
        IConfMenu allowLocalRecordMenu = new
RouterMenu(R.id.hwmdemo_confsetting_local_record_permission,
R.string.hwmdemo_confsetting_allow_record, "");
        attendeePermissionMenuChildren.add(allowReleaseMuteMenu);
        attendeePermissionMenuChildren.add(cameraRestrictionSwitch);
        attendeePermissionMenuChildren.add(cameraRestrictionMenu);
        attendeePermissionMenuChildren.add(allowShareMuteMenu);
        attendeePermissionMenuChildren.add(preemptShareTypeMenu);
        attendeePermissionMenuChildren.add(chatPermissionMenu);
        attendeePermissionMenuChildren.add(allowRenameMenu);
        attendeePermissionMenuChildren.add(allowLocalRecordMenu);
        /*
        * [Demo] Add a setting item to Meeting settings.
        */
        IConfMenu customeSettingMenuTest1 = new
SwitchMenu(com.huawei.hwmdemo.R.id.conf_setting_menu_test1,
com.huawei.hwmdemo.R.string.conf_setting_menu_test1, false);
        attendeePermissionMenuChildren.add(customeSettingMenuTest1);
        MenuContainer attendeePermissionMenuContainer = new
MenuContainer(R.id.hwmdemo_confsetting_participant_permission,
com.huawei.hwmdemo.R.string.hwmdemo_confsetting_participant_permission, attendeePermissionMenuChildren);

        List<IConfMenu> commonMenuChildren = new ArrayList<>();
        // Set the caption translation language.
        IConfMenu subtitlesLanguageMenu = new TextMenu(R.id.hwmdemo_confsetting_subtitles_language,
R.string.hwmdemo_confsetting_subtitle_translation_language, R.string.hwmdemo_confsetting_auto_no_translation);
        commonMenuChildren.add(subtitlesLanguageMenu);
        // Configure chat message notification.
        IConfMenu chatMessageRemindMenu = new
TextMenu(R.id.hwmdemo_confsetting_chat_message_remind,
R.string.hwmdemo_confsetting_chat_message_notify_mode, R.string.hwmdemo_confsetting_bubble_message_mode);
        commonMenuChildren.add(chatMessageRemindMenu);
        // Check the network quality.
        IConfMenu networkDetectMenu = new RouterMenu(R.id.hwmdemo_confsetting_network_detect,
com.huawei.hwmdemo.R.string.hwmdemo_confsetting_network_check, "cloudlink://hwmeeting/networkdetection");
        commonMenuChildren.add(networkDetectMenu);
        MenuContainer commonMenuContainer = new MenuContainer(R.id.hwmdemo_confsetting_menu_common,
com.huawei.hwmdemo.R.string.hwmdemo_confsetting_common, commonMenuChildren);

        menus.add(audioVideoMenuContainer);
        menus.add(securityMenuContainer);
        menus.add(attendeePermissionMenuContainer);
        menus.add(commonMenuContainer);

        /*
        * [Demo] Add a group of setting items to Meeting settings.
        */
        List<IConfMenu> customChildren = new ArrayList<>();
        // Check the network quality.
        IConfMenu customeSettingMenuTest2 = new
```

```
RouterMenu(com.huawei.hwmdemo.R.id.conf_setting_menu_test2,
com.huawei.hwmdemo.R.string.menu_conf_setting_menu_test1, "test");
    customChildren.add(customSettingMenuTest2);
    MenuContainer customContainer = new
MenuContainer(com.huawei.hwmdemo.R.id.conf_setting_menu_test_group,
com.huawei.hwmdemo.R.string.menu_conf_setting_menu_test_group, customChildren);
    menus.add(customContainer);

    return menus;
}
}
```

5.4.2.2 Customizing a Menu on the Participants Screen

This API is used to customize the following menus on the **Participants** screen:

1. `buildParticipantMoreMenuItems`: customizes the menu items (area 1 in [Figure 5-24](#)) on the right of the title bar.
2. `buildParticipantItemMenuItems`: customizes the menu ([Figure 5-25](#)) displayed when a user touches a participant (area 2 in [Figure 5-24](#)) in the participant list.
3. `buildParticipantToolbarMenuItems`: customizes the bottom menu bar (area 3 in [Figure 5-24](#)) of the **Participants** screen.
4. `buildParticipantToolbarMoreMenuItems`: customizes the menu ([Figure 5-26](#)) displayed when a user touches the **More** button (area 4 in [Figure 5-24](#)) at the bottom.

Application Scenarios

Menu items in the four areas on the **Participants** screen need to be customized.

Precautions

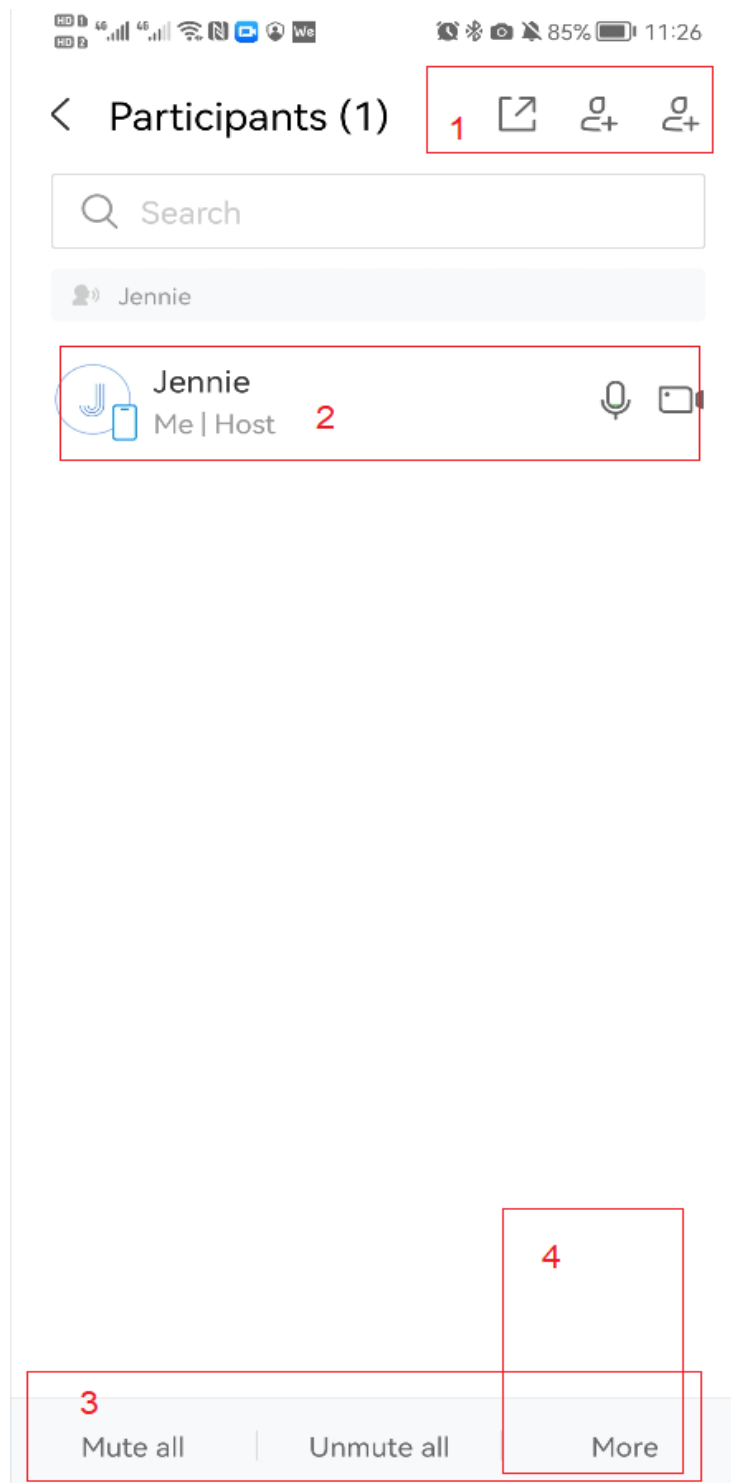
1. `sdkConfig` takes effect only when this configuration is passed during SDK initialization.

Customizing the Menu Items on the Participants Screen

Sample Code

```
sdkConfig.setParticipantMenuStrategy(new CustomParticipantMenuHandle());
```

Figure 5-24 Menu areas in the Participants screen



Customizing a More Menu in the Participants List

Figure 5-25 Customizing a More menu in the Participants list

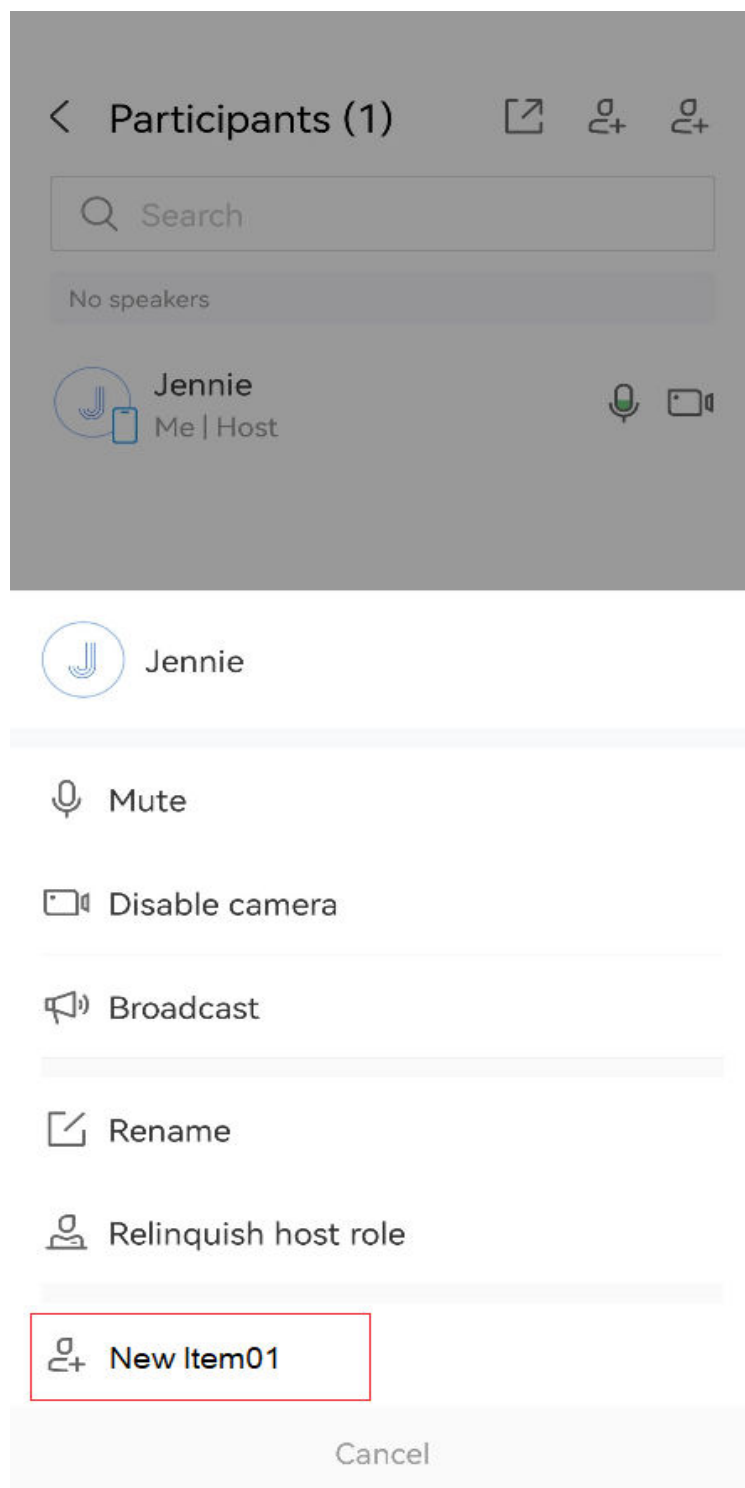
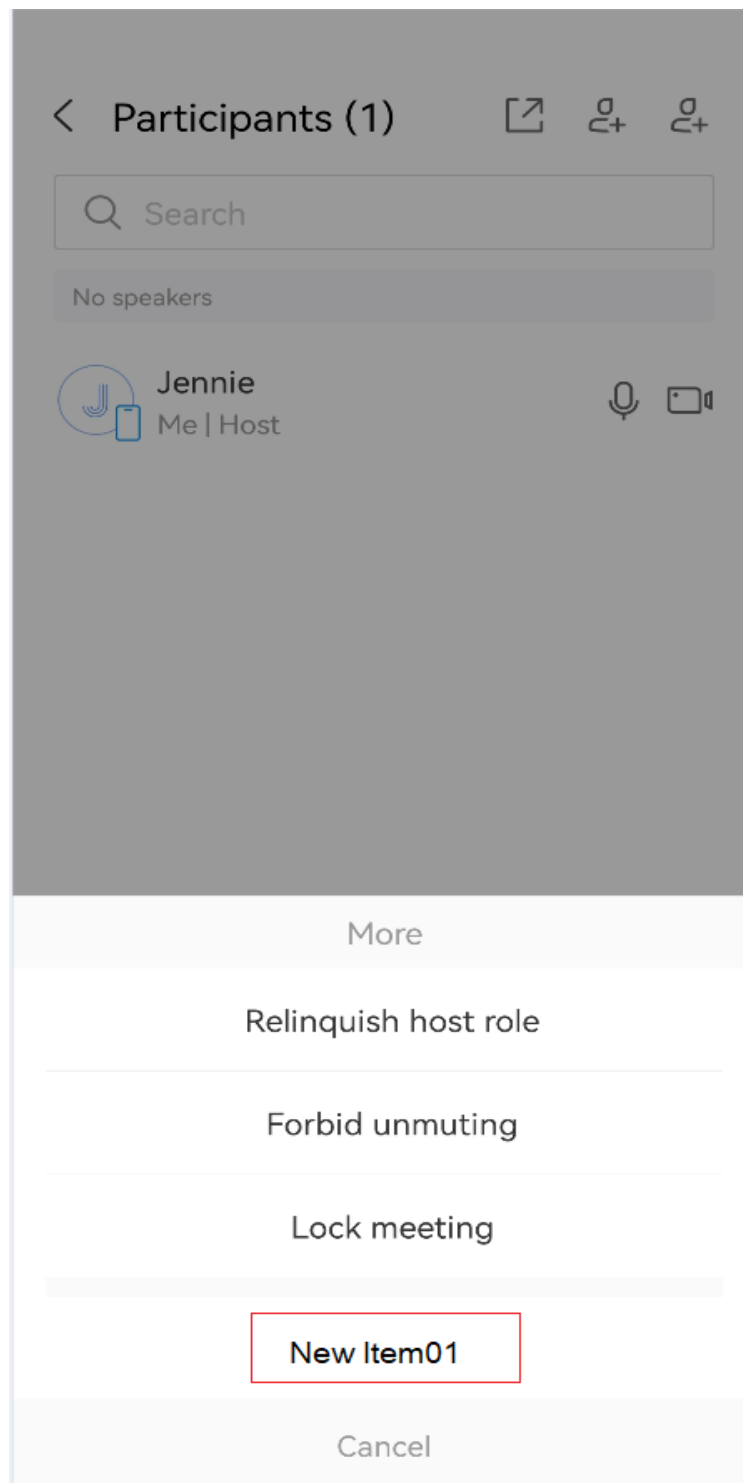


Figure 5-26 Sample of a custom More menu in the participants list



Sample Code

```
public class CustomParticipantMenuHandle implements IParticipantMenuStrategy {  
    @Override  
    public List<IConfMenu> buildParticipantMoreMenuItems() {  
        List<IConfMenu> confMenus = new ArrayList<>();  
        confMenus.add(new ParticipantShareMenu());  
    }  
}
```

```
        confMenus.add(new ContantMenu());
        // [Demo] Add a custom menu.
        confMenus.add(new CustomMoreMenu());
        return confMenus;
    }
    @Override
    public List<IConfMenu> buildParticipantItemMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();

        confMenus.add(new MuteOrUnmuteMenu());
        confMenus.add(new CameraMenu());
        confMenus.add(new HandsUpOrDownMenu().setDarkIcon(true));
        confMenus.add(new SelectWatchOrCacnelMenu());
        confMenus.add(new PrivateChatMenu());
        confMenus.add(new BroastAndCacelMenu());

        confMenus.add(new RenameMenu());
        confMenus.add(new InviteOrCancelShareMenu());
        confMenus.add(new GrantOrCancelLocalRecordMenu());
        confMenus.add(new SetAttendeeMenu());
        confMenus.add(new ReleaseOrRequestChairManMenu());
        confMenus.add(new SetChairmanMenu());
        confMenus.add(new SetOrCancelCoHostMenu());
        confMenus.add(new MoveToWaitingRoomMenu());
        confMenus.add(new RecallMenu());
        if (HWMBizSdk.getPublicConfigApi().isChinaSite()) {
            confMenus.add(new CallOtherNumberMenu());
        }

        confMenus.add(new HangupMenu());
        confMenus.add(new AdmitMenu());
        confMenus.add(new AutoAdmitMenu());
        confMenus.add(new RemoveMenu());

        // [Demo] Add a custom menu.
        confMenus.add(new CustomMoreMenu());
        return confMenus;
    }
    @Override
    public List<IConfMenu> buildParticipantToolbarMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        //-----Menus available only for hosts-----
        confMenus.add(new MuteAllMenu());
        confMenus.add(new CancelAllMuteMenu());
        confMenus.add(new MoreMenu());
        //-----Menus available only for non-host users-----
        confMenus.add(new HandsupMenu());
        confMenus.add(new HandsDownMenu());
        confMenus.add(new RequestChairmanMenu());
        //-----Demo of adding a custom menu-----
        confMenus.add(new CustomMenu());
        return null;
    }
    @Override
    public List<IConfMenu> buildParticipantToolbarMoreMenuItems() {
        List<IConfMenu> confMenus = new ArrayList<>();
        confMenus.add(new ReleaseOrRequestChairManMenu());
        confMenus.add(new AllowUnmuteOrNotMenu());
        confMenus.add(new LockOrUnlockConfMenu());
        // [Demo] Add a custom menu.
        confMenus.add(new CustomMoreMenu());
        return confMenus;
    }
}
```

5.4.2.3 Customizing the Menu Displayed upon a Touch on the Title Bar in a Meeting

You can customize the menu ([Figure 5-28](#)) displayed when you touch the title bar ([Figure 5-27](#)) in a meeting.

Application Scenarios

The content displayed on the meeting details panel needs to be adjusted, for example, hiding the password or adding a custom item.

Precautions

1. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Customizing the Menu Displayed upon a Touch on the Title Bar in a Meeting

Sample Code

```
sdkConfig.setConfTitlePopwindowHandle(new CustomConfTitleBarPopwindowHandle());
```

Figure 5-27 Title bar area in a meeting

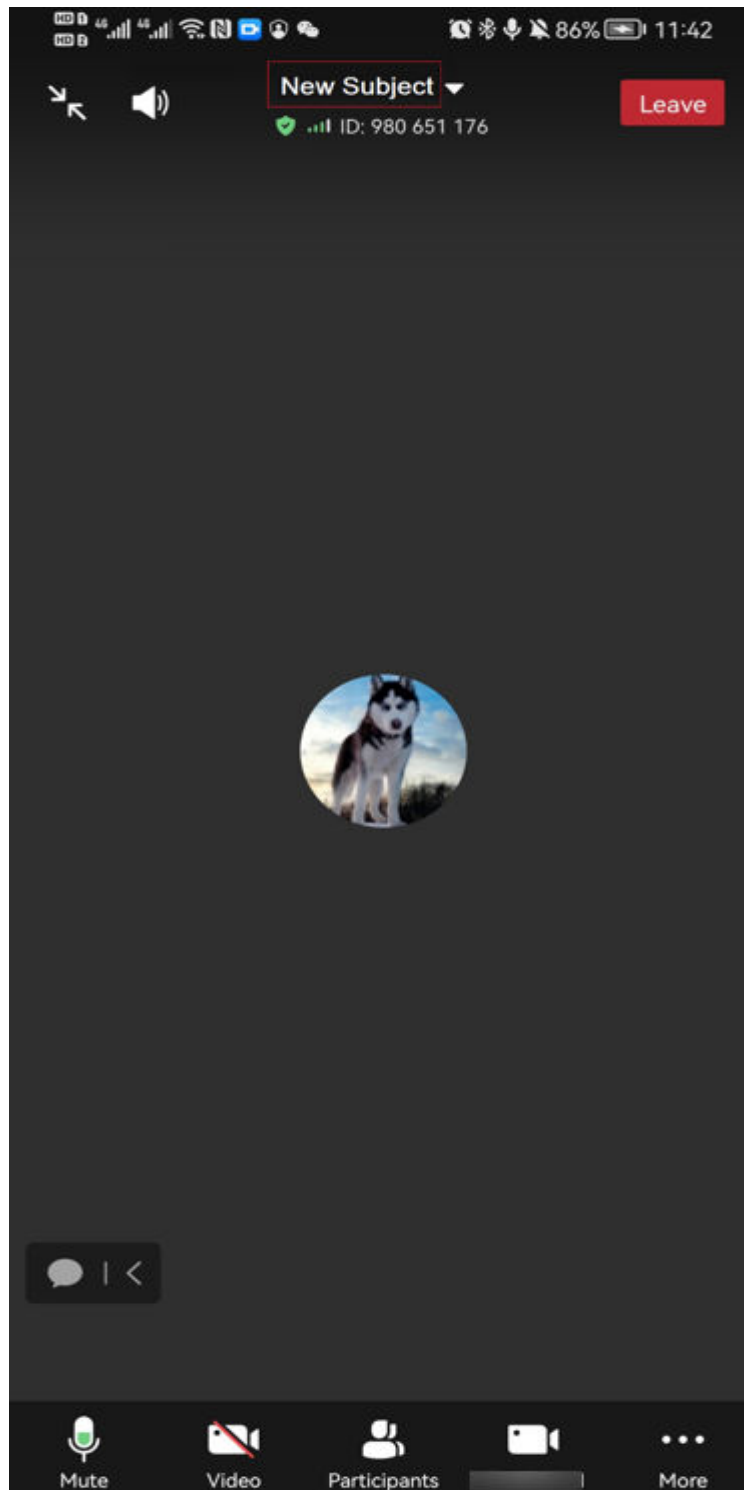
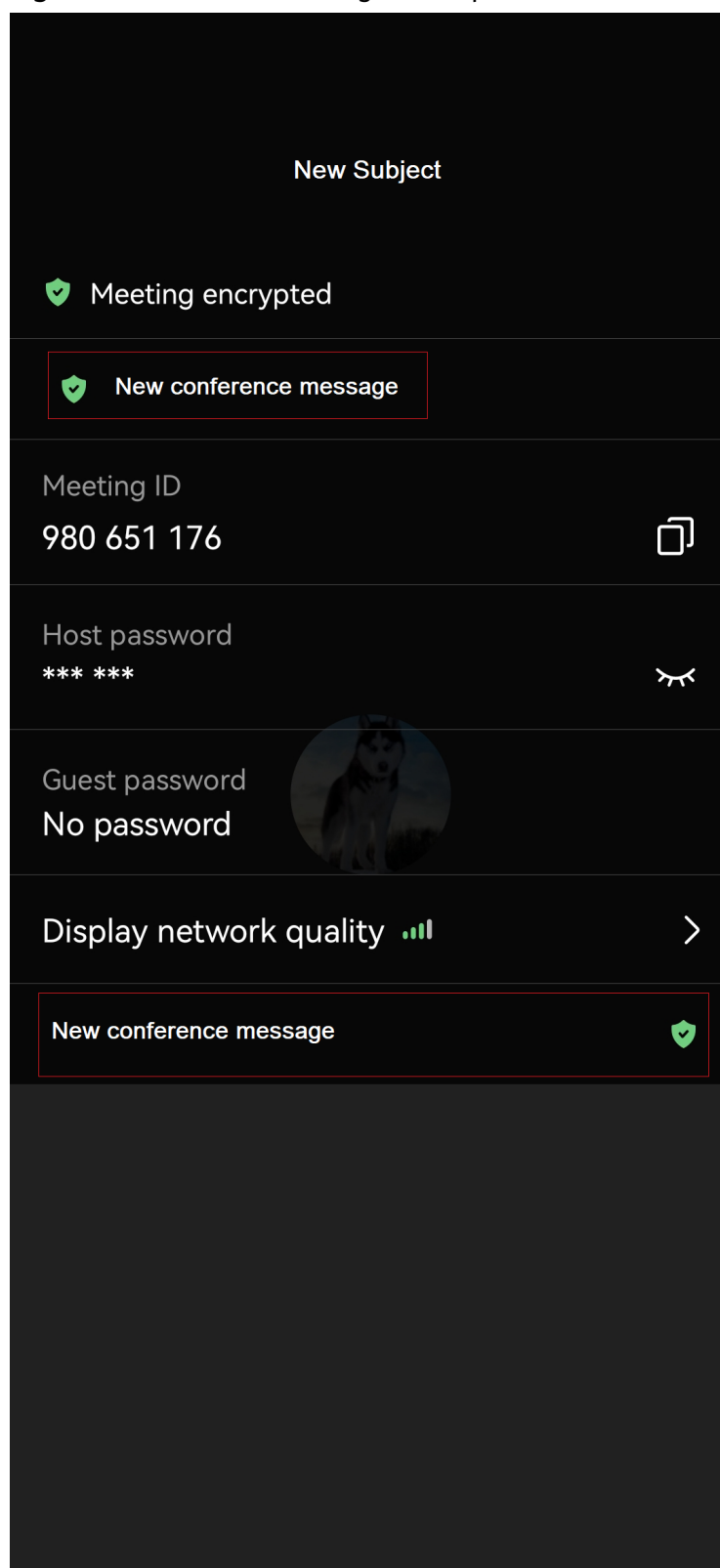


Figure 5-28 Custom meeting details panel



Sample Code

```
// Customize the menu displayed when the title bar in a meeting is touched. IMenuAction defines some view functions, which can be directly converted into ViewGroup to add, delete, modify, and query subviews.
```

```
public class CustomConfTitleBarPopwindowHandle implements IConfTitleBarPopwindowHandle {
    @Override
    public void buildConfTitleBarPopwindow(IMenuAction iMenuAction) {
        if (!HwMBizSdk.getBizOpenApi().isSelfChairMan()) {
            // View displayed without the password if the user is the host.
            View mPwdView = iMenuAction.findView(BuildInMenuType.CONF_TITLE_PWD_LAYOUT);
            if (mPwdView != null) {
                mPwdView.setVisibility(View.GONE);
            }
        } else {
            // View displayed with the password if the user is the host.
            View mPwdView = iMenuAction.findView(BuildInMenuType.CONF_TITLE_PWD_LAYOUT);
            if (mPwdView != null) {
                mPwdView.setVisibility(View.VISIBLE);
            }
        }
    }
}
```

5.4.2.4 Customizing a Screen for Adding Participants to a Meeting

When you touch the **Invite** button in the upper right corner of the participant list, the `doAddAttendees` callback method is triggered. You can customize the method, select contacts to be added to the meeting, and return the selected contact list via `onSuccess` of the callback.

Application Scenarios

Your application has integrated a corporate directory and you need to customize the function of adding contacts to a meeting.

Precautions

1. `sdkConfig` takes effect only when this configuration is passed during SDK initialization.

API for customizing the function of adding contacts to a meeting:

```
sdkConfig.setAddAttendeesHandle(new CustomAddAttendeesHandle());
```

The following figure shows the effect.

Sample code of customizing the method of adding participants

```
// Inject the screen for adding participants. The screen of selecting participants is displayed in the method.
public class CustomAddAttendeesHandle implements IAddAttendeesHandle {
    private HwmCallback<List<AttendeeModel>> callback;
    /**
     * Activity called by the curActivity.
     * selectedAccount: indicates the selected account.
     * isScheled: specifies whether to schedule a meeting.
     * callback: After the participant is added, the list of selected participants is returned.
     */
    @Override
    public void doAddAttendees(Activity curActivity, List<AttendeeModel> selectedAccount, String
selectParam, boolean isScheled, HwmCallback<List<AttendeeModel>> callback) {
        callback = hwmCallback;
        // You can pass the selected participant list to facilitate operations on the custom screen.
        Intent intent = new Intent(Utils.getApp(), AddPeopleByAppidAuthActivity.class);
        activity.startActivityForResult(intent,5000);
    }
    @Override
    public void dealContactSelect(Intent intent) {
    }
    @Override
    public void onActivityResult(int requestCode, int resultCode, Intent data) {
```

```
if (requestCode == 5000){
    if(null != callback){
        // Callback returned if the selected participant joins the meeting.
        callback.onSuccess(DemoUtil.selectModels);
    }
}
}
```

Sample code of processing the custom screen of adding participants to a meeting. `AddPeopleByAppidAuthActivity` is a custom screen example.

// Add the participant logic to the click event of the button for adding participants in activity and pass the participant list to the custom handle.

```
public void onClick(View view) {
    String thirdAccountId = thirdAccountIdTextView.getText().toString();
    String sipNumber = sipNumberTextView.getText().toString();
    String phoneNumber = userPhoneTextView.getText().toString();
    // The display name is optional. If it is left empty, the display name in the corporate directory is
used.
    String name = userNameTextView.getText().toString();

    members = new ArrayList<>();
    // Select one of the three methods. The ID of the third-party address book is valid only for app ID
login.
    if (!TextUtils.isEmpty(thirdAccountId)) {
        AttendeeModel attendeeModel = AttendeeModel.buildAttendeeByThirdUserId(thirdAccountId,
name);
        members.add(attendeeModel);
    } else if (!TextUtils.isEmpty(sipNumber)) {
        // Select one of the three methods. The SIP number is the account identifier of the meeting
corporate directory.
        AttendeeModel attendeeModel = AttendeeModel.buildAttendeeBySipNumber(sipNumber,name);
        members.add(attendeeModel);
    } else if (!TextUtils.isEmpty(phoneNumber)) {
        // Select one of the three methods. If a mobile number is specified, the outgoing call permission
is required.
        AttendeeModel attendeeModel = AttendeeModel.buildAttendeeByPhone(phoneNumber, name);
        members.add(attendeeModel);
    } else {
        DemoUtil.showToast("Select one of the three methods for joining a meeting.");
        return;
    }

    DemoUtil.selectModels = members;
    Intent intent = new Intent();
    setResult(1,intent);
    finish();
}
```

5.4.2.5 Customizing a Notification Bar in a Meeting

This API is used to customize the meeting notification icon in the notification bar. [Figure 5-29](#) shows the default icon.

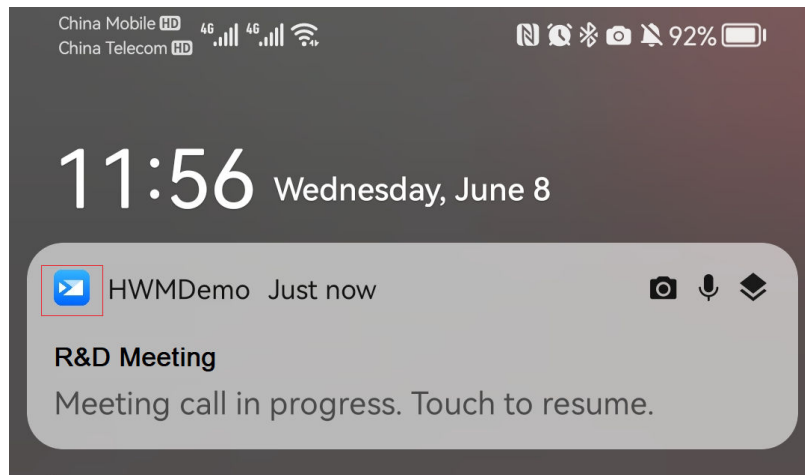
Application Scenarios

The notification icon in the notification bar needs to be the same as the app icon.

Precautions

1. `sdkConfig` takes effect only when this configuration is passed during SDK initialization.

Figure 5-29 Sample of a custom notification bar in meetings



Sample Code

```
sdkConfig.setNotificationStrategy(new INotificationStrategy() {  
    @Override  
    public int resSmallIcon() {  
        return R.mipmap.ic_launcher;  
    }  
});
```

5.4.2.6 Customizing the Profile Picture

API Description

This API is used to customize the profile picture displayed after login.

Scenarios

Figure 5-30 PiP view

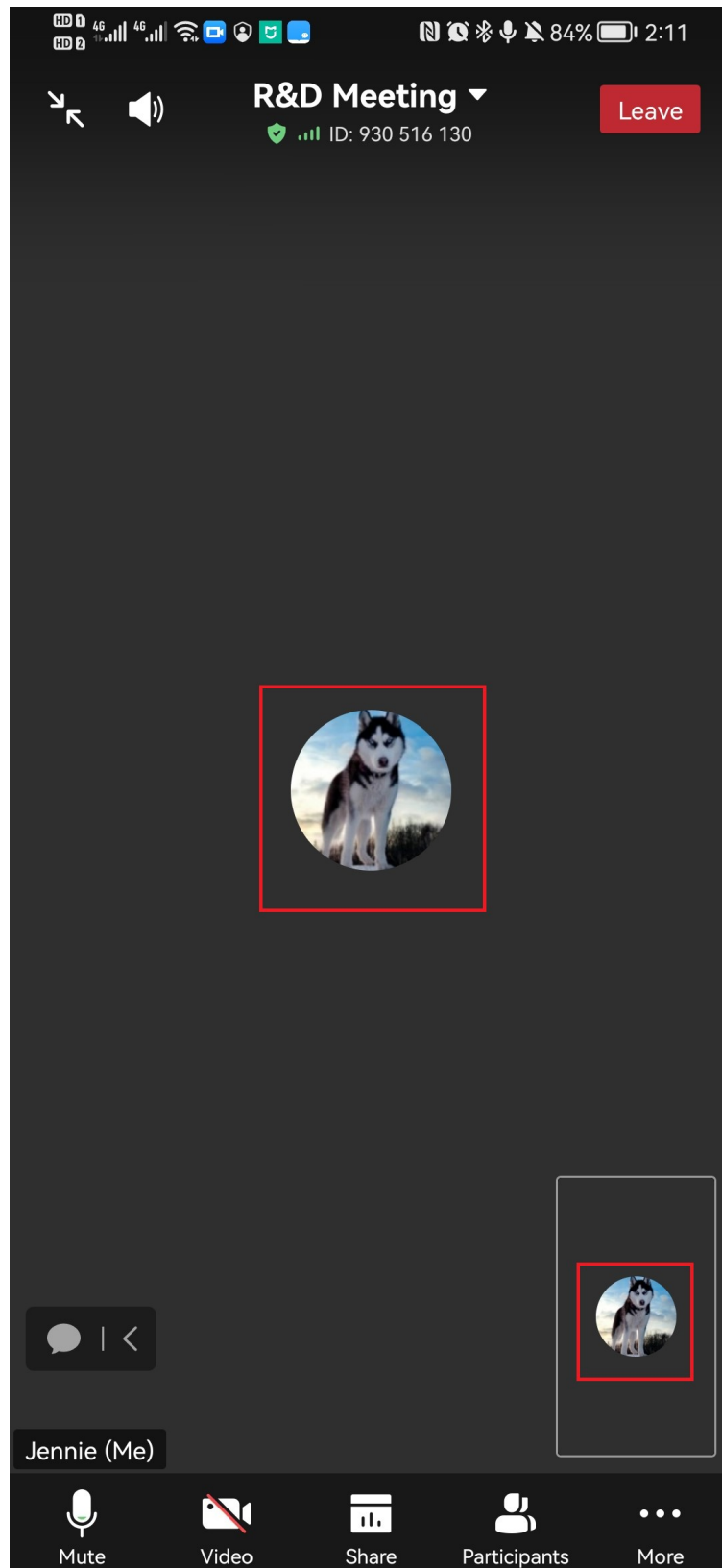


Figure 5-31 Gallery view

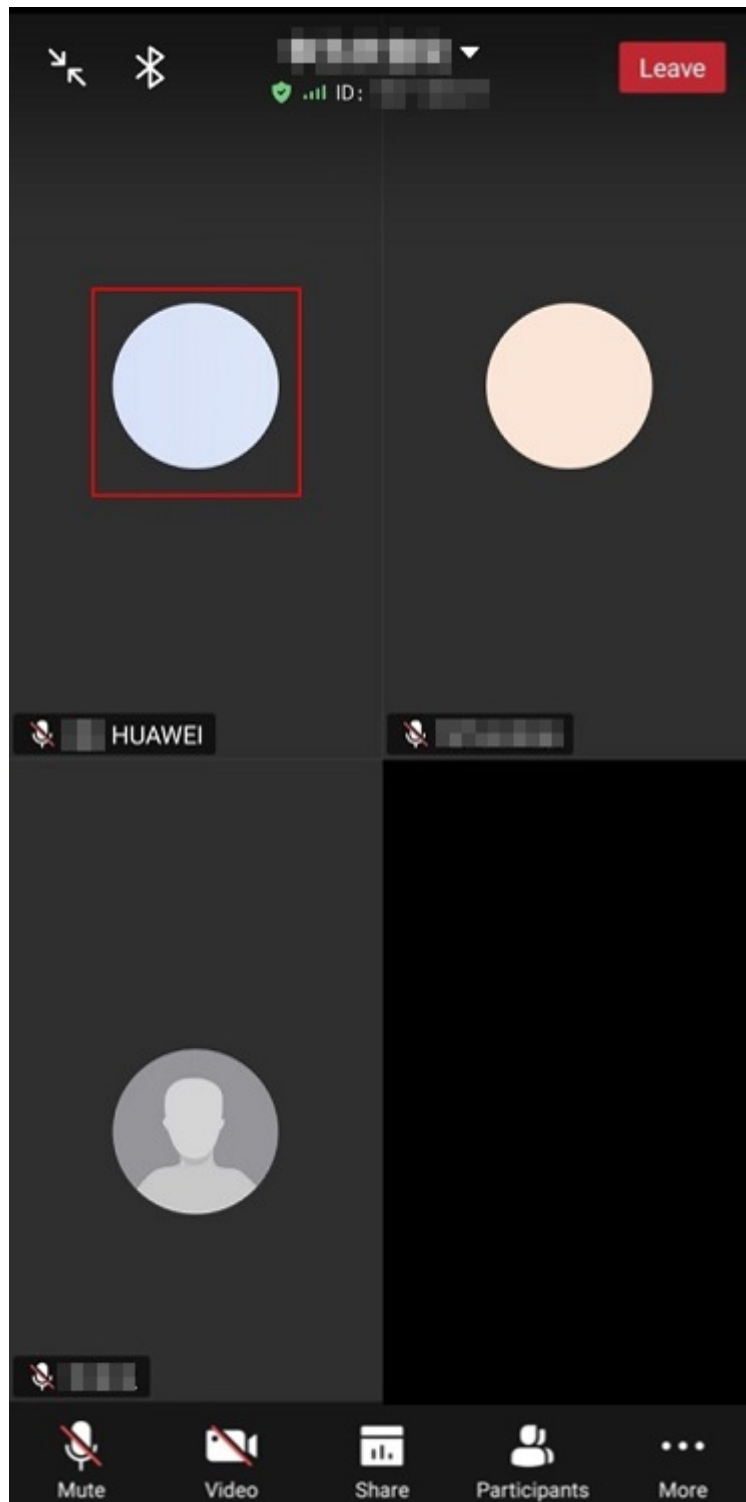
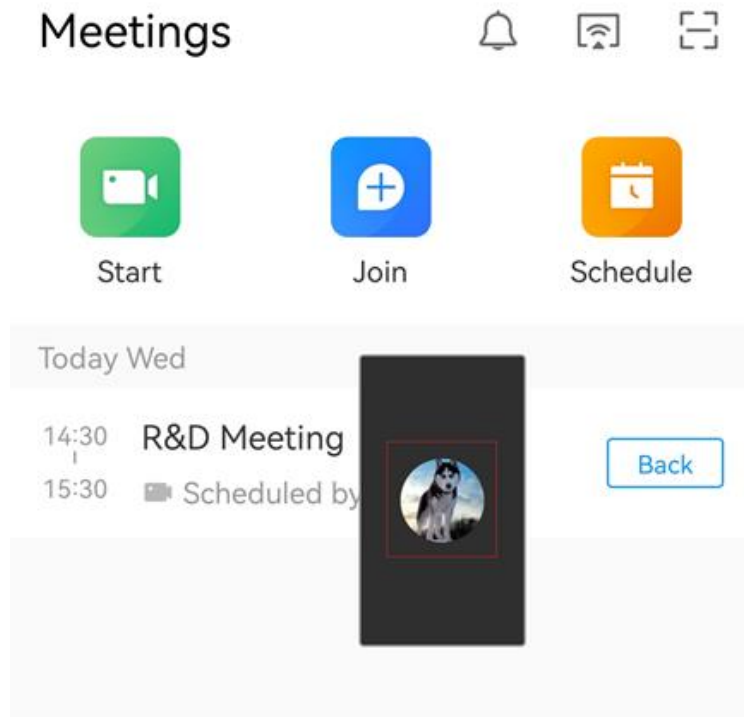


Figure 5-32 Mini window



Precautions

The profile picture of a user who has not logged in cannot be customized.

Method Definition

```
public Bitmap queryContactAvatar(String account, String thirdUserId, String sipNumber)
```

Parameter Description

Table 5-15

Parameter	Type	Description
account	String	This parameter is preferentially used in the account and password login scenario.
thirdUserId	String	This parameter is preferentially used in the app ID login scenario.
sipNumber	String	This parameter is preferentially used in the cross-enterprise scenario.

Return Values

Table 5-16

Parameter	Type	Description
bitmap	Bitmap	Bitmap class of the profile picture.

Sample Code

```
sdkConfig.setQueryContactInfoStrategy(new IQueryContactInfoStrategy() {  
    @Override  
    public Bitmap queryContactAvatar(String account, String thirdUserId, String sipNumber) {  
        Log.i(TAG, "setQueryContactInfoStrategy account: " + account + " thirdUserId: " + thirdUserId + "  
sipNumber: " + sipNumber);  
        // When a third party queries the address book, the profile picture of the corresponding user is  
returned. In the sample code, a default picture is returned.  
        return BitmapFactory.decodeResource(resources, R.mipmap.ic_launcher);  
    }  
});
```

5.4.2.7 Customizing a Watermark for a Meeting

You can customize a watermark for shared content in a meeting in OpenSDKConfig.

Figure 5-33 displayed the watermark effect.

Application Scenarios

Watermarks need to be added to shared content in the following scenarios:

1. Internal meetings in which shared materials are confidential and can be viewed only by some personnel
2. Cross-enterprise/region meetings that require leakage prevention of shared materials
3. Other scenarios that may cause leakage of important shared materials

Precautions

1. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Figure 5-33 Sample of a custom watermark



NOTE

Watermarks can be added to images presented to recipients during desktop, program, and whiteboard sharing. The custom watermarks take effect only when the watermark function is enabled on the server. If you do not customize a watermark, the mobile number, email address, meeting ID, and nickname are displayed in descending order by priority by default. The font transparency is 10%.

Sample Code

```
// Customize the watermark to be displayed in a meeting.
public class CustomWatermarkHandle implements IWatermarkHandle {
    @Override
    public Bitmap getWatermarkBitmap(Activity activity) {
        // Set the watermark bitmap.
        return null;
    }
}
```

```
}  
sdkConfig.setWatermarkHandle(new CustomWatermarkHandle());
```

5.4.2.8 Customizing the Status Bar Menu

You can customize the status bar in **OpenSDKConfig**.

Application Scenarios

Hide the recording button on the status bar.

Precautions

1. sdkConfig takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
public class CustomStatusBarMenuHandle implements IStatusBarMenuStrategy {  
    @Override  
    public List<IConfMenu> buildRecordMenuItems() {  
        List<IConfMenu> confMenus = new ArrayList<>();  
        // If the recording button does not need to be displayed on the status bar in the upper left corner of a  
        // meeting, comment out the following code.  
        confMenus.add(new StatusBarRecordMenu());  
        return confMenus;  
    }  
}  
  
sdkConfig.setStatusBarMenuStrategy(new CustomStatusBarMenuHandle ());
```

5.4.2.9 Obtaining an Error Message

This API is used to obtain an error message.

Precautions

None

Method Definition

```
String getErrorMessage(int errCode);
```

Sample Code

```
public static void showToast(String apiName, int retCode, String desc) {  
    String msg = HWMBizSdk.getBizOpenApi().getErrorMessage(retCode);  
    if (TextUtils.isEmpty(msg)) {  
        Log.i(TAG, "showToast msg == null!");  
    }  
    String errorMsg = msg + "\n" + "Error code: " + retCode + "\n" + "Error description: " + desc;  
    BaseDialogBuilder baseDialogBuilder = new BaseDialogBuilder(DemoActivity.getInstance());  
    baseDialogBuilder  
        .setMessage(errorMsg)  
        .addAction("OK",  
            (dialog, button, index) -> {  
                dialog.dismiss();  
            })  
        .show();  
}
```

5.4.2.10 Android Menu Functions

Scenario	Button ID	Class	Path	Button Name	Description
Bottom menu	hwmconf_menu_audience_join	AudienceJoinMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Attendee view	Used by the webinar host to allow attendees to watch the webinar
	hwmconf_menu_hands	HandsMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Raise hand/Lower hand	Used by a guest/attendee to raise or lower their hand
	hwmconf_menu_invite	InviteMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Invite	Used by the host to invite users to the meeting
	hwmconf_inmeeting_video_btn	CameraMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Video	Enable or disable the camera during a meeting
	hwmconf_inmeeting_mic_btn	MicMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Mute/Unmute	Enable or disable the microphone during a meeting

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_in_meeting_chat_btn	ChatMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Chats	Opening the chat screen during a meeting
	hwmconf_in_meeting_participants_btn	ParticipantMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Participants	Opening the participant list during a meeting
	hwmconf_menu_share_conf_link	ShareConfLinkMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Share	Sharing meeting details during a meeting
	hwmconf_in_meeting_share_screen	ShareMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Share	Initiating sharing during a meeting
	hwmconf_in_meeting_speaker_btn	SpeakerMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Speaker/Earpiece	Switching between speakers and earpieces during a meeting

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_menu_trans_video	TransVideoMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Switch to video	Switching a P2P voice call to a video call
	hwmconf_in_meeting_vote_btn	VoteBtnMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	Polls	Polls during a meeting
	hwmconf_in_meeting_more_btn	MoreMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/	More	More meeting control operations
More menu	hwmconf_more_menu_audio_to_video	CallAudioToVideoMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/call/	Video	Switching a P2P voice call to a video call
	hwmconf_more_menu_video_to_audio	CallVideoToAudioMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/call/	Switch to voice	Switching a P2P video call to a voice call

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_in_meeting_chat_btn	ChatMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Chats	Opening the chat screen during a meeting
	hwmconf_in_meeting_cloud_live	CloudLiveMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Live broadcast	Starting or ending streaming a meeting
	hwmconf_in_meeting_conf_setting	ConfSettingMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Settings	Meeting setting button
	hwmconf_in_meeting_connect_audio	ConnectAudioMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Set audio	Enabling audio (In this case, speakers cannot be disabled.)
	hwmconf_in_meeting_disconnect_audio	DisconnectAudioMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Disconnect audio	Disconnecting audio in a meeting to disable speakers

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_in_meeting_hands_up_toast	HandsUpOrDownMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Raise hand/ Lower hand	Used for a participant/attendee to raise or lower their hand during a meeting
	hwmconf_in_meeting_simul_interpret	InterpretMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Interpret	Setting the simultaneous interpretation language
	hwmconf_in_meeting_invite_btn	InviteMoreMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Invite	Inviting participants
	hwmconf_in_meeting_recording_start	OpenOrCloseRecordMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Recording	Enabling or pausing cloud recording during a meeting
	hwmconf_participant_release_host	ReleaseOrRequestChairmanMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Apply for be host/ Relinquish host role	Applying for being the host or relinquishing the host role

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_more_menu_start_or_stop_share	StartOrStopShareMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Share	Initiating or stopping screen sharing during a meeting
	hwmconf_subtitle_btn	Subtitles Menu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Enable captions	Enabling or disabling live caption translation during a meeting
	hwmconf_more_menu_switch_camera	SwitchCameraMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Switch camera	Switching between the front and rear cameras
	hwmconf_in_meeting_virtual_bg	VirtualBackgroundMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Virtual background	Setting a virtual background during a meeting
	hwmconf_in_meeting_vote	VoteMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Polls	Polls during a meeting

Scenario	Button ID	Class	Path	Button Name	Description
Settings menu	hwmconf_confsetting_camera_direction	RouterMenu	HWMPermission \src\main \res\values \ut_ids.xml	Auto (Camera direction)	Setting the camera shooting angle during a meeting
	hwmconf_confsetting_network_detect	RouterMenu	HWMPermission \src\main \res\values \ut_ids.xml	Network detection	Checking the current network environment during a meeting
	hwmconf_confsetting_camera_restriction	RouterMenu	HWMPermission \src\main \res\values \ut_ids.xml	Camera permissions	Used by the host to allow or forbid participants to enable the camera or force all participants to enable the camera
	hwmconf_confsetting_local_recording_permission	RouterMenu	HWMPermission \src\main \res\values \ut_ids.xml	Local recording for	Used by the host to open recording to only the host, everyone, or specific participants
	hwmconf_confsetting_beauty	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Beautification	Enabling beauty filters during a meeting
	hwmconf_confsetting_video_mirroring	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Video mirroring	Enabling video mirroring during a meeting
	hwmconf_confsetting_hide_self	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	My feed	Displaying your feed in the upper right corner during a meeting

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_confsetting_noise_reduction	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Noise reduction	Filtering out ambient sounds to make your voice clearer in the noisy environment
	hwmconf_confsetting_high_resolution	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	HD preferred	Prioritizing HD video during a meeting
	hwmconf_confsetting_whistle_detection	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Auto mute if feedback detected	Automatically muting the microphone when feedback is detected during a meeting
	hwmconf_confsetting_lock_meeting	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Lock meeting	Locking a meeting to allow users to join the meeting only when they are invited by the host
	hwmconf_confsetting_enable_waiting_room	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Waiting room	Enabling/Disabling the waiting room. When the waiting room is enabled, guests cannot join the meeting until the host admits them.
	hwmconf_confsetting_allow_unmute	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Unmute	Used by the host to allow participants to unmute themselves during a meeting
	hwmconf_confsetting_allow_sharing	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Share screen	Used by the host to allow participants to share screen during a meeting

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_confsetting_allow_rename	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Rename	Used by the host to allow participants to rename themselves during a meeting
	hwmconf_confsetting_enable_brighten	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Adjust lighting	Improving video experience when lighting is poor
	hwmconf_confsetting_allow_open_camera	SwitchMenu	HWMPermission \src\main \res\values \ut_ids.xml	Enable camera	Used by the host to allow participants to enable or disable the camera
	hwmconf_confsetting_picture_ratio	TextMenu	HWMPermission \src\main \res\values \ut_ids.xml	Video ratio	Using adaptive/original video aspect ratio during a meeting
	hwmconf_confsetting_allow_join_conf	TextMenu	HWMPermission \src\main \res\values \ut_ids.xml	Open to	Used by the host to set the scope of users (everyone, corporate users, or invited users) who can join a meeting
	hwmconf_confsetting_preempt_share_type	TextMenu	HWMPermission \src\main \res\values \ut_ids.xml	Sharing interruption	Used by the host to allow or forbid a participant to stop sharing of another participant and start new sharing
	hwmconf_confsetting_chat_permission	TextMenu	HWMPermission \src\main \res\values \ut_ids.xml	Chat settings	Used by the host to allow participants to chat freely or with the host only, disable direct messaging, or disable chats for all

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_confsetting_subtitles_language	TextMenu	HWMPermission \src\main \res\values \ut_ids.xml	Caption translation	Setting the caption language to Chinese, English, or German during a meeting
	hwmconf_confsetting_chat_message_remind	TextMenu	HWMPermission \src\main \res\values \ut_ids.xml	Message notifications	Notifying chat messages on the screen or as pop-ups, or disabling notifications
Menu bar in the upper right corner of the participant list	hwmconf_participant_participants_add	ContactMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/more/	Contacts	Accessing the custom address book
	hwmconf_participant_download_link_share	ParticipantShareMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/more/	Share	Sharing the meeting details
Menus displayed after tapping a participant	hwmconf_participant_item_admit	AdmitMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Admit	Used by the host to admit a member in the waiting room to a meeting

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_menu_attendee_profile	AttendeeProfileMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	View profile	Viewing details about a participant (You can call the IUserProfileHandle API to customize the redirection to the participant details screen.)
	hwmconf_participant_item_auto_admit	AutoAdmitMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Auto admit to meeting	Used by the host to allow a user to automatically join a meeting without waiting
	hwmconf_ctrl_back_to_main_conf	BackToMainConfMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Return to main session	Used by a participant to return to the main session from a breakout room
	hwmconf_participant_item_broadcast	BroadcastAndCancelMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Broadcast/Cancel broadcast	Used by the host to broadcast a participant or cancel broadcast

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_participant_item_call_other_numbers	CallOtherNumberMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Call other number	Dialing another number of a participant during a meeting
	hwmconf_ctrl_end_conf	EndConfMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	End for all	Used by the host to end a meeting for all participants
	hwmconf_participant_item_hang_up	HangupMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Disconnect	Used by the host to disconnect a participant
	hwmconf_participant_item_invite_screen_share	InviteOrCancelShareMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Invite to share	Used by the host to invite a participant to share content

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_ctrl_leave_conf	LeaveConfMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Leave	Used by a participant to leave a meeting or the waiting room
	hwmconf_participant_item_move_to_waiting_room	MoveToWaitingRoomMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Move to waiting room	Used by the host to move a participant to the waiting room
	hwmconf_participant_item_mute_unmute	MuteOrUnmuteMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Mute/Unmute	Used by the host to mute or unmute a participant
	hwmconf_participant_item_chat_with	PrivateChatMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Direct message	Direct messaging a participant

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_participant_item_redial	RecallMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Call	Used by the host to call a participant again
	hwmconf_participant_item_remove	RemoveMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Remove	Used by the host to remove a participant
	hwmconf_menu_rename	RenameMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Rename	Renaming a participant
	hwmconf_participant_item_report	ReportMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Report	Reporting a participant

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_participant_item_watch	SelectWatchOrCancelMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Focus/Cancel focus	Focusing on a participant or cancelling focusing
	hwmconf_menu_set_attendee	SetAttendeeMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Set as attendee	Used by the host to set a panelist as an attendee in a webinar
	hwmconf_participant_item_set_chair	SetChairmanMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Set as host	Used by the host to transfer the host role to a participant
	hwmconf_participant_item_set_cohost	SetOrCancelCoHostMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Set as co-host	Used by the host to set a participant as a co-host

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_menu_set_panelist	SetPanelistMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Set as panelist	Used by a webinar host to set an attendee as a panelist
	hwmconf_menu_allow_speaker_or_not	AllowSpeakerOrNotMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Block unmute	Used by the host to forbid a participant to unmute
	hwmconf_participant_allow_unmute_self	AllowUnmuteOrNotMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Allow unmute	Used by the host to allow a participant to unmute
	hwmconf_participant_item_local_recording	GrantOrCancelLocalRecordingMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Allow recording	Used by the host to allow or forbid a participant to perform local recording

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_ctrl_trans_chair_and_leave_conf	TransferChairAndLeaveMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/item/	Assign host & leave	Used by the host to assign a new host and leave a meeting (You can use the openSDKConfig.setSupportTransferChairOnLeave(true) method to display this button. true : displays the button. false (default value): hides the button.)
Menu bar at the bottom of the participant list	hwmconf_participant_unmute_all	CancelAllMuteMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/toolbar/	Unmute all	Used by the host to unmute all participants
	hwmconf_participant_bottom_hands_down	HandsDownMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/toolbar/	Lower hand	Used by a guest to lower their hand or by the host to lower participant hands
	hwmconf_participant_bottom_hands_up	HandsupMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/toolbar/	Raise hand	Used by a guest to raise their hand

Scenario	Button ID	Class	Path	Button Name	Description
	hwmconf_participant_more_btn	MoreMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/toolbar/	More	More buttons on the menu bar at the bottom of the participant list
	hwmconf_participant_mute_all	MuteAllMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/toolbar/	Mute all	Used by the host to mute all participants
	hwmconf_participant_apply_chair	RequestChairmanMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/participant/toolbar/	Apply to be host	Used by a guest to apply for being the host
More menu bar at the bottom of the participant list	hwmconf_participant_lock_meeting	LockOrUnlockConfMenu	com/huawei/hwmconf/presentation/dependency/menu/buildin/more/	Lock meeting	Locking a meeting to allow users to join the meeting only when they are invited by the host

5.4.3 Account Operations

5.4.3.1 Login Using an Account and Password

```
HWMSdk.getOpenApi.login(LoginParam,HwmCallback)
```

API Description

This API is used to log in to Huawei Cloud Meeting.

Precautions

You can join a meeting anonymously. However, if you want to use other services, you must log in first.

NOTE

After the login is successful, the callback **onSuccess** is invoked.

Method Definition

```
/**  
 * Logs in.  
 * @param LoginParam Indicates the LoginParam object.  
 * @param hwmCallback Indicates the result callback.  
 */  
void login(LoginParam loginParam HwmCallback<LoginResult> hwmCallback)
```

Parameter Description

Table 5-17 Parameter description

Parameter	Mandatory	Type	Description
loginParam	Yes	LoginParam	LoginParam object.
hwmCallback	Yes	HwmCallback<LoginResult>	Callback object.

Return Values

None

Parameter Extension

Table 5-18 LoginParam description

Parameter	Mandatory	Type	Description
account	Yes	String	Username.
password	Yes	String	Password.
nickName	No	String	Display name.

Table 5-19 LoginResult type description

Parameter	Type	Description
userId	String	User UUID, which is the unique user ID allocated by the system.
account	String	Login account.
thirdAccount	String	Third-party login account (in the app ID login scenario).
isFreeUser	boolean	Whether the user is a free user.
refreshToken	String	Refresh token.
siteDomain	String	Login domain name. This parameter is available only in site switchover scenarios. When a user selects the International site but uses a Chinese mainland account to log in, the system automatically switches to the Chinese mainland site and returns the domain name of the Chinese mainland.

Sample Code

```
// It is recommended that accounts and passwords used for authentication be stored in ciphertext in the
// configuration file or as environment variables and be decrypted during usage.
LoginParam loginParam = new LoginParam()
    .setLoginAuthType(LoginAuthType.Account_And_Password) // Set the login mode.
    .setAccount(getAccount()) // Login account
    .setPassword(getPassword()); // Login password

HWMSdk.getOpenApi(getActivity()).login(loginParam, new HwmCallback<LoginResult>() {
    @Override
    public void onSuccess(LoginResult loginResult) { // Callback invoked upon a successful login.
        if (loginResult != null) {
            Log.i(TAG, "Login succeeded" + loginResult.getUserId());
        }
    }
    @Override
    public void onFailed(int retCode, String desc) { // Callback invoked upon a login failure.
        Error error = HWMBizSdk.getLoginApi().convertErrorCodeToUI(retCode);
        String errorTip = getLoginErrTips(error); // Output the error cause based on the returned
        error value.
        Log.e(TAG, errorTip);
    }
});
```

5.4.3.2 Login Using an App ID

```
HWMSdk.getOpenApi().loginByAppId(AppIdAuthParam, HwmCallback)
```

API Description

This API is used for login using an app ID.

Precautions

You can join a meeting anonymously. However, if you want to use other services, you must log in first.

 **NOTE**

After the login is successful, the callback **onSuccess** is invoked.

Method Definition

```
/**
 * Logs in.
 * @param appldAuthParam Indicates the appldAuthParam object.
 * @param hwmCallback Indicates the result callback.
 */
void loginByAppld(AppldAuthParam appldAuthParam HwmCallback<LoginResult> hwmCallback)
```

Parameter Description

Table 5-20 Parameter description

Parameter	Mandatory	Type	Description
appldAuthParam	Yes	AppldAuthParam	appldAuthParam object.
hwmCallback	Yes	HwmCallback<LoginResult>	Callback object.

Return Values

None

Parameter Extension

Table 5-21 AppldAuthParam description

Parameter	Mandatory	Type	Description
thirdUserId	Yes	String	<p>Unique ID of a third-party account. The value contains 1 to 64 characters.</p> <p>Note: When the app ID authentication mode is used, ensure that the app ID has been applied for on the meeting server. When the app ID is passed using HWMSdk.init, the OpenSdkConfig parameter must be transferred using OpenSdkConfig.setAppld(appid).</p>

Parameter	Mandatory	Type	Description
nonce	Yes	String	A random character string consisting of 32 to 64 characters.
corpId	No	String	ID of the enterprise to which the user belongs. This parameter is mandatory only in SP mode. Do not set this parameter in single-enterprise mode. Otherwise, the authentication will fail.
signature	Yes	String	Signature information.
expireTime	Yes	long	Signature expiration time. The value is a Unix timestamp, in seconds. If the value is 0, the signature will not expire.
userName	No	String	Username. If this parameter is left blank, the value of this parameter is the same as that of thirdUserId by default.
userEmail	No	String	Email address of the user.
userPhone	No	String	Mobile number of the user.
deptCode	No	String	Department code.

Sample Code

```
// Create a login object.
AppIdAuthParam appIdAuthParam = new AppIdAuthParam();
// Set the signature expiration time. The value is a Unix timestamp, in seconds. If the value is 0, the
signature will not expire.
appIdAuthParam.setExpireTime(1599618620);
// Set a random character string consisting of 32 to 64 characters.
appIdAuthParam.setNonce(getNonce());
// Set the ID of the enterprise to which the user belongs. This parameter is required only in the SP login
scenario.
appIdAuthParam.setCorpId(getCorpId());
// Set the ID of the third-party account. The value contains 1 to 64 characters.
appIdAuthParam.setUserId(getUserId());
// Set signature information.
appIdAuthParam.setSignature(getSignature());
// Set the user nickname.
appIdAuthParam.setUserName(getUserName());
// Set the email address, which must meet the format requirements.
appIdAuthParam.setUserEmail(getUserEmail());
// Set the mobile number, which must be in the correct format, for example, ^$|^([+]?[0-9]+$.
appIdAuthParam.setUserPhone(getUserPhone());
// Start to log in.
HWMSdk.getOpenApi(getActivity().getApplication()).loginByAppId(appIdAuthParam, new
```



```
HwmCallback<LoginResult>() {
    @Override
    public void onSuccess(LoginResult loginResult) {
        dismissLoading();
        dismiss();
        if (loginResult != null) {
            DemoUtil.showToast("Login succeeded" + loginResult.getUserUid());
        }else{
            DemoUtil.showToast("Logged in");
        }
    }

    @Override
    public void onFailed(int retCode, String desc) {
        HwmContext.getInstance().runOnMainThread(() ->{
            dismissLoading();
            Error error = HWMBizSdk.getLoginApi().convertErrorCodeToUI(retCode);
            DemoUtil.showToast("Login failed: "+ getLoginErrTips(error));
            dismiss();
        });
    }
};
```

5.4.3.3 SSO Login

```
HWMSdk.getOpenApi.loginBySSO(SsoAuthParam ssoAuthParam, HwmCallback<LoginResult> callback)
```

API Description

This API is used for login in single sign-on (SSO) mode.

Precautions

You can join a meeting anonymously. However, if you want to use other services, you must log in first.

NOTE

After the login is successful, the callback **onSuccess** is invoked.

Method Definition

```
/**
 * SSO login API
 * @param code Indicates the authorization code.
 * @param domain Indicates the enterprise domain name.
 * @param authServerType Indicates the authentication server type.
 * @param callback
 */
void loginBySSO(SsoAuthParam ssoAuthParam, HwmCallback<LoginResult> callback);
```

Parameter Description

Table 5-22 Parameter description

Parameter	Mandatory	Type	Description
ssoAuthParam	Yes	SsoAuthParam	SSO login authentication parameters.
callback	Yes	HwmCallback<LoginResult>	Callback object.

Table 5-23 SsoAuthParam parameter description

Parameter	Mandatory	Type	Description
code	Yes	String	SSO authorization code.
domain	Yes	String	SSO enterprise domain name.
authServerType	Yes	AuthServerType	Authentication server type. Value: AUTH_SERVER_TYPE_OAUTH2 (0, "SSO")

Return Values

None

Sample Code

```
SsoAuthParam ssoAuthParam = new SsoAuthParam();
ssoAuthParam.setDomain(domain);
ssoAuthParam.setCode(code);
ssoAuthParam.setAuthServerType(AuthServerType.AUTH_SERVER_TYPE_OAUTH2);
HWMSdk.getOpenApi(ssoAuthParam, new HwmCallback<LoginResult>() {
    @Override
    public void onSuccess(LoginResult loginResult) {
        dismissLoading();
        if (loginResult != null) {
            DemoUtil.showToast("Login succeeded" + loginResult.getUserUuid());
        } else {
            DemoUtil.showToast("Logged in");
        }
    }
});

@Override
public void onFailed(int retCode, String desc) {
    HwmContext.getInstance().runOnMainThread(() -> {
        DemoUtil.showToast("Login error: code=" + retCode + " desc=" + desc);
        dismissLoading();
    });
}
});
```

5.4.3.4 Uploading a Profile Picture

```
HWMBizSdk.getBizOpenApi().uploadSelfAvatar(String path, HwmCallback<Void> hwmCallback)
```

API Description

This API is used to upload a profile picture to the address book on the meeting server.

Precautions

1. Call this API only when you have logged in.
2. Upload a PNG or JPG image no more than 200 KB.

Method Definition

```
/**
 * Uploads your profile picture to the address book on the meeting server.
 * @param path Indicates the local path of the profile picture.
 * @param hwmCallback Indicates the callback of the profile picture setting result.
 */
void uploadSelfAvatar(String path, HwmCallback<Void> hwmCallback);
```

Parameter Description

Table 5-24 Parameter description

Parameter	Mandatory	Type	Description
path	Yes	String	Local path of the profile picture.
hwmCallback	Yes	HwmCallback <Void>	Callback object.

Return Values

None

Sample Code

```
HWMBizSdk.getBizOpenApi().uploadSelfAvatar(filepath, new HwmCallback<Void>() {
    @Override
    public void onSuccess(Void aVoid) {
        if (getActivity() != null) {
            ((DemoActivity) getActivity()).dismissLoading();
        }
        DemoUtil.showToast("Profile picture set.");
    }

    @Override
    public void onFailed(int retCode, String desc) {
        if (getActivity() != null) {
            ((DemoActivity) getActivity()).dismissLoading();
        }
        if (!TextUtils.isEmpty(desc)) {
            DemoUtil.showToast(desc);
        } else {
            DemoUtil.showToast("Failed to set the profile picture.");
        }
    }
});
```

5.4.3.5 Logging Out

```
HWMSdk.getOpenApi.logout(HwmCallback<LogoutResult> hwmCallback)
```

API Description

This API is used to log out of an account.

Precautions

Call this API only when you have logged in.

Method Definition

```
/**
 * Logs out.
```

```
* @param hwmCallback Indicates the result callback.  
*/  
void logout(HwmCallback<LogoutResult> hwmCallback);
```

Parameter Description

Table 5-25 Parameter description

Parameter	Mandatory	Type	Description
hwmCallback	Yes	HwmCallback <LogoutResult >	Callback object.

Table 5-26 LogoutResult description

Parameter	Type	Description
userUuid	String	User UUID, which is the unique user ID allocated by the system.
account	String	Login account.
thirdAccount	String	Third-party login account (in the app ID login scenario).

Return Values

None

Sample Code

```
HWMSdk.getOpenApi(getActivity()).logout(new HwmCallback<LogoutResult>() {  
    @Override  
    public void onSuccess(LogoutResult result) {  
        Log.i("", getContext(), "Logout succeeded");  
    }  
  
    @Override  
    public void onFailed(int retCode, String desc) {  
        Log.i("", getContext(), "Logout failed: " + retCode + "; " + desc).  
    }  
});
```

5.4.4 Meeting Management

5.4.4.1 Scheduling a Meeting

API Description

This API is used to schedule a meeting.

Precautions

- This API can be called only when you have logged in to Huawei Cloud Meeting.
- The meeting start time must be later than the current time, and the meeting duration must be longer than 15 minutes.
- The **vmrId** parameter must be passed for a personal meeting or cloud meeting room.
- The **attendees** parameter must be passed if participant information needs to be carried.
- The **result** parameter in the callback returns the meeting details. For details, see [Table 5-29](#).

Method Definition

```
/**
 * Schedules a meeting.
 * @param bookConfParam Indicates the bookConfParam object.
 * @param hwmCallback Indicates the result callback.
 */
void bookConf(BookConfParam bookConfParam , HwmCallback<ConfInfo> hwmCallback);
```

Parameter Description

Table 5-27 BookConfParam description

Parameter	Mandatory	Type	Description
confSubject	Yes	String	Meeting topic.
startTime	Yes	long	Meeting start time. The value is a UTC timestamp, in seconds.
duration	Yes	int	Meeting duration, in minutes. The value ranges from 15 to 1,440.
timeZone	No	int	Time zone code. The default value is 56 , indicating GMT+08:00. For details, see Time Zone Table .
confType	Yes	MeetingType	Meeting type. The default value is CONF_VIDEO . CONF_AUDIO (0, "Voice meeting"), CONF_VIDEO (1, "Video meeting");
attendees	No	List<Attende eModel>	Participant list.

Parameter	Mandatory	Type	Description
vmrIdFlag	No	boolean	Whether to use the cloud meeting room ID for meeting scheduling. The default value is false .
vmrId	No	String	Cloud meeting room ID. This parameter is mandatory when vmrIdFlag is set to true .
isNeedConfPwd	No	boolean	Whether a guest password is required. The default value is true . NOTE This parameter is valid only for meetings with a random ID.
guestPwd	No	String	Guest password. If this parameter is left blank, the guest password is generated by the server. NOTE This parameter is valid only for meetings with a random ID.
joinConfRestrictionType	No	JoinConfPermissionType	Range of participants who are allowed to join the meeting. The default value is PERMIT_EVERYONE . PERMIT_EVERYONE ("PERMIT_EVERYONE", 0, "Everyone is allowed to join the meeting.") PERMIT_ENTERPRISE_USER ("PERMIT_ENTERPRISE_USER", 2, "Only corporate users are allowed to join the meeting.") PERMIT_INVITED_USER ("PERMIT_INVITED_USER", 3, "Only invited users are allowed to join the meeting.")

Parameter	Mandatory	Type	Description
isRecordOn	No	boolean	Whether recording is supported. The default value is false . NOTE This parameter is valid only for cloud recording, not for local recording on clients.
isAutoRecord	No	boolean	Whether to automatically start recording after the meeting starts. The default value is false . Meeting recording must be enabled if automatic recording is enabled. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
isSmsOn	No	boolean	Whether to send SMS notifications. The default value is false . This function must be enabled in the enterprise configuration. Otherwise, this function does not take effect.
isMailOn	No	boolean	Whether to send email notifications. The default value is false .
isEmailCalendarOn	No	boolean	Whether to send email calendars. The default value is false .
vmrIdType	No	VmrIdType	Meeting ID type of the cloud meeting room. The ID can be fixed or random.
allowGuestStartConf	No	boolean	Whether to allow guests to join the meeting ahead of the host. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, use the API for Modifying Cloud Meeting Room Information.

Parameter	Mandatory	Type	Description
allowGuestStartConfTime	No	int	<p>Time range allowed for guests to join the meeting in advance, in minutes.</p> <p>0: Guests can join the meeting at any time before the scheduled time.</p> <p>x: Guest can join the meeting <i>x</i> minutes before the scheduled time.</p> <p>NOTE</p> <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, the time range cannot be set.
isOpenWaitingRoom	No	boolean	<p>Whether to enable the waiting room.</p> <p>NOTE</p> <ul style="list-style-type: none"> The function takes effect only after the waiting room function is enabled.
customInfo	No	String	User-defined data on the device side. The server is unaware of the data.
concurrentParticipants	No	int	Maximum number of participants in the meeting. If this parameter is left blank, there is no restriction.
confResType	No	ConfResType	Meeting resource type. This parameter is mandatory only for a shared cloud meeting room (set the value to ConfResType.CONF_RESTYPE_SHARE_VMR).

Table 5-28 AttendeeModel description

Parameter	Mandatory	Type	Description
number	Yes	String	SIP number or phone number (Specify either number or thirdUserId).

Parameter	Mandatory	Type	Description
thirdUserId	Yes	String	Third-party account in the app ID login scenario. NOTE Specify either number or thirdUserId .
name	Yes	String	Name. The value can contain up to 96 characters.
isSelf	No	boolean	Whether you are the participant.
isAutoInvite	No	boolean	Whether to automatically make a call when the start time arrives.
isMute	No	boolean	Whether to mute the microphone when joining the meeting.
accountId	No	String	Unique ID of the user account in the corporate directory.
type	No	HwmAttendeeType	Participant type.
email	No	String	Email address.
sms	No	String	Mobile number.
email	No	String	Email address.
orgId	No	String	Enterprise ID of the user, which is used to identify whether the user belongs to your enterprise (when the API for obtaining the participant list is called).
isAnonymous	No	boolean	Whether to join the meeting anonymously.
state	No	ConfAttendeeState	Participant status. (This parameter is used only for obtaining the participant list.)

Table 5-29 ConfInfo description

Parameter	Type	Description
confSubject	String	Meeting topic.

Parameter	Type	Description
confId	String	Meeting ID.
isOtherCorpConf	boolean	Whether the meeting is held in another enterprise.
vmrConferenceId	String	Personal meeting ID.
confPwd	String	Meeting password.
confAccessNum	String	Meeting access number.
confChairPwd	String	Host password.
confGuestUri	String	Guest link.
confStartTime	String	Meeting start time.
confEndTime	String	Meeting end time.
confSchedulerName	String	Meeting creator.
confOrgId	String	Enterprise ID.
audienceJoinUri	String	Attendee link (for webinars).
audienceJoinPwd	String	Attendee password (for webinars).
confType	ConfType	Meeting type, which can be general meeting or webinar.
conferenceType	ConferenceType	Whether the meeting is a general or recurring meeting.
cycleConfParam	CycleConfParam	Recurring meeting series parameters.
subConfSize	int	Number of recurring meetings.
subConfParam	List<SubCycleConfParam>	Recurring meeting parameters.
selfConfRole	ConfRole	Role in the meeting.
isInBreakoutSub-Conf	boolean	Whether the participant is in a breakout room.

Table 5-30 Enumerated values of VmrlIdType

Enumeration Name	Enumerated Value	Description
FIXED_ID	0	VmrlId is a fixed ID.

Enumeration Name	Enumerated Value	Description
RANDOM_ID	1	Vmrid is a random ID.

Table 5-31 Enumerated values of ConfResType

Enumeration Name	Enumerated Value	Description
CONF_RESTYPE_DEFAULT	0	Default.
CONF_RESTYPE_SHARE_VMR	3	Shared cloud meeting room.

Sample Code

Constructor of List<AttendeeModel>:

```
boolean needWithMember = true;
List<AttendeeModel> attendeeInfos = new ArrayList<>();
if (needWithMember) {
    // The following three methods are available:
    String name = getName();
    String number = getNumber();
    String thirdAccountId = getThirdAccountId();
    if (!TextUtils.isEmpty(thirdAccountId)) {
        attendeeInfos.add(AttendeeModel.buildAttendeeByThirdUserId(thirdUserId, name));
    } else if (number.startsWith("+99")) {
        // A SIP number is used to join the meeting.
        attendeeInfos.add(AttendeeModel.buildAttendeeBySipNumber(number, name));
    } else {
        // A mobile number or a fixed-line phone number is used to join the meeting.
        attendeeInfos.add(AttendeeModel.buildAttendeeByPhone(number, name));
    }
}
```

Construct a participant model for login using an app ID. For details about other models, see the demo code.

```
public static AttendeeModel buildAttendeeByThirdUserId(@NonNull String thirdUserId,
String nickName) {
    AttendeeModel attendeeInfo = new AttendeeModel();
    attendeeInfo.setAppId(FOUNDATION.getAppId());
    attendeeInfo.setThirdUserId(thirdUserId);
    attendeeInfo.setName(nickName);
    attendeeInfo.setIsAutoInvite(true);
    attendeeInfo.setIsMute(true);
    attendeeInfo.setRole(ConfRole.ATTENDEE);
    attendeeInfo.setType(HwmAttendeeType.ATTENDEE_TYPE_NORMAL);
    return attendeeInfo;
}

private HwmCallback<ConfInfo> completeHandler = new HwmCallback<ConfInfo>() {
    @Override
    public void onSuccess(ConfInfo result) {
        dismissLoading();
        DemoUtil.showToast("Meeting scheduled.");
    }
}
```

```
@Override
public void onFailed(int retCode, String desc) {
    dismissLoading();
    dismiss();
    String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
    if (TextUtils.isEmpty(err)) {
        err = Utils.getApp().getString(R.string.hwmconf_book_conf_fail);
    }
    DemoUtil.showToast("Schedule meeting failed.: " + retCode + ", desc: " + err);
}
};
BookConfParam bookConfParam = new BookConfParam()
    .setConfSubject(getSubject())
    .setStartTime(1599574798)
    .setTimeZone(56)
    .setDuration(60)
    .setConfType(MeetingType.CONF_VIDEO)
    .setVmridFlag(false)
    .setVmrid("")
    .setNeedConfPwd(true)
    .setJoinConfRestrictionType(JoinConfPermissionType.PERMIT_EVERYONE)
    .setRecordOn(true)
    .setMailOn(true)
    .setSmsOn(true)
    .setEmailCalenderOn(true)
    .setAttendees(attendeeInfos);
HwMBizSdk.getBizOpenApi().bookConf(bookConfParam, this.completeHandler);
```

5.4.4.2 Editing a Meeting

API Description

This API is used to edit a meeting.

Precautions

- Call this API before a meeting starts. If the meeting is already in progress, calling this API is invalid.
- **All fields are mandatory. Specify the fields to be edited as required, and assign values in the meeting details to remaining fields.**

Method Definition

```
/**
 * Edits a meeting.
 * @param editConfParam Indicates the editConfParam object.
 * @param hwmCallback Indicates the result callback.
 */
void editConf(EditConfParam editConfParam, HwmCallback<Integer> hwmCallback);
```

Parameter Description

Table 5-32 EditConfParam description

Parameter	Mandatory	Type	Description
confId	Yes	String	Meeting ID.
isLiveOn	No	boolean	Whether live broadcast is enabled for the meeting.

Parameter	Mandatory	Type	Description
customInfo	No	String	User-defined data on the device side. The server is unaware of the data.

For details on other parameters, see [Parameter Description](#).

Sample Code

```
EditConfParam editConfParam = new EditConfParam()
    .setConfId(this.confDetailModel.getConfId())
    .setVmrlidFlag(1 == this.confDetailModel.getVmrlidFlag())
    .setVmrlid(this.confDetailModel.getVmrlid())
    .setConfSubject(getSubject())
    .setStartTime(1599574798)
    .setTimeZone(56)
    .setDuration(60)
    .setConfType(MeetingType.CONF_VIDEO)
    .setNeedConfPwd(!this.confDetailModel.getIsGuestFreePwd())
    .setJoinConfRestrictionType(JoinConfPermissionType.PERMIT_EVERYONE)
    .setRecordOn(true)
    .setMailOn(true)
    .setSmsOn(true)
    .setEmailCalenderOn(true)
    .setAttendees(attendeeInfos);
HWMBizSdk.getBizOpenApi().editConf(editConfParam, new HwmCallback<Integer>() {
    @Override
    public void onSuccess(Integer integer) {
        dismissLoading();
        DemoUtil.showToast("Meeting edited:" + integer);
    }

    @Override
    public void onFailed(int retCode, String desc) {
        dismissLoading();
        String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
        if (TextUtils.isEmpty(err)) {
            err = Utils.getApp().getString(R.string.hwmconf_edit_failed);
        }
        DemoUtil.showToast("Failed to edit the meeting: " + retCode + ", desc: " + err);
    }
});
```

5.4.4.3 Canceling a Meeting

API Description

This API is used to cancel a scheduled meeting that has not been started.

Precautions

Call this API before a meeting starts. If the meeting is already in progress, calling this API is invalid.

Method Definition

```
/**
 * Cancels a meeting.
 *
 * @param confId Indicates the meeting ID.
 * @param hwmCallback Indicates the result callback.
```

```
*/
void cancelConf(String confId, HwmCallback<Integer> hwmCallback);
```

Parameter Description

Table 5-33 Parameters

Parameter	Mandatory	Type	Description
confId	Yes	String	Meeting ID.

Sample Code

```
HwMBizSdk.getBizOpenApi().cancelConf(item.getConfId(), new HwmCallback<Integer>() {
    @Override
    public void onSuccess(Integer result) {
        dismissLoading();
        DemoUtil.showToast("Meeting canceled");
    }

    @Override
    public void onFailed(int retCode, String desc) {
        dismissLoading();
        dismiss();
        String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
        if (TextUtils.isEmpty(err)) {
            err = Utils.getApp().getString(R.string.hwmconf_cancel_fail_tip);
        }
        DemoUtil.showToast("Failed to cancel the meeting: "+ err);
    }
});
```

5.4.4.4 Obtaining the Meeting List

API Description

This API is used to obtain the meeting list.

Precautions

This API is valid only after you have logged in to Huawei Cloud Meeting and received the meeting list notification. Otherwise, an empty list is returned.

Method Definition

```
/**
 * Obtains the meeting list.
 * @return
 */
List<ConfBaseInfo> getConfList();
```

Parameter Description

Table 5-34 ConfBaseInfo description

Parameter	Type	Description
confId	String	Meeting ID.

Parameter	Type	Description
vmrConferenceld	String	Cloud meeting room ID, which is used when the cloud meeting room is displayed.
confSubject	String	Meeting topic.
chairmanPwd	String	Host password. (The host password is displayed only when you are the host.)
guestPwd	String	Guest password.
startTime	long	Meeting start time. The value is a UTC timestamp, accurate to seconds.
endTime	long	Meeting end time. The value is a UTC timestamp, accurate to seconds.
mediaType	int	17 : voice meeting; 21 : video meeting.
scheduserName	String	Scheduler name.
chairJoinUri	String	Link for the host to join the meeting (available only for the host).
guestJoinUri	String	Link for guests to join the meeting.
accessNumber	String	Meeting access number.

Sample Code

```
HWMBizSdk.getBizOpenApi().getConfList()
```

5.4.4.5 Obtaining Meeting Details

API Description

This API is used to obtain meeting details.

Precautions

ConfDetailModel parameters are inherited from [ConfBaseInfo](#).

Method Definition

```
/**  
 * Obtains meeting details by meeting ID.  
 *  
 * @param confId Indicates the meeting ID.  
 * @param hwmCallback Indicates the result callback.  
 */  
void getConfDetail(String confId, HwmCallback<ConfDetailModel> hwmCallback);
```

Parameter Description

Table 5-35 ConfDetailModel description (inherited from ConfBaseInfo)

Parameter	Type	Description
vmrId	String	ID of the meeting created using the cloud meeting room ID, which is used for editing a meeting.
vmrFlag	int	Whether the meeting is held in a cloud meeting room.
vmrIdType	VmrIdType	ID type of the meeting if it is held in a cloud meeting room.
callInRestriction-Type	JoinConfPermissionType	Users who are allowed to join the meeting. PERMIT_EVERYONE("PERMIT_EVERYONE", 0, "Everyone is allowed to join the meeting."), PERMIT_ENTERPRISE_USER(PERMIT_EVERYONE, "PERMIT_ENTERPRISE_USER", 2, " Only corporate users are allowed to join the meeting."), PERMIT_INVITED_USER("PERMIT_INVITED_USER", 3, "Only invited users are allowed to join the meeting.");
isRecordOn	boolean	Whether to record the meeting.
isAutoRecord	boolean	Whether to automatically start recording after the meeting starts.
isLiveOn	boolean	Whether live broadcast is enabled.
isMailOn	boolean	Whether to send email notifications.
isSmsOn	boolean	Whether to send SMS notifications.
isEmailCalenderOn	boolean	Whether to send calendar notifications.
isGuestFreePwd	boolean	Whether guests can join the meeting without a password.
minutes	int	Meeting duration.
allowGuestStart-Conf	boolean	Whether to allow guests to join the meeting ahead of the host.
allowGuestStart-ConfTime	int	Time range allowed for guests to join the meeting in advance, in minutes. 0 : Guests can join the meeting at any time before the scheduled time. x : Guest can join the meeting <i>x</i> minutes before the scheduled time.

Parameter	Type	Description
attendeeModels	List<AttendeeModel>	Participant list.
isCycleConf	boolean	Whether the meeting is a recurring meeting.
cycleConfParam	CycleConfParam	Recurring meeting attributes.
subCycleConfList	List<SubCycleConfParam>	Recurring meeting list.
isOpenWaitingRoom	boolean	Whether to enable the waiting room.
customInfo	String	User-defined data on the device side. The server is unaware of the data.
concurrentParticipants	int	Maximum number of participants in the meeting. The value 0 indicates that the number of participants is not limited.
timeZone	int	Time zone. The current time zone is used by default. Value range: 1–73. For China, the value is 56 and GMT+08:00 time is used. For details, see the time zone table.

Sample Code

```
HWMBizSdk.getBizOpenApi().getConfDetail(confid, new HwmCallback<ConfDetailModel>() {  
    @Override  
    public void onSuccess(ConfDetailModel confDetailModel) {  
        DemoUtil.showToast("Meeting details obtained.");  
        Message message = Message.obtain(confDetailPageHandler);  
        message.what = HANDLE_MESSAGE_GET_CONF_DETAIL_SUCCESS;  
        message.obj = confDetailModel;  
        message.sendToTarget();  
    }  
  
    @Override  
    public void onFailed(int retCode, String desc) {  
        DemoUtil.showToast("Failed to obtain meeting details: " + retCode + ", " + desc);  
    }  
});
```

5.4.4.6 Obtaining the Cloud Meeting Room List

API Description

This API is used to obtain the cloud meeting room list.

Precautions

None

Method Definition

```
/**
 * Obtains the list of cloud meeting rooms. You can schedule a meeting in a cloud meeting room.
 *
 * @param hwmCallback Indicates the result callback.
 */
void getVmrInfoList(HwmCallback<VmrInfoListModel> hwmCallback);
```

Parameter Description

Table 5-36 VmrInfoListModel description

Parameter	Type	Description
vmrInfoList	List<VmrInfoModel>	List of cloud meeting rooms.
isEnabledShareVmr	boolean	Whether shared cloud meeting rooms are available.

Table 5-37 VmrInfoModel description

Parameter	Type	Description
name	String	Cloud meeting room name.
vmrConferenceId	String	Display ID of the cloud meeting room.
vmrId	String	Unique ID of the cloud meeting room.
chairmanPwd	String	Host password.
guestPwd	String	Guest password.
type	MeetingIdType	Meeting ID type. RANDOM_MEETING_ID (0, "Random meeting ID"), PERSONAL_MEETING_ID (1, "Personal meeting ID"), CLOUD_MEETING_ROOM_ID (2, "Cloud meeting room ID");
maxParties	int	Maximum number of participants in the cloud meeting room.
vmrEnable	boolean	Whether the cloud meeting room is available.

Parameter	Type	Description
confAllowJoinUser	ConfAllowJoinUserType	Types of users allowed to join the meeting. CONF_ALLOW_JOIN_ANYONE (0, "Anyone: Anyone"), CONF_ALLOW_JOIN_LOGINED_USER (1, "logged user: Logged-in users"), CONF_ALLOW_JOIN_IN_COMPANY_USER (2, "Company user: Corporate users"), CONF_ALLOW_JOIN_INVITED_USER (3, "Invited user: Invited users")
isOpenWaitingRoom	boolean	Whether the waiting room is enabled.

Sample Code

```
HWMBizSdk.getBizOpenApi().getVmrInfoList(new HwmCallback<VmrInfoListModel>() {
    @Override
    public void onSuccess(VmrInfoListModel vmrInfoListModel) {
        Log.i(TAG, "getVmrList: " + vmrInfoListModel.getVmrInfoList().size());
        updateVmrList(vmrInfoListModel.getVmrInfoList());
    }
    @Override
    public void onFailed(int retCode, String desc) {
        HCLog.i(TAG, "getVmrList onFailed" + retCode + " " + desc);
    }
});
```

5.4.4.7 Modifying Cloud Meeting Room Information

API Description

This API is used to modify cloud meeting room information.

Precautions

None

Method Definition

```
/**
 * Modifies cloud meeting room information.
 * @param vmrParam: Indicates the cloud meeting room information. guestPwd: Indicates the guest
 password. hostPwd: Indicates the host password. vmrName: Indicates the cloud meeting room name. vmrId:
 Indicates the unique ID of the cloud meeting room.
 * @param hwmCallback Indicates the result callback.
 */
void changeVmrInfo(ModifyVmrParam vmrParam, HwmCallback<Void> hwmCallback);
```

Parameter Description

Table 5-38 ModifyVmrParam description

Parameter	Mandatory	Type	Description
vmrId	Yes	String	Unique cloud meeting room ID.
guestPwd	Yes	String	Guest password.
hostPwd	Yes	String	Host password.
subject	Yes	String	Topic of meetings held using the cloud meeting room.
allowGuestStartConf	No	boolean	Whether to allow guests to join the meeting ahead of the host.
confAllowJoinUser	No	ConfAllowJoinUserType	Types of users allowed to join the meeting. CONF_ALLOW_JOIN_ANYONE (0, "Anyone: Anyone"), CONF_ALLOW_JOIN_LOGINED_USER (1, "logged user: Logged-in users"), CONF_ALLOW_JOIN_IN_COMPANY_USER (2, "Company user: Corporate users"), CONF_ALLOW_JOIN_INVITED_USER (3, "Invited user: Invited users")
isOpenWaitingRoom	No	boolean	Whether the waiting room is enabled.

Sample Code

```
ModifyVmrParam vmrParam = new ModifyVmrParam();
vmrParam.setGuestPwd(item.getGuestPwd());
vmrParam.setHostPwd(item.getChairmanPwd());
vmrParam.setVmrId(item.getVmrId());
vmrParam.setSubject(item.getName());
HWMBizSdk.getBizOpenApi().changeVmrInfo(vmrParam, new HwmCallback<Void>() {
    @Override
    public void onSuccess(Void v) {
        DemoUtil.showToast("Guest password of the cloud meeting room changed.");
    }

    @Override
    public void onFailed(int retCode, String desc) {
        DemoUtil.showToast("Failed to change the guest password of the cloud meeting room: " +
retCode + ", desc: " + desc);
    }
});
```

5.4.4.8 Scheduling a Recurring Meeting Series

API Description

This API is used to schedule a recurring meeting series.

Precautions

- This API can be called only when you have logged in to Huawei Cloud Meeting.
- The meeting start time must be later than the current time, and the meeting duration must be longer than 15 minutes.
- The **vmrId** parameter must be passed for a personal meeting or cloud meeting room.
- The **attendees** parameter must be passed if participant information needs to be carried.
- The maximum time span of a recurring meeting series is one year. The number of recurring meetings in a series cannot exceed 50. Otherwise, only the first 50 meetings are scheduled.
- The **result** parameter in the callback returns the meeting details. For details, see [Table 5-29](#).

API Class

NativeSDK

Method Definition

```
/**
 * Schedules a recurring meeting series.
 * @param bookCycleConfParam Indicates parameters for scheduling a recurring meeting series.
 * @param callback Indicates the result callback.
 */
void bookCycleConf(BookCycleConfParam bookCycleConfParam, HwmCallback<ConfInfo> hwmCallback);
```

Parameter Description

Table 5-39 Parameter description

Parameter	Mandatory	Type	Description
bookCycleConfParam	Yes	BookCycleConfParam	Parameter body for scheduling a recurring meeting series.
callback	Yes	HwmCallback<ConfInfo> hwmCallback	Result callback for creating the recurring meeting series.

Table 5-40 BookCycleConfParam description

Parameter	Mandatory	Type	Description
bookConfParam	Yes	BookConfParam	Parameters for scheduling the recurring meeting series.
cycleConfParam	Yes	CycleConfParam	Recurring meeting parameters.

Table 5-41 CycleConfParam description

Parameter	Mandatory	Type	Description
startDate	Yes	long	Start date and timestamp, in seconds (GMT).
endDate	Yes	long	End date and timestamp, in seconds (GMT).
cycleType	Yes	CycleType	Period type.
interval	Yes	int	Interval of recurring meetings. 1. If cycleType is set to daily, there is a meeting every several days. The value range is [1,15]. 2. If cycleType is set to weekly, there is a meeting every several weeks. The value range is [1,5]. 3. If cycleType is set to monthly, there is a meeting every several months. The value range is [1,3].
listPoints	Yes	String	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5 . - Weekly: The value range is [0,6]. 0 indicates Sunday, 1 indicates Monday, and so on. - Monthly: The value range is [1,31]. If the specified maximum value exceeds the number of days in a given month, the system will interpret it as referring to the last day of that month.
preRemindDays	Yes	int	Number of days in advance users are notified of a recurring meeting.

Sample Code

```
CycleConfParam cycleConfParam = new CycleConfParam();
cycleConfParam.setCycleType(mSelectedCycleType);
cycleConfParam.setInterval(interval);
cycleConfParam.setListPoints(subDates);
cycleConfParam.setStartDate(startTimeStamp);
cycleConfParam.setEndDate(endTime.getTimeInMillis() / 1000);
cycleConfParam.setPreRemindDays(preMindDays);

BookConfParam bookConfParam = new BookConfParam()
    .setConfSubject(getSubject())
    .setStartTime(1599574798)
    .setTimeZone(56)
    .setDuration(60)
    .setConfType(MeetingType.CONF_VIDEO)
    .setVmridFlag(false)
    .setVmrid("")
    .setNeedConfPwd(true)
    .setJoinConfRestrictionType(JoinConfPermissionType.PERMIT_EVERYONE)
    .setRecordOn(true)
    .setMailOn(true)
    .setSmsOn(true)
    .setEmailCalenderOn(true)

    .setAttendees(attendeeInfos);

BookCycleConfParam bookCycleConfParam = new BookCycleConfParam();
bookCycleConfParam.setBookConfParam(bookConfParam);
bookCycleConfParam.setCycleConfParam(cycleConfParam);
HwMBizSdk.getBizOpenApi().bookCycleConf(bookCycleConfParam, completeHandler);
```

5.4.4.9 Editing a Recurring Meeting Series

API Description

This API is used to edit a recurring meeting series.

Precautions

None

Method Definition

```
/**
 * Edits a recurring meeting series.
 * @param editConfParam Indicates parameters for editing a recurring meeting series.
 * @param hwmCallback Indicates the result callback.
 */
void editCycleConf(EditCycleConfParam editCycleConfParam, HwmCallback<Integer> hwmCallback);
```

Parameter Description

Table 5-42 Parameter description

Parameter	Mandatory	Type	Description
editCycleConfParam	Yes	EditCycleConfParam	Parameter body for editing a recurring meeting series.
callback	Yes	HwmCallback<Integer>	Result callback for editing the recurring meeting series.

Table 5-43 EditCycleConfParam parameter description

Parameter	Mandatory	Type	Description
editConfParam	Yes	EditConfParam	Parameters for editing the recurring meeting series.
cycleConfParam	Yes	CycleConfParam	Parameters of recurring meetings.

Sample Code

```
HWMBizSdk.getBizOpenApi().editCycleConf(editCycleConfParam, new HwmCallback<Integer>() {  
    @Override  
    public void onSuccess(Integer integer) {  
        dismissGlobalLoading();  
        DemoUtil.showToast("Recurring meeting series edited: " + integer);  
    }  
  
    @Override  
    public void onFailed(int retCode, String desc) {  
        HCLog.i(TAG, "edit cycle conf " + retCode + " desc " + desc);  
        dismissGlobalLoading();  
        String err = ErrorMessageFactory.create(retCode);  
        if (TextUtils.isEmpty(err)) {  
            err = DemoUtil.getResources().getString(R.string.hwmconf_edit_failed);  
        }  
        DemoUtil.showToast("Edit recurring meeting series failed: " + retCode + ",desc: " + err);  
    }  
});
```

5.4.4.10 Canceling a Recurring Meeting Series

API Description

This API is used to cancel a recurring meeting series that has not been started yet.

Precautions

Call this API before a recurring meeting series ends. If the recurring meeting series ends, calling this API is invalid.

Method Definition

```
/**  
 * Cancels a recurring meeting series.  
 *  
 * @param cycleConfId Indicates the ID of a recurring meeting series.  
 * @param hwmCallback Indicates the result callback.  
 */  
void cancelCycleConf(String cycleConfId, HwmCallback<Integer> hwmCallback);
```

Parameter Description

Table 5-44 Parameter description

Parameter	Mandatory	Type	Description
confConfId	Yes	String	Recurring meeting series ID.

Sample Code

```
HWMBizSdk.getBizOpenApi().cancelCycleConf(item.getConfId(), new HwmCallback<Integer>() {
    @Override
    public void onSuccess(Integer result) {
        HLog.i(TAG,"cancelCycleConf onFailed" + result);
        doDismissDialogAndFragment();
        DemoUtil.showToast("cancel cycle conf success");
    }

    @Override
    public void onFailed(int retCode, String desc) {
        doDismissDialogAndFragment();
        String err = ErrorMessageFactory.create(retCode);
        if (TextUtils.isEmpty(err)) {
            err = DemoUtil.getResources().getString(R.string.hwmconf_cancel_fail_tip);
        }
        DemoUtil.showToast("cancel cycle conf failed: " + err);
    }
});
```

5.4.4.11 Editing a Recurring Meeting

API Description

This API is used to edit a meeting.

Precautions

- Call this API before a meeting starts. If the meeting is already in progress, calling this API is invalid.
- **All fields are mandatory. Specify the fields to be edited as required, and assign values in the meeting details to remaining fields.**

Method Definition

```
/**
 * Edits a recurring meeting.
 * @param modifySubCycleConfParam Indicates parameters for editing a recurring meeting.
 * @param hwmCallback Indicates the result callback.
 */
void editSubCycleConf(ModifySubCycleConfParam modifySubCycleConfParam, SdkCallback<Void>
hwmCallback);
```

Parameter Description

Table 5-45 Parameter description

Parameter	Mandatory	Type	Description
modifySubCycleConfParam	Yes	ModifySubCycleConfParam	Parameters of a recurring meeting.

Table 5-46 ModifySubCycleConfParam parameter description

Parameter	Mandatory	Type	Description
editConfParam	Yes	EditConfParam	Parameters for editing the recurring meeting.
cycleConfParam	Yes	CycleConfParam	Parameters of the recurring meeting.

For details on other parameters, see [Table 5-27](#).

Sample Code

```
HWMBizSdk.getBizOpenApi().editSubCycleConf(modifySubCycleConfParam, new SdkCallback<Void>() {  
    @Override  
    public void onSuccess(Void v) {  
        DemoUtil.showToast("Edit sub cycle conf success");  
        doDismissDialogAndFragment();  
        mListener.onEditSubCycleConfSuccess();  
    }  
  
    @Override  
    public void onFailed(SDKERR retCode) {  
        HCLog.i(TAG, "modifySubCycleConf onFailed" + retCode);  
        String err = ErrorMessageFactory.create(retCode);  
        if (TextUtils.isEmpty(err)) {  
            err = DemoUtil.getResources().getString(R.string.hwmconf_edit_failed);  
        }  
        DemoUtil.showToast("Edit sub cycle conf failed: " + retCode + ",desc: " + err);  
        doDismissDialogAndFragment();  
    }  
});
```

5.4.4.12 Canceling a Recurring Meeting

API Description

This API is used to cancel a recurring meeting that has not been started yet.

Precautions

Call this API before a recurring meeting starts. If the recurring meeting is already in progress, calling this API is invalid.

Method Definition

```
/**  
 * Cancels a recurring meeting.  
 *  
 * @param cycleConfId Indicates the ID of a recurring meeting series.  
 * @param subCycleConfId Indicates the ID of a recurring meeting.  
 * @param hwmCallback Indicates the result callback.  
 */  
void cancelSubCycleConf(String cycleConfId, String subCycleConfId, SdkCallback<Void> hwmCallback);
```

Parameter Description

Table 5-47 Parameter description

Parameter	Mandatory	Type	Description
cycleConfId	Yes	String	Recurring meeting series ID.
subCycleConfId	Yes	String	Recurring meeting ID.

Sample Code

```
HWMBizSdk.getBizOpenApi().cancelSubCycleConf(cycleConfId, item.getConfId(), new SdkCallback<Void>()
{
    @Override
    public void onFailed(SDKERR retCode) {
        HCLog.i(TAG, "cancel sub cycle conf onFailed " + retCode);
        String err = ErrorMessageFactory.create(retCode);
        if (TextUtils.isEmpty(err)) {
            err = DemoUtil.getResContext().getString(R.string.hwmconf_cancel_fail_tip);
        }
        DemoUtil.showToast("cancel sub cycle conf failed: " + err);
        confListAdapter.notifyDataSetChanged();
    }

    @Override
    public void onSuccess(Void aVoid) {
        DemoUtil.showToast("cancel sub cycle conf success");
        updateConfDetail(cycleConfId);
    }
});
}
```

5.4.5 Meeting Control

5.4.5.1 Creating a Meeting

```
HWMSdk.getOpenApi.createConf(CreateConfParam, HwmCancelableCallBack)
```

API Description

This API is used to create an instant meeting and join the meeting immediately.

Precautions

This API applies for the audio and camera permissions of the application.

Method Definition

```
/**
 * Creates a meeting.
 * @param createConfParam Indicates the createConfParam object.
 * @param hwmCallback Indicates the result callback.
 */
void createConf(CreateConfParam createConfParam , HwmCancelableCallBack <ConfInfo> hwmCallback);
```

Parameter Description

Table 5-48 Parameter description

Parameter	Mandatory	Type	Description
createConfParam	Yes	CreateConfParam	createConfParam object.
hwmCallback	Yes	HwmCancelableCallBack	Callback object.

Return Values

None

Parameter Extension

Table 5-49 CreateConfParam description

Parameter	Mandatory	Type	Description
setSubject	Yes	String	Meeting topic.
setConfType	Yes	ConfType	CONF_AUDIO(0, "Voice meeting"), CONF_VIDEO(1, "Video meeting"),
setNeedPassword	Yes	boolean	Whether a password is required. NOTE This parameter is valid only for meetings with a random ID.
guestPwd	No	String	Guest password. If this parameter is left blank, the guest password is generated by the server. NOTE This parameter is valid only for meetings with a random ID.
setAttendeeMembers	No	List<AttendeeModel>	Participant list.
setCameraOn	No	boolean	Whether to enable the camera.
setMicOn	No	boolean	Whether to enable the microphone.

Parameter	Mandatory	Type	Description
setRecordOn	No	boolean	Whether to enable meeting recording. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
setAutoRecord	No	boolean	Whether to automatically start recording after the meeting starts. The default value is false . Meeting recording must be enabled if automatic recording is enabled. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
setVmrlId	No	String	Cloud meeting room ID.
setJoinConfRestrictionType	No	JoinConfPermissionType	PERMIT_EVERYONE("PERMIT_EVERYONE", 0, "Everyone can join the meeting.") PERMIT_ENTERPRISE_USER(The "PERMIT_ENTERPRISE_USER", 2, "Only corporate users are allowed to join the meeting.") PERMIT_INVITED_USER("PERMIT_INVITED_USER", 3, "Only invited users are allowed to join the meeting.");
customInfo	No	String	User-defined data on the device side. The server is unaware of the data.
isSpeakerOff	No	boolean	Whether to disable the speakers. By default, the speakers are enabled.
concurrentParticipants	No	int	Maximum number of participants in the meeting. If this parameter is left blank, there is no restriction.

Parameter	Mandatory	Type	Description
confResType	No	ConfResType	Meeting resource type. This parameter is mandatory only for a shared cloud meeting room (set the value to ConfResType.CONF_RESTYPE_SHARE_VMR).

Sample Code

```
List<AttendeeModel> attendeeList = new ArrayList<>();
// The following three methods are available:
String name = getName();
String number = getNumber();
String thirdAccountId = getThirdAccountId();
if (!TextUtils.isEmpty(thirdAccount)) {
    if (LoginStatusCache.getLoginAccountInfo() instanceof AppIdAuthParam) {
        // An app ID is used for login.
        attendeeList.add(AttendeeModel.buildAttendeeByThirdAccountId(thirdAccount,name));
    }
} else if(number.startsWith("+99")){
    // A SIP number is used to join the meeting.
    attendeeList.add(AttendeeModel.buildAttendeeBySipNumber(number, name));
} else {
    // A mobile number or a fixed-line phone number is used to join the meeting.
    attendeeList.add(AttendeeModel.buildAttendeeByPhone(number, name));
}

CreateConfParam createConfParam = new CreateConfParam()
    .setSubject(getSubject()) // Set the meeting topic.
    .setConfType(ConfType.CONF_AUDIO) // Set the meeting type.
    .setVmrid(getVmrid()) // (Optional) Set the cloud meeting room ID.
    .setJoinConfRestrictionType(JoinConfPermissionType.PERMIT_EVERYONE) // Specify the scope of users
    who are allowed to join the meeting.
    .setNeedPassword(true) // Specify whether to create a password.
    .setCameraOn(true) // Specify whether to enable the camera.
    .setMicOn(true) // Specify whether to enable the microphone.
    .setRecordOn(true) // Specify whether to enable meeting recording.
    .setAttendeeMembers(attendeeList); // Add participant information.

HWMSdk.getOpenApi(getActivity()).createConf(createConfParam, new
HwmCancelableCallBack<ConfInfo>() {

    // Callback invoked when a meeting is created.
    @Override
    public void onSuccess(ConfInfo confInfo) {
        Log.i(TAG, "Meeting created: Meeting ID: "+ confInfo.getConfId() +
            ";Meeting password:" + confInfo.getConfPwd());
    }

    // Callback invoked when a meeting fails to be created.
    @Override
    public void onFailed(int retCode, String desc) {
        dismissLoading();
        String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
        if (TextUtils.isEmpty(err)) {
            err =
Utils.getApp().getString(com.huawei.hwmmobileconfui.R.string.conf_create_error);
        }
        Log.e(TAG, "Create meeting failed.: "+ err);
    }
}
@Override
```

```
public void onCancel() {
}
});
```

5.4.5.2 Joining a Meeting

```
HWMSdk.getOpenApi.joinConf(JoinConfParam, HwmCancelableCallBack)
```

API Description

This API can be used to join a meeting regardless of whether you have logged in or not. You can join a meeting in either of the following ways:

- Enter the meeting ID and password.
- Use a meeting ID and random code to join the meeting. The meeting link (for example, https://meeting.huaweicloud.com/#/j/981924330/e*****9) in the notification email contains the meeting ID (981924330 in this example) and random code (e*****9 in this example).

Precautions

- If you call this API without logging in to Huawei Cloud Meeting, the **nickname** parameter must be specified.
- Call the child class **PasswordJoinConfParam** to join a meeting using the ID, and call the child class **RandomJoinConfParam** to join a meeting in random mode.

Method Definition

```
/**
 * @param joinConfParam Indicates the joinConfParam object.
 * @param hwmCallback Indicates the result callback.
 */
void joinConf(JoinConfParam joinConfParam, HwmCancelableCallBack<Void> hwmCallback);
```

Parameter Description

Table 5-50 Parameter description

Parameter	Mandator y	Type	Description
joinConfParam	Yes	JoinConfParam	JoinConfParam object.
hwmCallback	Yes	HwmCancelableCall Back	Callback object.

Return Values

None

Parameter Extension

Table 5-51 JoinConfParam description

Parameter	Mandatory	Type	Description
setConfId	Yes	String	Meeting ID.
setNickname	Yes	String	Nickname.
setCameraOn	No	boolean	Whether to enable the camera.
setMicOn	No	boolean	Whether to enable the microphone.

Table 5-52 PasswordJoinConfParam parameter

Parameter	Mandatory	Type	Description
password	No	String	Password for joining the meeting. This parameter is left blank if the meeting does not have a password.
isStopConflictConf	No	boolean	Whether to forcibly end the meeting that conflicts with the cloud meeting room.

Table 5-53 RandomJoinConfParam parameter

Parameter	Mandatory	Type	Description
random	Yes	String	Random number for joining the meeting, which is generated based on the meeting password.
domain	No	String	Domain name, which is used when you join the meeting offline.

Sample Code

```
JoinConfParam joinConfParam;
if (!TextUtils.isEmpty(random)) {
    joinConfParam = new RandomJoinConfParam()
        .setRandom(random)
        .setConfId(getConfId())
        .setNickname(getNickname())
        .setCameraOn(true)
        .setMicOn(true);
} else {
    joinConfParam = new PasswordJoinConfParam()
        .setPassword(password)
        .setConfId(getConfId())
```



```

        .setNickname(getNickname())
        .setCameraOn(true)
        .setMicOn(true);
    }
    HwMSdk.getOpenApi(getActivity()).joinConf(joinConfParam, new HwmCancelableCallBack<Void>() {

        // Callback invoked when joining the meeting is successful.
        @Override
        public void onSuccess(Void ret) {
            Log.i(TAG, "Meeting joined");
        }

        // Callback invoked when joining the meeting fails.
        @Override
        public void onFailed(int retCode, String desc) {
            String err = ErrorMessageFactory.create(Utils.getApp(), retCode);
            if (TextUtils.isEmpty(err)) {
                err = Utils.getApp().getString(com.huawei.hwmmobileconfui.R.string.conf_join_fail_tip);
            }
            Log.e(TAG, "Joining the meeting failed: "+ err);
        }
        @Override
        public void onCancel() {

        }
    });

```

5.4.5.3 Adding Participants

```

HwMBizSdk.getBizOpenApi().addAttendee(List<AttendeeModel> attendees, HwmCallback<Integer>
hwmCallback);

```

API Description

This API is used to invite participants to a meeting.

Precautions

1. Only the host can invite participants.

Method Definition

```

/**
 * Invites participants to a meeting.
 * @param attendees Indicates the participants to invite.
 * @param hwmCallback Indicates the result callback.
 */
void addAttendee(List<AttendeeModel> attendees, HwmCallback<Integer> hwmCallback);

```

Parameter Description

Table 5-54 AttendeeModel description

Parameter	Mandatory	Type	Description
name	Yes	String	Participant name.

Parameter	Mandatory	Type	Description
number	Yes	String	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	String	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.

Sample Code

```
HWMBizSdk.getBizOpenApi().addAttendee(List<AttendeeModel> attendees, new HwmCallback<Integer>() {  
    @Override  
    public void onSuccess(Integer integer) {  
        Log.i(TAG, "Participants added.");  
    }  
  
    @Override  
    public void onFailed(int retCode, String desc) {  
        Log.i(TAG, "Failed to add the participants. code: " + retCode);  
    }  
});
```

5.4.5.4 Scanning a QR Code to Invite a Large Screen to a Meeting

joinPairConf

API Description

This API is used to scan a QR code to invite a large screen to a meeting.

Precautions

None

Method Definition

```
HWMSdk.getOpenApi(this.getApplication()).joinPairConf(JoinPairConfParam joinPairConfParam,  
HwmCallback<Void> callback);
```

Table 5-55 Parameter description

Parameter	Mandatory	Type	Description
joinPairConfParam	Yes	JoinPairConfParam	Parameters for inviting a large screen to a meeting by scanning a QR code.
callback	Yes	HwmCallback	Callback for inviting a large screen to a meeting by scanning a QR code.

Return Values

None

Parameter Extension

Table 5-56 JoinPairConfParam description

Parameter	Mandatory	Type	Description
url	Yes	String	QR code URL.
confId	Yes	String	Meeting ID.
confPassword	No	String	Meeting password.

Return Values

None

Sample Code

```
public void joinPairConf() {
    JoinPairConfParam joinPairConfParam = new JoinPairConfParam();
    joinPairConfParam.setConfId(confId);
    joinPairConfParam.setConfPassword(confPassword);
    joinPairConfParam.setUrl(url);
    HwMSdk.getOpenApi(this.getApplication()).joinPairConf(joinPairConfParam, new HwmCallback<Void>()
    {
        @Override
        public void onFailed(int retCode, String desc) {
            showToast(desc);
        }

        @Override
        public void onSuccess(Void unused) {
            if (successLayout != null) {
                successLayout.setVisibility(View.VISIBLE);
            }
        }
    });
}
```

5.4.5.5 Setting the Sharing Permission

setShareScreenPermission

```
HWMBizSdk.getBizOpenApi().setShareScreenPermission(boolean hasPermission)
```

API Description

This API is used to set the sharing permission.

Precautions

The return value of the API only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
/**  
 * Specifies whether the local device has the sharing permission.  
 * @param hasPermission  
 */  
void setShareScreenPermission(boolean hasPermission);
```

Parameter Description

Table 5-57 Parameter description

Parameter	Man dato ry	Type	Description
hasPermission	Yes	boolean	Whether sharing is allowed.

Return Values

None

Sample Code

```
HWMBizSdk.getBizOpenApi().setShareScreenPermission(true);
```

5.4.5.6 Leaving a Meeting

```
HWMSdk.getOpenApi.leaveConf(HwmCallback<Integer> callback)
```

API Description

This API is used to leave a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. If this API is called to leave a meeting, the meeting will not end. You can join the meeting again when the meeting is still in progress.

Method Definition

```
/**  
 * Leaves a meeting. */
```

```
* @param callback Indicates the result callback.  
*/  
void leaveConf(HwmCallback<Integer> callback);
```

Parameter Description

None

Return Values

None

Sample Code

```
HWMSdk.getOpenApi(HWMBizSdk.getApplication()).leaveConf(new HwmCallback<Integer>() {  
    @Override  
    public void onSuccess(Integer integer) {  
        Toast.makeText(HWMBizSdk.getApplication(), "You have left the meeting.",  
Toast.LENGTH_SHORT)  
            .show();  
    }  
  
    @Override  
    public void onFailed(int retCode, String desc) {  
        Toast.makeText(HWMBizSdk.getApplication(), "Failed to leave the meeting: " + retCode + " " +  
desc, Toast.LENGTH_SHORT)  
            .show();  
    }  
});
```

5.4.5.7 Ending a Meeting

```
HWMSdk.getOpenApi.endConf(HwmCallback<Integer> callback)
```

API Description

This API is used by the host to end a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. Only the host can end a meeting.
3. After this API is called, the meeting will end and you cannot join the meeting again.

Method Definition

```
/**  
 * Ends a meeting.  
 * @param callback Indicates the result callback.  
 */  
void endConf(HwmCallback<Integer> callback);
```

Parameter Description

None

Return Values

None

Sample Code

```
HWMSdk.getOpenApi(HWMBizSdk.getApplication()).endConf(new HwmCallback<Integer>() {  
    @Override  
    public void onSuccess(Integer integer) {
```

```
        Toast.makeText(HWMBizSdk.getApplication(), "Meeting ended.", Toast.LENGTH_SHORT)
            .show();
    }

    @Override
    public void onFailed(int retCode, String desc) {
        Toast.makeText(HWMBizSdk.getApplication(), "Failed to end the meeting: " + retCode + " " +
desc, Toast.LENGTH_SHORT)
            .show();
    }
});
```

5.4.5.8 Starting an Instant Meeting

startP2PConf

```
HWMSdk.getOpenApi(getActivity().getApplication()).startP2PConf(StartP2PConfParam createConfParam,
HwmCancelableCallBack<ConfInfo> callback);
```

API Description

This API is used to start an instant meeting.

Precautions

This API is used only when your enterprise enables the new P2P function.

Method Definition

```
/**
 * Creates an instant meeting.
 *
 * @param createConfParam Indicates parameter settings for creating an instant meeting.
 * @param callback Indicates the result callback.
 */
void startP2PConf(StartP2PConfParam createConfParam, HwmCancelableCallBack<ConfInfo> callback);
```

Parameter Description

Table 5-58 Parameter description

Parameter	Man dato ry	Type	Description
createConfParam	Yes	StartP2PConfP aram	Parameters for creating an instant meeting.
callback	Yes	HwmCancelab leCallBack	Callback for the result of creating the instant meeting.

Return Values

None

Parameter Extension

Table 5-59 StartP2PConfParam description

Parameter	Mandatory	Type	Description
callerInfo	Yes	CallerInfo	Caller information.
calleeInfo	Yes	CalleeInfo	Called participant information.
meetingType	Yes	MeetingType	Meeting type.

Table 5-60 CallerInfo description

Parameter	Mandatory	Type	Description
nickName	Yes	String	Caller name.

Table 5-61 CalleeInfo description

Parameter	Mandatory	Type	Description
nickName	Yes	String	Called participant name.

Parameter	Mandatory	Type	Description
number	No	String	Called number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	No	String	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.

Sample Code

```
private void startP2PConf() {
    showLoading();
    boolean isVideo = !audioBtn.isChecked();
    StartP2PConfParam startP2PConfParam = new StartP2PConfParam();
    startP2PConfParam.setCallerInfo(genP2PConfCaller());
    startP2PConfParam.setCalleeInfo(genP2PConfCallee());
    startP2PConfParam.setMeetingType(isVideo ? MeetingType.CONF_VIDEO : MeetingType.CONF_AUDIO);
    HWMSdk.getOpenApi(getActivity().getApplication()).startP2PConf(startP2PConfParam, new
    HwmCancelableCallBack<ConfInfo>() {
        @Override
        public void onSuccess(ConfInfo confInfo) {
            Log.i(TAG, "startP2PConf success");
        }
    });
}
```



```
        doDismissDialogAndFragment();
    }

    @Override
    public void onFailed(int retCode, String desc) {
        HLog.i(TAG, "startP2PConf onFailed" + retCode + " " + desc);
        dismissLoading();
        DemoUtil.showToast("Failed to start an instant meeting: " + retCode + ", desc: " + desc);
    }

    @Override
    public void onCancel() {
        HLog.i(TAG, "startP2PConf onCancel");
        dismissLoading();
    }
}
});
}
```

5.4.6 Meeting Information

5.4.6.1 Obtaining the Participant List

getAttendeeList

API Description

This API is used to obtain the participant list in a meeting.

Precautions

1. This API can be called only during a meeting.

Method Definition

```
/**
 * Obtains the participant list.
 * @return Indicates the participant list.
 */
List<AttendeeModel> getAttendeeList();
```

Parameter Description

For details, see [AttendeeModel](#).

Table 5-62 ConfAttendeeState description

Parameter	Description
CONF_ATTENDEE_STATE_IN_CONF	The participant is in the meeting.
CONF_ATTENDEE_STATE_CALLING	The participant is being called.
CONF_ATTENDEE_STATE_LEFT	The participant has left the meeting.

Sample Code

```
HWMBizSdk.getBizOpenApi().getAttendeeList();
```

5.4.6.2 Obtaining the Attendee List

getAudienceList

API Description

This API is used to obtain the attendee list in a meeting.

Precautions

1. This API can be called only during a meeting.
2. Attendees cannot call this API, but can obtain the list from the meeting details message.

Method Definition

```
/**  
 * Obtains the attendee list.  
 * @return Indicates the attendee list.  
 */  
List<AttendeeModel> getAudienceList();
```

Parameter Description

For details, see [AttendeeModel](#).

Sample Code

```
HWMBizSdk.getBizOpenApi().getAudienceList();
```

5.4.6.3 Obtaining a User Status

```
HWMUserSdk.getOpenApi().getHWMUserState();
```

API Description

This API is used to obtain the status of a user (whether the user is in a meeting).

Precautions

None

Method Definition

```
/**  
 * Obtains the status of a user (whether the user is in a meeting).  
 */  
HWMUserState getHWMUserState();
```

Parameter Description

None

Return Values

Table 5-63 Enumerated values of HWMUserState

Enumerated Value	Description
HWM_STATE_IDLE	The user is idle.

Enumerated Value	Description
HWM_STATE_IN_CONF	The user is in a meeting.
HWM_STATE_IN_CALL	The user is being called.

Sample Code

```
public void getHWMUserState() {
    HWMUserState hwmUserState =
    HWMSdk.getOpenApi(HWMBizSdk.getApplication()).getHWMUserState();
    DemoUtil.showToast("user state: " + hwmUserState.getDescription());
}
```

5.4.7 Audio and Video Data Streams

5.4.7.1 Enabling Third-Party Video Streaming

You can configure third-party collection of video streams in `OpenSDKConfig`. The SDK does not collect video streams.

There are three callback methods:

`onSetLocalVideoMirrorTypeNotify`: callback called when a meeting starts. You can configure video mirroring.

`onStartPushExternalVideoFrameNotify`: callback called when a meeting starts. You must collect data and push streams.

`onEndPushExternalVideoFrameNotify`: callback called when a meeting ends. You can stop data collection.

Application Scenarios

Video streams are collected by non-standard mobile phone cameras or video streams need to be processed additionally.

Precautions

1. `sdkConfig` takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
public class CustomPushExternalVideoFrameStrategy implements IPushExternalVideoFrameStrategy {
    private static CopyOnWriteArrayList<IPushVideoFrameNotification> pushVideoFrameNotifications = new
    CopyOnWriteArrayList<>();

    public static void registerPushVideoFrameListener(IPushVideoFrameNotification confResultNotification) {
        pushVideoFrameNotifications.add(confResultNotification);
    }

    public static void removePushVideoFrameListener(IPushVideoFrameNotification confResultNotification) {
        pushVideoFrameNotifications.remove(confResultNotification);
    }

    @Override
    public void onSetLocalVideoMirrorTypeNotify() {
```

```
// Set the mirroring mode of the local video (called in the UI main thread). For details, see
Configuring Video Mirroring of Third-Party Streaming.
}

@Override
public void onStartPushExternalVideoFrameNotify() {
    // Start third-party stream collection and push.
}

@Override
public void onEndPushExternalVideoFrameNotify() {
    // Stop third-party stream collection and push.
}
}
sdkConfig.setPushExternalVideoFrameStrategy(new CustomPushExternalVideoFrameStrategy());
```

5.4.7.2 Configuring Video Mirroring of Third-Party Streaming

API Description

This API is used to set the mirroring mode of the front camera in the local video window during third-party stream push.

Precautions

This API must be called in the UI main thread. Set the mirroring type of the front camera to left and right. Mirroring is unavailable for the rear camera.

Method Definition

```
/**
 * Sets the mirroring mode of the local video window.
 * @param mirrorType Indicates the mirroring mode. The value 0 means no mirroring, 1 means up and
down mirroring, and 2 means left and right mirroring. The default value is 0, and up and down mirroring is
not supported currently.
 */
void setLocalVideoMirrorType(MirrorType mirrorType);
```

Parameter Description

Table 5-64 Parameters

Parameter	Mandatory	Type	Description
mirrorType	Yes	MirrorType	Mirroring mode. MIRROR_NONE(0, "No mirroring") MIRROR_UP_DOWN(1, "Up and down mirroring") (not supported currently) MIRROR_LEFT_RIGHT(2, "Left and right mirroring")

Sample Code

```
HWMBizSdk.getBizOpenApi().setLocalVideoMirrorType(MirrorType.MIRROR_LEFT_RIGHT));
```

5.4.7.3 Pushing Video Streams Using a Third Party

API Description

In the custom video stream collection scenario, after data streams are collected, you can call this API to push streams using a third party.

Precautions

Call this API during a meeting or call.

Method Definition

```
/**
 * Pushes streams collected by a third party.
 * @param videoFrameParam Indicates the videoFrameParam object.
 * @param callback Indicates the result callback.
 */
void pushExternalVideoFrame(VideoFrameParam videoFrameParam, HwmCallback<Void> callback);
```

Parameter Description

Table 5-65 Parameters

Parameter	Mandatory	Type	Description
videoFrameParam	No	VideoFrameParam	videoFrameParam object.
callback	No	HwmCallback	Result callback.

Return Values

None

Parameter Extension

Table 5-66 VideoFrameParam parameters

Parameter	Mandatory	Type	Description
frameDate	Yes	byte[]	Video data.
frameWidth	Yes	int	Image width. When it is used as an input parameter, the value must be an integral multiple of 4, ranging from 90 to 1920.
frameHeight	Yes	int	Image height. When it is used as an input parameter, the value must be an integral multiple of 2, ranging from 90 to 1200.

Parameter	Mandatory	Type	Description
videoFrameFormat	Yes	VideoFrameFormat	Image format. The format used by the current demo is VIDEO_FRAME_FORMAT_NV21 . After conversion, the image format must be set to 105 . VIDEO_FRAME_FORMAT_I420(100, "I420") VIDEO_FRAME_FORMAT_YV12(101, "YV12") VIDEO_FRAME_FORMAT_NV21(105, "NV21") VIDEO_FRAME_FORMAT_UNKNOWN(999, "UNKNOWN")
displayRotation	Yes	DisplayRotation	Video display angle. ROTATION_0(0, "0 degree clockwise rotation") ROTATION_90(1, "90 degree clockwise rotation") ROTATION_180(2, "180 degree clockwise rotation") ROTATION_270(3, "270 degree clockwise rotation")

Sample Code

```
ExternalVideoFrameParam videoFrameParam = new ExternalVideoFrameParam();
videoFrameParam.setFrameDate(mData);
videoFrameParam.setFrameWidth(1920);
videoFrameParam.setFrameHeight(1080);
videoFrameParam.setDisplayRotation(DisplayRotation.ROTATION_0);
videoFrameParam.setVideoFrameFormat(VideoFrameFormat.VIDEO_FRAME_FORMAT_NV21);
HWMBizSdk.getBizOpenApi().pushExternalVideoFrame(videoFrameParam, new HwmCallback<Void>() {
    @Override
    public void onSuccess(Void aVoid) {
    }

    @Override
    public void onFailed(int retCode, String desc) {
        Log.i(TAG, "code: " + retCode);
    }
});
```

5.5 Notification Reference

5.5.1 Account Status Change Notification

You can configure listeners for account-related notification callbacks to monitor scenarios such as account expiration.

Application Scenarios

Account kicked out: `onKickedOut`

Token expired: `onTokenInvalid`

Account locked: `onAccountLocked`

Account or password error: `onAccountOrPasswordError`

Precautions

`sdkConfig` takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
sdkConfig.setAccountEventHandle(new IAccountEventHandle() {  
    @Override  
    public void onKickedOut(@Nullable KickOutState kickOutState) {  
        Log.i(TAG, "Your account has logged in on another device.");  
    }  
    @Override  
    public void onAccountOrPasswordError(@Nullable AccountOrPasswordErrorState  
accountOrPasswordErrorState) {  
        Log.i(TAG, "onAccountOrPasswordError");  
    }  
    @Override  
    public void onTokenInvalid(@Nullable TokenInvalidState tokenInvalidState) {  
        // After the token expires, you need to log out and log in again. Otherwise, basic functions such as  
meeting creation and scheduling will be affected.  
        Log.i(TAG, "onTokenInvalid");  
    }  
    @Override  
    public void onAccountLocked(@Nullable AccountLockedState accountLockedState) {  
        Log.i(TAG, "onAccountLocked");  
    }  
});
```

5.5.2 Meeting Status Change Notification

You can configure listeners for notifications related to meeting UI changes.

The UI is created when you join a meeting and destroyed when you leave the meeting.

Application Scenarios

Joining a meeting: `onConfDetailNotify`

Ending or leaving a meeting: `onConfEnded` or `onLeaveConf`

Poor network connection: `onPoorNetworkQualityInfoNotify`

Call records of instant meetings: `onP2PConfRecord`

Precautions

`sdkConfig` takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
public class CustomNotifyHandler implements CLMNotifyHandler {

    @Override
    public void onConfDetailNotify(ConfInfo confInfo) {
        Log.i(TAG, "confInfo: confId" + confInfo.getConfId() + ", Subject:" + confInfo.getConfSubject());
    }

    @Override
    public void onPoorNetworkQualityInfoNotify(PoorNetworkQualityInfo poorNetworkInfo) {
        Log.i(TAG, " poorNetworkInfo : " + poorNetworkInfo.getUserId() + ", "
            + ", " + poorNetworkInfo.getIsLocal() + ", " + poorNetworkInfo.getVideoStatus() + ", "
            + poorNetworkInfo.getAudioStatus() + ", " + poorNetworkInfo.getShareStatus());
        DemoUtil.showToast("CLMNotifyHandler event: onPoorNetworkQualityInfoNotify ");
    }

    /**
     * Notifies you when a meeting ended.
     * @param result Indicates the error code returned after the meeting ended.
     */
    @Override
    public void onConfEnded(ConfEndedReason result) {
        Log.i(TAG, "The meeting has ended.");
    }

    @Override
    public void onLeaveConf(int result) {
        Log.i(TAG, "You've left the meeting.");
    }
}

sdkConfig.setNotifyHandler(new CustomNotifyHandler());
```

5.5.2.1 Meeting End Notification

API Description

A notification is sent when a meeting ended.

Method Definition

```
/**
 * Notifies you when a meeting ended.
 *
 * @param reason Indicates the error code returned after the meeting ended.
 */
void onConfEnded(ConfEndedReason reason);
```

Parameter Description

Table 5-67 Parameter description

Parameter	Mandatory	Type	Description
reason	Yes	ConfEndedReason	Enumerated values of error codes.

Return Values

None

Parameter Extension

Table 5-68 Enumerated values of ConfEndedReason

Parameter	Type	Description
LEAVE_CONF_H ANGUP	enum	You have left the meeting.
STOP_CONF_HA NDUP	enum	The meeting has ended.
REMOVE_BY_CH AIRMAN_HAND UP	enum	You were removed by the host.
TIMEOUT	enum	Network interrupted.
NO_STREAM_H ANDUP	enum	Network error.
CORP_CONFERE NCE_RESOURCE _HAS_BEEN_RU N_OUT	enum	Enterprise resources have been used up.
UNKONWN	enum	Unknown reason.

5.5.2.2 Meeting Details Notification

API Description

A notification with meeting details is sent when you joined a meeting.

Method Definition

```
/**
 * Notifies you of meeting details.
 *
 * @param confInfo
 */
void onConfDetailNotify(ConfInfo confInfo);
```

Parameter Description

Table 5-69 Parameter description

Parameter	Mandatory	Type	Description
confInfo	Yes	ConfInfo	Meeting details.

Return Values

None

Parameter Extension

Table 5-70 ConfInfo description

Parameter	Mandatory	Type	Description
confSubject	Yes	String	Meeting topic.
confId	Yes	String	Meeting ID.
vmrConferen celd	Yes	String	Personal meeting ID.
confPwd	No	String	Guest password.
confAccessN um	Yes	String	Access code.
confChairPw d	Yes	String	Host password.
confGuestUri	Yes	String	URI for guests to join the meeting.
confStartTim e	Yes	String	Meeting start time.
confEndTime	Yes	String	Meeting end time.
confScheduse rName	Yes	String	Scheduler name.
confOrgId	Yes	String	Whether you come from another enterprise.
mediaType	Yes	int	Meeting type. CONF_MEDIA_TYPE_AUDIO = 1; voice CONF_MEDIA_TYPE_VIDEO = 2; video CONF_MEDIA_TYPE_HDVIDEO = 4; HD video CONF_MEDIA_TYPE_DATA = 16; data

5.5.2.3 Poor Connection Notification

API Description

A notification is sent when the network connection was poor.

Method Definition

```
/**
 * Reports information about poor network connection.
 *
 * @param poorNetWorkInfo
 */
void onPoorNetworkQualityInfoNotify(PoorNetWorkQualityInfo poorNetWorkInfo);
```

Parameter Description

Table 5-71 Parameter description

Parameter	Mandatory	Type	Description
poorNetWorkInfo	Yes	PoorNetworkQualityInfo	Information about poor network connection.

Return Values

None

Parameter Extension

Table 5-72 PoorNetworkQualityInfo description

Parameter	Mandatory	Type	Description
userId	Yes	int	User ID.
nickName	Yes	String	Display name in the meeting.
thirdUserId	Yes	String	Third-party account.
accountId	Yes	String	Account information.
number	No	String	SIP number.
isLocal	Yes	boolean	Whether the participant is the local client user.
audioStatus	No	LowNetworkStatusInfo	Network status of audio.
videoStatus	No	LowNetworkStatusInfo	Network status of video.
shareStatus	No	LowNetworkStatusInfo	Network status of sharing.

Table 5-73 LowNetworkStatusInfo description

Parameter	Mandatory	Type	Description
packetLoss	Yes	int	Packet loss rate.
delay	Yes	int	Delay.
jitter	Yes	int	Jitter.

Parameter	Mandatory	Type	Description
status	No	LowNetWorkStatusInfo	Status.

Table 5-74 Enumerated values of LowNetWorkStatus

Value	Description
LOW_NET_WORK_STATUS_NORMAL	Normal.
LOW_NET_WORK_STATUS_BAD	Poor.
LOW_NET_WORK_STATUS_VERY_BAD	Very poor.

5.5.2.4 Notification of Instant Meeting Records

API Description

A notification of instant meeting records is sent.

Method Definition

```
/**
 * Notifies you of call records of a new instant meeting when you left that meeting.
 * @param p2pConfRecordInfo
 */
void onP2PConfRecord(HWMP2PConfRecordInfo p2pConfRecordInfo);
```

Parameter Description

Table 5-75 Parameter description

Parameter	Mandatory	Type	Description
p2pConfRecordInfo	Yes	HWMP2PConfRecordInfo	Call record information.

Return Values

None

Parameter Extension

Table 5-76 HWMP2PConfRecordInfo description

Parameter	Mandatory	Type	Description
callerInfo	Yes	HWMCallMemberInfo	Caller information.
calleeInfo	Yes	HWMCallMemberInfo	Called participant information.
startTime	Yes	long	Call start time, accurate to seconds (GMT).
endTime	Yes	long	Call end time, accurate to seconds (GMT).
isCallEstablished	Yes	boolean	Whether the call is connected.
isCallOut	Yes	boolean	Whether the call is an outgoing call.
meetingType	Yes	MeetingType	Meeting type.
resultCode	Yes	int	Meeting end reason (error code).
resultMsg	No	String	Meeting end reason (error message).

Table 5-77 HWMCallMemberInfo description

Parameter	Mandatory	Type	Description
nickName	Yes	String	(Mandatory) Display name.
number	No	String	Called number. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set (number is prior to thirdUserId).
thirdUserId	No	String	Third-party account of the called participant. This parameter is used for app ID authentication. Either this parameter or number must be set (number is prior to thirdUserId).

5.5.3 Service Message Notification

You can configure the API for processing service notification messages in `OpenSDKConfig` to listen to meeting details changes.

Application Scenarios

Listening to meeting list changes

Listening to your host role change in a meeting

Listening to your recording permission change in a meeting

Listening to changes of the permission to send SMS messages in a meeting scheduled by you

Precautions

`sdkConfig` takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
public class CustomBizNotificationHandle implements BizNotificationHandler {

    private static CopyOnWriteArrayList<IConfListUpdate> confListUpdates = new CopyOnWriteArrayList<>();

    public static void registerConfListUpdateListener(IConfListUpdate confListUpdate){
        confListUpdates.add(confListUpdate);
    }

    public static void removeConfListUpdateListener(IConfListUpdate confListUpdate){
        confListUpdates.remove(confListUpdate);
    }

    // Callback invoked upon a meeting list update
    @Override
    public void onConfListChanged(List<ConfBaseInfo> list) {
        for (IConfListUpdate listener : confListUpdates) {
            try {
                listener.onConfListUpdateNotify(list);
            } catch (RuntimeException e) {
                Log.e("onConfListChanged", e.toString());
            }
        }
    }

    // Callback invoked upon the change of the host role
    @Override
    public void onIsSelfChairManChanged(boolean isChairman) {

    }

    // Callback invoked upon the change of the meeting recording permissions
    @Override
    public void onRecordPermissionChanged(boolean hasPermission) {

    }

    // Callback invoked upon the change of the permissions of sending SMS messages for scheduled meetings
    @Override
    public void onBookConfSmsPermissionChanged(boolean hasPermission) {

    }

    // Whether AI recording is supported
    @Override
```

```
public void onAIConfRecordStateChanged(int state) {
}

// Whether you have the cloud recording permission
@Override
public void onRecordTypeChanged(int type) {
}

// Incoming meeting call information
@Override
public void onConfIncomingNotify(ConfIncomingInfo confIncomingInfo) {
}
}
sdkConfig.setBizNotificationHandler(new CustomBizNotificationHandle());
```

5.5.3.1 Notification of Individual Role Changes

API Description

A notification is sent when the host role was changed.

Method Definition

```
/**
 * Notifies you when the host role was changed.
 * @param isSelfChairMan
 */
void onIsSelfChairManChanged(boolean isSelfChairMan);
```

Parameter Description

Table 5-78 Parameter description

Parameter	Type	Description
isSelfChairMan	boolean	Whether you are the host.

Return Values

None

5.5.3.2 Notification of Meeting List Changes

API Description

A notification is sent when the meeting list changed.

Method Definition

```
/**
 * Notifies you when the meeting list changed.
 *
 * @param hwmConfList
 */
void onConfListChanged(List<ConfBaseInfo> hwmConfList);
```

Parameter Description

See [meeting list parameters](#).

5.5.3.3 Notification of Changes on the Meeting Recording Permission

API Description

A notification is sent when the meeting recording permission was changed.

Method Definition

```
/**
 * Notifies you when the meeting recording permission was changed.
 *
 * @param hasPermission
 */
void onRecordPermissionChanged(boolean hasPermission);
```

Parameter Description

Table 5-79 Parameter description

Parameter	Type	Description
hasPermission	boolean	Whether you have the permission to record the meeting.

Return Values

None

5.5.3.4 Notification of Changes of the Permission of Sending SMS Messages for a Scheduled Meeting

API Description

A notification is sent when the permission of sending SMS messages for a scheduled meeting was changed.

Method Definition

```
/**
 * Notifies you when the permission of sending SMS messages for a scheduled meeting was changed.
 *
 * @param hasPermission
 */
void onBookConfSmsPermissionChanged(boolean hasPermission);
```

Parameter Description

Table 5-80 Parameter description

Parameter	Type	Description
hasPermission	boolean	Whether you have the permission to send SMS messages for a scheduled meeting.

Return Values

None

5.5.3.5 Notification of Changes of Information About Shared Cloud Meeting Rooms

API Description

This API is used to notify you when information about shared cloud meeting rooms was changed.

Method Definition

```
/**  
 * Notifies you of updates of shared cloud meeting rooms.  
 *  
 * @param shareVmrInfo Indicates information about shared cloud meeting rooms.  
 */  
void onShareVmrInfoNotify(ShareVmrInfo shareVmrInfo);
```

Parameter Description

Table 5-81 Parameter description

Parameter	Type	Description
shareVmrInfo	ShareVmrInfo	Information about shared cloud meeting rooms.

Table 5-82 ShareVmrInfo description

Parameter	Type	Description
isEnabledShareVmr	boolean	Whether shared cloud meeting rooms are available.

Return Values

None

5.5.4 Answering Policy Configuration of Incoming Calls

Notification Description

You can customize the mode of automatically processing an incoming meeting call in **OpenSDKConfig**. By default, the answering screen is displayed for manual processing.

Application Scenarios

Answering a call directly when receiving a meeting invitation:

`answerTypeOnConfIncoming`.

`HWMIncomingAnswerType.HWM_INCOMING_AUTO_ANSWER` is returned.

Rejecting a call when receiving a meeting invitation: `answerTypeOnConfIncoming.HWMIncomingAnswerType.HWM_IMCOMING_AUTO_DECLINE` is returned.

Precautions

`sdkConfig` takes effect only when this configuration is passed during SDK initialization.

Sample Code

```
sdkConfig.setIncomingHandle(new IncomingHandle() {
    @Override
    public HWMIncomingAnswerType answerTypeOnConfIncoming() {
        // Customize the incoming call processing mode for meeting invitations.
        return HWMIncomingAnswerType.HWM_IMCOMING_NORMAL;
    }
});
```

Reference Returned Values

```
public enum HWMIncomingAnswerType {
    HWM_IMCOMING_NORMAL(0, "HWM_IMCOMING_NORMAL"), // The default processing mode is
    used.
    HWM_IMCOMING_AUTO_DECLINE(1, "HWM_IMCOMING_AUTO_DECLINE"), // The call is automatically
    rejected.
    HWM_INCOMING_AUTO_ANSWER(2, "HWM_INCOMING_AUTO_ANSWER"); // The call is automatically
    answered.
}
```

5.5.5 UI-related Notification

5.5.5.1 Notification Indicating that the Audio and Video Floating Window Appeared

API Description

This API is used to notify you when the audio and video floating window appeared.

Method Definition

```
/**
 * The audio and video floating window appeared.
 */
void onFloatingWindowDidAppear();
```

Return Values

None

5.5.5.2 Notification Indicating that the Audio and Video Floating Window Disappeared

API Description

This API is used to notify you when the audio and video floating window disappeared.

Method Definition

```
/**  
 * The audio and video floating window disappeared.  
 */  
void onFloatingWindowDidDisappear();
```

Return Values

None

5.6 Error Code Reference

5.6.1 Common Error Codes

Table 1 Common error codes

Code	Description
68	Initiating or joining a meeting times out due to poor network conditions.
91	The meeting does not exist or you do not have the permissions to join the meeting.
95	You are not allowed to join the meeting ahead of the host. Contact the host.
103	You are not allowed to join the meeting ahead of the host. Contact the host.
112	The meeting has ended.
836	The call is disconnected due to network interruption.
837	The call is disconnected because no stream exists.
838	You have been removed from the meeting by the host. (The host disconnected you.)
839	The meeting has ended.
11070005	The meeting does not exist.
11070009	Failed to verify the meeting authentication information.
11071005	The current meeting conflicts with a scheduled meeting. Contact the cloud meeting room administrator.
11071014	The start time exceeds the allowed range.
11071025	Check whether the mobile numbers of participants are correct.
11071067	The meeting is in progress and cannot be canceled.

Code	Description
11071073	Anonymous users are not allowed to join the meeting. Contact the meeting scheduler.
11071074	Only corporate users can join the meeting. Contact the meeting scheduler.
11071075	Only invited users can join the meeting. Contact the meeting scheduler.
11072031	Check whether the mobile numbers of participants are specified.
11072033	Check whether the mobile numbers of participants are correct.
11072050	The meeting has been locked.
11076003	The number of users in the cloud meeting room has reached the upper limit. Contact the meeting host or administrator.
11081006	Incorrect password. Try again.
115022001	Concurrent resources of the enterprise are insufficient.

5.6.2 Error Codes

Table 5-83 Error codes

Error Code	Error Description
-1	Unknown error.
0	Success.
111070001	Request error.
111070002	Insufficient permissions.
111070003	System processing failure.
111070004	Meeting authentication failed.
111070005	Meeting does not exist.
111070006	Personal cloud meeting room does not exist.
111070007	Meeting access number does not exist.
111070008	Meeting notification could not be sent.
111070009	Meeting password cannot be left blank.

Error Code	Error Description
111070010	Insufficient permissions to view this meeting.
111070100	Get started meeting exception.
111070101	Start meeting exception.
111070102	Apply IVR resource exception.
111070103	Start IVR meeting exception.
111070104	Apply site resource exception.
111070105	Start sub meeting exception.
111070106	Add channel exception.
111070107	Move and apply site resource exception.
111070108	Start meeting exception.
111070109	Get started cloud meeting exception.
111070110	Invite site exception.
111070111	Request token is null.
111070112	Rename site exception.
111070113	Hangup site exception.
111070114	Mass hangup site exception.
111070115	Delete attendee exception.
111070116	Mass delete attendee exception.
111070117	Book cycle meeting exception.
111070118	Modify cycle meeting exception.
111070119	Create cycle meeting exception.
111070120	Region data not found.
111070121	Forbidden subscribe.
111070122	Cancel subscribe fail.
111071001	Sysportal service exception.
111071002	Conf service exception.
111071003	Failed to create the meeting. Try again later.
111071004	This cloud meeting room does not allow guests to join before the host.
111071005	This cloud meeting room has been scheduled for another meeting during this period.

Error Code	Error Description
111071006	Insufficient cloud meeting time.
111071007	Meeting does not exist.
111071008	Cannot query meeting list.
111071009	Cannot change cloud meeting into immediate meeting.
111071010	Cannot modify cloud meeting flag.
111071011	The cloud meeting has not yet started. Please wait.
111071012	Not cloud meeting.
111071013	Start time less than current time.
111071014	Start time over max schedule time.
111071015	Duration over range.
111071016	Cycle ID list null exception.
111071017	Meeting size over range.
111071018	Invalid media type.
111071019	Invalid meeting type.
111071020	Cycle params null exception.
111071021	Duration over range.
111071022	Subject length too long.
111071023	Group URI length too long.
111071024	Invalid email address format.
111071025	Invalid mobile number format.
111071026	Department name too long.
111071027	Invalid welcome voice enable value.
111071028	Invalid enter voice enable value.
111071029	Invalid leave voice enable value.
111071030	Invalid reminders value.
111071031	Invalid allow record value.
111071032	Invalid auto record value.
111071033	Invalid user type value.
111071034	Invalid encrypt mode value.
111071035	Invalid language value.

Error Code	Error Description
111071036	Invalid auto prolong value.
111071037	VmrlID too long.
111071038	Invalid record type value.
111071039	Live address too long.
111071040	Aux address too long.
111071041	Null start date for cycle meeting.
111071042	Null end date for cycle meeting.
111071043	Invalid cycle type value for cycle meeting.
111071044	Invalid interval for cycle meeting.
111071045	Null point for cycle meeting.
111071046	Invalid point value for cycle meeting.
111071047	Invalid vmr flag value.
111071048	Invalid record auxStream.
111071049	Invalid multiStream flag.
111071050	Invalid audience flag.
111071051	Invalid liveChannel ID.
111071052	Anonymous login is locked. Try again later.
111071053	Link login is locked. Try again later.
111071054	Not enough Meeting ID.
111071055	Failed to apply meeting ID.
111071056	Failed to release meeting ID.
111071057	Live room is used.
111071058	The meeting has not yet started. Please wait.
111071059	Meeting size over range.
111071060	The enterprise cannot create meetings because it has not purchased any concurrent meeting resources.
111071061	Parameter verify failed.
111071062	Json conversion failed.
111071063	Not cloud meeting room owner.
111071064	This cloud meeting room has been started for another meeting during this period.

Error Code	Error Description
111071065	This meeting cannot be modified because it is already started.
111071066	Attendees amount over range.
111071067	This meeting cannot be canceled because it is already started.
111071068	Meeting password encrypt failed.
111071069	No meeting during this period.
111071070	Sub cycle meeting cannot modify live room.
111071071	Stop online meeting exception.
111071072	Meeting is ended.
111071073	Not allow anonymous user.
111071074	Only allow user in organization.
111071075	Only allow invited user.
111071076	Batch export task for history meeting list during this period.
111071077	Only allow invited user and user in organization.
111071078	Max current participants amount reached.
111071079	Invalid CTD param.
111071080	Invalid guest password.
111071081	Guest password conflict with meeting ID.
111071082	Max meeting amount reached.
111071083	Invalid meeting random number.
111071084	Max export history meeting list times reached.
111071085	Max multi view layouts reached.
111071086	Max multi view invalid manual type.
111071087	Max multi view sub view amount reached.
111071088	Max multi view sub view numbers reached.
111071089	Webinar and common meeting cannot be converted to each other.
111071090	Not allow add audience.
111071091	Meeting password authentication failed.
111071092	File export task failed.

Error Code	Error Description
111071093	File export task is downloading.
111071094	Not allow audience to join.
111071095	Need to get WEBINAR_CONF.DTO object.
111071096	User-defined languages over range.
111071097	Your enterprise does not support simultaneous interpretation.
111071098	Need to set interpreter groups.
111071099	Invalid interpretation language.
111071100	Max languages in a meeting are reached.
111071101	This interpreter group ID already exists.
111071102	Max interpreters in the interpreter group reached.
111071103	This interpreter already exists in an interpreter group.
111071104	Invalid interpreter account.
111071105	Guest password conflict with chairman password.
111071106	Meeting is holding.
111071107	Invalid audience password.
111071108	Audience password conflict with meeting id.
111071109	Audience password conflict with chairman password.
111071110	Only RTC meeting support E2E encrypt.
111071111	Audience password conflict with guest password.
111071112	Cloud meeting room ID type cannot be modified.
111071113	Cloud meeting room type cannot be modified.
111071114	Cloud meeting room flag cannot be modified.
111071119	Sub cycle meeting modify time over range.
111072001	Application for meeting resources failed.
111072002	Failed to release meeting resources.
111072003	The meeting is ending.
111072004	The meeting is starting.
111072005	The meeting has not yet started.
111072006	The meeting has ended.

Error Code	Error Description
111072007	Site invitation failed.
111072008	Site does not exist.
111072009	Failed to disconnect the site.
111072010	Coming soon...
111072011	Meeting status incorrect.
111072012	Site control operation failed.
111072013	The cloud meeting room is in use by another meeting.
111072014	The meeting has ended.
111072015	The meeting has not yet started.
111072016	Meeting does not exist.
111072017	Meeting has no attendee.
111072018	Application for chairman password exception.
111072019	Not found site which can be moved exception.
111072020	The current meeting is not a recording meeting. Recording is not supported.
111072021	System processing failure.
111072022	Insufficient recording resources in the system.
111072023	There are no participants in this meeting.
111072024	Operation failed. No sites have joined this meeting.
111072025	Voice meeting does not support this function.
111072026	The voice site does not support this operation.
111072027	Voice sites cannot be displayed in custom continuous presence.
111072028	At least one site must have custom continuous presence configured.
111072029	At most one presentation pane is allowed in custom continuous presence.
111072030	In the voice-activated continuous presence mode, each pane can only support a single user.
111072031	The number used for the site to join the meeting cannot be left blank.
111072032	The number used for the site to join the meeting is too long.

Error Code	Error Description
111072033	The format of the number used for joining the meeting is incorrect.
111072034	Length of site name too long.
111072035	The site role type is outside the allowed range.
111072036	Length of site email address too long.
111072037	Length of site mobile number too long.
111072038	The value for whether a site is muted after it first joins the meeting is outside the allowed range.
111072039	The value for whether to automatically invite a site is outside the allowed range.
111072040	The host's site viewing type is outside the allowed range.
111072041	The value of the continuous presence setting mode is outside the allowed range.
111072042	The polling time is outside the allowed range.
111072043	The pane type cannot be left blank.
111072044	Invalid pane type.
111072045	The value of the switch is outside the allowed range.
111072046	The site name cannot be left blank.
111072047	Site name too long.
111072048	Continuous presence is not supported. Ask the administrator to configure related data on the MCU.
111072049	Response timed out. Try again later.
111072050	Meeting locked.
111072051	The meeting display mode is empty.
111072052	The meeting display mode is outside the allowed range.
111072053	The meeting pane type is outside the allowed range.
111072054	The banner or caption type is empty.
111072055	The banner or caption content is empty.
111072056	The banner or caption content cannot exceed 2,000 bytes.
111072057	The request message body is empty.
111072058	The pane index is greater than the total number of panes.
111072059	Meeting has no host.

Error Code	Error Description
111072060	Regular participants cannot perform this operation.
111072061	You have set host polling and cannot select a specific site to view or set continuous presence.
111072062	You cannot select a site to view on the web page. Perform the operation on the terminal.
111072063	Applying for recording resources...
111072064	Too many failed login attempts. Try again later.
111072065	The meeting ID or password is incorrect. Check the ID and password and try again.
111072066	The enterprise has not purchased any recording storage space.
111072067	Insufficient enterprise recording storage space.
111072068	Failed to start live broadcast. Try again later.
111072069	Not allow to hand up for host.
111072070	The operation is not allowed for guest.
111072071	The operation is only allowed for yourself.
111072072	Not allow to apply host for attendees who do not have meeting control abilities.
111072073	Notify message is expired.
111072074	Only participants with a number registered on HUAWEI CLOUD can be set as the host.
111072075	Hung up site for meeting ended.
111072076	Hung up site by host.
111072077	Hung up site because host deleted site.
111072078	Hung up site because meeting is recreated.
111072079	Hung up site for moving site failed.
111072080	Hung up site for inviting site cross region failed.
111072081	Hung up site for invitation exception.
111072082	Hung up site for joining meeting repeatedly.
111072083	Lock sharing failed.
111072084	This site does not support 1-screen layout.
111072085	Not support realtime subtitle.

Error Code	Error Description
111072086	Realtime subtitle pid is null.
111072087	Invalid realtime subtitle pid.
111072088	Failed to set realtime subtitle.
111072089	Not allow audience to change speaker status.
111072090	Allow/forbid audience to speak only for audience.
111072091	This meeting does not support simultaneous interpretation.
111072092	Interpreter group is empty.
111072093	This meeting has not enabled simultaneous interpretation.
111072094	This site is not interpreter.
111072095	This site has not yet confirmed interpreter identity.
111072096	Invalid site language.
111072097	This site is confirmed interpreter.
111072098	This site listen channel is different from speak channel.
111072099	Failed to set interpretation languages. Try again.
111072100	Failed to set interpretation channel. Try again.
111072101	Max participant amount reached.
111072102	Max allowed handup amount reached.
111072103	Max allowed speaking amount reached.
111072104	Failed to set virtual audio CSD site.
111072105	This meeting does not support cohost.
111072106	This site does not support cohost.
111072107	Host cannot be set to cohost.
111072108	Audience cannot be set to cohost.
111072109	Need to check cohost permission.
111072110	Cohost cannot operate host.
111072111	This site does not support share invitation.
111072201	Hung up site because heart beat failed.
111072202	Insufficient audience cloud meeting room logic resources.
111072203	Insufficient participant cloud meeting room logic resources.
111072204	Insufficient webinar resources, so started failed.

Error Code	Error Description
111072205	Only RTC conf support local record.
111072206	Invalid E2E encryption parameter.
111072207	Not allow to switch role in webinar.
111072208	The client version used by the user is too early. Cannot start local recording.
111072211	Meeting is under AR assist.
111072213	Audience cannot be set to host.
111072214	Rename param contains sensitive words.
111073001	User does not exist.
111073002	Department does not exist.
111073003	Invalid username format.
111073004	Invalid department name format.
111073005	Could not query department.
111073006	Application for anonymous user failed.
111073007	Invalid cloud meeting room package status.
111073008	Failed to Release anonymous user.
111073009	Not support cycle meeting for welinkC.
111073010	Not support cloud meeting room for welinkC.
111073011	Failed to get WeLink token.
111073012	Failed to Get M to M token.
111073013	Invalid webinar cloud meeting package status.
111073014	Max extend times for cloud meeting trial version reached.
111073015	Max extend duration for cloud meeting trial version reached.
111073016	Not support auto extend meeting for cloud meeting trial version.
111074001	This meeting host already exists.
111074002	No meeting host permissions.
111074003	Failed to extend the meeting. Max meeting duration reached.
111074004	Failed to extend the meeting. The service processing is abnormal.

Error Code	Error Description
111075001	Failed to start timer.
111075002	Failed to end timer.
111075003	Json parse failed.
111076001	Released by host.
111076002	Released by portal host.
111076003	Max number of participants reached.
111076004	Insufficient enterprise resources.
111076005	Not answered.
111076006	User does not exist.
111076007	Offline.
111076008	Busy.
111076009	Rejected by user.
111076010	Released by user.
111076011	Insufficient meeting resources in the system.
111076012	Outbound calling disabled.
111076013	Application for address token failed.
111076014	Call failed.
111076015	Max number of participants reached.
111076099	Common error.
111077001	RSE server info does not exist.
111077101	Not support AI record.
111077102	Reapplying for AI record resource.
111077103	Insufficient AI record resource.
111077104	In AI recording, the meeting cannot stop live or recording.
111077201	Record file does not exist or have no permission.
111077202	RSE authentication failed.
111078000	No available region in multi region.
111078001	No available global in multi region.
111078002	Dispatch region error in multi region.
111079000	Failed to phrase big data param query xml.

Error Code	Error Description
111079001	Failed to phrase anonymous assign xml.
111080001	Bad request.
111080002	Insufficient permissions.
111080004	Site data not found or deleted.
111081001	Site is inviting.
111081002	Site meeting does not exist or is ended.
111081003	Failed to apply site resource.
111081004	Failed to release site resource.
111081005	Failed to apply site media resource.
111081006	Authentication failed.
111081007	Meeting is locked.
111081009	Login is locked because max authentication times reached.
111081010	Waiting user restrictions.
111082001	Not support this control.
111082002	No response.
111082003	Site not exist.
111082004	Site unavailable.
111082005	Site busy.
111082006	Site refused.
111082007	Site leave.
111082008	PSTN service is closed.
111082009	SIP invitation timeout.
111083001	RSE does not exist.
111084001	Failed to execute DTMF.
111084002	Get started meeting exception.
111084003	Call MCU side exception.
111084004	Join call exception.
111084005	Invite exception.
111084006	Call terminal side exception.
111084007	Answer exception.

Error Code	Error Description
111084008	Common CTL exception.
111084009	Hangup exception.
111084010	Notify capability exception.
111084011	Update MT exception.
111084012	Negotiate exception.
111084013	Not support this meeting.
111084014	Not allowed join meeting in RTC inviting because guests are not invited.
111089002	Failed to phrase URI join xml.
111090001	Failed to join data meeting.
111090002	Join data meeting overtime.
111100001	Failed to get slider image.
111100002	Slider check failed.
111100003	Invalid random number.
111100004	Invalid slider token.
111100005	Need to check slider.
111100006	Invalid SMS phone number.
111100007	Failed to send verification code.
111100008	Verification code expired.
111100009	Verification code error.
111100010	Max verification code check times reached.
111100011	The uuid is invalid, you need to re-verify the phone number.
111100012	The meeting is not on this site.
111100013	Need to verify the mobile phone number. Mobile number verification is required when an International site user joins a meeting held by a free enterprise on the Chinese mainland site.
111110001	Failed to add IM group.
111110002	Failed to disband IM group.
111110003	Failed to add IM member.
111110004	Failed to remove IM member.
11112001	Failed to enter the waiting room.

Error Code	Error Description
111112002	Failed to exit the waiting room.
111112003	Waiting room cache operation failed.
111112004	Co-hosts cannot be moved into the waiting room.
111112005	Not allowed to enable waiting room.
111112008	Not support this feature according to client capabilities.
112010001	Common failure.
112010002	Null param.
112010003	Participant not found.
112010004	Meeting not found.
112010005	SIP invite information timeout.
112010006	SIP invite information failed.
112010007	SIP information timeout.
112010008	SIP information failed.
112010009	System processing failed.
112010010	System processing failed.
112010011	Failed to invite MRS.
112010012	Failed to invite participant.
112010013	Data meeting join information failed.
112010014	Failed to start meeting.
112010015	Media negotiation failed.
112010016	User rejects.
112010017	User is busy.
112010018	No call permission.
112010019	Unknown callee.
112010020	No user response.
112010021	Join meeting timed out.
112010022	Session has been released.
112010023	Callee is not registered.
112010024	SIP invite timed out.
112010025	User Session timer times out and hangs up.

Error Code	Error Description
112010026	The participant bye hangs up on the MRS side.
112010027	The participant bye hangs up on terminal side.
112010028	No RTP stream hang up.
112100000	Sysportal exception.
112100001	Bad request.
112100002	Illegal request.
112100003	Data not found.
112100004	Data duplication.
112100006	The requested type is not supported.
112100007	Failed to save notification template.
112100008	Failed to save data.
112100009	Failed to query data.
112100010	Failed to delete data.
112100011	Password reset required.
112100012	Incorrect old password.
112100013	The new password cannot be the same as the old password.
112100014	Insufficient password complexity and low security.
112100015	The length does not meet the requirements.
112100016	RSE is in meeting.
112100017	RSE to be deleted.
112100018	Failed to query the meeting list.
112100019	User has been locked out. Try again later.
112100022	The live room channel name exists.
112100023	Failed to modify system configuration items for duplicated meeting ID prefix.
112100024	CONFID prefix can only be added, not modified or deleted.
112100025	The live room channel url exists.
112100026	The live room has been occupied.
112100027	The live room does not exist.
112100028	Live room release failed.

Error Code	Error Description
112100029	The request is missing header or param.
112100030	The Live main stream URL already exists.
112100031	The Live auxiliary stream URL already exists.
112100032	Password is weak.
112100033	The live room is occupied.
112100034	Save part of attendees since max attendees size reached.
112100035	Failed to export data.
112100036	Failed to import data.
112100037	Max file size reached.
112100038	LVS target address exists.
112100039	LVS port existed.
112100040	Not allow to modify global standby config.
112100041	MCU insulation IP address exists.
112100042	MCU insulation IP address cannot be modified.
112100043	SBC address exists.
112100044	Internal exception.
112100045	System config delete exception.
112100046	No ISBC access address.
112100047	Media type need to be HD because the organization enables full HD capability.
112100061	Same interpreter language abbreviation exists.
112100062	Same interpreter language name exists.
112100063	MCU type is MIXED and insulation config is not configured, or MCU meeting exists when modifying MCU connection settings.
112100064	MCU type is MIXED and insulation config is not configured when adding mcu connection settings.
112100065	MCU type is MIXED when modifying MCU insulation config or disbanding enterprise.
112100066	MCU type is MIXED when deleting MCU insulation config.
112100067	This gateway type is incompatible with MCU.
115021001	Insufficient media resource.

Error Code	Error Description
115021002	Meeting does not exist.
115021003	Media resource does not exist.
115021005	Insufficient media bandwidth resource.
115021006	Media device fault.
115022000	Insufficient common logic resource.
115022001	Insufficient meeting resources in the enterprise.
115022002	Insufficient logic port resource.
115022003	Live broadcast resources have not been purchased or are insufficient.
115022004	Media device does not exist.
115023001	Insufficient ID resources.
115024001	RMS service exception.
115025001	The live room has already been occupied.
115025002	The live room does not exist.
115025003	Live room release failed.
115026001	MCU meeting exists.
115029001	Invalid common parameter.
115029002	Null parameter.
115029003	service is not available.
115029004	Configuration exception.
115029005	Duplicately apply resources.
115029006	Waiting for applying resources.
115029999	Unknown error.
118000000	User authentication failed.
118000001	User token authentication failed.
118000002	User authentication account lockout.
200000001	Server is busy. Please try again later.
200000002	Internal error. Please contact SRE.
200000003	Invalid parameter. Please check whether the parameters are valid.

Error Code	Error Description
200000004	Illegal request. Please check the value of the request header field X-Auth-Token or X-Access-Token.
200000005	Forbidden access during the version upgrade.
201020023	This user is already the owner of another corporation and cannot create a new corporation for it.
201040005	Max number of users reached. Please check the purchased meeting users.
201040016	Password security is low. Please set another password.
201040031	Activation code overdue.
201040042	Pre-authentication expired.
201040043	This user is the owner of another corporation and cannot be invited.
201040044	Invalid invite connection.
201040045	User is already in waiting list.
201040046	User already exists.
201040047	Account modification is not allowed.
201050012	Activation code does not exist.
201050015	Invalid activation code.
201050021	Activation failed.
201050022	Terminal does not allow unbinding.
201080000	VMR resource unavailable.
201080006	The host password and the guest password cannot be the same. Please confirm the input parameters.
201080017	Same as meeting password.
201510001	No invite permission to get an invite code.
201510003	Invalid application.
206010000	User name or password error.
206010007	Account is not activated, no permission to log in.
206010010	Failed to get verification code. Please contact SRE.
206010011	Verification code must be filled.
206010012	Verification code check failed.
206010013	Jump login failed. Please contact SRE.

Error Code	Error Description
206010022	SSO login failed. Please contact SRE.
206010023	SSO login is not supported.
206010024	Invalid authentication type.
206010025	APPID verification failed.
206010027	Authentication type error.
206010029	Network error.
206010030	APPID does not allow automatic registration.
206010031	APPID auto registration failed.
206010036	Normal users cannot log in.
206010042	Huawei account authentication failed.
206010057	APPID authentication expires.
206010058	APPID account is not bound.
206010064	Site mismatch.
206010065	Phone number conflict.
206010066	E-mail conflict.
206010070	The number of users has reached the maximum.
206010071	WeChat authentication failed.
206010074	International sites support site changing re-login.
206010075	Account has been unbound.
206020000	Invalid authentication information. Please check the value of the request header field X-Auth-Token or X-Access-Token.
206020001	Token is created by disaster recovery site.
206020002	Token is invalid due to being kicked.
206030000	The user does not exist.
206030001	The verification code is incorrect or has expired. Please obtain a new one.
206030002	Incorrect verification code.
206030003	Failed to send the verification code.
206030004	Try to get a new verification code 180s later.
206030005	The password cannot be changed.

Error Code	Error Description
206030006	The old password is incorrect.
206030007	The length of the new password does not meet the requirements.
206030008	The password complexity does not meet the requirements.
206030009	The new password must be different from the previous old passwords.
206030010	The password cannot contain three or more of the same characters consecutively.
206030011	The password cannot be changed within 5 minutes upon the last password change.
206030012	The password cannot contain the account or the reverse order of the account.
206030013	At least two characters must be different between the new and old passwords.
206030014	Invalid password format.
206030015	The user is locked and will be locked in 60s.
206030016	Have no right to reset other's password.
206030018	The number of password retrieval times in a day has reached the maximum (10 times).
206030019	The number of incorrect verification code inputs have reached the maximum. Please get it again.
206030023	Failed to send verification code. Please contact SRE.
206030028	The system has enabled SSO login and does not support changing the password. Please retry after the system has disabled SSO login.
206030031	Forgot password for Huawei account.
206040000	No corresponding terminal type.
206060008	Sending verification code is locked.
206060009	Slider verification required.
206060010	Invalid slider token.
206060011	Request parameter error.
206060012	Sending SMS is not supported.
206060013	Repeated sending is not supported.
206060014	Invalid verification code.

Error Code	Error Description
206060015	Max verification code check times reached.
206060017	Failed to bind Huawei account.
211030046	Not the IdeaHub activation code.
211030050	auth fail too many times, locked.
211030052	auth fail too many times, permanently locked.
211060003	The maximum number of log upload times has been reached.
411000001	Common failure.
411000002	Parameter error.
411000003	Meeting does not exist.
411000004	A meeting already exists.
411000005	Meeting state error.
411000006	Failed to get device.
411000007	Failed to set device.
411000008	No device available.
411000009	This operation is only supported on mobile.
411000010	Network access error.
411000011	Other supplementary service is running.
411000012	Memory allocation error.
411000013	Initialization failed.
411000014	User does not exist.
411000015	Did not join the data meeting.
411000016	Neither meeting nor call exists.
411000017	SVN port detection failed.
411000018	Failed to write file.
411000019	RTC does not support STG mode.
411000020	Failed to load RTC library. RTC meeting is not supported.
411000021	The meeting is in the audience pause state when changing roles.
411000022	Not in call.
411000023	Meeting or call does not exist.

Error Code	Error Description
411000024	Pairing state not allowed.
411000025	Pairing request failed.
411000026	Pairing exceeds limit.
411000027	Pairing common error.
411000028	Pairing and joining the meeting failed.
411000029	Pairing and joining the meeting is busy.
411000030	Pairing and joining the meeting is invalid.
411000031	Multiple clicks at the same time to pair and join the meeting error.
411000032	Pairing is not established or is being established.
411000033	The camera is not turned on in the third-party capture mode.
411000034	RTC engine creation failed.
411000035	Not in a meeting.
411000036	mute self failed.
411000100	End the meeting with no stream due to disconnection of network.
411000101	End the meeting with no stream because fail to re-join meeting.
411000102	Null pointer exception.
411000103	Parameters cannot be empty.
411000104	Encrypt and decrypt func not match.
411000105	Load user-defined DLLs failed.
411000106	Shimo Docs is not supported.
412100001	The message processing thread is not initialized.
412100002	Parameter error.
412100003	Timeout.
412100004	Memory allocation error.
412100005	XML parsing error.
412100006	DNS resolution error.
412100007	Request message failed.
412100008	Authentication failed.

Error Code	Error Description
412100009	Server error.
412100010	Account is locked.
412100011	Create timer error.
412100012	Server CA certificate verification failed.
412100013	Network error.
412100014	Server redirect.
412100015	Account is not activated.
412100016	JSON parsing error.
412100017	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
412100018	Disconnected by the proxy. Probably because the server address is misconfigured.
412100019	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.
412100020	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
412100021	The authentication process failed. The proxy user name or password is incorrect.
412100022	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.
412100023	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
412100024	The authentication process failed. Unable to resolve gateway.
412100025	The authentication process failed. Unable to resolve host.
412100026	The authentication process failed. Unable to connect.
412100027	The authentication process failed. Operation times out.
412100028	Message length too long.
412100029	Base64 encryption failed.
412100030	XML parsing error.
412100031	Secure function error.

Error Code	Error Description
412100032	Firewall detection parameter error.
412100033	Failed to create STG tunnel.
412100034	Failed to update STG service.
412100035	Encryption failed.
412100036	Do not allow duplicate downloads.
412100037	File operation failed.
412100038	The request message returns empty.
412100039	The number of detection servers is 0 error.
412100040	Failed to get local IP address.
412200001	Internal error.
412200002	Parameter error.
412200003	Network timeout.
412200004	Network Error.
412200005	Need to bind mobile phone.
412200006	Need to bind email.
412200007	Has initialized already.
412200008	State machine execution failed.
412200009	Failed to start timer.
412200010	The user is prompted to change the password when logging in for the first time.
412200011	Unknown authentication type.
413000001	Common error.
413000002	Parameter error.
413000003	Memory allocation error.
413000004	System error.
413000005	Message sending error.
413000006	Get system configuration error.
413000007	Physical network error.
413000008	Network access error.
413000009	Create timer error.

Error Code	Error Description
413000010	Call state error.
413000011	Other operation in progress error.
413000012	Requesting the master to start call error.
413000013	Requesting audio resource error.
413000014	Other supplementary service is running.
413000015	Record call error.
413000016	Media process error.
413000017	Maximum number of calls reached.
413000018	SIP account ID does not exist.
413000019	Call ID does not exist.
413000020	Failed due to registering.
413000021	Registration failed.
413000022	Deregistration failed.
413000023	Setting account information error.
413000024	Setting SIP account error.
413000025	Reporting SIP account information error.
413000026	Server information error.
413000027	SIP account information error.
413000028	SIPC execution error.
413000029	Not registered error.
413000030	Call Sip interface to subscribe error.
413000031	Canceling subscription error.
413000032	Subscribing error.
413000033	Only one local meeting is allowed.
413000034	Local meeting is not created.
413000035	The participant line does not match the chair account.
413000036	Local meeting state error.
413000037	Failed to report the linkage state of the IP Phone.
413000038	Meeting ID does not exist.
413000039	Video hold error.

Error Code	Error Description
413000040	Video unhold error.
413000041	The maximum number of server meetings reached.
413000042	Get AA random number error.
413000043	AA login error.
413000044	Meeting type mismatch.
413000045	Failed to start video meeting.
413000046	AA no master server.
413000047	Password error.
413000048	Username error.
413000049	User is logged in.
413000050	Account is locked.
413000051	Terminal type mismatch.
413000052	Parsing XML error.
413000053	Connecting to server error.
413000054	Get media configuration error.
413000055	Get service permission error.
413000056	Insufficient service permission.
413000057	Network environment error.
413000058	Service conflict.
413000059	Connection timeout.
413000060	Unknown error.
413000061	Add ringing information error.
413000062	Delete ringing information error.
413000063	Create ringing number error.
413000064	VVM parameter error.
413000065	Getting registered service error.
413000066	Getting voicemail error.
413000067	Attendee already exists.
413000068	Attendee does not exist.
413000069	Create server video meeting window error.

Error Code	Error Description
413000070	Video window already exists.
413000071	Getting meeting list error.
413000072	Operating requires host privileges.
413000073	No video device to operate.
413000074	Refresh registration is not turned off.
413000075	Online state report error.
413000076	Network address subscription report error.
413000077	Telepresence account was force unregistered. Information report error.
413000078	TLS root certificate error.
413000079	AD authentication error.
413000080	Meeting list is getting.
413000081	Prohibited calls.
413000082	The maximum number of calls has been reached.
413000083	The maximum number of encrypted calls has been reached.
413000084	The maximum number of video calls has been reached and needs to downgrade to audio.
413000085	H323 account ID does not exist.
413000086	H323 account information error.
413000087	H323 account information report failed.
413000088	Insufficient local resources.
413000089	The calling protocol is not supported.
413000090	Setting H323 account information error.
413000091	Mediatrix meeting access number reporting failed.
413000092	Mediatrix VMR information reporting failed.
413000093	IMS meeting list information reporting failed.
413000094	TUP initialization is not complete.
413000095	Message return value error.
413000096	Message content too large error.
413000097	Secure function error.
413000098	message response is empty error.

Error Code	Error Description
413000099	Account is not enabled.
413000100	Create call control implement error.
413000101	Already in call.
413000102	Call does not exist.
413000103	Failed to get media configuration information.
413000104	Failed to set third-party capture. Calling HME_V_Capture_InputData failed.
414100001	Common error.
414100002	Parameter error.
414100003	Timeout.
414100004	Memory allocation error.
414100005	DNS resolution error.
414100006	Request message failed.
414100007	Authentication failed.
414100008	Server error.
414100009	Create timer error.
414100010	Start timer error.
414100011	The meeting control block is full. Please release the control block that is not in use.
414100012	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
414100013	Disconnected by the proxy. Probably because the server address is misconfigured.
414100014	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.
414100015	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
414100016	The authentication process failed. The proxy user name or password is incorrect.
414100017	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.

Error Code	Error Description
414100018	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
414100019	Curl proxy exception.
414100020	Curl host exception.
414100021	Curl connection exception.
414100022	Curl operation timed out.
414100023	Message length too long.
414100024	Failed to create thread.
414100025	Secure function error.
414100026	JSON parsing failed.
414100027	WS token is empty.
414100028	Return JSON data error.
414100029	Failed to create meeting control block.
414100030	Failed to get meeting control block.
414100031	Failed to get meeting control block by CallId.
414100032	Destroying the meeting control block failed.
414100033	Temporary creating meeting information not found.
414100034	Failed to get participant ID.
414100035	Failed to get MT by participant ID.
414100036	Failed to get self information by participant ID.
414100037	Failed to get participant information by MT.
414100038	Manual invitation required.
414100039	The major parameters of the meeting have been reported.
414100040	Subtitles are not supported.
414100041	Meeting Hang Up - Timeout.
414100042	Meeting Hang Up - No Streaming.
414100043	Meeting hung up - Hung up by the host.
414100044	Meeting Hang Up - Meeting has ended.
414100045	End of meeting due to leave meeting.
414100046	Message queue processing function registration failed.

Error Code	Error Description
414100047	Message queue processing function deregistration failed.
414100048	Meeting ended due to reject meeting.
414100049	Meeting ended by self.
414100050	The meeting control module is not initialized.
414100051	The watching special site reaches the maximum.
414100052	The watching HD site reaches the maximum.
414100053	The watching SD site reaches the maximum.
414100054	The watching specification reaches the maximum.
414100055	Watching internal errors.
414100056	Duplicated watch render.
414100057	HTTP request error.
414100058	WebSocket request timeout.
414100059	Loading failed.
414100061	The meeting ends due to the timeout of guest waiting before meeting or the timeout of the meeting control heartbeat.
414100062	The meeting ends due to being canceled.
414100063	The meeting ends due to network error when guest waiting before meeting.
415000001	DB is not initialized.
415000002	Common failure.
415000003	Proxy detection has not been completed.
416000001	Invalid parameter.
416000002	Track module is not initialized.
416000003	Track event does not exist.
416000004	Not logged in.
416000005	Upload is not enabled.
419100001	Invalid parameter.
419100002	Incorrect URI.
419100003	Memory allocation failed.
419100004	SDP error.

Error Code	Error Description
419100005	Connection does not exist.
419100006	Connection failure.
419100007	Operation forbidden.
419100008	State error.
419100009	No corresponding line data.
419100010	No corresponding registered instance.
419100011	No corresponding call instance.
419100012	No corresponding subscription instance.
419100013	No corresponding Refer instance.
419100014	No corresponding DIM instance.
419100015	Failed to create header.
419100016	Failed to parse header.
419100017	Header not found.
419100018	No SDP message body.
419100019	Failed to get capability.
419100020	Failed to compare capability.
419100021	Failed to open logical channel.
419100022	Encoding SDP failed.
419100023	Decoding SDP failed.
419100024	Negotiate to unsupported SDP.
419100025	TPTD initialization failed.
419100026	TPT initialization failed.
419100027	TXN initialization failed.
419100028	UA initialization failed.
419100029	GLUE initialization failed.
419100030	HLLM initialization failed.
419100031	VCOM initialization failed.
419100032	SDP initialization failed.
419100033	Multiple instance error.
419100034	Insufficient registration control blocks.

Error Code	Error Description
419100035	Insufficient subscription control blocks.
419100036	Insufficient call control blocks.
419100037	Insufficient IM control blocks.
419100038	Failed to parse URI xml to string.
419100039	Encryption negotiation failed.
419100040	Local capabilities are not configured.
419100041	BFCP token error.
419100042	DNS resolution error.
419100043	Failed to get subscription state.
419100044	IPv4 is not supported.
419100045	IPv6 is not supported.
419100046	Unsupported host type.
419100047	Failed to get timer.
420000001	Cannot receive sharing invitations.
420000002	ReportDTO parameter verification failed.
420000003	Report folder creation failed.
420000004	Report folder compression failure.
420000005	The path of the ZIP file to be uploaded is empty.
420000006	The size of the ZIP file to be uploaded reaches the maximum.
420000007	The same person reported more than 100 times within 24 hours.
430100001	Common Error.
430100002	Invalid parameters.
430100003	SIP connection check failed.
430100004	Timeout.
430100005	In process.
430100006	Not initialized or initialization is not complete.
430100007	Not supported in this release.
430100008	Operation interrupt.
430100009	Contact not found.

Error Code	Error Description
430100010	Args length overrun.
430100011	APPID info illegal.
430100012	E2EEncrypt algorithm error.
430200001	unlogin.
430200002	Repeated login.
430200003	SIP connection timeout.
430200004	Invalid login password.
430200005	Password or account empty.
430300001	The calling number, account number or third-party account number cannot be empty.
430300002	Call account empty.
430300003	Call nickname empty.
430400001	Password required to join the meeting.
430400002	Time zone error.
430400003	The meeting duration is less than 1.
430400004	Joining the conference is interrupted.
430400005	Password input at least 4 digits.
430400006	User voluntarily cancels.
430400007	The guest password illegal.
430400008	Not in conference or in call.
430400009	Already exist conf or call.
430400010	Confld empty.
430400011	Subject too long.
430400012	VMR host password length illegal.
430400013	VMR name empty.
430400014	Conf starttime early.
430400015	Share is locked.
430400016	Not in data conference.
430400017	Role not support operation
430500001	HTTP request, server exception.

Error Code	Error Description
430500002	HTTP request, Connecting to the server times out.
430500003	Network unavailable.
510000403	Server forbidden.
510000404	Not found.
510000480	Temporary unavailable.
510000486	Busy here.
510000487	Request terminated.
510000488	Request is not acceptable here.
510000603	Decline.
510000841	Hangup without toast.
510000842	Conference is locked.
910000001	Server error.
910000002	SFU service failure.
910000003	Service unavailable 503.
910000004	Internal error.
910000005	Kicked off.
910000006	Signature expired.
910000007	Reconnect timeout.
910000008	Network detection.
910000009	User is removed.
910000010	The room is dismissed.
990000001	Internal error.
990000002	Message too large.
990000003	Insufficient memory.
990000004	Failed to send message synchronously.
990000005	Parameter error.
990000006	Call ID order error.
990000007	Failed to set local screen.
990000008	Failed to open remote screen.
990000009	Device configuration failed.

Error Code	Error Description
990000010	Initializing.
990000011	Deinitializing.
990000012	Uploading log.
990000013	Failed to get media port.
990000014	The maximum number view window reached .
990000015	Media negotiation failed.
990000016	Server no response.
990000017	Role switch failed.
990000018	Failed to join room.
990000019	Failed to join room. Status is busy.
990000020	Failed to join room. Server error.
990000021	Failed to join room. Service unavailable.
990000022	Failed to join room. Authentication failed.
990000023	Failed to join room. Authentication retry.
990000024	Failed to join room. Clock synchronization.
990000025	Failed to join room. URL error.
990000026	Kicked off.
990000027	Share failed.
990000028	Currently in external media output mode, this operation is forbidden.
990000029	Reconnection failed.
990000030	Server breaks down.
990000031	Signature has expired.
990000032	Failed to set remote window mode.
990000033	Failed to subscribe or unsubscribe audio.
990000034	Failed to connect to other room.
990000035	Failed to disconnect other room.
990000036	Role switching is not allowed.
990000037	Currently in third-party capture mode, this operation is forbidden.
990000038	Failed to set third-party audio capture.

Error Code	Error Description
990000039	Failed to set third-party video capture.
990000040	Failed to set share sound switch.
990000041	Failed to start or stop upstream audio stream.
990000042	Failed to start or stop upstream video stream.
990000043	User is removed.
990000044	The room is dismissed.
990000045	Failed to set remote View.

5.7 Version Updates

5.7.1 10.5.5 Updates

1. Added notifications of floating window changes. For details, see [Notification Indicating that the Audio and Video Floating Window Appeared](#) and [Notification Indicating that the Audio and Video Floating Window Disappeared](#).
2. Added the time zone parameter to the API for obtaining meeting details. For details, see [Obtaining Meeting Details](#).
3. Modified the virtual background integration mode. **HWMVirtualBackground-release.aar** can now be removed. The SDK of this version has built-in capabilities related to virtual backgrounds. Therefore, you do not need to add this .aar file separately. For details, see [Enabling a Function](#).
4. Fixed issues and provided more stable experience.

5.7.2 10.3.6 Updates

1. Removed the restriction that the synchronous initialization API must be implemented in the **onCreate()** method of the application. For details, see [Scenario 1: Initialization](#).
2. Combined eight .aar files in **libs** into **HWMSdk-release.aar**. For details, see [Getting Started](#).
3. Added the description of Android menu functions. For details, see [Android Menu Functions](#).

5.7.3 90.12.7 Updates

1. Fixed issues and provided more stable experience.

5.7.4 90.12.5 Updates

1. Deprecated the **getVmrList** API and added the **getVmrInfoList** API. For details, see [Obtaining the Cloud Meeting Room List](#).

2. Added the **OnShareVmrInfoNotify** notification to notify you when information about shared cloud meeting rooms was changed. For details, see [Notification of Changes of Information About Shared Cloud Meeting Rooms](#).
3. Added the **confResType** parameter to **CreateConfInfo** and **BookConfParam**. For details, see [Scheduling a Meeting](#) and [Creating a Meeting](#).
4. Added the **OnP2PConfRecordNotify** notification to notify you of instant meeting records. For details, see [Meeting Status Change Notification](#).
5. Added the **GetErrorMessage** API for obtaining an error message, which can be used for prompt. For details, see [Obtaining an Error Message](#).
6. Added the **SetGuaranteedIpAddresses** API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. For details, see [Setting Guaranteed IP Addresses for Meeting Control](#).
7. Fixed issues and provided more stable experience.

5.7.5 90.10.8 Updates

1. Fixed issues and provided more stable experience.

5.7.6 90.9.8 Updates

1. Fixed issues and provided more stable experience.

5.7.7 90.9.7 Updates

1. Fixed issues and provided more stable experience.

5.7.8 90.9.6 Updates

1. Fixed issues and provided more stable experience.

5.7.9 90.9.5 Updates

1. Added the **concurrentParticipants** parameter (maximum number of participants allowed in a meeting) to **CreateConfParam** (creating a meeting), **BookConfParam** (scheduling a meeting), **EditConfParam** (editing a meeting), and **ConfDetailModel** (meeting details). For details, see [Table 5-49](#), [Table 5-27](#), [Table 5-32](#), and [Table 5-35](#).
2. Fixed issues and provided more stable experience.

5.7.10 90.7.5 Updates

1. Added the **startP2PConf** API for starting an instant meeting. For details, see [Starting an Instant Meeting](#).
2. Added the **domain** field to the **RandomJoinConfParam** parameter of the API for joining a meeting using a random code. For details, see [Table 5-53](#).
3. Added the **joinPairConf** API for inviting a large screen to a meeting by scanning a QR code. For details, see [Scanning a QR Code to Invite a Large Screen to a Meeting](#).

4. Added the **isSpeakerOff** field to the **HWMCreateConfParam** parameter of the **createConf** API for creating a meeting. For details, see [Table 5-49](#).
5. Fixed issues and provided more stable experience.

5.7.11 90.6.5 Updates

1. Added the button for interrupting sharing to meeting settings.
2. Added the **isSupportMultiAppLogin** parameter, which indicates whether login to multiple applications on the same device is supported. For details, see [Table 5-2](#).
3. Added the **onPoorNetworkQualityInfoNotify()** API for reporting information about poor network connection. For details, see [Poor Connection Notification](#).
4. Added the **customInfo** field to the APIs for scheduling, editing, creating, and querying a meeting. For details, see [Table 5-27](#), [Table 5-32](#), [Table 5-49](#), and [Table 5-35](#).
5. Added error code 412100044 indicating that the server is degraded. After receiving this error code, you can continue to call the API to join a meeting offline.
6. Deprecated the **startCall** API.
7. Fixed issues and provided more stable experience.

5.7.12 80.15.21 Updates

1. Fixed issues and provided more stable experience.

5.7.13 80.15.5 Updates

1. Fixed issues and provided more stable experience.

5.7.14 80.13.6 Updates

1. Fixed issues and provided more stable experience.

5.7.15 80.13.5 Updates

1. The type and size of profile pictures are limited. For details, see [Uploading a Profile Picture](#).
2. Added the API for setting the language. For details, see [Setting the Language](#).
3. Fixed issues and provided more stable experience.

5.7.16 80.12.6 Updates

1. Added the enumerated value **HWM_FEATURE_TYPE_CONFIRM_RECORD** (whether to display the recording security prompt) to the **enableFeature** API. For details, see [Table 5-12](#).
2. Fixed issues and provided more stable experience.

5.7.17 80.12.5 Updates

1. Fixed multiple issues.

5.7.18 80.10.6 Updates

1. Added the [asynchronous initialization API](#).

5.7.19 80.10.5 Updates

1. Discarded the **cycleCount** parameter in the API for [Scheduling a Recurring Meeting Series](#).
2. Added parameters to the APIs for [Obtaining the Cloud Meeting Room List](#) and [Modifying Cloud Meeting Room Information](#).
3. Added the **setShareScreenPermission** API for [Setting the Sharing Permission](#).
3. Resolved some issues.

5.7.20 80.9.5 Updates

1. The **isLiveOn** field is added to edit a meeting and meeting details. For details, see [Editing a Meeting](#) and [Obtaining Meeting Details](#).
2. Resolved some issues.

5.7.21 80.8.5 Updates

1. You can set the guest password when creating, scheduling, or editing a meeting. For details, see [Scheduling a Meeting](#), [Creating a Meeting](#), and [Editing a Meeting](#).
2. Resolved some issues.

5.7.22 80.7.5 Updates

1. Resolved some issues.

5.7.23 80.5.11 Updates

1. Added the **disableVoicePrompts** API for disabling prompt tones. For details, see [Disabling Prompt Tones](#).
2. Resolved some issues.

5.7.24 80.5.5 Updates

1. Added the **isOpenWaitingRoom** parameter (waiting room switch) to the APIs for [Scheduling a Meeting](#), [Editing a Meeting](#), and [Obtaining Meeting Details](#).
2. Resolved some issues.

5.7.25 70.16.5 Updates

1. Added APIs related to recurring meetings. For details, see [Scheduling a Recurring Meeting Series](#), [Editing a Recurring Meeting Series](#), [Canceling a](#)

Recurring Meeting Series, Editing a Recurring Meeting, and Canceling a Recurring Meeting.

2. Added **isStopConflictConf** to **PasswordJoinConfParam** to forcibly end a meeting that conflicts with the current cloud meeting room. For details, see [Table 5-52](#).
3. You can configure whether to display notifications in the meeting notification bar when there is an incoming call. For details, see [Table 5-2](#).
4. Adjusted the SSO login API. For details, see [loginBySSO](#).
5. Modified error codes. For details about the new error code description, see [Table 5-83](#).

Table 5-84 Mapping between error codes of the old and new versions

Error Codes in 70.14.6 and Earlier Versions	Error Codes After 70.16.5	New Error Code Description
-1	430100001	Common error.
500	430200001	Not logged in.
12	430200002	Repeated login.
10001	412100001	The message processing thread is not initialized.
10001	412100004	Memory allocation error.
10001	412100005	XML parsing error.
10001	412100009	Server error.
10001	412100014	The server returns the redirection address.
10001	412100016	JSON parsing error.
10001	412200001	Internal error.
10002	412100002	Parameter error.
10002	412200002	Parameter error.
10003	412100003	Timed out.
10004	412100006	DNS resolution error.
10004	412100007	The request message is abnormal.
10004	412100013	Network error.
10004	412200004	Network error.
201	430200003	SIP connection timed out.

Error Codes in 70.14.6 and Earlier Versions	Error Codes After 70.16.5	New Error Code Description
35	430400001	Password is required to join the meeting.
2	430200004	Invalid login password.
420010001	430100003	SIP connection check failed.
10006	206010000	Username or password error.
10006	206030000	The user does not exist.
10006	206010025	App ID verification failed.
10007	412100010	Account locked.
10007	206030015	User locked. Try again after 60 seconds.

5.7.26 70.14.5 Updates

1. When scheduling or editing a meeting, you can set the time when a guest is allowed to join the meeting ahead of the host. For details, see [Table 5-27](#).
2. When scheduling a meeting in a cloud meeting room, you can select a fixed or random cloud meeting room ID. For details, see [Table 5-30](#).
3. A department ID can be specified for login using an app ID. For details, see [Table 5-21](#).
4. Resolved some issues.

5.7.27 70.13.5 Updates

1. Added the **uuid**, **account**, and **thirdAccount** parameters to the login and logout APIs. For details, see [Table 5-19](#) and [Table 5-26](#). If an earlier version is upgraded to 70.13.5, the definition of the callback functions needs to be modified.
2. The third-party video streaming API supports MMR meetings. For details, see [Table 5-65](#).
3. Added the **onConfIncoming** API to the service message notifications to allow you to obtain incoming call information before joining a meeting. For details, see [Notification Reference](#).
4. Resolved some issues.

5.7.28 70.12.6 Updates

1. Fixed an issue where the video definition cannot be restored after the network is restored.

5.7.29 70.12.4 Updates

1. Upgraded the RxJava version.
2. Resolved some issues.

5.7.30 70.11.5 Updates

1. Added the capability of configuring the log storage duration. For details, see [Table 5-2](#).
2. Upgraded HMS Scan Kit to version 2.1.0.300.
3. Resolved some issues.

5.7.31 70.10.5 Updates

1. Removed invalid resources.
2. Resolved some issues.

5.7.32 70.9.5 Updates

1. Added the SSO login mode. For details, see [SSO Login](#).
2. Removed the tinypinyin library.

5.7.33 70.8.6 Updates

Fixed issues and provided more stable experience.

5.7.34 70.8.5 Updates

NOTE

The original Android support library is no longer maintained or evolved by Google. Therefore, Android 28 will be upgraded to Android X.

Since the 70.8.5 version released in August, Huawei Cloud Meeting will no longer be developed based on the support library. Instead, Android X will be used for iteration.

If you are still using the original Android support library dependency:

- It is recommended that you change it to the Android X dependency. Otherwise, you may fail to connect to the Android X SDK version in subsequent development. For details, see [Getting Started](#).
- If you cannot upgrade to Android X as soon as possible, we will provide the original SDK developed based on the support library and maintain the SDK for six months. During the maintenance period, you can still integrate our SDK of 70.7.5 and earlier versions for development. Issues found in these versions will be fixed and updated. However, new functions in later iterations will be implemented only on the SDK of Android X.

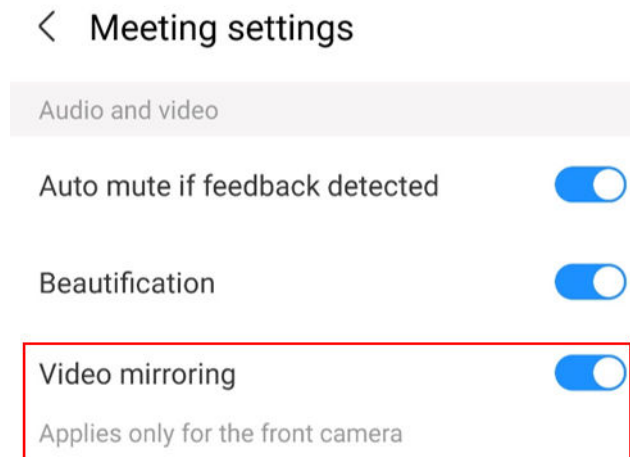
If you have any questions, dial 4000-955-988 or 950808 and press 1.

1. Since this version, the Android SDK is switched to the Android X dependency. For details, see [Getting Started](#).
2. You can obtain the participant list in meetings and webinars. For details, see [Obtaining the Participant List](#).

5.7.35 70.7.5 Updates

1. Video mirroring is supported. You can turn off video mirroring (enabled by default) to see yourself as others see you.

Figure 5-34 Video mirroring



2. API 30 of Android 11 is supported.
3. Upgraded okhttp to 4.9.1.

5.7.36 70.6.5 Updates

1. Deleted the dependency of ZXing.
2. Upgraded tinypinyin to 3.0.0.
3. Upgraded aspectjrt to 1.9.6.
4. Upgraded GSON to 2.8.6.

5.7.37 70.5.8 Updates

1. Adapted the participants and chats modules to the landscape mode.
2. On-screen comments are supported in chats.

5.7.38 70.4.5 Updates

1. Added the description of response parameters to the API for scheduling a meeting. For details, see [Table 5-29](#).
2. The SDK initialization must be performed in the onCreate main thread of Application.
3. Added the API for obtaining the current user status. For details, see [Obtaining a User Status](#).
4. The host can invite others to share content and quickly cancel the sharing.

5. Moved the button for switching between the front and rear cameras on the mobile app to the home screen.
6. Optimized the size of meeting logs.
7. Integrated AAR files in the **libs** folder. Before using the AAR files, you need to clear the files of earlier versions and import them again.

5.7.39 70.3.5 Updates

1. Removed the custom sharing link function in meetings. The custom sharing link function can be implemented through the custom sharing panel in meetings. For details, see [Customizing the Panel Used to Share a Meeting](#).
2. Removed the SMS permission requirements. For details, see [Step 6](#).
3. Changed error codes. For details, see [Error Code Reference](#).
4. Overlaid the speaker screen on the shared video screen. You can close the speaker screen by dragging it down.
5. Simultaneous login on mobile phones and tablets is supported.

5.7.40 60.15.6 Updates

1. Added the API for customizing automatic processing of incoming calls. For details, see [Answering Policy Configuration of Incoming Calls](#).
2. Added the API for customizing the ringing and vibration for incoming calls. For details, see [Customizing the Ringing and Vibration for Incoming Meetings](#).
3. Changed the AAR dependency of the SDK resource package. For details, see [Getting Started](#).
4. You can customize whether to hide the External label. For details, see [Hiding the External Label](#).

5.7.41 60.13.2 Updates

1. Added the API for adding participants. For details, see [Adding Participants](#).
2. Added the API for leaving a meeting. For details, see [Leaving a Meeting](#).
3. Added the API for ending a meeting. For details, see [Ending a Meeting](#).
4. Updated error codes and discarded unused error codes. For details, see [Error Code Reference](#).

5.7.42 60.12.5 Updates

1. During meeting creation, the meeting room (**vmrId**) and participant scope (**joinConfRestrictionType**) can be specified. For details, see [Table 5-49](#).
2. Updated error codes. For details, see [Error Code Reference](#).
3. Added the API for uploading a profile picture. For details, see [Uploading a Profile Picture](#).
4. Added the profile picture interception API to display a custom profile picture. For details, see [Customizing the Profile Picture](#).

5. Updated custom menu samples. For details, see [Customizing a Menu for Voice Meetings](#) and [Customizing a Menu for Video Meetings](#).

5.7.43 60.11.1 Updates

1. Added the **isAutoRecord** parameter to enable automatic recording for meetings.
isAutoRecord indicates whether to automatically start recording after a meeting starts. The function is disabled by default. Meeting recording must be enabled if automatic recording is enabled.
 - Added the API for creating a meeting. For details, see [Table 5-49](#).
 - Added the API for scheduling and editing a meeting. For details, see [Table 5-27](#).
2. Added the API for customizing buttons of answering meeting calls.

5.7.44 60.10.5 Updates

1. Added the configuration that specifies whether third-party data collection is enabled.

For details, see [Enabling Third-Party Video Streaming](#).

2. Added a custom access site.

For details, see [Configuring an Access Site](#).

3. Modified parameters on the sharing panel.

Added **ShareTypeEnum** as an input parameter. For details, see [Customizing the Panel Used to Share a Meeting](#).

4. Modified parameters of the API for joining a meeting.

Changed **JoinConfParam** as an abstract class. Its child classes **PasswordJoinConfParam** and **RandomJoinConfParam** were used instead. For details, see [Scenario 7: Joining a Meeting](#).

5.7.45 60.8.1 Updates

1. Added the app ID during initialization. The enterprise app ID can be passed.

An app ID set during initialization can be used for login. The app ID must be applied for from the meeting server.

For details, see [8. Initialize the SDK](#).

2. Added the following APIs: app ID login, meeting scheduling, meeting editing, meeting list query, meeting details query, and meeting cancellation.

The following is an example. For details about how to use the APIs, see [APIs](#).

- Added the APIs.

```
/**
 * Log in using an app ID.
 */
void loginByAppId(AppIdAuthParam appIdAuthParam, HwmCallback<LoginResult> callback);

/**
 * Schedule a meeting.
 */
void bookConf(BookConfParam bookConfParam, HwmCallback<ConfInfo> hwmCallback);

/**
 * Edit a meeting.
 */
void editConf(EditConfParam editConfParam, HwmCallback<Integer> hwmCallback);

/**
 * Obtain the meeting list.
 */
List<ConfBaselInfo> getConfList();

/**
 * Obtain meeting details by meeting ID.
 */
void getConfDetail(String confId, HwmCallback<ConfDetailModel> hwmCallback);

/**
 * Cancel a scheduled meeting.
 */
void cancelConf(String confId, HwmCallback<Integer> hwmCallback);

/**
 * Obtain the VMR list. You can schedule a meeting in a VMR.
 */
void getVmrList(HwmCallback<List<VmrInfoModel>> hwmCallback);

/**
 * Modify VMR information.
 */
void changeVmrInfo(HwmChangeVmrInfo hwmChangeVmrInfo, HwmCallback<Integer>
hwmCallback);
```

3. Added the APIs for configuring whether to enable HD priority and whether to enable the camera and microphone when answering a call.

For details, see [Enabling or Disabling HD Video First for a Video Meeting](#) and [Enabling or Disabling the Camera and Microphone in a Meeting](#).

4. Added the parameter to specify whether to enable recording during meeting creation.

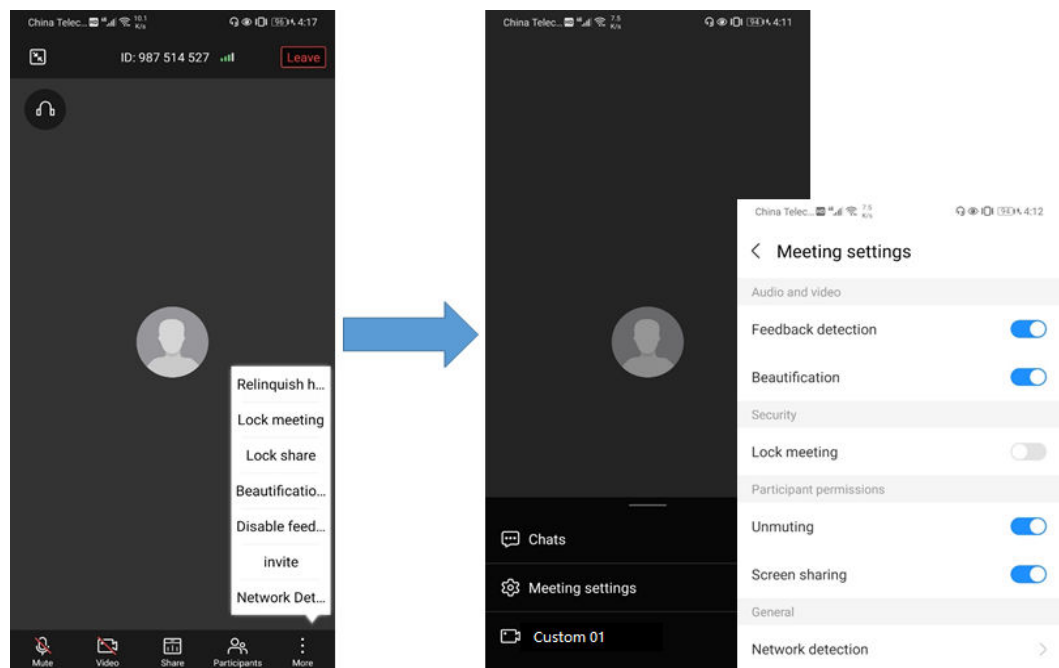
For details, see [Scenario 6: Creating a Meeting](#).

5.7.46 60.7.1 Updates

1. Optimized the meeting UI, and changed the menu structure and APIs.

- Meeting locking information was added to the meeting information on the top of the meeting page, and the UI was optimized.
- Some functions in the **More** menu of the toolbar were moved to the **Meeting settings** menu under **More**.

Figure 5-35 Meeting menus



2. The chat function in meetings was added. You can customize whether to display the chat function. For details, see [Enabling or Disabling Chat for a Meeting](#).

3. Optimized the APIs for customizing the meeting control menus, and replaced some APIs.

- On the **Participants** page in a meeting, the level-1 toolbar menu at the bottom can be customized.
- The menu bar can be configured for four scenarios: voice calls, video calls, voice meetings, and video meetings.
- Participants were distinguished. You can customize the menu displayed upon a click on the meeting title bar.
- The **IConfMenuHandle** API for configuring menus is discarded.

The following is an example. For details about how to use the APIs, see [APIs](#).

```
/**
 * Specify the configuration policy of the meeting control toolbar at the bottom of the meeting, including
 * the level-1 menu, the More menu after you touch the level-1 menu, and the More > Meeting settings
 * menu.
 */
public interface IToolbarMenuStrategy {

    /**
     * Set the level-1 meeting control menu at the bottom of the meeting.
     * @return Returns the level-1 meeting control menu.
     */
    List<IConfMenu> buildMenuItems();

    /**
     * Set the menu items displayed after you touch More at the bottom of the meeting.
     * @return Returns the More menu items displayed.
     */
    List<IConfMenu> buildMoreMenuItems();
}
```

```
/**
 * Set the menu items displayed after you touch More and choose Meeting settings. Two-level grouping
 is supported.
 * @return Returns the Meeting settings menu items.
 */
List<IConfMenu> buildSettingMenuItems();
}
```

```
/**
 * Define a callback on menu touch events.
 */
public interface OnMenuItemClickListener {
    /**
     * Callback invoked when a custom menu is touched.
     * @param confMenu Indicates the menu that is touched.
     * @param confInfo Indicates the meeting information.
     */
    void onCustomMenuItemClick(IConfMenu confMenu, ConfInfo confInfo);
}
```

Call the API.

```
// Customize a menu.
if(DemoUtil.needCustom(NeedCustomType.CONF_MENU)){
    sdkConfig.setConfMenuHandle(new CustomConfMenu());

    ToolbarMenuProxy toolbarMenuProxy = new ToolbarMenuProxy();
    // Customize the toolbar in a voice call.
    toolbarMenuProxy.setCallAudioToolbarHandle(new CustomCallAudioToolbarHandle());
    // Customize the toolbar in a video call.
    toolbarMenuProxy.setCallVideoToolbarHandle(new CustomCallVideoToolbarHandle());
    // Customize the toolbar in a voice meeting.
    toolbarMenuProxy.setConfAudioToolbarHandle(new CustomConfAudioToolbarHandle());
    // Customize the toolbar in a video meeting.
    toolbarMenuProxy.setConfVideoToolbarHandle(new CustomConfVideoToolbarHandle());
    sdkConfig.setToolbarMenuProxy(toolbarMenuProxy);
    // Customize the Participants menu in the meeting.
    sdkConfig.setParticipantMenuStrategy(new CustomParticipantMenuHandle());
    // Customize the handle click events on the custom menus.
    sdkConfig.setOnMenuItemClickListener(new CustomOnMenuItemClickListener());
}
```

5.8 Change History

Table 5-85 Change history

Released On	Version	Change Description
2024-06-13	100.5.5	1. Added notifications of floating window changes. 2. Added the time zone parameter to the API for obtaining meeting details. 3. Modified the virtual background integration mode. For details, see 10.5.5 Updates .

Released On	Version	Change Description
2024-4-23	100.3.6	<ol style="list-style-type: none"> 1. Removed the restriction that the synchronous initialization API must be implemented in the onCreate() method of the application. 2. Combined eight .aar files in libs into HWMSdk-release.aar. 3. Added the description of Android menu functions. <p>For details, see 10.3.6 Updates.</p>
2024-2-17	90.12.7	Fixed issues and provided more stable experience.
2024-1-5	90.12.5	<ol style="list-style-type: none"> 1. Deprecated the getVmrList API and added the getVmrInfoList API. 2. Added the OnShareVmrInfoNotify notification to notify you when information about shared cloud meeting rooms was changed. 3. Added the confResType parameter to CreateConfInfo and BookConfParam. 4. Added the OnP2PConfRecordNotify notification to notify you of instant meeting records. 5. Added the GetErrorMessage API for obtaining an error message, which can be used for prompt. 6. Added the SetGuaranteedIpAddresses API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. 7. Fixed issues and provided more stable experience. <p>For details, see 90.12.5 Updates.</p>
2023-12-13	90.10.8	Fixed issues and provided more stable experience.
2023-11-15	90.9.8	Fixed issues and provided more stable experience.
2023-10-27	90.9.7	Fixed issues and provided more stable experience.
2023-10-20	90.9.6	Fixed issues and provided more stable experience.

Released On	Version	Change Description
2023-10-7	90.9.5	<ol style="list-style-type: none">1. Added the concurrentParticipants parameter (maximum number of participants allowed in a meeting) to CreateConfParam (creating a meeting), BookConfParam (scheduling a meeting), EditConfParam (editing a meeting), and ConfDetailModel (meeting details).2. Fixed issues and provided more stable experience. For details, see 90.9.5 Updates.
2023-08-11	90.7.5	<ol style="list-style-type: none">1. Added the startP2PConf API for starting an instant meeting.2. Added the domain field to the RandomJoinConfParam parameter of the API for joining a meeting using a random code.3. Added the joinPairConf API for inviting a large screen to a meeting by scanning a QR code.4. Added the isSpeakerOff field to the CreateConfParam parameter of the createConf API for creating a meeting.5. Fixed issues and provided more stable experience. For details, see 90.7.5 Updates.

Released On	Version	Change Description
2023-06-02	90.6.5	<ol style="list-style-type: none"> 1. Added the button for interrupting sharing to meeting settings. 2. Added the isSupportMultiAppLogin parameter, which indicates whether login to multiple applications on the same device is supported. 3. Added the onPoorNetworkQualityInfoNotify() API for reporting information about poor network connection. 4. Added the customInfo field to the APIs for scheduling, editing, creating, and querying a meeting. 5. Added error code 412100044 indicating that the server is degraded. After receiving this error code, you can continue to call the API to join a meeting offline. 6. Deprecated the startCall API. 7. Fixed issues and provided more stable experience. <p>For details, see 90.6.5 Updates.</p>
2023-05-12	80.15.21	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. <p>For details, see 80.15.21 Updates.</p>
2023-03-24	80.15.5	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. <p>For details, see 80.15.5 Updates.</p>
2023-02-24	80.13.6	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. <p>For details, see 80.13.6 Updates.</p>
2023-02-07	80.13.5	<ol style="list-style-type: none"> 1. The format and size of profile pictures are limited. For details, see Uploading a Profile Picture. 2. Added the API for setting the language. For details, see Setting the Language. 3. Fixed issues and provided more stable experience. <p>For details, see 80.13.5 Updates.</p>

Released On	Version	Change Description
2023-01-09	80.12.6	<ol style="list-style-type: none"> Added the enumerated value HWM_FEATURE_TYPE_CONFIRM_RECORD (whether to display the recording security prompt) to the enableFeature API. For details, see Table 5-12. Fixed issues and provided more stable experience. <p>For details, see 80.12.6 Updates.</p>
2022-12-26	80.12.5	<ol style="list-style-type: none"> Fixed multiple issues.
2022-11-22	80.10.6	<ol style="list-style-type: none"> Added the asynchronous initialization API. <p>For details, see 80.10.6 Updates.</p>
2022-11-15	80.10.5	<ol style="list-style-type: none"> Discarded the cycleCount parameter in the API for Scheduling a Recurring Meeting Series. Added parameters to the APIs for Obtaining the Cloud Meeting Room List and Modifying Cloud Meeting Room Information. Added the setShareScreenPermission API for Setting the Sharing Permission. <p>For details, see 80.10.5 Updates.</p>
2022-10-10	80.9.5	<ol style="list-style-type: none"> Added the isLiveOn parameter (whether live broadcast is enabled) to the APIs for editing a meeting and querying meeting details. Resolved some issues. <p>For details, see 80.9.5 Updates.</p>
2022-09-02	80.8.5	<ol style="list-style-type: none"> You can set the guest password when creating, scheduling, or editing a meeting. Resolved some issues. <p>For details, see 80.8.5 Updates.</p>
2022-07-30	80.7.5	<ol style="list-style-type: none"> Resolved some issues. <p>For details, see 80.7.5 Updates.</p>
2022-06-15	80.5.11	<ol style="list-style-type: none"> Added the API for disabling prompt tones. Resolved some issues. <p>For details, see 80.5.11 Updates.</p>

Released On	Version	Change Description
2022-05-18	80.5.5	<ol style="list-style-type: none">Added the isOpenWaitingRoom parameter (waiting room switch) to the APIs for scheduling a meeting, modifying a meeting, and obtaining meeting details.Resolved some issues. For details, see 80.5.5 Updates .
2022-04-15	70.16.5	<ol style="list-style-type: none">Added APIs related to recurring meetings.Added isStopConflictConf to PasswordJoinConfParam, so you can forcibly end a meeting that conflicts with the current cloud meeting room.You can configure whether to display notifications when there is an incoming call in the meeting notification bar.Adjusted the SSO login API.Modified error codes and released the description of new error codes and the mapping between the error codes of the old and new versions. For details, see 70.16.5 Updates .
2022-02-19	70.14.5	<ol style="list-style-type: none">When scheduling or editing a meeting, you can set the time when a guest is allowed to join the meeting ahead of the host. For details, see Table 5-27.When scheduling a meeting in a cloud meeting room, you can select a fixed or random cloud meeting room ID. For details, see Table 5-30.A department ID can be specified for login using an app ID. For details, see Table 5-21.Resolved some issues. For details, see 70.14.5 Updates .

Released On	Version	Change Description
2022-01-19	70.13.5	<ol style="list-style-type: none"> Added the uuid, account, and thirdAccount parameters to the login and logout APIs. For details, see Table 5-19 and Table 5-26. If an earlier version is upgraded to 70.13.5, the definition of the callback functions needs to be modified. The third-party video streaming API supports MMR meetings. For details, see Table 5-65. Added the onConflncoming API to the service message notifications to allow you to obtain incoming call information before joining a meeting. For details, see Service Message Notification. Resolved some issues. For details, see 70.13.5 Updates.
2021-12-23	70.12.6	<ol style="list-style-type: none"> Fixed an issue where the definition cannot be restored when the network is weak. For details, see 70.12.6 Updates.
2021-12-15	70.12.4	<ol style="list-style-type: none"> Upgraded RxJava to 3.0.13. Resolved some issues. For details, see 70.12.4 Updates.
2021-12-03	70.11.5	<ol style="list-style-type: none"> Added the configuration of log storage duration. Upgraded HMS Scan Kit to version 2.1.0.300. Resolved some issues. For details, see 70.11.5 Updates.
2021-10-22	70.10.5	<ol style="list-style-type: none"> Removed invalid resources. Resolved some issues. For details, see 70.10.5 Updates.
2021-09-16	70.9.5	<ol style="list-style-type: none"> Added SSO login. Removed the tinypinyin library. For details, see 70.9.5 Updates.
2021-08-28	70.8.6	Fixed issues and provided more stable experience.

Released On	Version	Change Description
2021-08-18	70.8.5	<ol style="list-style-type: none"> 1. Changed Android SDK to the Android X dependency. 2. You can obtain the participant list in meetings and webinars. For details, see 70.8.5 Updates .
2021-07-16	70.7.5	<ol style="list-style-type: none"> 1. You can configure video mirroring for the local site in meetings. 2. API 30 of Android 11 is supported. 3. Upgraded okhttp to 4.9.1. For details, see 70.7.5 Updates .
2021-06-10	70.6.5	<ol style="list-style-type: none"> 1. Deleted the dependency of ZXing. 2. Upgraded tinypinyin to 3.0.0. 3. Upgraded aspectjrt to 1.9.6. 4. Upgraded GSON to 2.8.6. For details, see 70.6.5 Updates .
2021-05-17	70.5.8	<ol style="list-style-type: none"> 1. Adapted the participants and chats modules to the landscape mode. 2. On-screen comments are supported in chats. For details, see 70.5.8 Updates .
2021-04-15	70.4.5	<ol style="list-style-type: none"> 1. Added the description of response parameters to the API for scheduling a meeting. 2. The SDK initialization must be performed in the OnCreate main thread of the application. 3. Added the API for obtaining the current user status. 4. The host can invite others to share content and quickly cancel the sharing. 5. Moved the button for switching between the front and rear cameras on the mobile app to the home screen. 6. Optimized the size of meeting logs. 7. Integrated AAR files in the libs folder. Before using the AAR files, you need to clear the files of earlier versions and import them again. For details, see 70.4.5 Updates .

Released On	Version	Change Description
2021-03-12	70.3.5	<ol style="list-style-type: none"> 1. Removed the custom sharing link function in meetings. The custom sharing link function can be implemented through the custom sharing panel in meetings. 2. Removed the SMS permission requirements. 3. Changed error codes. 4. Overlaid the speaker screen on the shared video screen. You can close the speaker screen by dragging it down. 5. Simultaneous login on mobile phones and tablets is supported. <p>For details, see 70.3.5 Updates.</p>
2021-02-10	60.15.6	<ol style="list-style-type: none"> 1. Added the API for customizing automatic processing of incoming calls. 2. Added the API for customizing the ringing and vibration for incoming calls. 3. Changed the AAR dependency of the SDK resource package. 4. You can customize whether to hide the External label. <p>For details, see 60.15.6 Updates.</p>
2021-01-08	60.13.2	<ol style="list-style-type: none"> 1. Added the API for inviting participants. 2. Added the API for leaving a meeting. 3. Added the API for ending a meeting. 4. Updated error codes. <p>For details, see 60.13.2 Updates.</p>
2020-12-07	60.12.5	<ol style="list-style-type: none"> 1. During meeting creation, the meeting room (vmrId) and participant scope (joinConfRestrictionType) can be specified. 2. Updated error codes. 3. Added the API for uploading a profile picture. 4. Added the profile picture interception API to display a custom profile picture. 5. Updated custom menu samples. <p>For details, see 60.12.5 Updates.</p>

Released On	Version	Change Description
2020-11-07	60.11.1	<ol style="list-style-type: none">1. Added the function of automatic meeting recording.2. Added the API for customizing buttons of answering meeting calls.3. Added the API for setting a display name in calls. For details, see 60.11.1 Updates .
2020-10-15	60.10.5	<ol style="list-style-type: none">1. Added the configuration that specifies whether third-party data collection is enabled.2. Added a custom access site.3. Modified parameters on the sharing panel.4. Modified parameters of the API for joining a meeting. For details, see 60.10.5 Updates .
2020-09-04	60.8.1	<ol style="list-style-type: none">1. Added the app ID parameter during initialization. The enterprise app ID can be passed.2. Added the following APIs: app ID login, meeting scheduling, meeting editing, meeting list query, meeting details query, and meeting cancellation.3. Added the APIs for configuring whether to enable HD priority and whether to enable the camera and microphone when joining a meeting.4. Added the parameter to specify whether to enable recording during meeting creation.5. Fixed issues and provided more stable experience. For details, see 60.8.1 Updates .

Released On	Version	Change Description
2020-07-30	60.7.1	<p>1. Optimized the meeting UI, and changed the menu structure and APIs for clearer logic.</p> <p>2. Add the function so participants in a meeting can chat with each other in text. Added the function to show or hide custom configurations.</p> <p>3. Optimized the APIs for customizing the meeting control menus, and replaced some APIs for more flexible usage.</p> <p>For details, see 60.7.1 Updates.</p>
2020-06-29	60.6.4	<p>Added the following content:</p> <ul style="list-style-type: none"> • A callback to specify whether a participant is the host • An API to specify whether the current user is the host <p>Modified the following contents:</p> <ul style="list-style-type: none"> • Some APIs For details, see Customizing the Bottom Menu Bar.
2020-05-08	60.5.3	<p>Updated the document as follows:</p> <ul style="list-style-type: none"> • Deleted the API Creating a Meeting (Carrying Participant Information), and its function was integrated into the API Creating a Meeting. • Optimized the API names and structures.
2019-11-12	6.1.223	Solved some known issues.
2019-08-31	6.1.203	<p>Added the following API:</p> <ul style="list-style-type: none"> • Logging Out <p>Modified the following APIs:</p> <ul style="list-style-type: none"> • Login Using an Account and Password. Changed API parameters, and the login address and port are not required. • Joining a Meeting. Deleted the API Joining a Meeting Anonymously, and its function was integrated into the API Joining a Meeting. Changed some parameters of the API Joining a Meeting.

Released On	Version	Change Description
2019-07-23	6.1.195	Added the following content: <ul style="list-style-type: none">• Added the API Joining a Meeting Anonymously. This API enables users to join a meeting without logging in.• Added the function to allow users to return to the floating panel during a meeting.
2019-04-13	6.1.27	Added the following API: <ul style="list-style-type: none">• Creating a Meeting (Carrying Participant Information). This API enables users to add participant information when creating an instant meeting so that these participants can receive a meeting call when the meeting starts. Supported the following capabilities: <ul style="list-style-type: none">• Joining a meeting by answering a call on the application frontend.• Integrating applications. For more information, see Application Integration.
2019-03-29	6.1.23	This issue is the first official release.

6 iOS SDK

6.1 Introduction

Huawei Cloud Meeting iOS SDK provides a complete set of APIs. Developers can call the SDK APIs to quickly integrate voice and video meetings into their applications, including creating, scheduling, and joining meetings, and sharing screens.

6.2 Getting Started

This section uses SDK initialization as an example to describe how to use the iOS SDK for secondary development.

6.2.1 Preparations

1. Set the environment and project according to [Environment Requirements](#).
2. **Optional:** Decompress the downloaded **hwmsdk-ios.zip** software package on a MacBook. Download the required SDK software package by referring to [Downloading SDKs](#).
3. Obtain the certificates and files required for project and extension development. For details, see [How Do I Apply for a Certificate for iOS?](#)

6.2.2 Quick Integration

- Step 1** Decompress all the downloaded software packages to obtain **libs** for integration and **HWMSDKDemo**.

Figure 6-1 Decompressed files

Name	^	Date Modified	Size	Kind
> HWMSDKDemo ← Demo		Today at 14:59	--	Folder
> libs ← SDK resources		Today at 14:59	--	Folder

- Step 2** Start the Xcode.

Step 3 Choose **File > New > Project**. Then, select **Single View App** and click **Next**. On the displayed page, enter the application information and click **Create** to create a project, as shown in the following figures.

Figure 6-2 Creating a project

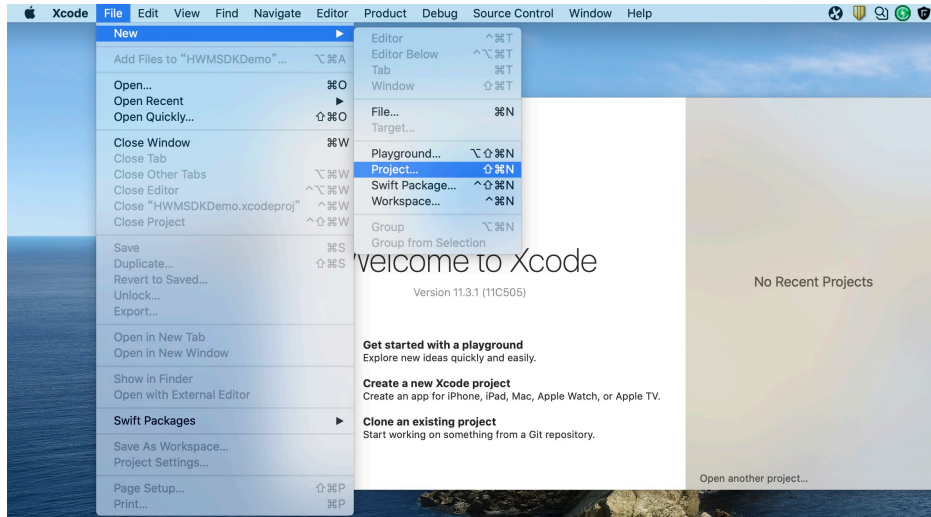


Figure 6-3 Selecting the Single View App template

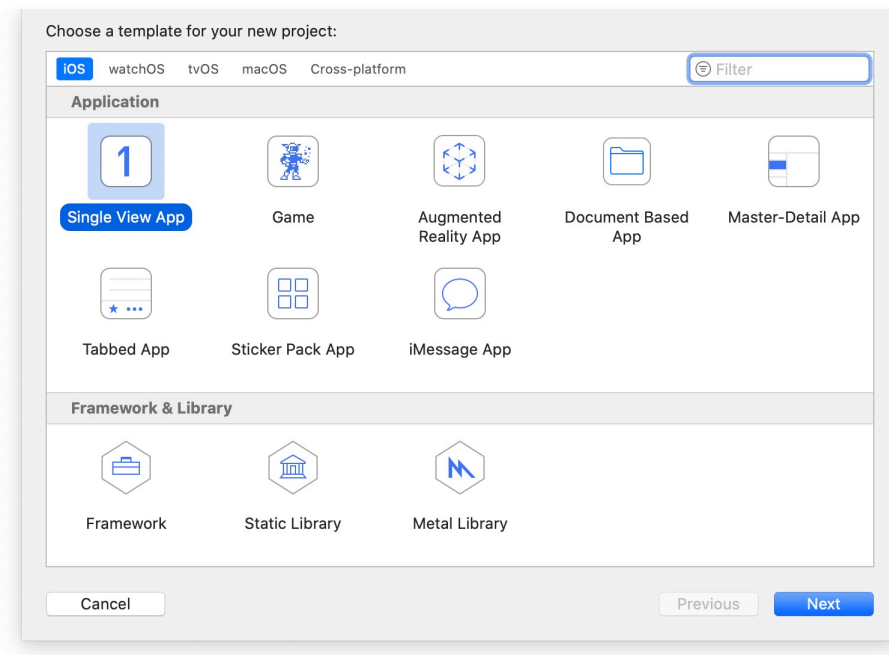


Figure 6-4 Naming the project

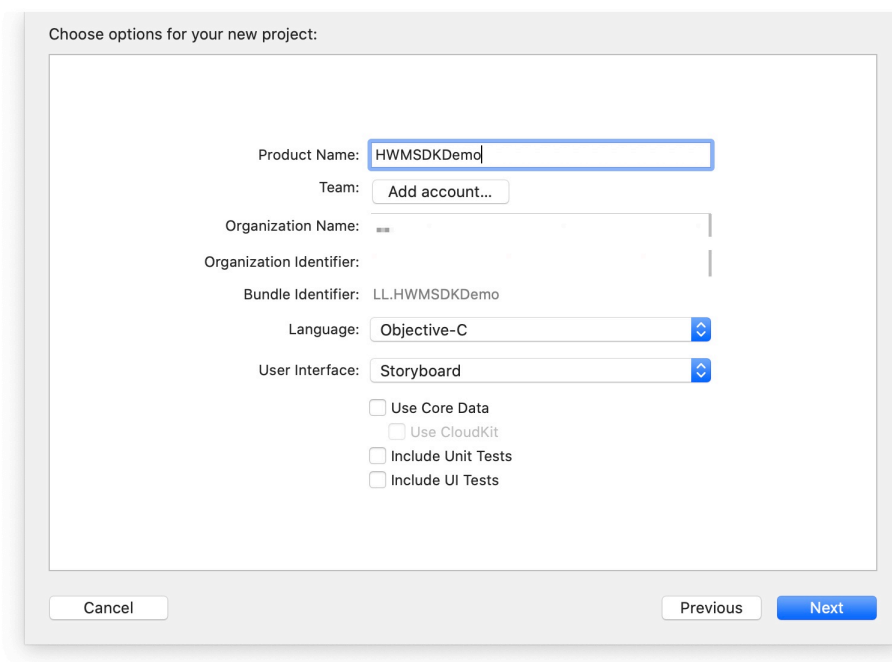
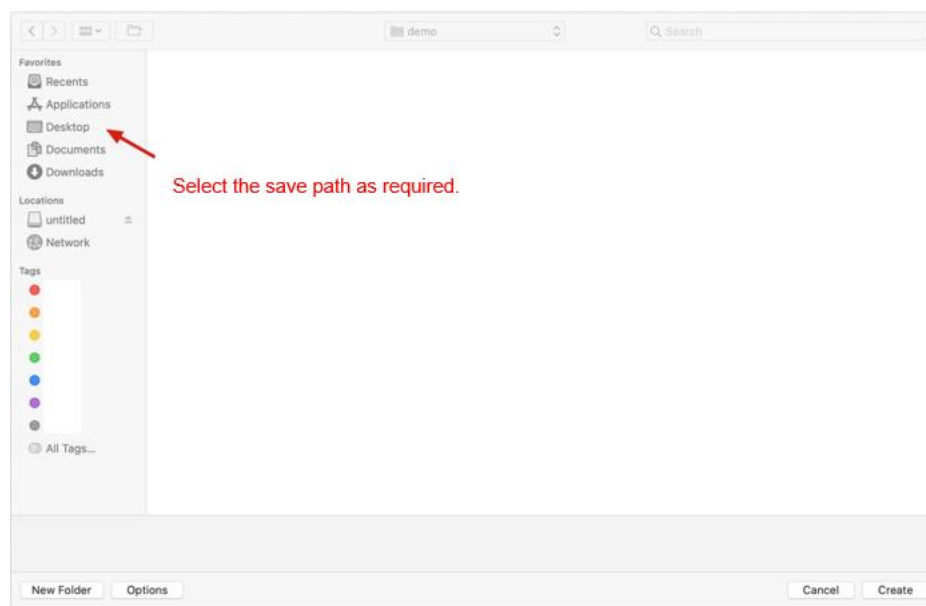


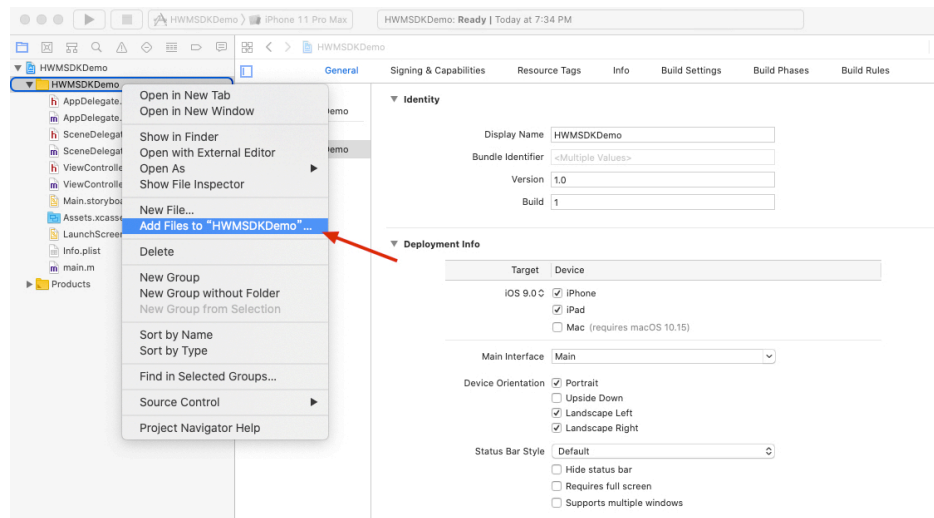
Figure 6-5 Selecting a save path for the project



Step 4 Add **HWMUISDK.framework** and **HWMRMedia.framework** obtained in [Step 1](#) to the project.

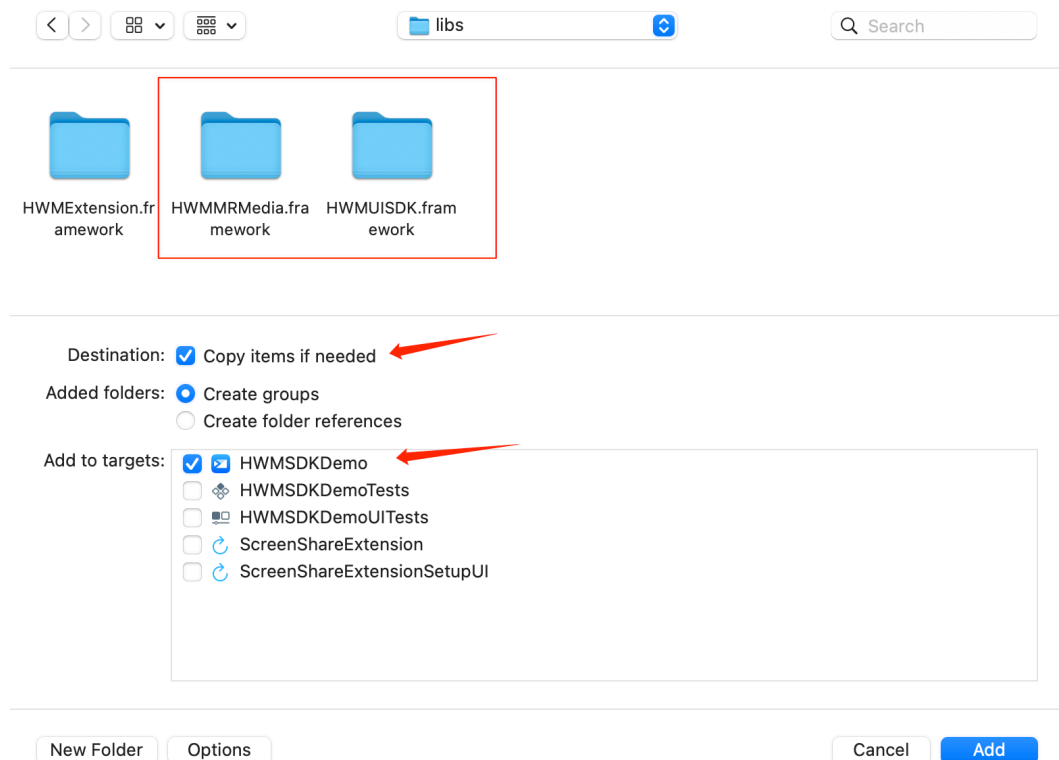
- Adding the decompressed resource

Figure 6-6 Adding resources



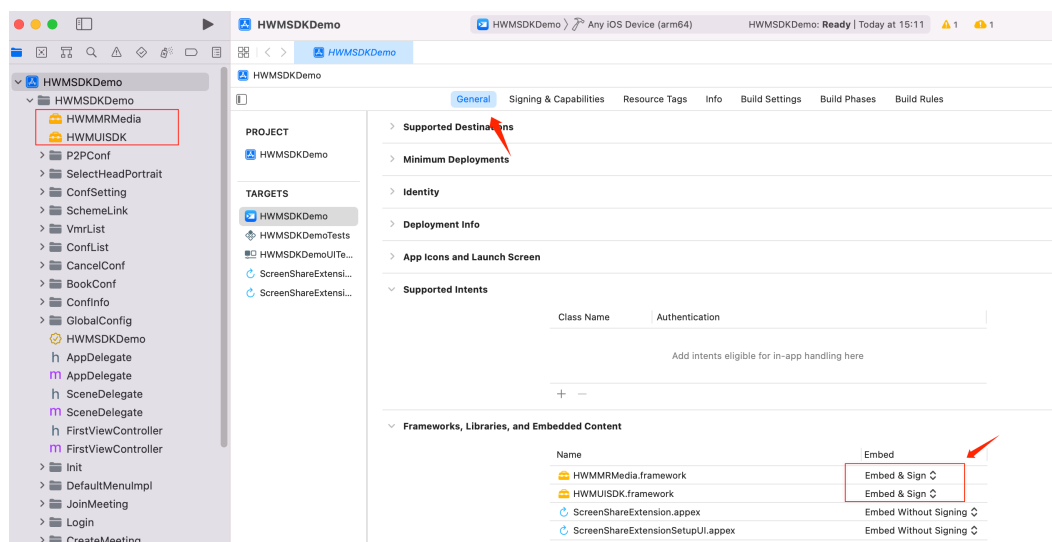
- Adding HWMUISDK.framework and HWMRMedia.framework

Figure 6-7 Selecting the frameworks



- Choose **TARGETS > General**. Then, change the value in the **Embed** column of HWMUISDK.framework to **Embed & Sign**.

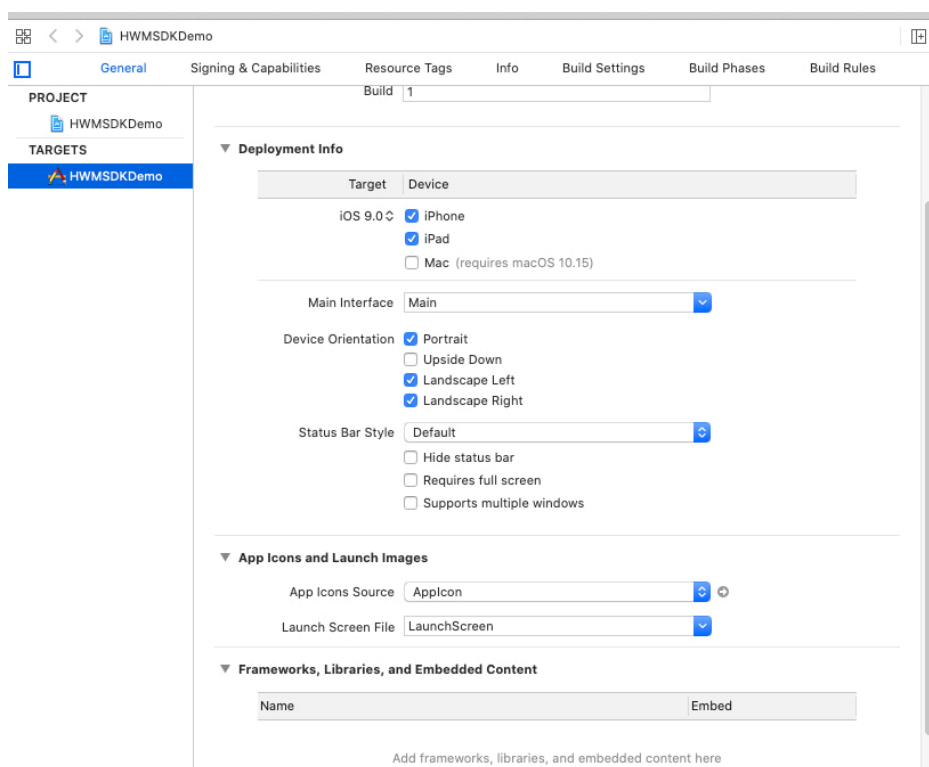
Figure 6-8 Effect after the adding



Step 5 Configure the project files.

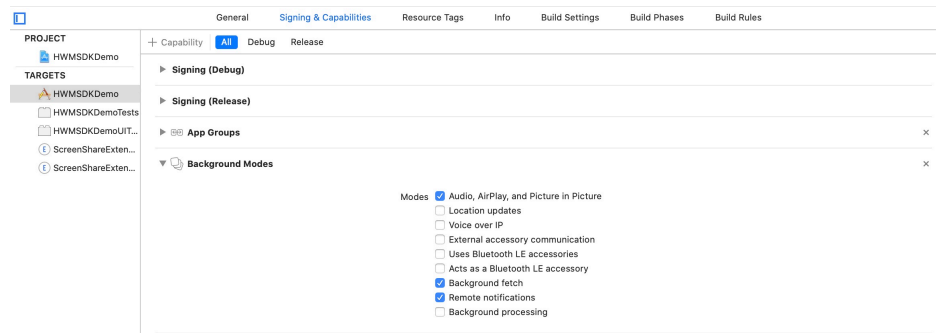
1. In **General** area, set the **Deployment Info** and development certificate as required.

Figure 6-9 Setting **Deployment Info** in the **General** area



2. In the **Signing & Capabilities** area, set **Background Modes** for the application, so that the meeting can run in the background. When submitting the application for review, provide a test account to Apple and describe the meeting scenario. Otherwise, the application may be rejected.

Figure 6-10 Setting Background Modes



3. In the **Build Settings** area, set **Enable Bitcode** to **NO** (**YES** is not supported by the SDK), **Valid Architectures** to **arm64** (not support simulators), and **Other Linker Flags** to **-ObjC**.

Figure 6-11 Setting Build Settings

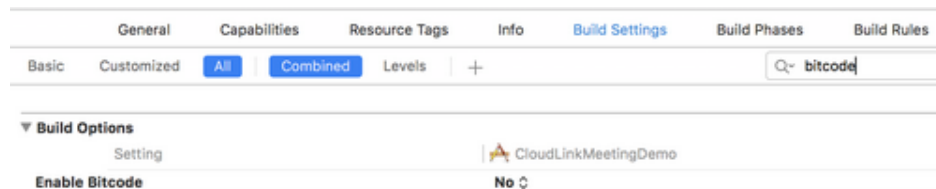


Figure 6-12 Setting Valid Architectures

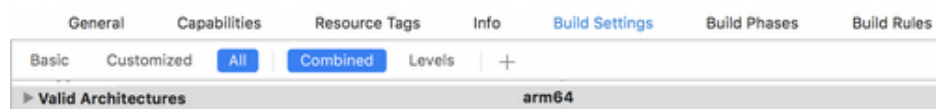
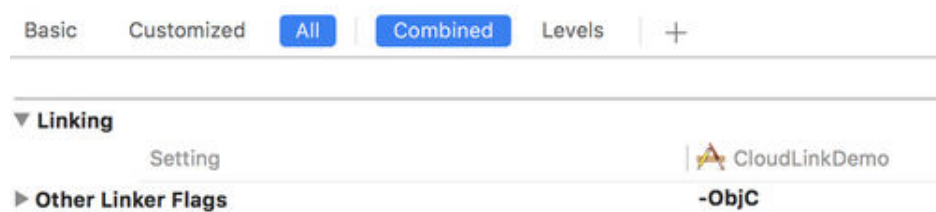
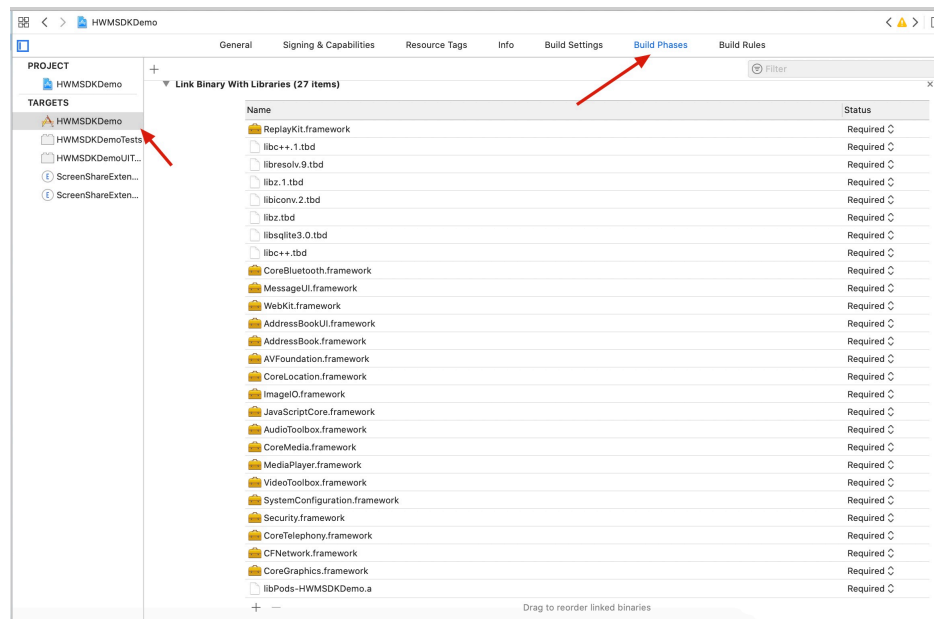


Figure 6-13 Setting Other Linker Flags to -ObjC



4. In the **Build Phases** area, configure **Link Binary With Libraries**. The following screenshots are for your reference.

Figure 6-14 Clicking the plus sign (+) under Link Binary With Libraries to add files

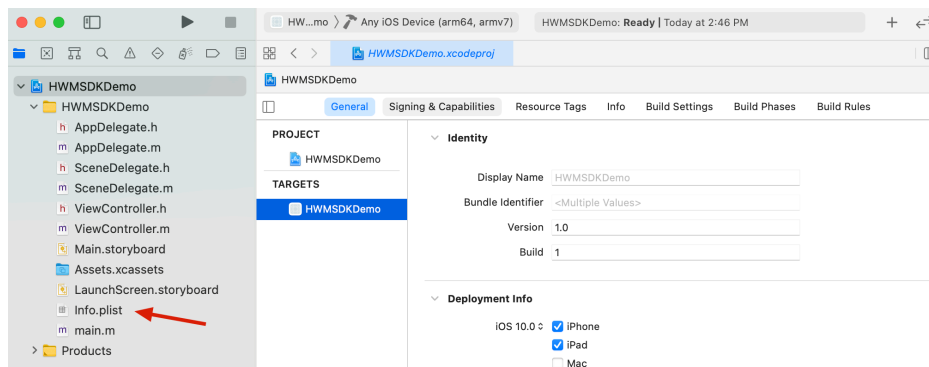


Copy the following names one by one and click the plus sign (+) to add files. Alternatively, manually enter names to add files.

AddressBook.framework
 AudioToolbox.framework
 AVFoundation.framework
 CFNetwork.framework
 CoreGraphics.framework
 CoreLocation.framework
 CoreMedia.framework
 CoreTelephony.framework
 MediaPlayer.framework
 PushKit.framework
 ReplayKit.framework
 Security.framework
 SystemConfiguration.framework
 VideoToolbox.framework
 WebKit.framework
 libresolv.9.tbd
 libc++.1.tbd
 libz.1.tbd
 libconv.tbd
 libz.tbd
 libc++.tbd

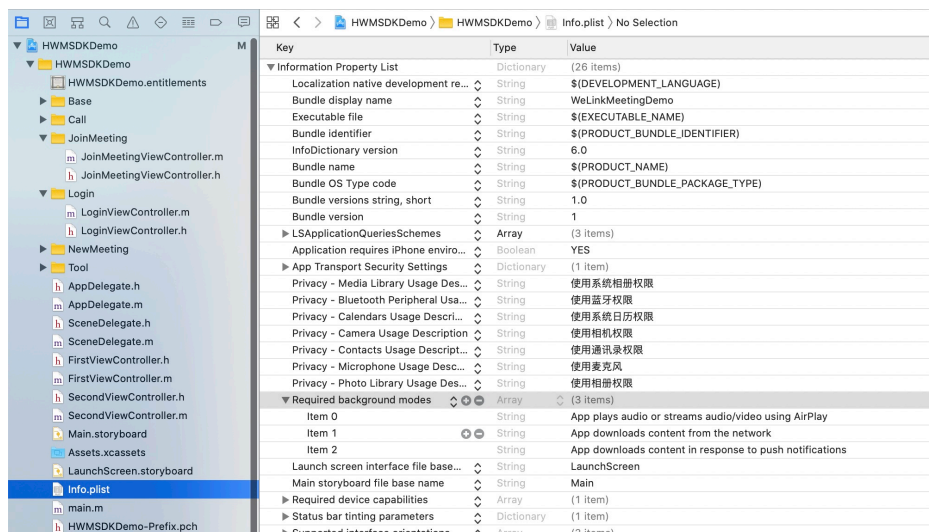
5. For **Info.plist**, configure permission prompts and third-party application startup information. The following fields need to be configured:

Figure 6-15 Info.plist location



- Privacy - Camera Usage Description (Camera usage prompt)
- Privacy - Microphone Usage Description (Microphone usage prompt)
- Privacy - Contacts Usage Description (Contact usage prompt)
- App Transport Security Settings--Allow Arbitrary Loads (The value must be YES.)

Figure 6-16 Info.plist configuration effect



----End

6.2.3 Screen Sharing Integration

NOTE

You can share your mobile phone screen with others to improve communication efficiency.

About the Sharing Bundle ID

Bundle ID format of the ScreenShareExtension extension:

Main app bundle ID + **ScreenShareExtension**

Bundle ID format of the ScreenShareExtensionSetupUI extension:

Main app bundle ID + **ScreenShareExtensionSetupUI**

Examples:
Assume that the bundle ID of the main app is **com.xx.xx**.
The bundle ID of the ScreenShareExtension extension will be **com.xx.xx.ScreenShareExtension**.
The bundle ID of the ScreenShareExtensionSetupUI extension will be **com.xx.xx.ScreenShareExtensionSetupUI**.

You need to add an iOS extension and configure related code for iOS screen sharing. The following describes how to integrate the SDK to develop the screen sharing extension.

NOTE

Related features depend on system capabilities. To use the screen sharing function, you need to use iOS 12 or a later version. For more information, see [App Extension Programming Guide](#).

Step 1 Choose **File > New > Target**. Then, select the **Broadcast Upload Extension** template to create an extension target.

Figure 6-17 Adding a target

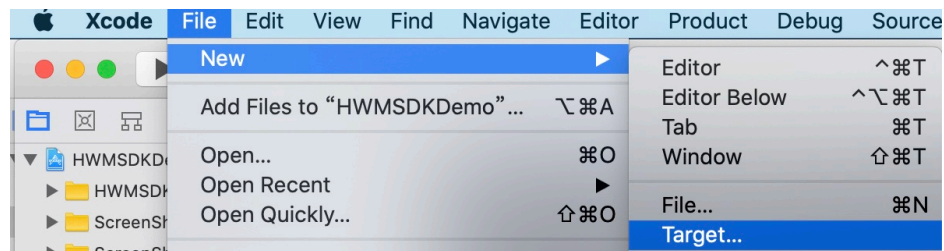


Figure 6-18 Selecting the Broadcast Upload Extension template and clicking Next

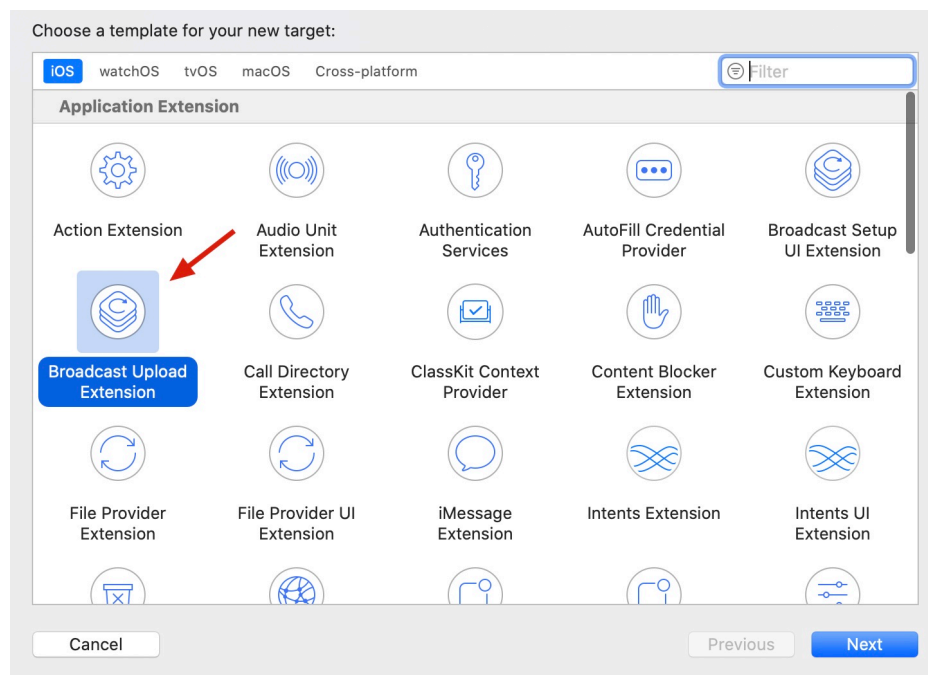
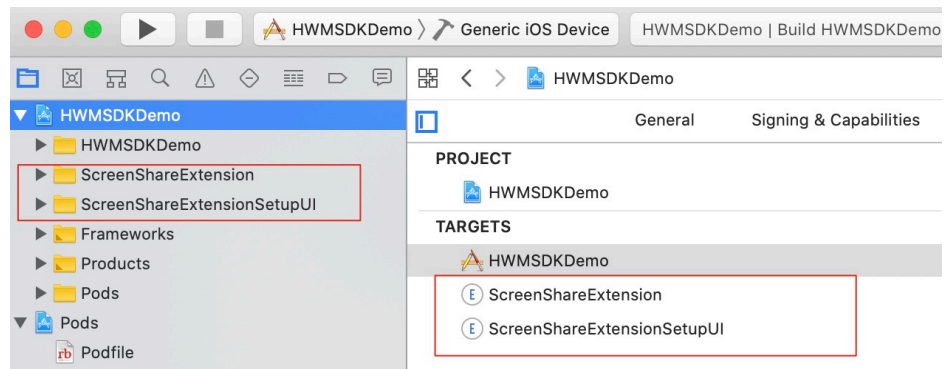


Figure 6-19 Extension named ScreenShareExtension added



Step 2 Set the iOS version supported by the extension to **12.0**.

Figure 6-20 Setting the extension

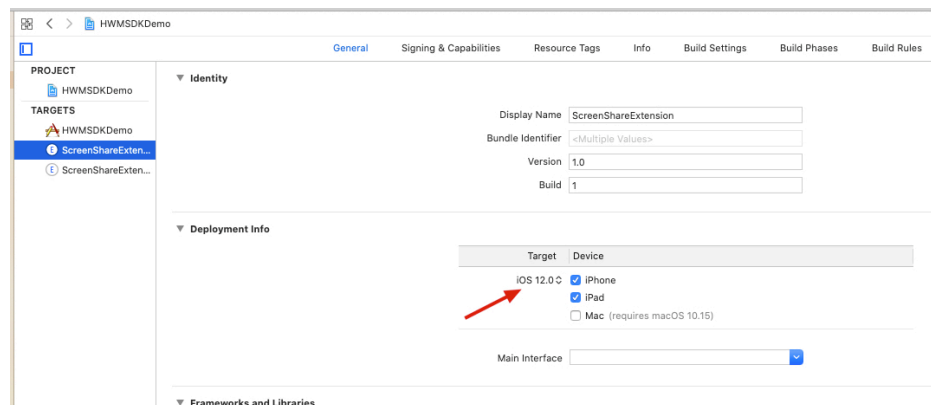
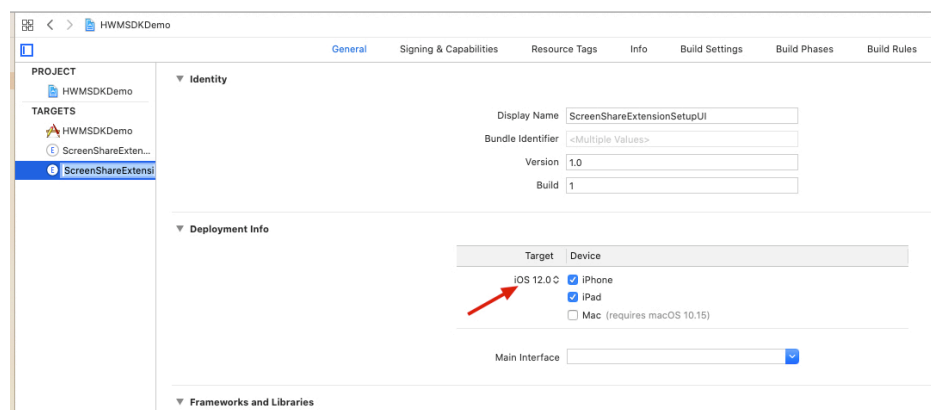


Figure 6-21 Setting the extension UI



Step 3 Add an app group to the main project and current extension, and set the group ID to that obtained in [Preparations](#).

Figure 6-22 Default setting (no app groups)

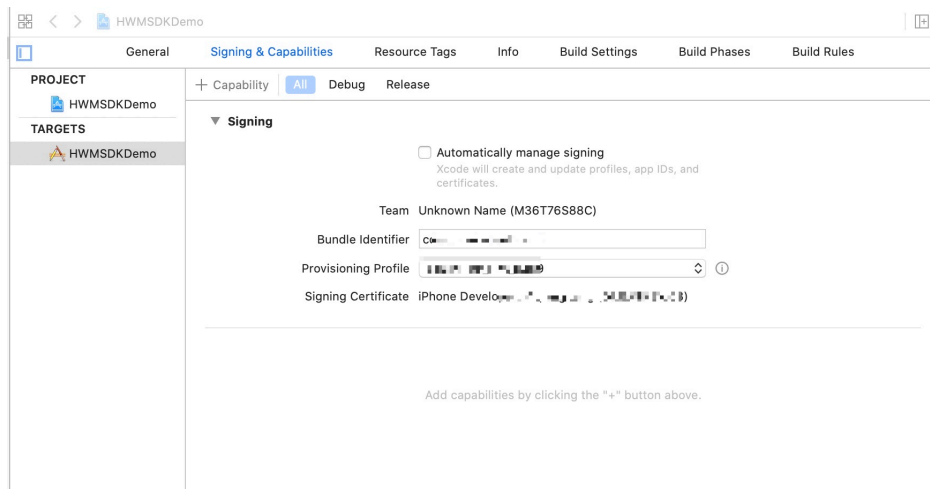


Figure 6-23 Choosing TARGETS > Signing & Capabilities > Capability to add an app group

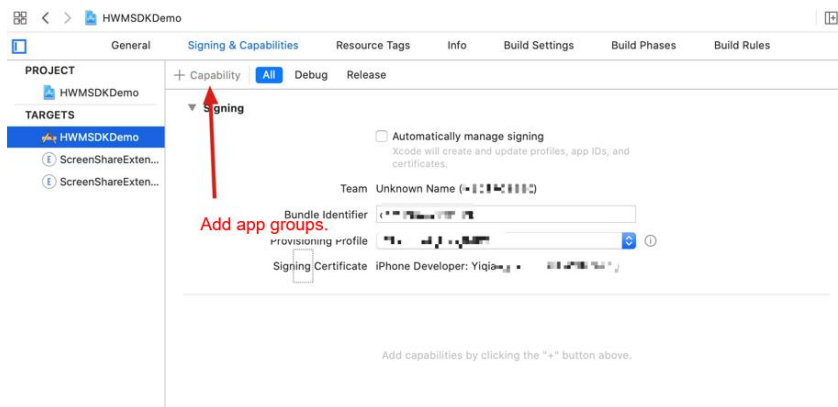
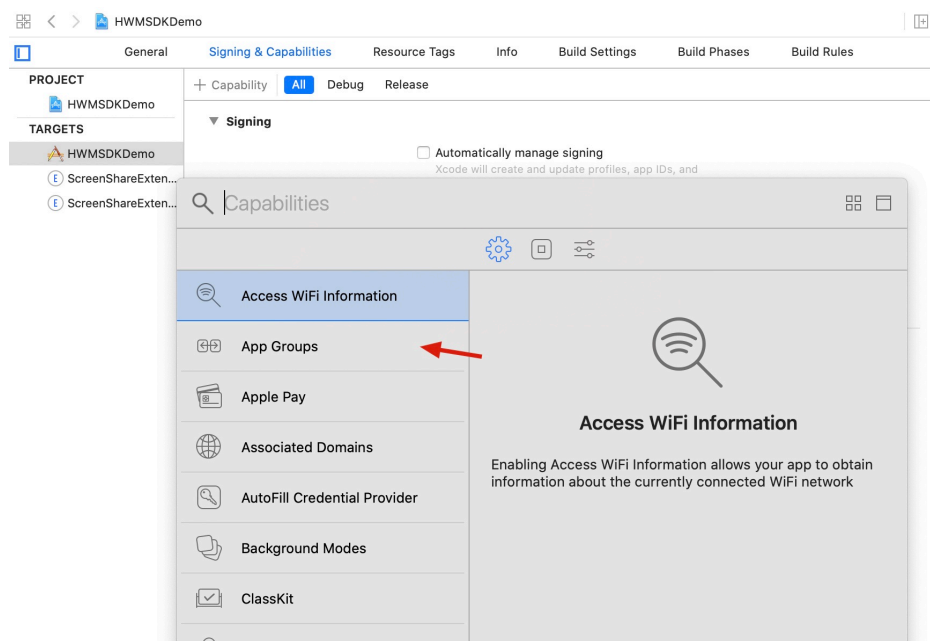
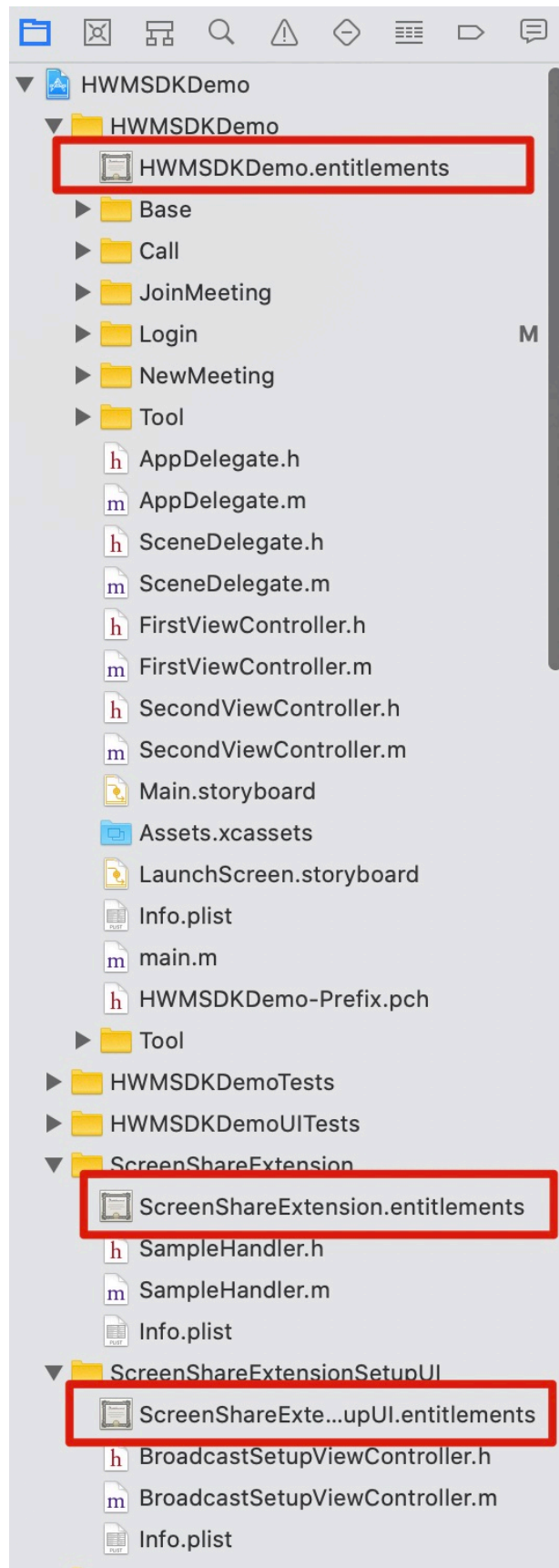


Figure 6-24 Choosing App Groups



Add app groups for ScreenShareExtension and ScreenShareExtensionSetupUI in the same way.

Figure 6-25 App groups added



Step 4 Add app group IDs to the entitlement files. (The group IDs are also used during initialization. You can apply for app group IDs from [Apple's official website](#).)

Figure 6-26 App group ID added to an app

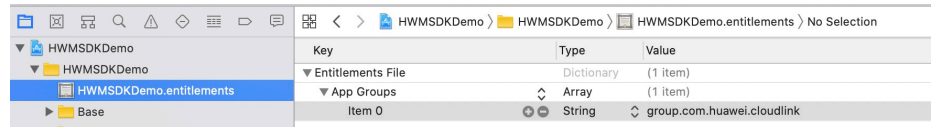


Figure 6-27 App group ID added to ScreenShareExtension

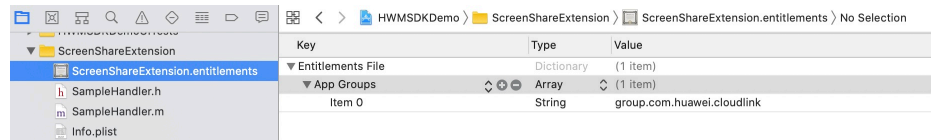
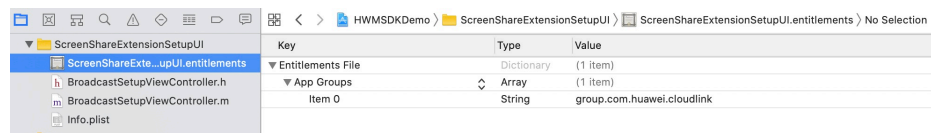


Figure 6-28 App group ID added to ScreenShareExtensionSetupUI



Step 5 Add `HWMExtension.framework` to `ScreenShareExtension`. Go to **TARGETS > ScreenShareExtension > Build Settings > Other Linker Flags** and add `-lc++`.

Figure 6-29 Choosing ScreenShareExtension > Add Files to...

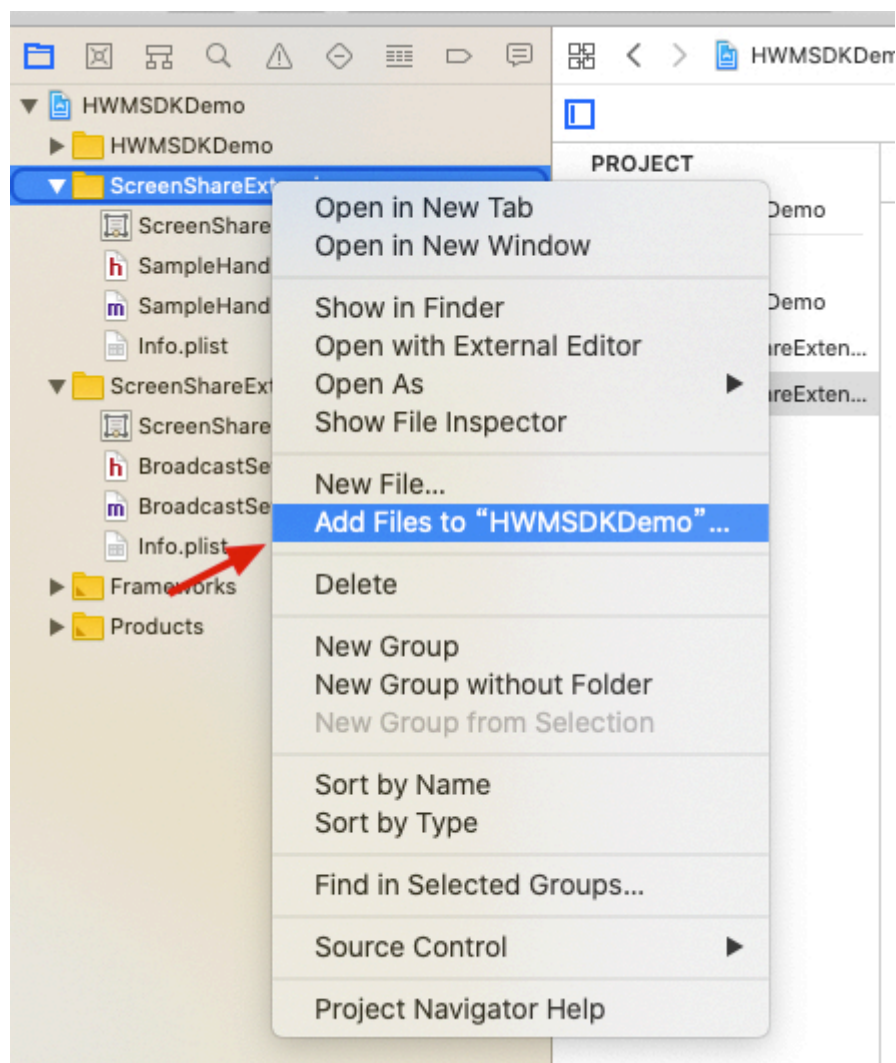


Figure 6-30 Adding HWMExtension.framework to ScreenShareExtension

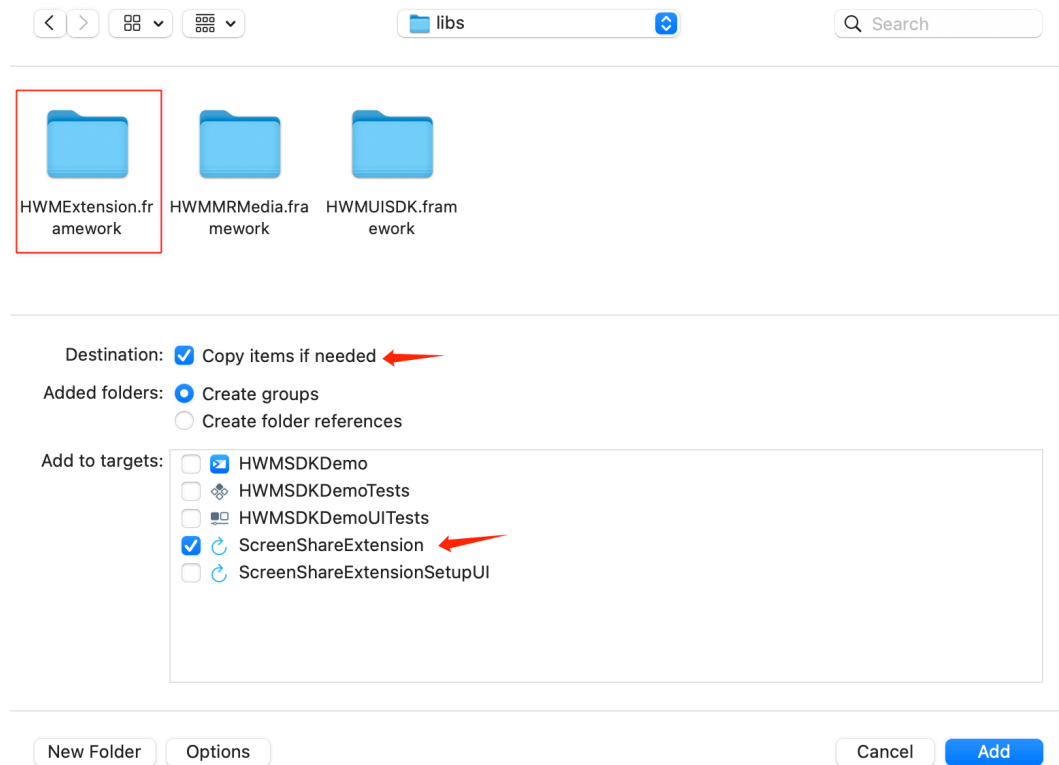
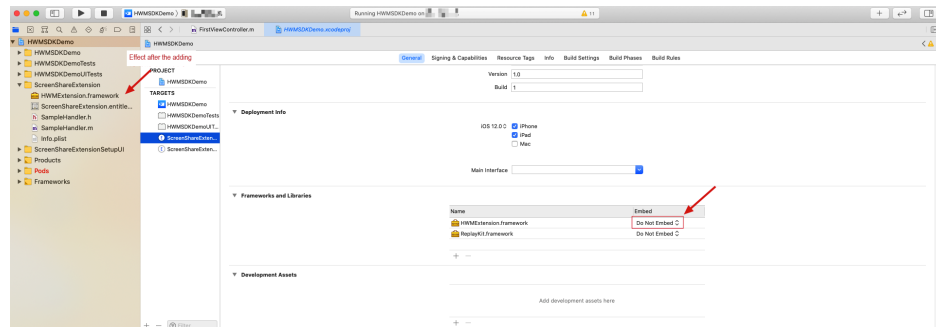


Figure 6-31 Effect after HWMExtension.framework is added to ScreenShareExtension



Step 6 Configure the screen sharing code. Specifically, add the following code to the **SampleHandler.m** file of ScreenShareExtension.

Figure 6-32 SampleHandler location



The file can be directly used after the group ID is modified.

```
#import "SampleHandler.h"
#import <HWMExtension/HWMExtension.h>

@interface SampleHandler()<ScreenShareManagerDelegate>
@property (strong, nonatomic) HWMExtensionDataManager *screenShareManager;
@end

@implementation SampleHandler

- (instancetype)init {
    if (self = [super init]) {
        // [HWMExtensionAppGroup setAppGroup:@"group.com.huawei.xxx"]; // Replace the corresponding
        // value with the app group you obtain.
        self.screenShareManager = [[HWMExtensionDataManager alloc] init];
        self.screenShareManager.delegate = self;
    }
    return self;
}

- (void)dealloc {
    self.screenShareManager = nil;
}

- (void)broadcastStartedWithSetupInfo:(NSDictionary<NSString *,NSObject *> *)setupInfo {
    // User has requested to start the broadcast. Setup info from the UI extension can be supplied but
    // optional.
    [self.screenShareManager broadcastStartedWithSetupInfo:setupInfo];
}

- (void)broadcastPaused {
    // User has requested to pause the broadcast. Samples will stop being delivered.
    [self.screenShareManager broadcastPaused];
}

- (void)broadcastResumed {
    // User has requested to resume the broadcast. Samples delivery will resume.
    [self.screenShareManager broadcastResumed];
}

- (void)broadcastFinished {
    // User has requested to finish the broadcast.
    [self.screenShareManager broadcastFinished];
}

- (void)processSampleBuffer:(CMSampleBufferRef)sampleBuffer withType:
(RPSampleBufferType)sampleBufferType {
    switch (sampleBufferType) {
        case RPSampleBufferTypeVideo:
            // Handle video sample buffer
            [self.screenShareManager processSampleBuffer:sampleBuffer withType:RPSampleBufferTypeVideo];
            break;
        case RPSampleBufferTypeAudioApp:
            // Handle audio sample buffer for app audio
            // Audio sharing-related
            if ([self currentIsAudioShare]) {
                [self.screenShareManager processSampleBuffer:sampleBuffer
withType:RPSampleBufferTypeAudioApp];
            }
            break;
        case RPSampleBufferTypeAudioMic:
            // Handle audio sample buffer for mic audio
            break;

        default:
            break;
    }
}
```



```
- (void)screenShareManagerFinishBroadcastWithError:(NSError *)error {
    [self.screenShareManager broadcastFinished];
    [self finishBroadcastWithError: error];
}
- (BOOL)currentIsAudioShare {
    NSUserDefaults *userDefault = [[NSUserDefaults alloc] initWithSuiteName:[HWMExtensionAppGroup
getAppGroup]];
    NSString *audioShareType = [userDefault objectForKey:kHWMExtensionAudioShareKey];
    if ([audioShareType isEqualToString:kHWMExtensionAudioShareValue] ) {
        return YES;
    }
    return NO;
}
@end
```

----End

6.2.4 Service Integration

The file for calling the **HWMSDK** API must contain the following content:

```
#import <HWMUISDK/HWMUISDK.h>
```

SDK initialization:

```
- (void)initSDK {
    HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];
    config.appld = getAppld();// In app ID login scenario, transfer the applied enterprise app ID. In non-app
ID login scenario, you are advised to transfer the enterprise name.
    config.appGroupIdentifier = getAppGroupIdentifier();// App group of ScreenShareExtension.
    BOOL result = [HWMSdk initWithConfig:config];
    if (result) {
        [UIUtil showMessage:@"Initialization succeeded." vc:self];
    }
}
```

Examples

- Login API
[[HWMSdk getOpenApi] login:account password:password callback:^(NSError * _Nullable error, HWMLoginResult * _Nullable result){ }];
- API for creating a meeting
[[HWMSdk getOpenApi] createConf:param callback:^(NSError * _Nullable error, HWMCreateConfResult * _Nullable result) { }];
- API for joining a meeting
[[HWMSdk getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) { }];
- API for scheduling a meeting
[[HWMBizSdk getBizOpenApi] bookConf:param callback:^(NSError * _Nullable error, id _Nullable result) { }];
- API for editing a meeting
[[HWMBizSdk getBizOpenApi] editConf:param callback:^(NSError * _Nullable error, id _Nullable result) { }];
- Logout API
[[HWMSdk getOpenApi] logout:^(NSError * _Nullable error, HWMLogoutResult _Nullable result) { }];

After the code of the preceding APIs is configured, SDK integration will be completed. For more information, see the **HWMSDKDemo** sample code.

6.3 Typical Scenarios

This section describes the API call orders and examples.

6.3.1 API Call in Typical Scenarios

API Description

iOS SDK APIs are classified into **synchronous APIs**, **asynchronous APIs**, and **global callback APIs**.

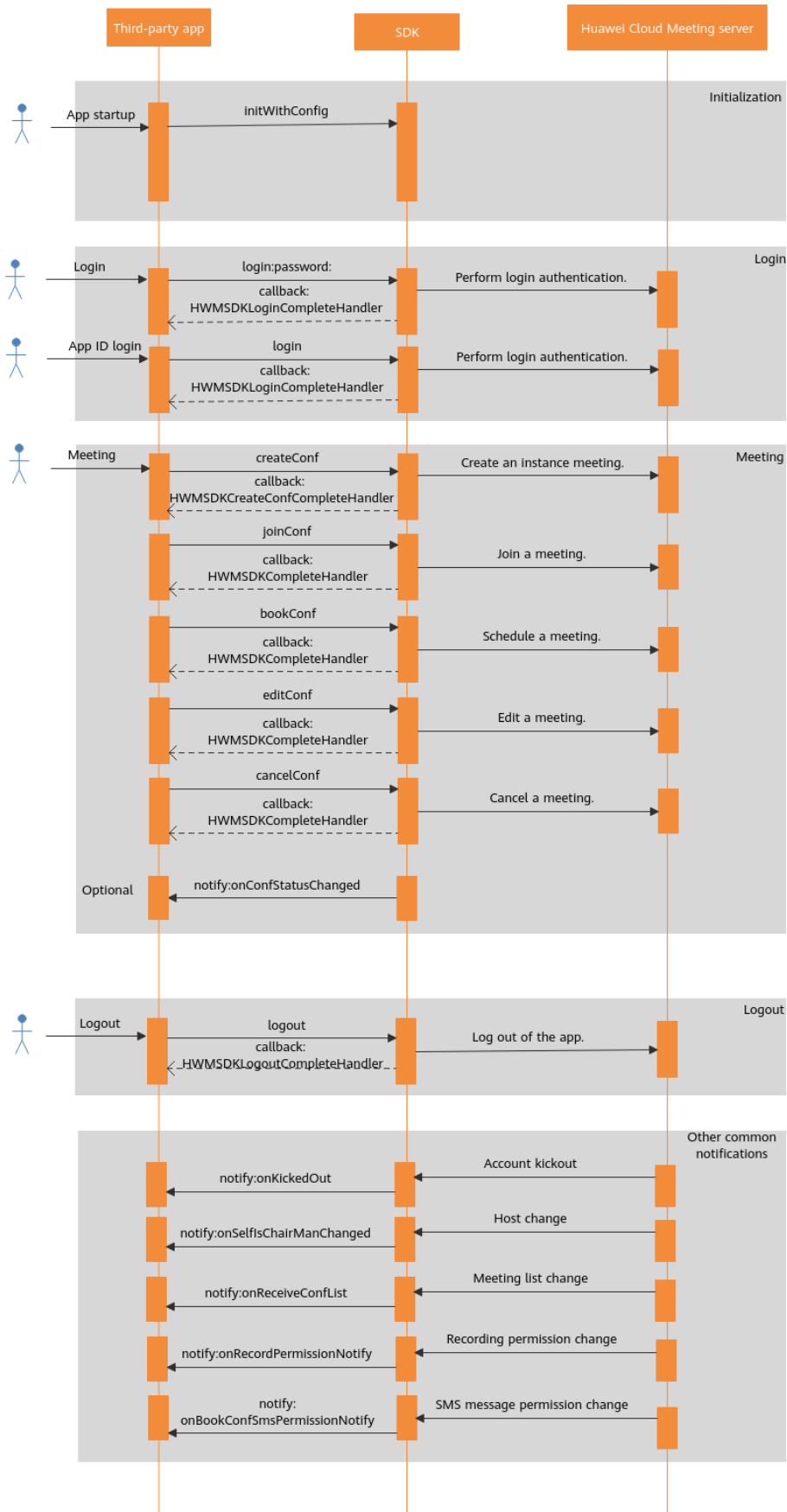
Synchronous APIs: Apps proactively call SDK APIs to complete specific tasks. For example, the **initWithConfig** API can be called for initialization.

Asynchronous APIs: Every time when an SDK API is called, the result is requested in callback mode.

Global callback APIs: When event notifications are triggered by the Huawei Cloud Meeting server or SDK, the SDK notifies apps through notification APIs. For example, the **onConfStatusChanged** API can be called to notify you of meeting calls.

API Call in Typical Scenarios

Figure 6-33 API call in typical scenarios



 NOTE

1. Before using SDK functions, you need to initialize the SDK.
2. You can join a created meeting by using the meeting ID and password without login. In other scenarios, you need to log in first.
3. You can configure the notification function as required.

6.3.2 Scenario 1: Initialization

Description

The initialization API can be called for SDK initialization. You only need to call this API once. You must call this API before calling other functional APIs.

Service Process

During SDK initialization, call the **initWithConfig** API and then check whether the API is successfully called based on the returned value.

Step 1 Call the API.

1. Build **HWMOpenSDKConfig** model parameters.
2. Call the **initWithConfig** API to initialize the configuration. The data in the preceding step is used as input parameters.

Step 2 Check the returned value.

YES: The initialization is successful. **NO:** The initialization fails.

----End

Sample Code

```
/// Initialization.
HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];
config.appId = getAppId();// Enter the applied app ID.
config.appGroupIdentifier = getAppGroupIdentifier();// App group of the screen sharing extension. This
parameter is mandatory and used for communication between the sharing process and the main process
during screen sharing. For details, see Apple's extension documentation.
BOOL result = [HWMSdk initWithConfig:config];
if (result) {
    NSLog(@"Initialization succeeded.");
}
```

 NOTE

The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.

6.3.3 Scenario 2: Login

6.3.3.1 Login Using an Account and Password

Description

This API is used to log in to the system using an account. APIs such as **CreateConf** can be called only when you have logged in. To use complete meeting functions, log in to the Huawei Cloud Meeting server first.

NOTE

If you have not logged in, you can only join created meetings.

Service Process

If you need to log in using the SDK, call the **login** API and then implement the callback.

Step 1 Call the API.

1. Obtain the account and password for login.
2. Call the **login** API to log in. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Login
/// It is recommended that accounts and passwords used for authentication be stored in ciphertext in the
/// configuration file or as environment variables and be decrypted during usage.
- (void)login {
    NSString *account = getAccount();
    NSString *password = getPassword();
    [[HWM SDK getOpenApi] login:account password:password callback:^(NSError * _Nullable error,
HWMLoginResult * _Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
}
};
```

6.3.3.2 Login Using an App ID

Description

The **login** API can be used for login using an app ID.

NOTE

If you have not logged in, you can only join created meetings.

Service Process

If you need to log in using the SDK, call the **login** API and then implement the callback.

Step 1 Call the API.

1. Obtain the login account, expiration time, random number, username, and encrypted signature from the server.
2. Call the **login** API to log in. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// App ID login API
- (void)login {
    HWMAppIDLoginParam *appidInfo = [[HWMAppIDLoginParam alloc] init];
    appidInfo.thirdUserId = getThirdUserId();
    appidInfo.expireTime = 1599618620;
    appidInfo.nonce = getNonce();
    appidInfo.userName = getUserName();
    appidInfo.signature = getSignature();
    [[HWM SDK getOpenApi] login:appidInfo callback:^(NSError * _Nullable error, HWMLoginResult *
    _Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
    }
};
```

6.3.4 Scenario 3: Scheduling a Meeting

Description

The **bookConf** API can be used to schedule a meeting.

Service Process

If you need to schedule a meeting using the SDK, call the **bookConf** API and then implement the callback.

Step 1 Call the API.

1. Call the **bookConf** API to schedule a meeting.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Schedule a meeting.
- (void)bookConf {
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];
    param.confSubject = @"Meeting topic";
    param.startTime = 1598759580;
    param.duration = 15;
    param.confType = HWMConfTypeVideo;
    param.isNeedConfPwd = YES;
    param.isRecordOn = NO;
    param.timeZone = 56;
    param.vmrId = @"";
    param.callInRestrictionType = HWMJoinConfRestrictionAll;
    [[HWMBizSdk getBizOpenApi] bookConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Schedule meeting failed: %@", error.localizedDescription);
        } else {
            NSLog(@"Meeting scheduled.");
        }
    }];
}
```

6.3.5 Scenario 4: Editing a Meeting

Description

The **editConf** API can be used to edit a meeting after you log in and call the [Obtaining Meeting Details](#) API or server RESTful API to obtain the meeting details.

Service Process

If you need to edit a meeting using the SDK, call the **editConf** API and then implement the callback.

Step 1 Call the API.

1. Call the **editConf** API to edit a meeting.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Edit a meeting.
- (void)editConf {
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];
    param.confSubject = @"Meeting topic";
    param.startTime = 1598759580;
    param.duration = 15;
    param.confType = HWMConfTypeVideo;
    param.isNeedConfPwd = YES;
    param.isRecordOn = NO;
    param.timeZone = 56;
    param.vmrId = @""; // Cloud meeting room ID, required for a meeting held in a cloud meeting room.
    param.callInRestrictionType = HWMJoinConfRestrictionAll;
    param.confId = @"986927771";
    [[HWMBizSdk getBizOpenApi] editConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Edit meeting failed: %@", error.localizedDescription);
        }
    }];
}
```



```
    } else {  
        NSLog(@"Meeting edited.");  
    }  
    }  
    }  
};  
}
```

6.3.6 Scenario 5: Creating a Meeting

Description

The **CreateConf** API can be used to create an instant meeting after your login. Participant information is optional.

NOTE

You can create a meeting only after you log in.

Service Process

If you need to create an instant meeting using the SDK, call the **createConf** API and then implement the callback.

Step 1 Call the API.

1. Assemble the **HWMCreateConfParam** model.
2. Assemble the **HWMCreateConfMember** model array (participants are optional).
3. Call the **createConf** API to create a meeting. The data in preceding steps is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Create a meeting.  
- (void)creatMeeting {  
    HWMCreateConfParam *param = [[HWMCreateConfParam alloc] init];  
    param.subject = @"Meeting topic";  
    param.confType = HWMConfTypeVideoData;  
    param.needPassword = YES; // Whether a password is required for a meeting. By default, no password is  
    required.  
    param.isCameraOn = YES; // Whether to turn on the camera. By default, the camera is turned off.  
    param.isMicOn = YES; // Whether to turn on the microphone. By default, the microphone is turned on.  
    param.isRecordOn = NO; // Whether to enable the meeting recording function. By default, this function  
    is disabled.  
    param.joinConfRestrictionType = HWMJoinConfRestrictionAll; // Participants who are allowed to join the  
    meeting.  
    // Participant list.  
    if (self.selectedMemebrs) {  
        __block NSMutableArray *members = [[NSMutableArray alloc] init];  
        [self.selectedMemebrs enumerateObjectsUsingBlock:^(HWMContactSelectedModel * _Nonnull obj,  
        NSUInteger idx, BOOL * _Nonnull stop) {  
            HWMCreateConfMember *member = [[HWMCreateConfMember alloc] init];  
            member.accountId = obj.accountId;  
            member.number = obj.number;  
            member.name = obj.name;  
            member.thirdUserId = obj.thirdUserId;  
            [members addObject:member];  
        }];  
    }  
}
```

```
    });  
    param.members = members;  
  }  
  [[HWMSdk getOpenApi] createConf:param callback:^(NSError * _Nullable error, HWMCreateConfResult *  
_Nullable result) {  
    [self hideLoading];  
    if (error) {  
      NSLog(@"Create meeting failed.%@", error.localizedDescription);  
    }else{  
      NSLog(@"Meeting created.");  
    }  
  }  
  }  
  }  
}
```

NOTE

The participant list is optional for creating a meeting. If such a list is configured, participants will be called after a meeting is created.

6.3.7 Scenario 6: Joining a Meeting

Description

The **joinConf** API can be used to join a meeting using a meeting ID and password, no matter whether you have logged in or not.

Service Process

If you need to join an existing meeting using the SDK, call the **joinConf** API and then implement the callback.

Step 1 Call the API.

1. Assemble the model.
 - a. **HWMJoinConfParam** is used to join a meeting based on the meeting ID.
 - b. **HWMRandomConfParam** is used to join a meeting in random mode.
2. Call the **joinConf** API to join the meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Join a meeting.  
- (void)joinMeeting {  
    HWMJoinConfParam *param = [[HWMJoinConfParam alloc] init];  
    param.confId = @"989156631";  
    param.password = getPassword();  
    param.nickname = @"Hangzhou site";  
    param.isCameraOn = NO;  
    param.isMicOn = YES;  
    [[HWMSdk getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) {  
        if (error) {  
            NSLog(@"Join meeting failed.%@", error.localizedDescription);  
        } else {  
            NSLog(@"Meeting joined.");  
        }  
    }  
}
```

```
    }  
};
```

NOTE

If you call this API without logging in to Huawei Cloud Meeting, the **nickname** parameter is mandatory.

6.3.8 Scenario 7: Adding Participants

Description

You can call the API for adding participants during a meeting.

Service Process

If you need to add participants using the SDK, open the contact list, select the contacts to be added, and add the selected contacts to the meeting. You can also customize the page for adding participants. For details, see [Customizing a Contact Selection UI](#).

NOTE

1. If you log in using an app ID, you are advised to customize a contact selection page.
2. If you do not customize such a page, there is no need to add sample code to the project.

Sample Code

```
/// Customize a contact selection UI.  
- (void)openContactSelectPage:(NSArray<HWMConfContactModel *> *)param  
    scene:(HWMSelectedContactScene)scene  
    completeHandler:(void(^)(NSArray<HWMContactSelectedModel *> *result, NSError  
*error))handler {  
    NSLog(@"enter open contact select page");  
    ContactSelectViewController * contactSelectVc = [[ContactSelectViewController alloc]  
initWithResultHandler:handler];  
    [self pushViewControllerWithVc:contactSelectVc];  
}
```

6.3.9 Scenario 8: Logout

Description

This API is used to log out of a meeting account.

Service Process

If you need to log out using the SDK, call the **logout** API and then implement the callback.

Step 1 Call the API.

1. Call the **logout** API to log out of Huawei Cloud Meeting.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```

/// Logout
- (void)logout {
    [[HWMSdk getOpenApi] logout:^(NSError * _Nullable error, HWMLogoutResult * _Nullable result) {
        if (error == nil) {
            NSLog(@"Logout succeeded.");
        } else {
            NSLog(@"Logout failed.");
        }
    }];
}

```

6.4 API Reference

6.4.1 Basic Settings

6.4.1.1 Initializing the SDK

NOTE

There are main thread initialization and subthread initialization APIs. Call either of them before calling other APIs.

initWithConfig

API Description

This API is used to start and initialize the SDK.

Precautions

1. You must call the initialization API before calling other APIs.
2. The initialization method must be called in the main thread.
3. The return value only indicates whether the API is successfully called.

Method Definition

```
+ (BOOL)initWithConfig:(HWMOpenSDKConfig *)config;
```

Parameter Description

Table 6-1 Parameter description

Parameter	Mandatory	Type	Description
config	Yes	HWMOpenSDKConfig	Initialization information set.

Table 6-2 HWMOpenSDKConfig description

Parameter	Man dator y	Type	Description
appld	Yes	NSString *	App ID. For details about how to request an app ID, see Requesting an App ID in <i>Developer Guide</i> .
appGroupIdentifier	No	NSString *	App group of the screen sharing extension. If this parameter is not transferred, the screen sharing function cannot be used. This parameter is used for communication between the sharing process and the main process during screen sharing. For details, see Apple's extension documentation.
siteType	No	HWMSdkSiteType	Login site type. The default value is HWMSdkSiteTypeChina .
serverAddress	No	NSString *	Server address.
serverPort	No	NSUInteger	Server port.
hideExternalLabel	No	BOOL	Whether to hide the External label in the participant list, host role transferring screen or chat screen. By default, the External label is displayed.
logKeepDays	No	NSInteger	Log storage duration. Valid value range is 3–30. The default value is 0 . 0 indicates that logs are not deleted by day. Note: 1 and 2 will be converted to 3 , and the values greater than 30 will be converted to 30 .
disableIncomingLocal-Notification	No	BOOL	Disables local push for incoming calls.
isSupportMultiAppLogin	No	BOOL	Whether to support login to multiple applications on the same device.

 NOTE

For details about how to request an app ID, see [Requesting an App ID](#) in *Developer Guide*.

Table 6-3 Enumerated values of HWMSdkSiteType

Enumerated Value	Description
HWMSdkSiteTypeChina	Chinese mainland.
HWMSdkSiteTypeAP	Asia Pacific.

Return Values**Table 6-4** Return value

Type	Description
BOOL	If the initialization succeeds, YES is returned. If the initialization fails, NO is returned.

Sample Code

```
/// Initialization.
HWMSdkConfig *config = [[HWMSdkConfig alloc] init];
config.appId = getAppId();// Enter the applied app ID.
config.appGroupIdentifier = getAppGroupIdentifier();// App group of the screen sharing extension. This
parameter is mandatory and used for communication between the sharing process and the main process
during screen sharing. For details, see Apple's extension documentation.
BOOL result = [HWMSdk initWithConfig:config];
if (result) {
    NSLog(@"Initialization succeeded.");
}
```

 NOTE

- The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.

initWithConfig:callback:**API Description**

This API is used to start and initialize the SDK in a subthread.

Precautions

1. You must call the initialization API before calling other APIs.
2. The return value only indicates whether the API is successfully called.

Method Definition

```
+ (void)initAsyncWithConfig:(HWMSdkConfig *)config callback:(_Nonnull  
HWMSdkInitCompleteHandler)callback;
```

Parameter Description

See [Table 6-1](#).

Return Values

None

Sample Code

```
/// Initialization.  
HWMSdkConfig *config = [[HWMSdkConfig alloc] init];  
config.appId = getAppId();// Enter the applied app ID.  
config.appGroupIdentifier = getAppGroupIdentifier();// App group of the screen sharing extension. This  
parameter is mandatory and used for communication between the sharing process and the main process  
during screen sharing. For details, see Apple's extension documentation.  
[HWMSdk initAsyncWithConfig:config callback:^(HWMSdkERR errCode, id _Nullable result) {  
    if (errCode == HWMSdkSdkerSuccess) {  
        NSLog(@"Initialization succeeded.");  
    } else {  
        NSLog(@"Initialization failed.");  
    }  
}];
```

NOTE

- The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.

6.4.1.2 Setting the Language

setLanguage

API Description

This API is used to set the SDK language. The default language is Chinese.

Precautions

None

Method Definition

```
+ (void)setLanguage:(HWMSdkLanguageType)language;
```

Parameter Description

Table 6-5 Parameter description

Parameter	Mandatory	Type	Description
language	Yes	HWMSdkLanguageType	Enumerated values of languages.

Table 6-6 HWMSdkLanguageType parameters

Enumerated Value	Description
HWMSdkLanguageTypeZH	Chinese.
HWMSdkLanguageTypeEN	English.
HWMSdkLanguageType-Customized	Custom language.

Return Values

None

Sample Code

```
/// Change the language.  
[HWMSdk setLanguage:HWMSdkLanguageType];
```

setLanguage:languageCode:

API Description

This API is used to customize the SDK language. The default language is Chinese.

Precautions

To implement a user-defined language, create the corresponding internationalization file in the directory at the same level as **en.lproj**. For example, to add Arabic, you can create **ar.lproj/Localizable.strings**. The language set through this API must be the same as the system language.

Method Definition

```
+ (void)setLanguage:(HWMSdkLanguageType)language languageCode:(NSString *)languageCode;
```

Parameter Description

Table 6-7 Parameter description

Parameter	Mandatory	Type	Description
language	Yes	HWMSdkLanguageType	Enumerated values of languages.
languageCode	No	NSString *	If LanguageType is set to Chinese or English, this parameter can be left empty or set to any value. If LanguageType is set to other languages, set this parameter to the language code, for example, ar (Arabic).

Return Values

None

Sample Code

```
/// Change the language.  
[HWMSdk setLanguage:HWMSdkLanguageTypeCustomized languageCode:@"ar"];
```

6.4.1.3 Setting a Log Path

setLogPath

API Description

This API is used to set a path for storing HUAWEI CLOUD Meeting logs.

Precautions

None

Method Definition

```
+ (void)setLogPath:(NSString *)logPath;
```

Parameter Description**Table 6-8** Parameter description

Parameter	Mandatory	Type	Description
logPath	Yes	NSString *	Log path.

Return Values

None

Sample Code

```
/// Use the default path.  
NSString * logPath= [[NSSearchPathForDirectoriesInDomains(NSLibraryDirectory, NSUserDomainMask, YES)  
firstObject] stringByAppendingPathComponent:@"log"];  
[HWMSdk setLogPath:logPath];
```

6.4.1.4 Setting the Incoming Call Notification Mode

changeIncomingNoticeWithRing:vibrate:

API Description

This API is used to modify the incoming meeting notification mode. (By default, the phone rings but does not vibrate.)

Precautions

1. Call this API only when you have logged in.

2. To set vibration, you must enable vibration on iOS first (tap **Settings** > **Sounds & Haptics** and enable **Vibrate on Ring** and **Vibrate on Silent** on your phone).
3. If **YES** is returned, the API is called successfully. If the SDK is not initialized or you have not logged in, **NO** is returned.

Method Definition

```
- (BOOL)changeInComingNoticeWithRing:(BOOL)ring vibrate:(BOOL)vibrate;
```

Parameter Description

Table 6-9 Parameter description

Parameter	Mandatory	Type	Description
ring	Yes	BOOL	Whether to enable ringing.
vibrate	Yes	BOOL	Whether to enable vibration.

Return Values

None

Sample Code

```
BOOL result = [[HWMSdk getOpenApi] changeInComingNoticeWithRing:YES vibrate:NO];  
[UIUtil showMessage:result? @"Setting succeeded.": @"Setting failed."];
```

6.4.1.5 Enabling or Disabling the Camera and Microphone in a Meeting

isOpenMicrophoneInComing

API Description

This API is used to customize the microphone status when a user is invited to a meeting.

Precautions

1. If automatic mute has been set for participants excluding the host, your microphone status customization does not take effect.

Method Definition

```
- (BOOL)isOpenMicrophoneInComing;
```

Parameter Description

None

Sample Code

```
/// Whether to enable the microphone when a user is invited to a meeting.  
- (BOOL)isOpenMicrophoneInComing {  
    return NO;  
}
```

isOpenCameraIncoming

API Description

This API is used to customize the camera status when a user is invited to a meeting.

Precautions

None

Method Definition

```
- (BOOL)isOpenCameraIncoming;
```

Parameter Description

None

Sample Code

```
/// Whether to enable the camera when a user is invited to a meeting.
- (BOOL)isOpenCameraIncoming {
    return NO;
}
```

6.4.1.6 Enabling a Function

enableFeature:isEnabled:

API Description

This API is used to enable a function.

Precautions

1. By default, the breakout room function is enabled. You can call this API to disable it.
2. Create an initialization object `HWMOpenSDKConfig` before calling this API, and call the initialization API after calling this API.

Method Definition

```
- (void)enableFeature:(HWMEnableFeatureType)feature isEnabled:(BOOL)enable;
```

Parameter Description

Table 6-10 Enumerated values of `HWMEnableFeatureType`

Value	Description
<code>HWMFeatureTypeBreakout-Conf</code>	Breakout room function.
<code>HWMFeatureTypeRecoedAlert</code>	Whether to display the recording security prompt. By default, it is not displayed.
<code>HWMFeatureTypeSaveNick-NameWhenAnonymousJoin</code>	Saving the display name when you join a meeting anonymously.

Value	Description
HWMFeatureTypeSupport-VirtualBackground	Virtual backgrounds.

Return Values

None

Sample Code

```
HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];
[config enableFeature:HWMFeatureTypeBreakoutConf isEnabled:YES];
```

6.4.1.7 Setting the Network Mode

setNetworkModeWithNetworkInfo:

API Description

This API is used to set the network mode to enterprise intranet access if the media nodes of Huawei Cloud Meeting are deployed in an enterprise and management nodes are accessed through the proxy of the enterprise.

NOTE

This API needs to be called only when the app cannot directly access the public network (that is, when the media nodes and management nodes are deployed in the enterprise).

Precautions

1. This API is optional. If it is not called, the default mode is used.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
-(HWMSDKERR)setNetworkModeWithNetworkInfo:(HWMSDKNetWorkModeInfoModel *)networkInfo;
```

Parameter Description

Table 6-11 HWMSDKNetWorkModeInfoModel description

Parameter	Mandatory	Type	Description
accessType	Yes	HWMNetworkAccessType	Network type.

Table 6-12 Enumerated values of HWMNetworkAccessType

Value	Description
HWMSDKAccessTypeAuto	Default value.
HWMSDKAccessTypeInner	Intranet access.
HWMSDKAccessTypeOuter	Extranet access.

Return Values

None

Sample Code

```
HWMSDKNetWorkModelInfoModel *networkInfo = [[HWMSDKNetWorkModelInfoModel alloc] init];
networkInfo.accessType = HWMSDKAccessTypeAuto;
HWMSDKERR ret = [[HWMSDKNetworkService sharedInstance]
setNetworkModeWithNetworkInfo:networkInfo];
```

6.4.1.8 Disabling Prompt Tones

disableVoicePrompts:

API Description

This API is used to disable meeting prompt tones.

Precautions

1. This API is optional. If it is not called, meeting prompt tones are enabled by default.
2. The return value only indicates whether the API is successfully called.

Method Definition

```
-(HWMSDKERR)disableVoicePrompts:(HWMSDKVoicePromptsModel *)voicePrompts;
```

Parameter Description

Table 6-13 HWMSDKVoicePromptsModel description

Parameter	Mandatory	Type	Description
disableMutePrompt	Yes	BOOL	Prompt tone played when the host mutes a participant.

Return Values

Whether the API is successfully called.

Sample Code

```
HWMSDKVoicePromptsModel * model = [[HWMSDKVoicePromptsModel alloc] init];  
model.disableMutePrompt = YES;  
[[HWMBizSdk getBizOpenApi] disableVoicePrompts:model];
```

6.4.1.9 Setting Guaranteed IP Addresses for Meeting Control

setGuaranteedIpAddresses:

API Description

This API is used to set the guaranteed IP addresses for meeting control.

Precautions

1. Up to four IP addresses are supported. They are separated by semicolons (;).
2. The return value only indicates whether the API is successfully called.

Method Definition

```
- (HWMSDKERR)setGuaranteedIpAddresses:(NSString *)pAddresses;
```

Parameter Description

Table 6-14 Parameter description

Parameter	Mandatory	Type	Description
pAddresses	Yes	NSString *	Guaranteed IP addresses.

Return Values

Whether the API is successfully called.

Sample Code

```
[[HWMBizSdk getBizOpenApi] setGuaranteedIpAddresses:guaranteelpAdrrs];
```

6.4.1.10 Setting a Bundle ID of the Screen Sharing Extension

setScreenShareExtensionBundleId:

API Description

This API is used to set a bundle ID of the screen sharing extension.

Precautions

1. This API is optional. If it is not called, the bundle ID used to start the screen sharing extension is **generated in the default format**.

Method Definition

```
+ (void)setScreenShareExtensionBundleId:(NSString *)bundleId;
```

Parameter Description

Table 6-15 Parameter description

Parameter	Mandatory	Type	Description
bundleId	Yes	NSString *	Bundle ID of the screen sharing extension.

Return Values

None

Sample Code

```
[HWMSdk setScreenShareExtensionBundleId:setScreenShareExtensionBundleId];
```

6.4.2 Account Operations

6.4.2.1 Login

You can log in using an account and password, or using an app ID.

login:password:

API Description

This API is used for login using an account and password.

Precautions

1. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.
2. **Error:** Error information. **nil:** Success.

Method Definition

```
-(void)login:(NSString * _Nonnull )account password:( NSString * _Nonnull )password callback:( _Nonnull HWMSDKLoginCompleteHandler)callback;
```

Parameter Description

Table 6-16 Parameter description

Parameter	Man dato ry	Type	Description
account	Yes	NSString *	Login account.
password	Yes	NSString *	Login password.
callback	No	HWMSDKLoginComp leteHandler	Error: Error information. nil: Success.

Return Values

Table 6-17 HWMLoginResult description

Parameter	Type	Description
userId	NSString *	Account UUID.
account	NSString *	Login account.
thirdAccount	NSString *	Third-party account for login using an app ID.

Sample Code

```
/// Login
/// It is recommended that accounts and passwords used for authentication be stored in ciphertext in the
/// configuration file or as environment variables and be decrypted during usage.
- (void)login {
    NSString *account = getAccount();
    NSString *password = getPassword();
    [[HWMSdk getOpenApi] login:account password:password callback:^(NSError * _Nullable error,
HWMLoginResult * _Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
};
```

login:

API Description

This API is used for login using an app ID.

Precautions

1. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.
2. **Error:** Error information. **nil:** Success.

Method Definition

```
- (void)login:(HWMAppIDLoginParam *)appidInfo callback:(HWMSDKLoginCompleteHandler)callback;
```

Parameter Description

Table 6-18 HWMAppIDLoginParam description

Parameter	Mandato ry	Type	Description
signature	Yes	NSString *	Authentication signature obtained from the third-party server.

Parameter	Mandatory	Type	Description
thirdUserId	Yes	NSString *	Third-party account.
expireTime	Yes	NSInteger	Signature expiration time. The value is a timestamp in seconds. If the value is 0, the signature will not expire.
nonce	Yes	NSString *	Random number.
userName	No	NSString *	Username.
userEmail	No	NSString *	Email address.
userPhone	No	NSString *	Mobile number.
corpId	No	NSString *	ID of the enterprise to which the user belongs. This parameter is mandatory only in SP mode. Do not set this parameter in single-enterprise mode. Otherwise, the authentication will fail.
deptCode	No	NSString *	Department code.

Return Values

For details, see [Table 6-17](#).

Sample Code

```

/// App ID login API
- (void)login {
    HWMAppIDLoginParam *appidInfo = [[HWMAppIDLoginParam alloc] init];
    appidInfo.thirdUserId = getThirdUserId();
    appidInfo.expireTime = 1599618620;
    appidInfo.nonce = getNonce();
    appidInfo.userName = getUserName();
    appidInfo.signature = getSignature();
    [[HWM SDK getOpenApi] login:appidInfo callback:^(NSError * _Nullable error, HWMLoginResult *
    _Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
    }
}

```

loginBySSO:

API Description

This API is used for login using SSO authentication.

Precautions

1. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.
2. **Error:** Error information. **nil:** Success.

Method Definition

```
- (void)loginBySSO:(HWMSSOLoginParam)param callback:(Nonnull  
HWMSSDKLoginCompleteHandler)callback;
```

Parameter Description

Table 6-19 HWMSSOLoginParam description

Parameter	Mandatory	Type	Description
domain	Yes	NSString *	Enterprise domain name.
userTicket	Yes	NSString *	code
authServerType	Yes	HWMAuthServerType	Authentication server type.

Table 6-20 Enumerated value of HWMAuthServerType

Value	Description
HWMSSDKAuthServerTypeOAuth2	SSO

Return Values

Table 6-17

Sample Code

```
/// SSO login API  
[[HWMSSdk getOpenApi] loginBySSO:ssoLoginParam callback:^(NSError * _Nullable error, HWMLoginResult * _Nullable result) {  
    if (error) {  
        [UIUtil showMessageWithError:error];  
    } else {  
        [UIUtil showMessage:@"SSO login succeeded." error:error];  
    }  
}];
```

6.4.2.2 Logout

logout

API Description

This API is used to log out of a meeting account.

Precautions

1. Call this API only when you have logged in.
2. **error**: Error information. **nil**: Success.

Method Definition

```
- (void)logout:(_Nonnull HWMSDKLogoutCompleteHandler)callback;
```

Parameter Description

None

Return Values

Table 6-21 HWMLogoutResult description

Parameter	Type	Description
userId	NSString *	Account UUID.
account	NSString *	Login account.
thirdAccount	NSString *	Third-party account for login using an app ID.

Sample Code

```
/// Logout
- (void)logout {
    [[HWMSdk getOpenApi] logout:^(NSError * _Nullable error, HWMLogoutResult * _Nullable result) {
        if (error == nil) {
            NSLog(@"Logout succeeded.");
        } else {
            NSLog(@"Logout failed.");
        }
    }];
}
```

6.4.2.3 Uploading a Profile Picture

uploadSelfAvatarWithFilePath:callback:

API Description

This API is used to upload a profile picture.

Precautions

1. The file path is the profile picture path.
2. The maximum size is 200 KB.
3. Only JPG and PNG files are supported.
4. The recommended aspect ratio is 1:1.
5. **error**: Error information. **nil**: Success.

Method Definition

```
- (void)uploadSelfAvatarWithFilePath:(NSString * _Nullable)filePath callback:(_Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 6-22

Parameter	Mandatory	Type	Description
filePath	No	NSString *	Profile picture file path.

Return Values

None

Sample Code

```
/// Upload a profile picture.
- (void)uploadSelfAvatar {
    [[HWMBizSdk getBizOpenApi] uploadSelfAvatarWithFilePath:self.headImgPath callback:^(NSError *
_Nullable error, id _Nullable result) {
        if (error) {
            [UIUtil showMessage:[NSString stringWithFormat:@"Failed to upload %@",
error.localizedDescription]];
        } else {
            [UIUtil showMessage:@"Upload succeeded."];
        }
    }];
}
```

6.4.3 UI Customization

You can customize meeting control menus as required.

NOTE

The sample code listed in this section is the default code of SDK. You can modify the code as required. Note that the value of the **type** parameter cannot be the same as that of [HWMConfCtrlType](#) in the SDK.

6.4.3.1 Configuring the UI

Set delegates for the custom pages as required. This operation can be performed when you initialize or use the SDK.

```
[HWMSdk getSdkConfig].socialShareHandler = <#Delegate#>; // (Optional) Customizes the social sharing capability during a meeting.
[HWMSdk getSdkConfig].audioConfToolBarHandler = <#Delegate#>; // (Optional) Customizes the meeting control menu of a voice meeting.
[HWMSdk getSdkConfig].videoConfToolBarHandler = <#Delegate#>; // (Optional) Customizes the meeting control menu of a video meeting.
[HWMSdk getSdkConfig].participantListMenuHandler = <#Delegate#>; // (Optional) Customizes the participant list menu.
[HWMSdk getSdkConfig].confTitleBarMenuHandler = <#Delegate#>; // (Optional) Customizes the title bar on the top of the meeting page.
[HWMSdk getSdkConfig].contactUIHandler = <#Delegate#>; // (Optional) Customizes the contact UI.
[HWMSdk getSdkConfig].headPortraitApiHandler = <#Delegate#>; // (Optional) Customizes the profile picture display.
```

UI Customization Items

Table 6-23 HWMConfMenuItem description

Parameter	Type	Description
type	HWMConfCtrlType	Meeting control type.
text	NSString *	Normal text.
highlightText	NSString *	Highlighted text.
selectedText	NSString *	Selected text.
isSelected	BOOL	Whether to select the item. Default value: NO .
clickEvent	void(^clickEvent) (HWMConfCtrlType type)	Callback triggered when you click an item.

Table 6-24 HWMConfToolBarMenuItem description (inherited from HWMConfMenuItem)

Parameter	Type	Description
image	UIImage *	Common image.
highlightImage	UIImage *	Highlighted image.
selectedImage	UIImage *	Selected image.
selectedHighlightImage	UIImage *	Image that is selected and highlighted.
disableImage	UIImage *	Image that cannot be clicked.
menuClickEvent	void(^menuClickEvent) (HWMConfCtrlType type, UIButton *menuItemBtn);	Callback triggered when you click an item.

Table 6-25 HWMConfMenuItem description (inherited from HWMConfMenuItem)

Parameter	Type	Description
nemuType	HWMConfMenuItemType	Enumerated display types.
image	UIImage *	Common image.
selectedImage	UIImage *	Selected image.

Table 6-26 HWMConfSettingItem description (inherited from HWMConfMenuItem)

Parameter	Type	Description
viewType	HWMConfSettingView-Type	Enumerated display types.
switchEvent	void (^ switchEvent) (HWMConfCtrlType type, UISwitch *actionSwitch)	Switch event callback. It is implemented only for HWMConfSettingItem-TypeSwitch . actionSwitch indicates this switch.

Table 6-27 HWMConfParticipantActionMenuItem description (inherited from HWMConfMenuItem)

Parameter	Type	Description
actionClickEvent	void(^actionClickEvent) (HWMConfCtrlType type, HWMConfParticipant *participant)	Callback triggered when you click an item.

Table 6-28 HWMConfParticipant description

Parameter	Type	Description
participantId	NSString *	Unique participant identifier.
name	NSString *	Participant name.
number	NSString *	Number.
accountId	NSString *	UUID of an account.
isMute	BOOL	Whether the microphone is muted.
isHandup	BOOL	Whether the participant raises hands.
isBroadcast	BOOL	Whether the participant is being broadcast.
isSelf	BOOL	Whether the participant is the local participant.
role	ConfRoleType	Participant role.

Parameter	Type	Description
state	ConfParticipantStatus-Type	Participant status.
mediaType	NSUInteger	Media type.
isAnonymous	BOOL	Whether the participant is anonymous.
isChairman	BOOL	Whether the participant is the host.
userId	NSUInteger	User ID.
clientDeviceType	HWMClientDeviceType	Client device type.
isMainSpeaker	BOOL	Whether the participant is the speaker with the top priority.
displayName	NSString *	By default, the participant name is displayed. If the participant is the local participant, "Me" is added.
pinyinName	NSString *	Chinese name in Pinyin.
isAudioJoined	BOOL	Whether the call is a voice call.
cameraState	HWMConfCameraState	Camera status.
orgId	NSString *	Enterprise ID.

Table 6-29 Enumerated values of HWMConfCtrlType (Default meeting control types in the SDK. Enumerated values will be added continuously. It is advised to start your custom enumerated values from 1,000.)

Enumerated Value	Value	Description
ConfCtrlMute	1	Mute or unmute the microphone.
ConfCtrlVideo	2	Enable or disable the camera.
ConfCtrlScreenShare	3	Start or stop screen sharing.
ConfCtrlAttendee	4	Participant list.
ConfCtrlMore	5	More.
ConfCtrlLoudSpeaker	6	Speaker or microphone.

Enumerated Value	Value	Description
ConfCtrlTransToVideo	7	Switch a voice call to a video call.
ConfCtrlTransToAudio	8	Switch a video call to a voice call.
ConfCtrlMuteAll	9	Mute all participants.
ConfCtrlUnmuteAll	10	Unmute all participants.
ConfCtrlHandup	11	Raise hands.
ConfCtrlRequestChairman	12	Apply to be the host.
ConfCtrlReleaseChairman	13	Relinquish the host role.
ConfCtrlTransferChairman	14	Transfer the host role.
ConfCtrlBroadcast	15	Broadcast a participant.
ConfCtrlCallOtherNumber	16	Call other numbers.
ConfCtrlChangeNickName	17	Change the display name in the meeting.
ConfCtrlHangup	18	Hang up a participant.
ConfCtrlRecall	19	Recall a participant.
ConfCtrlWatch	20	Focus on a participant or cancel focus.
ConfCtrlAllowAttendeeUnmute	21	Allow or forbid participants to unmute themselves.
ConfCtrlRecord	22	Start or stop recording.
ConfCtrlAddressBook	23	Contacts.
ConfCtrlShare	24	Social sharing.
ConfCtrlSwitchCamera	25	Switch between front and rear cameras.
ConfCtrlHideSmallVideo	26	Hide self view.
ConfCtrlLock	27	Lock the meeting.
ConfCtrlInvite	28	Invite participants.
ConfCtrlBeauty	29	Beautification.
ConfCtrlHowlDetection	30	Detect feedback.
ConfCtrlLockShare	31	Lock sharing.
ConfCtrlQRScan	32	Scan a QR code.

Enumerated Value	Value	Description
ConfCtrlNetworkDetect	33	Check network quality.
ConfCtrlFeedback	34	Provide feedback.
ConfCtrlRemoveAttendee	35	Remove participants.
ConfCtrlChat	36	Chat.
ConfCtrlSetting	37	Configure the meeting.
ConfCtrlInterpret	38	Interpret.
ConfCtrlAllowedSpeak	39	Allow attendees to speak.
ConfCtrlAllowAudience-Watch	40	Enable or disable attendee view.
ConfCtrlCoHost	41	Assign or unassign as a co-host.
ConfCtrlLocalRecordSet-Mode	42	Configure local recording permissions.
ConfCtrlLocalRecord-GrantAttendee	43	Allow or forbid participant recording.
ConfCtrlSwitchAudienceAndAttendee	44	Switch roles between attendee and panelist.
ConfCtrlViewDetails	45	View details.
ConfCtrlAllowJoinConf	46	Set users who can join the meeting.
ConfCtrlWaitingRoom	47	Waiting room.
ConfCtrlAllowChat	48	Allow chat.
ConfCtrlMoveToWaiting-Room	49	Move a participant to the waiting room.
ConfCtrlAdmitWaiting-RoomParticipant	50	Allow a waiting room member to join the meeting.
ConfCtrlRemoveWaiting-RoomParticipant	51	Remove a member from the waiting room.
ConfCtrlInviteScreen-Share	52	Invite a participant to share the screen or cancel sharing.
ConfCtrlChatRemind	53	Configure chat message notification.
ConfCtrlMirror	54	Video mirroring.
ConfCtrlAllowAttendeeOpenCamera	55	Allow participants to enable the camera.
ConfCtrlReport	56	Report a participant.

Enumerated Value	Value	Description
ConfCtrlAllowRename	57	Allow renaming.
ConfCtrlVote	58	Polls.
ConfCtrlPrivateChat	59	Direct messaging.
ConfCtrlVirtualBackground	60	Virtual background.
ConfCtrlHideFloatMicro	61	Hide the floating view.
ConfCtrlLiveBroadcast	62	Live broadcast
ConfCtrlHDPREFERRED	63	HD preferred.
ConfCtrlPicRatio	64	Video ratio.
ConfCtrlNoiseReduction	65	Noise reduction.
ConfCtrlRetrieveChairman	66	Claim the host role.
ConfCtrlEnhanceVideoQuality	67	Adjust lighting.
ConfCtrlPreemptSharePermission	68	Sharing interruption permission.
ConfCtrlAutoAdmitWaitingRoomParticipant	69	Automatically admit the user to the meeting.
ConfCtrlSubtitle	70	Enable or disable live captions.
ConfCtrlSubtitleLanguage	71	Select the live caption language.
ConfCtrlCameraPermission	72	Camera permissions.
ConfCtrlLeaveAndLogout	73	Leave this meeting and log out.
ConfCtrlAudioConnect	74	Automatically connect to audio after joining the meeting.

Table 6-30 Enumerated values of HWMConfMenuItemType

Enumerated Value	Description
HWMConfMenuItemTypeNormal	Common image and text.
HWMConfMenuItemTypeEnter	Text on the left + Enter button with the arrow on the right.

Enumerated Value	Description
HWMConfMenuItem- TypeRightBadge	Text on the left + Badge on the right (not available currently).

Table 6-31 Enumerated values of HWMConfSettingViewType

Enumerated Value	Description
HWMConfSettingView- TypeSwitch	Text on the left + Switch on the right.
HWMConfSettingView- TypeEnter	Text on the left + Arrow on the right.

Table 6-32 Enumerated values of ConfRoleType

Enumerated Value	Description
ConfRoleTypeAttendee	Guest.
ConfRoleTypeChairman	Host.
ConfRoleTypeAudience	Attendee.
ConfRoleTypeCohost	Co-host.

Table 6-33 Enumerated values of ConfParticipantStatusType

Enumerated Value	Description
ConfParticipantStatusIn- Conf	The participant is in the meeting.
ConfParticipantStatus- Calling	The participant is being called.
ConfParticipantStatus- Joining	The participant is joining the meeting.
ConfParticipantStatus- Leaved	The participant has left the meeting.
ConfParticipantStatus- NoExist	The user does not exist.
ConfParticipantSta- tusBusy	The called party is busy.
ConfParticipantStatus- NoAnser	The called party does not answer the call.

Enumerated Value	Description
ConfParticipantStatusReject	The called party rejects the call.
ConfParticipantStatus-Callfailed	Call failed.

Table 6-34 Enumerated values of HWMClientDeviceType

Enumerated Value	Description
HWMClientDeviceType-Desktop	PC client.
HWMClientDeviceType-Mobile	Mobile app.
HWMClientDeviceType-Pad	Tablet client.
HWMClientDeviceType-Other	Others.

Table 6-35 Enumerated values of HWMConfCameraState

Enumerated Value	Description
HWMConfCameraState-Close	Disabled.
HWMConfCameraState-Open	Enabled.
HWMConfCameraState-Unknown	Unknown.
HWMConfCameraState-NoCamera	No camera.

6.4.3.2 Clearing UI Configurations

If you need to clear proxies, set the corresponding values to **nil**.

```
[HWMsdk getSdkConfig].socialShareHandler = nil; // (Optional) Customizes the social sharing capability during a meeting.
[HWMsdk getSdkConfig].audioConfToolBarHandler = nil; // (Optional) Customizes the meeting control menu of a voice meeting.
[HWMsdk getSdkConfig].videoConfToolBarHandler = nil; // (Optional) Customizes the meeting control menu of a video meeting.
[HWMsdk getSdkConfig].participantListMenuHandler = nil; // (Optional) Customizes the participant list menu.
[HWMsdk getSdkConfig].confTitleBarMenuHandler = nil; // (Optional) Customizes the title bar on the top
```

of the meeting page.
[HWMSdk getSdkConfig].contactUIHandler = nil; // (Optional) Customizes the contact UI.

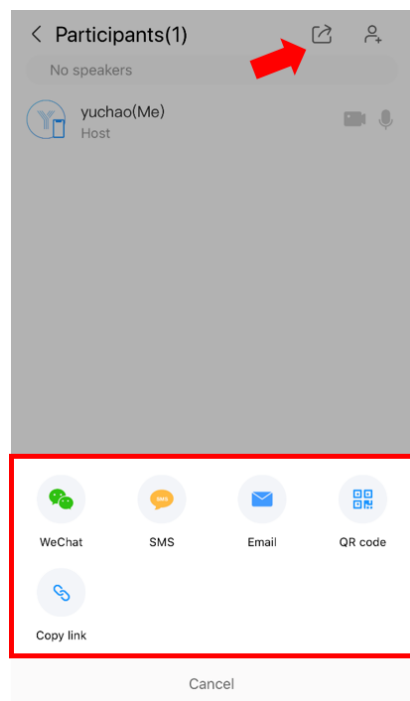
6.4.3.3 Customizing Social Sharing

shareConf:isAnonymous:inCtrl

API Description

This API is used to block meeting sharing. After the setting, the default sharing pop-up window of the SDK (shown in the following figure) will be blocked.

Figure 6-34 Sharing pop-up window



Precautions

1. If the **shareConf:isAnonymous:inCtrl** method is implemented, it will be called when you try to use the sharing function in a meeting.
2. In addition, the SDK internal sharing UI and meeting QR code will not be displayed. In this case, [getShareLogolmages](#) and [getBrandName](#) settings are invalid.

Method Definition

```
- (void)shareConf:(HWMConfDetail *)confInfo isAnonymous:(BOOL)isAnonymous inCtrl:(UIViewController *)controller;
```

Parameter Description

Table 6-36 Parameter description

Parameter	Type	Description
confInfo	HWMConfDetail *	Meeting details
isAnonymous	BOOL	Whether to join the meeting anonymously.
controller	UIViewController *	View controller. The custom sharing page can be displayed on the controller for the access party.

Table 6-37 HWMConfDetail description

Parameter	Type	Description
confId	NSString *	Meeting ID.
confSubject	NSString *	Meeting topic.
accessNumber	NSString *	Meeting access code.
chairmanPwd	NSString *	Host password.
generalPwd	NSString *	Guest password.
startTime	NSString *	Meeting start time.
endTime	NSString *	Meeting end time.

Return Values

None

Sample Code

```

/// After the setting takes effect, the SDK internal sharing pop-up window will be blocked.
- (void)shareConf:(HWMConfDetail *)confInfo isAnonymous:(BOOL)isAnonymous inCtrl:(UIViewController *)controller {
    NSLog(@"enter share conf");
    ShareView *shareView = [[ShareView alloc] init];
    [shareView showShareView:^(NSInteger index) {
        [UIUtil showMessage:[NSString stringWithFormat:@" Click button {xx}.", index + 1]];
    }];
}

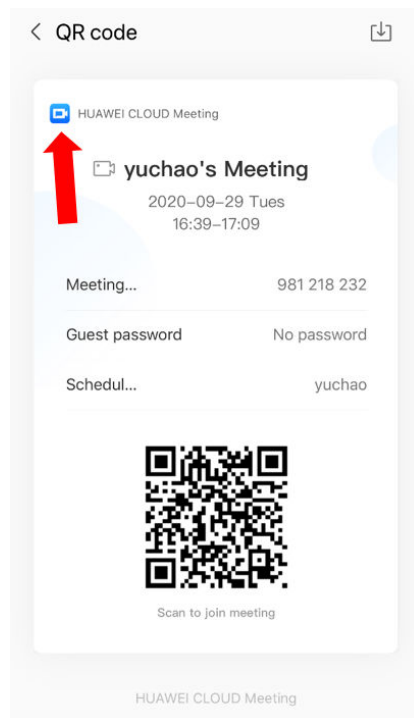
```

getShareLogoImages

API Description

This API is used to set a logo on the meeting QR code sharing page.

Figure 6-35 Customizing a logo on the meeting QR sharing page



Precautions

1. The logo array contains one logo.
2. The `getShareLogoImages` method cannot coexist with the `shareConf:isAnonymous:inCtrl` method. If they coexist, the `getShareLogoImages` method does not take effect.

Method Definition

```
-(NSArray <UIImage *>*)getShareLogoImages;
```

Parameter Description

Parameter	Type	Description
getShareLogoImages	NSArray <UIImage *>*	Logo array on the meeting QR code sharing page.

Return Values

None

Sample Code

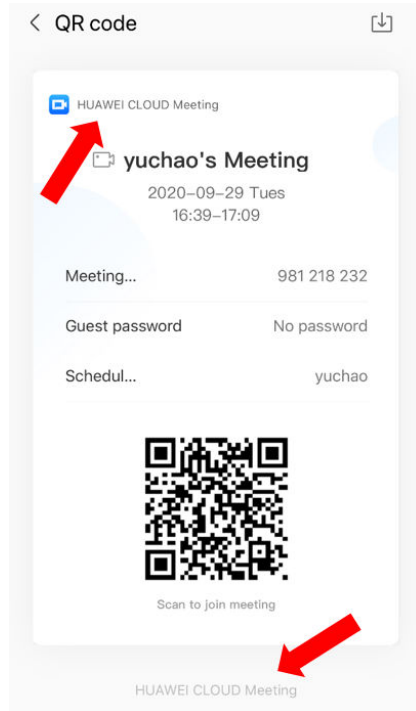
```
/// Set a logo array (containing one logo) on the meeting QR code sharing page.
-(NSArray<UIImage *> *)getShareLogoImages {
    UIImage * image = [UIImage imageNamed:@""];
    return @[image];
}
```

getBrandName

API Description

This API is used to set a brand name on the meeting QR code sharing page.

Figure 6-36 Customizing a brand name on the meeting QR code sharing page



Precautions

1. The **getBrandName** method cannot coexist with the **shareConf:isAnonymous:inCtrl** method. If they coexist, the **getBrandName** method does not take effect.

Method Definition

```
-(NSString *)getBrandName;
```

Parameter Description

Parameter	Type	Description
getBrandName	NSString *	Brand name on the meeting QR code sharing page.

Return Values

None

Sample Code

```
/// Set a brand name on the meeting QR code sharing page.
-(NSString *)getBrandName {
```



```
return @"Integrated brand name";  
}
```

6.4.3.4 Customizing the Bottom Toolbar

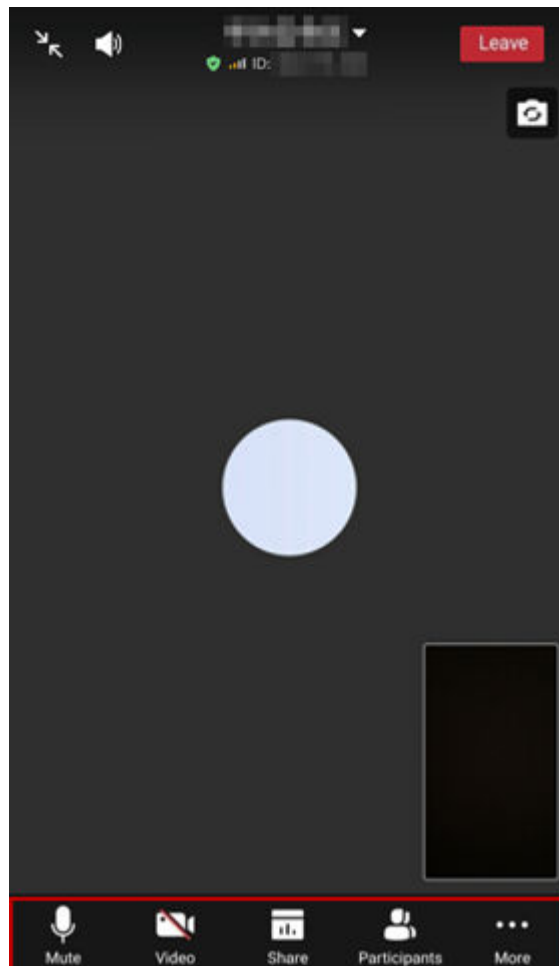
This section uses a video meeting as an example, and is also applicable to voice meetings.

buildToolBarMenuItems

API Description

This API is used to customize a meeting control menu at the bottom of a video meeting.

Figure 6-37 Customizing a meeting control menu at the bottom of a video meeting



Precautions

1. This method is used to customize a meeting control menu at the bottom of a video meeting.

Method Definition

```
-(NSArray <HWConfToolBarMenuItem *> *)buildToolBarMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize a meeting control menu at the bottom of a video meeting.
- (NSArray <HWMConfToolBarMenuItem *> *)buildToolBarMenuItems {
    // Mute or unmute the microphone.
    HWMConfToolBarMenuItem *micItem = [HWMConfToolBarMenuItem defaultMicItem];
    // Turn on or off the camera.
    HWMConfToolBarMenuItem *videoItem = [HWMConfToolBarMenuItem defaultVideoItem];
    // Start or stop screen sharing.
    HWMConfToolBarMenuItem *screenShareItem = [HWMConfToolBarMenuItem defaultScreenShareItem];
    // Participant list.
    HWMConfToolBarMenuItem *attendeelItem = [HWMConfToolBarMenuItem defaultAttendeelItem];
    // Customize More.
    HWMConfToolBarMenuItem *moreItem = [HWMConfToolBarMenuItem defaultMoreItem];

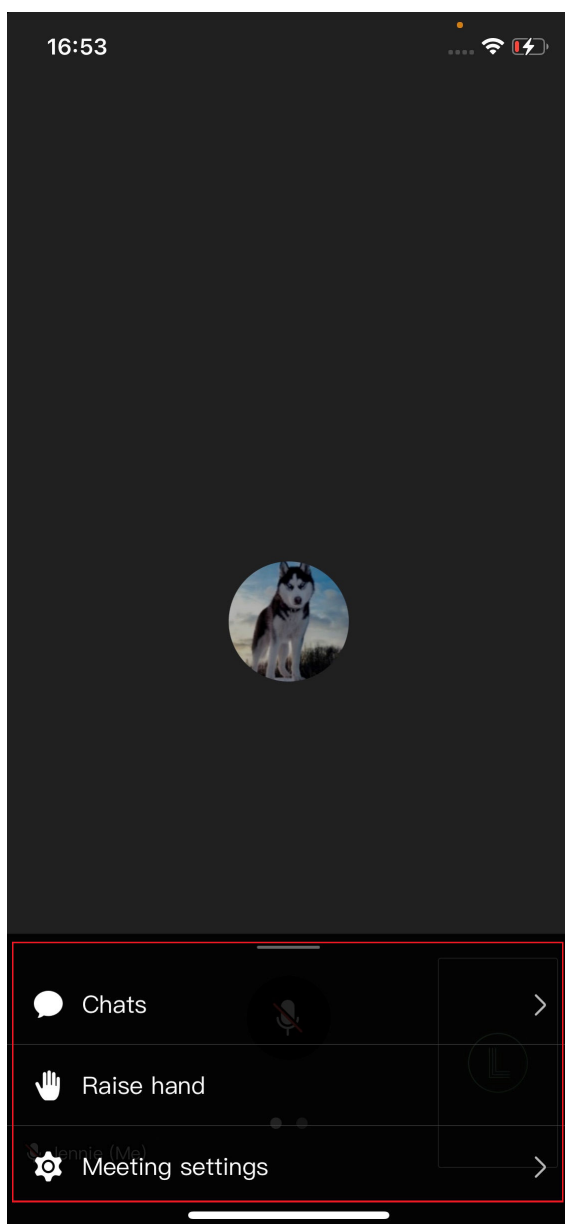
    return @[micItem, videoItem, screenShareItem, attendeelItem, moreItem];
}
```

buildToolBarMoreMenuItems

API Description

This API is used to customize the **More** menu at the bottom of a video meeting.

Figure 6-38 Customizing the **More** menu at the bottom of a video meeting



Precautions

None

Method Definition

```
- (NSArray <HWMLConfMenuItem *> *)buildToolBarMoreMenuItems
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize the More menu at the bottom of a video meeting.
- (NSArray <HWMConfMenuItem *> *)buildToolBarMoreMenuItems {
    // Chat.
    HWMConfMenuItem *chatItem = [HWMConfMenuItem defaultChatItem];
    // Invite participants.
    HWMConfMenuItem *inviteItem = [HWMConfMenuItem defaultInviteItem];
    // Record the meeting.
    HWMConfMenuItem *recordItem = [HWMConfMenuItem defaultRecordItem];
    // Raise hands.
    HWMConfMenuItem *raiseHandsItem = [HWMConfMenuItem defaultRaiseHandsItem];
    // Switch cameras.
    HWMConfMenuItem *switchCameraItem = [HWMConfMenuItem defaultSwitchCameraItem];
    // Customize meeting settings.
    HWMConfMenuItem *settingItem = [HWMConfMenuItem defaultSettingItem];

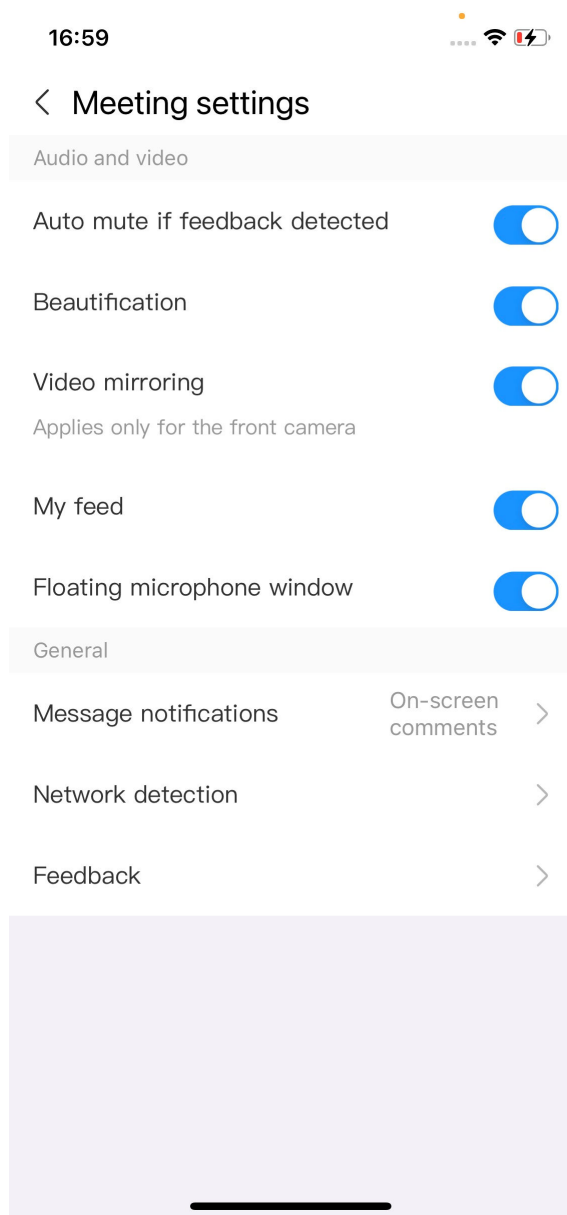
    return @[chatItem, inviteItem, recordItem, raiseHandsItem, switchCameraItem, settingItem];
}
```

buildSettingItems

API Description

This API is used to customize the meeting settings under **More** of a video meeting.

Figure 6-39 Customizing the meeting settings under **More** of a video meeting



Precautions

None

Method Definition

```
- (NSArray <HWMConfSettingGroup *> *)buildSettingItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
// Customize the meeting settings under More in a video meeting.
- (NSArray <HWMConfSettingGroup *> *)buildSettingItems {
    HWMConfSettingGroup *audioVideoGroup = [[HWMConfSettingGroup alloc] initWithTitle:@"Voice/Video"];
    HWMConfSettingItem *howlItem = [HWMConfSettingItem defaultHowlDetection];
    HWMConfSettingItem *beautyItem = [HWMConfSettingItem defaultBeautyItem];
    HWMConfSettingItem *hideSmallViewItem = [HWMConfSettingItem defaultHideSmallVideoItem];
    audioVideoGroup.items = @[howlItem, beautyItem, hideSmallViewItem];

    HWMConfSettingGroup *securityGroup = [[HWMConfSettingGroup alloc] initWithTitle:@"Security"];
    HWMConfSettingItem *lockItem = [HWMConfSettingItem defaultLockItem];
    securityGroup.items = @[lockItem];

    HWMConfSettingGroup *authorityGroup = [[HWMConfSettingGroup alloc] initWithTitle:@"Permissions"];
    HWMConfSettingItem *allowUnmuteItem = [HWMConfSettingItem defaultAllowAttendeeUnmuteItem];
    HWMConfSettingItem *shareLockItem = [HWMConfSettingItem defaultLockShareItem];
    authorityGroup.items = @[allowUnmuteItem, shareLockItem];

    HWMConfSettingGroup *commonGroup = [[HWMConfSettingGroup alloc] initWithTitle:@"General"];
    HWMConfSettingItem *networkDetectItem = [HWMConfSettingItem defaultNetworkDetectItem];
    HWMConfSettingItem *feedbackItem = [HWMConfSettingItem defaultFeedbackItem];
    commonGroup.items = @[networkDetectItem, feedbackItem];

    return @[audioVideoGroup, securityGroup, authorityGroup, commonGroup];
}
```

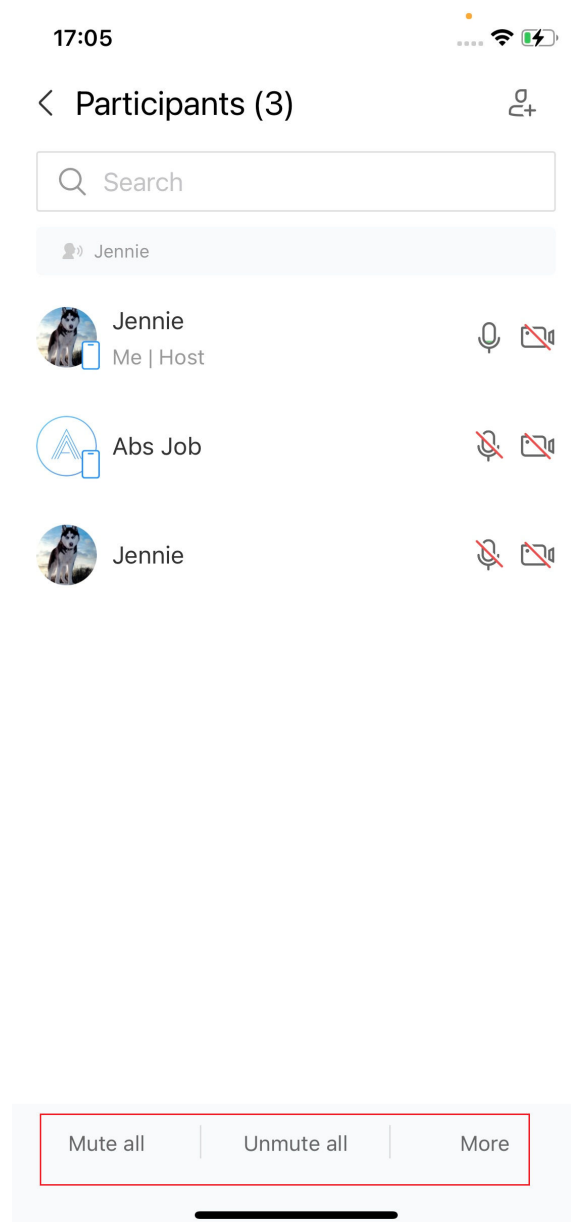
6.4.3.5 Customizing a Menu on the Participant List Page

buildParticipantToolBarMenuItems

API Description

This API is used to customize a menu at the bottom of the participant list page.

Figure 6-40 Customizing a menu at the bottom of the participant list page



Precautions

None

Method Definition

```
- (NSArray <HWMConfToolBarMenuItem *> *)buildParticipantToolBarMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize a menu at the bottom of the participant list page.
- (NSArray <HWMConfToolBarMenuItem *> *)buildParticipantToolBarMenuItems{
    // Mute all participants.
    HWMConfToolBarMenuItem *muteAllItem = [HWMConfToolBarMenuItem defaultMuteAllItem];
    // Unmute all participants.
    HWMConfToolBarMenuItem *unmuteAllItem = [HWMConfToolBarMenuItem defaultUnmuteAllItem];
    // Customize More.
    HWMConfToolBarMenuItem *moreItem = [HWMConfToolBarMenuItem defaultMemberListMoreItem];
    // Raise hands.
    HWMConfToolBarMenuItem *handupItem = [HWMConfToolBarMenuItem defaultHandupItem];
    // Apply to be the host.
    HWMConfToolBarMenuItem *requestChairmanItem = [HWMConfToolBarMenuItem
defaultRequestChairmanItem];

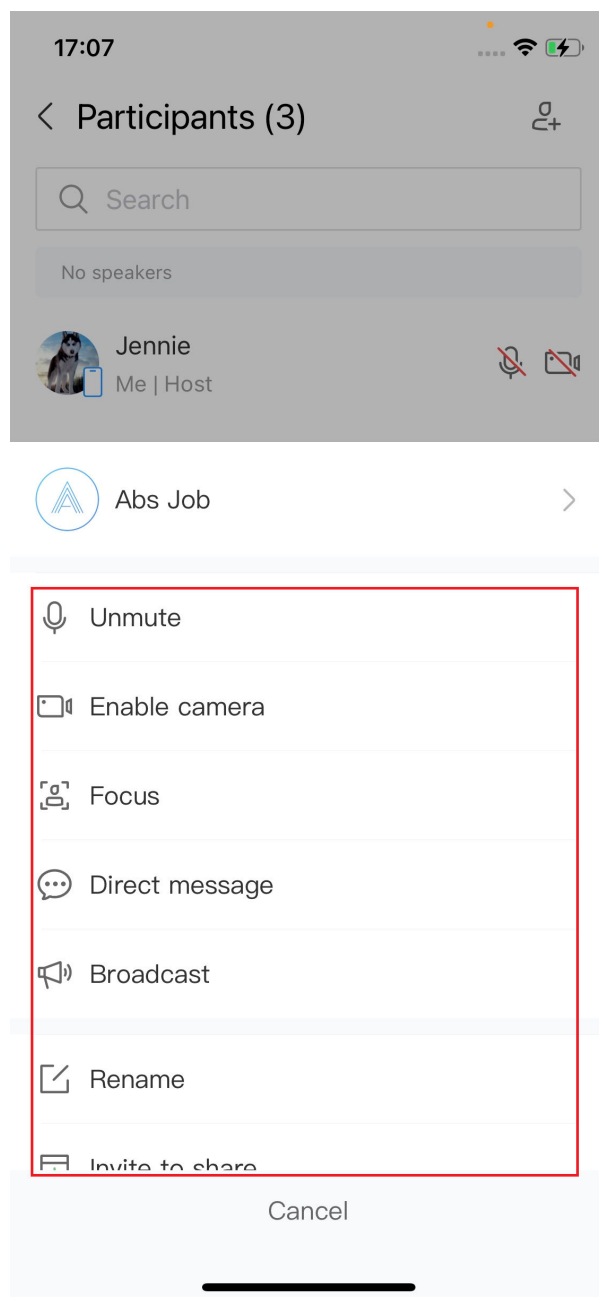
    return @[muteAllItem, unmuteAllItem, moreItem, handupItem, requestChairmanItem];
}
```

buildParticipantToolBarMoreMenuItems

API Description

This API is used to customize **More** at the bottom of the participant list page.

Figure 6-41 Customizing **More** at the bottom of the participant list page



Precautions

None

Method Definition

```
- (NSArray <HWMCConfMenuItem *> *)buildParticipantToolBarMoreMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

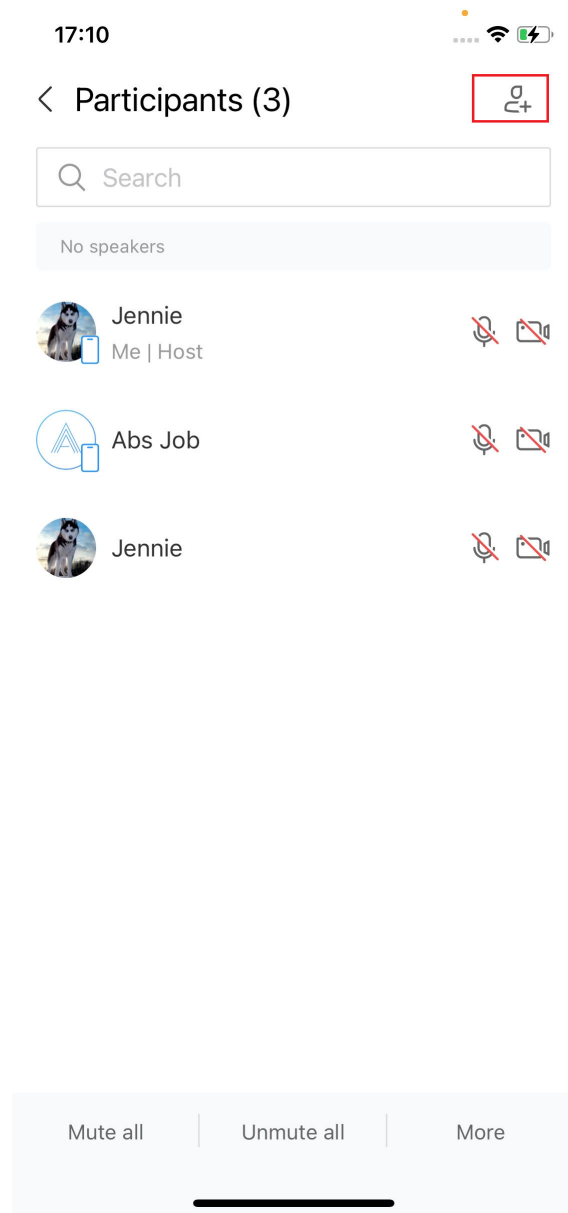
```
/// Customize More at the bottom of the participant list page.  
- (NSArray <HWMConfMenuItem *> *)buildParticipantToolBarMoreMenuItems{  
    // Relinquish the host role.  
    HWMConfMenuItem *releaseChairmanItem = [HWMConfMenuItem defaultReleaseChairmanItem];  
    // Lock the meeting.  
    HWMConfMenuItem *lockItem = [HWMConfMenuItem defaultLockItem];  
    // Allow or forbid participants to unmute themselves.  
    HWMConfMenuItem *allowUnmuteItem = [HWMConfMenuItem defaultAllowAttendeeUnmuteItem];  
  
    return @[releaseChairmanItem, lockItem, allowUnmuteItem];  
}
```

buildParticipantTitleBarMenuItems

API Description

This API is used to customize the menu in the upper right corner of the participant list page.

Figure 6-42 Customizing the menu in the upper right corner of the participant list page



Precautions

None

Method Definition

```
-(NSArray <HWMConfToolBarMenuItem *> *)buildParticipantTitleBarMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

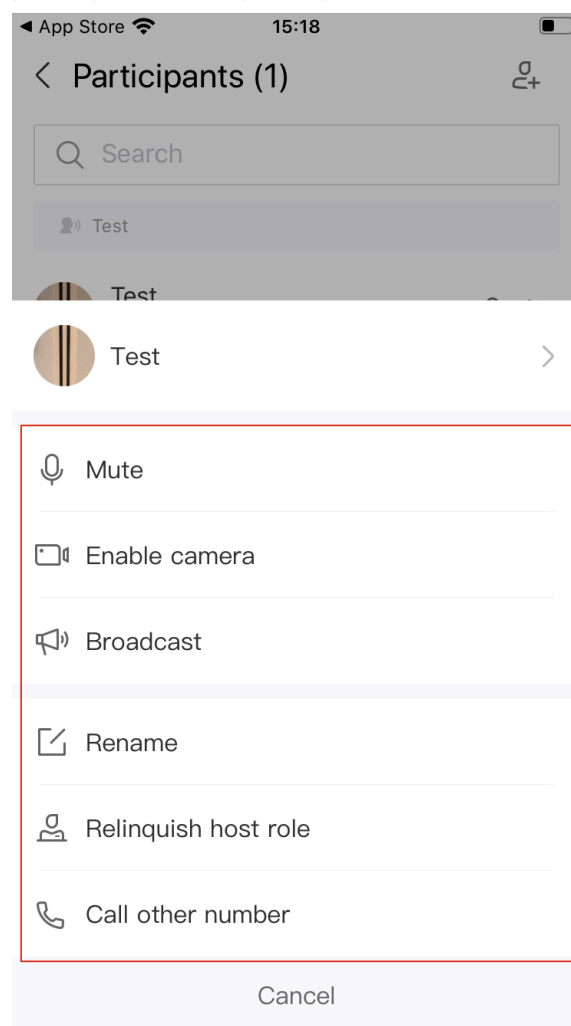
```
/// Customize the menu in the upper right corner of the participant list page.  
- (NSArray <HWMConfToolBarMenuItem *> *)buildParticipantTitleBarMenuItems{  
    HWMConfToolBarMenuItem *shareItem = [HWMConfToolBarMenuItem defaultShareItem];  
    HWMConfToolBarMenuItem *addressBookItem = [HWMConfToolBarMenuItem defaultAddressBookItem];  
  
    return @[shareItem, addressBookItem];  
}
```

buildParticipantActionSheetItems

API Description

This API is used to customize an action sheet that appears in response to touching a participant in the participant list.

Figure 6-43 Customizing an action sheet that appears in response to touching a participant in the participant list



Precautions

None

Method Definition

```
- (NSArray <HWMConfParticipantActionMenuItem *> *)buildParticipantActionSheetItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize an action sheet that appears in response to touches by participants.
- (NSArray <HWMConfParticipantActionMenuItem *> *)buildParticipantActionSheetItems{
    // Apply to be the host.
    HWMConfParticipantActionMenuItem *requestChairmanItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultRequestChairmanItem];
    // Relinquish the host role.
    HWMConfParticipantActionMenuItem *releaseChairmanItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultReleaseChairmanItem];
    // Start or stop broadcasting a participant.
    HWMConfParticipantActionMenuItem *broadcastItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultBroadcastItem];
    // Mute or unmute the microphone.
    HWMConfParticipantActionMenuItem *muteItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultMuteItem];
    // Hang up the call.
    HWMConfParticipantActionMenuItem *hangupItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultHangupItem];
    // Remove participants.
    HWMConfParticipantActionMenuItem *removeAttendeeItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultRemoveAttendeeItem];
    // Transfer the host role.
    HWMConfParticipantActionMenuItem *transferItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultTransferChairmanItem];
    // Focus on a participant or cancel focus.
    HWMConfParticipantActionMenuItem *watchItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultWatchItem];
    // Raise hands or put hands down.
    HWMConfParticipantActionMenuItem *handup = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultHandupItem];
    // Call other numbers.
    HWMConfParticipantActionMenuItem *callOtherItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultCallOtherNumberItem];
    // Change the display name in the meeting.
    HWMConfParticipantActionMenuItem *changeNameItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultChangeNickNameItem];
    // Recall the participant.
    HWMConfParticipantActionMenuItem *recallItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultRecallItem];

    return @[releaseChairmanItem, requestChairmanItem, broadcastItem, watchItem, muteItem,
transferItem, recallItem, callOtherItem, changeNameItem, handup, hangupItem, removeAttendeeItem];
}
```

Customizing the Profile Picture Click Event in buildParticipantActionSheetItems

API Description

This API is used to customize the event when a user touches the profile picture of a participant in the displayed action sheet.


```
- (BOOL)isShowAccessoryView:(HWMConfParticipant *)participant {
    // Return the value as required.
    return YES;
}

/// Customize an action sheet that appears in response to touches by participants.
- (NSArray <HWMConfParticipantActionMenuItem *> *)buildParticipantActionSheetItems{
    /// View details.
    HWMConfParticipantActionMenuItem *detailsItem = [HWMConfParticipantActionMenuItem
defaultViewDetails];
    detailsItem.delegate = self;
    detailsItem.actionClickEvent = ^(HWMConfCtrlType type, HWMConfParticipant * _Nonnull participant) {
        NSLog(@"Process the click event");
    };
    /// The preceding information is related to viewing details.

    // Apply to be the host.
    HWMConfParticipantActionMenuItem *requestChairmanItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultRequestChairmanItem];
    // Relinquish the host role.
    HWMConfParticipantActionMenuItem *releaseChairmanItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultReleaseChairmanItem];
    // Start or stop broadcasting a participant.
    HWMConfParticipantActionMenuItem *broadcastItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultBroadcastItem];
    // Mute or unmute the microphone.
    HWMConfParticipantActionMenuItem *muteItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultMuteItem];
    // Hang up the call.
    HWMConfParticipantActionMenuItem *hangupItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultHangupItem];
    // Remove participants.
    HWMConfParticipantActionMenuItem *removeAttendeeItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultRemoveAttendeeItem];
    // Transfer the host role.
    HWMConfParticipantActionMenuItem *transferItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultTransferChairmanItem];
    // Focus on a participant or cancel focus.
    HWMConfParticipantActionMenuItem *watchItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultWatchItem];
    // Raise hands or put hands down.
    HWMConfParticipantActionMenuItem *handup = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultHandupItem];
    // Call other numbers.
    HWMConfParticipantActionMenuItem *callOtherItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultCallOtherNumberItem];
    // Change the display name in the meeting.
    HWMConfParticipantActionMenuItem *changeNameItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultChangeNickNameItem];
    // Recall the participant.
    HWMConfParticipantActionMenuItem *recallItem = (HWMConfParticipantActionMenuItem *)
[HWMConfParticipantActionMenuItem defaultRecallItem];

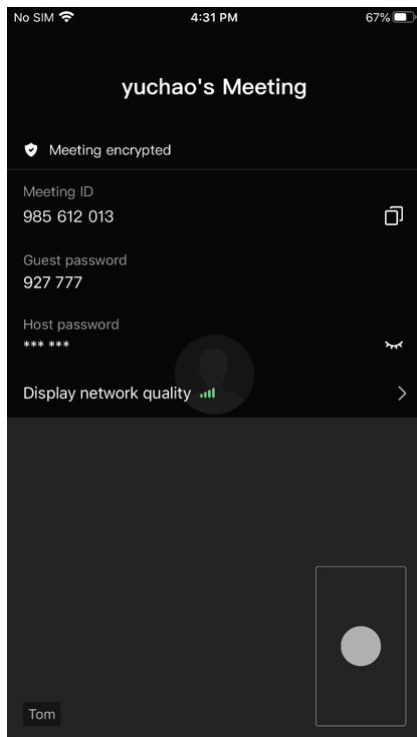
    return @[releaseChairmanItem, requestChairmanItem, broadcastItem, watchItem, muteItem,
transferItem, recallItem, callOtherItem, changeNameItem, handup, hangupItem, removeAttendeeItem];
}
```

6.4.3.6 Customizing the Menu That Appears in Response to Touches on the Title Bar of the Meeting Page

buildTitleBarPopViewItems

API Description

This API is used to customize the menu that appears in response to touches on the title bar of the meeting page.

Figure 6-45 Customizing the menu that appears in response to touches on the title bar of the meeting page

Precautions

1. The host password is visible only to the host. Other customized menus are displayed in the same way for all participants.
2. Customized cells need to comply with `HWMInMeetingCellDelegate` unless when you only change the default sequence.

Method Definition

```
- (NSArray <HWMInMeetingCellModel *> *)buildTitleBarPopViewItems;  
  
// Customize a cell as follows based on HWMInMeetingCellDelegate.  
/// Cell delegate  
/// @param cellType cellType  
- (UITableViewCell *)cellForRowWithCellType:(HWMConfInfoCellType)cellType inTableView:(UITableView  
*)tableView indexPath:(NSIndexPath *)indexPath;  
/// Cell tapping event delegate  
/// @param cellType cellType  
- (void)cellSelectedWithCellType:(HWMConfInfoCellType)cellType;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize the menu that appears in response to touches on the title bar of the meeting page.  
- (NSArray <HWMInMeetingCellModel *> *)buildTitleBarPopViewItems{  
    HWMInMeetingCellModel *subjectCell = [HWMInMeetingCellModel defaultSubjectCell];  
    HWMInMeetingCellModel *encryptCell = [HWMInMeetingCellModel defaultEncryptedCell];
```



```
HWMInMeetingCellModel *confIdCell = [HWMInMeetingCellModel defaultConfIdCell];
HWMInMeetingCellModel *generalPasswordCell = [HWMInMeetingCellModel
defaultGeneralPasswordCell];
HWMInMeetingCellModel *hostPasswordCell = [HWMInMeetingCellModel defaultHostPasswordCell];
HWMInMeetingCellModel *lockCell = [HWMInMeetingCellModel defaultConfLockCell];
HWMInMeetingCellModel *qosCell = [HWMInMeetingCellModel defaultQosCell];

return @[subjectCell,encryptCell, confIdCell, generalPasswordCell, hostPasswordCell, lockCell, qosCell];
}

/// The height of the cell delegate can be adaptive (by adding layout constraints). You can customize the
cell display. The following code is for reference only.
/// @param cellType cellType
- (UITableViewCell *)cellForRowWithCellType:(HWMConfInfoCellType)cellType inTableView:(nonnull
UITableView *)tableView indexPath:(nonnull NSIndexPath *)indexPath{
    NSString *reuseIdentifier = [NSString stringWithFormat:@"CustomCell_%ld", cellType];
    UITableViewCell *cell = [tableView dequeueReusableCellWithIdentifier:reuseIdentifier];
    if (cell == nil) {
        cell = [[UITableViewCell alloc] initWithStyle:UITableViewCellStyleDefault
reuseIdentifier:reuseIdentifier];
    }
    cell.contentView.backgroundColor = [UIColor clearColor];
    cell.backgroundColor = [UIColor clearColor];
    cell.selectionStyle = UITableViewCellSelectionStyleNone;

    UIImageView *safeImg = [[UIImageView alloc] initWithImage:[UIImage
imageNamed:@"custom_conf_setting"]];
    [cell.contentView addSubview:safeImg];

    UILabel *safeLabel = [[UILabel alloc] init];
    safeLabel.font = [UIFont systemFontOfSize:14];
    safeLabel.textColor = [UIColor whiteColor];
    safeLabel.text = reuseIdentifier;
    [cell.contentView addSubview:safeLabel];
    [safeImg mas_makeConstraints:^(MASConstraintMaker *make) {
        make.left.mas_equalTo(16);
        make.size.mas_equalTo(CGSizeMake(16, 16));
        make.centerY.mas_equalTo(safeLabel);
    }];

    [safeLabel mas_makeConstraints:^(MASConstraintMaker *make) {
        make.left.mas_equalTo(safeImg.mas_right).offset(10);
        make.top.mas_equalTo(10);
        make.height.mas_equalTo(34);
        make.bottom.mas_equalTo(-10);
    }];
    return cell;
}

/// Cell tapping event delegate
/// @param cellType cellType
- (void)cellSelectedWithCellType:(HWMConfInfoCellType)cellType{
    [UITil showMessage:[NSString stringWithFormat:@"Menu %lu tapped.", (unsigned long)cellType]];
}
```

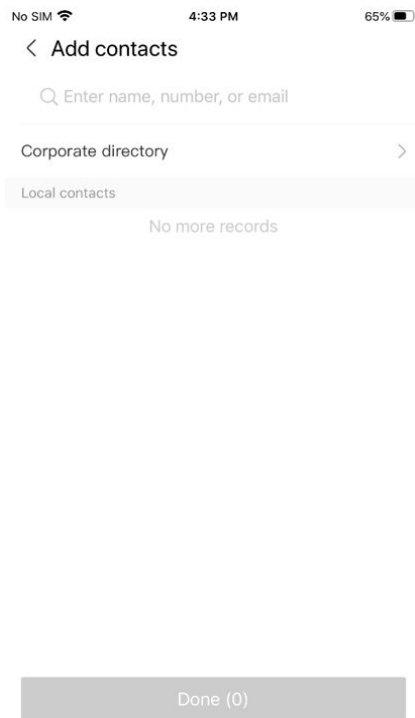
6.4.3.7 Customizing a Contact Selection UI

openContactSelectPage:scene:completeHandler:

API Description

This API is used to customize a contact selection UI.

Figure 6-46 Customizing a contact selection UI



Precautions

1. If you need to customize a contact selection UI, set the array of contacts to be added.

Method Definition

```
- (void)openContactSelectPage:(NSArray<HWMConfContactModel *> *)param
                             scene:(HWMSelectedContactScene)scene
                             completionHandler:(void (^)(NSArray<HWMContactSelectedModel *> *result, NSError
*error))handler;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize a contact selection UI.
- (void)openContactSelectPage:(NSArray<HWMConfContactModel *> *)param
                             scene:(HWMSelectedContactScene)scene
                             completionHandler:(void (^)(NSArray<HWMContactSelectedModel *> *result, NSError
*error))handler {
    NSLog(@"enter open contact select page");
    ContactSelectViewController * contactSelectVc = [[ContactSelectViewController alloc]
initWithResultHandler:handler];
    [self pushViewControllerWithVc:contactSelectVc];
}

/// Simulate the scenario where a callback function is triggered to add participants.
- (void)initSlectedModels {
    NSMutableArray *slectedModels = [NSMutableArray array];
    HWMContactSelectedModel *model = [[HWMContactSelectedModel alloc] initWithName:@"Test account
```

```
01" number:@" contactType:HWMContactTypeEnterprise];
[slectedModels addObject:model1];
HWMContactSelectedModel *model2 = [[HWMContactSelectedModel alloc] initWithName:@"Test
account 02" number:@" contactType:HWMContactTypeEnterprise];
[slectedModels addObject:model2];
HWMContactSelectedModel *model3 = [[HWMContactSelectedModel alloc] initWithName:@"Test
account 03" number:@" contactType:HWMContactTypeEnterprise];
[slectedModels addObject:model3];
HWMContactSelectedModel *model4 = [[HWMContactSelectedModel alloc] initWithName:@"Test
account 04" number:@" contactType:HWMContactTypeEnterprise];
[slectedModels addObject:model4];

/// Sample code in the app ID login scenario
HWMContactSelectedModel *model5 = [[HWMContactSelectedModel alloc] initWithName:@"Test
account 05" number:@" contactType:HWMContactTypeEnterprise];
model5.thirdUserId = getThirdUserId();
[slectedModels addObject:model5];

self.completeHandler(slectedModels, nil);
}
```

NOTE

1. You are advised to customize the contacts and UI in the app ID login scenario. **thirdUserId** needs to be passed when you construct the contact data.
2. You can use **completeHandler** to directly call back the participants to be added. If the UI is not required, directly call back related data.
3. Transfer data for **initSlectedModels** based on actual situations.

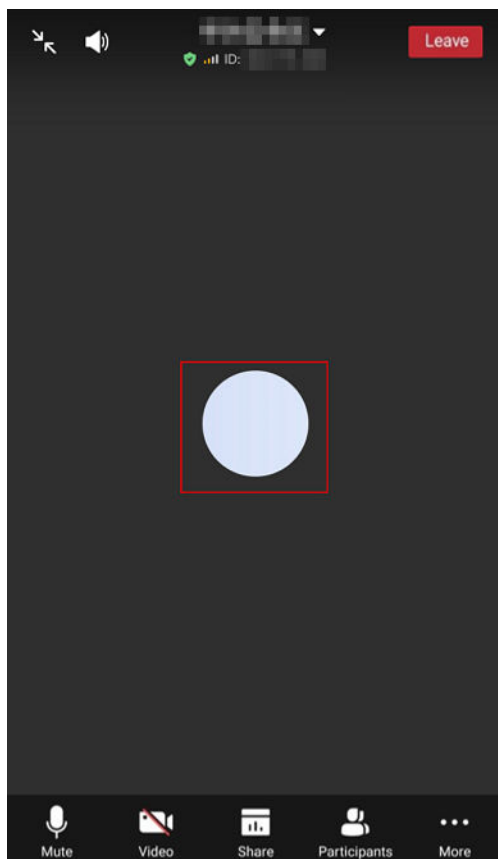
6.4.3.8 Customizing the Profile Picture Display

queryContactAvatarWithAccount:thirdUserId:number:completionBlock:

API Description

This API is used to customize the profile picture displayed in a meeting after login.

Figure 6-47 Effect of blocking the profile picture display



Precautions

1. The profile picture of a user who has not logged in cannot be customized.

Method Definition

```
- (void)queryContactAvatarWithAccount:(NSString *)account thirdUserId:(NSString *)thirdUserId number:
(NSString *)number
    completionBlock:(void (^)(NSError * _Nullable error, UIImage * _Nullable
avatarImage))completionBlock;
```

Parameter Description

Table 6-38

Parameter	Type	Description
account	NSString *	This parameter is preferentially used in the account and password login scenario.
thirdUserId	NSString *	This parameter is preferentially used in the app ID login scenario.
number	NSString *	This parameter is preferentially used in the cross-enterprise scenario.

Return Values

None

Sample Code

```
/// Block the profile picture display.
- (void)queryContactAvatarWithAccount:(NSString *)account thirdUserId:(NSString *)thirdUserId number:
(nonnull NSString *)number
    completionBlock:(void (^)(NSError * _Nullable error, UIImage * _Nullable
avatarImage))completionBlock {
/// Set an image based on account or thirdUserId. The following code is an example.
    UIImage *image = [UIImage imageNamed:@"custom_conf_setting"];
    completionBlock(nil, image);
}
```

6.4.3.9 Customizing a Watermark for a Meeting

screenShareCoverView

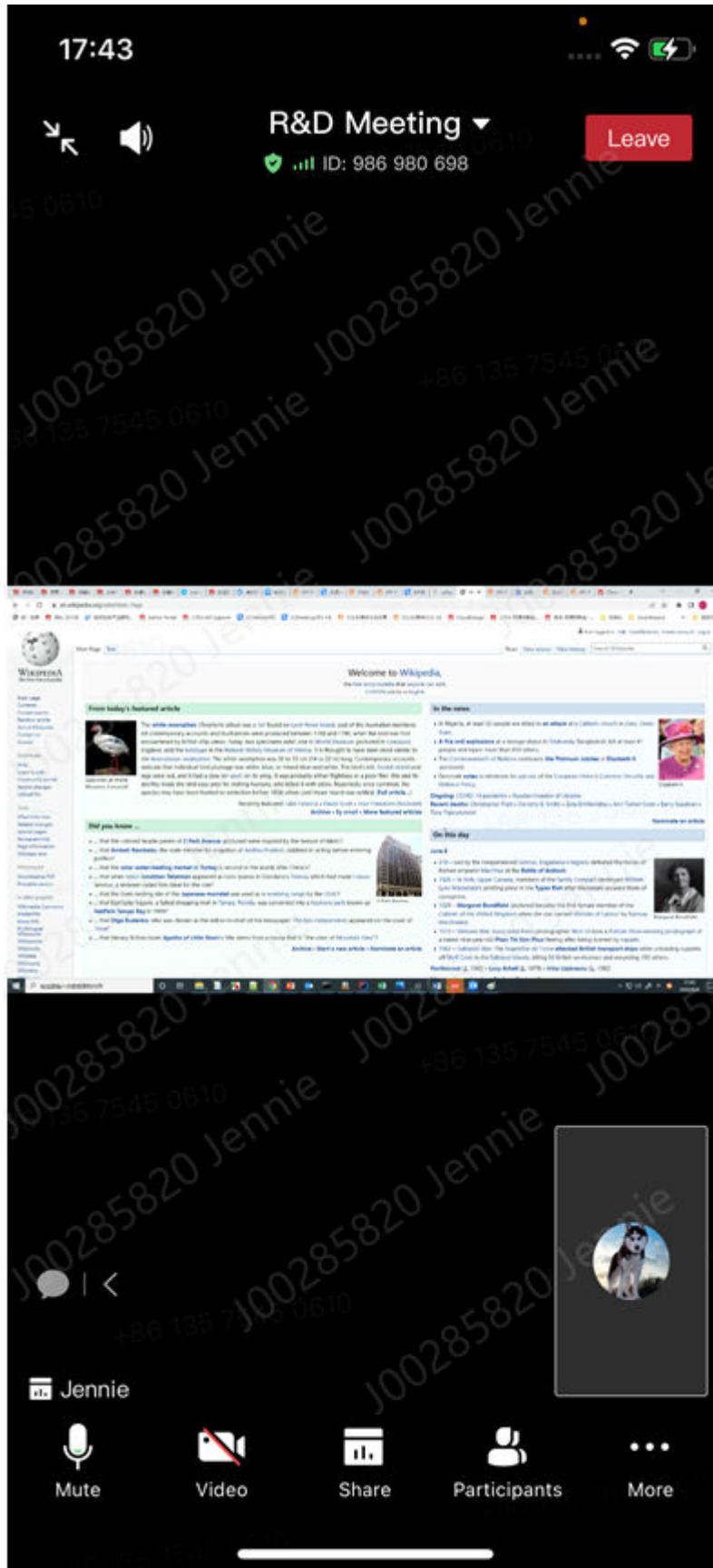
API Description

This API is used to set a watermark during screen or whiteboard sharing. The watermark is superimposed on the shared content at the receiving end. The watermark is displayed only after it is configured on the server.

NOTE

1. Watermarks can be added to images presented to recipients during desktop, program, and whiteboard sharing. The custom watermarks take effect only when the watermark function is enabled on the server. If you do not customize a watermark, the mobile number, email address, meeting ID, and nickname are displayed in descending order by priority by default. The font transparency is 10%.
2. After you customize a watermark, a pop-up message is displayed when you take a screenshot. If you do not need this function, disable it during initialization.

Figure 6-48 Example of setting a watermark



Precautions

1. Do not add full-screen gestures.
2. The custom view is a full-screen view above the shared view. Set a proper transparency for the custom view to prevent the shared information from being covered.
3. Set **enablePromptUserScreenshot** during SDK initialization to determine whether to enable the custom pop-up prompt.

Method Definition

```
- (UIView *)screenShareCoverView;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Set a watermark for screen or whiteboard sharing. Do not add full-screen gestures.  
- (UIView *)screenShareCoverView {  
    UIImageView *coverImgView = [[UIImageView alloc] init];  
    coverImgView.image = [UIImage imageNamed:@"img"];  
    coverImgView.alpha = 0.2;  
    return coverImgView;  
}
```

6.4.3.10 Customizing the Recording Button

buildRecordMenuItems

API Description

This API is used to customize whether the recording status bar can be touched.

Figure 6-49 Customizable location



Precautions

1. If no item is returned, the bar cannot be touched.

Method Definition

```
-(NSArray <HWMConfStatusBarMenuItem *> *)buildRecordMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize the recording button next to the recording status bar.  
-(NSArray<HWMConfStatusBarMenuItem *> *)buildRecordMenuItems {  
    HWMConfStatusBarMenuItem *recordItem = [HWMConfStatusBarMenuItem defaultRecordItem];  
    // If the recording status bar cannot be touched, return an empty array.  
    return @[recordItem];  
}
```


6.4.3.11 Obtaining an Error Message

getErrorMessage

API Description

This API is used to obtain an error message.

Precautions

1. This API is a synchronous API. The return value only indicates whether the API is successfully called.

Method Definition

```
-(NSString *)getErrorMessage:(NSInteger)code;
```

Parameter Description

Table 6-39 Parameter description

Parameter	Mandatory	Type	Description
code	Yes	NSInteger	Error code.

Return Values

None

Sample Code

```
NSString *msg = [[HWMBizSdk getBizOpenApi] getErrorMessage:errorCode];
```

6.4.4 Meeting Control

6.4.4.1 Creating a Meeting

createConf

API Description

This API is used to create an instant meeting.

Precautions

1. By default, this API enables you to join a meeting as a host. During API calling, there is no need to add your information to the participant parameters.
2. If other participants need to be invited, their information needs to be transferred.
3. Meeting recording must be enabled if automatic recording is enabled.
4. The meeting creation result can be obtained by calling the callback API.

Method Definition

```
- (void)createConf:(HWMCreateConfParam * _Nonnull)param callback:( _Nonnull  
HWMSDKCreateConfCompleteHandler)callback;
```

Parameter Description

Table 6-40 HWMCreateConfParam description

Parameter	Mandatory	Type	Description
subject	Yes	NSString *	Meeting topic.
confType	Yes	HWMConfType	Meeting media type. A voice meeting is created by default. If screen sharing is required, a data meeting needs to be created.
needPassword	No	BOOL	Whether a password is required for a meeting. By default, no password is required. NOTE This parameter is valid only for meetings with a random ID.
guestPwd	No	NSString *	Guest password. NOTE This parameter is valid only for meetings with a random ID.
members	No	NSArray < HWMCreateConfMember *> *	Member list (optional).
isCameraOn	No	BOOL	Whether to turn on the camera. By default, the camera is turned off.
isMicOn	No	BOOL	Whether to turn on the microphone. By default, the microphone is turned on.

Parameter	Mandatory	Type	Description
isRecordOn	No	BOOL	Whether to enable recording. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
isAutoRecord	No	BOOL	Whether to automatically start recording after the meeting starts. The function is disabled by default. Meeting recording must be enabled if automatic recording is enabled. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
vmrId	No	NSString *	ID of the personal meeting or cloud meeting room. This parameter is required when a personal meeting or a cloud meeting room is created. In other cases, this parameter is left empty.
vmrIdType	No	HWMVmrIdType	Type of the cloud meeting room ID (fixed/random).
joinConfRestrictionType	No	HWMJoinConfRestrictionType	Users who are allowed to join the meeting.
isOpenWaitingRoom	No	BOOL	Waiting room status. NOTE The function takes effect only after the waiting room function is enabled.

Parameter	Mandatory	Type	Description
customInfo	No	NSString *	User-defined information (meeting details and in-meeting chat messages).
isSpeakerOff	No	BOOL	Whether to disable the speakers. By default, the speakers are enabled.
concurrentParticipants	No	NSUInteger	Maximum number of participants in a meeting. The default value is 0 .

Table 6-41 Enumerated values of HWMConfType

Enumerated Value	Description
HWMConfTypeAudio	Voice meeting.
HWMConfTypeVideo	Video meeting.
HWMConfTypeAudioAnd-Data	Voice data meeting that supports screen sharing.
HWMConfTypeVideoData	Video data meeting that supports screen sharing.

Table 6-42 HWMCreateConfMember description

Parameter	Mandatory	Type	Description
name	Yes	NSString *	Participant name.
number	Yes	NSString *	SIP number or phone number (either number or thirdUserId should be passed).
thirdUserId	Yes	NSString *	Third-party account in the app ID login scenario (either number or thirdUserId should be passed).
accountId	No	NSString *	Account ID.

Return Values

None

Sample Code

```
/// Create a meeting.
- (void)creatMeeting {
    HWMCreateConfParam *param = [[HWMCreateConfParam alloc] init];
    param.subject = @"Meeting topic";
    param.confType = HWMConfTypeVideoData;
    param.needPassword = YES; // Whether a password is required for a meeting. By default, no password is
    required.
    param.isCameraOn = YES; // Whether to turn on the camera. By default, the camera is turned off.
    param.isMicOn = YES; // Whether to turn on the microphone. By default, the microphone is turned on.
    param.isRecordOn = NO; // Whether to enable the meeting recording function. By default, this function
    is disabled.
    param.joinConfRestrictionType = HWMJoinConfRestrictionAll;// Participants who are allowed to join the
    meeting.
    param.joinConfRestrictionType = NO;// Whether to enable the waiting room.
    // Participant list.
    if (self.selectedMemebrs) {
        __block NSMutableArray *members = [[NSMutableArray alloc] init];
        [self.selectedMemebrs enumerateObjectsUsingBlock:^(HWMContactSelectedModel * _Nonnull obj,
        NSUIInteger idx, BOOL * _Nonnull stop) {
            HWMCreateConfMember *member = [[HWMCreateConfMember alloc] init];
            member.accountId = obj.accountId;
            member.number = obj.number;
            member.name = obj.name;
            member.thirdUserId = obj.thirdUserId;
            [members addObject:member];
        }];
        param.members = members;
    }
    [[HWMSSdk getOpenApi] createConf:param callback:^(NSError * _Nullable error, HWMCreateConfResult *
    _Nullable result) {
        [self hideLoading];
        if (error) {
            NSLog(@"Create meeting failed.%@", error.localizedDescription);
        }else{
            NSLog(@"Meeting created.");
        }
    }];
}
```

6.4.4.2 Joining a Meeting

joinConf

API Description

This API is used to join an existing meeting by using the meeting ID and password. You can join a meeting in either of the following ways:

- Enter the meeting ID and password.
- Use a meeting ID to join a meeting in random mode. The meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/981924330/e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659>) in the notification email contains the meeting ID (981924330) and random code (e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659).

Precautions

1. Use the child class **HWMJoinConfParam** to join a meeting using the ID, and use the child class **HWMRandomConfParam** to join a meeting in random mode.
2. This API can be called regardless of whether you have logged in.
3. The actual service processing result can be obtained by calling the corresponding callback API.

Method Definition

```
- (void)joinConf:(HWMBaseJoinConfParam * _Nonnull)param callback:(_Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 6-43 HWMBaseJoinConfParam

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
nickname	No	NSString *	Display name in the meeting. If you have logged in, this parameter can be left blank. In such a case, the login username is used as the display name in the meeting.
isCameraOn	Yes	BOOL	Whether to turn on the camera. By default, the camera is turned off.
isMicOn	Yes	BOOL	Whether to turn on the microphone. By default, the microphone is turned on.

Table 6-44 HWMJoinConfParam description (inherited from HWMBaseJoinConfParam)

Parameter	Mandatory	Type	Description
password	No	NSString *	Meeting password. To join a meeting as a host, pass the host password. To join a meeting as a guest, pass the guest password unless the meeting is password-free.
isStopConflictConf	No	BOOL	Used to forcibly end a meeting that conflicts with the current cloud meeting room. (Only the owner of the cloud meeting room resource has the permission.)

Table 6-45 HWMRandomConfParam description (inherited from HWMBaseJoinConfParam)

Parameter	Mandatory	Type	Description
random	Yes	NSString *	This parameter is transferred when you join a meeting in random mode.
domain	No	NSString *	Domain name. This parameter is used when you join the meeting offline.

Sample Code

```
/// Join a meeting.
- (void)joinMeeting {
    HWMJoinConfParam *param = [[HWMJoinConfParam alloc] init];
    param.confId = getConfId();
    param.password = getPassword();
    param.nickname = getNickName();
    param.isCameraOn = NO;
    param.isMicOn = YES;
    [[HWM SDK getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Join meeting failed.%@", error.localizedDescription);
        }else{
            NSLog(@"Meeting joined.");
        }
    }
    }];
}

// Join a meeting in random mode.
- (void)joinMeetingByRandom {
    HWMRandomConfParam *param = [[HWMRandomConfParam alloc] init];
    param.confId = getConfId();
    param.random = getRandom();
    param.nickname = getNickName();
    param.isCameraOn = NO;
    param.isMicOn = YES;
    [[HWM SDK getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        [self hideLoading];
        if (error) {
            NSLog(@"Join meeting failed.%@", error.localizedDescription);
        }else{
            NSLog(@"Meeting joined.");
        }
    }
    }];
}
```

6.4.4.3 Adding Participants

addAttendee

API Description

This API is used to add a participant to a meeting.

Precautions

1. Only the host can invite participants.

Method Definition

```
- (void)addAttendee:(NSArray<HWMContactSelectedModel *> *)params completionHandler:
(HWMSDKCompleteHandler)handler;
```

Parameter Description

Table 6-46 HWMContactSelectedModel description

Parameter	Mandatory	Type	Description
name	Yes	NSString *	Participant name.
number	Yes	NSString *	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	NSString *	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.

Sample Code

```
/// Add participants during the meeting.
[[HWMSdk getOpenApi] addAttendee:attendee completionHandler:^(NSError * _Nullable error, id _Nullable result) {
```



```
[UIUtil showMessage:@"Invitation succeeded." error:error];  
}];
```

6.4.4.4 Scanning a QR Code to Invite a Large Screen to a Meeting

joinPairConf

API Description

This API is used to scan a QR code to invite a large screen to a meeting.

Precautions

1. The actual service processing result can be obtained by calling the corresponding callback API.

Method Definition

```
- (void)joinPairConf:(HWMPairCodeJoinConfParam *_Nonnull)param callback:(_Nonnull  
HWMSDKCompleteHandler)callback;
```

Parameter Description

Parameter	Mandatory	Type	Description
param	Yes	HWMPairCodeJoinConfParam *	Parameters for joining a meeting.

Table 6-47 HWMPairCodeJoinConfParam description

Parameter	Mandatory	Type	Description
url	Yes	NSString *	QR code URL.
confId	Yes	NSString *	Meeting ID.
confPassword	No	NSString *	Meeting password.

Return Values

None

Sample Code

```
- (void)joinPairConf {  
    // Set parameters for joining a meeting.  
    HWMPairCodeJoinConfParam *param = [[HWMPairCodeJoinConfParam alloc] init];  
    param.url = @"QR code URL";  
    param.confId = @"989156631";  
    param.confPassword = getPassword();  
    // Call the SDK API.  
    [[HWMSSdk getOpenApi] joinPairConf:param callback:^(NSError *_Nullable error, id _Nullable result) {  
        if (error) {  
            [UIUtil showMessageWithError:error];  
        } else {  
            [UIUtil showMessage:@"Meeting joined."];  
        }  
    }];  
}
```

```

    }
  };
}

```

6.4.4.5 Setting the Sharing Permission

setShareScreenPermission

API Description

This API is used to set the sharing permission.

Precautions

The return value of the API only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
- (BOOL)setShareScreenPermission:(BOOL)isPermission;
```

Parameter Description

Table 6-48 Parameter description

Parameter	Man dato ry	Type	Description
isPermission	Yes	bool	Whether sharing is allowed.

Return Values

None

Sample Code

```

/// Set the sharing permission.
[[HWMSdk getOpenApi] setShareScreenPermission:isPermission];

```

6.4.4.6 Leaving a Meeting

leaveConf

API Description

This API is used to leave a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. If this API is called to leave a meeting, the meeting will not end. You can join the meeting again when the meeting is still in progress.

Method Definition

```
- (void)leaveConf:(HWMSDKCompleteHandler)callback;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Leave a meeting.  
[[HWMSdk getOpenApi] leaveConf:^(NSError * _Nullable error, id _Nullable result) {  
    [UIUtil showMessage:@"Left meeting." error:error];  
}];
```

6.4.4.7 Ending a Meeting

endConf

API Description

This API is used to end a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. Only the host can end a meeting.
3. After this API is called, the meeting will end and you cannot join the meeting again.

Method Definition

```
- (void)endConf:(HWMSDKCompleteHandler)callback;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// End a meeting.  
[[HWMSdk getOpenApi] endConf:^(NSError * _Nullable error, id _Nullable result) {  
    [UIUtil showMessage:@"Meeting ended." error:error];  
}];
```

6.4.4.8 Starting an Instant Meeting

startP2PConf

API Description

This API is used to start an instant meeting.

Precautions

1. The actual service processing result can be obtained by calling the corresponding callback API.

Method Definition

```
- (void)startP2PConf:(HWMStartP2PConfParam *)param callback:(_Nonnull  
HWMSDKCreateConfCompleteHandler)callback;
```

Parameter Description

Parameter	Mandatory	Type	Description
param	Yes	HWMStartP2PConfParam *	Instant meeting details.

Table 6-49 HWMStartP2PConfParam description

Parameter	Mandatory	Type	Description
calleeInfo	Yes	HWMCalleeInfo *	Called participant information.
callerInfo	Yes	HWMCallerInfo *	Caller information.
mediaType	Yes	HWMMediaType	Media type.

Table 6-50 HWMCallerInfo description

Parameter	Mandatory	Type	Description
nickName	No	NSString *	Caller name.

Table 6-51 HWMCalleeInfo description

Parameter	Mandatory	Type	Description
nickName	No	NSString *	Called participant name.

Parameter	Mandatory	Type	Description
number	Yes	NSString *	Called number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	NSString *	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.

Return Values

None

Sample Code

```
- (void)startP2PConf {
    // Set the information about the called participant.
    HWMCalleeInfo *calleeInfo = [[HWMCalleeInfo alloc] init];
    calleeInfo.nickName = @"Called participant name";
    calleeInfo.number = @"123456";
    calleeInfo.thirdUserId = @"123456";
}
```

```
// Set the caller information.
HWMCallerInfo *callerInfo = [[HWMCallerInfo alloc] init];
callerInfo.nickName = @"Caller name";

HWMStartP2PConfParam *param = [[HWMStartP2PConfParam alloc] init];
// Set the media type.
param.mediaType = HWMMediaTypeVideo;
param.calleeInfo = calleeInfo;
param.callerInfo = callerInfo;
// Call the SDK API.
[[HWM SDK getOpenApi] startP2PConf:param callback:^(NSError * _Nullable error,
HWMCreateConfResult * _Nullable result) {
    if (error) {
        [UIUtil showMessageWithError:error];
    } else {
        [UIUtil showMessage:[NSString stringWithFormat:@"Meeting ID:%@", result.confId,
result.isP2PConf?@"YES":@"NO"]];
    }
}];
}
```

6.4.5 Meeting Management

6.4.5.1 Scheduling a Meeting

bookConf

API Description

This API is used to schedule a meeting.

Precautions

1. The start time of a meeting must be earlier than the current time.
2. The **vmrId** parameter must be passed for a personal meeting or cloud meeting room.
3. The **attende** parameter must be passed if participant information needs to be carried.
4. Meeting recording must be enabled if automatic recording is enabled.
5. For details about the meeting details returned in the callback, see [HWMConfDetail](#).

Method Definition

```
-(void)bookConf:(HWMOrderConfParam *_Nonnull)param callback:(_Nonnull
HWM SDKCompleteHandler)callback;
```

Parameter Description

Table 6-52 HWMOrderConfParam description

Parameter	Mandatory	Type	Description
confSubject	Yes	NSString *	Meeting topic.
startTime	Yes	NSTimeInterval	Meeting start time. The value is a UTC timestamp, accurate to seconds.

Parameter	Mandatory	Type	Description
duration	No	NSUInteger	Meeting duration, in minutes. The value ranges from 15 to 1,440.
confType	Yes	HWMOrderConfType	Meeting type.
isNeedConfPwd	No	BOOL	Whether a guest can join the meeting without the password. NOTE This parameter is valid only for meetings with a random ID.
guestPwd	No	NSString *	Guest password. NOTE This parameter is valid only for meetings with a random ID.
isRecordOn	No	BOOL	Whether to enable meeting recording. This parameter will be discarded and is not recommended. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
isAutoRecord	No	BOOL	Whether to automatically start recording after the meeting starts. The function is disabled by default. Meeting recording must be enabled if automatic recording is enabled. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
timeZone	No	NSUInteger	Time zone. The current time zone is used by default. Value range: 1–73. For China, the value is 56 and GMT+08:00 time is used. For details, see Time Zone Table .
vmrId	No	NSString *	This parameter needs to be transferred for a personal meeting or cloud meeting room.

Parameter	Mandatory	Type	Description
vmrIdType	No	HWMVmrIdType	ID type of the meeting if it is held in a cloud meeting room.
callInRestrictionType	No	HWMJoinConfRestrictionType	Users who are allowed to join the meeting.
attendee	No	NSArray< HWMAttendeeInfo *> *	Participant details.
isSmsOn	No	BOOL	(Optional) Whether to send SMS notifications. This function must be enabled in the enterprise configuration. Otherwise, this function does not take effect.
isMailOn	No	BOOL	(Optional) Whether to send email notifications. This function must be enabled in the enterprise configuration. Otherwise, this function does not take effect.
isEmailCalendarOn	No	BOOL	Whether to send an email calendar.
allowGuestStartConf	No	BOOL	Whether to allow guests to join the meeting ahead of the host. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, use the API for Modifying Cloud Meeting Room Information.

Parameter	Mandatory	Type	Description
allowGuestStartConfTime	No	NSInteger	Time range allowed for guests to join the meeting in advance, in minutes. 0: Guests can join the meeting at any time before the scheduled time. x: Guest can join the meeting <i>x</i> minutes before the scheduled time. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, the time range cannot be set.
isOpenWaitingRoom	No	BOOL	Waiting room status. NOTE The function takes effect only after the waiting room function is enabled.
customInfo	No	NSString *	User-defined information (meeting details and in-meeting chat messages).
concurrentParticipants	No	NSUInteger	Maximum number of participants in a meeting. The default value is 0 .

Table 6-53 Enumerated values of HWMOrderConfType

Parameter	Description
OrderConfTypeAudio	Voice meeting.
OrderConfTypeVideo	Video meeting.

Table 6-54 Enumerated values of HWMJoinConfRestrictionType

Parameter	Value	Description
HWMJoinConfRestrictionAll	0	Everyone.

Parameter	Value	Description
HWMJoinConfRestriction-Company	2	Corporate users only.
HWMJoinConfRestriction-Invited	3	Invited users only.

Table 6-55 HWMAttendeeInfo description

Parameter	Mandatory	Type	Description
number	No	NSString *	Number. (This parameter is optional when thirdUserId is used.)
thirdUserId	No	NSString *	Third-party account in the app ID login scenario.
name	No	NSString *	Member name.
email	No	NSString *	Email address.
sms	No	NSString *	Mobile number.
role	No	ConfRoleType	Participant role.
accountId	No	NSString *	UUID. (The login account is returned in the meeting details.)
userUuid	No	NSString *	This parameter can be obtained from the meeting details when you edit a meeting. By default, this parameter is left blank.
isAnonymous	No	BOOL	Whether to join the meeting anonymously. (This parameter is used only for obtaining the participant list.)
state	No	HWMConfAttendeeState	Participant status. (This parameter is used only for obtaining the participant list.)

Parameter	Mandatory	Type	Description
orgId	No	NSString *	Used to identify whether the participant belongs to the current enterprise. (This parameter is used only for obtaining the participant list.)

Table 6-56 Enumerated values of ConfRoleType

Parameter	Description
ConfRoleTypeAttendee	Guest.
ConfRoleTypeChairman	Host.
ConfRoleTypeAudience	Attendee.
ConfRoleTypeCohost	Co-host.

Table 6-57 Enumerated values of HWMVmridType

Parameter	Description
HWMVmridTypeFixed	Fixed type.
HWMVmridTypeRandom	Random type.

Sample Code

```

/// Schedule a meeting.
- (void)bookConf {
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];
    param.confSubject = @"Meeting topic";
    param.startTime = 1598759580;
    param.duration = 15;
    param.confType = HWMConfTypeVideo;
    param.isNeedConfPwd = YES;
    param.isRecordOn = NO;
    param.timeZone = 56;
    param.vmrid = @"";
    param.callInRestrictionType = HWMCallRestrictionAll;
    [[HWMBizSdk getBizOpenApi] bookConf:param callback:^(NSError *_Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Schedule meeting failed:%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting scheduled.");
        }
    }];
}

```

6.4.5.2 Editing a Meeting

editConf

API Description

This API is used to edit a meeting that has not been started yet.

Precautions

1. This API can be called only when a meeting has not been started and you are the host.
2. **userId** must be transferred when a participant tries to edit a scheduled meeting. (In the meeting details, each participant carries this parameter.)
3. Meeting recording must be enabled if automatic recording is enabled.
4. **All fields are mandatory. Specify the fields that need to be modified as required, and obtain the values of other fields that do not need to be modified from the meeting details.**

Method Definition

```
- (void)editConf:(HWMOrderConfParam *_Nonnull)param callback:(_Nonnull  
HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 6-58 HWMOrderConfParam description (For details about other parameters, see "Scheduling a Meeting.")

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
isLiveOn	No	BOOL	Whether live broadcast is enabled.

Sample Code

```
/// Edit a meeting.
- (void)editConf {
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];
    param.confSubject = @"Meeting topic";
    param.startTime = 1598759580;
    param.duration = 15;
    param.confType = HWMConfTypeVideo;
    param.isNeedConfPwd = YES;
    param.isRecordOn = NO;
    param.timeZone = 56;
    param.vmrId = @""; // Cloud meeting room ID, required for a meeting held in a cloud meeting room.
    param.callInRestrictionType = HWMCallRestrictionAll;
    param.confId = @"986927771";
    [[HWMBizSdk getBizOpenApi] editConf:param callback:^(NSError *_Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Edit meeting failed.:%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting edited.");
        }
    }];
}
```

6.4.5.3 Obtaining the Meeting List

getConfList

API Description

This API is used to obtain the meeting list.

Precautions

1. This API is valid only after you have logged in to Huawei Cloud Meeting and received the [meeting list notification](#). Otherwise, an empty list is returned.

Method Definition

```
- (NSArray<HWMBaseConfDetailParam *> *)getConfList;
```

Parameter Description

Table 6-59 HWMBaseConfDetailParam description

Parameter	Type	Description
confId	NSString *	Meeting ID.
vmrConferenceld	NSString *	Cloud meeting room ID, which is used when the cloud meeting room is displayed.
confSubject	NSString *	Meeting topic.
chairmanPwd	NSString *	Host password.
generalPwd	NSString *	Guest password.
startTime	NSTimeInterval	Meeting start time. The value is a UTC timestamp, accurate to seconds.
endTime	NSTimeInterval	Meeting end time. The value is a UTC timestamp, accurate to seconds.
mediaType	ConfMediaType	Media type. (1 and 17: Voice meeting. Other values: Video meeting.)
scheduserName	NSString *	Scheduler name.
chairJoinUri	NSString *	Link for the host to join the meeting.
guestJoinUri	NSString *	Link for guests to join the meeting.
role	ConfRoleType	Participant role.
accessNumber	NSString *	Meeting access number.
size	NSUInteger	Number of participants in the meeting.
accessNumber	NSString *	Meeting access number.
isWebinar	BOOL	Whether the meeting is a webinar.

Parameter	Type	Description
confStatusType	ConfStatusType	Meeting status.
conferenceType	HWMConferenceType	Meeting type, which can be common or recurring meeting.
isP2PConf	BOOL	Whether the meeting is an instant meeting.

Table 6-60 Enumerated values of ConfStatusType

Value	Description
ConfStatusSchedule	The meeting is scheduled.
ConfStatusCreating	The meeting is being created.
ConfStatusGoing	The meeting has started.
ConfStatusDestroyed	The meeting has ended.

Table 6-61 Enumerated values of HWMConferenceType

Value	Description
HWMSDKConfTypeCommon	Common meeting.
HWMSDKConfTypeCycle	Recurring meeting.

Sample Code

```
/// Obtain the meeting list.  
[[HWMBizSdk getBizOpenApi] getConfList];
```

6.4.5.4 Obtaining Meeting Details

getConfDetail

API Description

This API is used to obtain meeting details.

Precautions

None

Method Definition

```
-(void)getConfDetail:(NSString *)confId completeHandler:(HWMSDKConfInfoCompleteHandler)handler;
```

Parameter Description

HWMConfDetail is inherited from [HWMBaseConfDetailParam](#).

Table 6-62 HWMConfDetail description (inherited from HWMBaseConfDetailParam)

Parameter	Type	Description
recordType	NSUInteger	Whether to record the meeting. 2 : Record the meeting.
scheduleVmr	BOOL	Whether the meeting is a scheduled meeting held in the cloud meeting room. 0 : Common meeting. 1 : Scheduled meeting held in the cloud meeting room.
isGuestFreePwd	BOOL	Whether a guest can join the meeting without the password.
isSendNotify	BOOL	Whether to send email notifications.
isSendSms	BOOL	Whether to send SMS notifications.
isSendCalendarNotify	BOOL	Whether to send calendar notifications.
isAutoRecord	BOOL	Whether to automatically start recording after the meeting starts.
vmrId	NSString *	ID of the meeting created using the cloud meeting room ID, which is used for editing a meeting.
inviteHardTerminal	BOOL	Whether hard terminals can be invited.
audiencePwd	NSString *	Guest password.
audienceJoinUri	NSString *	Link for guests to join the meeting.
audienceCount	NSUInteger	Number of guests.
callInRestriction	HWMCallInRestrictionType	Incoming call restriction.
vmrFlag	BOOL	Whether the meeting is held in a cloud meeting room.
attendee	NSArray< HWMAttendeeInfo *> *	Participant list.
confServerType	HWMConfServerType	Meeting type.
timeZone	NSString *	Time zone.
cycleParam	HWMSDKCycleConfParamModel *	Information about the recurring meeting series.

Parameter	Type	Description
subConf	NSArray<HWMSDKSubCycleConfParamModel *> *	Recurring meeting list.
vmrIdType	HWMVmrIdType	Type of the cloud meeting room ID.
allowGuestStartConf	BOOL	Whether to allow guests to join the meeting ahead of the host.
allowGuestStartConfTime	NSInteger	Time range allowed for guests to join the meeting in advance, in minutes. 0 : Guests can join the meeting at any time before the scheduled time. <i>x</i> : Guest can join the meeting <i>x</i> minutes before the scheduled time.
isOpenWaitingRoom	BOOL	Waiting room status.
customInfo	NSString *	User-defined information (meeting details and in-meeting chat messages).
concurrentParticipants	NSUInteger	Maximum number of participants in a meeting. The default value is 0 .

Table 6-63 Enumerated values of HWMConfServerType

Value	Description
HWMConfServerTypeMCU	MCU meeting.
HWMConfServerTypeMMR	MMR meeting.
HWMConfServerTypeRTC	RTC meeting.

Table 6-64 HWMSDKSubCycleConfParamModel description

Parameter	Type	Description
subConfID	NSString *	Recurring meeting ID.
confMediaType	HWMConfMediaType	Meeting media type.
startTime	NSUInteger	Meeting start time.
endTime	NSUInteger	Meeting end time.
isAutoRecord	BOOL	Whether to automatically start recording after the meeting starts.

Parameter	Type	Description
callInRestriction	HWMConfAllowJoinUserType	Incoming call restriction.
allowGuestStart-Conf	BOOL	Whether to allow guests to join the meeting ahead of the host.
allowGuestStart-ConfTime	NSInteger	Time range allowed for guests to join the meeting in advance, in minutes. 0: Guests can join the meeting at any time before the scheduled time. x: Guest can join the meeting <i>x</i> minutes before the scheduled time.

Table 6-65 Enumerated values of HWMConfMediaType

Value	Description
HWMConfMediaTypeAudio	Voice meeting.
HWMConfMediaTypeVideo	Video meeting.

Sample Code

```
/// Obtain meeting details.
- (void)getConfDetail {
    [[HWMBizSdk getBizOpenApi] getConfDetail:@"986927771" completionHandler:^(NSError * _Nullable
error, HWMConfDetail * _Nullable result) {
        if (error) {
            NSLog(@"%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting details obtained.");
        }
    }
};
}
```

6.4.5.5 Canceling a Meeting

cancelConf

API Description

This API is used to cancel a scheduled meeting.

Precautions

1. Only the host can cancel a meeting.
2. Calling this API during a meeting will end the meeting.

Method Definition

```
- (void)cancelConf:(NSString * _Nonnull)confId callback:( _Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 6-66 Parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.

Sample Code

```
/// Cancel a meeting.
- (void)cancelConf {
    [[HWMBizSdk getBizOpenApi] cancelConf:@"986927771" callback:^(NSError * _Nullable error, id
    _Nullable result) {
        if (error) {
            NSLog(@"%@@",error.localizedDescription);
        } else {
            NSLog(@"Meeting canceled.");
        }
    }
};
}
```

6.4.5.6 Obtaining the Cloud Meeting Room List

getVmrInfoList

API Description

This API is used to obtain the cloud meeting room list.

Precautions

None

Method Definition

```
- (void)getVmrList:(__nonnull HWMSDKVmrListCompleteHandler)callback
DEPRECATED_MSG_ATTRIBUTE(Use '- (void)getVmrInfoList:(__nonnull
HWMSDKVmrInfoListCompleteHandler)callback' instead");
- (void)getVmrInfoList:(__nonnull HWMSDKVmrInfoListCompleteHandler)callback;
```

Parameter Description

Table 6-67 HWMVmrInfoListModel description

Parameter	Type	Description
vmrList	NSArray<HWMVmrInfoModel *> *	List of cloud meeting rooms.
isEnabledShareVmr	BOOL	Whether shared cloud meeting rooms are available.

Table 6-68 HWMVmrInfoModel description

Parameter	Type	Description
name	NSString *	Cloud meeting room name.

Parameter	Type	Description
confId	NSString *	Display ID of the cloud meeting room.
vmrId	NSString *	Unique cloud meeting room ID.
chairmanPwd	NSString *	Host password.
guestPwd	NSString *	Guest password.
type	HWMConfIdType	Meeting type.
maxParties	NSUInteger	Maximum number of participants in the cloud meeting room.
vmrStatus	BOOL	Cloud meeting room status. YES : The cloud meeting room is available. NO : The cloud meeting room is unavailable.
confAllowJoinUser	HWMCallInRestrictionType	Users who are allowed to join the meeting.
isOpenWaitingRoom	BOOL	Whether the waiting room is enabled.
allowGuestStart-Conf	BOOL	Whether to allow guests to join the meeting ahead of the host.

Table 6-69 Enumerated values of HWMConfIdType

Value	Description
HWMConfIdPersonal	Personal meeting ID.
HWMConfIdPrivate	Dedicated meeting ID.
HWMConfIdRandom	Random meeting ID.

Table 6-70 Enumerated values of HWMCallInRestrictionType

Value	Description
HWMCallRestrictionAll	Everyone.
HWMCallRestrictionNotAnonymouse	Non-anonymous users
HWMCallRestrictionCompany	Corporate users only.
HWMCallRestrictionInvited	Invited users only.

Sample Code

```
// Obtain the cloud meeting room list.
- (void)getVmrList {
    [[HWMBizSdk getBizOpenApi] getVmrInfoList:^(NSError * _Nullable error, NSArray<HWMVmrInfoModel
*> * _Nullable result) {
        if (error) {
            NSLog(@"Cloud meeting room list obtained.");
        } else {
            NSLog(@"Failed to obtain the cloud meeting room list.");
        }
    }];
}
```

6.4.5.7 Modifying Cloud Meeting Room Information

changeVmrInfo

API Description

This API is used to modify cloud meeting room information.

Precautions

1. If possible, change guest passwords only.

Method Definition

```
- (void)changeVmrInfo:(HWMModifyVMRParam *)info callback:(_Nonnull
HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 6-71 HWMModifyVMRParam description

Parameter	Mandatory	Type	Description
vmrId	Yes	NSString *	Unique cloud meeting room ID.
guestPwd	Yes	NSString *	Guest password.
chairPwd	Yes	NSString *	Host password.
vmrName	Yes	NSString *	Cloud meeting room name.
allowGuestStartConf	Yes	BOOL	Whether to allow guests to join the meeting ahead of the host.
confAllowJoinUser	No	HWMCallInRestrictionType	Users who are allowed to join the meeting.
isOpenWaitingRoom	No	BOOL	Whether the waiting room is enabled.

Sample Code

```
/// Modify cloud meeting room information.
- (void)changeVmrInfo {
    HWMModifyVMRParam * vmrInfo = [[HWMModifyVMRParam alloc] init];
```

```
vmrInfo.guestPwd = getGuestPwd();
vmrInfo.chairPwd = getChairPwd();
vmrInfo.vmrName = getVmrName();
vmrInfo.vmrId = getVmrId();
[[HWMBizSdk getBizOpenApi] changeVmrInfo:vmrInfo callback:^(NSError * _Nullable error, id _Nullable
result) {
    if (error) {
        NSLog(@"%@", error.localizedDescription);
    } else {
        NSLog(@"Cloud meeting room information modified.");
    }
}];
}];
}
```

6.4.5.8 Scheduling a Recurring Meeting Series

bookCycleConf

API Description

This API is used to schedule a recurring meeting series.

Precautions

1. This API can be called only when you have logged in to Huawei Cloud Meeting.
2. The meeting start time must be later than the current time, and the meeting duration must be longer than 15 minutes.
3. The **vmrId** parameter must be passed for a personal meeting or cloud meeting room.
4. The **attendees** parameter must be passed if participant information needs to be carried.
5. The maximum time span of a recurring meeting series is one year. The number of recurring meetings in a series cannot exceed 50. Otherwise, only the first 50 meetings are scheduled. For details about the meeting information returned in the callback, see **HWMConfDetail**.

Method Definition

```
-(void)bookCycleConf:(HWMOrderCycleConfParam *_Nonnull)param callback:(_Nonnull
HWMSDKCompleteHandler)callback
```

Parameter Description

Table 6-72 HWMOrderCycleConfParam parameter description

Parameter	Mandatory	Type	Description
orderConfParam	Yes	HWMOrderConfParam	Common meeting parameters.
cycleParam	Yes	HWMSDKCycleConfParamModel	Recurring meeting series parameters.

Table 6-73 HWMSDKCycleConfParamModel parameter description

Parameter	Mandatory	Type	Description
startDate	Yes	NSUInteger	Start date timestamp, in seconds (GMT).
endDate	Yes	NSUInteger	End date timestamp, in seconds (GMT).
cycleType	Yes	HWMCycleType	Period type.
interval	Yes	NSUInteger	Interval of recurring meetings. 1. If cycleType is set to Day , the recurring meeting is held at an interval of the specified number of days. The value ranges from 1 to 15. 2. If cycleType is set to Week , the recurring meeting is held at an interval of the specified number of weeks. The value ranges from 1 to 5. 3. If cycleType is set to Month , the recurring meeting is held at an interval of the specified number of months. The value ranges from 1 to 3.

Parameter	Mandatory	Type	Description
listPoints	Yes	NSString *	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. The values are separated by commas, for example, 1,3,5,7. - Weekly: The value range is [0,6]. 0 indicates Sunday, 1 indicates Monday, and so on. - Monthly: The value range is [1,31]. The maximum value is the last day of a month, for example, 30 when a month only has 30 days.
preRemindDays	Yes	NSUInteger	Number of days in advance users are notified of a recurring meeting.

Table 6-74 Enumerated values of Contact

Value	Description
HWMSDKCycleTypeDay	Daily.
HWMSDKCycleTypeWeek	Weekly.
HWMSDKCycleTypeMonth	Monthly.

Sample Code

```

/// Schedule a recurring meeting series.
- (void)bookCycleConf{
    HWMOrderCycleConfParam * cycleConfParam = [[HWMOrderCycleConfParam alloc] init];
    cycleConfParam.orderConfParam.confSubject = @"My Scheduled Meeting";
    cycleConfParam.orderConfParam.confType = OrderConfTypeVideo;
    cycleConfParam.orderConfParam.isNeedConfPwd = YES;
    cycleConfParam.orderConfParam.isAutoRecord = YES;
    cycleConfParam.orderConfParam.isRecordOn = YES;
    cycleConfParam.orderConfParam.startTime = 1633017600; // UTC timestamp, in seconds. If the obtained
time is the local time, the time needs to be converted to the UTC time.
    cycleConfParam.orderConfParam.duration = 30; // Meeting duration, in minutes
    cycleConfParam.orderConfParam.timeZone = 56;
    cycleConfParam.orderConfParam.callInRestrictionType = HWMJoinConfRestrictionAll;
    HWMAttendeelInfo * attendeeInfo = [[HWMAttendeelInfo alloc] init];

```

```
attendeelInfo.name = @"Mike";
attendeelInfo.number = @"+991116003543";
attendeelInfo.isMute = YES;
cycleConfParam.orderConfParam.attendee = @[attendeelInfo];

HWMSDKCycleConfParamModel * cycleConfParamModel = [[HWMSDKCycleConfParamModel alloc] init];
cycleConfParamModel.startDate = 1633017600; // UTC timestamp, in seconds. If the obtained time is the
local time, the time needs to be converted to the UTC time.
cycleConfParamModel.endDate = 1636560000;
cycleConfParamModel.cycleType = HWMSDKCycleTypeWeek;
cycleConfParamModel.preRemindDays = 1;
cycleConfParam.cycleParam = cycleConfParamModel;

[[HWMBizSdk getBizOpenApi] bookCycleConf:cycleConfParam callback:^(NSError * _Nullable error, id
_Nullable result) {
    if (!error) {
        NSLog(@"book cycle conf success");
        [UIUtil showMessage:@"Recurring meeting series scheduled."];
    }else{
        NSLog(@"book cycle conf fail errorCode : %zd",error.code);
        [UIUtil showMessage:[NSString stringWithFormat:@"Schedule recurring meeting series failed:%zd
%@", error.code, error.localizedDescription]];
    }
}];
}
```

6.4.5.9 Editing a Recurring Meeting Series

editCycleConf

API Description

This API is used to edit a recurring meeting series.

Precautions

1. Call this API after login.
2. **All fields are mandatory. Specify the fields to be edited as required, and assign values in the meeting details to remaining fields.**

Method Definition

```
- (void)editCycleConf:(HWMOrderCycleConfParam * _Nonnull)param callback:(_Nonnull
HWMSDKCompleteHandler)callback
```

Parameter Description

Table 6-75 HWMOrderCycleConfParam parameter description

Parameter	Mandatory	Type	Description
orderConfParam	Yes	HWMOrderConfParam	Common meeting parameters.
cycleParam	Yes	HWMSDKCycleConfParamModel	Recurring meeting series parameters.

Sample Code

```
/// Edit a recurring meeting series.
- (void)editCycleConf{
```



```
HWMOrderCycleConfParam * cycleConfParam = [[HWMOrderCycleConfParam alloc] init];
cycleConfParam.orderConfParam.confSubject = @"My Scheduled Meeting";
cycleConfParam.orderConfParam.confType = OrderConfTypeVideo;
cycleConfParam.orderConfParam.isNeedConfPwd = YES;
cycleConfParam.orderConfParam.isAutoRecord = YES;
cycleConfParam.orderConfParam.isRecordOn = YES;
cycleConfParam.orderConfParam.startTime = 1633017600; // UTC timestamp, in seconds. If the obtained
time is the local time, the time needs to be converted to the UTC time.
cycleConfParam.orderConfParam.duration = 30; // Meeting duration, in minutes
cycleConfParam.orderConfParam.timeZone = 56;
cycleConfParam.orderConfParam.callInRestrictionType = HWMJoinConfRestrictionAll;
HWMAttendeeInfo * attendeeInfo = [[HWMAttendeeInfo alloc] init];
attendeeInfo.name = @"Mike";
attendeeInfo.number = @"+991116003543";
attendeeInfo.isMute = YES;
cycleConfParam.orderConfParam.attendee = @[attendeeInfo];

HWMSDKCycleConfParamModel * cycleConfParamModel = [[HWMSDKCycleConfParamModel alloc] init];
cycleConfParamModel.startDate = 1633017600; // UTC timestamp, in seconds. If the obtained time is the
local time, the time needs to be converted to the UTC time.
cycleConfParamModel.endDate = 1636560000;
cycleConfParamModel.cycleType = HWMSDKCycleTypeWeek;
cycleConfParamModel.preRemindDays = 1;
cycleConfParam.cycleParam = cycleConfParamModel;

[[HWMBizSdk getBizOpenApi] editCycleConf:cycleConfParam callback:^(NSError * _Nullable error, id
_Nullable result) {
    if (!error) {
        NSLog(@"book cycle conf success");
        [UIUtil showMessage:@"Recurring meeting series edited."];
    }else{
        NSLog(@"book cycle conf fail errorCode : %zd",error.code);
        [UIUtil showMessage:[NSString stringWithFormat:@"Edit recurring meeting series failed:%zd %@",
error.code, error.localizedDescription]];
    }
}];
}
```

6.4.5.10 Canceling a Recurring Meeting Series

cancelCycleConfWithParam

API Description

This API is used to cancel a recurring meeting series that has at least one upcoming meeting.

Precautions

1. Call this API after login.
2. Call this API before the last recurring meeting starts. If the last recurring meeting is already in progress, calling this API is invalid.

Method Definition

```
-(void)cancelCycleConfWithParam:(HWMSDKCancelCycleConfParamModel * _Nonnull)param callback:
(_Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 6-76 HWMSDKCancelCycleConfParamModel parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
endOnlineConf	Yes	BOOL	Whether to end an ongoing meeting.

Sample Code

```
/// Cancel a recurring meeting series.
- (void)cancelCycleConf {
    HWMSDKCancelCycleConfParamModel *cancelParam = [[HWMSDKCancelCycleConfParamModel alloc]
init];
    cancelParam.confId = "989156631";
    cancelParam.endOnlineConf = YES;
    [[HWMBizSdk getBizOpenApi] cancelCycleConfWithParam:cancelParam callback:^(NSError * _Nullable
error, id _Nullable result) {
        NSString *tips = !error ? @"Recurring meeting series canceled." : @"Cancel recurring meeting series
failed.";
        [UIUtil showMessage:tips error:error];
    }];
}
```

6.4.5.11 Editing a Recurring Meeting

editSubCycleConf

API Description

This API is used to edit a recurring meeting.

Precautions

1. Call this API after login.

Method Definition

```
- (void)editSubCycleConf:(HWMSDKModifySubCycleConfParamModel *_Nonnull)param callback:(_Nonnull
HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 6-77 HWMSDKModifySubCycleConfParamModel parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
subConfID	Yes	NSString *	UUID of a recurring meeting.
confMediaType	No	HWMConfMediaType	Meeting media type.
startTime	No	NSInteger	Meeting start time (UTC time), in seconds.

Parameter	Mandatory	Type	Description
confLen	No	NSUInteger	Meeting duration, in minutes.
isAutoRecord	No	BOOL	Whether to automatically start recording after a meeting starts.
recordAuthType	No	NSUInteger	Recording authentication mode. The options are as follows: 0 : The recording can be viewed or downloaded through link (no nonce is added). 1 : Corporate users can view or download the recording. 2 : Participants can view or download the recording.
callInRestriction	No	HWMConfAllowJoinUserType	Incoming call restriction.
allowGuestStartConf	No	BOOL	Whether to allow guests to start the meeting.
allowGuestStartConfTime	No	NSInteger	Time range for a guest to join a meeting in advance, in minutes. The options are as follows: 0 : at any time; n : <i>n</i> minutes in advance.

Table 6-78 Enumerated values of HWMConfAllowJoinUserType

Value	Description
HWMConfAllowJoinUserTypeAnyone	Anyone.
HWMConfAllowJoinUserTypeLoggedInUser	Logged-in users.
HWMConfAllowJoinUserTypeInCompanyUser	Corporate users only.
HWMConfAllowJoinUserTypeInvitedUser	Invited users only.

Sample Code

```

/// Edit a recurring meeting.
- (void)editSubCycleConf{
    HWMSDKModifySubCycleConfParamModel * modifySubCycleConfParamModel =
[[HWMSDKModifySubCycleConfParamModel alloc] init];
    modifySubCycleConfParamModel.confId = confId;
    modifySubCycleConfParamModel.subConfId = subConfId;
    modifySubCycleConfParamModel.confMediaType = HWMConfMediaTypeVideo;
    modifySubCycleConfParamModel.startTime = 1633017600;
    modifySubCycleConfParamModel.confLen = 60;
}

```

```
modifySubCycleConfParamModel.isAutoRecord = NO;
modifySubCycleConfParamModel.callInRestriction = HWMConfAllowJoinUserTypeAnyone;
modifySubCycleConfParamModel.allowGuestStartConf = NO;
modifySubCycleConfParamModel.allowGuestStartConfTime = 0;
[[HWMBizSdk getBizOpenApi] editSubCycleConf:modifySubCycleConfParamModel callback:^(NSError *
_Nullable error, id _Nullable result) {
    if (!error) {
        [UIUtil showMessage:@"Recurring meeting edited."];
    }else{
        [UIUtil showMessage:[NSString stringWithFormat:@"Edit recurring meeting failed:%zd %@",
error.code, error.localizedDescription]];
    }
}
}];
}
```

6.4.5.12 Canceling a Recurring Meeting

cancelSubCycleWithParam

API Description

This API is used to cancel a recurring meeting that has not been started yet.

Precautions

1. Call this API after login.
2. Call this API before a recurring meeting starts. If the meeting is already in progress, calling this API is invalid.

Method Definition

```
- (void)cancelSubCycleWithParam:(HWMSDKCancelSubCycleConfParamModel *_Nonnull)param callback:
(_Nonnull HWMSDKCompleteHandler)callback
```

Parameter Description

Table 6-79 HWMSDKCancelSubCycleConfParamModel parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
subConfID	Yes	NSString *	Recurring meeting ID.
endOnlineConf	Yes	BOOL	Whether to end an ongoing meeting.

Sample Code

```
/// Cancel a recurring meeting.
- (void)confirmCancelSubConf {
    HWMSDKCancelSubCycleConfParamModel *cancelParma = [[HWMSDKCancelSubCycleConfParamModel
alloc] initWith];
    cancelParma.confId = confId;
    cancelParma.subConfID = subConfID;
    cancelParma.endOnlineConf = YES;
    [[HWMBizSdk getBizOpenApi] cancelSubCycleWithParam:cancelParma callback:^(NSError * _Nullable
error, id _Nullable result) {
        NSString *tips = !error ? @"Meeting canceled." : @"Cancel meeting failed.";
        [UIUtil showMessage:tips error:error];
    }
}];
}
```

```
    }  
};
```

6.4.6 Meeting Information

6.4.6.1 Obtaining the Participant List

getAttendeeList

API Description

This API is used to obtain the participant list in a meeting.

Precautions

1. This API can be called only during a meeting.

Method Definition

```
-(NSArray <HWMAttendeeInfo *> *)getAttendeeList;
```

Parameter Description

See [HWMAttendeeInfo](#).

Table 6-80 Enumerated values of HWMConfAttendeeState

Parameter	Description
HWMConfAttendeeStateInConf	The user is in the meeting.
HWMConfAttendeeStateCalling	The user is being called.
HWMConfAttendeeStateJoining	The user is joining the meeting.
HWMConfAttendeeStateLeaved	The user has left the meeting.
HWMConfAttendeeStateNotExist	The user does not exist.
HWMConfAttendeeStateBusy	The called party is busy.
HWMConfAttendeeStateNoAnswer	The user does not answer the call.
HWMConfAttendeeStateReject	The user rejects the call.
HWMConfAttendeeStateFailed	Call failed.

Sample Code

```
/// Obtain the participant list.  
[[HWMBizSdk getBizOpenApi] getAttendeeList];
```

6.4.6.2 Obtaining the Audience List

getAudienceList

API Description

This API is used to obtain the attendee list in a meeting.

Precautions

1. This API can be called only during a meeting.
2. Attendees cannot call this API, but can obtain the list from the meeting details message.

Method Definition

```
- (NSArray <HWMAttendeeInfo *> *)getAudienceList;
```

Parameter Description

See [HWMAttendeeInfo](#).

Sample Code

```
/// Obtain the attendee list.  
[[HWMBizSdk getBizOpenApi] getAudienceList];
```

6.4.6.3 Determining Whether You Are a Host

selfIsChairMan

API Description

This API is used to determine whether you are a host.

Precautions

1. **YES** is returned when you are a host. **NO** is returned when you are not the host or not in a meeting.

Method Definition

```
- (BOOL)selfIsChairMan;
```

Parameter Description

None

Sample Code

```
/// Determine whether you are a host.  
[[HWMBizSdk getBizOpenApi] selfIsChairMan];
```

6.4.6.4 Obtaining a User Status

getIsInConfOrCall:

API Description

This API is used to obtain the status of a user (whether the user is in a meeting).

Precautions

None

Method Definition

```
- (HWMSDKConfOrCallStatus)getIsInConfOrCall;
```

Parameter Description

Table 6-81 Parameter description

Enumerated Value	Description
HWMSDKConfOrCallStatu- sIdle	The user is in the idle state.
HWMSDKConfOrCallStatu- sInConf	The user is in a meeting.
HWMSDKConfOrCallStatu- sInCall	The user is being called.

Return Values

None

Sample Code

```
[[HWMBizSdk getBizOpenApi] getIsInConfOrCall];
```

6.5 Notification Reference

6.5.1 Precautions

1. You must register a proxy object to use a notification method.
The following two ways are available:
 - a. Assign a value to the attribute of the **HWMOpenSDKConfig** object during initialization.

```
HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];  
// Example (Use the corresponding proxy as required.)  
config.globalHandler = [NotifyMessageHandler sharedInstance];
```
 - b. Use **[HWMSdk getSdkConfig]** to obtain the initialization object and assign a value to the attribute.

```
// Example (Use the corresponding proxy as required.)  
[HWMSdk getSdkConfig].globalHandler = [NotifyMessageHandler sharedInstance];
```
2. The proxy method must be written in the proxy object.
3. Ensure that the proxy object exists when using the proxy.

6.5.2 Account Status Change Notification

6.5.2.1 Forcible Logout Notification

Notification Description

A notification is sent when you were kicked out of this account by another device. In this case, you need to log in again.

Method Definition

```
- (void)onKickedOut:(NSString *)result;
```

Precautions

1. Set the **globalHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 6-82 Parameter description

Parameter	Type	Description
result	NSString *	User UUID.

6.5.3 Meeting Status Change Notification

6.5.3.1 Notifications for Meeting Status Changes

Notification Description

A notification is sent when the meeting status is changed.

Method Definition

```
- (void)onConfStatusChanged:(HWMSDKConfStatus)status;
```

Precautions

1. Set the **globalHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 6-83 Parameter description

Parameter	Type	Description
status	HWMSDKConfStatus	Meeting call status.

Table 6-84 Enumerated values of HWMSDKConfStatus

Enumerated Value	Description
HWMSDKConfStatusIdle	Idle state. That is, the meeting is ended.

Enumerated Value	Description
HWMSDKConfStatusIn-coming	Incoming call.
HWMSDKConfStatusCal-lingOut	Outgoing call.
HWMSDKConfStatusWait-ing	Waiting...
HWMSDKConfStatusCon-nected	Connected.
HWMSDKConfStatusRecall-ing	Calling again.

6.5.3.2 Notification of Incoming Meeting Calls

Notification Description

A notification is sent when you were invited to a meeting.

Method Definition

```
- (void)onConfIncomingNotify:(HWMSDKConfIncomingInfoModel *)confIncomingInfo;
```

Precautions

1. Set the **globalHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 6-85 Parameter description

Parameter	Type	Description
confIncomingInfo	HWMSDKConfIncomingInfoModel	Meeting details.

Table 6-86 HWMSDKConfIncomingInfoModel description

Parameter	Type	Description
subject	NSString *	Meeting topic.
confId	NSString *	Meeting ID.
confMediaType	HWMConfMediaType	Media type.

Parameter	Type	Description
vmrConfId	NSString *	ID of meetings held in a cloud meeting room.

Table 6-87 Enumerated values of HWMConfMediaType

Enumerated Value	Value	Description
HWMConfMediaTypeAudio	0	Voice meeting.
HWMConfMediaTypeVideo	1	Video meeting.

6.5.3.3 Meeting Details Notification

Notification Description

A meeting details notification is sent during the meeting. This notification can be used for sharing the meeting.

Method Definition

```
- (void)onConfDetailNotify:(HWMConfDetail *)confDetail;
```

Precautions

1. Set the **globalHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 6-88 Parameter description

Parameter	Type	Description
confDetail	HWMConfDetail	Meeting details.

6.5.3.4 Meeting End Notification

Notification Description

A notification is sent when the meeting ends.

Method Definition

```
- (void)onConfEndedNotify:(HWMSDKERR)confEndCode;
```

Precautions

1. Set the **globalHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 6-89 Parameter description

Parameter	Type	Description
confEndCode	HWMSDKERR	Enumerated SDK error information. For details, see the HWMSDKCommonDefine.h file.

6.5.3.5 Poor Connection Notification

Notification Description

A notification is sent when the network connection was poor.

Method Definition

```
-(void)onPoorNetworkQualityInfoNotify:(HWMSDKPoorNetWorkQualityInfoModel *)poorNetWorkInfo;
```

Precautions

1. Set the **globalHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 6-90 HWMSDKPoorNetWorkQualityInfoModel description

Parameter	Type	Description
userId	NSUInteger	User ID.
nickName	NSString *	Display name in the meeting.
thirdUserId	NSString *	Third-party account.
accountId	NSString *	Account information.
number	NSString *	SIP number.
isLocal	BOOL	Whether the participant is the local client user.
audioStatus	HWMSDKLowNetWork-StatusInfoModel *	Audio status.

Parameter	Type	Description
videoStatus	HWMSDKLowNetWork-StatusInfoModel *	Video status.
shareStatus	HWMSDKLowNetWork-StatusInfoModel *	Sharing status.

Table 6-91 HWMSDKLowNetWorkStatusInfoModel description

Parameter	Type	Description
packetLoss	NSUInteger	Packet loss rate.
delay	NSUInteger	Delay.
jitter	NSUInteger	Jitter.
status	HWMLowNetWorkStatus	Status.

Table 6-92 Enumerated values of HWMLowNetWorkStatus

Enumerated Value	Description
HWMLowNetWorkStatusNormal	Normal.
HWMLowNetWorkStatusBad	Poor.
HWMLowNetWorkStatusVeryBad	Very poor.

6.5.4 Service Message Notification

6.5.4.1 Notifications for Host Role Changes

Notification Description

A notification is sent when the host role is changed.

Method Definition

```
- (void)onSelfIsChairManChanged:(BOOL)isChairMan;
```

Precautions

1. Set the **bizNotifyHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 6-93 Parameter description

Parameter	Type	Description
isChairMan	BOOL	Whether the participant is the host.

6.5.4.2 Notifications for Meeting List Changes

Notification Description

A notification is sent when the meeting list is changed.

Method Definition

```
- (void)onReceiveConfList:(NSArray<HWMBaseConfDetailParam *> *)confList;
```

Precautions

1. Set the **bizNotifyHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

See [Table 6-59](#).

6.5.4.3 Notifications for Changes on Video Meeting Recording Permissions

Notification Description

A notification is sent when the video meeting recording permission is changed.

Method Definition

```
- (void)onRecordPermissionNotify:(BOOL)isHasPermission;
```

Precautions

1. Set the **bizNotifyHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 6-94 Parameter description

Parameter	Type	Description
isHasPermission	BOOL	Whether recording is allowed.

6.5.4.4 Notifications for Changes of Permissions of Sending SMS Messages for Scheduled Meetings

Notification Description

A notification is sent when the permissions of sending SMS messages for scheduled meetings are changed.

Method Definition

```
- (void)onBookConfSmsPermissionNotify:(BOOL)isHasPermission;
```

Precautions

Set the **bizNotifyHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 6-95 Parameter description

Parameter	Type	Description
isHasPermission	BOOL	Whether SMS messages can be sent.

6.5.4.5 Notification of Shared Cloud Meeting Rooms

Notification Description

A notification is sent when information about shared cloud meeting rooms was changed.

Method Definition

```
- (void)onShareVmrInfoNotify:(HWMSDKShareVmrInfoModel *)shareVmrInfo;
```

Precautions

1. Set the **bizNotifyHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 6-96 Parameter description

Parameter	Type	Description
shareVmrInfo	HWMCallRecordInfo *	Information about shared cloud meeting rooms.

Table 6-97 HWMCallRecordInfo description

Parameter	Type	Description
isEnabledShareVmr	BOOL	Whether shared cloud meeting rooms are available.

6.5.5 Incoming Call Answering Policy Configuration

6.5.5.1 Configuring the Policy for Answering a Meeting Call

Notification Description

A notification is sent when a meeting call is received. The called party needs to return the policy for answering the meeting call. If no policy is configured, the default configuration is used, and the dialog box for answering the meeting call is displayed.

Method Definition

```
-(HWMCallRecordInfo)answerTypeOnConfIncoming;
```

Sample Code

```
-(HWMCallRecordInfo)answerTypeOnConfIncoming {  
    return HWMCallRecordInfoNormal;// Default configuration.  
}
```

Precautions

1. Set the **confSettingHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 6-98 HWMInComingAnswerType parameters

Parameter	Description
HWMInComingAnswerNormal	Default configuration.
HWMInComingAnswerAutoDecline	The call is automatically rejected.
HWMInComingAnswerAutoAnswer	The call is automatically answered.

6.5.6 UI-related Notification

6.5.6.1 Notifications Indicating that the Floating Window Appeared

Notification Description

A notification is sent when the floating window appeared.

Method Definition

```
- (void)onReceiveConfLonFloatingWindowDidAppear;
```

Sample Code

```
- (void)onReceiveConfLonFloatingWindowDidAppear {  
}
```

Precautions

1. Set the **confUIHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

None

6.5.6.2 Notifications Indicating that the Floating Window Disappeared

Notification Description

A notification is sent when the floating window disappeared.

Method Definition

```
- (void)onReceiveConfLonFloatingWindowDidDisappear;
```

Sample Code


```
- (void)onReceiveConfLonFloatingWindowDidDisappear;  
}
```

Precautions

1. Set the **confUIHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

None

6.6 Error Code Reference

6.6.1 Common Error Codes

Precautions

1. You are advised to use enumerations.

Table 6-99 Enumerated values of HWMUISDKErrorCode

Parameter	Value	Description
HWMUISDKErrorCodeNumberAndAccountEmpty	40001	The contact does not exist.
HWMUISDKErrorCodeArgsError	40002	Invalid parameter.
HWMUISDKErrorCodeRepeatRequest	40003	Method call repeated.
HWMUISDKErrorCodeTimeOut	40004	Method call timed out.
HWMUISDKErrorCodeUnInit	40005	The SDK has not been initialized.
HWMUISDKErrorCodeArgsLengthOverrun	40006	The parameter value is too long.
HWMUISDKErrorCodePasswordOrAccountEmpty	40007	The account and password cannot be both empty.
HWMUISDKErrorCodeConfIdEmpty	40008	The meeting ID cannot be empty.
HWMUISDKErrorCodeUnLogin	40009	You have not logged in yet.
HWMUISDKErrorCodeLogging	40010	Logging in...

Parameter	Value	Description
HWMUISDKErrorCodeSubjectTooLong	40011	The meeting topic cannot contain up to 50 characters.
HWMUISDKErrorCodeConfIdTooLong	40012	The meeting ID cannot contain up to 20 characters.
HWMUISDKErrorCodeConfOrCallExit	40013	You are in a meeting or call.
HWMUISDKErrorCodeAppIdIllegal	40014	The app ID login parameters are incorrect.
HWMUISDKErrorCodeNetworkUnreachable	40015	Network unavailable. Check the network.
HWMUISDKErrorCodeFilePathEmpty	40016	The picture path for uploading a profile picture cannot be empty.
HWMUISDKErrorCodeNotInMeeting	40017	You are not in the meeting.
HWMUISDKErrorCodeNoPermissionAddAttendee	40018	You do not have the permission to add participants.
HWMUISDKErrorCodeNoPermissionEndConf	40019	You do not have the permission to end the meeting.
HWMUISDKErrorCodeLeaveConfFail	40020	Failed to leave the meeting.
HWMUISDKErrorCodeLoggedIn	40021	You have already logged in.

Table 6-100 Enumerated values of HWMConfUIErrorCode

Parameter	Value	Description
HWMErrorCodePermissionReject	50000	No camera or microphone permissions.
HWMErrorCodeUserCancel	50001	You have canceled the password input.
HWMErrorCodeMultiDeviceOnline	50002	You have logged in to multiple clients.
HWMErrorCodeSipDisable	50003	The call is unavailable.
HWMErrorCodeConfIdError	50004	The meeting ID cannot be empty.
HWMErrorCodeNickEmpty	50005	The nickname cannot be empty.
HWMErrorCodeNickTooLong	50006	The nickname cannot exceed 64 characters.

Parameter	Value	Description
HWMErrorCodeConfOrCallExist	50007	A meeting or call already exists.
HWMErrorCodeConfNeedPassword	50008	A password is required for an anonymous meeting.
HWMErrorCodeConfUnLogin	50009	You have not logged in yet.
HWMErrorCodeConfLoginIng	50010	Logging in...
HWMErrorCodeQRCodeNotSupported	50011	The QR code is not supported. (Only Huawei Cloud Meeting QR code is supported.)
HWMErrorCodeNetworkUnreachable	50012	Network error.
HWMErrorCodeUserCancelPhoneVerify	50013	A user cancels the mobile phone verification for joining a meeting anonymously.
HWMErrorCodeSeesionExpired	50014	The session for a user to join a meeting anonymously expires.

Table 6-101 Enumerated values of HWMConfSdkErrorCode

Parameter	Value	Description
HWMConfSdkErrorCodeOperationTimeout	68	Initiating or joining a meeting times out due to poor network conditions.
HWMConfSdkErrorCodeRoleAuthenticationFailed	91	The meeting does not exist or you do not have the permissions to join the meeting.
HWMConfSdkErrorCodeVMROnlyAllowChairStartConf	95	You are not allowed to join the meeting ahead of the host. Contact the host.
HWMConfSdkErrorCodeNotAllowedGuestFirstJoin	103	You are not allowed to join the meeting ahead of the host. Contact the host.
HWMConfSdkErrorCodeConfSizeOverCommunalVMRMaxNum	104	The number of participants in the cloud meeting room has reached the upper limit. Contact the administrator.
HWMConfSdkErrorCodeConfClosedRecently	112	The meeting has ended.

Parameter	Value	Description
HWMConfSdkErrorCodeReason-SessionTimerTimeout	836	The call is disconnected due to network interruption.
HWMConfSdkErrorCodeReason-NostreamHangup	837	The call is disconnected because no stream exists.
HWMConfSdkErrorCodeReason-ChairHangup	838	You have been removed from the meeting by the host. (The host disconnected you.)
HWMConfSdkErrorCodeReason-StopConfHangup	839	The meeting has ended.
HWMConfSdkErrorCodeReason-ConfLocked	842	The meeting has been locked.
HWMConfSdkErrorCodeVMRDataNotFound	11070006	The cloud meeting room does not exist.
HWMConfSdkErrorCodeVMR-ConfConflict	11071005	The current meeting conflicts with a scheduled meeting. Contact the cloud meeting room administrator.
HWMConfSdkErrorCodeConf-StartTimeOverMaxScheduleTime	11071014	The start time exceeds the allowed range.
HWMConfSdkErrorCodeConfSM-Illegal	11071025	Check whether the mobile numbers of participants are correct.
HWMConfSdkErrorCodeOrgConcurrentParticipantsNumberIsZero	11071060	Failed to create a meeting because the enterprise has not purchased concurrent participant resources.
HWMConfSdkErrorCodeConfCancelFailAsConfStarted	11071067	The meeting is in progress and cannot be canceled.
HWMConfSdkErrorCodeConfNotAllowAnonymous	11071073	Anonymous users are not allowed to join the meeting. Contact the meeting scheduler.
HWMConfSdkErrorCodeConfOnlyAllowUserInOrg	11071074	Only corporate users can join the meeting. Contact the meeting scheduler.
HWMConfSdkErrorCodeConfOnlyAllowUserInvited	11071075	Only invited users can join the meeting. Contact the meeting scheduler.
HWMConfSdkErrorCodeSiteCall-NumberIsEmpty	11072031	Check whether the mobile numbers of participants are specified.

Parameter	Value	Description
HWMConfSdkErrorCodeSiteCall-NumberIllegalUri	11072033	Check whether the mobile numbers of participants are correct.
HWMConfSdkErrorCodeConfLocked	11072050	The meeting has been locked.
HWMConfSdkErrorCodeParticipantAuthenticationFailed	11081006	Incorrect password. Try again.
HWMConfSdkErrorCodeCorpConferenceResourceHasBeenRunout	15022001	The meeting resources (number of participants) purchased by the enterprise have reached the upper limit. Contact the administrator.
HWMConfSdkErrorCodeLowVersionNotSetCohost	111072106	The participant is using an earlier version and cannot be set as a co-host.

6.6.2 Error Codes

Table 6-102 Error codes

Error Code	Error Description
-1	Unknown error.
0	Success.
111070001	Request error.
111070002	Insufficient permissions.
111070003	System processing failure.
111070004	Meeting authentication failed.
111070005	Meeting does not exist.
111070006	Personal cloud meeting room does not exist.
111070007	Meeting access number does not exist.
111070008	Meeting notification could not be sent.
111070009	Meeting password cannot be left blank.
111070010	Insufficient permissions to view this meeting.
111070100	Get started meeting exception.
111070101	Start meeting exception.
111070102	Apply IVR resource exception.

Error Code	Error Description
111070103	Start IVR meeting exception.
111070104	Apply site resource exception.
111070105	Start sub meeting exception.
111070106	Add channel exception.
111070107	Move and apply site resource exception.
111070108	Start meeting exception.
111070109	Get started cloud meeting exception.
111070110	Invite site exception.
111070111	Request token is null.
111070112	Rename site exception.
111070113	Hangup site exception.
111070114	Mass hangup site exception.
111070115	Delete attendee exception.
111070116	Mass delete attendee exception.
111070117	Book cycle meeting exception.
111070118	Modify cycle meeting exception.
111070119	Create cycle meeting exception.
111070120	Region data not found.
111070121	Forbidden subscribe.
111070122	Cancel subscribe fail.
111071001	Sysportal service exception.
111071002	Conf service exception.
111071003	Failed to create the meeting. Try again later.
111071004	This cloud meeting room does not allow guests to join before the host.
111071005	This cloud meeting room has been scheduled for another meeting during this period.
111071006	Insufficient cloud meeting time.
111071007	Meeting does not exist.
111071008	Cannot query meeting list.
111071009	Cannot change cloud meeting into immediate meeting.

Error Code	Error Description
111071010	Cannot modify cloud meeting flag.
111071011	The cloud meeting has not yet started. Please wait.
111071012	Not cloud meeting.
111071013	Start time less than current time.
111071014	Start time over max schedule time.
111071015	Duration over range.
111071016	Cycle ID list null exception.
111071017	Meeting size over range.
111071018	Invalid media type.
111071019	Invalid meeting type.
111071020	Cycle params null exception.
111071021	Duration over range.
111071022	Subject length too long.
111071023	Group URI length too long.
111071024	Invalid email address format.
111071025	Invalid mobile number format.
111071026	Department name too long.
111071027	Invalid welcome voice enable value.
111071028	Invalid enter voice enable value.
111071029	Invalid leave voice enable value.
111071030	Invalid reminders value.
111071031	Invalid allow record value.
111071032	Invalid auto record value.
111071033	Invalid user type value.
111071034	Invalid encrypt mode value.
111071035	Invalid language value.
111071036	Invalid auto prolong value.
111071037	VmrlID too long.
111071038	Invalid record type value.
111071039	Live address too long.

Error Code	Error Description
111071040	Aux address too long.
111071041	Null start date for cycle meeting.
111071042	Null end date for cycle meeting.
111071043	Invalid cycle type value for cycle meeting.
111071044	Invalid interval for cycle meeting.
111071045	Null point for cycle meeting.
111071046	Invalid point value for cycle meeting.
111071047	Invalid vmr flag value.
111071048	Invalid record auxStream.
111071049	Invalid multiStream flag.
111071050	Invalid audience flag.
111071051	Invalid liveChannel ID.
111071052	Anonymous login is locked. Try again later.
111071053	Link login is locked. Try again later.
111071054	Not enough Meeting ID.
111071055	Failed to apply meeting ID.
111071056	Failed to release meeting ID.
111071057	Live room is used.
111071058	The meeting has not yet started. Please wait.
111071059	Meeting size over range.
111071060	The enterprise cannot create meetings because it has not purchased any concurrent meeting resources.
111071061	Parameter verify failed.
111071062	Json conversion failed.
111071063	Not cloud meeting room owner.
111071064	This cloud meeting room has been started for another meeting during this period.
111071065	This meeting cannot be modified because it is already started.
111071066	Attendees amount over range.
111071067	This meeting cannot be canceled because it is already started.

Error Code	Error Description
111071068	Meeting password encrypt failed.
111071069	No meeting during this period.
111071070	Sub cycle meeting cannot modify live room.
111071071	Stop online meeting exception.
111071072	Meeting is ended.
111071073	Not allow anonymous user.
111071074	Only allow user in organization.
111071075	Only allow invited user.
111071076	Batch export task for history meeting list during this period.
111071077	Only allow invited user and user in organization.
111071078	Max current participants amount reached.
111071079	Invalid CTD param.
111071080	Invalid guest password.
111071081	Guest password conflict with meeting ID.
111071082	Max meeting amount reached.
111071083	Invalid meeting random number.
111071084	Max export history meeting list times reached.
111071085	Max multi view layouts reached.
111071086	Max multi view invalid manual type.
111071087	Max multi view sub view amount reached.
111071088	Max multi view sub view numbers reached.
111071089	Webinar and common meeting cannot be converted to each other.
111071090	Not allow add audience.
111071091	Meeting password authentication failed.
111071092	File export task failed.
111071093	File export task is downloading.
111071094	Not allow audience to join.
111071095	Need to get WEBINAR_CONF.DTO object.
111071096	User-defined languages over range.

Error Code	Error Description
111071097	Your enterprise does not support simultaneous interpretation.
111071098	Need to set interpreter groups.
111071099	Invalid interpretation language.
111071100	Max languages in a meeting are reached.
111071101	This interpreter group ID already exists.
111071102	Max interpreters in the interpreter group reached.
111071103	This interpreter already exists in an interpreter group.
111071104	Invalid interpreter account.
111071105	Guest password conflict with chairman password.
111071106	Meeting is holding.
111071107	Invalid audience password.
111071108	Audience password conflict with meeting id.
111071109	Audience password conflict with chairman password.
111071110	Only RTC meeting support E2E encrypt.
111071111	Audience password conflict with guest password.
111071112	Cloud meeting room ID type cannot be modified.
111071113	Cloud meeting room type cannot be modified.
111071114	Cloud meeting room flag cannot be modified.
111071119	Sub cycle meeting modify time over range.
111072001	Application for meeting resources failed.
111072002	Failed to release meeting resources.
111072003	The meeting is ending.
111072004	The meeting is starting.
111072005	The meeting has not yet started.
111072006	The meeting has ended.
111072007	Site invitation failed.
111072008	Site does not exist.
111072009	Failed to disconnect the site.
111072010	Coming soon...

Error Code	Error Description
111072011	Meeting status incorrect.
111072012	Site control operation failed.
111072013	The cloud meeting room is in use by another meeting.
111072014	The meeting has ended.
111072015	The meeting has not yet started.
111072016	Meeting does not exist.
111072017	Meeting has no attendee.
111072018	Application for chairman password exception.
111072019	Not found site which can be moved exception.
111072020	The current meeting is not a recording meeting. Recording is not supported.
111072021	System processing failure.
111072022	Insufficient recording resources in the system.
111072023	There are no participants in this meeting.
111072024	Operation failed. No sites have joined this meeting.
111072025	Voice meeting does not support this function.
111072026	The voice site does not support this operation.
111072027	Voice sites cannot be displayed in custom continuous presence.
111072028	At least one site must have custom continuous presence configured.
111072029	At most one presentation pane is allowed in custom continuous presence.
111072030	In the voice-activated continuous presence mode, each pane can only support a single user.
111072031	The number used for the site to join the meeting cannot be left blank.
111072032	The number used for the site to join the meeting is too long.
111072033	The format of the number used for joining the meeting is incorrect.
111072034	Length of site name too long.
111072035	The site role type is outside the allowed range.

Error Code	Error Description
111072036	Length of site email address too long.
111072037	Length of site mobile number too long.
111072038	The value for whether a site is muted after it first joins the meeting is outside the allowed range.
111072039	The value for whether to automatically invite a site is outside the allowed range.
111072040	The host's site viewing type is outside the allowed range.
111072041	The value of the continuous presence setting mode is outside the allowed range.
111072042	The polling time is outside the allowed range.
111072043	The pane type cannot be left blank.
111072044	Invalid pane type.
111072045	The value of the switch is outside the allowed range.
111072046	The site name cannot be left blank.
111072047	Site name too long.
111072048	Continuous presence is not supported. Ask the administrator to configure related data on the MCU.
111072049	Response timed out. Try again later.
111072050	Meeting locked.
111072051	The meeting display mode is empty.
111072052	The meeting display mode is outside the allowed range.
111072053	The meeting pane type is outside the allowed range.
111072054	The banner or caption type is empty.
111072055	The banner or caption content is empty.
111072056	The banner or caption content cannot exceed 2,000 bytes.
111072057	The request message body is empty.
111072058	The pane index is greater than the total number of panes.
111072059	Meeting has no host.
111072060	Regular participants cannot perform this operation.
111072061	You have set host polling and cannot select a specific site to view or set continuous presence.

Error Code	Error Description
111072062	You cannot select a site to view on the web page. Perform the operation on the terminal.
111072063	Applying for recording resources...
111072064	Too many failed login attempts. Try again later.
111072065	The meeting ID or password is incorrect. Check the ID and password and try again.
111072066	The enterprise has not purchased any recording storage space.
111072067	Insufficient enterprise recording storage space.
111072068	Failed to start live broadcast. Try again later.
111072069	Not allow to hand up for host.
111072070	The operation is not allowed for guest.
111072071	The operation is only allowed for yourself.
111072072	Not allow to apply host for attendees who do not have meeting control abilities.
111072073	Notify message is expired.
111072074	Only participants with a number registered on HUAWEI CLOUD can be set as the host.
111072075	Hung up site for meeting ended.
111072076	Hung up site by host.
111072077	Hung up site because host deleted site.
111072078	Hung up site because meeting is recreated.
111072079	Hung up site for moving site failed.
111072080	Hung up site for inviting site cross region failed.
111072081	Hung up site for invitation exception.
111072082	Hung up site for joining meeting repeatedly.
111072083	Lock sharing failed.
111072084	This site does not support 1-screen layout.
111072085	Not support realtime subtitle.
111072086	Realtime subtitle pid is null.
111072087	Invalid realtime subtitle pid.
111072088	Failed to set realtime subtitle.

Error Code	Error Description
111072089	Not allow audience to change speaker status.
111072090	Allow/forbid audience to speak only for audience.
111072091	This meeting does not support simultaneous interpretation.
111072092	Interpreter group is empty.
111072093	This meeting has not enabled simultaneous interpretation.
111072094	This site is not interpreter.
111072095	This site has not yet confirmed interpreter identity.
111072096	Invalid site language.
111072097	This site is confirmed interpreter.
111072098	This site listen channel is different from speak channel.
111072099	Failed to set interpretation languages. Try again.
111072100	Failed to set interpretation channel. Try again.
111072101	Max participant amount reached.
111072102	Max allowed handup amount reached.
111072103	Max allowed speaking amount reached.
111072104	Failed to set virtual audio CSD site.
111072105	This meeting does not support cohost.
111072106	This site does not support cohost.
111072107	Host cannot be set to cohost.
111072108	Audience cannot be set to cohost.
111072109	Need to check cohost permission.
111072110	Cohost cannot operate host.
111072111	This site does not support share invitation.
111072201	Hung up site because heart beat failed.
111072202	Insufficient audience cloud meeting room logic resources.
111072203	Insufficient participant cloud meeting room logic resources.
111072204	Insufficient webinar resources, so started failed.
111072205	Only RTC conf support local record.
111072206	Invalid E2E encryption parameter.
111072207	Not allow to switch role in webinar.

Error Code	Error Description
111072208	The client version used by the user is too early. Cannot start local recording.
111072211	Meeting is under AR assist.
111072213	Audience cannot be set to host.
111072214	Rename param contains sensitive words.
111073001	User does not exist.
111073002	Department does not exist.
111073003	Invalid username format.
111073004	Invalid department name format.
111073005	Could not query department.
111073006	Application for anonymous user failed.
111073007	Invalid cloud meeting room package status.
111073008	Failed to Release anonymous user.
111073009	Not support cycle meeting for welinkC.
111073010	Not support cloud meeting room for welinkC.
111073011	Failed to get WeLink token.
111073012	Failed to Get M to M token.
111073013	Invalid webinar cloud meeting package status.
111073014	Max extend times for cloud meeting trial version reached.
111073015	Max extend duration for cloud meeting trial version reached.
111073016	Not support auto extend meeting for cloud meeting trial version.
111074001	This meeting host already exists.
111074002	No meeting host permissions.
111074003	Failed to extend the meeting. Max meeting duration reached.
111074004	Failed to extend the meeting. The service processing is abnormal.
111075001	Failed to start timer.
111075002	Failed to end timer.
111075003	Json parse failed.

Error Code	Error Description
111076001	Released by host.
111076002	Released by portal host.
111076003	Max number of participants reached.
111076004	Insufficient enterprise resources.
111076005	Not answered.
111076006	User does not exist.
111076007	Offline.
111076008	Busy.
111076009	Rejected by user.
111076010	Released by user.
111076011	Insufficient meeting resources in the system.
111076012	Outbound calling disabled.
111076013	Application for address token failed.
111076014	Call failed.
111076015	Max number of participants reached.
111076099	Common error.
111077001	RSE server info does not exist.
111077101	Not support AI record.
111077102	Reapplying for AI record resource.
111077103	Insufficient AI record resource.
111077104	In AI recording, the meeting cannot stop live or recording.
111077201	Record file does not exist or have no permission.
111077202	RSE authentication failed.
111078000	No available region in multi region.
111078001	No available global in multi region.
111078002	Dispatch region error in multi region.
111079000	Failed to phrase big data param query xml.
111079001	Failed to phrase anonymous assign xml.
111080001	Bad request.
111080002	Insufficient permissions.

Error Code	Error Description
111080004	Site data not found or deleted.
111081001	Site is inviting.
111081002	Site meeting does not exist or is ended.
111081003	Failed to apply site resource.
111081004	Failed to release site resource.
111081005	Failed to apply site media resource.
111081006	Authentication failed.
111081007	Meeting is locked.
111081009	Login is locked because max authentication times reached.
111081010	Waiting user restrictions.
111082001	Not support this control.
111082002	No response.
111082003	Site not exist.
111082004	Site unavailable.
111082005	Site busy.
111082006	Site refused.
111082007	Site leave.
111082008	PSTN service is closed.
111082009	SIP invitation timeout.
111083001	RSE does not exist.
111084001	Failed to execute DTMF.
111084002	Get started meeting exception.
111084003	Call MCU side exception.
111084004	Join call exception.
111084005	Invite exception.
111084006	Call terminal side exception.
111084007	Answer exception.
111084008	Common CTL exception.
111084009	Hangup exception.
111084010	Notify capability exception.

Error Code	Error Description
111084011	Update MT exception.
111084012	Negotiate exception.
111084013	Not support this meeting.
111084014	Not allowed join meeting in RTC inviting because guests are not invited.
111089002	Failed to phrase URI join xml.
111090001	Failed to join data meeting.
111090002	Join data meeting overtime.
111100001	Failed to get slider image.
111100002	Slider check failed.
111100003	Invalid random number.
111100004	Invalid slider token.
111100005	Need to check slider.
111100006	Invalid SMS phone number.
111100007	Failed to send verification code.
111100008	Verification code expired.
111100009	Verification code error.
111100010	Max verification code check times reached.
111100011	The uuid is invalid, you need to re-verify the phone number.
111100012	The meeting is not on this site.
111100013	Need to verify the mobile phone number. Mobile number verification is required when an International site user joins a meeting held by a free enterprise on the Chinese mainland site.
111110001	Failed to add IM group.
111110002	Failed to disband IM group.
111110003	Failed to add IM member.
111110004	Failed to remove IM member.
111112001	Failed to enter the waiting room.
111112002	Failed to exit the waiting room.
111112003	Waiting room cache operation failed.
111112004	Co-hosts cannot be moved into the waiting room.

Error Code	Error Description
111112005	Not allowed to enable waiting room.
111112008	Not support this feature according to client capabilities.
112010001	Common failure.
112010002	Null param.
112010003	Participant not found.
112010004	Meeting not found.
112010005	SIP invite information timeout.
112010006	SIP invite information failed.
112010007	SIP information timeout.
112010008	SIP information failed.
112010009	System processing failed.
112010010	System processing failed.
112010011	Failed to invite MRS.
112010012	Failed to invite participant.
112010013	Data meeting join information failed.
112010014	Failed to start meeting.
112010015	Media negotiation failed.
112010016	User rejects.
112010017	User is busy.
112010018	No call permission.
112010019	Unknown callee.
112010020	No user response.
112010021	Join meeting timed out.
112010022	Session has been released.
112010023	Callee is not registered.
112010024	SIP invite timed out.
112010025	User Session timer times out and hangs up.
112010026	The participant bye hangs up on the MRS side.
112010027	The participant bye hangs up on terminal side.
112010028	No RTP stream hang up.

Error Code	Error Description
112100000	Sysportal exception.
112100001	Bad request.
112100002	Illegal request.
112100003	Data not found.
112100004	Data duplication.
112100006	The requested type is not supported.
112100007	Failed to save notification template.
112100008	Failed to save data.
112100009	Failed to query data.
112100010	Failed to delete data.
112100011	Password reset required.
112100012	Incorrect old password.
112100013	The new password cannot be the same as the old password.
112100014	Insufficient password complexity and low security.
112100015	The length does not meet the requirements.
112100016	RSE is in meeting.
112100017	RSE to be deleted.
112100018	Failed to query the meeting list.
112100019	User has been locked out. Try again later.
112100022	The live room channel name exists.
112100023	Failed to modify system configuration items for duplicated meeting ID prefix.
112100024	CONFID prefix can only be added, not modified or deleted.
112100025	The live room channel url exists.
112100026	The live room has been occupied.
112100027	The live room does not exist.
112100028	Live room release failed.
112100029	The request is missing header or param.
112100030	The Live main stream URL already exists.
112100031	The Live auxiliary stream URL already exists.

Error Code	Error Description
112100032	Password is weak.
112100033	The live room is occupied.
112100034	Save part of attendees since max attendees size reached.
112100035	Failed to export data.
112100036	Failed to import data.
112100037	Max file size reached.
112100038	LVS target address exists.
112100039	LVS port existed.
112100040	Not allow to modify global standby config.
112100041	MCU insulation IP address exists.
112100042	MCU insulation IP address cannot be modified.
112100043	SBC address exists.
112100044	Internal exception.
112100045	System config delete exception.
112100046	No ISBC access address.
112100047	Media type need to be HD because the organization enables full HD capability.
112100061	Same interpreter language abbreviation exists.
112100062	Same interpreter language name exists.
112100063	MCU type is MIXED and insulation config is not configured, or MCU meeting exists when modifying MCU connection settings.
112100064	MCU type is MIXED and insulation config is not configured when adding mcu connection settings.
112100065	MCU type is MIXED when modifying MCU insulation config or disbanding enterprise.
112100066	MCU type is MIXED when deleting MCU insulation config.
112100067	This gateway type is incompatible with MCU.
115021001	Insufficient media resource.
115021002	Meeting does not exist.
115021003	Media resource does not exist.
115021005	Insufficient media bandwidth resource.

Error Code	Error Description
115021006	Media device fault.
115022000	Insufficient common logic resource.
115022001	Insufficient meeting resources in the enterprise.
115022002	Insufficient logic port resource.
115022003	Live broadcast resources have not been purchased or are insufficient.
115022004	Media device does not exist.
115023001	Insufficient ID resources.
115024001	RMS service exception.
115025001	The live room has already been occupied.
115025002	The live room does not exist.
115025003	Live room release failed.
115026001	MCU meeting exists.
115029001	Invalid common parameter.
115029002	Null parameter.
115029003	service is not available.
115029004	Configuration exception.
115029005	Duplicately apply resources.
115029006	Waiting for applying resources.
115029999	Unknown error.
118000000	User authentication failed.
118000001	User token authentication failed.
118000002	User authentication account lockout.
200000001	Server is busy. Please try again later.
200000002	Internal error. Please contact SRE.
200000003	Invalid parameter. Please check whether the parameters are valid.
200000004	Illegal request. Please check the value of the request header field X-Auth-Token or X-Access-Token.
200000005	Forbidden access during the version upgrade.
201020023	This user is already the owner of another corporation and cannot create a new corporation for it.

Error Code	Error Description
201040005	Max number of users reached. Please check the purchased meeting users.
201040016	Password security is low. Please set another password.
201040031	Activation code overdue.
201040042	Pre-authentication expired.
201040043	This user is the owner of another corporation and cannot be invited.
201040044	Invalid invite connection.
201040045	User is already in waiting list.
201040046	User already exists.
201040047	Account modification is not allowed.
201050012	Activation code does not exist.
201050015	Invalid activation code.
201050021	Activation failed.
201050022	Terminal does not allow unbinding.
201080000	VMR resource unavailable.
201080006	The host password and the guest password cannot be the same. Please confirm the input parameters.
201080017	Same as meeting password.
201510001	No invite permission to get an invite code.
201510003	Invalid application.
206010000	User name or password error.
206010007	Account is not activated, no permission to log in.
206010010	Failed to get verification code. Please contact SRE.
206010011	Verification code must be filled.
206010012	Verification code check failed.
206010013	Jump login failed. Please contact SRE.
206010022	SSO login failed. Please contact SRE.
206010023	SSO login is not supported.
206010024	Invalid authentication type.
206010025	APPID verification failed.

Error Code	Error Description
206010027	Authentication type error.
206010029	Network error.
206010030	APPID does not allow automatic registration.
206010031	APPID auto registration failed.
206010036	Normal users cannot log in.
206010042	Huawei account authentication failed.
206010057	APPID authentication expires.
206010058	APPID account is not bound.
206010064	Site mismatch.
206010065	Phone number conflict.
206010066	E-mail conflict.
206010070	The number of users has reached the maximum.
206010071	WeChat authentication failed.
206010074	International sites support site changing re-login.
206010075	Account has been unbound.
206020000	Invalid authentication information. Please check the value of the request header field X-Auth-Token or X-Access-Token.
206020001	Token is created by disaster recovery site.
206020002	Token is invalid due to being kicked.
206030000	The user does not exist.
206030001	The verification code is incorrect or has expired. Please obtain a new one.
206030002	Incorrect verification code.
206030003	Failed to send the verification code.
206030004	Try to get a new verification code 180s later.
206030005	The password cannot be changed.
206030006	The old password is incorrect.
206030007	The length of the new password does not meet the requirements.
206030008	The password complexity does not meet the requirements.

Error Code	Error Description
206030009	The new password must be different from the previous old passwords.
206030010	The password cannot contain three or more of the same characters consecutively.
206030011	The password cannot be changed within 5 minutes upon the last password change.
206030012	The password cannot contain the account or the reverse order of the account.
206030013	At least two characters must be different between the new and old passwords.
206030014	Invalid password format.
206030015	The user is locked and will be locked in 60s.
206030016	Have no right to reset other's password.
206030018	The number of password retrieval times in a day has reached the maximum (10 times).
206030019	The number of incorrect verification code inputs have reached the maximum. Please get it again.
206030023	Failed to send verification code. Please contact SRE.
206030028	The system has enabled SSO login and does not support changing the password. Please retry after the system has disabled SSO login.
206030031	Forgot password for Huawei account.
206040000	No corresponding terminal type.
206060008	Sending verification code is locked.
206060009	Slider verification required.
206060010	Invalid slider token.
206060011	Request parameter error.
206060012	Sending SMS is not supported.
206060013	Repeated sending is not supported.
206060014	Invalid verification code.
206060015	Max verification code check times reached.
206060017	Failed to bind Huawei account.
211030046	Not the IdeaHub activation code.
211030050	auth fail too many times, locked.

Error Code	Error Description
211030052	auth fail too many times, permanently locked.
211060003	The maximum number of log upload times has been reached.
411000001	Common failure.
411000002	Parameter error.
411000003	Meeting does not exist.
411000004	A meeting already exists.
411000005	Meeting state error.
411000006	Failed to get device.
411000007	Failed to set device.
411000008	No device available.
411000009	This operation is only supported on mobile.
411000010	Network access error.
411000011	Other supplementary service is running.
411000012	Memory allocation error.
411000013	Initialization failed.
411000014	User does not exist.
411000015	Did not join the data meeting.
411000016	Neither meeting nor call exists.
411000017	SVN port detection failed.
411000018	Failed to write file.
411000019	RTC does not support STG mode.
411000020	Failed to load RTC library. RTC meeting is not supported.
411000021	The meeting is in the audience pause state when changing roles.
411000022	Not in call.
411000023	Meeting or call does not exist.
411000024	Pairing state not allowed.
411000025	Pairing request failed.
411000026	Pairing exceeds limit.
411000027	Pairing common error.

Error Code	Error Description
411000028	Pairing and joining the meeting failed.
411000029	Pairing and joining the meeting is busy.
411000030	Pairing and joining the meeting is invalid.
411000031	Multiple clicks at the same time to pair and join the meeting error.
411000032	Pairing is not established or is being established.
411000033	The camera is not turned on in the third-party capture mode.
411000034	RTC engine creation failed.
411000035	Not in a meeting.
411000036	mute self failed.
411000100	End the meeting with no stream due to disconnection of network.
411000101	End the meeting with no stream because fail to re-join meeting.
411000102	Null pointer exception.
411000103	Parameters cannot be empty.
411000104	Encrypt and decrypt func not match.
411000105	Load user-defined DLLs failed.
411000106	Shimo Docs is not supported.
412100001	The message processing thread is not initialized.
412100002	Parameter error.
412100003	Timeout.
412100004	Memory allocation error.
412100005	XML parsing error.
412100006	DNS resolution error.
412100007	Request message failed.
412100008	Authentication failed.
412100009	Server error.
412100010	Account is locked.
412100011	Create timer error.
412100012	Server CA certificate verification failed.

Error Code	Error Description
412100013	Network error.
412100014	Server redirect.
412100015	Account is not activated.
412100016	JSON parsing error.
412100017	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
412100018	Disconnected by the proxy. Probably because the server address is misconfigured.
412100019	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.
412100020	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
412100021	The authentication process failed. The proxy user name or password is incorrect.
412100022	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.
412100023	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
412100024	The authentication process failed. Unable to resolve gateway.
412100025	The authentication process failed. Unable to resolve host.
412100026	The authentication process failed. Unable to connect.
412100027	The authentication process failed. Operation times out.
412100028	Message length too long.
412100029	Base64 encryption failed.
412100030	XML parsing error.
412100031	Secure function error.
412100032	Firewall detection parameter error.
412100033	Failed to create STG tunnel.
412100034	Failed to update STG service.
412100035	Encryption failed.

Error Code	Error Description
412100036	Do not allow duplicate downloads.
412100037	File operation failed.
412100038	The request message returns empty.
412100039	The number of detection servers is 0 error.
412100040	Failed to get local IP address.
412200001	Internal error.
412200002	Parameter error.
412200003	Network timeout.
412200004	Network Error.
412200005	Need to bind mobile phone.
412200006	Need to bind email.
412200007	Has initialized already.
412200008	State machine execution failed.
412200009	Failed to start timer.
412200010	The user is prompted to change the password when logging in for the first time.
412200011	Unknown authentication type.
413000001	Common error.
413000002	Parameter error.
413000003	Memory allocation error.
413000004	System error.
413000005	Message sending error.
413000006	Get system configuration error.
413000007	Physical network error.
413000008	Network access error.
413000009	Create timer error.
413000010	Call state error.
413000011	Other operation in progress error.
413000012	Requesting the master to start call error.
413000013	Requesting audio resource error.

Error Code	Error Description
413000014	Other supplementary service is running.
413000015	Record call error.
413000016	Media process error.
413000017	Maximum number of calls reached.
413000018	SIP account ID does not exist.
413000019	Call ID does not exist.
413000020	Failed due to registering.
413000021	Registration failed.
413000022	Deregistration failed.
413000023	Setting account information error.
413000024	Setting SIP account error.
413000025	Reporting SIP account information error.
413000026	Server information error.
413000027	SIP account information error.
413000028	SIPC execution error.
413000029	Not registered error.
413000030	Call Sip interface to subscribe error.
413000031	Canceling subscription error.
413000032	Subscribing error.
413000033	Only one local meeting is allowed.
413000034	Local meeting is not created.
413000035	The participant line does not match the chair account.
413000036	Local meeting state error.
413000037	Failed to report the linkage state of the IP Phone.
413000038	Meeting ID does not exist.
413000039	Video hold error.
413000040	Video unhold error.
413000041	The maximum number of server meetings reached.
413000042	Get AA random number error.
413000043	AA login error.

Error Code	Error Description
413000044	Meeting type mismatch.
413000045	Failed to start video meeting.
413000046	AA no master server.
413000047	Password error.
413000048	Username error.
413000049	User is logged in.
413000050	Account is locked.
413000051	Terminal type mismatch.
413000052	Parsing XML error.
413000053	Connecting to server error.
413000054	Get media configuration error.
413000055	Get service permission error.
413000056	Insufficient service permission.
413000057	Network environment error.
413000058	Service conflict.
413000059	Connection timeout.
413000060	Unknown error.
413000061	Add ringing information error.
413000062	Delete ringing information error.
413000063	Create ringing number error.
413000064	VVM parameter error.
413000065	Getting registered service error.
413000066	Getting voicemail error.
413000067	Attendee already exists.
413000068	Attendee does not exist.
413000069	Create server video meeting window error.
413000070	Video window already exists.
413000071	Getting meeting list error.
413000072	Operating requires host privileges.
413000073	No video device to operate.

Error Code	Error Description
413000074	Refresh registration is not turned off.
413000075	Online state report error.
413000076	Network address subscription report error.
413000077	Telepresence account was force unregistered. Information report error.
413000078	TLS root certificate error.
413000079	AD authentication error.
413000080	Meeting list is getting.
413000081	Prohibited calls.
413000082	The maximum number of calls has been reached.
413000083	The maximum number of encrypted calls has been reached.
413000084	The maximum number of video calls has been reached and needs to downgrade to audio.
413000085	H323 account ID does not exist.
413000086	H323 account information error.
413000087	H323 account information report failed.
413000088	Insufficient local resources.
413000089	The calling protocol is not supported.
413000090	Setting H323 account information error.
413000091	Mediatrix meeting access number reporting failed.
413000092	Mediatrix VMR information reporting failed.
413000093	IMS meeting list information reporting failed.
413000094	TUP initialization is not complete.
413000095	Message return value error.
413000096	Message content too large error.
413000097	Secure function error.
413000098	message response is empty error.
413000099	Account is not enabled.
413000100	Create call control implement error.
413000101	Already in call.
413000102	Call does not exist.

Error Code	Error Description
413000103	Failed to get media configuration information.
413000104	Failed to set third-party capture. Calling HME_V_Capture_InputData failed.
414100001	Common error.
414100002	Parameter error.
414100003	Timeout.
414100004	Memory allocation error.
414100005	DNS resolution error.
414100006	Request message failed.
414100007	Authentication failed.
414100008	Server error.
414100009	Create timer error.
414100010	Start timer error.
414100011	The meeting control block is full. Please release the control block that is not in use.
414100012	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
414100013	Disconnected by the proxy. Probably because the server address is misconfigured.
414100014	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.
414100015	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
414100016	The authentication process failed. The proxy user name or password is incorrect.
414100017	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.
414100018	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
414100019	Curl proxy exception.
414100020	Curl host exception.
414100021	Curl connection exception.

Error Code	Error Description
414100022	Curl operation timed out.
414100023	Message length too long.
414100024	Failed to create thread.
414100025	Secure function error.
414100026	JSON parsing failed.
414100027	WS token is empty.
414100028	Return JSON data error.
414100029	Failed to create meeting control block.
414100030	Failed to get meeting control block.
414100031	Failed to get meeting control block by CallId.
414100032	Destroying the meeting control block failed.
414100033	Temporary creating meeting information not found.
414100034	Failed to get participant ID.
414100035	Failed to get MT by participant ID.
414100036	Failed to get self information by participant ID.
414100037	Failed to get participant information by MT.
414100038	Manual invitation required.
414100039	The major parameters of the meeting have been reported.
414100040	Subtitles are not supported.
414100041	Meeting Hang Up - Timeout.
414100042	Meeting Hang Up - No Streaming.
414100043	Meeting hung up - Hung up by the host.
414100044	Meeting Hang Up - Meeting has ended.
414100045	End of meeting due to leave meeting.
414100046	Message queue processing function registration failed.
414100047	Message queue processing function deregistration failed.
414100048	Meeting ended due to reject meeting.
414100049	Meeting ended by self.
414100050	The meeting control module is not initialized.
414100051	The watching special site reaches the maximum.

Error Code	Error Description
414100052	The watching HD site reaches the maximum.
414100053	The watching SD site reaches the maximum.
414100054	The watching specification reaches the maximum.
414100055	Watching internal errors.
414100056	Duplicated watch render.
414100057	HTTP request error.
414100058	WebSocket request timeout.
414100059	Loading failed.
414100061	The meeting ends due to the timeout of guest waiting before meeting or the timeout of the meeting control heartbeat.
414100062	The meeting ends due to being canceled.
414100063	The meeting ends due to network error when guest waiting before meeting.
415000001	DB is not initialized.
415000002	Common failure.
415000003	Proxy detection has not been completed.
416000001	Invalid parameter.
416000002	Track module is not initialized.
416000003	Track event does not exist.
416000004	Not logged in.
416000005	Upload is not enabled.
419100001	Invalid parameter.
419100002	Incorrect URI.
419100003	Memory allocation failed.
419100004	SDP error.
419100005	Connection does not exist.
419100006	Connection failure.
419100007	Operation forbidden.
419100008	State error.
419100009	No corresponding line data.

Error Code	Error Description
419100010	No corresponding registered instance.
419100011	No corresponding call instance.
419100012	No corresponding subscription instance.
419100013	No corresponding Refer instance.
419100014	No corresponding DIM instance.
419100015	Failed to create header.
419100016	Failed to parse header.
419100017	Header not found.
419100018	No SDP message body.
419100019	Failed to get capability.
419100020	Failed to compare capability.
419100021	Failed to open logical channel.
419100022	Encoding SDP failed.
419100023	Decoding SDP failed.
419100024	Negotiate to unsupported SDP.
419100025	TPTD initialization failed.
419100026	TPT initialization failed.
419100027	TXN initialization failed.
419100028	UA initialization failed.
419100029	GLUE initialization failed.
419100030	HLLM initialization failed.
419100031	VCOM initialization failed.
419100032	SDP initialization failed.
419100033	Multiple instance error.
419100034	Insufficient registration control blocks.
419100035	Insufficient subscription control blocks.
419100036	Insufficient call control blocks.
419100037	Insufficient IM control blocks.
419100038	Failed to parse URI xml to string.
419100039	Encryption negotiation failed.

Error Code	Error Description
419100040	Local capabilities are not configured.
419100041	BFCP token error.
419100042	DNS resolution error.
419100043	Failed to get subscription state.
419100044	IPv4 is not supported.
419100045	IPv6 is not supported.
419100046	Unsupported host type.
419100047	Failed to get timer.
420000001	Cannot receive sharing invitations.
420000002	ReportDTO parameter verification failed.
420000003	Report folder creation failed.
420000004	Report folder compression failure.
420000005	The path of the ZIP file to be uploaded is empty.
420000006	The size of the ZIP file to be uploaded reaches the maximum.
420000007	The same person reported more than 100 times within 24 hours.
430100001	Common Error.
430100002	Invalid parameters.
430100003	SIP connection check failed.
430100004	Timeout.
430100005	In process.
430100006	Not initialized or initialization is not complete.
430100007	Not supported in this release.
430100008	Operation interrupt.
430100009	Contact not found.
430100010	Args length overrun.
430100011	APPID info illegal.
430100012	E2EEncrypt algorithm error.
430200001	unlogin.
430200002	Repeated login.

Error Code	Error Description
430200003	SIP connection timeout.
430200004	Invalid login password.
430200005	Password or account empty.
430300001	The calling number, account number or third-party account number cannot be empty.
430300002	Call account empty.
430300003	Call nickname empty.
430400001	Password required to join the meeting.
430400002	Time zone error.
430400003	The meeting duration is less than 1.
430400004	Joining the conference is interrupted.
430400005	Password input at least 4 digits.
430400006	User voluntarily cancels.
430400007	The guest password illegal.
430400008	Not in conference or in call.
430400009	Already exist conf or call.
430400010	Confld empty.
430400011	Subject too long.
430400012	VMR host password length illegal.
430400013	VMR name empty.
430400014	Conf starttime early.
430400015	Share is locked.
430400016	Not in data conference.
430400017	Role not support operation
430500001	HTTP request, server exception.
430500002	HTTP request, Connecting to the server times out.
430500003	Network unavailable.
510000403	Server forbidden.
510000404	Not found.
510000480	Temporary unavailable.

Error Code	Error Description
510000486	Busy here.
510000487	Request terminated.
510000488	Request is not acceptable here.
510000603	Decline.
510000841	Hangup without toast.
510000842	Conference is locked.
910000001	Server error.
910000002	SFU service failure.
910000003	Service unavailable 503.
910000004	Internal error.
910000005	Kicked off.
910000006	Signature expired.
910000007	Reconnect timeout.
910000008	Network detection.
910000009	User is removed.
910000010	The room is dismissed.
990000001	Internal error.
990000002	Message too large.
990000003	Insufficient memory.
990000004	Failed to send message synchronously.
990000005	Parameter error.
990000006	Call ID order error.
990000007	Failed to set local screen.
990000008	Failed to open remote screen.
990000009	Device configuration failed.
990000010	Initializing.
990000011	Deinitializing.
990000012	Uploading log.
990000013	Failed to get media port.
990000014	The maximum number view window reached .

Error Code	Error Description
990000015	Media negotiation failed.
990000016	Server no response.
990000017	Role switch failed.
990000018	Failed to join room.
990000019	Failed to join room. Status is busy.
990000020	Failed to join room. Server error.
990000021	Failed to join room. Service unavailable.
990000022	Failed to join room. Authentication failed.
990000023	Failed to join room. Authentication retry.
990000024	Failed to join room. Clock synchronization.
990000025	Failed to join room. URL error.
990000026	Kicked off.
990000027	Share failed.
990000028	Currently in external media output mode, this operation is forbidden.
990000029	Reconnection failed.
990000030	Server breaks down.
990000031	Signature has expired.
990000032	Failed to set remote window mode.
990000033	Failed to subscribe or unsubscribe audio.
990000034	Failed to connect to other room.
990000035	Failed to disconnect other room.
990000036	Role switching is not allowed.
990000037	Currently in third-party capture mode, this operation is forbidden.
990000038	Failed to set third-party audio capture.
990000039	Failed to set third-party video capture.
990000040	Failed to set share sound switch.
990000041	Failed to start or stop upstream audio stream.
990000042	Failed to start or stop upstream video stream.
990000043	User is removed.

Error Code	Error Description
990000044	The room is dismissed.
990000045	Failed to set remote View.

6.7 Version Updates

6.7.1 100.5.5 Updates

1. Added notifications of floating window changes. For details, see [Notifications Indicating that the Floating Window Appeared](#) and [Notifications Indicating that the Floating Window Disappeared](#).
2. Fixed issues and provided more stable experience.

6.7.2 100.3.6 Updates

1. Added the `setScreenShareExtensionBundleId` API for setting a bundle ID of the screen sharing extension. For details, see [Setting a Bundle ID of the Screen Sharing Extension](#).
2. Fixed issues and provided more stable experience.

6.7.3 90.12.7 Updates

1. Fixed issues and provided more stable experience.

6.7.4 90.12.5 Updates

1. Deprecated the `getVmrList` API and added the `getVmrInfoList` API. For details, see [Obtaining the Cloud Meeting Room List](#).
2. Added `OnShareVmrInfoNotify` to notify you when information about shared cloud meeting rooms was changed. For details, see [Notification of Shared Cloud Meeting Rooms](#).
3. Added the `getErrorMessage` API for obtaining an error message, which can be used for prompt. For details, see [Obtaining an Error Message](#).
4. Added the `setGuaranteedIpAddresses` API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. For details, see [Setting Guaranteed IP Addresses for Meeting Control](#).
5. Renamed `HWMUISDKErrorDefine.h` to `HWMErrorDefine.h`.
6. Fixed issues and provided more stable experience.

6.7.5 90.10.8 Updates

1. Fixed issues and provided more stable experience.

6.7.6 90.9.6 Updates

1. Fixed issues and provided more stable experience.

6.7.7 90.9.5 Updates

1. Added the **concurrentParticipants** parameter (maximum number of participants allowed in a meeting) to **HWMCreateConfParam** (creating a meeting), **HWMOrderConfParam** (scheduling a meeting), and **HWMConfDetail** (meeting details). For details, see [Table 6-40](#), [Table 6-52](#), and [Table 6-62](#).
2. Added the **vmrConfId** parameter (ID of meetings held in a cloud meeting room) to **HWMSDKConfIncomingInfoModel** (incoming meeting details). For details, see [Table 6-86](#).
3. Fixed issues and provided more stable experience.

6.7.8 90.7.5 Updates

1. Added the **StartP2pConf** API for starting an instant meeting. For details, see [Starting an Instant Meeting](#).
2. Added the **domain** field to the **HWMRandomConfParam** parameter of the API for joining a meeting using a random code. For details, see [Table 6-45](#).
3. Added the **joinPairConf:callback:** API for inviting a display to a meeting by scanning a QR code. For details, see [Scanning a QR Code to Invite a Large Screen to a Meeting](#).
4. Added **isP2PConf** (whether the meeting is an instant meeting) to **HWMBaseConfDetailParam** in the meeting details notification **onConfDetail**. For details, see [Table 6-59](#).
5. Added **isSpeakerOff** (whether to disable speakers) to the **HWMCreateConfParam** parameter of the **createConf** API for creating a meeting. For details, see [Table 6-40](#).
6. Fixed issues and provided more stable experience.

6.7.9 90.6.5 Updates

Deprecated the **startCall** API.

1. Added the button for interrupting sharing to meeting settings.
2. Added the **isSupportMultiAppLogin** parameter, which indicates whether login to multiple applications on the same device is supported. For details, see [Table 6-2](#).
3. Added the **onPoorNetworkQualityInfoNotify()** API for reporting information about poor network connection. For details, see [Poor Connection Notification](#).
4. Added the **customInfo** field to the APIs for scheduling, editing, creating, and querying a meeting. For details, see [Table 6-40](#), [Table 6-52](#), and [Table 6-62](#).
5. Added error code 412100044. (For details about the adaptation mode of this error code, see the demo.)
6. Fixed issues and provided more stable experience.

6.7.10 80.15.21 Updates

1. Fixed issues and provided more stable experience.

6.7.11 80.15.6 Updates

1. Fixed issues and provided more stable experience.

6.7.12 80.15.5 Updates

1. Added the function of broadcasting continuous presence.
2. Added the screen rotation switch.
3. Added the lighting adjustment function.
4. Fixed issues and provided more stable experience.

6.7.13 80.13.8 Updates

1. Fixed issues and provided more stable experience.

6.7.14 80.13.6 Updates

1. Upgraded the compilation environment to Xcode 14.
2. Fixed issues and provided more stable experience.

6.7.15 80.13.5 Updates

1. Added the API for initializing the SDK in a subthread. For details, see [initAsyncWithConfig:callback:](#).
2. Added the function of viewing details after touching the profile picture of a participant in the action sheet.s For details, see [Customizing the Profile Picture Click Event in buildParticipantActionSheetItems](#).
3. Fixed issues and provided more stable experience.

6.7.16 80.12.6 Updates

1. Added the enumerated value **HWMFeatureTypeRecoedAlert** (whether to display the recording security prompt) to the **enableFeature:isEnabled:** API. For details, see [Table 6-10](#).
2. Fixed issues and provided more stable experience.

6.7.17 80.12.5 Updates

1. Added the **HWMRMedia.framework** library. For details, see [Getting Started](#). The usage method is similar to that of the **HWMUISDK.framework** library.
2. Changed the conditions for uploading profile pictures (to check the type and size of profile pictures). For details, see [Uploading a Profile Picture](#).
3. Fixed issues and provided more stable experience.

6.7.18 80.10.5 Updates

1. Added parameters **confAllowJoinUser** (configuring users who can join the meeting) and **isOpenWaitingRoom** (whether the waiting room is enabled) to APIs for obtaining the cloud meeting room list (**HWMVmrInfoModel**) and modifying cloud meeting room information (**HWMModifycloud meeting roomParam**). For details, see [HWMVmrInfoModel](#) and [HWMModifyVMRParam](#).
2. Added the **setShareScreenPermission** API for setting the sharing permission. For details, see [Setting the Sharing Permission](#).
3. Fixed issues and provided more stable experience.

6.7.19 80.9.5 Updates

1. Add the **isLiveOn** parameter to **HWMOrderConfParam.h** of the API for editing a meeting. For details, see [HWMOrderConfParam](#).
2. Added the enumerated value **HWMFeatureTypeBreakoutConf** of breakout rooms to the **enableFeature:isEnabled:** API for enabling a function. For details, see [Enabling a Function](#).
3. Changed the **subConfUUID** parameter to **subConfID** in the **CancelSubCycleConf** API for canceling a recurring meeting. For details, see [HWMSDKCancelSubCycleConfParamModel](#).
4. Fixed issues and provided more stable experience.

6.7.20 80.8.5 Updates

1. You can set the guest password when creating, scheduling, or editing a meeting. For details, see [HWMCreateConfParam](#) and [HWMOrderConfParam](#).
2. Fixed issues and provided more stable experience.

6.7.21 80.7.5 Updates

1. You can customize the app language.
2. Fixed issues and provided more stable experience.

6.7.22 80.5.11 Updates

1. Added the API for disabling prompt tones. For details, see [Disabling Prompt Tones](#).
2. Added the function of customizing the recording button. For details, see [Customizing the Recording Button](#).

6.7.23 80.5.5 Updates

1. Added the waiting room switch to the APIs for scheduling a meeting, modifying a meeting, and obtaining meeting details. For details, see [Table 6-40](#) and [Table 6-52](#).
2. Fixed issues and provided more stable experience.

6.7.24 70.16.5 Updates

1. Added APIs related to recurring meetings. For details, see [Scheduling a Recurring Meeting Series](#), [Editing a Recurring Meeting Series](#), [Canceling a Recurring Meeting Series](#), [Editing a Recurring Meeting](#), and [Canceling a Recurring Meeting](#).
2. Added the API for setting the network mode. For details, see [Setting the Network Mode](#).
3. Added the function of sharing audio. For details, see [Figure 6-32](#).
4. Added **isStopConflictConf** to **HWMJoinConfParam.h** in the API for joining a meeting using an ID. For details, see [Table 6-44](#).
5. Added **disableIncomingLocalNotification** (disabling notifications of incoming meeting calls) to **HWMOpenSDKConfig** for SDK initialization. For details, see [Initializing the SDK](#).
6. Adjusted the SSO login API. For details, see [loginBySSO](#).
7. Modified error codes. For details about the new error code description, see [Table 6-103](#).

Table 6-103 Mapping between error codes of the old and new versions

Error Codes in 70.14.6 and Earlier Versions	Error Codes After 70.16.5	New Error Code Description
1002	430400007	The guest password is incorrect.
1004	430400002	Time zone error.
1005	430400003	The meeting duration is less than 1.
1006	430400004	Meeting joining is interrupted.

6.7.25 70.14.5 Updates

1. When scheduling or editing a meeting, you can set the time (**allowGuestStartConf** and **allowGuestStartConfTime**) when a guest is allowed to join the meeting ahead of the host. For details, see [Table 6-52](#).
2. When scheduling a meeting in a cloud meeting room, you can select a fixed or random cloud meeting room ID. For details, see [Table 6-57](#).
3. A department ID can be specified for login using an app ID. For details, see [Table 6-18](#).

6.7.26 70.13.5 Updates

1. Added **userUuid** (the original **uuid** field), **account**, and **thirdAccount** to the callback of login and logout APIs. For details, see [Table 6-17](#) and [Table 6-21](#). If an earlier version is upgraded to 70.13.5, the definition of the callback functions needs to be modified.
2. Added the **hideExternalLabel** field for specifying whether to display the **External** label in the host role transferring and chat scenarios. For details, see [Initializing the SDK](#).

3. Added notifications for incoming meeting calls. For details, see [Notification of Incoming Meeting Calls](#).

6.7.27 70.12.6 Updates

1. Fixed an issue where the video definition cannot be restored after the network is restored.

6.7.28 70.12.4 Updates

Fixed issues and provided more stable experience.

6.7.29 70.11.5 Updates

1. Added the **logKeepDays** field to the initialization API. For details, see [Initializing the SDK](#).
2. The UI SDK for iPhone supports iOS 10.0 or later.
3. **HWRTCEngine.framework** is renamed **HWMMREngine.framework** (only the package name is changed, and the integration mode remains unchanged). For details, see [Step 4](#).

6.7.30 70.10.5 Updates

1. You can switch between large and small windows when viewing a shared desktop.
2. Fixed issues and provided more stable experience.

6.7.31 70.9.5 Updates

1. Added the SSO login mode. For details, see [loginBySSO](#).

6.7.32 70.8.6 Updates

Fixed issues and provided more stable experience.

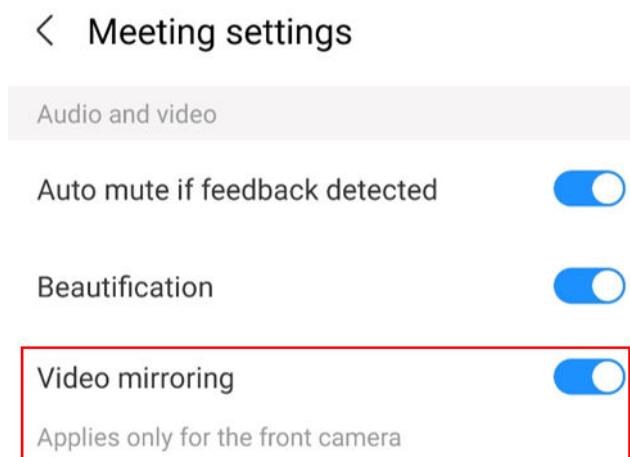
6.7.33 70.8.5 Updates

1. You can obtain the participant list in meetings and webinars. For details, see [Obtaining the Participant List](#).

6.7.34 70.7.5 Updates

1. Added the video mirroring function. After this function is enabled, you can view your own video image in mirroring mode.

Figure 6-50 Video mirroring



6.7.35 70.6.5 Updates

1. Added the meeting ending status notification. For details, see [Meeting End Notification](#).

6.7.36 70.5.8 Updates

1. Adapted the participants and chats modules to the landscape mode.
2. On-screen comments are supported in chats.

6.7.37 70.4.5 Updates

1. Added the API for obtaining the current user status. For details, see [Obtaining a User Status](#).
2. The host can invite others to share content and quickly cancel the sharing.
3. Moved the button for switching between the front and rear cameras on the mobile app to the home screen.
4. Optimized the in-meeting screen.
5. Optimized the size of meeting logs.

6.7.38 70.3.5 Updates

1. Overlaid the speaker screen on the shared video screen. You can close the speaker screen by dragging it down.
2. Simultaneous login on mobile phones and tablets is supported. For details, see [Login](#).

6.7.39 60.15.5 Updates

1. Optimized the customized title bar on the top of the meeting page. Cells can be customized. For details, see [Customizing the Menu That Appears in Response to Touches on the Title Bar of the Meeting Page](#).
2. Added the function of hiding the **External** label in the participant list. The **hideExternalLabel** parameter is set during initialization. By default, the **External** label is displayed.

3. Added the API for setting the ringing and vibration for incoming calls. For details, see [Setting the Incoming Call Notification Mode](#).
4. Added the configuration of the call answering policy (automatic answering, automatic rejection, and default) for incoming calls and meeting calls. For details, see [Incoming Call Answering Policy Configuration](#).

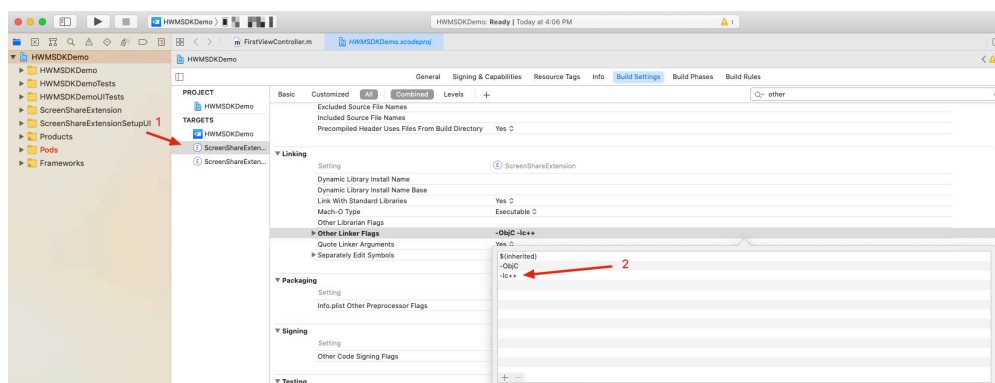
6.7.40 60.13.2 Updates

1. Added the API for adding participants. For details, see [Adding Participants](#).
2. Added the API for leaving a meeting. For details, see [Leaving a Meeting](#).
3. Added the API for ending a meeting. For details, see [Ending a Meeting](#).

6.7.41 60.12.5 Updates

1. Added the `-lc++` configuration in **TARGETS > ScreenShareExtension > Build Settings > Other Linker Flags**.

Figure 6-51 Adding the configuration



2. During meeting creation, the meeting room (`vmrId`) and participant scope (`joinConfRestrictionType`) can be specified. For details, see [Table 6-40](#).
3. Meeting details can be reported during a meeting. For details, see [Meeting Details Notification](#).
4. Added the API for uploading a profile picture. For details, see [Uploading a Profile Picture](#).
5. Added the profile picture blocking API to display a custom profile picture. For details, see [Customizing the Profile Picture Display](#).
6. The API for scheduling a meeting returns meeting details in the result. For details, see [5](#).

6.7.42 60.11.6 Updates

1. Added the `isAutoRecord` parameter to enable automatic recording for meetings.

`isAutoRecord` indicates whether to automatically start recording after a meeting starts. The function is disabled by default. Meeting recording must be enabled if automatic recording is enabled.

- Added the API for creating a meeting. For details, see [Table 6-40](#).

- Added the API for scheduling and editing a meeting. For details, see [Table 6-52](#).
- 2. Added the API for customizing buttons of answering meeting calls.
- 3. Added the SDK library **HWRTCEngine.framework**. For details, see [Step 4](#).

6.7.43 60.10.5 Updates

1. Added the login site type to the initialization API. For details, see [Initializing the SDK](#).
2. Allowed users to join a meeting in random mode. For details, see [Joining a Meeting](#).
3. Supported SP authentication and login, and added the **corpId** field. For details, see [login](#).
4. Optimized the watermark display. For details, see [screenShareCoverView](#).

6.7.44 60.8.1 Updates

1. Added app IDs during initialization and optimized app differentiation.
2. Added the following APIs: app ID login, meeting scheduling, meeting editing, meeting list query, meeting details query, and meeting cancellation.

- Added APIs.

```
/// Obtain the meeting list.  
- (NSArray<HWMBaseConfDetailParam *> *)getConfList;  
/// Obtain meeting details.  
- (void)getConfDetail:(NSString *)confId completeHandler:  
(HWMSDKConfInfoCompleteHandler)handler;  
/// Schedule a meeting.  
- (void)bookConf:(HWMOrderConfParam *_Nonnull)param callback:(_Nonnull  
HWMSDKCompleteHandler)callback;  
/// Cancel a meeting.  
- (void)cancelConf:(NSString *_Nonnull)confId callback:(_Nonnull HWMSDKCompleteHandler)callback;  
/// Edit a meeting.  
- (void)editConf:(HWMOrderConfParam *_Nonnull)param callback:(_Nonnull  
HWMSDKCompleteHandler)callback;  
/// Obtain the cloud meeting room ID list. You can use the IDs for scheduling meetings.  
- (NSArray<HWMVmrInfoModel *> *)getVmrList;  
/// Modify cloud meeting room information.  
- (void)changeVmrInfo:(HWMModifyVmrParam *)info callback:(_Nonnull  
HWMSDKCompleteHandler)callback;
```

3. Optimized the voice meeting screen.
The in-meeting screen of a voice meeting was optimized.
4. Integrated **IMSDK.framework** into **UISDK.framework**.

6.7.45 60.7.1 Updates

1. Optimized UIs and adjusted positions.
 - Meeting locking information was added to the meeting information on the top of the meeting page, and the UI was optimized.
 - Some functions in the **More** menu were moved to the **Meeting settings** menu under **More**.
2. Optimized the APIs for customizing the meeting control menus, and replaced some APIs.

The following is an example. For details about how to use the APIs, see [API Reference](#).

– Added APIs.

```
/// Set a meeting menu.
- (NSArray <HWMConfSettingGroup *> *)buildSettingItems;
/// Customize the menu that appears in response to touches on the title bar of the meeting page.
- (NSArray <HWMInMeetingCellModel *> *)buildTitleBarPopViewItems;
/// Set the view (for example, add a watermark) for screen or whiteboard sharing. Do not add full-screen gestures.
- (UIView *)screenShareCoverView;
```

– Replaced APIs.

```
/// Customize a meeting control menu at the bottom of a voice call and meeting.
- (NSArray <HWMConfToolBarMenuItem *> *)buildAudioCallAndConfToolBarMenuItems;
/// Customize a meeting control menu at the bottom of a video call and meeting.
- (NSArray <HWMConfToolBarMenuItem *> *)buildVideoCallAndConfToolBarMenuItems;
/// Customize the More menu at the bottom of a P2P video call.
- (NSArray <HWMConfMenuItem *> *)buildVideoCallToolBarMoreMenuItems;
/// Customize the More menu at the bottom of a video meeting.
- (NSArray <HWMConfMenuItem *> *)buildVideoConfToolBarMoreMenuItems;
```

Combined and replaced APIs.

```
/// Customize a meeting control menu at the bottom.
- (NSArray <HWMConfToolBarMenuItem *> *)buildToolBarMenuItems;
/// Customize the More menu at the bottom.
- (NSArray <HWMConfMenuItem *> *)buildToolBarMoreMenuItems;
```

– Deleted APIs.

```
/// Customize a meeting control menu at the bottom of a voice call and meeting.
- (NSArray <HWMConfToolBarMenuItem *> *)buildAudioCallAndConfToolBarMenuItems;
/// Customize a meeting control menu at the bottom of a video call and meeting.
- (NSArray <HWMConfToolBarMenuItem *> *)buildVideoCallAndConfToolBarMenuItems;
/// Customize the More menu at the bottom of a P2P video call.
- (NSArray <HWMConfMenuItem *> *)buildVideoCallToolBarMoreMenuItems;
/// Customize the More menu at the bottom of a video meeting.
- (NSArray <HWMConfMenuItem *> *)buildVideoConfToolBarMoreMenuItems;
```

6.7.46 90.10.8 Updates

1. Fixed issues and provided more stable experience.

6.8 Change History

Table 6-104 Change history

Released On	Version	Change Description
2024-06-13	100.5.5	<ol style="list-style-type: none"> 1. Added notifications of floating window changes. 2. Fixed issues and provided more stable experience. For details, see 100.5.5 Updates .
2024-04-23	100.3.6	<ol style="list-style-type: none"> 1. Added the setScreenShareExtensionBundleId API for setting a bundle ID of the screen sharing extension. 2. Fixed issues and provided more stable experience. For details, see 100.3.6 Updates .

Released On	Version	Change Description
2024-02-17	90.12.7	Fixed issues and provided more stable experience. For details, see 90.12.7 Updates .
2024-01-03	90.12.5	<ol style="list-style-type: none"> 1. Deprecated the getVmrList API and added the getVmrInfoList API. 2. Added the OnShareVmrInfoNotify notification to notify you when information about shared cloud meeting rooms was changed. 3. Added the getErrorMessage API for obtaining an error message, which can be used for prompt. 4. Added the setGuaranteedIpAddresses API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. 5. Renamed HWMUISDKErrorDefine.h to HWMErrorDefine.h. 6. Fixed issues and provided more stable experience. For details, see 90.12.5 Updates .
2023-12-13	90.10.8	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 90.10.8 Updates .
2023-11-03	90.9.6	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 90.9.6 Updates .
2023-09-28	90.9.5	<ol style="list-style-type: none"> 1. Added the concurrentParticipants parameter (maximum number of participants allowed in a meeting) to HWMCreateConfParam (creating a meeting), HWMOrderConfParam (scheduling a meeting), and HWMConfDetail (meeting details). 2. Added the vmrConfId parameter (ID of meetings held in a cloud meeting room) to HWMSDKConfIncomingInfoModel (incoming meeting details). 3. Fixed issues and provided more stable experience. For details, see 90.9.5 Updates .

Released On	Version	Change Description
2023-08-08	90.7.5	<ol style="list-style-type: none"> 1. Added the StartP2pConf API for starting an instant meeting. 2. Added the domain field to the HWMRandomConfParam parameter of the API for joining a meeting using a random code. 3. Added the joinPairConf:callback: API for inviting a display to a meeting by scanning a QR code. 4. Added isP2PConf (whether the meeting is an instant meeting) to HWMBaseConfDetailParam in the meeting details notification onConfDetail. 5. Added isSpeakerOff (whether to disable speakers) to the HWMCreateConfParam parameter of the createConf API for creating a meeting. 6. Fixed issues and provided more stable experience. For details, see 90.7.5 Updates.
2023-06-01	90.6.5	<ol style="list-style-type: none"> 1. Deprecated the startCall API. 2. Added the button for interrupting sharing to meeting settings. 3. Added the isSupportMultiAppLogin parameter, which indicates whether login to multiple applications on the same device is supported. 4. Added the onPoorNetworkQualityInfoNotify() API for reporting information about poor network connection. 5. Added the customInfo field to the APIs for scheduling, editing, creating, and querying a meeting. 6. Added error code 412100044. (For details about the adaptation mode of this error code, see the demo.) 7. Fixed issues and provided more stable experience. For details, see 90.6.5 Updates.
2023-05-12	80.15.21	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 80.15.21 Updates.
2023-03-28	80.15.6	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 80.15.6 Updates.

Released On	Version	Change Description
2023-03-24	80.15.5	<ol style="list-style-type: none"> 1. Added the function of broadcasting continuous presence. 2. Added the screen rotation switch. 3. Added the lighting adjustment function. 4. Fixed issues and provided more stable experience. For details, see 80.15.5 Updates .
2023-04-14	80.13.8	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 80.13.8 Updates .
2023-02-22	80.13.6	<ol style="list-style-type: none"> 1. Upgraded the compilation environment to Xcode 14. 2. Fixed issues and provided more stable experience. For details, see 80.13.6 Updates .
2023-02-06	80.13.5	<ol style="list-style-type: none"> 1. Added the API for initializing the SDK in a subthread. 2. Added the function of viewing details after a user touches the profile picture of a participant in the displayed action sheet. 3. Fixed issues and provided more stable experience. For details, see 80.13.5 Updates .
2023-01-05	80.12.6	<ol style="list-style-type: none"> 1. Added the enumerated value HWMFeatureTypeRecoedAlert of breakout rooms to the enableFeature:isEnabled: API for enabling a function. 2. Fixed issues and provided more stable experience. For details, see 80.12.6 Updates .
2022-12-23	80.12.5	<ol style="list-style-type: none"> 1. Added the HWMRMedia.framework library. 2. Changed the conditions for uploading profile pictures (to check the type and size of profile pictures). 3. Fixed issues and provided more stable experience. For details, see 80.12.5 Updates .

Released On	Version	Change Description
2022-11-15	80.10.5	<ol style="list-style-type: none"> Added parameters confAllowJoinUser (configuring users who can join the meeting) and isOpenWaitingRoom (whether the waiting room is enabled) to APIs for obtaining the cloud meeting room list (HWMVmrInfoModel) and modifying cloud meeting room information (HWMModifyVMRParam). Added the setShareScreenPermission API for setting the sharing permission. Fixed issues and provided more stable experience. <p>For details, see 80.10.5 Updates.</p>
2022-10-09	80.9.5	<ol style="list-style-type: none"> Add the isLiveOn parameter to HWMOrderConfParam.h of the API for editing a meeting. Added the enumerated value HWMFeatureTypeBreakoutConf of breakout rooms to the enableFeature:isEnabled: API for enabling a function. Changed the subConfUUID parameter to subConfID in the CancelSubCycleConf API for canceling a recurring meeting. Fixed issues and provided more stable experience. <p>For details, see 80.9.5 Updates.</p>
2022-09-02	80.8.5	<ol style="list-style-type: none"> You can set the guest password when creating, scheduling, or editing a meeting. Fixed issues and provided more stable experience. <p>For details, see 80.8.5 Updates.</p>
2022-07-30	80.7.5	<ol style="list-style-type: none"> You can customize the app language. Fixed issues and provided more stable experience. <p>For details, see 80.7.5 Updates.</p>
2022-06-06	80.5.11	<ol style="list-style-type: none"> Added the API for disabling prompt tones. Added the function of customizing the recording button. <p>For details, see 80.5.11 Updates.</p>
2022-05-18	80.5.5	<ol style="list-style-type: none"> Added the waiting room switch to the APIs for scheduling a meeting, modifying a meeting, and obtaining meeting details. Fixed issues and provided more stable experience. <p>For details, see 80.5.5 Updates.</p>

Released On	Version	Change Description
2022-04-15	70.16.5	<ol style="list-style-type: none"> 1. Added APIs related to recurring meetings. 2. Added the API for configuring the network mode. 3. Added audio sharing 4. Added isStopConflictConf to HWMJoinConfParam for joining a meeting using its ID. 5. Added a field to SDK initialization to disable local push for incoming meeting calls. 6. Adjusted the SSO login API. 7. Modified error codes and released the description of new error codes and the mapping between the error codes of the old and new versions. <p>For details, see 70.16.5 Updates.</p>
2022-02-19	70.14.5	<ol style="list-style-type: none"> 1. When scheduling or editing a meeting, you can allow guests to join the meeting at the time you specify before the start time. For details, see Table 6-52. 2. Supported fixed or random cloud meeting room IDs for scheduling a meeting in a cloud meeting room. For details, see Table 6-57. 3. Supported department IDs specified for login using an app ID. For details, see Table 6-18. <p>For details, see 70.14.5 Updates.</p>
2022-01-19	70.13.5	<ol style="list-style-type: none"> 1. Added userUuid (the original uuid field), account, and thirdAccount to the callback of login and logout APIs. 2. Added the host role transferring and chat scenarios to the hideExternalLabel field for specifying whether to display the External label. 3. Added notifications for incoming meeting calls. <p>For details, see 70.13.5 Updates.</p>
2021-12-23	70.12.6	<ol style="list-style-type: none"> 1. Fixed an issue where the definition cannot be restored when the network is weak. <p>For details, see 70.12.6 Updates.</p>
2021-12-13	70.12.4	<p>Fixed issues and provided more stable experience.</p> <p>For details, see 70.12.4 Updates.</p>

Released On	Version	Change Description
2021-12-03	70.11.5	<ol style="list-style-type: none"> 1. Added logKeepDays (log storage duration) to the initialization API. 2. The UI SDK for iPhone supports iOS 10.0 or later. 3. HWRTCEngine.framework is renamed HWMMREngine.framework. <p>For details, see 70.11.5 Updates.</p>
2021-10-22	70.10.5	<ol style="list-style-type: none"> 1. You can switch between large and small windows when viewing a shared desktop. 2. Fixed issues and provided more stable experience. <p>For details, see 70.10.5 Updates.</p>
2021-09-16	70.9.5	<ol style="list-style-type: none"> 1. Added SSO login. <p>For details, see 70.9.5 Updates.</p>
2021-08-28	70.8.6	<p>Fixed issues and provided more stable experience.</p> <p>For details, see 70.8.6 Updates.</p>
2021-08-18	70.8.5	<ol style="list-style-type: none"> 1. You can obtain the participant list in meetings and webinars. <p>For details, see 70.8.5 Updates.</p>
2021-07-16	70.7.5	<ol style="list-style-type: none"> 1. You can configure video mirroring for the local site in meetings. <p>For details, see 70.7.5 Updates.</p>
2021-06-10	70.6.5	<ol style="list-style-type: none"> 1. Added the meeting ending status notification. <p>For details, see 70.6.5 Updates.</p>
2021-05-17	70.5.8	<ol style="list-style-type: none"> 1. Adapted the participants and chats modules to the landscape mode. 2. On-screen comments are supported in chats. <p>For details, see 70.5.8 Updates.</p>
2021-04-15	70.4.5	<ol style="list-style-type: none"> 1. Added the API for obtaining the current user status. 2. The host can invite others to share content and quickly cancel the sharing. 3. Moved the button for switching between the front and rear cameras on the mobile app to the home screen. 4. Optimized the in-meeting screen. 5. Optimized the size of meeting logs. <p>For details, see 70.4.5 Updates.</p>

Released On	Version	Change Description
2021-03-12	70.3.5	<ol style="list-style-type: none"> 1. Overlaid the speaker screen on the shared video screen. You can close the speaker screen by dragging it down. 2. Simultaneous login on mobile phones and tablets is supported. <p>For details, see 70.3.5 Updates.</p>
2021-02-10	60.15.5	<ol style="list-style-type: none"> 1. Optimized the customized title bar on the top of the meeting page. Cells can be customized. 2. Added the function of hiding the External label in the participant list. 3. Added the API for setting the ringing and vibration for incoming calls. 4. Added the configuration of the call answering policy (automatic answering, automatic rejection, and default) for incoming calls and meeting calls. <p>For details, see 60.15.5 Updates.</p>
2021-01-08	60.13.2	<ol style="list-style-type: none"> 1. Added the API for adding participants to a meeting. 2. Added the API for leaving a meeting. 3. Added the API for ending a meeting. <p>For details, see 60.13.2 Updates.</p>
2020-12-07	60.12.5	<ol style="list-style-type: none"> 1. Added the -lc++ configuration in TARGETS > ScreenShareExtension > Build Settings > Other Linker Flags. 2. During meeting creation, the meeting room and participant scope can be specified. 3. Added the function of reporting meeting details during a meeting. 4. Added the API for uploading a profile picture. 5. Added the API for blocking the profile picture. 6. Meeting details can be returned by the API for scheduling a meeting. <p>For details, see 60.12.5 Updates.</p>
2020-11-07	60.11.6	<ol style="list-style-type: none"> 1. Added the function of automatic meeting recording. 2. Added the API for customizing buttons of answering meeting calls. 3. Added the API for setting a display name in calls. 4. Added the SDK library HWRTCEngine.framework. <p>For details, see 60.11.6 Updates.</p>

Released On	Version	Change Description
2020-10-15	60.10.5	<ol style="list-style-type: none">1. Added login site types during initialization.2. Allowed users to join a meeting in random mode.3. Supported SP authentication and login.4. Optimized the watermark display. For details, see 60.10.5 Updates .
2020-09-04	60.8.1	<ol style="list-style-type: none">1. Added the app ID parameter during initialization and allowed users to transfer enterprise app IDs.2. Added the following APIs: app ID login, meeting scheduling, meeting editing, meeting list query, meeting details query, and meeting cancellation.3. Optimized the voice meeting window.4. Integrated IMSDK.framework into UISDK.framework.5. Fixed issues and provided more stable experience. For details, see 60.8.1 Updates .
2020-07-30	60.7.1	<ol style="list-style-type: none">1. Adjusted UIs of the meeting details and More screens.2. Added the chat function and allowed users to choose whether to display this function.3. Optimized the APIs for voice/video calls and meetings, meeting control (at the bottom), and menu customization, and deleted the original APIs.4. Fixed issues and provided more stable experience. For details, see 60.7.1 Updates .
2020-06-29	60.6.1	<ol style="list-style-type: none">1. Optimized the API for social sharing.2. Fixed issues and provided more stable experience.
2020-06-14	60.5.1	<ol style="list-style-type: none">1. Supported customization of the meeting control UI.2. Fixed issues and provided more stable experience.
2020-05-28	60.4.0	<ol style="list-style-type: none">1. Eliminated the dependency on Cordova, optimized performance, and improved the initialization and meeting joining speed.2. Re-designed APIs to facilitate access.3. Developed new demos to simplify access.4. Optimized the architecture and switched web-based development to native development for some pages, bringing smooth user experience.

Released On	Version	Change Description
2019-09-02	6.1.203	Added the following API: Logout Changed some API parameters, and added the groupId parameter for screen sharing.
2019-07-23	6.1.195	Added the following API: API for joining a meeting anonymously (that is, joining a meeting without login)
2019-06-21	6.1.187	Added the following API: Starting a P2P call
2019-05-20	6.1.177	Added the following API: API for sharing a screen during a meeting
2019-04-13	6.1.27	Added the following API: <ul style="list-style-type: none">API for creating a meeting (with participant information carried). Participants will receive a call to join a meeting when it is initiated. Supported the following capabilities: <ul style="list-style-type: none">Joining a meeting by answering a call on the application frontend.Integrating applications. For more information, see Application Integration.
2019-03-29	6.1.23	This issue is the first official release.

7 Windows SDK

7.1 Introduction

The Windows SDK provides of HUAWEI CLOUD Meeting provides a complete set of APIs. You can call these APIs to quickly integrate audio and video meeting capabilities into their applications, including creating, scheduling, and joining meetings, sharing screens and programs, annotating whiteboards, and muting or unmuting all participants.

7.2 Getting Started

This section uses SDK initialization as an example to describe how to use the Windows SDK for secondary development.

Preparations

During the development, ensure that the following environment requirements are met:

Table 7-1 Environment requirements

Environment and Tool	Version	Description
OS	Windows 10/11 Professional	Hardware requirements <ul style="list-style-type: none">• CPU: i5-2400 quad-core, 3.1 GHz or above• Memory: 4 GB or above

Environment and Tool	Version	Description
Microsoft Visual Studio	Visual Studio 2017	During the installation, select Desktop development with C++, Visual C++ MFC for x86 and x64 , and Windows 10 SDK (10.0.15063.0) .
Requesting test resources and app IDs	-	For details, see Preparations .

SDK Integration

NOTE

The high DPI awareness function of each monitor must be enabled for the exe program that integrates the SDK on a computer with a high DPI (zoom ratio greater than 100%). Otherwise, the image will be displayed abnormally. For example, the image is blurry, or the image is incomplete or tilted on the receiver during sharing.

For details, see [Figure 7-12](#).

Step 1 Decompress the SDK package to the local host.

Figure 7-1 Decompressing the SDK package to the local host

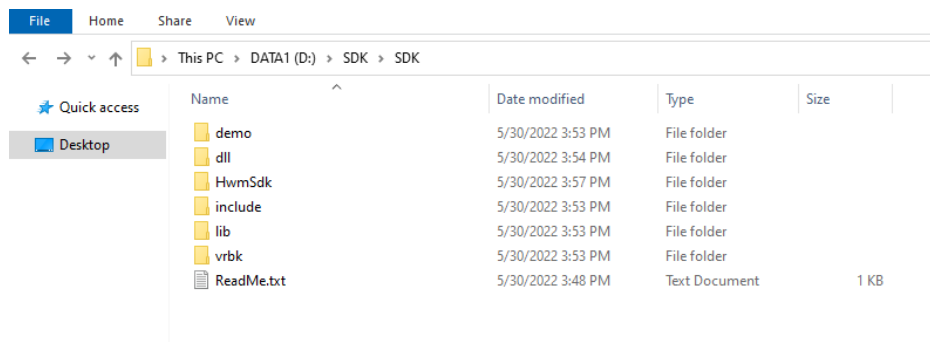


Table 7-2 Introduction to SDK directories

Folder	Description
include	Stores the header files required for compilation.
lib	Contains two subfolders, win32 and x64 . The two subfolders store the .lib files that the compilation of the corresponding platform depends on.
dll	Contains two subfolders, win32 and x64 . The two subfolders store the .dll files and the executable SDK .exe files that the running of the corresponding platform depends on.
HwmSdk	Stores the common dependency libraries used by Win32 and x64.

Folder	Description
demo	Stores demo code files and resource files.

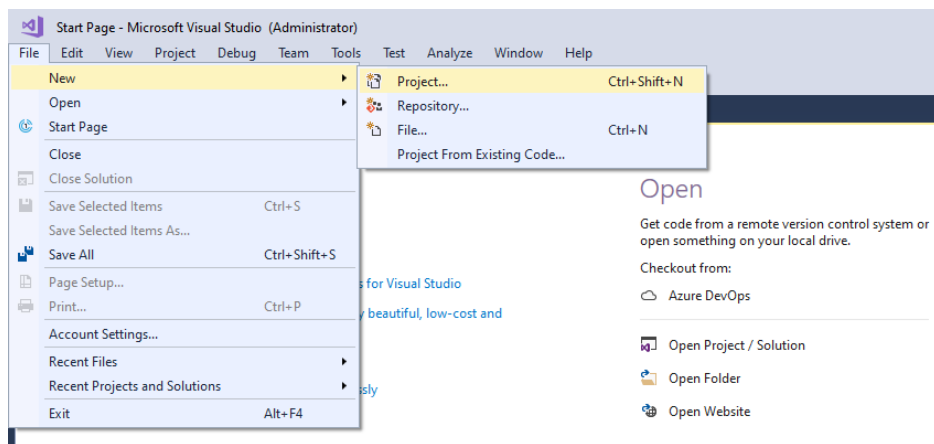
 **NOTE**

The **Meeting-Workspace-Plugin** directory stores library files related to the cloud desktop plug-in. To integrate the cloud desktop plug-in, copy this directory to **HwmSdk\sdkResources**.

Step 2 Create a project.

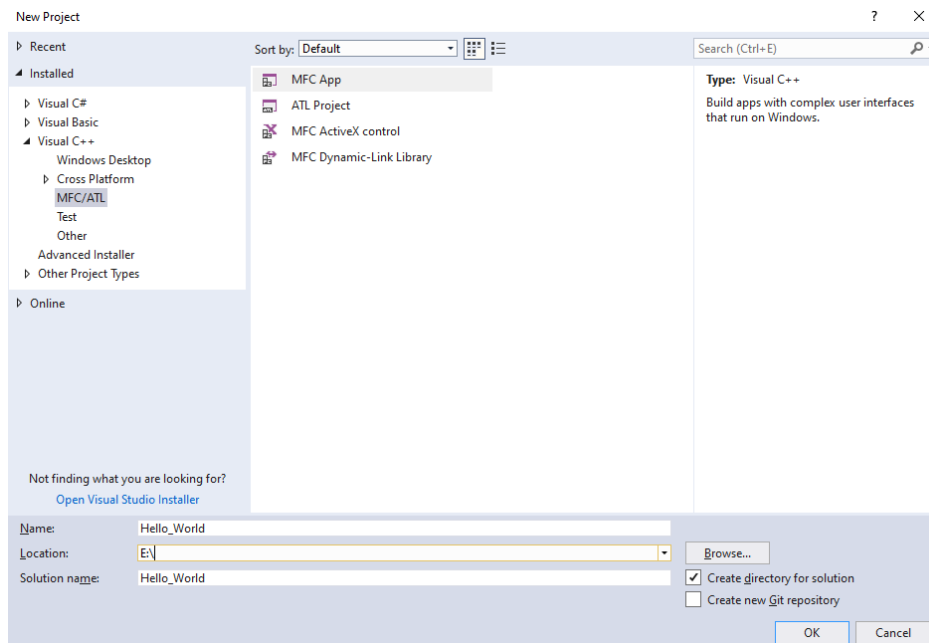
1. Open Visual Studio 2017 and choose **File > New > Project** from the main menu.

Figure 7-2 Opening a new project



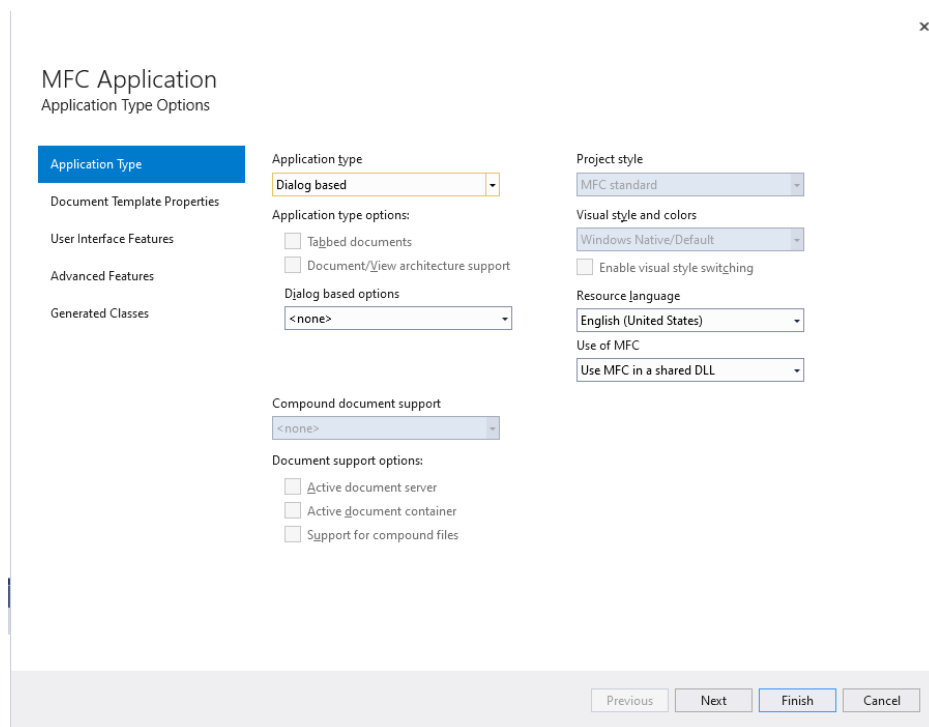
2. On the **Create a new project** page, choose **Installed > Visual C++** from the navigation tree. Select **MFC Application** in the template list, set the project name to **Hello_World**, select **E:** from the **Location** drop-down list, and click **OK**.

Figure 7-3 Creating a project



3. On the **Application Type** page, set **Application type** to **Dialog based**, retain the default values for other parameters, and click **Finish**.

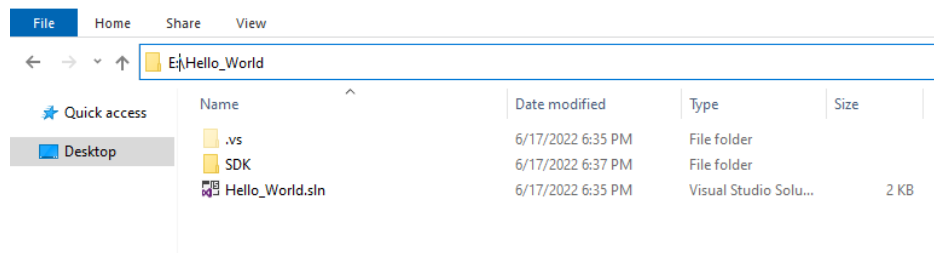
Figure 7-4 Application type options



Step 3 Copy the static library files and header files to the project.

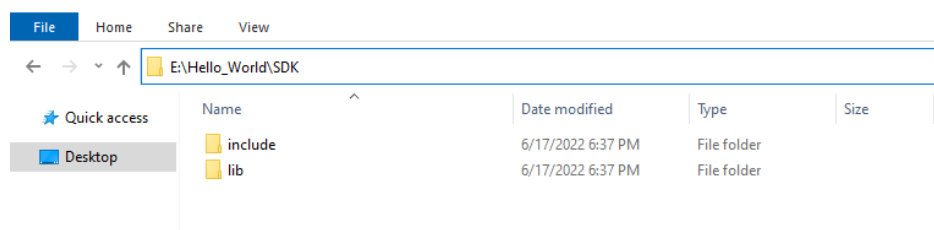
1. Create a directory named **SDK** at the same level as the **Hello_World.sln** file in the **Hello_World** project directory.

Figure 7-5 Creating the SDK directory



2. Copy the **lib** and **include** directories in the **SDK** directory of the demo installation package to the **Hello_World\SDK** directory.

Figure 7-6 Copying files



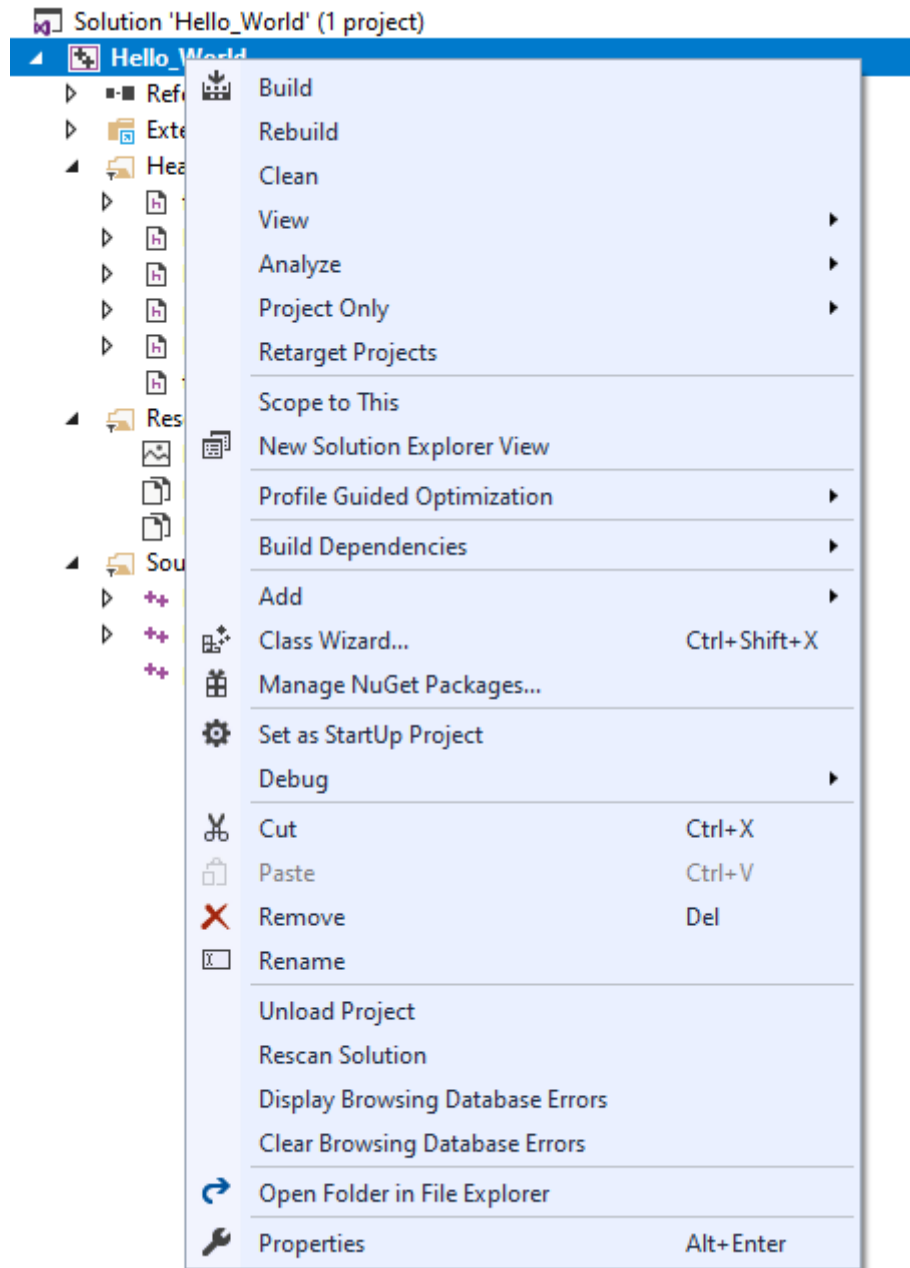
Step 4 Modify configuration properties of the project.

NOTE

The following operations are performed based on the **Debug** configuration and **Win32** platform. When modifying the configuration and platform, add additional include directories and dependent libraries again.

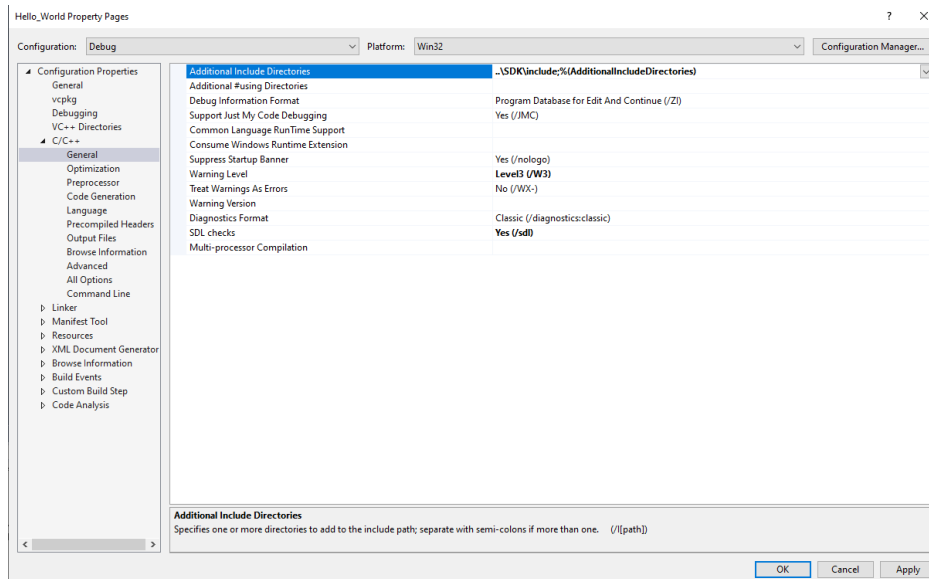
1. Right-click the **Hello_World** project and choose **Properties** from the shortcut menu.

Figure 7-7 Project properties



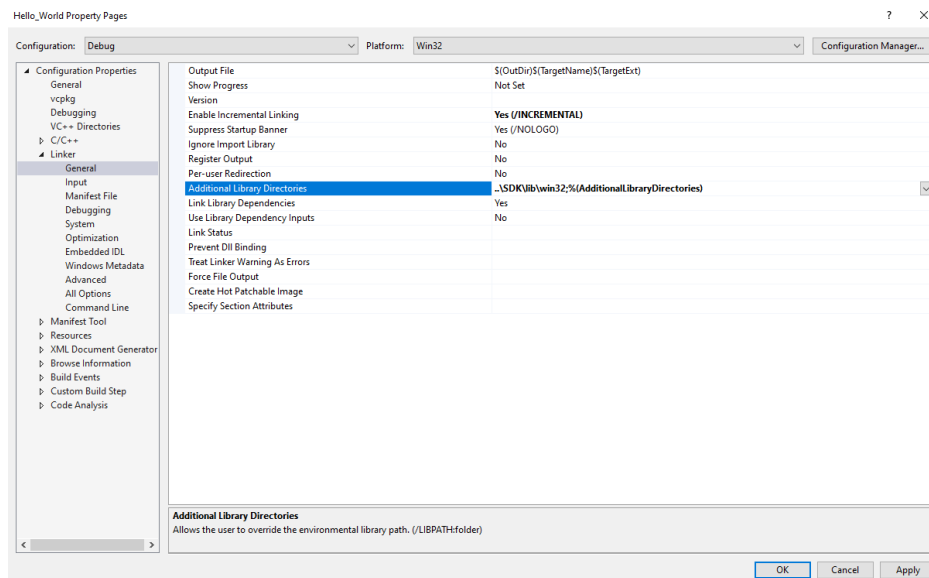
2. Choose **Configuration Properties > C/C++ > General**, change the value of **Additional Include Directories** to `..\SDK\include`, and click **Apply**.

Figure 7-8 Configuring Additional Include Directories



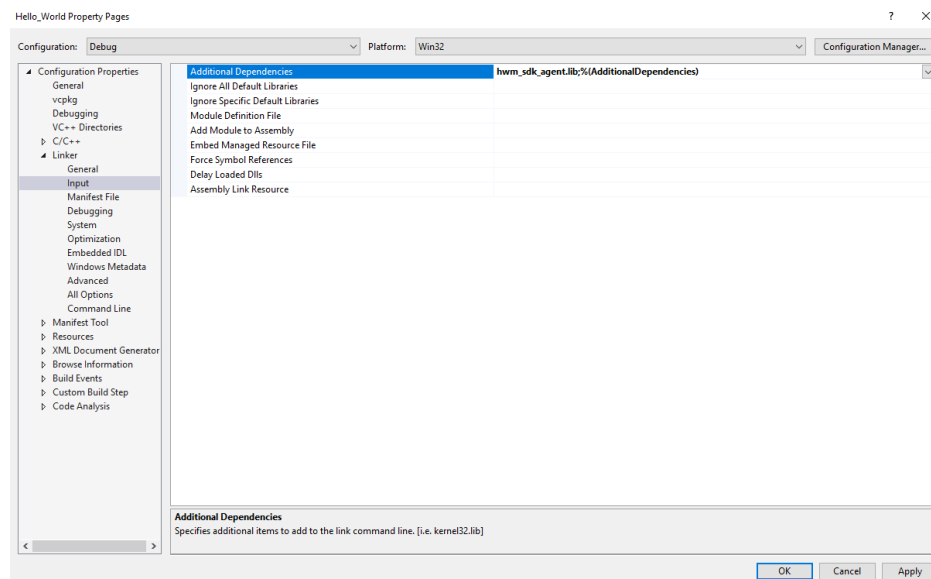
3. Choose **Configuration Properties > Linker > General**, change the value of **Additional Library Directories** to `..\SDK\lib\win32`, and click **Apply**.

Figure 7-9 Configuring Additional Library Directories



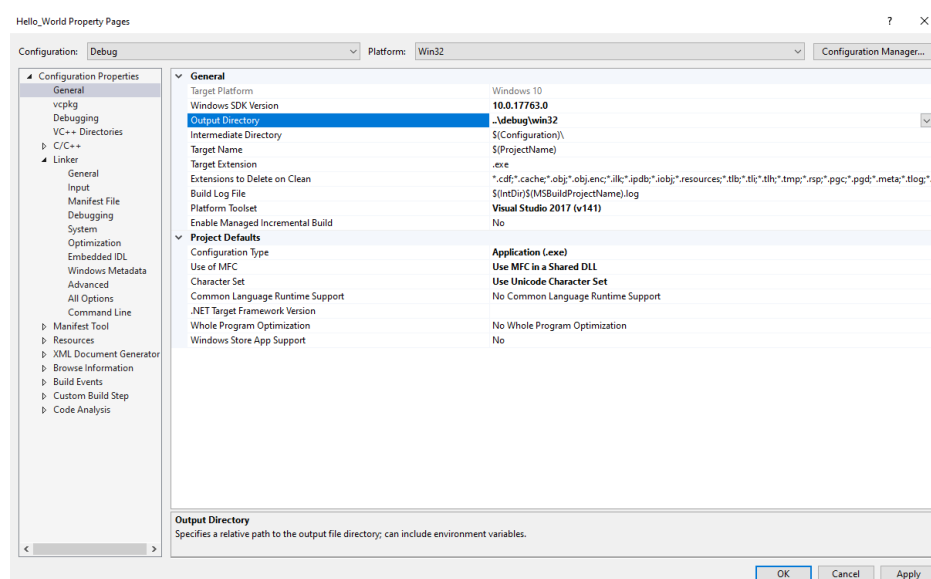
4. Choose **Configuration Properties > Linker > Input**, change the value of **Additional Dependencies** to `hwm_sdk_agent.lib`, and click **Apply**.

Figure 7-10 Configuring Additional Dependencies



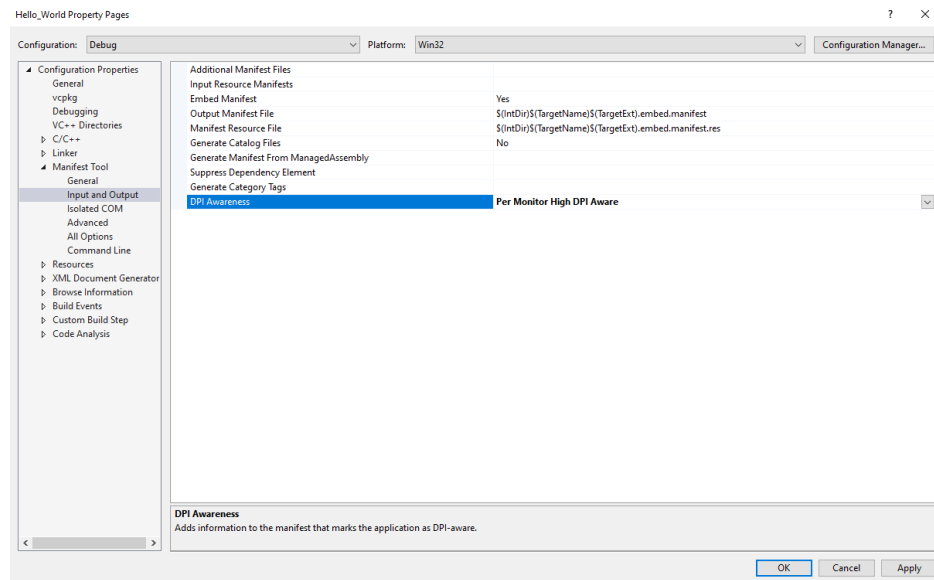
5. Choose **Configuration Properties > General**, change the value of **Output Directory** to **..\debug\win32**, and click **OK**.

Figure 7-11 Configuring Output Directory



6. In the left pane of the property page, choose **Configuration Properties > Manifest Tools > Input and Output**, change the value of **DPI Awareness** to **Per Monitor High DPI Aware**, and click **OK**.

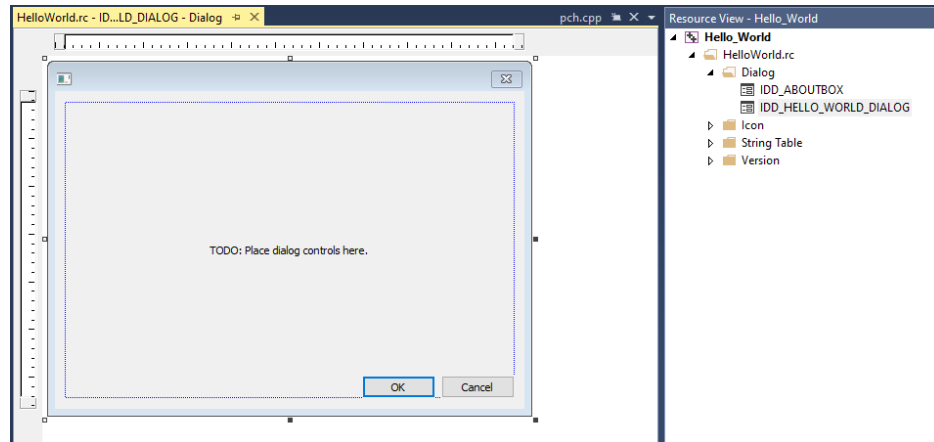
Figure 7-12 Configuring the DPI awareness function



Step 5 Add a UI resource control.

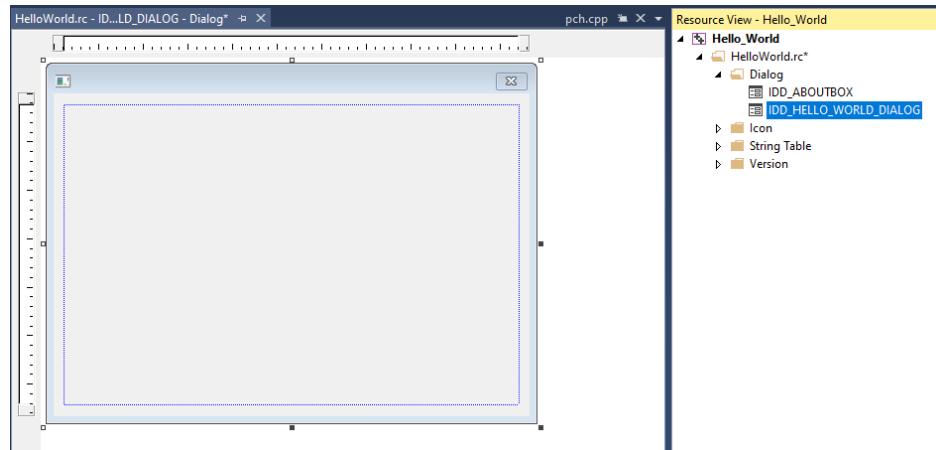
1. In the resource view, open the **Dialog** page corresponding to the project.

Figure 7-13 Dialog page of the project



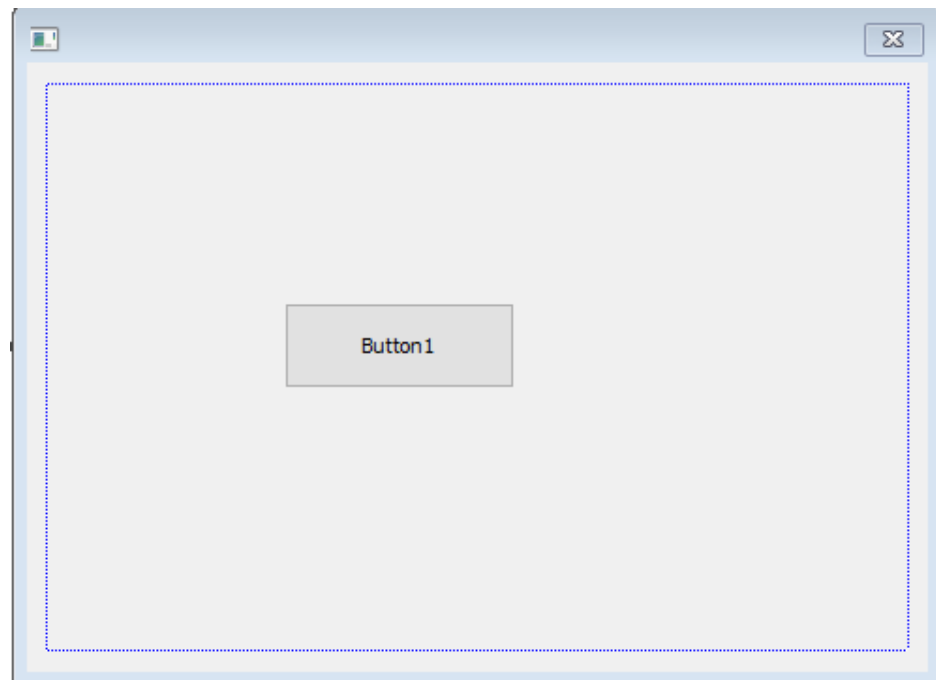
2. Select all controls on the page and press **Delete**.

Figure 7-14 Deleting existing controls



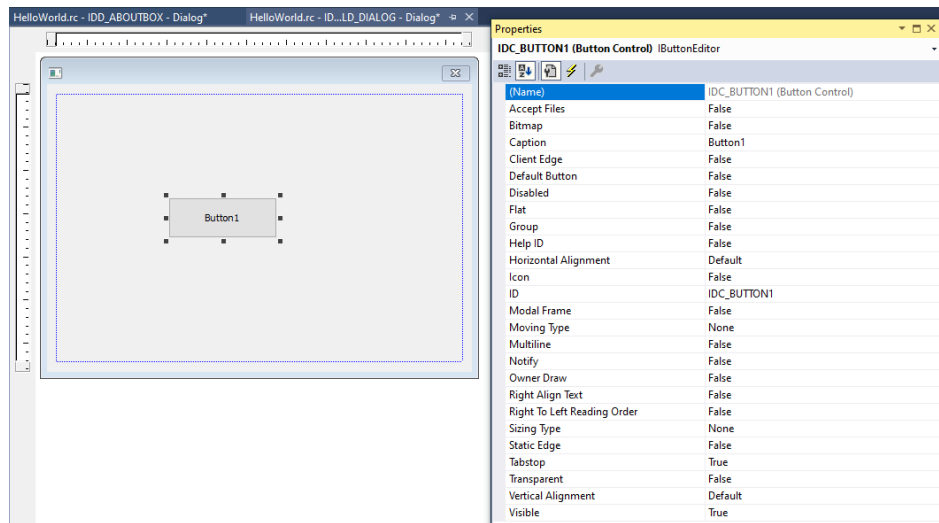
3. Add the initialization button.
 - a. Add the initialization button control. Open the toolbox page, select the button control, drag it to the dialog box, and adjust the width and height of the button.

Figure 7-15 Adding the initialization button



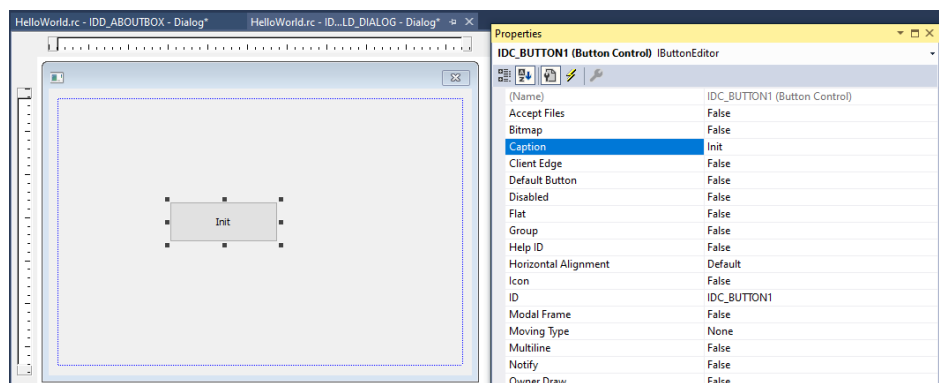
- b. To modify the text on the button, right-click the button and choose **Properties** from the shortcut menu.

Figure 7-16 Button properties



- c. Change the value of **Caption** to **Init**.

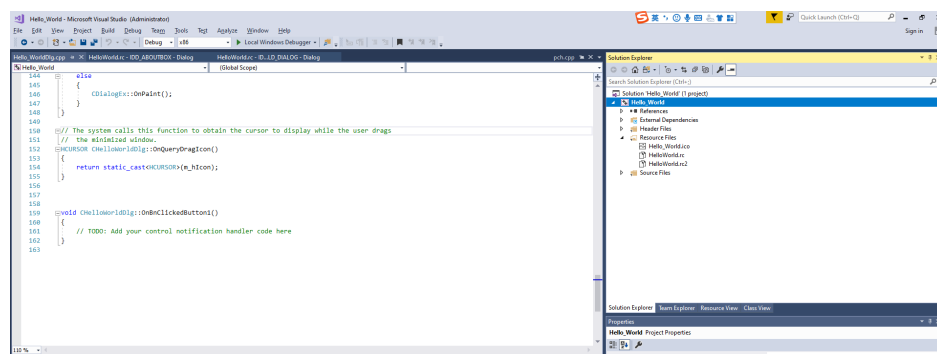
Figure 7-17 Modifying button properties



Step 6 Add a button click event.

1. Double-click the **Init** control. The system automatically adds the **OnBnClickedButton1()** method to **Hello_WorldDlg.cpp** for the **Init** button.

Figure 7-18 Creating an event method for the Init button

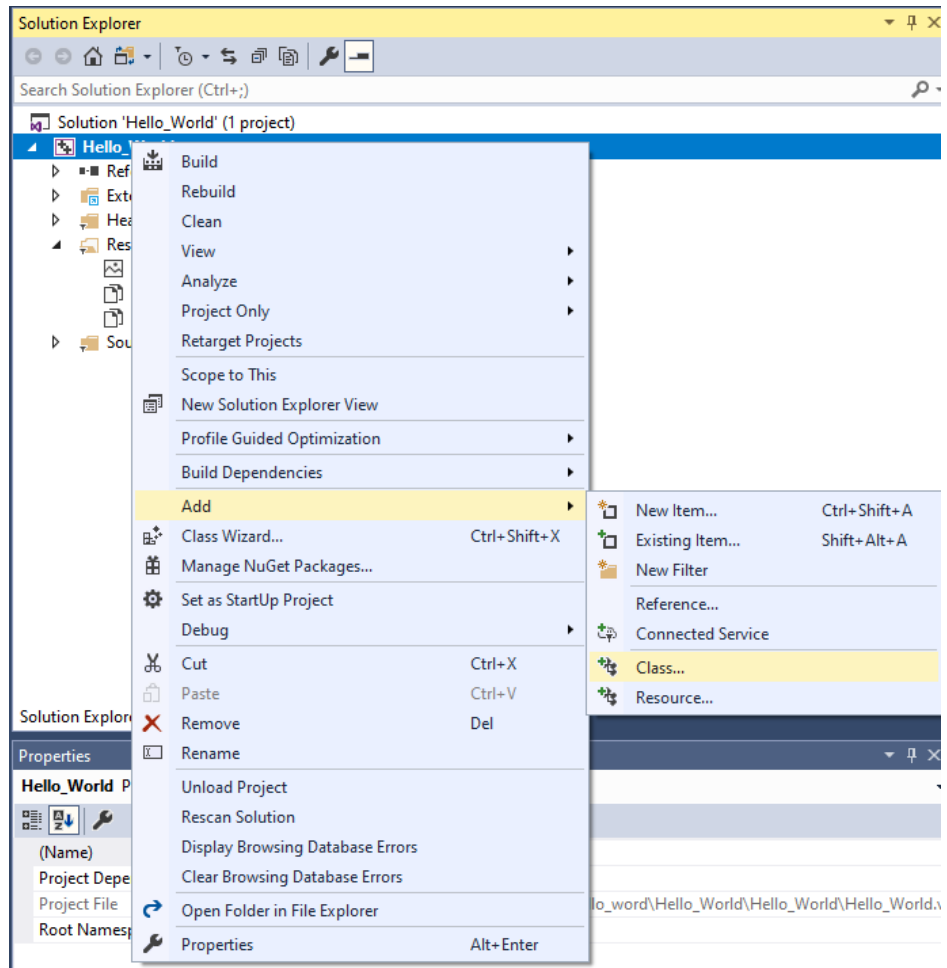


Step 7 Add a code file.

1. Add a callback processing class.

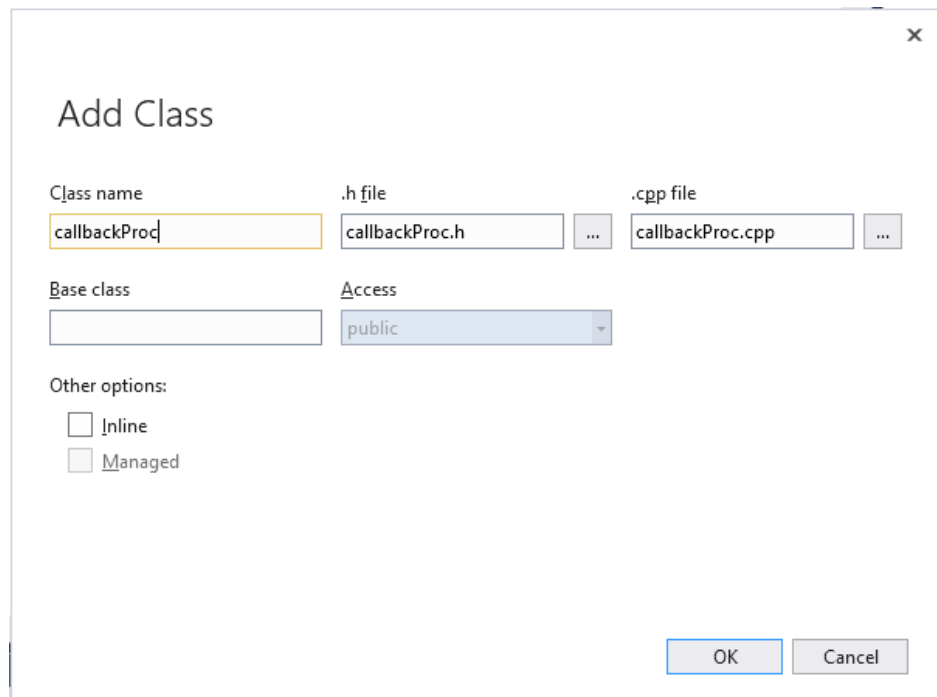
- a. Right-click the project and choose **Add > Class** from the shortcut menu.

Figure 7-19 Adding a class



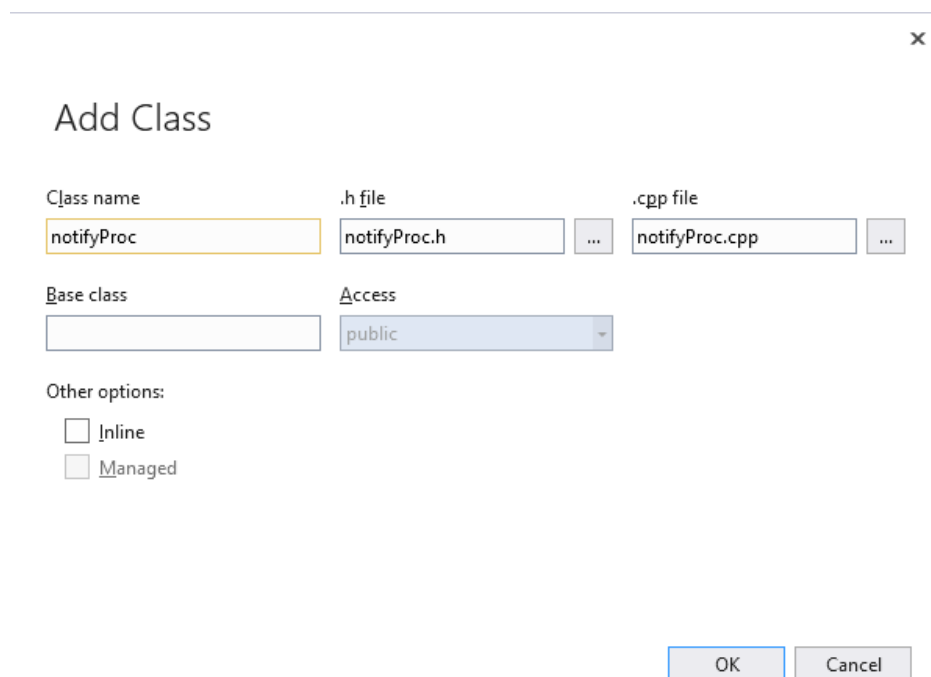
- b. In the **Generic C++ class wizard** dialog box, set the class name to **callbackProc**, retain the default values for other parameters, and click **Finish**.

Figure 7-20 Adding the callbackProc class



2. Add a notification processing class and set the class name to **notifyProc**.

Figure 7-21 Adding the notifyProc class



Step 8 Add the logic code.

1. Add the SDK callback class header file **HwmAgentCallback.h** to the **callbackProc.h** file, so the callbackProc class inherits the base class HwmAgentCallback. You can copy only API calling callback functions that need to be focused on in the **HwmAgentCallback.h** file.


```
#pragma once
#include "HwmAgentCallback.h"

class callbackProc : public hwmsdkagent::HwmAgentCallback
{
public:
    callbackProc();
    ~callbackProc();
    /**
     * @brief [en] Callback of Init interface.
     *
     * @param [in] hwmsdk::HwmErrCode ret [en] Return code
     * @param [in] const char* reason [en] Fail reason
     * @attention [en] NA
     **/
    void OnInitResult(hwmsdk::HwmErrCode ret, const char* reason, HwmSdkInfo *sdkInfo);

    /**
     * @brief [en] Callback of Exit interface.
     *
     * @param [in] hwmsdk::HwmErrCode ret [en] Return code
     * @param [in] const char* reason [en] Fail reason
     * @attention [en] NA
     **/
    void OnExitResult(hwmsdk::HwmErrCode ret, const char* reason);

    // To save space, other callback APIs are omitted here. Copy them completely during actual
    operations.
}
}
```

NOTE

To save space, some of the preceding code is omitted. You need to implement the complete code based on the SDK header file.

2. Define APIs in the **callbackProc.cpp** file.

```
#include "stdafx.h"
#include "callbackProc.h"

callbackProc::callbackProc()
{
}

callbackProc::~callbackProc()
{
}

/**
 * Initialization callback
 */
void callbackProc::OnInitResult(hwmsdk::HwmErrCode ret, const char* reason, HwmSdkInfo *sdkInfo)
{
    CString retStr;
    retStr.Format(_T("%d"), ret);
    CString tips = _T("OnInitResult code:") + retStr;
    AfxMessageBox(tips);
}

/**
 * Exit callback */
void callbackProc::OnExitResult(hwmsdk::HwmErrCode ret, const char* reason)
{
    CString retStr;
    retStr.Format(_T("%d"), ret);
    CString tips = _T("OnExitResult code:") + retStr;
    AfxMessageBox(tips);
}
}
```

```
// To save space, some code is omitted here. In actual operations, define callback function APIs that you need to pay attention to.
```

NOTE

To save space, some of the preceding code is omitted. You need to implement the complete code based on the SDK header file. The header files (**stdafx.h** or **pch.h**) used for precompilation in different versions may be different. If a compilation error occurs, use the local default header file.

3. Add the SDK callback class header file **HwmAgentNotify.h** to the **notifyProc.h** file, so the callbackProc class inherits the base class HwmAgentNotify. You can copy only API calling functions that need to be focused on in the **HwmAgentNotify.h** file.

```
#pragma once
#include "HwmAgentNotify.h"

class notifyProc : public hwmsdkagent::HwmAgentNotify
{
public:
    notifyProc();
    ~notifyProc();

    /**
     * @brief [en] Notify of sdk disconnected.
     *
     * @attention [en] NA
     */
    void OnSdkDisconnected();

    // To save space, other callback APIs are omitted here. Copy them completely during actual operations.
}
```

NOTE

To save space, some of the preceding code is omitted. You need to implement the complete code based on the SDK header file.

4. Define APIs in the **notifyProc.cpp** file.

```
#include "stdafx.h"
#include "notifyProc.h"

notifyProc::notifyProc()
{
}

notifyProc::~notifyProc()
{
}

// SDK disconnection notification
void notifyProc::OnSdkDisconnected()
{
    CString tips = _T("OnSdkDisconnected");
    AfxMessageBox(tips);
}

// To save space, other callback APIs are omitted here. Copy them completely during actual operations.
```

NOTE

To save space, some of the preceding code is omitted. You need to implement the complete code based on the SDK header file. The header files (**stdafx.h** or **pch.h**) used for precompilation in different versions may be different. If a compilation error occurs, use the local default header file.

5. Include the required header files in the **Hello_WorldDlg.h** file.

```
#include "HwmErrorCodeDef.h"
```

6. Declare functions to be used in the **Hello_WorldDlg.h** file.

```
public:  
    // Initialization API  
    hwmsdk::HwmErrCode Init();  
    // Exit API  
    static hwmsdk::HwmErrCode Exit();
```

7. Include the required header files in the **Hello_WorldDlg.cpp** file.

```
#include "notifyProc.h"  
#include "callBackProc.h"  
#include "HwmSdkAgent.h"  
#include <string>
```

8. Define the callback and notification objects in the **Hello_WorldDlg.cpp** file.

```
static notifyProc *notifyObj = new notifyProc();  
static callbackProc *callbackObj = new callbackProc();
```

9. Define the initialization API in the **Hello_WorldDlg.cpp** file.

```
/**  
 * Initialization API  
 */  
hwmsdk::HwmErrCode CHello_WorldDlg::Init()  
{  
    // Assemble the input parameter structure.  
    hwmsdkagent::HwmlnitInfo initParam;  
    memset(&initParam, 0, sizeof(hwmsdkagent::HwmlnitInfo));  
  
    // (Not required for Win32) Configure the SDK path, that is, the .exe file path, for the x64 platform  
    // after renaming the .exe file.  
    // Convert the path into the UTF-8 format and copy it to initParam. The conversion code is  
    // omitted here.  
    strcpy_s(initParam.exePath, HWM_MAX_FILE_PATH_LEN, GetHwmSdkExePath().c_str());  
    // Specify the log path, convert the path into the UTF-8 format, and copy the converted path to  
    // initParam. The conversion code is omitted here.  
    strcpy_s(initParam.logPath, HWM_MAX_FILE_PATH_LEN, GetLogPath().c_str());  
    // Specify the data path, convert the path into the UTF-8 format, and copy the converted path to  
    // initParam. The conversion code is omitted here.  
    strcpy_s(initParam.userDataPath, HWM_MAX_FILE_PATH_LEN, GetUserDataPath().c_str());  
    strncpy_s(initParam.appId, GetAppId.c_str(), HWM_MAX_APPID_LEN);  
  
    initParam.notify = notifyObj;  
    initParam.callback = callbackObj;  
    hwmsdk::HwmErrCode ret = hwmsdkagent::Init(&initParam);  
  
    return ret;  
}
```

10. In the **Hello_WorldDlg.cpp** file, implement the processing of the event of clicking the **Init** button.

```
void CHello_WorldDlg::OnBnClickedButton1()  
{  
    // TODO: Add a control to notify code processing.  
    hwmsdk::HwmErrCode ret = Init();  
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)  
    {  
        AfxMessageBox(_T("Init error"));  
    }  
}
```

NOTE

The preceding code is the same as the project code. Do not add the code repeatedly.

11. Define the exit API in **Hello_WorldDlg.cpp** file.

```
/**  
 * Exit API  
 */  
hwmsdk::HwmErrCode CHello_WorldDlg::Exit()
```

```
{
    hwmsdk::HwmErrCode ret = hwmsdkagent::Exit();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Exit error"));
    }
    return ret;
}
```

12. Find the `InitInstance` API in the **Hello_World.cpp** file and call the exit API when the window exits.

```
// Initialize CHello_WorldApp.
```

```
BOOL CHello_WorldApp::InitInstance()
{
    // If an application running on Windows XP specifies to
    // enable the visualization mode using ComCtl32.dll version 6 or later,
    // InitCommonControlsEx() is required. Otherwise, the window cannot be created.
    INITCOMMONCONTROLSEX InitCtrls;
    InitCtrls.dwSize = sizeof(InitCtrls);
    // Set it to include all the common control classes
    // to be used in the application.
    InitCtrls.dwICC = ICC_WIN95_CLASSES;
    InitCommonControlsEx(&InitCtrls);

    CWinApp::InitInstance();

    AfxEnableControlContainer();

    // Create a shell manager to prevent the dialog box from containing
    // any shell tree view control or shell list view control.
    CShellManager *pShellManager = new CShellManager;

    // Activate the Windows Native visual manager to enable the theme in the MFC control.
    CMFCVisualManager::SetDefaultManager(RUNTIME_CLASS(CMFCVisualManagerWindows));

    // Standard initialization
    // If these functions are not used,
    // and you want to reduce the size of the final executable file,
    // remove the following specific initialization routines that are not required,
    // and change the registry key for storing settings.
    // TODO: Modify the character string as required.
    // For example, change the value to the company or organization name.
    SetRegistryKey(_T("Local applications generated by the application wizard"));

    CHello_WorldDlg dlg;
    m_pMainWnd = &dlg;
    INT_PTR nResponse = dlg.DoModal();
    if (nResponse == IDOK)
    {
        // TODO: Place code here
        // to handle when to use OK to close the dialog box.
        CHello_WorldDlg::Exit();
    }
    else if (nResponse == IDCANCEL)
    {
        // TODO: Place code here
        // to handle when to use Cancel to close the dialog box.
        CHello_WorldDlg::Exit();
    }
    else if (nResponse == -1)
    {
        TRACE(traceAppMsg, 0, "Warning: Creating the dialog box failed. The application will terminate unexpectedly.\n");
        TRACE(traceAppMsg, 0, "Warning: If you use the MFC control in the dialog box, you cannot #define _AFX_NO_MFC_CONTROLS_IN_DIALOGS.\n");
    }
}
```

```
// Delete the created shell manager.
if (pShellManager != nullptr)
{
    delete pShellManager;
}

#ifdef _AFXDLL && !defined(_AFX_NO_MFC_CONTROLS_IN_DIALOGS)
    ControlBarCleanUp();
#endif

// Because the dialog box is closed, FALSE is returned to exit the application,
// instead of starting the message pump of the application.
return FALSE;
}
```

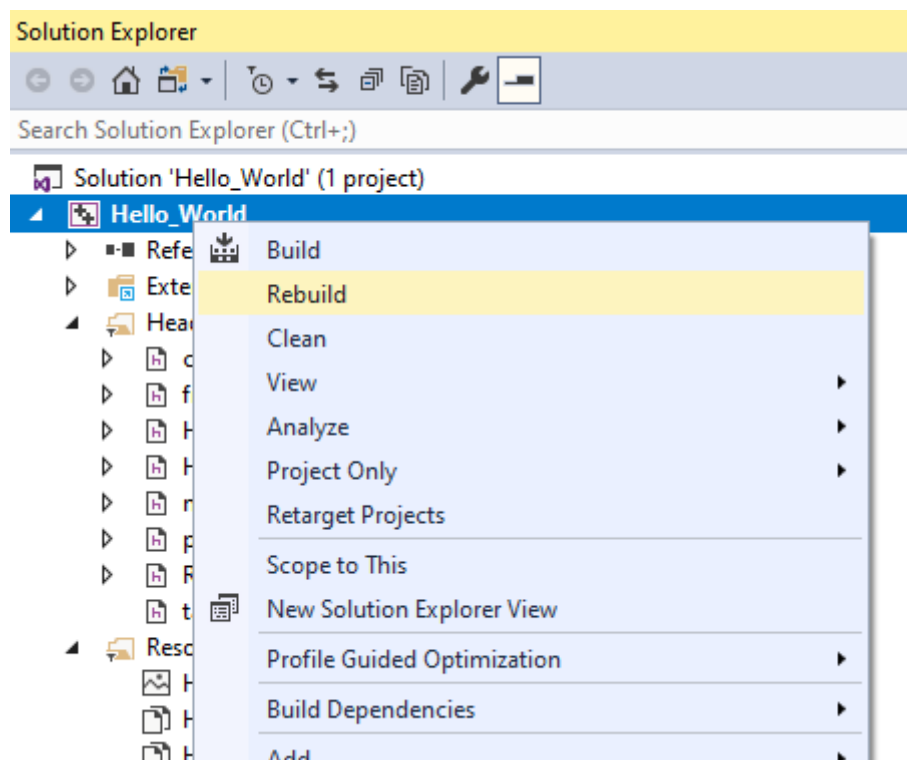
 **NOTE**

The preceding code is the same as the project code. Do not add the code repeatedly.

Step 9 Compile and debug the project.

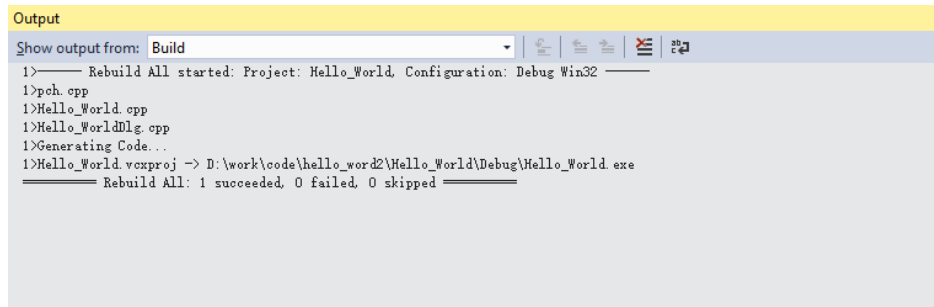
1. Right-click the project and choose **Rebuild** from the shortcut menu to compile the project.

Figure 7-22 Rebuilding files



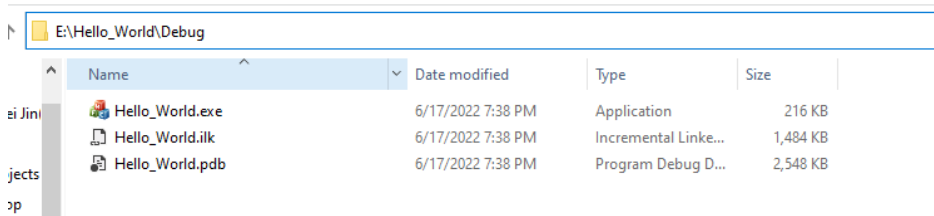
2. Observe the **Output** window. If the message "Rebuild All: 1 succeeded, 0 failed, 0 skipped" is displayed, the compilation is successful.

Figure 7-23 Result



3. After the compilation is successful, the generated executable program **Hello_World.exe** is stored in the output directory. The current output directory is **\$(path)\Hello_World\debug\win32**.

Figure 7-24 .exe file



4. Copy the corresponding files in **SDK\dll** and **SDK\HwmSdk** to the output directory. If the Win32 platform is used, copy DLL files in **SDK\dll\win32** to the output directory, and copy all the files in **SDK\HwmSdk** to the output directory.

Figure 7-25 Copying DLL files in SDK\dll\win32 to the output directory

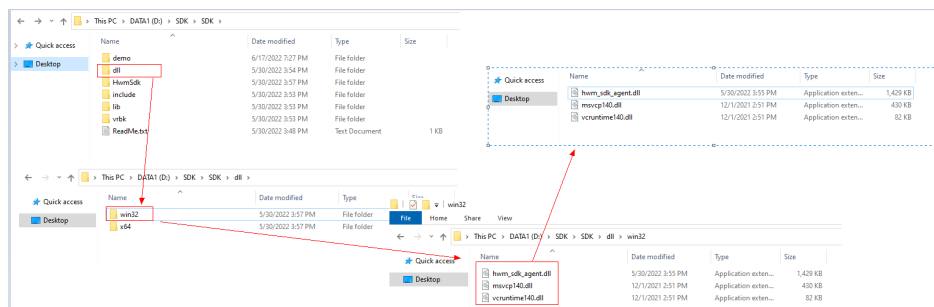
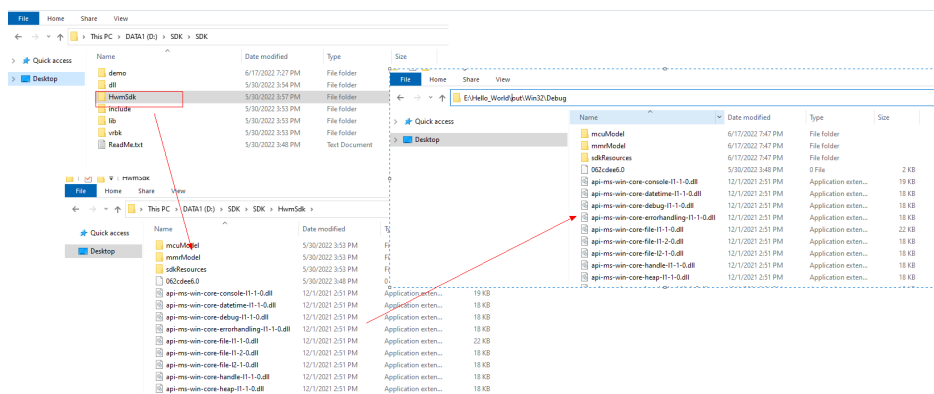


Figure 7-26 Copying all files in SDK\HwmSdk to the output directory



If the x64 platform is used, copy DLL files in **SDK\dll\x64** to the output directory and the entire **SDK\HwmSdk** folder to the output directory, copy **HwmSdk.exe** in **SDK\dll\x64** to the **HwmSdk** folder in the output directory.

Figure 7-27 Copying DLL files in **SDK\dll\x64** to the output directory

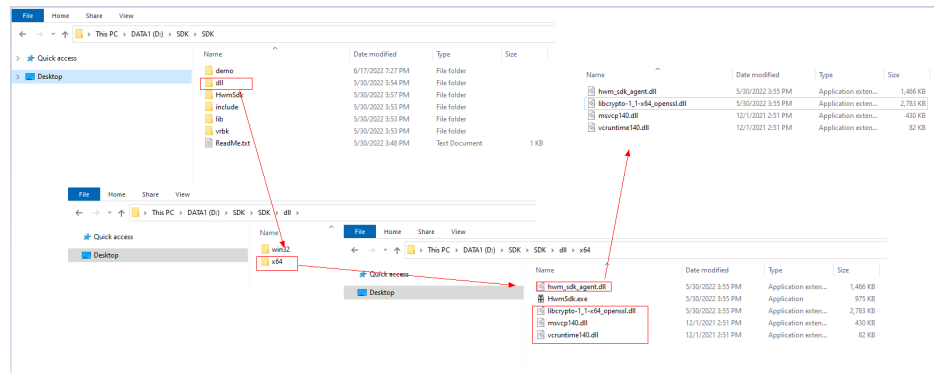


Figure 7-28 Copying the entire **SDK\HwmSdk** folder to the output directory

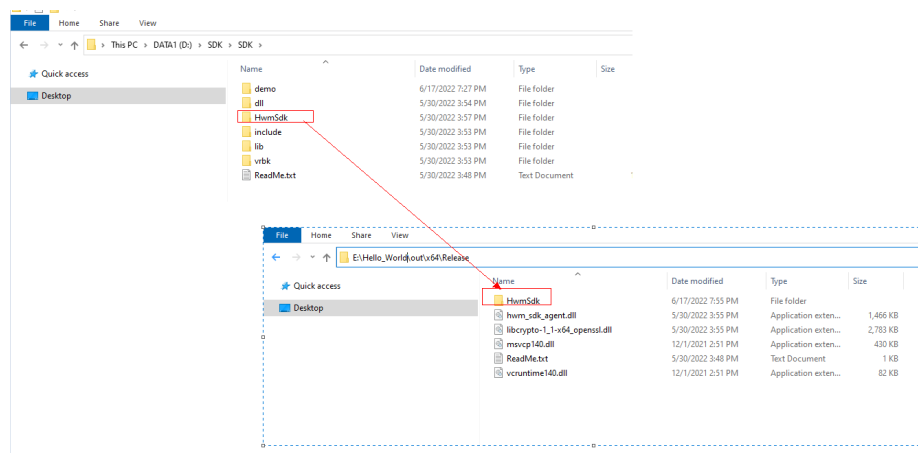
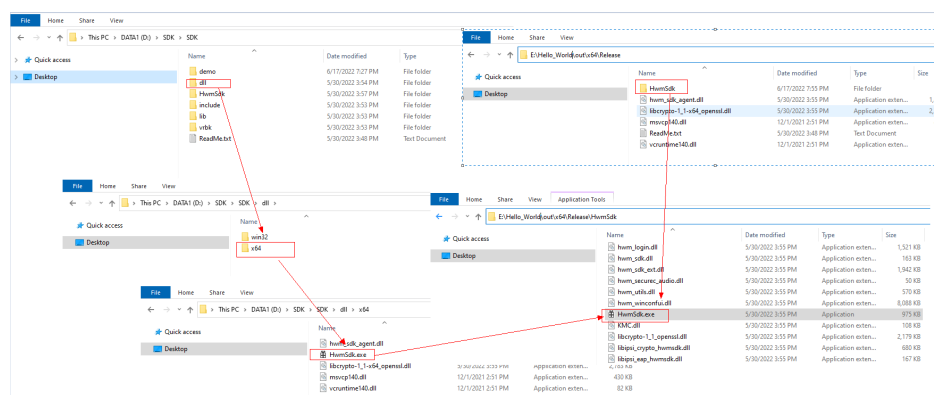


Figure 7-29 Copying **HwmSdk.exe** in **SDK\dll\x64** to the **HwmSdk** folder in the output directory

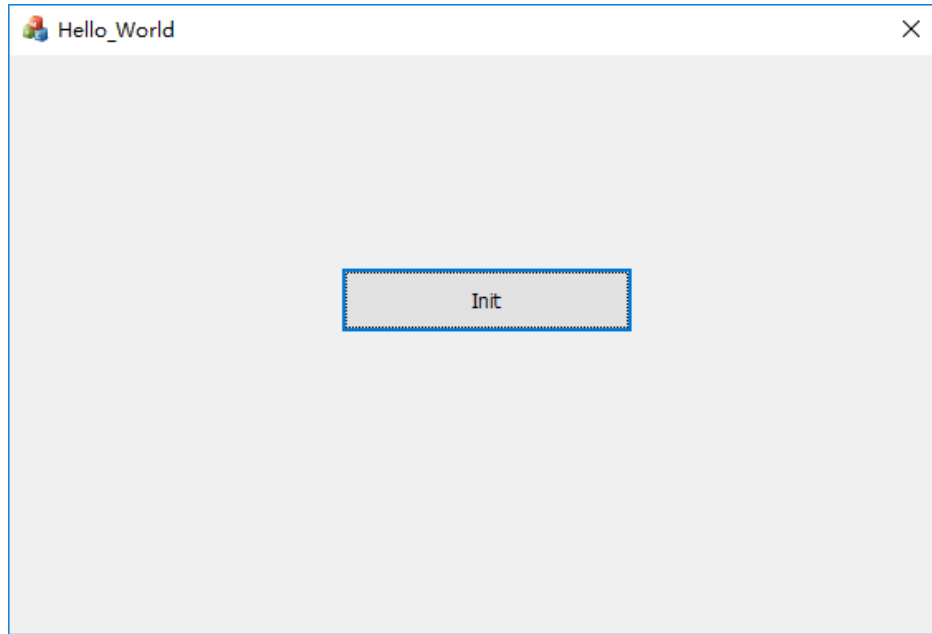


 **NOTE**

When the Win32 platform is used, the directory is **SDK\dll\win32**. When the x64 platform is used, the directory is **SDK\dll\x64**. HwmSdk contains common dependency library files.

5. Double-click **Hello_World.exe**.

Figure 7-30 Startup screen



6. Click **Init**. A dialog box is displayed indicating the initialization result. The value **0** indicates that the initialization is successful, and other values indicate that the initialization fails. After the initialization is successful, a notification dialog box is displayed.

Figure 7-31 Result prompt

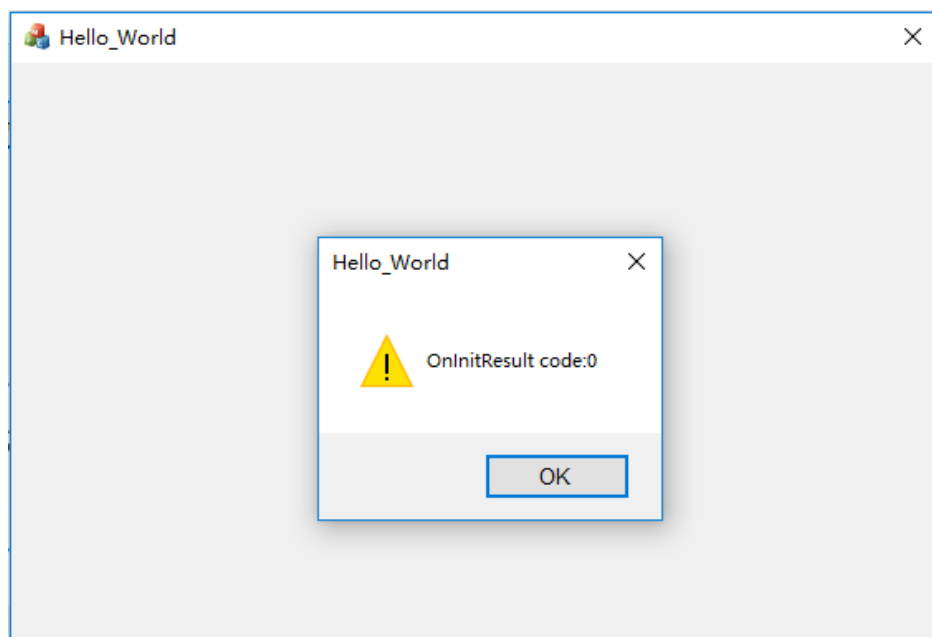
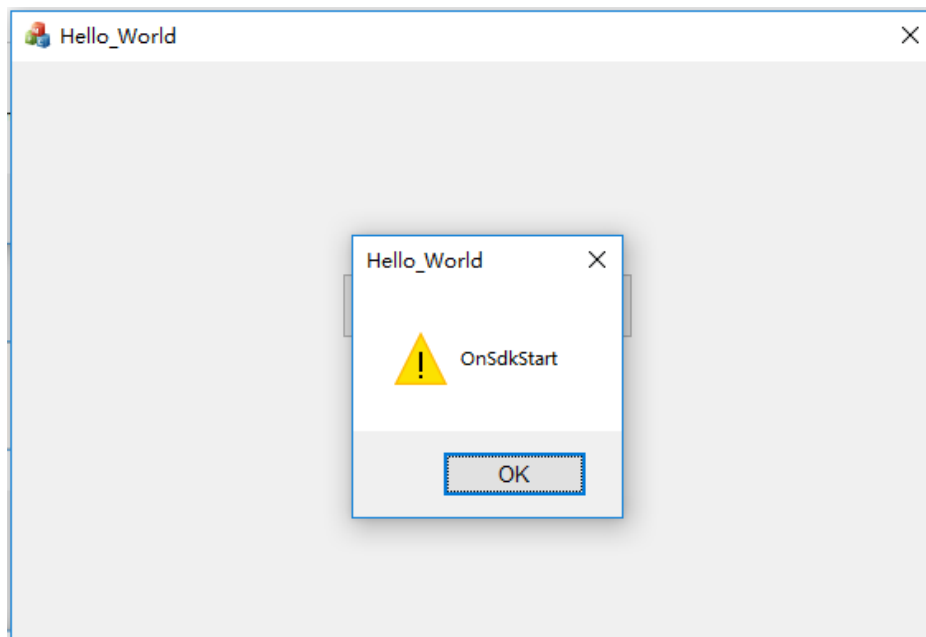


Figure 7-32 Startup notification



----End

7.3 Typical Scenarios

This section describes the API call orders and examples of HUAWEI CLOUD Meeting.

7.3.1 API Call in Typical Scenarios

API Description

Windows SDK APIs are classified into active calling APIs, callback APIs, and message notification APIs.

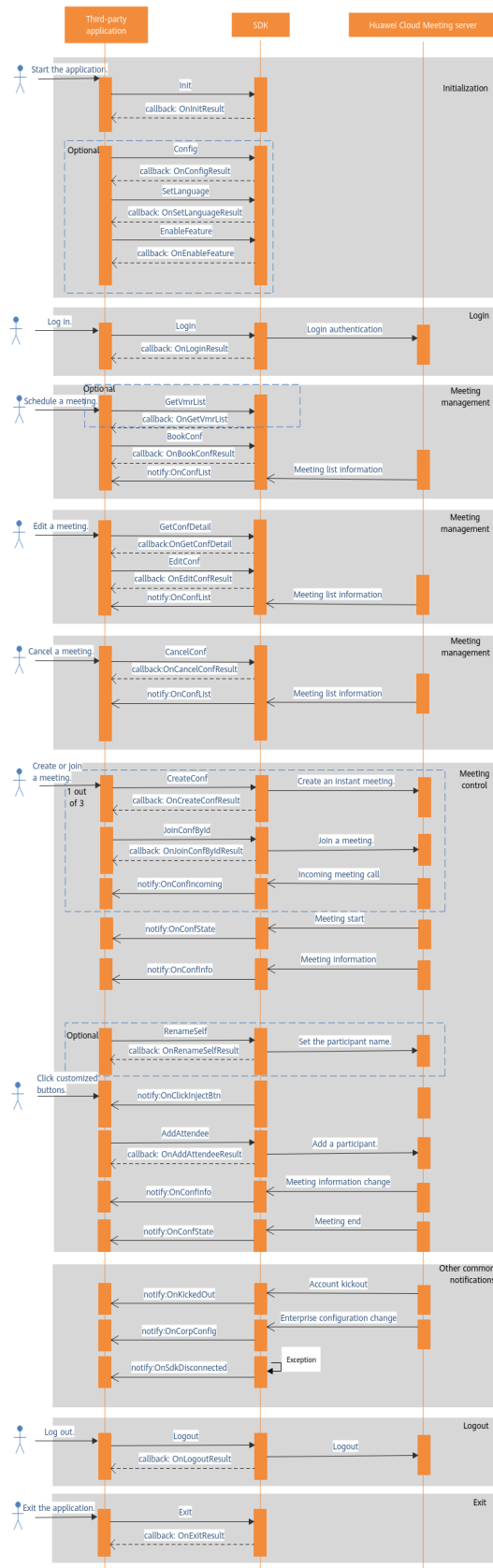
Active calling APIs: The application actively calls these APIs to complete tasks. For example, the **Init** API is called for initialization.

Callback APIs: Active API calling and SDK internal task processing are asynchronous. After a task in the SDK is completed, callback APIs are called to notify the application. For example, the **OnInitResult** API is called to notify the application of the initialization result.

Message notification APIs: These APIs are called by the SDK to notify the application of events triggered by the Huawei Cloud Meeting server or the SDK. For example, the **OnConfIncoming** API is called to notify the application of meeting calls.

API Call in Typical Scenarios

Figure 7-33 API call in typical scenarios



 NOTE

1. Generally, the application process needs to be stopped before application upgrade. To facilitate upgrade management, you can customize the name of the **HwmSdk.exe** file in the **HwmSdk** folder before initialization.
2. Login is not mandatory. You can use the meeting ID and password to join a created meeting without login.
 - APIs for starting sharing, ending sharing, leaving a meeting, and ending a meeting have been provided on the UI of the SDK. If a third-party application does not need these functions, it does not need to call the corresponding APIs.
 - The **RenameSelf** API can be called before and during a meeting.
 - After a meeting starts, **OnConfInfo** is reported for multiple times.

7.3.2 Scenario 1: Initialization

Description

The initialization API can be called for SDK initialization after a third-party application starts. You only need to call this API once. You must call this API before calling other functional APIs.

Service Process

During SDK initialization, change the name of the **HwmSdk.exe** file in the **HwmSdk** folder, call the **Init** API, and then process the callback function **OnInitResult**.

Step 1 Change the name of the .exe file.

Change the name of the **HwmSdk.exe** file in the **HwmSdk** folder to **MySdk.exe**.

Step 2 Call the API.

1. Construct the **HwmInitInfo** data structure.
 - a. Define the derived class **demoNotifyProc** that it inherits from the base class **HwmAgentNotify**, and create a derived class object.
`static demoNotifyProc *notifyObj = new demoNotifyProc();`
 - b. Define the derived class **demoCallbackProc** that it inherits from the base class **HwmAgentCallback**, and create a derived class object.
`static demoCallbackProc *callbackObj = new demoCallbackProc();`
 - c. Construct other variables.
2. Call the **Init** API to initialize the configuration. The data in the preceding step is used as input parameters.

Step 3 Implement the callback function.

Implement the **OnInitResult** function.

----End

Sample Code

```
/**  
 * Call the initialization API and start the application.  
 */
```

```
int CdemoBeforeLoginDlg::Init()
{
    // Assemble the input parameter structure.
    hwmsdkagent::HwmInitInfo initParam;
    memset(&initParam, 0, sizeof(HwmInitInfo));

    // (Not required for Win32) Configure the SDK path, that is, the .exe file path, for the x64 platform after
    // renaming the .exe file.
    // Convert the SDK path into the UTF-8 format and copy it to initParam. The conversion code is omitted
    // here.
    strcpy_s(initParam.exePath, HWM_MAX_FILE_PATH_LEN, GetHwmSdkExePath().c_str());
    // Specify the log path, convert the path into the UTF-8 format, and copy the converted path to
    // initParam. The conversion code is omitted here.
    strcpy_s(initParam.logPath, HWM_MAX_FILE_PATH_LEN, GetLogPath().c_str());
    // Specify the data path, convert the path into the UTF-8 format, and copy the converted path to
    // initParam. The conversion code is omitted here.
    strcpy_s(initParam.userDataPath, HWM_MAX_FILE_PATH_LEN, GetUserDataPath().c_str());
    strncpy_s(initParam.appId, GetAppId.c_str(), HWM_MAX_APPID_LEN);

    initParam.notify = notifyObj;
    initParam.callback = callbackObj;
    initParam.authType = hwmsdkagent::HWM_AUTH_TYPE_APPID;
    int ret = hwmsdkagent::Init(&initParam);

    return ret;
}
```

NOTE

The value of **exePath** is the parent directory of the **HwmSdk** directory. For example, if the **HwmSdk** directory is **E:\Hello_World\debug\win32\HwmSdk**, the value of **exePath** is **E:\Hello_World\debug\win32**.

```
/**
 * Initialization callback
 */
void demoCallbackProc::OnInitResult(hwmsdk::HwmErrCode ret, const char* msg, HwmSdkInfo *sdkInfo)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    string verStr = "";
    if (sdkInfo != NULL) {
        verStr = CTools::UTF82MultiByte(sdkInfo->version);
    }
    CString tips = _T("OnInitResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str()) + _T(" version:")
+ CString(verStr.c_str());
    AfxMessageBox(tips);
}
```

NOTE

The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.

7.3.3 Scenario 2: Login

Description

You can log in to the Huawei Cloud Meeting server using your Huawei Cloud Meeting account or app ID. The API for creating a meeting can be called only when you have logged in. To use complete meeting functions, log in to Huawei Cloud Meeting.

 NOTE

If you have not logged in, you can only join created meetings.

Service Process

When using the SDK for login, call the **Login** API, and then implement the **OnLoginResult** function.

Step 1 Call the API.

1. Assemble the **HwmLoginInfo** data structure.
 - a. Select a proper login type.
 - b. Assign a value to the corresponding variable based on the login type.
2. Call the **Login** API to log in. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **OnLoginResult** function.

----End

Sample Code

```
/**
 * Login
 */
int demoLoginDlg::Login()
{
    int ret;
    // Set app ID login parameters.
    /**
     * The data conversion performed by the third-party server is omitted here. The nonce and signature are
     obtained.
     */
    strncpy_s(loginParam.appldAuthInfo.thirdUserId, GetUserId.c_str(), HWM_MAX_USER_ID_LEN);
    strncpy_s(loginParam.appldAuthInfo.userName, GetUserName.c_str(), HWM_MAX_USER_NAME_LEN);
    strncpy_s(loginParam.appldAuthInfo.signature, GetSignature().c_str(), HWM_MAX_SIGNATURE_LEN);
    strncpy_s(loginParam.appldAuthInfo.nonce, GetNonce().c_str(), HWM_APPID_NONCE_LEN);
    strncpy_s(loginParam.appldAuthInfo.email, GetEmail.c_str(), HWM_MAX_EMAIL_LEN);
    strncpy_s(loginParam.appldAuthInfo.phoneNumber, GetPhoneNumber.c_str(),
HWM_MAX_PHONE_NUM_LEN);
    loginParam.appldAuthInfo.expireTime = 1598398920; // UTC time, in seconds

    loginParam.authType = hwmsdkagent::HWM_AUTH_TYPE_APPID;
    // Call the login API.
    ret = hwmsdkagent::Login(&loginParam);

    return ret;
}

/**
 * Login API callback
 */
void demoCallbackProc::OnLoginResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnLoginResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

7.3.4 Scenario 3: Scheduling a Meeting

Description

After logging in to Huawei Cloud Meeting using an account, you can schedule a meeting. When scheduling the meeting, you can add participants in addition to setting mandatory meeting parameters.

Service Process

Call the **BookConf** API to schedule a meeting and then implement the **OnBookConfResult** and **OnConfList** functions.

To schedule a meeting using a personal meeting ID or a cloud meeting room, call the **GetVmrList** API to query the personal meeting ID and cloud meeting room information, and then process the data returned by the **OnGetVmrList** function. The data can be used to schedule the meeting.

Step 1 Call the API.

1. Assemble the **HwmBookConfParam** data structure (including **HwmAttendeelInfo**).
2. Call the **BookConf** API to schedule a meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **OnBookConfResult** function.

Step 3 Implement the notification function.

Implement the **OnConfList** function.

----End

Sample Code

```
/**
 * Schedule a meeting.
 */
int CdemoBookConfDlg::OnBnClickedBookConf()
{
    hwmsdkagent::HwmBookConfParam data = {0};

    string confSubject = u8"My scheduled meeting"; // The value must be a UTF-8 character string.
    strncpy_s(data.subject, confSubject.c_str(), HWM_MAX_SUBJECT_LEN);
    data.confType = hwmsdkagent::HwmConfMediaType::HWM_VIDEO_AND_DATA;
    data.isNeedConfPwd = true;
    data.isRecordOn = false; // Recording is disabled by default.
    data.isAutoRecordOn = false; // By default, automatic recording is disabled.
    data.startTime = 1598398920; // UTC timestamp, in seconds. If the obtained time is the local time, the
time needs to be converted to the UTC time.
    data.duration = 30; // Meeting duration, in minutes
    data.timeZone = 56; // Time zone. The value 56 indicates GMT+08:00.
    data.joinConfRestrictionType = hwmsdkagent::HwmJoinConfPermissionType::RESTRICTION_CALL_IN_ALL;

    std::vector<hwmsdkagent::HwmAttendeelInfo> attendeeList;
    // Participants to invite
    hwmsdkagent::HwmAttendeelInfo attendeeInfo = { 0 };
    strncpy_s(attendeeInfo.name, GetAttName().c_str(), HWM_MAX_USER_NAME_LEN);
    strncpy_s(attendeeInfo.number, GetAttNumber().c_str(), HWM_MAX_NUMBER_LEN);
```

```
strncpy_s(attendeeInfo.email, GetAttEmail().c_str(), HWM_MAX_EMAIL_LEN);
strncpy_s(attendeeInfo.sms, GetAttSms().c_str(), HWM_MAX_PHONE_NUM_LEN);
strncpy_s(attendeeInfo.thirdUserId, GetAttUserId().c_str(), HWM_MAX_USER_ID_LEN);
attendeeInfo.isMute = true;
attendeeInfo.isAutoInvite = true;
attendeeList.push_back(attendeeInfo);

data.attendees = attendeeList.data();
data.attendeeLen = attendeeList.size();
data.isSmsOn = true;
data.isMailOn = true;
data.isEmailCalendarOn = true;
return hwmsdkagent::BookConf(&data);
}
```

```
/**
 * Callback of the API for scheduling a meeting
 */
void demoCallbackProc::OnBookConfResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnBookConfResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

```
/**
 * Meeting list notification
 */
void demoNotifyProc::OnConfList(HwmConflistUpdateType updateType, const HwmConfListInfo*
conflInfoList, unsigned int conflInfoLen)
{
    if (conflInfoLen <= 0 || conflInfoList == nullptr)
    {
        return;
    }
    // Return the meeting list after successful login.
    if (updateType == CONFLIST_UPDTAE_ALL)
    {
        // Process the meeting list.
    }
    else
    {
        if (updateType == CONFLIST_UPDATE_ADD)
        {
            // Process the new meeting or the edited meeting.
        }
        else if (updateType == CONFLIST_UPDATE_DELETE)
        {
            // Process the canceled meeting.
        }
    }

    CString tips = _T("OnConfList");
    for (int i = 0; i < conflInfoLen; i++)
    {
        CString strConfId = CTools::UTF2UNICODE(conflInfoList->confId);
        CString strConfSubject = CTools::UTF2UNICODE(conflInfoList->confSubject);
        CString tip = _T(", confId:") + CString(strConfId)
            + _T(", subject:") + CString(strConfSubject);
        tips += tip;
        conflInfoList++;
    }
    AfxMessageBox(tips);
}
```


7.3.5 Scenario 4: Editing a Meeting

Description

After a meeting is scheduled, you can use the meeting modification API to edit the meeting details and add participants.

Service Process

To edit a meeting after obtaining the meeting list, call the **GetConfDetail** API to query the meeting details, implement the **OnGetConfDetail** callback function, call the **EditConf** API to modify the meeting details, and implement the **OnEditConfResult** and **OnConfList** functions.

Step 1 Obtain meeting details.

1. Call the **GetConfDetail** API.

Step 2 Implement the callback function.

Implement the **OnGetConfDetail** function to obtain the meeting details.

Step 3 Call the API for editing the meeting.

1. Use the data obtained in [Step 2](#) to assemble the **HwmEditConfParam** data structure (including **HwmAttendeeInfo**).
2. Call the **EditConf** API. The data in [Step 1](#) is used as input parameters.

Step 4 Implement the callback function.

Implement the **OnEditConfResult** function.

Step 5 Implement the notification function.

Implement the **OnConfList** function.

----End

Sample Code

```
/**
 * Obtain meeting details.
 */
int demoEditConfDlg::GetConfDetail()
{
    int ret =hwmsdkagent::GetConfDetail(GetConfID()); // Use the meeting ID to query meeting details.
    return ret;
}
```

```
/**
 * Implement the meeting details callback function.
 */
void demoCallbackProc::OnGetConfDetail(hwmsdk::HwmErrCode ret, const char* reason, const
HwmConfDetail* confDetail)
{
    if (confDetail == nullptr)
    {
        return;
    }
    // The code for caching meeting details is omitted here.
    CString codeStr;
```

```
codeStr.Format(_T("%d"), ret);
string msgStr = CTools::UTF82MultiByte(msg);
CString tips = _T("OnGetConfDetail code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
AfxMessageBox(tips);
}

/**
 * Edit a meeting.
 */
int demoEditConfDlg::EditConf()
{
    hwmsdkagent::HwmConfDetail confDetail{0}; // Obtain meeting details from the cache and assign them
    to confDetail.
    hwmsdkagent::HwmEditConfParam editConfParam{ 0 };
    // Copy the confDetail data as required.
    strncpy_s(editConfParam.confId, confDetail.confListInfo.confId, HWM_MAX_CONF_ID_LEN);
    editConfParam.vmrFlag = confDetail.vmrFlag;
    strncpy_s(editConfParam.vmrId, confInfo.vmrId, HWM_MAX_VMR_CONF_ID_LEN);
    // Part of the value assignment code is omitted here.
    editConfParam.timeZone = 56; // Local time zone. The value 56 indicates GMT+08:00.
    editConfParam.isRecordOn = false; // Recording is disabled by default.
    editConfParam.isAutoRecordOn = false; // Automatic recording is disabled by default.
    editConfParam.startTime = 1598398920; // UTC timestamp
    editConfParam.duration = 0 * 60 + 30; // Meeting duration
    editConfParam.joinConfRestrictionType =
    hwmsdkagent::HwmJoinConfPermissionType::RESTRICTION_CALL_IN_ALL; // Obtain types of users who are
    allowed to join the meeting.
    return hwmsdkagent::EditConf(&editConfParam);
}

/**
 * Callback of the API for editing meeting details
 */
void demoCallbackProc::OnEditConfResult()
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnEditConfResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

NOTE

The **OnConfList** event notification scenario is the same as the meeting scheduling scenario. For details, see [Sample Code](#).

7.3.6 Scenario 5: Canceling a Meeting

Description

After a meeting is scheduled, you can call the API of canceling a meeting to cancel the meeting.

Service Process

To cancel a meeting, call the **CancelConf** API and implement the **OnCancelConfResult** and **OnConfList** functions.

Step 1 Call the API.

Call the **CancelConf** API.

Step 2 Implement the callback function.

Implement the **OnCancelConfResult** function.

Step 3 Implement the notification function.

Implement the **OnConfList** function.

----End

Sample Code

```
/**
 * API for canceling a meeting
 */
int demoConfListDlg::OnBnCancelConf(hwmsdk::HwmErrCode ret, const char* msg)
{
    return hwmsdkagent::CancelConf(GetConfId());
}
```

```
/**
 * Callback of the API for canceling the meeting
 */
void demoCallbackProc::OnCancelConfResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnCancelConfResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

 **NOTE**

The **OnConfList** event notification scenario is the same as the meeting scheduling scenario. For details, see [Sample Code](#).

7.3.7 Scenario 6: Creating a Meeting

Description

After logging in to Huawei Cloud Meeting using an account, you can call the API for starting an instant meeting. Participant information is optional.

Service Process

To schedule a meeting using a personal meeting ID or a cloud meeting room, call the **GetVmrList** API to query the personal meeting ID and cloud meeting room information, and then process the data returned by the **OnGetVmrList** function. The data can be used to schedule the meeting.

When using the SDK to create an instant meeting, call the **CreateConf** API, and then implement the **OnCreateConfResult**, **OnConfState**, and **OnConfInfo** functions.

Step 1 Call the API.

1. Assemble the **HwmCreateConfInfo** data structure.
2. Assemble the **HwmConfAttendee** data structure.

3. Call the **CreateConf** API to create a meeting. The data in preceding steps is used as input parameters.

Step 2 Implement the callback function.

Implement the **OnCreateConfResult** function.

Step 3 Implement the notification function.

Implement the **OnConfState** function.

Step 4 Implement the notification function.

Implement the **OnConfInfo** function.

Step 5 Implement the notification function.

Implement the **OnConfList** function.

----End

Sample Code

```
/**
 * Create a meeting.
 */
int demoCreateConfWithAttendeeDlg::clickCreatConfWithAttendee()
{
    int ret;
    hwmsdkagent::HwmCreateConfInfo data;
    memset(&data, 0, sizeof(hwmsdkagent::HwmCreateConfInfo));

    // Set the meeting topic.
    strncpy_s(data.subject, GetMeetingSubjectStr().c_str(), HWM_MAX_SUBJECT_LEN);
    // Set the meeting type.
    data.mediaType = hwmsdkagent::HWM_VIDEO_AND_DATA
    // Set whether the guest password is required for the meeting.
    data.needPassword = true;
    data.callInRestriction = hwmsdkagent::RESTRICTION_CALL_IN_ALL;
    // Configure vmrId. To create a meeting with a random ID, leave vmrId empty. Here,
    m_confIdTypeCombo indicates that a meeting with a random ID is preferentially created.
    // Therefore, vmrIdSelect > 0 indicates the personal meeting ID or a cloud meeting room ID is used.
    const auto vrmlIdSelect = m_confIdTypeCombo.GetCurSel();
    if (vrmlIdSelect > 0 && vrmlIdSelect - 1 < vmrList.size())
    {
        strncpy_s(data.vmrId, HWM_MAX_VMR_CONF_ID_LEN, vmrList[vrmlIdSelect - 1].vmrId);
    }

    // Set participants.
    // Obtain participant details based on site requirements.
    CString tempCString;
    m_attendeesEdit.GetWindowText(tempCString);
    string tempString = CTools::UNICODE2UTF(tempCString);
    vector<string> list = CTools::split(tempString, ',');
    vector<string> temp;
    int count = list.size();
    int realCount = 0;
    if (count > 0)
    {
        // Apply for the structure memory.
        hwmsdkagent::HwmConfAttendee* participants;
        participants = (hwmsdkagent::HwmConfAttendee*)malloc(sizeof(hwmsdkagent::HwmConfAttendee) *
count);
        if (participants == NULL)
        {
            return -1;
        }
    }
}
```

```
    }
    memset(participants, 0, sizeof(hwmsdkagent::HwmConfAttendee)*count);

    hwmsdkagent::HwmConfAttendee* participantsTemp = participants;
    for (int i = 0; i < count; i++)
    {
        temp = CTools::split(list[i], '-');
        if (temp.size() == 2)
        {
            // Assign a value to name.
            strncpy_s(participantsTemp->name, (char *)temp[0].c_str(), HWM_MAX_DISPLAY_NAME_LEN);
            // Assign a value to number.
            strncpy_s(participantsTemp->number, (char *)temp[1].c_str(), HWM_MAX_NUMBER_LEN);
            // Increase the number of pointers by 1.
            realCount++;
            participantsTemp++;
        }
    }
    // Call the SDK API to create the meeting.
    ret = hwmsdkagent::CreateConf(&data, participants, realCount);

    // Release memory space.
    free(participants);
    participants = NULL;
}
else
{
    // Create a meeting without specifying participants.
    ret = hwmsdkagent::CreateConf(&data, NULL, 0);
}
return ret;
}
```

NOTE

String parameters, such as the meeting topic and participant name, in Windows SDK APIs. These parameters must be encoded in UTF-8. Otherwise, an error will be reported.

```
/**
 * Callback of the API for creating a meeting
 */
void demoCallbackProc::OnCreateConfResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnCreateConfResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

```
/**
 * Meeting status notification
 */
void demoNotifyProc::OnConfState(HwmConfStateInfo *confStateInfo)
{
    CString str;
    str.Format(_T("%d"), confStateInfo->state);
    CString reason;
    reason.Format(_T("%d"), confStateInfo->reason);
    CString tips = _T("OnConfState state:") + str + _T(", reason:") + reason;
    AfxMessageBox(tips);
}
```

```
/**
 * Meeting details notification
 */
void demoNotifyProc::OnConfInfo(HwmConfInfo *confInfo)
{

```

```
string urlStr = CTools::UTF82MultiByte(confInfo->url);
string confIdStr = CTools::UTF82MultiByte(confInfo->confId);
string chairmanPwdStr = CTools::UTF82MultiByte(confInfo->chairmanPwd);
string generalPwdStr = CTools::UTF82MultiByte(confInfo->generalPwd);
string subjectStr = CTools::UTF82MultiByte(confInfo->subject);

CString role;
role.Format(_T("%d"), confInfo->role);

CString tips = _T("OnConfInfo confUrl:") + CString(urlStr.c_str())
+ _T(", confId:") + CString(confIdStr.c_str()) + _T(", confRole:") + CString(role)
+ _T(", chairmanPwd:") + CString(chairmanPwdStr.c_str())
+ _T(", generalPwd:") + CString(generalPwdStr.c_str())
+ _T(", subject:") + CString(subjectStr.c_str());
AfxMessageBox(tips);
}
```

NOTE

The **OnConfList** event notification scenario is the same as the meeting scheduling scenario. For details, see [Sample Code](#).

Character strings in Windows SDK functions are encoded in UTF-8.

7.3.8 Scenario 7: Joining a Meeting

Description

You can call this API to join a meeting using a meeting ID and password regardless of whether you have logged in to Huawei Cloud Meeting or not.

Service Process

When using the SDK to join a meeting, call the **JoinConfById** API, and implement the **OnJoinConfByIdResult**, **OnConfState**, and **OnConfInfo** functions.

Step 1 Call the API.

1. Assemble the **HwmJoinConfByIdInfo** data structure.
2. Call the **JoinConfById** API to join a meeting. The data in preceding steps is used as input parameters.

Step 2 Implement the callback function.

Implement the **OnJoinConfByIdResult** function.

Step 3 Implement the notification function.

Implement the **OnConfState** function.

Step 4 Implement the notification function.

Implement the **OnConfInfo** function.

----End

Sample Code

```
// Join a meeting using the meeting ID.
int demoJoinConfByIdDlg::clickJoinConfById()
{
    // Enter the meeting ID and meeting password. You can specify your display name in the meeting
    regardless of whether you have logged in or not.
```

```
hwmsdkagent::HwmJoinConfByIdInfo data;
memset(&data, 0, sizeof(hwmsdkagent::HwmJoinConfByIdInfo));

strncpy_s(data.confId, GetMeetingID().c_str(), HWM_MAX_CONF_ID_LEN);
strncpy_s(data.password, GetAccessCode().c_str(), HWM_MAX_PASSWORD_LEN);
strncpy_s(data.name, GetParticipantName().c_str(), HWM_MAX_DISPLAY_NAME_LEN);

int ret = hwmsdkagent::JoinConfById(&data);
return ret;
}

/**
 * Callback of the API for joining a meeting using the meeting ID
 */
void demoCallbackProc::OnJoinConfByIdResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnJoinConfByIdResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

NOTE

The **OnConfState** and **OnConfInfo** event notification scenarios are the same as the meeting creation scenario. For details, see [Scenario 6: Creating a Meeting](#).

7.3.9 Scenario 8: Joining a Meeting by Clicking a Link in an Email

Description

You can use a meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/981924330/e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659>) in the notification email to join a meeting. The link contains the meeting ID (981924330) and random code (e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659).

You can call this API to join a meeting using the meeting ID and 48-digit value (random code) mapping to the password in the meeting link before or after logging in to Huawei Cloud Meeting.

Service Process

When using the SDK to join a meeting, call the **JoinConfByRandom** API, and implement the **OnJoinConfByRandom**, **OnConfState**, and **OnConfInfo** functions.

Step 1 Call the API.

1. Create a **HwmJoinConfByRandomInfo** object.
2. Call the **JoinConfByRandom** API to join a meeting. The data in the [preceding step](#) is used as input parameters.

Step 2 Implement the callback function.

Implement the **OnJoinConfByRandomResult** function.

Step 3 Implement the notification function.

Implement the **OnConfState** function.

Step 4 Implement the notification function.

Implement the **OnConfInfo** function.

----End

Sample Code

```
// Join a meeting using the meeting ID and random code.
int demoJoinConfByRandomDlg::clickJoinConfByRandom()
{
    // Enter the meeting ID and password mapping value. If you join the meeting using the random code,
    you can configure the display name.
    hwmsdkagent::HwmJoinConfByRandomInfo data;
    memset(&data, 0, sizeof(hwmsdkagent::HwmJoinConfByRandomInfo));

    strncpy_s(data.confId, GetMeetingID().c_str(), HWM_MAX_CONF_ID_LEN);
    strncpy_s(data.random, GetAccessCode().c_str(), HWM_MAX_RANDOM_LEN);
    strncpy_s(data.name, GetParticipantName().c_str(), HWM_MAX_DISPLAY_NAME_LEN);

    int ret = hwmsdkagent::JoinConfByRandom(&data);
    return ret;
}

/**
 * Callback of the meeting ID and random code for joining a meeting
 */
void demoCallbackProc::OnJoinConfByRandomResult(hwmsdk::HwmErrCode ret, const char* reason)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnJoinConfByRandomResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

NOTE

The **OnConfState** and **OnConfInfo** event notification scenarios are the same as the meeting creation scenario. For details, see [Scenario 6: Creating a Meeting](#).

The 48-digit value mapping to the password is a part of the character string carried in the link for sharing a meeting.

<https://bmeeting.huaweicloud.com/#/j/987297025/227b2d708b7e5a24ce8de2159772239b1672c0a85ba70d85>

7.3.10 Scenario 9: Adding Participants

Description

You can call the API for adding participants during a meeting.

Service Process

When using the SDK to add participants, call the **AddAttendee** API, and implement the **OnAddAttendeeResult** function.

Step 1 Call the API.

1. Assemble the **HwmConfAttendee** data structure.
2. Call the **AddAttendee** API to add participants. The data in preceding steps is used as input parameters.

Step 2 Implement the callback function.

Implement the **OnAddAttendeeResult** function.

----End

Sample Code

```
/**
 * Add participants.
 */
int demoAddAttendeeDlg::clickAddAttendee()
{
    int ret;
    CString tempCString;

    // Obtain participant details based on site requirements.
    m_numbersEdit.GetWindowText(tempCString);
    string tempString = CTools::UNICODE2UTF(tempCString);
    vector<string> list = CTools::split(tempString, ',');
    vector<string> temp;
    int count = list.size();

    int realCount = 0;
    if (count > 0)
    {
        // Apply for the structure memory.
        hwmsdkagent::HwmConfAttendee* participants;
        participants = (hwmsdkagent::HwmConfAttendee*)malloc(sizeof(hwmsdkagent::HwmConfAttendee) *
count);
        if (participants == NULL)
        {
            return -1;
        }
        memset(participants, 0, sizeof(hwmsdkagent::HwmConfAttendee)*count);

        hwmsdkagent::HwmConfAttendee* participantsTemp = participants;
        for (int i = 0; i < count; i++)
        {
            temp = CTools::split(list[i], '-');
            if (temp.size() == 2)
            {
                // Assign a value to name.
                strncpy_s(participantsTemp->name, (char *)temp[0].c_str(), HWM_MAX_DISPLAY_NAME_LEN);
                // Assign a value to number.
                strncpy_s(participantsTemp->number, (char *)temp[1].c_str(), HWM_MAX_NUMBER_LEN);
                // Increase the number of pointers by 1.
                realCount++;
                participantsTemp++;
            }
        }

        ret = hwmsdkagent::AddAttendee(participants, realCount);

        // Release memory space.
        free(participants);
        participants = NULL;
    }

    return ret;
}

/**
 * Callback of the API for adding participants
 */
void demoCallbackProc::OnAddAttendeeResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
```

```
codeStr.Format(_T("%d"), ret);
string msgStr = CTools::UTF82MultiByte(msg);
CString tips = _T("OnAddAttendeeResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
AfxMessageBox(tips);
}
```

7.3.11 Scenario 10: Customizing the Invite Button in a Meeting

Description

In most scenarios where the SDK is used for secondary development, third-party applications do not use the corporate directory provided by Huawei Cloud Meeting. Therefore, the page for inviting participants only provides a button and does not provide the complete function of inviting participants. You must implement the function by yourself.

Service Process

When using the SDK to implement the participant invitation function, call the **Config** API, implement the **OnConfigResult** function, and then implement the **OnClickInjectBtn** function after the **Invite** button is clicked in the meeting.

Step 1 Call the API.

After the SDK is initialized, call the **Config** API to customize the **Invite** button.

Step 2 Implement the callback function.

Implement the **OnConfigResult** function.

Step 3 Implement the notification function.

After the **Invite** button is clicked, implement the **OnClickInjectBtn** function.

----End

Sample Code

```
/**
 * Configure the Invite button.
 */
int hwmSDKConfigUI::hwmSDKStartUIConfig()
{
    // Configure the Invite button.
    CString inviteBtn = ("{"frame":{"confMenu" : {"toolBar":{"button":{"id":"invite"},"showAsAction" : {"ifRoom"},"isCustomizedClick" : true}}}}");
    string uiConfig CTools::UNICODE2UTF(inviteBtn);
    ret = hwmsdkagent::Config(uiConfig);
    return ret;
}
```

```
/**
 * Configure the callback function.
 */
void demoCallbackProc::OnConfigResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnConfigResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
}
```

```
AfxMessageBox(tips);
}

/**
 * Message notification upon button clicking
 */
void notifyProc::OnClickInjectBtn(hwmsdkagent::HwmClickInjectBtn injectBtn, void* data, const char* id)
{
    INT_PTR nRes;
    switch (injectBtn)
    {
        // Send a notification after the Invite button is clicked.
        case hwmsdkagent::HWM_CLICK_INJECT_BTN_INVITE:
        {
            // Display the page for inviting participants with a corporate directory.
            hwm_ui_demo_inviteDlg inviteDlg;
            nRes = inviteDlg.DoModal();
            break;
        }
    }
}
```

7.3.12 Scenario 11: Logout

Description

You can call this API to log out of Huawei Cloud Meeting.

Service Process

When using the SDK for logout, call the **Logout** API and then implement the **OnLogoutResult** function.

Step 1 Call the API.

Call the **Logout** API to log out of Huawei Cloud Meeting.

Step 2 Implement the callback function.

Implement the **OnLogoutResult** function.

----End

Sample Code

```
/**
 * Log out.
 */
void demoMainMenuDlg::OnBnClickedLogout()
{
    // Call the logout API.
    int ret = hwmsdkagent::Logout();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Logout error"));
    }
}

/**
 * Logout API callback
 */
void demoCallbackProc::OnLogoutResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
}
```

```
string msgStr = CTools::UTF82MultiByte(msg);
CString tips = _T("OnLogoutResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
AfxMessageBox(tips);
}
```

7.3.13 Scenario 12: Exit

Description

When a third-party application exits, the SDK needs to be deinitialized. Otherwise, the **HwmSdk.exe** process (main process of the Windows SDK) keeps running in the background.

Service Process

To exit the SDK, call the **Exit** API and then implement the **OnExitResult** function.

Step 1 Call the API.

Call the **Exit** API to exit the SDK.

Step 2 Implement the callback function.

Implement the **OnExitResult** function.

----End

Sample Code

```
/**
 * Exit the SDK.
 */
void CdemoBeforeLoginDlg::OnBnClickedButtonExit()
{
    int ret = hwmsdkagent::Exit();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Exit error"));
    }
}
```

```
/**
 * Exit callback
 */
void demoCallbackProc::OnExitResult(hwmsdk::HwmErrCode ret, const char* msg)
{
    CString codeStr;
    codeStr.Format(_T("%d"), ret);
    string msgStr = CTools::UTF82MultiByte(msg);
    CString tips = _T("OnExitResult code:") + codeStr + _T(", msg:") + CString(msgStr.c_str());
    AfxMessageBox(tips);
}
```

7.4 API Reference

NOTE

Character arrays (**char[]**) in Windows SDK APIs must be encoded in UTF-8. Exceptions are described in the parameter description.

7.4.1 Basic Settings

7.4.1.1 Initializing the SDK

Init

API Description

This API is used to start and initialize the SDK.

Precautions

1. Before calling this API, change the name of the **HwmSdk.exe** file in the **HwmSdk** folder to your desired name.
2. You must call this API successfully and receive the callback result before calling other APIs.
3. Each time the initialization API is called, the SDK is restarted, and all the previous settings and operations are cleared.
4. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode Init(HwmlInitInfo *initInfo);
```

Callback Function

```
virtual void OnInitResult(hwmsdk::HwmErrCode ret, const char* reason, HwmSdkInfo *sdkInfo) {};
```

Parameter Description

Table 7-3 HwmlInitInfo description

Parameter	Mandatory	Type	Description
exePath	Mandatory for the x64 platform	char[]	SDK startup path, that is, the absolute path of the .exe file in the HwmSdk folder of the SDK package. Before calling this API, change the name of the HwmSdk.exe file in the HwmSdk folder of the SDK package to your desired name. Assume that the path of the HwmSdk folder is D:\MyApp\SDK\HwmSdk\ and the name of the .exe file is MySdk.exe . Then set this parameter to D:\MyApp\SDK\HwmSdk\MySdk.exe . UTF-8 encoding is required.

Parameter	Mandatory	Type	Description
logPath	Yes	char[]	SDK log path. If this parameter is not set, the default path is used. UTF-8 encoding is required.
userDataPath	Yes	char[]	SDK user data path. If this parameter is not set, the default path is used. UTF-8 encoding is required.
appld	Yes	char[]	App ID. For details about how to request an app ID, see Requesting an App ID in <i>Developer Guide</i> .
notify	Yes	HwmAgentNotify	Notification object, which is the object of the class inherited from the base class HwmAgentNotify .
callback	Yes	HwmAgentCallback	API callback object, which is the object of the class inherited from the base class HwmAgentCallback .
authType	Yes	HwmAuthType	Authentication mode.
siteType	No	HwmSiteType	Site type. The default value is 0 , indicating that Chinese mainland site is used.
logKeepDays	No	unsigned int	Log storage duration. Valid value range is 3–30. The default value is 0 . 0 indicates that logs are not deleted by day. Note: 1 and 2 will be converted to 3 , and the values greater than 30 will be converted to 30 .
preferredCamera	No	char[]	Preferred camera list. After this parameter is set, the first available camera is selected based on the sequence in the list when the camera is opened for the first time. This parameter can be left empty. If it is left empty, available cameras are enabled in the default sequence.
isSupportMultiAppLogin	No	bool	Whether to support login to multiple applications on the same device. This function is disabled by default.

Table 7-4 Enumerated values of HwmAuthType

Enumerated Value	Description
HWM_AUTH_TYPE_ACCOUNT_AND_PASSWORD	Account and password authentication.
HWM_AUTH_TYPE_APPID	App ID authentication.

Table 7-5 Enumerated values of HwmSiteType

Enumerated Value	Description
SITE_TYPE_CHINA	Chinese mainland.
SITE_TYPE_AP	Asia Pacific.

Table 7-6 HwmSdkInfo description

Parameter	Type	Description
version	char[]	SDK version number.

 **NOTE**

App ID authentication mode is recommended. For details about how to request an app ID, see section "Requesting an App ID" in [Developer Guide](#).

Return Values

Table 7-7 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
// Create a notification processing object.
static demoNotifyProc *notifyObj = new demoNotifyProc();
// Create a callback function processing object.
static demoCallbackProc *callbackObj = new demoCallbackProc();

/**
 * Call the initialization API and start the application.
```

```
*/
int CdemoBeforeLoginDlg::Init()
{
    // Assemble the input parameter structure.
    hwmsdkagent::HwmlnInitInfo initParam;
    memset(&initParam, 0, sizeof(HwmlnInitInfo));

    // (Not required for Win32) Configure the SDK path, that is, the .exe file path, for the x64 platform after
    // renaming the .exe file.
    // Convert the SDK path into the UTF-8 format and copy it to initParam. The conversion code is omitted
    // here.
    strcpy_s(initParam.exePath, HWM_MAX_FILE_PATH_LEN, GetHwmSdkExePath().c_str());
    // Specify the log path, convert the path into the UTF-8 format, and copy the converted path to
    // initParam. The conversion code is omitted here.
    strcpy_s(initParam.logPath, HWM_MAX_FILE_PATH_LEN, GetLogPath().c_str());
    // Specify the data path, convert the path into the UTF-8 format, and copy the converted path to
    // initParam. The conversion code is omitted here.
    strcpy_s(initParam.userDataPath, HWM_MAX_FILE_PATH_LEN, GetUserDataPath().c_str());

    // Pass the requested enterprise app ID.
    strncpy_s(initParam.appId, GetAppId.c_str(), HWM_MAX_APPID_LEN);
    initParam.notify = notifyObj;
    initParam.callback = callbackObj;
    initParam.authType = hwmsdkagent::HWM_AUTH_TYPE_APPID;
    int ret = hwmsdkagent::Init(&initParam);

    return ret;
}
```

NOTE

- The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.
- For details about the definitions of the message notification processing class **demoNotifyProc** and callback function processing class **demoCallbackProc**, see the demo code in the SDK package.

7.4.1.2 Exiting the SDK

Exit

API Description

This API is used to exit the SDK.

Precautions

1. After this API is called, the SDK cannot be used.
2. Call this API before exiting the application. If this API is not called, the SDK cannot exit and the SDK process still runs in the background after the application exits.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode Exit();
```

Callback Function

```
virtual void OnExitResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```


Parameter Description

None

Return Values**Table 7-8** Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Exit the SDK.
 */
void CdemoBeforeLoginDlg::OnBnClickedButtonExit()
{
    int ret = hwmsdkagent::Exit();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Exit error"));
    }
}
```

7.4.1.3 Setting the Language

SetLanguage

API Description

This API is used to set the GUI language. The default language is Chinese.

Precautions

This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetLanguage(HwmLanguage language);
```

Callback Function

```
virtual void OnSetLanguageResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-9 Parameter description

Parameter	Man dato ry	Type	Description
language	Yes	HwmLanguage	GUI language.

Table 7-10 Enumerated values of HwmLanguage

Enumerated Value	Description
HWM_LANGUAGE_ZH_CN	Chinese.
HWM_LANGUAGE_EN_GB	English.
HWM_LANGUAGE_CUSTO MIZED	Custom language.

Return Values

Table 7-11 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Change the language.
 */
void demoSettingDlg::OnBnClickedButtonSetLanCode()
{
    // Set the language to Chinese.
    hwmsdkagent::HwmLanguage languageCode = hwmsdkagent::HWM_LANGUAGE_ZH_CN;

    int ret = hwmsdkagent::SetLanguage((hwmsdkagent::HwmLanguage)languageCode);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("SetLanguage error"));
    }
}
```

SetLanguageWithCode

API Description

This API is used to customize the SDK language. The default language is Chinese.

Precautions

1. To customize a language, create the corresponding internationalization files in `\HwmSdk\sdkResources\language\`. For example, create `\ar\temp.js` when you set the SDK language to Arabic. The language set using this API must be the same as the system language.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetLanguageWithCode(HwmLanguage language, const char* languageCode);
```

Callback Function

```
virtual void OnSetLanguageResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-12 Parameter description

Parameter	Man dato ry	Type	Description
language	Yes	HwmLanguage	GUI language.
languageCode	No	char[]	Language code. If the language is Chinese or English, this parameter can be left empty.

Return Values

Table 7-13 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Change the language.
 */
void demoSettingDlg::OnBnClickedButtonSetLanCode()
{
    // Set the language to a custom language. Arabic is used as an example.
    hwmsdkagent::HwmLanguage languageCode = hwmsdkagent::HWM_LANGUAGE_CUSTOMIZED;
    CString code = "ar";
}
```

```
int ret = hwmsdkagent::SetLanguageWithCode((hwmsdkagent::HwmLanguage)languageCode,
CTools::UNICODE2UTF(code).c_str());
if (hwmsdk::HWM_COMMON_SUCCESS != ret)
{
    AfxMessageBox(_T("SetLanguageWithCode error"));
}
}
```

7.4.1.4 Enabling a Function

EnableFeature

API Description

This API is used to enable or disable a function in the Windows SDK.

Precautions

1. Functions have default statuses. Call this API only if you need to change the function status.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode EnableFeature(HwmEnableFeatureType type, bool isEnabled);
```

Callback Function

```
virtual void OnEnableFeature(hwmsdk::HwmErrCode ret, const char* msg) {};
```

Parameter Description

Table 7-14 Parameter description

Parameter	Man dato ry	Type	Description
type	Yes	HwmEnableFe atureType	Function switch.
isEnabled	Yes	bool	Function switch status.

Table 7-15 Enumerated values of HwmEnableFeatureType

Enumerated Value	Description
HWM_ENABLE_FEATURE_T YPE_MULTI_MONITOR	Whether to enable the multi-monitor mode. In the multi-monitor scenario, when one monitor screen is shared, the video screen is displayed on the other monitor. In single-monitor mode, the video window is hidden after sharing is enabled. This function is disabled by default.

Enumerated Value	Description
HWM_ENABLE_FEATURE_TYPE_SHOW_HANGUP_ATTENDEE	Whether to display the status of the participant who leaves the meeting in the participant list. This function is enabled by default.
HWM_ENABLE_FEATURE_TYPE_HOWLING_DETECTION	Whether to enable feedback suppression. This function is enabled by default.
HWM_ENABLE_FEATURE_TYPE_HIGH_RESOLUTION	Whether to enable 1080p HD display in a meeting. This function is enabled by default.
HWM_ENABLE_FEATURE_TYPE_MIC_SWITCH	Initial status of the microphone in a meeting. The microphone is enabled by default.
HWM_ENABLE_FEATURE_TYPE_CAM_SWITCH	Initial status of the camera in a meeting. The camera is disabled by default.
HWM_ENABLE_FEATURE_TYPE_HIDE_EXTERNAL_LABEL	Whether an external label is displayed or hidden in a meeting. By default, the external label is displayed.
HWM_ENABLE_FEATURE_AUTO_MIC_VOLUME	Whether to enable automatic microphone volume adjustment. This function is enabled by default. If the external microphone has automatic gain control (AGC), you are advised to disable this function.
HWM_ENABLE_FEATURE_BREAKOUT_CONF	Status of the breakout room function. This function is enabled by default.
HWM_ENABLE_FEATURE_CONFIRM_RECORD	Whether to display the recording confirmation prompt. This function is disabled by default.
HWM_ENABLE_FEATURE_DEFAULT_SHARE_AUDIO	Audio sharing. This function is disabled by default.
HWM_ENABLE_FEATURE_SUPPORT_DISCONNECT_AUDIO	Disconnecting audio. This function is disabled by default.
HWM_ENABLE_FEATURE_DISCONNECT_AUDIO_TO_JOIN_CONF	Joining a meeting without audio. This function is disabled by default.
HWM_ENABLE_FEATURE_CPU_REDUCTION_DETECT	Detecting CPU frequency reduction. This function is disabled by default.
HWM_ENABLE_FEATURE_SUPPORT_GUEST_INVITE	Inviting participants. This function is disabled by default.

Return Values

Table 7-16 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Configure multi-monitor mode status.
 */
void demoEnableFeatureDlg::OnBnClickedButtonMultiMonitor()
{
    bool isCheck = true;
    int ret = hwmsdkagent::EnableFeature(hwmsdkagent::HWM_ENABLE_FEATURE_TYPE_MULTI_MONITOR,
    isCheck);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Enable multi monitor failed"));
    }
}
```

7.4.1.5 Setting the Path for Saving User Files

SetUserSavePath

API Description

This API is used to set the path for saving user files (including local recordings).

Precautions

1. This API is optional. If not specified, the default path is used.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetUserSavePath(HWMSavePathType type, const char* path);
```

Callback Function

```
virtual void OnSetUserSavePath(hwmsdk::HwmErrCode ret, const char* msg) {};
```

Parameter Description

Table 7-17 Parameter description

Parameter	Man dato ry	Type	Description
type	Yes	HWMSavePathType	Enumerated path types.
path	Yes	const char*	Absolute path. UTF-8 encoding is required.

Table 7-18 Description of HWMSavePathType

Enumerated Value	Description
HWM_SAVE_PATH_LOCAL_RECORD	Path for storing local recording files.

Return Values

Table 7-19 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Setting the user save path
 */
void demoSetUserSavePathDlg::OnBnClickedSetUserSavePath()
{
    std::string path = "E:\\";
    int ret = hwmsdkagent::SetUserSavePath(hwmsdkagent::HWM_SAVE_PATH_LOCAL_RECORD,
    path.c_str());
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Set save path failed"));
    }
}
```

7.4.1.6 Obtaining the Path for Saving User Files

GetUserSavePath

API Description

This API is used to obtain the path for saving user files (including local recording files).

Precautions

1. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetUserSavePath(HWMSavePathType type);
```

Callback Function

```
virtual void OnGetUserSavePath(hwmsdk::HwmErrCode ret, const char* msg, const HwmUserSavePathInfo* pathInfo) {};
```

Parameter Description

Table 7-20 Parameter description

Parameter	Man dato ry	Type	Description
type	Yes	HWMSavePat hType	Enumerated path types.

Table 7-21 HwmUserSavePathInfo description

Parameter	Type	Description
pathType	HWMSavePathT ype	Enumerated path types.
path	char[]	Save path. The value is an absolute path and must be encoded in UTF-8.

Return Values

Table 7-22 Return value

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code


```

/**
 * Obtain the path for saving user files.
 */
void demoSetUserSavePathDlg::OnBnClickedGetUserSavePath()
{
    int ret = hwmsdkagent::GetUserSavePath(hwmsdkagent::HWM_SAVE_PATH_LOCAL_RECORD);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Set get path failed"));
    }
}

```

7.4.1.7 Setting the Network Mode

SetNetworkMode

API Description

This API is used to set the network mode to enterprise intranet access if the media nodes of Huawei Cloud Meeting are deployed in an enterprise and management nodes are accessed through the proxy of the enterprise.

NOTE

This API needs to be called only when the app cannot directly access the public network (that is, when the media nodes and management nodes are deployed in the enterprise).

Precautions

1. This API is optional. If it is not called, the default mode is used.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetNetworkMode(const HwmNetWorkModelInfo* networkInfo);
```

Callback Function

```
virtual void OnSetNetworkModeResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-23 Parameter description

Parameter	Man dato ry	Type	Description
networkInfo	Yes	HwmNetWork ModelInfo	Network mode information.

Table 7-24 HwmNetWorkModelInfo description

Parameter	Man dato ry	Type	Description
accessType	Yes	HwmNetwork AccessType	Network access type.
netConnectType	Yes	HwmNetConn ectType	Network connection type.

Table 7-25 HwmNetworkAccessType description

Enumerated Value	Description
ACCESS_TYPE_AUTO	Default value. Currently, the value is the same as the extranet access mode.
ACCESS_TYPE_INNER	Intranet access, which is used when the media and signaling nodes are deployed in the enterprise. The app uses the intranet for access. Signaling and media messages access the Huawei Cloud Meeting server through the proxy server.
ACCESS_TYPE_OUTER	External network access, which is used when the media and signaling nodes are not deployed in the enterprise. The app uses the Internet for access. Signaling and media messages access the Huawei Cloud Meeting server through the proxy server.

Table 7-26 Enumerated values of HwmNetConnectType

Enumerated Value	Description
NET_CONNECT_AUTO	Automatic mode. Default value.
NET_CONNECT_FORCE_V PN	Forcible VPN.
NET_CONNECT_FORCE_DI RECT	Forcible direct connection.

Return Values

Table 7-27 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Set the network mode.
 */
void demoSetNetworkModeDlg::SetNetworkMode()
{
    hwmsdkagent::HwmNetWorkModeInfo networkMode{};
    networkMode.accessType = hwmsdkagent::HwmNetworkAccessType::ACCESS_TYPE_AUTO;
    int ret = hwmsdkagent::SetNetworkMode(&networkMode);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Set network mode failed"));
    }
}
```

7.4.1.8 Disabling Prompt Tones

DisableVoicePrompts

API Description

This API is used to disable prompt tones.

Precautions

1. This API is optional. If it is not called, prompt tones are played by default.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode DisableVoicePrompts(const HwmVoicePromptsInfo* voicePromptsInfo);
```

Callback Function

```
virtual void OnDisableVoicePromptsResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-28 Parameter description

Parameter	Man dato ry	Type	Description
voicePromptsInfo	Yes	HwmVoicePro mptsInfo	Prompt tone information.

Table 7-29 HwmVoicePromptsInfo parameter

Parameter	Man dato ry	Type	Description
isDisableMutePro mpt	Yes	bool	Whether to disable the mute prompt tone.

Return Values

Table 7-30 Return value

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Disable prompt tones.
 */
void demoDisableVoicePromptsDlg::DisableVoicePrompts()
{
    hwmsdkagent::HwmVoicePromptsInfo info{};
    info.isDisableMutePrompt = true;

    int ret = hwmsdkagent::DisableVoicePrompts(&info);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("disable voice prompts error"));
        return;
    }
    CDialogEx::OnOK();
}
```

7.4.1.9 Setting the Path for Saving Logs

SetLogPath

API Description

This API is used to set the path for saving logs.

Precautions

1. This API is optional. If it is not called, the default path is used.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetLogPath(const HwmLogPathInfo* logPathInfo);
```

Callback Function

```
virtual void OnSetLogPathResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-31 HwmLogPathInfo description

Parameter	Mandatory	Type	Description
path	Yes	char[]	Save path. UTF-8 encoding is required.

Table 7-32 Return value

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

```
/**
 * Set the path for saving logs.
 */
void demoSetLogPathDlg::SetLogPath()
{
    HwmLogPathInfo logPathInfo{};
    std::string path = "E:\\";
    strcpy_s(logPathInfo.path, sizeof(logPathInfo.path), path.c_str());
    int ret = hwmsdkagent::SetLogPath(&logPathInfo);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("set log path error"));
        return;
    }
}
```

```

    }
    CDialogEx::OnOK();
}

```

7.4.1.10 Setting Guaranteed IP Addresses for Meeting Control

SetGuaranteedIpAddresses

API Description

This API is used to set the guaranteed IP addresses for meeting control. Up to four IP addresses are supported. They are separated by semicolons (;).

Precautions

1. This API is optional. If it is not called, the default IP address is used.
2. This API is a synchronous API. The return value only indicates whether the API is successfully called.

Method Definition

```

HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetGuaranteedIpAddresses(const char*
guaranteedIpAddresses);

```

Parameter Description

Table 7-33 Parameter description

Parameter	Man dato ry	Type	Description
guaranteedIpAd resses	Yes	char[]	Guaranteed IP addresses.

```

/**
 * Set guaranteed IP addresses for meeting control.
 */
void demoSetGuaranteedIpAddressesDlg::SetGuaranteedIpAddresses()
{
    std::string address = GetIpAddress();
    int ret = hwmsdkagent::SetGuaranteedIpAddresses(address.c_str());
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("set guaranteed Ip addresses error"));
        return;
    }
    CDialogEx::OnOK();
}

```

7.4.2 Account Operations

7.4.2.1 Login

Login

API Description

This API is used to log in to Huawei Cloud Meeting. You can log in to the system using a Huawei Cloud Meeting account or an app ID, which is determined by the **authType** parameter.

Precautions

1. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode Login(HwmLoginInfo *loginInfo);
```

Callback Function

```
virtual void OnLoginResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmLoginResult* loginResult) {};
```

Parameter Description

Table 7-34 HwmLoginInfo description

Parameter	Mandatory	Type	Description
authType	Yes	HwmAuthType	Login type. For details, see Table 7-4 .
accountAndPasswordAuthInfo	No	HwmAccountAndPasswordAuthInfo	Account and password login details. Required when account and password authentication is selected.
appIdAuthInfo	No	HwmAppIdAuthInfo	App ID login details. Required when app ID authentication is selected.

Table 7-35 HwmAccountAndPasswordAuthInfo description

Parameter	Mandatory	Type	Description
account	Yes	char[]	Login account.
password	Yes	char[]	Login password.

Table 7-36 HwmAppldAuthInfo description

Parameter	Mandatory	Type	Description
thirdUserId	Yes	char[]	Third-party user ID.
corpId	No	char[]	ID of the enterprise to which the user belongs. This parameter is mandatory only in SP mode. Do not set this parameter in single-enterprise mode. Otherwise, the authentication will fail.
userName	No	char[]	Username. If this parameter is left blank, the value of this parameter is the same as that of thirdUserId by default.
signature	Yes	char[]	Authentication signature obtained from the third-party server.
nonce	Yes	char[]	Nonce value obtained from the third-party server, which is used by the Huawei Cloud server to verify the validity of the authentication signature.
expireTime	Yes	long long	Timestamp of the validity period of the authentication signature obtained from the third-party server. The value 0 indicates that authentication signature never expires.
email	No	char[]	Email address of the user.
phoneNumber	No	char[]	Mobile number of the user.
deptCode	No	char[]	Department ID.

Return Values

Table 7-37 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .
HwmLoginResult	Login result.

Table 7-38 HwmLoginResult description

Parameter	Type	Description
userId	char[]	UUID, which is the unique user ID allocated by the system.
account	char[]	Account.
thirdAccount	char[]	Third-party account.

Sample Code

```
/**
 * Login
 */
int demoLoginDlg::Login()
{
    int ret;
    // Set app ID login parameters.
    /**
     * The data conversion performed by the third-party server is omitted here. The nonce and signature are
     * obtained.
     */
    strncpy_s(loginParam.appldAuthInfo.thirdUserId, GetUserId().c_str(), HWM_MAX_USER_ID_LEN);
    strncpy_s(loginParam.appldAuthInfo.userName, GetUserName().c_str(), HWM_MAX_USER_NAME_LEN);
    strncpy_s(loginParam.appldAuthInfo.signature, GetSignature().c_str(), HWM_MAX_SIGNATURE_LEN);
    strncpy_s(loginParam.appldAuthInfo.nonce, GetNonce().c_str(), HWM_APPID_NONCE_LEN);
    strncpy_s(loginParam.appldAuthInfo.email, GetEmail().c_str(), HWM_MAX_EMAIL_LEN);
    strncpy_s(loginParam.appldAuthInfo.phoneNumber, GetPhoneNumber().c_str(),
HWM_MAX_PHONE_NUM_LEN);
    loginParam.appldAuthInfo.expireTime = 1598398920; // UTC time, in seconds

    loginParam.authType = hwmsdkagent::HWM_AUTH_TYPE_APPID;
    // Call the login API.
    ret = hwmsdkagent::Login(&loginParam);
    return ret;
}
```

7.4.2.2 SSO

LoginBySSO

API Description

This API is used for single sign-on (SSO). You need to obtain the authentication code through the **GetSSOAuthorizeUrl** API. GetSSOAuthorizeUrl obtains the

authentication website by transferring the domain name. A user enters the account and password on the website or scans the QR code for authentication to obtain a temporary code (used for login).

Precautions

1. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode LoginBySSO(HwmSSOAuthInfo *ssoAuthInfo);
```

Callback Function

```
virtual void OnLoginBySSOResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmLoginResult* loginResult) {};
```

Parameter Description

Table 7-39 HwmSSOAuthInfo description

Parameter	Man dato ry	Type	Description
code	Yes	char[]	Authorization code
domain	Yes	char[]	Enterprise domain name
authServerType	Yes	AuthServerType	Authentication service type

Table 7-40 AuthServerType description

Parameter	Description
AUTH_SERVER_TYPE_OAUTH2	SSO

Return Values

Table 7-41 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Type	Description
HwmLoginResult	Login result. For details, see Table 7-38 .

Sample Code

```
/**
 * Login
 */
int demoLoginBySSODlg::LoginBySSO()
{
    int ret;
    //Enter login parameters.
    hwmsdkagent::HwmSSOAuthInfo ssoAuthInfo{};
    strncpy_s(ssoAuthInfo.domain, GetDomain().c_str(), HWM_MAX_SSO_DOMAIN_LEN);
    strncpy_s(ssoAuthInfo.code, GetCode().c_str(), HWM_MAX_SSO_CODE_LEN);
    ssoAuthInfo.authServerType = hwmsdkagent::AUTH_SERVER_TYPE_OAUTH2;

    // Call the login API.
    ret = hwmsdkagent::LoginBySSO(&ssoAuthInfo);
    return ret;
}
```

7.4.2.3 Logout

Logout

API Description

This API is used to log out of Huawei Cloud Meeting.

Precautions

1. Call this API only when you have logged in.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode Logout();
```

Callback Function

```
virtual void OnLogoutResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmLogoutResult* logoutResult) {};
```

Parameter Description

None

Return Values

Table 7-42 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .
HwmLogoutResult	Logout result

Table 7-43 HwmLogoutResult description

Parameter	Type	Description
userUuid	char[]	UUID, which is the unique user ID allocated by the system.
account	char[]	Account.
thirdAccount	char[]	Third-party account.

Sample Code

```
/**
 * Log out.
 */
void demoMainMenuDlg::OnBnClickedLogout()
{
    // Call the logout API.
    int ret = hwmsdkagent::Logout();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Logout error"));
    }
}
```

7.4.2.4 Uploading a Profile Picture

UploadSelfAvatar

API Description

This API is used to upload a profile picture to the address book on the meeting server.

Precautions

1. Call this API only when you have logged in.
2. Upload a JPG or PNG image no more than 200 KB.
3. The recommended aspect ratio is 1:1.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode UploadSelfAvatar(const HwmSelfAvatarInfo *selfAvatarInfo);
```

Callback Function

```
virtual void OnUploadSelfAvatarResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-44 HwmSelfAvatarInfo parameter

Parameter	Man dato ry	Type	Description
path	Yes	char[]	Full path of the image.

```
/**
 * Upload a profile picture.
 */
int demoUploadSelfAvatarDlg::UploadSelfAvatar()
{
    int ret;
    // Enter the profile picture parameters.
    string path= "to/path/image.png";
    hwmsdkagent::HwmSelfAvatarInfo selfAvatarInfo{};
    strncpy_s(selfAvatarInfo.path, path.c_str(), HWM_MAX_FILE_PATH_LEN);

    // Call the API for uploading a profile picture.
    ret = hwmsdkagent::UploadSelfAvatar(&selfAvatarInfo);
    return ret;
}
```

7.4.2.5 Deleting a Profile Picture

DeleteSelfAvatar

API Description

This API is used to delete a customized profile picture.

Precautions

1. Call this API only when you have logged in.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode DeleteSelfAvatar();
```

Callback Function

```
virtual void OnDeleteSelfAvatarResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

```
/**
 * Delete a profile picture.
 */
int demoUploadSelfAvatarDlg::DeleteSelfAvatar()
{
    // Call the API for deleting a profile picture.
    int ret = hwmsdkagent::DeleteSelfAvatar();
    return ret;
}
```

7.4.3 UI Customization

7.4.3.1 Configuring the UI

Config

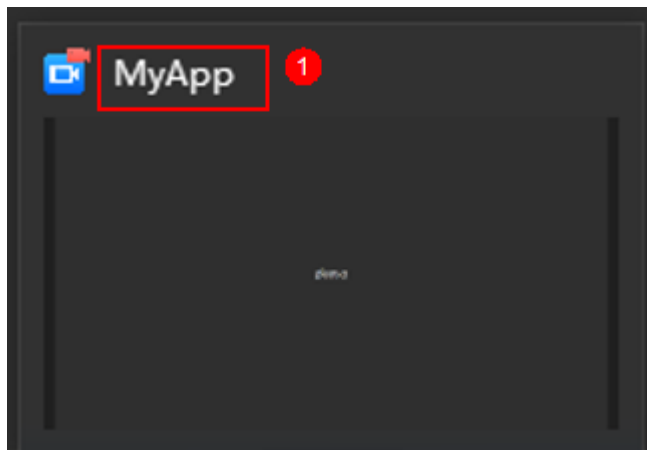
API Description

The Windows SDK provides the UI for meetings. Some elements on the UI can be customized. UI elements that can be customized are as follows:

- **Meeting window name**

After a meeting starts, a meeting icon is generated on the task bar of the Windows. When you point to the icon, the thumbnail window is displayed. You can customize the name of the window.

Figure 7-34 Meeting window name



NOTE

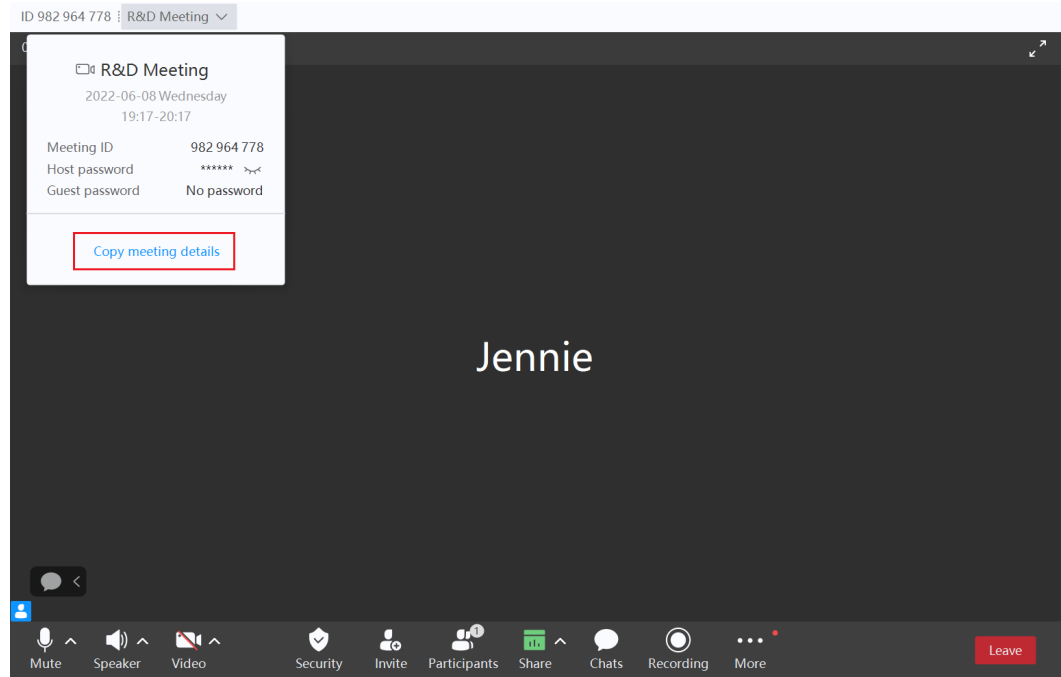
You can change the icon of the meeting window by replacing the **video.ico** file in the **HwmSdk\sdkResources\nativeimg** directory.

- **Meeting details and meeting link prefix**

By default, the domain name prefix of the meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/982989574>) is **https://bmeeting.huaweicloud.com/**. If you have developed your own meeting portal, you need to customize the prefix.

You can customize whether to display or hide meeting details.

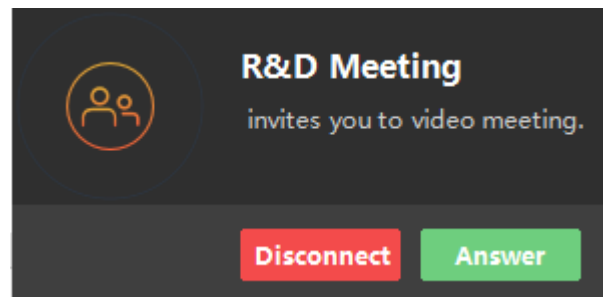
Figure 7-35 Meeting details



- **Incoming meeting window**

By default, the incoming meeting window is displayed when an incoming meeting is received. You can hide the window. When an incoming meeting notification is received, the API for answering the meeting is called.

Figure 7-36 Incoming meeting window



- **Meeting control buttons**

1. Delete or modify meeting control buttons provided by the SDK. For details about buttons that can be deleted and modified, see [Table 7-53](#).
2. Add custom buttons. For details, see [Customizing Meeting Control Buttons](#).

Figure 7-37 Bottom toolbar and More menu

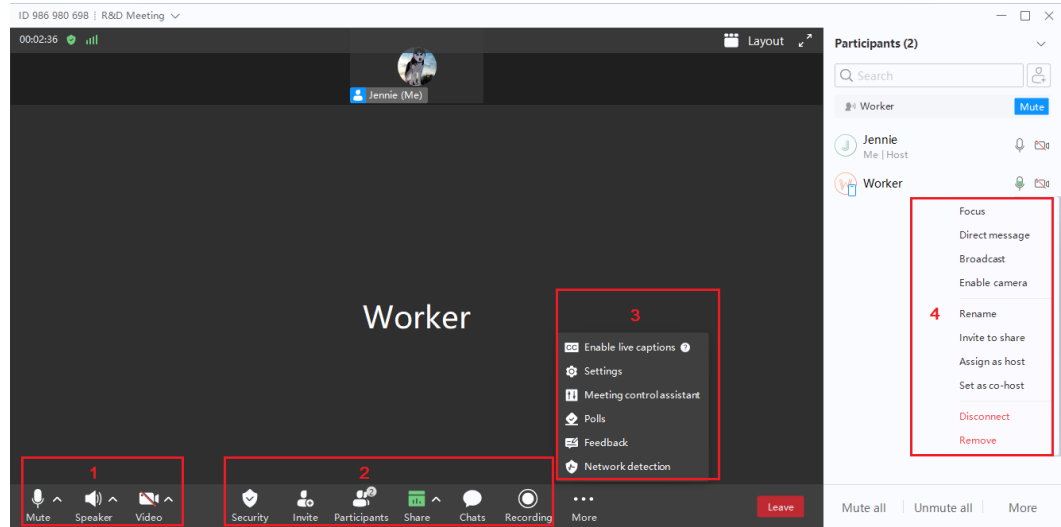


Figure 7-38 Sharing toolbar and More menu

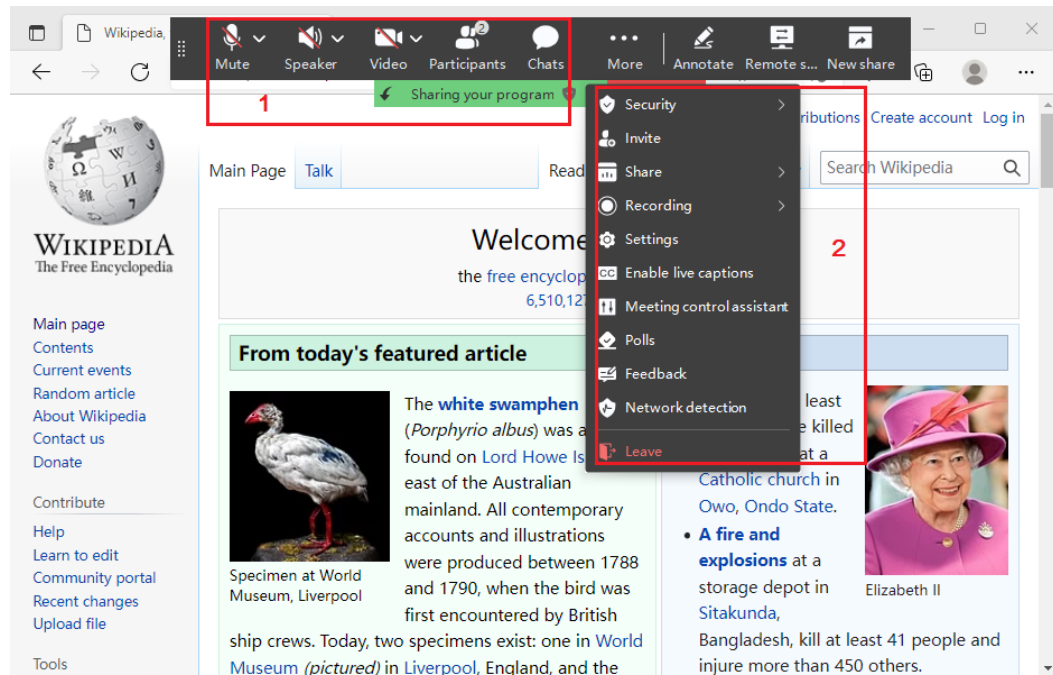
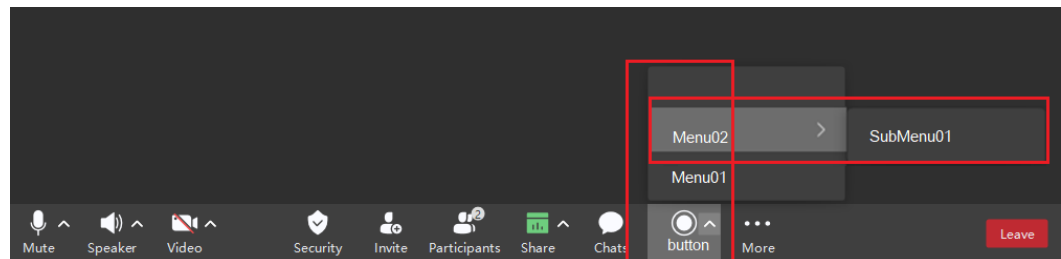


Figure 7-39 Custom submenu items



- Custom meeting details window

Figure 7-40 Custom meeting details window

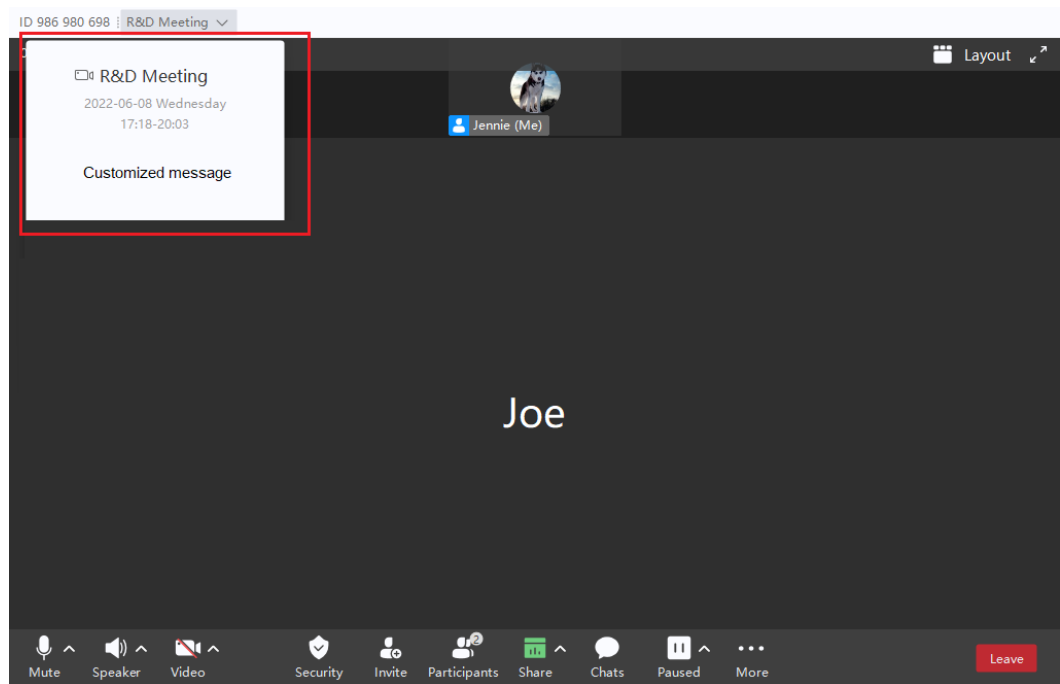


Figure 7-41 Status bar

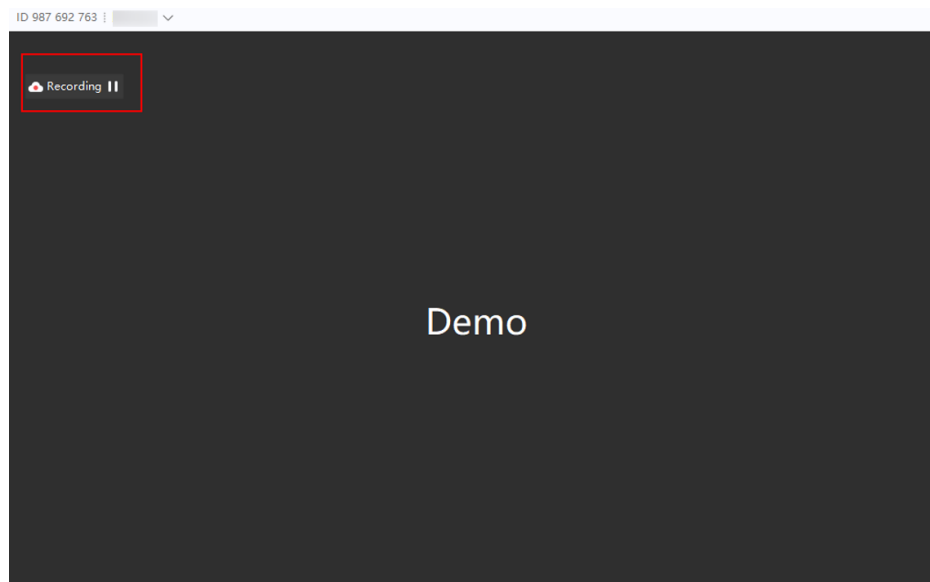
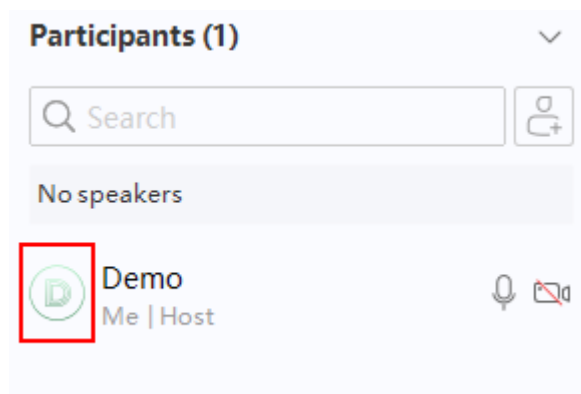


Figure 7-42 Profile picture of a participant in the participant list



NOTE

For details about how to customize the meeting details window, see [Displaying Meeting Information Box Notification](#) and [Destroying a Meeting Information Box](#).

Precautions

1. Call this API only if you need to change the default style of the meeting screen.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode Config(char uiConfig[HWM_MAX_CONFIG_LEN]);
```

NOTE

The **Config** API cannot be called consecutively. It can be called for the second time only after the **OnConfigResult** function of the result of the first **Config** API calling is processed.

Callback Function

```
virtual void OnConfigResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-45 Parameter description

Parameter	Mandatory	Type	Description
uiConfig	Yes	char[]	JSON object character string <code>"{" frame":object}"</code> . The object has format requirements. If the format does not meet the requirements, the configuration does not take effect. For details, see the following tables.

Table 7-46 frame object description

Key	Type	Description
name	string	Meeting window name, for example, MyApp shown in Figure 7-34 .
linkPrefix	string	Prefix of the meeting link copied from the meeting window, for example, from the meeting window shown in Figure 7-35 .
confMenu	object	Button objects in the meeting window, such as the four types of buttons shown in Figure 7-37 and Figure 7-38 .
isUseExternalConfIn-foWnd	bool	Whether to customize the meeting details window displayed in the meeting window, such as the window shown in Figure 7-40 . true : enabled; false : disabled. The default value is false .
isUseExternalAddress-Book	bool	Whether to use profile pictures in an external address book in the meeting window. true : yes; false : no. The default value is false .
isHideConfIncoming-Window	bool	Whether to hide the incoming meeting pop-up window. true : yes. false : no. The default value is false .
defaultWindowMode	int	Meeting window mode. 0 : normal; 1 : maximized; 2 : full screen. The default value is 0 .
isCloseSideWindow	bool	Whether to close the side window. false : no; true : yes. The default value is false .
flowControllInitShow-Pos	int	Initial position of the sharing toolbar. 0 : top; 1 : bottom. By default, the tool bar is displayed on the top.
defaultWindowMoni-tor	int	Display on which a meeting window is created by default when a participant joins a meeting. 0 : primary display; 1 : secondary display. By default, it is displayed on the primary display.
isHideTransferHostBe-foreLeave	bool	Whether to hide the button for specifying a new host when the original host leaves a meeting. false : no; true : yes. The default value is false .
isUploadKeyLog	bool	Whether to automatically collect logs. true : yes; false : no. The default value is true .

Table 7-47 confMenu object description

Key	Type	Description
toolBar	object	Button objects in the meeting window, such as the four types of buttons shown in Figure 7-37 and Figure 7-38 .
titleBar	object	Configuration object of the title bar in the meeting window, for example, the meeting details shown in Figure 7-35 .
statusBar	object	Configuration object of the status bar in the upper left corner of the meeting window, as shown in Figure 7-41 .

Table 7-48 toolBar object description

Key	Type	Description
button	object[]	Button objects in the meeting window, such as the four types of buttons and menus shown in Figure 7-37 and Figure 7-38 .
customButton	object[]	Configuration object of the third-party custom buttons in the meeting window, such as 3 and 4 shown in Figure 7-37 and 1 and 2 shown in Figure 7-38 .

Table 7-49 statusBar object description

key	Type	Description
button	object[]	Button configuration object of the status bar in the upper left corner of the meeting window, as shown in Figure 7-41 .

Table 7-50 button object description

Key	Type	Description
id	string	Unique ID of a button. For details about the mapping between IDs and buttons, see Table 7-53 .
showAsAction	string	Whether to display the button. The value can be never (not displayed) or ifRoom (displayed).

Key	Type	Description
isCustomizedClick	bool	Whether to inject content if the button is clicked. true : yes. When a user clicks the button, a notification is sent, and the SDK does not process the click response.

Table 7-51 customButton object description

Key	Type	Description
id	string	Custom button ID, for example, customMenu .
title	string	Custom button name, for example, Custom button .
buttonImg	string	Icon path of the custom button. Use an absolute path. For example, to/path/image.svg . SVG and PNG formats are supported. UTF-8 encoding is required.
buttonPos	int	Position of the custom button. 0: More menu on the toolbar; 1: bottom toolbar ; 2: sharing toolbar .
subMenu	object[]	Submenu items of the custom button. Up to three levels of submenu items can be configured.

Table 7-52 subMenu object description

Key	Type	Description
id	string	Custom button ID, for example, customMenu .
title	string	Custom button name, for example, Custom button .
buttonImg	string	Icon path of the custom button. Use an absolute path. For example, to/path/image.svg . SVG and PNG formats are supported. UTF-8 encoding is required.
subMenu	object[]	Submenu items of the custom button.

Table 7-53 Button IDs

Button Name	Button ID	Description
Microphone	"microphone"	Can be hidden.
Speaker	"speaker"	Can be hidden.
Camera	"camera"	Can be hidden.
Invite	"invite"	Can be hidden and injected.
Leave	"leave"	Can be hidden and injected.
Share	"share"	Can be hidden and injected.
Participants	"attendee"	Can be hidden and injected.
Call other number	"call_other_number"	Can be hidden and injected.
Feedback	"feedback"	Can be hidden and injected.
Raise up/Lower hand	"hands_up"	Can be hidden.
Apply to be host/Release host role	"change_chairman_auth"	Can be hidden.
Rename	"rename"	Can be hidden.
Lock meeting	"lock_conf"	Can be hidden.
Annotate	"annotation"	Can be hidden.
Give control	"remote_control"	Can be hidden.
Stop sharing	"stop_share"	Can be hidden.
Chat	"chat"	Can be hidden and injected.
Export participants	"export_participants"	Can be hidden.
Open to	"attendee_access_control"	Can be hidden.
Allow sharing	"lock_Share"	Can be hidden.
Live captions (enabling live captions and caption translation)	"subtitle"	Can be hidden.
Security	"security"	Can be hidden.

Button Name	Button ID	Description
Invite to share/Cancel sharing	"invite_or_cancel_share"	Can be hidden.
Hide non-video participants	"hide_no_video_view"	Can be hidden.
Intelligent video sorting	"video_smart_sorting"	Can be hidden.
Virtual background	"virtual_background"	Can be hidden.
Network detection	"network_detection"	Can be hidden.
Mute all/Unmute all	"mute_all"	Can be hidden.
Allow unmute	"allow_unmute"	Can be hidden.
Dual screen	"dual_screen"	Can be hidden.
Recording	"record"	Can be hidden.
Polls	"vote"	Can be hidden.
Sharing image quality policy: Definition preferred/Fluency preferred	"share_strategy"	Can be hidden.
Hide video window during sharing	"share_hide_video"	Can be hidden.
Include computer sound during sharing	"share_audio"	Can be hidden.
Copy meeting info	"copy_conf_info"	Can be injected.
Move all to waiting room	"moveall_to_waitingroom"	Can be hidden.
Participant details	"participant_detail"	Can be injected. For details, see Figure 7-42 .
Copy attendee link	"copy_audience_conf_info"	Can be injected.

Table 7-54 titleBar object description

Key	Type	Description
confDetail	object[]	Meeting details, as shown in Figure 7-35 . If showAsAction is set to never , meeting details are not displayed.

Table 7-55 confDetail object description

Key	Type	Description
showAsAction	string	Whether to display meeting details. The value can be never (not displayed) or ifRoom (displayed).
button	object[]	Button objects in the meeting details window.

According to the preceding definition, the complete configuration items in JSON format of the customizable UI elements are as follows:

```
{
  "frame":{
    "name":"MyApp",
    "linkPrefix":"https://www.demo.com/",
    "isUseExternalConfInfoWnd":false,
    "isUseExternalAddressBook":false,
    "confMenu":{
      "titleBar":{
        "confDetail":{
          "showAsAction":"never"
        }
      }
    },
    "statusBar": {
      "button": [
        {
          "id": "record",
          "showAsAction": "never"
        }
      ]
    },
    "toolBar":{
      "customButton": [
        {
          "id": "customMenu",
          "title": "Custom button",
          "buttonImg": "D:/demoResource/icon-whiteboard.svg",
          "buttonPos": 1
        }
      ],
      "button":[
        {
          "id":"microphone",
          "showAsAction":"ifRoom"
        },
        {
          "id":"speaker",
          "showAsAction":"ifRoom"
        },
        {
          "id":"camera",
          "showAsAction":"ifRoom"
        },
        {
          "id":"invite",
          "showAsAction":"ifRoom",
          "isCustomizedClick":true
        }
      ],
    }
  }
}
```



```
{
  "id": "leave",
  "showAsAction": "ifRoom",
  "isCustomizedClick": true
},
{
  "id": "share",
  "showAsAction": "never",
  "isCustomizedClick": true
},
{
  "id": "attendee",
  "showAsAction": "ifRoom",
  "isCustomizedClick": true
},
{
  "id": "call_other_number",
  "showAsAction": "ifRoom",
  "isCustomizedClick": true
},
{
  "id": "feedback",
  "showAsAction": "never"
},
{
  "id": "hands_up",
  "showAsAction": "never"
},
{
  "id": "change_chairman_auth",
  "showAsAction": "never",
  "isCustomizedClick": false
},
{
  "id": "rename",
  "showAsAction": "never"
},
{
  "id": "lock_conf",
  "showAsAction": "never"
},
{
  "id": "annotation",
  "showAsAction": "never"
},
{
  "id": "remote_control",
  "showAsAction": "never"
},
{
  "id": "stop_share",
  "showAsAction": "never"
},
{
  "id": "chat",
  "showAsAction": "ifRoom",
  "isCustomizedClick": true
},
{
  "id": "export_participants",
  "showAsAction": "never"
},
{
  "id": "attendee_access_control",
  "showAsAction": "never"
},
{
  "id": "network_detection",
  "showAsAction": "never"
}
```

```
    },  
    {  
        "id":"mute_all",  
        "showAsAction":"never"  
    },  
    {  
        "id":"allow_unmute",  
        "showAsAction":"never"  
    },  
    {  
        "id":"dual_screen",  
        "showAsAction":"never"  
    },  
    {  
        "id":"record",  
        "showAsAction":"never"  
    },  
    {  
        "id":"vote",  
        "showAsAction":"never"  
    }  
    ]  
    }  
    }  
}
```

NOTE

The **uiConfig** of the **Config** function is an array. Therefore, you need to convert the preceding JSON string into a string. For details, see the following sample code.

Sample Code

```
/**  
 * UI configurations  
 */  
int hwmSDKConfigUI::hwmSDKStartUIConfigTotal()  
{  
    CString start = "{\n\"frame\":{\n";  
  
    // Meeting window name  
    CString name = "\n\"name\":\n\"MyApp\"";  
  
    // Meeting link prefix  
    CString linkPrefix = "\n\"linkPrefix\":\n\"https://www.demo.com/\"";  
    // Whether to custom the external meeting details window  
    CString isUseExternalConfInfoWnd = "\n\"isUseExternalConfInfoWnd\":\n\"false\"";  
    // Whether to use an external address book.  
    CString isUseExternalAddressBook = "\n\"isUseExternalAddressBook\":\n\"false\"";  
    CString menuStart = "\n\"confMenu\":{\n";  
    // Meeting details  
    CString titleBar = "\n\"titleBar\":{\n\"confDetail\":{\n\"showAsAction\":\n\"ifRoom\"}}";  
    CString toolBarStart = "\n\"toolBar\":{\n";  
    // Customize buttons.  
    CString customMenuStart = "\n\"customButton\":[{\n";  
    CString customMenu1 = "{\n\"id\":\n\"customMenu1\", \"title\":\n\"Custom button 1\"}";  
    CString customMenu2 = "{\n\"id\":\n\"customMenu2\", \"title\":\n\"Custom button 2\"}";  
    CString customMenuEnd = "\n]";  
  
    // Meeting control buttons  
    CString buttonStart = "\n\"button\":[{\n";  
    CString inviateButton = "{\n\"id\":\n\"invite\", \"showAsAction\":\n\"ifRoom\", \"isCustomizedClick\":true}";  
    CString leaveButton = "{\n\"id\":\n\"leave\", \"showAsAction\":\n\"ifRoom\", \"isCustomizedClick\":true}";  
    CString callButton = "{\n\"id\":\n\"call_other_number\", \"showAsAction\":\n\"ifRoom\", \"isCustomizedClick\":true}";  
    CString attendeeButton = "{\n\"id\":\n\"attendee\", \"showAsAction\":\n\"ifRoom\", \"isCustomizedClick\":true}";  
    CString shareButton = "{\n\"id\":\n\"share\", \"showAsAction\":\n\"ifRoom\", \"isCustomizedClick\":true}";  
    CString annotationButton = "{\n\"id\":\n\"annotation\", \"showAsAction\":\n\"never\"}";  
    CString stopshareButton = "{\n\"id\":\n\"stop_share\", \"showAsAction\":\n\"never\"}";  
}
```

```
CString feedbackButton = "{\\id\\:\\feedback\\,\\showAsAction\\:\\never\\}";
CString remotecontrolButton = "{\\id\\:\\remote_control\\,\\showAsAction\\:\\never\\}";
CString handsupButton = "{\\id\\:\\hands_up\\,\\showAsAction\\:\\never\\}";
CString changechairmanButton = "{\\id\\:\\change_chairman_auth\\,\\showAsAction\\:\\never\\}";
CString renameButton = "{\\id\\:\\rename\\,\\showAsAction\\:\\never\\}";
CString lockconfButton = "{\\id\\:\\lock_conf\\,\\showAsAction\\:\\never\\}";
CString chatButton = "{\\id\\:\\chat\\,\\showAsAction\\:\\never\\}";
CString exportButton = "{\\id\\:\\export_participants\\,\\showAsAction\\:\\never\\}";
CString accessButton = "{\\id\\:\\attendee_access_control\\,\\showAsAction\\:\\never\\}";

CString buttonEnd = "]";
CString toolBarEnd = "}";
CString menuEnd = "}";
CString end = "}}";

CString customMenu = customMenuStart + customMenu1 + "," + customMenu2 + customMenuEnd;
CString button = buttonStart + inviateButton + "," + leaveButton + "," + \
    + callButton + "," + attendeeButton + "," + shareButton + "," + annotationButton + "," + \
stopshareButton + "," + \
    + feedbackButton + "," + remotecontrolButton + "," + handsupButton + "," + changechairmanButton + \
"," + renameButton + "," + \
    + lockconfButton + "," + chatButton + "," + exportButton + "," + accessButton + buttonEnd;

CString menu = menuStart + "," + titleBar + toolBarStart + customMenu + "," + button + toolBarEnd + \
menuEnd;
CString config = start + name + "," + linkPrefix + "," + isUseExternalConfInfoWnd + "," + \
isUseExternalAddressBook + "," + menu + end;

// Convert to the UTF-8 format.
string uiConfig = CTools::UNICODE2UTF(config);
int ret = hwmsdkagent::Config(uiConfig);
return ret;
}
```

7.4.3.2 Customizing Meeting Control Buttons

1. Add custom buttons. You can add buttons on the bottom toolbar, sharing toolbar, and **More** menus. Currently, you can customize one button on the bottom or sharing toolbar and the button is displayed before the **More** menu. More custom buttons are displayed in the **More** menu. Custom buttons in the **More** menu take effect on the bottom and sharing toolbars. Custom buttons in the **More** menu on the bottom toolbar are displayed at the end of the **More** menu. Custom buttons in the **More** menu on the sharing toolbar are displayed before the **Leave** button.
2. Delete custom buttons. Call the **Config** API to delete the button configuration in **customButton**. If **customButton:[]** is passed, all custom buttons are cleared. If a position is specified under **customButton** but no specific custom button is specified, all custom buttons in the position are cleared.
3. Functions of submenus under a button are as follows:
 - When **subMenu** is empty and the button is clicked, a notification is sent, indicating that the button that matches the ID is clicked.
 - When **subMenu** is not empty and the button is clicked, the level-2 menu specified by **subMenu** is displayed. No notification is sent.

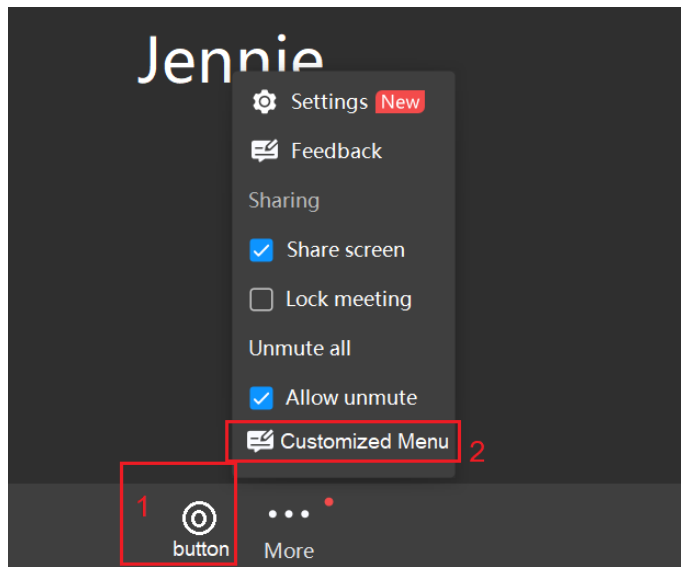
NOTE

When calling the **Config** API to add, delete, or modify custom buttons, pass all custom buttons in the corresponding position. The bottom and sharing toolbars can be dynamically refreshed. **More** menus can only be refreshed when they are regenerated. For details about how to refresh a custom button, see [Updating Custom Button Configurations](#).

- **Add custom buttons.**

The following describes how to add a custom button with submenus on the bottom toolbar, sharing toolbar, and **More** menus.

```
{
  "frame":{
    "confMenu":{
      "toolBar":{
        "customButton": [
          {
            "id": "customMenu",
            "title": "Custom button",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 1,
            "subMenu":[
              {
                "id": "customSecondMenu",
                "title": "Submenu",
                "buttonImg": "D:/demoResource/icon-whiteboard.svg"
              }
            ]
          },
          {
            "id": "customMore",
            "title": "Custom more",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 0
          },
          {
            "id": "customShare",
            "title": "Custom sharing",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 2
          }
        ]
      }
    }
  }
}
```



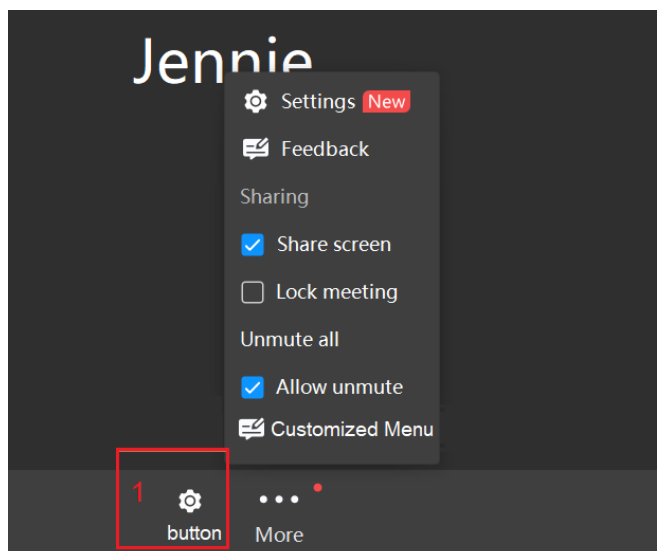
- **Update custom buttons.**

Ensure that the values of **id** and **buttonPos** are correct and modify other information about the button. The following describes how to rename a button on the bottom toolbar.

```

{
  "frame":{
    "confMenu":{
      "toolBar":{
        "customButton": [
          {
            "id": "customMenu",
            "title": "Renamed button",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 1,
            "subMenu":[
              {
                "id": "customSecondMenu",
                "title": "Submenu",
                "buttonImg": "D:/demoResource/icon-whiteboard.svg"
              }
            ]
          },
          {
            "id": "customMore",
            "title": "Custom more",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 0
          },
          {
            "id": "customShare",
            "title": "Custom sharing",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 2
          }
        ]
      }
    }
  }
}

```



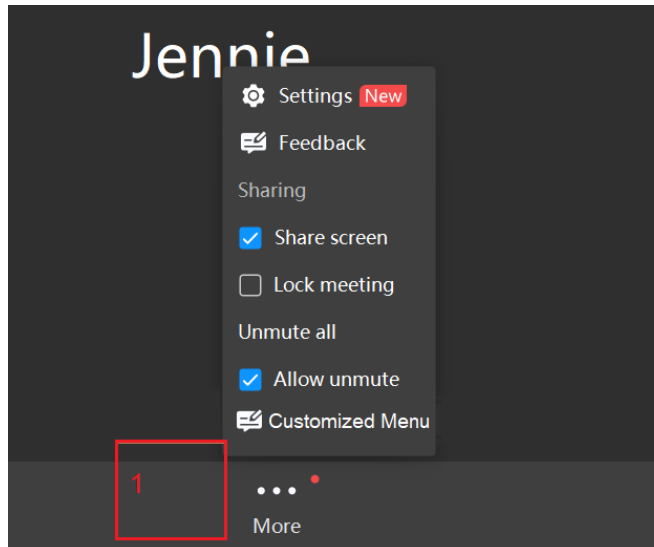
- **Delete some custom buttons.**

Buttons defined in **customButton** are deleted and other custom buttons are retained. The following describes how to delete custom buttons on the bottom toolbar.

```

{
  "frame":{
    "confMenu":{
      "toolBar":{
        "customButton": [
          {

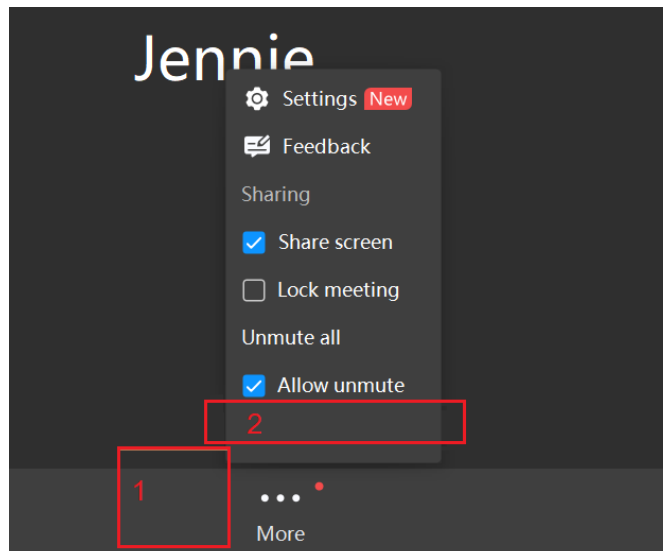
```

- **Clear all custom buttons.**

If an empty array is passed for **customButton**, custom buttons in all positions are cleared. The following is an example:

```
{  
  "frame":{  
    "confMenu":{  
      "toolBar":{  
        "customButton": [  
          ]  
        }  
      }  
    }  
  }  
}
```



7.4.3.3 Clearing UI Configurations

CleanConfig

API Description

This API is used to clear all configurations related to the meeting UI and restore the default status.

Precautions

1. You can only call this API if you have called the **Config** API and want to clear configurations performed by the **Config API**.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode CleanConfig();
```

Callback Function

```
virtual void OnCleanConfigResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

None

Return Values

Table 7-56 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**  
 * Clear UI configurations.  
 */  
int hwmSDKConfigUI::hwmSDKConfigUI()  
{  
    // Clear configurations.  
    int ret = hwmsdkagent::CleanConfig();  
    LOG_INFO("Call hwmsdkagent::CleanConfig ret is " << ret);  
}
```

7.4.3.4 Updating Custom Button Configurations

UpdateCustomButtonInfo

API Description

This API is used to update the configurations related to customized buttons. The bottom toolbar and shared toolbar are supported.

Precautions

1. Used to update the customized button configuration during a meeting.
2. Valid only for customized buttons that have been configured in **Config**.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode UpdateCustomButtonInfo(const HwmCustomButtonInfo *btnInfo);
```

Callback Function

```
virtual void OnUpdateCustomButtonInfoResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-57 Parameter description

Parameter	Mandatory	Type	Description
btnInfo	Yes	HwmCustomButtonInfo	Custom button information.

Table 7-58 HwmCustomButtonInfo parameters

Parameter	Mandatory	Type	Description
HwmCustomButtonPos	Yes	HwmCustomButtonPos	Position of a customized button
buttonKey	Yes	char[]	Customized button ID, which must be the same as that configured in the config file.
buttonTitle	Yes	char[]	Customized button name
buttonImg	Yes	char[]	Icon path of a customized button. Use an absolute path.

Table 7-59 HwmCustomButtonPos parameters

Parameter	Description
CUSTOM_BUTTON_POS_TOOL_BAR	Bottom toolbar
CUSTOM_BUTTON_POS_SHARE_TOOL_BAR	Sharing toolbar

Return Values

Table 7-60 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Update customized button configurations.
 */
int hwmSDKConfigUI::hwmSDKConfigUI()
{
    hwmSDKagent::HwmCustomButtonInfo btnInfo{};
    btnInfo.buttonPos = hwmSDKagent::CUSTOM_BUTTON_POS_TOOL_BAR;
    string buttonKey = CTools::UNICODE2UTF(CString("customMenu"));
    strcpy_s(btnInfo.buttonKey, sizeof(btnInfo.buttonKey), buttonKey.c_str());
    string buttonTitle = CTools::UNICODE2UTF(CString("update"));
    strcpy_s(btnInfo.buttonTitle, sizeof(btnInfo.buttonTitle), buttonTitle.c_str());
    string buttonIconPath = CTools::UNICODE2UTF(CString("path/to/image"));
    strcpy_s(btnInfo.buttonImg, sizeof(btnInfo.buttonImg), buttonIconPath.c_str());
    //Update the customized button configurations.
    int ret = hwmSDKagent::UpdateCustomButtonInfo(&btnInfo);
    LOG_INFO("Call hwmSDKagent::UpdateCustomButtonInfo ret is " << ret);
}
```

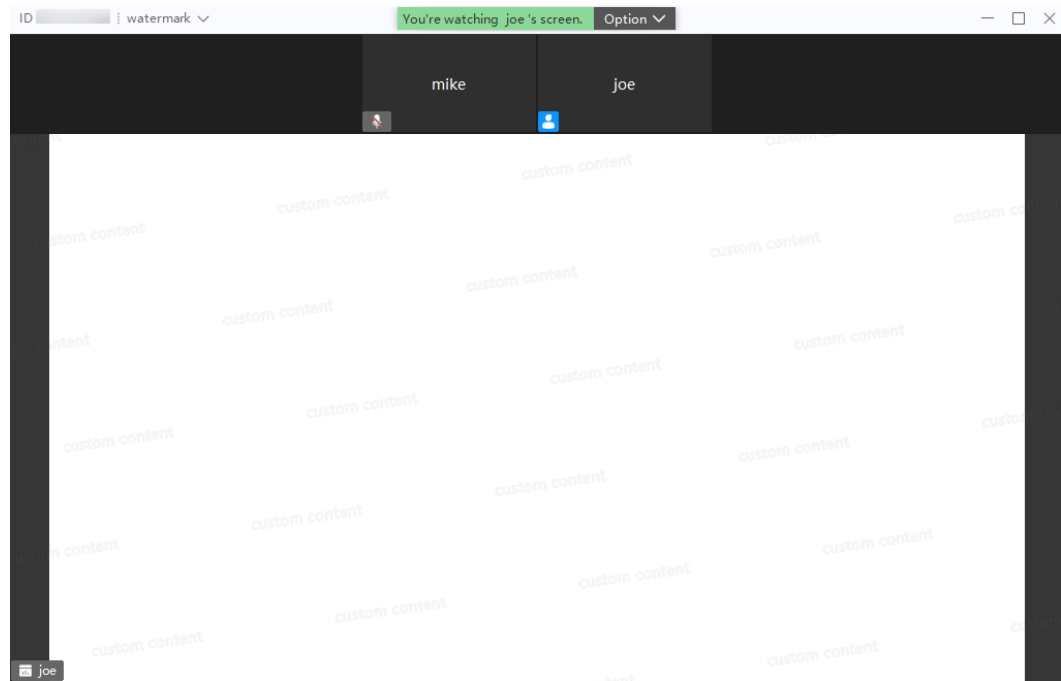
7.4.3.5 Customizing a Watermark for a Meeting

SetWaterMark

API Description

This API is used to customize a watermark. If not specified, the internal priorities are used to display the watermark.

Figure 7-43 Sample of a custom watermark



Precautions

1. This API must be called before a meeting. Calling it during a meeting does not take effect immediately.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.
3. If the enterprise-level watermark function is disabled, the customized watermark injection does not take effect.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetWaterMark(const HwmWaterMarkInfo * wtInfo);
```

Callback Function

```
virtual void OnSetWaterMarkInjectInfoResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-61 Parameter description

Parameter	Man dato ry	Type	Description
wtInfo	Yes	HwmWaterM arkInfo	Set the watermark information.

Table 7-62 HwmWaterMarkInfo description

Parameter	Type	Description
content	char[]	Set the custom watermark to be injected.
color	HwmWaterMarkColor-Type	Set the watermark font color.

Table 7-63 Enumerated values of HwmWaterMarkColorType

Enumerated Value	Description
HWM_WATERMARK_COLOR_TYPE_LIGHT	Light #CCCCCC
HWM_WATERMARK_COLOR_TYPE_STANDARD	Standard #999999
HWM_WATERMARK_COLOR_TYPE_DARKER	Dark #666666

Return Values

Table 7-64 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Set watermarks
 */
void demoWaterMarkInfoDlg::OnBnClickedSetWaterMarkInjectInfo()
{
    unsigned int color = hwmsdkagent::HWM_WATERMARK_COLOR_TYPE_LIGHT;
    hwmsdkagent::HwmWaterMarkInfo injectInfo = {0};

    strncpy_s(injectInfo.content, GetContent().c_str(), HWM_MAX_WATERMARK_CONTENT_LEN);
    injectInfo.color = (hwmsdkagent::HwmWaterMarkColorType)color;
    int ret = hwmsdkagent::SetWaterMark(&injectInfo);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("SetWaterMark inject info failed"));
    }
}
```

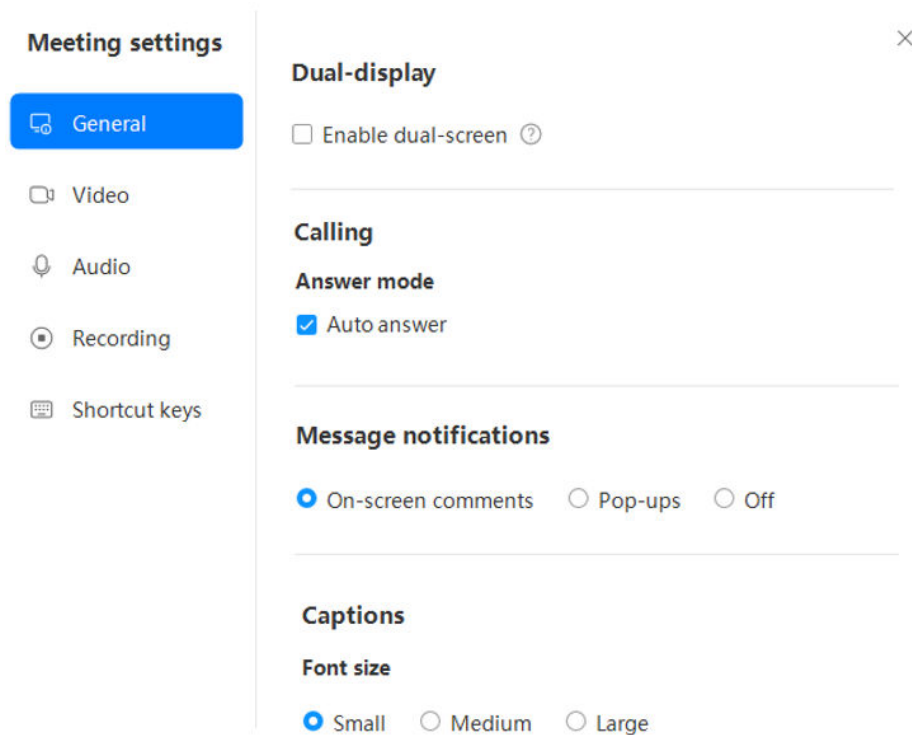
7.4.3.6 Customizing the Settings Screen

ConfigSettingWindow

API Description

This API is used to customize the display of tab pages and function areas of the settings screen. If not customized, all tab pages and function areas are displayed by default.

Figure 7-44 Settings screen



Precautions

1. This API must be called before the setting screen is opened. Calling this API when the setting screen is opened does not take effect immediately.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode ConfigSettingWindow(const HwmSettingWindowConfig * configInfo);
```

Callback Function

```
virtual void OnConfigSettingWindowResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-65 Parameter description

Parameter	Man dato ry	Type	Description
configInfo	Yes	HwmSettingW indowConfig	Settings screen customization information.

Table 7-66 HwmSettingWindowConfig description

Parameter	Type	Description
normalTab	HwmNormalSettingTab	Customization information about the basic settings screen.
videoTab	HwmVideoSettingTab	Customization information about the video settings screen.
audioTab	HwmAudioSettingTab	Customization information about the audio settings screen.
screenTab	HwmScreenSettingTab	Customization information about the screen settings screen.
recordTab	HwmRecordSettingTab	Customization information about the recording settings screen.
virtualBackgro udTab	HwmVirtualBackground- SettingTab	Customization information about the virtual background settings screen.
hotkeyTab	HwmHotKeySettingTab	Customization information about the shortcut key settings screen.

Table 7-67 HwmNormalSettingTab description

Parameter	Type	Description
isHide	bool	Whether to hide.
callOrConfAre a	HwmSettingArea	Calling settings area customization information.
chatNotifyArea	HwmSettingArea	Message notifications settings area customization information.
subtitleArea	HwmSettingArea	Captions settings area customization information.
shareArea	HwmSettingArea	Screen sharing settings area customization information.

Table 7-68 HwmVideoSettingTab description

Parameter	Type	Description
isHide	bool	Whether to hide.
cameraArea	HwmSettingArea	Camera settings area customization information.
videoViewArea	HwmSettingArea	Video settings area customization information.

Table 7-69 HwmAudioSettingTab description

Parameter	Type	Description
isHide	bool	Whether to hide.
micArea	HwmSettingArea	Microphone settings area customization information.
spkArea	HwmSettingArea	Speaker settings area customization information.
advancedArea	HwmSettingArea	Advanced settings area customization information.

Table 7-70 HwmScreenSettingTab description

Parameter	Type	Description
isHide	bool	Whether to hide.
dualScreenArea	HwmSettingArea	Customization information about the dual screen setting area.
displayTopologyArea	HwmSettingArea	Customization information about the display mode setting area.
swapContentArea	HwmSettingArea	Customization information about the area of switching the display content.

Table 7-71 HwmRecordSettingTab description

Parameter	Type	Description
isHide	bool	Whether to hide.
localRecordArea	HwmSettingArea	Local recording settings area customization information.

Table 7-72 HwmVirtualBackgroundSettingTab description

Parameter	Type	Description
isHide	bool	Whether to hide.
virtualBackgroundArea	HwmSettingArea	Virtual background settings area customization information.

Table 7-73 HwmHotKeySettingTab description

Parameter	Type	Description
isHide	bool	Whether to hide.
hotkeyArea	HwmSettingArea	Shortcut key settings area customization information.

Table 7-74 HwmSettingArea description

Parameter	Type	Description
isHide	bool	Whether to hide.

Return Values

Table 7-75 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Customize the settings screen.
 */
void demoConfigSettingWindowDlg::OnBnClickedOk()
{
    hwmsdkagent::HwmSettingWindowConfig data{ 0 };

    data.normalTab.isHide = true;
    data.videoTab.videoViewArea.isHide = true;

    int ret = hwmsdkagent::ConfigSettingWindow(&data);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("config setting window error"));
    }
}
```



```
return;
}
}
```

7.4.3.7 Displaying the Settings Window

ShowSettingWindow

API Description

This API is used to display the settings window and can be called before and during a meeting.

Precautions

1. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode ShowSettingWindow(const HwmShowSettingWindowInfo* showInfo);
```

Callback Function

```
virtual void OnShowSettingWindowResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-76 Parameter description

Parameter	Man dato ry	Type	Description
showInfo	Yes	HwmShowSet tingWindowIn fo	Information about displaying the settings window.

Table 7-77 HwmShowSettingWindowInfo parameters

Parameter	Type	Description
isShow	bool	Whether the window is displayed.
defaultPage	HwmSettingPage	Tab displayed by default.

Table 7-78 Enumerated values of HwmSettingPage

Enumerated Value	Description
SETTING_PAGE_NORMAL	General

Enumerated Value	Description
SETTING_PAGE_VIDEO	Video
SETTING_PAGE_AUDIO	Audio
SETTING_PAGE_RECORD	Recording
SETTING_PAGE_HOTKEY	Shortcut keys
SETTING_PAGE_SCREEN	Screen
SETTING_PAGE_COUNT	Number of setting screens.

Sample Code

```
/**
 * Displays the settings window.
 */
void demoShowSettingWindowDlg::OnBnClickedOk()
{
    hwmsdkagent::HwmShowSettingWindowInfo showInfo{ 0 };

    showInfo.isShow = true;
    showInfo.defaultPage = hwmsdkagent::HwmSettingPage::SETTING_PAGE_NORMAL;

    int ret = hwmsdkagent::ShowSettingWindow(&showInfo);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("show setting window error"));
        return;
    }
}
```

7.4.3.8 Displaying a Toast Message

ShowToast

API Description

This API is used to display a toast.

Precautions

1. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode ShowToast(const HwmToastInfo* toastInfo);
```

Callback Function

```
virtual void OnShowToastResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-79 Parameter description

Parameter	Man dato ry	Type	Description
toastInfo	Yes	HwmToastInfo	Toast message.

Table 7-80 HwmToastInfo description

Parameter	Type	Description
content	char[]	Toast message.
duration	int	Display duration, in seconds.

Table 7-81 Return value

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Display a toast message.
 */
void demoShowToastDlg::OnBnClickedOk()
{
    hwmsdkagent::HwmToastInfo toastInfo{ 0 };
    std::string toastContent = "toastContent";
    strcpy_s(toastInfo.content, HWM_MAX_TOAST_CONTENT_LEN, toastContent.c_str());
    toastInfo.duration = 5;

    int ret = hwmsdkagent::ShowToast(&toastInfo);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("show toast error"));
        return;
    }
}
```

7.4.3.9 Obtaining Information About the Main Window

GetMainWindowInfo

API Description

This API is used to obtain information about the main window.

Precautions

1. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetMainWindowInfo();
```

Callback Function

```
virtual void OnGetMainWindowInfoResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmMainWindowInfo *mainWindowInfo) {};
```

Parameter Description

Table 7-82 HwmMainWindowInfo description

Parameter	Type	Description
x	int	Offset of the window relative to the left side of the screen.
y	int	Offset of the window relative to the top of the screen.
width	int	Width of the window.
height	int	Height of the window.

Table 7-83 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .
HwmMainWindowInfo	Main window information.

Sample Code

```
/**
 * Obtain information about the main window.
 */
void demoGetMainWindowInfoDlg::OnBnClickedOk()
{
    int ret = hwmsdkagent::GetMainWindowInfo();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("get mainwindow info error"));
        return;
    }
}
```

7.4.3.10 Obtaining an Error Message

GetErrorMessage

API Description

This API is used to obtain an error message.

Precautions

1. This API is a synchronous API. The return value only indicates whether the API is successfully called.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetErrorMessage(int errorCode, OUT HwmErrorMessageInfo *errorMessageInfo);
```

Parameter Description

Table 7-84 Parameter description

Parameter	Type	Description
errorCode	int	Error code.

Table 7-85 HwmErrorMessageInfo description

Parameter	Type	Description
errorMessage	char[]	Error message. UTF-8 encoding is required.

Table 7-86 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .
HwmErrorMessageInfo	Error message.

Sample Code

```
/**
 * Obtain an error message.
 */
void demoGetErrorMessageDlg::OnBnClickedOk()
{
    hwmsdkagent::HwmErrorMessageInfo info{};
```

```
int ret = hwmsdkagent::GetErrorMessage(hwmsdk::HWM_AGENT_ERR_IN_PROCESS, &info);
if (hwmsdk::HWM_COMMON_SUCCESS != ret)
{
    AfxMessageBox(_T("get error message error"));
    return;
}
}
```

7.4.4 Meeting Control

7.4.4.1 Creating a Meeting

CreateConf

API Description

This API is used to create an instant meeting.

Precautions

1. By default, this API enables you to join a meeting as a host. During API calling, there is no need to add your information to the participant parameters.
2. If other participants need to be invited, their information needs to be transferred. If other participants are not required to join the meeting, participant details and the number of participants can be empty.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode CreateConf(HwmCreateConfInfo *createConfInfo,
HwmConfAttendee *attendees, unsigned int count);
```

Callback Function

```
virtual void OnCreateConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Parameter	Mandatory	Type	Description
createConfInfo	Yes	HwmCreateConfInfo	Meeting details.
attendees	No	HwmConfAttendee	Participant details. If participants are not required, set this parameter to NULL .
count	No	unsigned int	Number of participants. If participants are not required, set this parameter to 0 .

Table 7-87 HwmCreateConfInfo description

Parameter	Mandatory	Type	Description
subject	Yes	char[]	Meeting topic.
mediaType	Yes	HwmConfMediaType	Meeting type.
needPassword	No	bool	Whether a meeting password is required. NOTE This parameter is valid only for meetings with a random ID.
isAutoRecord	No	bool	Whether to enable automatic meeting recording. If automatic meeting recording is enabled, the meeting can be recorded by default even meeting recording is disabled. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
allowRecord	No	bool	Whether meeting recording is supported. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
callInRestriction	No	HwmJoinConfPermissionType	Users who are allowed to join the meeting. By default, everyone is allowed.
vmrId	No	char[]	Unique cloud meeting room ID. To schedule a meeting with a random meeting ID, set this parameter to an empty string.
vmrConfIdType	No	HwmVmrConfIdType	ID type of the cloud meeting room.

Parameter	Mandatory	Type	Description
guestPwd	No	char[]	Password of a common participant. If this parameter is left empty, the server randomly generates a value. NOTE This parameter is valid only for meetings with a random ID.
isOpenWaitingRoom	No	bool	Waiting room status. NOTE The function takes effect only after the waiting room function is enabled.
duration	No	int	Meeting duration, in minutes. The value ranges from 15 to 1,440. Note: If this parameter is left blank, the server uses the default meeting duration.
concurrentParticipants	No	unsigned int	Maximum number of participants in the meeting. If this parameter is left blank, there is no restriction.
customInfo	No	char[]	Custom extension information.
confResType	No	HwmConfResType	Meeting resource type.

Table 7-88 Enumerated values of HwmConfMediaType

Enumerated Value	Description
HWM_AUDIO_AND_DATA	Voice and data meeting.
HWM_VIDEO_AND_DATA	Video and data meeting.

Table 7-89 Enumerated values of HwmJoinConfPermissionType

Enumerated Value	Description
RESTRICTION_CALL_IN_ALL	Everyone.

Enumerated Value	Description
RESTRICTION_CALL_IN_COMPANY	Corporate users only.
RESTRICTION_CALL_IN_INVITED	Invited users only.

Table 7-90 HwmConfAttendee description

Parameter	Mandatory	Type	Description
name	Yes	char[]	Participant name.
number	Yes	char[]	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	char[]	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.

Table 7-91 Enumerated values of HwmVmrConfIdType

Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	Fixed ID of the cloud meeting room.
HWM_VMR_CONF_ID_TYPE_RANDOM	Random ID of the cloud meeting room.

Table 7-92 Enumerated values of HwmConfResType

Enumerated Value	Description
HWM_CONF_RESTYPE_DEF AULT	Default.
HWM_CONF_RESTYPE_SH ARE_VMR	Shared cloud meeting room.

Return Values

Table 7-93 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Create a meeting.
 */
int demoCreateConfWithAttendeeDlg::clickCreatConfWithAttendee()
{
    int ret;
    hwmsdkagent::HwmCreateConfInfo data;
    memset(&data, 0, sizeof(hwmsdkagent::HwmCreateConfInfo));

    // Set the meeting topic.
    strncpy_s(data.subject, GetMeetingSubjectStr().c_str(), HWM_MAX_SUBJECT_LEN);
    // Set the meeting type.
    data.mediaType = hwmsdkagent::HWM_VIDEO_AND_DATA
    // Set whether the guest password is required for the meeting.
    data.needPassword = true;
    // Set the meeting incoming call restriction.
    data.callInRestriction = hwmsdkagent::RESTRICTION_CALL_IN_ALL;
    // Configure vmrId. To create a meeting with a random ID, leave vmrId empty. Here,
    m_confIdTypeCombo indicates that a meeting with a random ID is preferentially created.
    // Therefore, vmrIdSelect > 0 indicates the personal meeting ID or a cloud meeting room ID is used.
    const auto vmrIdSelect = m_confIdTypeCombo.GetCurSel();
    if (vmrIdSelect > 0 && vmrIdSelect - 1 < vmrList.size())
    {
        strcpy_s(data.vmrId, HWM_MAX_VMR_CONF_ID_LEN, vmrList[vmrIdSelect - 1].vmrId);
    }

    // Set participants.
    // Obtain participant details based on site requirements.
    CString tempCString;
    m_attendeesEdit.GetWindowText(tempCString);
    string tempString = CTools::UNICODE2UTF(tempCString);
    vector<string> list = CTools::split(tempString, ',');
    vector<string> temp;
    int count = list.size();
    int realCount = 0;
    if (count > 0)
```

```
{
    // Apply for the structure memory.
    hwmsdkagent::HwmConfAttendee* participants;
    participants = (hwmsdkagent::HwmConfAttendee*)malloc(sizeof(hwmsdkagent::HwmConfAttendee) *
count);
    if (participants == NULL)
    {
        return -1;
    }
    memset(participants, 0, sizeof(hwmsdkagent::HwmConfAttendee)*count);

    hwmsdkagent::HwmConfAttendee* participantsTemp = participants;
    for (int i = 0; i < count; i++)
    {
        temp = CTools::split(list[i], '-');
        if (temp.size() == 2)
        {
            // Assign a value to name.
            strncpy_s(participantsTemp->name, (char *)temp[0].c_str(), HWM_MAX_DISPLAY_NAME_LEN);
            // Assign a value to number.
            strncpy_s(participantsTemp->number, (char *)temp[1].c_str(), HWM_MAX_NUMBER_LEN);
            // Increase the number of pointers by 1.
            realCount++;
            participantsTemp++;
        }
    }
    // Call the SDK API to create the meeting.
    ret = hwmsdkagent::CreateConf(&data, participants, realCount);

    // Release memory space.
    free(participants);
    participants = NULL;
}
else
{
    // Create a meeting without specifying participants.
    ret = hwmsdkagent::CreateConf(&data, NULL, 0);
}
return ret;
}
```

7.4.4.2 Joining a Meeting

JoinConfById

API Description

This API is used to join an existing meeting by using the meeting ID and password.

Precautions

1. This API can be called regardless of whether you have logged in.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode JoinConfById(HwmJoinConfByIdInfo *joinConfByIdInfo);
```

Callback Function

```
virtual void OnJoinConfByIdResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-94 HwmJoinConfByIdInfo description

Parameter	Mandatory	Type	Description
confId	Yes	char[]	Meeting ID.
password	No	char[]	Meeting password. To join a meeting as a host, pass the host password. To join a meeting as a guest, pass the guest password or leave it empty if the meeting is password-free.
name	No	char[]	Display name in the meeting. If you have logged in, this parameter can be left blank. In such a case, the login username is used as the display name in the meeting. To join a meeting anonymously, you must enter this name or set the participant name in advance.
isCloseSpk	No	bool	Whether to disable the speaker. Enter true to disable the speaker or false to enable it.
isStopConflictConf	No	bool	Used to forcibly end a meeting that conflicts with the current cloud meeting room. (Only the owner of the cloud meeting room resource has the permission.)

Return Values

Table 7-95 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
// Join a meeting using the meeting ID.
int demoJoinConfByDlgl::clickJoinConfByDlgl()
{
    // Enter the meeting ID and meeting password. You can specify your display name in the meeting
    // regardless of whether you have logged in or not.
    hwmsdkagent::HwmJoinConfByDlglInfo data;
    memset(&data, 0, sizeof(hwmsdkagent::HwmJoinConfByDlglInfo));

    strncpy_s(data.confId, GetMeetingID().c_str(), HWM_MAX_CONF_ID_LEN);
    strncpy_s(data.password, GetAccessCode().c_str(), HWM_MAX_PASSWORD_LEN);
    strncpy_s(data.name, GetParticipantName().c_str(), HWM_MAX_DISPLAY_NAME_LEN);
    data.isCloseSpk = false;

    // Enable or disable the microphone and camera.
    int ret = EnableFeature(hwmsdkagent::HWM_ENABLE_FEATURE_TYPE_MIC_SWITCH, true);
    ret = EnableFeature(hwmsdkagent::HWM_ENABLE_FEATURE_TYPE_CAM_SWITCH, false);
    ret = hwmsdkagent::JoinConfByDlgl(&data);
    return ret;
}
```

NOTE

Before joining a meeting, you can call **EnableFeature** to change the microphone and camera status.

7.4.4.3 Joining a Meeting Using a Random Code

JoinConfByRandom

API Description

The meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/981924330/e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659>) in the notification email contains the meeting ID (981924330) and random code (e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659). A third-party app calls this API to join a meeting.

NOTE

If you do not specify a guest password when scheduling a meeting, the meeting link contains only the meeting ID but not the random code.

Precautions

1. This API can be called regardless of whether you have logged in.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode JoinConfByRandom(HwmJoinConfByRandomInfo
*joinConfByRandomInfo);
```

Callback Function

```
virtual void OnJoinConfByRandomResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-96 HwmJoinConfByRandomInfo description

Parameter	Mandatory	Type	Description
confId	Yes	char[]	Meeting ID.
random	No	char[]	Mapping value of a 48-digit meeting password. The value comes from the end of the meeting link in the shared meeting details. If a meeting does not require a guest password, this parameter can be left blank.
name	No	char[]	Display name in the meeting. If you have logged in, this parameter can be left blank. In such a case, the login username is used as the display name in the meeting. To join a meeting anonymously, enter this name or set the site name in advance.
domain	No	char[]	Domain name. This parameter is used when you join the meeting offline.
isCloseSpk	No	bool	Whether to disable the speaker. Enter true to disable the speaker or false to enable it.

Return Values

Table 7-97 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
// Join a meeting using the meeting ID and random code.
int demoJoinConfByRandomDlg::clickJoinConfByRandom()
{
    // Enter the meeting ID and password mapping value. If you join the meeting using the random code,
    you can configure the display name.
```

```

hwmsdkagent::HwmJoinConfByRandomInfo data;
memset(&data, 0, sizeof(hwmsdkagent::HwmJoinConfByRandomInfo));

strncpy_s(data.confId, GetMeetingID().c_str(), HWM_MAX_CONF_ID_LEN);
strncpy_s(data.random, GetAccessCode().c_str(), HWM_MAX_RANDOM_LEN);
strncpy_s(data.name, GetParticipantName().c_str(), HWM_MAX_DISPLAY_NAME_LEN);
data.isCloseSpk = false;

// Enable or disable the microphone and camera.
int ret = EnableFeature(hwmsdkagent::HWM_ENABLE_FEATURE_TYPE_MIC_SWITCH, true);
ret = EnableFeature(hwmsdkagent::HWM_ENABLE_FEATURE_TYPE_CAM_SWITCH, false);
ret = hwmsdkagent::JoinConfByRandom(&data);
return ret;
}

```

 **NOTE**

Before joining a meeting, you can call **EnableFeature** to change the microphone and camera status.

7.4.4.4 Setting the Participant Name

RenameSelf

API Description

This API is used to set the participant name.

Precautions

This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode RenameSelf(const char
name[HWM_MAX_DISPLAY_NAME_LEN]);
```

Callback Function

```
virtual void OnRenameSelfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-98 Parameter description

Parameter	Man dato ry	Type	Description
name	Yes	char[]	Participant name.

Return Values

Table 7-99 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
void demoRenameSelfDlg::OnBnClickedOk()
{
    // Set the participant name.
    int ret = hwmsdkagent::RenameSelf(GetNameString().c_str());
    if(ret != hwmsdk::HWM_COMMON_SUCCESS)
    {
        AfxMessageBox(_T("Renamel self error"));
        return;
    }
}
```

7.4.4.5 Inviting a Participant

AddAttendee

API Description

This API is used to add participants to a meeting.

Precautions

1. If this API is called when you are not in a meeting, a failure message is returned.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode AddAttendee(HwmConfAttendee *attendees, unsigned int count);
```

Callback Function

```
virtual void OnAddAttendeeResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-100 HwmConfAttendee description

Parameter	Mandatory	Type	Description
name	Yes	char[]	Participant name.

Parameter	Mandatory	Type	Description
number	Yes	char[]	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	char[]	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	No	char[]	Huawei Cloud Meeting account.

Return Values

Table 7-101 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Add a participant.
 */
int demoAddAttendeeDlg::clickAddAttendee()
{
    int ret;
    CString tempCString;

    // Obtain participant details based on site requirements.
    m_numbersEdit.GetWindowText(tempCString);
    string tempString = CTools::UNICODE2UTF(tempCString);
```

```
vector<string> list = CTools::split(tempString, ',');
vector<string> temp;
int count = list.size();

int realCount = 0;
if (count > 0)
{
    // Apply for the structure memory.
    hwmsdkagent::HwmConfAttendee* participants;
    participants = (hwmsdkagent::HwmConfAttendee*)malloc(sizeof(hwmsdkagent::HwmConfAttendee) *
count);
    if (participants == NULL)
    {
        return -1;
    }
    memset(participants, 0, sizeof(hwmsdkagent::HwmConfAttendee)*count);

    hwmsdkagent::HwmConfAttendee* participantsTemp = participants;
    for (int i = 0; i < count; i++)
    {
        temp = CTools::split(list[i], '-');
        if (temp.size() == 2)
        {
            // Assign a value to name.
            strncpy_s(participantsTemp->name, (char *)temp[0].c_str(), HWM_MAX_DISPLAY_NAME_LEN);
            // Assign a value to number.
            strncpy_s(participantsTemp->number, (char *)temp[1].c_str(), HWM_MAX_NUMBER_LEN);
            // Increase the number of pointers by 1.
            realCount++;
            participantsTemp++;
        }
    }

    ret = hwmsdkagent::AddAttendee(participants, realCount);

    // Release memory space.
    free(participants);
    participants = NULL;
}

return ret;
}
```

7.4.4.6 Starting Sharing

StartShare

API Description

This API is used to enable meeting sharing. The UI of the SDK has implemented the sharing function. You can call this API to initiate sharing on a third-party application.

Precautions

1. If this API is called when you are not in a meeting, a failure message is returned.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode StartShare(HwmStartShareInfo *startShareInfo);
```

Callback Function

```
virtual void OnStartShareResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-102 HwmStartShareInfo description

Parameter	Mandatory	Type	Description
shareType	Yes	enum	Sharing type.
monitorShareInfo	No	HwmMonitorShareInfo	Desktop sharing details. This parameter is mandatory if the sharing type is desktop sharing.
appShareInfo	No	HwmAppShareInfo	Program sharing details. This parameter is mandatory if the sharing type is program sharing.
operatableUiMonitor	Yes	HwmMonitorShareInfo	Monitor where the toolbar is located during sharing. If monitorMode is set to the primary/secondary monitor mode and the value of monitor is set to 0 , you do not need to specify a monitor.

Table 7-103 Enumerated values of HwmShareType

Enumerated Value	Description
HWM_SHARE_TYPE_MONITOR	Desktop sharing.
HWM_SHARE_TYPE_APP	Program sharing.

Table 7-104 HwmMonitorShareInfo description

Parameter	Mandatory	Type	Description
monitor	Yes	HwmMonitor	Monitor type. This parameter is valid only when monitorMode is set to the primary/secondary monitor mode.
monitorMode	Yes	HwmMonitorMode	Monitor mode.

Parameter	Mandatory	Type	Description
monitorIndex	Yes	unsigned int	Monitor index. This parameter is valid only when monitorMode is set to the multi-screen mode.

Table 7-105 Enumerated values of HwmMonitor

Enumerated Value	Description
HWM_MONITOR_MAIN	Primary monitor.
HWM_MONITOR_SECONDARY	Secondary monitor.

Table 7-106 Enumerated values of HwmMonitorMode

Enumerated Value	Description
HWM_MONITOR_MODE_PRIMARY_SECONDARY	Primary/Secondary monitor.
HWM_MONITOR_MODE_MULTI_MONITOR	Multi-monitor.

Table 7-107 HwmAppShareInfo description

Parameter	Mandatory	Type	Description
appHandle	Yes	HWND	Program handle.

Return Values

Table 7-108 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Starts sharing.
```

```
*/
int demoStartShareDlg::clickStartShare()
{
    hwmsdkagent::HwmStartShareInfo data;
    memset(&data, 0, sizeof(hwmsdkagent::HwmStartShareInfo));
    // Set the sharing type.
    data.shareType = hwmsdkagent::HwmShareType::HWM_SHARE_TYPE_MONITOR;
    // Set the monitor to share.
    data.monitorShareInfo.monitor = hwmsdkagent::HWM_MONITOR_MAIN;
    // Set the monitor where the toolbar is located.
    data.operableUiMonitor = hwmsdkagent::HWM_MONITOR_MAIN;

    int ret = hwmsdkagent::StartShare(&data);
    return ret;
}
```

7.4.4.7 Ending Sharing

StopShare

API Description

This API is used to end sharing in a meeting. The UI of the SDK has implemented the function of stopping sharing. You can call this API to stop sharing on a third-party application.

Precautions

1. Do not call this API if no participant is sharing content.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode StopShare();
```

Callback Function

```
virtual void OnStopShareResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

None

Return Values

Table 7-109 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * End sharing.
```

```

*/
void demoConfCtrlDlg::OnBnClickedButtonStopShare()
{
    // End sharing.
    int ret = hwmsdkagent::StopShare();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("StopShare error"));
    }
}
}

```

7.4.4.8 Configuring Automatic Answering for Incoming Calls

SetConfIncomingAnswerResult

API Description

This API is used to configure whether to automatically reject or answer incoming calls.

Precautions

1. This API can be called (in the [OnConfIncoming](#) API) only when a meeting call is received.
2. This API is used to set the answer type, including dialog box selection, rejection, and answer.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

NOTE

If the incoming call is automatically rejected, the [Config](#) API needs to be called to set **isHideConfIncomingWindow** to **TRUE** after the initialization.

When the call needs to be rejected, **SetCallIncomingAnswerResult** is set to **HWM_INCOMING_ANSWER_DECLINE**. When the call needs to be answered in a pop-up window, **SetCallIncomingAnswerResult** is set to **HWM_INCOMING_ANSWER_NORMAL**.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode type(HWMIncomingAnswerType type);
```

Callback Function

```
virtual void OnSetConfIncomingAnswerResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-110 Enumerated values of HWMIncomingAnswerType

Enumerated Value	Description
HWM_INCOMING_ANSWER_NORMAL	Use the default dialog box to select an answering mode.
HWM_INCOMING_ANSWER_DECLINE	Reject an incoming call.

Enumerated Value	Description
HWM_INCOMING_ANSWER_ANSWER	Answer an incoming call.

Return Values

Table 7-111 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Reject a meeting call.
 */
void demoConfCtrlDlg::OnBnClickedSetConfIncomingAnswerResult()
{
    hwmsdkagent::HWMIncomingAnswerType type = HWM_INCOMING_ANSWER_DECLINE;
    int ret = hwmsdkagent::SetConfIncomingAnswerResult(type);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("SetConfIncomingAnswerResult error"));
    }
}
```

7.4.4.9 Displaying the Main Meeting Window

showMeetingWindow

API Description

This API is used to place the main meeting window at the top when it is minimized or covered by other windows. An ongoing meeting will be selected from the meeting list to show its window.

Precautions

None

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode ShowMeetingWindow();
```

Parameter Description

None

Return Values

Table 7-112 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Display the main window of a meeting.
 */
void demoSettingDlg::OnBnClickedButtonShowMeetingWindow()
{
    int ret = hwmsdkagent::ShowMeetingWindow();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox("ShowMeetingWindow error" );
    }
}
```

7.4.4.10 Setting a Sharing Policy

SetShareStrategy

API Description

This API is called to set a screen sharing policy to clarity preferred or fluency preferred.

Precautions

This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetShareStrategy(HwmShareStrategyType shareStrategyType);
```

Callback Function

```
virtual void OnSetShareStrategyResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-113 Parameters

Parameter	Man datory	Type	Description
shareStrategyType	Yes	HwmShareStrateg yType	Screen sharing policy types

Table 7-114 Enumerated values of HwmShareStrategyType

Enumerated Value	Description
HWM_SHARE_STRATEGY_DEFINITION_FIRST	Clarity preferred
HWM_SHARE_STRATEGY_FLUENCY_FIRST	Fluency preferred

Return Values

Table 7-115 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Set a sharing policy.
 */
void demoSetShareStrategyDlg::OnBnClickedButtonSetShareStrategy()
{
    hwmsdkagent::HwmShareStrategyType type = HWM_SHARE_STRATEGY_DEFINITION_FIRST;
    int ret = hwmsdkagent::SetShareStrategy(type);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Set Share Strategy Result failed"));
    }
}
```

7.4.4.11 Setting Audio Sharing

SetShareAudio

API Description

This API is used to set whether to share the computer sound during screen sharing.

Precautions

This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetShareAudio(bool isEnabled);
```

Callback Function

```
virtual void OnSetShareAudioResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-116 Parameter description

Parameter	Man dato ry	Type	Description
isEnabled	Yes	bool	Whether to enable the function.

Return Values

Table 7-117 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Set audio sharing.
 */
void demoSetShareAudioDlg::OnBnClickedButtonSetShareAudio()
{
    bool isEnabled = true;
    int ret = hwmsdkagent::SetShareAudio(isEnabled);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("Set Share Audio Result failed"));
    }
}
```

7.4.4.12 Controlling Audio and Video Devices

AVDeviceCtrl

API Description

This API is used to control local microphones, speakers, and cameras.

Precautions

This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode AVDeviceCtrl(HwmDeviceType deviceType, bool isOpen);
```

Callback Function

```
virtual void OnAVDeviceCtrlResult(hwmsdk::HwmErrCode ret, const char* reason, HwmDeviceType deviceType) {};
```

Parameter Description

Table 7-118 Parameter description

Parameter	Man datory	Type	Description
HwmDeviceType	Yes	HwmDeviceType	Device type enumeration.
isOpen	Yes	bool	Whether to enable the device.

Table 7-119 Enumerated values of value HwmDeviceType

Enumerated Value	Description
HWM_DEVICE_TYPE_MIC	Microphone
HWM_DEVICE_TYPE_SPEAKER	Speaker
HWM_DEVICE_TYPE_CAMERA	Camera

Return Values

Table 7-120 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Control audio and video devices.
 */
int demoAVDeviceCtrlDlg::ClickAVDeviceCtrl()
{
    hwmsdkagent::HwmDeviceType deviceType = hwmsdkagent::HwmDeviceType::HWM_DEVICE_TYPE_MIC;
    bool isOpen = true;
    int ret = hwmsdkagent::AVDeviceCtrl(deviceType, isOpen);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("AVDeviceCtrl error"));
    }
}
```

7.4.4.13 Setting the Sharing Permission

SetShareScreenPermission

API Description

This API is used to set the sharing permission.

Precautions

This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetShareScreenPermission(bool isAllowed);
```

Callback Function

```
virtual void OnSetShareScreenPermissionsResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-121 Parameter description

Parameter	Man dato ry	Type	Description
isAllowed	Yes	bool	Whether sharing is allowed.

Return Values

Table 7-122 Return value

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Sets the sharing permission.
 */
int demoSetShareScreenPermissionDlg::ClickSetShareScreenPermission()
{
    bool isOpen = true;
    int ret = hwmsdkagent::SetShareScreenPermission(isOpen);
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("SetShareScreenPermission error"));
    }
}
```

```
}  
}
```

7.4.4.14 Leaving a Meeting

LeaveConf

API Description

This API is used to leave a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. If this API is called to leave a meeting, the meeting will not end. You can join the meeting again when the meeting is still in progress.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode LeaveConf();
```

Callback Function

```
virtual void OnLeaveConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

None

Return Values

Table 7-123 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**  
 * Leave a meeting.  
 */  
void demoConfCtrlDlg::OnBnClickedButtonLeaveConf()  
{  
    int ret = hwmsdkagent::LeaveConf();  
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)  
    {  
        AfxMessageBox(_T("LeaveConf error"));  
    }  
}
```

7.4.4.15 Ending a Meeting

EndConf

API Description

This API is used to end a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. After this API is called, the meeting will end and you cannot join the meeting again.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode EndConf();
```

Callback Function

```
virtual void OnEndConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

None

Return Values

Table 7-124 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * End a meeting.
 */
void demoConfCtrlDlg::OnBnClickedButtonStopConf()
{
    int ret = hwmsdkagent::EndConf();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("EndConf error"));
    }
}
```

7.4.4.16 Starting an Instant Meeting

StartP2pConf

API Description

This API is used to start an instant meeting.

Precautions

1. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode StartP2pConf(const HwmP2PStartCallInfo *startCallInfo);
```

Callback Function

```
virtual void OnStartP2pConfResult(hwmsdk::HwmErrCode ret, const char* reason, HwmConfInfo *confInfo) {};
```

Parameter Description

Parameter	Mandatory	Type	Description
startCallInfo	Yes	HwmP2PStartCallInfo	Instant meeting details.

Table 7-125 HwmP2PStartCallInfo description

Parameter	Mandatory	Type	Description
callerInfo	Yes	HwmCallerInfo	Caller information.
calleeInfo	Yes	HwmCalleeInfo	Called participant information.
mediaType	Yes	HwmMediaType	Media type.

Table 7-126 HwmCallerInfo description

Parameter	Mandatory	Type	Description
nickName	No	char[]	Caller name.

Table 7-127 HwmCalleeInfo description

Parameter	Mandatory	Type	Description
nickName	No	char[]	Name of the called party.
number	Yes	char[]	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	char[]	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
userUuid	No	char[]	Participant UUID.

Return Values

Table 7-128 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .
HwmConfInfo	Meeting details.

Sample Code

```
/**
 * Start an instant meeting.
 */
int demoStartP2pConfDlg::clickStartP2pConf()
{
```



```
hwmsdkagent::HwmP2PStartCallInfo data{};

// Set the caller information.
string callerNickName = CTools::UNICODE2UTF(CString("Caller name"));
strncpy_s(data.callerInfo.nickName, callerNickName.c_str(), HWM_MAX_DISPLAY_NAME_LEN);
// Set the information about the called participant.
string calleeNickName = CTools::UNICODE2UTF(CString("Called participant name"));
strncpy_s(data.calleeInfo.nickName, calleeNickName.c_str(), HWM_MAX_DISPLAY_NAME_LEN);
string calleeNumber = CTools::UNICODE2UTF(CString("123456"));
strncpy_s(data.calleeInfo.number, calleeNumber.c_str(), HWM_MAX_NUMBER_LEN);
string calleeThirdUserId = CTools::UNICODE2UTF(CString("123456"));
strncpy_s(data.calleeInfo.calleeThirdUserId, calleeThirdUserId.c_str(), HWM_MAX_USER_ID_LEN);
// Set the media type.
data.mediaType = hwmsdkagent::HWM_MEDIA_TYPE_VIDEO

// Call the SDK API.
int ret = hwmsdkagent::StartP2pConf(&data);
return ret;
}
```

7.4.5 Meeting Management

7.4.5.1 Obtaining the Cloud Meeting Room List

GetVmrList

API Description

This API is used to obtain the cloud meeting room list.

Precautions

1. Call this API after login.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetVmrList();
```

Callback Function

This API has been deprecated. Use the new callback **OnGetVmrInfoListResult**.

```
virtual void OnGetVmrListResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmVmrInfo* vmrInfoList, unsigned int listLen) {};
```

New callback

```
virtual void OnGetVmrInfoListResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmVmrListInfo* vmrListInfo) {};
```

Parameter Description

None

Return Values

Table 7-129 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Table 7-130 HwmVmrlInfo description

Parameter	Type	Description
vmrConferenceld	char[]	Fixed meeting ID of the cloud meeting room.
vmrld	char[]	Unique cloud meeting room ID.
chairmanPwd	char[]	Host password of the cloud meeting room.
guestPwd	char[]	Guest password of the cloud meeting room.
type	HwmVmrlIdType	Cloud meeting room type.
maxParties	int	Maximum number of participants in the cloud meeting room.
name	char[]	Cloud meeting room name.
allowGuestStart-Conf	bool	Whether to allow guests to join the meeting ahead of the host.
joinConfRestrictionType	HwmJoinConfPermissionType	Users who are allowed to join the meeting.
isOpenWaitingRoom	bool	Waiting room status.

Table 7-131 Enumerated values of HwmVmrlIdType

Enumerated Value	Description
PERSONAL_MEETING_ID	Personal meeting ID.
CLOUD_MEETING_ROOM_ID	Cloud meeting room ID.

Table 7-132 HwmVmrListInfo description

Parameter	Type	Description
numOfVmrs	unsigned int	Number of cloud meeting rooms.
vmrs	HwmVmrInfo	Cloud meeting room information.
isEnabledShareVmr	bool	Whether shared cloud meeting rooms are available.

Sample Code

```
/**
 * Obtain the cloud meeting room list.
 */
void demoBookConfDlg::GetVmrList()
{
    int ret = hwmsdkagent::GetVmrList();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
        AfxMessageBox(_T("GetVmrList error"));
    }
}
```

7.4.5.2 Scheduling a Meeting

BookConf

API Description

This API is used to schedule a meeting.

Precautions

1. Call this API after login.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.
3. When calling this API, add yourself to the participant list and set yourself as the host.
4. The callback function returns details about scheduled meetings. For details, see [HwmConfDetail](#). If only meeting IDs are returned, meeting details fail to be obtained.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode BookConf(const HwmBookConfParam *param);
```

Callback Function

```
virtual void OnBookConfResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmConfDetail* confDetail) {};
```

Parameter Description

Table 7-133 HwmBookConfParam description

Parameter	Mandatory	Type	Description
subject	Yes	char[]	Meeting topic.
startTime	Yes	long long	UTC timestamp when the meeting starts, in seconds.
duration	Yes	int	Meeting duration, in minutes. The value ranges from 15 to 1,440.
confType	No	HwmConfMediaType	Meeting type. The default meeting type is video meeting.
isNeedConfPwd	No	bool	Whether a password is required. By default, no password is required. NOTE This parameter is valid only for meetings with a random ID.
isRecordOn	No	bool	Whether to enable recording. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
isAutoRecordOn	No	bool	Whether to enable automatic meeting recording. Disabled by default. If automatic meeting recording is enabled, the meeting can be recorded by default even meeting recording is disabled. NOTE This parameter is valid only for cloud recording, not for local recording on clients.
timeZone	Yes	int	Time zone code. For details, see Time Zone Table . This parameter is used for sending meeting notifications.
vmrFlag	No	bool	Whether to use the virtual meeting room. To schedule a meeting with a concurrent meeting ID, set this parameter to false .

Parameter	Mandatory	Type	Description
vmrId	No	char[]	Unique cloud meeting room ID. To schedule a meeting with a concurrent meeting ID, set this parameter to an empty string.
joinConfRestrictionType	No	HwmJoinConfPermissionType	Users who are allowed to join the meeting. By default, everyone is allowed.
isSmsOn	No	bool	Whether to send an SMS notification. To use this function, enable it in the enterprise configuration. Otherwise, this parameter does not take effect.
isMailOn	No	bool	Whether to send an email notification.
isEmailCalendarOn	No	bool	Whether to send an email calendar.
attendees	Yes	HwmAttendeeInfo*	Participant list.
attendeeLen	Yes	unsigned int	Number of participants.
vmrConfIdType	No	HwmVmrConfIdType	ID type of the cloud meeting room.
guestPwd	No	char[]	Guest password. If this parameter is left blank, the guest password is generated by the server. NOTE This parameter is valid only for meetings with a random ID.
isOpenWaitingRoom	No	bool	Waiting room status. NOTE The function takes effect only after the waiting room function is enabled.
allowGuestStartConf	No	bool	Whether to allow guests to join the meeting ahead of the host. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, use the API for Modifying Cloud Meeting Room Information.

Parameter	Mandator y	Type	Description
allowGuestStartConfTime	No	unsigned int	Time range allowed for guests to join the meeting in advance, in minutes. 0: Guests can join the meeting at any time before the scheduled time. x: Guest can join the meeting x minutes before the scheduled time. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, the time range cannot be set.
concurrentParticipants	No	unsigned int	Maximum number of participants in the meeting. If this parameter is left blank, there is no restriction.
customInfo	No	char[]	Custom extension information.
confResType	No	HwmConfResType	Meeting resource type.

Table 7-134 Enumerated values of HwmConfMediaType

Enumerated Value	Description
HWM_AUDIO_AND_DATA	Voice and data meeting.
HWM_VIDEO_AND_DATA	Video and data meeting.

Table 7-135 Enumerated values of HwmJoinConfPermissionType

Enumerated Value	Description
RESTRICTION_CALL_IN_ALL	Everyone.
RESTRICTION_CALL_IN_COMPANY	Corporate users only.
RESTRICTION_CALL_IN_INVITED	Invited users only.

Table 7-136 HwmAttendeeInfo description

Parameter	Mandatory	Type	Description
number	Yes	char[]	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	char[]	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
name	Yes	char[]	Participant name.
email	No	char[]	Email address used for receiving email notifications.
sms	No	char[]	Mobile number used for receiving SMS notifications.
isMute	No	bool	Whether to mute the microphone.
isAutoInvite	No	bool	Whether to automatically invite participants.
role	Yes	HwmConf Role	Participant role in the meeting.
isAnonymous	No	BOOL	Whether to join the meeting anonymously. (This parameter is used only for obtaining the participant list).
callStatus	No	ConfAttendeeState	Participant status. (This parameter is used only for obtaining the participant list.)
orgId	No	char[]	Used to identify whether the participant belongs to the current enterprise. (This parameter is used only for obtaining the participant list).

Table 7-137 Enumerated values of HwmConfRole

Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	Common participant.
HWM_CONF_ROLE_CHAIRMAN	Host.

Table 7-138 Enumerated values of HwmVmrConfIdType

Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	Fixed ID of the cloud meeting room.
HWM_VMR_CONF_ID_TYPE_RANDOM	Random ID of the cloud meeting room.

Table 7-139 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Table 7-140 HwmConfDetail description

Parameter	Type	Description
confListInfo	HwmConfListInfo	Meeting details. For details, see Table 7-179 .
vmrFlag	bool	Whether the meeting is in a cloud meeting room.
vmrId	char[]	Unique cloud meeting room ID.
isRecordOn	bool	Whether recording is supported.
isAutoRecord	bool	Whether to enable automatic meeting recording.
isGuestFreePwd	bool	Whether a guest can join the meeting without the password.
isMailOn	bool	Whether to send email notifications.
isSmsOn	bool	Whether to send SMS notifications.

Parameter	Type	Description
isEmailCalendarOn	bool	Whether to send calendar notifications.
joinConfRestrictionType	HwmJoinConfPermissionType	Participants who are allowed to join the meeting. For details, see Table 7-135 .
attendees	HwmAttendeeInfo*	Participant list. For details about the fields, see Scheduling a Meeting .
attendeeLen	unsigned int	Number of participants.
confServerType	HwmConfServerType	Meeting server type. 1 : RTC. 0 : MCU.
isOpenWaitingRoom	bool	Whether to enable the waiting room.

Sample Code

```
/**
 * Schedule a meeting.
 */
int CdemoBookConfDlg::OnBnClickedBookConf()
{
    hwmsdkagent::HwmBookConfParam data = {0};
    strncpy_s(data.subject, GetConfSubject().c_str(), HWM_MAX_SUBJECT_LEN); // UTF-8 string
    data.confType = hwmsdkagent::HwmConfMediaType::HWM_VIDEO_AND_DATA;
    data.isNeedConfPwd = true;
    data.isAutoRecordOn = true;
    data.isRecordOn = true;
    data.startTime = 1598398920; // UTC timestamp, in seconds. If the obtained time is the local time, the
time needs to be converted to the UTC time.
    data.duration = 30; // Meeting duration, in minutes
    data.timeZone = 56; // Time zone. The value 56 indicates GMT+08:00.
    data.joinConfRestrictionType = hwmsdkagent::HwmJoinConfPermissionType::RESTRICTION_CALL_IN_ALL;

    std::vector<hwmsdkagent::HwmAttendeeInfo> attendeeList;
    // Participants to invite
    hwmsdkagent::HwmAttendeeInfo attendeeInfo = { 0 };
    strncpy_s(attendeeInfo.name, GetAttName().c_str(), HWM_MAX_USER_NAME_LEN);
    strncpy_s(attendeeInfo.number, GetAttNumber().c_str(), HWM_MAX_NUMBER_LEN);
    strncpy_s(attendeeInfo.email, GetAttEmail().c_str(), HWM_MAX_EMAIL_LEN);
    strncpy_s(attendeeInfo.sms, GetAttSms().c_str(), HWM_MAX_PHONE_NUM_LEN);
    strncpy_s(attendeeInfo.thirdUserId, GetAttUserId().c_str(), HWM_MAX_USER_ID_LEN);
    attendeeInfo.isMute = true;
    attendeeInfo.isAutoInvite = true;
    attendeeList.push_back(attendeeInfo);

    data.attendees = attendeeList.data();
    data.attendeeLen = attendeeList.size();
    data.isSmsOn = true;
    data.isMailOn = true;
    data.isEmailCalendarOn = true;
    return hwmsdkagent::BookConf(&data);
}
```

7.4.5.3 Editing a Meeting

EditConf

API Description

This API is used to edit a scheduled meeting.

Precautions

1. Call this API after login.
2. This API can only be used to edit meetings that have not started. If this API is called to edit a meeting that has been started, a failure message is returned.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.
4. **All parameters are mandatory. Before editing a meeting, you need to query meeting details. For parameters that do not need to be changed, use the values returned by the meeting details query API.**

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode EditConf(const HwmEditConfParam *confParam);
```

Callback Function

```
virtual void OnEditConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-141 HwmEditConfParam description

Parameter	Mandatory	Type	Description
confId	Yes	char[]	Meeting ID.
subject	Yes	char[]	Meeting topic.
startTime	Yes	long long	UTC timestamp when the meeting starts, in seconds.
duration	Yes	int	Meeting duration, in minutes.
confType	Yes	HwmConfMediaType	Meeting type. The default meeting type is video meeting.
isNeedConfPwd	Yes	bool	Whether a password is required. By default, no password is required.
isRecordOn	Yes	bool	Whether to enable recording. (This field will be discarded and is not recommended.)
isLiveOn	No	bool	Reserved field. This parameter is transparently transmitted during meeting modification.

Parameter	Mandatory	Type	Description
isAutoRecordOn	Yes	bool	Whether to enable automatic meeting recording.
timeZone	Yes	int	Time zone code. For details, see Time Zone Table .
vmrFlag	Yes	bool	Whether the meeting is in a cloud meeting room. The value cannot be changed. Enter the value returned by the meeting details query API.
vmrId	No	char[]	Unique cloud meeting room ID. The value cannot be changed. Enter the value returned by the meeting details query API.
joinConfRestrictionType	Yes	HwmJoinConfPermissionType	Users who are allowed to join the meeting. By default, everyone is allowed.
isSmsOn	Yes	bool	Whether to send SMS notifications. To use this function, enable it in the enterprise configuration. Otherwise, this parameter does not take effect.
isMailOn	Yes	bool	Whether to send an email notification.
isEmailCalendarOn	Yes	bool	Whether to send an email calendar.
attendees	Yes	HwmAttendeeInfo*	Participant list.
attendeeLen	Yes	unsigned int	Number of participants.
vmrConfIdType	Yes	HwmVmrConfIdType	ID type of the cloud meeting room. This parameter cannot be modified. If vmrConferenceId is not empty, this parameter is set to HWM_VMR_CONF_ID_TYPE_FIXED . Otherwise, it is set to HWM_VMR_CONF_ID_TYPE_RANDOM .
isOpenWaitingRoom	No	bool	Waiting room status. NOTE The function takes effect only after the waiting room function is enabled.

Parameter	Mandatory	Type	Description
allowGuestStartConf	No	bool	Whether to allow guests to join the meeting ahead of the host. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, use the API for Modifying Cloud Meeting Room Information.
allowGuestStartConfTime	No	unsigned int	Time range for guests to join the meeting in advance, in minutes. 0 : anytime before the scheduled time. <i>n</i> : <i>n</i> minutes before the scheduled time.
concurrentParticipants	No	unsigned int	Maximum number of participants in the meeting. If this parameter is left blank, there is no restriction.
customInfo	No	char[]	Custom extension information.

Return Values

Table 7-142 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Edit a meeting.
 */
int demoEditConfDlg::EditConf()
{
    hwmsdkagent::HwmConfDetail confDetail{0}; // Obtain meeting details from the cache and assign them to confDetail.
    hwmsdkagent::HwmEditConfParam editConfParam{ 0 };
    // Copy the confDetail data as required.
    strncpy_s(editConfParam.confId, confDetail.confListInfo.confId, HWM_MAX_CONF_ID_LEN);
    editConfParam.vmrFlag = confDetail.vmrFlag;
    strncpy_s(editConfParam.vmrId, confInfo.vmrId, HWM_MAX_VMR_CONF_ID_LEN);
    // Part of the value assignment code is omitted here.
    editConfParam.timeZone = 56; // Local time zone. The value 56 indicates GMT+08:00.
    editConfParam.isRecordOn = false;
    editConfParam.isAutoRecordOn = false;
}
```

```
editConfParam.startTime = 1598398920; // UTC timestamp
editConfParam.duration = 0 * 60 + 30; // Meeting duration
editConfParam.joinConfRestrictionType =
hwmsdkagent::HwmJoinConfPermissionType::RESTRICTION_CALL_IN_ALL; // Obtain types of users who are
allowed to join the meeting.
// If vmrConferenceld is not empty, the value is a fixed ID. Otherwise, the value is a random ID.
editConfParam.vmrConfldType = (strlen(confInfo.confListInfo.vmrConferenceld) != 0) ?
hwmsdkagent::HwmVmrConfldType::HWM_VMR_CONF_ID_TYPE_FIXED :
hwmsdkagent::HwmVmrConfldType::HWM_VMR_CONF_ID_TYPE_RANDOM;
return hwmsdkagent::EditConf(&editConfParam);
}
```

7.4.5.4 Canceling a Meeting

CancelConf

API Description

This API is used to cancel a scheduled meeting.

Precautions

1. Call this API after login.
2. This API can only be used to cancel meetings that have not started. If this API is called to cancel a meeting that has been started, a failure message is returned.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode CancelConf(const char confld[HWM_MAX_CONF_ID_LEN]);
```

Callback Function

```
virtual void OnCancelConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Parameter	Mandatory	Type	Description
confld	Yes	char[]	Meeting ID.

Return Values

Table 7-143 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * API for canceling a meeting
 */
int demoConfListDlg::OnBnCancelConf(hwmsdk::HwmErrCode ret, const char* msg)
{
    return hwmsdkagent::CancelConf(GetConfId().c_str());
}
```

7.4.5.5 Obtaining Meeting Details

GetConfDetail

API Description

This API is used to obtain meeting details.

Precautions

1. Call this API after login.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetConfDetail(const char
confId[HWM_MAX_CONF_ID_LEN]);
```

Callback Function

```
virtual void OnGetConfDetail(hwmsdk::HwmErrCode ret, const char* reason, const HwmConfDetail*
vmrInfoList) {};
```

Parameter Description

Table 7-144 Request parameters

Parameter	Mandatory	Type	Description
confId	Yes	char[]	Meeting ID.

Table 7-145 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Table 7-146 HwmConfDetail description

Parameter	Type	Description
confListInfo	HwmConfListInfo	Meeting details. For details, see Table 7-179 .
vmrFlag	bool	Whether the meeting is held in a cloud meeting room.
vmrId	char[]	Unique cloud meeting room ID.
isRecordOn	bool	Whether recording is supported.
isLiveOn	bool	Reserved field. This parameter is transparently transmitted during meeting modification.
isAutoRecord	bool	Whether to enable automatic meeting recording.
isGuestFreePwd	bool	Whether a guest can join the meeting without the password.
isMailOn	bool	Whether to send email notifications.
isSmsOn	bool	Whether to send SMS notifications.
isEmailCalendarOn	bool	Whether to send calendar notifications.
joinConfRestrictionType	HwmJoinConfPermissionType	Participants who are allowed to join the meeting. For details, see Table 7-135 .
attendees	HwmAttendeeInfo*	Participant list. For details about the fields, see Scheduling a Meeting . You can query only the participants added during meeting scheduling and the participants invited by the host during the meeting. If a participant proactively joins the meeting, this interface cannot be queried.
attendeeLen	unsigned int	Number of participants.
confServerType	HwmConfServerType	Meeting server type. 1 : RTC. 0 : MCU.
isOpenWaitingRoom	bool	Whether to enable the waiting room.
vmrConfIdType	HwmVmrConfIdType	Meeting ID type of the cloud meeting room. For details, see HwmVmrConfIdType .
allowGuestStartConf	bool	Whether to allow guests to join the meeting ahead of the host.

Parameter	Type	Description
allowGuestStartConfTime	unsigned int	Time range for guests to join the meeting in advance, in minutes. 0 : anytime before the scheduled time. <i>n</i> : <i>n</i> minutes before the scheduled time.
concurrentParticipants	unsigned int	Maximum number of participants in the meeting. The value 0 indicates that the number of participants is not limited.

Sample Code

```
/**
 * Obtain meeting details.
 */
int demoEditConfDlg::GetConfDetail()
{
    int ret =hwmsdkagent::GetConfDetail(GetConfID().c_str()); // Use the meeting ID to query meeting details.
    return ret;
}
```

7.4.5.6 Modifying Cloud Meeting Room Information

ChangeVmrInfo

API Description

This API is used to modify cloud meeting room information.

Precautions

1. Call this API after login.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.
3. **All parameters are mandatory. Before calling this API, you need to obtain the cloud meeting room list. For parameters that do not need to be changed, use the values returned by the API for obtaining the cloud meeting room list.**

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode ChangeVmrInfo(const ChangeVmrInfoParam *param);
```

Callback Function

```
virtual void OnChangeVmrInfo(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Parameter	Mandatory	Type	Description
vmrId	Yes	char[]	Unique cloud meeting room ID.
vmrName	Yes	char[]	Cloud meeting room name.
chairPwd	Yes	char[]	Host password of the cloud meeting room.
guestPwd	Yes	char[]	Guest password of the cloud meeting room.
allowGuestStartConf	No	bool	Whether to allow guests to join the meeting ahead of the host.
joinConfRestrictionType	No	HwmJoinConfRestrictionType	Users who are allowed to join the meeting.
isOpenWaitingRoom	No	bool	Waiting room status.

Table 7-147 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Modify cloud meeting room information.
 */
int demoCreateConfWithAttendeeDlg::onClickEditVmrSubmit()
{
    hwmsdkagent::ChangeVmrInfoParam infoParam = {0};
    strcpy_s(infoParam.vmrName, sizeof(infoParam.vmrName), GetName().c_str());
    strcpy_s(infoParam.chairPwd, sizeof(infoParam.chairPwd), GetChairPwd().c_str());
    strcpy_s(infoParam.guestPwd, sizeof(infoParam.guestPwd), GetGuestPwd().c_str());
    return hwmsdkagent::ChangeVmrInfo(&infoParam);
}
```

7.4.5.7 Scheduling a Recurring Meeting Series

BookCycleConf

API Description

This API is used to schedule a recurring meeting series.

Precautions

1. Call this API after login.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.
3. The meeting start time must be later than the current time, and the meeting duration must be longer than 15 minutes.
4. The **attendees** parameter must be passed if participant information needs to be carried.
5. The maximum time span of a recurring meeting series is one year. The number of recurring meetings in a series cannot exceed 50. Otherwise, only the first 50 meetings are scheduled.
6. The callback function returns details about scheduled meetings. For details, see [HwmConfDetail](#). If only meeting IDs are returned, meeting details fail to be obtained.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode BookCycleConf(const HwmBookCycleConfParam *bookCycleConfParam);
```

Callback Function

```
virtual void OnBookCycleConfResult(hwmsdk::HwmErrCode ret, const char* reason, const HwmConfDetail* confDetail) {};
```

Parameter Description

Table 7-148 HwmBookCycleConfParam description

Parameter	Mandatory	Type	Description
bookCycleConfParam	Yes	HwmBookCycleConfParam	Parameters for scheduling the recurring meeting series.
cycleParam	Yes	HwmCycleConfParam	Recurring meeting series parameters.

Table 7-149 HwmCycleConfParam description

Parameter	Mandatory	Type	Description
startDate	Yes	long long	Start date and timestamp, in seconds (GMT).
endDate	Yes	long long	End date and timestamp, in seconds (GMT).
cycleType	Yes	HwmCycleType	Period type.

Parameter	Mandatory	Type	Description
interval	Yes	unsigned int	Interval of recurring meetings. 1. If cycleType is set to daily, there is a meeting every several days. The value range is [1,15]. 2. If cycleType is set to weekly, there is a meeting every several weeks. The value range is [1,5]. 3. If cycleType is set to monthly, there is a meeting every several months. The value range is [1,3].
listPoints	Yes	char[]	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 . - Weekly: The value range is [0,6]. 0 indicates Sunday, 1 indicates Monday, and so on. - Monthly: The value range is [1,31]. If the specified maximum value exceeds the number of days in a given month, the system will interpret it as referring to the last day of that month.
preRemindDays	Yes	unsigned int	Number of days in advance users are notified of a recurring meeting.

Table 7-150 Enumerated values of HwmCycleType

Enumerated Value	Description
CYCLE_TYPE_DAY	Daily.
CYCLE_TYPE_WEEK	Weekly.
CYCLE_TYPE_MONTH	Monthly.

Sample Code

```
/**
 * Schedule a meeting.
 */
int CdemoBookConfDlg::OnBnClickedBookCycleConf()
{
    hwm sdkagent::HwmBookConfParam data{};
    strncpy_s(data.subject, GetConfSubject().c_str(), HWM_MAX_SUBJECT_LEN); // UTF-8 string
    data.confType = hwm sdkagent::HwmConfMediaType::HWM_VIDEO_AND_DATA;
    data.isNeedConfPwd = true;
}
```

```
data.isAutoRecordOn = true;
data.isRecordOn = true;
data.startTime = 1633017600; // UTC timestamp, in seconds. If the obtained time is the local time, the
time needs to be converted to the UTC time.
data.duration = 30; // Meeting duration, in minutes
data.timeZone = 56; // Time zone. The value 56 indicates GMT+08:00.
data.joinConfRestrictionType = hwmsdkagent::HwmJoinConfPermissionType::RESTRICTION_CALL_IN_ALL;

std::vector<hwmsdkagent::HwmAttendeeInfo> attendeeList;
// Participants to invite
hwmsdkagent::HwmAttendeeInfo attendeeInfo{};
strncpy_s(attendeeInfo.name, GetAttName().c_str(), HWM_MAX_USER_NAME_LEN);
strncpy_s(attendeeInfo.number, GetAttNumber().c_str(), HWM_MAX_NUMBER_LEN);
strncpy_s(attendeeInfo.email, GetAttEmail().c_str(), HWM_MAX_EMAIL_LEN);
strncpy_s(attendeeInfo.sms, GetAttSms().c_str(), HWM_MAX_PHONE_NUM_LEN);
strncpy_s(attendeeInfo.thirdUserId, GetAttUserId().c_str(), HWM_MAX_USER_ID_LEN);
attendeeInfo.isMute = true;
attendeeInfo.isAutoInvite = true;
attendeeList.push_back(attendeeInfo);

data.attendees = attendeeList.data();
data.attendeeLen = attendeeList.size();
data.isSmsOn = true;
data.isMailOn = true;
data.isEmailCalendarOn = true;

hwmsdkagent::HwmCycleConfParam cycleConfParam{};
cycleConfParam.startDate = 1633017600; // UTC timestamp, in seconds. If the obtained time is the local
time, the time needs to be converted to the UTC time.
cycleConfParam.endDate = 1636560000; // UTC timestamp, in seconds. If the local time is obtained,
convert it to the UTC time.
cycleConfParam.cycleType = hwmsdkagent::CYCLE_TYPE_WEEK;
strcpy_s(cycleConfParam.listPoints, sizeof(cycleConfParam.listPoints), "1,5"); // Every Monday and Friday
cycleConfParam.preRemindDays = 1;

hwmsdkagent::HwmBookCycleConfParam bookCycleConfParam{};
bookCycleConfParam.bookConfParam = data;
bookCycleConfParam.cycleParam = cycleConfParam;
return hwmsdkagent::BookCycleConf(&bookCycleConfParam);
}
```

7.4.5.8 Editing a Recurring Meeting Series

ModifyCycleConf

API Description

This API is used to edit a recurring meeting series.

Precautions

1. Call this API after login.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.
3. **All fields are mandatory. Specify the fields to be edited as required, and assign values in the meeting details to remaining fields.**

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode ModifyCycleConf(const HwmModifyCycleConfParam
*modifyParam);
```

Callback Function

```
virtual void OnModifyCycleConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-151 HwmModifyCycleConfParam parameters

Parameter	Mandatory	Type	Description
editConfParam	Yes	HwmEditConfParam	Parameters for editing the recurring meeting.
cycleParam	Yes	HwmCycleConfParam	Recurring meeting series parameters.

Sample Code

```
/**
 * Edit a recurring meeting series.
 */
int demoEditConfDlg::ModifyCycleConf()
{
    hwmsdkagent::HwmConfDetail confDetail{}; // Obtain meeting details from the cache and assign them
    to confDetail.
    hwmsdkagent::HwmEditConfParam editConfParam{};
    // Copy the confDetail data as required.
    strncpy_s(editConfParam.confId, confDetail.confListInfo.confId, HWM_MAX_CONF_ID_LEN);
    editConfParam.vmrFlag = confDetail.vmrFlag;
    strncpy_s(editConfParam.vmrId, confInfo.vmrId, HWM_MAX_VMR_CONF_ID_LEN);
    // Part of the value assignment code is omitted here.
    editConfParam.timeZone = 56; // Local time zone. The value 56 indicates GMT+08:00.
    editConfParam.isRecordOn = false;
    editConfParam.isAutoRecordOn = false;
    editConfParam.startTime = 1633017600; // UTC timestamp
    editConfParam.duration = 0 * 60 + 30; // Meeting duration
    editConfParam.joinConfRestrictionType =
    hwmsdkagent::HwmJoinConfPermissionType::RESTRICTION_CALL_IN_ALL; // Obtain types of users who are
    allowed to join the meeting.
    // If vmrConfId is not empty, the value is a fixed ID. If vmrConfId is empty, the value is a
    random ID.
    editConfParam.vmrConfIdType = (strlen(confInfo.confListInfo.vmrConfId) != 0)
        ? hwmsdkagent::HwmVmrConfIdType::HWM_VMR_CONF_ID_TYPE_FIXED
        : hwmsdkagent::HwmVmrConfIdType::HWM_VMR_CONF_ID_TYPE_RANDOM;
    editConfParam.allowGuestStartConf = false;
    editConfParam.allowGuestStartConfTime = 0;

    hwmsdkagent::HwmCycleConfParam cycleConfParam{};
    cycleConfParam.startDate = 1633017600; // UTC timestamp, in seconds. If the obtained time is the local
    time, the time needs to be converted to the UTC time.
    cycleConfParam.endDate = 1636560000; // UTC timestamp, in seconds. If the local time is obtained,
    convert it to the UTC time.
    cycleConfParam.cycleType = 1;
    strcpy_s(cycleConfParam.listPoints, sizeof(cycleConfParam.listPoints), "5"); // Friday
    cycleConfParam.preRemindDays = 1;
    cycleConfParam.interval = 1;

    hwmsdkagent::HwmModifyCycleConfParam editCycleConfParam{};
    editCycleConfParam.editConfParam = editConfParam;
    editCycleConfParam.cycleParam = cycleConfParam;

    return hwmsdkagent::ModifyCycleConf(&editCycleConfParam);
}
```

7.4.5.9 Canceling a Recurring Meeting Series

CancelCycleConf

API Description

This API is used to cancel a recurring meeting series that has at least one upcoming meeting.

Precautions

1. Call this API after login.
2. Call this API before the last recurring meeting starts. If the last recurring meeting is already in progress, calling this API is invalid.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode CancelCycleConf(const HwmCancelCycleConfParam *cancelCycleConfParam);
```

Callback Function

```
virtual void OnCancelCycleConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-152 HwmCancelCycleConfParam description

Parameter	Mandatory	Type	Description
confId	Yes	char[]	Meeting ID.
endOnlineConf	Yes	bool	Whether to end an ongoing meeting.

Sample Code

```
/**
 * Cancel a recurring meeting series.
 */
int demoConfListDlg::OnBnCancelCycleConf()
{
    hwmsdkagent::HwmCancelCycleConfParam cancelCycleConfParam{};
    strcpy_s(cancelCycleConfParam.confId, sizeof(cancelCycleConfParam.confId), GetConfId().c_str());
    cancelCycleConfParam.endOnlineConf = true;
    return hwmsdkagent::CancelCycleConf(cancelCycleConfParam);
}
```

7.4.5.10 Editing a Recurring Meeting

ModifySubCycleConf

API Description

This API is used to edit a recurring meeting.

Precautions

1. Call this API after login.
2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode ModifySubCycleConf(const HwmModifySubCycleConfParam *modifySubCycleConfParam);
```

Callback Function

```
virtual void OnModifySubCycleConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-153 HwmModifySubCycleConfParam parameters

Parameter	Mandatory	Type	Description
confId	Yes	char[]	Meeting ID.
subConfID	Yes	char[]	UUID of a recurring meeting.
confMediaType	No	HwmConfMediaType	Meeting media type.
startTime	No	long long	Meeting start time (UTC time), in seconds.
confLen	No	unsigned int	Meeting duration, in minutes.
isAutoRecord	No	bool	Whether to automatically start recording after a meeting starts.
recordAuthType	No	unsigned int	Recording authentication mode. The options are as follows: 0 : The recording can be viewed or downloaded through link (no nonce is added). 1 : Corporate users can view or download the recording. 2 : Participants can view or download the recording.
callInRestriction	No	HwmJoinConfPermissionType	Incoming call restriction.
allowGuestStartConf	No	bool	Whether to allow guests to start the meeting.

Parameter	Mandatory	Type	Description
allowGuestStartConfTime	No	unsigned int	Time range for a guest to join a meeting in advance, in minutes. The options are as follows: 0 : at any time; n : <i>n</i> minutes in advance.

Sample Code

```
/**
 * Edit a recurring meeting.
 */
int demoConfListDlg::ModifySubCycleConf()
{
    hwmsdkagent::HwmModifySubCycleConfParam SubCycleConfParam{};
    strcpy_s(SubCycleConfParam.confId, sizeof(SubCycleConfParam.confId), confId.c_str());
    strcpy_s(SubCycleConfParam.subConfID, sizeof(SubCycleConfParam.subConfID), subConfUuid.c_str());

    SubCycleConfParam.confMediaType = 1;
    SubCycleConfParam.startTime = 1633017600;
    SubCycleConfParam.confLen = 60;
    SubCycleConfParam.isAutoRecord = false;
    SubCycleConfParam.callInRestriction = 0;
    SubCycleConfParam.allowGuestStartConf = false;
    SubCycleConfParam.allowGuestStartConfTime = 0;

    return hwmsdkagent::ModifySubCycleConf(&SubCycleConfParam);
}
```

7.4.5.11 Canceling a Recurring Meeting

CancelSubCycleConf

API Description

This API is used to cancel a recurring meeting that has not been started yet.

Precautions

1. Call this API after login.
2. Call this API before a recurring meeting starts. If the meeting is already in progress, calling this API is invalid.
3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode CancelSubCycleConf(const HwmCancelSubCycleConfParam *cancelSubCycleConfParam);
```

Callback Function

```
virtual void OnCancelSubCycleConfResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Parameter Description

Table 7-154 HwmCancelCycleConfParam parameters

Parameter	Mandatory	Type	Description
confId	Yes	char[]	Meeting ID.
subConfID	Yes	char[]	UUID of a recurring meeting.
endOnlineConf	Yes	bool	Whether to end an ongoing meeting.

Sample Code

```
/**
 * Cancel a recurring meeting.
 */
int demoSubCycleConfList::CancelSubCycleConf()
{
    hwmsdkagent::HwmCancelSubCycleConfParam subCycleConfParam{};
    strcpy_s(subCycleConfParam.confId, sizeof(subCycleConfParam.confId), m_confInfo.confListInfo.confId);
    strcpy_s(subCycleConfParam.subConfID, sizeof(subCycleConfParam.subConfID),
m_subCycleConfID.c_str());
    subCycleConfParam.endOnlineConf = true;
    hwmsdkagent::CancelSubCycleConf(&subCycleConfParam);
}
```

7.4.6 Obtaining Meeting Information

7.4.6.1 Obtaining the Participant List

GetAttendeeList

API Description

This API is used to obtain the participant list in a meeting.

Precautions

1. This API can be called only during a meeting.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetAttendeeList();
```

Callback Function

```
virtual void OnGetAttendeeListResult(const HwmAttendeeInfo* attendeeList, unsigned int length) override{};
```

Parameter Description

[HWMAttendeeInfo](#) parameters

Table 7-155 ConfAttendeeState description

Parameter	Description
CONF_ATTENDEE_STATE_IN_CONF	The participant is in the meeting.
CONF_ATTENDEE_STATE_CALLING	The participant is being called.
CONF_ATTENDEE_STATE_LEAVED	The participant has left the meeting.

Sample Code

```
/**
 * Obtaining the Participant List
 */
void demoSettingDlg::OnBnClickedButtonGetAttendeeList()
{
    hwmsdkagent::GetAttendeeList();
}

/**
 * Callback for obtaining the participant list.
 */

void demoCallbackProc::OnGetAttendeeListResult(const HwmAttendeeInfo* attendeeList, unsigned int length)
{
    std::vector< HwmAttendeeInfo> attendeeListInfo(attendeeList, attendeeList + length);
}
```

7.4.6.2 Obtaining the Attendee List

GetAudienceList

API Description

This API is used to obtain the attendee list in a meeting.

Precautions

1. This API can be called only during a meeting.
2. Attendees cannot call this API, but can obtain the list from the meeting details message.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetAudienceList();
```

Callback Function

```
virtual void OnGetAudienceListResult(const HwmAttendeeInfo* audienceList, unsigned int length) override {};
```

Parameter Description

[HWMAttendeeInfo](#) parameters

7.4.6.3 Obtaining a User Status

GetUserState

API Description

This API is used to obtain the status of the current user terminal.

Precautions

1. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode GetUserState();
```

Callback Function

```
virtual void OnGetUserStateResult(hwmsdk::HwmErrCode ret, const char* reason, HwmUserState userState) {};
```

Parameter Description

Table 7-156 Enumerated values of HwmUserState

Enumerated Value	Description
HWM_STATE_IDLE	The user is idle.
HWM_STATE_IN_CONF	The user is in the meeting.
HWM_STATE_IN_CALL	The user is being called.

Return Values

Table 7-157 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Sample Code

```
/**
 * Obtaining user status
 */
void demoSetUserSavePathDlg::OnBnClickedGetUserState()
{
    int ret = hwmsdkagent::GetUserState();
    if (hwmsdk::HWM_COMMON_SUCCESS != ret)
    {
```

```
AfxMessageBox(_T("Get user state failed"));  
}  
}
```

7.4.7 Audio and Video Data Streams

7.4.7.1 Obtaining Audio Data Streams

API Description

This API is used to obtain the audio data streams after audio mixing of each venue in a meeting. Only 32-bit libraries are supported.

Precautions

This API is an asynchronous API. The return value of the callback function only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding notification function.

This API can be called before joining a meeting. After a meeting is created or joined, a notification is sent.

Method Definition

```
HWM_SDK_AGENT_API hwmsdk::HwmErrCode SetAudioRawDataOutputConfig(bool isOpen);
```

Callback Function

```
virtual void OnSetAudioRawDataOutputConfigResult(hwmsdk::HwmErrCode ret, const char* reason) {};
```

Notification Function

```
virtual void OnAudioFrameNotify(const AudioFrameData* pFrame) {};
```

Parameter Description

Table 7-158 Parameter description

Parameter	Mandatory	Type	Description
isOpen	Yes	bool	Whether to enable the function.

Table 7-159 Return values

Type	Description
HwmErrCode	If 0 is returned, the operation is successful. If other values are returned, the operation fails. For details about values returned upon failures, see Common Error Codes .

Table 7-160 AudioFrameData description

Parameter	Type	Description
eFrameType	AudioFrameType	Audio frame type.
iSamples	signed int	Number of sampling points for each channel.
iSamplesPerSec	signed int	Sampling ratio.
iBytesPerSample	signed int	Number of bytes of each sampling point. Generally, the PCM audio is 16 bits.
iChannels	signed int	Number of audio channels.
pBuffer	char *	Data buffer. Length = iSamples x iBytesPerSample x iChannels
uiDataLen	signed int	Data length, which is used after encoding or before decoding. The value of this parameter needs to be updated after encryption or decryption.
uiBufferLen	signed int	Buffer length. The encoded data is encrypted by a third party. The data length increases to prevent overflow.

Table 7-161 Enumerated values of AudioFrameType

Enumerated Value	Description
AUDIO_FRAME_TYPE_PCM16	16-bit precision PCM

Sample Code

```
/**
 * The notification of reporting audio stream frame data
 */
void demoNotifyProc::OnAudioFrameNotify(const AudioFrameData* pFrame)
{
    if(nullptr != pFrame)
    {
        FILE* recordFile = nullptr;
        std::string Path ("D:\\AudioFrame.pcm");
        auto error = fopen_s(&recordFile,Path.c_str(), "ab+");
        if (error != 0)
        {
            CTools::OutputRetStr("open file error = " + std::to_string(error));
        }

        if (nullptr != recordFile)
        {
            fwrite(pFrame->pBuffer, sizeof(char), pFrame->iSamples * pFrame->iBytesPerSample * pFrame->iChannels, recordFile);
            fclose(recordFile);
        }
    }
}
```

```
}  
}
```

7.5 Notification Reference

7.5.1 Basic Configuration Change Notification

7.5.1.1 Disconnection Notification

Notification Description

A notification is sent when the SDK is disconnected.

Method Definition

```
virtual void OnSdkDisconnected() {};
```

Precautions

If this notification is received, the SDK is disconnected abnormally. In this case, call the initialization API again. Otherwise, the SDK cannot be used.

Parameter Description

None

7.5.1.2 Enterprise Configuration Change Notification

Notification Description

A notification is sent when the enterprise configuration is changed.

Method Definition

```
virtual void OnCorpConfig(HwmCorpConfigInfo* data) {};
```

Precautions

None

Parameter Description

Table 7-162 HwmCorpConfigInfo parameters

Parameter	Type	Description
enablePstn	bool	Whether to support mobile phone calls.

Parameter	Type	Description
enableSms	bool	Whether to support SMS notifications.
enableRecord	bool	Whether to support recording.
allowGuestStartConf	bool	Whether to allow guests to join the meeting ahead of the host.
allowGuestStartConfTime	unsigned int	Time range allowed for guests to join the meeting in advance, in minutes. 0 : any time before the scheduled time. n : n minutes before the scheduled time.
enableShowAddressBookStructure	bool	Whether to display the corporate directory.

7.5.1.3 Changing Enterprise Information

Notification Description

A notification is sent when the enterprise information is changed.

Method Definition

```
virtual void OnUserCorpInfo(HwmUserCorpInfoNotifyType* type) = 0;
```

Precautions

None

Parameter Description

Table 7-163 HwmUserCorpInfoNotifyType parameters

Parameter	Description
HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_DELETE	The user has been deregistered.
HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_JOIN_NEW_CORP	The user has joined a new enterprise (after accepting the invitation and creating an enterprise).
HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_LEAVE_CURRENT_CORP	The user has been removed from the current enterprise. (The user becomes a registered user after the enterprise administrator deletes or dismisses the enterprise, or the user leaves the enterprise.)

Parameter	Description
HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_RESET	The user is reset (after the activation code of the SmartRooms account is reset or the account is deleted).
HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_VMR_CHANGE	The cloud meeting room of the user has changed.
HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_NAME_CHANGE	The username has changed.
HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_STATUS_CHANGE	The status of the access account has changed.

7.5.1.4 Notification of Sharing Cloud Meeting Rooms

Notification Description

A notification is sent when information about shared cloud meeting rooms was changed.

Method Definition

```
virtual void OnShareVmrInfoNotify(HwmShareVmrInfo* shareVmrInfo) = 0;
```

Precautions

None

Parameter Description

Table 7-164 HwmShareVmrInfo description

Parameter	Type	Description
isEnabledShareVmr	bool	Whether shared cloud meeting rooms are available.

7.5.2 Account Status Change Notification

7.5.2.1 Forcible Logout Notification

Notification Description

A notification is sent when you were kicked out of this account by another device. In this case, you need to log in again.

Method Definition

```
virtual void OnKickedOut() {};
```

Precautions

None

Parameter Description

None

7.5.3 Customized UI Event Notification

7.5.3.1 Click Injection Notification

Notification Description

A notification is sent when a user clicks a button configured with click injection.

Method Definition

```
virtual void OnClickInjectBtn(HwmClickInjectBtn injectBtn, void* data, const char* id) {};
```

Precautions

None

Parameter Description

Table 7-165 Parameter description

Parameter	Type	Description
injectBtn	HwmClickInjectBtn	Button type.
data	void*	Button parameter, which may be empty. <ul style="list-style-type: none">If the button type is HWM_CLICK_INJECT_BTN_CALL_OTHER_NUM, the value of this parameter is the information about the participant to be called.If the button type is HWM_CLICK_INJECT_BTN_INVITE, this parameter is left blank.

Parameter	Type	Description
id	const char*	<p>ID of a customized button.</p> <ul style="list-style-type: none"> When the button type is HWM_TOOLS_INJECT_BTN_CUSTOM, the value of this parameter is the ID of the customized button. When the button type is HWM_CLICK_INJECT_BTN_PARTICIPANT_DETAIL, the value of this parameter is that of HwmConfAttendee. When the button type is set to other values, this parameter is left blank.

Table 7-166 Enumerated values of HwmClickInjectBtn

Enumerated Value	Description
HWM_CLICK_INJECT_BTN_INVITE	Invite button.
HWM_CLICK_INJECT_BTN_CALL_OTHER_NUMBER	Call other number button.
HWM_CLICK_INJECT_BTN_ATTENDEE	Participants button.
HWM_CLICK_INJECT_BTN_SHARE	Share button.
HWM_CLICK_INJECT_BTN_LEAVE	Leave button.
HWM_TOOLS_INJECT_BTN_CUSTOM	User-defined button.
HWM_CLICK_INJECT_BTN_COPY_CONF_INFO	Button for copying meeting information.
HWM_CLICK_INJECT_BTN_PARTICIPANT_DETAIL	Participant details button.

7.5.3.2 Displaying Meeting Information Box Notification

Notification Description

A notification is sent when the user hovers over the meeting ID in the upper left corner of the meeting page.

Method Definition

```
virtual void OnShowExternalConfInfoWnd(int left,int top) {};
```

Precautions

1. Set **isUseExternalConfInfoWnd** in [Table 7-46](#) to **true**.
2. Add thread switching to the **OnShowExternalConfInfoWnd** API, switch to the user thread, and then the user-defined meeting information box is displayed.

(The meeting information box needs to be pinned to the top.)

3. Add timer detection (2s) the API for displaying the user-defined meeting information box.

If you do not hover over the customized meeting information area, the meeting information is deleted when the timer expires.

If you hover over the customized meeting information area, the meeting information is deleted when the cursor is moved out of the customized meeting information area.

(If timer detection is not added, the meeting information box cannot be destroyed in all scenarios.)

Parameter Description

Table 7-167

Parameter	Type	Description
left	int	X coordinate in the upper left corner of the meeting information box.
top	int	Y coordinate in the upper left corner of the meeting information box.

Sample Code

```
/**  
 * The external meeting information box.  
 */  
LRESULT demoMainMenuDlg::OnShowExternalConfInfoWnd(WPARAM wParam, LPARAM lParam)  
{  
    CPoint* pt = (CPoint*)wParam;  
    demoConfInfoDlg* dlg = demoData::GetInstance().GetConfInfoDlgObj();  
    // If the dialog box object does not exist, create one.  
    if (dlg == NULL)  
    {  
        dlg = new demoConfInfoDlg;  
        dlg->Create(IDD_CONF_INFO_DIALOG, NULL);  
        demoData::GetInstance().SetConfInfoDlgObj(dlg);  
    }  
    // If the dialog box exists, set a timer to check whether the dialog box is destroyed.  
    if (IsWindow(dlg->GetSafeHwnd()))  
    {  
        SetTimer(1, 2000, NULL);  
    }  
}
```

```
// Displaying the dialog box and pin it on top.
CRect rectDlg(0, 0, 0, 0);
dlg->GetClientRect(rectDlg);
CRect rt(pt->x, pt->y, pt->x + rectDlg.Width(), pt->y + rectDlg.Height());
dlg->MoveWindow(rt);
dlg->SetWindowPos(&CWnd::wndTopMost, pt->x, pt->y, rectDlg.Width(), rectDlg.Height(),
SWP_NOMOVE | SWP_NOSIZE | SWP_NOACTIVATE);
dlg->ShowWindow(SW_SHOW);

delete pt;
pt = NULL;
return 0;
}
/**
 * The timer detects whether the meeting information box is destroyed.
 */
void demoMainMenuDlg::OnTimer(UINT_PTR nIDEvent)
{
    if (nIDEvent == 1)
    {
        demoConfInfoDlg* dlg = demoData::GetInstance().GetConfInfoDlgObj();
        if (dlg == NULL)
        {
            return;
        }

        if (IsWindow(dlg->m_hWnd))
        {
            CPoint ptMouse(0, 0);
            GetCursorPos(&ptMouse);

            CRect rtConfInfo(0,0,0,0);
            dlg->GetWindowRect(&rtConfInfo);
            // Destroying a meeting information dialog box if the cursor is not in the box.
            if (!rtConfInfo.PtInRect(ptMouse))
            {
                dlg->CloseWindow();
                demoData::GetInstance().SetConfInfoDlgObj(NULL);
                delete dlg;
                dlg = NULL;
                KillTimer(nIDEvent);
            }
        }
    }
}
CDialogEx::OnTimer(nIDEvent);
}
/**
 * Adding the function that the meeting information box is destroyed upon the cursor is moved out of the
 * box.
 */
void demoConfInfoDlg::OnMouseMove(UINT nFlags, CPoint point)
{
    if (!m_bTracking)
    {
        TRACKMOUSEEVENT t_MouseEvent;
        t_MouseEvent.cbSize = sizeof(TRACKMOUSEEVENT);
        t_MouseEvent.dwFlags = TME_HOVER | TME_LEAVE;
        t_MouseEvent.hwndTrack = m_hWnd;
        t_MouseEvent.dwHoverTime = 30;

        // Triggering the OnMouseLeave or OnMouseHover event. m_bTracking prevents frequent event
        // triggering.
        if (::TrackMouseEvent(&t_MouseEvent))
        {
            m_bTracking = true;
        }
    }
}
CDialogEx::OnMouseMove(nFlags, point);
}
```

```
void demoConfInfoDlg::OnMouseLeave()
{
    m_bTracking = false;
    CDialogEx::OnMouseLeave();
    demoData::GetInstance().SetConfInfoDlgObj(NULL);
    OnCancel();
}
```

7.5.3.3 Destroying a Meeting Information Box

Notification Description

A notification is sent in the scenarios such as clicking the in-meeting sharing button, clicking the in-meeting leave button, leaving a meeting, ending a meeting, clicking the title bar, and sharing the meeting control mode.

Method Definition

```
virtual void OnDestroyExternalConfInfoWnd() {};
```

Precautions

Check whether the meeting information box object exists. If yes, the box is destroyed.

Parameter Description

None

Sample Code

```
/**
 * Destroying the external meeting information box.
 */
LRESULT demoMainMenuDlg::OnDestroyExternalConfInfoWnd(WPARAM wParam, LPARAM lParam)
{
    demoConfInfoDlg* dlg = demoData::GetInstance().GetConfInfoDlgObj();
    if (dlg == NULL)
    {
        return 1;
    }

    dlg->CloseWindow();
    demoData::GetInstance().SetConfInfoDlgObj(NULL);
    delete dlg;
    dlg = NULL;
    return 0;
}
```

7.5.3.4 Querying Profile Pictures in the External Address Book

Notification Description

This API is used to display the customized profile picture when the camera is disabled in the video window. To use this API, set **isUseExternalAddressBook** to **true** in the [Configuring the UI](#) API, and return the image to be displayed to the SDK through the notification API.

Method Definition

```
virtual void OnQueryContactAvatar(const char account[HWM_MAX_ACCOUNT_LEN], const char
thirdUserId[HWM_MAX_ACCOUNT_LEN], const char sipNumber[HWM_MAX_NUMBER_LEN], char*
avatarPath,int pathLen) {};
```

Precautions

In the **OnQueryContactAvatar** notification method, the user needs to query the personal address book based on the account, thirdUserId, and sipNumber to obtain the avatarPath and assign the value to avatarPath. pathLen indicates the maximum length of the path.

Parameter Description

Table 7-168

Parameter	Type	Description
account	char[]	Account for logging in to Huawei Cloud Meeting.
thirdUserId	char[]	Third-party user ID for logging in to Huawei Cloud Meeting.
sipNumber	char[]	SIP number corresponding to the account.
avatarPath	char*	Path of the profile picture returned when the address book is queried.
pathLen	int	Maximum path length

Sample Code

```
/**
 * Querying profile pictures in the external address book
 */
void demoNotifyProc::OnQueryContactAvatar(const char* account, const char* thirdUserId, const char*
sipNumber, char* avatarPath, int pathLen)
{
    Cdemo* app = (Cdemo*)AfxGetApp();
    if (!app || (strlen(account) == 0 && strlen(thirdUserId) == 0 && strlen(sipNumber) == 0))
    {
        // The window is closed or the data is empty.
        return;
    }

    string sAccount = account;
    string sThirdUserId = thirdUserId;
    string sSipNumber = sipNumber;

    /* Obtain the profile picture path based on the logic of the user layer, account, thirdUserId, sipNumber
    and copy the path to the avatarPath char array.*/
    // During the test, place an image in D:\picture\ and name it test.png.
    strcpy_s(avatarPath, pathLen, "D:\\picture\\test.png");
}
```

7.5.4 Meeting Status Change Notification

7.5.4.1 Incoming Call Notification

Notification Description

A notification is sent when you received an incoming meeting call.

Method Definition

```
virtual void OnConfIncoming(HwmConfIncomingInfo* data) {};
```

Precautions

None

Parameter Description

Table 7-169 HwmConfIncomingInfo description

Parameter	Type	Description
state	HwmConfComingState	Incoming call status.
mediaType	HwmMediaType	Meeting media type.
confId	char[]	Meeting ID.
vmrId	char[]	ID of meetings held in the cloud meeting room.

Table 7-170 Enumerated values of HwmConfComingState

Enumerated Value	Description
HWM_CONF_COMING_STATE_START	Initial state. The phone of the called party is ringing.
HWM_CONF_COMING_STATE_ACCEPT	The call is answered.
HWM_CONF_COMING_STATE_REJECT	The call is rejected.
HWM_CONF_COMING_STATE_TIMEOUT	The called party does not respond, the call times out, or the calling party has hung up.

Table 7-171 Enumerated values of HwmMediaType

Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	Audio.
HWM_MEDIA_TYPE_VIDEO	Video.

7.5.4.2 Meeting Status Notification

Notification Description

A notification is sent when the meeting status was changed.

Method Definition

```
virtual void OnConfState(HwmConfStateInfo *confStateInfo) {};
```

Precautions

None

Parameter Description

Table 7-172 HwmConfStateInfo description

Parameter	Type	Description
state	HwmState	Meeting status.
reason	HwmConfEndReason	Reason for leaving the meeting.
isP2PConf	bool	Whether the meeting is an instant meeting.

Table 7-173 Enumerated values of HwmState

Enumerated Value	Description
HWM_STATE_OFF	The meeting has not started or the user has left the meeting.
HWM_STATE_ON	The meeting has started.

Table 7-174 Enumerated values of HwmConfEndReason

Enumerated Value	Description
HWM_CONF_END_REASON_LEAVE_CONF_HANGUP	The user leaves the meeting.
HWM_CONF_END_REASON_STOP_CONF_HANGUP	The meeting has ended.
HWM_CONF_END_REASON_CHAIR_HANGUP	The user is removed by the host.
HWM_CONF_END_REASON_SESSION_TIMER_TIMEOUT	Network interrupted.
HWM_CONF_END_REASON_NOSTREAM_HANGUP	Network error.
HWM_CONF_END_REASON_CORP_CONFERENCE_RESOURCE_HAS_BEEN_RUN_OUT	Enterprise resources have been used up.
HWM_CONF_END_REASON_CONF_ONLY_SAME_ENTERPRISE	Only enterprise users can join the meeting.
HWM_CONF_END_REASON_CONF_ONLY_INVITED	Only invited users can join the meeting.
HWM_CONF_END_REASON_CONF_IS_LOCKED	The meeting is locked.
HWM_CONF_END_REASON_ERR_VMR_NOT_BEEN_HOLD	Guests are not allowed to activate the meeting.
HWM_CONF_END_REASON_VMR_CONF_CONFLICT	Meetings conflict in this cloud meeting room.
HWM_CONF_END_REASON_SERVER_ERROR	Server exception.
HWM_CONF_END_REASON_NUM_OF_PAR_EXCEEDS_UPPER_LIMIT	More participants than allowed by the cloud meeting room package.
HWM_CONF_END_REASON_CONF_NUM_OVER_MAX_ALLOWED = 111071116	The maximum number of ongoing meetings has been reached.
HWM_CONF_END_REASON_MANAGER_SHARE_VMR_NOT_ENOUGH = 111071151	No shared cloud meeting rooms are available.
HWM_CONF_END_REASON_OVER_MAX_PARTICIPANT_NUMBER = 111072101	More participants than allowed.
HWM_CONF_END_REASON_PARTICIPANT_REACH_MAX_NUM = 111072504	Max. participants in a single meeting reached.

Enumerated Value	Description
HWM_CONF_END_REASON_PARTICIPANT_CONF_NOT_EXIST = 111081002	The meeting does not exist or has ended.
HWM_CONF_END_MANAGER_NO_UPSCALE_VMR = 112030001	There are no cloud meeting rooms of higher specifications.
HWM_CONF_END_REASON_END_EXPIRATION = 414100069	Invalid user, enterprise, or SP.
HWM_CONF_END_REASON_SDK_CHAIR_END_CONF = 414100074	The host ends the meeting.
HWM_CONF_END_REASON_SDK_TIMEOVER_END_CONF = 414100075	The meeting ends when the scheduled time arrives.
HWM_CONF_END_REASON_CALLEE_REFUSED_END_CONF = 414100076	The called participant rejects the call.
HWM_CONF_END_REASON_CALLEE_TIMEOUT_END_CONF = 414100077	The call times out.
HWM_CONF_END_FORCE_OPEN_CAMERA_HANGUP = 414100078	The video meeting is forcibly ended.
HWM_CONF_END_REASON_RTC_SDK_NETWORK_FAILED = 990000053	Network exception.

7.5.4.3 Meeting Details Notification

Notification Description

A notification is sent when the meeting details changed.

Method Definition

```
virtual void OnConfInfo(HwmConfInfo *confInfo) {};
```

Precautions

After a meeting starts, the meeting details (**HwmConfInfo**) is reported multiple times.

Parameter Description

Table 7-175 HwmConfInfo description

Parameter	Type	Description
url	char[]	Meeting link. Participants can open the link in a browser to join the meeting.

Parameter	Type	Description
confId	char[]	Meeting ID.
role	HwmConfRole	Participant role in the meeting. Host or common participant.
chairmanPwd	char[]	Host password.
generalPwd	char[]	Guest password.
subject	char[]	Meeting topic.
isOtherCorpConf	bool	Whether a meeting belongs to an external enterprise. If you join the meeting of an external enterprise or join the meeting anonymously, the value is true . Otherwise, the value is false .
isCreator	bool	Whether the meeting was scheduled by you.
isInBreakoutSubConf	bool	Whether you are in a breakout room.
customInfo	char[]	Custom extension information.

Table 7-176 Enumerated values of HwmConfRole

Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	Common participant.
HWM_CONF_ROLE_CHAIRMAN	Host.
HWM_CONF_ROLE_AUDIENCE	Attendee.
HWM_CONF_ROLE_COHOST	Co-host.
HWM_CONF_ROLE_WAITING	Waiting members.

7.5.4.4 Meeting List Notification

Notification Description

A notification is sent when the meeting list was changed.

Method Definition

```
virtual void OnConflist(HwmConflistUpdateType updateType, const HwmConflistInfo *conflistInfo,
    unsigned int conflistLen) {};
```

Precautions

After the login is successful, the notification is reported once. When the meeting list changes, the notification is reported again.

This notification is triggered when a meeting is scheduled, modified, or canceled. The update type of the notification triggered by meeting details modification is **CONFLIST_UPDATE_ADD**.

When **updateType** is set to **CONFLIST_UPDTAE_ALL** and **conflistLen** is set to **0**, the meeting list needs to be cleared.

Parameter Description

Table 7-177 Parameter description

Parameter	Type	Description
updateType	HwmConflistUpdateType	Update type.
conflistInfo	HwmConflistInfo*	Meeting list parameters.
conflistLen	unsigned int	Number of meetings.

Table 7-178 Enumerated values of HwmConflistUpdateType

Enumerated Value	Description
CONFLIST_UPDTAE_ALL	All meetings in the meeting list are updated.
CONFLIST_UPDATE_ADD	One or more meetings are added or modified in the meeting list. This value is reported when the meeting list changes due to meeting details modification.
CONFLIST_UPDATE_DELETE	A meeting is deleted from the meeting list.

Table 7-179 HwmConflistInfo description

Parameter	Type	Description
confId	char[]	Meeting ID.
confSubject	char[]	Meeting topic.
chairmanPwd	char[]	Host password.

Parameter	Type	Description
guestPwd	char[]	Guest password.
audiencePwd	char[]	Audience password.
startTime	long long	UTC time when the meeting starts, in seconds.
endTime	long long	UTC time when the meeting ends, in seconds.
timeZone	char[]	Time zone code.
mediaType	HwmMediaType	Media type. For details, see Table 7-88 .
scheduserName	char[]	Name of the user who schedules the meeting.
vmrConferencelid	char[]	Display ID of the cloud meeting.
chairJoinUri	char[]	Link for the host to join the meeting.
guestJoinUri	char[]	Link for guests to join the meeting.
audienceJoinUri	char[]	Link for an audience to join the meeting.
confStateType	HwmConfState	Meeting status.
isWebinar	bool	Whether the meeting is a webinar.
selfConfRole	HwmConfRole	Role in the meeting. For details, see Table 7-137 .
customInfo	char[]	Custom extension information.

Table 7-180 Enumerated values of **HwmConfState**

Enumerated Value	Description
HWM_CONF_STATE_SCHEDULE	The meeting is scheduled.
HWM_CONF_STATE_CREATING	The meeting is being created.
HWM_CONF_STATE_GOING	The meeting has started.
HWM_CONF_STATE_DESTROYED	The meeting has ended.

7.5.4.5 Notifications for Changes on the Status of Sharing Data

Notification Description

A notification is sent when the status of sharing data is changed.

Method Definition

```
virtual void OnShareState(HwmShareStateInfo *shareStateInfo) {};
```

Precautions

None

Parameter Description

Table 7-181 HwmShareStateInfo parameters

Parameter	Type	Description
state	HwmState	Sharing status.
name	char[]	Sharer name. This parameter is valid only when state is set to HWM_STATE_ON .
number	char[]	Number of the sharer. This parameter is valid only when state is set to HWM_STATE_ON .
shareType	HwmShareType	Sharing type.
monitor	HwmMonitor	Type of the shared monitor (primary or secondary monitor).
appHandle	HWND	Program handle.

Table 7-182 Enumerated values of HwmState

Enumerated Value	Description
HWM_STATE_OFF	Sharing disabled.
HWM_STATE_ON	Sharing enabled.

Table 7-183 Enumerated values of HwmShareType

Enumerated Value	Description
HWM_SHARE_TYPE_MONITOR	Desktop sharing.

Enumerated Value	Description
HWM_SHARE_TYPE_APP	Program sharing.
HWM_SHARE_TYPE_WHITE_BOARD	Whiteboard sharing.

Table 7-184 Enumerated values of HwmMonitor

Enumerated Value	Description
HWM_MONITOR_MAIN	Primary monitor.
HWM_MONITOR_SECONDARY	Secondary monitor.

7.5.4.6 Notifications for Changes on the Status of Receiving Shared Data

Notification Description

A notification is sent when the status of receiving shared data is changed.

Method Definition

```
virtual void OnRecvShareState(HwmRecvShareStateInfo *shareStateInfo) {};
```

Precautions

None

Parameter Description

Table 7-185 HwmRecvShareStateInfo parameters

Parameter	Type	Description
state	HwmState	Sharing status.
name	char[]	Sharer name. This parameter is valid only when state is set to HWM_STATE_ON .
number	char[]	Number of the sharer. This parameter is valid only when state is set to HWM_STATE_ON .

Table 7-186 Enumerated values of HwmState

Enumerated Value	Description
HWM_STATE_OFF	The sharing has been stopped.
HWM_STATE_ON	The third-party application starts to receive the shared data.

7.5.4.7 Obtaining Remote Control Permission Notification

Notification Description

A notification is sent when the status of the current remote control permission changes. When the value of state is **1**, the remote control permission is obtained from **name**. When the value of state is **0**, the remote control permission of **name** is released or revoked.

Method Definition

```
virtual void OnRemoteControlState(HwmRemoteControlStateInfo *remoteControlStateInfo) {};
```

Precautions

None

Parameter Description

Table 7-187 HwmRemoteControlStateInfo parameters

Parameter	Type	Description
state	HwmState	Status.
name	char[]	Name of the permission owner.
number	char[]	Number of the permission owner.

Table 7-188 Enumerated values of HwmState

Enumerated Value	Description
HWM_STATE_OFF	Revoking the remote control permission.
HWM_STATE_ON	Obtaining the remote control permission.

7.5.4.8 Granting the Remote Control Permission to Others

Notification Description

A notification is sent when the status of the current remote control right changes. When the value of state is **1**, the remote control right is granted to **name**. When the value of state is **0**, the remote control right of **name** is released or revoked.

Method Definition

```
virtual void OnBeRemoteControlledState(HwmRemoteControlStateInfo *remoteControlStateInfo) {};
```

Precautions

None

Parameter Description

Table 7-189 HwmRecvShareStateInfo parameters

Parameter	Type	Description
state	HwmState	Status.
name	char[]	Name of the permission owner.
number	char[]	Number of the permission owner.

Table 7-190 Enumerated values of HwmState

Enumerated Value	Description
HWM_STATE_OFF	Revoking the remote control permission.
HWM_STATE_ON	Granting the remote control permission to others.

7.5.4.9 Notifications for Sharing Lock Status Changes

Notification Description

A notification is sent when the sharing lock status changes.

Method Definition

```
virtual void OnConfIsShareLockedChanged(bool isShareLocked) {};
```

Precautions

None

Parameter Description

Table 7-191 Parameter description

Parameter	Type	Description
isShareLocked	bool	Whether sharing is locked.

7.5.4.10 Meeting End Notification

Notification Description

A notification is sent when a meeting ended.

Method Definition

```
virtual void OnConfEndedNotify(const HwmConfEndInfo *confEndInfo) {};
```

Precautions

None

Parameter Description

Table 7-192 HwmConfEndInfo description

Parameter	Type	Description
reason	HwmConfEndReason	Reason for leaving the meeting.
isP2PConf	bool	Whether the meeting is an instant meeting.

7.5.4.11 Poor Connection Notification

Notification Description

A notification is sent when the network connection was poor.

Method Definition

```
virtual void OnPoorNetworkQualityInfoNotify(const HwmPoorNetWorkQualityInfo *poorNetWorkInfo) {};
```

Precautions

None

Parameter Description

Table 7-193 HwmConfEndInfo description

Parameter	Type	Description
nickName	char[]	Participant name.
number	char[]	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	char[]	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	char[]	Huawei Cloud Meeting account.
isLocal	bool	Whether the participant is the local client user.
audioStatus	HwmLowNetWorkStatusInfo	Network status of audio.
videoStatus	HwmLowNetWorkStatusInfo	Network status of video.
shareStatus	HwmLowNetWorkStatusInfo	Network status of sharing.

Table 7-194 HwmLowNetWorkStatusInfo description

Parameter	Type	Description
packetLoss	unsigned int	Packet loss rate.
delay	unsigned int	Delay.
jitter	unsigned int	Jitter.

Parameter	Type	Description
status	HwmLowNetWorkStatus	Status.

Table 7-195 Enumerated values of HwmLowNetWorkStatus

Enumerated Value	Description
LOW_NET_WORK_STATU S_NORMAL	Normal.
LOW_NET_WORK_STATU S_BAD	Poor.
LOW_NET_WORK_STATU S_VERY_BAD	Very poor.

7.5.4.12 Notification of Instant Meeting Records

Notification Description

A notification of instant meeting records is sent.

Method Definition

```
virtual void OnP2PConfRecordNotify(const HwmP2PConfRecordInfo *recordInfo) {};
```

Precautions

None

Parameter Description

Table 7-196 HwmP2PConfRecordInfo description

Parameter	Type	Description
callerInfo	HwmCallMemberInfo	Caller information.
calleeInfo	HwmCallMemberInfo	Called participant information.
startTime	int	Call start time, accurate to seconds (GMT).
endTime	int	Call end time, accurate to seconds (GMT).
isCallOut	bool	Whether the call is an outgoing call.

Parameter	Type	Description
mediaType	HwmMediaType	Media type.
resultCode	HwmErrCode	Error code.
resultMsg	char[]	Error message.
isCallEstablished	bool	Whether the call is connected.

Table 7-197 HwmCallMemberInfo description

Parameter	Type	Description
number	char[]	Number.
nickName	char[]	Member name.
thirdUserId	char[]	Third-party account.

7.5.5 Audio and Video Device Status Notification

Notification Description

A notification is sent when the status of the microphone, speaker, or camera in the meeting changes.

Method Definition

```
virtual void OnAVDeviceCtrlStateChanged(HwmDeviceType deviceType, bool isOpen) {};
```

Precautions

None

Parameter Description

Table 7-198 Parameter description

Parameter	Man dato ry	Type	Description
HwmDeviceType	Yes	HwmDeviceTy pe	Device type enumeration.
isOpen	Yes	bool	Whether the device is enabled.

7.6 Error Code Reference

7.6.1 Common Error Codes

Table 7-199 Enumerated values of HwmErrCode

Variable	Value	Description
HWM_COMMON_ERR_FAILED	1	Common error.
HWM_COMMON_ERR_PARAM_ERROR	2	Invalid parameter.
HWM_LOGIN_ERR_ACCOUNT_OR_PASSWORD_ERROR	10006	Incorrect account or password.
HWM_LOGIN_ERR_ACCOUNT_LOCKED	10007	The account is locked.
HWM_LOGIN_ERR_IP_OR_DEVICE_FORBIDDEN	10008	The IP address or device is not allowed to access the system.
HWM_LOGIN_ERR_ACCOUNT_OR_ENTERPRISE_NOT_ACTIVE	10009	The account or enterprise is not activated.
HWM_LOGIN_ERR_AUTH_INFO_TIMEOUT	10011	The authentication information has expired. Check whether the UTC time is used and whether the time has been calibrated.
HWM_LOGIN_ERR_ACCOUNT_STOPPED	10013	The account has been suspended.
HWM_CONF_ERR_CONF_ID_OR_PASSWORD_ERROR	20001	Incorrect meeting ID or password.
HWM_CONF_ERR_CONF_LOCKED	20002	The meeting is locked.
HWM_CONF_ERR_NOT_IN_CONF	20003	The API calling is invalid because you are not in a meeting.
HWM_CONF_ERR_VMR_NOT_BEEN_HOLD	20004	Guests are not allowed to activate the meeting.
HWM_CONF_ERR_SHARE_LOCKED	20005	The sharing is locked.
HWM_CONF_ERR_NOT_IN_DATA_CONF	20006	You are not in a data meeting.
HWM_CONF_ERR_CONF_ONLY_SAME_ENTERPRISE	20007	Only enterprise users can join the meeting.

Variable	Value	Description
HWM_CONF_ERR_CONF_ONLY_INVITED	20008	Only invited users can join the meeting.
HWM_CALL_ERR_THIRD_USER_ID_NO_EXIST	20009	The third-party account that initiates the call does not exist.
HWM_ERR_NOT_IN_CONF_OR_CALL	20010	You are not in a meeting or call.
HWM_ERR_ALREADY_EXIST_CONF_OR_CALL	20011	A meeting or call already exists.
HWM_CONF_ERR_PASSWORD_ERROR_LOCKED	20012	The meeting is temporarily locked because the number of incorrect password attempts reaches the maximum.
HWM_CONF_ERR_CONF_ENDED	20013	The meeting has ended.
HWM_CONF_ERR_SAME_PWD_WITH_HOST	20014	The guest password is the same as the host password.
HWM_CONF_ERR_NUM_OF_PARTICIPANTS_EXCEEDS_UPPER_LIMIT	20015	More participants than allowed by the cloud meeting room package.
HWM_CONF_ERR_CONF_NOT_ON_LOCAL_STATION	20016	The meeting is not held at this site.
HWM_CONF_ERR_ENTERPRISE_CONCURRENCY_RESOURCE_NOT_ENOUGH	115022001	Concurrent participants in the enterprise are insufficient.
HWM_CONF_ERR_CONF_DATA_NOT_FOUND	111070005	The meeting does not exist.
HWM_CONF_ERR_VMR_DATA_NOT_FOUND	111070006	The personal cloud meeting room does not exist.
HWM_CONF_ERR_CONF_ROLE_AUTHENTICATION_FAILED	111070010	You do not have the permissions required to view the meeting.
HWM_CONF_ERR_VMR_CONF_CONFLICT	111071106	Meetings conflict in this cloud meeting room.
HWM_CONF_ERR_MODIFY_FAIL_AS_CONF_ALREADY_STARTED	111071065	The meeting is in progress and cannot be edited.

Variable	Value	Description
HWM_ORG_CONCURRENT_PARTICIPANTS_NUMBER_IS_ZERO	111071060	The enterprise has no concurrent participant resources configured and cannot use the personal meeting ID or random meeting ID to initiate a meeting.
HWM_CONF_USER_NOT_VMR_OWNER	111071063	The user is not the owner of the cloud meeting room.
HWM_CONF_ERR_CANCEL_FAIL_AS_CONF_STARTED	111071067	The meeting is in progress and cannot be canceled.
HWM_CONF_ERR_START_TIME_LESS_THAN_CURRENT_TIME	111071013	The start time is earlier than the current time.
HWM_CONF_ERR_START_TIME_OVER_MAXIMUM_SCHEDULE_TIME	111071014	The start time exceeds the allowed range.
HWM_CONF_ERR_VMR_PWM_SAME_AS_MEETING_ID	201080017	The guest password cannot be the same as the meeting ID.
HWM_CONF_ERR_PARTICIPANT_CONF_NOT_SUPPORT	111084013	The meeting is not supported.
HWM_CONF_ERR_ATTENDEES_NUMBER_EXCEED_LIMIT	111071066	The number of participants exceeds the upper limit.
HWM_CONF_ERR_VMR_DATA_STATUS_ILLEGAL	111073007	Invalid status of the cloud meeting room package.
HWM_CONF_ERR_WAIT_APPLY_RESOURCE	115029006	Resources are being requested.
HWM_CONF_ERR_SDK_SVN_DETECT_FAILED	411000017	SVN port detection failed.
HWM_CONF_ERR_RTC_NOT_SUPPORT_STG	411000019	RTC does not support the STG mode.
HWM_CONF_ERR_OVER_MAXIMUM_PARTICIPANT_NUMBER	111072101	More participants than allowed.
HWM_CONF_ERR_AUDIENCE_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111072202	The number of attendees exceeds the maximum number of concurrent participants in the cloud meeting room package.

Variable	Value	Description
HWM_CONF_ERR_PARTICIPANT_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111072203	The number of the host and panelists exceeds the maximum number of concurrent participants in the cloud meeting room package.
HWM_CONF_ERR_PARTICIPANT_CONF_NOT_EXIST	111081002	The meeting does not exist or has ended.
HWM_VMR_RESOURCE_UNAVAILABLE	201080000	Cloud meeting resources are unavailable.
HWM_LOGIN_ERR_ACCOUNT_IS_UNBOUND	206010075	The account has been unbound.
HWM_CONF_ERR_SERVER_ERROR	990000018	Failed to connect to the server.
HWM_CONF_ERR_JOIN_ROOM_FAIL	990000019	Failed to join the meeting.
HWM_CONF_ERR_SERVER_BUSY	990000020	The server is busy.
HWM_CONF_ERR_RTC_JOIN_ROOM_AUTH_FAIL	990000022	Failed to verify the meeting authentication information.
HWM_CONF_ERR_SERVER_CONNECTION_ERROR	990000025	The server connection is abnormal.
HWM_LOGIN_ERR_CA_VERIFY_FAILED	412100012	Failed to verify the server CA certificate.
HWM_LOGIN_ERR_CURLE_EXTERN_CONNECT_TIMEOUT	412100017	The proxy communication times out, and the TCP connection fails to be set up. There is a high probability that the proxy configuration is incorrect.
HWM_LOGIN_ERR_CURLE_EXTERN_CLOSED_BY_PROXY	412100018	The link is disconnected by the proxy. There is a high probability that the configured server address is incorrect.
HWM_LOGIN_ERR_CURLE_COULDNT_RESOLVE_PROXY	412100024	The proxy domain name resolution failed.
HWM_LOGIN_ERR_CURLE_COULDNT_RESOLVE_HOST	412100025	The server domain name resolution failed.

Variable	Value	Description
HWM_LOGIN_E_ERR_MNG_FAILED	412100044	Management plane exception.
HWM_AGENT_ERR_CALLBACK_TIMEOUT	90001	Waiting for callback timed out.
HWM_AGENT_ERR_IN_PROCESS	90002	The API is being processed.
HWM_AGENT_ERR_NOT_LOGIN	90003	The API calling is invalid because you have not logged in.
HWM_AGENT_ERR_NOT_INITED_END	90004	The initialization is not started or not completed.
HWM_AGENT_ERR_NOT_SUPPORT_END	90005	This version is not supported.
HWM_AGENT_ERR_OPERATION_INTERRUPT	90012	The operation is interrupted.

7.6.2 Error Codes

Table 7-200 Error codes

Error Code	Error Description
-1	Unknown error.
0	Success.
111070001	Request error.
111070002	Insufficient permissions.
111070003	System processing failure.
111070004	Meeting authentication failed.
111070005	Meeting does not exist.
111070006	Personal cloud meeting room does not exist.
111070007	Meeting access number does not exist.
111070008	Meeting notification could not be sent.
111070009	Meeting password cannot be left blank.
111070010	Insufficient permissions to view this meeting.
111070100	Get started meeting exception.

Error Code	Error Description
111070101	Start meeting exception.
111070102	Apply IVR resource exception.
111070103	Start IVR meeting exception.
111070104	Apply site resource exception.
111070105	Start sub meeting exception.
111070106	Add channel exception.
111070107	Move and apply site resource exception.
111070108	Start meeting exception.
111070109	Get started cloud meeting exception.
111070110	Invite site exception.
111070111	Request token is null.
111070112	Rename site exception.
111070113	Hangup site exception.
111070114	Mass hangup site exception.
111070115	Delete attendee exception.
111070116	Mass delete attendee exception.
111070117	Book cycle meeting exception.
111070118	Modify cycle meeting exception.
111070119	Create cycle meeting exception.
111070120	Region data not found.
111070121	Forbidden subscribe.
111070122	Cancel subscribe fail.
111071001	Sysportal service exception.
111071002	Conf service exception.
111071003	Failed to create the meeting. Try again later.
111071004	This cloud meeting room does not allow guests to join before the host.
111071005	This cloud meeting room has been scheduled for another meeting during this period.
111071006	Insufficient cloud meeting time.
111071007	Meeting does not exist.

Error Code	Error Description
111071008	Cannot query meeting list.
111071009	Cannot change cloud meeting into immediate meeting.
111071010	Cannot modify cloud meeting flag.
111071011	The cloud meeting has not yet started. Please wait.
111071012	Not cloud meeting.
111071013	Start time less than current time.
111071014	Start time over max schedule time.
111071015	Duration over range.
111071016	Cycle ID list null exception.
111071017	Meeting size over range.
111071018	Invalid media type.
111071019	Invalid meeting type.
111071020	Cycle params null exception.
111071021	Duration over range.
111071022	Subject length too long.
111071023	Group URI length too long.
111071024	Invalid email address format.
111071025	Invalid mobile number format.
111071026	Department name too long.
111071027	Invalid welcome voice enable value.
111071028	Invalid enter voice enable value.
111071029	Invalid leave voice enable value.
111071030	Invalid reminders value.
111071031	Invalid allow record value.
111071032	Invalid auto record value.
111071033	Invalid user type value.
111071034	Invalid encrypt mode value.
111071035	Invalid language value.
111071036	Invalid auto prolong value.
111071037	VmriD too long.

Error Code	Error Description
111071038	Invalid record type value.
111071039	Live address too long.
111071040	Aux address too long.
111071041	Null start date for cycle meeting.
111071042	Null end date for cycle meeting.
111071043	Invalid cycle type value for cycle meeting.
111071044	Invalid interval for cycle meeting.
111071045	Null point for cycle meeting.
111071046	Invalid point value for cycle meeting.
111071047	Invalid vmr flag value.
111071048	Invalid record auxStream.
111071049	Invalid multiStream flag.
111071050	Invalid audience flag.
111071051	Invalid liveChannel ID.
111071052	Anonymous login is locked. Try again later.
111071053	Link login is locked. Try again later.
111071054	Not enough Meeting ID.
111071055	Failed to apply meeting ID.
111071056	Failed to release meeting ID.
111071057	Live room is used.
111071058	The meeting has not yet started. Please wait.
111071059	Meeting size over range.
111071060	The enterprise cannot create meetings because it has not purchased any concurrent meeting resources.
111071061	Parameter verify failed.
111071062	Json conversion failed.
111071063	Not cloud meeting room owner.
111071064	This cloud meeting room has been started for another meeting during this period.
111071065	This meeting cannot be modified because it is already started.

Error Code	Error Description
111071066	Attendees amount over range.
111071067	This meeting cannot be canceled because it is already started.
111071068	Meeting password encrypt failed.
111071069	No meeting during this period.
111071070	Sub cycle meeting cannot modify live room.
111071071	Stop online meeting exception.
111071072	Meeting is ended.
111071073	Not allow anonymous user.
111071074	Only allow user in organization.
111071075	Only allow invited user.
111071076	Batch export task for history meeting list during this period.
111071077	Only allow invited user and user in organization.
111071078	Max current participants amount reached.
111071079	Invalid CTD param.
111071080	Invalid guest password.
111071081	Guest password conflict with meeting ID.
111071082	Max meeting amount reached.
111071083	Invalid meeting random number.
111071084	Max export history meeting list times reached.
111071085	Max multi view layouts reached.
111071086	Max multi view invalid manual type.
111071087	Max multi view sub view amount reached.
111071088	Max multi view sub view numbers reached.
111071089	Webinar and common meeting cannot be converted to each other.
111071090	Not allow add audience.
111071091	Meeting password authentication failed.
111071092	File export task failed.
111071093	File export task is downloading.
111071094	Not allow audience to join.

Error Code	Error Description
111071095	Need to get WEBINAR_CONF.DTO object.
111071096	User-defined languages over range.
111071097	Your enterprise does not support simultaneous interpretation.
111071098	Need to set interpreter groups.
111071099	Invalid interpretation language.
111071100	Max languages in a meeting are reached.
111071101	This interpreter group ID already exists.
111071102	Max interpreters in the interpreter group reached.
111071103	This interpreter already exists in an interpreter group.
111071104	Invalid interpreter account.
111071105	Guest password conflict with chairman password.
111071106	Meeting is holding.
111071107	Invalid audience password.
111071108	Audience password conflict with meeting id.
111071109	Audience password conflict with chairman password.
111071110	Only RTC meeting support E2E encrypt.
111071111	Audience password conflict with guest password.
111071112	Cloud meeting room ID type cannot be modified.
111071113	Cloud meeting room type cannot be modified.
111071114	Cloud meeting room flag cannot be modified.
111071119	Sub cycle meeting modify time over range.
111072001	Application for meeting resources failed.
111072002	Failed to release meeting resources.
111072003	The meeting is ending.
111072004	The meeting is starting.
111072005	The meeting has not yet started.
111072006	The meeting has ended.
111072007	Site invitation failed.
111072008	Site does not exist.

Error Code	Error Description
111072009	Failed to disconnect the site.
111072010	Coming soon...
111072011	Meeting status incorrect.
111072012	Site control operation failed.
111072013	The cloud meeting room is in use by another meeting.
111072014	The meeting has ended.
111072015	The meeting has not yet started.
111072016	Meeting does not exist.
111072017	Meeting has no attendee.
111072018	Application for chairman password exception.
111072019	Not found site which can be moved exception.
111072020	The current meeting is not a recording meeting. Recording is not supported.
111072021	System processing failure.
111072022	Insufficient recording resources in the system.
111072023	There are no participants in this meeting.
111072024	Operation failed. No sites have joined this meeting.
111072025	Voice meeting does not support this function.
111072026	The voice site does not support this operation.
111072027	Voice sites cannot be displayed in custom continuous presence.
111072028	At least one site must have custom continuous presence configured.
111072029	At most one presentation pane is allowed in custom continuous presence.
111072030	In the voice-activated continuous presence mode, each pane can only support a single user.
111072031	The number used for the site to join the meeting cannot be left blank.
111072032	The number used for the site to join the meeting is too long.
111072033	The format of the number used for joining the meeting is incorrect.

Error Code	Error Description
111072034	Length of site name too long.
111072035	The site role type is outside the allowed range.
111072036	Length of site email address too long.
111072037	Length of site mobile number too long.
111072038	The value for whether a site is muted after it first joins the meeting is outside the allowed range.
111072039	The value for whether to automatically invite a site is outside the allowed range.
111072040	The host's site viewing type is outside the allowed range.
111072041	The value of the continuous presence setting mode is outside the allowed range.
111072042	The polling time is outside the allowed range.
111072043	The pane type cannot be left blank.
111072044	Invalid pane type.
111072045	The value of the switch is outside the allowed range.
111072046	The site name cannot be left blank.
111072047	Site name too long.
111072048	Continuous presence is not supported. Ask the administrator to configure related data on the MCU.
111072049	Response timed out. Try again later.
111072050	Meeting locked.
111072051	The meeting display mode is empty.
111072052	The meeting display mode is outside the allowed range.
111072053	The meeting pane type is outside the allowed range.
111072054	The banner or caption type is empty.
111072055	The banner or caption content is empty.
111072056	The banner or caption content cannot exceed 2,000 bytes.
111072057	The request message body is empty.
111072058	The pane index is greater than the total number of panes.
111072059	Meeting has no host.
111072060	Regular participants cannot perform this operation.

Error Code	Error Description
111072061	You have set host polling and cannot select a specific site to view or set continuous presence.
111072062	You cannot select a site to view on the web page. Perform the operation on the terminal.
111072063	Applying for recording resources...
111072064	Too many failed login attempts. Try again later.
111072065	The meeting ID or password is incorrect. Check the ID and password and try again.
111072066	The enterprise has not purchased any recording storage space.
111072067	Insufficient enterprise recording storage space.
111072068	Failed to start live broadcast. Try again later.
111072069	Not allow to hand up for host.
111072070	The operation is not allowed for guest.
111072071	The operation is only allowed for yourself.
111072072	Not allow to apply host for attendees who do not have meeting control abilities.
111072073	Notify message is expired.
111072074	Only participants with a number registered on HUAWEI CLOUD can be set as the host.
111072075	Hung up site for meeting ended.
111072076	Hung up site by host.
111072077	Hung up site because host deleted site.
111072078	Hung up site because meeting is recreated.
111072079	Hung up site for moving site failed.
111072080	Hung up site for inviting site cross region failed.
111072081	Hung up site for invitation exception.
111072082	Hung up site for joining meeting repeatedly.
111072083	Lock sharing failed.
111072084	This site does not support 1-screen layout.
111072085	Not support realtime subtitle.
111072086	Realtime subtitle pid is null.

Error Code	Error Description
111072087	Invalid realtime subtitle pid.
111072088	Failed to set realtime subtitle.
111072089	Not allow audience to change speaker status.
111072090	Allow/forbid audience to speak only for audience.
111072091	This meeting does not support simultaneous interpretation.
111072092	Interpreter group is empty.
111072093	This meeting has not enabled simultaneous interpretation.
111072094	This site is not interpreter.
111072095	This site has not yet confirmed interpreter identity.
111072096	Invalid site language.
111072097	This site is confirmed interpreter.
111072098	This site listen channel is different from speak channel.
111072099	Failed to set interpretation languages. Try again.
111072100	Failed to set interpretation channel. Try again.
111072101	Max participant amount reached.
111072102	Max allowed handup amount reached.
111072103	Max allowed speaking amount reached.
111072104	Failed to set virtual audio CSD site.
111072105	This meeting does not support cohost.
111072106	This site does not support cohost.
111072107	Host cannot be set to cohost.
111072108	Audience cannot be set to cohost.
111072109	Need to check cohost permission.
111072110	Cohost cannot operate host.
111072111	This site does not support share invitation.
111072201	Hung up site because heart beat failed.
111072202	Insufficient audience cloud meeting room logic resources.
111072203	Insufficient participant cloud meeting room logic resources.
111072204	Insufficient webinar resources, so started failed.
111072205	Only RTC conf support local record.

Error Code	Error Description
111072206	Invalid E2E encryption parameter.
111072207	Not allow to switch role in webinar.
111072208	The client version used by the user is too early. Cannot start local recording.
111072211	Meeting is under AR assist.
111072213	Audience cannot be set to host.
111072214	Rename param contains sensitive words.
111073001	User does not exist.
111073002	Department does not exist.
111073003	Invalid username format.
111073004	Invalid department name format.
111073005	Could not query department.
111073006	Application for anonymous user failed.
111073007	Invalid cloud meeting room package status.
111073008	Failed to Release anonymous user.
111073009	Not support cycle meeting for welinkC.
111073010	Not support cloud meeting room for welinkC.
111073011	Failed to get WeLink token.
111073012	Failed to Get M to M token.
111073013	Invalid webinar cloud meeting package status.
111073014	Max extend times for cloud meeting trial version reached.
111073015	Max extend duration for cloud meeting trial version reached.
111073016	Not support auto extend meeting for cloud meeting trial version.
111074001	This meeting host already exists.
111074002	No meeting host permissions.
111074003	Failed to extend the meeting. Max meeting duration reached.
111074004	Failed to extend the meeting. The service processing is abnormal.
111075001	Failed to start timer.

Error Code	Error Description
111075002	Failed to end timer.
111075003	Json parse failed.
111076001	Released by host.
111076002	Released by portal host.
111076003	Max number of participants reached.
111076004	Insufficient enterprise resources.
111076005	Not answered.
111076006	User does not exist.
111076007	Offline.
111076008	Busy.
111076009	Rejected by user.
111076010	Released by user.
111076011	Insufficient meeting resources in the system.
111076012	Outbound calling disabled.
111076013	Application for address token failed.
111076014	Call failed.
111076015	Max number of participants reached.
111076099	Common error.
111077001	RSE server info does not exist.
111077101	Not support AI record.
111077102	Reapplying for AI record resource.
111077103	Insufficient AI record resource.
111077104	In AI recording, the meeting cannot stop live or recording.
111077201	Record file does not exist or have no permission.
111077202	RSE authentication failed.
111078000	No available region in multi region.
111078001	No available global in multi region.
111078002	Dispatch region error in multi region.
111079000	Failed to phrase big data param query xml.
111079001	Failed to phrase anonymous assign xml.

Error Code	Error Description
111080001	Bad request.
111080002	Insufficient permissions.
111080004	Site data not found or deleted.
111081001	Site is inviting.
111081002	Site meeting does not exist or is ended.
111081003	Failed to apply site resource.
111081004	Failed to release site resource.
111081005	Failed to apply site media resource.
111081006	Authentication failed.
111081007	Meeting is locked.
111081009	Login is locked because max authentication times reached.
111081010	Waiting user restrictions.
111082001	Not support this control.
111082002	No response.
111082003	Site not exist.
111082004	Site unavailable.
111082005	Site busy.
111082006	Site refused.
111082007	Site leave.
111082008	PSTN service is closed.
111082009	SIP invitation timeout.
111083001	RSE does not exist.
111084001	Failed to execute DTMF.
111084002	Get started meeting exception.
111084003	Call MCU side exception.
111084004	Join call exception.
111084005	Invite exception.
111084006	Call terminal side exception.
111084007	Answer exception.
111084008	Common CTL exception.

Error Code	Error Description
111084009	Hangup exception.
111084010	Notify capability exception.
111084011	Update MT exception.
111084012	Negotiate exception.
111084013	Not support this meeting.
111084014	Not allowed join meeting in RTC inviting because guests are not invited.
111089002	Failed to phrase URI join xml.
111090001	Failed to join data meeting.
111090002	Join data meeting overtime.
111100001	Failed to get slider image.
111100002	Slider check failed.
111100003	Invalid random number.
111100004	Invalid slider token.
111100005	Need to check slider.
111100006	Invalid SMS phone number.
111100007	Failed to send verification code.
111100008	Verification code expired.
111100009	Verification code error.
111100010	Max verification code check times reached.
111100011	The uuid is invalid, you need to re-verify the phone number.
111100012	The meeting is not on this site.
111100013	Need to verify the mobile phone number. Mobile number verification is required when an International site user joins a meeting held by a free enterprise on the Chinese mainland site.
111110001	Failed to add IM group.
111110002	Failed to disband IM group.
111110003	Failed to add IM member.
111110004	Failed to remove IM member.
111112001	Failed to enter the waiting room.
111112002	Failed to exit the waiting room.

Error Code	Error Description
111112003	Waiting room cache operation failed.
111112004	Co-hosts cannot be moved into the waiting room.
111112005	Not allowed to enable waiting room.
111112008	Not support this feature according to client capabilities.
112010001	Common failure.
112010002	Null param.
112010003	Participant not found.
112010004	Meeting not found.
112010005	SIP invite information timeout.
112010006	SIP invite information failed.
112010007	SIP information timeout.
112010008	SIP information failed.
112010009	System processing failed.
112010010	System processing failed.
112010011	Failed to invite MRS.
112010012	Failed to invite participant.
112010013	Data meeting join information failed.
112010014	Failed to start meeting.
112010015	Media negotiation failed.
112010016	User rejects.
112010017	User is busy.
112010018	No call permission.
112010019	Unknown callee.
112010020	No user response.
112010021	Join meeting timed out.
112010022	Session has been released.
112010023	Callee is not registered.
112010024	SIP invite timed out.
112010025	User Session timer times out and hangs up.
112010026	The participant bye hangs up on the MRS side.

Error Code	Error Description
112010027	The participant bye hangs up on terminal side.
112010028	No RTP stream hang up.
112100000	Sysportal exception.
112100001	Bad request.
112100002	Illegal request.
112100003	Data not found.
112100004	Data duplication.
112100006	The requested type is not supported.
112100007	Failed to save notification template.
112100008	Failed to save data.
112100009	Failed to query data.
112100010	Failed to delete data.
112100011	Password reset required.
112100012	Incorrect old password.
112100013	The new password cannot be the same as the old password.
112100014	Insufficient password complexity and low security.
112100015	The length does not meet the requirements.
112100016	RSE is in meeting.
112100017	RSE to be deleted.
112100018	Failed to query the meeting list.
112100019	User has been locked out. Try again later.
112100022	The live room channel name exists.
112100023	Failed to modify system configuration items for duplicated meeting ID prefix.
112100024	CONFID prefix can only be added, not modified or deleted.
112100025	The live room channel url exists.
112100026	The live room has been occupied.
112100027	The live room does not exist.
112100028	Live room release failed.
112100029	The request is missing header or param.

Error Code	Error Description
112100030	The Live main stream URL already exists.
112100031	The Live auxiliary stream URL already exists.
112100032	Password is weak.
112100033	The live room is occupied.
112100034	Save part of attendees since max attendees size reached.
112100035	Failed to export data.
112100036	Failed to import data.
112100037	Max file size reached.
112100038	LVS target address exists.
112100039	LVS port existed.
112100040	Not allow to modify global standby config.
112100041	MCU insulation IP address exists.
112100042	MCU insulation IP address cannot be modified.
112100043	SBC address exists.
112100044	Internal exception.
112100045	System config delete exception.
112100046	No ISBC access address.
112100047	Media type need to be HD because the organization enables full HD capability.
112100061	Same interpreter language abbreviation exists.
112100062	Same interpreter language name exists.
112100063	MCU type is MIXED and insulation config is not configured, or MCU meeting exists when modifying MCU connection settings.
112100064	MCU type is MIXED and insulation config is not configured when adding mcu connection settings.
112100065	MCU type is MIXED when modifying MCU insulation config or disbanding enterprise.
112100066	MCU type is MIXED when deleting MCU insulation config.
112100067	This gateway type is incompatible with MCU.
115021001	Insufficient media resource.
115021002	Meeting does not exist.

Error Code	Error Description
115021003	Media resource does not exist.
115021005	Insufficient media bandwidth resource.
115021006	Media device fault.
115022000	Insufficient common logic resource.
115022001	Insufficient meeting resources in the enterprise.
115022002	Insufficient logic port resource.
115022003	Live broadcast resources have not been purchased or are insufficient.
115022004	Media device does not exist.
115023001	Insufficient ID resources.
115024001	RMS service exception.
115025001	The live room has already been occupied.
115025002	The live room does not exist.
115025003	Live room release failed.
115026001	MCU meeting exists.
115029001	Invalid common parameter.
115029002	Null parameter.
115029003	service is not available.
115029004	Configuration exception.
115029005	Duplicately apply resources.
115029006	Waiting for applying resources.
115029999	Unknown error.
118000000	User authentication failed.
118000001	User token authentication failed.
118000002	User authentication account lockout.
200000001	Server is busy. Please try again later.
200000002	Internal error. Please contact SRE.
200000003	Invalid parameter. Please check whether the parameters are valid.
200000004	Illegal request. Please check the value of the request header field X-Auth-Token or X-Access-Token.

Error Code	Error Description
200000005	Forbidden access during the version upgrade.
201020023	This user is already the owner of another corporation and cannot create a new corporation for it.
201040005	Max number of users reached. Please check the purchased meeting users.
201040016	Password security is low. Please set another password.
201040031	Activation code overdue.
201040042	Pre-authentication expired.
201040043	This user is the owner of another corporation and cannot be invited.
201040044	Invalid invite connection.
201040045	User is already in waiting list.
201040046	User already exists.
201040047	Account modification is not allowed.
201050012	Activation code does not exist.
201050015	Invalid activation code.
201050021	Activation failed.
201050022	Terminal does not allow unbinding.
201080000	VMR resource unavailable.
201080006	The host password and the guest password cannot be the same. Please confirm the input parameters.
201080017	Same as meeting password.
201510001	No invite permission to get an invite code.
201510003	Invalid application.
206010000	User name or password error.
206010007	Account is not activated, no permission to log in.
206010010	Failed to get verification code. Please contact SRE.
206010011	Verification code must be filled.
206010012	Verification code check failed.
206010013	Jump login failed. Please contact SRE.
206010022	SSO login failed. Please contact SRE.
206010023	SSO login is not supported.

Error Code	Error Description
206010024	Invalid authentication type.
206010025	APPID verification failed.
206010027	Authentication type error.
206010029	Network error.
206010030	APPID does not allow automatic registration.
206010031	APPID auto registration failed.
206010036	Normal users cannot log in.
206010042	Huawei account authentication failed.
206010057	APPID authentication expires.
206010058	APPID account is not bound.
206010064	Site mismatch.
206010065	Phone number conflict.
206010066	E-mail conflict.
206010070	The number of users has reached the maximum.
206010071	WeChat authentication failed.
206010074	International sites support site changing re-login.
206010075	Account has been unbound.
206020000	Invalid authentication information. Please check the value of the request header field X-Auth-Token or X-Access-Token.
206020001	Token is created by disaster recovery site.
206020002	Token is invalid due to being kicked.
206030000	The user does not exist.
206030001	The verification code is incorrect or has expired. Please obtain a new one.
206030002	Incorrect verification code.
206030003	Failed to send the verification code.
206030004	Try to get a new verification code 180s later.
206030005	The password cannot be changed.
206030006	The old password is incorrect.
206030007	The length of the new password does not meet the requirements.

Error Code	Error Description
206030008	The password complexity does not meet the requirements.
206030009	The new password must be different from the previous old passwords.
206030010	The password cannot contain three or more of the same characters consecutively.
206030011	The password cannot be changed within 5 minutes upon the last password change.
206030012	The password cannot contain the account or the reverse order of the account.
206030013	At least two characters must be different between the new and old passwords.
206030014	Invalid password format.
206030015	The user is locked and will be locked in 60s.
206030016	Have no right to reset other's password.
206030018	The number of password retrieval times in a day has reached the maximum (10 times).
206030019	The number of incorrect verification code inputs have reached the maximum. Please get it again.
206030023	Failed to send verification code. Please contact SRE.
206030028	The system has enabled SSO login and does not support changing the password. Please retry after the system has disabled SSO login.
206030031	Forgot password for Huawei account.
206040000	No corresponding terminal type.
206060008	Sending verification code is locked.
206060009	Slider verification required.
206060010	Invalid slider token.
206060011	Request parameter error.
206060012	Sending SMS is not supported.
206060013	Repeated sending is not supported.
206060014	Invalid verification code.
206060015	Max verification code check times reached.
206060017	Failed to bind Huawei account.
211030046	Not the IdeaHub activation code.

Error Code	Error Description
211030050	auth fail too many times, locked.
211030052	auth fail too many times, permanently locked.
211060003	The maximum number of log upload times has been reached.
411000001	Common failure.
411000002	Parameter error.
411000003	Meeting does not exist.
411000004	A meeting already exists.
411000005	Meeting state error.
411000006	Failed to get device.
411000007	Failed to set device.
411000008	No device available.
411000009	This operation is only supported on mobile.
411000010	Network access error.
411000011	Other supplementary service is running.
411000012	Memory allocation error.
411000013	Initialization failed.
411000014	User does not exist.
411000015	Did not join the data meeting.
411000016	Neither meeting nor call exists.
411000017	SVN port detection failed.
411000018	Failed to write file.
411000019	RTC does not support STG mode.
411000020	Failed to load RTC library. RTC meeting is not supported.
411000021	The meeting is in the audience pause state when changing roles.
411000022	Not in call.
411000023	Meeting or call does not exist.
411000024	Pairing state not allowed.
411000025	Pairing request failed.
411000026	Pairing exceeds limit.

Error Code	Error Description
411000027	Pairing common error.
411000028	Pairing and joining the meeting failed.
411000029	Pairing and joining the meeting is busy.
411000030	Pairing and joining the meeting is invalid.
411000031	Multiple clicks at the same time to pair and join the meeting error.
411000032	Pairing is not established or is being established.
411000033	The camera is not turned on in the third-party capture mode.
411000034	RTC engine creation failed.
411000035	Not in a meeting.
411000036	mute self failed.
411000100	End the meeting with no stream due to disconnection of network.
411000101	End the meeting with no stream because fail to re-join meeting.
411000102	Null pointer exception.
411000103	Parameters cannot be empty.
411000104	Encrypt and decrypt func not match.
411000105	Load user-defined DLLs failed.
411000106	Shimo Docs is not supported.
412100001	The message processing thread is not initialized.
412100002	Parameter error.
412100003	Timeout.
412100004	Memory allocation error.
412100005	XML parsing error.
412100006	DNS resolution error.
412100007	Request message failed.
412100008	Authentication failed.
412100009	Server error.
412100010	Account is locked.
412100011	Create timer error.

Error Code	Error Description
412100012	Server CA certificate verification failed.
412100013	Network error.
412100014	Server redirect.
412100015	Account is not activated.
412100016	JSON parsing error.
412100017	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
412100018	Disconnected by the proxy. Probably because the server address is misconfigured.
412100019	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.
412100020	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
412100021	The authentication process failed. The proxy user name or password is incorrect.
412100022	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.
412100023	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
412100024	The authentication process failed. Unable to resolve gateway.
412100025	The authentication process failed. Unable to resolve host.
412100026	The authentication process failed. Unable to connect.
412100027	The authentication process failed. Operation times out.
412100028	Message length too long.
412100029	Base64 encryption failed.
412100030	XML parsing error.
412100031	Secure function error.
412100032	Firewall detection parameter error.
412100033	Failed to create STG tunnel.
412100034	Failed to update STG service.

Error Code	Error Description
412100035	Encryption failed.
412100036	Do not allow duplicate downloads.
412100037	File operation failed.
412100038	The request message returns empty.
412100039	The number of detection servers is 0 error.
412100040	Failed to get local IP address.
412200001	Internal error.
412200002	Parameter error.
412200003	Network timeout.
412200004	Network Error.
412200005	Need to bind mobile phone.
412200006	Need to bind email.
412200007	Has initialized already.
412200008	State machine execution failed.
412200009	Failed to start timer.
412200010	The user is prompted to change the password when logging in for the first time.
412200011	Unknown authentication type.
413000001	Common error.
413000002	Parameter error.
413000003	Memory allocation error.
413000004	System error.
413000005	Message sending error.
413000006	Get system configuration error.
413000007	Physical network error.
413000008	Network access error.
413000009	Create timer error.
413000010	Call state error.
413000011	Other operation in progress error.
413000012	Requesting the master to start call error.

Error Code	Error Description
413000013	Requesting audio resource error.
413000014	Other supplementary service is running.
413000015	Record call error.
413000016	Media process error.
413000017	Maximum number of calls reached.
413000018	SIP account ID does not exist.
413000019	Call ID does not exist.
413000020	Failed due to registering.
413000021	Registration failed.
413000022	Deregistration failed.
413000023	Setting account information error.
413000024	Setting SIP account error.
413000025	Reporting SIP account information error.
413000026	Server information error.
413000027	SIP account information error.
413000028	SIPC execution error.
413000029	Not registered error.
413000030	Call Sip interface to subscribe error.
413000031	Canceling subscription error.
413000032	Subscribing error.
413000033	Only one local meeting is allowed.
413000034	Local meeting is not created.
413000035	The participant line does not match the chair account.
413000036	Local meeting state error.
413000037	Failed to report the linkage state of the IP Phone.
413000038	Meeting ID does not exist.
413000039	Video hold error.
413000040	Video unhold error.
413000041	The maximum number of server meetings reached.
413000042	Get AA random number error.

Error Code	Error Description
413000043	AA login error.
413000044	Meeting type mismatch.
413000045	Failed to start video meeting.
413000046	AA no master server.
413000047	Password error.
413000048	Username error.
413000049	User is logged in.
413000050	Account is locked.
413000051	Terminal type mismatch.
413000052	Parsing XML error.
413000053	Connecting to server error.
413000054	Get media configuration error.
413000055	Get service permission error.
413000056	Insufficient service permission.
413000057	Network environment error.
413000058	Service conflict.
413000059	Connection timeout.
413000060	Unknown error.
413000061	Add ringing information error.
413000062	Delete ringing information error.
413000063	Create ringing number error.
413000064	VVM parameter error.
413000065	Getting registered service error.
413000066	Getting voicemail error.
413000067	Attendee already exists.
413000068	Attendee does not exist.
413000069	Create server video meeting window error.
413000070	Video window already exists.
413000071	Getting meeting list error.
413000072	Operating requires host privileges.

Error Code	Error Description
413000073	No video device to operate.
413000074	Refresh registration is not turned off.
413000075	Online state report error.
413000076	Network address subscription report error.
413000077	Telepresence account was force unregistered. Information report error.
413000078	TLS root certificate error.
413000079	AD authentication error.
413000080	Meeting list is getting.
413000081	Prohibited calls.
413000082	The maximum number of calls has been reached.
413000083	The maximum number of encrypted calls has been reached.
413000084	The maximum number of video calls has been reached and needs to downgrade to audio.
413000085	H323 account ID does not exist.
413000086	H323 account information error.
413000087	H323 account information report failed.
413000088	Insufficient local resources.
413000089	The calling protocol is not supported.
413000090	Setting H323 account information error.
413000091	Mediatrix meeting access number reporting failed.
413000092	Mediatrix VMR information reporting failed.
413000093	IMS meeting list information reporting failed.
413000094	TUP initialization is not complete.
413000095	Message return value error.
413000096	Message content too large error.
413000097	Secure function error.
413000098	message response is empty error.
413000099	Account is not enabled.
413000100	Create call control implement error.
413000101	Already in call.

Error Code	Error Description
413000102	Call does not exist.
413000103	Failed to get media configuration information.
413000104	Failed to set third-party capture. Calling HME_V_Capture_InputData failed.
414100001	Common error.
414100002	Parameter error.
414100003	Timeout.
414100004	Memory allocation error.
414100005	DNS resolution error.
414100006	Request message failed.
414100007	Authentication failed.
414100008	Server error.
414100009	Create timer error.
414100010	Start timer error.
414100011	The meeting control block is full. Please release the control block that is not in use.
414100012	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
414100013	Disconnected by the proxy. Probably because the server address is misconfigured.
414100014	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.
414100015	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
414100016	The authentication process failed. The proxy user name or password is incorrect.
414100017	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.
414100018	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
414100019	Curl proxy exception.
414100020	Curl host exception.

Error Code	Error Description
414100021	Curl connection exception.
414100022	Curl operation timed out.
414100023	Message length too long.
414100024	Failed to create thread.
414100025	Secure function error.
414100026	JSON parsing failed.
414100027	WS token is empty.
414100028	Return JSON data error.
414100029	Failed to create meeting control block.
414100030	Failed to get meeting control block.
414100031	Failed to get meeting control block by CallId.
414100032	Destroying the meeting control block failed.
414100033	Temporary creating meeting information not found.
414100034	Failed to get participant ID.
414100035	Failed to get MT by participant ID.
414100036	Failed to get self information by participant ID.
414100037	Failed to get participant information by MT.
414100038	Manual invitation required.
414100039	The major parameters of the meeting have been reported.
414100040	Subtitles are not supported.
414100041	Meeting Hang Up - Timeout.
414100042	Meeting Hang Up - No Streaming.
414100043	Meeting hung up - Hung up by the host.
414100044	Meeting Hang Up - Meeting has ended.
414100045	End of meeting due to leave meeting.
414100046	Message queue processing function registration failed.
414100047	Message queue processing function deregistration failed.
414100048	Meeting ended due to reject meeting.
414100049	Meeting ended by self.
414100050	The meeting control module is not initialized.

Error Code	Error Description
414100051	The watching special site reaches the maximum.
414100052	The watching HD site reaches the maximum.
414100053	The watching SD site reaches the maximum.
414100054	The watching specification reaches the maximum.
414100055	Watching internal errors.
414100056	Duplicated watch render.
414100057	HTTP request error.
414100058	WebSocket request timeout.
414100059	Loading failed.
414100061	The meeting ends due to the timeout of guest waiting before meeting or the timeout of the meeting control heartbeat.
414100062	The meeting ends due to being canceled.
414100063	The meeting ends due to network error when guest waiting before meeting.
415000001	DB is not initialized.
415000002	Common failure.
415000003	Proxy detection has not been completed.
416000001	Invalid parameter.
416000002	Track module is not initialized.
416000003	Track event does not exist.
416000004	Not logged in.
416000005	Upload is not enabled.
419100001	Invalid parameter.
419100002	Incorrect URI.
419100003	Memory allocation failed.
419100004	SDP error.
419100005	Connection does not exist.
419100006	Connection failure.
419100007	Operation forbidden.
419100008	State error.

Error Code	Error Description
419100009	No corresponding line data.
419100010	No corresponding registered instance.
419100011	No corresponding call instance.
419100012	No corresponding subscription instance.
419100013	No corresponding Refer instance.
419100014	No corresponding DIM instance.
419100015	Failed to create header.
419100016	Failed to parse header.
419100017	Header not found.
419100018	No SDP message body.
419100019	Failed to get capability.
419100020	Failed to compare capability.
419100021	Failed to open logical channel.
419100022	Encoding SDP failed.
419100023	Decoding SDP failed.
419100024	Negotiate to unsupported SDP.
419100025	TPTD initialization failed.
419100026	TPT initialization failed.
419100027	TXN initialization failed.
419100028	UA initialization failed.
419100029	GLUE initialization failed.
419100030	HLLM initialization failed.
419100031	VCOM initialization failed.
419100032	SDP initialization failed.
419100033	Multiple instance error.
419100034	Insufficient registration control blocks.
419100035	Insufficient subscription control blocks.
419100036	Insufficient call control blocks.
419100037	Insufficient IM control blocks.
419100038	Failed to parse URI xml to string.

Error Code	Error Description
419100039	Encryption negotiation failed.
419100040	Local capabilities are not configured.
419100041	BFCP token error.
419100042	DNS resolution error.
419100043	Failed to get subscription state.
419100044	IPv4 is not supported.
419100045	IPv6 is not supported.
419100046	Unsupported host type.
419100047	Failed to get timer.
420000001	Cannot receive sharing invitations.
420000002	ReportDTO parameter verification failed.
420000003	Report folder creation failed.
420000004	Report folder compression failure.
420000005	The path of the ZIP file to be uploaded is empty.
420000006	The size of the ZIP file to be uploaded reaches the maximum.
420000007	The same person reported more than 100 times within 24 hours.
430100001	Common Error.
430100002	Invalid parameters.
430100003	SIP connection check failed.
430100004	Timeout.
430100005	In process.
430100006	Not initialized or initialization is not complete.
430100007	Not supported in this release.
430100008	Operation interrupt.
430100009	Contact not found.
430100010	Args length overrun.
430100011	APPID info illegal.
430100012	E2EEncrypt algorithm error.
430200001	unlogin.

Error Code	Error Description
430200002	Repeated login.
430200003	SIP connection timeout.
430200004	Invalid login password.
430200005	Password or account empty.
430300001	The calling number, account number or third-party account number cannot be empty.
430300002	Call account empty.
430300003	Call nickname empty.
430400001	Password required to join the meeting.
430400002	Time zone error.
430400003	The meeting duration is less than 1.
430400004	Joining the conference is interrupted.
430400005	Password input at least 4 digits.
430400006	User voluntarily cancels.
430400007	The guest password illegal.
430400008	Not in conference or in call.
430400009	Already exist conf or call.
430400010	ConfId empty.
430400011	Subject too long.
430400012	VMR host password length illegal.
430400013	VMR name empty.
430400014	Conf starttime early.
430400015	Share is locked.
430400016	Not in data conference.
430400017	Role not support operation
430500001	HTTP request, server exception.
430500002	HTTP request, Connecting to the server times out.
430500003	Network unavailable.
510000403	Server forbidden.
510000404	Not found.

Error Code	Error Description
510000480	Temporary unavailable.
510000486	Busy here.
510000487	Request terminated.
510000488	Request is not acceptable here.
510000603	Decline.
510000841	Hangup without toast.
510000842	Conference is locked.
910000001	Server error.
910000002	SFU service failure.
910000003	Service unavailable 503.
910000004	Internal error.
910000005	Kicked off.
910000006	Signature expired.
910000007	Reconnect timeout.
910000008	Network detection.
910000009	User is removed.
910000010	The room is dismissed.
990000001	Internal error.
990000002	Message too large.
990000003	Insufficient memory.
990000004	Failed to send message synchronously.
990000005	Parameter error.
990000006	Call ID order error.
990000007	Failed to set local screen.
990000008	Failed to open remote screen.
990000009	Device configuration failed.
990000010	Initializing.
990000011	Deinitializing.
990000012	Uploading log.
990000013	Failed to get media port.

Error Code	Error Description
990000014	The maximum number view window reached .
990000015	Media negotiation failed.
990000016	Server no response.
990000017	Role switch failed.
990000018	Failed to join room.
990000019	Failed to join room. Status is busy.
990000020	Failed to join room. Server error.
990000021	Failed to join room. Service unavailable.
990000022	Failed to join room. Authentication failed.
990000023	Failed to join room. Authentication retry.
990000024	Failed to join room. Clock synchronization.
990000025	Failed to join room. URL error.
990000026	Kicked off.
990000027	Share failed.
990000028	Currently in external media output mode, this operation is forbidden.
990000029	Reconnection failed.
990000030	Server breaks down.
990000031	Signature has expired.
990000032	Failed to set remote window mode.
990000033	Failed to subscribe or unsubscribe audio.
990000034	Failed to connect to other room.
990000035	Failed to disconnect other room.
990000036	Role switching is not allowed.
990000037	Currently in third-party capture mode, this operation is forbidden.
990000038	Failed to set third-party audio capture.
990000039	Failed to set third-party video capture.
990000040	Failed to set share sound switch.
990000041	Failed to start or stop upstream audio stream.
990000042	Failed to start or stop upstream video stream.

Error Code	Error Description
990000043	User is removed.
990000044	The room is dismissed.
990000045	Failed to set remote View.

7.7 Version Updates

7.7.1 100.5.5 Updates

1. Changed the **isForcedVpn** parameter in the **HwmNetWorkModelInfo** struct to the **HwmNetConnectType** enum. For details, see [Table 7-24](#).
2. Changed the type of the **operatableUiMonitor** parameter in the **HwmStartShareInfo** struct from enum to struct, and changed the value assignment method to **operatableUiMonitor.monitor**. For details, see [Table 7-102](#).

7.7.2 100.3.7 Updates

Fixed issues and provided more stable experience.

7.7.3 100.3.6 Updates

Added the enumerated value **HWM_ENABLE_FEATURE_SUPPORT_GUEST_INVITE** for the **EnableFeature** API for configuring meeting functions. For details, see [Enabling a Function](#).

7.7.4 90.12.7 Updates

Fixed issues and provided more stable experience.

7.7.5 90.12.5 Updates

1. Added the **ShowToast** API for displaying a toast message. For details, see [Displaying a Toast Message](#).
2. Added the **GetMainWindowInfo** API for obtaining the main window information. For details, see [Obtaining Information About the Main Window](#).
3. Deprecated the **OnGetVmrListResult** notification and added the **OnGetVmrInfoListResult** notification to notify you of the cloud meeting room list. For details, see [Obtaining the Cloud Meeting Room List](#).
4. Added the **confResType** parameter to **HwmCreateConfInfo** (creating a meeting) and **HwmBookConfParam** (scheduling a meeting). For details, see [Table 7-87](#) and [Table 7-133](#).
5. Added the **OnShareVmrInfoNotify** notification to notify you of information about shared cloud meeting rooms. For details, see [Notification of Sharing Cloud Meeting Rooms](#).

6. Added the participant UUID parameter to **HwmCalleeInfo**. For details, see [Table 7-127](#).
7. Added the **GetErrorMessage** API for obtaining an error message, which can be used for prompt. For details, see [Obtaining an Error Message](#).
8. Added the **SetGuaranteedIpAddresses** API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. For details, see [Setting Guaranteed IP Addresses for Meeting Control](#).
9. Added the following meeting end error codes to **HwmConfEndReason**:
HWM_CONF_END_REASON_OVER_MAX_PARTICIPANT_NUMBER,
HWM_CONF_END_MANAGER_SHARE_VMR_NOT_ENOUGH, and
HWM_CONF_END_MANAGER_NO_UPSCALE_VMR. For details, see [Table 7-174](#).
10. Added the **OnP2PConfRecordNotify** notification to notify you of instant meeting records. For details, see [Notification of Instant Meeting Records](#).
11. Added the **copy_audience_conf_info** parameter to the **config** API to support the injection of the button used to copy the link to a webinar for attendees. For details, see [Table 7-127](#).

7.7.6 90.9.5 Updates

1. Added the **concurrentParticipants** parameter (maximum number of participants allowed in a meeting) to **HwmCreateConfInfo** (creating a meeting), **HwmBookConfParam** (scheduling a meeting), **HwmEditConfParam** (editing a meeting), and **HwmConfDetail** (meeting details). For details, see [Table 7-87](#), [Table 7-133](#), [Table 7-141](#), and [Table 7-146](#).
2. Added the **vmrId** parameter (ID of meetings held in a cloud meeting room) to **HwmConfIncomingInfo** (incoming meeting details). For details, see [Table 7-169](#).
3. Added the **SetLogPath** API for setting the log storage path. For details, see [Setting the Path for Saving Logs](#).

7.7.7 90.7.6 Updates

1. Fixed issues and provided more stable experience.

7.7.8 90.7.5 Updates

1. Added the **StartP2pConf** API for starting an instant meeting. For details, see [Starting an Instant Meeting](#).
2. Added **isP2PConf** (whether the meeting is an instant meeting) to the **HwmConfStateInfo** parameter in the meeting status notification **OnConfState** and the **HwmConfEndInfo** parameter in the meeting end notification **OnConfEndedNotify**. For details, see [Table 7-172](#) and [Table 7-192](#).
3. Added the **DeleteSelfAvatar** API for deleting a user-defined profile picture. For details, see [Deleting a Profile Picture](#).
4. Added the **GetUserSavePath** API for obtaining the save path of a user. For details, see [Obtaining the Path for Saving User Files](#).

5. Added the enumerated values **HWM_ENABLE_FEATURE_SUPPORT_DISCONNECT_AUDIO** (disconnecting audio), **HWM_ENABLE_FEATURE_DISCONNECT_AUDIO_TO_JOIN_CONF** (whether to join a meeting without audio), and **HWM_ENABLE_FEATURE_CPU_REDUCTION_DETECT** (whether to detect CPU frequency reduction) to the **EnableFeature** parameter of the API for configuring meeting functions. For details, see [Table 7-15](#).

6. Added the error codes **HWM_CONF_END_REASON_CONF_NUM_OVER_MAX_ALLOWED**, **HWM_CONF_END_REASON_CALLEE_REFUSED_END_CONF**, **HWM_CONF_END_REASON_CALLEE_TIMEOUT_END_CONF**, and **HWM_CONF_END_FORCE_OPEN_CAMERA_HANGUP** to **HwmConfEndReason** (meeting end reason). For details, see [Table 7-174](#).

7. Added the domain field to the **HwmJoinConfByRandomInfo** parameter of the API for joining a meeting using a random code. For details, see [Table 7-96](#).

7.7.9 90.6.5 Updates

1. Deprecated the **StartCall** API.

2. Added the **customInfo** field (user-defined information) to **HwmBookConfParam** (scheduling a meeting), **HwmEditConfParam** (editing a meeting), **HwmCreateConfInfo** (creating a meeting), **HwmConfInfo** (meeting information), and **HwmConfListInfo** (meeting list). For details, see [Table 7-87](#), [Table 7-133](#), [Table 7-141](#), [Table 7-175](#), and [Table 7-179](#).

3. Added the **isSupportMultiAppLogin** field (whether to support login to multiple applications on the same device) to **HwmInitInfo** in the **Init** API. For details, see [Table 7-3](#).

4. Added the enumerated values **HWM_ENABLE_FEATURE_DEFAULT_SHARE_AUDIO** (disconnecting audio), **HWM_ENABLE_FEATURE_VOICEPRINT_NOISE_REDUCE** (voice shield) to the **EnableFeature** parameter of the API for setting meeting functions. For details, see [Enabling a Function](#).

5. Added **OnPoorNetworkQualityInfoNotify** for notifications about poor network connection. For details, see [Poor Connection Notification](#).

6. Added the error codes **HWM_CONF_END_REASON_PARTICIPANT_CONF_NOT_EXIST**, **HWM_CONF_END_REASON_END_EXPIRATION**, **HWM_CONF_END_REASON_SDK_CHAIR_END_CONF**, **HWM_CONF_END_REASON_SDK_TIMEOVER_END_CONF**, and **HWM_CONF_END_REASON_RTC_SDK_NETWORK_FAILED**. For details, see [Table 7-174](#).

7. Added the audio and video decoupling plug-in to the **Meeting-Workspace-Plugin** folder. For details, see [SDK Integration](#).

8. Added error code 412100044 indicating that the server is degraded. After receiving this error code, you can continue to call the API to join a meeting offline. (For details about the adaptation mode of this error code, see the demo.)

7.7.10 80.15.21 Updates

1. Fixed issues and provided more stable experience.

7.7.11 80.15.5 Updates

1. Added **OnConfEndedNotify** for meeting end notifications. For details, see [Meeting End Notification](#).
2. Added the **isForcedVpn** field (whether to forcibly use a VPN) to the **HwmNetWorkModeInfo** parameter in the API for setting the network mode. For details, see [Table 7-24](#).

7.7.12 80.13.6 Updates

1. Fixed issues and provided more stable experience.

7.7.13 80.13.5 Updates

1. Added the **SetLanguageWithCode** API for setting the SDK language. For details, see [Table 7-15](#).

7.7.14 80.12.7 Updates

1. Fixed issues and provided more stable experience.

7.7.15 80.12.6 Updates

1. Added the enumerated value **HWM_ENABLE_FEATURE_CONFIRM_RECORD** (whether to display the recording confirmation prompt) to the **EnableFeature** parameter. For details, see [Table 7-15](#).

7.7.16 80.12.5 Updates

1. Added the **UploadSelfAvatar** API for uploading a profile picture. For details, see [UploadSelfAvatar](#).
2. Added the **OnConfIsShareLockedChanged** notification to notify whether sharing is locked. For details, see [Notifications for Sharing Lock Status Changes](#).
3. Added the **enableShowAddressBookStructure** parameter (whether the corporate directory is displayed) to **HwmCorpConfigInfo** in the enterprise configuration change notification **OnCorpConfig**. For details, see [Table 7-162](#).
4. Added the error code **111072504** **HWM_CONF_END_REASON_PARTICIPANT_REACH_MAX_NUM** (The meeting is ended because max. participants in a single meeting reached). For details, see [Table 7-174](#).

7.7.17 80.10.5 Updates

1. Added the **joinConfRestrictionType** and **isOpenWaitingRoom** parameters to **ChangeVmrInfoParam** and **HwmVmrInfo**.
For details, see [Table 7-130](#) and [ChangeVmrInfo](#).

2. Added the **SetShareScreenPermission** API for setting the sharing permission. For details, see [SetShareScreenPermission](#).

7.7.18 80.9.5 Updates

1. Changed the **subConfUUID** parameter to **subConfID** in the **CancelSubCycleConf** API for canceling a recurring meeting. For details, see [Table 7-154](#).
2. Discarded the **cycleCount** parameter in the recurring meeting details of the **BookCycleConf** API for scheduling a recurring meeting series and the **ModifyCycleConf** API for editing a recurring meeting series. For details, see [Table 7-149](#).
3. Added the enumerated value **HWM_ENABLE_FEATURE_BREAKOUT_CONF** to the **EnableFeature** API for enabling a function. For details, see [Table 7-15](#).
4. Added the **isInBreakoutSubConf** parameter to **HwmConfInfo** of meeting information. For details, see [Table 7-175](#).

7.7.19 80.8.5 Updates

1. Detailed error codes and added error code 10011 indicating that the authentication information has expired. For details, see [Common Error Codes](#).
2. Added the **isCreator** parameter indicating whether the user is the meeting scheduler to the **HwmConfInfo** parameter of the **OnConfInfo** API. For details, see [Meeting Details Notification](#).
3. Added the **isLiveOn** parameter to **HwmConfDetail** and **HwmEditConfParam**. For details, see [Obtaining Meeting Details](#) and [Editing a Meeting](#).

Table 7-201 Mapping between error codes of the old and new versions

Error Code in 80.7.5 and Earlier Versions	Error Code in 80.8.5 and Later Versions	New Error Code Description
10006	10006	The username or password is incorrect.
	206010025	Failed to verify the app ID.
	206030000	The user does not exist.
20001	20001	Incorrect meeting ID or password.
	111070005	The meeting does not exist.
	111070006	The personal cloud meeting room does not exist.
	111070010	You do not have the permissions required to view the meeting.

Error Code in 80.7.5 and Earlier Versions	Error Code in 80.8.5 and Later Versions	New Error Code Description
	111081002	The meeting does not exist or has ended.
20015	20015	More participants than allowed by the cloud meeting room package.
	111072101	More participants than allowed.

7.7.20 80.7.5 Updates

1. Added the **ShowSettingWindow** API for displaying the settings window. For details, see [Displaying the Settings Window](#).
2. Added the **moveall_to_waitingroom** parameter of moving all participants to the waiting room to the **Config** API. This button can be hidden. For details, see [Configuring the UI](#).
3. Added the **participant_detail** parameter of injecting the participant profile to the **Config** API and added the participant details button **HWM_CLICK_INJECT_BTN_PARTICIPANT_DETAIL** with data of **HwmConfAttendee** to the **OnClickInjectBtn** notification. For details, see [Configuring the UI](#) and [Click Injection Notification](#).
4. Added the screen settings item **HwmScreenSettingTab** to **HwmSettingWindowConfig** and moved the dual-screen setting item from **HwmNormalSettingTab** to **HwmScreenSettingTab**. For details, see [Customizing the Settings Screen](#).
5. Added **isOtherCorpConf** indicating whether the meeting is initiated by an external enterprise to the **HwmConfInfo** parameter in the **OnConfInfo** notification. For details, see [Meeting Details Notification](#).
6. Added the enumerated values **HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_NAME_CHANGE** (username change) and **HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_STATUS_CHANGE** (user status change) to the **HwmUserCorpInfoNotifyType** parameter in the enterprise information change notification (**OnUserCorpInfo**). For details, see [Changing Enterprise Information](#).
7. Added the **accountId** (Huawei Cloud Meeting account) to the **HwmConfAttendee** parameter of the **AddAttendee** API. For details, see [Inviting a Participant](#).
8. Added error codes. For details, see [Common Error Codes](#).
9. Added the error code indicating that the maximum number of participants in a cloud meeting room package has been reached (**HWM_CONF_END_REASON_NUM_OF_PAR_EXCEEDS_UPPER_LIMIT**). For details, see [Meeting Status Notification](#).

10. Added the call end notification **OnCallRecordInfo**.

7.7.21 80.5.11 Updates

1. Added the **statusBar** parameter for hiding the button on the recording status bar to the **Config** API. For details, see [Configuring the UI](#).
2. Added the **DisableVoicePrompts** API for disabling prompt tones. For details, see [Disabling Prompt Tones](#).

7.7.22 80.5.5 Updates

1. Added **HWM_CONF_END_REASON_SERVER_ERROR** (server exception) to **HwmConfEndReason** (reasons for ending a meeting). For details, see [Table 7-174](#).

7.7.23 70.16.5 Updates

1. Added recurring meeting APIs. For details, see [Scheduling a Recurring Meeting Series](#), [Editing a Recurring Meeting Series](#), [Canceling a Recurring Meeting Series](#), [Editing a Recurring Meeting](#), and [Canceling a Recurring Meeting](#).
2. Added **isStopConflictConf** to the **HwmJoinConfByIdInfo** API for joining a meeting, so you can forcibly end a meeting that conflicts with the current cloud meeting room. For details, see [Joining a Meeting](#).
3. Added the **Config** API for configuring custom buttons. Level-2 menus can be added. For details about the API, see [Configuring the UI](#).
4. Added error codes. For details, see [Common Error Codes](#).
5. Added the following buttons to the **Config** API: **share_strategy** (shared image quality policy, that is, definition first or fluency first), **share_hide_video** (hiding the video window during screen sharing), **share_audio** (sharing computer sound during screen sharing), and **copy_conf_info** (copying meeting information). The first three buttons can be hidden, and the last button supports configuration injection. For details, see [Configuring the UI](#) and [Table 7-166](#).
6. Added enumerated values **HWM_CONF_ROLE_AUDIENCE** (attendee), **HWM_CONF_ROLE_COHOST** (co-host), and **HWM_CONF_ROLE_WAITING** (waiting room member) to the meeting role **HwmConfRole**. For details, see [Table 7-176](#).

7.7.24 70.14.5 Updates

1. Added the **SetNetworkMode** API for configuring the network mode. For details, see [Setting the Network Mode](#).
2. Added **deptCode** (department ID) to the **HwmAppIdAuthInfo** parameter of the login API. For details, see [Login](#).
3. When scheduling a meeting, you can allow guests to join the meeting at the time you specify before the start time. For details, see [Scheduling a Meeting](#).

7.7.25 70.13.5 Updates

1. Added the **HwmLoginResult** parameter to the **OnLoginResult** and **OnLoginBySSOResult** callbacks and added the **HwmLogoutResult** parameter to the **OnLogoutResult** callback. For details, see [Account Operations](#). If an earlier version is upgraded to 70.13.5, the definition of the callback functions needs to be modified.
2. Changed the file name extension of WinUI logs to .txt, including **hwm_winconfui.txt**, **hwmSdk.txt**, **hwmSdkAgent.txt**, and **hwmSdkAgent32.txt**.
3. Added the **isUploadKeyLog** parameter (whether to automatically collect logs) to the **Config** API. For details, see [Configuring the UI](#).
4. Added **preferredCamera** (list of preferred cameras) to the **HwmInitInfo** parameter of the **Init** API. For details, see [Initializing the SDK](#).
5. Added the **AVDeviceCtrl** API and the **OnAVDeviceCtrlResult** result callback for controlling audio and video devices, and the **OnAVDeviceCtrlStateChanged** notification of device status changes. For details, see [Controlling Audio and Video Devices](#) and [Audio and Video Device Status Notification](#).
6. Added the button customization in the **Config** API. The bottom and sharing toolbars can be dynamically refreshed. For details, see [Configuring the UI](#).

7.7.26 70.12.6 Updates

1. Fixed an issue where the video definition cannot be restored after the network is restored.
2. Fixed the issue of hiding polls.

7.7.27 70.12.4 Updates

1. Added **duration** (optional, meeting duration) to the **HwmCreateConfInfo** parameter of the **CreateConf** API. For details, see [Creating a Meeting](#).
2. Added the **ConfigSettingWindow** API for customizing the settings screen. For details, see [Customizing the Settings Screen](#).
3. Added the **OnUserCorpInfo** notification of enterprise information updates. For details, see [Changing Enterprise Information](#).

7.7.28 70.11.5 Updates

1. Added **logKeepDays** (log storage duration) to the **HwmInitInfo** parameter of the **Init** API.

For details, see [Initializing the SDK](#).

7.7.29 70.10.5 Updates

1. Added the **isHideTransferHostBeforeLeave** parameter (whether to hide the button of appointing a new host when a host leaves a meeting) to the **Config** API.

For details, see [Configuring the UI](#).

7.7.30 70.9.5 Updates

1. Added the SSO login API. For details, see [SSO](#).

7.7.31 70.8.6 Updates

1. Added the API for refreshing custom button settings. For details, see [Updating Custom Button Configurations](#).
2. Fixed issues and provided more stable experience.

7.7.32 70.8.5 Updates

1. The participant list (including the webinar) can be obtained. For details, see [Obtaining the Participant List](#).
2. Audio data streams can be obtained. For details, see [Obtaining Audio Data Streams](#).

7.7.33 70.7.5 Updates

1. Video mirroring is supported. After this function is enabled, you can view your own image effect.
2. 32-bit and 64-bit SDKs are available. For details, see [Getting Started](#).
3. The meeting control toolbar can be customized. For details, see [Configuring the UI](#).
4. Background replacement and blurring are supported.
5. During continuous presence broadcast, the shared screen can now be displayed as a small feed, and the participant video screen and the shared screen can be switched.
6. The [Setting a Sharing Policy](#) and [Setting Audio Sharing](#) APIs are added.

7.7.34 70.6.5 Updates

- Added the API for displaying the main window of a meeting. For details, see [Displaying the Main Meeting Window](#).
2. You can now hide participants without video in meetings.
 3. When an authorized user joins a meeting that only allows specific users to join the meeting or that is locked, the error code is reported in OnConfState (reason for leaving the meeting), instead of the callback of joining the meeting. For details, see [Meeting Status Notification](#).

7.7.35 70.5.8 Updates

1. Optimized the visual experience during meetings.

7.7.36 70.4.5 Updates

1. Added the description of response parameters to the API for scheduling a meeting. For details, see [Scheduling a Meeting](#).

3. Added the API for obtaining the current user status. For details, see [Obtaining a User Status](#).
3. Added the configuration of hiding the security menu, caption function, and button of locking sharing. For details, see [Configuring the UI](#).
4. The host can invite others to share content and quickly cancel the sharing.
5. Installation and use in Arabic file paths are supported.
6. Optimized the size of meeting logs.

7.7.37 70.3.5 Updates

1. Optimized participant information export during meetings.

7.7.38 60.15.5 Updates

1. Added the error code `HWM_AGENT_ERR_NOT_INITED_END` indicating that the initialization is not performed or is not complete. If the initialization callback result is not returned, any other APIs will fail to be called.
2. Added the function of hiding the **External** label in the participant list. For details, see [Enabling a Function](#).
3. Added the function of hiding the pop-up window for incoming calls and meetings. For details, see [Configuring the UI](#).
5. Added the local recording function. The host can control participants' local recording permissions and participants can configure the path for storing recordings. For details, see [Setting the Path for Saving User Files](#).
6. Added the **Security** module.

7.7.39 60.13.2 Updates

1. Added the function of changing the name of the **HwmSdk.exe** file in the **HwmSdk** folder before initialization.
2. Changed the value of **exePath** in the initialization API from the absolute path of the **HwmSdk** folder to the absolute path of the .exe file in UTF8 format. For details, see [Table 7-3](#).
3. Added the **logPath** and **userDataPath** parameters to the initialization API to specify the paths for storing log files and user data files. The format is **UTF8**. For details, see [Table 7-3](#).

7.7.40 60.12.5 Updates

1. During meeting creation, the meeting room (**vmrId**) and participant scope (**callInRestriction**) can be specified. For details, see [Table 7-87](#).
2. Added the function of customizing the meeting information windows. For details, see [Figure 7-40, Displaying Meeting Information Box Notification](#), and [Destroying a Meeting Information Box](#).
3. Added the function of querying the profile picture of a user from the external corporate directory. When the camera is disabled during a meeting, the profile picture is displayed. For details, see [Querying Profile Pictures in the External Address Book](#).

7.7.41 60.11.6 Updates

- Added the **isAutoRecord** parameter to enable automatic recording for meetings.
Note: Whether to automatically start recording after a meeting starts. The function is disabled by default. Meeting recording must be enabled if automatic recording is enabled.
 - Added the API for creating a meeting. For details, see [Table 7-87](#).
 - Added the API for scheduling and editing a meeting. For details, see [Table 7-133](#).

7.7.42 60.10.5 Updates

- Added the login site type to the initialization API. For details, see [Initializing the SDK](#).
- Allowed users to join a meeting in random mode. For details, see [Joining a Meeting Using a Random Code](#).
- Supported SP authentication and login, and added the **corpId** field. For details, see [Login](#).
- Optimized the watermark display. For details, see [SetWaterMark](#).

7.7.43 60.8.1 Updates

- Added app IDs during initialization and optimized app differentiation.
- Added the following APIs: app ID login, meeting scheduling, meeting editing, meeting list query, meeting details query, and meeting cancellation.

7.8 Change History

Table 7-202 Change history

Released On	Version	Change Description
2024-06-13	100.5.5	1. Changed the isForcedVpn Bool in the HwmNetWorkModelInfo struct to the HwmNetConnectType enum. 2. Changed the type of the operableUiMonitor parameter in the HwmStartShareInfo struct from enum to struct, and changed the value assignment method to operableUiMonitor.monitor . For details, see 100.5.5 Updates .
2024-05-21	100.3.7	Fixed issues and provided more stable experience. For details, see 100.5.5 Updates .

Released On	Version	Change Description
2024-04-23	100.3.6	Added the enumerated value HWM_ENABLE_FEATURE_SUPPORT_GUEST_INVITE for the EnableFeature API used to configure meeting functions. For details, see 100.5.5 Updates .
2024-02-17	90.12.7	Fixed issues and provided more stable experience. For details, see 90.12.7 Updates .

Released On	Version	Change Description
2024-01-15	90.12.5	<p>1. Added the ShowToast API for displaying a toast message.</p> <p>2. Added the GetMainWindowInfo API for obtaining the main window information.</p> <p>3. Deprecated the OnGetVmrListResult notification and added the OnGetVmrInfoListResult notification to notify you of the cloud meeting room list.</p> <p>4. Added the confResType parameter to HwmCreateConfInfo and HwmBookConfParam.</p> <p>5. Added the OnShareVmrInfoNotify notification to notify you when information about shared cloud meeting rooms was changed.</p> <p>6. Added the participant UUID parameter to HwmCalleeInfo.</p> <p>7. Added the GetErrorMessage API for obtaining an error message, which can be used for prompt.</p> <p>8. Added the SetGuaranteedIpAddresses API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival.</p> <p>9. Added the following meeting end error codes to HwmConfEndReason: HWM_CONF_END_REASON_OVER_MAX_PARTICIPANT_NUMBER, HWM_CONF_END_MANAGER_SHARE_VMR_NOT_ENOUGH, and HWM_CONF_END_MANAGER_NO_UPSCALE_VMR.</p> <p>10. Added the OnP2PConfRecordNotify notification to notify you of instant meeting records.</p> <p>11. Added the copy_audience_conf_info parameter to the config API to support the injection of the button used to copy the link to a webinar for attendees.</p> <p>For details, see 90.12.7 Updates.</p>

Released On	Version	Change Description
2023-9-26	90.9.5	<ol style="list-style-type: none">1. Added the concurrentParticipants parameter (maximum number of participants allowed in a meeting) to HwmCreateConfInfo (creating a meeting), HwmBookConfParam (scheduling a meeting), HwmEditConfParam (editing a meeting), and HwmConfDetail (meeting details).2. Added the vmrId parameter (ID of meetings held in a cloud meeting room) to HwmConfIncomingInfo (incoming meeting details).3. Added the SetLogPath API for setting the log storage path. For details, see 90.9.5 Updates .
2023-08-24	90.7.6	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 90.7.6 Updates .

Released On	Version	Change Description
2023-08-04	90.7.5	<p>1. Added the StartP2pConf API for starting an instant meeting.</p> <p>2. Added isP2PConf (whether the meeting is an instant meeting) to the HwmConfStateInfo parameter in the meeting status notification OnConfState and the HwmConfEndInfo parameter in the meeting end notification OnConfEndedNotify.</p> <p>3. Added the DeleteSelfAvatar API for deleting a user-defined profile picture.</p> <p>4. Added the GetUserSavePath API for obtaining the save path of a user.</p> <p>5. Added the enumerated values HWM_ENABLE_FEATURE_SUPPORT_DISCONNECT_AUDIO (disconnecting audio), HWM_ENABLE_FEATURE_DISCONNECT_AUDIO_TO_JOIN_CONF (whether to join a meeting without audio), and HWM_ENABLE_FEATURE_CPU_REDUCTION_DETECT (whether to detect CPU frequency reduction) to the EnableFeature parameter of the API for configuring meeting functions.</p> <p>6. Added the error codes HWM_CONF_END_REASON_CONF_NUM_OVER_MAX_ALLOWED, HWM_CONF_END_REASON_CALLEE_REFUSED_END_CONF, HWM_CONF_END_REASON_CALLEE_TIMEOUT_END_CONF, and HWM_CONF_END_FORCE_OPEN_CAMERA_HANGUP to HwmConfEndReason (meeting end reason).</p> <p>7. Added the domain field to the HwmJoinConfByRandomInfo parameter of the API for joining a meeting using a random code.</p> <p>For details, see 90.7.5 Updates.</p>

Released On	Version	Change Description
2023-06-02	90.6.5	<ol style="list-style-type: none"> 1. Deprecated the StartCall API. 2. Added the customInfo field (user-defined information) to HwmBookConfParam (scheduling a meeting), HwmEditConfParam (editing a meeting), HwmCreateConfInfo (creating a meeting), HwmConfInfo (meeting details), and HwmConfListInfo (meeting list). 3. Added the isSupportMultiAppLogin field (whether to support login to multiple applications on the same device) to HwmInitInfo in the Init API. 4. Added the enumerated value HWM_ENABLE_FEATURE_DEFAULT_SHARE_AUDIO (whether to share audio) to the EnableFeature parameter in the API for setting meeting functions. 5. Added OnPoorNetworkQualityInfo-Notify for notifications about poor network connection. 6. Added the error codes HWM_CONF_END_REASON_PARTICIPANT_CONF_NOT_EXIST, HWM_CONF_END_REASON_END_EXPIRATION, HWM_CONF_END_REASON_SDK_CHAIR_END_CONF, HWM_CONF_END_REASON_SDK_TIME_OVER_END_CONF, and HWM_CONF_END_REASON_RTC_SDK_NETWORK_FAILED. 7. Added the audio and video decoupling plug-in to the Meeting-Workspace-Plugin folder. 8. Added error code 412100044 indicating that the server is degraded. After receiving this error code, you can continue to call the API to join a meeting offline. For details, see 90.6.5 Updates.
2023-05-11	80.15.21	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 80.15.21 Updates.

Released On	Version	Change Description
2023-03-29	80.15.5	<p>1. Added OnConfEndedNotify for meeting end notifications.</p> <p>2. Added the isForcedVpn field (whether to forcibly use a VPN) to the HwmNetWorkModeInfo parameter in the API for setting the network mode.</p> <p>For details, see 80.15.5 Updates.</p>
2023-02-22	80.13.6	<p>1. Fixed issues and provided more stable experience.</p> <p>For details, see 80.13.6 Updates.</p>
2023-02-07	80.13.5	<p>1. Added the SetLanguageWithCode API for setting the SDK language.</p> <p>For details, see 80.13.5 Updates.</p>
2023-01-17	80.12.7	<p>1. Fixed issues and provided more stable experience.</p> <p>For details, see 80.12.7 Updates.</p>
2023-01-09	80.12.6	<p>1. Added the enumerated value HWM_ENABLE_FEATURE_CONFIRM_RECORD (whether to display the recording confirmation prompt) to the EnableFeature parameter.</p> <p>For details, see 80.12.6 Updates.</p>
2022-12-23	80.12.5	<p>1. Added the UploadSelfAvatar API for uploading a profile picture.</p> <p>2. Added the OnConfIsShareLocked-Changed notification to notify whether sharing is locked.</p> <p>3. Added the enableShowAddressBook-Structure parameter (whether the corporate directory is displayed) to HwmCorpConfigInfo in the enterprise configuration change notification OnCorpConfig.</p> <p>4. Added the error code 111072504 HWM_CONF_END_REASON_PARTICIPANT_REACH_MAX_NUM (The meeting is ended because max. participants in a single meeting reached).</p> <p>For details, see 80.12.5 Updates.</p>

Released On	Version	Change Description
2022-11-16	80.10.5	<p>1. Added the joinConfRestrictionType and isOpenWaitingRoom parameters to ChangeVmrInfoParam and HwmVmrInfo.</p> <p>2. Added the SetShareScreenPermission API for setting the sharing permission.</p> <p>For details, see 80.10.5 Updates.</p>
2022-10-08	80.9.5	<p>1. Changed the subConfUUID parameter to subConfID in the CancelSubCycleConf API for canceling a recurring meeting.</p> <p>2. Discarded the cycleCount parameter in the recurring meeting details of the BookCycleConf API for scheduling a recurring meeting series and the ModifyCycleConf API for editing a recurring meeting series.</p> <p>3. Added the enumerated value HWM_ENABLE_FEATURE_BREAKOUT_CONF to the EnableFeature API for enabling a function.</p> <p>4. Added the isInBreakoutSubConf parameter to HwmConfInfo of meeting details.</p> <p>For details, see 80.9.5 Updates.</p>
2022-09-02	80.8.5	<p>1. Detailed error codes and added error code 10011 indicating that the authentication information has expired.</p> <p>2. Added the isCreator parameter indicating whether the user is the meeting scheduler to the HwmConfInfo parameter of the OnConfInfo API.</p> <p>3. Added the isLiveOn parameter to HwmConfDetail and HwmEditConfParam.</p> <p>For details, see 80.8.5 Updates.</p>

Released On	Version	Change Description
2022-07-30	80.7.5	<ol style="list-style-type: none"> 1. Added the ShowSettingWindow API for displaying the settings window. 2. Added the moveall_to_waitingroom parameter of moving all participants to the waiting room to the Config API. This button can be hidden. 3. Added the participant_detail parameter of injecting the participant profile to the Config API and added the participant details button HWM_CLICK_INJECT_BTN_PARTICIPANT_DETAIL with data of HwmConfAttendee to the OnClickInjectBtn notification. 4. Added the screen settings item HwmScreenSettingTab to HwmSettingWindowConfig and moved the dual-screen setting item from HwmNormalSettingTab to HwmScreenSettingTab. 5. Added isOtherCorpConf indicating whether the meeting is initiated by an external enterprise to the HwmConfInfo parameter in the OnConfInfo notification. 6. Added the enumerated values HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_NAME_CHANGE (username change) and HWM_USER_CORP_INFO_NOTIFY_TYPE_USER_STATUS_CHANGE (user status change) to the HwmUserCorpInfoNotifyType parameter in the enterprise information change notification (OnUserCorpInfo). 7. Added the accountId (Huawei Cloud Meeting account) to the HwmConfAttendee parameter of the AddAttendee API. 8. Added error codes. 9. Added the error code indicating that the maximum number of participants in a cloud meeting room package has been reached (HWM_CONF_END_REASON_NUM_OF_PAR_EXCEEDS_UPPER_LIMIT). 10. Added the call end notification OnCallRecordInfo.

Released On	Version	Change Description
		For details, see 80.7.5 Updates .
2022-05-30	80.5.11	<ol style="list-style-type: none"> 1. Added the statusBar parameter for hiding the button on the recording status bar to the Config API. 2. Added the DisableVoicePrompts API for disabling prompt tones. For details, see 80.5.11 Updates .
2022-05-18	80.5.5	<ol style="list-style-type: none"> 1. Added HWM_CONF_END_REASON_SERVER_ERROR (server exception) to HwmConfEndReason (reasons for ending a meeting). For details, see 80.5.5 Updates .
2022-03-25	70.16.5	<ol style="list-style-type: none"> 1. Added APIs related to recurring meetings. 2. Added isStopConflictConf to the HwmJoinConfByIdInfo API for joining a meeting, so you can forcibly end a meeting that conflicts with the current cloud meeting room. 3. The Config API can be used to customize buttons and add level-2 menus. 4. Added error codes. 5. Added the following buttons to the Config API: share_strategy (shared image quality policy, that is, definition first or fluency first), share_hide_video (hiding the video window during screen sharing), share_audio (sharing computer sound during screen sharing), and copy_conf_info (copying meeting details). The first three buttons can be hidden, and the last button supports configuration injection. For details. 6. Added enumerated values HWM_CONF_ROLE_AUDIENCE (attendee), HWM_CONF_ROLE_COHOST (co-host), and HWM_CONF_ROLE_WAITING (waiting room member) to HwmConfRole. For details, see 70.16.5 Updates .

Released On	Version	Change Description
2022-02-19	70.14.5	<p>1. Added the SetNetworkMode API for configuring the network mode.</p> <p>2. Added deptCode (department ID) to the HwmAppIdAuthInfo parameter of the login API.</p> <p>3. When scheduling or editing a meeting, you can allow guests to join the meeting at the time you specify before the start time.</p> <p>For details, see 70.14.5 Updates.</p>
2022-01-19	70.13.5	<p>1. Added the HwmLoginResult parameter to the OnLoginResult and OnLoginBySSOResult callbacks and added the HwmLogoutResult parameter to the OnLogoutResult callback.</p> <p>2. Changed the file name extension of WinUI logs to .txt, including hwm_winconfui.txt, hwmSdk.txt, hwmSdkAgent.txt, and hwmSdkAgent32.txt.</p> <p>3. Added the isUploadKeyLog parameter (whether to automatically collect logs) to the Config API.</p> <p>4. Added preferredCamera (list of preferred cameras) to the HwmInitInfo parameter of the Init API.</p> <p>5. Added the AVDeviceCtrl API and the OnAVDeviceCtrlResult result callback for controlling audio and video devices, and the OnAVDeviceCtrlStateChanged notification of device status changes.</p> <p>6. Added the button customization in the Config API. The bottom and sharing toolbars can be dynamically refreshed.</p> <p>For details, see 70.13.5 Updates.</p>
2021-12-23	70.12.6	<p>1. Fixed an issue where the definition cannot be restored when the network is weak.</p> <p>2. Fixed the issue of hiding polls.</p> <p>For details, see 70.12.6 Updates.</p>

Released On	Version	Change Description
2021-12-13	70.12.4	<ol style="list-style-type: none"> 1. Added duration (optional, meeting duration) to the HwmCreateConfInfo parameter of the CreateConf API. 2. Added the ConfigSettingWindow API for customizing the settings screen. 3. Added the OnUserCorpInfo notification of enterprise information updates. <p>For details, see 70.12.4 Updates.</p>
2021-12-03	70.11.5	<ol style="list-style-type: none"> 1. Added logKeepDays (log storage duration) to the HwmInitInfo parameter of the Init API. <p>For details, see 70.11.5 Updates.</p>
2021-10-22	70.10.5	<ol style="list-style-type: none"> 1. Added the isHideTransferHostBeforeLeave parameter (whether to hide the button of appointing a new host when a host leaves a meeting) to the Config API. <p>For details, see 70.10.5 Updates.</p>
2021-09-16	70.9.5	<ol style="list-style-type: none"> 1. Added the SSO login API. <p>For details, see 70.9.5 Updates.</p>
2021-08-28	70.8.6	<ol style="list-style-type: none"> 1. Added the API for refreshing custom button settings. 2. Fixed issues and provided more stable experience. <p>For details, see 70.8.6 Updates.</p>
2021-08-18	70.8.5	<ol style="list-style-type: none"> 1. You can obtain the participant list in meetings and webinars. 2. You can obtain audio data streams. <p>For details, see 70.8.5 Updates.</p>

Released On	Version	Change Description
2021-07-16	70.7.5	<ol style="list-style-type: none"> 1. You can configure video mirroring for the local site in meetings. 2. 32-bit and 64-bit SDKs are available. 3. You can customize the meeting control toolbar. 4. Background replacement and blurring are supported. 5. During continuous presence broadcast, the shared screen can now be displayed as a small feed, and the participant video screen and the shared screen can be switched. 6. Added APIs of setting the sharing policy and setting the shared audio. <p>For details, see 70.7.5 Updates.</p>
2021-06-10	70.6.5	<ol style="list-style-type: none"> 1. Added the API for displaying the main meeting window. 2. You can now hide participants without video in meetings. 3. When an authorized user joins a meeting that only allows specific users to join the meeting or that is locked, the error code is reported in OnConfState (reason for leaving the meeting), instead of the callback of joining the meeting. <p>For details, see 70.6.5 Updates.</p>
2021-05-17	70.5.8	<ol style="list-style-type: none"> 1. Optimized the visual experience during meetings. <p>For details, see 70.5.8 Updates.</p>

Released On	Version	Change Description
2021-04-15	70.4.5	<ol style="list-style-type: none"> 1. Added the description of response parameters to the API for scheduling a meeting. 2. Added the API for obtaining the current user status. 3. Added the configuration of hiding the security menu, caption function, and button of locking sharing. 4. The host can invite others to share content and quickly cancel the sharing. 5. Installation and use in Arabic file paths are supported. 6. Optimized the size of meeting logs. 7. Changed the implementation mode of callback functions from pure virtual functions to virtual functions with default implementation. You do not need to define all callback function APIs. <p>For details, see 70.4.5 Updates.</p>
2021-03-12	70.3.5	<ol style="list-style-type: none"> 1. Optimized participant information export during meetings. <p>For details, see 70.3.5 Updates.</p>
2021-02-10	60.15.5	<ol style="list-style-type: none"> 1. Added the error code <code>HWM_AGENT_ERR_NOT_INITED_END</code> indicating that the initialization is not performed or is not complete. If the initialization callback result is not returned, any other APIs will fail to be called. 2. Added the function of hiding the External label in the participant list. 3. Added the function of hiding the pop-up window for incoming calls and meetings. 4. Added the API for configuring incoming call answering. 5. Added the local recording function. The host can control participants' local recording permissions and participants can configure the path for storing recordings. 6. Added the Security module. <p>For details, see 60.15.5 Updates.</p>

Released On	Version	Change Description
2021-01-08	60.13.2	<p>1. Generally, the application process needs to be ended before application upgrade. To facilitate upgrade management, you can customize the name of the HwmSdk.exe file in the HwmSdk folder before initialization.</p> <p>2. Changed the value of exePath in the initialization API from the absolute path of the HwmSdk folder to the absolute path of the .exe file in UTF-8 format.</p> <p>3. Added the logPath and userDataPath parameters to the initialization API to specify the paths for storing log files and user data files.</p> <p>For details, see 60.13.2 Updates.</p>
2020-12-07	60.12.5	<p>1. During meeting creation, the meeting room (vmrId) and scope of users who are allowed to join the meeting (callInRestriction) can be specified.</p> <p>2. Added the function of customizing the meeting details windows.</p> <p>3. Added the function of querying the profile picture of a user from the external corporate directory. When the camera is disabled during a meeting, the profile picture is displayed.</p> <p>For details, see 60.12.5 Updates.</p>
2020-11-07	60.11.1	<p>1. Added the function of automatic meeting recording.</p> <p>2. Added the P2P call function.</p> <p>3. Added the function of setting a display name in a P2P call.</p> <p>For details, see 60.11.6 Updates.</p>
2020-10-15	60.10.5	<p>1. Added login site types during initialization.</p> <p>2. Allowed users to join a meeting in random mode.</p> <p>3. Supported SP authentication and login.</p> <p>4. Optimized the watermark display.</p> <p>For details, see 60.10.5 Updates.</p>

Released On	Version	Change Description
2020-09-04	60.8.1	1. Added meeting management APIs related to scheduled meetings. 2. Added the scenario of login using a third-party app ID. For details, see 60.8.1 Updates .
2020-06-24	60.6.4	This issue is the first official release.

8 macOS SDK

8.1 Overview

Huawei Cloud Meeting macOS SDK provides a complete set of APIs. Developers can call the SDK APIs to quickly integrate meeting functions into their applications, including creating, scheduling, and joining meetings, and sharing screens.

8.2 Quick Start

This section uses SDK initialization as an example to describe how to use the macOS SDK for secondary development.

8.2.1 Preparations

1. Set the environment according to [Environment Requirements](#).
2. **Optional:** Decompress the downloaded **hwmsdk-mac.zip** software package on a Mac computer. Download the required SDK software package by referring to [Downloading SDKs](#).

8.2.2 Quick Integration

- Step 1** Decompress all the downloaded software packages to obtain **HWMUISDK** for integration and **HWMUISDKNativeDemo**.

Figure 8-1 Decompressed files



 NOTE

AW_PortraitSDK.framework in **HWMUISDK** is used for background blurring. To integrate the background blurring function, contact Huawei sales personnel.

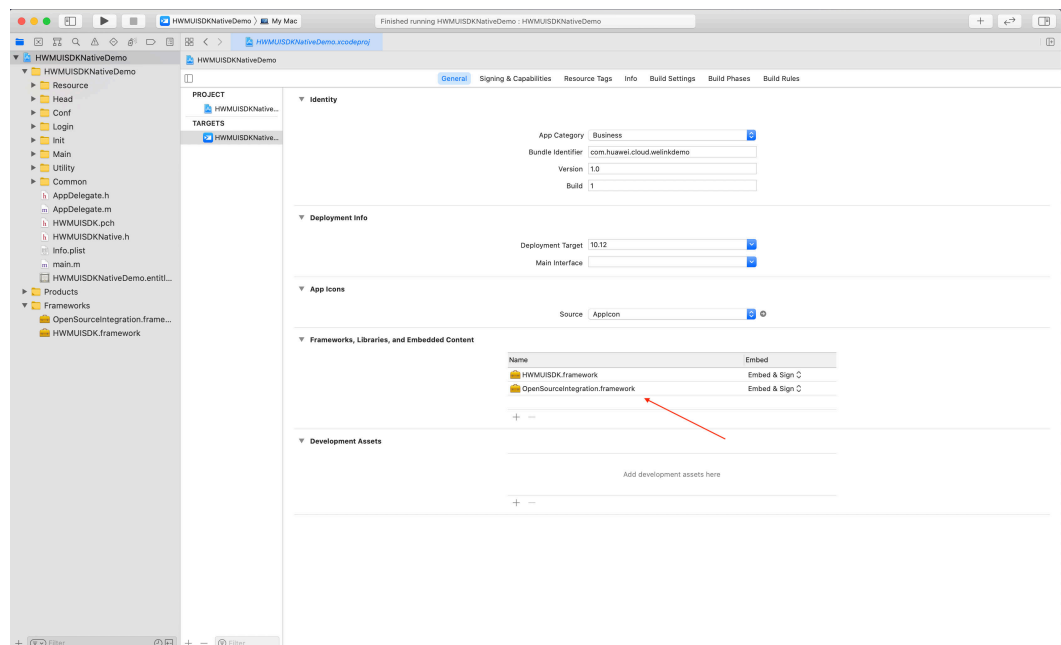
Step 2 Start the Xcode.

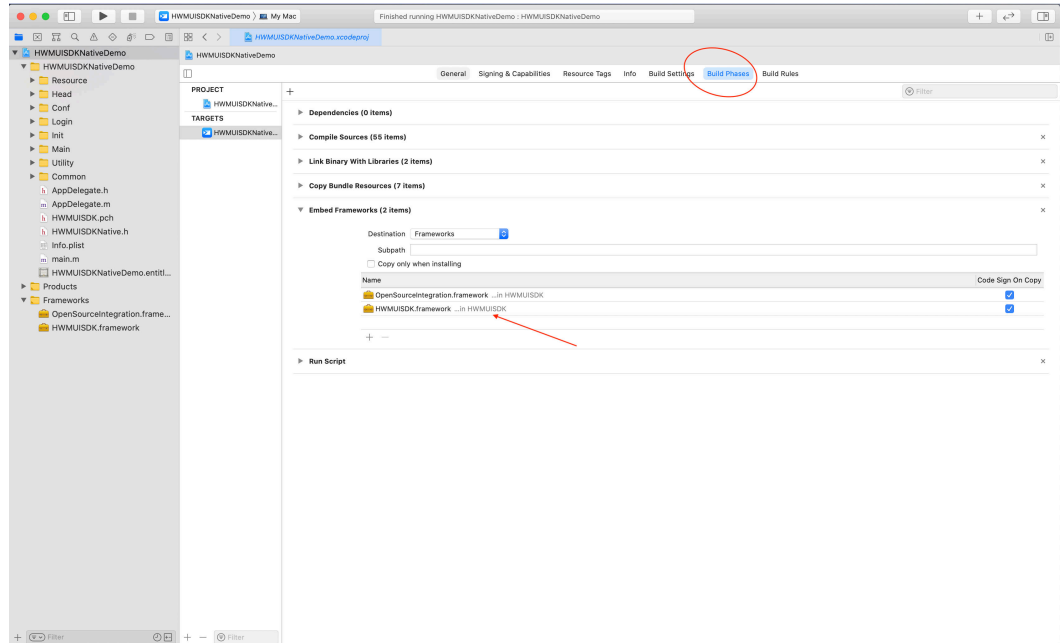
Step 3 Choose **File > New > Project**, choose **App > Next**, enter app information, and click **Create** to create a project.

Step 4 Add **HWMUISDK.framework** and **OpenSourceIntegration.framework** obtained in **Step 1** to the project.

Choose **TARGETS > General**. Then, change the value in the **Embed** column of **HWMUISDK.framework** to **Embed & Sign**.

Figure 8-2 Effect after the adding





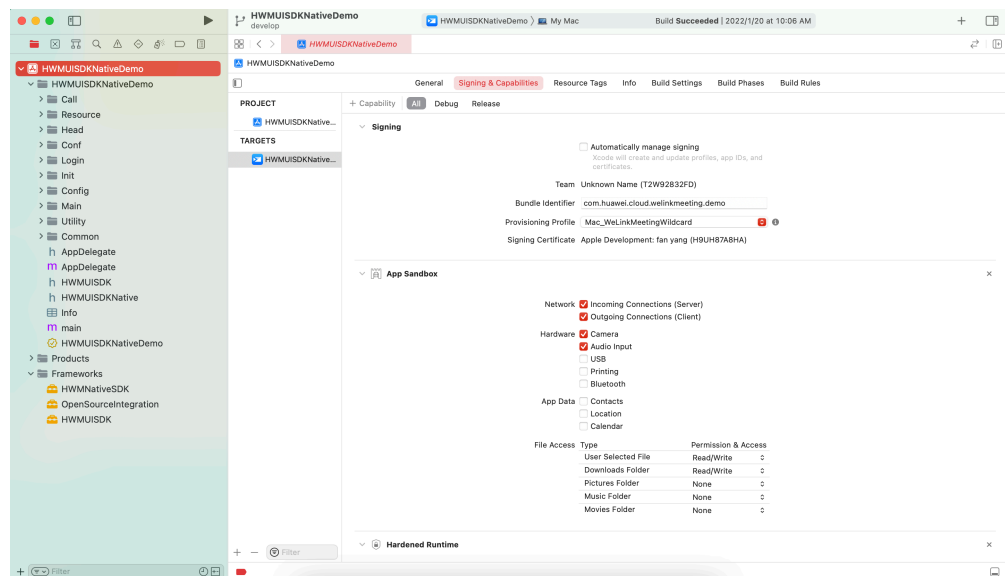
Step 5 Configure project files.

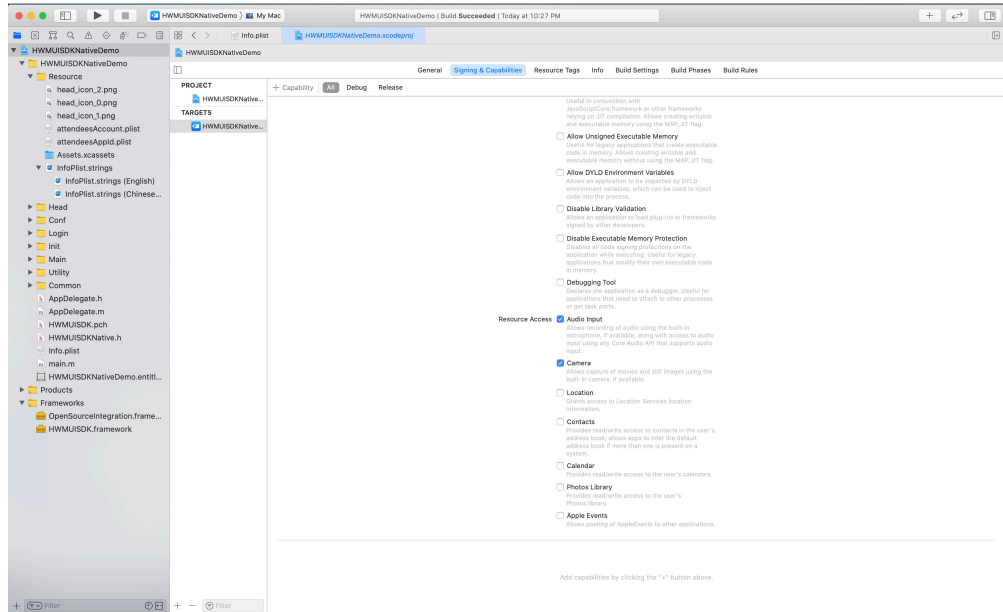
1. Enable the sandbox configuration items. If the app is not to be released to the app store, the sandbox can be disabled.

Set the values of the sandbox configuration item keys to **true**.

- com.apple.security.app-sandbox
- com.apple.security.device.audio-input
- com.apple.security.device.camera
- com.apple.security.files.user-selected.read-write
- com.apple.security.files.downloads.read-write
- com.apple.security.network.client
- com.apple.security.network.server

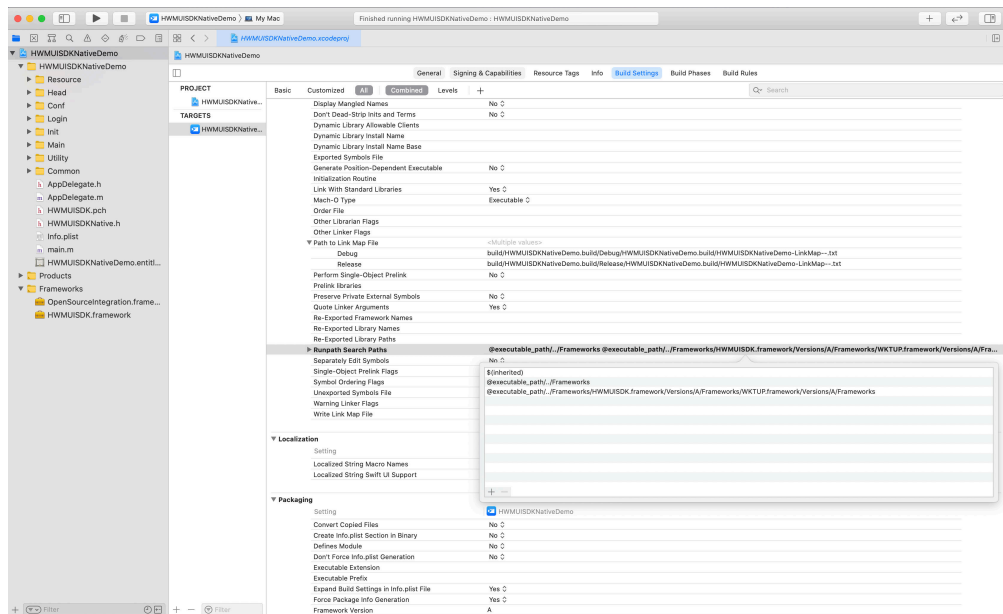
Figure 8-3 Enabling sandbox configuration items





- In **Build Settings**, add the following two relative paths to **Runpath Search Paths**:
`@executable_path/../Frameworks`
`@executable_path/../Frameworks/HWMUISDK.framework/Versions/A/Frameworks`

Figure 8-4 Adding configuration items to Runpath Search Paths



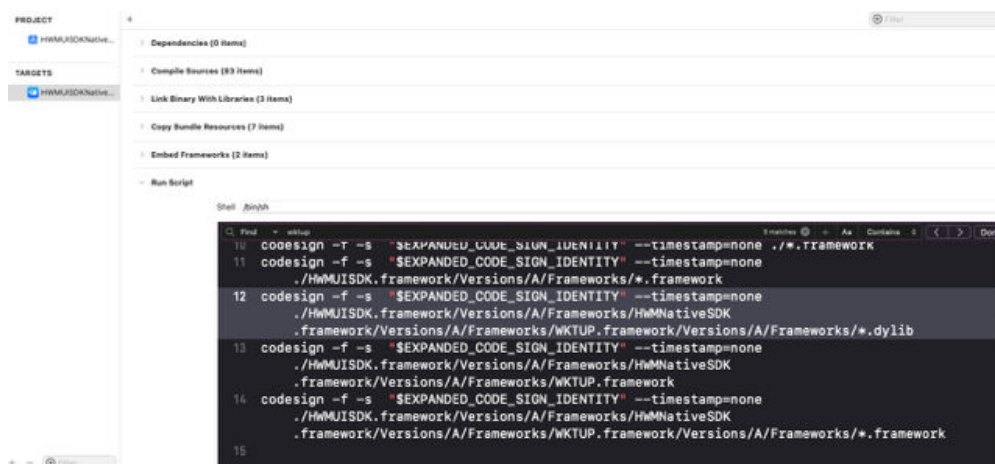
- In **Build Phases**, modify **Run Script** to provide the library re-signature and make it consistent with the app signature.

```
cd "$BUILT_PRODUCTS_DIR"/
# Replace xxxx with your app name.
cd ./xxxx.app/Contents/Frameworks/
echo "##### HWMUISDK.framework xattr #####"
```

```
xattr -r -d com.apple.quarantine ./HWMUISDK.framework
xattr -r -d com.apple.quarantine ./OpenSourceIntegration.framework
echo "##### finish #####"

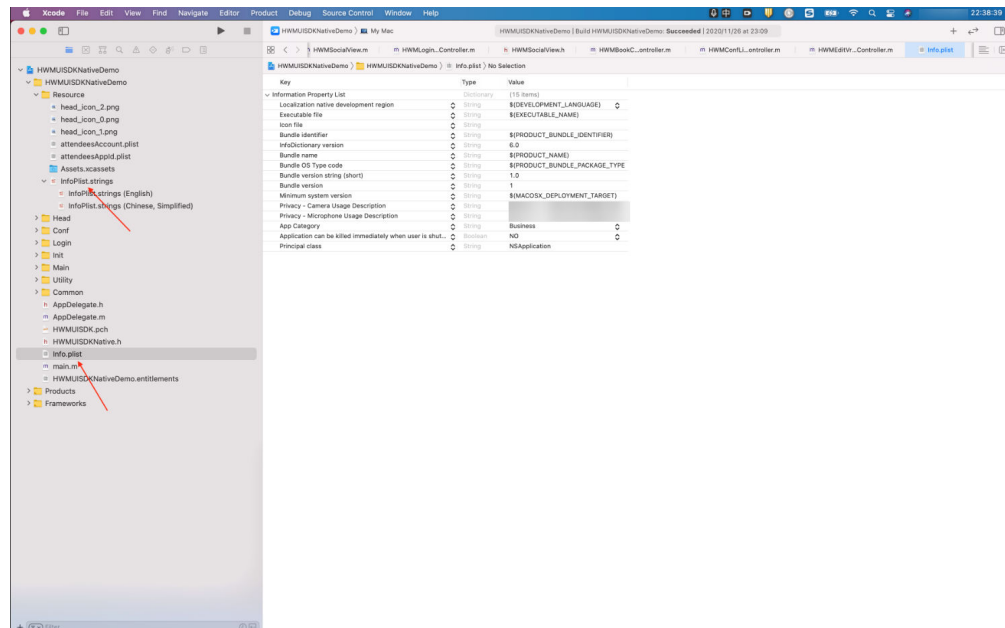
echo "##### HWMUISDK.framework codeSgin #####"
codesign -f -s "$EXPANDED_CODE_SIGN_IDENTITY" --timestamp=none ./
*.framework
codesign -f -s "$EXPANDED_CODE_SIGN_IDENTITY" --timestamp=none ./
HWMUISDK.framework/Versions/A/Frameworks/*.framework
codesign -f -s "$EXPANDED_CODE_SIGN_IDENTITY" --timestamp=none ./
HWMUISDK.framework/Versions/A/Frameworks/HWMNativeSDK.framework/
Versions/A/Frameworks/WKTUP.framework/Versions/A/Frameworks/*.dylib
codesign -f -s "$EXPANDED_CODE_SIGN_IDENTITY" --timestamp=none ./
HWMUISDK.framework/Versions/A/Frameworks/HWMNativeSDK.framework/
Versions/A/Frameworks/WKTUP.framework
codesign -f -s "$EXPANDED_CODE_SIGN_IDENTITY" --timestamp=none ./
HWMUISDK.framework/Versions/A/Frameworks/HWMNativeSDK.framework/
Versions/A/Frameworks/WKTUP.framework/Versions/A/Frameworks/
*.framework
```

Figure 8-5 Modifying the library signature



4. In the **Info.plist** file, configure the usage prompts (set the language as required) and the attributes related to exiting. The following keys need to be configured:
 - Privacy - Camera Usage Description (Camera usage prompt)
 - Privacy - Microphone Usage Description (Microphone usage prompt)
 - **Application can be killed immediately when user is shutting down or logging out:** Set it to **NO**.

Figure 8-6 Info.plist configuration effect



----End

8.2.3 Service Integration

The file for calling the HWM SDK API must contain the following content:

```
#import <HWMUISDK/HWMUISDK.h>
```

SDK initialization API must be called in the main thread.

```
(void)initSDK {
    HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];
    config.appld = getAppld();// In app ID login scenario, transfer the applied enterprise app ID. In non-app
    ID login scenario, you are advised to transfer the app name.
    BOOL result = [HWM SDK initWithConfig:config];
    if (result) {
        [UIUtil showMessage:@"Initialization succeeded." vc:self];
    }
}
```

Examples

- Login API
[[HWM SDK getOpenApi] login:account password:password callback:^(NSError * _Nullable error, HWMLoginResult * _Nullable result){ }];
- API for creating a meeting
[[HWM SDK getOpenApi] createConf:param callback:^(NSError * _Nullable error, HWMCreateConfResult * _Nullable result) { }];
- API for joining a meeting
[[HWM SDK getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) { }];
- API for scheduling a meeting
[[HWM BizSdk getBizOpenApi] bookConf:param callback:^(NSError * _Nullable error, id _Nullable result) { }];
- API for editing a meeting
[[HWM BizSdk getBizOpenApi] editConf:param callback:^(NSError * _Nullable error, id _Nullable result) { }];
- Logout API
[[HWM SDK getOpenApi] logout:^(NSError * _Nullable error, id _Nullable result) { }];

After the code of the preceding APIs is configured, SDK integration will be completed. For more information, see the `HWMUISDKNativeDemo` sample code.

8.3 Typical Scenarios

This section describes the API call orders and examples.

8.3.1 API Call in Typical Scenarios

API Description

macOS SDK APIs are classified into **synchronous APIs**, **asynchronous APIs**, and **global callback APIs**.

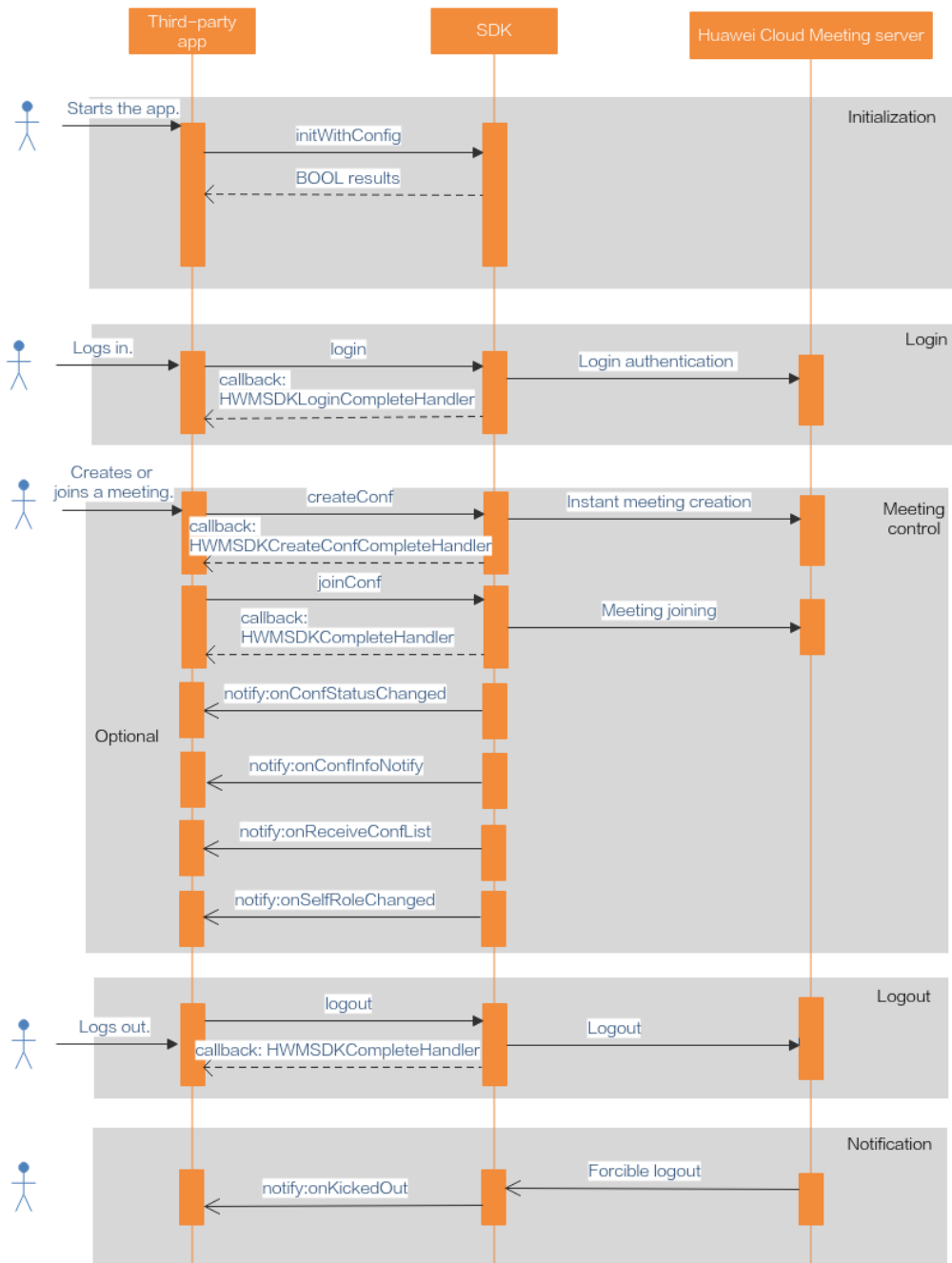
Synchronous APIs: Apps proactively call SDK APIs to complete specific tasks. For example, the `initWithConfig` API can be called for initialization.

Asynchronous APIs: Every time when an SDK API is called, the result is requested in callback mode.

Global callback APIs: When event notifications are triggered by the Huawei Cloud Meeting server or SDK, the SDK notifies apps through notification APIs. For example, the `onConfStatusChanged` API can be called to notify you of meeting calls.

API Call in Typical Scenarios

Figure 8-7 API call in typical scenarios



NOTE

1. Before using SDK functions, you need implement initialization.
2. You can join a created meeting by using the meeting ID and password without login. In other scenarios, you need to log in first.
3. You can configure the notification function as required.

8.3.2 Scenario 1: Initialization

Description

The initialization API can be called for SDK initialization after a third-party application starts. You only need to call this API once. You must call this API before calling other functional APIs.

Service Process

During SDK initialization, call the **initWithConfig** API and then check whether the API is successfully called based on the returned value.

Step 1 Call the API.

1. Build **HWMOpenSDKConfig** model parameters.
2. Call the **initWithConfig** API to initialize the configuration. The data in the preceding step is used as input parameters.

Step 2 Check the returned value.

YES: The initialization is successful. **NO:** The initialization fails.

----End

Sample Code

```
/// Initialization.  
HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];  
config.appId = getAppId();// Enter the applied app ID.  
BOOL result = [HWMSdk initWithConfig:config];  
if (result) {  
    NSLog(@"Initialization succeeded.");  
}
```

NOTE

The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.

8.3.3 Scenario 2: Login

8.3.3.1 Login Using an Account and Password

Description

This API can be used for login using an account and password. APIs such as **CreateConf** can be called only when you have logged in. To use complete meeting functions, log in to the Huawei Cloud Meeting server first.

NOTE

If you have not logged in, you can only join created meetings.

Service Process

If you need to log in using the SDK, call the **login** API and then implement the callback.

Step 1 Call the API.

1. Obtain the account and password for login.
2. Call the **login** API to log in. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Login
/// It is recommended that accounts and passwords used for authentication be stored in ciphertext in the
/// configuration file or as environment variables and be decrypted during usage.
- (void)login {
    NSString *account = @"*****";
    NSString *password = getPassword();
    [[HWMSdk getOpenApi] login:account password:password callback:^(NSError * _Nullable error,
    HWMLoginResult * _Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
    }
};
```

8.3.3.2 Login Using an App ID

Description

The **login** API can be used for login using an app ID.

NOTE

If you have not logged in, you can only join created meetings.

Service Process

If you need to log in using the SDK, call the **login** API and then implement the callback.

Step 1 Call the API.

1. Obtain the login account, expiration time, random number, username, and encrypted signature from the server.
2. Call the **login** API to log in. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// App ID login API
- (void)login {
    HWMAppIDLoginParam *appidInfo = [[HWMAppIDLoginParam alloc] init];
    appidInfo.thirdUserId = getThirdUserId();
    appidInfo.expireTime = 1599618620;
    appidInfo.nonce = getNonce();
    appidInfo.userName = getUserName();
    appidInfo.signature = getSignature();
    [[HWMSSdk getOpenApi] login:appidInfo callback:^(NSError * _Nullable error, HWMLoginResult *
    _Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
    }];
}
```

8.3.4 Scenario 3: Scheduling a Meeting

Description

The **bookConf** API can be used to schedule a meeting.

Service Process

If you need to schedule a meeting using the SDK, call the **bookConf** API and then implement the callback.

Step 1 Call the API.

1. Call the **bookConf** API to schedule a meeting.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Schedule a meeting.
- (void)bookConf {
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];
    param.confSubject = @"Meeting topic";
    param.startTime = 1598759580;
    param.duration = 15;
    param.isAutoRecord = NO;
    param.timeZone = 56;
    param.vmrId = @"";
    param.callInRestrictionType = HWMJoinConfRestrictionAll;
    [[HWMBizSdk getBizOpenApi] bookConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Schedule meeting failed:%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting scheduled.");
        }
    }
    }
}
```

```
    }  
};
```

8.3.5 Scenario 4: Editing a Meeting

Description

The **editConf** API can be used to edit a meeting after you log in and call the [Obtaining Meeting Details](#) API or server RESTful API to obtain the meeting details.

Service Process

If you need to edit a meeting using the SDK, call the **editConf** API and then implement the callback.

Step 1 Call the API.

1. Call the **editConf** API to edit a meeting.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Edit a meeting.  
- (void)editConf {  
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];  
    param.confSubject = @"Meeting topic";  
    param.startTime = 1598759580;  
    param.duration = 15;  
    param.isAutoRecord = NO;  
    param.timeZone = 56;  
    param.vmrId = @""; // Cloud meeting room ID, required for a meeting held in a cloud meeting room.  
    param.callInRestrictionType = HWMJoinCallRestrictionAll;  
    param.confId = @"986927771";  
    [[HWMBizSdk getBizOpenApi] editConf:param callback:^(NSError *_Nullable error, id _Nullable result) {  
        if (error) {  
            NSLog(@"Edit meeting failed.:%@", error.localizedDescription);  
        } else {  
            NSLog(@"Meeting edited.");  
        }  
    }  
};  
}
```

8.3.6 Scenario 5: Creating a Meeting

Description

The **CreateConf** API can be used to create an instant meeting after your login. Participant information is optional.

NOTE

You can create a meeting only after you log in.

Service Process

If you need to create an instant meeting using the SDK, call the **CreateConf** API and then implement the callback.

Step 1 Call the API.

1. Assemble the `HWMCreateConfParam` model.
2. Assemble the `HWMAttendeeInfo` model array (participants are optional).
3. Call the **CreateConf** API to create a meeting. The data in preceding steps is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Create a meeting.
- (void)creatMeeting {
    HWMCreateConfParam *param = [[HWMCreateConfParam alloc] init];
    param.subject = @"Meeting topic";
    param.isCameraOn = YES; // Whether to turn on the camera. By default, the camera is turned off.
    param.isMicOn = YES; // Whether to turn on the microphone. By default, the microphone is turned on.
    param.isAutoRecord = NO; // Whether to enable the meeting recording function. By default, this function
is disabled.
    param.callInRestrictionType = HWMJoinConfRestrictionAll; // Users who are allowed to join the meeting.
    // Participant list.
    if (self.selectedMemebrs) {
        __block NSMutableArray *members = [[NSMutableArray alloc] init];
        [self.selectedMemebrs enumerateObjectsUsingBlock:^(HWMContactSelectedModel * _Nonnull obj,
        NSUInteger idx, BOOL * _Nonnull stop) {
            HWMAttendeeInfo *member = [[HWMAttendeeInfo alloc] init];
            member.accountId = obj.accountId;
            member.number = obj.number;
            member.name = obj.name;
            member.thirdUserId = obj.thirdUserId;
            [members addObject:member];
        }];
        param.members = members;
    }
    [[HWM SDK getOpenApi] createConf:param callback:^(NSError * _Nullable error, HWMCreateConfResult *
    _Nullable result) {
        [self hideLoading];
        if (error) {
            NSLog(@"Create meeting failed.%@", error.localizedDescription);
        }else{
            NSLog(@"Meeting created.");
        }
    }];
}
```

NOTE

The participant list is optional for creating a meeting. If such a list is configured, participants will be called after a meeting is created.

8.3.7 Scenario 6: Joining a Meeting

Description

The **joinConf** API can be used to join a meeting using a meeting ID and password, no matter whether you have logged in or not.

Service Process

If you need to join an existing meeting using the SDK, call the **joinConf** API and then implement the callback.

Step 1 Call the API.

1. Assemble the model.
 - a. **HWMJoinConfParam** is used to join a meeting based on the meeting ID.
 - b. **HWMRandomConfParam** is used to join a meeting in random mode.
2. Call the **joinConf** API to join the meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Join a meeting.
- (void)joinMeeting {
    HWMJoinConfParam *param = [[HWMJoinConfParam alloc] init];
    param.confId = @"989156631";
    param.password = getPassword();
    param.nickname = @"Hangzhou site";
    param.isCameraOn = NO;
    param.isMicOn = YES;
    [[HWM SDK getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Join meeting failed.%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting joined.");
        }
    }];
}
```

NOTE

If you call this API without logging in to Huawei Cloud Meeting, the **nickname** parameter is mandatory.

8.3.8 Scenario 7: Adding Participants

Description

You can call the API for adding participants during a meeting.

Service Process

If you need to add participants using the SDK, customize a contact selection page, select the contacts to be added, and add the selected contacts to the meeting.

NOTE

The macOS SDK supports only customized participant adding.

Sample Code

```
/// Customize contacts.
- (void)openContactSelectWindow:(NSArray<HWMAttendeeInfo *> *)param scene:
(HWMSelectedContactScene)scene completionHandler:(void (^)(NSArray<HWMAttendeeInfo *> *
Nullable))handler {
    HWMSelectContactViewController *contact = [[HWMSelectContactViewController alloc] init];
    [contact setSelectAttendeeInfoHandler:^(NSArray *attendees) {
        NSMutableArray *arr = @[].mutableCopy;
        for (HWMContactInfoModel *model in attendees) {
            HWMAttendeeInfo *info = [[HWMAttendeeInfo alloc] init];
            info.accountId = model.accountId;
            info.name = model.name;
            info.number = model.number;
            info.thirdUserId = model.thirdUserId;
            info.email = model.email;
            info.mute = model.mute;
            info.role = model.role;
            info.sms = model.sms;
            [arr addObject:info];
        }
        if (handler) {
            handler(arr);
        }
    }];
    self.selectContactVC = contact;
    [self presentViewControllerAsModalWindow:contact];
}
```

8.3.9 Scenario 8: Logout

Description

This API is used to log out of a meeting account.

Service Process

If you need to log out using the SDK, call the **logout** API and then implement the callback.

Step 1 Call the API.

1. Call the **logout** API to log out of Huawei Cloud Meeting.

Step 2 Implement the callback.

Implement the callback.

----End

Sample Code

```
/// Logout
- (void)logout {
```

```
[[HWMSdk getOpenApi] logout:^(NSError * _Nullable error, id _Nullable result) {
    if (error == nil) {
        NSLog(@"Logout succeeded.");
    } else {
        NSLog(@"Logout failed.");
    }
}];
}
```

8.4 APIs

8.4.1 Basic Settings

8.4.1.1 Initializing the SDK

initWithConfig

API Description

This API is used to start and initialize the SDK.

Precautions

1. You must call this API before calling other APIs.
2. The initialization method must be called in the main thread.
3. The return value only indicates whether the API is successfully called.

Method Definition

```
+ (BOOL)initWithConfig:(HWMSdkConfig *)config;
```

Parameter Description

Table 8-1 Parameter description

Parameter	Mandatory	Type	Description
config	Yes	HWMSdkConfig	Initialization information set.

Table 8-2 HWMSdkConfig description

Parameter	Mandatory	Type	Description
appId	Yes	NSString *	App ID. For details about how to request an app ID, see Requesting an App ID in <i>Developer Guide</i> .
siteType	No	HWMSiteType	Login site type. The default value is HWMSiteTypeChina .

Parameter	Mandatory	Type	Description
hideExternalLabel	No	BOOL	Whether to display the external label in the participant list. By default, the external label is displayed.
hideAllowJoinConf Menu	No	BOOL	Whether to hide the menu of meeting joining options in the security settings. By default, the menu is not hidden.
logKeepDays	No	NSInteger	Log storage duration. Valid value range is 3–30. The default value is 0 . 0 indicates that logs are not deleted by day. Note: 1 and 2 will be converted to 3 , and the values greater than 30 will be converted to 30 .
appUrl	No	NSString *	Official download link.
isSupportMultiAppLogin	No	BOOL	Whether to support login to multiple applications on the same device.

 **NOTE**

For details about how to request an app ID, see [Requesting an App ID](#) in *Developer Guide*.

Table 8-3 Enumerated values of HWMSdkSiteType

Enumerated Value	Description
HWMSiteTypeChina	Chinese mainland.
HWMSiteTypeAP	Asia Pacific.

Return Values**Table 8-4** Return values

Type	Description
BOOL	If the initialization succeeds, YES is returned. If the initialization fails, NO is returned.

Sample Code


```
/// Initialization.
HWMSdkConfig *config = [[HWMSdkConfig alloc] init];
config.appId = getAppId();// Enter the applied app ID.
BOOL result = [HWMSdk initWithConfig:config];
if (result) {
    NSLog(@"Initialization succeeded.");
}
```

NOTE

- The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.

8.4.1.2 Setting a Language

setLanguage

API Description

This API is used to set a language for the app. The set language will be used on the UI.

Method Definition

```
+ (void)setLanguage:(HWMSdkLanguageType)language;
```

Parameter Description

Table 8-5 Parameter description

Parameter	Mandatory	Type	Description
language	Yes	HWMSdkLanguageType	Language to be set. Currently, only Chinese and English are supported.

Table 8-6 HWMSdkLanguageType parameters

Enumerated Value	Description
HWMSdkLanguageTypeZH	Chinese.
HWMSdkLanguageTypeEN	English.
HWMSdkLanguageType-Customized	Custom language.

Sample Code

```
/// Language initialization.
[HWMSdk setLanguage:HWMSdkLanguageTypeEN];
```

 NOTE

1. You are advised to use this API after initialization.
2. This API does not support setting during a meeting. A language set during a meeting does not take effect immediately.
3. Currently, only Chinese and English are supported.

setLanguage:languageCode:

API Description

This API is used to customize the SDK language. The default language is Chinese.

Precautions

To implement a user-defined language, create the corresponding internationalization file in the directory at the same level as **en.lproj**. For example, to add Arabic, you can create **ar.lproj/Localizable.strings**. The language set through this API must be the same as the system language.

Method Definition

```
+ (void)setLanguage:(HWMSdkLanguageType)language languageCode:(NSString *)languageCode;
```

Parameter Description

Table 8-7 Parameter description

Parameter	Mandator y	Type	Description
language	Yes	HWMSdkLanguageType	Enumerated values of languages.
languageCode	No	NSString *	Language code. If the language is Chinese or English, this parameter can be left empty.

Return Values

None

Sample Code

```
/// Change the language.  
[HWMSdk setLanguage:HWMSdkLanguageTypeCustomized languageCode:@"ar"];
```

8.4.1.3 Enabling or Disabling the Camera and Microphone in a Meeting

isOpenMicrophoneIncoming

API Description

This API is used to customize the microphone status when a user is invited to a meeting.

Precautions

1. If automatic mute has been set for participants excluding the host, the microphone status customization does not take effect.

Method Definition

```
- (BOOL)isOpenMicrophoneIncoming;
```

Parameter Description

None

Sample Code

```
/// Whether to enable the microphone when a user is invited to a meeting.  
- (BOOL)isOpenMicrophoneIncoming {  
    return NO;  
}
```

isOpenCameraIncoming

API Description

This API is used to customize the camera status when a user is invited to a meeting.

Precautions

None

Method Definition

```
- (BOOL)isOpenCameraIncoming;
```

Parameter Description

None

Sample Code

```
/// Whether to enable the camera when a user is invited to a meeting.  
- (BOOL)isOpenCameraIncoming {  
    return NO;  
}
```

8.4.1.4 Customizing a Local Recording Path

setLocalRecordPath

API Description

This API is used to customize the path for storing local recording files.

Precautions

If a user specifies a recording folder in this API, another recording folder cannot be created after the sandbox is enabled and will be written to the default path.

Method Definition

```
- (void)setLocalRecordPath:(NSURL *)url;
```

Sample Code

```

NSOpenPanel *select = [NSOpenPanel openPanel];
select.canChooseFiles = NO;
select.canChooseDirectories = YES;
select.prompt = @"OK";
[select beginSheetModalForWindow:self.view.window completionHandler:^(NSModalResponse result) {
    if (result == 1) {
        [[HWMSdk getOpenSDK] setLocalRecordPath:select.URL];
    }
}];

```

8.4.1.5 Enabling a Function

enableSDKCapability

API Description

This API is used to enable a function.

Method Definition

```
- (void)enableSDKCapability:(HWMSDKCapabilitySupport)type;
```

Parameter Description

Table 8-8 HWMSDKCapabilitySupport description

Parameter	Type	Description
HWMSDKCapabilitySupportVideoHD	NSUInteger	Enabling the 720p HD video. The default definition is 360p.
HWMSDKCapabilitySupportShareAudio	NSUInteger	Enabling the Include computer sound option. This option is not displayed by default.
HWMSDKCapabilitySupportHideNoCameraView	NSUInteger	Enabling the Hide non-video participants option. This option is enabled by default.
HWMSDKCapabilitySupportBreakoutConf	NSUInteger	Enabling the breakout room function. This function is enabled by default.
HWMSDKCapabilitySupportConfirmRecord	NSUInteger	Recording security prompt, which is disabled by default.

Enabling the HD Video

Sample Code

```

/// Enable the HD video.
[[HWMBizSdk getBizOpenApi] enableSDKCapability:HWMSDKCapabilitySupportVideoHD];

```

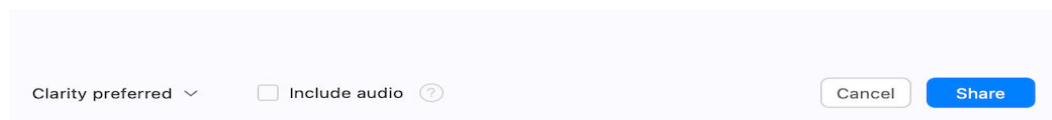
Enabling Audio Sharing

Step 1 Call the `enableSDKCapability` API to enable the display of the **Include computer sound** option.

Sample Code

```
/// Enable audio sharing.
[[HWMBizSdk getBizOpenApi] enableSDKCapability:HWMSDKCapabilitySupportShareAudio];
```

If the function is enabled, the **Include computer sound** option will be displayed in the sharing window when a user initiates screen sharing, as shown in the following figure. If the function is not enabled, the option is not displayed.



Step 2 Disable the **App Sandbox** function.

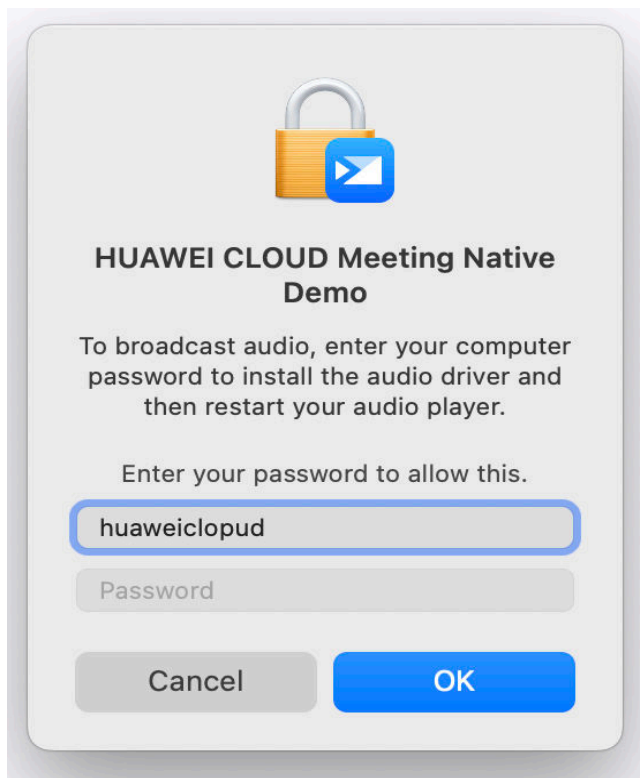
Disable the **App Sandbox** function and obtain the root permission to enable the SDK to automatically install the audio driver plug-in.

Delete the **App Sandbox** item Under **Entitlements File** of the app. The following figure is an example.

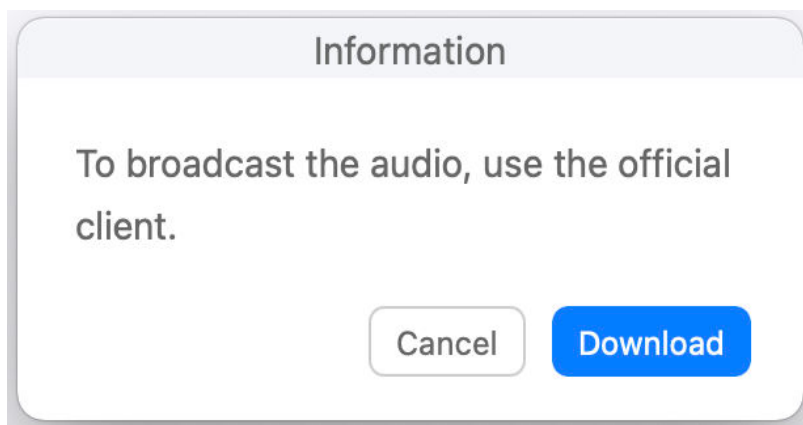
The screenshot shows the 'Entitlements File' section in Xcode. The 'App Sandbox' item is highlighted in blue. The table below represents the data shown in the screenshot.

Key	Type	Value
Entitlements File	Dictionary	(7 items)
App Sandbox	Boolean	YES
Audio Input	Boolean	YES
Camera	Boolean	YES
com.apple.security.files.downloads.read-write	Boolean	1
com.apple.security.files.user-selected.read-write	Boolean	1
com.apple.security.network.client	Boolean	1
com.apple.security.network.server	Boolean	1

If the **App Sandbox** function is disabled, the root permission is obtained when **Include computer sound** is selected for the first time. After the user clicks **OK**, the audio driver plug-in is automatically installed. The following figure is an example.



If the **App Sandbox** function is not disabled, the user will be prompted to download the client from the official website when selecting **Include computer sound** for the first time. After the user clicks **Download**, the official website is displayed. The following figure is an example.



The download link can be configured in the **appUrl** parameter of the **initWithConfig** API, which is used to start and initialize the SDK. For details, see [Initializing the SDK](#). If **appUrl** is not configured, the download page is not displayed.

----End

NOTE

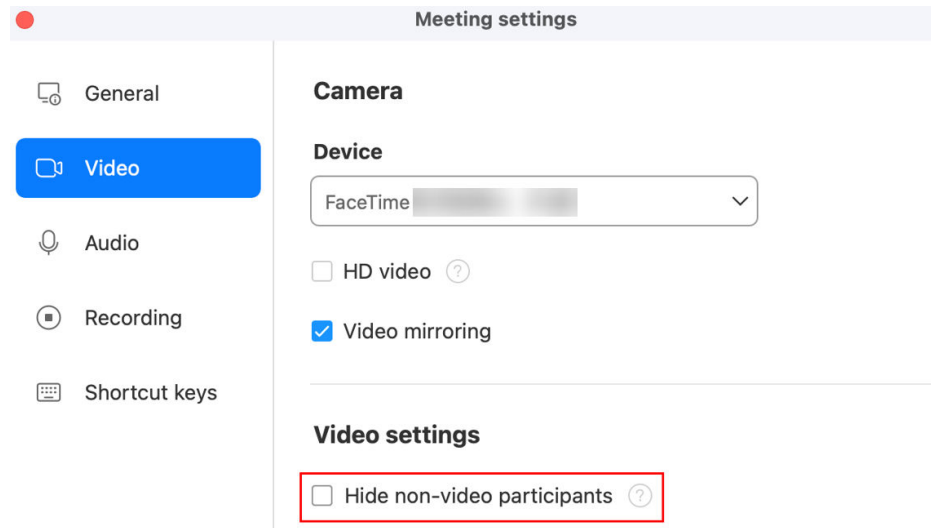
After the **App Sandbox** function is disabled, the user path obtained by the app changes, and the app cannot be released to the Mac App Store.

Enabling the Function of Hiding Non-Video Participants

Sample Code

```
/// Enable the option of displaying or hiding non-video participants.  
[[HWMBizSdk getBizOpenApi] enableSDKCapability:HWMSDKCapabilitySuportHideNoCameraView];
```

After the function is enabled, the **Hide non-video participants** option is displayed in the meeting settings.



Sample Code

```
/// Disable the option of displaying or hiding non-video participants.  
[[HWMBizSdk getBizOpenApi] disableSDKCapability:HWMSDKCapabilitySuportHideNoCameraView];
```

After the function is disabled, the **Hide non-video participants** option is hidden from the meeting settings.

8.4.1.6 Setting the Network Mode

setNetworkModeWithAccessType

API Description

This API is used to set the network mode to enterprise intranet access if the media nodes of Huawei Cloud Meeting are deployed in an enterprise and management nodes are accessed through the proxy of the enterprise.

NOTE

This API needs to be called only when the app cannot directly access the public network (that is, when the media nodes and management nodes are deployed in the enterprise).

Precautions

1. This API is optional. If it is not called, the default mode is used.
2. This API supports only macOS 10.13 and later versions.

Method Definition

```
/// Set the network mode.  
+ (void)setNetworkModeWithAccessType:(HWMAccessType)accessType API_AVAILABLE(macos(10.13));
```

Parameter Description

Table 8-9 Parameter description

Parameter	Man dato ry	Type	Description
accessType	Yes	HWMMAccessTy pe	Network access type.

Table 8-10 Enumerated values of HWMMAccessType

Enumerated Value	Description
HWMMAccessTypeAuto	Default value.
HWMMAccessTypeInner	Intranet access, which is used when the media and signaling nodes are deployed in the enterprise. The app uses the intranet for access. Signaling and media messages access the Huawei Cloud Meeting server through the proxy server.
HWMMAccessTypeOuter	External network access, which is used when the media and signaling nodes are not deployed in the enterprise. The app uses the Internet for access. Signaling and media messages access the Huawei Cloud Meeting server through the proxy server.

Sample Code

```
/**
 * Set the network mode.
 */
[HWMMSdk setNetworkModeWithAccessType:HWMMAccessTypeInner];
```

8.4.1.7 Disabling Prompt Tones

disableVoicePrompts:

API Description

This API is used to disable meeting prompt tones.

Precautions

1. This API is optional. If it is not called, the default mode is used.
2. The return value only indicates whether the API is successfully called.

Method Definition

```
-(HWMSDKERR)disableVoicePrompts:(HWMSDKVoicePromptsModel *)voicePrompts;
```


Parameter Description

Table 8-11 HWMSDKVoicePromptsModel description

Parameter	Mandatory	Type	Description
disableMutePrompt	Yes	BOOL	Prompt tone played when the host mutes a participant.

Return Values

Whether the API is successfully called.

Sample Code

```
HWMSDKVoicePromptsModel * model = [[HWMSDKVoicePromptsModel alloc] init];
model.disableMutePrompt = YES;
[[HWMBizSdk getBizOpenApi] disableVoicePrompts:model];
```

8.4.1.8 Setting a Log Path

setLogPath

API Description

This API is used to set a path for storing Huawei Cloud Meeting logs.

Precautions

None

Method Definition

```
+ (void)setLogPath:(NSString *)logPath;
```

Parameter Description

Table 8-12 Parameter description

Parameter	Mandatory	Type	Description
logPath	Yes	NSString *	Log path.

Return Values

None

Sample Code

```
NSString * logPath= [[NSSearchPathForDirectoriesInDomains(NSLibraryDirectory, NSUserDomainMask, YES)
firstObject] stringByAppendingPathComponent:@"log"];
[HWMSdk setLogPath:logPath];
```

8.4.1.9 Setting Guaranteed IP Addresses for Meeting Control

setGuaranteedIpAddresses

API Description

This API is used to set the guaranteed IP addresses for meeting control.

Precautions

1. This API is optional. If it is not called, the default IP address is used.
2. Up to four IP addresses are supported. They are separated by semicolons (;).

Method Definition

```
-(HWMSDKERR)setGuaranteedIpAddresses:(NSString *)pAddresses;
```

Parameter Description

Table 8-13 Parameter description

Parameter	Mandato ry	Type	Description
pAddresses	Yes	NSString *	Guaranteed IP addresses.

Return Values

Whether the API is successfully called.

Sample Code

```
// Set guaranteed IP addresses.  
HWMSDKERR result = [[HWMBizSdk getBizOpenApi]  
setGuaranteedIpAddresses:self.guarantIpAddrInputView.textField.stringValue];  
NSString *tip = @"Set";  
if (result != HWMSDKSd KerrSuccess) {  
// Display a message if the setting fails.  
tip = [NSString stringWithFormat:@"Set failed[%ld]",result];  
}  
[HWMConsoleManager sharedInstance].console = tip;
```

8.4.2 Account Operations

8.4.2.1 Logging In to Huawei Cloud Meeting

You can log in using an account and password, or using an app ID.

login:password:

API Description

This API is used for login using an account and password.

Precautions

1. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.
2. **Error:** Error information. **nil:** Success.

Method Definition

```
-(void)login:(NSString * _Nonnull)account password:(NSString * _Nonnull)password callback:( _Nonnull HWMSDKLoginCompleteHandler)callback;
```

Parameter Description

Table 8-14 Parameter description

Parameter	Man dato ry	Type	Description
account	Yes	NSString *	Login account.
password	Yes	NSString *	Login password.
callback	No	HWMSDKLoginCompleteHandler	Error: Error information. nil: Success.

Return Values

Table 8-15 HWMLoginResult description

Parameter	Type	Description
userId	NSString *	Account UUID.
account	NSString *	Login account.
thirdAccount	NSString *	Third-party account for login using an app ID.

Sample Code

```
/// Login
/// It is recommended that accounts and passwords used for authentication be stored in ciphertext in the
/// configuration file or as environment variables and be decrypted during usage.
-(void)login {
    NSString *account = @"*****";
    NSString *password = getPassword();
    [[HWMSdk getOpenApi] login:account password:password callback:^(NSError * _Nullable error,
    HWMLoginResult * _Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
    }
};
```

login:

API Description

This API is used for login using an app ID.

Precautions

1. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.
2. **Error:** Error information. **nil:** Success.

Method Definition

```
- (void)login:(HWMAppIDLoginParam *)appidInfo callback:(HWMSDKLoginCompleteHandler)callback;
```

Parameter Description

Table 8-16 HWMAppIDLoginParam description

Parameter	Mandatory	Type	Description
signature	Yes	NSString *	Authentication signature obtained from the third-party server.
thirdUserId	Yes	NSString *	Third-party account.
expireTime	Yes	NSInteger	Signature expiration time. The value is a timestamp in seconds. If the value is 0, the signature will not expire.
nonce	Yes	NSString *	Random number.
userName	No	NSString *	Username.
userEmail	No	NSString *	Email address.
userPhone	No	NSString *	Mobile number.
corpId	No	NSString *	This parameter is mandatory when there are multiple enterprises under an SP.
deptCode	No	NSString *	Department code.

Return Values

For details, see [Table 8-15](#).

Sample Code

```
/// App ID login API  
- (void)login {  
    HWMAppIDLoginParam *appidInfo = [[HWMAppIDLoginParam alloc] init];
```

```
appidInfo.thirdUserId = getThirdUserId();
appidInfo.expireTime = 1599618620;
appidInfo.nonce = getNonce();
appidInfo.userName = getUsername();
appidInfo.signature = getSignature();
[[HWMSSdk getOpenApi] login:appidInfo callback:^(NSError * _Nullable error, HWMLoginResult *
_Nullable result) {
    if (error == nil) {
        NSLog(@"Login succeeded.");
    }else{
        NSLog(@"Login failed.");
    }
}];
}
```

loginBySSO:

API Description

This API is used for login in single sign-on (SSO) mode.

Precautions

You can join a meeting anonymously. However, if you want to use other services, you must log in first.

Method Definition

```
-(void)loginBySSO:(HWMSSOLoginParam *)param callback:(HWMSDKLoginCompleteHandler)callback;
```

Parameter Description

Table 8-17 HWMSSOLoginParam description

Parameter	Mandatory	Type	Description
domain	Yes	NSString *	Enterprise domain name.
userTicket	Yes	NSString *	code
authServerType	Yes	HWMOpenAuthServerType	Authentication server type.

Table 8-18 Enumerated value of HWMOpenAuthServerType

Value	Description
HWMOpenAuthServerTypeOAuth2	SSO

Return Values

For details, see [Table 8-15](#).

Sample Code

```
/// SSO login API
- (void)login {
    HWMSSOLoginParam *param = [[HWMSSOLoginParam alloc] init];
    param.domain = domain;
    param.code = code;
    param.authServerType = HWMOpenAuthServerTypeOauth2;
    [[HWMSSdk getOpenApi] loginBySSO:param callback:^(NSError * _Nullable error, HWMLoginResult *
_Nullable result) {
        if (error == nil) {
            NSLog(@"Login succeeded.");
        }else{
            NSLog(@"Login failed.");
        }
    }
    }];
}
```

8.4.2.2 Logging Out of Huawei Cloud Meeting

logout

API Description

This API is used to log out of a meeting account.

Precautions

1. Call this API only when you have logged in.
2. **Error:** Error information. **nil:** Success.

Method Definition

```
- (void)logout:(Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

None

Return Values

Table 8-19 HWMLogoutResult description

Parameter	Type	Description
userUuid	NSString *	Account UUID.
account	NSString *	Login account.
thirdAccount	NSString *	Third-party account for login using an app ID.

Sample Code

```
/// Logout
- (void)logout {
    [[HWMSSdk getOpenApi] logout:^(NSError * _Nullable error, HWMLogoutResult* _Nullable result) {
        if (error == nil) {
            NSLog(@"Logout succeeded.");
        } else {
            NSLog(@"Logout failed.");
        }
    }
}
```

```
    }  
  }  
}
```

8.4.2.3 Uploading a Profile Picture

uploadSelfAvatar: success: fail:

API Description

This API is used to upload a profile picture.

Precautions

1. Pass the profile picture path.
2. The maximum size is 200 KB.
3. Only JPG and PNG files are supported.
4. The recommended aspect ratio is 1:1.
5. **success**: Success. **fail**: Failure. **error**: Error information.

Method Definition

```
- (void)uploadSelfAvatar:(NSString *)path success:(void (^)(void))success fail:(void (^)(NSError *error))fail;
```

Parameter Description

Table 8-20

Parameter	Mandatory	Type	Description
path	Yes	NSString	Full path of an image.

Return Values

None

Sample Code

```
/// Upload a profile picture.  
- (void)uploadSelfAvatar {  
    [[HWMBizSdk getBizOpenApi] uploadSelfAvatar:path success:^(  
        NSLog(@"set succeeded");  
    } fail:^(NSError *_Nonnull error) {  
        NSLog(@"%@", error.description);  
    }];  
}
```

8.4.3 UI Customization

You can customize the UI as required.

8.4.3.1 Configuring the UI

Set proxies for the custom pages as required. This operation can be performed when you initialize or use the SDK.

```
[HWMSdk getSdkConfig].socialShareHandler = Proxy; // (Optional) Customizes the social sharing capability during a meeting.  
[HWMSdk getSdkConfig].confUIHandler = Proxy; // (Optional) Customizes UIs during a meeting.  
[HWMSdk getSdkConfig].contactUIHandler = Proxy; // (Optional) Customizes the contact invitation UI during a meeting.  
[HWMSdk getSdkConfig].headPortraitApiHandler = Proxy; // (Optional) Customizes the profile picture display.
```

8.4.3.2 Clearing UI Configurations

If you need to clear proxies, set the corresponding values to **nil**.

```
[HWMSdk getSdkConfig].socialShareHandler = nil;  
[HWMSdk getSdkConfig].confUIHandler = nil;  
[HWMSdk getSdkConfig].contactUIHandler = nil;  
[HWMSdk getSdkConfig].headPortraitApiHandler = nil;
```

8.4.3.3 Customizing the Bottom Toolbar

meetingToolBarItemsForScene

API Description

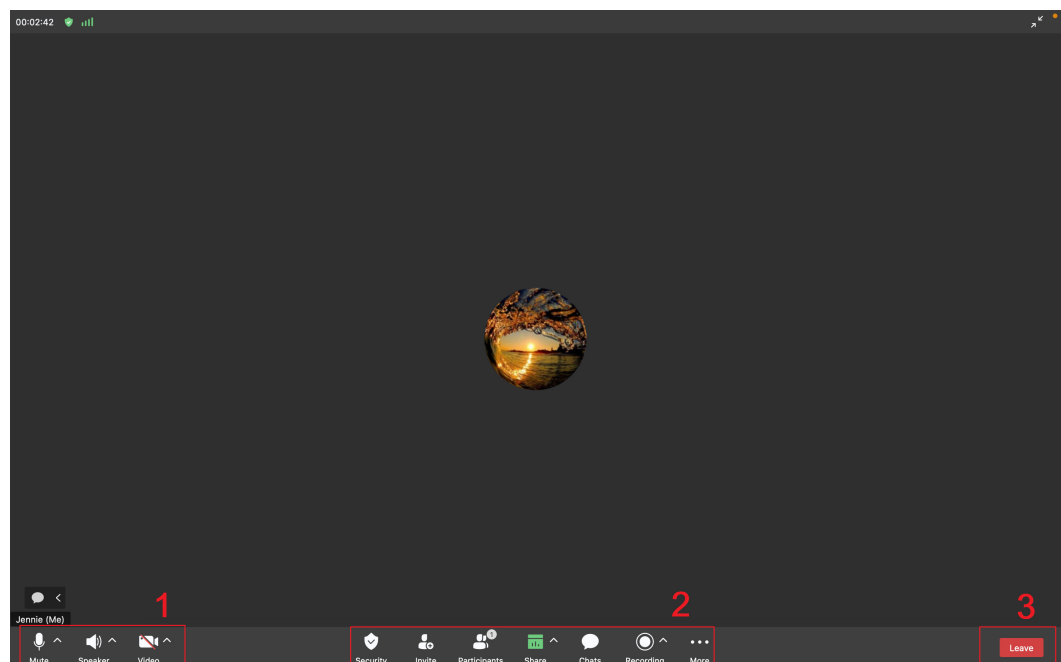
This API is used to customize a meeting control menu at the bottom.

You can adjust the button display sequence or hide buttons in area 1 in the following figure.

A maximum of eight buttons can be displayed in area 2. Extra buttons will not be displayed.

You can only hide or display the button in area 3.

Figure 8-8 Customizing a meeting control menu at the bottom of a video meeting



Precautions

1. In the returned full array, use an empty array (@[]) to hide a button in a certain area.
2. If the current scenario or role does not support the transferred button, the button will not be displayed. For example, the invitation function is hidden for common participants.

Method Definition

```
- (nullable NSArray <NSArray <HWMToolBarItemModel * > * >)meetingToolBarItemsForScene:  
(HWMConfToolBarScene)scene;
```

Parameter Description

scene: scenario where the bottom toolbar is customized. The options are as follows:

HWMConfToolBarSceneAudioConf: voice meeting.

HWMConfToolBarSceneVideoConf: video meeting.

Return Values

None

Sample Code

Take a video meeting as an example:

The following code hides the **Video** button and adds a custom button. Figure 1 shows the effect.

```
- (nullable NSArray <NSArray <HWMToolBarItemModel * > * >)meetingToolBarItemsForScene:  
(HWMConfToolBarScene)scene {  
    // Customize buttons on the bottom toolbar for the video meeting.  
    if (scene == HWMConfToolBarSceneVideoConf) {  
        // Microphone  
        HWMToolBarItemModel *micItem = [HWMToolBarItemModel defaultMicrophoneItem];  
        // Speaker  
        HWMToolBarItemModel *speakerItem = [HWMToolBarItemModel defaultSpeakerItem];  
        // Participants  
        HWMToolBarItemModel *participantItem = [HWMToolBarItemModel defaultParticipantItem];  
        // Share  
        HWMToolBarItemModel *shareItem = [HWMToolBarItemModel defaultDataShareItem];  
        // Chat  
        HWMToolBarItemModel *chatItem = [HWMToolBarItemModel defaultChatItem];  
        // Custom  
        HWMToolBarItemModel *customItem = [[HWMToolBarItemModel alloc] init];  
        customItem.title = @"Custom";  
        customItem.selectedTitle = @"Select the custom button.";  
        customItem.iconImage = [UIImage imageNamed:@"icon-customize-select-normal"];  
        customItem.selectedIconImage = [UIImage imageNamed:@"icon-customize-select-selected"];  
        customItem.disabledIconImage = [UIImage imageNamed:@"icon-customize-select-normal"];  
        // More  
        HWMToolBarItemModel *moreItem = [HWMToolBarItemModel defaultMoreItem];  
        // Leave  
        HWMToolBarItemModel *leaveItem = [HWMToolBarItemModel defaultLeaveItem];  
  
        // Left area  
        NSArray *leadingArray = @[micItem, speakerItem];  
        // Middle area  
        NSArray *centerArray = @[participantItem, shareItem, chatItem, customItem, moreItem];  
        // Right area  
        NSArray *trailingArray = @[leaveItem];  
  
        // Return a full array. Use an empty array (@[]) to hide all buttons in a certain area.  
        return @[leadingArray, centerArray, trailingArray];  
    }  
}
```

```
}  
    return nil;  
}
```

8.4.3.4 Customizing the Sharing Toolbar

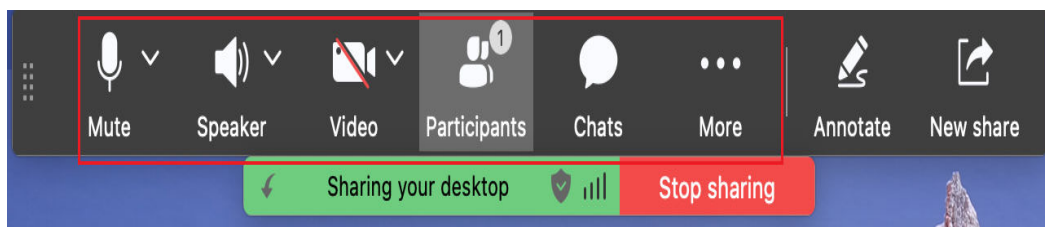
screenShareToolBarItems

API Description

This API is used to customize buttons on the sharing toolbar.

A maximum of eight buttons can be customized in the boxed area in the following figure. Extra buttons will not be displayed.

Figure 8-9 Buttons can be customized on the sharing toolbar



Precautions

If the current scenario or role does not support the transferred button, the button will not be displayed.

Method Definition

```
- (nullable NSArray <HWMToolBarItemModel *> *)screenShareToolBarItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
// Customize buttons on the sharing toolbar.  
- (nullable NSArray <HWMToolBarItemModel *> *)screenShareToolBarItems {  
    // Microphone  
    HWMToolBarItemModel *micItem = [HWMToolBarItemModel defaultMicrophoneItem];  
    // Speaker  
    HWMToolBarItemModel *speakerItem = [HWMToolBarItemModel defaultSpeakerItem];  
    // Camera  
    HWMToolBarItemModel *cameraItem = [HWMToolBarItemModel defaultCameraItem];  
    // Participants  
    HWMToolBarItemModel *participantItem = [HWMToolBarItemModel defaultParticipantItem];  
    // Custom  
    HWMToolBarItemModel *customItem = [[HWMToolBarItemModel alloc] init];  
    customItem.title = @"Custom";  
    customItem.selectedTitle = @"Select the custom button.";  
    customItem.iconImage = [NSImage imageNamed:@"icon-customize-select-normal"];  
    customItem.selectedIconImage = [NSImage imageNamed:@"icon-customize-select-selected"];  
    customItem.disabledIconImage = [NSImage imageNamed:@"icon-customize-select-normal"];  
    // Chat
```

```

HWMToolBarItemModel *chatItem = [HWMToolBarItemModel defaultChatItem];
// More
HWMToolBarItemModel *moreItem = [HWMToolBarItemModel defaultMoreItem];

return @[micItem, speakerItem, cameraItem, participantItem, customItem, chatItem, moreItem];
}

```

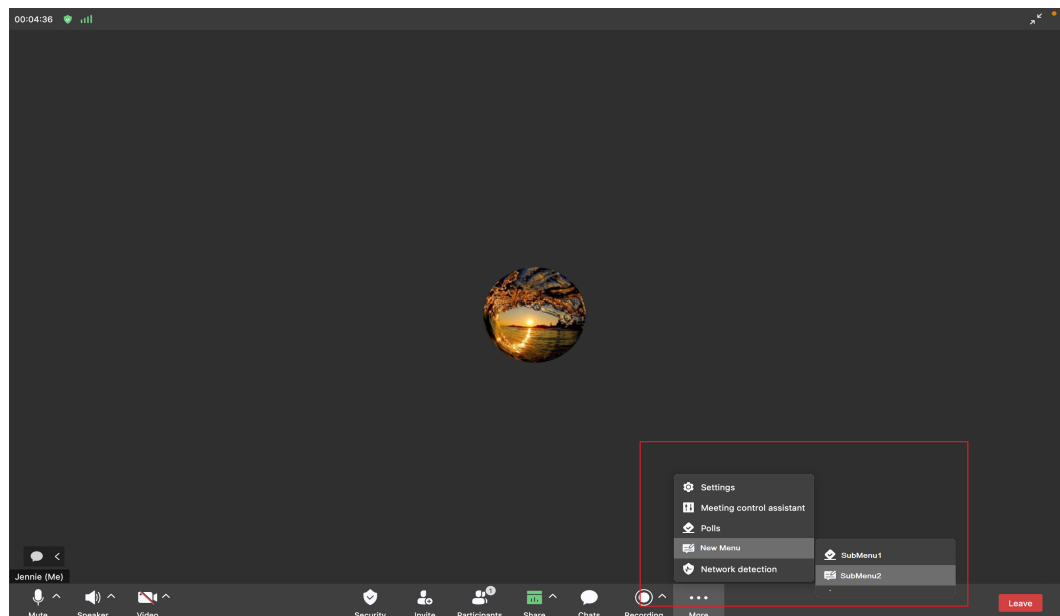
8.4.3.5 Customizing the More Menu on the Bottom Toolbar

meetingToolBarMoreMenuItems

API Description

This API is used to customize the options in the **More** menu on the meeting control toolbar.

Figure 8-10 Options in the More menu on the meeting control toolbar



Precautions

None

Method Definition

```
- (nullable NSArray <HWMMenuItemModel *> *)meetingToolBarMoreMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

```

// Customize the More menu on the bottom toolbar.
- (nullable NSArray <HWMMenuItemModel *> *)meetingToolBarMoreMenuItems {
    // Network detection
    HWMMenuItemModel *netWorkDetectionItem = [HWMMenuItemModel

```

```
defaultNetworkDectectionModel];  
    // Custom option  
    HWMMenulItemModel *customItem = [[HWMMenulItemModel alloc]init];  
    customItem.title = @"Custom option";  
    customItem.image = [NSImage imageNamed:@"icon-customize-select-normal"];  
    HWMMenulItemModel *subItem1 = [[HWMMenulItemModel alloc]init];  
    subItem1.title = @"Sub-option 1";  
    HWMMenulItemModel *subItem2 = [[HWMMenulItemModel alloc]init];  
    subItem2.title = @"Sub-option 2";  
    customItem.submenus = @[subItem1,subItem2];  
    return @[netWorkDectectionItem, customItem];  
}
```

8.4.3.6 Customizing the More Menu on the Sharing Toolbar

screenShareToolbarMoreMenuItems

API Description

This API is used to customize the options in the **More** menu on the sharing toolbar.

Figure 8-11 Options in the More menu on the sharing toolbar



Precautions

None

Method Definition

```
- (nullable NSArray <HWMMenulItemModel *> *)screenShareToolbarMoreMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
// Customize the options in the More menu on the sharing toolbar.  
- (nullable NSArray <HWMMenulItemModel *> *)screenShareToolbarMoreMenuItems {  
    // Network detection  
    HWMMenulItemModel *networkDetectionItem = [HWMMenulItemModel  
defaultNetworkDectectionModel];  
    // Custom option  
    HWMMenulItemModel *customItem = [[HWMMenulItemModel alloc]init];  
    customItem.title = @"Custom option";  
    customItem.image = [NSImage imageNamed:@"icon-customize-select-normal"];  
    HWMMenulItemModel *subItem1 = [[HWMMenulItemModel alloc]init];
```

```
subItem1.title = @"Sub-option 1";
HWMMMenuItemModel *subItem2 = [[HWMMMenuItemModel alloc] init];
subItem2.title = @"Sub-option 2";
customItem.submenus = @[subItem1, subItem2];
// Leave
HWMMMenuItemModel *leaveItem = [HWMMMenuItemModel defaultLeaveMeetingModel];

return @[networkDetectionItem, customItem, leaveItem];
}
```

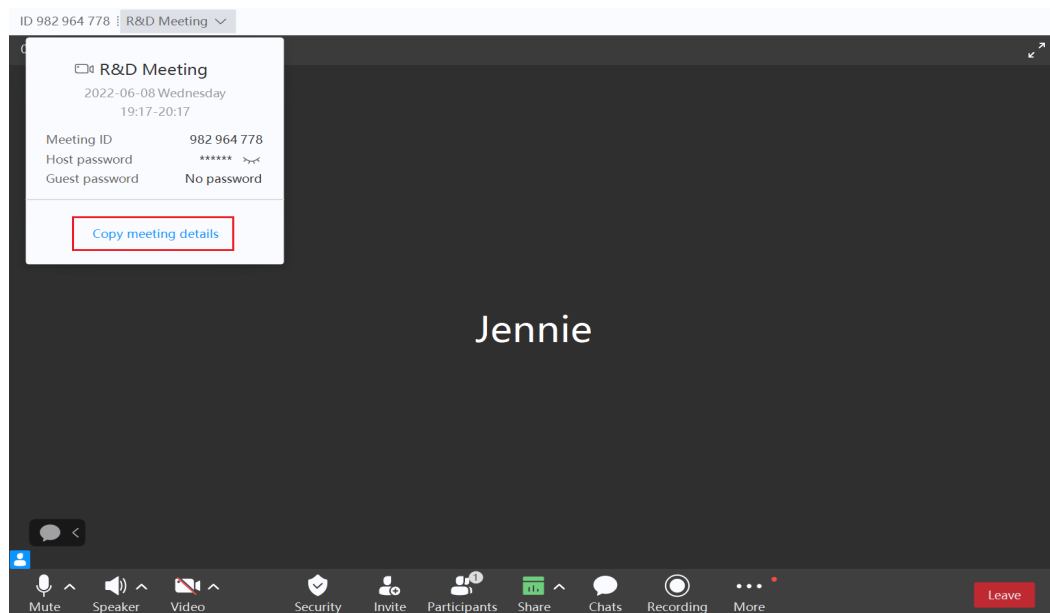
8.4.3.7 Customizing the Social Sharing Window

- (NSView *)socialShareView:(HWMConfStateInfo *)confInfo;

API Description

This API is used to block the meeting sharing window. After the setting, the sharing pop-up window of the SDK (shown in the following figure) will be blocked.

Figure 8-12 Sharing pop-up window



Precautions

1. If the method is implemented, it will be called when you use the sharing function during a meeting. The SDK controls the position, display, and hiding of the window.

Sample Code

```
- (NSView *)socialShareView:(HWMConfStateInfo *)confDetail {
    if (!self.socialView) {
        self.socialView = [[HWMSocialView alloc] initWithFrame:NSMakeRange(0, 0, 500, 300)];
        self.socialView.wantsLayer = YES;
        self.socialView.layer.backgroundColor = [NSColor whiteColor].CGColor;
    }
    self.socialView.confDetail = confDetail;
    return self.socialView;
}
```

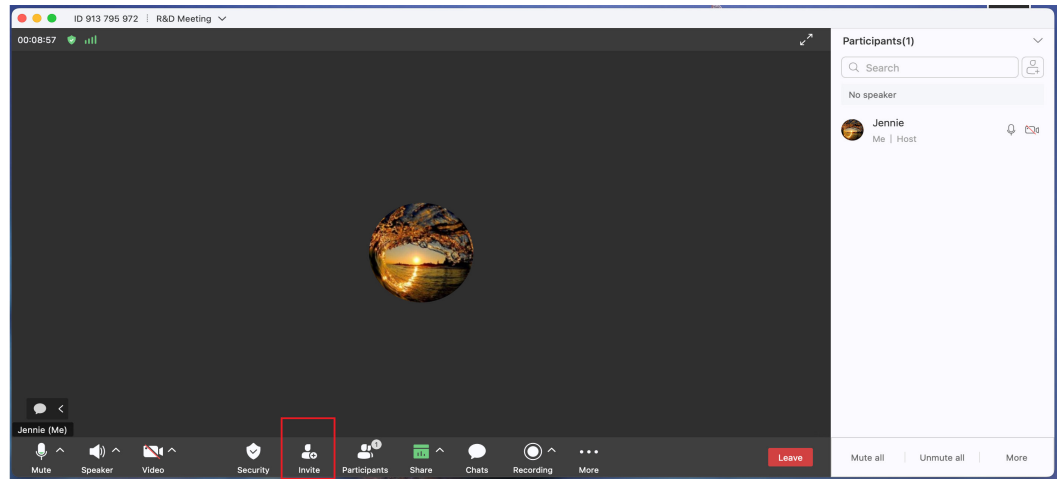
8.4.3.8 Customizing the Contact Selection Window

openContactSelectWindow:scene:completeHandler:

API Description

This API is used to customize the contact selection window.

Figure 8-13 Location where contact selection is triggered



Precautions

None

Method Definition

```
- (void)openContactSelectWindow:(NSArray<HWMAttendeeInfo *> *)param scene:  
(HWMSelectedContactScene)scene completeHandler:(void (^)(NSArray<HWMAttendeeInfo *> *  
_Nullable))handler ;
```

Parameter Description

None

Return Values

None

Sample Code

```
- (void)openContactSelectWindow:(NSArray<HWMAttendeeInfo *> *)param scene:  
(HWMSelectedContactScene)scene completeHandler:(void (^)(NSArray<HWMAttendeeInfo *> *  
_Nullable))handler {  
    HWMSelectContactViewController *contact = [[HWMSelectContactViewController alloc] init];  
    [contact setSelectAttendeeInfoHandler:^(NSArray *attendees) {  
        if (handler) {  
            handler(attendees);  
        }  
    }];  
    self.selectContactVC = contact;  
    [self presentViewControllerAsModalWindow:contact];  
}
```

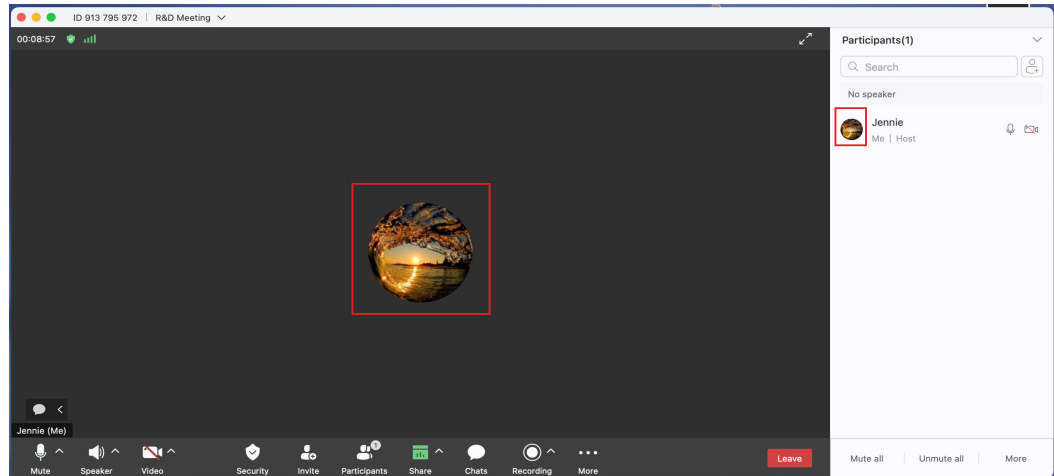
8.4.3.9 Customizing the Profile Picture

downloadHeadPortraitWithThirdAccount: account: number: completionBlock:

API Description

This API is used to customize the profile picture displayed after login.

Figure 8-14 Effect of blocking the profile picture



Precautions

1. The profile picture of a user who has not logged in cannot be customized.
2. Profile pictures can be uploaded (see the API for uploading a profile picture) or implemented through injection. If both methods are used, the injected profile picture takes precedence. The profile picture uploaded to the server will not be used in this case.

Method Definition

```
-(void)downloadHeadPortraitWithThirdAccount:(NSString *)thirdAccount account:(NSString *)account
number:(NSString *)number completionBlock:(void (^)(NSError * _Nullable, NSString *
_Nullable))completionBlock
```

Parameter Description

Table 8-21

Parameter	Type	Description
thirdAccount	NSString	This parameter is preferentially used in the app ID login scenario.
account	NSString	This parameter is preferentially used in the account and password login scenario.

Parameter	Type	Description
number	NSString	This parameter is preferentially used in the cross-enterprise scenario.

Return Values

None

Sample Code

```
- (void)downloadHeadPortraitWithThirdAccount:(NSString *)thirdAccount account:(NSString *)account
number:(NSString *)number completionBlock:(void (^)(NSError * _Nullable, NSString *
_Nullable))completionBlock {
    if (completionBlock) {
        /// Return the image path to the SDK.
        NSInteger index = arc4random() % 3;
        NSString *path = [[NSBundle bundleForClass:[self class]] pathForResource:[NSString
stringWithFormat:@"head_icon_%lu", index] ofType:@"png"];

        completionBlock(nil, path);
    }
}
```

8.4.3.10 Customizing Other UIs

videoWindowDockIcon

API Description

This API is used to customize the Dock icon of the minimized window during the video call.

Method Definition

```
- (NSImage *)videoWindowDockIcon;
```

Parameter Description

None

Return Values

None

Sample Code

```
- (NSImage *)videoWindowDockIcon {
    return [NSImage imageNamed:@"iconMeeting"];
}
```

8.4.3.11 Customizing a Watermark for a Meeting

setWaterMark

API Description

This API is used to customize the watermark for sharing.

Method Definition

```
-(void)setWaterMark:(nullable NSAttributedString *)waterMarkString;
```

Parameter Description

Watermark content.

Return Values

None

Sample Code

```
NSAttributedString *waterMarkString = [[NSAttributedString alloc] initWithString:@"Watermark content"];
[[HWMSdk getOpenApi] setWaterMark:waterMarkString];
```

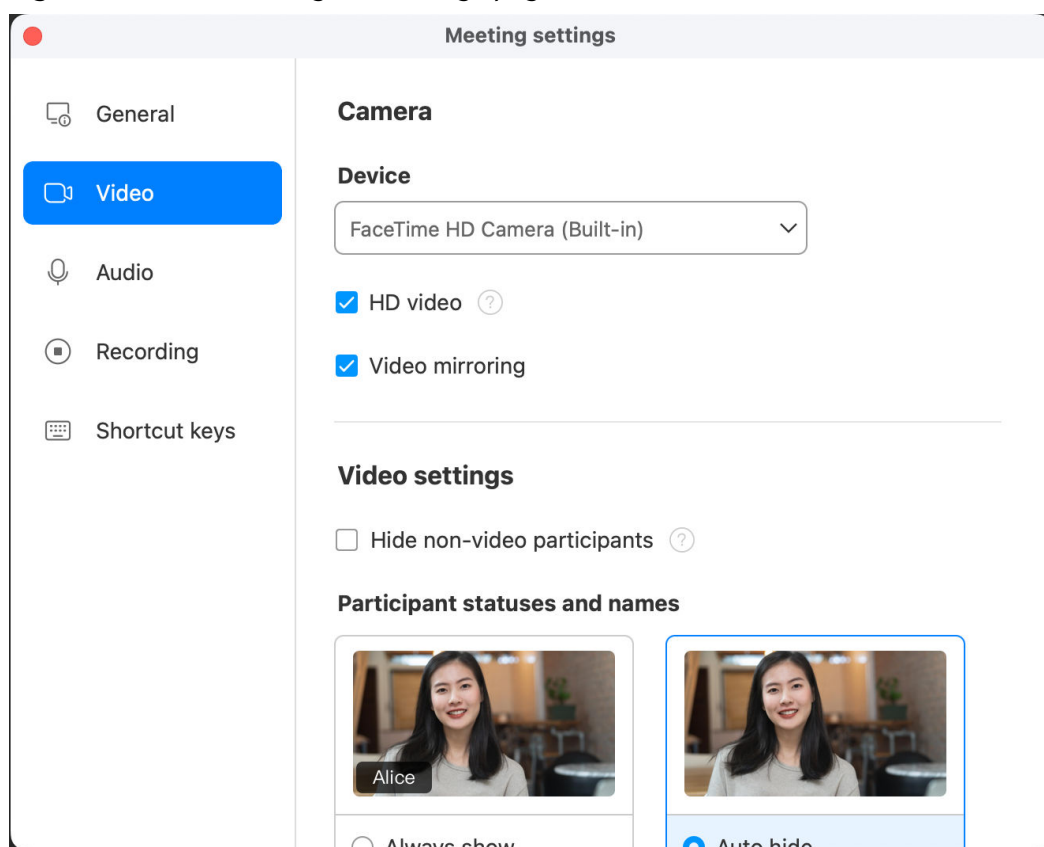
8.4.3.12 Customizing the Settings Page

buildSettingTabItems

API Description

This API is used to customize the display of tab pages and function areas of the settings page. If not customized, all tab pages and function areas are displayed by default.

Figure 8-15 Customizing the settings page



Method Definition

```
- (NSArray <HWMSettingTabItem *> *)buildSettingTabItems;
```

Parameter Description

Table 8-22 HWMSettingTabItem

Parameter	Type	Description
type	HWMSettingTabType	Tab type.
text	NSString	Title.
image	NSImage	Image.
hoverImage	NSImage	Effect when the pointer is placed on an image.
settingMenuItems	NSArray	Function list on the right.

Table 8-23 HWMSettingMenuItem

Parameter	Type	Description
type	HWMSettingMenuItemType	Function type.
text	NSString	Title.

Table 8-24 HWMSettingTabType parameters

Parameter	Type	Description
HWMSettingTabNormal	NSUInteger	General settings page.
HWMSettingTabVideo	NSUInteger	Video settings page.
HWMSettingTabAudio	NSUInteger	Audio settings page.
HWMSettingTabRecord	NSUInteger	Recording settings page.
HWMSettingTabHotKey	NSUInteger	Shortcut key settings page.

Table 8-25 HWMSettingMenuItemType parameters

Parameter	Type	Description
HWMSettingMenuItemLogin	NSUInteger	Login settings.
HWMSettingMenuItemCall	NSUInteger	Meeting call settings.
HWMSettingMenuItemChat-Notify	NSUInteger	Message notification settings.

Parameter	Type	Description
HWMSettingMenuSubtitle	NSUInteger	Caption settings.
HWMSettingMenuMicrophone	NSUInteger	Microphone settings.
HWMSettingMenuSpeaker	NSUInteger	Speaker settings.
HWMSettingMenuAdvanced	NSUInteger	Advanced settings.
HWMSettingMenuCamera	NSUInteger	Camera settings.
HWMSettingMenuLayout	NSUInteger	Layout settings.
HWMSettingMenuRecord	NSUInteger	Recording settings.
HWMSettingMenuHotKey	NSUInteger	Shortcut key settings.

Return Values

None

Sample Code

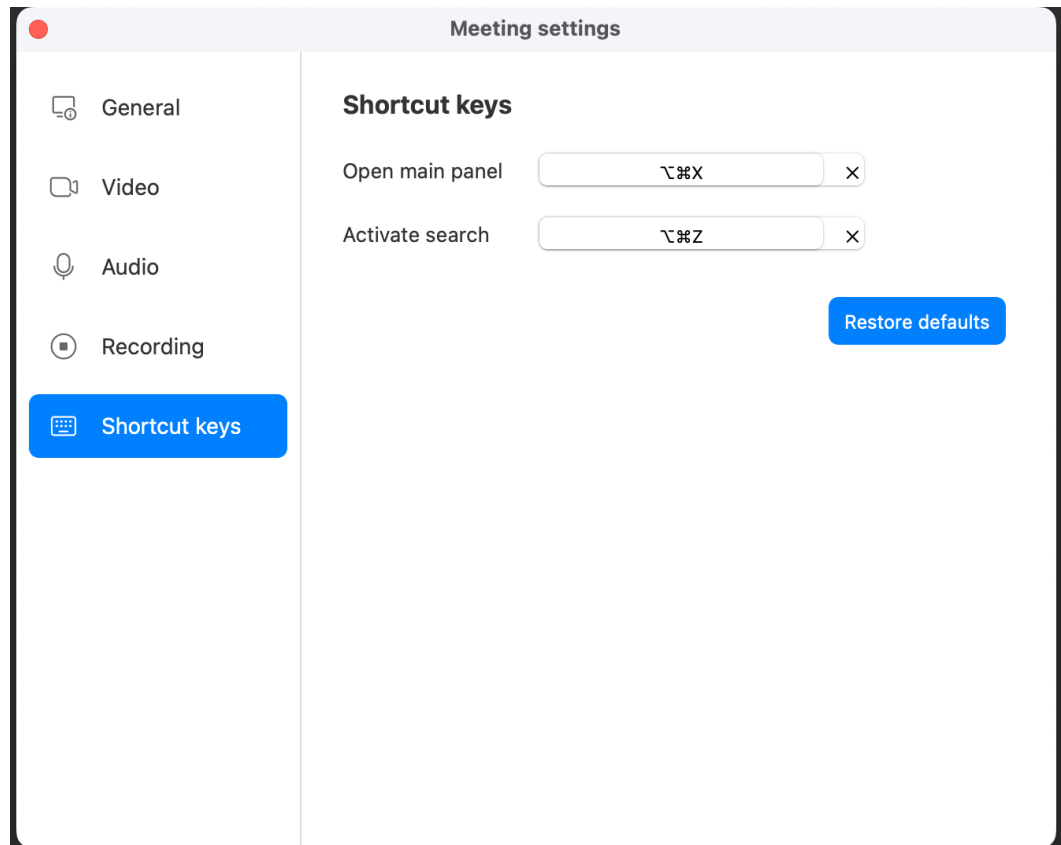
```
- (NSArray <HWMSettingTabItem *> *)buildSettingTabItems{
    HWMSettingTabItem *normalTab = [HWMSettingTabItem defaultTabNormal];
    HWMSettingTabItem *videoTab = [HWMSettingTabItem defaultTabVideo];
    HWMSettingTabItem *audioTab = [HWMSettingTabItem defaultTabAudio];
    HWMSettingTabItem *recordTab = [HWMSettingTabItem defaultTabRecord];
    HWMSettingTabItem *hotKeyTab = [HWMSettingTabItem defaultTabHotKey];
    return @[normalTab, videoTab, audioTab, recordTab, hotKeyTab];
};
```

buildSettingHotKeyItems

API Description

This API is used to customize the shortcut key page of the settings page. The shortcut key page will not be displayed if not set.

Figure 8-16 Customizing shortcut keys



Method Definition

```
- (NSArray<HWMSettingHotKeyItem *> *)buildSettingHotKeyItem;
```

Parameter Description

Table 8-26 HWMSettingHotKeyItem

Parameter	Type	Description
type	HWMSettingHotKeyType	Shortcut key type.
keyCode	NSInteger	Default shortcut key.
keyName	NSString	Key value of a shortcut key.
text	NSString	Shortcut key title.
action	dispatch_block_t	Shortcut key response event.

Table 8-27 HWMSettingHotKeyType parameters

Parameter	Type	Description
HWMSettingHotKeyOpenMain	NSUInteger	Main panel opening.
HWMSettingHotKeyActivateSearch	NSUInteger	Activate search.

Return Values

None

Sample Code

```
- (NSArray <HWMSettingHotKeyItem *> *)buildSettingHotKeyItems {
    HWMSettingHotKeyItem *item = [[HWMSettingHotKeyItem alloc] initWithType:2 text:@"Custom
shortcut key" keyCode:kVK_ANSI_C keyName:@"HWMHotKeyCustomKey"];
    item.action = ^{
        NSLog(@"action");
    };
    return @[item];
};
```

8.4.3.13 Customizing Contact Information

queryUserDetailByNumbers: completionBlock:

API Description

This API is used to inject contact information.

Precautions

1. You need to subscribe to the **HWMContactApiHandler** proxy object to use the API.

Figure 8-17 Injected department information displayed in the tooltip

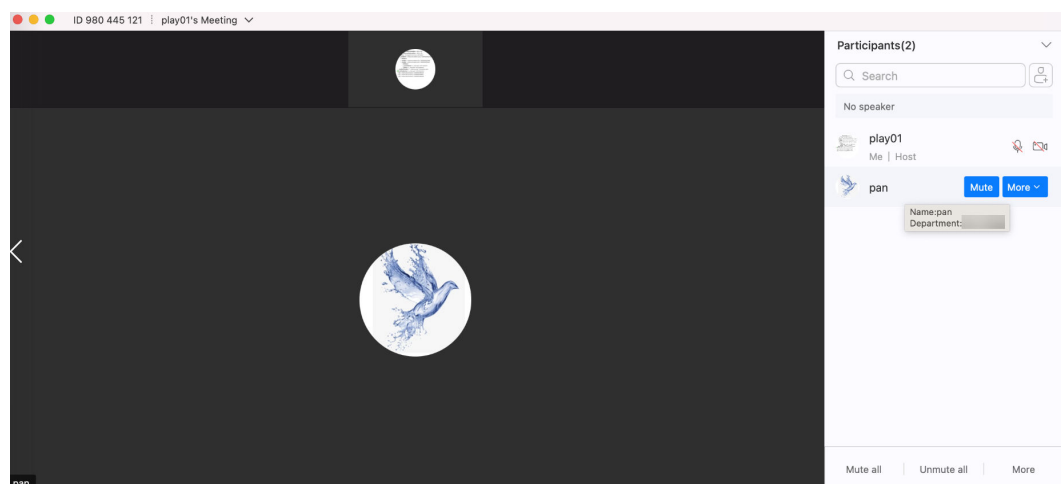
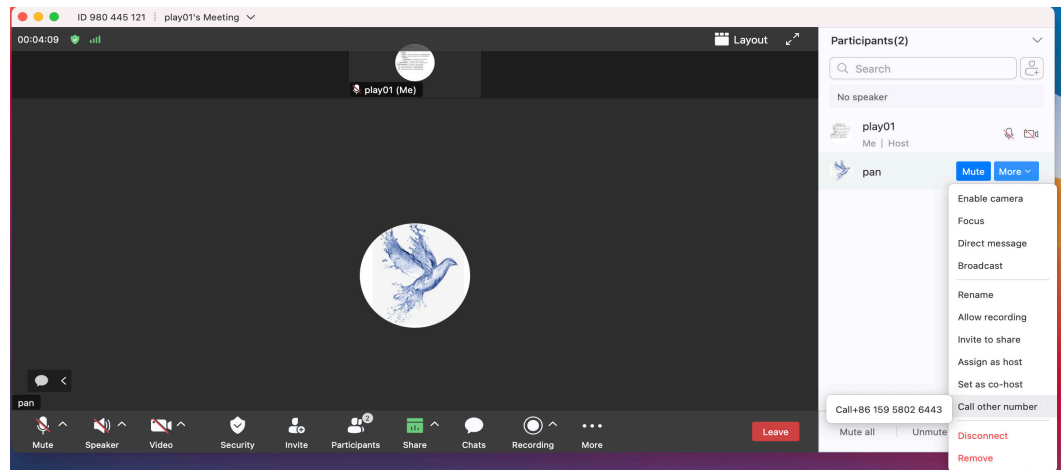


Figure 8-18 Customizing the display mode of mobile numbers



Method Definition

```

/// Query a contact by number (SIP number).
/// @param numbers number set
/// @param completionBlock result callback. If there is a value in NSArray, an error will not be returned.
/// Return the query result (userInfo) to the SDK.
- (void)queryUserDetailByNumbers:(NSArray<NSString *> *)numbers
    completionBlock:(void (^)(NSError *_Nullable error, NSArray<HWMEnterpriseContact *>
*_Nullable userInfo))completionBlock;
    
```

Parameter Description

Table 8-28

Parameter	Type	Description
numbers	NSArray	SIP number of the contact to be injected.

Return Values

None

Sample Code

```

- (void)queryUserDetailByNumbers:(NSArray<NSString *> *)numbers completionBlock:(void (^)(NSError *_
_Nullable, NSArray<HWMEnterpriseContact *> *_Nullable))completionBlock {
    NSArray *data = [self searchContactsWithKeys:numbers isNumber:YES]; // Contact array obtained through
the numbers array.
    completionBlock(nil,data); // Return the data source to the SDK.
}
    
```

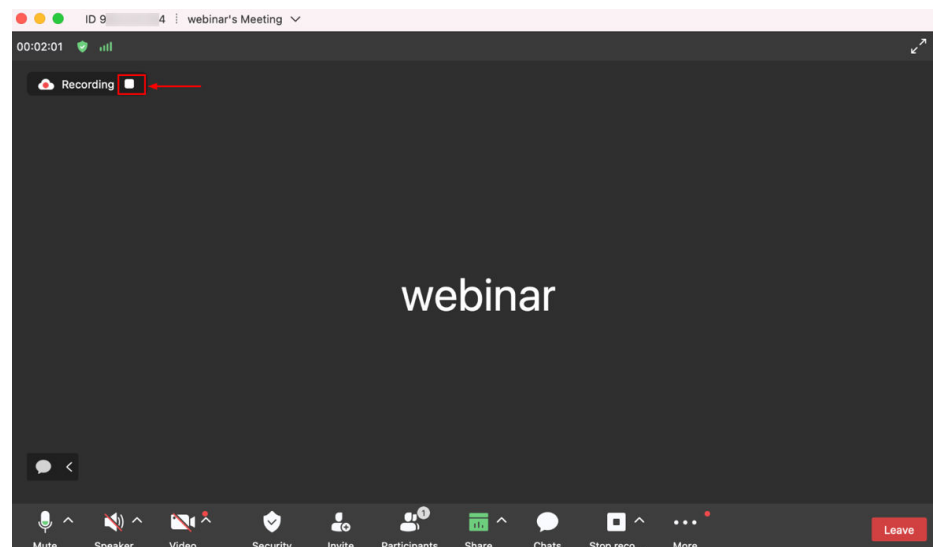
8.4.3.14 Customizing the Recording Button

buildRecordMenuItems

API Description

This API is used to customize whether to hide the recording button next to the recording status bar.

Figure 8-19 Customizable location



Precautions

1. Currently, only the button on the right of the recording status bar can be hidden. If no item is passed, the button will be hidden.

Method Definition

```
-(NSArray <HWMStatusBarItemModel *> *)buildRecordMenuItems;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Customize the recording button next to the recording status bar.
-(NSArray <HWMStatusBarItemModel *> *)buildRecordMenuItems {
    HWMStatusBarItemModel *recordItem = [WKCFStatusBarItemModel defaultStatusBarRecordMenu];
    // If the operation button on the right of the recording status bar is not required, leave the array empty.
    return @[recordItem];
}
```

8.4.3.15 Displaying the Settings Window

showSettingWindowWithInfo

API Description

This API is used to display the settings window.

Method Definition

```
-(void)showSettingWindowWithInfo:(HWMUISDKShowSettingWindowInfoModel *)info;
```

Parameter Description

Table 8-29 Parameter description

Parameter	Man dato ry	Type	Description
info	Yes	HWMUISDKShowSet- tingWindowInfoMo- del	Information about displaying the settings window.

Table 8-30 HWMUISDKShowSettingWindowInfoModel parameters

Parameter	Type	Description
isShow	BOOL	Whether the window is displayed.
defaultPage	HWMUISDKSetting- Page	Tab displayed by default.

Table 8-31 Enumerated values of HWMUISDKSettingPage

Enumerated Value	Description
HWMUISDKSettingPage- Normal	General
HWMUISDKSettingPageVi- deo	Video
HWMUISDKSettingPageAu- dio	Audio
HWMUISDKSettingPageRe- cord	Recording
HWMUISDKSettingPage- Hotkey	Shortcut keys
HWMUISDKSettingPa- geScreen	Screen
HWMUISDKSettingPage- Count	Number of setting screens

Return Values

None

Sample Code

```
(void)settingEvent:(NSButton *)button {
    if (![HWMsdk hasInit]) {
        // Call this API after initialization.
    }
}
```



```
return;
}
HWMUISDKShowSettingWindowInfoModel *model = [[HWMUISDKShowSettingWindowInfoModel alloc]
init];
model.isShow = YES;// Whether the window is displayed.
model.defaultPage = HWMUISDKSettingPageNormal;// Set the tab page to be displayed.
[[HWMBizSdk getBizOpenApi] showSettingWindowWithInfo:model];
}
```

8.4.3.16 Customizing Subitems in the Participant List

onClickInjectParticipantItemBtnNotify

API Description

This API is used to customize an event of clicking a subitem in the participant list.

Method Definition

```
- (void)onClickInjectParticipantItemBtnNotify:(HWMUISDKInjectParticipantItemBtnInfoModel *)injectBtnInfo;
```

Parameter Description

Table 8-32 Parameter description

Parameter	Man dato ry	Type	Description
injectBtnInfo	Yes	HWMUISDKInjectPar- ticipantItemBtnInfo- Model	Information about displaying the settings window.

Table 8-33 HWMUISDKInjectParticipantItemBtnInfoModel description

Parameter	Type	Description
injectBtn	HWMUISDKClickInject- ParticipantItemBtn	Button type.
participantInfo	HWMUISDKParticipan- tItemInfoModel	Participant subitem information.
btnId	NSString *	Button ID.

Table 8-34 Enumerated values of HWMUISDKClickInjectParticipantItemBtn

Enumerated Value	Description
HWMUISDKClickInjectPar- ticipantItemBtnCallOther- Num	Call other number button.

Enumerated Value	Description
HWMUISDKClickInjectParticipantItemBtnParticipantDetail	Button of viewing participant details.

Table 8-35 HWMUISDKParticipantItemInfoModel description

Parameter	Type	Description
number	NSString *	Number.
nickName	NSString *	Participant nickname.
thirdUserId	NSString *	Third-party account of the participant, which is used for login using app ID.
accountId	NSString *	Huawei Cloud Meeting account.

Return Values

None

Sample Code

```

- (void)onClickInjectParticipantItemBtnNotify:(HWMUISDKInjectParticipantItemBtnInfoModel *)injectBtnInfo
{
    // After receiving the notification, process the reported information. The processing mode of the sample
    // code is to print the reported information.
    NSString *info = [injectBtnInfo yy_modelDescription];
    [HWMConsoleManager sharedInstance].console = [NSString stringWithFormat:@"participant: %@", info];
}

```

8.4.3.17 Displaying a Toast Message

showToast

API Description

This API is used to display a toast.

Method Definition

```

- (void)showToast:(HWMUISDKToastInfoModel *)info;

```

Parameter Description

Table 8-36 Parameter description

Parameter	Man dato ry	Type	Description
info	Yes	HWMUISDKToastIn- foModel	Message information.

Table 8-37 HWMUISDKToastInfoModel description

Parameter	Type	Description
content	NSString *	Toast message.
duration	NSInteger	Display duration, in seconds.

Return Values

None

Sample Code

```
HWMUISDKToastInfoModel * info = [[HWMUISDKToastInfoModel alloc] init];
// Obtain the message and duration from the text box.
info.content = self.toastContentView.textField.stringValue;
info.duration = self.toastDurationInfoView.textField.intValue;
[[HWMBizSdk getBizOpenApi] showToast:info];
```

8.4.3.18 Obtaining Information About the Main Window

getMainWindowInfo

API Description

This API is used to obtain information about the main window.

Method Definition

```
-(HWMUISDKMainWindowInfoModel *)getMainWindowInfo;
```

Parameter Description

None

Return Values

Table 8-38 HWMUISDKMainWindowInfoModel description

Parameter	Type	Description
x	NSInteger	Offset of the window relative to the left side of the screen.

Parameter	Type	Description
y	NSInteger	Offset of the window relative to the top of the screen.
width	NSInteger	Width of the window.
height	NSInteger	Height of the window.

Sample Code

```
HWMUISDKMainWindowInfoModel * info = [[HWMBizSdk getBizOpenApi] getMainWindowInfo];
```

8.4.3.19 Obtaining an Error Message

getErrorMessage

API Description

This API is used to obtain an error message using an error code.

Method Definition

```
-(NSString *)getErrorMessage:(NSInteger)code;
```

Parameter Description

Table 8-39 Parameter description

Parameter	Type	Description
code	NSInteger	Error code.

Return Values

Table 8-40 Parameter description

Type	Description
NSString *	Error message.

Sample Code

```
-(void)setError:(NSError *)error {
    NSString *errorTips = [[HWMBizSdk getBizOpenApi] getErrorMessage:error.code];
}
```

8.4.4 Meeting Control

8.4.4.1 Creating a Meeting

createConf

API Description

This API is used to create an instant meeting.

Precautions

1. By default, this API enables you to join a meeting as a host. During API calling, there is no need to add your information to the participant parameters.
2. If other participants need to be invited, their information needs to be transferred.
3. The meeting creation result can be obtained by calling the callback API.

Method Definition

```
- (void)createConf:(HWMCreateConfParam * _Nonnull)param callback:( _Nonnull  
HWMSDKCreateConfCompleteHandler)callback;
```

Parameter Description

Table 8-41 HWMCreateConfParam description

Parameter	Mandatory	Type	Description
subject	Yes	NSString *	Meeting topic.
members	No	NSArray <HWMAttendeeInfo*> *	Member list (optional).
isCameraOn	No	BOOL	Whether to turn on the camera. By default, the camera is turned off.
isMicOn	No	BOOL	Whether to turn on the microphone. By default, the microphone is turned on.
isAutoRecord	No	BOOL	Whether to automatically start recording after the meeting starts. The function is disabled by default. Meeting recording must be enabled if automatic recording is enabled.

Parameter	Mandatory	Type	Description
vmrId	No	NSString *	ID of the personal meeting or cloud meeting room. This parameter is required when a personal meeting or a cloud meeting room is created. In other cases, this parameter is left empty.
callInRestriction-Type	No	HWMJoinConfRestrictionType	Users who are allowed to join the meeting.
noPassword	No	BOOL	Whether a meeting has no password. By default, a meeting has a password. (This parameter is valid only for random meetings held in the cloud meeting room.)
guestPwd	No	NSString	Password for a guest to join a meeting. By default, this parameter is left empty, indicating that a password is generated randomly. (This parameter is valid only for random meetings held in the cloud meeting room.)
isVideo	No	BOOL	Whether to create a video meeting. The default value is YES . If NO is specified, a voice meeting is created.
vmrConfIdType	No	HWMVmrConfIdType	ID type of the cloud meeting room. A fixed ID is used by default.

Parameter	Mandatory	Type	Description
isOpenWaitingRoom	No	BOOL	Whether to enable the waiting room. NOTE The function takes effect only after the waiting room function is enabled.
customInfo	No	NSString *	User-defined information (meeting details and in-meeting chat messages).
concurrentParticipants	No	NSUInteger	Maximum number of participants in a meeting. The default value is 0 .
confResType	No	HWMConfResType	Meeting resource type.

Table 8-42 HWMAttendeeInfo description

Parameter	Mandatory	Type	Description
name	Yes	NSString	Participant name.
number	No	NSString	SIP number or phone number. This parameter is mandatory in the account and password login scenario.
thirdUserId	No	NSString	Third-party account. This parameter is mandatory in the app ID login scenario.

Parameter	Mandatory	Type	Description
accountId	No	NSString	User login account. This parameter is mandatory in the account and password login scenario.
email	No	NSString	Email address.
sms	No	NSString	Mobile number for receiving SMS notifications.
mute	No	BOOL	Whether to mute the microphone.
role	No	HWMConfRoleType	Participant role.

Table 8-43 Enumerated values of HWMConfResType

Enumerated Value	Description
HWMSDKConfRestypeDefault	Default.
HWMSDKConfRestypeShareVmr	Shared cloud meeting room.

Return Values

None

Sample Code

```

// Create a meeting.
- (void)createMeeting {
    HWMCreateConfParam *param = [[HWMCreateConfParam alloc] init];
    param.subject = @"Meeting topic";
    param.isCameraOn = YES; // Whether to turn on the camera. By default, the camera is turned off.
    param.isMicOn = YES; // Whether to turn on the microphone. By default, the microphone is turned on.
    param.isAutoRecord = NO; // Whether to enable the automatic recording function. By default, this
function is disabled.
    param.joinConfRestrictionType = HWMJoinConfRestrictionAll; // Users who are allowed to join the
meeting.

    [[HWMSdk getOpenApi] createConf:param callback:^(NSError * _Nullable error, HWMCreateConfResult *
_Nullable result) {
        [self hideLoading];
        if (error) {
            NSLog(@"Create meeting failed.%@", error.localizedDescription);
        }else{
            NSLog(@"Meeting created.");
        }
    }
}

```



```
    }  
}
```

8.4.4.2 Joining a Meeting

joinConf

API Description

This API is used to join an existing meeting by using the meeting ID and password. The following two methods can be used to join a meeting:

- Enter the meeting ID and password.
- Use a meeting ID to join a meeting in random mode. The meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/981924330/e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659>) in the notification email contains the meeting ID (981924330) and random code (e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659).

Precautions

1. Use the child class **HWMJoinConfParam** to join a meeting using the ID, and use the child class **HWMRandomConfParam** to join a meeting in random mode.
2. This API can be called regardless of whether you have logged in.
3. The actual service processing result can be obtained by calling the corresponding callback API.

Method Definition

```
- (void)joinConf:(HWMBaseJoinConfParam * _Nonnull)param callback:(_Nonnull  
HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 8-44 HWMBaseJoinConfParam

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
nickname	No	NSString *	Display name in the meeting. If you have logged in, this parameter can be left blank. In such a case, the login username is used as the display name in the meeting.
isCameraOn	No	BOOL	Whether to turn on the camera. By default, the camera is turned off.
isMicOn	No	BOOL	Whether to turn on the microphone. By default, the microphone is turned on.

Parameter	Mandatory	Type	Description
isSpkOn	No	BOOL	Whether to unmute the speaker. By default, the speaker is unmuted.

Table 8-45 HWMJoinConfParam description (inherited from HWMBaseJoinConfParam)

Parameter	Mandatory	Type	Description
password	No	NSString *	Meeting password. To join a meeting as a host, pass the host password. To join a meeting as a guest, pass the guest password unless the meeting is password-free.
isStopConflictConf	No	BOOL	Used to forcibly end a meeting that conflicts with the current cloud meeting room. (Only the owner of the cloud meeting room resource has the permission.)

Table 8-46 HWMRandomConfParam description (inherited from HWMBaseJoinConfParam)

Parameter	Mandatory	Type	Description
random	Yes	NSString *	This parameter is transferred when you join a meeting in random mode.
domain	No	NSString *	Domain name. This parameter is used when you join the meeting offline.

Sample Code

```

/// Join a meeting.
- (void)joinMeeting {
    HWMJoinConfParam *param = [[HWMJoinConfParam alloc] init];
    param.confId = @"989156631";
    param.password = getPassword();
    param.nickname = @"Hangzhou site";
    param.isCameraOn = NO;
    param.isMicOn = YES;
    [[HWM SDK getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Join meeting failed.%@", error.localizedDescription);
        }else{

```

```
        NSLog(@"Meeting joined.");
    }
    }];
}
// Join a meeting in random mode.
- (void)joinMeetingByRandom {
    HWMRandomConfParam *param = [[HWMRandomConfParam alloc] init];
    param.confId = @"989156631";
    param.random = getRandom();
    param.nickname = @"Hangzhou site";
    param.isCameraOn = NO;
    param.isMicOn = YES;
    [[HWM SDK getOpenApi] joinConf:param callback:^(NSError * _Nullable error, id _Nullable result) {
        [self hideLoading];
        if (error) {
            NSLog(@"Join meeting failed.%@", error.localizedDescription);
        }else{
            NSLog(@"Meeting joined.");
        }
    }
    }];
}
```

8.4.4.3 Inviting a Participant

addAttendee

API Description

This API is used to add a participant to a meeting.

Precautions

1. Only the host in the meeting can add participants.

Method Definition

```
- (void)addAttendee:(NSArray<HWMAttendeeInfo *> *) attendee callback:(_Nonnull HWM SDKCompleteHandler)callback;
```

Parameter Description

attendee contains the information about the members to join the meeting. For details, see [HWMAttendeeInfo](#).

Sample Code

```
/// Add a participant to a meeting.
[[HWM BizSdk getBizOpenApi] addAttendee:arr callback:^(NSError * _Nullable error, id _Nullable result) {
    if (!error) {
        NSLog(@"success");
    }
}
}];
```

8.4.4.4 Displaying the Main Meeting Window

showMeetingWindow

API Description

This API is used to place the main meeting window at the top when it is minimized or covered by other windows.

Precautions

None

Method Definition

```
- (void)showMeetingWindow;
```

Parameter Description

None

Return Values

None

Sample Code

```
[[HWMBizSdk getBizOpenApi] showMeetingWindow];
```

8.4.4.5 Setting the Sharing Permission

setShareScreenPermission

API Description

This API is used to set the sharing permission.

Precautions

The return value of this API indicates whether the API is successfully called.

Method Definition

```
- (BOOL)setShareScreenPermission:(BOOL)isPermission;
```

Parameter Description

Table 8-47 Parameter description

Parameter	Man dato ry	Type	Description
isPermission	Yes	bool	Whether sharing is allowed.

Return Values

Table 8-48 Return value

Type	Description
BOOL	If the API is called successfully, YES is returned. If the API fails to be called, NO is returned.

Sample Code

```
/// Set the sharing permission.  
[[HWMSdk getOpenApi] setShareScreenPermission:isPermission];
```

8.4.4.6 Leaving a Meeting

leaveConf

API Description

This API is used to leave a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. If this API is called to leave a meeting, the meeting will not end. You can join the meeting again when the meeting is still in progress.

Method Definition

```
- (void)leaveConf:(HWMSDKCompleteHandler)callback;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// Leave a meeting.  
[[HWMSdk getBizOpenApi] leaveConf:^(NSError * _Nullable error, id _Nullable result) {  
    [UIUtil showMessage:@"Left meeting." error:error];  
}];
```

8.4.4.7 Ending a Meeting

endConf

API Description

This API is used to end a meeting.

Precautions

1. Do not call this API if you are not in a meeting.
2. Only the host can end a meeting.
3. After this API is called, the meeting will end and you cannot join the meeting again.

Method Definition

```
- (void)endConf:(HWMSDKCompleteHandler)callback;
```

Parameter Description

None

Return Values

None

Sample Code

```
/// End a meeting.  
[[HWM SDK getBizOpenApi] endConf:^(NSError * _Nullable error, id _Nullable result) {  
    [UIUtil showMessage:@"Meeting ended." error:error];  
}];
```

8.4.4.8 Starting an Instant Meeting

startP2PConf

API Description

This API is used to start an instant meeting.

Precautions

1. The actual service processing result can be obtained by calling the corresponding callback API.

Method Definition

```
- (void)startP2PConf:(HWMUISDKStartCallInfoModel *)param callback:(_Nonnull  
HWM SDKCreateConfCompleteHandler)callback;
```

Table 8-49 HWMUISDKStartCallInfoModel description

Parameter	Mandatory	Type	Description
calleeInfo	Yes	HWMUISDKCalleeInfo*	Called participant information.
callerInfo	Yes	HWMUISDKCallerInfo*	Caller information.
mediaType	Yes	HWMUISDKMediaType	Media type.

Table 8-50 HWMUISDKCallerInfo description

Parameter	Mandatory	Type	Description
nickName	No	NSString *	Caller name.

Table 8-51 HWMUISDKCalleeInfo description

Parameter	Mandatory	Type	Description
nickName	No	NSString *	Called participant name.

Parameter	Mandatory	Type	Description
number	Yes	NSString *	Called number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set (number is prior to thirdUserId).
thirdUserId	Yes	NSString *	Third-party account of the called participant. This parameter is used for app ID authentication. Either this parameter or number must be set (number is prior to thirdUserId).

Table 8-52 Enumerated values of HWMUISDKMediaType

Enumerated Value	Description
HWMUISDKMediaTypeAudio	Audio.
HWMUISDKMediaTypeVideo	Video.

Return Values

None

Sample Code

```
- (void)startP2PConf {
    // Set the information about the called participant.
    HWMUISDKCalleeInfo *calleeInfo = [[HWMUISDKCalleeInfo alloc] init];
    calleeInfo.nickName = @"Called participant name";
    calleeInfo.number = @"123456";
    calleeInfo.thirdUserId = @"123456";

    // Set the caller information.
    HWMUISDKCallerInfo *callerInfo = [[HWMUISDKCallerInfo alloc] init];
    callerInfo.nickName = @"Caller name";

    HWMUISDKStartCallInfoModel *param = [[HWMUISDKStartCallInfoModel alloc] init];
    // Set the media type.
    param.mediaType = HWMUISDKMediaTypeVideo;
    param.calleeInfo = calleeInfo;
    param.callerInfo = callerInfo;
    // Call the SDK API.
    [[HWMUISDK getOpenApi] startP2PConf:param callback:^(NSError * _Nullable error,
    HWMCreateConfResult * _Nullable result) {
        if (error) {
            NSLog(@"Start instant meeting failed.:%@", error.localizedDescription);
        } else {
            NSLog(@"Instant meeting started.");
        }
    }];
}
```

8.4.5 Meeting Management

8.4.5.1 Scheduling a Meeting

bookConf

API Description

This API is used to schedule a meeting.

Precautions

1. The start time of a meeting must be later than the current time.
2. The **vmrId** parameter must be passed for a personal meeting or cloud meeting room.

3. The **attendee** parameter must be passed if participant information needs to be carried.
4. Meeting recording must be enabled if automatic recording is enabled.
5. For details about the meeting details returned in the callback, see [HWMConfDetail](#).

Method Definition

```
- (void)bookConf:(HWMOrderConfParam *_Nonnull)param callback:(Nonnull
HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 8-53 HWMOrderConfParam description

Parameter	Mandatory	Type	Description
confSubject	Yes	NSString *	Meeting topic.
startTime	Yes	NSTimeInterval	Meeting start time. The value is a UTC timestamp, accurate to seconds.
duration	No	NSUInteger	Meeting duration, in minutes. The value ranges from 15 to 1,440.
isAutoRecord	No	BOOL	Whether to automatically start recording after the meeting starts. The function is disabled by default. Meeting recording must be enabled if automatic recording is enabled.
timeZone	Yes	NSUInteger	Time zone. The current time zone is used by default. Value range: 1–73. For China, the value is 56 and GMT+08:00 time is used. For details, see Time Zone Table .
vmrId	No	NSString *	This parameter needs to be transferred for a personal meeting or cloud meeting room.
callInRestrictionType	No	HWMJoinConfRestrictionType	Users who are allowed to join the meeting.
attendee	No	NSArray< HWMAttendeeInfo *> *	Participant details.

Parameter	Mandatory	Type	Description
isSmsOn	No	BOOL	(Optional) Whether to send SMS notifications. This function must be enabled in the enterprise configuration. Otherwise, this function does not take effect.
isMailOn	No	BOOL	(Optional) Whether to send email notifications. This function must be enabled in the enterprise configuration. Otherwise, this function does not take effect.
isEmailCalendarOn	No	BOOL	Whether to send an email calendar.
noPassword	No	BOOL	Whether a meeting has no password. By default, a meeting has a password. (This parameter is valid only for random meetings held in the cloud meeting room.)
guestPwd	No	NSString	Password for a guest to join a meeting. By default, this parameter is left empty, indicating that a password is generated randomly. (This parameter is valid only for random meetings held in the cloud meeting room.)
isVideo	No	BOOL	Whether to create a video meeting. The default value is YES . If NO is specified, a voice meeting is created.
vmrConfIdType	No	HWMVmrConfIdType	ID type of the cloud meeting room. A fixed ID is used by default.
allowGuestStartConf	No	BOOL	Whether to allow guests to join the meeting ahead of the host. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, use the API for Modifying Cloud Meeting Room Information.

Parameter	Mandatory	Type	Description
allowGuestStartConfTime	No	NSUInteger	Time range allowed for guests to join the meeting in advance, in minutes. 0: Guests can join the meeting at any time before the scheduled time. x: Guest can join the meeting <i>x</i> minutes before the scheduled time. NOTE <ul style="list-style-type: none"> This parameter is valid only for meetings with a random ID. For meetings with fixed IDs, the time range cannot be set.
isOpenWaitingRoom	No	BOOL	Whether to enable the waiting room. NOTE The function takes effect only after the waiting room function is enabled.
isRecordOn	No	BOOL	Whether to enable recording.
customInfo	No	NSString *	User-defined information (meeting details and in-meeting chat messages).
concurrentParticipants	No	NSUInteger	Maximum number of participants in a meeting. The default value is 0 .
confResType	No	HWMConfResType	Meeting resource type.

Table 8-54 Enumerated values of HWMJoinConfRestrictionType

Parameter	Value	Description
HWMJoinConfRestrictionAll	0	Everyone.
HWMJoinConfRestrictionCompany	2	Corporate users only.
HWMJoinConfRestrictionInvited	3	Invited users only.

Table 8-55 HWMAttendeeInfo description

Parameter	Mandatory	Type	Description
number	No	NSString *	This parameter is mandatory in the account and password login scenario.
thirdUserId	No	NSString *	Third-party account, which is mandatory in the app ID login scenario.
name	No	NSString *	Site name.
email	No	NSString *	Email address.
sms	No	NSString *	Mobile number.
role	No	HWMConfRoleType	Participant role.
accountId	No	NSString *	UUID. (The login account is returned in the meeting details.)
mute	No	BOOL	Whether to mute the microphone.
isAnonymous	No	BOOL	Whether to join the meeting anonymously. (This parameter is used only for obtaining the participant list).
state	No	HWMAttendeeState	Participant status. (This parameter is used only for obtaining the participant list.)
orgId	No	NSString *	Used to identify whether the participant belongs to the current enterprise account. (This parameter is used only for obtaining the participant list).

Table 8-56 Enumerated values of HWMConfRoleType

Parameter	Description
HWMConfRoleTypeAttendee	Guest.
HWMConfRoleTypeChairman	Host.

Table 8-57 Enumerated values of HWMVmrConfIdType

Enumerated Value	Description
HWMVmrConfIdTypeFixed	Fixed ID of the cloud meeting room.
HWMVmrConfIdTypeRandom	Random ID of the cloud meeting room.

Sample Code

```
/// Schedule a meeting.
- (void)bookConf {
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];
    param.confSubject = @"Meeting topic";
    param.startTime = 1598759580;
    param.duration = 15;
    param.isAutoRecord = NO;
    param.timeZone = 56;
    param.vmrId = @"";
    param.attendee = self.attenteeArr;
    param.callInRestrictionType = HWMCallRestrictionAll;
    [[HWMBizSdk getBizOpenApi] bookConf:param callback:^(NSError *_Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Schedule meeting failed:%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting scheduled.");
        }
    }];
}
```

8.4.5.2 Editing a Meeting

editConf

API Description

This API is used to edit a meeting that has not been started yet.

Precautions

1. This API can be called only when a meeting has not been started and you are the host.
2. **userId** must be transferred when a participant tries to edit a scheduled meeting. (In the meeting details, each participant carries this parameter.)
3. **All fields are mandatory. Specify the fields that need to be modified as required, and obtain the values of other fields that do not need to be modified from the meeting details.**

Method Definition

```
- (void)editConf:(HWMOrderConfParam *_Nonnull)param callback:(_Nonnull  
HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 8-58 HWMOrderConfParam description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
isLiveOn	No	BOOL	Whether live broadcast is enabled.

For details about other parameters, see [Table 8-53](#).

Sample Code

```
/// Edit a meeting.
- (void)editConf {
    HWMOrderConfParam * param = [[HWMOrderConfParam alloc] init];
    param.confSubject = @"Meeting topic";
    param.startTime = 1598759580;
    param.duration = 15;
    param.isAutoRecord = NO;
    param.timeZone = 56;
    param.vmrId = @""; // Cloud meeting room ID, required for a meeting held in a cloud meeting room.
    param.callInRestrictionType = HWMCallRestrictionAll;
    param.confId = @"986927771";
    [[HWMBizSdk getBizOpenApi] editConf:param callback:^(NSError *_Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"Edit meeting failed:%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting edited.");
        }
    }];
}
```

8.4.5.3 Obtaining the Meeting List

getConfList

API Description

This API is used to obtain the meeting list.

Precautions

1. This API is valid only after you have logged in to Huawei Cloud Meeting and received the meeting list notification. Otherwise, an empty list is returned.

Method Definition

```
-(NSArray<HWMConfListItemInfo *> *)getConfList;
```

Parameter Description

Table 8-59 HWMConfListItemInfo description

Parameter	Type	Description
confId	NSString *	Meeting ID.

Parameter	Type	Description
vmrConferenceld	NSString *	Cloud meeting room ID, which is used when the cloud meeting room is displayed.
confSubject	NSString *	Meeting topic.
chairmanPwd	NSString *	Host password.
generalPwd	NSString *	Guest password.
startTime	NSTimeInterval	Meeting start time. The value is a UTC timestamp, accurate to seconds.
endTime	NSTimeInterval	Meeting end time. The value is a UTC timestamp, accurate to seconds.
videoConf	BOOL	Whether the meeting is a video meeting.
scheduserName	NSString *	Scheduler name.
chairJoinUri	NSString *	Link for the host to join the meeting.
guestJoinUri	NSString *	Link for guests to join the meeting.
role	HWMConfRoleType	Participant role.
isAutoRecord	BOOL	Whether to automatically start recording.
accessNumber	NSString *	Meeting access number.
scheduleVmr	BOOL	Whether the meeting is a scheduled meeting held in the cloud meeting room. 0 : Common meeting. 1 : Scheduled meeting held in the cloud meeting room.
audiencePwd	NSString *	Guest password.
audienceJoinUri	NSString *	Link for guests to join the meeting.
isWebinar	BOOL	Whether the meeting is a webinar.
confStateType	HWMUISDKConfState	Meeting status.

Table 8-60 Enumerated values of HWMConfRoleType

Parameter	Description
HWMConfRoleTypeAttendee	Guest.

Parameter	Description
HWMConfRoleTypeChairman	Host.

Table 8-61 Enumerated values of HWMUISDKConfState

Parameter	Description
HWMUISDKConfState-Schedule	The meeting is scheduled.
HWMUISDKConfStateCreating	The meeting is being created.
HWMUISDKConfStateGoing	The meeting has started.
HWMUISDKConfStateDestroyed	The meeting has ended.

Sample Code

```
/// Obtain the meeting list.
[[HWMBizSdk getBizOpenApi] getConfList];
```

8.4.5.4 Obtaining Meeting Details

getConfDetail

API Description

This API is used to obtain meeting details.

Precautions

None

Method Definition

```
-(void)getConfDetail:(NSString *)confId completeHandler:(HWMSDKConfInfoCompleteHandler)handler;
```

Parameter Description

HWMConfDetail parameters are inherited from [HWMConfListItemInfo](#).

Table 8-62 HWMConfDetail description (inherited from HWMConfListItemInfo)

Parameter	Type	Description
guestFreePwd	BOOL	Whether a guest can join the meeting without the password.
sendNotify	BOOL	Whether to send email notifications.

Parameter	Type	Description
sendSms	BOOL	Whether to send SMS notifications.
sendCalendarNotify	BOOL	Whether to send calendar notifications.
isAutoRecord	BOOL	Whether to automatically start recording after a meeting starts.
vmrId	NSString *	ID of the meeting created using the cloud meeting room ID, which is used for editing a meeting.
callInRestriction	HWMCallInRestrictionType	Incoming call restriction.
vmrFlag	BOOL	Whether the meeting is held in a cloud meeting room.
attendee	NSArray< HWMAttendeeInfo > *	Participant list.
allowGuestStartConf	BOOL	Whether to allow guests to join the meeting ahead of the host.
allowGuestStartConfTime	NSInteger	Time range allowed for a guest to join a meeting in advance, in minutes. A guest can start a meeting <i>n</i> minutes before the scheduled time. The value of <i>n</i> can be 0 , 5 , 10 , 15 , or 30 . The default value is 0 , indicating that a user can join a meeting at any time.
vmrConfIdType	HWMVmrConfIdType	ID type of the cloud meeting room.
isOpenWaitingRoom	BOOL	Whether to enable the waiting room.
isRecordOn	BOOL	Whether to enable recording.
isLiveOn	BOOL	Whether to enable live broadcast.
customInfo	NSString *	User-defined information (meeting details and in-meeting chat messages).
concurrentParticipants	NSInteger	Maximum number of participants in a meeting. The default value is 0 .
timeZone	NSString *	Time zone.

Sample Code

```
/// Obtain meeting details.
- (void)getConfDetail {
    [[HWMBizSdk getBizOpenApi] getConfDetail:@"986927771" completionHandler:^(NSError * _Nullable
```

```
error, HWMConfDetail * _Nullable result) {
    if (error) {
        NSLog(@"%@", error.localizedDescription);
    } else {
        NSLog(@"Meeting details obtained.");
    }
}
}];
}
```

8.4.5.5 Canceling a Meeting

cancelConf

API Description

This API is used to cancel a meeting that has not been started yet.

Precautions

1. Only the host can cancel a meeting.

Method Definition

```
- (void)cancelConf:(NSString * _Nonnull)confId callback:(_Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 8-63 Parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.

Sample Code

```
/// Cancel a meeting.
- (void)cancelConf {
    [[HWMBizSdk getBizOpenApi] cancelConf:@"986927771" callback:^(NSError * _Nullable error, id
    _Nullable result) {
        if (error) {
            NSLog(@"%@", error.localizedDescription);
        } else {
            NSLog(@"Meeting canceled.");
        }
    }
}];
}
```

8.4.5.6 Obtaining the Cloud Meeting Room List

getVmrList

API Description

This API is used to obtain the cloud meeting room list.

Precautions

None

Method Definition

Deprecated API:

- (void)getVmrList:(_Nonnull HWMSDKVmrListCompleteHandler)callback;

New API:

- (void)getVmrInfoList:(_Nonnull HWMSDKVmrInfoListCompleteHandler)callback;

Parameter Description

Table 8-64 HWMVmrInfoListModel description

Parameter	Type	Description
vmrs	NSArray <HWMVmrInfoModel>*	Cloud meeting room information.
isEnabledShareVmr	BOOL	Whether shared cloud meeting rooms are available.

Table 8-65 HWMVmrInfoModel description

Parameter	Type	Description
name	NSString *	Cloud meeting room name.
confId	NSString *	Display ID of the cloud meeting room.
vmrId	NSString *	Unique cloud meeting room ID.
chairmanPwd	NSString *	Host password.
guestPwd	NSString *	Guest password.
type	HWMConfIdType	Meeting type.
maxParties	NSUInteger	Maximum number of participants in the cloud meeting room.
usable	BOOL	Cloud meeting room status. YES : The cloud meeting room is available. NO : The cloud meeting room is unavailable.
allowGuestStart-Conf	BOOL	Whether to allow guests to join the meeting ahead of the host.
confAllowJoinUser	HWMJoinConfRestrictionType	Users who are allowed to join the meeting.
isOpenWaitingRoom	BOOL	Whether to enable the waiting room.

Table 8-66 Enumerated values of HWMConfIdType

Parameter	Description
HWMConfIdPersonal	Personal meeting ID.
HWMConfIdMeetingRoom	Cloud meeting room ID.
HWMConfIdRandom	Random meeting ID.

Table 8-67 Enumerated values of HWMJoinConfRestrictionType

Parameter	Description
HWMJoinConfRestrictionAll	Everyone.
HWMJoinConfRestrictionCompany	Corporate users only.
HWMJoinConfRestrictionInvited	Invited users only.

Sample Code

```

/// Obtain the cloud meeting room list.
- (void)getVmrList {
    [[HWMBizSdk getBizOpenApi] getVmrList:^(NSError * _Nullable error, NSArray<HWMVmrInfoModel *> *
    _Nullable result) {
        if (error) {
            NSLog(@"Cloud meeting room list obtained.");
        } else {
            NSLog(@"Failed to obtain the cloud meeting room list.");
        }
    }
    }];
}

```

8.4.5.7 Modifying Cloud Meeting Room Information

changeVmrInfo

API Description

This API is used to modify cloud meeting room information.

Precautions

1. If possible, change guest passwords only.

Method Definition

```

- (void)changeVmrInfo:(HWMModifyVmrParam *)info callback:(__Nonnull
HWMSDKCompleteHandler)callback;

```

Parameter Description

Table 8-68 HWMModifyVMRParam description

Parameter	Mandatory	Type	Description
vmrId	Yes	NSString *	Unique cloud meeting room ID.
guestPwd	Yes	NSString *	Guest password.
chairPwd	Yes	NSString *	Host password.
vmrName	Yes	BOOL	Cloud meeting room name.
allowGuestStartConf	Yes	BOOL	Whether to allow guests to join the meeting ahead of the host.
confAllowJoinUser	No	HWMJoinConfRestrictionType	Users who are allowed to join the meeting.
isOpenWaitingRoom	No	BOOL	Whether to enable the waiting room.

Table 8-69 Enumerated values of HWMJoinConfRestrictionType

Parameter	Description
HWMJoinConfRestrictionAll	Everyone.
HWMJoinConfRestrictionCompany	Corporate users only.
HWMJoinConfRestrictionInvited	Invited users only.

Sample Code

```

/// Modify cloud meeting room information.
- (void)changeVmrInfo {
    HWMModifyVMRParam * vmrInfo = [[HWMModifyVMRParam alloc] init];
    vmrInfo.guestPwd = getGuestPwd();
    vmrInfo.chairPwd = getChairPwd();
    vmrInfo.vmrName = @"Cloud meeting room name"
    vmrInfo.vmrId = @"8a8d0d8a718d87d50171a9f6b8de0f40";
    vmrInfo.allowGuestStartConf = YES;
    [[HWMBizSdk getBizOpenApi] changeVmrInfo:vmrInfo callback:^(NSError * _Nullable error, id _Nullable result) {
        if (error) {
            NSLog(@"%@", error.localizedDescription);
        } else {
            NSLog(@"Cloud meeting room information modified.");
        }
    }];
}

```

8.4.5.8 Scheduling a Recurring Meeting Series

bookCycleConf

API Description

This API is used to schedule a recurring meeting series.

Precautions

- This API can be called only when you have logged in to Huawei Cloud Meeting.
- The meeting start time must be later than the current time, and the meeting duration must be longer than 15 minutes.
- The **vmrId** parameter must be passed for a personal meeting or cloud meeting room.
- The **attendees** parameter must be passed if participant information needs to be carried.
- The maximum time span of a recurring meeting series is one year. The number of recurring meetings in a series cannot exceed 50. Otherwise, only the first 50 meetings are scheduled.
- For details about the meeting information returned in the callback, see [HWMConfDetail](#).

Method Definition

```
- (void)bookCycleConf:(HWMBookCycleConfParam * _Nonnull)param callback:(_Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 8-70 HWMBookCycleConfParam parameter description

Parameter	Mandatory	Type	Description
confParam	Yes	HWMOrderConfParam	Parameters for scheduling the recurring meeting series.
cycleConfParam	Yes	HWMCycleConfParam	Parameters of recurring meetings.

Table 8-71 HWMCycleConfParam parameter description

Parameter	Mandatory	Type	Description
startDate	Yes	NSDateInterval	Start date and timestamp, in seconds (GMT).

Parameter	Mandatory	Type	Description
endDate	Yes	NSTimeInterval	End date and timestamp, in seconds (GMT).
cycleMode	Yes	HWMCycleMode	Period type.
interval	Yes	NSUInteger	Interval of recurring meetings. 1. If cycleType is set to daily, there is a meeting every several days. The value ranges from 1 to 15. 2. If cycleType is set to weekly, there is a meeting every several weeks. The value ranges from 1 to 5. 3. If cycleType is set to monthly, there is a meeting every several months. The value ranges from 1 to 3.
listPoints	Yes	NSString *	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Separate values by colons (,), for example, 1,3,5,7 .
preRemindDays	Yes	NSUInteger	Number of days in advance users are notified of a recurring meeting.

Table 8-72 Enumerated values of HWMCycleMode

Value	Description
HWMCycleModeDay	Daily.
HWMCycleModeWeek	Weekly.
HWMCycleModeMonth	Monthly.

Sample Code

```
/// Schedule a recurring meeting series.
- (void)bookCycleConf{
    HWMOrderConfParam * orderConfParam = [[HWMOrderConfParam alloc] init];
    orderConfParam.confSubject = @"My Scheduled Meeting";
    orderConfParam.isAutoRecord = YES;
    orderConfParam.startTime = 1633017600; // UTC timestamp, in seconds. If the obtained time is the local
time, the time needs to be converted to the UTC time.
    orderConfParam.duration = 30; // Meeting duration, in minutes
    orderConfParam.timeZone = 56;
    orderConfParam.callInRestrictionType = HWMCallRestrictionAll;
    HWMAttendeelInfo * attendeeInfo = [[HWMAttendeelInfo alloc] init];
    attendeeInfo.name = @"Mike";
    attendeeInfo.number = @"+991116003543";
    attendeeInfo.isMute = YES;
    orderConfParam.attendee = @[attendeeInfo];

    HWMCycleConfParamModel * cycleConfParamModel = [[HWMCycleConfParamModel alloc] init];
    cycleConfParamModel.startDate = 1633017600; // UTC timestamp, in seconds. If the obtained time is the
local time, the time needs to be converted to the UTC time.
    cycleConfParamModel.endDate = 1636560000;
    cycleConfParamModel.cycleType = HWMSDKCycleTypeWeek;
    cycleConfParamModel.preRemindDays = 1;

    HWMBookCycleConfParam *param = [[HWMBookCycleConfParam alloc] init];
    param.confParam = orderConfParam;
    param.cycleConfParam = cycleConfParamModel;
    [[HWMBizSdk getBizOpenApi] bookCycleConf:param callback:^(NSError * _Nullable error, id _Nullable
result) {
        if (!error) {
            NSLog(@"book cycle conf success");
        }else{
            NSLog(@"book cycle conf fail errorCode : %zd",error.code);
        }
    }
    }];
}
```

8.4.5.9 Editing a Recurring Meeting Series

editCycleConf

API Description

This API is used to edit a recurring meeting series.

Precautions

1. Call this API after login.
2. **All fields are mandatory. Specify the fields to be edited as required, and assign values in the meeting details to remaining fields.**

Method Definition

```
- (void)editCycleConf:(HWMBookCycleConfParam * _Nonnull)param callback:(_Nonnull
HWMSDKCompleteHandler)callback
```

Parameter Description

Table 8-73 HWMBookCycleConfParam parameter description

Parameter	Mandatory	Type	Description
confParam	Yes	HWMOrderConfParam	Common meeting parameters.
cycleConfParam	Yes	HWMCycleConfParam	Recurring meeting series parameters.

Sample Code

```
/// Edit a recurring meeting series.
- (void)editCycleConf{
    HWMOrderConfParam * orderConfParam = [[HWMOrderConfParam alloc] init];
    orderConfParam.confSubject = @"My Scheduled Meeting";
    orderConfParam.isAutoRecord = YES;
    orderConfParam.startTime = 1633017600; // UTC timestamp, in seconds. If the obtained time is the local
time, the time needs to be converted to the UTC time.
    orderConfParam.duration = 30; // Meeting duration, in minutes
    orderConfParam.timeZone = 56;
    orderConfParam.callInRestrictionType = HWMCallRestrictionAll;
    HWMAttendeeInfo * attendeeInfo = [[HWMAttendeeInfo alloc] init];
    attendeeInfo.name = @"Mike";
    attendeeInfo.number = @"+991116003543";
    attendeeInfo.isMute = YES;
    orderConfParam.attendee = @[attendeeInfo];

    HWMCycleConfParamModel * cycleConfParamModel = [[HWMCycleConfParamModel alloc] init];
    cycleConfParamModel.startDate = 1633017600; // UTC timestamp, in seconds. If the obtained time is the
local time, the time needs to be converted to the UTC time.
    cycleConfParamModel.endDate = 1636560000;
    cycleConfParamModel.cycleType = HWMSDKCycleTypeWeek;
    cycleConfParamModel.preRemindDays = 1;

    HWMBookCycleConfParam *param = [[HWMBookCycleConfParam alloc] init];
    param.confParam = orderConfParam;
    param.cycleConfParam = cycleConfParamModel;

    [[HWMBizSdk getBizOpenApi] editCycleConf:param callback:^(NSError * _Nullable error, id _Nullable
result) {
        if (!error) {
            NSLog(@"book cycle conf success");
        }else{
            NSLog(@"book cycle conf fail errorCode : %zd",error.code);
        }
    }
    }];
}
```

8.4.5.10 Canceling a Recurring Meeting Series

cancelCycleConf

API Description

This API is used to cancel a recurring meeting series that has at least one upcoming meeting.

Precautions

1. Call this API after login.

2. Call this API before the last recurring meeting starts. If the last recurring meeting is already in progress, calling this API is invalid.

Method Definition

```
-(void)cancelCycleConf:(NSString *_Nonnull)confId callback:(_Nonnull HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 8-74 Parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.

Sample Code

```
/// Cancel a recurring meeting series.
-(void)cancelCycleConf {
    NSString *confId = "989156631";
    [[HWMBizSdk getBizOpenApi] cancelCycleConfWithParam:cancelParam callback:^(NSError *_Nullable
error, id _Nullable result) {
        NSString *tips = !error ? @"Recurring meeting series canceled." : @"Cancel recurring meeting series
failed.";
        NSLog(@"%@@",tips);
    }];
}
```

8.4.5.11 Editing a Recurring Meeting

editSubCycleConf

API Description

This API is used to edit a recurring meeting.

Precautions

1. Call this API after login.

Method Definition

```
-(void)editSubCycleConf:(HWMSDKModifySubCycleConfParamModel *_Nonnull)param callback:(_Nonnull
HWMSDKCompleteHandler)callback;
```

Parameter Description

Table 8-75 HWMSDKModifySubCycleConfParamModel parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.
subConfId	Yes	NSString *	UUID of a recurring meeting.
confMediaType	No	HWMSDKConfMediaType	Meeting media type.

Parameter	Mandatory	Type	Description
startTime	No	NSInteger	Meeting start time (UTC time), in seconds.
confLen	No	NSInteger	Meeting duration, in minutes.
isAutoRecord	No	BOOL	Whether to automatically start recording after a meeting starts.
recordAuthType	No	NSUInteger	Recording authentication mode. The options are as follows: 0 : The recording can be viewed or downloaded through link (no nonce is added). 1 : Corporate users can view or download the recording. 2 : Participants can view or download the recording.
callInRestriction	No	HWMConfAllowJoinUserType	Incoming call restriction.
allowGuestStartConf	No	BOOL	Whether to allow guests to start the meeting.
allowGuestStartConfTime	No	NSInteger	Time range for a guest to join a meeting in advance, in minutes. The options are as follows: 0 : at any time; n : <i>n</i> minutes in advance.

Table 8-76 Enumerated values of HWMConfMediaType

Enumerated Value	Value	Description
HWMConfMediaTypeAudio	0	Voice meeting.
HWMConfMediaTypeVideo	1	Video meeting.

Table 8-77 Enumerated values of HWMConfAllowJoinUserType

Value	Description
HWMConfAllowJoinUserTypeAnyone	Anyone.
HWMConfAllowJoinUserTypeLoggedInUser	Logged-in users.

Value	Description
HWMConfAllowJoinUserTypeInCompanyUser	Corporate users only.
HWMConfAllowJoinUserTypeInvitedUser	Invited users only.

Sample Code

```
/// Edit a recurring meeting.
- (void)editSubCycleConf{
    HWMSDKModifySubCycleConfParamModel * modifySubCycleConfParamModel =
[[HWMSDKModifySubCycleConfParamModel alloc] init];
    modifySubCycleConfParamModel.confId = confId;
    modifySubCycleConfParamModel.subConfID = subConfID;
    modifySubCycleConfParamModel.confMediaType = HWMConfMediaTypeVideo;
    modifySubCycleConfParamModel.startTime = 1633017600;
    modifySubCycleConfParamModel.confLen = 60;
    modifySubCycleConfParamModel.isAutoRecord = NO;
    modifySubCycleConfParamModel.callInRestriction = HWMConfAllowJoinUserTypeAnyone;
    modifySubCycleConfParamModel.allowGuestStartConf = NO;
    modifySubCycleConfParamModel.allowGuestStartConfTime = 0;
    [[HWMBizSdk getBizOpenApi] editSubCycleConf:modifySubCycleConfParamModel callback:^(NSError *
_Nullable error, id _Nullable result) {
        if (!error) {
            NSLog(@"Recurring meeting edited.");
        }else{
            NSLog(@"Edit recurring meeting failed:%zd %@", error.code, error.localizedDescription);
        }
    }];
}
```

8.4.5.12 Canceling a Recurring Meeting

cancelSubCycleConf

API Description

This API is used to cancel a recurring meeting that has not been started yet.

Precautions

1. Call this API after login.
2. Call this API before a recurring meeting starts. If the meeting is already in progress, calling this API is invalid.

Method Definition

```
- (void)cancelSubCycleConf:(HWMSDKCancelSubCycleConfParamModel * _Nonnull)param callback:
(_Nonnull HWMSDKCompleteHandler)callback
```

Parameter Description

Table 8-78 HWMSDKCancelSubCycleConfParamModel parameter description

Parameter	Mandatory	Type	Description
confId	Yes	NSString *	Meeting ID.

Parameter	Mandatory	Type	Description
subConfID	Yes	NSString *	Recurring meeting ID.
endOnlineConf	Yes	BOOL	Whether to end an ongoing meeting.

Sample Code

```
/// Cancel a recurring meeting.
- (void)confirmCancelSubConf {
    HWMSDKCancelSubCycleConfParamModel *cancelParma = [[HWMSDKCancelSubCycleConfParamModel alloc] init];
    cancelParma.confId = confId;
    cancelParma.subConfID = subConfID;
    cancelParma.endOnlineConf = YES;
    [[HWMBizSdk getBizOpenApi] cancelSubCycleConf:cancelParma callback:^(NSError * _Nullable error, id _Nullable result) {
        NSString *tips = !error ? @"Meeting canceled." : @"Cancel meeting failed.";
        NSLog(@"%@@",tips);
    }];
}
```

8.4.6 Conference Information

8.4.6.1 Obtaining the Participant List

getAttendeeList

API Description

This API is used to obtain the participant list in a meeting.

Precautions

1. This API can be called only during a meeting.

Method Definition

```
-(NSArray <HWMAttendeeInfo *> *)getAttendeeList;
```

Parameter Description

See [HWMAttendeeInfo](#).

Table 8-79 Enumerated values of HWMAttendeeState

Parameter	Description
HWMAttendeeStateInConf	The participant is in the meeting.
HWMAttendeeStateCalling	The participant is being called.
HWMAttendeeStateLeaved	The participant has left the meeting.

Sample Code

```
/// Obtain the participant list.  
[[HWMBizSdk getBizOpenApi] getAttendeeList];
```

8.4.6.2 Obtaining the Attendee List

getAudienceList

API Description

This API is used to obtain the attendee list in a webinar.

Precautions

1. Call this API only in webinars.
2. Attendees cannot call this API, but can obtain the list from the meeting details message.

Method Definition

```
- (NSArray <HWMAttendeeInfo *> *)getAudienceList;
```

Parameter Description

See [HWMAttendeeInfo](#).

Sample Code

```
/// Obtaining the attendee list.  
[[HWMBizSdk getBizOpenApi] getAudienceList];
```

8.4.6.3 Obtaining a User Status

getUserState

API Description

This API is used to obtain the status of a user (whether the user is in a meeting).

Precautions

None

Method Definition

```
- (HWMUserState)getUserState;
```

Parameter Description

Table 8-80 Enumerated values of HWMUserState

Parameter	Value	Description
HWMUserStateIdle	0	The participant is in the idle state.

Parameter	Value	Description
HWMUserStateInConf	1	The participant is in the meeting.
HWMUserStateInCall	2	The participant is being called.

Return Values

None

Sample Code

```
[[HWMSdk getOpenApi] getUserState];
```

8.4.6.4 Determining Whether You Are a Host

selfIsChairMan

API Description

This API is used to determine whether you are a host.

Precautions

1. **YES** is returned when you are a host. **NO** is returned when you are not the host or not in a meeting.

Method Definition

```
- (BOOL)selfIsChairMan;
```

Parameter Description

None

Sample Code

```
/// Determine whether you are a host.  
[[HWMBizSdk getBizOpenApi] selfIsChairMan];
```

8.4.7 Audio and Video Data Streams

8.4.7.1 Obtaining Audio Data Streams

setAudioRawDataOutputConfig

API Description

This API is used to obtain audio data streams.

Precautions

If this API is called and the parameter is set to **YES**, the service processing result is returned in the corresponding notification ([Audio Data Stream Notification](#)).

This API can be called after initialization. You will receive a notification after creating or joining a meeting.

Method Definition

```
-(void)setAudioRawDataOutputConfig:(BOOL)enable;
```

Parameter Description

YES: The function is enabled. **NO:** The function is disabled (default).

Return Values

None

Sample Code

```
[[HWMBizSdk getBizOpenApi] setAudioRawDataOutputConfig:YES];
```

8.5 Notification Reference

Precautions

1. You must register a proxy object to use a notification method.

The following two ways are available:

- a. Assign a value to the attribute of the **HWMOpenSDKConfig** object during initialization.

```
HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];  
// Example (Use the corresponding proxy as required.)  
config.globalHandler = [NotifyMessageHandler sharedInstance];
```

- b. Use **[HWMSdk getSdkConfig]** to obtain the initialization object and assign a value to the attribute.

```
// Example (Use the corresponding proxy as required.)  
[HWMSdk getSdkConfig].globalHandler = [NotifyMessageHandler sharedInstance];
```

2. The proxy method must be written in the proxy object.
3. Ensure that the proxy object exists when using the proxy.

8.5.1 Precautions

1. You must register a proxy object to use a notification method.

Single-proxy registration modes:

- a. Assign a value to the attribute of the **HWMOpenSDKConfig** object during initialization.

```
HWMOpenSDKConfig *config = [[HWMOpenSDKConfig alloc] init];  
// Example (Use the corresponding proxy as required.)  
config.confSettingHandler = [NotifyMessageHandler sharedInstance];
```

- b. Use **[HWMSdk getSdkConfig]** to obtain the initialization object and assign a value to the attribute.

```
// Example (Use the corresponding proxy as required.)  
[HWMSdk getSdkConfig].confSettingHandler = [NotifyMessageHandler sharedInstance];
```

Multi-proxy registration modes:

- a. Subscription


```
// Example (Use the corresponding proxy as required.)  
HWMOpenSDKConfig *config = [HWMSdk getSdkConfig].confSettingHandler;  
[config subscribeGlobalNotificationHandler:[NotifyMessageHandler sharedInstance]];
```

b. **Unsubscription**

```
HWMOpenSDKConfig *config = [HWMSdk getSdkConfig].confSettingHandler;  
// Example (Use the corresponding proxy as required.)  
[config unsubscribeGlobalNotificationHandler:[NotifyMessageHandler sharedInstance]];
```

2. The proxy method must be written in the proxy object.
3. Ensure that the proxy object exists when using the proxy.

8.5.2 Account Status Change Notification

8.5.2.1 Forcible Logout Notification

Notification Description

A notification is sent when you were kicked out of this account by another device. In this case, you need to log in again. You need to call the login API again to perform operations.

Method Definition

```
- (void)onKickedOut;
```

Sample Code

```
/// Forcibly logged out.  
- (void)onKickedOut {  
    NSLog(@"Your account has logged in on another terminal.");  
}
```

Precautions

1. Subscribe to the **HWMNotifyHandler** delegate during SDK initialization or set the delegate on the target page.

8.5.3 Basic Configuration Change Notification

8.5.3.1 Enterprise Configuration Information

Notification Description

A notification is sent when the login is successful. The enterprise configuration information is delivered.

Method Definition

```
- (void)onCorpConfigNotify:(HWMCorpConfigInfo *)corpConfig;
```

Sample Code

```
- (void)onCorpConfigNotify:(HWMCorpConfigInfo *)corpConfig {  
    if (corpConfig.hasSMSPerm) {  
        NSLog(@"The SMS notification sending permission is available.");  
    }  
}
```

```
if (corpConfig.hasRecordPerm) {  
    NSLog(@"The meeting recording permission is available.");  
}  
if (corpConfig.hasPstnPerm) {  
    NSLog(@"The PSTN call permission is available.");  
}  
}
```

Precautions

1. Subscribe to the **HWMNotifyHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 8-81 Parameter description

Parameter	Type	Description
corpConfig	HWMCorpConfigInfo *	Configuration information.

Table 8-82 HWMCorpConfigInfo parameters

Parameter	Type	Description
hasRecordPerm	BOOL	Whether the meeting recording permission is available.
hasPstnPerm	BOOL	Whether the PSTN call permission is available.
hasSMSPerm	BOOL	Whether the SMS notification sending permission is available.

8.5.4 Customized UI Event Notification

8.5.4.1 Notification of Opening the Contact Selection Window

Notification Description

A notification is sent when the SDK opens the contact selection window for a participant to return custom contacts.

Method Definition

```
- (void)openContactSelectWindow:(nullable NSArray<HWMAttendeeInfo *> *)param scene:  
(HWMSelectedContactScene *)scene  
completeHandler:(void (^)(NSArray<HWMAttendeeInfo *> * _Nullable result))handler;
```

Sample Code

```
/// Customize contacts.
- (void)openContactSelectWindow:(NSArray<HWMAttendeelInfo *> *)param scene:
(HWMSelectedContactScene)scene completionHandler:(void (^)(NSArray<HWMAttendeelInfo *> *
_Nullable))handler {
    HWMSelectContactViewController *contact = [[HWMSelectContactViewController alloc] init];
    [contact setSelectedAttendeelInfoHandler:^(NSArray *attendees) {
        if (handler) {
            handler(attendees);
        }
    }];
    self.selectContactVC = contact;
    [self presentViewControllerAsModalWindow:contact];
}
```

Precautions

1. Set the **contactUIHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 8-83 Parameter description

Parameter	Type	Description
param	NSArray<HWMAttendeelInfo *> *	Existing contacts in the meeting.
scene	HWMSelectedContactScene	Contact selection scenario. By default, it is in the meeting.
handler	void(^) (NSArray<HWMAttendeelInfo *> *_Nullable result)	Result. A participant needs to encapsulate selected contacts into HWMAttendeelInfo and call the handler to return it to the SDK.

Table 8-84 Enumerated values of HWMSelectedContactScene

Parameter	Description
HWMSelectedContactInConf = 0	In the common meeting, modal and non-modal dialog boxes can be used for window display.
HWMSelectedContactInShare	In the sharing scenario of the meeting, non-modal dialog boxes are used for window display. Modal dialog boxes are not recommended.

8.5.4.2 Notification of Closing the Contact Selection Window

Notification Description

A notification is sent for a participant to close the contact selection window.

Method Definition

```
- (void)closeContactSelectWindow;
```

Sample Code

```
/// Close the window for selecting contacts.  
- (void)closeContactSelectWindow {  
    if (self.selectContactVC) {  
        [self.selectContactVC.view.window close];  
    }  
}
```

Precautions

1. Set the **contactUIHandler** proxy during SDK initialization or set the proxy on the target page.

8.5.4.3 Notification of Setting a Dock Icon

Notification Description

A notification is sent for the access party to return an image, which is used as the Dock icon of the minimized window during the video call.

Method Definition

```
- (NSImage *)videoWindowDockIcon;
```

Sample Code

```
/// Set the Dock icon of the minimized window during the video call.  
- (NSImage *)videoWindowDockIcon {  
    return [NSImage imageNamed:@"iconMeeting"];  
}
```

Precautions

1. Set the **confUIHandler** proxy during SDK initialization or set the proxy on the target page.

8.5.4.4 Notification of Obtaining the User Profile Picture

Notification Description

A notification is sent for the access party to return the profile picture corresponding to the unique user ID.

Method Definition

```
- (void)downloadHeadPortraitWithThirdAccount:(NSString *)thirdAccount account:(NSString *)account  
number:(nonnull NSString *)number completionBlock:(void (^)(NSError *_Nullable error, NSString *_Nullable  
headImagePath))completionBlock;
```

Sample Code

```
- (void)downloadHeadPortraitWithThirdAccount:(NSString *)thirdAccount account:(NSString *)account  
number:(NSString *)number completionBlock:(void (^)(NSError *_Nullable, NSString *_  
Nullable))completionBlock {  
    NSLog(@"thirdAccount:%@ -- account:%@ -- number:%@", thirdAccount, account, number);  
}
```

```
if (completionBlock) {  
    /// Return the image path to the SDK.  
    NSInteger index = arc4random() % 3;  
    NSString *path = [[NSBundle bundleForClass:[self class]] pathForResource:[NSString  
stringWithFormat:@"head_icon_%lu", index] ofType:@"png"];  
    completionBlock(nil, path);  
}  
}
```

Precautions

1. Set the **headPortraitApiHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 8-85 Parameter description

Parameter	Type	Description
thirdAccount	NSString *	This parameter is preferentially used in the app ID login scenario.
account	NSString *	This parameter is preferentially used in the account and password login scenario.
number	NSString *	This parameter is preferentially used in the cross-enterprise scenario.
completionBlock	void(^)(NSError *_Nullable error, NSString *_Nullable headImagePath)	Result callback.

8.5.4.5 Meeting Information Sharing Notification

Notification Description

A notification is sent to display the page for sharing meeting information. The sharing page and size displayed when the pointer is placed on the title bar are specified by the external app. The display position and time of display and hiding are controlled by the SDK. This API is used for native implementation, which is convenient and simple.

Method Definition

```
- (NSView *)socialShareView:(HWMConfStateInfo *)confInfo;
```

Sample Code

```
- (NSView *)socialShareView:(HWMConfStateInfo *)confDetail {  
    if (!self.socialView) {  
        self.socialView = [[HWMSocialView alloc] initWithFrame:NSMakeRange(0, 0, 500, 300)];  
        self.socialView.wantsLayer = YES;  
        self.socialView.layer.backgroundColor = [NSColor whiteColor].CGColor;  
    }  
}
```

```

}
self.socialView.confDetail = confDetail;
return self.socialView;
}

```

Table 8-86 Parameter description

Parameter	Type	Description
confInfo	HWMConfStateInfo *	Details about the ongoing meeting.

Table 8-87 HWMConfStateInfo parameters

Parameter	Type	Description
confId	NSString *	Meeting ID.
confSubject	NSString *	Meeting topic.
chairmanPwd	NSString *	Host password.
generalPwd	NSString *	Guest password.
startTime	NSTimeInterval	Meeting start time. The value is a UTC timestamp, accurate to seconds.
endTime	NSTimeInterval	Meeting end time. The value is a UTC timestamp, accurate to seconds.
videoConf	BOOL	Whether the meeting is a video meeting.
confScheduleName	NSString *	Scheduler name.
chairJoinUri	NSString *	Link for the host to join the meeting.
guestJoinUri	NSString *	Link for guests to join the meeting.
vmrConferenceId	NSString *	ID of the meeting held in the cloud meeting room.
role	HWMConfRoleType	Role.
orgId	NSString *	Enterprise ID of the meeting. If an enterprise ID reported in corpId in the login result is different from the enterprise ID of the meeting, an external contact joins the meeting.

Parameter	Type	Description
customInfo	NSString *	User-defined information (meeting details and in-meeting chat messages).

Precautions

1. Set the **HWMSocialShareHandler** proxy during SDK initialization or set the proxy on the target page.

8.5.4.6 Custom Meeting Details Sharing Notification

Notification Description

A notification is sent when the external app displays the page for sharing meeting details. The sharing page settings, including the size, display position, and time of display and hiding, are controlled by the external app when the pointer is placed on the title bar.

NOTE

This API is mainly used for Electron JavaScript implementation. For native implementation, use [Meeting Information Sharing Notification](#).

Method Definition

```
- (void)showSocialShareView:(NSPoint)point shareInfo:(HWMConfStateInfo *)confInfo;
```

Table 8-88 Parameter description

Parameter	Type	Description
point	NSPoint	Pointer position.
confInfo	HWMConfStateInfo *	Details about the ongoing meeting.

Precautions

1. Set the **HWMSocialShareHandler** delegate during SDK initialization or set the delegate on the target page.
2. You only need to implement either the method for meeting details sharing notification or the one for custom meeting details sharing notification. If both methods are implemented, only **showSocialShareView: shareInfo** is used.

8.5.5 Meeting Status Change Notification

8.5.5.1 Meeting Status Change Notification

Notification Description

A notification is sent when the meeting status is changed.

Method Definition

```
- (void)onConfStatusChanged:(HWMConfStatus)status;
```

Sample Code

```
- (void)onConfStatusChanged:(HWMConfStatus)status {
    switch (status) {
        case HWMConfStatusIdle:
            NSLog(@"Meeting ended.");
            break;
        case HWMConfStatusIncoming:
            NSLog(@"Incoming call.");
            break;
        case HWMConfStatusCallingOut:
            NSLog(@"Outgoing call.");
            break;
        case HWMConfStatusConnected:
            NSLog(@"Connected.");
            break;

        default:
            break;
    }
}
```

Precautions

1. Subscribe to the **HWMBizNotificationHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 8-89 Parameter description

Parameter	Type	Description
status	HWMConfStatus	Meeting call status.

Table 8-90 Enumerated values of HWMSDKConfStatus

Enumerated Value	Description
HWMConfStatusIdle = 0	Idle state. That is, the meeting is ended.
HWMConfStatusIncoming	Incoming call.
HWMConfStatusCallingOut	Outgoing call.
HWMConfStatusConnected	Connected.

8.5.5.2 Ongoing Meeting Details Change Notification

Notification Description

A notification is sent when the details about the ongoing meeting change.

Method Definition

```
- (void)onConfInfoNotify:(HWMLConfStateInfo *)confInfo;
```

Sample Code

```
- (void)onConfInfoNotify:(HWMLConfStateInfo *)confInfo {  
    NSLog(@"Ongoing meeting details report onConfInfoNotify :%@", [confInfo yy_modelDescription]);  
}
```

Precautions

1. Subscribe to the **HWMBizNotificationHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 8-91 Parameter description

Parameter	Type	Description
confInfo	HWMLConfStateInfo *	Meeting details.

8.5.5.3 Notifications for Poor Network Connection

Notification Description

A notification is sent when the network connection is poor.

Method Definition

```
- (void)onPoorNetworkQualityInfoNotify:(HWMSDKPoorNetWorkQualityInfoModel *)poorNetWorkInfo;
```

Precautions

1. Subscribe to the **HWMBizNotificationHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 8-92 HWMSDKPoorNetWorkQualityInfoModel description

Parameter	Type	Description
userId	NSUInteger	User ID.

Parameter	Type	Description
nickName	NSString *	Display name in the meeting.
thirdUserId	NSString *	Third-party account.
accountId	NSString *	Account information.
number	NSString *	SIP number.
isLocal	BOOL	Whether the participant is the local client user.
audioStatus	HWMSDKLowNetWork-StatusInfoModel *	Audio status.
videoStatus	HWMSDKLowNetWork-StatusInfoModel *	Video status.
shareStatus	HWMSDKLowNetWork-StatusInfoModel *	Sharing status.

Table 8-93 HWMSDKLowNetWorkStatusInfoModel description

Parameter	Type	Description
packetLoss	NSUInteger	Packet loss rate.
delay	NSUInteger	Delay.
jitter	NSUInteger	Jitter.
status	HWMLowNetWorkStatus	Status.

Table 8-94 Enumerated values of HWMLowNetWorkStatus

Enumerated Value	Description
HWMLowNetWorkStatusNormal	Normal.
HWMLowNetWorkStatusBad	Poor.
HWMLowNetWorkStatusVeryBad	Very poor.

8.5.5.4 Notification of Incoming Meeting Call Status Changes

Notification Description

A notification is sent when a meeting call is received.

Method Definition

```
- (void)onConflIncoming:(HWMConflIncomingInfo *)conflIncomingInfo;
```

Sample Code

```
- (void)onConflIncoming:(HWMConflIncomingInfo *)conflIncomingInfo {
    NSLog(@"%@@", [conflIncomingInfo yy_modelDescription]);
}
```

Precautions

1. Subscribe to the **HWMNotifyHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 8-95 HWMConflIncomingInfo description

Parameter	Type	Description
state	HWMConflIncoming-State	Incoming call status.
mediaType	HWMSDKConfMedia-Type	Meeting media type.
confId	NSString	Meeting ID.
vmrConfId	NSString	ID of meetings held in a cloud meeting room.

Table 8-96 Enumerated values of HWMConflIncomingState

Enumerated Value	Description
HWMConflIncomingStateStart	Initial state. The phone of the called party is ringing.
HWMConflIncomingStateAccept	The call is answered.
HWMConflIncomingStateReject	The call is rejected.
HWMConflIncomingStateTimeout	The called party does not respond, the call times out, or the calling party has hung up.

Table 8-97 Enumerated values of HWMSDKConfMediaType

Enumerated Value	Description
HWMSDKConfMediaTypeAudio	Audio.
HWMSDKConfMediaTypeVideo	Video.

8.5.5.5 Notification of Instant Meeting Records

Notification Description

A notification of instant meeting records is sent.

Method Definition

```
- (void)onP2PConfRecord:(HWMP2PConfRecordInfoModel *)recordInfo;
```

Sample Code

```
- (void)onP2PConfRecord:(HWMP2PConfRecordInfoModel *)recordInfo{  
    NSLog(@"%@@", [recordInfo yy_modelDescription]);  
}
```

Precautions

1. Subscribe to the **HWMNotifyHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 8-98 HWMP2PConfRecordInfoModel description

Parameter	Type	Description
callerInfo	HWMUISDKCallMemberInfoModel	Caller information.
calleeInfo	HWMUISDKCallMemberInfoModel	Called participant information.
startTime	NSInteger	Call start time.
endTime	NSInteger	Call end time.
isCallOut	BOOL	Whether the call is an outgoing call.
mediaType	HWMUISDKMediaType	Media type.
resultCode	HWMUISDKSDKERR	Call end reason.
resultMsg	NSString	Call end description.

Parameter	Type	Description
isCallEstablished	BOOL	Whether the call is connected.

Table 8-99 HWMUISDKCallMemberInfoModel description

Parameter	Type	Description
number	NSString	Number.
nickName	NSString	Member name.
thirdUserId	NSString	Third-party account.

Table 8-100 Enumerated values of HWMUISDKMediaType

Enumerated Value	Description
HWMUISDKMediaTypeAudio	Audio.
HWMUISDKMediaTypeVideo	Video.

8.5.6 Service Message Notification

8.5.6.1 Role Change Notification

Notification Description

A notification is sent when a role changes.

Method Definition

```
- (void)onSelfRoleChanged:(HWMConfRoleType)confRole;
```

Sample Code

```
- (void)onSelfRoleChanged:(HWMConfRoleType)confRole {
    switch (confRole) {
        case HWMConfRoleTypeAttendee:
            NSLog(@"Participant");
            break;
        case HWMConfRoleTypeAudience:
            NSLog(@"Attendee");
            break;
        case HWMConfRoleTypeChairman:
            NSLog(@"Host");
            break;
        default:

```

```
        break;
    }
}
```

Precautions

1. Subscribe to the **HWMBizNotificationHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 8-101 Parameter description

Parameter	Type	Description
confRole	HWMConfRoleType	Role.

Table 8-102 Enumerated values of HWMConfRoleType

Enumerated Value	Description
HWMConfRoleTypeInvalid = -1	Invalid role.
HWMConfRoleTypeAttendee = 0	Guest.
HWMConfRoleTypeChairman	Host.
HWMConfRoleTypeAudience	Attendee.

8.5.6.2 Meeting List Change Notification

Notification Description

A notification is sent when the meeting list changes.

Method Definition

```
- (void)onReceiveConfList:(NSArray<HWMConfListItemInfo *>)confList;
```

Sample Code

```
- (void)onReceiveConfList:(NSArray<HWMConfListItemInfo *>)confList {
    NSLog(@"%lu", confList.count);
    [self.dataArr removeAllObjects];
    [self.dataArr addObjectsFromArray:confList];
    [self.listView reloadData];
}
```

Precautions

1. Subscribe to the **HWMBizNotificationHandler** proxy during SDK initialization or set the proxy on the target page.

Parameter Description

Table 8-103 Parameter description

Parameter	Type	Description
confList	NSArray<HWMLConfListItemInfo *> *	Meeting list.

Table 8-104 HWMLConfListItemInfo parameters

Parameter	Type	Description
confId	NSString *	Meeting ID.
confSubject	NSString *	Meeting topic.
accessNumber	NSString *	Meeting access code.
chairmanPwd	NSString *	Host password.
generalPwd	NSString *	Guest password.
startTime	NSTimeInterval	Meeting start time. The value is a UTC timestamp, accurate to seconds.
endTime	NSTimeInterval	Meeting end time. The value is a UTC timestamp, accurate to seconds.
videoConf	BOOL	Whether the meeting is a video meeting.
confScheduleName	NSString *	Scheduler name.
chairJoinUri	NSString *	Link for the host to join the meeting.
guestJoinUri	NSString *	Link for guests to join the meeting.
vmrConferenceId	NSString *	ID of the meeting held in the cloud meeting room.
isAutoRecord	BOOL	Whether to enable automatic recording for a meeting.

Parameter	Type	Description
scheduleVmr	BOOL	Whether the meeting is a scheduled meeting held in the cloud meeting room. 0 : Common meeting. 1 : Scheduled meeting held in the cloud meeting room.
role	HWMLConfRoleType	Role.

8.5.6.3 Audio Data Stream Notification

Notification Description

A notification is sent when an audio data stream is sent.

Method Definition

```
- (void)onAudioFrameDataNotify:(HWMAudioFrameDataModel *)pFrame;
```

Sample Code

```
- (void)onAudioFrameDataNotify:(HWMAudioFrameDataModel *)pFrame{  
    NSLog(@"In-meeting audio stream report:%@", [pFrame yy_modelDescription]);  
}
```

Precautions

1. Subscribe to the **HWMBizNotificationHandler** proxy during SDK initialization or set the proxy on the target page.
2. You need to call the API for [obtaining audio data streams](#) and set the parameter to **YES**. Then, data can be reported in the notification.

Parameter Description

Table 8-105 Parameter description

Parameter	Type	Description
pFrame	HWMAudioFrameDataModel *	Audio stream information.

Table 8-106 HWMAudioFrameDataModel parameters

Parameter	Type	Description
iSamples	NSInteger	Number of sampling points of each audio channel. $iSamples = iSamplesPerSec \times 10 \text{ ms} / 1000$
iSamplesPerSec	NSInteger	Sampling ratio.
iBytesPerSample	NSInteger	Number of bytes of each sampling point. Generally, the PCM audio is 16 bits.
iChannels	NSInteger	Number of audio channels.
pBuffer	NSData	Data buffer. Length = $iSamples \times iBytesPerSample \times iChannels$
uiDataLen	NSInteger	Data length, which is used after encoding or before decoding. The value of this parameter needs to be updated after encryption or decryption.
eFrameType	HWMAudioRowDataFrameType	Audio frame type.

Table 8-107 Enumerated values of HWMAudioRowDataFrameType

Enumerated Value	Description
HWMAudioRowDataFrameTypePcm16 = 0	Pcm16

8.5.6.4 Notification of Sharing Cloud Meeting Rooms

Notification Description

A notification is sent when information about shared cloud meeting rooms was changed.

Method Definition

```
-(void)onShareVmrInfoNotify:(HWMSDKShareVmrInfoModel *)shareVmrInfo;
```

Sample Code

```
-(void)onShareVmrInfoNotify:(HWMSDKShareVmrInfoModel *)shareVmrInfo{
    NSLog(@"%@@", [shareVmrInfo yy_modelDescription]);
}
```

Precautions

1. Subscribe to the **HWMNotifyHandler** delegate during SDK initialization or set the delegate on the target page.

Parameter Description

Table 8-108 HWMSDKShareVmrInfoModel description

Parameter	Type	Description
isEnabledShareVmr	BOOL	Whether shared cloud meeting rooms are available.

8.5.7 Incoming Call Answering Policy Configuration

8.5.7.1 Configuring the Policy for Answering a Meeting Call

Notification Description

A notification is sent when a meeting call is received. The called party needs to return the policy for answering the meeting call. If no policy is configured, the default configuration is used, and the dialog box for answering the meeting call is displayed.

Method Definition

```
- (HWMIncomingAnswerType)answerTypeOnConfIncoming;
```

Sample Code

```
- (HWMIncomingAnswerType)answerTypeOnConfIncoming {  
    return HWMIncomingAnswerAutoDecline; // Automatically rejects the call.  
}
```

Precautions

1. Set the **incomingAnswerHandler** proxy during SDK initialization or set the proxy on the target page.

8.5.7.2 Notification of Setting the Microphone Status

Notification Description

A notification is sent for incoming meetings. Participants are required to set whether to turn on microphones. If this method is not implemented, microphones are turned on by default.

Method Definition

```
- (BOOL)isOpenMicrophoneIncoming;
```

Sample Code

```
- (BOOL)isOpenMicrophoneIncoming {
    return YES;
}
```

Precautions

1. Set the **confSettingHandler** proxy during SDK initialization or set the proxy on the target page.

8.5.7.3 Notification of Setting the Camera Status

Notification Description

A notification is sent for incoming meetings. Participants are required to set whether to turn on cameras. If this method is not implemented, cameras are turned off by default.

Method Definition

```
- (BOOL)isOpenCameraIncoming;
```

Sample Code

```
- (BOOL)isOpenCameraIncoming {
    return YES;
}
```

Precautions

1. Set the **confSettingHandler** proxy during SDK initialization or set the proxy on the target page.

8.6 Error Code Reference

8.6.1 Common Error Codes

Table 8-109 Enumerated values of HWMUISDKErrorCode

Parameter	Value	Description
HWMUISDKErrorCodeContactNotFound	40000	The contact does not exist.
HWMUISDKErrorCodeNumberAndAccountEmpty	40001	The account and number cannot be both empty.
HWMUISDKErrorCodeArgsError	40002	Parameter error.
HWMUISDKErrorCodeRepeatRequest	40003	Method call repeated.

Parameter	Value	Description
HWMUISDKErrorCodeTime-Out	40004	Timeout.
HWMUISDKErrorCodeUnInit	40005	Uninitialized.
HWMUISDKErrorCodeArg-sLengthOverrun	40006	The parameter value length exceeds the limit.
HWMUISDKErrorCodePass-wordOrAccountEmpty	40007	The account and password cannot be both empty.
HWMUISDKErrorCodeConfl-dEmpty	40008	The meeting ID cannot be empty.
HWMUISDKErrorCodeUnLo-gin	40009	You have not logged in yet.
HWMUISDKErrorCodeLogin-g	40010	Logging in...
HWMUISDKErrorCodeSub-jectTooLong	40011	The meeting topic cannot contain more than 50 characters.
HWMUISDKErrorCodeConfl-dTooLong	40012	The meeting ID cannot contain more than 20 characters.
HWMUISDKErrorCodeCon-fOrCallExit	40013	In a meeting or being called.
HWMUISDKErrorCodeAPPI-DInfollegal	40014	Invalid app ID.
HWMUISDKErrorCodeVMR-HostPasswordLengthlegal	40015	The length of the host password is invalid.
HWMUISDKErrorCodeVMR-NameEmpty	40016	The cloud meeting room name is empty.
HWMUISDKErrorCodeCallIn-terfaceError	40110	Failed to call a meeting API.
HWMUISDKErrorCodeConf-StartTimeEarly	40115	The start time of a meeting is earlier than the current time.
HWMUISDKErrorCodeNotIn-Conf	40116	Not in a meeting.
HWMUISDKErrorE2EEncryptA-lgorithmError	41117	The end-to-end encryption algorithm is asymmetric.
HWMUISDKErrorCodeCallRe-sourceNoEnough	115022001	The enterprise's concurrent resources are insufficient.

8.6.2 Error Codes

Table 8-110 Error codes

Error Code	Error Description
-1	Unknown error.
0	Success.
111070001	Request error.
111070002	Insufficient permissions.
111070003	System processing failure.
111070004	Meeting authentication failed.
111070005	Meeting does not exist.
111070006	Personal cloud meeting room does not exist.
111070007	Meeting access number does not exist.
111070008	Meeting notification could not be sent.
111070009	Meeting password cannot be left blank.
111070010	Insufficient permissions to view this meeting.
111070100	Get started meeting exception.
111070101	Start meeting exception.
111070102	Apply IVR resource exception.
111070103	Start IVR meeting exception.
111070104	Apply site resource exception.
111070105	Start sub meeting exception.
111070106	Add channel exception.
111070107	Move and apply site resource exception.
111070108	Start meeting exception.
111070109	Get started cloud meeting exception.
111070110	Invite site exception.
111070111	Request token is null.
111070112	Rename site exception.
111070113	Hangup site exception.
111070114	Mass hangup site exception.
111070115	Delete attendee exception.

Error Code	Error Description
111070116	Mass delete attendee exception.
111070117	Book cycle meeting exception.
111070118	Modify cycle meeting exception.
111070119	Create cycle meeting exception.
111070120	Region data not found.
111070121	Forbidden subscribe.
111070122	Cancel subscribe fail.
111071001	Sysportal service exception.
111071002	Conf service exception.
111071003	Failed to create the meeting. Try again later.
111071004	This cloud meeting room does not allow guests to join before the host.
111071005	This cloud meeting room has been scheduled for another meeting during this period.
111071006	Insufficient cloud meeting time.
111071007	Meeting does not exist.
111071008	Cannot query meeting list.
111071009	Cannot change cloud meeting into immediate meeting.
111071010	Cannot modify cloud meeting flag.
111071011	The cloud meeting has not yet started. Please wait.
111071012	Not cloud meeting.
111071013	Start time less than current time.
111071014	Start time over max schedule time.
111071015	Duration over range.
111071016	Cycle ID list null exception.
111071017	Meeting size over range.
111071018	Invalid media type.
111071019	Invalid meeting type.
111071020	Cycle params null exception.
111071021	Duration over range.
111071022	Subject length too long.

Error Code	Error Description
111071023	Group URI length too long.
111071024	Invalid email address format.
111071025	Invalid mobile number format.
111071026	Department name too long.
111071027	Invalid welcome voice enable value.
111071028	Invalid enter voice enable value.
111071029	Invalid leave voice enable value.
111071030	Invalid reminders value.
111071031	Invalid allow record value.
111071032	Invalid auto record value.
111071033	Invalid user type value.
111071034	Invalid encrypt mode value.
111071035	Invalid language value.
111071036	Invalid auto prolong value.
111071037	VmrID too long.
111071038	Invalid record type value.
111071039	Live address too long.
111071040	Aux address too long.
111071041	Null start date for cycle meeting.
111071042	Null end date for cycle meeting.
111071043	Invalid cycle type value for cycle meeting.
111071044	Invalid interval for cycle meeting.
111071045	Null point for cycle meeting.
111071046	Invalid point value for cycle meeting.
111071047	Invalid vmr flag value.
111071048	Invalid record auxStream.
111071049	Invalid multiStream flag.
111071050	Invalid audience flag.
111071051	Invalid liveChannel ID.
111071052	Anonymous login is locked. Try again later.

Error Code	Error Description
111071053	Link login is locked. Try again later.
111071054	Not enough Meeting ID.
111071055	Failed to apply meeting ID.
111071056	Failed to release meeting ID.
111071057	Live room is used.
111071058	The meeting has not yet started. Please wait.
111071059	Meeting size over range.
111071060	The enterprise cannot create meetings because it has not purchased any concurrent meeting resources.
111071061	Parameter verify failed.
111071062	Json conversion failed.
111071063	Not cloud meeting room owner.
111071064	This cloud meeting room has been started for another meeting during this period.
111071065	This meeting cannot be modified because it is already started.
111071066	Attendees amount over range.
111071067	This meeting cannot be canceled because it is already started.
111071068	Meeting password encrypt failed.
111071069	No meeting during this period.
111071070	Sub cycle meeting cannot modify live room.
111071071	Stop online meeting exception.
111071072	Meeting is ended.
111071073	Not allow anonymous user.
111071074	Only allow user in organization.
111071075	Only allow invited user.
111071076	Batch export task for history meeting list during this period.
111071077	Only allow invited user and user in organization.
111071078	Max current participants amount reached.
111071079	Invalid CTD param.
111071080	Invalid guest password.

Error Code	Error Description
111071081	Guest password conflict with meeting ID.
111071082	Max meeting amount reached.
111071083	Invalid meeting random number.
111071084	Max export history meeting list times reached.
111071085	Max multi view layouts reached.
111071086	Max multi view invalid manual type.
111071087	Max multi view sub view amount reached.
111071088	Max multi view sub view numbers reached.
111071089	Webinar and common meeting cannot be converted to each other.
111071090	Not allow add audience.
111071091	Meeting password authentication failed.
111071092	File export task failed.
111071093	File export task is downloading.
111071094	Not allow audience to join.
111071095	Need to get WEBINAR_CONF.DTO object.
111071096	User-defined languages over range.
111071097	Your enterprise does not support simultaneous interpretation.
111071098	Need to set interpreter groups.
111071099	Invalid interpretation language.
111071100	Max languages in a meeting are reached.
111071101	This interpreter group ID already exists.
111071102	Max interpreters in the interpreter group reached.
111071103	This interpreter already exists in an interpreter group.
111071104	Invalid interpreter account.
111071105	Guest password conflict with chairman password.
111071106	Meeting is holding.
111071107	Invalid audience password.
111071108	Audience password conflict with meeting id.
111071109	Audience password conflict with chairman password.

Error Code	Error Description
111071110	Only RTC meeting support E2E encrypt.
111071111	Audience password conflict with guest password.
111071112	Cloud meeting room ID type cannot be modified.
111071113	Cloud meeting room type cannot be modified.
111071114	Cloud meeting room flag cannot be modified.
111071119	Sub cycle meeting modify time over range.
111072001	Application for meeting resources failed.
111072002	Failed to release meeting resources.
111072003	The meeting is ending.
111072004	The meeting is starting.
111072005	The meeting has not yet started.
111072006	The meeting has ended.
111072007	Site invitation failed.
111072008	Site does not exist.
111072009	Failed to disconnect the site.
111072010	Coming soon...
111072011	Meeting status incorrect.
111072012	Site control operation failed.
111072013	The cloud meeting room is in use by another meeting.
111072014	The meeting has ended.
111072015	The meeting has not yet started.
111072016	Meeting does not exist.
111072017	Meeting has no attendee.
111072018	Application for chairman password exception.
111072019	Not found site which can be moved exception.
111072020	The current meeting is not a recording meeting. Recording is not supported.
111072021	System processing failure.
111072022	Insufficient recording resources in the system.
111072023	There are no participants in this meeting.

Error Code	Error Description
111072024	Operation failed. No sites have joined this meeting.
111072025	Voice meeting does not support this function.
111072026	The voice site does not support this operation.
111072027	Voice sites cannot be displayed in custom continuous presence.
111072028	At least one site must have custom continuous presence configured.
111072029	At most one presentation pane is allowed in custom continuous presence.
111072030	In the voice-activated continuous presence mode, each pane can only support a single user.
111072031	The number used for the site to join the meeting cannot be left blank.
111072032	The number used for the site to join the meeting is too long.
111072033	The format of the number used for joining the meeting is incorrect.
111072034	Length of site name too long.
111072035	The site role type is outside the allowed range.
111072036	Length of site email address too long.
111072037	Length of site mobile number too long.
111072038	The value for whether a site is muted after it first joins the meeting is outside the allowed range.
111072039	The value for whether to automatically invite a site is outside the allowed range.
111072040	The host's site viewing type is outside the allowed range.
111072041	The value of the continuous presence setting mode is outside the allowed range.
111072042	The polling time is outside the allowed range.
111072043	The pane type cannot be left blank.
111072044	Invalid pane type.
111072045	The value of the switch is outside the allowed range.
111072046	The site name cannot be left blank.
111072047	Site name too long.

Error Code	Error Description
111072048	Continuous presence is not supported. Ask the administrator to configure related data on the MCU.
111072049	Response timed out. Try again later.
111072050	Meeting locked.
111072051	The meeting display mode is empty.
111072052	The meeting display mode is outside the allowed range.
111072053	The meeting pane type is outside the allowed range.
111072054	The banner or caption type is empty.
111072055	The banner or caption content is empty.
111072056	The banner or caption content cannot exceed 2,000 bytes.
111072057	The request message body is empty.
111072058	The pane index is greater than the total number of panes.
111072059	Meeting has no host.
111072060	Regular participants cannot perform this operation.
111072061	You have set host polling and cannot select a specific site to view or set continuous presence.
111072062	You cannot select a site to view on the web page. Perform the operation on the terminal.
111072063	Applying for recording resources...
111072064	Too many failed login attempts. Try again later.
111072065	The meeting ID or password is incorrect. Check the ID and password and try again.
111072066	The enterprise has not purchased any recording storage space.
111072067	Insufficient enterprise recording storage space.
111072068	Failed to start live broadcast. Try again later.
111072069	Not allow to hand up for host.
111072070	The operation is not allowed for guest.
111072071	The operation is only allowed for yourself.
111072072	Not allow to apply host for attendees who do not have meeting control abilities.
111072073	Notify message is expired.

Error Code	Error Description
111072074	Only participants with a number registered on HUAWEI CLOUD can be set as the host.
111072075	Hung up site for meeting ended.
111072076	Hung up site by host.
111072077	Hung up site because host deleted site.
111072078	Hung up site because meeting is recreated.
111072079	Hung up site for moving site failed.
111072080	Hung up site for inviting site cross region failed.
111072081	Hung up site for invitation exception.
111072082	Hung up site for joining meeting repeatedly.
111072083	Lock sharing failed.
111072084	This site does not support 1-screen layout.
111072085	Not support realtime subtitle.
111072086	Realtime subtitle pid is null.
111072087	Invalid realtime subtitle pid.
111072088	Failed to set realtime subtitle.
111072089	Not allow audience to change speaker status.
111072090	Allow/forbid audience to speak only for audience.
111072091	This meeting does not support simultaneous interpretation.
111072092	Interpreter group is empty.
111072093	This meeting has not enabled simultaneous interpretation.
111072094	This site is not interpreter.
111072095	This site has not yet confirmed interpreter identity.
111072096	Invalid site language.
111072097	This site is confirmed interpreter.
111072098	This site listen channel is different from speak channel.
111072099	Failed to set interpretation languages. Try again.
111072100	Failed to set interpretation channel. Try again.
111072101	Max participant amount reached.
111072102	Max allowed handup amount reached.

Error Code	Error Description
111072103	Max allowed speaking amount reached.
111072104	Failed to set virtual audio CSD site.
111072105	This meeting does not support cohost.
111072106	This site does not support cohost.
111072107	Host cannot be set to cohost.
111072108	Audience cannot be set to cohost.
111072109	Need to check cohost permission.
111072110	Cohost cannot operate host.
111072111	This site does not support share invitation.
111072201	Hung up site because heart beat failed.
111072202	Insufficient audience cloud meeting room logic resources.
111072203	Insufficient participant cloud meeting room logic resources.
111072204	Insufficient webinar resources, so started failed.
111072205	Only RTC conf support local record.
111072206	Invalid E2E encryption parameter.
111072207	Not allow to switch role in webinar.
111072208	The client version used by the user is too early. Cannot start local recording.
111072211	Meeting is under AR assist.
111072213	Audience cannot be set to host.
111072214	Rename param contains sensitive words.
111073001	User does not exist.
111073002	Department does not exist.
111073003	Invalid username format.
111073004	Invalid department name format.
111073005	Could not query department.
111073006	Application for anonymous user failed.
111073007	Invalid cloud meeting room package status.
111073008	Failed to Release anonymous user.
111073009	Not support cycle meeting for welinkC.

Error Code	Error Description
111073010	Not support cloud meeting room for welinkC.
111073011	Failed to get WeLink token.
111073012	Failed to Get M to M token.
111073013	Invalid webinar cloud meeting package status.
111073014	Max extend times for cloud meeting trial version reached.
111073015	Max extend duration for cloud meeting trial version reached.
111073016	Not support auto extend meeting for cloud meeting trial version.
111074001	This meeting host already exists.
111074002	No meeting host permissions.
111074003	Failed to extend the meeting. Max meeting duration reached.
111074004	Failed to extend the meeting. The service processing is abnormal.
111075001	Failed to start timer.
111075002	Failed to end timer.
111075003	Json parse failed.
111076001	Released by host.
111076002	Released by portal host.
111076003	Max number of participants reached.
111076004	Insufficient enterprise resources.
111076005	Not answered.
111076006	User does not exist.
111076007	Offline.
111076008	Busy.
111076009	Rejected by user.
111076010	Released by user.
111076011	Insufficient meeting resources in the system.
111076012	Outbound calling disabled.
111076013	Application for address token failed.
111076014	Call failed.

Error Code	Error Description
111076015	Max number of participants reached.
111076099	Common error.
111077001	RSE server info does not exist.
111077101	Not support AI record.
111077102	Reapplying for AI record resource.
111077103	Insufficient AI record resource.
111077104	In AI recording, the meeting cannot stop live or recording.
111077201	Record file does not exist or have no permission.
111077202	RSE authentication failed.
111078000	No available region in multi region.
111078001	No available global in multi region.
111078002	Dispatch region error in multi region.
111079000	Failed to phrase big data param query xml.
111079001	Failed to phrase anonymous assign xml.
111080001	Bad request.
111080002	Insufficient permissions.
111080004	Site data not found or deleted.
111081001	Site is inviting.
111081002	Site meeting does not exist or is ended.
111081003	Failed to apply site resource.
111081004	Failed to release site resource.
111081005	Failed to apply site media resource.
111081006	Authentication failed.
111081007	Meeting is locked.
111081009	Login is locked because max authentication times reached.
111081010	Waiting user restrictions.
111082001	Not support this control.
111082002	No response.
111082003	Site not exist.
111082004	Site unavailable.

Error Code	Error Description
111082005	Site busy.
111082006	Site refused.
111082007	Site leave.
111082008	PSTN service is closed.
111082009	SIP invitation timeout.
111083001	RSE does not exist.
111084001	Failed to execute DTMF.
111084002	Get started meeting exception.
111084003	Call MCU side exception.
111084004	Join call exception.
111084005	Invite exception.
111084006	Call terminal side exception.
111084007	Answer exception.
111084008	Common CTL exception.
111084009	Hangup exception.
111084010	Notify capability exception.
111084011	Update MT exception.
111084012	Negotiate exception.
111084013	Not support this meeting.
111084014	Not allowed join meeting in RTC inviting because guests are not invited.
111089002	Failed to phrase URI join xml.
111090001	Failed to join data meeting.
111090002	Join data meeting overtime.
111100001	Failed to get slider image.
111100002	Slider check failed.
111100003	Invalid random number.
111100004	Invalid slider token.
111100005	Need to check slider.
111100006	Invalid SMS phone number.

Error Code	Error Description
111100007	Failed to send verification code.
111100008	Verification code expired.
111100009	Verification code error.
111100010	Max verification code check times reached.
111100011	The uuid is invalid, you need to re-verify the phone number.
111100012	The meeting is not on this site.
111100013	Need to verify the mobile phone number. Mobile number verification is required when an International site user joins a meeting held by a free enterprise on the Chinese mainland site.
111110001	Failed to add IM group.
111110002	Failed to disband IM group.
111110003	Failed to add IM member.
111110004	Failed to remove IM member.
111112001	Failed to enter the waiting room.
111112002	Failed to exit the waiting room.
111112003	Waiting room cache operation failed.
111112004	Co-hosts cannot be moved into the waiting room.
111112005	Not allowed to enable waiting room.
111112008	Not support this feature according to client capabilities.
112010001	Common failure.
112010002	Null param.
112010003	Participant not found.
112010004	Meeting not found.
112010005	SIP invite information timeout.
112010006	SIP invite information failed.
112010007	SIP information timeout.
112010008	SIP information failed.
112010009	System processing failed.
112010010	System processing failed.
112010011	Failed to invite MRS.

Error Code	Error Description
112010012	Failed to invite participant.
112010013	Data meeting join information failed.
112010014	Failed to start meeting.
112010015	Media negotiation failed.
112010016	User rejects.
112010017	User is busy.
112010018	No call permission.
112010019	Unknown callee.
112010020	No user response.
112010021	Join meeting timed out.
112010022	Session has been released.
112010023	Callee is not registered.
112010024	SIP invite timed out.
112010025	User Session timer times out and hangs up.
112010026	The participant bye hangs up on the MRS side.
112010027	The participant bye hangs up on terminal side.
112010028	No RTP stream hang up.
112100000	Sysportal exception.
112100001	Bad request.
112100002	Illegal request.
112100003	Data not found.
112100004	Data duplication.
112100006	The requested type is not supported.
112100007	Failed to save notification template.
112100008	Failed to save data.
112100009	Failed to query data.
112100010	Failed to delete data.
112100011	Password reset required.
112100012	Incorrect old password.

Error Code	Error Description
112100013	The new password cannot be the same as the old password.
112100014	Insufficient password complexity and low security.
112100015	The length does not meet the requirements.
112100016	RSE is in meeting.
112100017	RSE to be deleted.
112100018	Failed to query the meeting list.
112100019	User has been locked out. Try again later.
112100022	The live room channel name exists.
112100023	Failed to modify system configuration items for duplicated meeting ID prefix.
112100024	CONFID prefix can only be added, not modified or deleted.
112100025	The live room channel url exists.
112100026	The live room has been occupied.
112100027	The live room does not exist.
112100028	Live room release failed.
112100029	The request is missing header or param.
112100030	The Live main stream URL already exists.
112100031	The Live auxiliary stream URL already exists.
112100032	Password is weak.
112100033	The live room is occupied.
112100034	Save part of attendees since max attendees size reached.
112100035	Failed to export data.
112100036	Failed to import data.
112100037	Max file size reached.
112100038	LVS target address exists.
112100039	LVS port existed.
112100040	Not allow to modify global standby config.
112100041	MCU insulation IP address exists.
112100042	MCU insulation IP address cannot be modified.
112100043	SBC address exists.

Error Code	Error Description
112100044	Internal exception.
112100045	System config delete exception.
112100046	No ISBC access address.
112100047	Media type need to be HD because the organization enables full HD capability.
112100061	Same interpreter language abbreviation exists.
112100062	Same interpreter language name exists.
112100063	MCU type is MIXED and insulation config is not configured, or MCU meeting exists when modifying MCU connection settings.
112100064	MCU type is MIXED and insulation config is not configured when adding mcu connection settings.
112100065	MCU type is MIXED when modifying MCU insulation config or disbanding enterprise.
112100066	MCU type is MIXED when deleting MCU insulation config.
112100067	This gateway type is incompatible with MCU.
115021001	Insufficient media resource.
115021002	Meeting does not exist.
115021003	Media resource does not exist.
115021005	Insufficient media bandwidth resource.
115021006	Media device fault.
115022000	Insufficient common logic resource.
115022001	Insufficient meeting resources in the enterprise.
115022002	Insufficient logic port resource.
115022003	Live broadcast resources have not been purchased or are insufficient.
115022004	Media device does not exist.
115023001	Insufficient ID resources.
115024001	RMS service exception.
115025001	The live room has already been occupied.
115025002	The live room does not exist.
115025003	Live room release failed.

Error Code	Error Description
115026001	MCU meeting exists.
115029001	Invalid common parameter.
115029002	Null parameter.
115029003	service is not available.
115029004	Configuration exception.
115029005	Duplicately apply resources.
115029006	Waiting for applying resources.
115029999	Unknown error.
118000000	User authentication failed.
118000001	User token authentication failed.
118000002	User authentication account lockout.
200000001	Server is busy. Please try again later.
200000002	Internal error. Please contact SRE.
200000003	Invalid parameter. Please check whether the parameters are valid.
200000004	Illegal request. Please check the value of the request header field X-Auth-Token or X-Access-Token.
200000005	Forbidden access during the version upgrade.
201020023	This user is already the owner of another corporation and cannot create a new corporation for it.
201040005	Max number of users reached. Please check the purchased meeting users.
201040016	Password security is low. Please set another password.
201040031	Activation code overdue.
201040042	Pre-authentication expired.
201040043	This user is the owner of another corporation and cannot be invited.
201040044	Invalid invite connection.
201040045	User is already in waiting list.
201040046	User already exists.
201040047	Account modification is not allowed.
201050012	Activation code does not exist.

Error Code	Error Description
201050015	Invalid activation code.
201050021	Activation failed.
201050022	Terminal does not allow unbinding.
201080000	VMR resource unavailable.
201080006	The host password and the guest password cannot be the same. Please confirm the input parameters.
201080017	Same as meeting password.
201510001	No invite permission to get an invite code.
201510003	Invalid application.
206010000	User name or password error.
206010007	Account is not activated, no permission to log in.
206010010	Failed to get verification code. Please contact SRE.
206010011	Verification code must be filled.
206010012	Verification code check failed.
206010013	Jump login failed. Please contact SRE.
206010022	SSO login failed. Please contact SRE.
206010023	SSO login is not supported.
206010024	Invalid authentication type.
206010025	APPID verification failed.
206010027	Authentication type error.
206010029	Network error.
206010030	APPID does not allow automatic registration.
206010031	APPID auto registration failed.
206010036	Normal users cannot log in.
206010042	Huawei account authentication failed.
206010057	APPID authentication expires.
206010058	APPID account is not bound.
206010064	Site mismatch.
206010065	Phone number conflict.
206010066	E-mail conflict.

Error Code	Error Description
206010070	The number of users has reached the maximum.
206010071	WeChat authentication failed.
206010074	International sites support site changing re-login.
206010075	Account has been unbound.
206020000	Invalid authentication information. Please check the value of the request header field X-Auth-Token or X-Access-Token.
206020001	Token is created by disaster recovery site.
206020002	Token is invalid due to being kicked.
206030000	The user does not exist.
206030001	The verification code is incorrect or has expired. Please obtain a new one.
206030002	Incorrect verification code.
206030003	Failed to send the verification code.
206030004	Try to get a new verification code 180s later.
206030005	The password cannot be changed.
206030006	The old password is incorrect.
206030007	The length of the new password does not meet the requirements.
206030008	The password complexity does not meet the requirements.
206030009	The new password must be different from the previous old passwords.
206030010	The password cannot contain three or more of the same characters consecutively.
206030011	The password cannot be changed within 5 minutes upon the last password change.
206030012	The password cannot contain the account or the reverse order of the account.
206030013	At least two characters must be different between the new and old passwords.
206030014	Invalid password format.
206030015	The user is locked and will be locked in 60s.
206030016	Have no right to reset other's password.

Error Code	Error Description
206030018	The number of password retrieval times in a day has reached the maximum (10 times).
206030019	The number of incorrect verification code inputs have reached the maximum. Please get it again.
206030023	Failed to send verification code. Please contact SRE.
206030028	The system has enabled SSO login and does not support changing the password. Please retry after the system has disabled SSO login.
206030031	Forgot password for Huawei account.
206040000	No corresponding terminal type.
206060008	Sending verification code is locked.
206060009	Slider verification required.
206060010	Invalid slider token.
206060011	Request parameter error.
206060012	Sending SMS is not supported.
206060013	Repeated sending is not supported.
206060014	Invalid verification code.
206060015	Max verification code check times reached.
206060017	Failed to bind Huawei account.
211030046	Not the IdeaHub activation code.
211030050	auth fail too many times, locked.
211030052	auth fail too many times, permanently locked.
211060003	The maximum number of log upload times has been reached.
411000001	Common failure.
411000002	Parameter error.
411000003	Meeting does not exist.
411000004	A meeting already exists.
411000005	Meeting state error.
411000006	Failed to get device.
411000007	Failed to set device.
411000008	No device available.

Error Code	Error Description
411000009	This operation is only supported on mobile.
411000010	Network access error.
411000011	Other supplementary service is running.
411000012	Memory allocation error.
411000013	Initialization failed.
411000014	User does not exist.
411000015	Did not join the data meeting.
411000016	Neither meeting nor call exists.
411000017	SVN port detection failed.
411000018	Failed to write file.
411000019	RTC does not support STG mode.
411000020	Failed to load RTC library. RTC meeting is not supported.
411000021	The meeting is in the audience pause state when changing roles.
411000022	Not in call.
411000023	Meeting or call does not exist.
411000024	Pairing state not allowed.
411000025	Pairing request failed.
411000026	Pairing exceeds limit.
411000027	Pairing common error.
411000028	Pairing and joining the meeting failed.
411000029	Pairing and joining the meeting is busy.
411000030	Pairing and joining the meeting is invalid.
411000031	Multiple clicks at the same time to pair and join the meeting error.
411000032	Pairing is not established or is being established.
411000033	The camera is not turned on in the third-party capture mode.
411000034	RTC engine creation failed.
411000035	Not in a meeting.
411000036	mute self failed.

Error Code	Error Description
411000100	End the meeting with no stream due to disconnection of network.
411000101	End the meeting with no stream because fail to re-join meeting.
411000102	Null pointer exception.
411000103	Parameters cannot be empty.
411000104	Encrypt and decrypt func not match.
411000105	Load user-defined DLLs failed.
411000106	Shimo Docs is not supported.
412100001	The message processing thread is not initialized.
412100002	Parameter error.
412100003	Timeout.
412100004	Memory allocation error.
412100005	XML parsing error.
412100006	DNS resolution error.
412100007	Request message failed.
412100008	Authentication failed.
412100009	Server error.
412100010	Account is locked.
412100011	Create timer error.
412100012	Server CA certificate verification failed.
412100013	Network error.
412100014	Server redirect.
412100015	Account is not activated.
412100016	JSON parsing error.
412100017	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
412100018	Disconnected by the proxy. Probably because the server address is misconfigured.
412100019	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.

Error Code	Error Description
412100020	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
412100021	The authentication process failed. The proxy user name or password is incorrect.
412100022	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.
412100023	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
412100024	The authentication process failed. Unable to resolve gateway.
412100025	The authentication process failed. Unable to resolve host.
412100026	The authentication process failed. Unable to connect.
412100027	The authentication process failed. Operation times out.
412100028	Message length too long.
412100029	Base64 encryption failed.
412100030	XML parsing error.
412100031	Secure function error.
412100032	Firewall detection parameter error.
412100033	Failed to create STG tunnel.
412100034	Failed to update STG service.
412100035	Encryption failed.
412100036	Do not allow duplicate downloads.
412100037	File operation failed.
412100038	The request message returns empty.
412100039	The number of detection servers is 0 error.
412100040	Failed to get local IP address.
412200001	Internal error.
412200002	Parameter error.
412200003	Network timeout.
412200004	Network Error.
412200005	Need to bind mobile phone.

Error Code	Error Description
412200006	Need to bind email.
412200007	Has initialized already.
412200008	State machine execution failed.
412200009	Failed to start timer.
412200010	The user is prompted to change the password when logging in for the first time.
412200011	Unknown authentication type.
413000001	Common error.
413000002	Parameter error.
413000003	Memory allocation error.
413000004	System error.
413000005	Message sending error.
413000006	Get system configuration error.
413000007	Physical network error.
413000008	Network access error.
413000009	Create timer error.
413000010	Call state error.
413000011	Other operation in progress error.
413000012	Requesting the master to start call error.
413000013	Requesting audio resource error.
413000014	Other supplementary service is running.
413000015	Record call error.
413000016	Media process error.
413000017	Maximum number of calls reached.
413000018	SIP account ID does not exist.
413000019	Call ID does not exist.
413000020	Failed due to registering.
413000021	Registration failed.
413000022	Deregistration failed.
413000023	Setting account information error.

Error Code	Error Description
413000024	Setting SIP account error.
413000025	Reporting SIP account information error.
413000026	Server information error.
413000027	SIP account information error.
413000028	SIPC execution error.
413000029	Not registered error.
413000030	Call Sip interface to subscribe error.
413000031	Canceling subscription error.
413000032	Subscribing error.
413000033	Only one local meeting is allowed.
413000034	Local meeting is not created.
413000035	The participant line does not match the chair account.
413000036	Local meeting state error.
413000037	Failed to report the linkage state of the IP Phone.
413000038	Meeting ID does not exist.
413000039	Video hold error.
413000040	Video unhold error.
413000041	The maximum number of server meetings reached.
413000042	Get AA random number error.
413000043	AA login error.
413000044	Meeting type mismatch.
413000045	Failed to start video meeting.
413000046	AA no master server.
413000047	Password error.
413000048	Username error.
413000049	User is logged in.
413000050	Account is locked.
413000051	Terminal type mismatch.
413000052	Parsing XML error.
413000053	Connecting to server error.

Error Code	Error Description
413000054	Get media configuration error.
413000055	Get service permission error.
413000056	Insufficient service permission.
413000057	Network environment error.
413000058	Service conflict.
413000059	Connection timeout.
413000060	Unknown error.
413000061	Add ringing information error.
413000062	Delete ringing information error.
413000063	Create ringing number error.
413000064	VVM parameter error.
413000065	Getting registered service error.
413000066	Getting voicemail error.
413000067	Attendee already exists.
413000068	Attendee does not exist.
413000069	Create server video meeting window error.
413000070	Video window already exists.
413000071	Getting meeting list error.
413000072	Operating requires host privileges.
413000073	No video device to operate.
413000074	Refresh registration is not turned off.
413000075	Online state report error.
413000076	Network address subscription report error.
413000077	Telepresence account was force unregistered. Information report error.
413000078	TLS root certificate error.
413000079	AD authentication error.
413000080	Meeting list is getting.
413000081	Prohibited calls.
413000082	The maximum number of calls has been reached.

Error Code	Error Description
413000083	The maximum number of encrypted calls has been reached.
413000084	The maximum number of video calls has been reached and needs to downgrade to audio.
413000085	H323 account ID does not exist.
413000086	H323 account information error.
413000087	H323 account information report failed.
413000088	Insufficient local resources.
413000089	The calling protocol is not supported.
413000090	Setting H323 account information error.
413000091	Mediatrix meeting access number reporting failed.
413000092	Mediatrix VMR information reporting failed.
413000093	IMS meeting list information reporting failed.
413000094	TUP initialization is not complete.
413000095	Message return value error.
413000096	Message content too large error.
413000097	Secure function error.
413000098	message response is empty error.
413000099	Account is not enabled.
413000100	Create call control implement error.
413000101	Already in call.
413000102	Call does not exist.
413000103	Failed to get media configuration information.
413000104	Failed to set third-party capture. Calling HME_V_Capture_InputData failed.
414100001	Common error.
414100002	Parameter error.
414100003	Timeout.
414100004	Memory allocation error.
414100005	DNS resolution error.
414100006	Request message failed.
414100007	Authentication failed.

Error Code	Error Description
414100008	Server error.
414100009	Create timer error.
414100010	Start timer error.
414100011	The meeting control block is full. Please release the control block that is not in use.
414100012	The proxy communication times out and the TCP link building fails. Probably because the proxy configuration is incorrect.
414100013	Disconnected by the proxy. Probably because the server address is misconfigured.
414100014	The TCP link establishment timed out. Probably because the proxy domain name or port configuration is incorrect.
414100015	The authentication process failed. The user does not have proxy permission and needs to apply for proxy permission.
414100016	The authentication process failed. The proxy user name or password is incorrect.
414100017	The authentication process failed. Incorrect authentication type. User name and password are required. The user needs to be prompted for input.
414100018	The authentication process failed. Other unknown errors. It may be that the authentication method is not supported. The user needs to be prompted to try again.
414100019	Curl proxy exception.
414100020	Curl host exception.
414100021	Curl connection exception.
414100022	Curl operation timed out.
414100023	Message length too long.
414100024	Failed to create thread.
414100025	Secure function error.
414100026	JSON parsing failed.
414100027	WS token is empty.
414100028	Return JSON data error.
414100029	Failed to create meeting control block.
414100030	Failed to get meeting control block.

Error Code	Error Description
414100031	Failed to get meeting control block by CallId.
414100032	Destroying the meeting control block failed.
414100033	Temporary creating meeting information not found.
414100034	Failed to get participant ID.
414100035	Failed to get MT by participant ID.
414100036	Failed to get self information by participant ID.
414100037	Failed to get participant information by MT.
414100038	Manual invitation required.
414100039	The major parameters of the meeting have been reported.
414100040	Subtitles are not supported.
414100041	Meeting Hang Up - Timeout.
414100042	Meeting Hang Up - No Streaming.
414100043	Meeting hung up - Hung up by the host.
414100044	Meeting Hang Up - Meeting has ended.
414100045	End of meeting due to leave meeting.
414100046	Message queue processing function registration failed.
414100047	Message queue processing function deregistration failed.
414100048	Meeting ended due to reject meeting.
414100049	Meeting ended by self.
414100050	The meeting control module is not initialized.
414100051	The watching special site reaches the maximum.
414100052	The watching HD site reaches the maximum.
414100053	The watching SD site reaches the maximum.
414100054	The watching specification reaches the maximum.
414100055	Watching internal errors.
414100056	Duplicated watch render.
414100057	HTTP request error.
414100058	WebSocket request timeout.
414100059	Loading failed.

Error Code	Error Description
414100061	The meeting ends due to the timeout of guest waiting before meeting or the timeout of the meeting control heartbeat.
414100062	The meeting ends due to being canceled.
414100063	The meeting ends due to network error when guest waiting before meeting.
415000001	DB is not initialized.
415000002	Common failure.
415000003	Proxy detection has not been completed.
416000001	Invalid parameter.
416000002	Track module is not initialized.
416000003	Track event does not exist.
416000004	Not logged in.
416000005	Upload is not enabled.
419100001	Invalid parameter.
419100002	Incorrect URI.
419100003	Memory allocation failed.
419100004	SDP error.
419100005	Connection does not exist.
419100006	Connection failure.
419100007	Operation forbidden.
419100008	State error.
419100009	No corresponding line data.
419100010	No corresponding registered instance.
419100011	No corresponding call instance.
419100012	No corresponding subscription instance.
419100013	No corresponding Refer instance.
419100014	No corresponding DIM instance.
419100015	Failed to create header.
419100016	Failed to parse header.
419100017	Header not found.

Error Code	Error Description
419100018	No SDP message body.
419100019	Failed to get capability.
419100020	Failed to compare capability.
419100021	Failed to open logical channel.
419100022	Encoding SDP failed.
419100023	Decoding SDP failed.
419100024	Negotiate to unsupported SDP.
419100025	TPTD initialization failed.
419100026	TPT initialization failed.
419100027	TXN initialization failed.
419100028	UA initialization failed.
419100029	GLUE initialization failed.
419100030	HLLM initialization failed.
419100031	VCOM initialization failed.
419100032	SDP initialization failed.
419100033	Multiple instance error.
419100034	Insufficient registration control blocks.
419100035	Insufficient subscription control blocks.
419100036	Insufficient call control blocks.
419100037	Insufficient IM control blocks.
419100038	Failed to parse URI xml to string.
419100039	Encryption negotiation failed.
419100040	Local capabilities are not configured.
419100041	BFCP token error.
419100042	DNS resolution error.
419100043	Failed to get subscription state.
419100044	IPv4 is not supported.
419100045	IPv6 is not supported.
419100046	Unsupported host type.
419100047	Failed to get timer.

Error Code	Error Description
420000001	Cannot receive sharing invitations.
420000002	ReportDTO parameter verification failed.
420000003	Report folder creation failed.
420000004	Report folder compression failure.
420000005	The path of the ZIP file to be uploaded is empty.
420000006	The size of the ZIP file to be uploaded reaches the maximum.
420000007	The same person reported more than 100 times within 24 hours.
430100001	Common Error.
430100002	Invalid parameters.
430100003	SIP connection check failed.
430100004	Timeout.
430100005	In process.
430100006	Not initialized or initialization is not complete.
430100007	Not supported in this release.
430100008	Operation interrupt.
430100009	Contact not found.
430100010	Args length overrun.
430100011	APPID info illegal.
430100012	E2EEncrypt algorithm error.
430200001	unlogin.
430200002	Repeated login.
430200003	SIP connection timeout.
430200004	Invalid login password.
430200005	Password or account empty.
430300001	The calling number, account number or third-party account number cannot be empty.
430300002	Call account empty.
430300003	Call nickname empty.
430400001	Password required to join the meeting.

Error Code	Error Description
430400002	Time zone error.
430400003	The meeting duration is less than 1.
430400004	Joining the conference is interrupted.
430400005	Password input at least 4 digits.
430400006	User voluntarily cancels.
430400007	The guest password illegal.
430400008	Not in conference or in call.
430400009	Already exist conf or call.
430400010	Confd empty.
430400011	Subject too long.
430400012	VMR host password length illegal.
430400013	VMR name empty.
430400014	Conf starttime early.
430400015	Share is locked.
430400016	Not in data conference.
430400017	Role not support operation
430500001	HTTP request, server exception.
430500002	HTTP request, Connecting to the server times out.
430500003	Network unavailable.
510000403	Server forbidden.
510000404	Not found.
510000480	Temporary unavailable.
510000486	Busy here.
510000487	Request terminated.
510000488	Request is not acceptable here.
510000603	Decline.
510000841	Hangup without toast.
510000842	Conference is locked.
910000001	Server error.
910000002	SFU service failure.

Error Code	Error Description
910000003	Service unavailable 503.
910000004	Internal error.
910000005	Kicked off.
910000006	Signature expired.
910000007	Reconnect timeout.
910000008	Network detection.
910000009	User is removed.
910000010	The room is dismissed.
990000001	Internal error.
990000002	Message too large.
990000003	Insufficient memory.
990000004	Failed to send message synchronously.
990000005	Parameter error.
990000006	Call ID order error.
990000007	Failed to set local screen.
990000008	Failed to open remote screen.
990000009	Device configuration failed.
990000010	Initializing.
990000011	Deinitializing.
990000012	Uploading log.
990000013	Failed to get media port.
990000014	The maximum number view window reached .
990000015	Media negotiation failed.
990000016	Server no response.
990000017	Role switch failed.
990000018	Failed to join room.
990000019	Failed to join room. Status is busy.
990000020	Failed to join room. Server error.
990000021	Failed to join room. Service unavailable.
990000022	Failed to join room. Authentication failed.

Error Code	Error Description
990000023	Failed to join room. Authentication retry.
990000024	Failed to join room. Clock synchronization.
990000025	Failed to join room. URL error.
990000026	Kicked off.
990000027	Share failed.
990000028	Currently in external media output mode, this operation is forbidden.
990000029	Reconnection failed.
990000030	Server breaks down.
990000031	Signature has expired.
990000032	Failed to set remote window mode.
990000033	Failed to subscribe or unsubscribe audio.
990000034	Failed to connect to other room.
990000035	Failed to disconnect other room.
990000036	Role switching is not allowed.
990000037	Currently in third-party capture mode, this operation is forbidden.
990000038	Failed to set third-party audio capture.
990000039	Failed to set third-party video capture.
990000040	Failed to set share sound switch.
990000041	Failed to start or stop upstream audio stream.
990000042	Failed to start or stop upstream video stream.
990000043	User is removed.
990000044	The room is dismissed.
990000045	Failed to set remote View.

8.7 Version Updates

8.7.1 100.5.5 Updates

1. Added the **timeZone** parameter to **HWMConfDetail**. For details, see [Table 8-62](#).

2. Added the **audiencePwd**, **audienceJoinUri**, **isWebinar**, and **confStateType** parameters to **HWMConfListItemInfo**. For details, see [Table 8-59](#).

8.7.2 100.3.6 Updates

1. Fixed issues and provided more stable experience.

8.7.3 90.12.7 Updates

1. Fixed issues and provided more stable experience.

8.7.4 90.12.5 Updates

1. Added the **ShowToast** API for displaying a toast message. For details, see [Displaying a Toast Message](#).
2. Added the **GetMainWindowInfo** API for obtaining the main window information. For details, see [Obtaining Information About the Main Window](#).
3. Deprecated the **getVmrList** API and added the **getVmrInfoList** API. For details, see [Obtaining the Cloud Meeting Room List](#).
4. Added the **HWMConfResType** parameter (meeting resource type) to **HWMCreateConfParam** (creating a meeting) and **HWMOrderConfParam** (scheduling a meeting). For details, see [Table 8-41](#) and [Table 8-53](#).
5. Added **OnShareVmrInfoNotify** to notify you when information about shared cloud meeting rooms was changed. For details, see [Notification of Sharing Cloud Meeting Rooms](#).
6. Added the **GetErrorMessage** API for obtaining an error message, which can be used for prompt. For details, see [Obtaining an Error Message](#).
7. Added the **SetGuaranteedIpAddresses** API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. For details, see [Setting Guaranteed IP Addresses for Meeting Control](#).
8. Added the **OnP2PConfRecordNotify** notification to notify you of instant meeting records. For details, see [Notification of Instant Meeting Records](#).

8.7.5 90.9.5 Updates

1. Added the **concurrentParticipants** parameter (maximum number of participants allowed in a meeting) to **HWMCreateConfParam** (creating a meeting), **HWMOrderConfParam** (scheduling a meeting), and **HWMConfDetail** (meeting details). For details, see [Table 8-41](#), [Table 8-53](#), and [Table 8-62](#).
2. Added the **vmrConfId** parameter (ID of meetings held in a cloud meeting room) to **HWMConfIncomingInfo** (incoming meeting details). For details, see [Table 8-95](#).
3. Added the **SetLogPath** API for setting the log storage path. For details, see [Setting a Log Path](#).

8.7.6 90.7.5 Updates

1. Added the **StartP2pConf** API for starting an instant meeting. For details, see [Starting an Instant Meeting](#).
2. Added the **domain** field to the **HWMRandomConfParam** parameter of the API for joining a meeting using a random code. For details, see [Table 8-46](#).
3. Fixed issues and provided more stable experience.

8.7.7 90.6.5 Updates

1. Deprecated the **StartCall** API.
2. Added the **isSupportMultiAppLogin** parameter, which indicates whether login to multiple applications on the same device is supported. For details, see [Table 8-2](#).
3. Added the **onPoorNetworkQualityInfoNotify()** API for reporting information about poor network connection. For details, see [Notifications for Poor Network Connection](#).
4. Added the **customInfo** field to the APIs for scheduling, editing, creating, and querying a meeting. For details, see [Table 8-41](#), [Table 8-53](#), and [Table 8-62](#).
5. Added error code 412100044. (For details about the adaptation mode of this error code, see the demo.)
6. Fixed issues and provided more stable experience.

8.7.8 80.15.21 Updates

1. Fixed issues and provided more stable experience.

8.7.9 80.15.5 Updates

1. Fixed issues and provided more stable experience.

8.7.10 80.13.6 Updates

1. Fixed issues and provided more stable experience.

8.7.11 80.13.5 Updates

1. Fixed issues and provided more stable experience.

8.7.12 80.12.7 Updates

1. Fixed issues and provided more stable experience.

8.7.13 80.12.6 Updates

1. Added the enumerated value **HWMSDKCapabilitySupportConfirmRecord** (whether to display the recording security prompt) to the **enableSDKCapability** API. For details, see [Table 8-8](#).
2. Fixed issues and provided more stable experience.

8.7.14 80.12.5 Updates

1. Changed the conditions for uploading profile pictures (to check the type and size of profile pictures). For details, see [Uploading a Profile Picture](#).
2. Fixed issues and provided more stable experience.

8.7.15 80.10.5 Updates

1. Added parameters **confAllowJoinUser** (users who are allowed to join the meeting) and **isOpenWaitingRoom** (whether the waiting room is enabled) to the APIs for obtaining the cloud meeting room list (**HWMVmrInfoModel.h**) and modifying cloud meeting room information (**HWMModifyVmrParam.h**). For details, see [HWMVmrInfoModel](#) and [HWMModifyVmrParam](#).
2. Added the **setShareScreenPermission** API for setting the sharing permission. For details, see [Setting the Sharing Permission](#).

8.7.16 80.9.5 Updates

1. Added the **isRecordOn** and **isLiveOn** parameters to the **HWMConfDetail.h** API for obtaining meeting details and the **HWMOrderConfParam.h** API for editing a meeting. For details, see [HWMConfDetail](#) and [HWMOrderConfParam](#).
2. Added the enumerated value **HWMSDKCapabilitySupportBreakoutConf** (breakout room) to the **enableSDKCapability** API for enabling a function. For details, see [HWMSDKCapabilitySupport](#).
3. Changed the **subConfUUID** parameter to **subConfID** in the **CancelSubCycleConf** API for canceling a recurring meeting. For details, see [HWMSDKCancelSubCycleConfParamModel](#).
4. Discarded the **cycleCount** parameter in **HWMCycleConfParam.h** of APIs for scheduling and editing a recurring meeting series. For details, see [HWMCycleConfParam](#).

8.7.17 80.8.5 Updates

1. Fixed issues and provided more stable experience.

8.7.18 80.7.5 Updates

1. You can customize the app language. For details, see [Setting a Language](#).
2. Added the **showSettingWindowWithInfo** API for displaying the settings window. For details, see [Displaying the Settings Window](#).
3. Added **onClickInjectParticipantItemBtnNotify** for sending a notification when an item in the participant list is clicked. For details, see [Customizing Subitems in the Participant List](#).
4. Added error codes. For details, see [Common Error Codes](#).

8.7.19 80.5.11 Updates

1. Added the **disableVoicePrompts** API for disabling prompt tones. For details, see [Disabling Prompt Tones](#).

2. Added the function of customizing the recording button. For details, see [Customizing the Recording Button](#).

8.7.20 80.5.5 Updates

1. Added the **isOpenWaitingRoom** parameter to **HWMCreateConfParam.h** of creating a meeting, **HWMOrderConfParam.h** of scheduling and modifying a meeting, and **HWMConfDetail.h** of querying meeting details. For details, see [Creating a Meeting](#), [Scheduling a Meeting](#), [Editing a Meeting](#), and [Obtaining Meeting Details](#).
2. You can enable or disable the **Hide non-video participants** in meeting settings. For details, see [Enabling the Function of Hiding Non-Video Participants](#).

8.7.21 70.16.5 Updates

1. Added APIs related to recurring meetings. For details, see [Scheduling a Recurring Meeting Series](#), [Editing a Recurring Meeting Series](#), [Canceling a Recurring Meeting Series](#), [Editing a Recurring Meeting](#), and [Canceling a Recurring Meeting](#).
2. Added **isStopConflictConf** to **HWMJoinConfParam.h** in the API for joining a meeting using an ID. For details, see [Table 8-45](#).
3. Adjusted the SSO login API. For details, see [loginBySSO](#).
4. Modified error codes. For details about the new error code description, see [Table 8-111](#).

Table 8-111 Mapping between error codes of the old and new versions

Error Codes in 70.14.6 and Earlier Versions	Error Codes After 70.16.5	New Error Code Description
40117	430400007	The guest password is invalid.
40017	430400001	The calling number, account, or third-party account cannot be empty.

8.7.22 70.14.5 Updates

1. When scheduling a meeting in a cloud meeting room, you can select a fixed or random cloud meeting room ID. For details, see [Table 8-57](#).
3. When scheduling or editing a meeting, you can set the time (**allowGuestStartConf** and **allowGuestStartConfTime**) when a guest is allowed to join the meeting ahead of the host. For details, see [Table 8-53](#).
4. A department ID can be specified for login using an app ID. For details, see [Table 8-16](#).
5. Added the API for setting the network mode. For details, see [Setting the Network Mode](#).

8.7.23 70.13.5 Updates

1. Added **userUuid** (the original **uuid** field), **account**, and **thirdAccount** to the callback of login and logout APIs. For details, see [Table 8-15](#) and [Table 8-19](#). If an earlier version is upgraded to 70.13.5, the definition of the callback functions needs to be modified.
2. Added the notification of incoming call status changes. For details, see [Notification of Incoming Meeting Call Status Changes](#).
3. Added the incoming call notification.
4. Added the function of enabling audio sharing. For details, see [Enabling Audio Sharing](#).
5. Changed the default local recording path. The access app needs to apply for the permission to download recordings to a folder. For details, [Step 5](#).

8.7.24 70.12.6 Updates

1. Fixed an issue where the video definition cannot be restored after the network is restored.

8.7.25 70.12.4 Updates

1. The meeting settings window can be customized. For details, see [Customizing the Settings Page](#).
2. Feature support can be enabled. For details, see [Enabling a Function](#).

8.7.26 70.11.5 Updates

1. The signature script of the project configuration and Runpath Search Paths configuration are changed. For details, see [Step 5](#).
2. The **logKeepDays** field is added to the **Initializing the SDK API**. For details, see [Table 8-2](#).

8.7.27 70.10.5 Updates

1. Watermarks can be customized. For details, see [Customizing a Watermark for a Meeting](#).
2. The local recording path can be customized. For details, see [Customizing a Local Recording Path](#).

8.7.28 70.9.5 Updates

1. Added the SSO login mode. For details, see [loginBySSO](#).

8.7.29 70.8.6 Updates

Fixed issues and provided more stable experience.

8.7.30 70.8.5 Updates

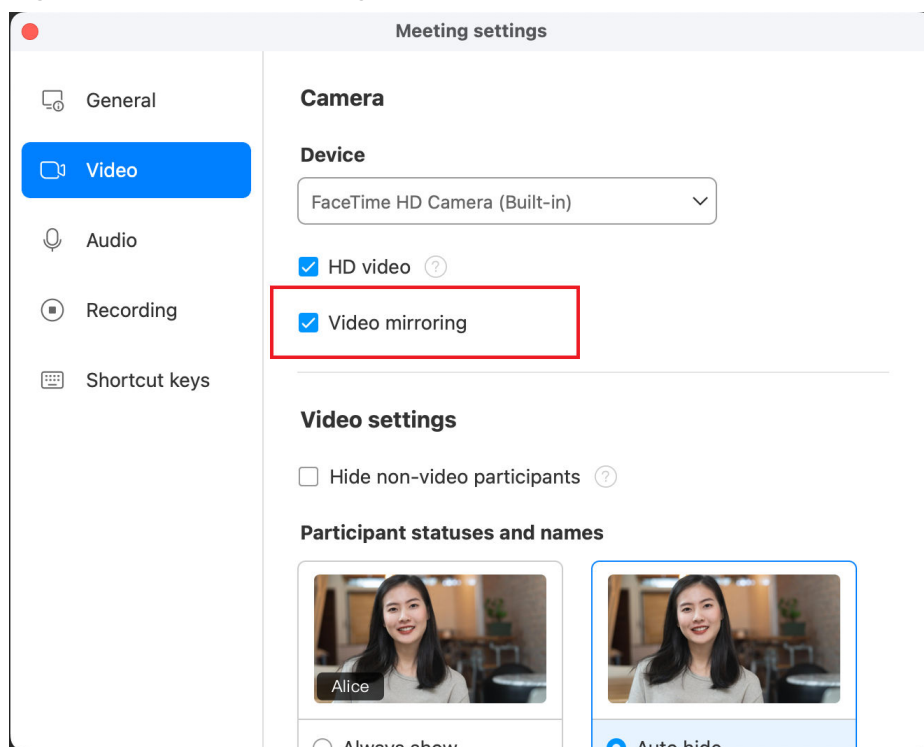
1. The participant list (including the webinar) can be obtained. For details, see [Obtaining the Participant List](#).

2. Audio data streams can be obtained. For details, see [Obtaining Audio Data Streams](#).

8.7.31 70.7.5 Updates

1. Video mirroring is supported. After this function is enabled, you can view your own image effect.

Figure 8-20 Video mirroring



2. Visual effect of in-meeting screens is optimized.
3. The meeting control toolbar can be customized. For details, see [UI Customization](#).

8.7.32 70.6.5 Updates

1. Added the API for displaying the main window of a meeting. For details, see [Displaying the Main Meeting Window](#).

8.7.33 70.5.8 Updates

1. The project configuration signature script is added with new code. For details, see [Figure 8-5](#).

```
codesign -f -s "$EXPANDED_CODE_SIGN_IDENTITY" ./HWMUISDK.framework/
Versions/A/Frameworks/WKTUP.framework/Versions/A/Frameworks/
libHRTCEngine.framework/Versions/A/libHRTCEngine
```

2. The shared video can be displayed as the sub-picture of the broadcast continuous presence. In this mode, the video and shared video can be switched freely.

3. On-screen comments are supported.

8.7.34 70.4.5 Updates

1. The project configuration signature script is added with new code. For details, see [Figure 8-5](#).

```
codesign -f -s "$EXPANDED_CODE_SIGN_IDENTITY" ./HWMUISDK.framework/  
Versions/A/Frameworks/WKTUP.framework/Versions/A/Frameworks/  
libHME_Video.framework/Versions/A/libHME_Video
```

2. Added the function of querying whether a terminal is in a meeting. For details, see [Obtaining a User Status](#).
3. A configuration item in the security menu can be hidden. For details, see [Initializing the SDK](#).
4. The host can invite others to share content and quickly cancel the sharing.
5. Log size is optimized.

8.7.35 70.3.5 Updates

1. The function of exporting participant information during a conference is optimized.

8.7.36 60.15.5 Updates

1. Added the API for configuring the incoming call answering policy. For details, see [Incoming Call Answering Policy Configuration](#).
2. Added the parameter for setting a speaker in a meeting. For details, see [Table 8-44](#).
3. Added the parameters for creating, scheduling, and editing a meeting password and voice meeting.
4. The Security module is added to the meeting for unified permissions management.
5. Added the function of hiding external labels in the participant list. For details, see [Initializing the SDK](#).

8.7.37 60.13.2 Updates

1. Added the API for adding participants. For details, see [Inviting a Participant](#).
2. Added the API for leaving a meeting. For details, see [Leaving a Meeting](#).
3. Added the API for ending a meeting. For details, see [Ending a Meeting](#).
4. Added the API for setting a language. For details, see [Setting a Language](#).

8.7.38 60.12.5 Updates

1. Added the notification of adding an incoming call answering policy. For details, see [Incoming Call Answering Policy Configuration](#).
2. Added the parameter for specifying whether to mute the speaker when joining a meeting. For details, see [Table 8-44](#).

3. Added the parameters for creating a meeting password and creating a voice meeting. For details, see [Table 8-41](#).
4. Added the parameters for scheduling and editing meeting passwords and the parameter indicating whether a meeting is a video meeting. For details, see [Table 8-53](#).

8.8 Change History

Table 8-112 Change history

Released On	Version	Change Description
2024-06-13	100.5.5	<ol style="list-style-type: none">1. Added the timeZone parameter to HWMConfDetail.2. Added the audiencePwd, audienceJoinUri, isWebinar, and confStateType parameters to HWMConfListItemInfo. For details, see 100.5.5 Updates .
2024-04-23	100.3.6	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 100.3.6 Updates .
2024-02-17	90.12.7	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 90.12.7 Updates .
2024-01-15	90.12.5	<ol style="list-style-type: none">1. Added the ShowToast API for displaying a toast message.2. Added the GetMainWindowInfo API for obtaining the main window information.3. Deprecated the getVmrList API and added the getVmrInfoList API.4. Added the HWMConfResType parameter (meeting resource type) to HWMCreateConfParam (creating a meeting) and HWMOrderConfParam (scheduling a meeting).5. Added the OnShareVmrInfoNotify notification to notify you when information about shared cloud meeting rooms was changed.6. Added the GetErrorMessage API for obtaining an error message, which can be used for prompt.7. Added the SetGuaranteedIpAddresses API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival.8. Added the OnP2PConfRecordNotify notification to notify you of instant meeting records. For details, see 90.12.5 Updates .

Released On	Version	Change Description
2023-10-8	90.9.5	<ol style="list-style-type: none">1. Added the concurrentParticipants parameter (maximum number of participants allowed in a meeting) to HWMCreateConfParam (creating a meeting), HWMOrderConfParam (scheduling a meeting), and HWMConfDetail (meeting details).2. Added the vmrConfId parameter (ID of meetings held in a cloud meeting room) to HWMConfIncomingInfo (incoming meeting details).3. Added the SetLogPath API for setting the log storage path. For details, see 90.9.5 Updates.
2023-08-05	90.7.5	<ol style="list-style-type: none">1. Added the StartP2pConf API for starting an instant meeting.2. Added the domain field to the HWMRandomConfParam parameter of the API for joining a meeting using a random code.3. Fixed issues and provided more stable experience. For details, see 90.7.5 Updates.
2023-06-01	90.6.5	<ol style="list-style-type: none">1. Deprecated the StartCall API.2. Added the isSupportMultiAppLogin parameter, which indicates whether login to multiple applications on the same device is supported.3. Added the onPoorNetworkQualityInfoNotify() API for reporting information about poor network connection.4. Added the customInfo field to the APIs for scheduling, editing, creating, and querying a meeting.5. Added error code 412100044. (For details about the adaptation mode of this error code, see the demo.)6. Fixed issues and provided more stable experience. For details, see 90.6.5 Updates.
2023-05-11	80.15.21	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 80.15.21 Updates.
2023-03-29	80.15.5	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 80.15.5 Updates.
2023-02-23	80.13.6	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 80.13.6 Updates.
2023-02-07	80.13.5	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 80.13.5 Updates.
2023-01-17	80.12.7	<ol style="list-style-type: none">1. Fixed issues and provided more stable experience. For details, see 80.12.7 Updates.

Released On	Version	Change Description
2023-01-09	80.12.6	<ol style="list-style-type: none"> 1. Added the enumerated value HWMSDKCapabilitySupportConfirmRecord (whether to display the recording security prompt) to the enableSDKCapability API. 2. Fixed issues and provided more stable experience. For details, see 80.12.6 Updates .
2022-12-24	80.12.5	<ol style="list-style-type: none"> 1. Changed the conditions for uploading profile pictures (to check the type and size of profile pictures). 2. Fixed issues and provided more stable experience. For details, see 80.12.5 Updates .
2022-11-16	80.10.5	<ol style="list-style-type: none"> 1. Added the confAllowJoinUser and isOpenWaitingRoom parameters to HWMVmInfoModel.h (cloud meeting room list) and HWMModifyVMRParam.h (modifying the cloud meeting room info). 2. Added the setShareScreenPermission API for setting the sharing permission. For details, see 80.10.5 Updates .
2022-10-08	80.9.5	<ol style="list-style-type: none"> 1. Added the isRecordOn and isLiveOn parameters to HWMConfDetail.h (meeting details) and HWMOrderConfParam.h (editing a meeting). 2. Added the enumerated value HWMSDKCapabilitySupportBreakoutConf (breakout room function) in the enableSDKCapability API for enabling a function. 3. Changed the subConfUUID parameter to subConfID in the CancelSubCycleConf API for canceling a recurring meeting. 4. Discarded the cycleCount parameter in HWMCycleConfParam.h of APIs for scheduling and editing a recurring meeting series. For details, see 80.9.5 Updates .
2022-09-02	80.8.5	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 80.8.5 Updates .
2022-07-30	80.7.5	<ol style="list-style-type: none"> 1. You can customize the app language. 2. Added the showSettingWindowWithInfo API for displaying the settings window. 3. Added onClickInjectParticipantItemBtnNotify for sending a notification when an item in the participant list is clicked. 4. Added error codes. For details, see 80.7.5 Updates .
2022-06-17	80.5.11	<ol style="list-style-type: none"> 1. Added the API for disabling prompt tones. 2. Added the function of customizing the recording button. For details, see 80.5.11 Updates .

Released On	Version	Change Description
2022-05-18	80.5.5	<ol style="list-style-type: none"> 1. Added the isOpenWaitingRoom parameter to HWMCreateConfParam.h of creating a meeting, HWMOrderConfParam.h of scheduling and modifying a meeting, and HWMConfDetail.h of querying meeting details. 2. You can enable or disable the Hide non-video participants in meeting settings. <p>For details, see 80.5.5 Updates.</p>
2022-04-15	70.16.5	<ol style="list-style-type: none"> 1. Added APIs related to recurring meetings. 2. Added isStopConflictConf to HWMJoinConfParam for joining a meeting using its ID. 3. Adjusted the SSO login API. 4. Modified error codes and released the description of new error codes and the mapping between the error codes of the old and new versions. <p>For details, see 70.16.5 Updates.</p>
2022-02-19	70.14.5	<ol style="list-style-type: none"> 1. Supported fixed or random cloud meeting room IDs for scheduling a meeting in a cloud meeting room. 2. Added the APIs for initiating a point-to-point call, call status change notification, and call end notification. 3. Added the allowGuestStartConf parameter for allowing guests to join the meeting at the time you specify before the start time (allowGuestStartConfTime) when you schedule or edit a meeting. 4. Supported department IDs specified for login using an app ID. 5. Added the API for configuring the network mode. <p>For details, see 70.14.5 Updates.</p>
2022-01-19	70.13.5	<ol style="list-style-type: none"> 1. Added userUuid (the original uuid field), account, and thirdAccount to the callback of login and logout APIs. 2. Added the API for the notification of incoming meeting call status changes. 3. Added the incoming call notification. 4. Modified the parameters for obtaining a window handle. 5. Added the function of enabling audio sharing. 6. Changed the default local recording path. The access app needs to apply for the permission to download recordings to a folder. <p>For details, see 70.13.5 Updates.</p>
2021-12-23	70.12.6	<ol style="list-style-type: none"> 1. Fixed an issue where the definition cannot be restored when the network is weak. <p>For details, see 70.12.6 Updates.</p>

Released On	Version	Change Description
2021-12-15	70.12.4	<ol style="list-style-type: none"> 1. Supported the customization of the meeting settings page. 2. Supported feature enabling. For details, see 70.12.4 Updates .
2021-12-03	70.11.5	<ol style="list-style-type: none"> 1. Changed the signature script and Runpath Search Paths configurations of the project. 2. Added logKeepDays (log storage duration) to the initialization API. For details, see 70.11.5 Updates .
2021-10-22	70.10.5	<ol style="list-style-type: none"> 1. Supported watermark customization. 2. Supported the customization of the local recording path. For details, see 70.10.5 Updates .
2021-09-16	70.9.5	Added SSO login. For details, see 70.9.5 Updates .
2021-08-28	70.8.6	Fixed issues and provided more stable experience.
2021-08-18	70.8.5	<ol style="list-style-type: none"> 1. You can obtain the participant list in meetings and webinars. 2. You can obtain audio data streams. For details, see 70.8.5 Updates .
2021-07-16	70.7.5	<ol style="list-style-type: none"> 1. You can configure video mirroring for the local site in meetings. 2. Supported UI update in meetings. 3. You can customize the meeting control toolbar. For details, see 70.7.5 Updates .
2021-06-10	70.6.5	<ol style="list-style-type: none"> 1. Added the API for displaying the main meeting window. For details, see 70.6.5 Updates .
2021-05-17	70.5.8	<ol style="list-style-type: none"> 1. Changed the signature script of the project configuration. For details about the new code, see Figure 8-5. 2. During continuous presence broadcast, the shared screen can now be displayed as a small feed, and the participant video screen and the shared screen can be switched. 3. Supported on-screen comments. For details, see 70.5.8 Updates .

Released On	Version	Change Description
2021-04-15	70.4.5	<ol style="list-style-type: none"> 1. Changed the signature script of the project configuration. For details, see Figure 8-5. 2. You can query whether the current terminal is in a meeting. For details, see Obtaining a User Status. 3. You can configure whether to hide the security settings. For details, see Initializing the SDK. 4. The host can invite others to share content and quickly cancel the sharing. 5. Optimized the size of meeting logs. For details, see 70.4.5 Updates .
2021-03-12	70.3.5	<ol style="list-style-type: none"> 1. Optimized participant information export during meetings. For details, see 70.3.5 Updates .
2021-02-10	60.15.5	<ol style="list-style-type: none"> 1. Added the API for the notification of the incoming call answering policy. 2. Added the parameter for setting the speaker when a participant joins a meeting. 3. Added the parameters for meeting creation and scheduling, meeting password editing, and voice meeting. 4. Added the Security module. For details, see 60.15.5 Updates .
2021-01-08	60.13.2	<ol style="list-style-type: none"> 1. Added the API for adding participants to a meeting. 2. Added the API for leaving a meeting. 3. Added the API for ending a meeting. 4. Added the API for setting the language. For details, see 60.13.2 Updates .
2020-12-07	60.12.5	This issue is the first official release.

9 Electron SDK

9.1 Overview

The Electron SDK of Huawei Cloud Meeting provides a complete set of APIs. The SDK is applicable to Windows and macOS. Developers can call the APIs provided by the SDK to quickly integrate audio and video meeting capabilities into their applications, including creating, scheduling, and joining meetings, sharing screens and programs, annotating whiteboards, and muting all participants.

9.2 Getting Started

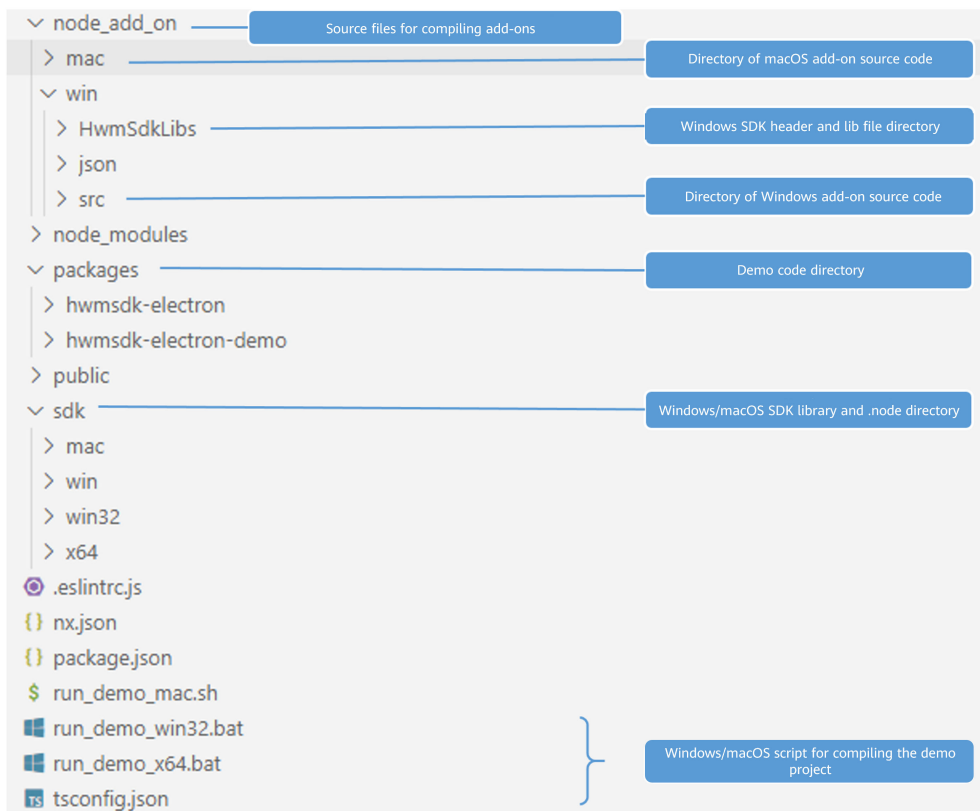
Before integrating the Electron SDK into a third-party application, familiarize yourself with the basic process of integrating the Huawei Cloud Meeting Electron SDK into an Electron client by referring to [Building the Electron Demo](#).

To integrate Huawei Cloud Meeting Windows SDK into a third-party Electron client, perform the following steps:

Step 1 Download the [Electron SDK](#).

Step 2 Decompress the Electron SDK to obtain the following directories and files.

Figure 9-1 Directory structure of the SDK package



Step 3 Copy Electron SDK files.

NOTE

1. If Node.js has been installed, run the following command to check the Node.js version. The result **x64** indicates 64-bit and **ia32** indicates 32-bit.

```
$ node -p "process.arch"
```

2. If Node.js is not installed, download the required version from the [Node.js website](#).

- If the platform is Windows and the Node.js version is 32-bit, run the **run_demo_win32.bat** script in the directory generated after decompression in the preceding step.
- If the platform is Windows and the Node.js version is 64-bit, run the **run_demo_x64.bat** script in the directory generated after decompression in the preceding step.
- If the platform is macOS, run the **run_demo_mac.sh** script in the directory generated after decompression in the preceding step.

NOTE

The .bat or .sh script can perform the following operations:

- Compile TS APIs and generate JS and types files.
- Copy the SDK files of the corresponding platform to the corresponding directory (**sdk/win32**, **sdk/x64**, or **sdk/mac**).
- Run the demo.

- Copy the **js** and **types** directories and their subdirectories and files and the **package.json** file in the root directory to a directory of the project. (If the project uses TypeScript, copy the **ts** directory and its subdirectories and files.)

 **NOTE**

The JavaScript APIs to be called are stored in the **js** folder, and the entry file is **js\index.js**. (If the project uses TypeScript, the entry file is **ts\index.ts**.)

Step 4 Add dependencies.

Add dependencies by referring to the **package.json** file in the demo.

```
"dependencies": {
  "electron": "^13.6.7"
},
```

Step 5 Use the import mode to reference the directory where API files of the Electron SDK are located, initialize the UISDKService object, and configure the node path to load the SDK.

Refer to the **AppService.js/NotifyService.js** code in the demo.

```
import UISDKService from 'hwmsdk-electron';
const os = window.require('os');
const platform = os.platform();
const arch = os.arch();
const path = window.require("path");

let instance = null;
export default class ApiService {
  constructor() {
    if (!instance) {
      instance = this;
      // Pass the actual node path to the UISDKService constructor.
      let _path = (platform == 'darwin' ? './sdk/mac/' : arch == 'x64' ? './sdk/x64/' : './sdk/win32/');
      let nodePath = path.join(window.__dirname, _path + "HwmUisdk.node");
      console.log("ApiService nodePath", nodePath);
      this.uisdkService = new UISDKService(nodePath);
    }
    return instance;
  }
}
```

Step 6 Call APIs.

For details about the API calling and message notification processing sequence of Huawei Cloud Meeting, see [API Call in Typical Scenarios](#).

JavaScript APIs that can be called by third-party applications are stored in **js/api/**. You can call these APIs by referring to **AppService/ApiService.js** in the demo.

```
import UISDKService from 'hwmsdk-electron';
const os = window.require('os');
const platform = os.platform();
const arch = os.arch();
const path = window.require("path");

let instance = null;
export default class ApiService {
  constructor() {
    if (!instance) {
      instance = this;
      // Pass the actual node path to the UISDKService constructor.
      let _path = (platform == 'darwin' ? './sdk/mac/' : arch == 'x64' ? './sdk/x64/' : './sdk/win32/');
```



```
    let nodePath = path.join(window.__dirname, (_path + "HwmUisdk.node"));
    console.log("ApiService nodePath", nodePath);
    this.uisdkService = new UISDKService(nodePath);
  }
  return instance;
}

init(initInfo) {
  console.log("init, in param = ", initInfo);
  let ret = this.uisdkService.init(initInfo);
  console.log("init, out data = ", ret);
  return ret;
}
}
```

Step 7 Subscribe to event notifications.

JavaScript APIs for subscribing to notifications that can be received by the third-party application are stored in **js/api/**. You can subscribe to these notifications by referring to **AppService/NotifyService.js** in the demo.

```
import UISDKService from 'hwmsdk-electron';
const os = window.require('os');
const platform = os.platform();
const arch = os.arch();
const path = window.require("path");

export default class NotifyService {
  static setNotifyFunc() {

    let _path = (platform === 'darwin' ? './../sdk/mac/' : arch === 'x64' ? './../sdk/x64/' : './../sdk/win32/');
    let nodePath = path.join(window.__dirname, (_path + "HwmUisdk.node"));
    console.log("NotifyService nodePath", nodePath);
    let uisdkService = new UISDKService(nodePath);
    uisdkService.getConfMgrApi().setOnConfListChangedCB(NotifyService.handleOnConfListChanged);
  }

  static handleOnConfListChanged(confListInfo) {
    console.log('OnConfListChanged', ' ', confListInfo);
    let _confListInfo = window.sessionStorage.getItem("confListInfo");
    _confListInfo = _confListInfo ? JSON.parse(_confListInfo) : [];
    console.log("sessionStorage confList:", _confListInfo);
    let confListNew = confListInfo.confListItem;
    let _data = JSON.stringify(confListNew ? confListNew : []);
    window.sessionStorage.setItem("confListInfo", _data);
  }
}
```

Step 8 (Optional) Use enumerations provided by the Electron SDK.

You can use the enumeration definitions provided by the Electron SDK for the third-party application, copy **packages/hwmsdk-electron/js/Api/enum.js** and **packages/hwmsdk-electron/types/Api/enum.d.ts** to a directory of the project, and use these enumeration definitions by referring to **packages/hwmsdk-electron-demo/src/Constants/typeOption.js** in the demo.

```
import { MediaType } from "./enum";

export const MediaTypeOptions = [
  {
    value: MediaType.HWM_MEDIA_TYPE_AUDIO,
    label: "Audio",
  },
  {
    value: MediaType.HWM_MEDIA_TYPE_VIDEO,
    label: "Video",
  },
]
```

```
}  
];
```

----End

9.3 Typical Scenarios

This section describes the API call orders and examples of Huawei Cloud Meeting.

9.3.1 API Call in Typical Scenarios

API Description

Electron SDK APIs are classified into active calling synchronous APIs, active calling asynchronous APIs, and subscription and notification APIs.

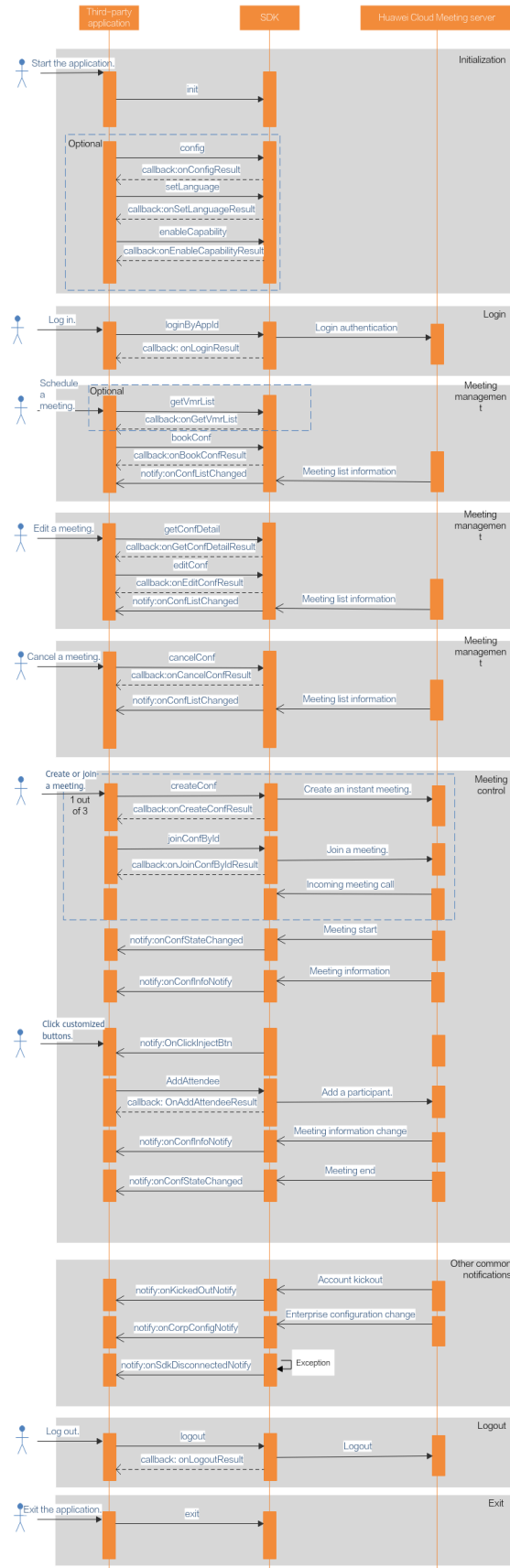
Active calling synchronous APIs: The application actively calls these APIs to complete tasks. For example, the **Init** API is called for initialization.

Active calling asynchronous APIs: The application actively calls APIs and the SDK processes internal tasks asynchronously. After a task is processed, the SDK notifies the application in API callback mode. For example, the input parameters of the API for creating a meeting include the parameters required for creating a meeting and the **onCreateConfResult** callback function of the meeting creation result.

Subscription and notification APIs: For an event notification triggered by the Huawei Cloud Meeting server or SDK, after the corresponding subscription API is called, the SDK notifies the application through the notification API. For example, the **setOnConfListChangedCB** notification API for subscribing to the meeting list.

API Call in Typical Scenarios

Figure 9-2 API call in typical scenarios



 NOTE

1. Generally, the process needs to be ended before application upgrade. To facilitate upgrade management on the Windows 64-bit platform, change the name of the **HwmSdk.exe** file in the **HwmSdk** folder to your own name before initialization. (Ignore this note if you use other platforms.)
2. Login is not mandatory. You can use the meeting ID and password to join a created meeting without login.
3. The UI of the current SDK provides functions of leaving and ending a meeting. If you do not need to control these functions, you do not need to call APIs for leaving and ending a meeting.
4. After a meeting starts, the **onConflInfoNotify** notification of the subscribed-to meeting details is reported for multiple times.

9.3.2 Scenario 1: Initialization

Description

The initialization API can be called for SDK initialization after a third-party application starts. You only need to call this API once. You must call this API before calling other functional APIs.

Service Process

During SDK initialization, if the Windows 64-bit platform is used, change the name of the **HwmSdk.exe** file in the **HwmSdk** folder and call the init synchronization API.

Step 1 Change the name of the .exe file (only for the Windows 64-bit platform).

Change the name of the **HwmSdk.exe** file in the **HwmSdk** folder to **MySdk.exe**.

Step 2 Call the API.

1. Construct the **InitInfo** data structure.
2. Call the **Init** API to initialize the configuration. The data in the preceding step is used as input parameters.

----End

Sample Code

```
/**
 * Call the initialization API and start the application.
 */
async goToInit() {
  let param = {
    exePath: "E:\\Hello_World\\debug\\win32\\HwmSdk\\MySdk.exe", // Configure the SDK path only for
    the Windows 64-bit platform. Assume that the HwmSdk directory is in E:\\Hello_World\\debug\\win32\\
    and the .exe file name is MySdk.exe. (The path must be encoded using UTF-8.)
    logPath: "E:\\Hello_World\\debug\\win32\\MySdk\\log\\", // Specify the log path. (The path must be
    encoded using UTF-8.)
    userDataPath: "E:\\Hello_World\\debug\\win32\\MySdk\\UserData\\", // Specify the data path. (The
    path must be encoded using UTF-8.)
    appId: getAppId()
  };
  const apiService = new ApiService();
  let setResult = await apiService.init(param);
  if (setResult != 0) {
```

```
        window.electron.ipcRenderer.send("show-error-alert", "init error = " + setResult.ret);
    }
}
/**
 * Definition of init in ApiService
 */
init(initInfo) {
    console.log("init, in param = ", initInfo);
    let ret = this.uisdkService.init(initInfo);
    console.log("init, out data = ", ret);
    return ret;
}
```

NOTE

The sample code in the typical scenario and API reference is pseudo code and cannot be directly used.

9.3.3 Scenario 2: Login

Description

You can use an app ID (for details about how to request an app ID, see [Introduction to App ID Authentication](#)) or Huawei Cloud Meeting account to log in to Huawei Cloud Meeting. The API for creating a meeting can be called only when you have logged in. To use complete meeting functions, log in to Huawei Cloud Meeting.

NOTE

If you have not logged in, you can only join created meetings.

Service Process

Take app ID login as an example. Call the **loginByAppId** API and configure the API callback function **onLoginResult** when using the SDK to log in to the app.

Step 1 Call the API.

1. Assemble the data structure **AppIdAuthInfo** and the API callback function **onLoginResult**.
2. Call the **loginByAppId** API to log in. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onLoginResult** function.

----End

Sample Code

```
/**
 * Login
 */
async goToLoginByAppId(){
    /**
     * . The data conversion performed by the third-party server is omitted here. The nonce and signature are
     * obtained.
```

```
*/
let param = {
  thirdUserId: getThirdUserId(),
  userName: getUsername(),
  signature: getSignature(),
  nonce: getNonce(),
  expireTime: 1598398920,
  userEmail: getEmail(),
  userPhone: getUserPhone(),
}
const apiService = new ApiService();
let setResult = await apiService.loginByAppId(param);
if(setResult.ret == 0){
  this.props.history.push('/main');
}else{
  window.electron.ipcRenderer.send("show-error-alert", "loginByAppId error = " + setResult.ret);
}
}
```

```
/**
 * Definition of loginByAppId API in ApiService
 */
async loginByAppId(appIdAuthInfo) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason, loginResult) => {
      console.log("loginByAppId, out data = ", { ret, reason, loginResult });
      resolve({ ret, reason, loginResult });
    };
    console.log("loginByAppId, in param = ", appIdAuthInfo);
    this.uisdkService.getLoginApi().loginByAppId(appIdAuthInfo, resultCallback);
  });
}
```

9.3.4 Scenario 3: Scheduling a Meeting

Description

After logging in to Huawei Cloud Meeting using an account, you can schedule a meeting. When scheduling the meeting, you can add participants in addition to setting mandatory meeting parameters.

Service Process

Call the **bookConf** API to schedule a meeting and implement the API callback function **onBookConfResult** and the subscribed-to notification **onConfListChanged**.

To schedule a meeting using a personal meeting ID or a cloud meeting room, call the **getVmrList** API to query the personal meeting ID and cloud meeting room information, and then process the data returned by the **onGetVmrListResult** function. The data can be used to schedule the meeting.

Step 1 Call the API.

1. Assemble the data structure **BookConfParam** (including **Array<AttendeeBaseInfo>** in the structure) and the API callback function **onBookConfResult**.
2. Call the **bookConf** API to schedule a meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onBookConfResult** function.

Step 3 Implement the notification function.

Implement the **onConfListChanged** function.

----End

Sample Code

```
/**
 * Schedule a meeting.
 */
async goToBookConf() {
  let _attendees = [{
    nickName: "Mike",
    number: "+991116003543",
    email: "",
    sms: "",
    thirdUserId: "",
    isMute: true,
    isAutoInvite: true,
  }];
  let param = {
    startTime: 1598398920; // UTC timestamp, in seconds. If the obtained time is the local time, the time
    needs to be converted to the UTC time.
    duration: 30; // Meeting duration, in minutes.
    isSendCalendar: true,
    confCommonParam: {
      subject: "My Scheduled Meeting", // The value must be a UTF-8 character string.
      mediaType: MediaType.HWM_MEDIA_TYPE_VIDEO,
      needPassword: true,
      timezone: 56, // Time zone. 56 indicates GMT+08:00.
      confAllowJoinUser: ConfAllowJoinUserType.CONF_ALLOW_JOIN_ANYONE,
      isSendSms: true,
      isSendEmail: true,
      attendees: _attendees,
      isAutoRecord: false, // By default, automatic recording is disabled.
    }
  }
  const apiService = new ApiService();
  let setResult = await apiService.bookConf(param);
  if (setResult.ret != 0) {
    window.electron.ipcRenderer.send("show-error-alert", "bookConf error = " + setResult.ret);
  }
}
```

```
/**
 * Definition of bookConf API in ApiService
 */
async bookConf(bookConfParam) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason, confDetail) => {
      console.log("bookConf, out data = ", { ret, reason, confDetail });
      resolve({ ret, reason, confDetail });
    };
    console.log("bookConf, in param = ", bookConfParam);
    this.uisdkService.getConfMgrApi().bookConf(bookConfParam, resultCallback);
  });
}
```

```
/**
 * Subscribe to the onConfListChanged notification of the meeting list information.
 */
uisdkService.getConfMgrApi().setOnConfListChangedCB(NotifyService.handleOnConfListChanged);
/**
```



```
* Definition of handleOnConfListChanged in NotifyService
*/
static handleOnConfListChanged(confListInfo) {
  console.log('OnConfListChanged', ' ', confListInfo = ' ', confListInfo);
  let _confListInfo = window.sessionStorage.getItem("confListInfo");
  _confListInfo = _confListInfo ? JSON.parse(_confListInfo) : [];
  console.log("sessionStorage confList:", _confListInfo);
  let confListNew = confListInfo.confListItem;
  let _data = JSON.stringify(confListNew ? confListNew : []);
  window.sessionStorage.setItem("confListInfo", _data);
}
```

9.3.5 Scenario 4: Editing a Meeting

Description

After a meeting is scheduled, you can use the meeting modification API to edit the meeting details and add participants.

Service Process

To edit a meeting after the meeting list is obtained, call the **getConfDetail** API to query the meeting details, process the details in the API callback **onGetConfDetailResult**, call the **editConf** API to modify the meeting details, and implement the API callback function **onEditConfResult** and the subscribed-to **onConfListChanged** notification.

Step 1 Obtain meeting details.

1. Assemble the data structure **GetConfDetailParam** and the API callback function **onGetConfDetailResult**.
2. Call the **GetConfDetail** API. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onGetConfDetailResult** function to obtain the meeting details.

Step 3 Call the API for editing the meeting.

1. Use the data obtained in step 2 to assemble the data structure **EditConfParam** (including **Array<AttendeeBaseInfo>** in the structure) and the callback function **onEditConfResult**.
2. Call the **editConf** API. The data in the preceding step is used as input parameters.

Step 4 Implement the callback function.

Implement the **onEditConfResult** function.

Step 5 Implement the notification function.

Implement the **onConfListChanged** function.

----End

Sample Code

```
/**
 * Obtain meeting details.
```

```
*/
async getConfInfoById(confId) {
  let param = {
    confId: "989156631",
  }
  const apiService = new ApiService();
  let setResult = await apiService.getConfDetail(param);
  if (setResult.ret === 0) {
    let _data = setResult.confDetail;
    console.log("confDetail:", _data);
    // The code for caching meeting details is omitted here.
  } else {
    window.electron.ipcRenderer.send("show-error-alert", "getConfDetail error = " + setResult.ret);
  }
}
```

```
/**
 * Definition of getConfDetail API in ApiService
 */
async getConfDetail(getConfDetailParam) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason, confDetail) => {
      console.log("getConfDetail, out data = ", { ret, reason, confDetail });
      resolve({ ret, reason, confDetail });
    };
    console.log("getConfDetail, in param = ", getConfDetailParam);
    this.uisdkService.getConfMgrApi().getConfDetail(getConfDetailParam, resultCallback);
  });
}
```

```
/**
 * Edit a meeting.
 */
async editConf() {
  // According to the cache, meeting details are stored in state. Obtain meeting details from state.
  let { confId, subject, startTime, duration, mediaType, needPassword, timezone, vmrFlag, vmrId,
  confAllowJoinUser, isSendSms, isSendEmail,
  isSendCalendar, attendees, isAutoRecord, isOpenWaitingRoom, vmrConfId } = this.state;
  let _attendees = attendees ? JSON.parse(attendees) : "";
  let param = {
    confId: confId,
    startTime: 1598398920, // UTC timestamp.
    duration: 0 * 60 + 30, // Meeting duration.
    isSendCalendar: isSendCalendar,
    confCommonParam: {
      subject: subject,
      mediaType: mediaType,
      needPassword: needPassword,
      timezone: 56, // Local time zone. The value 56 indicates GMT+08:00.
      vmrId: vmrId,
      vmrConfIdType: (vmrConfId !== "") ? 0 : 1,
      confAllowJoinUser: ConfAllowJoinUserType.CONF_ALLOW_JOIN_ANYONE, // Obtain the type of
users allowed to join the meeting.
      isSendSms: isSendSms,
      isSendEmail: isSendEmail,
      attendees: _attendees,
      isAutoRecord: false; // By default, automatic recording is disabled.
      isOpenWaitingRoom: isOpenWaitingRoom,
    }
  }
  const apiService = new ApiService();
  let setResult = await apiService.editConf(param);
  if (setResult.ret !== 0) {
    window.electron.ipcRenderer.send("show-error-alert", "editConf error = " + setResult.ret);
  }
}
/**
 * Definition of editConf API in ApiService
```

```
*/
async editConf(editConfParam) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason) => {
      console.log("editConf, out data = ", { ret, reason });
      resolve({ ret, reason });
    };
    console.log("editConf, in param = ", editConfParam);
    this.usdkService.getConfMgrApi().editConf(editConfParam, resultCallback);
  });
}
```

NOTE

The **onConfListChanged** event notification scenario is the same as the meeting scheduling scenario. For details, see [Sample Code](#).

9.3.6 Scenario 5: Canceling a Meeting

Description

After a meeting is scheduled, you can call the API of canceling a meeting to cancel the meeting.

Service Process

To cancel a meeting, call the **cancelConf** API and implement the callback function **onCancelConfResult** and the subscribed-to notification **onConfListChanged**.

Step 1 Call an API.

1. Assemble the data structure **CancelConfParam** and the API callback function **onCancelConfResult**.
2. Call the **cancelConf** API to cancel the meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onCancelConfResult** function.

Step 3 Implement the notification function.

Implement the **onConfListChanged** function.

----End

Sample Code

```
/**
 * API for canceling a meeting
 */
async cancelConfById() {
  let param = {
    confId: "989156631",
  }
  console.log(param);
  const apiService = new ApiService();
  let setResult = await apiService.cancelConf(param);
  if (setResult.ret != 0) {
    window.electron.ipcRenderer.send("show-error-alert", "cancelConf error = " + setResult.ret);
  }
  this.props.history.push('/main');
}
```

```
/**
 * Definition of cancelConf API in ApiService
 */
async cancelConf(cancelConfParam) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason) => {
      console.log("cancelConf, out data = ", { ret, reason });
      resolve({ ret, reason });
    };
    console.log("cancelConf, in param = ", cancelConfParam);
    this.uisdkService.getConfMgrApi().cancelConf(cancelConfParam, resultCallback);
  });
}
```

NOTE

The **onConfListChanged** event notification scenario is the same as the meeting scheduling scenario. For details, see [Sample Code](#).

9.3.7 Scenario 6: Creating a Meeting

Description

After logging in to Huawei Cloud Meeting using an account, you can start an instant meeting. Participant information is optional.

Service Process

To create a meeting using a personal meeting ID or cloud meeting room, call the **getVmrList** API to query the personal meeting ID and cloud meeting room information, and then process the data returned by the **onGetVmrListResult** function. The data can be used to create the meeting.

When using the SDK to create an instant meeting, call the **createConf** API and implement the API callback function **onCreateConfResult** and subscribed-to notifications **onConfStateChanged** and **onConfInfoNotify**.

Step 1 Call the API.

1. Assemble the data structure **CreateConfInfo** (including **Array<AttendeeBaseInfo>** in the structure, which is optional) and the API callback function **onCreateConfResult**.
2. Call the **createConf** API to create a meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onCreateConfResult** function.

Step 3 Implement the notification function.

Implement the **onConfStateChanged** function.

Step 4 Implement the notification function.

Implement the **onConfInfoNotify** function.

Step 5 Implement the notification function.

Implement the **onConfListChanged** function.

----End

Sample Code

```
/**
 * Create a meeting.
 */
async goToCreateConf() {
  let param = {
    subject: "My Meeting",
    mediaType: MediaType.HWM_MEDIA_TYPE_VIDEO,
    needPassword: true,
    confAllowJoinUser: ConfAllowJoinUserType.CONF_ALLOW_JOIN_ANYONE,
    isMicOn: true, // The microphone is enabled by default after a user joins the meeting.
    isCameraOn: false, // The camera is disabled by default after a user joins the meeting.
  }
  const apiService = new ApiService();
  let setResult = await apiService.createConf(param);
  if (setResult.ret != 0) {
    window.electron.ipcRenderer.send("show-error-alert", "createConf error = " + setResult.ret);
  }
}
/**
 * Definition of createConf API in ApiService
 */
async createConf(createConfInfo) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason, createConfResult) => {
      console.log("createConf, out data = ", { ret, reason, createConfResult });
      resolve({ ret, reason, createConfResult });
    };
    console.log("createConf, in param = ", createConfInfo);
    this.uidkService.getConfCtrlApi().createConf(createConfInfo, resultCallback);
  });
}
```

NOTE

Parameters, such as the meeting topic and participant name, in Electron SDK APIs must be encoded in UTF-8. Otherwise, an error will be reported.

```
/**
 * Subscribe to the meeting status notification onConfStateChanged.
 */
uidkService.getConfCtrlApi().setOnConfStateChangedCB(NotifyService.handleOnConfStateChanged);
/**
 * Definition of handleOnConfStateChanged in NotifyService
 */
static handleOnConfStateChanged(confStateInfo) {
  console.log('OnConfStateChanged', ' ', confStateInfo = ' ', confStateInfo);
}
```

```
/**
 * Subscribe to the meeting message notification onConfInfoNotify
 */
uidkService.getConfCtrlApi().setOnConfInfoNotifyCB(NotifyService.handleOnConfInfoNotify);
/**
 * Definition of handleOnConfInfoNotify in NotifyService
 */
static handleOnConfInfoNotify(confInfo) {
  console.log('OnConfInfoNotify', ' ', confInfo = ' ', confInfo);
}
```

 NOTE

The **onConfListChanged** event notification scenario is the same as the meeting scheduling scenario. For details, see [Sample Code](#).

Character strings in Electron SDK callback functions or message notifications are encoded in UTF-8.

9.3.8 Scenario 7: Joining a Meeting

Description

You can call this API to join a meeting using a meeting ID and password regardless of whether you have logged in to Huawei Cloud Meeting or not.

Service Process

When using the SDK to join an existing meeting, call the **joinConfById** API and implement the API callback function **onJoinConfByIdResult** and subscribed-to message notifications **onConfStateChanged** and **onConfInfoNotify**.

Step 1 Call the API.

1. Assemble the data structure **JoinConfByIdInfo** and the API callback function **onJoinConfByIdResult**.
2. Call the **joinConfById** API. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onJoinConfByIdResult** function.

Step 3 Implement the notification function.

Implement the **onConfStateChanged** function.

Step 4 Implement the notification function.

Implement the **onConfInfoNotify** function.

----End

Sample Code

```
async goToJoinConfById() {
  let { confId, password, nickName, isSpeakerOff, isMicOn, isCameraOn } = this.state;
  let param = {
    confId: "989156631",
    password: "*****",
    nickName: "Hangzhou site",
    isSpeakerOff: false, // The speaker is not muted by default after a user joins the meeting.
    isMicOn: true, // The microphone is enabled by default after a user joins the meeting.
    isCameraOn: false, // The camera is disabled by default after a user joins the meeting.
  }
  const apiService = new ApiService();
  let setResult = await apiService.joinConfById(param);
  if(setResult.ret != 0){
    window.electron.ipcRenderer.send("show-error-alert", "joinConfById error = " + setResult.ret);
  }
}
/**
 * Definition of joinConfById API in ApiService
```

```
*/
async joinConfById(joinConfByIdInfo) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason) => {
      console.log("joinConfById, out data = ", { ret, reason });
      resolve({ ret, reason });
    };
    console.log("joinConfById, in param = ", joinConfByIdInfo);
    this.uisdkService.getConfCtrlApi().joinConfById(joinConfByIdInfo, resultCallback);
  });
}
```

NOTE

The **onConfStateChanged** and **onConfInfoNotify** event notification scenarios are the same as the meeting creation scenario. For details, see [Scenario 6: Creating a Meeting](#).

9.3.9 Scenario 8: Joining a Meeting by Clicking a Link in an Email

Description

You can use a meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/981924330/e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659>) in the notification email to join a meeting. The link contains the meeting ID (981924330) and random code (e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659).

You can call this API to join a meeting using the meeting ID and 48-digit value (random code) mapping to the password in the meeting link before or after logging in to Huawei Cloud Meeting.

Service Process

When using the SDK to join an existing meeting, call the **joinConfByRandom** API and implement the API callback function **onJoinConfByRandomResult** and subscribed-to message notifications **onConfStateChanged** and **onConfInfoNotify**.

Step 1 Call the API.

1. Assemble the data structure **JoinConfByRandomInfo** and callback function **onJoinConfByRandomResult**.
2. Call the **joinConfByRandom** API to join the meeting. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onJoinConfByRandomResult** function.

Step 3 Implement the notification function.

Implement the **onConfStateChanged** function.

Step 4 Implement the notification function.

Implement the **onConfInfoNotify** function.

----End

Sample Code

```
// Join a meeting using the meeting ID and random code.
async goToJoinConfByRandom(){
  let { confId, random, nickName, isSpeakerOff, isMicOn, isCameraOn } = this.state;
  let param = {
    confId: "988148352",
    random: "c4f92bc34e685bbba6c23589741be0431997f30da5d6e47b",
    nickName: "Hangzhou site",
    isSpeakerOff: false, // The speaker is not muted by default after a user joins the meeting.
    isMicOn: true, // The microphone is enabled by default after a user joins the meeting.
    isCameraOn: false, // The camera is disabled by default after a user joins the meeting.
  }
  const apiService = new ApiService();
  let setResult = await apiService.joinConfByRandom(param);
  if(setResult.ret != 0){
    window.electron.ipcRenderer.send("show-error-alert", "joinConfByRandom error = " + setResult.ret);
  }
}

/**
 * Definition of joinConfByRandom API in ApiService
 */
async joinConfByRandom(joinConfByRandomInfo) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason) => {
      console.log("joinConfByRandom, out data = ", { ret, reason });
      resolve({ ret, reason });
    };
    console.log("joinConfByRandom, in param = ", joinConfByRandomInfo);
    this.uisdkService.getConfCtrlApi().joinConfByRandom(joinConfByRandomInfo, resultCallback);
  });
}
```

NOTE

The **onConfStateChanged** and **onConfInfoNotify** event notification scenarios are the same as the meeting creation scenario. For details, see [Scenario 6: Creating a Meeting](#).

The 48-digit value mapping to the password is a part of the character string carried in the link for sharing a meeting.

<https://bmeeting.huaweicloud.com/#/j/987297025/227b2d708b7e5a24ce8de2159772239b1672c0a85ba70d85>

9.3.10 Scenario 9: Adding Participants

Description

You can call the API for adding participants during a meeting.

Service Process

When using the SDK to add participants, call the **addAttendee** API and implement the API callback function **onAddAttendeeResult**.

Step 1 Call the API.

1. Assemble the data structure **AddAttendeeInfo** and the API callback function **onAddAttendeeResult**.
2. Call the **addAttendee** API. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onAddAttendeeResult** function.

----End

Sample Code

```
/**
 * Add a participant.
 */
async goToAddAttendee() {
  let _attendees = [{
    nickName: "Mike",
    number: "+991116003543"
  }];
  let param = {
    attendees: _attendees
  }
  const apiService = new ApiService();
  let setResult = await apiService.addAttendee(param);
  if(setResult.ret != 0){
    window.electron.ipcRenderer("show-error-alert", "addAttendee error = " + setResult.ret);
  }
}
/**
 * Definition of getConfigDetail API in ApiService
 */
async addAttendee(addAttendeeInfo) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason) => {
      console.log("addAttendee, out data = ", { ret, reason });
      resolve({ ret, reason });
    };
    console.log("addAttendee, in param = ", addAttendeeInfo);
    this.uidkService.getConfigCtrlApi().addAttendee(addAttendeeInfo, resultCallback);
  });
}
```

9.3.11 Scenario 10: Customizing the Invite Button in a Meeting

Description

In most scenarios where the SDK is used for secondary development, third-party applications do not use the corporate directory provided by Huawei Cloud Meeting. Therefore, the page for inviting participants only provides a button and does not provide the complete function of inviting participants. You must implement the function by yourself.

Service Process

When using the SDK to implement the participant invitation function, call the **config** API, implement the API callback function **onConfigResult** and implement the subscribed-to message notification **onClickInjectBtnNotify** after the **Invite** button is clicked in a meeting.

Step 1 Call an API.

1. Assemble the character string containing the configuration information and the API callback function **onConfigResult**.
2. Call the **config** API. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onConfigResult** function.

Step 3 Implement the notification function.

After the **Invite** button is clicked, implement the subscribed-to message notification **onClickInjectBtnNotify**.

----End

Sample Code

```
/**
 * Configure the Invite button.
 */
async setInvite(){
  let param = {
    "frame": {
      "confMenu": {
        "toolBar": {
          "button": [{
            "buttonId": "invite",
            "showAsAction": "ifRoom",
            "isCustomizedClick": true
          }]
        }
      }
    }
  }
  const apiService = new ApiService();
  let setResult = await apiService.config(JSON.stringify(param));
  if(setResult.ret != 0){
    window.electron.ipcRenderer.send("show-error-alert", "config error = " + setResult.ret);
  }
}

/**
 * Definition of config API in ApiService
 */
async config(uiConfig) {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason) => {
      console.log("config, out data = ", { ret, reason });
      resolve({ ret, reason });
    };
    console.log("config, in param = ", uiConfig);
    this.uisdkService.getUIConfigApi().config(uiConfig, resultCallback);
  });
}
```

```
/**
 * Subscribe to the button click notification onClickInjectBtnNotify.
 */
uisdkService.getUIConfigApi().setOnClickInjectBtnNotifyCB(NotifyService.handleOnClickInjectBtnNotify);

/**
 * Definition of handleOnClickInjectBtnNotify in NotifyService
 */
static handleOnClickInjectBtnNotify(injectBtnInfo) {
  console.log('OnClickInjectBtnNotify', injectBtnInfo);
  switch (injectBtnInfo.injectBtn) {
    // Send a notification after the Invite button is clicked.
    case ClickInjectBtn.HWM_CLICK_INJECT_BTN_INVITE:
      // Display the screen for adding participants.
      window.location.hash = "#/confCtrlPage/addAttendee";
      window.electron.ipcRenderer.send('show-add-attendee-window');
      break;
  }
}
```

```
    default:
      break;
  }
}
```

9.3.12 Scenario 11: Logout

Description

You can call this API to log out of Huawei Cloud Meeting.

Service Process

When using the SDK to log out, call the **logout** API and implement the API callback function **onLogoutResult**.

Step 1 Call the API.

1. Assemble the API callback function **onLogoutResult**.
2. Call the **Logout** API to log out. The data in the preceding step is used as input parameters.

Step 2 Implement the callback function.

Implement the **onLogoutResult** function.

----End

Sample Code

```
/**
 * Log out.
 */
async Logout(){
  const apiService = new ApiService();
  let setResult = await apiService.logout();
  if(setResult.ret === 0){
    console.log("logoutresult:", setResult.logoutResult);
    window.sessionStorage.setItem("confListInfo", "");
    this.props.history.push('/');
  }else{
    window.electron.ipcRenderer.send("show-error-alert", "logout error = " + setResult.ret);
  }
}
```

```
/**
 * Definition of logout API in ApiService
 */
async logout() {
  return new Promise((resolve) => {
    let resultCallback = (ret, reason, logoutResult) => {
      console.log("logout, out data = ", { ret, reason, logoutResult });
      resolve({ ret, reason, logoutResult });
    };
    console.log("logout, in param = ");
    this.uidkService.getLoginApi().logout(resultCallback);
  });
}
```

9.3.13 Scenario 12: Exit

Description

When a third-party application exits the SDK, the SDK needs to be deinitialized. Otherwise, the **HwmSdk.exe** process (main process of the Electron SDK on the Windows 64-bit platform) is still running in the background. This scenario applies only to the 64-bit Windows platform.

Service Process

To exit the SDK, call the **Exit** synchronization API.

Step 1 Call an API.

1. Call the **Exit** API to exit the SDK.

----End

Sample Code

```
/**
 * Exit the SDK.
 */
async exitSdk(){
  const apiService = await new ApiService();
  let setResult = await apiService.exit();
  if(setResult != 0){
    window.electron.ipcRenderer.send("show-error-alert", "exit error = " + setResult);
  }
}

/**
 * Definition of exit API in ApiService
 */
exit() {
  console.log("exit, in param = ");
  let ret = this.uisdkService.exit();
  console.log("exit, out data = ", ret);
  return ret;
}
```

9.4 APIs

9.4.1 UISDK API Management Objects

UISDK API management objects

9.4.1.1 Initializing the SDK

Function

This API is used to start and initialize the SDK. 1. Before calling this API, modify the name of the **HwmSdk.exe** file in the **HwmSdk** folder. 2. Before calling other APIs, you must call this API and wait for the initialization callback result. 3. Each time the initialization API is called, the SDK is restarted and all the previous settings and operations do not exist.

Function Prototype

init(initInfo: InitInfo): SDKERR

Request Parameters

Table 9-1 Input parameter description

Parameter	Mandatory	Type	Description
initInfo	Yes	InitInfo	Initialization information.

Table 9-2 InitInfo

Parameter	Mandatory	Type	Description
exePath	Yes	string	SDK startup path, that is, the absolute path of the .exe file in the HwmSdk folder of the SDK package. Before calling this API, change the name of the HwmSdk.exe file in the HwmSdk folder of the SDK package to your desired name. Assume that the path of the HwmSdk folder is D:\MyApp\SDK\HwmSdk\ and the name of the .exe file is MySdk.exe . Then set this parameter to D:\MyApp\SDK\HwmSdk\MySdk.exe . UTF-8 encoding is required. (This parameter is valid only for the Windows 64-bit platform.)
logPath	Yes	string	SDK log path. If this parameter is not set, the default path is used. UTF-8 encoding is required.
userDataPath	Yes	string	SDK user data path. If this parameter is not set, the default path is used. UTF-8 encoding is required. (This parameter is valid only for the Windows platform.)
appId	Yes	string	App ID. For details about how to request an app ID, see section "Introduction to App ID Authentication."

Parameter	Mandatory	Type	Description
siteType	No	SiteType	Site type. The default value is 0 , indicating that Chinese mainland site is used.
logKeepDays	No	number	Log storage duration. Valid value range is 3–30. The default value is 0 . 0 indicates that logs are not deleted by day. 1 and 2 will be converted to 3 , and values greater than 30 will be converted to 30 .
preferredCamera	No	string	Preferred camera list. After this parameter is set, the first available camera is selected based on the sequence in the list when the camera is opened for the first time. This parameter can be left empty. If it is left empty, available cameras are enabled in the default sequence. (This parameter is valid only for the Windows platform.)
appUrl	No	string	Download link on the official website (valid only for the macOS platform).
isSupportMultiAppLogin	Yes	boolean	Whether to support login to multiple applications on the same device.

Table 9-3 Enumerated values of SiteType

Enumeration Name	Enumerated Value	Description
HWM_SITE_TYPE_CHINA	0	Chinese mainland.
HWM_SITE_TYPE_AP	1	Asia Pacific.

Return Values

For details about **SDKERR**, see [Error Code Reference](#).

9.4.1.2 Exiting the SDK

Function

This API is used to exit the SDK. 1. After this API is called, the SDK cannot be used. 2. Call this API when exiting the application. If this API is not called, the SDK process still exists after the application exits. 3. Call this API in the process killing scenario on macOS.

Function Prototype

exit(): SDKERR

Return Values

For details about **SDKERR**, see [Error Code Reference](#).

9.4.1.3 Obtaining a Login Service Object

Function

This API is used to obtain a login service object.

Function Prototype

getLoginApi(): ILogin

Return Values

ILogin

9.4.1.4 Obtaining a Meeting Control Service Object

Function

This API is used to obtain a meeting control service object.

Function Prototype

getConfCtrlApi(): IConfCtrl

Return Values

IConfCtrl

9.4.1.5 Obtaining a Meeting Management Service Object

Function

This API is used to obtain a meeting management service object.

Function Prototype

```
getConfMgrApi(): IConfMgr
```

Return Values

IConfMgr

9.4.1.6 Obtaining a Configuration Service Object

Function

This API is used to obtain a configuration service object.

Function Prototype

```
getConfigApi(): IConfig
```

Return Values

IConfig

9.4.1.7 Obtaining a UI Configuration Service Object

Function

This API is used to obtain a UI configuration service object.

Function Prototype

```
getUIConfigApi(): IUIConfig
```

Return Values

IUIConfig

9.4.1.8 Subscribing to Disconnection Notifications

Function

A notification is sent when the SDK is disconnected.

Function Prototype

```
setOnSdkDisconnectedNotifyCB(onSdkDisconnectedNotify: () => void):  
voidsetOnSdkDisconnectedNotifyCB(onSdkDisconnectedNotify: () => void): void
```


Request Parameters

Table 9-4 Input parameter description

Parameter	Mandatory	Type	Description
onSdkDisconnectedNotify	Y	() => void	Notification sent when the SDK is disconnected.

Return Values

void

9.4.2 Login Management Objects

Login management objects

9.4.2.1 Subscribing to Login Kickout Notifications

Function

A notification is sent when you were kicked out of this account by another device. In this case, you need to log in again.

Function Prototype

```
setOnKickedOutNotifyCB(onKickedOutNotify: () => void):  
voidsetOnKickedOutNotifyCB(onKickedOutNotify: () => void): void
```

Request Parameters

Table 9-5 Input parameter description

Parameter	Mandatory	Type	Description
onKickedOutNotify	Yes	() => void	Notifies you when you were kicked out of this account by another device. In this case, you need to log in again.

Return Values

void

9.4.2.2 Subscribing to Enterprise Configuration Notifications

Function

A notification is sent when the enterprise configuration is changed.

Function Prototype

```
setOnCorpConfigNotifyCB(onCorpConfigNotify: (configInfo: CorpConfigInfo) => void): void
setOnCorpConfigNotifyCB(onCorpConfigNotify: (configInfo: CorpConfigInfo) => void): void
```

Request Parameters

Table 9-6 Input parameter description

Parameter	Mandatory	Type	Description
onCorpConfigNotify	Yes	(configInfo: CorpConfigInfo) => void	A notification is sent when the enterprise configuration is changed.

Return Values

void

Notification Method Parameters

```
(configInfo: CorpConfigInfo) => void
```

Table 9-7 Input parameter description

Parameter	Type	Description
configInfo	CorpConfigInfo	Configuration information.

Table 9-8 CorpConfigInfo

Parameter	Type	Description
pstnEnable	boolean	Whether to support mobile phone calls.
smsEnable	boolean	Whether to support SMS notifications.
recordEnable	boolean	Whether to support meeting recording.
pstnNumber	string	PSTN call number.
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting in advance.
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Parameter	Type	Description
enableShowAddressBookStructure	boolean	Whether to display the corporate directory (valid only for the Windows client).

9.4.2.3 Subscribing to Login Error Notifications

Function

A notification is sent when login failed.

Function Prototype

```
setOnLoginErrorNotifyCB(onLoginErrorNotify: (ret: SDKERR, reason: string) => void): void
setOnLoginErrorNotifyCB(onLoginErrorNotify: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-9 Input parameter description

Parameter	Mandatory	Type	Description
onLoginErrorNotify	Yes	(ret: SDKERR, reason: string) => void	Notifies you when login failed.

Return Values

void

Notification Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-10 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.2.4 Subscribing to Shared Cloud Meeting Room Changes

Function

A notification is sent when information about shared cloud meeting rooms was changed.

Function Prototype

```
setOnShareVmrInfoNotifyCB(onShareVmrInfoNotify: (shareVmrInfo:
ShareVmrInfo) => void): voidsetOnShareVmrInfoNotifyCB(onShareVmrInfoNotify:
(shareVmrInfo: ShareVmrInfo) => void): void
```

Request Parameters

Table 9-11 Input parameter description

Parameter	Mandatory	Type	Description
onShareVmrInfoNotify	Yes	(shareVmrInfo: ShareVmrInfo) => void	Notifies you when information about shared cloud meeting rooms was changed.

Return Values

void

Notification Method Parameters

(shareVmrInfo: ShareVmrInfo) => void

Table 9-12 Input parameter description

Parameter	Type	Description
shareVmrInfo	ShareVmrInfo	Information about shared cloud meeting rooms.

Table 9-13 ShareVmrInfo

Parameter	Type	Description
isEnabledShareVmr	boolean	Whether shared cloud meeting rooms are available.

9.4.2.5 Account and Password Login

Function

This API is used to log in to the system using an account and password. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.

Function Prototype

```
loginByAccount(accountAuthInfo: AccountAuthInfo, onLoginResult?: (ret: SDKERR, reason: string, loginResult: LoginResult) => void): void
voidloginByAccount(accountAuthInfo: AccountAuthInfo, onLoginResult?: (ret: SDKERR, reason: string, loginResult: LoginResult) => void): void
```

Request Parameters

Table 9-14 Input parameter description

Parameter	Mandatory	Type	Description
accountAuthInfo	Yes	AccountAuthInfo	Account and password authentication information.
onLoginResult	Yes	(ret: SDKERR, reason: string, loginResult: LoginResult) => void	Login callback.

Table 9-15 AccountAuthInfo

Parameter	Mandatory	Type	Description
account	Yes	string	Login account.
password	Yes	string	Login password.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, loginResult: LoginResult) => void

Table 9-16 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
loginResult	LoginResult	Login result.

Table 9-17 LoginResult

Parameter	Type	Description
userId	string	UUID, which is the unique user ID allocated by the system.
account	string	Account.
thirdAccount	string	Third-party account.
basicCallAbility	boolean	Whether the point-to-point call capability is available.

9.4.2.6 App ID Login

Function

This API is used to log in to the system using an app ID. You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.

Function Prototype

```
loginByAppId(appIdAuthInfo: AppIdAuthInfo, onLoginResult?: (ret: SDKERR, reason: string, loginResult: LoginResult) => void): void
loginByAppId(appIdAuthInfo: AppIdAuthInfo, onLoginResult?: (ret: SDKERR, reason: string, loginResult: LoginResult) => void): void
```

Request Parameters

Table 9-18 Input parameter description

Parameter	Mandatory	Type	Description
appldAuthInfo	Yes	AppldAuthInfo	App ID authentication information.
onLoginResult	Yes	(ret: SDKERR, reason: string, loginResult: LoginResult) => void	Login callback.

Table 9-19 AppldAuthInfo

Parameter	Mandatory	Type	Description
corpId	No	string	Enterprise ID. This parameter is mandatory only in SP mode. Do not configure this parameter in single-enterprise mode. Otherwise, the authentication fails.
thirdUserId	Yes	string	Unique ID of a third-party account.
userName	No	string	Username. If this parameter is left blank, the value of this parameter is the same as that of thirdUserId by default.
signature	Yes	string	Authentication signature obtained from the third-party server.
nonce	Yes	string	Nonce value obtained from the third-party server, which is used by the Huawei Cloud server to verify the validity of the authentication signature.
expireTime	Yes	number	Validity period timestamp of the authentication signature obtained from the third-party server, in seconds. 0 indicates that the authentication signature never expires.
userEmail	No	string	Email address of the user.

Parameter	Mandatory	Type	Description
userPhone	No	string	Mobile number of the user.
deptCode	No	string	Department ID.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, loginResult: LoginResult) => void

Table 9-20 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
loginResult	LoginResult	Login result.

Table 9-21 LoginResult

Parameter	Type	Description
userId	string	UUID, which is the unique user ID allocated by the system.
account	string	Account.
thirdAccount	string	Third-party account.
basicCallAbility	boolean	Whether the point-to-point call capability is available.

9.4.2.7 SSO

Function

This API is used to log in to the system via single sign-on (SSO). You must log in to Huawei Cloud Meeting before using functions such as creating meetings and being invited into meetings. If you do not log in, you cannot experience complete meeting functions.

Function Prototype

```
loginBySSO(ssoAuthInfo: SSOAuthInfo, onLoginResult?: (ret: SDKERR, reason: string, loginResult: LoginResult) => void): void
loginBySSO(ssoAuthInfo: SSOAuthInfo, onLoginResult?: (ret: SDKERR, reason: string, loginResult: LoginResult) => void): void
```

Request Parameters

Table 9-22 Input parameter description

Parameter	Mandatory	Type	Description
ssoAuthInfo	Yes	SSOAuthInfo	SSO authentication information.
onLoginResult	Yes	(ret: SDKERR, reason: string, loginResult: LoginResult) => void	Login callback.

Table 9-23 SSOAuthInfo

Parameter	Mandatory	Type	Description
code	Yes	string	Authorization code.
domain	Yes	string	Enterprise domain name.
authServerType	Yes	AuthServerType	Authentication service type.

Table 9-24 Enumerated values of AuthServerType

Enumeration Name	Enumerated Value	Description
AUTH_SERVER_TYPE_OAUTH2	0	SSO.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, loginResult: LoginResult) => void

Table 9-25 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
loginResult	LoginResult	Login result.

Table 9-26 LoginResult

Parameter	Type	Description
userId	string	UUID, which is the unique user ID allocated by the system.
account	string	Account.
thirdAccount	string	Third-party account.
basicCallAbility	boolean	Whether the point-to-point call capability is available.

9.4.2.8 Logout

Function

This API is used to log out of Huawei Cloud Meeting. Call this API only after login.

Function Prototype

```
logout(onLogoutResult?: (ret: SDKERR, reason: string, logoutResult: LogoutResult) => void): void
logout(onLogoutResult?: (ret: SDKERR, reason: string, logoutResult: LogoutResult) => void): void
```

Request Parameters

Table 9-27 Input parameter description

Parameter	Mandatory	Type	Description
onLogoutResult	Yes	(ret: SDKERR, reason: string, logoutResult: LogoutResult) => void	Logout callback.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, logoutResult: LogoutResult) => void

Table 9-28 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
logoutResult	LogoutResult	Logout result.

Table 9-29 LogoutResult

Parameter	Type	Description
userId	string	UUID, which is the unique user ID allocated by the system.
account	string	Account.
thirdAccount	string	Third-party account.

9.4.2.9 Setting the Network Mode

Function

This API is used to set the network mode. 1. This API needs to be called only when an application in an enterprise cannot directly access the public network (that is, when the media nodes and management nodes are deployed in the enterprise). If the media nodes of Huawei Cloud Meeting are deployed in the enterprise and management nodes are accessed through the proxy of the enterprise, set the network mode to enterprise intranet access. 2. This API is optional. If it is not called, the default mode is used.

Function Prototype

```
setNetworkMode(networkInfo: NetWorkModeInfo, onSetNetworkModeResult?:  
(ret: SDKERR, reason: string) => void): void  
setNetworkMode(networkInfo:  
NetWorkModeInfo, onSetNetworkModeResult?: (ret: SDKERR, reason: string) =>  
void): void
```

Request Parameters

Table 9-30 Input parameter description

Parameter	Mandatory	Type	Description
networkInfo	Yes	NetWorkModeInfo	Network mode information.
onSetNetworkModeResult	Yes	(ret: SDKERR, reason: string) => void	Callback of setting the network mode.

Table 9-31 NetWorkModeInfo

Parameter	Mandatory	Type	Description
accessType	Yes	NetworkAccessType	Network access type.
netConnectType	No	NetConnectType	Network connection type (valid only for the Windows client).

Table 9-32 Enumerated values of NetworkAccessType

Enumeration Name	Enumerated Value	Description
ACCESS_TYPE_AUTO	0	Default value. Currently, the value is the same as the extranet access mode.
ACCESS_TYPE_INNER	1	Intranet access, which is used when the media and signaling nodes are deployed in the enterprise. The app uses the intranet for access. Signaling and media messages access the Huawei Cloud Meeting server through the proxy server.
ACCESS_TYPE_OUTER	2	External network access, which is used when the media and signaling nodes are not deployed in the enterprise. The app uses the Internet for access. Signaling and media messages can directly access the Huawei Cloud Meeting server.

Table 9-33 Enumerated values of NetConnectType

Enumeration Name	Enumerated Value	Description
NET_CONNECT_AUTO	0	Auto mode.
NET_CONNECT_FORCE_VPN	1	Forcible VPN.
NET_CONNECT_FORCE_DIRECT	2	Forcible direct connection.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-34 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.2.10 Uploading a Profile Picture

Function

This API is used to upload a profile picture to the address book on the meeting server. Precautions: 1. Call this API only when you have logged in. 2. Upload a PNG or JPG image no more than 200 KB. 3. The recommended aspect ratio is 1:1.

Function Prototype

```
uploadSelfAvatar(selfAvatarInfo: SelfAvatarInfo, onUploadSelfAvatarResult?: (ret: SDKERR, reason: string) => void): void
uploadSelfAvatar(selfAvatarInfo: SelfAvatarInfo, onUploadSelfAvatarResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-35 Input parameter description

Parameter	Mandatory	Type	Description
selfAvatarInfo	Yes	SelfAvatarInfo	Personal profile picture information.
onUploadSelfAvatarResult	Yes	(ret: SDKERR, reason: string) => void	Callback of uploading the personal profile picture.

Table 9-36 SelfAvatarInfo

Parameter	Mandatory	Type	Description
path	Yes	string	Full path of the image.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-37 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.2.11 Setting Guaranteed IP Addresses for Meeting Control

Function

This API is used to set the guaranteed IP addresses for meeting control. Up to four IP addresses are supported. They are separated by semicolons (;).

Function Prototype

```
setGuaranteedIpAddresses(guaranteedIpAddresses: string): SDKERR
```

Request Parameters

Table 9-38 Input parameter description

Parameter	Mandatory	Type	Description
guaranteedIpAddresses	Yes	string	Guaranteed IP addresses.

Return Values

For details about **SDKERR**, see [Error Code Reference](#).

9.4.3 Meeting Control Objects

Meeting control objects

9.4.3.1 Subscribing to Meeting Status Notifications

Function

A notification is sent when the meeting status is changed.

Function Prototype

```
setOnConfStateChangedCB(onConfStateChanged: (confStateInfo: ConfStateInfo) => void): void  
setOnConfStateChangedCB(onConfStateChanged: (confStateInfo: ConfStateInfo) => void): void
```

Request Parameters

Table 9-39 Input parameter description

Parameter	Mandatory	Type	Description
onConfStateChanged	Y	(confStateInfo: ConfStateInfo) => void	Notification sent when the meeting status is changed.

Return Values

void

Notification Method Parameters

(confStateInfo: ConfStateInfo) => void

Table 9-40 Input parameter description

Parameter	Type	Description
confStateInfo	ConfStateInfo	Meeting status information.

Table 9-41 ConfStateInfo

Parameter	Type	Description
state	State	Meeting status.

Table 9-42 Enumerated values of State

Enumeration Name	Enumerated Value	Description
HWM_STATE_OFF	0	Closed.
HWM_STATE_ON	1	Open.

9.4.3.2 Subscribing to Meeting End Notifications

Function

A notification is sent when a meeting ended.

Function Prototype

```
setOnConfEndedNotifyCB(onConfEndedNotify: (confEndInfo: ConfEndInfo) => void): void  
setOnConfEndedNotifyCB(onConfEndedNotify: (confEndInfo: ConfEndInfo) => void): void
```

Request Parameters

Table 9-43 Input parameter description

Parameter	Mandatory	Type	Description
onConfEndedNotify	Yes	(confEndInfo: ConfEndInfo) => void	Notifies you when a meeting ended.

Return Values

void

Notification Method Parameters

(confEndInfo: ConfEndInfo) => void

Table 9-44 Input parameter description

Parameter	Type	Description
confEndInfo	ConfEndInfo	Information about the ended meeting.

Table 9-45 ConfEndInfo

Parameter	Type	Description
reason	ConfEndReason	Reason for leaving the meeting.
isP2PConf	boolean	Whether the meeting is an instant meeting.

Table 9-46 Enumerated values of ConfEndReason

Enumeration Name	Enumerated Value	Description
HWM_CONF_END_REASON_LEAVE_CONF_HANGUP	0	The user leaves the meeting.
HWM_CONF_END_REASON_STOP_CONF_HANGUP	1	The meeting has ended.
HWM_CONF_END_REASON_HOST_HANGUP	2	The user is removed by the host.
HWM_CONF_END_REASON_SESSION_TIMER_TIMEOUT	3	Network interrupted.
HWM_CONF_END_REASON_NOSTREAM_HANGUP	4	Network error.
HWM_CONF_END_REASON_CORP_CONFERENCE_RESOURCE_HAS_BEEN_RUN_OUT	5	The amount of enterprise resources has reached the upper limit.
HWM_CONF_END_REASON_CONF_ONLY_SAME_ENTERPRISE	6	Only enterprise users can join the meeting.

Enumeration Name	Enumerated Value	Description
HWM_CONF_END_REASON_CONF_ONLY_INVITED	7	Only invited users can join the meeting.
HWM_CONF_END_REASON_CONF_IS_LOCKED	8	The meeting is locked.
HWM_CONF_END_ERR_VMR_NOT_BEEN_HOLD	9	Guests are not allowed to activate the meeting in this cloud meeting room.
HWM_CONF_END_REASON_VMR_CONF_CONFLICT	10	Meetings conflict in this cloud meeting room.
HWM_CONF_END_REASON_SERVER_ERROR	11	Server exception.
HWM_CONF_END_REASON_NUM_OF_PAR_EXCEEDS_UPPER_LIMIT	12	More participants than allowed by the cloud meeting room package.
HWM_CONF_END_REASON_CONF_NUM_OVER_MAX_ALLOWED	1110 7111 6	The maximum number of ongoing meetings has been reached.
HWM_CONF_END_REASON_PARTICIPANT_REACH_MAX_NUMBER	1110 7250 4	Maximum number of participants in a single meeting has been reached.
HWM_CONF_END_REASON_PARTICIPANT_CONF_NOT_EXIST	1110 8100 2	The meeting does not exist or has ended.
HWM_CONF_END_REASON_CONF_CONFLICT	1111 1100 8	Another device has joined this meeting using your account.
HWM_CONF_END_REASON_END_CONF_NET_BREAK	4110 0010 0	No stream was received. The network was disconnected.
HWM_CONF_END_REASON_END_EXPIRATION	4141 0006 9	Invalid user, enterprise, or SP.
HWM_CONF_END_REASON_SDK_CHAIR_END_CONF	4141 0007 4	The host ended the meeting.
HWM_CONF_END_REASON_SDK_TIMEOVER_END_CONF	4141 0007 5	The scheduled end time arrived.

Enumeration Name	Enumerated Value	Description
HWM_CONF_END_REASON_RTC_SDK_NETWORK_FAILED	990000053	Network error.
HWM_CONF_END_FORCE_OPEN_CAMERA_HANGUP	414100078	The video meeting was forcibly ended.
HWM_CONF_END_MANAGER_SHARE_VMR_NOT_ENOUGH	111071151	No shared cloud meeting rooms are available.
HWM_CONF_END_MANAGER_NO_UPSCALE_VMR	112030001	There are no cloud meeting rooms of higher specifications.
HWM_CONF_END_REASON_OVER_MAX_PARTICIPANT_NUMBER	111072101	More participants than allowed.
HWM_CONF_END_REASON_PROJECTION_FAILED	414100080	Projection failed.
HWM_CONF_END_REASON_PROJECTION_CANCEL	414100082	The large screen canceled the projection during negotiation.
HWM_CONF_END_REASON_PROJECTION_BY_SENDER_WITH_TWO_MEMBERS	414100083	The projection initiator in this two-participant meeting ended the projection.
HWM_CONF_END_REASON_PROJECTION_BY_RECEIVER	414100084	The large screen ended the projection.
HWM_CONF_END_REASON_PROJECTION_BY_SENDER_WITH_MULTI_MEMBERS	414100085	The projection initiator in this multi-participant meeting ended the projection.

9.4.3.3 Subscribing to the Callback of Instant Meeting Records

Function

This API is used to subscribe to the callback of instant meeting records.

Function Prototype

```
setOnP2PConfRecordNotifyCB(onP2PConfRecordNotify: (recordInfo: P2PConfRecordInfo) => void):
```

voidsetOnP2PConfRecordNotifyCB(onP2PConfRecordNotify: (recordInfo: P2PConfRecordInfo) => void): void

Request Parameters

Table 9-47 Input parameter description

Parameter	Mandatory	Type	Description
onP2PConfRecordNotify	Yes	(recordInfo: P2PConfRecordInfo) => void	Callback of instant meeting records.

Return Values

void

Notification Method Parameters

(recordInfo: P2PConfRecordInfo) => void

Table 9-48 Input parameter description

Parameter	Type	Description
recordInfo	P2PConfRecordInfo	Meeting record information.

Table 9-49 P2PConfRecordInfo

Parameter	Type	Description
callerInfo	CallMemberInfo	Caller information.
calleeInfo	CallMemberInfo	Called participant information.
startTime	number	Call start time, accurate to seconds (GMT).
endTime	number	Call end time, accurate to seconds (GMT).
isCallOut	boolean	Whether the call is an outgoing call.
mediaType	MediaType	Media type.
resultCode	For details about SDKERR , see Error Code Reference .	Error code.

Parameter	Type	Description
resultMsg	string	Error description.
isCallEstablished	boolean	Whether the call is connected.

Table 9-50 CallMemberInfo

Parameter	Type	Description
number	string	Number.
nickName	string	Member name.
thirdUserId	string	Third-party account.

Table 9-51 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

9.4.3.4 Subscribing to Meeting Details Notifications

Function

A notification is sent when meeting details changed.

Function Prototype

```
setOnConfInfoNotifyCB(onConfInfoNotify: (confInfo: ConfInfo) => void): void
voidsetOnConfInfoNotifyCB(onConfInfoNotify: (confInfo: ConfInfo) => void): void
```

Request Parameters

Table 9-52 Input parameter description

Parameter	Mandatory	Type	Description
onConfInfoNotify	Yes	(confInfo: ConfInfo) => void	Notifies you when meeting details changed.

Return Values

void

Notification Method Parameters

(confInfo: ConfInfo) => void

Table 9-53 Input parameter description

Parameter	Type	Description
confInfo	ConfInfo	Meeting details.

Table 9-54 ConfInfo

Parameter	Type	Description
hostJoinUri	string	Link for the host to join the meeting (valid only for the macOS platform).
guestJoinUri	string	Link for guests to join the meeting using a browser.
confId	string	Meeting ID.
selfConfRole	ConfRole	Role in the meeting, for example, host and guest.
hostPwd	string	Host password.
guestPwd	string	Guest password.
subject	string	Meeting topic.
startTime	number	Meeting start time.
endTime	number	Meeting end time.
schedulerName	string	Name of the user who schedules the meeting.
mediaType	MediaType	Meeting type. (This parameter is valid only for the macOS platform.)
vmrConfId	string	Display ID of the cloud meeting. (This parameter is valid only for the macOS platform.)
corpId	string	Enterprise ID. (This parameter is valid only for the macOS platform.)
customInfo	string	Custom extension information.

Parameter	Type	Description
isOtherCorpConf	boolean	Whether the meeting belongs to an external enterprise. If you join the meeting of an external enterprise or join the meeting anonymously, the value is true . Otherwise, the value is false .
isCreator	boolean	Whether you are the meeting scheduler. This parameter is valid only for the Windows platform.
isInBreakoutSub-Conf	boolean	Whether you are in a breakout room.

Table 9-55 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-56 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

9.4.3.5 Subscribing to Sharing Status Notifications

Function

A notification is sent when the sharing status is changed.

Function Prototype

setOnShareStateChangedCB(onShareStateChanged: (shareStateInfo: ShareStateInfo) => void): void
setOnShareStateChangedCB(onShareStateChanged: (shareStateInfo: ShareStateInfo) => void): void

Request Parameters

Table 9-57 Input parameter description

Parameter	Mandatory	Type	Description
onShareStateChanged	Y	(shareStateInfo: ShareStateInfo) => void	Notification sent when the sharing status is changed.

Return Values

void

Notification Method Parameters

(shareStateInfo: ShareStateInfo) => void

Table 9-58 Input parameter description

Parameter	Type	Description
shareStateInfo	ShareStateInfo	Sharing status information.

Table 9-59 ShareStateInfo

Parameter	Type	Description
state	State	Sharing status.
nickName	string	Sharer name. This parameter is valid only when state is set to HWM_STATE_ON .
number	string	Number of the sharer. This parameter is valid only when state is set to HWM_STATE_ON .
monitor	Monitor	Type of the shared monitor (primary or secondary monitor).
shareType	ShareType	Sharing type.
appHandle	number	Program handle.

Table 9-60 Enumerated values of State

Enumeration Name	Enumerated Value	Description
HWM_STATE_OFF	0	Disabled.
HWM_STATE_ON	1	Enabled.

Table 9-61 Enumerated values of Monitor

Enumeration Name	Enumerated Value	Description
HWM_MONITOR_MAIN	1	Primary.
HWM_MONITOR_SECONDARY	2	Secondary.

Table 9-62 Enumerated values of ShareType

Enumeration Name	Enumerated Value	Description
HWM_SHARE_TYPE_MONITOR	0	Screen sharing.
HWM_SHARE_TYPE_APP	1	Program sharing.
HWM_SHARE_TYPE_WHITEBOARD	2	Whiteboard sharing.

9.4.3.6 Subscribing to Role Change Notifications

Function

A notification is sent when your role changed (valid only for the macOS platform).

Function Prototype

```
setOnSelfRoleChangedCB(onSelfRoleChanged: (role: ConfRole) => void):  
voidsetOnSelfRoleChangedCB(onSelfRoleChanged: (role: ConfRole) => void): void
```

Request Parameters

Table 9-63 Input parameter description

Parameter	Mandatory	Type	Description
onSelfRoleChanged	Yes	(role: ConfRole) => void	Notifies you when your role changed (valid only for the macOS platform).

Return Values

void

Notification Method Parameters

(role: ConfRole) => void

Table 9-64 Input parameter description

Parameter	Type	Description
role	ConfRole	Role in the meeting.

Table 9-65 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

9.4.3.7 Subscribing to Poor Network Connection Notifications

Function

This API is used to subscribe to poor network connection notifications.

Function Prototype

```
setOnPoorNetworkQualityInfoNotifyCB(onPoorNetworkQualityInfoNotify:
(poorNetWorkInfo: PoorNetWorkQualityInfo) => void):
voidsetOnPoorNetworkQualityInfoNotifyCB(onPoorNetworkQualityInfoNotify:
(poorNetWorkInfo: PoorNetWorkQualityInfo) => void): void
```

Request Parameters

Table 9-66 Input parameter description

Parameter	Mandatory	Type	Description
onPoorNetworkQualityInfoNotify	Yes	(poorNetWorkInfo: PoorNetWorkQualityInfo) => void	Notification about poor network connection.

Return Values

void

Notification Method Parameters

```
(poorNetWorkInfo: PoorNetWorkQualityInfo) => void
```

Table 9-67 Input parameter description

Parameter	Type	Description
poorNetWorkInfo	PoorNetWorkQualityInfo	Type of poor network connection.

Table 9-68 PoorNetWorkQualityInfo

Parameter	Type	Description
nickName	string	Participant name.

Parameter	Type	Description
number	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	string	Huawei Cloud Meeting account.
isLocal	boolean	Whether the participant is the local client user.
audioStatus	LowNetWorkStatusInfo	Network status of audio.
videoStatus	LowNetWorkStatusInfo	Network status of video.
shareStatus	LowNetWorkStatusInfo	Network status of sharing.

Table 9-69 LowNetWorkStatusInfo

Parameter	Type	Description
packetLoss	number	Packet loss rate.
delay	number	Delay.
jitter	number	Jitter.
status	LowNetWorkStatusInfo	Network status.

Table 9-70 Enumerated values of LowNetWorkStatus

Enumeration Name	Enumerated Value	Description
LOW_NET_WORK_STATUS_NORMAL	0	Normal.
LOW_NET_WORK_STATUS_BAD	1	Poor.
LOW_NET_WORK_STATUS_VERY_BAD	2	Very poor.

9.4.3.8 Creating a Meeting

Function

This API is used to create an instant meeting. 1. By default, calling this API will add you to the meeting as the host. You do not need to pass your own information in the participant parameters. 2. If other participants need to be invited when a meeting is created, the information about other participants needs to be passed. If other participants are not required to join the meeting, participant details and the number of participants can be empty.

Function Prototype

```
createConf(createConfInfo: CreateConfInfo, onCreateConfResult?: (ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void): void
voidcreateConf(createConfInfo: CreateConfInfo, onCreateConfResult?: (ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void): void
```

Request Parameters

Table 9-71 Input parameter description

Parameter	Mandatory	Type	Description
createConfInfo	Yes	CreateConfInfo	Meeting creation information.
onCreateConfResult	Yes	(ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void	Callback of creating the meeting.

Table 9-72 CreateConfInfo

Parameter	Mandatory	Type	Description
subject	Yes	string	Meeting topic.
mediaType	Yes	MediaType	Meeting type.
needPassword	Yes	boolean	Whether a guest password is required. This parameter is valid only for meetings with a random ID.
isAutoRecord	No	boolean	Whether automatic meeting recording is enabled. If automatic meeting recording is enabled, the meeting will be recorded by default, regardless of whether recording is enabled or disabled in the meeting. This parameter is valid only for cloud recording, not for local recording on clients.
allowRecord	No	boolean	Whether meeting recording is supported. (This parameter is valid only for the Windows platform.) This parameter is valid only for cloud recording, not for local recording on clients.
confAllowJoin User	No	ConfAllowJoin UserType	Users who are allowed to join the meeting. By default, everyone is allowed.
vmrId	No	string	Unique cloud meeting room ID. To schedule a meeting with a random meeting ID, set this parameter to an empty string.
vmrConfIdType	No	VmrConfIdType	ID type of the cloud meeting room.
guestPwd	No	string	Guest password. If this parameter is left empty, the server randomly generates a password. This parameter is valid only for meetings with a random ID.

Parameter	Mandatory	Type	Description
isOpenWaitingRoom	No	boolean	Waiting room status. This parameter takes effect only when the waiting room function is enabled.
duration	No	number	Meeting duration, in minutes. The value ranges from 15 to 1,440. If this parameter is left blank, the server uses the default meeting duration.
isMicOn	No	boolean	Whether to enable the microphone. The options are true (yes) and false (no).
isCameraOn	No	boolean	Whether to enable the camera. The options are true (yes) and false (no).
concurrentParticipants	No	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).
numOfAttendee	Yes	number	Number of participants. If participants are not required, set this parameter to 0 .
attendees	Yes	AttendeeBaseInfo	Participant details. If participants are not required, leave this parameter empty.
customInfo	No	string	User-defined information.
confResType	No	ConfResType	Meeting resource type.

Table 9-73 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-74 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Table 9-75 Enumerated values of VmrConfIdType

Enumeration Name	Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	0	Fixed ID of the cloud meeting room.
HWM_VMR_CONF_ID_TYPE_RANDOM	1	Random ID of the cloud meeting room.

Table 9-76 AttendeeBaseInfo

Parameter	Mandatory	Type	Description
nickName	Yes	string	Participant name.

Parameter	Mandatory	Type	Description
number	Yes	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	No	string	Huawei Cloud Meeting account.
email	No	string	Email address used for receiving email notifications.
sms	No	string	Mobile number used for receiving SMS notifications.
isAutoInvite	No	boolean	Whether to automatically invite participants.
isMute	No	boolean	Whether to mute the microphone.
role	No	ConfRole	Participant role in the meeting.
type	No	AttendeeType	Participant type.
userUuid	No	string	Participant UUID.

Table 9-77 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-78 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-79 Enumerated values of ConfResType

Enumeration Name	Enumerated Value	Description
HWM_CONF_RESTYPE_DEFAULT	0	Default.
HWM_CONF_RESTYPE_SHARE_VMR	3	Shared cloud meeting room.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void

Table 9-80 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
createConfResult	CreateConfResult	Meeting creation result.

Table 9-81 CreateConfResult

Parameter	Type	Description
confId	string	Meeting ID.
vmrConfId	string	Cloud meeting room ID (valid only for the macOS platform).
hostPwd	string	Host password.
guestPwd	string	Guest password.
mediaType	MediaType	Meeting media type (valid only for the macOS platform).
guestJoinUri	string	Guest link.

Parameter	Type	Description
selfConfRole	ConfRole	Role in the meeting.
subject	string	Meeting topic.
startTime	number	Meeting start time, in seconds (GMT).
endTime	number	Meeting end time.
schedulerName	string	Name of the user who schedules the meeting.
customInfo	string	Custom extension information.

9.4.3.9 Starting an Instant Meeting

Function

This API is used to start an instant meeting.

Function Prototype

```
startP2pConf(startCallInfo: StartCallInfo, onStartP2pConfResult?: (ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void):  
voidstartP2pConf(startCallInfo: StartCallInfo, onStartP2pConfResult?: (ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void): void
```

Request Parameters

Table 9-82 Input parameter description

Parameter	Mandatory	Type	Description
startCallInfo	Yes	StartCallInfo	Information about starting an instant meeting.
onStartP2pConfResult	Yes	(ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void	Callback of starting the instant meeting.

Table 9-83 StartCallInfo

Parameter	Mandatory	Type	Description
callerInfo	Yes	CallerInfo	Caller information.

Parameter	Mandatory	Type	Description
calleeInfo	Yes	CalleeInfo	Called participant information.
mediaType	Yes	MediaType	Media type.

Table 9-84 CallerInfo

Parameter	Mandatory	Type	Description
nickName	No	string	Caller name.

Table 9-85 CalleeInfo

Parameter	Mandatory	Type	Description
nickName	No	string	Called participant name.
number	Yes	string	Called number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set (number is prior to thirdUserId).
thirdUserId	Yes	string	Third-party account of the called participant. Either this parameter or number is used. The priority is as follows: number > thirdUserId . This parameter is used for app ID authentication.
userUuid	No	string	Participant UUID.

Table 9-86 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, createConfResult: CreateConfResult) => void

Table 9-87 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
createConfResult	CreateConfResult	Meeting creation result.

Table 9-88 CreateConfResult

Parameter	Type	Description
confId	string	Meeting ID.
vmrConfId	string	Cloud meeting room ID (valid only for the macOS platform).
hostPwd	string	Host password.
guestPwd	string	Guest password.
mediaType	MediaType	Meeting media type (valid only for the macOS platform).
guestJoinUri	string	Guest link.
selfConfRole	ConfRole	Role in the meeting.
subject	string	Meeting topic.

Parameter	Type	Description
startTime	number	Meeting start time, in seconds (GMT).
endTime	number	Meeting end time.
schedulerName	string	Name of the user who schedules the meeting.
customInfo	string	Custom extension information.

Table 9-89 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

9.4.3.10 Joining a Meeting

Function

This API is used to join an existing meeting by using the meeting ID and password. This API can be called regardless of whether you have logged in.

Function Prototype

```
joinConfById(joinConfByIdInfo: JoinConfByIdInfo, onJoinConfByIdResult?: (ret: SDKERR, reason: string) => void): void
joinConfById(joinConfByIdInfo: JoinConfByIdInfo, onJoinConfByIdResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-90 Input parameter description

Parameter	Mandatory	Type	Description
joinConfByIdInfo	Yes	JoinConfByIdInfo	Information about joining a meeting using an ID.
onJoinConfByIdResult	Yes	(ret: SDKERR, reason: string) => void	Callback for joining the meeting using the meeting ID.

Table 9-91 JoinConfByIdInfo

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.
password	No	string	Meeting password. If you want to join a meeting as a host, you must enter the host password. If you want to join a meeting as a guest, enter the guest password or leave the password empty as required.
nickName	No	string	Display name in the meeting. If you have logged in, this parameter can be left blank. In such a case, the login username is used as the display name in the meeting. If you join the meeting anonymously, specify this parameter.
isSpeakerOff	No	boolean	Whether to disable the speaker. The options are true (yes) and false (no).
isMicOn	No	boolean	Whether to enable the microphone. The options are true (yes) and false (no).
isCameraOn	No	boolean	Whether to enable the camera. The options are true (yes) and false (no).

Parameter	Mandatory	Type	Description
isStopConflictConf	No	boolean	Forcibly end a meeting that conflicts with the current cloud meeting room. (Only the owner of the cloud meeting room resource has the permission.)

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-92 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.3.11 Joining a Meeting Using a Random Code

Function

The meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/981924330/e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659>) in the notification email contains the meeting ID (981924330) and random code (e11ddec62ee760734fcf2ba55b79937eac2aa68677caf659). You can call this API to join the meeting.

Function Prototype

```
joinConfByRandom(joinConfByRandomInfo: JoinConfByRandomInfo,  
onJoinConfByRandomResult?: (ret: SDKERR, reason: string) => void):  
void  
void joinConfByRandom(joinConfByRandomInfo: JoinConfByRandomInfo,  
onJoinConfByRandomResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-93 Input parameter description

Parameter	Mandatory	Type	Description
joinConfByRandomInfo	Yes	JoinConfByRandomInfo	Information about joining a meeting using a random code.
onJoinConfByRandomResult	Yes	(ret: SDKERR, reason: string) => void	Callback of joining the meeting using the random code.

Table 9-94 JoinConfByRandomInfo

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.
random	No	string	Mapping value of a 48-digit meeting password. The value comes from the end of the meeting link in the shared meeting details. If a meeting does not require a guest password, this parameter can be left blank.
nickName	No	string	Display name in the meeting. If you have logged in, this parameter can be left blank. In such a case, the login username is used as the display name in the meeting. If you join the meeting anonymously, specify this parameter.
domain	No	string	Domain name.
isSpeakerOff	No	boolean	Whether to disable the speaker. The options are true (yes) and false (no).
isMicOn	No	boolean	Whether to enable the microphone. The options are true (yes) and false (no).
isCameraOn	No	boolean	Whether to enable the camera. The options are true (yes) and false (no).

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-95 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.3.12 Adding Participants

Function

This API is used to add participants to a meeting or call. 1. If you are not in the meeting or call, calling this API will fail. 2. If you call this API during a call, the call is converted to a meeting.

Function Prototype

```
addAttendee(addAttendeeInfo: AddAttendeeInfo, onAddAttendeeResult?: (ret: SDKERR, reason: string) => void): void
addAttendee(addAttendeeInfo: AddAttendeeInfo, onAddAttendeeResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-96 Input parameter description

Parameter	Mandatory	Type	Description
addAttendeeInfo	Yes	AddAttendeeInfo	Information about participants to be added.
onAddAttendeeResult	Yes	(ret: SDKERR, reason: string) => void	Callback of adding participants.

Table 9-97 AddAttendeeInfo

Parameter	Mandatory	Type	Description
attendeeSize	Yes	number	Number of participants to be added.
attendees	Yes	AttendeeBaseInfo	List of participants to be added.

Table 9-98 AttendeeBaseInfo

Parameter	Mandatory	Type	Description
nickName	Yes	string	Participant name.
number	Yes	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	No	string	Huawei Cloud Meeting account.
email	No	string	Email address used for receiving email notifications.
sms	No	string	Mobile number used for receiving SMS notifications.
isAutoInvite	No	boolean	Whether to automatically invite participants.
isMute	No	boolean	Whether to mute the microphone.

Parameter	Mandatory	Type	Description
role	No	ConfRole	Participant role in the meeting.
type	No	AttendeeType	Participant type.
userId	No	string	Participant UUID.

Table 9-99 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-100 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-101 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.3.13 Leaving a Meeting

Function

This API is used to leave a meeting. 1. Call this API only when you are in a meeting. 2. Calling this API will not end the meeting. You can join the meeting again when the meeting exists.

Function Prototype

```
leaveConf(onLeaveConfResult?: (ret: SDKERR, reason: string) => void): void  
voidleaveConf(onLeaveConfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-102 Input parameter description

Parameter	Mandatory	Type	Description
onLeaveConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of leaving a meeting.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-103 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.3.14 Ending a Meeting

Function

This API is used to end a meeting. 1. Call this API only when you are in a meeting. 2. Calling this API will end the meeting. No one can join the meeting again.

Function Prototype

```
endConf(onEndConfResult?: (ret: SDKERR, reason: string) => void): void
voidendConf(onEndConfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-104 Input parameter description

Parameter	Mandatory	Type	Description
onEndConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of ending a meeting.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-105 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.3.15 Obtaining the Participant List

Function

This API is used to obtain the participant list in a meeting. Call this API only when you are in a meeting.

Function Prototype

```
getAttendeeList(onGetAttendeeListResult?: (ret: SDKERR, reason: string, attendeeList: AttendeeListInfo) => void): void
voidgetAttendeeList(onGetAttendeeListResult?: (ret: SDKERR, reason: string, attendeeList: AttendeeListInfo) => void): void
```


Request Parameters

Table 9-106 Input parameter description

Parameter	Mandatory	Type	Description
onGetAttendeeListResult	Yes	(ret: SDKERR, reason: string, attendeeList: AttendeeListInfo) => void	Callback of obtaining the participant list.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, attendeeList: AttendeeListInfo) => void

Table 9-107 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
attendeeList	AttendeeListInfo	Participant list.

Table 9-108 AttendeeListInfo

Parameter	Type	Description
numOfAttendee	number	Number of participants in the list.
attendees	AttendeeInfo	Basic participant information.

Table 9-109 AttendeeInfo

Parameter	Type	Description
baseInfo	AttendeeBaseInfo	Basic participant information.
isSelf	boolean	Whether you are the participant.

Parameter	Type	Description
state	ConfAttendeeState	Participant status.
isAnonymous	boolean	Whether the participant joins the meeting anonymously.
corpId	string	Enterprise ID, which is used to identify whether the participant belongs to the enterprise.

Table 9-110 AttendeeBaseInfo

Parameter	Type	Description
nickName	string	Participant name.
number	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	string	Huawei Cloud Meeting account.
email	string	Email address used for receiving email notifications.
sms	string	Mobile number used for receiving SMS notifications.
isAutoInvite	boolean	Whether to automatically invite participants.
isMute	boolean	Whether to mute the microphone.
role	ConfRole	Participant role in the meeting.
type	AttendeeType	Participant type.

Parameter	Type	Description
userId	string	Participant UUID.

Table 9-111 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-112 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-113 Enumerated values of ConfAttendeeState

Enumeration Name	Enumerated Value	Description
CONF_ATTENDEE_STATE_IN_CONF	0	The participant is in the meeting.
CONF_ATTENDEE_STATE_CALLING	1	The participant is being called.
CONF_ATTENDEE_STATE_JOINING	2	The participant is joining the meeting.
CONF_ATTENDEE_STATE_LEAVED	3	The participant has left the meeting.
CONF_ATTENDEE_STATE_NO_EXIST	4	The user does not exist.
CONF_ATTENDEE_STATE_BUSY	5	The called user is busy.
CONF_ATTENDEE_STATE_NO_ANSWER	6	The called user does not answer the call.
CONF_ATTENDEE_STATE_REJECT	7	The called user rejects the call.
CONF_ATTENDEE_STATE_CALL_FAILED	8	Call failed.

9.4.3.16 Obtaining the Attendee List

Function

This API is used to obtain the attendee list in a meeting. 1. Call this API only when you are in a meeting. 2. Attendees cannot call this API. You can obtain the attendee role information from the meeting details notification.

Function Prototype

```
getAudienceList(onGetAudienceListResult?: (ret: SDKERR, reason: string,
audienceList: AttendeeListInfo) => void):
voidgetAudienceList(onGetAudienceListResult?: (ret: SDKERR, reason: string,
audienceList: AttendeeListInfo) => void): void
```

Request Parameters

Table 9-114 Input parameter description

Parameter	Mandatory	Type	Description
onGetAudienceListResult	Yes	(ret: SDKERR, reason: string, audienceList: AttendeeListInfo) => void	Callback of obtaining the attendee list.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, audienceList: AttendeeListInfo) => void

Table 9-115 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
audienceList	AttendeeListInfo	Attendee list.

Table 9-116 AttendeeListInfo

Parameter	Type	Description
numOfAttendee	number	Number of participants in the list.
attendees	AttendeeInfo	Basic participant information.

Table 9-117 AttendeeInfo

Parameter	Type	Description
baseInfo	AttendeeBaseInfo	Basic participant information.
isSelf	boolean	Whether you are the participant.
state	ConfAttendeeState	Participant status.
isAnonymous	boolean	Whether the participant joins the meeting anonymously.
corpId	string	Enterprise ID, which is used to identify whether the participant belongs to the enterprise.

Table 9-118 AttendeeBaseInfo

Parameter	Type	Description
nickName	string	Participant name.
number	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	string	Huawei Cloud Meeting account.
email	string	Email address used for receiving email notifications.
sms	string	Mobile number used for receiving SMS notifications.
isAutoInvite	boolean	Whether to automatically invite participants.
isMute	boolean	Whether to mute the microphone.

Parameter	Type	Description
role	ConfRole	Participant role in the meeting.
type	AttendeeType	Participant type.
userUuid	string	Participant UUID.

Table 9-119 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-120 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.
ATTENDEE_TYPE_TELEPHONE	7	Phone user.

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-121 Enumerated values of ConfAttendeeState

Enumeration Name	Enumerated Value	Description
CONF_ATTENDEE_STATE_IN_CONF	0	The participant is in the meeting.
CONF_ATTENDEE_STATE_CALLING	1	The participant is being called.
CONF_ATTENDEE_STATE_JOINING	2	The participant is joining the meeting.
CONF_ATTENDEE_STATE_LEAVED	3	The participant has left the meeting.
CONF_ATTENDEE_STATE_NO_EXIST	4	The user does not exist.
CONF_ATTENDEE_STATE_BUSY	5	The called user is busy.
CONF_ATTENDEE_STATE_NO_ANSWER	6	The called user does not answer the call.
CONF_ATTENDEE_STATE_REJECT	7	The called user rejects the call.
CONF_ATTENDEE_STATE_CALL_FAILED	8	Call failed.

9.4.3.17 Obtaining a User Status

Function

This API is used to obtain the status of a user (whether the user is being called or in the meeting).

Function Prototype

```
getUserState(onGetUserStateResult?: (ret: SDKERR, reason: string, userState:
UserState) => void): void
getUserState(onGetUserStateResult?: (ret: SDKERR, reason: string, userState: UserState) => void): void
```

Request Parameters

Table 9-122 Input parameter description

Parameter	Mandatory	Type	Description
onGetUserStateResult	Yes	(ret: SDKERR, reason: string, userState: UserState) => void	Callback of obtaining the user status.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, userState: UserState) => void

Table 9-123 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
userState	UserState	User status, which is used to determine whether the user is busy.

Table 9-124 Enumerated values of UserState

Enumeration Name	Enumerated Value	Description
HWM_STATE_IDLE	0	Idle.
HWM_STATE_IN_CONF	1	In a meeting.
HWM_STATE_IN_CALL	2	In a call.

9.4.3.18 Obtaining Your Role in a Meeting

Function

This API is used to obtain your role in a meeting (valid only for the macOS platform).

Function Prototype

```
getSelfRole(onGetSelfRoleResult?: (ret: SDKERR, reason: string, selfRole: ConfRole) => void): void
getSelfRole(onGetSelfRoleResult?: (ret: SDKERR, reason: string, selfRole: ConfRole) => void): void
```

Request Parameters

Table 9-125 Input parameter description

Parameter	Mandatory	Type	Description
onGetSelfRoleResult	Yes	(ret: SDKERR, reason: string, selfRole: ConfRole) => void	Callback for obtaining the role in the meeting.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, selfRole: ConfRole) => void

Table 9-126 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
selfRole	ConfRole	Role in the meeting.

Table 9-127 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

9.4.3.19 Setting the Participant Name

Function

This API is used to set the participant name.

Function Prototype

```
renameSelf(renameSelfInfo: RenameSelfInfo, onRenameSelfResult?: (ret: SDKERR, reason: string) => void): void
renameSelf(renameSelfInfo: RenameSelfInfo, onRenameSelfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-128 Input parameter description

Parameter	Mandatory	Type	Description
renameSelfInfo	Yes	RenameSelfInfo	Participant name information.

Parameter	Mandatory	Type	Description
onRenameSelf Result	Yes	(ret: SDKERR, reason: string) => void	Callback of configuring the participant name.

Table 9-129 RenameSelfInfo

Parameter	Mandatory	Type	Description
nickName	Yes	string	Participant name.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-130 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.4 Meeting Management Objects

Meeting management objects

9.4.4.1 Subscribing to Incoming Call Notifications

Function

A notification is sent when you received an incoming meeting call.

Function Prototype

```
setOnConflncomingNotifyCB(onConflncomingNotify: (conflncomingInfo:  
ConflncomingInfo) => void):  
voidsetOnConflncomingNotifyCB(onConflncomingNotify: (conflncomingInfo:  
ConflncomingInfo) => void): void
```

Request Parameters

Table 9-131 Input parameter description

Parameter	Mandatory	Type	Description
onConflncomingNotify	Yes	(conflncomingInfo: ConflncomingInfo) => void	Notifies you of an incoming meeting call.

Return Values

void

Notification Method Parameters

(conflncomingInfo: ConflncomingInfo) => void

Table 9-132 Input parameter description

Parameter	Type	Description
conflncomingInfo	ConflncomingInfo	Incoming call information.

Table 9-133 ConflncomingInfo

Parameter	Type	Description
state	ConfComingState	Incoming call status.
mediaType	MediaType	Meeting media type.
confId	string	Meeting ID.
vmrConfId	string	ID of meetings held in a cloud meeting room.

Table 9-134 Enumerated values of ConfComingState

Enumeration Name	Enumerated Value	Description
HWM_CONF_COMING_STATE_START	1	Initial state. The phone of the called participant is ringing.

Enumeration Name	Enumerated Value	Description
HWM_CONF_COMING_STATE_ACCEPT	2	The call was answered.
HWM_CONF_COMING_STATE_REJECT	3	The call was rejected.
HWM_CONF_COMING_STATE_TIMEOUT	4	The called party did not respond, the call timed out, or the caller hung up the call.

Table 9-135 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

9.4.4.2 Subscribing to Meeting List Notifications

Function

A notification is sent when the meeting list changed.

Function Prototype

```
setOnConfListChangedCB(onConfListChanged: (confListInfo: ConfListInfo) => void): void
setOnConfListChangedCB(onConfListChanged: (confListInfo: ConfListInfo) => void): void
```

Request Parameters

Table 9-136 Input parameter description

Parameter	Mandatory	Type	Description
onConfListChanged	Yes	(confListInfo: ConfListInfo) => void	Notifies you when the meeting list changed.

Return Values

void

Notification Method Parameters

(confListInfo: ConfListInfo) => void

Table 9-137 Input parameter description

Parameter	Type	Description
confListInfo	ConfListInfo	Meeting list.

Table 9-138 ConfListInfo

Parameter	Type	Description
confListSize	number	Number of meetings.
confListItem	ConfListItem	Meeting list parameters.

Table 9-139 ConfListItem

Parameter	Type	Description
confId	string	Meeting ID.
subject	string	Meeting topic.
hostPwd	string	Host password.
guestPwd	string	Guest password.
audiencePwd	string	Attendee password. (This parameter is valid only for the Windows platform.)
startTime	number	UTC time when the meeting starts, in seconds.
endTime	number	UTC time when the meeting ends, in seconds.
timezone	Timezone	Time zone code (valid only for the Windows platform).
mediaType	MediaType	Media type.
schedulerName	string	Name of the user who schedules the meeting.
vmrConfId	string	Display ID of the cloud meeting.

Parameter	Type	Description
hostJoinUri	string	Link for the host to join the meeting.
guestJoinUri	string	Link for guests to join the meeting.
audienceJoinUri	string	Link for attendees to join the meeting (valid only for the Windows platform).
confStateType	ConfState	Meeting status (valid only for the Windows platform).
isWebinar	boolean	Whether the meeting is a webinar or not (valid only for the Windows platform).
selfConfRole	ConfRole	Role in the meeting.
conferenceType	ConferenceType	Meeting type.
cycleParam	CycleConfParam	Recurring meeting series parameters.
subConfSize	number	Number of recurring meetings.
subConfParam	SubCycleConfParam	Recurring meeting parameters.
customInfo	string	User-defined information.

Table 9-140 Enumerated values of Timezone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_DEFAULT	0	Default MediaX time zone
HWM_TIMEZONE_INTERDATE_LINE	1	International Date Line West
HWM_TIMEZONE_MIDWAY_ISLAND	2	Midway Island, Samoa
HWM_TIMEZONE_HAWAII	3	Hawaii
HWM_TIMEZONE_ALASKA	4	Alaska
HWM_TIMEZONE_PACIFIC_TIME	5	Pacific Time (US & Canada), Tijuana
HWM_TIMEZONE_ARIZONA	6	Arizona
HWM_TIMEZONE_MOUNTAIN_TIME	7	Mountain Time (US & Canada)

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_CENTRAL_AMERICA	8	Central America
HWM_TIMEZONE_CENTRAL_TIME	9	Central Time (US & Canada)
HWM_TIMEZONE_MEXICO_CITY	10	Mexico City
HWM_TIMEZONE_SASKATCHEWAN	11	Saskatchewan
HWM_TIMEZONE_BOGOTA	12	Bogota, Lima, Quito
HWM_TIMEZONE_EASTERN_TIME	13	Eastern Time (US & Canada)
HWM_TIMEZONE_INDIANA	14	Indiana (East)
HWM_TIMEZONE_ATLANTIC_TIME	15	Atlantic Time (Canada)
HWM_TIMEZONE_CARACAS	16	Caracas, La Paz
HWM_TIMEZONE_SANTIAGO	17	Santiago
HWM_TIMEZONE_NEWFOUNDLAND	18	Newfoundland
HWM_TIMEZONE_BRASILIA	19	Brasilia
HWM_TIMEZONE_BUENOS_AIRES	20	Buenos Aires, Georgetown
HWM_TIMEZONE_GREENLAND	21	Greenland
HWM_TIMEZONE_MID_ATLANTIC	22	Mid-Atlantic
HWM_TIMEZONE_AZORES	23	Azores
HWM_TIMEZONE_CAPEVERDE	24	Cape Verde Is.
HWM_TIMEZONE_MONROVIA	25	Monrovia
HWM_TIMEZONE_GREENWICH_MEANTIME	26	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
HWM_TIMEZONE_AMSTERDAM	27	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
HWM_TIMEZONE_BELGRADE	28	Belgrade, Bratislava, Budapest, Ljubljana, Prague

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_BRUSSELS	29	Brussels, Copenhagen, Madrid, Paris
HWM_TIMEZONE_SARAJEVO	30	Sarajevo, Skopje, Vilnius, Sofia, Warsaw, Zagreb
HWM_TIMEZONE_WESTCENTRAL_AFRICA	31	West Central Africa
HWM_TIMEZONE_ATHENS	32	Athens, Istanbul, Minsk
HWM_TIMEZONE_BUCHAREST	33	Bucharest
HWM_TIMEZONE_CAIRO	34	Cairo
HWM_TIMEZONE_HARARE	35	Harare, Pretoria
HWM_TIMEZONE_HELSINKI	36	Helsinki, Riga, Tallinn
HWM_TIMEZONE_JERUSALEM	37	Jerusalem
HWM_TIMEZONE_BAGHDAD	38	Baghdad
HWM_TIMEZONE_KUWAIT	39	Kuwait, Riyadh
HWM_TIMEZONE_MOSCOW	40	Moscow, St. Petersburg, Kazan, Volgograd
HWM_TIMEZONE_NAIROBI	41	Nairobi
HWM_TIMEZONE_TEHRAN	42	Tehran
HWM_TIMEZONE_ABU_DHABI	43	Abu Dhabi, Muscat
HWM_TIMEZONE_TBILISI	44	Tbilisi, Yerevan
HWM_TIMEZONE_KABUL	45	Kabul
HWM_TIMEZONE_EKATERINBURG	46	Ekaterinburg
HWM_TIMEZONE_ISLAMABAD	47	Islamabad, Karachi, Tashkent
HWM_TIMEZONE_CALCUTTA	48	Kolkata, Chennai, Mumbai, New Delhi
HWM_TIMEZONE_KATHMANDU	49	Kathmandu
HWM_TIMEZONE_ALMATY	50	Almaty
HWM_TIMEZONE_ASTANA	51	Astana, Dhaka
HWM_TIMEZONE_SRIJAYA	52	Sri Jayawardenepura

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_RANGOON	53	Yangon (Rangoon)
HWM_TIMEZONE_BANGKOK	54	Bangkok, Jakarta, Hanoi
HWM_TIMEZONE_NOVOSIBIRSK	55	Novosibirsk
HWM_TIMEZONE_BEIJING	56	Beijing, Chongqing, Hong Kong, Urumqi, Taipei
HWM_TIMEZONE_KRASNOYARSK	57	Krasnoyarsk, Ulaanbaatar
HWM_TIMEZONE_KUALALUMPUR	58	Kuala Lumpur, Singapore
HWM_TIMEZONE_PERTH	59	Perth
HWM_TIMEZONE_OSAKA	60	Tokyo, Osaka, Sapporo
HWM_TIMEZONE_SEOUL	61	Seoul
HWM_TIMEZONE_YAKUTSK	62	Yakutsk
HWM_TIMEZONE_ADELAIDE	63	Adelaide
HWM_TIMEZONE_DARWIN	64	Darwin
HWM_TIMEZONE_BRISBANE	65	Brisbane
HWM_TIMEZONE_CANBERRA	66	Canberra, Melbourne, Sydney
HWM_TIMEZONE_GUAM	67	Guam, Port Moresby
HWM_TIMEZONE_HOBART	68	Hobart
HWM_TIMEZONE_VLADIVOSTOK	69	Vladivostok
HWM_TIMEZONE_SOLOMON	70	Solomon Is., New Caledonia
HWM_TIMEZONE_AUCKLAND	71	Auckland, Wellington
HWM_TIMEZONE_FIJI	72	Fuji, Kamchatka, Marshall Is.
HWM_TIMEZONE_NUKUALOFA	73	Nuku'alofa
HWM_TIMEZONE_IRKUTSK	74	Irkutsk
HWM_TIMEZONE_CASABLANCA	75	Casablanca
HWM_TIMEZONE_BAKU	76	Baku

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_MAGADAN	77	Magadan

Table 9-141 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-142 Enumerated values of ConfState

Enumeration Name	Enumerated Value	Description
HWM_CONF_STATE_SCHEDULE	0	The meeting is scheduled.
HWM_CONF_STATE_CREATING	1	The meeting is being created.
HWM_CONF_STATE_GOING	2	The meeting has started.
HWM_CONF_STATE_DESTROYED	3	The meeting has ended.

Table 9-143 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-144 Enumerated values of ConferenceType

Enumeration Name	Enumerated Value	Description
HWM_CONF_TYPE_COMMON	0	Common meeting.
HWM_CONF_TYPE_CYCLE	1	Recurring meeting.

Table 9-145 CycleConfParam

Parameter	Type	Description
startDate	number	Start date and timestamp, in seconds (GMT).
endDate	number	End date and timestamp, in seconds (GMT).
cycleType	CycleType	Period type.
interval	number	Interval of recurring meetings. If cycleType is set to daily, there is a meeting every several days and the value range is [1,15]. If cycleType is set to weekly, there is a meeting every several weeks and the value range is [1,5]. If cycleType is set to monthly, there is a meeting every several months and the value range is [1,3].
listPoints	string	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 .
preRemindDays	number	Number of days in advance users are notified of a recurring meeting.

Table 9-146 Enumerated values of CycleType

Enumeration Name	Enumerated Value	Description
CYCLE_TYPE_DAY	0	Daily.
CYCLE_TYPE_WEEK	1	Weekly.
CYCLE_TYPE_MONTH	2	Monthly.

Table 9-147 SubCycleConfParam

Parameter	Type	Description
subConfID	string	UUID of a recurring meeting.
mediaType	MediaType	Media type.
startTime	number	Meeting start time.
endTime	number	Meeting end time.
isAutoRecord	boolean	Whether to automatically start recording after a meeting starts.
recordAuthType	RecordAuthType	Recording authentication mode.
confAllowJoinUser	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting.
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Table 9-148 Enumerated values of RecordAuthType

Enumeration Name	Enumerated Value	Description
REOCDR_AUTH_TYPE_ANYONE	0	The recording can be viewed or downloaded through link (no nonce is added).

Enumeration Name	Enumerated Value	Description
REOCDR_AUTH_TYPE_IN_COMPANY_USER	1	Corporate users can view or download the recording.
REOCDR_AUTH_TYPE_ATTENDEE	2	Participants can view or download the recording.

Table 9-149 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

9.4.4.3 Scheduling a Meeting

Function

This API is used to schedule a meeting. 1. Call this API only after login. 2. When calling this API, add yourself as the host to the participant list. 3. The callback function returns details about the scheduled meeting. For details, see the **HwmConfDetail** structure. If only a meeting ID is returned, meeting details fail to be obtained.

Function Prototype

```
bookConf(bookConfParam: BookConfParam, onBookConfResult?: (ret: SDKERR, reason: string, confDetail: ConfDetail) => void): void
bookConf(bookConfParam: BookConfParam, onBookConfResult?: (ret: SDKERR, reason: string, confDetail: ConfDetail) => void): void
```

Request Parameters

Table 9-150 Input parameter description

Parameter	Mandatory	Type	Description
bookConfParam	Yes	BookConfParam	Parameters for scheduling a meeting.
onBookConfResult	Yes	(ret: SDKERR, reason: string, confDetail: ConfDetail) => void	Callback of scheduling the meeting.

Table 9-151 BookConfParam

Parameter	Mandatory	Type	Description
startTime	Yes	number	UTC timestamp when the meeting starts, in seconds.
duration	Yes	number	Meeting duration, in minutes. The value ranges from 15 to 1,440.
confCommonParam	Yes	ConfCommonParam	Common meeting parameters.
isSendCalendar	No	boolean	Whether to send a calendar email.

Table 9-152 ConfCommonParam

Parameter	Mandatory	Type	Description
subject	Yes	string	Meeting topic.
mediaType	No	MediaType	Meeting type. By default, the meeting is an audio meeting.
needPassword	No	boolean	Whether a guest password is required. By default, the guest password is not required (valid only for meetings with a random ID).

Parameter	Mandatory	Type	Description
isAutoRecord	No	boolean	Whether to enable automatic meeting recording. By default, this function is disabled. If automatic meeting recording is enabled, the meeting will be recorded by default, regardless of whether recording is enabled or disabled in the meeting. This parameter is valid only for cloud recording, not for local recording on clients.
allowRecord	No	boolean	Whether meeting recording is supported. (This parameter is valid only for the Windows platform.) This parameter is valid only for cloud recording, not for local recording on clients.
allowLive	No	boolean	Reserved field. This parameter is transparently transmitted during meeting modification.
timezone	Yes	Timezone	Time zone code. This parameter is used for sending meeting notifications.
vmrId	No	string	Unique cloud meeting room ID. To schedule a meeting using concurrent participants, set this parameter to an empty string. When you modify a meeting, you cannot modify this parameter and need to enter the value returned in meeting details.
confAllowJoinUser	No	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
isSendSms	No	boolean	Whether to send an SMS notification. To use this function, enable it in the enterprise configuration first. Otherwise, this parameter does not take effect.
isSendEmail	No	boolean	Whether to send an email notification.

Parameter	Mandatory	Type	Description
vmrConfIdType	No	VmrConfIdType	ID type of the cloud meeting room. When modifying a meeting, set this parameter to HWM_VMR_CONF_ID_TYPE_FIXED if vmrConfId in meeting details is not empty, or set it to HWM_VMR_CONF_ID_TYPE_RANDOM if vmrConfId in meeting details is empty.
guestPwd	No	string	Guest password. If this parameter is left empty, the server randomly generates a password. This parameter is valid only for meetings with a random ID.
isOpenWaitingRoom	No	boolean	Waiting room status. This parameter takes effect only when the waiting room function is enabled.
numOfAttendee	Yes	number	Number of participants.
attendees	Yes	AttendeeBaseInfo	Participant list.
allowGuestStartConf	No	boolean	Whether to allow guests to start the meeting.
allowGuestStartConfTime	No	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.
concurrentParticipants	Yes	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).
customInfo	No	string	User-defined information.
confResType	No	ConfResType	Meeting resource type.

Table 9-153 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-154 Enumerated values of Timezone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_DEFAULT	0	Default MediaX time zone
HWM_TIMEZONE_INTERDATE_LINE	1	International Date Line West
HWM_TIMEZONE_MIDWAY_ISLAND	2	Midway Island, Samoa
HWM_TIMEZONE_HAWAII	3	Hawaii
HWM_TIMEZONE_ALASKA	4	Alaska
HWM_TIMEZONE_PACIFIC_TIME	5	Pacific Time (US & Canada), Tijuana
HWM_TIMEZONE_ARIZONA	6	Arizona
HWM_TIMEZONE_MOUNTAIN_TIME	7	Mountain Time (US & Canada)
HWM_TIMEZONE_CENTRAL_AMERICA	8	Central America
HWM_TIMEZONE_CENTRAL_TIME	9	Central Time (US & Canada)
HWM_TIMEZONE_MEXICO_CITY	10	Mexico City
HWM_TIMEZONE_SASKATCHEWAN	11	Saskatchewan
HWM_TIMEZONE_BOGOTA	12	Bogota, Lima, Quito
HWM_TIMEZONE_EASTERN_TIME	13	Eastern Time (US & Canada)
HWM_TIMEZONE_INDIANA	14	Indiana (East)

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_ATLANTIC_TIME	15	Atlantic Time (Canada)
HWM_TIMEZONE_CARACAS	16	Caracas, La Paz
HWM_TIMEZONE_SANTIAGO	17	Santiago
HWM_TIMEZONE_NEWFOUNDLAND	18	Newfoundland
HWM_TIMEZONE_BRASILIA	19	Brasilia
HWM_TIMEZONE_BUENOSAIRES	20	Buenos Aires, Georgetown
HWM_TIMEZONE_GREENLAND	21	Greenland
HWM_TIMEZONE_MIDATLANTIC	22	Mid-Atlantic
HWM_TIMEZONE_AZORES	23	Azores
HWM_TIMEZONE_CAPEVERDE	24	Cape Verde Is.
HWM_TIMEZONE_MONROVIA	25	Monrovia
HWM_TIMEZONE_GREENWICH_MEANTIME	26	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
HWM_TIMEZONE_AMSTERDAM	27	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
HWM_TIMEZONE_BELGRADE	28	Belgrade, Bratislava, Budapest, Ljubljana, Prague
HWM_TIMEZONE_BRUSSELS	29	Brussels, Copenhagen, Madrid, Paris
HWM_TIMEZONE_SARAJEVO	30	Sarajevo, Skopje, Vilnius, Sofia, Warsaw, Zagreb
HWM_TIMEZONE_WESTCENTRAL_AFRICA	31	West Central Africa
HWM_TIMEZONE_ATHENS	32	Athens, Istanbul, Minsk
HWM_TIMEZONE_BUCHAREST	33	Bucharest
HWM_TIMEZONE_CAIRO	34	Cairo
HWM_TIMEZONE_HARARE	35	Harare, Pretoria
HWM_TIMEZONE_HELSINKI	36	Helsinki, Riga, Tallinn

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_JERUSALEM	37	Jerusalem
HWM_TIMEZONE_BAGHDAD	38	Baghdad
HWM_TIMEZONE_KUWAIT	39	Kuwait, Riyadh
HWM_TIMEZONE_MOSCOW	40	Moscow, St. Petersburg, Kazan, Volgograd
HWM_TIMEZONE_NAIROBI	41	Nairobi
HWM_TIMEZONE_TEHRAN	42	Tehran
HWM_TIMEZONE_ABU_DHABI	43	Abu Dhabi, Muscat
HWM_TIMEZONE_TBILISI	44	Tbilisi, Yerevan
HWM_TIMEZONE_KABUL	45	Kabul
HWM_TIMEZONE_EKATERINBURG	46	Ekaterinburg
HWM_TIMEZONE_ISLAMABAD	47	Islamabad, Karachi, Tashkent
HWM_TIMEZONE_CALCUTTA	48	Kolkata, Chennai, Mumbai, New Delhi
HWM_TIMEZONE_KATHMANDU	49	Kathmandu
HWM_TIMEZONE_ALMATY	50	Almaty
HWM_TIMEZONE_ASTANA	51	Astana, Dhaka
HWM_TIMEZONE_SRIJAYA	52	Sri Jayawardenepura
HWM_TIMEZONE_RANGOON	53	Yangon (Rangoon)
HWM_TIMEZONE_BANGKOK	54	Bangkok, Jakarta, Hanoi
HWM_TIMEZONE_NOVOSIBIRSK	55	Novosibirsk
HWM_TIMEZONE_BEIJING	56	Beijing, Chongqing, Hong Kong, Urumqi, Taipei
HWM_TIMEZONE_KRASNOYARSK	57	Krasnoyarsk, Ulaanbaatar
HWM_TIMEZONE_KUALALUMPUR	58	Kuala Lumpur, Singapore
HWM_TIMEZONE PERTH	59	Perth

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_OSAKA	60	Tokyo, Osaka, Sapporo
HWM_TIMEZONE_SEOUL	61	Seoul
HWM_TIMEZONE_YAKUTSK	62	Yakutsk
HWM_TIMEZONE_ADELAIDE	63	Adelaide
HWM_TIMEZONE_DARWIN	64	Darwin
HWM_TIMEZONE_BRISBANE	65	Brisbane
HWM_TIMEZONE_CANBERRA	66	Canberra, Melbourne, Sydney
HWM_TIMEZONE_GUAM	67	Guam, Port Moresby
HWM_TIMEZONE_HOBART	68	Hobart
HWM_TIMEZONE_VLADIVOSTOK	69	Vladivostok
HWM_TIMEZONE_SOLOMON	70	Solomon Is., New Caledonia
HWM_TIMEZONE_AUCKLAND	71	Auckland, Wellington
HWM_TIMEZONE_FIJI	72	Fuji, Kamchatka, Marshall Is.
HWM_TIMEZONE_NUKUALOFA	73	Nuku'alofa
HWM_TIMEZONE_IRKUTSK	74	Irkutsk
HWM_TIMEZONE_CASABLANCA	75	Casablanca
HWM_TIMEZONE_BAKU	76	Baku
HWM_TIMEZONE_MAGADAN	77	Magadan

Table 9-155 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Table 9-156 Enumerated values of VmrConfIdType

Enumeration Name	Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	0	Fixed ID of the cloud meeting room.
HWM_VMR_CONF_ID_TYPE_RANDOM	1	Random ID of the cloud meeting room.

Table 9-157 AttendeeBaseInfo

Parameter	Mandatory	Type	Description
nickName	Yes	string	Participant name.
number	Yes	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.

Parameter	Mandatory	Type	Description
thirdUserId	Yes	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	No	string	Huawei Cloud Meeting account.
email	No	string	Email address used for receiving email notifications.
sms	No	string	Mobile number used for receiving SMS notifications.
isAutoInvite	No	boolean	Whether participants are automatically invited.
isMute	No	boolean	Whether the microphone is muted.
role	No	ConfRole	Participant role in the meeting.
type	No	AttendeeType	Participant type.
userId	No	string	Participant UUID.

Table 9-158 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-159 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-160 Enumerated values of ConfResType

Enumeration Name	Enumerated Value	Description
HWM_CONF_RESTYPE_DEFAULT	0	Default.
HWM_CONF_RESTYPE_SHARE_VMR	3	Shared cloud meeting room.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, confDetail: ConfDetail) => void

Table 9-161 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
confDetail	ConfDetail	Meeting details.

Table 9-162 ConfDetail

Parameter	Type	Description
confListInfo	ConfListItem	Basic meeting details.
vmrId	string	Unique cloud meeting room ID.
vmrFlag	boolean	Whether the meeting is held in a cloud meeting room.
isAutoRecord	boolean	Whether automatic meeting recording is enabled.
allowRecord	boolean	Whether meeting recording is supported.
allowLive	boolean	Reserved field. This parameter is transparently transmitted during meeting modification.
needPassword	boolean	Whether a password is required.
isSendSms	boolean	Whether SMS notifications are sent.
isSendEmail	boolean	Whether email notifications are sent.
isSendCalendar	boolean	Whether calendar notifications are sent.
confAllowJoinUser	ConfAllowJoinUserType	Meeting access settings.
numOfAttendee	number	Number of participants.
attendees	AttendeeBaseInfo	Participant list.
isOpenWaitingRoom	boolean	Whether the waiting room is enabled.

Parameter	Type	Description
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting.
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.
vmrConfIdType	VmrConfIdType	ID type of the cloud meeting room.
concurrentParticipants	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).

Table 9-163 ConfListItem

Parameter	Type	Description
confId	string	Meeting ID.
subject	string	Meeting topic.
hostPwd	string	Host password.
guestPwd	string	Guest password.
audiencePwd	string	Attendee password. (This parameter is valid only for the Windows platform.)
startTime	number	UTC time when the meeting starts, in seconds.
endTime	number	UTC time when the meeting ends, in seconds.
timezone	Timezone	Time zone code (valid only for the Windows platform).
mediaType	MediaType	Media type.
schedulerName	string	Name of the user who schedules the meeting.
vmrConfId	string	Display ID of the cloud meeting.
hostJoinUri	string	Link for the host to join the meeting.
guestJoinUri	string	Link for guests to join the meeting.
audienceJoinUri	string	Link for attendees to join the meeting (valid only for the Windows platform).
confStateType	ConfState	Meeting status (valid only for the Windows platform).

Parameter	Type	Description
isWebinar	boolean	Whether the meeting is a webinar or not (valid only for the Windows platform).
selfConfRole	ConfRole	Role in the meeting.
conferenceType	ConferenceType	Meeting type.
cycleParam	CycleConfParam	Recurring meeting series parameters.
subConfSize	number	Number of recurring meetings.
subConfParam	SubCycleConfParam	Recurring meeting parameters.
customInfo	string	User-defined information.

Table 9-164 Enumerated values of ConfState

Enumeration Name	Enumerated Value	Description
HWM_CONF_STATE_SCHEDULE	0	The meeting is scheduled.
HWM_CONF_STATE_CREATING	1	The meeting is being created.
HWM_CONF_STATE_GOING	2	The meeting has started.
HWM_CONF_STATE_DESTROYED	3	The meeting has ended.

Table 9-165 Enumerated values of ConferenceType

Enumeration Name	Enumerated Value	Description
HWM_CONF_TYPE_COMMON	0	Common meeting.
HWM_CONF_TYPE_CYCLE	1	Recurring meeting.

Table 9-166 CycleConfParam

Parameter	Type	Description
startDate	number	Start date and timestamp, in seconds (GMT).
endDate	number	End date and timestamp, in seconds (GMT).
cycleType	CycleType	Period type.
interval	number	Interval of recurring meetings. If cycleType is set to daily, there is a meeting every several days and the value range is [1,15]. If cycleType is set to weekly, there is a meeting every several weeks and the value range is [1,5]. If cycleType is set to monthly, there is a meeting every several months and the value range is [1,3].
listPoints	string	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 .
preRemindDays	number	Number of days in advance users are notified of a recurring meeting.

Table 9-167 Enumerated values of CycleType

Enumeration Name	Enumerated Value	Description
CYCLE_TYPE_DAY	0	Daily.
CYCLE_TYPE_WEEK	1	Weekly.
CYCLE_TYPE_MONTH	2	Monthly.

Table 9-168 SubCycleConfParam

Parameter	Type	Description
subConfID	string	UUID of a recurring meeting.
mediaType	MediaType	Media type.
startTime	number	Meeting start time.

Parameter	Type	Description
endTime	number	Meeting end time.
isAutoRecord	boolean	Whether to automatically start recording after a meeting starts.
recordAuthType	RecordAuthType	Recording authentication mode.
confAllowJoinUser	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting.
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Table 9-169 Enumerated values of RecordAuthType

Enumeration Name	Enumerated Value	Description
REOCD_AUTH_TYPE_ANYONE	0	The recording can be viewed or downloaded through link (no nonce is added).
REOCD_AUTH_TYPE_IN_COMPANY_USER	1	Corporate users can view or download the recording.
REOCD_AUTH_TYPE_ATTENDEE	2	Participants can view or download the recording.

Table 9-170 AttendeeBaseInfo

Parameter	Type	Description
nickName	string	Participant name.

Parameter	Type	Description
number	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	string	Huawei Cloud Meeting account.
email	string	Email address used for receiving email notifications.
sms	string	Mobile number used for receiving SMS notifications.
isAutoInvite	boolean	Whether participants are automatically invited.
isMute	boolean	Whether the microphone is muted.
role	ConfRole	Participant role in the meeting.
type	AttendeeType	Participant type.
userId	string	Participant UUID.

9.4.4.4 Canceling a Meeting

Function

This API is used to cancel a scheduled meeting. 1. Call this API only after login. 2. Call this API to cancel a meeting that has not started. If the meeting has started, a failure message is returned.

Function Prototype

```
cancelConf(cancelConfParam: CancelConfParam, onCancelConfResult?: (ret: SDKERR, reason: string) => void): void  
cancelConf(cancelConfParam: CancelConfParam, onCancelConfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-171 Input parameter description

Parameter	Mandatory	Type	Description
cancelConfParam	Yes	CancelConfParam	Parameters for canceling a meeting.
onCancelConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of canceling the meeting.

Table 9-172 CancelConfParam

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.
isForceCancel	No	boolean	Whether to forcibly cancel the meeting. You can forcibly cancel an ongoing meeting. (This parameter is valid only for the Windows platform.)

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-173 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.4.5 Editing a Meeting

Function

This API is used to edit a scheduled meeting. 1. Call this API only after login. 2. Call this API to modify a meeting that has not started. If the meeting has started,

a failure message is returned. 3. All parameters are mandatory. Before modifying a meeting, query the meeting details. For the data that does not need to be changed, use the data returned after the meeting details are queried.

Function Prototype

```
editConf(editConfParam: EditConfParam, onEditConfResult?: (ret: SDKERR, reason: string) => void): void  
editConf(editConfParam: EditConfParam, onEditConfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-174 Input parameter description

Parameter	Mandatory	Type	Description
editConfParam	Yes	EditConfParam	Parameters for modifying a meeting.
onEditConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of modifying the meeting.

Table 9-175 EditConfParam

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.
startTime	Yes	number	Meeting start time. If the start time is not specified, the meeting starts immediately. The value is accurate to seconds (GMT).
duration	Yes	number	Meeting duration, in minutes.
confCommonParam	Yes	ConfCommonParam	Common meeting parameters.
isSendCalendar	No	boolean	Whether to send calendar notifications.

Table 9-176 ConfCommonParam

Parameter	Mandatory	Type	Description
subject	Yes	string	Meeting topic.
mediaType	No	MediaType	Meeting type. By default, the meeting is an audio meeting.

Parameter	Mandatory	Type	Description
needPassword	No	boolean	Whether a guest password is required. By default, the guest password is not required (valid only for meetings with a random ID).
isAutoRecord	No	boolean	Whether to enable automatic meeting recording. By default, this function is disabled. If automatic meeting recording is enabled, the meeting will be recorded by default, regardless of whether recording is enabled or disabled in the meeting. This parameter is valid only for cloud recording, not for local recording on clients.
allowRecord	No	boolean	Whether meeting recording is supported. (This parameter is valid only for the Windows platform.) This parameter is valid only for cloud recording, not for local recording on clients.
allowLive	No	boolean	Reserved field. This parameter is transparently transmitted during meeting modification.
timezone	Yes	Timezone	Time zone code. This parameter is used for sending meeting notifications.
vmrId	No	string	Unique cloud meeting room ID. To schedule a meeting using concurrent participants, set this parameter to an empty string. When you modify a meeting, you cannot modify this parameter and need to enter the value returned in meeting details.
confAllowJoin User	No	ConfAllowJoin UserType	Users who are allowed to join the meeting. By default, everyone is allowed.

Parameter	Mandatory	Type	Description
isSendSms	No	boolean	Whether to send an SMS notification. To use this function, enable it in the enterprise configuration first. Otherwise, this parameter does not take effect.
isSendEmail	No	boolean	Whether to send an email notification.
vmrConfIdType	No	VmrConfIdType	ID type of the cloud meeting room. When modifying a meeting, set this parameter to HWM_VMR_CONF_ID_TYPE_FIXED if vmrConfId in meeting details is not empty, or set it to HWM_VMR_CONF_ID_TYPE_RANDOM if vmrConfId in meeting details is empty.
guestPwd	No	string	Guest password. If this parameter is left empty, the server randomly generates a password. This parameter is valid only for meetings with a random ID.
isOpenWaitingRoom	No	boolean	Waiting room status. This parameter takes effect only when the waiting room function is enabled.
numOfAttendee	Yes	number	Number of participants.
attendees	Yes	AttendeeBaseInfo	Participant list.
allowGuestStartConf	No	boolean	Whether to allow guests to start the meeting.
allowGuestStartConfTime	No	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Parameter	Mandatory	Type	Description
concurrentParticipants	Yes	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).
customInfo	No	string	User-defined information.
confResType	No	ConfResType	Meeting resource type.

Table 9-177 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-178 Enumerated values of Timezone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_DEFAULT	0	Default MediaX time zone
HWM_TIMEZONE_INTERDATE_LINE	1	International Date Line West
HWM_TIMEZONE_MIDWAY_ISLAND	2	Midway Island, Samoa
HWM_TIMEZONE_HAWAII	3	Hawaii
HWM_TIMEZONE_ALASKA	4	Alaska
HWM_TIMEZONE_PACIFIC_TIME	5	Pacific Time (US & Canada), Tijuana
HWM_TIMEZONE_ARIZONA	6	Arizona
HWM_TIMEZONE_MOUNTAIN_TIME	7	Mountain Time (US & Canada)
HWM_TIMEZONE_CENTRAL_AMERICA	8	Central America

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_CENTRAL_TIME	9	Central Time (US & Canada)
HWM_TIMEZONE_MEXICO_CITY	10	Mexico City
HWM_TIMEZONE_SASKATCHEWAN	11	Saskatchewan
HWM_TIMEZONE_BOGOTA	12	Bogota, Lima, Quito
HWM_TIMEZONE_EASTERN_TIME	13	Eastern Time (US & Canada)
HWM_TIMEZONE_INDIANA	14	Indiana (East)
HWM_TIMEZONE_ATLANTIC_TIME	15	Atlantic Time (Canada)
HWM_TIMEZONE_CARACAS	16	Caracas, La Paz
HWM_TIMEZONE_SANTIAGO	17	Santiago
HWM_TIMEZONE_NEWFOUNDLAND	18	Newfoundland
HWM_TIMEZONE_BRASILIA	19	Brasilia
HWM_TIMEZONE_BUENOS_AIRES	20	Buenos Aires, Georgetown
HWM_TIMEZONE_GREENLAND	21	Greenland
HWM_TIMEZONE_MID_ATLANTIC	22	Mid-Atlantic
HWM_TIMEZONE_AZORES	23	Azores
HWM_TIMEZONE_CAPEVERDE	24	Cape Verde Is.
HWM_TIMEZONE_MONROVIA	25	Monrovia
HWM_TIMEZONE_GREENWICH_MEANTIME	26	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
HWM_TIMEZONE_AMSTERDAM	27	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
HWM_TIMEZONE_BELGRADE	28	Belgrade, Bratislava, Budapest, Ljubljana, Prague
HWM_TIMEZONE_BRUSSELS	29	Brussels, Copenhagen, Madrid, Paris

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_SARAJEVO	30	Sarajevo, Skopje, Vilnius, Sofia, Warsaw, Zagreb
HWM_TIMEZONE_WESTCENTRAL_AFRICA	31	West Central Africa
HWM_TIMEZONE_ATHENS	32	Athens, Istanbul, Minsk
HWM_TIMEZONE_BUCHAREST	33	Bucharest
HWM_TIMEZONE_CAIRO	34	Cairo
HWM_TIMEZONE_HARARE	35	Harare, Pretoria
HWM_TIMEZONE_HELSINKI	36	Helsinki, Riga, Tallinn
HWM_TIMEZONE_JERUSALEM	37	Jerusalem
HWM_TIMEZONE_BAGHDAD	38	Baghdad
HWM_TIMEZONE_KUWAIT	39	Kuwait, Riyadh
HWM_TIMEZONE_MOSCOW	40	Moscow, St. Petersburg, Kazan, Volgograd
HWM_TIMEZONE_NAIROBI	41	Nairobi
HWM_TIMEZONE_TEHRAN	42	Tehran
HWM_TIMEZONE_ABU_DHABI	43	Abu Dhabi, Muscat
HWM_TIMEZONE_TBILISI	44	Tbilisi, Yerevan
HWM_TIMEZONE_KABUL	45	Kabul
HWM_TIMEZONE_EKATERINBURG	46	Ekaterinburg
HWM_TIMEZONE_ISLAMABAD	47	Islamabad, Karachi, Tashkent
HWM_TIMEZONE_CALCUTTA	48	Kolkata, Chennai, Mumbai, New Delhi
HWM_TIMEZONE_KATHMANDU	49	Kathmandu
HWM_TIMEZONE_ALMATY	50	Almaty
HWM_TIMEZONE_ASTANA	51	Astana, Dhaka
HWM_TIMEZONE_SRIJAYA	52	Sri Jayawardenepura
HWM_TIMEZONE_RANGOON	53	Yangon (Rangoon)

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_BANGKOK	54	Bangkok, Jakarta, Hanoi
HWM_TIMEZONE_NOVOSIBIRSK	55	Novosibirsk
HWM_TIMEZONE_BEIJING	56	Beijing, Chongqing, Hong Kong, Urumqi, Taipei
HWM_TIMEZONE_KRASNOYARSK	57	Krasnoyarsk, Ulaanbaatar
HWM_TIMEZONE_KUALALUMPUR	58	Kuala Lumpur, Singapore
HWM_TIMEZONE_PERTH	59	Perth
HWM_TIMEZONE_OSAKA	60	Tokyo, Osaka, Sapporo
HWM_TIMEZONE_SEOUL	61	Seoul
HWM_TIMEZONE_YAKUTSK	62	Yakutsk
HWM_TIMEZONE_ADELAIDE	63	Adelaide
HWM_TIMEZONE_DARWIN	64	Darwin
HWM_TIMEZONE_BRISBANE	65	Brisbane
HWM_TIMEZONE_CANBERRA	66	Canberra, Melbourne, Sydney
HWM_TIMEZONE_GUAM	67	Guam, Port Moresby
HWM_TIMEZONE_HOBART	68	Hobart
HWM_TIMEZONE_VLADIVOSTOK	69	Vladivostok
HWM_TIMEZONE_SOLOMON	70	Solomon Is., New Caledonia
HWM_TIMEZONE_AUCKLAND	71	Auckland, Wellington
HWM_TIMEZONE_FIJI	72	Fuji, Kamchatka, Marshall Is.
HWM_TIMEZONE_NUKUALOFA	73	Nuku'alofa
HWM_TIMEZONE_IRKUTSK	74	Irkutsk
HWM_TIMEZONE_CASABLANCA	75	Casablanca
HWM_TIMEZONE_BAKU	76	Baku
HWM_TIMEZONE_MAGADAN	77	Magadan

Table 9-179 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Table 9-180 Enumerated values of VmrConfIdType

Enumeration Name	Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	0	Fixed ID of the cloud meeting room.
HWM_VMR_CONF_ID_TYPE_RANDOM	1	Random ID of the cloud meeting room.

Table 9-181 AttendeeBaseInfo

Parameter	Mandatory	Type	Description
nickName	Yes	string	Participant name.

Parameter	Mandatory	Type	Description
number	Yes	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	No	string	Huawei Cloud Meeting account.
email	No	string	Email address used for receiving email notifications.
sms	No	string	Mobile number used for receiving SMS notifications.
isAutoInvite	No	boolean	Whether to automatically invite participants.
isMute	No	boolean	Whether to mute the microphone.
role	No	ConfRole	Participant role in the meeting.
type	No	AttendeeType	Participant type.
userUuid	No	string	Participant UUID.

Table 9-182 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-183 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-184 Enumerated values of ConfResType

Enumeration Name	Enumerated Value	Description
HWM_CONF_RESTYPE_DEFAULT	0	Default.
HWM_CONF_RESTYPE_SHARE_VMR	3	Shared cloud meeting room.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-185 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.4.6 Obtaining the Cloud Meeting Room List

Function

This API is used to obtain the cloud meeting room list. Call this API only after login.

Function Prototype

```
getVmrList(onGetVmrListResult?: (ret: SDKERR, reason: string, vmrListInfo: VmrListInfo) => void): void
getVmrList(onGetVmrListResult?: (ret: SDKERR, reason: string, vmrListInfo: VmrListInfo) => void): void
```

Request Parameters

Table 9-186 Input parameter description

Parameter	Mandatory	Type	Description
onGetVmrListResult	Yes	(ret: SDKERR, reason: string, vmrListInfo: VmrListInfo) => void	Cloud meeting room list notification, which is returned upon the request for obtaining the cloud meeting room list.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, vmrListInfo: VmrListInfo) => void

Table 9-187 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
vmrListInfo	VmrListInfo	Cloud meeting room list.

Table 9-188 VmrListInfo

Parameter	Type	Description
numOfVmrs	number	Number of cloud meeting rooms.
vmrs	VmrInfo	Cloud meeting room information.
isEnabledShareVmr	boolean	Whether shared cloud meeting rooms are available.

Table 9-189 VmrlInfo

Parameter	Type	Description
vmrConfId	string	Fixed meeting ID of the cloud meeting room.
vmrId	string	Unique cloud meeting room ID.
hostPwd	string	Host password of the cloud meeting room.
guestPwd	string	Guest password of the cloud meeting room.
vmrType	VmrlIdType	Cloud meeting room type.
maxParties	number	Maximum number of participants in the cloud meeting room.
isEnabled	boolean	Whether the cloud meeting room is available.
name	string	Cloud meeting room name.
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting.
confAllowJoinUser	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
isOpenWaitingRoom	boolean	Waiting room status. This parameter takes effect only when the waiting room function is enabled.

Table 9-190 Enumerated values of VmrlIdType

Enumeration Name	Enumerated Value	Description
RANDOM_MEETING_ID	0	Random meeting ID.
PERSONAL_MEETING_ID	1	Personal meeting ID.
CLOUD_MEETING_ROOM_ID	2	Cloud meeting room ID.

Table 9-191 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

9.4.4.7 Obtaining Meeting Details

Function

This API is used to obtain meeting details. Call this API only after login.

Function Prototype

```
getConfDetail(getConfDetailParam: GetConfDetailParam, onGetConfDetailResult?:
(ret: SDKERR, reason: string, confDetail: ConfDetail) => void):
void
getConfDetail(getConfDetailParam: GetConfDetailParam,
onGetConfDetailResult?: (ret: SDKERR, reason: string, confDetail: ConfDetail) =>
void): void
```

Request Parameters

Table 9-192 Input parameter description

Parameter	Mandatory	Type	Description
getConfDetailParam	Yes	GetConfDetailParam	Parameters for obtaining meeting details.
onGetConfDetailResult	Yes	(ret: SDKERR, reason: string, confDetail: ConfDetail) => void	Meeting details notification, which is returned upon the request for obtaining meeting details.

Table 9-193 GetConfDetailParam

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, confDetail: ConfDetail) => void

Table 9-194 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
confDetail	ConfDetail	Meeting details.

Table 9-195 ConfDetail

Parameter	Type	Description
confListInfo	ConfListItem	Basic meeting details.
vmrId	string	Unique cloud meeting room ID.
vmrFlag	boolean	Whether the meeting is held in a cloud meeting room.
isAutoRecord	boolean	Whether automatic meeting recording is enabled.
allowRecord	boolean	Whether meeting recording is supported.
allowLive	boolean	Reserved field. This parameter is transparently transmitted during meeting modification.
needPassword	boolean	Whether a password is required.
isSendSms	boolean	Whether SMS notifications are sent.
isSendEmail	boolean	Whether email notifications are sent.

Parameter	Type	Description
isSendCalendar	boolean	Whether calendar notifications are sent.
confAllowJoinUser	ConfAllowJoinUserType	Meeting access settings.
numOfAttendee	number	Number of participants.
attendees	AttendeeBaseInfo	Participant list.
isOpenWaitingRoom	boolean	Whether the waiting room is enabled.
allowGuestStartConf	boolean	Whether to allow guests to start the meeting.
allowGuestStartConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.
vmrConfIdType	VmrConfIdType	ID type of the cloud meeting room.
concurrentParticipants	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).

Table 9-196 ConfListItem

Parameter	Type	Description
confId	string	Meeting ID.
subject	string	Meeting topic.
hostPwd	string	Host password.
guestPwd	string	Guest password.
audiencePwd	string	Attendee password. (This parameter is valid only for the Windows platform.)
startTime	number	UTC time when the meeting starts, in seconds.
endTime	number	UTC time when the meeting ends, in seconds.
timezone	Timezone	Time zone code (valid only for the Windows platform).
mediaType	MediaType	Media type.

Parameter	Type	Description
schedulerName	string	Name of the user who schedules the meeting.
vmrConfId	string	Display ID of the cloud meeting.
hostJoinUri	string	Link for the host to join the meeting.
guestJoinUri	string	Link for guests to join the meeting.
audienceJoinUri	string	Link for attendees to join the meeting (valid only for the Windows platform).
confStateType	ConfState	Meeting status (valid only for the Windows platform).
isWebinar	boolean	Whether the meeting is a webinar or not (valid only for the Windows platform).
selfConfRole	ConfRole	Role in the meeting.
conferenceType	ConferenceType	Meeting type.
cycleParam	CycleConfParam	Recurring meeting series parameters.
subConfSize	number	Number of recurring meetings.
subConfParam	SubCycleConfParam	Recurring meeting parameters.
customInfo	string	User-defined information.

Table 9-197 Enumerated values of Timezone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_DEFAULT	0	Default MediaX time zone
HWM_TIMEZONE_INTERDATE_LINE	1	International Date Line West
HWM_TIMEZONE_MIDWAY_ISLAND	2	Midway Island, Samoa
HWM_TIMEZONE_HAWAII	3	Hawaii
HWM_TIMEZONE_ALASKA	4	Alaska
HWM_TIMEZONE_PACIFIC_TIME	5	Pacific Time (US & Canada), Tijuana

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_ARIZONA	6	Arizona
HWM_TIMEZONE_MOUNTAIN_TIME	7	Mountain Time (US & Canada)
HWM_TIMEZONE_CENTRAL_AMERICA	8	Central America
HWM_TIMEZONE_CENTRAL_TIME	9	Central Time (US & Canada)
HWM_TIMEZONE_MEXICO_CITY	10	Mexico City
HWM_TIMEZONE_SASKATCHEWAN	11	Saskatchewan
HWM_TIMEZONE_BOGOTA	12	Bogota, Lima, Quito
HWM_TIMEZONE_EASTERN_TIME	13	Eastern Time (US & Canada)
HWM_TIMEZONE_INDIANA	14	Indiana (East)
HWM_TIMEZONE_ATLANTIC_TIME	15	Atlantic Time (Canada)
HWM_TIMEZONE_CARACAS	16	Caracas, La Paz
HWM_TIMEZONE_SANTIAGO	17	Santiago
HWM_TIMEZONE_NEWFOUNDLAND	18	Newfoundland
HWM_TIMEZONE_BRASILIA	19	Brasilia
HWM_TIMEZONE_BUENOS_AIRES	20	Buenos Aires, Georgetown
HWM_TIMEZONE_GREENLAND	21	Greenland
HWM_TIMEZONE_MID_ATLANTIC	22	Mid-Atlantic
HWM_TIMEZONE_AZORES	23	Azores
HWM_TIMEZONE_CAPEVERDE	24	Cape Verde Is.
HWM_TIMEZONE_MONROVIA	25	Monrovia
HWM_TIMEZONE_GREENWICH_MEANTIME	26	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_AMSTERDAM	27	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
HWM_TIMEZONE_BELGRADE	28	Belgrade, Bratislava, Budapest, Ljubljana, Prague
HWM_TIMEZONE_BRUSSELS	29	Brussels, Copenhagen, Madrid, Paris
HWM_TIMEZONE_SARAJEVO	30	Sarajevo, Skopje, Vilnius, Sofia, Warsaw, Zagreb
HWM_TIMEZONE_WESTCENTRAL_AFRICA	31	West Central Africa
HWM_TIMEZONE_ATHENS	32	Athens, Istanbul, Minsk
HWM_TIMEZONE_BUCHAREST	33	Bucharest
HWM_TIMEZONE_CAIRO	34	Cairo
HWM_TIMEZONE_HARARE	35	Harare, Pretoria
HWM_TIMEZONE_HELSINKI	36	Helsinki, Riga, Tallinn
HWM_TIMEZONE_JERUSALEM	37	Jerusalem
HWM_TIMEZONE_BAGHDAD	38	Baghdad
HWM_TIMEZONE_KUWAIT	39	Kuwait, Riyadh
HWM_TIMEZONE_MOSCOW	40	Moscow, St. Petersburg, Kazan, Volgograd
HWM_TIMEZONE_NAIROBI	41	Nairobi
HWM_TIMEZONE_TEHRAN	42	Tehran
HWM_TIMEZONE_ABU_DHABI	43	Abu Dhabi, Muscat
HWM_TIMEZONE_TBILISI	44	Tbilisi, Yerevan
HWM_TIMEZONE_KABUL	45	Kabul
HWM_TIMEZONE_EKATERINBURG	46	Ekaterinburg
HWM_TIMEZONE_ISLAMABAD	47	Islamabad, Karachi, Tashkent
HWM_TIMEZONE_CALCUTTA	48	Kolkata, Chennai, Mumbai, New Delhi
HWM_TIMEZONE_KATHMANDU	49	Kathmandu

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_ALMATY	50	Almaty
HWM_TIMEZONE_ASTANA	51	Astana, Dhaka
HWM_TIMEZONE_SRIJAYA	52	Sri Jayawardenepura
HWM_TIMEZONE_RANGOON	53	Yangon (Rangoon)
HWM_TIMEZONE_BANGKOK	54	Bangkok, Jakarta, Hanoi
HWM_TIMEZONE_NOVOSIBIRSK	55	Novosibirsk
HWM_TIMEZONE_BEIJING	56	Beijing, Chongqing, Hong Kong, Urumqi, Taipei
HWM_TIMEZONE_KRASNOYARSK	57	Krasnoyarsk, Ulaanbaatar
HWM_TIMEZONE_KUALALUMPUR	58	Kuala Lumpur, Singapore
HWM_TIMEZONE_PERTH	59	Perth
HWM_TIMEZONE_OSAKA	60	Tokyo, Osaka, Sapporo
HWM_TIMEZONE_SEOUL	61	Seoul
HWM_TIMEZONE_YAKUTSK	62	Yakutsk
HWM_TIMEZONE_ADELAIDE	63	Adelaide
HWM_TIMEZONE_DARWIN	64	Darwin
HWM_TIMEZONE_BRISBANE	65	Brisbane
HWM_TIMEZONE_CANBERRA	66	Canberra, Melbourne, Sydney
HWM_TIMEZONE_GUAM	67	Guam, Port Moresby
HWM_TIMEZONE_HOBART	68	Hobart
HWM_TIMEZONE_VLADIVOSTOK	69	Vladivostok
HWM_TIMEZONE_SOLOMON	70	Solomon Is., New Caledonia
HWM_TIMEZONE_AUCKLAND	71	Auckland, Wellington
HWM_TIMEZONE_FIJI	72	Fuji, Kamchatka, Marshall Is.
HWM_TIMEZONE_NUKUALOFA	73	Nuku'alofa
HWM_TIMEZONE_IRKUTSK	74	Irkutsk

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_CASABLANCA	75	Casablanca
HWM_TIMEZONE_BAKU	76	Baku
HWM_TIMEZONE_MAGADAN	77	Magadan

Table 9-198 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-199 Enumerated values of ConfState

Enumeration Name	Enumerated Value	Description
HWM_CONF_STATE_SCHEDULE	0	The meeting is scheduled.
HWM_CONF_STATE_CREATING	1	The meeting is being created.
HWM_CONF_STATE_GOING	2	The meeting has started.
HWM_CONF_STATE_DESTROYED	3	The meeting has ended.

Table 9-200 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-201 Enumerated values of ConferenceType

Enumeration Name	Enumerated Value	Description
HWM_CONF_TYPE_COMMON	0	Common meeting.
HWM_CONF_TYPE_CYCLE	1	Recurring meeting.

Table 9-202 CycleConfParam

Parameter	Type	Description
startDate	number	Start date and timestamp, in seconds (GMT).
endDate	number	End date and timestamp, in seconds (GMT).
cycleType	CycleType	Period type.
interval	number	Interval of recurring meetings. If cycleType is set to daily, there is a meeting every several days and the value range is [1,15]. If cycleType is set to weekly, there is a meeting every several weeks and the value range is [1,5]. If cycleType is set to monthly, there is a meeting every several months and the value range is [1,3].

Parameter	Type	Description
listPoints	string	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 .
preRemindDays	number	Number of days in advance users are notified of a recurring meeting.

Table 9-203 Enumerated values of CycleType

Enumeration Name	Enumerated Value	Description
CYCLE_TYPE_DAY	0	Daily.
CYCLE_TYPE_WEEK	1	Weekly.
CYCLE_TYPE_MONTH	2	Monthly.

Table 9-204 SubCycleConfParam

Parameter	Type	Description
subConfID	string	UUID of a recurring meeting.
mediaType	MediaType	Media type.
startTime	number	Meeting start time.
endTime	number	Meeting end time.
isAutoRecord	boolean	Whether to automatically start recording after a meeting starts.
recordAuthType	RecordAuthType	Recording authentication mode.
confAllowJoinUser	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting.
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Table 9-205 Enumerated values of RecordAuthType

Enumeration Name	Enumerated Value	Description
REOCDR_AUTH_TYPE_ANYONE	0	The recording can be viewed or downloaded through link (no nonce is added).
REOCDR_AUTH_TYPE_IN_COMPANY_USER	1	Corporate users can view or download the recording.
REOCDR_AUTH_TYPE_ATTENDEE	2	Participants can view or download the recording.

Table 9-206 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Table 9-207 AttendeeBaseInfo

Parameter	Type	Description
nickName	string	Participant name.

Parameter	Type	Description
number	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	string	Huawei Cloud Meeting account.
email	string	Email address used for receiving email notifications.
sms	string	Mobile number used for receiving SMS notifications.
isAutoInvite	boolean	Whether participants are automatically invited.
isMute	boolean	Whether the microphone is muted.
role	ConfRole	Participant role in the meeting.
type	AttendeeType	Participant type.
userId	string	Participant UUID.

Table 9-208 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-209 Enumerated values of VmrConfIdType

Enumeration Name	Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	0	Fixed ID of the cloud meeting room.
HWM_VMR_CONF_ID_TYPE_RANDOM	1	Random ID of the cloud meeting room.

9.4.4.8 Modifying Cloud Meeting Room Information

Function

This API is used to modify cloud meeting room information. 1. Call this API only after login. 2. All parameters are mandatory. Before calling this API, obtain the cloud meeting room list. For data that does not need to be changed, use the data returned by the API for obtaining the cloud meeting room list.

Function Prototype

```
changeVmrInfo(vmrInfoParam: ChangeVmrInfoParam, onChangeVmrInfoResult?: (ret: SDKERR, reason: string) => void): void
```

ChangeVmrlInfoParam, onChangeVmrlInfoResult?: (ret: SDKERR, reason: string) => void): void

Request Parameters

Table 9-210 Input parameter description

Parameter	Mandatory	Type	Description
vmrlInfoParam	Yes	ChangeVmrlInfoParam	Information about modifying a cloud meeting room.
onChangeVmrlInfoResult	Yes	(ret: SDKERR, reason: string) => void	Callback of modifying the cloud meeting room.

Table 9-211 ChangeVmrlInfoParam

Parameter	Mandatory	Type	Description
vmrId	Yes	string	Unique cloud meeting room ID.
vmrName	Yes	string	Cloud meeting room name.
guestPwd	Yes	string	Guest password of the cloud meeting room.
hostPwd	Yes	string	Host password of the cloud meeting room.
allowGuestStartConf	No	boolean	Whether to allow guests to start the meeting in advance.
confAllowJoinUser	No	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
isOpenWaitingRoom	No	boolean	Waiting room status. This parameter takes effect only when the waiting room function is enabled.

Table 9-212 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-213 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.4.9 Obtaining the Meeting List

Function

This API is used to obtain the meeting list (valid only for the macOS platform). Call this API only after login and when you receive the meeting list notification for the first time. Otherwise, an empty list is returned.

Function Prototype

```
getConfList(onGetConfListResult?: (ret: SDKERR, reason: string, confListInfo: ConfListInfo) => void): void
getConfList(onGetConfListResult?: (ret: SDKERR, reason: string, confListInfo: ConfListInfo) => void): void
```

Request Parameters

Table 9-214 Input parameter description

Parameter	Mandatory	Type	Description
onGetConfList Result	Yes	(ret: SDKERR, reason: string, confListInfo: ConfListInfo) => void	Meeting list notification, which is returned upon the request for the meeting list.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, confListInfo: ConfListInfo) => void

Table 9-215 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
confListInfo	ConfListInfo	Meeting list.

Table 9-216 ConfListInfo

Parameter	Type	Description
confListSize	number	Number of meetings.
confListItem	ConfListItem	Meeting list parameters.

Table 9-217 ConfListItem

Parameter	Type	Description
confId	string	Meeting ID.
subject	string	Meeting topic.

Parameter	Type	Description
hostPwd	string	Host password.
guestPwd	string	Guest password.
audiencePwd	string	Attendee password. (This parameter is valid only for the Windows platform.)
startTime	number	UTC time when the meeting starts, in seconds.
endTime	number	UTC time when the meeting ends, in seconds.
timezone	Timezone	Time zone code (valid only for the Windows platform).
mediaType	MediaType	Media type.
schedulerName	string	Name of the user who schedules the meeting.
vmrConfId	string	Display ID of the cloud meeting.
hostJoinUri	string	Link for the host to join the meeting.
guestJoinUri	string	Link for guests to join the meeting.
audienceJoinUri	string	Link for attendees to join the meeting (valid only for the Windows platform).
confStateType	ConfState	Meeting status (valid only for the Windows platform).
isWebinar	boolean	Whether the meeting is a webinar or not (valid only for the Windows platform).
selfConfRole	ConfRole	Role in the meeting.
conferenceType	ConferenceType	Meeting type.
cycleParam	CycleConfParam	Recurring meeting series parameters.
subConfSize	number	Number of recurring meetings.
subConfParam	SubCycleConfParam	Recurring meeting parameters.
customInfo	string	User-defined information.

Table 9-218 Enumerated values of Timezone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_DEFAULT	0	Default MediaX time zone
HWM_TIMEZONE_INTERDATE_LINE	1	International Date Line West
HWM_TIMEZONE_MIDWAY_ISLAND	2	Midway Island, Samoa
HWM_TIMEZONE_HAWAII	3	Hawaii
HWM_TIMEZONE_ALASKA	4	Alaska
HWM_TIMEZONE_PACIFIC_TIME	5	Pacific Time (US & Canada), Tijuana
HWM_TIMEZONE_ARIZONA	6	Arizona
HWM_TIMEZONE_MOUNTAIN_TIME	7	Mountain Time (US & Canada)
HWM_TIMEZONE_CENTRAL_AMERICA	8	Central America
HWM_TIMEZONE_CENTRAL_TIME	9	Central Time (US & Canada)
HWM_TIMEZONE_MEXICO_CITY	10	Mexico City
HWM_TIMEZONE_SASKATCHEWAN	11	Saskatchewan
HWM_TIMEZONE_BOGOTA	12	Bogota, Lima, Quito
HWM_TIMEZONE_EASTERN_TIME	13	Eastern Time (US & Canada)
HWM_TIMEZONE_INDIANA	14	Indiana (East)
HWM_TIMEZONE_ATLANTIC_TIME	15	Atlantic Time (Canada)
HWM_TIMEZONE_CARACAS	16	Caracas, La Paz
HWM_TIMEZONE_SANTIAGO	17	Santiago
HWM_TIMEZONE_NEWFOUNDLAND	18	Newfoundland
HWM_TIMEZONE_BRASILIA	19	Brasilia

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_BUENOS_AIRES	20	Buenos Aires, Georgetown
HWM_TIMEZONE_GREENLAND	21	Greenland
HWM_TIMEZONE_MID_ATLANTIC	22	Mid-Atlantic
HWM_TIMEZONE_AZORES	23	Azores
HWM_TIMEZONE_CAPEVERDE	24	Cape Verde Is.
HWM_TIMEZONE_MONROVIA	25	Monrovia
HWM_TIMEZONE_GREENWICH_MEANTIME	26	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
HWM_TIMEZONE_AMSTERDAM	27	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
HWM_TIMEZONE_BELGRADE	28	Belgrade, Bratislava, Budapest, Ljubljana, Prague
HWM_TIMEZONE_BRUSSELS	29	Brussels, Copenhagen, Madrid, Paris
HWM_TIMEZONE_SARAJEVO	30	Sarajevo, Skopje, Vilnius, Sofia, Warsaw, Zagreb
HWM_TIMEZONE_WESTCENTRAL_AFRICA	31	West Central Africa
HWM_TIMEZONE_ATHENS	32	Athens, Istanbul, Minsk
HWM_TIMEZONE_BUCHAREST	33	Bucharest
HWM_TIMEZONE_CAIRO	34	Cairo
HWM_TIMEZONE_HARARE	35	Harare, Pretoria
HWM_TIMEZONE_HELSINKI	36	Helsinki, Riga, Tallinn
HWM_TIMEZONE_JERUSALEM	37	Jerusalem
HWM_TIMEZONE_BAGHDAD	38	Baghdad
HWM_TIMEZONE_KUWAIT	39	Kuwait, Riyadh
HWM_TIMEZONE_MOSCOW	40	Moscow, St. Petersburg, Kazan, Volgograd
HWM_TIMEZONE_NAIROBI	41	Nairobi

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_TEHRAN	42	Tehran
HWM_TIMEZONE_ABU_DHABI	43	Abu Dhabi, Muscat
HWM_TIMEZONE_TBILISI	44	Tbilisi, Yerevan
HWM_TIMEZONE_KABUL	45	Kabul
HWM_TIMEZONE_EKATERINBURG	46	Ekaterinburg
HWM_TIMEZONE_ISLAMABAD	47	Islamabad, Karachi, Tashkent
HWM_TIMEZONE_CALCUTTA	48	Kolkata, Chennai, Mumbai, New Delhi
HWM_TIMEZONE_KATHMANDU	49	Kathmandu
HWM_TIMEZONE_ALMATY	50	Almaty
HWM_TIMEZONE_ASTANA	51	Astana, Dhaka
HWM_TIMEZONE_SRIJAYA	52	Sri Jayawardenepura
HWM_TIMEZONE_RANGOON	53	Yangon (Rangoon)
HWM_TIMEZONE_BANGKOK	54	Bangkok, Jakarta, Hanoi
HWM_TIMEZONE_NOVOSIBIRSK	55	Novosibirsk
HWM_TIMEZONE_BEIJING	56	Beijing, Chongqing, Hong Kong, Urumqi, Taipei
HWM_TIMEZONE_KRASNOYARSK	57	Krasnoyarsk, Ulaanbaatar
HWM_TIMEZONE_KUALALUMPUR	58	Kuala Lumpur, Singapore
HWM_TIMEZONE_PERTH	59	Perth
HWM_TIMEZONE_OSAKA	60	Tokyo, Osaka, Sapporo
HWM_TIMEZONE_SEOUL	61	Seoul
HWM_TIMEZONE_YAKUTSK	62	Yakutsk
HWM_TIMEZONE_ADELAIDE	63	Adelaide
HWM_TIMEZONE_DARWIN	64	Darwin
HWM_TIMEZONE_BRISBANE	65	Brisbane

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_CANBERRA	66	Canberra, Melbourne, Sydney
HWM_TIMEZONE_GUAM	67	Guam, Port Moresby
HWM_TIMEZONE_HOBART	68	Hobart
HWM_TIMEZONE_VLADIVOSTOK	69	Vladivostok
HWM_TIMEZONE_SOLOMON	70	Solomon Is., New Caledonia
HWM_TIMEZONE_AUCKLAND	71	Auckland, Wellington
HWM_TIMEZONE_FIJI	72	Fuji, Kamchatka, Marshall Is.
HWM_TIMEZONE_NUKUALOFA	73	Nuku'alofa
HWM_TIMEZONE_IRKUTSK	74	Irkutsk
HWM_TIMEZONE_CASABLANCA	75	Casablanca
HWM_TIMEZONE_BAKU	76	Baku
HWM_TIMEZONE_MAGADAN	77	Magadan

Table 9-219 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-220 Enumerated values of ConfState

Enumeration Name	Enumerated Value	Description
HWM_CONF_STATE_SCHEDULE	0	The meeting is scheduled.

Enumeration Name	Enumerated Value	Description
HWM_CONF_STATE_CREATING	1	The meeting is being created.
HWM_CONF_STATE_GOING	2	The meeting has started.
HWM_CONF_STATE_DESTROYED	3	The meeting has ended.

Table 9-221 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-222 Enumerated values of ConferenceType

Enumeration Name	Enumerated Value	Description
HWM_CONF_TYPE_COMMON	0	Common meeting.
HWM_CONF_TYPE_CYCLE	1	Recurring meeting.

Table 9-223 CycleConfParam

Parameter	Type	Description
startDate	number	Start date and timestamp, in seconds (GMT).

Parameter	Type	Description
endDate	number	End date and timestamp, in seconds (GMT).
cycleType	CycleType	Period type.
interval	number	Interval of recurring meetings. If cycleType is set to daily, there is a meeting every several days and the value range is [1,15]. If cycleType is set to weekly, there is a meeting every several weeks and the value range is [1,5]. If cycleType is set to monthly, there is a meeting every several months and the value range is [1,3].
listPoints	string	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 .
preRemindDays	number	Number of days in advance users are notified of a recurring meeting.

Table 9-224 Enumerated values of CycleType

Enumeration Name	Enumerated Value	Description
CYCLE_TYPE_DAY	0	Daily.
CYCLE_TYPE_WEEK	1	Weekly.
CYCLE_TYPE_MONTH	2	Monthly.

Table 9-225 SubCycleConfParam

Parameter	Type	Description
subConfID	string	UUID of a recurring meeting.
mediaType	MediaType	Media type.
startTime	number	Meeting start time.
endTime	number	Meeting end time.

Parameter	Type	Description
isAutoRecord	boolean	Whether to automatically start recording after a meeting starts.
recordAuthType	RecordAuthType	Recording authentication mode.
confAllowJoinUser	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting.
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Table 9-226 Enumerated values of RecordAuthType

Enumeration Name	Enumerated Value	Description
REOCDRD_AUTH_TYPE_ANYONE	0	The recording can be viewed or downloaded through link (no nonce is added).
REOCDRD_AUTH_TYPE_IN_COMPANY_USER	1	Corporate users can view or download the recording.
REOCDRD_AUTH_TYPE_ATTENDEE	2	Participants can view or download the recording.

Table 9-227 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

9.4.4.10 Scheduling a Recurring Meeting Series

Function

This API is used to schedule a recurring meeting series. 1. Call this API only after login. 2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function. 3. The meeting start time must be later than the current time, and the meeting duration must be longer than 15 minutes. 4. The **attendees** parameter must be passed if participant information needs to be carried. 5. The maximum time span of a recurring meeting series is one year. The number of recurring meetings in a series cannot exceed 50. Otherwise, only the first 50 meetings are scheduled. 6. The callback function returns scheduled meeting details. For details, see the **HwmConfDetail** structure. If only a meeting ID is returned, meeting details fail to be obtained.

Function Prototype

```
bookCycleConf(bookCycleConfParam: BookCycleConfParam,  
onBookCycleConfResult?: (ret: SDKERR, reason: string, confDetail: ConfDetail) =>  
void): void  
bookCycleConf(bookCycleConfParam: BookCycleConfParam,  
onBookCycleConfResult?: (ret: SDKERR, reason: string, confDetail: ConfDetail) =>  
void): void
```

Request Parameters

Table 9-228 Input parameter description

Parameter	Mandatory	Type	Description
bookCycleConfParam	Yes	BookCycleConfParam	Parameters for scheduling a recurring meeting series.
onBookCycleConfResult	Yes	(ret: SDKERR, reason: string, confDetail: ConfDetail) => void	Callback of creating a recurring meeting series.

Table 9-229 BookCycleConfParam

Parameter	Mandatory	Type	Description
bookConfParam	No	BookConfParam	Parameters for scheduling a recurring meeting series.
cycleParam	Yes	CycleConfParam	Recurring meeting parameters.

Table 9-230 BookConfParam

Parameter	Mandatory	Type	Description
startTime	Yes	number	UTC timestamp when the meeting starts, in seconds.
duration	Yes	number	Meeting duration, in minutes. The value ranges from 15 to 1,440.
confCommonParam	Yes	ConfCommonParam	Common meeting parameters.
isSendCalendar	No	boolean	Whether to send a calendar email.

Table 9-231 ConfCommonParam

Parameter	Mandatory	Type	Description
subject	Yes	string	Meeting topic.
mediaType	No	MediaType	Meeting type. By default, the meeting is an audio meeting.
needPassword	No	boolean	Whether a guest password is required. By default, the guest password is not required (valid only for meetings with a random ID).
isAutoRecord	No	boolean	Whether to enable automatic meeting recording. By default, this function is disabled. If automatic meeting recording is enabled, the meeting will be recorded by default, regardless of whether recording is enabled or disabled in the meeting. This parameter is valid only for cloud recording, not for local recording on clients.
allowRecord	No	boolean	Whether meeting recording is supported. (This parameter is valid only for the Windows platform.) This parameter is valid only for cloud recording, not for local recording on clients.

Parameter	Mandatory	Type	Description
allowLive	No	boolean	Reserved field. This parameter is transparently transmitted during meeting modification.
timezone	Yes	Timezone	Time zone code. This parameter is used for sending meeting notifications.
vmrId	No	string	Unique cloud meeting room ID. To schedule a meeting using concurrent participants, set this parameter to an empty string. When you modify a meeting, you cannot modify this parameter and need to enter the value returned in meeting details.
confAllowJoin User	No	ConfAllowJoin UserType	Users who are allowed to join the meeting. By default, everyone is allowed.
isSendSms	No	boolean	Whether to send an SMS notification. To use this function, enable it in the enterprise configuration first. Otherwise, this parameter does not take effect.
isSendEmail	No	boolean	Whether to send an email notification.
vmrConfIdType	No	VmrConfIdType	ID type of the cloud meeting room. When modifying a meeting, set this parameter to HWM_VMR_CONF_ID_TYPE_FIXED if vmrConfId in meeting details is not empty, or set it to HWM_VMR_CONF_ID_TYPE_RANDOM if vmrConfId in meeting details is empty.
guestPwd	No	string	Guest password. If this parameter is left empty, the server randomly generates a password. This parameter is valid only for meetings with a random ID.

Parameter	Mandatory	Type	Description
isOpenWaitingRoom	No	boolean	Waiting room status. This parameter takes effect only when the waiting room function is enabled.
numOfAttendee	Yes	number	Number of participants.
attendees	Yes	AttendeeBaseInfo	Participant list.
allowGuestStartConf	No	boolean	Whether to allow guests to start the meeting.
allowGuestStartConfTime	No	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.
concurrentParticipants	Yes	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).
customInfo	No	string	User-defined information.
confResType	No	ConfResType	Meeting resource type.

Table 9-232 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-233 Enumerated values of Timezone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_DEFAULT	0	Default MediaX time zone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_INTERDATE_LINE	1	International Date Line West
HWM_TIMEZONE_MIDWAY_ISLAND	2	Midway Island, Samoa
HWM_TIMEZONE_HAWAII	3	Hawaii
HWM_TIMEZONE_ALASKA	4	Alaska
HWM_TIMEZONE_PACIFIC_TIME	5	Pacific Time (US & Canada), Tijuana
HWM_TIMEZONE_ARIZONA	6	Arizona
HWM_TIMEZONE_MOUNTAIN_TIME	7	Mountain Time (US & Canada)
HWM_TIMEZONE_CENTRAL_AMERICA	8	Central America
HWM_TIMEZONE_CENTRAL_TIME	9	Central Time (US & Canada)
HWM_TIMEZONE_MEXICO_CITY	10	Mexico City
HWM_TIMEZONE_SASKATCHEWAN	11	Saskatchewan
HWM_TIMEZONE_BOGOTA	12	Bogota, Lima, Quito
HWM_TIMEZONE_EASTERN_TIME	13	Eastern Time (US & Canada)
HWM_TIMEZONE_INDIANA	14	Indiana (East)
HWM_TIMEZONE_ATLANTIC_TIME	15	Atlantic Time (Canada)
HWM_TIMEZONE_CARACAS	16	Caracas, La Paz
HWM_TIMEZONE_SANTIAGO	17	Santiago
HWM_TIMEZONE_NEWFOUNDLAND	18	Newfoundland
HWM_TIMEZONE_BRASILIA	19	Brasilia
HWM_TIMEZONE_BUENOS_AIRES	20	Buenos Aires, Georgetown
HWM_TIMEZONE_GREENLAND	21	Greenland

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_MID_ATLANTIC	22	Mid-Atlantic
HWM_TIMEZONE_AZORES	23	Azores
HWM_TIMEZONE_CAPEVERDE	24	Cape Verde Is.
HWM_TIMEZONE_MONROVIA	25	Monrovia
HWM_TIMEZONE_GREENWICH_MEANTIME	26	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
HWM_TIMEZONE_AMSTERDAM	27	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
HWM_TIMEZONE_BELGRADE	28	Belgrade, Bratislava, Budapest, Ljubljana, Prague
HWM_TIMEZONE_BRUSSELS	29	Brussels, Copenhagen, Madrid, Paris
HWM_TIMEZONE_SARAJEVO	30	Sarajevo, Skopje, Vilnius, Sofia, Warsaw, Zagreb
HWM_TIMEZONE_WESTCENTRAL_AFRICA	31	West Central Africa
HWM_TIMEZONE_ATHENS	32	Athens, Istanbul, Minsk
HWM_TIMEZONE_BUCHAREST	33	Bucharest
HWM_TIMEZONE_CAIRO	34	Cairo
HWM_TIMEZONE_HARARE	35	Harare, Pretoria
HWM_TIMEZONE_HELSINKI	36	Helsinki, Riga, Tallinn
HWM_TIMEZONE_JERUSALEM	37	Jerusalem
HWM_TIMEZONE_BAGHDAD	38	Baghdad
HWM_TIMEZONE_KUWAIT	39	Kuwait, Riyadh
HWM_TIMEZONE_MOSCOW	40	Moscow, St. Petersburg, Kazan, Volgograd
HWM_TIMEZONE_NAIROBI	41	Nairobi
HWM_TIMEZONE_TEHRAN	42	Tehran
HWM_TIMEZONE_ABU_DHABI	43	Abu Dhabi, Muscat
HWM_TIMEZONE_TBILISI	44	Tbilisi, Yerevan

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_KABUL	45	Kabul
HWM_TIMEZONE_EKATERINBURG	46	Ekaterinburg
HWM_TIMEZONE_ISLAMABAD	47	Islamabad, Karachi, Tashkent
HWM_TIMEZONE_CALCUTTA	48	Kolkata, Chennai, Mumbai, New Delhi
HWM_TIMEZONE_KATHMANDU	49	Kathmandu
HWM_TIMEZONE_ALMATY	50	Almaty
HWM_TIMEZONE_ASTANA	51	Astana, Dhaka
HWM_TIMEZONE_SRIJAYA	52	Sri Jayawardenepura
HWM_TIMEZONE_RANGOON	53	Yangon (Rangoon)
HWM_TIMEZONE_BANGKOK	54	Bangkok, Jakarta, Hanoi
HWM_TIMEZONE_NOVOSIBIRSK	55	Novosibirsk
HWM_TIMEZONE_BEIJING	56	Beijing, Chongqing, Hong Kong, Urumqi, Taipei
HWM_TIMEZONE_KRASNOYARSK	57	Krasnoyarsk, Ulaanbaatar
HWM_TIMEZONE_KUALALUMPUR	58	Kuala Lumpur, Singapore
HWM_TIMEZONE_PERTH	59	Perth
HWM_TIMEZONE_OSAKA	60	Tokyo, Osaka, Sapporo
HWM_TIMEZONE_SEOUL	61	Seoul
HWM_TIMEZONE_YAKUTSK	62	Yakutsk
HWM_TIMEZONE_ADELAIDE	63	Adelaide
HWM_TIMEZONE_DARWIN	64	Darwin
HWM_TIMEZONE_BRISBANE	65	Brisbane
HWM_TIMEZONE_CANBERRA	66	Canberra, Melbourne, Sydney
HWM_TIMEZONE_GUAM	67	Guam, Port Moresby
HWM_TIMEZONE_HOBART	68	Hobart

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_VLADIVOSTOK	69	Vladivostok
HWM_TIMEZONE_SOLOMON	70	Solomon Is., New Caledonia
HWM_TIMEZONE_AUCKLAND	71	Auckland, Wellington
HWM_TIMEZONE_FIJI	72	Fuji, Kamchatka, Marshall Is.
HWM_TIMEZONE_NUKUALOFA	73	Nuku'alofa
HWM_TIMEZONE_IRKUTSK	74	Irkutsk
HWM_TIMEZONE_CASABLANCA	75	Casablanca
HWM_TIMEZONE_BAKU	76	Baku
HWM_TIMEZONE_MAGADAN	77	Magadan

Table 9-234 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Table 9-235 Enumerated values of VmrConfIdType

Enumeration Name	Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	0	Fixed ID of the cloud meeting room.

Enumeration Name	Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_RANDOM	1	Random ID of the cloud meeting room.

Table 9-236 AttendeeBaseInfo

Parameter	Mandatory	Type	Description
nickName	Yes	string	Participant name.
number	Yes	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	Yes	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	No	string	Huawei Cloud Meeting account.
email	No	string	Email address used for receiving email notifications.
sms	No	string	Mobile number used for receiving SMS notifications.
isAutoInvite	No	boolean	Whether participants are automatically invited.
isMute	No	boolean	Whether the microphone is muted.

Parameter	Mandatory	Type	Description
role	No	ConfRole	Participant role in the meeting.
type	No	AttendeeType	Participant type.
userId	No	string	Participant UUID.

Table 9-237 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-238 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-239 Enumerated values of ConfResType

Enumeration Name	Enumerated Value	Description
HWM_CONF_RESTYPE_DEFAULT	0	Default.
HWM_CONF_RESTYPE_SHARE_VMR	3	Shared cloud meeting room.

Table 9-240 CycleConfParam

Parameter	Mandatory	Type	Description
startDate	Yes	number	Start date and timestamp, in seconds (GMT).
endDate	Yes	number	End date and timestamp, in seconds (GMT).
cycleType	Yes	CycleType	Period type.

Parameter	Mandatory	Type	Description
interval	Yes	number	Interval of recurring meetings. If cycleType is set to daily, there is a meeting every several days and the value range is [1,15]. If cycleType is set to weekly, there is a meeting every several weeks and the value range is [1,5]. If cycleType is set to monthly, there is a meeting every several months and the value range is [1,3].
listPoints	Yes	string	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 .
preRemindDays	Yes	number	Number of days in advance users are notified of a recurring meeting.

Table 9-241 Enumerated values of CycleType

Enumeration Name	Enumerated Value	Description
CYCLE_TYPE_DAY	0	Daily.
CYCLE_TYPE_WEEK	1	Weekly.
CYCLE_TYPE_MONTH	2	Monthly.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, confDetail: ConfDetail) => void

Table 9-242 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
confDetail	ConfDetail	Meeting details.

Table 9-243 ConfDetail

Parameter	Type	Description
confListInfo	ConfListItem	Basic meeting details.
vmrId	string	Unique cloud meeting room ID.
vmrFlag	boolean	Whether the meeting is held in a cloud meeting room.
isAutoRecord	boolean	Whether automatic meeting recording is enabled.
allowRecord	boolean	Whether meeting recording is supported.
allowLive	boolean	Reserved field. This parameter is transparently transmitted during meeting modification.
needPassword	boolean	Whether a password is required.
isSendSms	boolean	Whether SMS notifications are sent.
isSendEmail	boolean	Whether email notifications are sent.
isSendCalendar	boolean	Whether calendar notifications are sent.
confAllowJoinUser	ConfAllowJoinUserType	Meeting access settings.
numOfAttendee	number	Number of participants.
attendees	AttendeeBaseInfo	Participant list.
isOpenWaitingRoom	boolean	Whether the waiting room is enabled.
allowGuestStartConf	boolean	Whether to allow guests to start the meeting.

Parameter	Type	Description
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.
vmrConfldType	VmrConfldType	ID type of the cloud meeting room.
concurrentParticipants	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).

Table 9-244 ConfListItem

Parameter	Type	Description
confld	string	Meeting ID.
subject	string	Meeting topic.
hostPwd	string	Host password.
guestPwd	string	Guest password.
audiencePwd	string	Attendee password. (This parameter is valid only for the Windows platform.)
startTime	number	UTC time when the meeting starts, in seconds.
endTime	number	UTC time when the meeting ends, in seconds.
timezone	Timezone	Time zone code (valid only for the Windows platform).
mediaType	MediaType	Media type.
schedulerName	string	Name of the user who schedules the meeting.
vmrConfld	string	Display ID of the cloud meeting.
hostJoinUri	string	Link for the host to join the meeting.
guestJoinUri	string	Link for guests to join the meeting.
audienceJoinUri	string	Link for attendees to join the meeting (valid only for the Windows platform).
confStateType	ConfState	Meeting status (valid only for the Windows platform).

Parameter	Type	Description
isWebinar	boolean	Whether the meeting is a webinar or not (valid only for the Windows platform).
selfConfRole	ConfRole	Role in the meeting.
conferenceType	ConferenceType	Meeting type.
cycleParam	CycleConfParam	Recurring meeting series parameters.
subConfSize	number	Number of recurring meetings.
subConfParam	SubCycleConfParam	Recurring meeting parameters.
customInfo	string	User-defined information.

Table 9-245 Enumerated values of ConfState

Enumeration Name	Enumerated Value	Description
HWM_CONF_STATE_SCHEDULE	0	The meeting is scheduled.
HWM_CONF_STATE_CREATING	1	The meeting is being created.
HWM_CONF_STATE_GOING	2	The meeting has started.
HWM_CONF_STATE_DESTROYED	3	The meeting has ended.

Table 9-246 Enumerated values of ConferenceType

Enumeration Name	Enumerated Value	Description
HWM_CONF_TYPE_COMMON	0	Common meeting.
HWM_CONF_TYPE_CYCLE	1	Recurring meeting.

Table 9-247 CycleConfParam

Parameter	Type	Description
startDate	number	Start date and timestamp, in seconds (GMT).
endDate	number	End date and timestamp, in seconds (GMT).
cycleType	CycleType	Period type.
interval	number	Interval of recurring meetings. If cycleType is set to daily, there is a meeting every several days and the value range is [1,15]. If cycleType is set to weekly, there is a meeting every several weeks and the value range is [1,5]. If cycleType is set to monthly, there is a meeting every several months and the value range is [1,3].
listPoints	string	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 .
preRemindDays	number	Number of days in advance users are notified of a recurring meeting.

Table 9-248 SubCycleConfParam

Parameter	Type	Description
subConfID	string	UUID of a recurring meeting.
mediaType	MediaType	Media type.
startTime	number	Meeting start time.
endTime	number	Meeting end time.
isAutoRecord	boolean	Whether to automatically start recording after a meeting starts.
recordAuthType	RecordAuthType	Recording authentication mode.
confAllowJoinUser	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
allowGuestStart-Conf	boolean	Whether to allow guests to start the meeting.

Parameter	Type	Description
allowGuestStart-ConfTime	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Table 9-249 Enumerated values of RecordAuthType

Enumeration Name	Enumerated Value	Description
REOCD_AUTH_TYPE_ANYONE	0	The recording can be viewed or downloaded through link (no nonce is added).
REOCD_AUTH_TYPE_IN_COMPANY_USER	1	Corporate users can view or download the recording.
REOCD_AUTH_TYPE_ATTENDEE	2	Participants can view or download the recording.

Table 9-250 AttendeeBaseInfo

Parameter	Type	Description
nickName	string	Participant name.
number	string	Number. If this parameter is set to the SIP number (for example, +9911244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.
thirdUserId	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	string	Huawei Cloud Meeting account.

Parameter	Type	Description
email	string	Email address used for receiving email notifications.
sms	string	Mobile number used for receiving SMS notifications.
isAutoInvite	boolean	Whether participants are automatically invited.
isMute	boolean	Whether the microphone is muted.
role	ConfRole	Participant role in the meeting.
type	AttendeeType	Participant type.
userId	string	Participant UUID.

9.4.4.11 Editing a Recurring Meeting Series

Function

This API is used to edit a recurring meeting series. 1. Call this API only after login. 2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function. 3. All fields are mandatory. Specify the fields to be edited as required, and assign values in the meeting details to remaining fields.

Function Prototype

```
modifyCycleConf(modifyParam: ModifyCycleConfParam,  
onModifyCycleConfResult?: (ret: SDKERR, reason: string) => void):  
void  
voidmodifyCycleConf(modifyParam: ModifyCycleConfParam,  
onModifyCycleConfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-251 Input parameter description

Parameter	Mandatory	Type	Description
modifyParam	Yes	ModifyCycleConfParam	Parameters for editing a recurring meeting series.
onModifyCycleConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of editing a recurring meeting series.

Table 9-252 ModifyCycleConfParam

Parameter	Mandatory	Type	Description
editConfParam	No	EditConfParam	Parameters for editing a recurring meeting series.
cycleParam	Yes	CycleConfParam	Recurring meeting parameters.

Table 9-253 EditConfParam

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.
startTime	Yes	number	Meeting start time. If the start time is not specified, the meeting starts immediately. The value is accurate to seconds (GMT).
duration	Yes	number	Meeting duration, in minutes.
confCommonParam	Yes	ConfCommonParam	Common meeting parameters.
isSendCalendar	No	boolean	Whether to send calendar notifications.

Table 9-254 ConfCommonParam

Parameter	Mandatory	Type	Description
subject	Yes	string	Meeting topic.
mediaType	No	MediaType	Meeting type. By default, the meeting is an audio meeting.
needPassword	No	boolean	Whether a guest password is required. By default, the guest password is not required (valid only for meetings with a random ID).

Parameter	Mandatory	Type	Description
isAutoRecord	No	boolean	Whether to enable automatic meeting recording. By default, this function is disabled. If automatic meeting recording is enabled, the meeting will be recorded by default, regardless of whether recording is enabled or disabled in the meeting. This parameter is valid only for cloud recording, not for local recording on clients.
allowRecord	No	boolean	Whether meeting recording is supported. (This parameter is valid only for the Windows platform.) This parameter is valid only for cloud recording, not for local recording on clients.
allowLive	No	boolean	Reserved field. This parameter is transparently transmitted during meeting modification.
timezone	Yes	Timezone	Time zone code. This parameter is used for sending meeting notifications.
vmrId	No	string	Unique cloud meeting room ID. To schedule a meeting using concurrent participants, set this parameter to an empty string. When you modify a meeting, you cannot modify this parameter and need to enter the value returned in meeting details.
confAllowJoin User	No	ConfAllowJoin UserType	Users who are allowed to join the meeting. By default, everyone is allowed.
isSendSms	No	boolean	Whether to send an SMS notification. To use this function, enable it in the enterprise configuration first. Otherwise, this parameter does not take effect.
isSendEmail	No	boolean	Whether to send an email notification.

Parameter	Mandatory	Type	Description
vmrConfIdType	No	VmrConfIdType	ID type of the cloud meeting room. When modifying a meeting, set this parameter to HWM_VMR_CONF_ID_TYPE_FIXED if vmrConfId in meeting details is not empty, or set it to HWM_VMR_CONF_ID_TYPE_RANDOM if vmrConfId in meeting details is empty.
guestPwd	No	string	Guest password. If this parameter is left empty, the server randomly generates a password. This parameter is valid only for meetings with a random ID.
isOpenWaitingRoom	No	boolean	Waiting room status. This parameter takes effect only when the waiting room function is enabled.
numOfAttendee	Yes	number	Number of participants.
attendees	Yes	AttendeeBaseInfo	Participant list.
allowGuestStartConf	No	boolean	Whether to allow guests to start the meeting.
allowGuestStartConfTime	No	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.
concurrentParticipants	Yes	number	Maximum number of participants in the meeting. The value can be 0 (unlimited) or greater than 0 (specific maximum number of participants).
customInfo	No	string	User-defined information.
confResType	No	ConfResType	Meeting resource type.

Table 9-255 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-256 Enumerated values of Timezone

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_DEFAULT	0	Default MediaX time zone
HWM_TIMEZONE_INTERDATE_LINE	1	International Date Line West
HWM_TIMEZONE_MIDWAY_ISLAND	2	Midway Island, Samoa
HWM_TIMEZONE_HAWAII	3	Hawaii
HWM_TIMEZONE_ALASKA	4	Alaska
HWM_TIMEZONE_PACIFIC_TIME	5	Pacific Time (US & Canada), Tijuana
HWM_TIMEZONE_ARIZONA	6	Arizona
HWM_TIMEZONE_MOUNTAIN_TIME	7	Mountain Time (US & Canada)
HWM_TIMEZONE_CENTRAL_AMERICA	8	Central America
HWM_TIMEZONE_CENTRAL_TIME	9	Central Time (US & Canada)
HWM_TIMEZONE_MEXICO_CITY	10	Mexico City
HWM_TIMEZONE_SASKATCHEWAN	11	Saskatchewan
HWM_TIMEZONE_BOGOTA	12	Bogota, Lima, Quito
HWM_TIMEZONE_EASTERN_TIME	13	Eastern Time (US & Canada)
HWM_TIMEZONE_INDIANA	14	Indiana (East)

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_ATLANTIC_TIME	15	Atlantic Time (Canada)
HWM_TIMEZONE_CARACAS	16	Caracas, La Paz
HWM_TIMEZONE_SANTIAGO	17	Santiago
HWM_TIMEZONE_NEWFOUNDLAND	18	Newfoundland
HWM_TIMEZONE_BRASILIA	19	Brasilia
HWM_TIMEZONE_BUENOSAIRES	20	Buenos Aires, Georgetown
HWM_TIMEZONE_GREENLAND	21	Greenland
HWM_TIMEZONE_MIDATLANTIC	22	Mid-Atlantic
HWM_TIMEZONE_AZORES	23	Azores
HWM_TIMEZONE_CAPEVERDE	24	Cape Verde Is.
HWM_TIMEZONE_MONROVIA	25	Monrovia
HWM_TIMEZONE_GREENWICH_MEANTIME	26	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
HWM_TIMEZONE_AMSTERDAM	27	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
HWM_TIMEZONE_BELGRADE	28	Belgrade, Bratislava, Budapest, Ljubljana, Prague
HWM_TIMEZONE_BRUSSELS	29	Brussels, Copenhagen, Madrid, Paris
HWM_TIMEZONE_SARAJEVO	30	Sarajevo, Skopje, Vilnius, Sofia, Warsaw, Zagreb
HWM_TIMEZONE_WESTCENTRAL_AFRICA	31	West Central Africa
HWM_TIMEZONE_ATHENS	32	Athens, Istanbul, Minsk
HWM_TIMEZONE_BUCHAREST	33	Bucharest
HWM_TIMEZONE_CAIRO	34	Cairo
HWM_TIMEZONE_HARARE	35	Harare, Pretoria
HWM_TIMEZONE_HELSINKI	36	Helsinki, Riga, Tallinn

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_JERUSALEM	37	Jerusalem
HWM_TIMEZONE_BAGHDAD	38	Baghdad
HWM_TIMEZONE_KUWAIT	39	Kuwait, Riyadh
HWM_TIMEZONE_MOSCOW	40	Moscow, St. Petersburg, Kazan, Volgograd
HWM_TIMEZONE_NAIROBI	41	Nairobi
HWM_TIMEZONE_TEHRAN	42	Tehran
HWM_TIMEZONE_ABU_DHABI	43	Abu Dhabi, Muscat
HWM_TIMEZONE_TBILISI	44	Tbilisi, Yerevan
HWM_TIMEZONE_KABUL	45	Kabul
HWM_TIMEZONE_EKATERINBURG	46	Ekaterinburg
HWM_TIMEZONE_ISLAMABAD	47	Islamabad, Karachi, Tashkent
HWM_TIMEZONE_CALCUTTA	48	Kolkata, Chennai, Mumbai, New Delhi
HWM_TIMEZONE_KATHMANDU	49	Kathmandu
HWM_TIMEZONE_ALMATY	50	Almaty
HWM_TIMEZONE_ASTANA	51	Astana, Dhaka
HWM_TIMEZONE_SRIJAYA	52	Sri Jayawardenepura
HWM_TIMEZONE_RANGOON	53	Yangon (Rangoon)
HWM_TIMEZONE_BANGKOK	54	Bangkok, Jakarta, Hanoi
HWM_TIMEZONE_NOVOSIBIRSK	55	Novosibirsk
HWM_TIMEZONE_BEIJING	56	Beijing, Chongqing, Hong Kong, Urumqi, Taipei
HWM_TIMEZONE_KRASNOYARSK	57	Krasnoyarsk, Ulaanbaatar
HWM_TIMEZONE_KUALALUMPUR	58	Kuala Lumpur, Singapore
HWM_TIMEZONE_PERTH	59	Perth

Enumeration Name	Enumerated Value	Description
HWM_TIMEZONE_OSAKA	60	Tokyo, Osaka, Sapporo
HWM_TIMEZONE_SEOUL	61	Seoul
HWM_TIMEZONE_YAKUTSK	62	Yakutsk
HWM_TIMEZONE_ADELAIDE	63	Adelaide
HWM_TIMEZONE_DARWIN	64	Darwin
HWM_TIMEZONE_BRISBANE	65	Brisbane
HWM_TIMEZONE_CANBERRA	66	Canberra, Melbourne, Sydney
HWM_TIMEZONE_GUAM	67	Guam, Port Moresby
HWM_TIMEZONE_HOBART	68	Hobart
HWM_TIMEZONE_VLADIVOSTOK	69	Vladivostok
HWM_TIMEZONE_SOLOMON	70	Solomon Is., New Caledonia
HWM_TIMEZONE_AUCKLAND	71	Auckland, Wellington
HWM_TIMEZONE_FIJI	72	Fuji, Kamchatka, Marshall Is.
HWM_TIMEZONE_NUKUALOFA	73	Nuku'alofa
HWM_TIMEZONE_IRKUTSK	74	Irkutsk
HWM_TIMEZONE_CASABLANCA	75	Casablanca
HWM_TIMEZONE_BAKU	76	Baku
HWM_TIMEZONE_MAGADAN	77	Magadan

Table 9-257 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Table 9-258 Enumerated values of VmrConfIdType

Enumeration Name	Enumerated Value	Description
HWM_VMR_CONF_ID_TYPE_FIXED	0	Fixed ID of the cloud meeting room.
HWM_VMR_CONF_ID_TYPE_RANDOM	1	Random ID of the cloud meeting room.

Table 9-259 AttendeeBaseInfo

Parameter	Mandatory	Type	Description
nickName	Yes	string	Participant name.
number	Yes	string	Number. If this parameter is set to the SIP number (for example, +99111244216210249) allocated to the account, the Huawei Cloud Meeting app is called. If this parameter is set to a PSTN number (for example, 18700000000), the number is called through the VoIP gateway if the enterprise has enabled PSTN call. This parameter is used for account and password authentication. Either this parameter or thirdUserId must be set.

Parameter	Mandatory	Type	Description
thirdUserId	Yes	string	Third-party user ID. This parameter is used for app ID authentication. Either this parameter or number must be set.
accountId	No	string	Huawei Cloud Meeting account.
email	No	string	Email address used for receiving email notifications.
sms	No	string	Mobile number used for receiving SMS notifications.
isAutoInvite	No	boolean	Whether participants are automatically invited.
isMute	No	boolean	Whether the microphone is muted.
role	No	ConfRole	Participant role in the meeting.
type	No	AttendeeType	Participant type.
userId	No	string	Participant UUID.

Table 9-260 Enumerated values of ConfRole

Enumeration Name	Enumerated Value	Description
HWM_CONF_ROLE_ATTENDEE	0	Common participant.
HWM_CONF_ROLE_HOST	1	Host.
HWM_CONF_ROLE_AUDIENCE	2	Attendee.
HWM_CONF_ROLE_COHOST	3	Co-host.
HWM_CONF_ROLE_WAITING	4	Waiting room member.

Table 9-261 Enumerated values of AttendeeType

Enumeration Name	Enumerated Value	Description
ATTENDEE_TYPE_NORMAL	0	Voice, HD, and SD participant addresses.
ATTENDEE_TYPE_TELEPRESENCE	1	Address of a telepresence participant (uni-screen or tri-screen telepresence participant).
ATTENDEE_TYPE_TERMINAL	2	Meeting room or hard terminal.
ATTENDEE_TYPE_OUTSIDE	3	External participant.
ATTENDEE_TYPE_CUSTOMNUMBER	4	Custom number.
ATTENDEE_TYPE_MOBILE	5	Soft client user's mobile phone.
ATTENDEE_TYPE_ANONYMOUS	6	Anonymous user.
ATTENDEE_TYPE_TELEPHONE	7	Phone user.
ATTENDEE_TYPE_BOARD	8	Whiteboard user.
ATTENDEE_TYPE_IDEAHUB	9	Large-screen device with HiSilicon chips.
ATTENDEE_TYPE_HWVISION	10	Smart TV.
ATTENDEE_TYPE_WELINKC	11	WeLink (public edition).

Table 9-262 Enumerated values of ConfResType

Enumeration Name	Enumerated Value	Description
HWM_CONF_RESTYPE_DEFAULT	0	Default.
HWM_CONF_RESTYPE_SHARE_VMR	3	Shared cloud meeting room.

Table 9-263 CycleConfParam

Parameter	Mandatory	Type	Description
startDate	Yes	number	Start date and timestamp, in seconds (GMT).
endDate	Yes	number	End date and timestamp, in seconds (GMT).
cycleType	Yes	CycleType	Period type.
interval	Yes	number	Interval of recurring meetings. If cycleType is set to daily, there is a meeting every several days and the value range is [1,15]. If cycleType is set to weekly, there is a meeting every several weeks and the value range is [1,5]. If cycleType is set to monthly, there is a meeting every several months and the value range is [1,3].
listPoints	Yes	string	Point for holding recurring meetings. This parameter is valid only when meetings are held weekly or monthly. Values are separated by colons (,), for example, 1,3,5,7 .
preRemindDays	Yes	number	Number of days in advance users are notified of a recurring meeting.

Table 9-264 Enumerated values of CycleType

Enumeration Name	Enumerated Value	Description
CYCLE_TYPE_DAY	0	Daily.
CYCLE_TYPE_WEEK	1	Weekly.
CYCLE_TYPE_MONTH	2	Monthly.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-265 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.4.12 Editing a Recurring Meeting

Function

This API is used to edit a recurring meeting. 1. Call this API only after login. 2. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Function Prototype

```
modifySubCycleConf(modifySubCycleConfParam: ModifySubCycleConfParam,  
onModifySubCycleConfResult?: (ret: SDKERR, reason: string) => void):  
void  
void modifySubCycleConf(modifySubCycleConfParam: ModifySubCycleConfParam,  
onModifySubCycleConfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-266 Input parameter description

Parameter	Mandatory	Type	Description
modifySubCycleConfParam	Yes	ModifySubCycleConfParam	Parameters for editing a recurring meeting.
onModifySubCycleConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of editing a recurring meeting.

Table 9-267 ModifySubCycleConfParam

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.

Parameter	Mandatory	Type	Description
subConfID	Yes	string	UUID of a recurring meeting.
mediaType	Yes	MediaType	Meeting type.
startTime	No	number	Meeting start time (UTC time), in seconds.
duration	Yes	number	Meeting duration, in minutes.
isAutoRecord	No	boolean	Whether automatic meeting recording is enabled. If automatic meeting recording is enabled, the meeting will be recorded by default, regardless of whether recording is enabled or disabled in the meeting. This parameter is valid only for cloud recording, not for local recording on clients.
recordAuthType	No	RecordAuthType	Recording authentication mode.
confAllowJoinUser	No	ConfAllowJoinUserType	Users who are allowed to join the meeting. By default, everyone is allowed.
allowGuestStartConf	No	boolean	Whether to allow guests to start the meeting.
allowGuestStartConfTime	No	number	Time range for a guest to join the meeting in advance, in minutes. 0 : at any time; <i>n</i> : <i>n</i> minutes in advance.

Table 9-268 Enumerated values of MediaType

Enumeration Name	Enumerated Value	Description
HWM_MEDIA_TYPE_AUDIO	0	Audio.
HWM_MEDIA_TYPE_VIDEO	1	Video.

Table 9-269 Enumerated values of RecordAuthType

Enumeration Name	Enumerated Value	Description
REOCDR_AUTH_TYPE_ANYONE	0	The recording can be viewed or downloaded through link (no nonce is added).
REOCDR_AUTH_TYPE_IN_COMPANY_USER	1	Corporate users can view or download the recording.
REOCDR_AUTH_TYPE_ATTENDEE	2	Participants can view or download the recording.

Table 9-270 Enumerated values of ConfAllowJoinUserType

Enumeration Name	Enumerated Value	Description
CONF_ALLOW_JOIN_ANYONE	0	Everyone.
CONF_ALLOW_JOIN_LOGINED_USER	1	Logged-in users.
CONF_ALLOW_JOIN_IN_COMPANY_USER	2	Corporate users only.
CONF_ALLOW_JOIN_INVITED_USER	3	Invited users only.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-271 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.

Parameter	Type	Description
reason	string	Error description.

9.4.4.13 Canceling a Recurring Meeting Series

Function

This API is used to cancel a recurring meeting series that has at least one upcoming meeting. 1. Call this API only after login. 2. Call this API before the last recurring meeting starts. If the last recurring meeting is already in progress, calling this API is invalid. 3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Function Prototype

```
cancelCycleConf(cancelCycleConfParam: CancelCycleConfParam,  
onCancelCycleConfResult?: (ret: SDKERR, reason: string) => void):  
void  
cancelCycleConf(cancelCycleConfParam: CancelCycleConfParam,  
onCancelCycleConfResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-272 Input parameter description

Parameter	Mandatory	Type	Description
cancelCycleConfParam	Yes	CancelCycleConfParam	Parameters for canceling a recurring meeting series.
onCancelCycleConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of canceling a recurring meeting series.

Table 9-273 CancelCycleConfParam

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.
endOnlineConf	Yes	boolean	Whether to end an ongoing meeting.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-274 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.4.14 Canceling a Recurring Meeting

Function

This API is used to cancel a recurring meeting. 1. Call this API only after login. 2. Call this API before a recurring meeting starts. If the meeting is already in progress, calling this API is invalid. 3. This API is an asynchronous API. The return value only indicates whether the API is successfully called. The actual service processing result is returned in the corresponding callback function.

Function Prototype

cancelSubCycleConf(cancelSubCycleConfParam: CancelSubCycleConfParam, onCancelSubCycleConfResult?: (ret: SDKERR, reason: string) => void): void
voidcancelSubCycleConf(cancelSubCycleConfParam: CancelSubCycleConfParam, onCancelSubCycleConfResult?: (ret: SDKERR, reason: string) => void): void

Request Parameters

Table 9-275 Input parameter description

Parameter	Mandatory	Type	Description
cancelSubCycleConfParam	Yes	CancelSubCycleConfParam	Parameters for canceling a recurring meeting.
onCancelSubCycleConfResult	Yes	(ret: SDKERR, reason: string) => void	Callback of canceling a recurring meeting.

Table 9-276 CancelSubCycleConfParam

Parameter	Mandatory	Type	Description
confId	Yes	string	Meeting ID.
subConfID	Yes	string	UUID of a recurring meeting.
endOnlineConf	Yes	boolean	Whether to end an ongoing meeting.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-277 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5 Common Configuration Management Objects

Common configuration management objects

9.4.5.1 Subscribing to Notifications of Reporting Audio Stream Frame Data

Function

A notification is sent when audio stream frame data starts to be reported. (For Windows, only 32-bit Windows is supported.)

Function Prototype

```
setOnAudioFrameNotifyCB(onAudioFrameNotify: (audioFrameData:
AudioFrameData) => void): void
setOnAudioFrameNotifyCB(onAudioFrameNotify:
(audioFrameData: AudioFrameData) => void): void
```


Request Parameters

Table 9-278 Input parameter description

Parameter	Mandatory	Type	Description
onAudioFrameNotify	Yes	(audioFrameData: AudioFrameData) => void	Notifies you when audio stream frame data starts to be reported. (For Windows, only 32-bit Windows is supported.)

Return Values

void

Notification Method Parameters

(audioFrameData: AudioFrameData) => void

Table 9-279 Input parameter description

Parameter	Type	Description
audioFrameData	AudioFrameData	Audio stream frame data.

Table 9-280 AudioFrameData

Parameter	Type	Description
eFrameType	AudioFrameType	Audio frame type.
iSamples	number	Number of sampling points of each audio channel. iSamples = iSamplesPerSec x 10 ms/1,000
iSamplesPerSec	number	Sampling ratio.
iBytesPerSample	number	Number of bytes of each sampling point. Generally, the PCM audio is 16 bits.
iChannels	number	Number of audio channels.
uiBufferLen	number	Buffer length. The encoded data is encrypted by a third party. The data length increases to prevent overflow.
pBuffer	HWM_CHAR *	Data buffer. Length = iSamples x iBytesPerSample x iChannels

Parameter	Type	Description
uiDataLen	number	Data length, which is used after encoding or before decoding. The value of this parameter needs to be updated after encryption or decryption.

Table 9-281 Enumerated values of AudioFrameType

Enumeration Name	Enumerated Value	Description
HWM_AUDIO_FRAME_TYPE_PCM16	0	16-bit PCM.

9.4.5.2 Enabling or Disabling Functions

Function

This API is used to enable or disable meeting functions. Functions in the enumeration have default values. Call this API when you need to change the function status.

Function Prototype

```
enableCapability(capabilityInfo: CapabilityInfo, onEnableCapabilityResult?: (ret: SDKERR, reason: string) => void): void
enableCapability(capabilityInfo: CapabilityInfo, onEnableCapabilityResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-282 Input parameter description

Parameter	Mandatory	Type	Description
capabilityInfo	Yes	CapabilityInfo	Function configuration.
onEnableCapabilityResult	Yes	(ret: SDKERR, reason: string) => void	Callback of configuring function statuses.

Table 9-283 CapabilityInfo

Parameter	Mandatory	Type	Description
type	Yes	CapabilityType	Function type.
isEnabled	Yes	boolean	Function status.

Table 9-284 Enumerated values of CapabilityType

Enumeration Name	Enumerated Value	Description
HWM_CAPABILITY_TYPE_SHOW_HANGUP_ATTENDEE	0	Displaying offline participants (valid only for the Windows platform).
HWM_CAPABILITY_TYPE_HIDE_EXTERNAL_LABEL	1	Hiding the External label.
HWM_CAPABILITY_TYPE_RESOLUTION_1080P	2	1080p (valid only for the Windows platform)
HWM_CAPABILITY_TYPE_RESOLUTION_720P	3	720p (valid only for the macOS platform).
HWM_CAPABILITY_TYPE_MULTI_MONITOR	4	Multi-monitor mode (valid only for the Windows platform).
HWM_CAPABILITY_TYPE_HOWLING_DETECTION	5	Feedback detection (valid only for the Windows platform).
HWM_CAPABILITY_AUTO_MIC_VOLUME	6	Automatic microphone volume adjustment (valid only for the Windows platform).
HWM_CAPABILITY_SHARE_AUDIO	7	Audio sharing.
HWM_CAPABILITY_HIDE_NO_CAMERA_VIEW	8	Hiding non-video participants (valid only for the macOS platform).
HWM_CAPABILITY_BREAKOUT_CONF	9	Enabling or disabling the breakout room function.
HWM_CAPABILITY_CONFIRM_RECORD	10	Recording confirmation.
HWM_CAPABILITY_SUPPORT_DISCONNECT_AUDIO	12	Audio disconnection (valid only for the Windows platform).
HWM_CAPABILITY_DISCONNECT_AUDIO_TO_JOIN_CONF	13	Joining the meeting without audio (valid only for the Windows platform).

Enumeration Name	Enumerated Value	Description
HWM_CAPABILITY_CPU_REDUCTION_DETECT	14	Detecting CPU frequency reduction (valid only for the Windows platform).
HWM_CAPABILITY_SUPPORT_GUEST_INVITE	16	Participant invitation.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-285 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.3 Setting the Language

Function

This API is used to set the language. The default language is Chinese. To customize a language, create the corresponding internationalization files in `\HwmSdk\sdkResources\language\` in Windows or `/HWMUISDK.framework/Versions/A/Frameworks/WKLanguage.framework/Resources/` in macOS. For example, create `\ar\temp.js` in Windows or `ar.lproj/Localizable.strings` in macOS for Arabic. The language set through this API must be the same as the system language.

Function Prototype

```
setLanguage(languageInfo: LanguageInfo, onSetLanguageResult?: (ret: SDKERR, reason: string) => void): void  
setLanguage(languageInfo: LanguageInfo, onSetLanguageResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-286 Input parameter description

Parameter	Mandatory	Type	Description
languageInfo	Yes	LanguageInfo	Language type information.
onSetLanguageResult	Yes	(ret: SDKERR, reason: string) => void	Callback of setting the language.

Table 9-287 LanguageInfo

Parameter	Mandatory	Type	Description
type	Yes	Language	Language type.
languageCode	No	string	Code of the custom language.

Table 9-288 Enumerated values of Language

Enumeration Name	Enumerated Value	Description
HWM_LANGUAGE_ZH_CN	0	Chinese.
HWM_LANGUAGE_EN_GB	1	English.
HWM_LANGUAGE_CUSTOMIZED	2	Custom language.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-289 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.4 Setting the Save Path

Function

This API is used to set the path for saving user files (including local recording files). This API is optional. If the save path is not set, the default path is used.

Function Prototype

```
setUserSavePath(userSavePathInfo: UserSavePathInfo, onSetUserSavePathResult?:  
(ret: SDKERR, reason: string) => void): void  
setUserSavePath(userSavePathInfo: UserSavePathInfo, onSetUserSavePathResult?:  
(ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-290 Input parameter description

Parameter	Mandatory	Type	Description
userSavePathInfo	Yes	UserSavePathInfo	Save path information.
onSetUserSavePathResult	Yes	(ret: SDKERR, reason: string) => void	Callback of setting the save path.

Table 9-291 UserSavePathInfo

Parameter	Mandatory	Type	Description
pathType	Yes	SavePathType	Save path type.
path	Yes	string	Save path. The value is an absolute path and must be encoded in UTF-8.

Table 9-292 Enumerated values of SavePathType

Enumeration Name	Enumerated Value	Description
HWM_SAVE_PATH_LOCAL_RECORD	0	Path for storing local recording files.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-293 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.5 Obtaining the Save Path

Function

This API is used to obtain the path for saving user files (including local recording files). It is valid only for the Windows platform.

Function Prototype

```
getUserSavePath(pathType: SavePathType, onGetUserSavePathResult?: (ret: SDKERR, reason: string, pathInfo: UserSavePathInfo) => void):  
void  
getUserSavePath(pathType: SavePathType, onGetUserSavePathResult?: (ret: SDKERR, reason: string, pathInfo: UserSavePathInfo) => void): void
```

Request Parameters

Table 9-294 Input parameter description

Parameter	Mandatory	Type	Description
pathType	Yes	SavePathType	Save path type.
onGetUserSavePathResult	Yes	(ret: SDKERR, reason: string, pathInfo: UserSavePathInfo) => void	Callback of setting the save path.

Table 9-295 Enumerated values of SavePathType

Enumeration Name	Enumerated Value	Description
HWM_SAVE_PATH_LOCAL_RECORD	0	Path for storing local recording files.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, pathInfo: UserSavePathInfo) => void

Table 9-296 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
pathInfo	UserSavePathInfo	Save path information.

Table 9-297 UserSavePathInfo

Parameter	Type	Description
pathType	SavePathType	Save path type.
path	string	Save path. The value is an absolute path and must be encoded in UTF-8.

9.4.5.6 Enabling or Disabling Audio Streams

Function

This API is used to enable or disable audio streams.

Function Prototype

```
setAudioRawDataOutputConfig(audioRawDataConfigInfo:  
AudioRawDataConfigInfo, onSetAudioRawDataOutputConfigResult?: (ret: SDKERR,  
reason: string) => void):  
void  
setAudioRawDataOutputConfig(audioRawDataConfigInfo:  
AudioRawDataConfigInfo, onSetAudioRawDataOutputConfigResult?: (ret: SDKERR,  
reason: string) => void): void
```

Request Parameters

Table 9-298 Input parameter description

Parameter	Mandatory	Type	Description
audioRawDataConfigInfo	Yes	AudioRawDataConfigInfo	Audio stream configuration.
onSetAudioRawDataOutputConfigResult	Yes	(ret: SDKERR, reason: string) => void	Callback of enabling or disabling audio streams.

Table 9-299 AudioRawDataConfigInfo

Parameter	Mandatory	Type	Description
isOpen	Yes	boolean	Whether audio streams are enabled.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-300 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.7 Setting the Call Answer Mode

Function

This API is used to set the call answer mode, including original pop-up, automatic rejection, and automatic answer.

Function Prototype

```
setAnswerType(inComingAnswerTypeInfo: InComingAnswerTypeInfo,
onSetAnswerTypeResult?: (ret: SDKERR, reason: string) => void):
voidsetAnswerType(inComingAnswerTypeInfo: InComingAnswerTypeInfo,
onSetAnswerTypeResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-301 Input parameter description

Parameter	Mandatory	Type	Description
inComingAnswerTypeInfo	Yes	InComingAnswerTypeInfo	Incoming call answer information.
onSetAnswerTypeResult	Yes	(ret: SDKERR, reason: string) => void	Callback of setting the incoming call answer mode.

Table 9-302 InComingAnswerTypeInfo

Parameter	Mandatory	Type	Description
type	Yes	InComingAnswerType	Incoming call answer type.

Table 9-303 Enumerated values of InComingAnswerType

Enumeration Name	Enumerated Value	Description
HWM_INCOMING_ANSWER_NORMAL	0	(Default value) Displays the incoming call answer screen.
HWM_INCOMING_ANSWER_DECLINE	1	Rejects an incoming call.
HWM_INCOMING_ANSWER_ANSWER	2	Answers an incoming call.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-304 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.8 Configuring Device Statuses After a Meeting Call Is Answered

Function

This API is used to set the status of devices, including the microphone and camera, when a meeting call is answered.

Function Prototype

```
setDeviceConfigForConfIncoming(deviceConfig: DeviceConfig,
onSetDeviceConfigForConfIncomingResult?: (ret: SDKERR, reason: string) => void):
void
setDeviceConfigForConfIncoming(deviceConfig: DeviceConfig,
onSetDeviceConfigForConfIncomingResult?: (ret: SDKERR, reason: string) => void):
void
```

Request Parameters

Table 9-305 Input parameter description

Parameter	Mandatory	Type	Description
deviceConfig	Yes	DeviceConfig	Device configuration.
onSetDeviceConfigForConfigIncomingResult	Yes	(ret: SDKERR, reason: string) => void	Callback of setting the microphone or camera status when a meeting call is answered.

Table 9-306 DeviceConfig

Parameter	Mandatory	Type	Description
isMicOn	No	boolean	Whether to enable the microphone.
isCameraOn	No	boolean	Whether to enable the camera.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-307 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.9 Obtain the Meeting PSTN Number

Function

This API is used to obtain the meeting PSTN number.

Function Prototype

```
getConfPstnAccessNumber(onGetConfPstnAccessNumberResult?: (ret: SDKERR,
reason: string, pstnAccessNumberInfo: PstnAccessNumberInfo) => void):
voidgetConfPstnAccessNumber(onGetConfPstnAccessNumberResult?: (ret:
SDKERR, reason: string, pstnAccessNumberInfo: PstnAccessNumberInfo) => void):
void
```

Request Parameters

Table 9-308 Input parameter description

Parameter	Mandatory	Type	Description
onGetConfPstnAccessNumberResult	Yes	(ret: SDKERR, reason: string, pstnAccessNumberInfo: PstnAccessNumberInfo) => void	Callback of obtaining the meeting PSTN number.

Return Values

void

Callback Method Parameters

```
(ret: SDKERR, reason: string, pstnAccessNumberInfo: PstnAccessNumberInfo) =>
void
```

Table 9-309 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
pstnAccessNumberInfo	PstnAccessNumberInfo	Meeting PSTN number information.

Table 9-310 PstnAccessNumberInfo

Parameter	Type	Description
pstnAccessNumber	string	Meeting PSTN number.

9.4.5.10 Disabling Prompt Tones

Function

This API is used to disable prompt tones.

Function Prototype

```
disableVoicePrompts(voicePromptsInfo: VoicePromptsInfo,
onDisableVoicePromptsResult?: (ret: SDKERR, reason: string) => void):
void
disableVoicePrompts(voicePromptsInfo: VoicePromptsInfo,
onDisableVoicePromptsResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-311 Input parameter description

Parameter	Mandatory	Type	Description
voicePromptsInfo	Yes	VoicePromptsInfo	Prompt tone information.
onDisableVoicePromptsResult	Yes	(ret: SDKERR, reason: string) => void	Callback of disabling prompt tones.

Table 9-312 VoicePromptsInfo

Parameter	Mandatory	Type	Description
isDisableMutePrompt	Yes	boolean	Whether to disable the mute prompt tone.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-313 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.11 Setting the Sharing Permission

Function

This API is used to set the sharing permission. By default, sharing is allowed.

Function Prototype

```
setShareScreenPermission(permission: SharePermission,
onSetShareScreenPermissionResult?: (ret: SDKERR, reason: string) => void):
voidsetShareScreenPermission(permission: SharePermission,
onSetShareScreenPermissionResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-314 Input parameter description

Parameter	Mandatory	Type	Description
permission	Yes	SharePermissi on	Permission type information.
onSetShareScr eenPermission Result	Yes	(ret: SDKERR, reason: string) => void	Callback of setting the sharing permission.

Table 9-315 SharePermission

Parameter	Mandatory	Type	Description
isAllowed	Yes	boolean	Whether to disable sharing.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-316 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.12 Setting the Path for Saving Logs

Function

This API is used to set the path for saving logs. This API is optional. If the save path is not set, the default path is used.

Function Prototype

setLogPath(logPathInfo: LogPathInfo, onSetLogPathResult?: (ret: SDKERR, reason: string) => void): void
 setLogPath(logPathInfo: LogPathInfo, onSetLogPathResult?: (ret: SDKERR, reason: string) => void): void

Request Parameters

Table 9-317 Input parameter description

Parameter	Mandatory	Type	Description
logPathInfo	Yes	LogPathInfo	Log path information.
onSetLogPathResult	Yes	(ret: SDKERR, reason: string) => void	Callback of setting the path for saving logs.

Table 9-318 LogPathInfo

Parameter	Mandatory	Type	Description
path	Yes	string	Save path. The value is an absolute path and must be encoded in UTF-8.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-319 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.5.13 Obtaining an Error Message

Function

This API is used to obtain an error message.

Function Prototype

getErrorMessage(errorCode: number): ErrorMessageInfo

Request Parameters

Table 9-320 Input parameter description

Parameter	Mandatory	Type	Description
errorCode	Yes	number	Error code.
errorMessageInfo	Yes	ErrorMessageInfo	Error message.

Return Values

ErrorMessageInfo

9.4.6 UI Configuration Management Objects

UI configuration management objects

9.4.6.1 Subscribing to Click Injection Notifications

Function

A notification is sent when a user clicked a button configured with click injection.

Function Prototype

```
setOnClickInjectBtnNotifyCB(onClickInjectBtnNotify: (injectBtnInfo: InjectBtnInfo) => void): void
setOnClickInjectBtnNotifyCB(onClickInjectBtnNotify: (injectBtnInfo: InjectBtnInfo) => void): void
```

Request Parameters

Table 9-321 Input parameter description

Parameter	Mandatory	Type	Description
onClickInjectBtnNotify	Yes	(injectBtnInfo: InjectBtnInfo) => void	Notifies you when a user clicked a button configured with click injection.

Return Values

void

Notification Method Parameters

```
(injectBtnInfo: InjectBtnInfo) => void
```

Table 9-322 Input parameter description

Parameter	Type	Description
injectBtnInfo	InjectBtnInfo	Click injection notification.

Table 9-323 InjectBtnInfo

Parameter	Type	Description
injectBtn	ClickInjectBtn	Button type.
btnId	string	Button ID.

Table 9-324 Enumerated values of ClickInjectBtn

Enumeration Name	Enumerated Value	Description
HWM_CLICK_INJECT_BTN_INVITE	0	Invite button.
HWM_CLICK_INJECT_BTN_ATTENDEE	1	Participants button.
HWM_CLICK_INJECT_BTN_CHAT	2	Chats button.
HWM_CLICK_INJECT_BTN_SHARE	3	Share button.
HWM_CLICK_INJECT_BTN_LEAVE	4	Leave button.
HWM_CLICK_INJECT_BTN_CUSTOM	5	Custom button.
HWM_CLICK_INJECT_BTN_GUEST_INVITE	6	Invite button displayed to guests.
HWM_CLICK_INJECT_BTN_FEEDBACK	7	Feedback button.
HWM_CLICK_INJECT_BTN_COPY_CONF_INFO	8	Button for copying meeting details.
HWM_CLICK_INJECT_BTN_COPY_AUDIENCE_CONF_INFO	9	Button for copying meeting details for attendees.

9.4.6.2 Subscribing to Click Injection Notifications of Participant List Subitems

Function

A notification is sent when a user clicked a button configured with click injection in the participant list.

Function Prototype

```
setOnClickInjectParticipantItemBtnNotifyCB(onClickInjectParticipantItemBtnNotify:
(injectBtnInfo: InjectParticipantItemBtnInfo) => void):
voidsetOnClickInjectParticipantItemBtnNotifyCB(onClickInjectParticipantItemBtnNo
tify: (injectBtnInfo: InjectParticipantItemBtnInfo) => void): void
```

Request Parameters

Table 9-325 Input parameter description

Parameter	Mandatory	Type	Description
onClickInjectParticipantItemBtnNotify	Yes	(injectBtnInfo: InjectParticipantItemBtnInfo) => void	Notifies you when a user clicked a button configured with click injection in the participant list.

Return Values

void

Notification Method Parameters

(injectBtnInfo: InjectParticipantItemBtnInfo) => void

Table 9-326 Input parameter description

Parameter	Type	Description
injectBtnInfo	InjectParticipantItemBtnInfo	Click injection notification.

Table 9-327 InjectParticipantItemBtnInfo

Parameter	Type	Description
injectBtn	ClickInjectParticipantItemBtn	Button type.
participantInfo	ParticipantItemInfo	Subitem in the participant list.
btnId	string	Button ID.

Table 9-328 Enumerated values of ClickInjectParticipantItemBtn

Enumeration Name	Enumerated Value	Description
HWM_CLICK_INJECT_PARTICIPANT_ITEM_BTN_CALL_OTHER_NUM	0	Call other number button.

Enumeration Name	Enumerated Value	Description
HWM_CLICK_INJECT_PARTICIPANT_ITEM_BTN_PARTICIPANT_DETAIL	1	Button of viewing participant details.

Table 9-329 ParticipantItemInfo

Parameter	Type	Description
number	string	Number.
nickName	string	Participant display name.
thirdUserId	string	Third-party account of the participant, which is used for app ID login.
accountId	string	Huawei Cloud Meeting account.

9.4.6.3 Subscribing to Window Handle Notifications

Function

A notification is sent when the window handle information changes.

Function Prototype

```
setOnRenderWindowInfoListChangedCB(onRenderWindowInfoListChanged:
(hwndInfo: HwndListInfo) => void):
voidsetOnRenderWindowInfoListChangedCB(onRenderWindowInfoListChanged:
(hwndInfo: HwndListInfo) => void): void
```

Request Parameters

Table 9-330 Input parameter description

Parameter	Mandatory	Type	Description
onRenderWindowInfoListChanged	Y	(hwndInfo: HwndListInfo) => void	Notification sent when the window handle information changes.

Return Values

void

Notification Method Parameters

(hwndInfo: HwndListInfo) => void

Table 9-331 Input parameter description

Parameter	Type	Description
hwndInfo	HwndListInfo	Window handle information.

Table 9-332 HwndListInfo

Parameter	Type	Description
hwndInfoList	HwndInfo	Video window handle list.
hwndListLength	number	Number of window handles in the list.

9.4.6.4 Subscribing to Notifications of Profile Picture Query in an External Corporate Directory

Function

A notification is sent when a user enabled the profile picture function in the external corporate directory and joined a meeting with camera disabled.

Function Prototype

```
setOnQueryContactAvatarNotifyCB(onQueryContactAvatarNotify: (contactInfo: ContactInfo) => void): void
voidsetOnQueryContactAvatarNotifyCB(onQueryContactAvatarNotify: (contactInfo: ContactInfo) => void): void
```

Request Parameters

Table 9-333 Input parameter description

Parameter	Mandatory	Type	Description
onQueryContactAvatarNotify	Yes	(contactInfo: ContactInfo) => void	Notifies you when a user enabled the profile picture function in the external corporate directory and joined a meeting with camera disabled.

Return Values

void

Notification Method Parameters

(contactInfo: ContactInfo) => void

Table 9-334 Input parameter description

Parameter	Type	Description
contactInfo	ContactInfo	Information about querying an external contact.

Table 9-335 ContactInfo

Parameter	Type	Description
accountId	string	Account. This parameter is preferentially used in the account and password login scenario.
thirdUserId	string	Third-party account of the participant. This parameter is preferentially used in the app ID login scenario.
number	string	Number. This parameter is preferentially used in cross-enterprise scenarios.
userUuid	string	UUID (unique user ID allocated by the system, which is valid only for the Windows platform).

9.4.6.5 Configuring the UI

Function

This API is used to customize parameters and UI elements in a meeting.

Function Prototype

```
config(uiConfig: string, onConfigResult?: (ret: SDKERR, reason: string) => void):
voidconfig(uiConfig: string, onConfigResult?: (ret: SDKERR, reason: string) => void):
void
```

Request Parameters

Table 9-336 Input parameter description

Parameter	Mandatory	Type	Description
uiConfig	Yes	string	Configuration information, which is in JSON format. For details, see JSON Description for UI Configuration .
onConfigResult	Yes	(ret: SDKERR, reason: string) => void	Callback of customizing parameters.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-337 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.6.6 Customizing a Watermark for a Meeting

Function

This API is used to customize a watermark. If not specified, the internal priorities are used to display the watermark. 1. Call this API before a meeting. Calling this API during a meeting does not take effect. 2. If the enterprise-level watermark function is disabled, the custom watermark content injection does not take effect.

Function Prototype

```
setWaterMark(waterMarkInfo: WaterMarkInfo, onSetWaterMarkResult?: (ret: SDKERR, reason: string) => void): void
setWaterMark(waterMarkInfo: WaterMarkInfo, onSetWaterMarkResult?: (ret: SDKERR, reason: string) => void): void
```


Request Parameters

Table 9-338 Input parameter description

Parameter	Mandatory	Type	Description
waterMarkInfo	Yes	WaterMarkInfo	Watermark injection information.
onSetWaterMarkResult	Yes	(ret: SDKERR, reason: string) => void	Callback of configuring watermark injection information.

Table 9-339 WaterMarkInfo

Parameter	Mandatory	Type	Description
content	No	string	Custom watermark injection content.
color	No	WaterMarkColorType	Watermark font color. 0 : light; 1 : standard; 2 : dark.

Table 9-340 Enumerated values of WaterMarkColorType

Enumeration Name	Enumerated Value	Description
HWM_WATERMARK_COLOR_TYPE_LIGHT	0	Light #CCCCCC
HWM_WATERMARK_COLOR_TYPE_STANDARD	1	Standard #999999
HWM_WATERMARK_COLOR_TYPE_DARKER	2	Dark #666666

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-341 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.6.7 Obtaining the Window Handle List

Function

This API is used to obtain the window handle list.

Function Prototype

```
getRenderWindowInfoList(onGetRenderWindowInfoListResult?: (ret: SDKERR, reason: string, hwndInfo: HwndListInfo) => void): void  
voidgetRenderWindowInfoList(onGetRenderWindowInfoListResult?: (ret: SDKERR, reason: string, hwndInfo: HwndListInfo) => void): void
```

Request Parameters

Table 9-342 Input parameter description

Parameter	Mandatory	Type	Description
onGetRenderWindowInfoListResult	Yes	(ret: SDKERR, reason: string, hwndInfo: HwndListInfo) => void	Callback of the window handle list, which is returned for GetRenderWindowInfoList requests.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, hwndInfo: HwndListInfo) => void

Table 9-343 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
hwndInfo	HwndListInfo	Window handle information.

Table 9-344 HwndListInfo

Parameter	Type	Description
hwndInfoList	HwndInfo	Video window handle list.
hwndListLength	number	Number of window handles in the list.

9.4.6.8 Displaying the Meeting Window

Function

This API is used to place the main meeting window at the top when it is minimized or covered by other windows. An ongoing meeting will be selected from the meeting list to show its window.

Function Prototype

```
showMeetingWindow(onShowMeetingWindowResult?: (ret: SDKERR, reason: string) => void): void
showMeetingWindow(onShowMeetingWindowResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-345 Input parameter description

Parameter	Mandatory	Type	Description
onShowMeetingWindowResult	Yes	(ret: SDKERR, reason: string) => void	This parameter is used to display the meeting window.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-346 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.6.9 Configuring a Profile Picture

Function

This API is used to configure the profile picture information.

Function Prototype

```
setAvatar(avatarInfo: AvatarInfo, onSetAvatarResult?: (ret: SDKERR, reason: string) => void): void  
setAvatar(avatarInfo: AvatarInfo, onSetAvatarResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-347 Input parameter description

Parameter	Mandatory	Type	Description
avatarInfo	Yes	AvatarInfo	Profile picture information.
onSetAvatarResult	Yes	(ret: SDKERR, reason: string) => void	Callback of configuring the profile picture.

Table 9-348 AvatarInfo

Parameter	Mandatory	Type	Description
number	Yes	string	Number.
avatarPath	Yes	string	Profile picture path.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-349 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.6.10 Customizing the Meeting Window Icon on the Taskbar

Function

This API is used to set the meeting window icon on the taskbar (valid only for the macOS platform). On the Windows platform, you can replace the **video.ico** file in **HwmSdk\sdkResources\nativeimg**.

Function Prototype

```
setMeetingWindowIcon(windowIconInfo: WindowIconInfo,
onSetMeetingWindowIconResult?: (ret: SDKERR, reason: string) => void):
void
setMeetingWindowIcon(windowIconInfo: WindowIconInfo,
onSetMeetingWindowIconResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-350 Input parameter description

Parameter	Mandatory	Type	Description
windowIconInfo	Yes	WindowIconInfo	Window icon information.
onSetMeetingWindowIconResult	Yes	(ret: SDKERR, reason: string) => void	Callback of configuring the meeting window icon.

Table 9-351 WindowIconInfo

Parameter	Mandatory	Type	Description
iconPath	Yes	string	Icon path.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-352 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.6.11 Displaying the Settings Window

Function

This API is used to display the settings window.

Function Prototype

```
showSettingWindow(showInfo: ShowSettingWindowInfo,
onShowSettingWindowResult?: (ret: SDKERR, reason: string) => void):
voidshowSettingWindow(showInfo: ShowSettingWindowInfo,
onShowSettingWindowResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-353 Input parameter description

Parameter	Mandatory	Type	Description
showInfo	Yes	ShowSettingW indowInfo	Information about displaying the settings window.

Parameter	Mandatory	Type	Description
onShowSettingWindowResult	Yes	(ret: SDKERR, reason: string) => void	Callback of displaying the settings window.

Table 9-354 ShowSettingWindowInfo

Parameter	Mandatory	Type	Description
isShow	Yes	boolean	Whether the settings window is displayed.
defaultPage	Yes	SettingPage	Tab displayed by default.

Table 9-355 Enumerated values of SettingPage

Enumeration Name	Enumerated Value	Description
SETTING_PAGE_NORMAL	0	General
SETTING_PAGE_VIDEO	1	Video
SETTING_PAGE_AUDIO	2	Audio
SETTING_PAGE_RECORD	3	Recording
SETTING_PAGE_HOTKEY	4	Shortcut keys
SETTING_PAGE_SCREEN	5	Screen
SETTING_PAGE_COUNT	6	Number of setting screens

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-356 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.6.12 Displaying a Toast Message

Function

This API is used to display a toast message.

Function Prototype

```
showToast(toastInfo: ToastInfo, onShowToastResult?: (ret: SDKERR, reason: string) => void): void  
showToast(toastInfo: ToastInfo, onShowToastResult?: (ret: SDKERR, reason: string) => void): void
```

Request Parameters

Table 9-357 Input parameter description

Parameter	Mandatory	Type	Description
toastInfo	Yes	ToastInfo	Toast message.
onShowToastResult	Yes	(ret: SDKERR, reason: string) => void	Callback of displaying a toast message.

Table 9-358 ToastInfo

Parameter	Mandatory	Type	Description
content	Yes	string	Toast message.
duration	Yes	number	Display duration, in seconds.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string) => void

Table 9-359 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.

9.4.6.13 Obtaining Information About the Main Window

Function

This API is used to obtain information about the main window.

Function Prototype

getMainWindowInfo(onGetMainWindowInfoResult?: (ret: SDKERR, reason: string, mainWindowInfo: MainWindowInfo) => void):
void
voidgetMainWindowInfo(onGetMainWindowInfoResult?: (ret: SDKERR, reason: string, mainWindowInfo: MainWindowInfo) => void): void

Request Parameters

Table 9-360 Input parameter description

Parameter	Mandatory	Type	Description
onGetMainWi ndowInfoResul t	Yes	(ret: SDKERR, reason: string, mainWindowInfo: MainWindowInfo) => void	Main window information notification, which is returned when the main window information is obtained.

Return Values

void

Callback Method Parameters

(ret: SDKERR, reason: string, mainWindowInfo: MainWindowInfo) => void

Table 9-361 Input parameter description

Parameter	Type	Description
ret	For details about SDKERR , see Error Code Reference .	Error code.
reason	string	Error description.
mainWindowInfo	MainWindowInfo	Main window information.

Table 9-362 MainWindowInfo

Parameter	Type	Description
x	number	Offset of the window relative to the left side of the screen.
y	number	Offset of the window relative to the top of the screen.
width	number	Width of the window.
height	number	Height of the window.

9.5 Error Codes

Error Code Reference

Table 9-363 Enumerated values of SDKError

Variable	Value	Description
SDKERR_UNKOWN	-1	Unknown error.
SDKERR_SUCCESS	0	Successful.
CMS_CONF_SERVER_FLOW_CONTROL	100000429	Server flow control error.
CMS_CONF_BAD_REQUEST	111070001	Request error.
CMS_CONF_INSUFFICIENT_PERMISSIONS	111070002	Insufficient permissions.
CMS_CONF_EXCEPTION	111070003	System processing failed.

Variable	Value	Description
CMS_CONF_AUTH_FAIL	111070004	Verification failed.
CMS_CONF_DATA_NOT_FOUND	111070005	The meeting does not exist.
CMS_VMR_DATA_NOT_FOUND	111070006	The personal cloud meeting room does not exist.
CMS_ACCESS_NUMBER_NOT_FOUND	111070007	The meeting access number does not exist.
CMS_CONF_NOTICE_MODEL_CONFIG_ERROR	111070008	The meeting notification template is incorrect.
CMS_CONF_AUTHEN_NEED_PASSWORD	111070009	The meeting password cannot be empty.
CMS_CONF_ROLE_AUTHENTICATION_FAILED	111070010	You do not have the permissions to view the meeting.
CMS_CONF_GET_STARTED_CONF_EXCEPTION	111070100	An exception occurred when obtaining the meeting to be held.
CMS_CONF_START_EXCEPTION	111070101	An exception occurred when starting the meeting.
CMS_CONF_APPLY_IVR_RESOURCE_EXCEPTION	111070102	An exception occurred when requesting IVR resources.
CMS_START_IVRCONF_EXCEPTION	111070103	An exception occurred when starting the IVR meeting.
CMS_CONF_APPLY_PARTICIPANT_RESOURCE_EXCEPTION	111070104	An exception occurred when requesting participant resources.
CMS_START_SUBCONF_EXCEPTION	111070105	An exception occurred when starting the meeting.
CMS_CONF_ADD_CHANNEL_EXCEPTION	111070106	An exception occurred when creating the cascading channel.
CMS_CONF_MOVE_AND_APPLY_RESOURCE_EXCEPTION	111070107	An exception occurred when requesting resources to move the participant.
CMS_START_CONF_EXCEPTION	111070108	An exception occurred when starting the meeting.
CMS_CONF_GET_STARTED_VMRCONF_EXCEPTION	111070109	An exception occurred when obtaining details of a meeting held using the cloud meeting room.

Variable	Value	Description
CMS_CONF_INVITE_PARTICIPANT_EXCEPTION	111070110	An exception occurred when inviting the participant.
CMS_REQUEST_TOKEN_IS_NULL	111070111	The request token is empty.
CMS_CONF_RENAME_PARTICIPANT_EXCEPTION	111070112	An exception occurred when renaming the participant.
CMS_CONF_HANGUP_EXCEPTION	111070113	An exception occurred when disconnecting the participant.
CMS_CONF_BULK_HANGUP_EXCEPTION	111070114	An exception occurred when disconnecting the participants.
CMS_CONF_DELETE_ATTENDEE_EXCEPTION	111070115	An exception occurred when removing the participant.
CMS_CONF_BULK_DELETE_ATTENDEE_EXCEPTION	111070116	An exception occurred when removing the participants.
CMS_SCHEDULE_CYCLE_CONF_EXCEPTION	111070117	An exception occurred when scheduling a recurring meeting.
CMS_MODIFY_CYCLE_CONF_EXCEPTION	111070118	An exception occurred when modifying the recurring meeting.
CMS_CREATE_CYCLE_CONF_EXCEPTION	111070119	An exception occurred when creating a recurring meeting.
CMS_REGION_DATA_NOT_FOUND	111070120	Failed to obtain the region information.
CMS_FORBIDDEN_SUBSCRIBE	111070121	Subscription is not allowed.
CMS_CANCEL_SUBSCRIBE_FAIL	111070122	Failed to cancel subscription.
CMS_CONF_SYSPORTAL_SERVICE_EXCEPTION	111071001	Sysportal service exception.
CMS_CONF_EXECUTOR_RUN_EXCEPTION	111071002	Conf service exception.
CMS_CONF_ID_NOT_EXIST	111071003	Failed to create the meeting. Try again later.
CMS_VMR_ONLY_ALLOW_CHAIR_START_CONF	111071004	Guests are not allowed to join the cloud meeting room ahead of the host.

Variable	Value	Description
CMS_VMR_CONF_CONFLICT	111071005	This cloud meeting room has been scheduled for another meeting during this period.
CMS_VMR_IMMEDIATELY_CONF_DURATION_NOT_ENOUGH	111071006	Insufficient cloud meeting duration.
CMS_VMR_SCHEDULE_RELATION_NOT_EXIST	111071007	The meeting does not exist.
CMS_CONF_QUERY_LIST_FAIL	111071008	Failed to query the meeting list.
CMS_CONF_MODIFY_IMMEDIATELY_VMR_FAIL	111071009	Meetings held using cloud meeting rooms cannot be changed to instant meetings.
CMS_CONF_MODIFY_VMR_FLAG_FAIL	111071010	The cloud meeting room ID cannot be modified.
CMS_VMR_CONF_NOT_REACH_PREPARE_TIME	111071011	The meeting has not started.
CMS_CONF_NOT_VMR	111071012	The meeting is not held in a cloud meeting room.
CMS_CONF_START_TIME_LESS_THAN_CURRENT_TIME	111071013	The meeting start time cannot be earlier than the current system time.
CMS_CONF_START_TIME_OVER_MAX_SCHEDULE_TIME	111071014	The start time exceeds the allowed range.
CMS_CONF_DURATION_OVER_RANGE	111071015	Duration too long.
CMS_CONF_PARAMS_NULL_EXCEPTION	111071016	The list of IDs of recurring meetings to be canceled cannot be empty.
CMS_CONF_SIZE_OVER_RANGE	111071017	More participants than allowed.
CMS_CONF_MEDIA_TYPES_ILLEGAL	111071018	Invalid media type.
CMS_CONF_CONFERENCE_TYPE_ILLEGAL	111071019	Invalid meeting type.
CMS_CONF_CYCLE_PARAMS_NULL_EXCEPTION	111071020	Recurring meeting parameters must be carried for a recurring meeting.

Variable	Value	Description
CMS_CONF_LENGTH_OVER_RANGE	111071021	Meeting duration too long.
CMS_CONF_SUBJECT_LENGTH_TOO_LONG	111071022	Meeting topic too long.
CMS_CONF_GROUPURI_LENGTH_TOO_LONG	111071023	groupuri too long.
CMS_CONF_EMAIL_ILLEGAL	111071024	Invalid email address.
CMS_CONF_SMS_ILLEGAL	111071025	Invalid mobile number.
CMS_CONF_DEPTNAME_TOO_LONG	111071026	Department name too long.
CMS_CONF_WELCOME_VOICE_NOT_IN_RANGE	111071027	The status of the joining message switch is invalid.
CMS_CONF_ENTER_PROMPT_NOT_IN_RANGE	111071028	The status of the joining voice prompt switch is invalid.
CMS_CONF_LEAVE_PROMPT_NOT_IN_RANGE	111071029	The status of the leaving message switch is invalid.
CMS_CONF_REMINDERS_ILLEGAL	111071030	The meeting reminder status is invalid.
CMS_CONF_ALLOW_RECORD_NOT_IN_RANGE	111071031	The status of network recording is invalid.
CMS_CONF_AUTO_RECORD_NOT_IN_RANGE	111071032	The status of automatic recording is invalid.
CMS_CONF_USER_TYPE_NOT_IN_RANGE	111071033	The user type of the meeting scheduler is invalid.
CMS_CONF_ENCRYPT_MODE_NOT_IN_RANGE	111071034	Invalid encryption type.
CMS_CONF_LANGUAGE_NOT_IN_RANGE	111071035	Invalid language.
CMS_CONF_AUTO_PROLONG_NOT_IN_RANGE	111071036	The status of whether to automatically extend the meeting is invalid.
CMS_CONF_VMRID_TOO_LONG	111071037	vmrid too long.

Variable	Value	Description
CMS_CONF_RECORD_TYPE_NOT_IN_RANGE	111071038	Invalid recording type.
CMS_CONF_LIVE_ADDRESS_TOO_LONG	111071039	Video live broadcast URL too long.
CMS_CONF_AUX_ADDRESS_TOO_LONG	111071040	Presentation live broadcast URL too long.
CMS_CONF_CYCLE_PARAMS_STARTDATE_NULL	111071041	The start date of the recurring meeting is empty.
CMS_CONF_CYCLE_PARAMS_ENDDATE_NULL	111071042	The end date of the recurring meeting is empty.
CMS_CONF_CYCLE_PARAMS_CYCLE_ILLEGAL	111071043	Invalid period type for a recurring meeting.
CMS_CONF_CYCLE_PARAMS_INTERVAL_NOT_IN_RANGE	111071044	Invalid interval for a recurring meeting.
CMS_CONF_CYCLE_PARAMS_POINT_NULL_EXCEPTION	111071045	The point parameter for a recurring meeting is empty.
CMS_CONF_CYCLE_PARAMS_POINT_NOT_IN_RANGE	111071046	Invalid point for a recurring meeting.
CMS_CONF_VMR_FLAG_NOT_IN_RANGE	111071047	Invalid vmrFlag.
CMS_CONF_RECORD_AUX_STREAM_NOT_IN_RANGE	111071048	Invalid recordAuxStream.
CMS_CONF_MULTI_STREAM_FLAG_NOT_IN_RANGE	111071049	Invalid multiStreamFlag.
CMS_CONF_AUDIENCE_FLAG_NOT_IN_RANGE	111071050	Invalid audienceFlag.
CMS_CONF_LIVE_CHANNEL_ID_NOT_EXISTED	111071051	liveChannelID does not exist.
CMS_CONF_ANONYMOUS_LOGIN_LOCKED	111071052	Anonymous login is locked. Try again later.

Variable	Value	Description
CMS_CONF_LINK_LOGIN_LOCKED	111071053	Login using the link is locked. Try again later.
CMS_CONF_IDENTIFIER_NOT_ENOUGH	111071054	Insufficient meeting ID resources.
CMS_CONF_IDENTIFIER_APPLY_FAILED	111071055	Failed to request the meeting ID.
CMS_CONF_IDENTIFIER_RELEASE_FAILED	111071056	Failed to release the meeting ID.
CMS_CONF_LIVE_ROOM_ISUSED	111071057	The live broadcast room has been occupied.
CMS_NOT_ALLOWED_GUEST_FIRST_JOIN	111071058	The meeting has not started.
CMS_CONF_SIZE_OVER_COMMUNAL_VMR_MAXNUM	111071059	More participants than allowed.
CMS_ORG_CONCURRENT_PARTICIPANTS_NUMBER_IS_ZERO	111071060	The enterprise has no concurrent participant resources configured and cannot use the personal meeting ID or random meeting ID to initiate a meeting.
CMS_PARAMETER_VERIFIED_FAIL	111071061	Parameter verification failed.
CMS_JSON_CONVERSION_FAILED	111071062	JSON conversion failed.
CMS_CONF_USER_NOT_VMR_OWNER	111071063	The user is not the owner of the cloud meeting room.
CMS_VMR_CONF_CONFLICT_AS_VMR_ALREADY_STARTED	111071064	A meeting is in progress in this cloud meeting room.
CMS_CONF_MODIFY_FAIL_AS_CONF_ALREADY_STARTED	111071065	The meeting is in progress. Its information cannot be modified.
CMS_CONF_ATTENDEES_NUMBER_EXCEED_LIMIT	111071066	More participants than allowed.
CMS_CONF_CANCEL_FAIL_AS_CONF_STARTED	111071067	The meeting is in progress and cannot be canceled.
CMS_CONF_PWD_ENCRYPT_FAILED	111071068	Failed to encrypt the meeting password.

Variable	Value	Description
CMS_CONF_NOCONF_IN_SELECTED_TIME	111071069	No meeting in your selected time.
CMS_SUB_CYCCONF_CANNOT_MODIFY_LIVE_ROOM	111071070	The live broadcast room cannot be changed for a recurring meeting.
CMS_STOP_ONLINE_CONF_EXCEPTION	111071071	Failed to end the meeting.
CMS_CONF_CLOSED_RECENTLY	111071072	The meeting has ended.
CMS_CONF_NOT_ALLOWED_ANONYMOUS	111071073	Anonymous users are not allowed to join the meeting.
CMS_CONF_ONLY_ALLOWED_USER_IN_ORG	111071074	Only corporate users are allowed to join the meeting.
CMS_CONF_ONLY_ALLOWED_USER_INVITED	111071075	Only invited users are allowed to join the meeting.
CMS_BATCH_EXPORT_HIS_CONF_LIST_CONFLICT	111071076	A batch export task is being executed.
CMS_CONF_ONLY_ALLOWED_USER_INVITED_AND_USER_IN_ORG	111071077	Only invited users or corporate users can join the meeting.
CMS_WELINK_C_CONCURRENT_PARTICIPANTS_NUMBER_IS_NOT_ENOUGH	111071078	The number of concurrent participants in the meeting has reached the maximum allowed limit.
CMS_CONF_CTD_PARAMETER_ILLEGAL	111071079	Invalid CTD meeting parameter.
CMS_GUEST_PWD_ILLEGAL	111071080	Invalid guest password.
CMS_GUEST_PWD_CONFLICT_WITH_CONF_ID	111071081	The guest password conflicts with the meeting ID.
CMS_CONF_NUM_UP_TO_LIMIT	111071082	More meetings than allowed.
CMS_CONF_RANDOM_INVALID	111071083	Invalid meeting random number.
CMS_EXPORT_HIS_CONF_UP_TO_LIMIT	111071084	More historical meeting exports than allowed.

Variable	Value	Description
CMS_MULTI_PIC_TOO_MANY_LAYOUTS	111071085	More continuous presence layouts than allowed.
CMS_MULTI_PIC_MANUAL_TYPE_INVALID	111071086	The continuous presence mode is invalid.
CMS_MULTI_PIC_TOO_MANY_SUBPICS	111071087	More continuous presence screens than allowed.
CMS_MULTI_PIC_TOO_MANY_SUBNUMBERS	111071088	More participants in a screen of continuous presence than allowed.
CMS_WEBINAR_COMMON_NON_CONVERT	111071089	A webinar cannot be changed to a common meeting, and a common meeting cannot be changed to a webinar.
CMS_NOT_ALLOW_AUDIENCE	111071090	Adding attendees is not allowed.
CMS_CONF_PWD_AUTH_FAILED	111071091	Incorrect password.
CMS_FILE_EXPORT_TASK_FAILED	111071092	Failed to export the file.
CMS_FILE_EXPORT_TASK_DOWNLOADING	111071093	The file is being exported.
CMS_CONF_FORBID_AUDIENCE_JOIN	111071094	Attendees cannot join the meeting.
CMS_CONF_NEED_GET_WEBINAR_CONF_DTO	111071095	The WEBINAR_CONF_DTO object is required.
CMS_CUSTOM_LANGUAGE_NUM_OVER_RANGE	111071096	More custom languages than allowed.
CMS_ORG_NOT_SUPPORT_SIMULTANEOUS_INTERPRETATION	111071097	This enterprise does not support simultaneous interpretation.
CMS_NEED_SET_INTERPRETER_GROUPS	111071098	Interpreter group information needs to be set.
CMS_INTERPRETER_LANGUAGE_ILLEGAL	111071099	The language of the interpreter group is invalid.
CMS_CONF_LANGUAGE_NUM_UP_TO_MAX	111071100	A meeting supports up to 16 languages.
CMS_INTERPRETER_GROUP_ID_REPEATED	111071101	Duplicate interpreter group IDs.

Variable	Value	Description
CMS_INTERPRETER_NUM_IN_ONE_GROUP_UP_TO_MAX	111071102	The maximum number of interpreters in the group has been reached.
CMS_INTERPRETER_REPEATED	111071103	The interpreter has already been added to a group.
CMS_INVALID_INTERPRETER	111071104	The interpreter account does not exist.
CMS_GUEST_PWD_CONFLICT_WITH_CHAIR_PWD	111071105	The guest password conflicts with the host password.
CMS_ONLINE_CONF_IN_COMMUNAL	111071106	A meeting is being held in the cloud meeting room.
CMS_AUDIENCE_PWD_ILLEGAL	111071107	Invalid attendee password.
CMS_AUDIENCE_PWD_CONFLICT_WITH_CONF_ID	111071108	The attendee password conflicts with the meeting ID.
CMS_AUDIENCE_PWD_CONFLICT_WITH_CHAIR_PWD	111071109	The attendee password conflicts with the host password.
CMS_ONLY_RTC_CONF_SUPPORT_E2E_ENCRYPT	111071110	Non-RTC meetings do not support end-to-end encryption.
CMS_AUDIENCE_PWD_CONFLICT_WITH_GUEST_PWD	111071111	The attendee password conflicts with the guest password.
CMS_VMRIDTYPE_CANNOT_MODIFY	111071112	The meeting ID type cannot be changed.
CMS_VMRID_CANNOT_MODIFY	111071113	The cloud meeting room type cannot be changed.
CMS_VMR_FLAG_CANNOT_MODIFY	111071114	The cloud meeting room ID cannot be changed.
CMS_CONF_NUM_OVER_MAX_ALLOWED	111071116	The maximum number of ongoing meetings has been reached.
CMS_SUB_CYCONF_MODIFY_TIME_OVER_RANGE	111071119	The new time of the recurring meeting series is invalid.
CMS_CONF_MANAGER_SERVER_REGION_CHANGING	111071147	Server site changed.

Variable	Value	Description
CMS_CONF_MANAGER_SHARE_VMR_NOT_ENOUGH	111071151	No shared cloud meeting rooms are available.
CMS_CONF_APPLY_RESOURCE_FAILED	111072001	Failed to request resources.
CMS_CONF_RELEASE_RESOURCE_FAILED	111072002	Failed to release resources.
CMS_CONF_IS_CLOSING	111072003	The meeting is being ended.
CMS_CONF_IS_STARTING	111072004	The meeting is being started.
CMS_CONF_NOT_STARTED	111072005	The meeting has not started.
CMS_CONF_IS_CLOSED	111072006	The meeting has ended.
CMS_CONF_INVITE_PARTICIPANT_FAILED	111072007	Failed to invite the participant.
CMS_CONF_PARTICIPANT_NOT_EXIST	111072008	The participant does not exist.
CMS_CONF_PARTICIPANT_HANG_UP_FAILED	111072009	Failed to disconnect the participant.
CMS_CONF_NOT_SUPPORTED	111072010	This function is coming soon...
CMS_CONF_STATUS_ILLEGAL	111072011	Invalid meeting status.
CMS_CONF_GENERIC_CTL_PARTICIPANT_FAILED	111072012	Meeting control on the participant failed.
CMS_VMR_CURRENT_CONF_NOT_GOAL_CONF	111072013	The cloud meeting room is used by another meeting.
CMS_VMR_CONF_IS_EXPIRED	111072014	The meeting has expired.
CMS_VMR_CONF_IS_NOT_ARRIVE_START_TIME	111072015	The meeting has not started.
CMS_VMR_CONF_WITH_SCHEDULE_NOT_EXIST	111072016	The reservation record does not exist.

Variable	Value	Description
CMS_CONF_HAS_NO_ATTENDEE	111072017	The participant does not exist.
CMS_CONF_CHAIRMAN_PWD_EXCEPTION	111072018	Incorrect host password.
CMS_CONF_NOT_FIND_CANMOVESITE_EXCEPTION	111072019	No participant can be moved.
CMS_CONF_NOT_SUPPORT_RECORD	111072020	The meeting does not support recording.
CMS_RECORD_RESOURCE_NOT_ENOUGH	111072021	Recording scheduling failed.
CMS_RECORD_SCHEDULE_FAIL	111072022	Insufficient recording resources.
CMS_CONF_NOT_HAVE_PART	111072023	No participant exists in the meeting.
CMS_CONF_NO_PARTICIPANT_JOINED	111072024	Ensure that at least one participant has joined the meeting.
CMS_AUDIO_CONF_NOT_SUPPORT	111072025	Voice meetings do not support this function.
CMS_AUDIO_SITE_NOT_SUPPORT	111072026	Voice-only participants do not support this operation.
CMS_AUDIO_SITE_IN_MULTI_PIC	111072027	Voice-only participants cannot be displayed in the manually set continuous presence.
CMS_NO_SITE_IN_MULTI_PIC	111072028	At least one participant must be set in the manually set continuous presence.
CMS_ASSISTANT_PICTURE_NUM_MORE_THAN_ONE	111072029	At most one presentation screen is allowed in the manually set continuous presence.
CMS_VAS_SUB_PICTURE_CONTAINS_USER_MORE_THAN_ONE	111072030	In voice activated continuous presence mode, each screen displays only one participant.
CMS_SITE_CALL_NUMBER_IS_EMPTY	111072031	The participant number cannot be empty.
CMS_SITE_CALL_NUMBER_LENGTH_TOO_LONG	111072032	The participant number is too long.

Variable	Value	Description
CMS_SITE_CALL_NUMBER_ILLEGAL_URI	111072033	The format of the number used for the participant to join the meeting is invalid. (SIP and tel number formats are supported.)
CMS_SITE_NAME_LENGTH_TOO_LONG	111072034	The participant name is too long.
CMS_SITE_ROLE_NOT_IN_RANGE	111072035	The participant role type is invalid.
CMS_SITE_EMAIL_LENGTH_TOO_LONG	111072036	The participant's email address is too long.
CMS_SITE_SMS_LENGTH_TOO_LONG	111072037	The participant's mobile number is too long.
CMS_SITE_MUTE_NOT_IN_RANGE	111072038	The value of whether to mute a participant after the participant joins the meeting is invalid.
CMS_SITE_AUTO_INVITE_NOT_IN_RANGE	111072039	The value of whether to automatically invite participants is invalid.
CMS_VIEW_TYPE_NOT_IN_RANGE	111072040	The host focus type is invalid.
CMS_SET_MULTI_PICTURE_MANUAL_SET_NOT_IN_RANGE	111072041	The continuous presence mode is invalid.
CMS_SWITCH_TIME_NOT_IN_RANGE	111072042	The time for displaying participants is invalid.
CMS_SET_MULTI_PICTURE_IMAGE_TYPE_IS_EMPTY	111072043	The screen type cannot be empty.
CMS_SET_MULTI_PICTURE_IMAGE_TYPE_IS_NOT_MATCH	111072044	Invalid screen type.
CMS_ON_OFF_NOT_IN_RANGE	111072045	The value of the switch item is invalid.
CMS_SITE_NAME_IS_EMPTY	111072046	The participant name cannot be empty.
CMS_SITE_NEW_NAME_LENGTH_TOO_LONG	111072047	The participant name is too long.
CMS_MCU_NOT_SUPPORT_SET_MULTI_PICTURE	111072048	Continuous presence is not supported. Contact the administrator to enable the related function on the MCU.

Variable	Value	Description
CMS_RESPONSE_TIME_OUT	111072049	Response timed out.
CMS_CONF_LOCKED	111072050	The meeting is locked.
CMS_CONF_MODE_IS_EMPTY	111072051	The meeting display mode is empty.
CMS_CONF_MODE_NOT_IN_RANGE	111072052	The meeting display mode is invalid.
CMS_CONF_IMAGE_TYPE_NOT_IN_RANGE	111072053	The meeting screen type is invalid.
CMS_TEXT_TYPE_IS_EMPTY	111072054	The banner or caption type is empty.
CMS_TEXT_IS_EMPTY	111072055	The banner or caption content is empty.
CMS_TEXT_IS_TOO_LONG	111072056	The banner or caption content contains more than 2000 bytes.
CMS_REQUEST_BODY_IS_NULL	111072057	Empty request body.
CMS_SUB_PICTURE_INDEX_MORE_THAN_PICTURE_NUMBER	111072058	The screen index is greater than the total number of screens.
CMS_CONF_NO_CHAIR_SITE	111072059	There is no host in the meeting.
CMS_NORMAL_SITE_NOT_SUPPORT_VIEW	111072060	Common participants cannot perform this operation.
CMS_CHAIR_POLLING_FORBIDDEN_VIEW	111072061	The host is viewing participants in turn and cannot be set to view a specific participant or continuous presence.
CMS_SVC_SITE_NOT_SUPPORT_VIEW	111072062	The host cannot perform this operation.
CMS_RSE_RESREAPPLY	111072063	The recording resource has been requested. Wait for the recording resource to access the meeting.
CMS_CONF_CONTROL_LOGIN_LOCKED	111072064	Too many failed meeting control login attempts.
CMS_CONF_NOT_FOUND_OR_AUTH_FAILED	111072065	The meeting does not exist or the password is incorrect.
CMS_ORG_NOT_BUY_RECORDING_SPACE	111072066	The enterprise has not purchased the recording storage space.

Variable	Value	Description
CMS_ORG_RECSPACE_NOT_ENOUGH	111072067	Insufficient recording storage space in the enterprise.
CMS_CONF_SETLIVE_FAILED	111072068	Failed to start live broadcast.
CMS_CONF_CHAIR_FORBIDDEN_HAND	111072069	The host is not allowed to raise hands to speak.
CMS_GUEST_NO_PERMISSION_OPERATION	111072070	Guests are not allowed to perform this operation.
CMS_NO_PERMISSION_OPERATE_OTHERS	111072071	You can only perform this operation on yourself.
CMS_NO_CONF_CTL_CAP_NO_CHAIR	111072072	A participant without the meeting control capability cannot be the host.
CMS_NOTIFY_MSG_IS_EXPIRED	111072073	The message has expired.
CMS_TRUNK_APPLY_CHAIR_FORBID	111072074	An on-premises meeting participant cannot be the host.
CMS_CONF_CLOSE_HUNG_UP	111072075	The meeting ends. The participant is disconnected.
CMS_CHAIR_HUNG_UP	111072076	The participant is disconnected by the host.
CMS_CHAIR_DEL_SITE_HUNG_UP	111072077	The host deletes the meeting. The participant is disconnected.
CMS_RECREATE_CONF_HUNG_UP	111072078	The meeting is re-created. The participant is disconnected.
CMS_MOVE_SITE_FAIL_HUNG_UP	111072079	Failed to move the participant. The participant is disconnected.
CMS_CROSS_REGION_INVITE_SITE_FAIL_HUNG_UP	111072080	Failed to invite the participant across regions. The participant is disconnected.
CMS_INVITE_EXCEPTION_HUNG_UP	111072081	Failed to invite the participant. The participant is disconnected.
CMS_REPEAT_JOIN_HUNG_UP	111072082	The participant joins the meeting again. The original session is disconnected.
CMS_LOCK_SHARE_FAILED	111072083	Failed to lock sharing.
CMS_TRUNK_SET_ONE_MULTIPIC_FORBID	111072084	On-premises participants cannot be added to continuous presence of one-screen layout.

Variable	Value	Description
CMS_CONF_NOT_SUPPORT_REALTIME_SUBTITLE	111072085	The meeting does not support live captions.
CMS_CONF_REALTIME_SUBTITLE_PID_NULL	111072086	The list of speakers specified for live captions is empty.
CMS_CONF_REALTIME_SUBTITLE_PID_WRONG	111072087	The speaker ID specified for live captions is invalid or the speaker has left the meeting.
CMS_CONF_REALTIME_SUBTITLE_SET_FAIL	111072088	Failed to configure live captions.
CMS_CONF_NOT_ALLOW_CHANGE_AUDIENCE_SPEAK_STATUS	111072089	Attendees cannot unmute.
CMS_CONF_SPEAKABLE_ONLY_FOR_AUDIENCE	111072090	This operation can be performed only on attendees.
CMS_CONF_NOT_SUPPORT_SIMULTANEOUS_INTERPRETATION	111072091	The meeting does not support simultaneous interpretation.
CMS_CONF_INTERPRETER_GROUP_IS_EMPTY	111072092	No interpreter groups available. Configure one first.
CMS_CONF_NOT_ENABLE_SIMULTANEOUS_INTERPRETATION	111072093	Simultaneous interpretation is not enabled for the meeting.
CMS_PARTICIPANT_IS_NOT_INTERPRETER	111072094	The participant is not an interpreter.
CMS_PARTICIPANT_NOT_CONFIRM_INTERPRETER	111072095	The interpreter has not confirmed the identity.
CMS_PARTICIPANT_LANGUAGE_ILLEGAL	111072096	The language selected by the participant is invalid.
CMS_PARTICIPANT_IS_CONFIRMED_INTERPRETER	111072097	The participant is already an interpreter.
CMS_PARTICIPANT_LISTEN_NOT_EQUAL_SPEAK	111072098	Channels to listen and speak of common participants are inconsistent.
CMS_SET_CONF_LANGUAGE_CHANNEL_LIST_FAILED	111072099	Failed to configure language channels for the meeting.

Variable	Value	Description
CMS_SET_PARTICIPANT_LANGUAGE_CHANNEL_FAILED	111072100	Failed to configure a language channel for the participant.
CMS_OVER_MAX_PARTICIPANT_NUMBER	111072101	More participants than allowed.
CMS_OVER_MAX_ALLOWED_HAND_NUMBER	111072102	Too many attendees allowed to raise hands.
CMS_OVER_MAX_ALLOWED_SPEAK_NUMBER	111072103	Too many attendees allowed to speak.
CMS_SET_VIRTUAL_AUDIO_CSD_SITE_FAILED	111072104	Failed to configure the virtual language site in the cascading channel.
CMS_CONF_NOT_SUPPORT_COHOST	111072105	The co-host function is not enabled for the meeting.
CMS_PARTICIPANT_NOT_SUPPORT_COHOST	111072106	The meeting does not support co-hosts.
CMS_CHAIR_CANNOT_BE_COHOST	111072107	The host cannot be set as a co-host.
CMS_AUDIENCE_CANNOT_BE_COHOST	111072108	Attendees cannot be set as co-hosts.
CMS_NEED_CHECK_COHOST_PERMISSION	111072109	Check whether the participant is a co-host in the meeting.
CMS_COHOST_CANNOT_OPERATE_CHAIR	111072110	Co-hosts cannot perform operations on the host.
CMS_PARTICIPANT_NOT_SUPPORT_INVITE_SHARE	111072111	The participant does not support sharing invitation.
CMS_HEART_BEAT_FAILING_UP	111072201	The heartbeat connection of the device is interrupted. The participant is disconnected.
CMS_AUDIENCE_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111072202	The number of participants exceeds the maximum number of concurrent participants in the cloud meeting room package.
CMS_PARTICIPANT_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111072203	The number of the host and panelists has reached the quota of the cloud meeting room package.
CMS_STARTED_FAIL_WEBINAR_RESOURCE_NOT_ENOUGH	111072204	Failed to activate the meeting because another meeting is using the webinar package.

Variable	Value	Description
CMS_ONLY_RTC_CONF_SUPPORT_LOCAL_RECORD	111072205	Non-RTC meetings do not support local recording.
CMS_E2E_PARAMETER_ILLEGAL	111072206	The end-to-end encryption parameter is invalid.
CMS_DISABLE_ROLE_SWITCH_OVER	111072207	Role switch is not allowed in webinars.
CMS_TERMINAL_NOT_SUPPORT_LOCAL_RECORD	111072208	The client does not support local recording.
CMS_CONF_IS_UNDER_AR_ASSIST	111072211	AR collaboration is already ongoing in the meeting.
CMS_AUDIENCE_CANNOT_BE_CHAIRMAN	111072213	Attendees cannot be set as the host.
CMS_RENAME_CONTAINS_SENSITIVWORDS	111072214	The new name contains a sensitive word.
CMS_RECORD_START_EXCEPTION	111072222	Failed to start cloud recording. Contact the administrator.
CMS_RECORD_PAUSED_EXCEPTION	111072223	Failed to pause cloud recording. Contact the administrator.
CMS_RECORD_STOP_EXCEPTION	111072224	Failed to stop cloud recording. Contact the administrator.
CMS_LIVE_START_EXCEPTION	111072225	Failed to start live broadcast. Contact the administrator.
CMS_LIVE_STOP_EXCEPTION	111072226	Failed to stop live broadcast. Contact the administrator.
CMS_LIVE_STOP_SENSITIVE_WORDS	111072227	The information contains sensitive words.
CMS_NOT_SUPPORT_AUX_CONF	111072403	Meetings with the new presentation architecture are not supported.
CMS_MMR_PARTICIPANT_REACH_MAX_NUM	111072504	Maximum number of participants in a single meeting has been reached.
CMS_WAITING_ROOM_USER_LEAVE	111072507	The waiting room user has left the meeting.
CMS_WAITING_ROOM_USER_JOIN	111072508	The waiting room user has been admitted.
CMS_PARTICIPANT_NOT_SUPPORT_SCREENSHOTS	111072512	Screenshot capturing cannot be disabled for this participant.

Variable	Value	Description
CMS_APPLY_REFRESH_MMRID_LIMIT	111072516	Too many mmrId change requests.
CMS_FORBIDDEN_MOBILE_INVITE_SHARE	111072520	Mobile app users are not allowed to view shared content. Therefore, they cannot be invited to share content.
CMS_ONLY_ALLOW_INVITATIONS_FROM_BELONG_ORG	111072521	The user is not allowed to join external meetings.
CMS_NOT_ALLOW_OFFLINE_OPERATION	111072599	Management plane is normal and offline operations are not allowed.
CMS_USER_DATA_USER_INFO_NOT_EXIST	111073001	The user does not exist.
CMS_USER_DATA_ORG_INFO_NOT_EXIST	111073002	The organization does not exist.
CMS_USER_DATA_USER_INFO_ILLEGAL	111073003	Invalid user.
CMS_USER_DATA_ORG_INFO_ILLEGAL	111073004	Invalid organization.
CMS_USER_DATA_ORG_INFO_QUERY_FAILED	111073005	Failed to query the organization.
CMS_ASSIGN_ANONYMOUS_FAILED	111073006	Failed to request an anonymous user.
CMS_VMR_DATA_STATUS_ILLEGAL	111073007	The status of the cloud meeting room package is invalid.
CMS_RELEASE_ANONYMOUS_FAILED	111073008	Failed to release the anonymous user.
CMS_WELINK_C_NOT_SUPPORT_CYCLE_CONF	111073009	WeLinkC does not support scheduling of recurring meetings.
CMS_WELINK_C_NOT_SUPPORT_VMR_CONF	111073010	WeLinkC does not support scheduling of meetings held using cloud meeting rooms.
CMS_GET_WELINK_PROXY_TOKEN_FAILED	111073011	Failed to obtain WeLink Proxy Token.
CMS_GET_MACHINE_TO_MACHINE_TOKEN_FAILED	111073012	Failed to obtain the token of a machine-machine account.
CMS_WEBINAR_VMR_DATA_STATUS_ILLEGAL	111073013	The status of the webinar cloud meeting room package is invalid.

Variable	Value	Description
CMS_PROLONG_TIMES_OVER_LIMIT	111073014	The number of meeting extension times has reached the quota of the cloud meeting room trial package.
CMS_PROLONG_DURATION_OVER_LIMIT	111073015	The meeting extension time has reached the quota of the cloud meeting room trial package.
CMS_RFEE_VMR_NOT_SUPPORT_AUTO_PROLONG	111073016	The cloud meeting room trial package does not support automatic extension.
CMS_IDO_CONF_CHAIR_EXIST	111074001	The IDO host already exists.
CMS_IDO_NOT_CONF_CHAIR	111074002	No IDO host permissions.
CMS_IDO_OVER_CONF_MAX_DURATION	111074003	Failed to extend the meeting. The meeting duration has reached the maximum.
CMS_IDO_SET_CONF_DURATION_FAIL	111074004	Failed to extend the meeting due to a service processing error.
CMS_START_TIMER_FAIL	111075001	Failed to start the timer.
CMS_MODIFY_TIMER_FAIL	111075002	Failed to stop the timer.
CMS_JSON_PARSE_FAIL	111075003	JSON conversion error.
CMS_CONF_PORTAL_PARTICIPANT_HANGUP_BY_CHAIR_IDO	111076001	The participant is disconnected by the host on the device.
CMS_CONF_PORTAL_PARTICIPANT_HANGUP_BY_CHAIR_REST	111076002	The participant is disconnected by the host on the Management Platform.
CMS_CONF_PORTAL_PARTICIPANT_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111076003	More participants in the cloud meeting room than allowed.
CMS_CONF_PORTAL_PARTICIPANT_RESOURCE_NOT_ENOUGH	111076004	Concurrent participants in the enterprise are insufficient.
CMS_CONF_PORTAL_PARTICIPANT_NO_RESPONSE	111076005	The participant does not respond.

Variable	Value	Description
CMS_CONF_PORTAL_PARTICIPANT_NOT_EXIST	111076006	The participant does not exist.
CMS_CONF_PORTAL_PARTICIPANT_UNAVAILABLE	111076007	The participant is offline.
CMS_CONF_PORTAL_PARTICIPANT_BUSY	111076008	The participant is busy.
CMS_CONF_PORTAL_PARTICIPANT_REFUSED	111076009	The participant rejects the meeting.
CMS_CONF_PORTAL_PARTICIPANT_LEAVE	111076010	The participant is disconnected.
CMS_CONF_PORTAL_PARTICIPANT_MEDIA_RESOURCE_NOT_ENOUGH	111076011	Media resources are insufficient.
CMS_PSTN_SERVICE_UNAVAILABLE	111076012	The PSTN service is not enabled.
CMS_CONF_APPLY_ADDRESS_TOKEN_FAILED	111076013	Failed to request corporate directory authentication information.
CMS_CONF_PORTAL_PARTICIPANT_TIMEOUT	111076014	SIP call timed out.
CMS_CONF_PORTAL_OVER_MAX_PARTICIPANT_NUMBER	111076015	More participants than allowed.
CMS_CONF_USER_EXPIRATION	111076017	Invalid user.
CMS_CONF_ORG_EXPIRATION	111076018	Invalid enterprise.
CMS_CONF_SP_EXPIRATION	111076019	Invalid SP.
CMS_CONF_GUEST_INVITE_NOT_ALLOW	111076022	Guests are not allowed to scan the QR code to invite hard terminals to the meeting.
CMS_CONF_NOT_ALLOWED_CTRL	111076028	AR collaboration is in progress in the meeting. Meeting control operations such as sharing, group discussion, and releasing the host role are not allowed.

Variable	Value	Description
CMS_CONF_NOT_ALLOWED_AR_ASSIST	111076029	Sharing or group discussion is in progress. AR collaboration is not allowed.
CMS_CONF_NETWORK_ERR_NEED_RESTART_SHARE	111076040	A network exception occurred. Initiate sharing again.
CMS_CONF_PORTAL_PARTICIPANT_COMMON_ERROR	111076099	Common error.
CMS_RSE_SERVER_INFO_NOT_EXIST	111077001	RSE recording error.
CMS_CONF_NOT_SUPPORTED_AI_RECORD	111077101	AI meeting minutes are not supported.
CMS_CONF_RE_APPLY_AI_RECORD_RES	111077102	The system is requesting meeting minutes resources again.
CMS_AI_RECORD_RESOURCE_NOT_ENOUGH	111077103	AI meeting minutes resources are insufficient.
CMS_CONF_IS_IN_AI_RECORD	111077104	Recording or live broadcast cannot be stopped because AI meeting minutes are enabled.
CMS_RECORD_FILE_NOT_EXIST_OR_HAVE_NO_RIGHT	111077201	The recording file has been deleted or you do not have the permission for accessing it.
CMS_RSE_AUTH_FAILED	111077202	RSE machine-to-machine authentication failed.
CMS_MULTI_REGION_NO_AVAILABLE_REGION	111078000	No Region site available.
CMS_MULTI_REGION_NO_AVAILABLE_GLOBAL	111078001	No Global site is available.
CMS_MULTI_REGION_DISPATCH_REGION_ERROR	111078002	Failed to distribute regions in multi-region mode.
CMS_DATA_PARAM_QUERY_XML_FAILED	111079000	Failed to parse the XML file.
CMS_ANONYMOUS_ASSIGN_XML_FAILED	111079001	Failed to parse the XML file for anonymous account allocation.
CMS_PARTICIPANT_BAD_REQUEST	111080001	Incorrect parameters in the request message.

Variable	Value	Description
CMS_PARTICIPANT_INSUFFICIENT_PERMISSIONS	111080002	The user has no permission to perform this operation.
CMS_PARTICIPANT_DATA_NOT_FOUND	111080004	The participant does not exist or has been removed.
CMS_IM_COMMON_EXCEPTION	111080090	Common IM error.
CMS_IM_SENDER_INFORMATION_ILLEGAL	111080096	Invalid IM sender information.
CMS_CONF_BASE_MISSING	111080097	Basic meeting details are missing.
CMS_USER_PARTICIPANT_MISSING	111080098	Participant information is missing.
CMS_IM_CHANNEL_ILLEGAL	111080099	Invalid IM channel.
CMS_IM_CHAT_FORBIDDEN	111080100	Chatting is not allowed.
CMS_IM_CHAT_TARGET_ILLEGAL	111080101	Invalid chat target.
CMS_IM_PUBLIC_CHAT_ONLY	111080102	Only public chat is allowed.
CMS_IM_QUERY_MESSAGE_ID_ILLEGAL	111080104	Invalid msgId for query.
CMS_IM_MESSAGE_TYPE_ILLEGAL	111080105	Invalid message type.
CMS_IM_MESSAGE_CONTENT_ILLEGAL	111080106	Message is too long.
CMS_IM_CHAT_MESSAGE_SENDING_CONTROLLED	111080205	Rate limiting is performed on message sending.
CMS_PARTICIPANT_IS_INVITING	111081001	The participant is in a call.
CMS_PARTICIPANT_CONF_NOT_EXIST	111081002	The meeting does not exist or has ended.
CMS_PARTICIPANT_APPLY_RESOURCE_FAILED	111081003	Failed to request participant resources.
CMS_PARTICIPANT_RELEASE_RESOURCE_FAILED	111081004	Failed to release participant resources.

Variable	Value	Description
CMS_PARTICIPANT_APPLY_MEDIA_RESOURCE_FAILED	111081005	Failed to request participant media resources.
CMS_PARTICIPANT_AUTHENTICATION_FAILED	111081006	Authentication failed.
CMS_PARTICIPANT_CONF_IS_LOCKED	111081007	The meeting has been locked.
CMS_PARTICIPANT_CONF_LOGIN_LOCKED	111081009	Too many failed meeting authentication attempts. The user is locked.
CMS_WAITING_USER_LIMIT	111081010	The maximum number of users in the waiting room has been reached.
CMS_PARTICIPANT_CONTROL_NOT_SUPPORTED	111082001	The meeting control operation is not supported.
CMS_PARTICIPANT_NO_RESPONSE	111082002	No response.
CMS_PARTICIPANT_NOT_EXIST	111082003	The participant does not exist.
CMS_PARTICIPANT_UNAVAILABLE	111082004	The participant is offline.
CMS_PARTICIPANT_BUSY	111082005	The participant is busy.
CMS_PARTICIPANT_REFUSED	111082006	The participant rejects the call.
CMS_PARTICIPANT_DISCONNECTED	111082007	The participant is disconnected.
CMS_PSTN_SERVICE_CLOSED	111082008	The PSTN service is disabled.
CMS_PARTICIPANT_INVITE_TIMEOUT	111082009	SIP call timed out.
CMS_PARTICIPANT_RSE_DEVICE_NOT_EXIST	111083001	The RSE device does not exist.
CMS_PARTICIPANT_EXECUTE_DTMF_FAILED	111084001	Failed to execute DTMF.
CMS_PARTICIPANT_GET_STARTED_CONF_EXCEPTION	111084002	An exception occurred when starting the meeting.

Variable	Value	Description
CMS_PARTICIPANT_CALL_MCUSIDE_EXCEPTION	111084003	An exception occurred when calling the MCU.
CMS_PARTICIPANT_JOIN_CALL_EXCEPTION	111084004	Meeting joining exception.
CMS_PARTICIPANT_INVITE_EXCEPTION	111084005	Invitation exception.
CMS_PARTICIPANT_CALL_TERMINALSIDE_EXCEPTION	111084006	An exception occurred on the caller side.
CMS_PARTICIPANT_ANSWER_EXCEPTION	111084007	Response exception.
CMS_PARTICIPANT_GENERIC_CTL_EXCEPTION	111084008	Common CTL exception.
CMS_PARTICIPANT_HANGUP_EXCEPTION	111084009	Hang-up exception.
CMS_PARTICIPANT_INFORMATION_CAPABILITY_EXCEPTION	111084010	Notification capability exception.
CMS_PARTICIPANT_UPDATE_MT_EXCEPTION	111084011	An exception occurred when updating the MT.
CMS_PARTICIPANT_NEGOTIATE_EXCEPTION	111084012	Negotiation exception.
CMS_PARTICIPANT_CONF_NOT_SUPPORT	111084013	The meeting is not supported.
CMS_RTC_INVITE_NOT_ALLOWED_JOIN_CONF	111084014	The guest is not invited to the RTC meeting and cannot join the meeting.
CMS_URI_JOIN_XML_FAILED	111089002	Failed to parse the XML file for joining a meeting through a link.
CMS_DATA_JOIN_FAIL	111090001	Failed to join the data meeting.
CMS_DATA_JOIN_OVERTIME	111090002	Joining the data meeting timed out.
CMS_AUTH_SLIDE_GET_IMAGE_FAILED	111100001	Failed to obtain the CAPTCHA image.
CMS_AUTH_SLIDE_VERIFY_CHECK_FAILED	111100002	CAPTCHA verification failed.

Variable	Value	Description
CMS_AUTH_INVALID_RANDOM	111100003	Invalid random number.
CMS_AUTH_INVALID_SLIDER_TOKEN	111100004	Invalid CAPTCHA token.
CMS_AUTH_NEED_CHECK_SLIDER	111100005	CAPTCHA verification is required.
CMS_AUTH_INVALID_SMS	111100006	Invalid mobile number.
CMS_SEND_VERIFY_CODE_FAIL	111100007	Failed to send the verification code.
CMS_AUTH_VERIFY_CODE_EXPIRED	111100008	The verification code has expired.
CMS_AUTH_VERIFY_CODE_FAIL	111100009	Incorrect verification code.
CMS_AUTH_VERIFY_CODE_FAIL_CNT_EXCEEDED	111100010	Too many failed verification code attempts.
CMS_AUTH_INVALID_UUID	111100011	Invalid UUID. Verify the mobile number again.
CMS_CONF_NOT_ON_LOCAL_STATION	111100012	The meeting is not held at this site.
CMS_AUTH_NEED_MOBILE_VERIFY	111100013	Mobile number verification is required when an International site user joins a meeting held by a free enterprise on the Chinese mainland site.
CMS_IM_ADD_GROUP_FAILED	111110001	Failed to add the group.
CMS_IM_DISBAND_GROUP_FAILED	111110002	Failed to delete the group.
CMS_IM_ADD_MEMBER_FAILED	111110003	Failed to add the member.
CMS_IM_REMOVE_MEMBER_FAILED	111110004	Failed to delete the member.
CMS_CTRL_HANGUP_MMR_REJOIN_FAILED	111111007	Disconnected. Failed to join the MMR meeting again.
CMS_CTRL_HANGUP_CONFLICT	111111008	Another device has joined this meeting using your account.

Variable	Value	Description
CMS_WAITING_ROOM_ADD_MEMBER_FAILED	111112001	Failed to move the participant to the waiting room.
CMS_WAITING_ROOM_MOVE_MEMBER_FAILED	111112002	Failed to remove the participant from the waiting room.
CMS_WAITING_ROOM_CACHE_OPT_FAILED	111112003	Failed to operate the waiting room cache.
CMS_NOT_ALLOW_COHOST_TO_WAITING_ROOM	111112004	Co-hosts cannot be moved to the waiting room.
CMS_NOT_ALLOW_ENABLE_WAITING_ROOM	111112005	The waiting room cannot be enabled.
CMS_CLIENT_NOT_SUPPORT	111112008	The client does not support this feature.
CMS_APPLICATION_NOT_FOUND	111113001	Failed to find the app information.
CMS_APPLICATION_EXISTS	111113002	The app already exists. Currently, one meeting can be associated with only one app.
CMS_APPLICATION_CREATE_FORBIDDEN	111113003	Insufficient permission to create an app.
CMS_APPLICATION_NEED_REAL_NAME	111113004	Real-name authentication is required for app operations. (You need to bind a mobile number.)
CMS_APPLICATION_GET_USER_TOKEN_FAILED	111113005	Failed to obtain the app user token.
CMS_APPLICATION_URL_INVALID	111113006	Invalid URL of the app service.
CMS_APPLICATION_SHIMO_DOC_NOT_ENABLED	111113101	Shimo Docs is not enabled.
CMS_APPLICATION_SHIMO_DOC_CALL_FAILED	111113102	Failed to invoke the Shimo Docs service.
CMS_APPLICATION_SHIMO_GET_TOKEN_FAILED	111113103	Failed to obtain the app-level token of Shimo Docs.

Variable	Value	Description
CMS_APPLICATION_SHIMO_NOT_IN_CONFERENCE	111113104	The user is not in the meeting and cannot apply for the permission.
CMS_LOGIN_ACCOUNT_DISABLED	111113105	The enterprise account is suspended.
CMS_PROJECTION_LINK_VERIFY_FAILED	111114001	Verify projection link failed.
CMS_BREAKOUT_CONF_SUB_OVER_LIMIT	111500301	More breakout rooms than allowed.
CMS_BREAKOUT_CONF_NAME_ERROR	111500302	The breakout room name is incorrect.
CMS_BREAKOUT_CONF_START_FAILED	111500303	Failed to open the breakout room.
CMS_BREAKOUT_CONF_NOT_EXIST_WHEN_DELETE	111500304	The breakout room to delete does not exist.
CMS_BREAKOUT_CONF_NOT_EXIST_WHEN_START	111500305	The breakout room to open does not exist.
CMS_BREAKOUT_CONF_CLOSING	111500306	The breakout room is closing.
CMS_BREAKOUT_CONF_END_OR_NOT_STARTED	111500307	The breakout room to join has closed or is not open.
CMS_BREAKOUT_CONF_ATTENDEE_IN_TARGET_CONF	111500308	The user to move is already in the target breakout room.
CMS_BREAKOUT_CONF_CHAIR_IN_CURRENT_CONF	111500309	The host is already in the breakout room.
CMS_BREAKOUT_CONF_NOT_SUPPORT_BREAKOUT	111500310	Breakout rooms are not supported.
CMS_BREAKOUT_CONF_STARTING_OR_STARTED	111500311	The breakout room has already opened or is opening.
CMS_BREAKOUT_CONF_NOT_EXIST	111500312	The breakout room does not exist.

Variable	Value	Description
CMS_BREAKOUT_CONF_NOT_SUPPORT_IN_MAIN_CONF	111500313	Users in the main session cannot request help.
CMS_BREAKOUT_CONF_STATE_ILLEGAL	111500314	The breakout room status is abnormal (the cache is deleted by mistake).
CMS_BREAKOUT_CONF_ACTION_FORBIDDEN_BY_STATUS	111500315	This operation is not supported in the current state.
CMS_BREAKOUT_CONF_APPLY_CHAIR_FAILED	111500316	The host is in a breakout room. Cannot request the host role.
CMS_BREAKOUT_CONF_APPLY_CONF_ID_FAILED	111500317	Failed to apply for a breakout room ID.
CMS_BREAKOUT_CONF_QUERY_MAIN_CONF_FAILED	111500318	Failed to obtain the main session information.
CMS_BREAKOUT_CONF_ATTENDEE_NOT_FOUND	111500319	No user information is found.
CMS_BREAKOUT_CONF_STOP_FAILED	111500320	Failed to close the breakout room.
CMS_SUBJECT_FAIL_TO_LEAVE_CONF_START	111502000	Subscription failed. The start value of the error code for leaving the meeting is required.
CMS_SUBJECT_FAIL_TO_LEAVE_CONF_END	111502099	Subscription failed. The end value of the error code for leaving the meeting is required.
CMS_FAILED	112010001	Common error.
CMS_NULL_PARAM	112010002	The parameter is empty.
CMS_PARTICIPANT_NOT_FOUND	112010003	No participant found.
CMS_CONFERENCE_NOT_FOUND	112010004	The meeting does not exist.
CMS_SIP_INVITE_TIMEOUT_NO_RCV	112010005	The invite message timed out.
CMS_SIP_INVITE_FAILED	112010006	The invite message fails to be sent.

Variable	Value	Description
CMS_SIP_INFO_TIMEOUT	112010007	Info response timed out.
CMS_SIP_INFO_FAILED	112010008	Info response failed.
CMS_WAIT_FIRST_CALL_FAILED	112010009	System processing failed.
CMS_PARTICIPANT_DIALOG_FAILED	112010010	System processing failed.
CMS_INVITE_MRS_FAILED	112010011	Failed to call the MRS.
CMS_INVITE_PARTICIPANT_FAILED	112010012	Failed to call the terminal.
CMS_INFORM_CONF_INFO_FAILED	112010013	The Info process of joining the data meeting failed.
CMS_START_CONF_FAILED	112010014	Failed to hold the meeting.
CMS_MEDIA_NEGOTIATION_FAILURE	112010015	Media negotiation failed.
CMS_USER_REJECTED	112010016	The user rejects the call or meeting.
CMS_USER_BUSY	112010017	The user is busy.
CMS_NO_CALL_RIGHT	112010018	No call permission.
CMS_UNKNOWN_CALLER	112010019	Unknown called participant.
CMS_NO_USER_RESPONDING	112010020	No user response.
CMS_JOIN_CONF_TIMEOUT	112010021	Joining the meeting timed out.
CMS_SESSION_RELEASED	112010022	The session has been released.
CMS_CALLEE_NOT_REGISTERED	112010023	The called participant is not registered.
CMS_SIP_INVITE_TIMEOUT_RCV1XX	112010024	SIP invitation timed out.
CMS_USER_SESSION_TIMER_TIMEOUT_HANGUP	112010025	The user session timer timed out. The user hangs up.
CMS_RCV_USER_BYE_MRS_HANGUP	112010026	The participant is disconnected by the MRS.

Variable	Value	Description
CMS_RCV_USER_BYE_PART_HANGUP	112010027	The participant is disconnected by the device.
CMS_NO_RTP_STREAM_HUNG_UP	112010028	No stream received. The meeting or call is disconnected.
CMS_CONF_MANAGER_NO_UPSCALE_VMR	112030001	There are no cloud meeting rooms of higher specifications.
CMS_SYSPORTAL_EXCEPTION	112100000	System exception.
CMS_BAD_REQUEST	112100001	Request error.
CMS_ILLEGAL_REQUEST	112100002	Invalid request.
CMS_DATA_NOT_FOUND	112100003	The data is not obtained.
CMS_DATA_DUPLICATE	112100004	Duplicate data.
CMS_APPLY_TYPE_NOT_SUPPORT	112100006	The request type is not supported.
CMS_SAVE_NOTICE_MODEL_FAILED	112100007	Failed to save the notification template.
CMS_SAVE_DATA_FAILED	112100008	Failed to save the data.
CMS_QUERY_DATA_FAILED	112100009	Failed to query the data.
CMS_DELETE_DATA_FAILED	112100010	Failed to delete the data.
CMS_NEED_RESET_PASSWORD	112100011	The password needs to be reset.
CMS_AUTH_FAILED	112100012	Incorrect old password.
CMS_NEW_PASSWORD_EQUALS_OLD_PASSWORD	112100013	The new password cannot be the same as the old password.
CMS_PASSWORD_TOO_SIMPLE	112100014	The password is too weak.
CMS_LEHGTH_NOTMET_STANDARD	112100015	Invalid length.
CMS_RSE_IS_IN_CONFERENCE	112100016	RSE is in the meeting.

Variable	Value	Description
CMS_RSE_IS_DELETING	112100017	RSE is to be deleted.
CMS_RSE_LIST_CONF_FAILED	112100018	Failed to query the meeting list.
CMS_AUTH_LOCKED	112100019	The user has been locked. Log in again later.
CMS_LIVE_CHANNEL_NAME_EXISTED	112100022	The channel name already exists.
CMS_CONFID_PREFIX_CANNOT_DECREASE	112100023	Failed to modify the system configuration item because the meeting ID prefix already exists.
CMS_CONFID_PREFIX_DUPLICATE	112100024	You can add CONFID prefixes but cannot modify or delete them.
CMS_LIVE_CHANNEL_URL_EXISTED	112100025	The live broadcast room address already exists.
CMS_LIVE_ROOM_ISUSED	112100026	The live broadcast room has been occupied.
CMS_LIVE_ROOM_NOT_EXIST	112100027	The live broadcast room does not exist.
CMS_LIVE_ROOM_RELEASE_FAIL	112100028	Failed to release the live broadcast room.
CMS_REQUEST_MISSING_HEADER_OR_PARAMETER	112100029	The request header field is missing.
CMS_LIVE_MAIN_URL_EXISTED	112100030	The audio and video stream push address already exists.
CMS_LIVE_AUX_URL_EXISTED	112100031	The presentation stream push address already exists.
CMS_PWD_IS_WEAK_PASSWORD	112100032	Weak password.
CMS_LIVE_ROOM_ISUSED_FAIL	112100033	The live broadcast room has been occupied.
CMS_SAVE_PART_ATTENDEES_SINCE_TOO_MANY	112100034	More participants than allowed. Only some participants are saved.
CMS_EXPORT_DATA_FAIL	112100035	Failed to export the data.
CMS_IMPORT_DATA_FAIL	112100036	Failed to import the data.

Variable	Value	Description
CMS_FILE_EXCEEDS_MAXIMUM_SIZE	112100037	The file size exceeds the upper limit.
CMS_LVS_TARGET_ADDRESS_EXISTS	112100038	The target address of LVS already exists.
CMS_LVS_PORT_EXISTS	112100039	Duplicate LVS ports.
CMS_NOT_ALLOWED_TO_MODIFY_GLOBAL_SETTINGS	112100040	Only hosts can modify the Global configuration.
CMS_MCU_ISOLATION_IP_EXISTS	112100041	The MCU isolation IP address already exists.
CMS_MCU_ISOLATION_IP_CANNOT_BE_CHANGED	112100042	The MCU isolation IP address cannot be changed.
CMS_SBC_ADDRESS_EXISTS	112100043	The SBC address already exists.
CMS_INTERNAL_EXCEPTION	112100044	Internal error.
CMS_SYS_CONFIG_DELETE_EXCEPTION	112100045	The system configuration cannot be deleted.
CMS_NO_ISBC_ACCESS_ADDRESS	112100046	Failed to obtain the SBC address based on the enterprise ID.
CMS_MEDIA_TYPE_NEED_HD	112100047	The enterprise has enabled the full HD function. The media configuration cannot be lower than 1080p nor 8 Mbit/s.
CMS_INTERPRETER_LANGUAGE_ABBREVIATION_REPEATED	112100061	Duplicate language abbreviations.
CMS_INTERPRETER_LANGUAGE_NAME_REPEATED	112100062	Duplicate language names.
CMS_MODIFY_MCU_WARNING	112100063	MCU type is MIXED and isolation is not configured, or an MCU meeting exists when you modify MCU connection settings.
CMS_ADD_MCU_WARNING	112100064	The MCU type is MIXED and isolation is not configured when you add MCU connection settings.
CMS_MODIFY_MCU_ISOLATION_WARNING	112100065	MCU type is MIXED when modifying MCU insulation configuration or unbinding the enterprise.

Variable	Value	Description
CMS_DEL_MCUINSULATED_WARNING	112100066	MCU type is MIXED when deleting MCU insulation configuration.
CMS_MCU_TYPE_INCOMPATIBLE	112100067	The MCU is incompatible with the gateway type.
CMS_MEDIARES_MEDIA_RESOURCE_NOT_ENOUGH	115021001	Media resources are insufficient.
CMS_MEDIARES_CONFIGURATION_NOT_EXIST	115021002	The meeting does not exist.
CMS_MEDIARES_MEDIA_RESOURCE_NOT_EXIST	115021003	The media resource does not exist.
CMS_MEDIARES_BANDWIDTH_RESOURCE_NOT_ENOUGH	115021005	Insufficient network bandwidth.
CMS_MEDIARES_DEVICE_FAULT	115021006	The device is faulty.
CMS_LOGIC_RESOURCES_NOT_ENOUGH	115022000	Common logical resources are insufficient.
CMS_LOGICRES_PARTICIPANTS_RESOURCE_NOT_ENOUGH	115022001	Concurrent participants in the enterprise are insufficient.
CMS_LOGICRES_PORTS_RESOURCE_NOT_ENOUGH	115022002	Logical port resources are insufficient.
CMS_LOGICRES_LIVE_BROADCAST_RESOURCE_NOT_ENOUGH	115022003	Live broadcast resources in the enterprise are insufficient.
CMS_MEDIARES_DEVICE_NOT_EXIST	115022004	The media device does not exist.
CMS_LOGICRES_RECORDING_PORTS_RESOURCE_NOT_ENOUGH	115022005	Cloud recording ports purchased by your enterprise have been used up.
CMS_ID_RESOURCE_NOT_ENOUGH	115023001	Insufficient ID resources.
CMS_RMS_SERVICE_ERROR	115024001	The RMS service is abnormal.
CMS_LIVE_ROOM_IN_USE	115025001	The live broadcast room has been occupied.

Variable	Value	Description
CMS_LIVE_ROOM_NOT_EXISTED	115025002	The live broadcast room does not exist.
CMS_LIVE_ROOM_RELEASE_FAILED	115025003	Failed to release the live broadcast room.
CMS_MCU_HAS_CONF	115026001	An MCU meeting exists.
CMS_COMMON_INVALID_PARAMS	115029001	Invalid common parameter.
CMS_COMMON_NULL_PARAMS	115029002	The parameter value is empty.
CMS_COMMON_SERVICE_INVALID	115029003	The service is unavailable.
CMS_CONFIG_ERROR	115029004	The configuration is abnormal.
CMS_DUPLICATE_APPLY_RESOURCE	115029005	A resource request already exists.
CMS_WAIT_APPLY_RESOURCE	115029006	Resources are being requested.
CMS_COMMON_UNKNOWN	115029999	Unknown error.
CMS_USER_AUTHENTICATION_FAILED	118000000	Authentication failed.
CMS_USER_TOKEN_AUTH_FAILED	118000001	USG token authentication failed.
CMS_USER_AUTHENTICATION_LOCKED	118000002	The account has been locked.
USG_SERVER_BUSY	200000001	The server is busy. Try again later.
USG_INTERNAL_ERR	200000002	The server is busy. Contact SRE.
USG_PARAM_ERR	200000003	Incorrect request parameter. Check whether the parameter is valid.
USG_ILLEGAL_REQ	200000004	Invalid request. Check the value of X-Auth-Token or X-Access-Token in the request header.
USG_UPGRADING	200000005	The system is being upgraded and is temporarily inaccessible. Sorry for any inconvenience.
USG_NO_DEPARTMENT_PERMISSIONS	200000026	Insufficient permissions to call APIs by domain.

Variable	Value	Description
USG_URL_PERMISSION_VALID_FAILED	200000030	Insufficient department permissions.
USG_OTHER_CORP_OWNER	201020023	The user is already the owner of an enterprise. New enterprises cannot be created for the user.
USG_CORP_USER_NUMBER_MAX	201040005	The number of users has reached the upper limit. Check the user quantity allowed by the resources you have purchased.
USG_PASSWORD_SECURITY_LOW	201040016	Weak password. Set another password.
USG_ACTIVE_CODE_OVERDUE	201040031	The activation code has expired.
USG_DEVICE_CANNOT_BE_REACTIVATED	201040033	This device has already been activated in your enterprise.
USG_DEVICE_ACTIVATED_IN_OTHERS_ENTERPRISE	201040034	This device has already been activated in another enterprise.
USG_ACTIVE_CODE_REACHED_RESOURCE_LIMIT	201040037	The maximum number of activation codes has been reached.
USG_USER_NOT_ACTIVATED	201040041	The user is not activated.
USG_PRE_VERIFY_EXPIRE	201040042	Pre-verification failed.
USG_NO_INVITE_OTHER_CORP_OWNER	201040043	The user is the owner of another enterprise and cannot be invited.
USG_INVITE_LINK_INVALID	201040044	Invalid invitation connection.
USG_USER_IN_WAIT_LIST	201040045	The user is already in the waiting list.
USG_USER_EXISTS	201040046	The user already exists.
USG_NOT_ALLOW_MOD_ACCOUNT	201040047	The account cannot be modified.
USG_IDEAHUB_RESOURCE_EXCEEDS_INACTIVE_LIMIT	201040049	The maximum number of inactive IdeaHubs has been exceeded.

Variable	Value	Description
USG_NOT_CANNOT_CONTAIN_SENSITIVE_WORDS	201040063	Username cannot contain sensitive words.
USG_DEVICE_NOT_SUPPORT_ACTIVE_CODE	201050004	Devices of this type do not support the activation code.
USG_ACTIVE_CODE_RESET_REACH_MAXIMUM	201050010	The number of device activation code reset times in a day has reached the maximum (5).
USG_ACTIVE_CODE_NOT_EXIST	201050012	The activation code does not exist.
USG_ACTIVE_INVALID_ACTIVE_CODE	201050015	Incorrect activation code.
USG_TRIAL_ACTIVE_CODE_CANNOT_BE_DELETED	201050016	Trial activation codes cannot be deleted.
USG_ACTIVE_FAIL	201050021	Activation failed.
USG_CAN_NOT_UNBOUND	201050022	The terminal cannot be unbound.
USG_IDEA_MANAGER_NOT_ENABLED	201050027	IdeaManager is not enabled.
USG_VMR_RESOURCE_UNAVAILABLE	201080000	Cloud meeting resources are unavailable.
USG_VMR_PWD_SAME_AS_CHAIRMAN_PWD	201080006	The host password and guest password cannot be the same. Check the parameters.
USG_VMR_PWM_SAME_AS_MEETING_PWD	201080017	Same as the meeting password.
USG_INVITATION_ENABLE_INVALID	201510001	You do not have the permission to obtain an invitation code.
USG_CORP_APPLICANT_INVALID	201510003	The request is invalid.
USG_DEVICE_TYPE_NOT_EXIST	205030005	The device type does not exist.
USG_ERR_PASSWORD	206010000	The name or password is incorrect.
USG_APPID_ACCOUNT_DISABLED	206010007	The account is not activated and cannot be used for login.
USG_USER_INFORMATION_DISABLED	206010008	The user does not exist or is not activated and cannot be used for login.

Variable	Value	Description
USG_SEND_SLIDER_FAILED	206010010	Failed to obtain the verification code. Contact SRE.
USG_NEED_VERIFY_CODE	206010011	The verification code cannot be empty.
USG_CHECK_SLIDER_FAILED	206010012	Incorrect verification code.
USG_JUMP_LOGIN_FAILED	206010013	Failed to redirect to the login page. Contact SRE.
USG_DOMIAN_NOT_EXISTS	206010014	The enterprise domain name does not exist.
USG_SSO_AUTH_FAILED	206010022	SSO login failed. Contact SRE.
USG_AUTH_NOT_SUPPORT_SSO	206010023	SSO login is not supported.
USG_INVALID_AUTH_TYPE	206010024	Invalid authentication type.
USG_APPID_AUTH_FAILED	206010025	Failed to verify the app ID.
USG_AUTH_TYPE_ERR	206010027	Verification type error.
USG_NETWORK_ERROR	206010029	Network error.
USG_APPID_NOT_ALLOW_AUTO_REG	206010030	Automatic app ID registration is not allowed.
USG_APPID_AUTO_REG_FAILED	206010031	Automatic app ID registration failed.
USG_NORMAL_USER_CANNOT_LOGIN	206010036	Common users cannot log in.
USG_HWACCOUNT_AUTH_FAILED	206010042	HUAWEI ID authentication failed.
USG_APPID_AUTH_EXPIRE	206010057	The app ID authentication has expired.
USG_APPID_ACCOUNT_NOT_BIND	206010058	The mobile number is not registered.
USG_SITE_MISMATCHED	206010064	The site does not match.
USG_CONFLICT_PHONE	206010065	Mobile number conflicts.

Variable	Value	Description
USG_CONFLICT_EMAIL	206010066	Email address conflicts.
USG_USER_NUM_EXCEEDED	206010070	More users than allowed.
AUTH_WECHAT_LOGIN_FAILED	206010071	WeChat authentication failed.
USG_CHANGE_SITE_AND_NEXT_REQUEST	206010074	The International site supports re-login after site change.
USG_ACCOUNT_IS_UNBOUND	206010075	The account has been unbound.
USG_OFFLINE_PAIR_AUTH_FIXED_LINK_UNFOUNDED	206010079	No fixed link is established between the device and the large screen.
USG_OFFLINE_PAIR_AUTH_JWT_INVALID	206010080	The JWT token is invalid.
USG_NEED_AGREED_SIGN_PRIVACY	206010090	The privacy statement needs to be signed. The returned data contains the key of third-party user cache information.
USG_THIRD_USER_INFO_HAS_INVALID	206010091	The third-party user cache information is invalid.
USG_INVALID_TOKEN	206020000	Invalid authentication information. Check the value of X-Auth-Token or X-Access-Token in the request header.
USG_TOKEN_IS_CREATED_BY_OTHERSITE	206020001	The token is created at the DR site.
USG_TOKEN_IS_INVALID_BY_KICKOFF	206020002	The token is invalid because you are kicked out.
USG_USER_NOT_EXIST	206030000	The user does not exist.
USG_FIND_VERCODE_FAILED	206030001	The verification code is incorrect or has expired. Obtain a new one.
USG_VERCODE_ERR	206030002	Incorrect verification code.
USG_NOT_PHONE_AND_EMAIL	206030003	Failed to send the verification code.
USG_RESEND_NOT_ALLOWED	206030004	Resend a code 180s later.
USG_NOT_SUPPORT_MODIFY_PWD	206030005	The system does not support password change.

Variable	Value	Description
USG_OLD_PWD_WRONG	206030006	Incorrect old password.
USG_INVALID_NEW_PASSWORD_LEN	206030007	The length of the new password does not meet the requirements.
USG_INVALID_PASSWORD_LEVEL	206030008	The password complexity does not meet the requirements.
USG_CANNOT_SAME_WITH_HISTROY_PWD	206030009	The new password must be different from any of the previous old passwords.
USG_REPEAT_CHAR_NUM_TOO_MUCH	206030010	The password cannot contain three or more of the same characters consecutively.
USG_PWD_TOO_FREQUENTLY	206030011	The password cannot be changed within 5 minutes upon the last password change.
USG_CANNOT_CONTAIN_ACCOUNT	206030012	The password cannot be the account or the account spelled backwards.
USG_MANY_SAME_WITH_OLD_PWD	206030013	At least two characters must be different between the new and old passwords.
USG_CONTAINS_INVALID	206030014	Invalid password format.
USG_USER_LOCKED	206030015	The user has been locked. Try again after 60 seconds.
USG_NO_RIGHT_TO_RESET_PWD	206030016	You do not have the permissions to reset the password.
USG_FROGET_PASSWORD_OVER_10_TIMES	206030018	The number of password retrieval times in a day has reached the maximum (10).
USG_USG_VERIFY_CODE_CHECK_EXCCED_MAX	206030019	The maximum number of incorrect verification code inputs has been reached. Obtain a new verification code.
USG_SEND_VERIFY_CODE_FAILED	206030023	Failed to send the verification code. Contact SRE.
USG_AUTO_USER_NOT_ALLOW_MOD_PWD	206030028	The system has enabled SSO login. The password cannot be changed. Disable SSO login and try again.
USG_HUAWEI_MODIFY_PASSWORD	206030031	The password of the HUAWEI ID was forgotten.

Variable	Value	Description
USG_NO_CORRESPOND_TERMINAL_TYPE	206040000	No corresponding terminal type.
USG_SEND_VERIFY_CODE_IS_LOCKED	206060008	The function of sending verification codes is locked.
USG_NEED_SLIDER_VERIFY	206060009	CAPTCHA verification is required.
USG_SLIDER_TOKEN_INVALID	206060010	Invalid CAPTCHA token.
USG_REQUEST_PARAMETER_ERROR	206060011	Incorrect request parameter.
USG_NOT_SUPPORT_SEND_SMS	206060012	SMS message delivery is not supported.
USG_NOT_ALLOW_REPEAT_SEND	206060013	Repeated delivery is not supported.
USG_LOGIN_VERIFY_CODE_INVALID	206060014	Invalid verification code.
USG_LOGIN_VERIFY_CODE_EXCEED_MAX	206060015	Too many failed verification code attempts.
USG_HWACCOUNT_BIND_FAILED	206060017	Failed to bind the HUAWEI ID.
USG_ACTIVE_NOT_IDEAHUB_CODE	211030046	Incorrect IdeaHub activation code.
USG_AUTH_FAIL_TOO_MANY_TIMES_LOCKED	211030050	Too many failed identity authentication attempts. The account is locked.
USG_AUTH_FAIL_TOO_MANY_TIMES_PERMANENTLY_LOCKED	211030052	Too many failed identity authentication attempts. The account is locked permanently.
USG_LOG_UPLOAD_TIMES_EXCEED	211060003	The maximum number of log uploads has been reached.
USG_NOT_ALLOW_PAIR_CROSS_CORP	222020001	Cross-enterprise pairing is not allowed.
USG_OFFLINE_PAIR_HAS_BEEN_BOUND	222020002	Another device has been bound to this large screen.
USG_OFFLINE_PAIR_DOUBLE_CHECK_FAILED	222020003	The secondary verification code is invalid.
USG_OFFLINE_PAIR_CODE_INVALID	222020004	The pairing code is invalid.

Variable	Value	Description
USG_OFFLINE_PAIR_ALREADY_EXIST	222020005	An offline temporary link already exists.
USG_OFFLINE_FIXED_PAIR_ALREADY_EXIST	222020006	An offline fixed link already exists.
USG_PROJECTION_CODE_ILLEGAL	222020010	Invalid projection code.
USG_PROJECTION_IP_BEEN_LOCKED	222020011	The IP address has been locked.
USG_PROJECTION_CROSS_CORP	222020012	The projection code is not generated by the device of the enterprise to which the user belongs.
USG_PROJECTION_DOUBLE_CHECK_REACH_MAX_TIME	222020013	The maximum number of incorrect secondary verification code inputs has been reached.
USG_OBS_UPLOAD_IMAGE_NOT_EXIST	225020001	The image object cannot be found in OBS.
USG_OBS_UPLOAD_IMAGE_IS_REPETITION	225030002	The image with this unique identifier is already under review.
USG_SLIDER_NOT_SUPPORTED	230010001	The current service is not supported.
USG_SLIDER_VERIFY_CODE_AND_BUSINESS_MISMATCH	230010002	The verification code does not match the service.
USG_SLIDER_USER_NOT_EXIST	230010003	The user does not exist.
USG_SLIDER_TRY_AGAIN_LATER	230010004	Try again later.
USG_SLIDER_VERIFY_CODE_INVALID	230010005	The verification code has expired.
USG_SLIDER_VERIFY_CODE_ERROR	230010006	Incorrect verification code.
USG_SLIDER_GET_NEW_VERIFY_CODE	230010007	The maximum number of incorrect verification code inputs has been reached. Obtain a new verification code.
SDK_COMMON_FAIL	411000001	Failed.
SDK_PARAM_ERROR	411000002	Parameter error.
SDK_CONF_NOT_EXIST	411000003	The meeting does not exist.

Variable	Value	Description
SDK_CONF_EXIST	411000004	A meeting already exists.
SDK_CONF_STATE_ERROR	411000005	The meeting status is abnormal.
SDK_CALL_GET_DEVICE_FAILED	411000006	Failed to obtain the device.
SDK_CALL_SET_DEVICE_FAILED	411000007	Failed to configure the device.
SDK_NO_DEVICE_CAN_USED	411000008	No device is available.
SDK_ONLY_MOBILE_SUPPORT	411000009	Only mobile devices support this operation.
SDK_ACCESS_ERROR	411000010	Network access error.
SDK_SERVICE_DOING	411000011	Another supplementary service is in progress.
SDK_ERR_MEM_ERROR	411000012	Memory allocation error.
SDK_ERR_INITIALIZE_FAILED	411000013	Initialization failed.
SDK_USER_DOES_NOT_EXIST	411000014	The user does not exist.
SDK_DATACONF_NOT_JOIN	411000015	The user is not in the data meeting.
SDK_CALL_AND_CONF_NOT_EXIST	411000016	The meeting and call do not exist.
SDK_SVN_DETECT_FAILED	411000017	SVN port detection failed.
SDK_ERR_WRITE_FILE_FAILED	411000018	Failed to write the file.
SDK_ERR_RTC_NOT_SUPPORT_STG	411000019	RTC does not support the STG mode.
SDK_ERR_RTC_LIB_LOADING_FAILED	411000020	Failed to load the RTC library. RTC meetings are not supported.
SDK_ERR_SWITCH_ROLE_CONF_PAUSE	411000021	Attendee view is paused when the role is switched.
SDK_CONF_NOT_IN_CALL	411000022	The user is not in a call.
SDK_CONF_OR_CALL_NOT_EXIST	411000023	The meeting or call does not exist.

Variable	Value	Description
SDK_CONF_PAIR_STAT E_NOT_ALLOW	411000024	The pairing status is not allowed.
SDK_CONF_PAIR_QUE RY_FAIL	411000025	Pairing request failed.
SDK_CONF_PAIR_OVER _LIMIT	411000026	More pairing connections than allowed.
SDK_CONF_PAIR_ERRO R_COMMON	411000027	Common pairing error.
SDK_CONF_PAIR_ENTE R_FAILED	411000028	Failed to join the meeting after pairing.
SDK_CONF_PAIR_ENTE R_BUSY	411000029	The device is already in a meeting.
SDK_CONF_PAIR_ENTE R_INVALID	411000030	Invalid pairing for joining a meeting.
SDK_CONF_PAIR_ENTE R_MULTI	411000031	A pairing request is being processed. Do not re-initiate pairing.
SDK_CONF_PAIR_UNES TABLISHED_OR_PRIRIN G	411000032	Pairing has not been set up or is being set up.
SDK_CONF_EXTERN_IN PUT_CAMERA_NOT_O PEN	411000033	The camera is not enabled in third-party collection mode.
SDK_CONF_CREAT_RT C_ENGINE_FAILED	411000034	Failed to create the RTC engine.
SDK_CONF_NOT_IN_C ONF	411000035	The user is not in the meeting.
SDK_CONF_MUTE_SEL F_FAILED	411000036	Failed to mute the microphone and protection is enabled.
SDK_CONF_IN_SETTIN G_LANGUAGE_CHANN EL	411000037	Switching channels... Try again later.
SDK_NO_STREAM_EN D_CONF_NET_BREAK	411000100	No stream was received. The network was disconnected.
SDK_NO_STREAM_EN D_CONF_REJOIN_FAIL	411000101	Failed to join the meeting again.
SDK_CHECK_PARAM_N ULL_POINTER	411000102	Null pointer.
SDK_CHECK_PARAM_N OT_ALLOW_NULL	411000103	The parameter cannot be empty.

Variable	Value	Description
SDK_ENCRYPT_DECRYPT_FUNC_NOT_MATCH	411000104	The encryption and decryption algorithms do not match.
SDK_LOAD_USER_DEFINED_DLL_FAILED	411000105	Failed to load the custom DLL.
SDK_APPLICATION_NOT_SUPPORT_SHIMODOCS	411000106	Shimo Docs cannot be opened in the enterprise.
SDK_DATACONF_SCREEN_RENDER_FAIL	411000107	Failed to render the data meeting UI.
SDK_CONF_END_MMR_REJOIN_FAIL	411000108	Failed to join the MMR meeting again.
SDK_AUDIO_DISCONNECTED	411000109	Disconnecting audio...
SDK_DATACONF_SECOND_MONITOR_DISCONNECT	411000110	The secondary display is disconnected during secondary display sharing.
SDK_LOGIN_MESSAGE_THREAD_UNINIT	412100001	The message processing thread is not initialized.
SDK_LOGIN_PARAMETER_ERROR	412100002	Parameter error.
SDK_LOGIN_TIMEOUT	412100003	Timeout.
SDK_LOGIN_MEMORY_ERROR	412100004	Memory allocation error.
SDK_LOGIN_XML_ERROR	412100005	XML parsing error.
SDK_LOGIN_DNS_ERROR	412100006	DNS resolution exception.
SDK_LOGIN_REQUEST_FAILED	412100007	The request message is abnormal.
SDK_LOGIN_AUTH_FAILED	412100008	Authorization failed.
SDK_LOGIN_SERVICE_ERROR	412100009	Server exception.
SDK_LOGIN_ACCOUNT_LOCKED	412100010	The account is locked.
SDK_LOGIN_TIMER_ERROR	412100011	An error occurred during timer creation.

Variable	Value	Description
SDK_LOGIN_CA_VERIFY_FAILED	412100012	Failed to verify the server CA certificate.
SDK_LOGIN_NETWORK_ERROR	412100013	Network error.
SDK_LOGIN_SERVER_REDIRECT	412100014	The server returns a redirection address.
SDK_LOGIN_AUTH_ACCOUNT_DIACTIVE	412100015	The account is not activated.
SDK_LOGIN_JSON_ERROR	412100016	Failed to parse the JSON file.
SDK_LOGIN_CURLE_EXTENSION_CONNECT_TIMEOUT	412100017	The proxy communication times out and the TCP connection fails to be set up. Proxy configuration may be incorrect.
SDK_LOGIN_CURLE_EXTENSION_CLOSED_BY_PROXY	412100018	The connection is disconnected by the proxy. Server address may be incorrect.
SDK_LOGIN_CURLE_EXTENSION_PROXY_ADDRESS_OR_PORT_ERROR	412100019	TCP connection setup times out. Proxy domain name or port number may be incorrect.
SDK_LOGIN_CURLE_EXTENSION_PROXY_PERMISSION_DENIED	412100020	Authentication failed. The user does not have the proxy permission and needs to request the proxy permission.
SDK_LOGIN_CURLE_EXTENSION_USER_OR_PASSWORD_ERROR	412100021	Authentication failed. The proxy username or password is incorrect.
SDK_LOGIN_CURLE_EXTENSION_AUTH_TYPE_ERROR	412100022	Authentication failed. The authentication type is incorrect. The username and password are required.
SDK_LOGIN_CURLE_EXTENSION_AUTH_ERROR	412100023	Authentication failed due to other unknown errors. The possible cause is that the authentication mode is not supported. It is recommended that a dialog box be displayed to prompt the user to initiate the authentication again.
SDK_LOGIN_CURLE_COULDNT_RESOLVE_PROXY	412100024	Authentication failed. The gateway cannot be parsed.

Variable	Value	Description
SDK_LOGIN_CURLE_C OULDNT_RESOLVE_HO ST	412100025	Authentication failed. The host cannot be parsed.
SDK_LOGIN_CURLE_C OULDNT_CONNECT	412100026	Authentication failed. Connection failed.
SDK_LOGIN_CURLE_OP ERATION_TIMEDOUT	412100027	Authentication failed. Operation timed out.
SDK_LOGIN_MSG_TOO LARGE	412100028	The message is too long.
SDK_LOGIN_BASE64_E NCODE_ERROR	412100029	Base64 encryption failed.
SDK_LOGIN_XML_PARS E_ERROR	412100030	XML parsing error.
SDK_LOGIN_SECURE_LI B_ERROR	412100031	Secure function error.
SDK_LOGIN_FIREWALL _DETECT_PARAM_ERR OR	412100032	Firewall detection parameters are incorrect.
SDK_LOGIN_BUILD_ST G_TUNNEL_FAIL	412100033	Failed to create the STG tunnel.
SDK_LOGIN_UPDATE_S TG_SERVER_ERROR	412100034	Failed to update the STG service.
SDK_LOGIN_TUP_CPYP T_ENCRYPT_ERROR	412100035	Encryption failed.
SDK_LOGIN_IN_DOWN LOADING_CANNOT_D OWNLOAD_AGAIN	412100036	Repeated download is not allowed.
SDK_LOGIN_FILE_OPE RT_FAIL	412100037	Failed to operate the file.
SDK_LOGIN_RSP_BODY _NULL	412100038	The returned request message is empty.
SDK_LOGIN_PROBE_SE RVER_NUMBER_ZERO_ ERR	412100039	The number of detected servers is 0.
SDK_LOGIN_GET_BEST _LOCAL_IP_FAIL	412100040	Failed to obtain the local IP address.
SDK_LOGIN_E_ERR_LO GIN_NO_INIT	412100041	The login module message is not initialized.

Variable	Value	Description
SDK_LOGIN_E_ERR_HTTP_BUSY	412100042	An HTTP error 429 is returned.
SDK_LOGIN_E_ERR_NOT_LOGINED	412100043	The service is available only after login.
SDK_LOGIN_E_ERR_MNG_FAILED	412100044	Server degraded. After receiving this error code, you can continue to call the API for joining a meeting offline.
SDK_LOGIN_E_ERR_CANCEL_DOWNLOAD	412100045	The download is canceled during the version upgrade.
SDK_LOGINLOGIC_GENERAL	412200001	Internal error.
SDK_LOGINLOGIC_PARAMETER_ERROR	412200002	Parameter error.
SDK_LOGINLOGIC_REQUEST_TIMEOUT	412200003	Network timeout.
SDK_LOGINLOGIC_NETWORK_ERROR	412200004	Network error.
SDK_LOGINLOGIC_NEED_MOBILEBIND	412200005	Bind a mobile phone.
SDK_LOGINLOGIC_NEED_MAILBIND	412200006	Bind an email address.
SDK_LOGINLOGIC_HAS_INITED	412200007	The resource cannot be re-initialized.
SDK_LOGINLOGIC_STATE_MACHINE_RUN_FAILED	412200008	Failed to run the state machine.
SDK_LOGINLOGIC_START_TIMER_ERROR	412200009	Failed to start the timer.
SDK_LOGINLOGIC_NEED_MODIFY_PASSWORD	412200010	Change your password upon the first login.
SDK_LOGINLOGIC_UNKNOWN_AUTH_TYPE	412200011	Unknown authentication type.
SDK_LOGINLOGIC_NEED_REPAIR_CONTROLLER	412200012	Re-pairing is required.
SDK_LOGINLOGIC_NEED_REPAIR_WITH_CREDENTIAL	412200013	Send a request again after verification.

Variable	Value	Description
SDK_LOGINLOGIC_NEED_REPAIR_FAILED	412200014	Failed to obtain the credential. Repairing is required.
SDK_LOGINLOGIC_NOT_SUPPORT_MEDIA_SEPARATE	412200015	The environment does not support media separation.
SDK_LOGINLOGIC_MEDIA_SEPARATE_PLUGIN_DISCONNECT	412200016	The media separation plug-in is not connected.
SDK_LOGINLOGIC_REQUEST_MEDIA_SEPARATE_LOG_TIMEOUT	412200017	Media separation log collection timed out.
SDK_LOGINLOGIC_REQUEST_MEDIA_SEPARATE_LOG_FAILED	412200018	Failed to collect media separation logs.
SDK_LOGINLOGIC_REQUEST_MEDIA_SEPARATE_LOG_ALREADY_START	412200019	Media separation log collection has started.
SDK_LOGINLOGIC_REQUEST_MEDIA_SEPARATE_LOG_NOT_SUPPORT	412200020	The TC plug-in does not support media separation log collection.
SDK_CALL_GENERAL_ERROR	413000001	Common error.
SDK_CALL_PARAM_ERROR	413000002	Parameter error.
SDK_CALL_MEM_ERROR	413000003	Memory allocation error.
SDK_CALL_SYSTEM_ERROR	413000004	System error.
SDK_CALL_MSG_ERROR	413000005	Message delivery error.
SDK_CALL_CFG_ERROR	413000006	An error occurred when obtaining the system configuration.
SDK_CALL_NET_ERROR	413000007	Physical network error.
SDK_CALL_ACCESS_ERROR	413000008	Network access error.
SDK_CALL_TIMER_ERROR	413000009	An error occurred during timer creation.

Variable	Value	Description
SDK_CALL_STATE_ERROR	413000010	Call status error.
SDK_CALL_OPERATE_ERROR	413000011	Another operation is in progress.
SDK_CALL_REQSRV_ERROR	413000012	An error occurred when requesting the master to make a call start.
SDK_CALL_REQRES_ERROR	413000013	An error occurred when requesting audio resources.
SDK_CALL_SERVICE_DOING	413000014	Another supplementary service is in progress.
SDK_CALL_CALLRECORD_ERROR	413000015	An error occurred when recording call records.
SDK_CALL_MPROC_ERROR	413000016	Error returned by the media process.
SDK_CALL_MAX_CALL_ERROR	413000017	Too many calls.
SDK_CALL_SIPID_NOTEXIST_ERROR	413000018	The SIP account ID does not exist.
SDK_CALL_CALLID_NOTEXIST_ERROR	413000019	The call ID does not exist.
SDK_CALL_REGISTERING_ERROR	413000020	An error occurred because the registration is in progress.
SDK_CALL_REGIST_FAIL_ERROR	413000021	Registration failed.
SDK_CALL_DEREGIST_FAIL_ERROR	413000022	Deregistration failed.
SDK_CALL_SET_SIP_INFO_ERROR	413000023	An error occurred when setting the account information.
SDK_CALL_SETACCOUNT_ERROR	413000024	Failed to set the SIP account.
SDK_CALL_NOTIFYSIPACCOUNT_ERROR	413000025	Failed to report SIP account information.
SDK_CALL_SIPSEVER_ERROR	413000026	Incorrect server information.
SDK_CALL_SIPACCOUNTINFO_ERROR	413000027	Incorrect account information.
SDK_CALL_SIPC_ERROR	413000028	SIPC execution error.

Variable	Value	Description
SDK_CALL_UNREGISTER_ERROR	413000029	Not registered.
SDK_CALL_SUB_FALL_ERROR	413000030	Failed to call the SIP API for subscription.
SDK_CALL_DESUBING_ERROR	413000031	An error occurred in unsubscription.
SDK_CALL_SUBING_ERROR	413000032	An error occurred in subscription.
SDK_CALL_LOCAL_MAX_CONFERENCE_ERROR	413000033	Only one local meeting is allowed.
SDK_CALL_LOCAL_CONFERENCE_NOEXIT_ERROR	413000034	The local meeting is not created.
SDK_CALL_LOCAL_CONFERENCE_NOMATCH_ERROR	413000035	The participant line and host account do not match.
SDK_CALL_CONF_STATUS_ERROR	413000036	The local meeting status is incorrect.
SDK_CALL_JOINTSTATE_NOTIFY_ERROR	413000037	The IP phone failed to report its linkage status.
SDK_CALL_CONFIDENCE_NOTEXIST_ERROR	413000038	The meeting ID does not exist.
SDK_CALL_CONF_VIDEO_HOLD_ERROR	413000039	Failed to place the video on hold.
SDK_CALL_CONF_VIDEO_UNHOLD_ERROR	413000040	Failed to resume the video.
SDK_CALL_MAX_SERVER_CONFERENCE_ERROR	413000041	Too many server meetings.
SDK_CALL_AA_RANDOMNUM_ERROR	413000042	Failed to obtain a random number from AA.
SDK_CALL_AA_LOGIN_ERROR	413000043	Failed to log in to AA.
SDK_CALL_CONF_VIDEO_TYPE_NO_MATCH	413000044	The meeting type does not match.
SDK_CALL_CONF_VIDEO_START_ERROR	413000045	Failed to start the video meeting.
SDK_CALL_AA_PRIMARY_SERVER_ERROR	413000046	The AA primary server does not exist.

Variable	Value	Description
SDK_CALL_AA_PASSWORD_ERROR	413000047	Incorrect password.
SDK_CALL_AA_USERNAME_ERROR	413000048	Incorrect username.
SDK_CALL_AA_USERLOGINED_ERROR	413000049	The user has logged in.
SDK_CALL_AA_ACCOUNTLOCKED_ERROR	413000050	The account has been locked.
SDK_CALL_AA_TERMINALTYPE_ERROR	413000051	The device type does not match.
SDK_CALL_AA_PARSEXML_ERROR	413000052	XML parsing error.
SDK_CALL_AA_CONNECTION_ERROR	413000053	Server connection error.
SDK_CALL_MEDIA_CFG_ERROR	413000054	Failed to obtain the media configuration.
SDK_CALL_AA_GETSRINFO_ERROR	413000055	Failed to obtain service permissions.
SDK_CALL_AA_LACKSR_ERROR	413000056	Insufficient service permissions.
SDK_CALL_NETWORKENV_ERROR	413000057	Network environment error.
SDK_CALL_SERVICE_CONFLICT_ERROR	413000058	Service conflict.
SDK_CALL_AA_TIMEOUT_ERROR	413000059	Connection timed out.
SDK_CALL_AA_UNKNOWN_ERROR	413000060	Unknown error.
SDK_CALL_PICKUP_ADDTIP_ERROR	413000061	Failed to add ring tone information.
SDK_CALL_PICKUP_REMOVE_TIP_ERROR	413000062	Failed to delete ring tone information.
SDK_CALL_PICKUP_CREATE_RINGINGNUMBER_ERROR	413000063	Failed to create the ringing number.
SDK_CALL_VVM_PARAMETER_ERROR	413000064	VVM parameter error.

Variable	Value	Description
SDK_CALL_GET_IPT_IN FO_ERR	413000065	An error occurred when obtaining registered services.
SDK_CALL_VVM_GETV OICEMAIL_ERR	413000066	An error occurred when obtaining the voice mailbox.
SDK_CALL_ATTENDEE_ ALREADY_EXIST	413000067	The participant already exists.
SDK_CALL_ATTENDEE_ NOT_EXIST	413000068	The participant does not exist.
SDK_CALL_CREATE_CO NF_WND_ERROR	413000069	Failed to create a server video meeting window.
SDK_CALL_CREATE_CO NF_WND_EXIST	413000070	The video window already exists.
SDK_CALL_GET_CONF_ LIST_INFO_ERROR	413000071	Failed to obtain the meeting list.
SDK_CALL_NEED_CHAI RMAN_TO_OPERATE	413000072	Only the host can perform the operation.
SDK_CALL_NO_VIDEO_ DEVICE_TO_OPERATE	413000073	No video device to operate.
SDK_CALL_NOT_STOP_ REFRESHREG	413000074	Registration status refresh is not disabled.
SDK_CALL_NOTIFY_ON LINE_STATE_ERROR	413000075	Failed to report the online status.
SDK_CALL_NOTIFY_NE TADDR_ERROR	413000076	Failed to report the network address book subscription notification.
SDK_CALL_INFO_FORC EUNREG_ERROR	413000077	The telepresence account is kicked out. The information fails to be reported.
SDK_CALL_TLSROOTCE RT_ERROR	413000078	TLS root certificate error.
SDK_CALL_AD_AUTH_F AIL	413000079	AD authentication failed.
SDK_CALL_GET_CONF_ LIST_INFO_DOING	413000080	The meeting list is being obtained.
SDK_CALL_CALL_PROH IBITED	413000081	Calling is forbidden.
SDK_CALL_CALL_NUM BER_UPPER_LIMIT	413000082	The maximum number of calls has been reached.

Variable	Value	Description
SDK_CALL_ENCRYPT_CALL_UPPER_LIMIT	413000083	The maximum number of encrypted calls has been reached.
SDK_CALL_SHOULD_DEGRADE_TO_AUDIO	413000084	The maximum number of video calls has been reached. The call needs to be degraded to an audio call.
SDK_CALL_H323ID_NOT_EXIST_ERROR	413000085	The H.323 account ID does not exist.
SDK_CALL_H323_ACCOUNT_INFORMATION_ERROR	413000086	Incorrect H.323 account information.
SDK_CALL_NOTIFY_H323_ACCOUNT_ERROR	413000087	Failed to report H.323 account information.
SDK_CALL_LOCAL_RESOURCE_NOT_ENOUGH	413000088	Local resources are insufficient.
SDK_CALL_CALL_PROTOCOL_NOT_SUPPORT	413000089	The call protocol is not supported.
SDK_CALL_SET_H323_INFORMATION_ERROR	413000090	An error occurred when setting the H.323 account information.
SDK_CALL_NOTIFY_ACCESSNUM_ERROR	413000091	An error occurred when reporting the MediaX meeting access number to the GUI.
SDK_CALL_NOTIFY_VM_ROOM_INFORMATION_ERROR	413000092	Failed to report the cloud meeting room information of MediaX to the GUI.
SDK_CALL_NOTIFY_CONFERENCE_LIST_INFORMATION_ERROR	413000093	Failed to report the IMS meeting list information to the GUI.
SDK_CALL_TUP_INITIALIZATION_BLOCK	413000094	TUP initialization is not complete.
SDK_CALL_MESSAGE_RETURN_VALUE_ERROR	413000095	The message return value is incorrect.
SDK_CALL_MESSAGE_TOO_LARGE_ERROR	413000096	The message content is too large.
SDK_CALL_SECURE_FUNCTION_RETURN_ERROR	413000097	The security function returns an error.
SDK_CALL_MESSAGE_RESPONSE_NULL_ERROR	413000098	The message response is empty.
SDK_CALL_ACCOUNT_ID_NOT_ENABLED_ERROR	413000099	The account is not enabled.

Variable	Value	Description
SDK_CALL_CREAT_CALL_IMPL_ERROR	413000100	An error occurred when creating a call control class.
SDK_CALL_ALREADY_IN_CALL_ERROR	413000101	The user is already in a call.
SDK_CALL_NO_CALL_EXIST_ERROR	413000102	The call does not exist.
SDK_CALL_GET_MEDIA_CONFIG_FAILED	413000103	Failed to obtain the media configuration information.
SDK_CALL_CAPTURE_INPUTDATA_FAILED	413000104	Failed to configure third-party collection. A failure message is returned after HME_V_Capture_InputData_MCU is called.
SDK_CALL_NOT_CONFIG_BASIC_CALL_ABILITY	413000105	The P2P capability is not configured for your enterprise.
SDK_CALL_NOT_SUPPORT_MCU_CALL_AND_CONF	413000106	The MCU call and meeting capabilities are not supported.
SDK_CONFCTRL_GENERAL	414100001	Common error.
SDK_CONFCTRL_PARAMETER_ERROR	414100002	Parameter error.
SDK_CONFCTRL_TIMEOUT	414100003	Timeout.
SDK_CONFCTRL_MEMORY_ERROR	414100004	Memory allocation error.
SDK_CONFCTRL_DNS_ERROR	414100005	DNS resolution exception.
SDK_CONFCTRL_REQUEST_FAILED	414100006	The request message is abnormal.
SDK_CONFCTRL_AUTH_FAILED	414100007	Authorization failed.
SDK_CONFCTRL_SERVICE_ERROR	414100008	Server exception.
SDK_CONFCTRL_TIMER_ERROR	414100009	An error occurred during timer creation.
SDK_CONFCTRL_START_TIMER_ERROR	414100010	An error occurred during timer startup.

Variable	Value	Description
SDK_CONFCTRL_CONF_BLOCK_FULL	414100011	Meeting control blocks are full. Release unused control blocks.
SDK_CONFCTRL_CURL_E_EXTERN_CONNECT_TIMEOUT	414100012	The proxy communication times out and the TCP connection fails to be set up. Proxy configuration may be incorrect.
SDK_CONFCTRL_CURL_E_EXTERN_CLOSED_BY_PROXY	414100013	The connection is disconnected by the proxy. Server address may be incorrect.
SDK_CONFCTRL_CURL_E_EXTERN_PROXY_ADDR_OR_PORT_ERROR	414100014	TCP connection setup times out. Proxy domain name or port number may be incorrect.
SDK_CONFCTRL_CURL_E_EXTERN_PROXY_PERMISSION_DENIED	414100015	Authentication failed. The user does not have the proxy permission and needs to request the proxy permission.
SDK_CONFCTRL_CURL_E_EXTERN_USER_OR_PASSWORD_ERROR	414100016	Authentication failed. The proxy username or password is incorrect.
SDK_CONFCTRL_CURL_E_EXTERN_AUTH_TYPE_ERROR	414100017	Authentication failed. The authentication type is incorrect. The username and password are required.
SDK_CONFCTRL_CURL_E_EXTERN_AUTH_ERROR	414100018	Authentication failed due to other unknown errors. The possible cause is that the authentication mode is not supported. It is recommended that a dialog box be displayed to prompt the user to initiate the authentication again.
SDK_CONFCTRL_CURL_E_COULDNT_RESOLVE_PROXY	414100019	cURL proxy exception.
SDK_CONFCTRL_CURL_E_COULDNT_RESOLVE_HOST	414100020	cURL host exception.
SDK_CONFCTRL_CURL_E_COULDNT_CONNECT	414100021	cURL connection error.
SDK_CONFCTRL_CURL_E_OPERATION_TIMED_OUT	414100022	cURL operation timed out.

Variable	Value	Description
SDK_CONFCTRL_MSG_TOO_LARGE	414100023	The meeting control message is too large.
SDK_CONFCTRL_PTHREAD_CREAT_ERROR	414100024	Failed to create the thread.
SDK_CONFCTRL_SEC_FUNC_RETURN_ERROR	414100025	The security function returns an error.
SDK_CONFCTRL_JSON_PARSE_FAILED	414100026	Failed to parse the JSON body.
SDK_CONFCTRL_TOKEN_IS_NULL_ERROR	414100027	The WebSocket token value is empty.
SDK_CONFCTRL_RETURN_JSON_ERROR	414100028	The returned JSON data is abnormal.
SDK_CONFCTRL_CREATE_CONF_BASIC_ERROR	414100029	Failed to create the meeting control block.
SDK_CONFCTRL_GET_CONF_BASIC_BY_HANDLE_ERROR	414100030	Failed to obtain the meeting control block.
SDK_CONFCTRL_GET_CONF_BASIC_BY_CALLID_ERROR	414100031	Failed to obtain the meeting control block based on the call ID.
SDK_CONFCTRL_DESTROY_CONF_BASIC_ERROR	414100032	Failed to destroy the meeting control block.
SDK_CONFCTRL_CREATE_CONF_TMP_INFO_NOT_FOUND	414100033	Failed to find the temporary information for creating the meeting.
SDK_CONFCTRL_GET_PARTICIPANT_ID_FAILED	414100034	Failed to obtain the participant ID.
SDK_CONFCTRL_GET_MT_BY_PARTICIPANT_ID_FAILED	414100035	Failed to obtain the MT using the participant ID.
SDK_CONFCTRL_GET_SELFINFO_ERROR	414100036	Failed to obtain selfinfo using participant ID.
SDK_CONFCTRL_GET_PARTICIPANT_BY_MT_FAILED	414100037	Failed to obtain meeting member information through the MT.
SDK_CONFCTRL_NEED_MANUAL_INVITE_ERROR	414100038	Manual invitation is required.

Variable	Value	Description
SDK_CONFCTRL_HAD_NOTIFY_CONFINFO_BEFORE	414100039	The major parameters of the meeting have been reported.
SDK_CONFCTRL_NOT_SUPPORT_SUBTITLE	414100040	Captions are not supported.
SDK_CONFCTRL_CONF_END_TIMEOUOT	414100041	The meeting ends because connection times out.
SDK_CONFCTRL_CONF_END_NOSTREAM	414100042	The meeting ends because no stream received.
SDK_CONFCTRL_CONF_END_CHAIR_HANGUP	414100043	The meeting ends by the host.
SDK_CONFCTRL_CONF_END_STOP_CONF	414100044	The meeting has ended.
SDK_CONFCTRL_CONF_END_LEAVE_CONF	414100045	The user leaves the meeting. The meeting ends.
SDK_CONFCTRL_MSG_PROC_FUN_REG_FAIL	414100046	Failed to register the message queue processing function.
SDK_CONFCTRL_MSG_PROC_FUN_UNREG_FAIL	414100047	Failed to deregister the message queue processing function.
SDK_CONFCTRL_CONF_END_REJECT_CONF	414100048	The meeting ends because the meeting is rejected.
SDK_CONFCTRL_CONF_END_SELF_END	414100049	The meeting is ended by the user.
SDK_CONFCTRL_VIEWER_EXCEEDS_LIMIT	414100050	The meeting control module is not initialized.
SDK_CONFCTRL_SPECIAL_WATCH_EXCEEDS_LIMIT	414100051	Too many special sites allowed to focus on.
SDK_CONFCTRL_WATCH_HD_EXCEEDS_LIMIT	414100052	Too many HD sites allowed to focus on.
SDK_CONFCTRL_WATCH_SD_EXCEEDS_LIMIT	414100053	Too many SD sites allowed to focus on.
SDK_CONFCTRL_WATCH_SPECIFICATIONS_EXCEEDS_LIMIT	414100054	The number or resolution of videos to focus on exceeds the limit.
SDK_CONFCTRL_WATCH_INNER_ERROR	414100055	An internal error of video focus occurred.

Variable	Value	Description
SDK_CONFCTRL_WATCH_RENDER_REPEATS	414100056	Duplicate handles to focus on.
SDK_CONFCTRL_HTTP_RECV_FAILED	414100057	HTTP request error.
SDK_CONFCTRL_TRACK_REQUEST_TIMEOUT	414100058	WebSocket request timed out.
SDK_CONFCTRL_TRACK_LOAD_FAILED	414100059	Loading error.
SDK_CONFCTRL_CONF_END_TIMEOUT_HANGUP	414100061	The meeting ends because waiting before the meeting times out or the meeting control heartbeat times out.
SDK_CONFCTRL_CONF_END_CONCLUDE	414100062	The meeting ends because the meeting is canceled.
SDK_CONFCTRL_CONF_END_NETWORK_FAILED	414100063	The meeting ends due to network exceptions on the waiting page before the meeting.
SDK_CONFCTRL_E_ERR_HTTP_BUSY	414100064	An HTTP error 429 is returned.
SDK_CONFCTRL_E_ERR_SELF_IS_CHAIRMAN	414100065	The user is already the host.
SDK_CONFCTRL_E_ERR_SELF_IS_COHOST	414100066	The user is already the co-host.
SDK_CONFCTRL_E_ERR_NO_COHOST_AND_CHAIRMAN	414100067	No host or co-host exists.
SDK_CONFCTRL_E_ERR_UNUPPORT_COHOST_AND_CHAIRMAN	414100068	No host or co-host available.
SDK_CONFCTRL_E_ERR_END_EXPIRATION	414100069	Invalid user, enterprise, or SP.
SDK_CONFCTRL_E_ERR_NOT_SUPPORT_OFFLINE_JOIN	414100070	Cannot join a meeting offline.
SDK_CONFCTRL_E_ERR_START_CONFCTRL_WSS_FAILED	414100071	Failed to connect the meeting control WebSocket.
SDK_CONFCTRL_E_ERR_OFFLINE_JOIN_QUERY_USER_TOKEN_FAILED	414100072	Failed to obtain the user token when joining a meeting offline.

Variable	Value	Description
SDK_CONFCTRL_E_ERR_OFFLINE_JOIN_QUERY_CONF_INFO_FAILED	414100073	Failed to obtain meeting details when joining a meeting offline.
SDK_CONFCTRL_E_ERR_CHAIR_END_CONF	414100074	The host ended the meeting.
SDK_CONFCTRL_E_ERR_TIMEOVER_END_CONF	414100075	The scheduled end time arrived.
SDK_CONFCTRL_E_ERR_CALLEE_REFUSED_END_CONF	414100076	The called participant rejects the call.
SDK_CONFCTRL_E_ERR_CALLEE_TIMEOUT_END_CONF	414100077	The call times out.
SDK_CONFCTRL_E_ERR_END_FORCE_OPEN_CAMERA_HANGUP	414100078	The video meeting was forcibly ended.
SDK_CONFCTRL_E_ERR_NO_MATCHED_SIGNAL_PROXY_WITH_SITE_URL	414100079	The signaling proxy does not match the site address.
SDK_CONFCTRL_E_ERR_END_PROJECTION_FAILED	414100080	Projection failed.
SDK_CONFCTRL_E_ERR_END_PROJECTION_END	414100081	Projection ended.
SDK_CONFCTRL_E_ERR_END_PROJECTION_CANCEL	414100082	The large screen canceled the projection during negotiation.
SDK_CONFCTRL_E_ERR_END_PROJECTION_BY_SENDER_WITH_TWO_MEMBERS	414100083	The projection initiator in this two-participant meeting ended the projection.
SDK_CONFCTRL_E_ERR_END_PROJECTION_BY_RECEIVER	414100084	The large screen ended the projection.
SDK_CONFCTRL_E_ERR_END_PROJECTION_BY_SENDER_WITH_MULTI_MEMBERS	414100085	The projection initiator in this multi-participant meeting ended the projection.

Variable	Value	Description
SDK_CONFCTRL_E_ERR_CONF_END_PEER_HANGS_UP	414100086	The peer participant has ended the call.
SDK_COMMON_SQLITE_E_NOT_INITED	415000001	The database is not initialized.
SDK_COMMON_E_FAIL	415000002	Failed.
SDK_COMMON_E_ERR_PROXY_UNFINISH	415000003	The proxy detection is not complete.
SDK_TRACK_E_INVALID_PARAMETER	416000001	Parameter error.
SDK_TRACK_E_NOT_INITED	416000002	The track module is not initialized.
SDK_TRACK_E_EVENT_NOT_EXIST	416000003	The track event does not exist.
SDK_TRACK_E_NOT_LOGGED	416000004	The user has not logged in yet.
SDK_TRACK_E_NO_UPLOAD	416000005	Upload is not enabled.
SDK_SIP_INVALIDPARAM	419100001	Incorrect parameter.
SDK_SIP_WRONGURI	419100002	Incorrect number.
SDK_SIP_MEMALLOCATION_FAILURE	419100003	Memory allocation fails.
SDK_SIP_SDPROLEFAILURE	419100004	SDP error.
SDK_SIP_NOCONNECTION	419100005	The connection does not exist.
SDK_SIP_CONNECTION_EXPIRED	419100006	Connection failed.
SDK_SIP_FORBIDDEN	419100007	Forbidden operation.
SDK_SIP_WRONGSTATE	419100008	Incorrect status.
SDK_SIP_NOLINEDATA	419100009	No corresponding line data.
SDK_SIP_NOREGISTER	419100010	No corresponding registered instance.
SDK_SIP_NODIALOG	419100011	No corresponding call instance.
SDK_SIP_NOSUBSCRIPTION	419100012	No corresponding subscription instance.

Variable	Value	Description
SDK_SIP_NOREFER	419100013	No corresponding Refer instance.
SDK_SIP_NODIM	419100014	No corresponding DIM instance.
SDK_SIP_CREATEHEADER	419100015	Failed to create the header.
SDK_SIP_PARSEHEADER	419100016	Failed to parse the header.
SDK_SIP_FIELDEXIST	419100017	No header is found.
SDK_SIP_NOSDPBODY	419100018	No SDP message body.
SDK_SIP_GETCAP	419100019	Failed to obtain the capability.
SDK_SIP_COMMCAP	419100020	Failed to compare capabilities.
SDK_SIP_OPENLCFAILED	419100021	Failed to open the logical stream.
SDK_SIP_ENCODESDP	419100022	Failed to encode SDP.
SDK_SIP_DECODESDP	419100023	Failed to decode SDP.
SDK_SIP_UNSUPPORTSDP	419100024	The negotiated SDP is not supported.
SDK_SIP_TPTDINIT	419100025	TPTD initialization failed.
SDK_SIP_TPTINIT	419100026	TPT initialization failed.
SDK_SIP_TXNINIT	419100027	TXN initialization failed.
SDK_SIP_UAINIT	419100028	UA initialization failed.
SDK_SIP_GLUEINIT	419100029	GLUE initialization fails.
SDK_SIP_HLLMINIT	419100030	HLLM initialization failed.
SDK_SIP_VCOMINIT	419100031	VCOM initialization failed.
SDK_SIP_SDPINIT	419100032	SDP initialization failed.
SDK_SIP_MULTIIINS	419100033	Multi-instance error.
SDK_SIP_NOREGCB	419100034	Registration control blocks are insufficient.
SDK_SIP_NOSUBCB	419100035	Subscription control blocks are insufficient.
SDK_SIP_NODIACB	419100036	Call control blocks are insufficient.
SDK_SIP_NODIMCB	419100037	IM control blocks are insufficient.
SDK_SIP_PARSEURITOSTR	419100038	Failed to parse the URI in the XML file.

Variable	Value	Description
SDK_SIP_ENCRYPTNEG_OERR	419100039	Encryption negotiation failed.
SDK_SIP_NOLOCALCAP	419100040	Local capabilities are not configured.
SDK_SIP_BFCPTOKENERR	419100041	BFCP token error.
SDK_SIP_DNSERR	419100042	DNS resolution error.
SDK_SIP_GET_SUB_STATE_ERR	419100043	Failed to obtain the subscription status.
SDK_SIP_NOT_SUPPORT_IPV4	419100044	IPv4 is not supported.
SDK_SIP_NOT_SUPPORT_IPV6	419100045	IPv6 is not supported.
SDK_SIP_NOT_SUPPORT_HOST_TYPE	419100046	The host type is not supported.
SDK_SIP_GET_TIMER_ERROR	419100047	Failed to obtain the timer.
SDK_VTOP_ERR_MSG_NOMEM	419200001	The memory is insufficient.
SDK_VTOP_ERR_MSG_NULLPTR	419200002	The message pointer is null.
SDK_VTOP_ERR_MSG_INVALID	419200003	Invalid message.
SDK_VTOP_ERR_MSG_BADRECV	419200004	Receive message failed.
SDK_VTOP_ERR_MSG_TIMEOUT	419200005	Message processing timed out.
SDK_VTOP_ERR_MSG_NOINIT	419200006	The message is not initialized.
SDK_VTOP_ERR_MSG_NODESTR	419200007	There is no receiving end.
SDK_VTOP_ERR_MSG_NOAPPNAME	419200008	There is no application name.
SDK_VTOP_ERR_MSG_REHANDLE	419200009	The message has already been handled.
SDK_VTOP_ERR_MSG_TRACE	419200010	Trace message failed.

Variable	Value	Description
SDK_VTOP_ERR_MSG_SENDERR	419200011	Send message failed.
SDK_VTOP_ERR_MSG_BADFUNC	419200012	Abnormal function.
SDK_VTOP_ERR_MSG_NOTIFY	419200013	Message notification failed.
SDK_VTOP_ERR_MSG_NOTFIND	419200014	Message not found.
SDK_VTOP_ERR_MSG_NOMSG	419200015	There is no message.
SDK_VTOP_ERR_MSG_NOTFINDMID	419200016	The module ID cannot be found.
SDK_VTOP_ERR_MSG_TAG_NOT_EXIST	419200017	The tag does not exist.
SDK_VTOP_ERR_MSG_QUEUE_FULL	419200018	Queue overflow.
SDK_VTOP_ERR_MSG_TAG_ALREADY_EXIST	419200019	The tag already exists.
SDK_VTOP_ERR_MSG_UNKOWN	419200020	Unknown error.
APP_CANNOT_ACCEPT_INVITE_SHARE	420000001	Failed to receive the sharing invitation.
APP_REPORT_CHECK_PARAMETERS_FAILED	420000002	ReportDTO parameter verification failed.
APP_REPORT_CREATE_FOLDER_FAILED	420000003	Failed to create the report folder.
APP_REPORT_COMPRESS_FAILED	420000004	Failed to compress the report folder.
APP_REPORT_UPLOAD_PATH_EMPTY	420000005	The path of the ZIP file to be uploaded is empty.
APP_REPORT_UPLOAD_SIZE_EXCEED_LIMIT	420000006	The ZIP file to be uploaded is too large.
APP_REPORT_UPLOAD_TIMES_EXCEED_LIMIT_DAILY	420000007	The same person reports more than 100 times within 24 hours.
UISDK_COMMON_ERROR	430100001	Common error.
UISDK_API_INVALID_PARAMETERS	430100002	Parameter error.

Variable	Value	Description
UISDK_SIP_CHECK_TIMEOUT	430100003	SIP connection check failed.
UISDK_TIMEOUT	430100004	Timeout.
UISDK_IN_PROCESS	430100005	The API is being processed.
UISDK_NOT_INITED_END	430100006	The initialization is not started or not completed.
UISDK_NOT_SUPPORT_END	430100007	Not supported in this version.
UISDK_OPERATION_INTERRUPT	430100008	The operation is interrupted.
UISDK_CONTACT_NOT_FOUND	430100009	The contact does not exist.
UISDK_ARGS_LENGTH_OVERRUN	430100010	The parameter value is too long.
UISDK_APPID_INFO_ILLEGAL	430100011	Invalid app ID.
UISDK_E2EENCRYPT_ALGORITHM_ERROR	430100012	The end-to-end encryption algorithm is asymmetric.
UISDK_UNLOGIN_ERROR	430200001	The user has not logged in yet.
UISDK_REPEATED_LOGIN_ERROR	430200002	Repeated login.
UISDK_SIP_CONNECTION_TIMEOUT	430200003	SIP connection timed out.
UISDK_LOGIN_INVALID_PASSWORD_PARAMETER	430200004	The login password is invalid.
UISDK_PASSWORD_OR_ACCOUNT_EMPTY	430200005	The account and password cannot be both empty.
UISDK_CALL_INVALID_ACCOUNT_PARAMETER	430300001	The calling number, account, or third-party account cannot be empty.
UISDK_CALL_ACCOUNT_EMPTY	430300002	The point-to-point call account is empty.
UISDK_CALL_NICKNAME_EMPTY	430300003	The point-to-point call name is empty.
UISDK_JOINCONF_NEED_PASSWORD	430400001	A password is required for joining the meeting.

Variable	Value	Description
UISDK_INVALID_TIMEZONE_PARAMETER	430400002	Incorrect time zone.
UISDK_INVALID_CONF_DURATION_PARAMETER	430400003	The meeting duration is less than 1.
UISDK_CONF_INTERRUPTED	430400004	Meeting joining is interrupted.
UISDK_JOINCONF_INPUT_INVALID_PASSWORD	430400005	The password must contain at least four characters.
UISDK_JOINCONF_USER_CANCEL	430400006	The user cancels meeting joining.
UISDK_INVALID_GUEST_PASSWORD_PARAMETER	430400007	Invalid guest password.
UISDK_NOT_IN_CONF_OR_CALL	430400008	The user is not in a meeting or call.
UISDK_ALREADY_EXIST_CONF_OR_CALL	430400009	A meeting or call already exists.
UISDK_CONFID_EMPTY	430400010	The meeting ID cannot be empty.
UISDK_SUBJECT_TOO_LONG	430400011	The meeting topic can contain up to 50 characters.
UISDK_VMR_HOST_PASSWORD_LENGTH_LEGAL	430400012	The length of the host password is invalid.
UISDK_VMR_NAME_EMPTY	430400013	The cloud meeting room name is empty.
UISDK_CONF_STARTTIME_EARLY	430400014	The start time of a meeting is earlier than the current time.
UISDK_SHARE_LOCKED	430400015	The sharing is locked.
UISDK_NOT_IN_DATACONF	430400016	The user is not in the data meeting.
UISDK_ROLE_NOT_SUPPORT_OPERATION	430400017	The role does not support this operation.
UISDK_SCAN_CODE_EXPIRED	430400018	The QR code expired.
UISDK_SCAN_CODE_NOT_SUPPORT	430400019	The QR code not supported.

Variable	Value	Description
UISDK_SCAN_CODE_OUTDATED_VERSION	430400020	The large screen version is too early.
UISDK_HTTP_SERVER_ERROR	430500001	Server exception for the HTTP request.
UISDK_HTTP_CONNECT_SERVER_TIMEOUT_ERROR	430500002	Connecting to the server timed out for the HTTP request.
UISDK_NO_NETWORK_ERROR	430500003	The network is unavailable.
UISDK_FILE_TYPE_ILLEGAL	430500004	Invalid file type.
UISDK_FROZEN_LEAVE_CONF	430600001	You left the meeting because the app was frozen in the backend.
UISDK_VIDEO_LAYOUT_MODE_NOT_SUPPORTED	600000001	The video layout mode is not supported.
UISDK_CONTROLLER_PAIR_ERROR	600000002	Pairing error.
UISDK_CONTROLLER_PAIR_LINK_IS_NOT_EXIST	600000003	The paired link does not exist.
UISDK_CONTROLLER_CMD_IS_NOT_SUPPORTED	600000004	The command is not supported.
UISDK_ACTION_IS_RUNNING	600000005	Executing...
UISDK_MCU_IS_NOT_SUPPORTED	600000006	MCU is not supported.
UISDK_OPERATE_NOT_IN_CONF	600000007	The user is not in the meeting.
UISDK_OPERATE_MIC_ERROR_NO_PERMISSION	600000008	No permission to operate the microphone.
UISDK_OPERATE_MIC_ERROR_NOT_ALLOW_UNMUTE	600000009	Unmuting is not allowed.
UISDK_OPERATE_MIC_ERROR_AUDIENCE_NOT_ALLOW_SPEAK	600000010	Muting is not allowed.

Variable	Value	Description
UISDK_OPERATE_CAMERA_ERROR_NO_PERMISSION	600000011	Attendees do not have the permission to enable the camera.
UISDK_OPERATE_CAMERA_ERROR_NOT_ALLOWED_OPEN	600000012	The camera cannot be enabled.
UISDK_OPERATE_CAMERA_ERROR_NOT_ALLOWED_OPEN_LOW_VIDEO_BW	600000013	The camera cannot be enabled when the bandwidth is low.
UISDK_PARAM_IS_INCORRECT	600000014	The volume parameter is incorrect.
UISDK_OPERATE_CAMERA_ERROR_REQUIRE_ALL_ATTENDEES_TO_OPEN_CAMERA	600000015	Disable camera failed. The camera is forcibly enabled in this meeting.
UISDK_OPERATE_MIC_ERROR_LOW_PERFORMANCE_CLOUD_DESKTOP	600000016	The camera cannot be enabled when you join a meeting using a low-performance cloud desktop.
UISDK_OPERATE_SPK_ERROR_SYSTEM_API	600000017	An error occurred when calling the speaker system API.
SDK_CALL_REASON_CODE_403_FORBIDDEN	510000403	Forbidden.
SDK_CALL_REASON_CODE_404_NOT_FOUND	510000404	Not found.
SDK_CALL_REASON_CODE_480_TEMP_UNAVAILABLE	510000480	Temporarily unavailable.
SDK_CALL_REASON_CODE_486_BUSYHERE	510000486	Busy here.
SDK_CALL_REASON_CODE_487_REQ_TERMINATED	510000487	Request terminated.
SDK_CALL_REASON_CODE_488_NOT_ACCEPTABLE_HERE	510000488	The request is unacceptable.
SDK_CALL_REASON_CODE_603_DECLINE	510000603	Declined.

Variable	Value	Description
SDK_CALL_REASON_CODE_841_HANGUP_WITHOUT_TOAST	510000841	Hang-up without toast.
SDK_CALL_REASON_CODE_842_CONFERENCE_IS_LOCK	510000842	The meeting is locked.
RTC_SDK_LEAVE_REASON_SERVER_ERROR	910000001	Server exception.
RTC_SDK_LEAVE_REASON_BREAKDOWN	910000002	The SFU service is faulty.
RTC_SDK_LEAVE_REASON_SERVICE_UNREACHABLE	910000003	Service unavailable 503.
RTC_SDK_LEAVE_REASON_INTERNAL_ERROR	910000004	Internal error.
RTC_SDK_LEAVE_REASON_KICKED_OFF	910000005	Kicked out.
RTC_SDK_LEAVE_REASON_SIGNATURE_EXPIRED	910000006	The signature has expired.
RTC_SDK_LEAVE_REASON_RECONNECT_FAILED	910000007	Reconnection timed out.
RTC_SDK_LEAVE_REASON_NETWORK_TEST	910000008	Network detection.
RTC_SDK_LEAVE_REASON_USER_REMOVED	910000009	The user is removed.
RTC_SDK_LEAVE_REASON_ROOM_DISMISSED	910000010	The room is dismissed.
RTC_SDK_LEAVE_REASON_USER_LOGINED	910000013	The app is in hibernation mode for a long time.
RTC_SDK_LEAVE_REASON_AUTH_FAILED	910000014	Authorization failed.
RTC_SDK_LEAVE_REASON_AUTH_RETRY	910000015	Authentication retried.
RTC_SDK_LEAVE_REASON_AUTH_CLOCK_SYNC	910000016	Clock synchronization required.

Variable	Value	Description
RTC_SDK_LEAVE_REASON_URL_NOT_RIGHT	910000017	Incorrect URL.
RTC_SDK_SDK_INTERNAL_ERROR	990000001	Internal error.
RTC_SDK_MSG_TOOLARGE	990000002	The message is too long.
RTC_SDK_MEM_NOT_ENOUGH	990000003	The memory is insufficient.
RTC_SDK_SYNSEND_MSG_ERR	990000004	Failed to send the message synchronously.
RTC_SDK_PARAM_ERROR	990000005	Parameter error.
RTC_SDK_API_CALLED_IN_WRONG_ORDER	990000006	The call ID order is incorrect.
RTC_SDK_SETUP_LOCAL_VIEW_FAIL	990000007	Failed to set the local screen.
RTC_SDK_START_REMOTE_STREAM_VIEW_FAIL	990000008	Failed to enable the remote screen.
RTC_SDK_SET_DEVICE_FAIL	990000009	Failed to configure the device.
RTC_SDK_INITIALIZING	990000010	Initializing...
RTC_SDK_UN_INITIALIZING	990000011	Deinitializing...
RTC_SDK_LOG_UPLOADING	990000012	Uploading logs...
RTC_SDK_MEDIA_PORT_ERROR	990000013	Failed to obtain the media port.
RTC_SDK_WATCH_VIEWS_TOO_MUCH	990000014	The number or resolution of screens to focus on exceeds the allowed specifications.
RTC_SDK_MEDIA_NEGOTIATION_ERR	990000015	Media negotiation failed.
RTC_SDK_SERVER_NO_RESPONSE	990000016	The server does not respond.
RTC_SDK_USER_ROLE_CHANGE_FAIL	990000017	Failed to switch the role.

Variable	Value	Description
RTC_SDK_JOIN_ROOM_FAIL	990000018	Failed to join the room.
RTC_SDK_JOIN_ROOM_STATUS_BUSY	990000019	The status is busy.
RTC_SDK_JOIN_ROOM_SERVER_ERROR	990000020	Failed to join the room. Server error.
RTC_SDK_JOIN_ROOM_SERVICE_UNREACHABLE	990000021	Failed to join the room. The service is unavailable.
RTC_SDK_JOIN_ROOM_AUTH_FAIL	990000022	Failed to join the room. Authentication failed.
RTC_SDK_JOIN_ROOM_AUTH_RETRY	990000023	Failed to join the room. Retry authentication.
RTC_SDK_JOIN_ROOM_AUTH_CLOCK_SYNC	990000024	Failed to join the room. Synchronize the clock.
RTC_SDK_JOIN_ROOM_URL_NOT_RIGHT	990000025	Failed to join the room. Incorrect URL.
RTC_SDK_KICKED_OFF	990000026	Kicked out.
RTC_SDK_SCREEN_CAPTURE_FAIL	990000027	Sharing failed.
RTC_SDK_EXT_MEDIA_OUTPUT	990000028	This operation is not allowed because the external media output mode is used.
RTC_SDK_RECONNECT_FAILED	990000029	Reconnection failed.
RTC_SDK_SERVER_BREAK_DOWN	990000030	The server is broken down.
RTC_SDK_SIGNATURE_EXPIRED	990000031	The signature has expired.
RTC_SDK_SET_REMOTE_RENDER_MODE_FAIL	990000032	Failed to set the remote window mode.
RTC_SDK_SET_REMOTE_AUDIO_MUTE_FAIL	990000033	Failed to subscribe to or unsubscribe from the audio.
RTC_SDK_CONNECT_OTHER_ROOM_FAIL	990000034	Failed to connect to another room.
RTC_SDK_DISCONNECT_OTHER_ROOM_FAIL	990000035	Failed to disconnect from other rooms.

Variable	Value	Description
RTC_SDK_SET_USERROLE_NOT_ALLOWED	990000036	Role switch is not allowed.
RTC_SDK_EXT_MEDIA_CAPTURE_INPUT	990000037	This operation is not allowed because the third-party collection mode is used.
RTC_SDK_SET_EXTAUDIO_CAPTURE_FAIL	990000038	Failed to set third-party audio collection.
RTC_SDK_SET_EXTVIDEO_CAPTURE_FAIL	990000039	Failed to set third-party video collection.
RTC_SDK_SET_SHARE_COMPUTER_SOUND_FAIL	990000040	Failed to set the audio sharing switch.
RTC_SDK_SET_LOCAL_AUDIO_MUTE_FAIL	990000041	Failed to start or stop the uplink audio stream.
RTC_SDK_SET_LOCAL_VIDEO_MUTE_FAIL	990000042	Failed to start or stop the uplink video stream.
RTC_SDK_USER_REMOVED	990000043	The user is removed.
RTC_SDK_ROOM_DISMISSED	990000044	The room is dismissed.
RTC_SDK_SETUP_REMOTE_VIEW_FAIL	990000045	Failed to set the remote view.
RTC_SDK_ROOM_FULL	990000052	Failed to join the room because it is full.
RTC_SDK_NETWORK_FAILED	990000053	MMR network exception.

9.6 Remarks

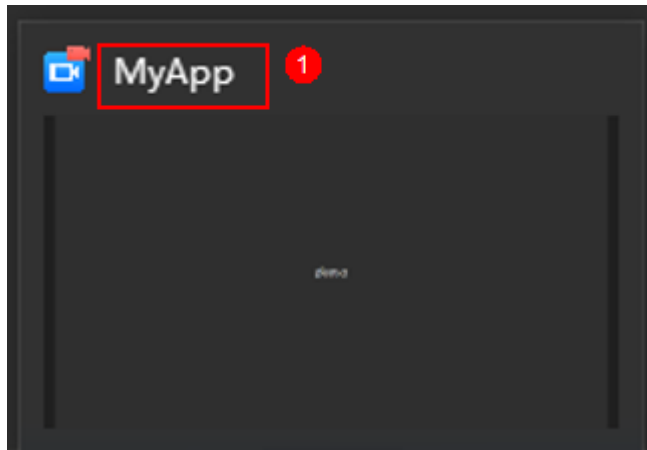
9.6.1 JSON Description for UI Configuration

Some in-meeting UI elements are customized through the **config** API. UI elements that can be customized are as follows:

- **Meeting window name (only for the Windows platform).**

After a meeting starts, a meeting icon is generated on the task bar of the Windows. When you point to the icon, a thumbnail window is displayed. You can customize the name of the window.

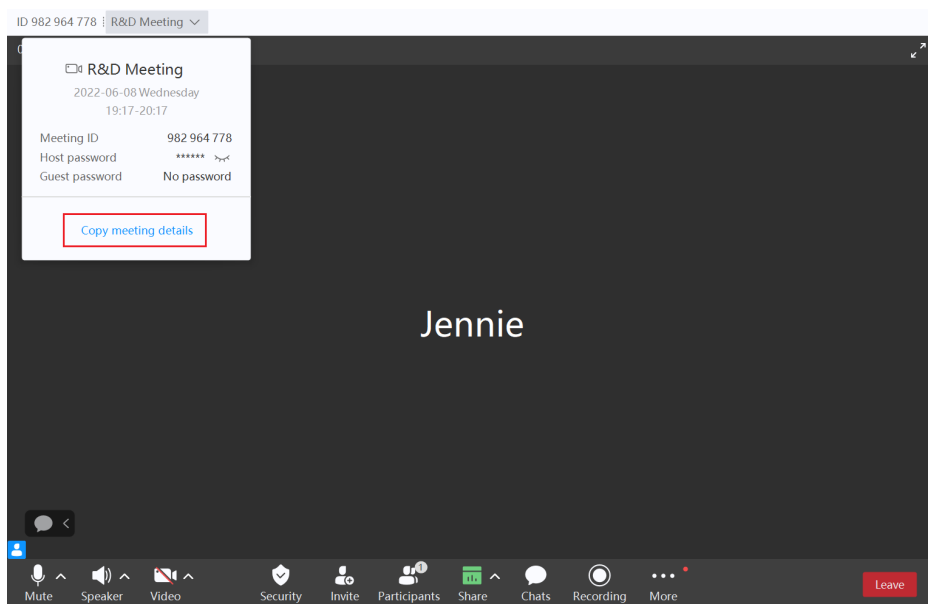
Figure 9-3 Meeting window name



- **Meeting details copied after the copy button is clicked on the meeting details screen**

The default domain name prefix of the meeting link (for example, <https://bmeeting.huaweicloud.com/#/j/982989574>) is <https://bmeeting.huaweicloud.com/>. If the portal for joining a meeting is developed by you, customize the meeting details copied after a user clicks the copy button on the meeting details screen.

Figure 9-4 Meeting details



- **Meeting control buttons**
 1. Delete or modify meeting control buttons provided by the SDK. For details about buttons that can be deleted and modified, see [Table 9-373](#).
 2. Add custom buttons. For details, see [Customizing Meeting Control Buttons](#).

Figure 9-5 Bottom toolbar and More menu

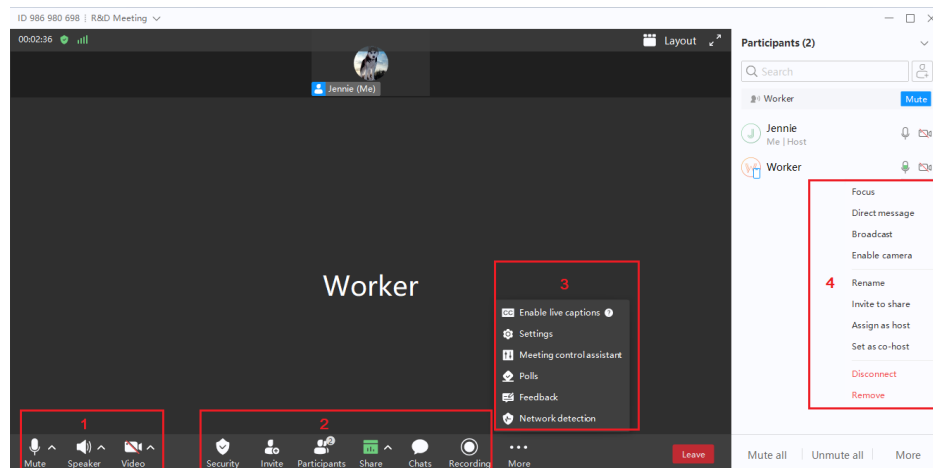


Figure 9-6 Sharing toolbar and More menu

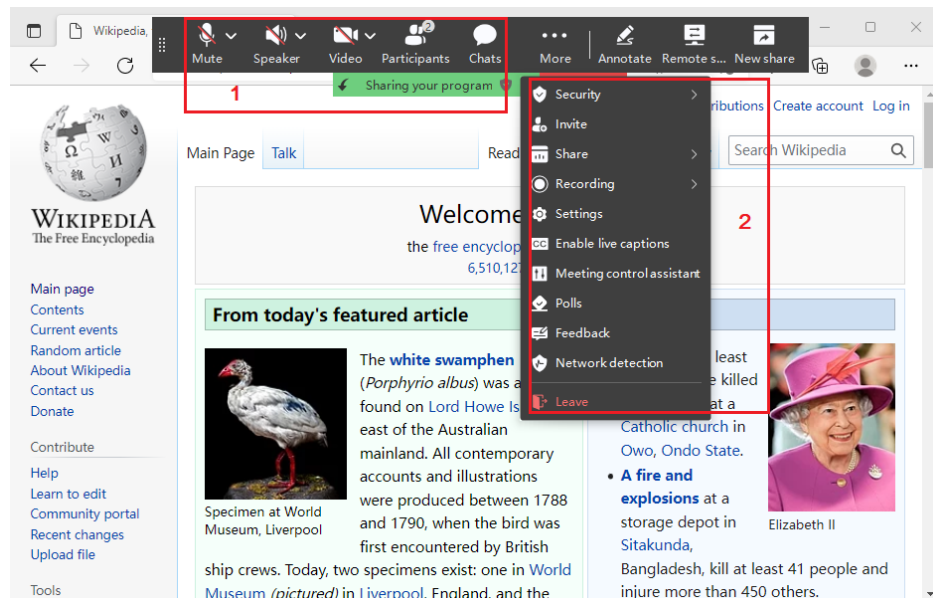
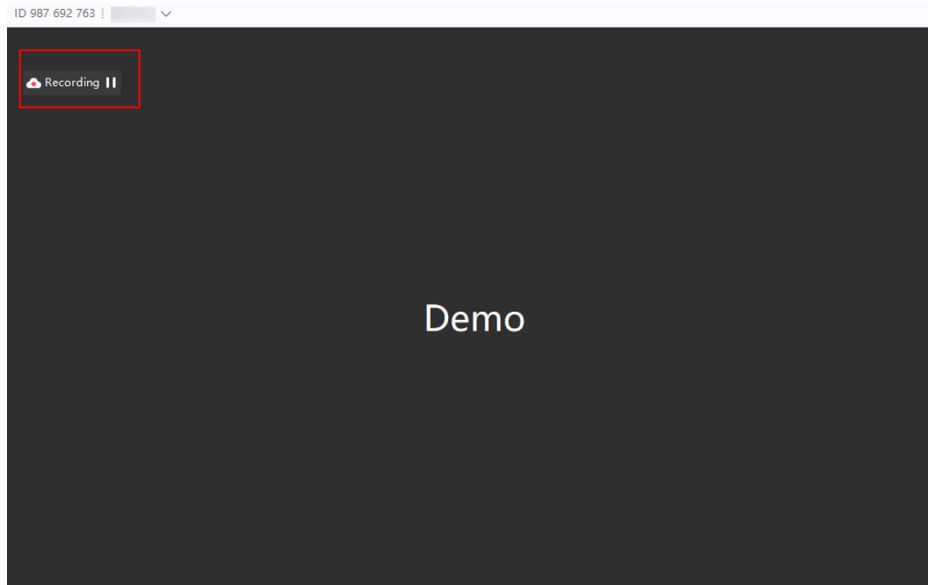


Figure 9-7 Status toolbar



Parameter description of the **config** API

Table 9-364 Parameter description

Parameter	Mandatory	Type	Description
uiConfig	Yes	string	JSON object character string <code>{"frame":object}</code> . The object has format requirements. If the format does not meet the requirements, the configuration does not take effect. For detailed rules, see Table 2, 3, 4, and 5.

Table 9-365 frame object description

Key	Type	Description
name	string	Meeting window name, for example, MyApp shown in Figure 9-3 .
confMenu	object	Button objects in the meeting window, as shown in Figure 9-5 and Figure 9-6 .

Table 9-366 confMenu object description

Key	Type	Description
toolBar	object	Button objects in the meeting window, as shown in Figure 9-5 and Figure 9-6 .
titleBar	object	Configuration object of the title bar in the meeting window, for example, the meeting details shown in Figure 9-4 .
statusBar	object	Configuration object of the status bar in the upper left corner of the meeting window, as shown in Figure 9-7 .

Table 9-367 toolBar object description

Key	Type	Description
button	object[]	Button objects in the meeting window, for example, buttons and menus shown in Figure 9-5 and Figure 9-6 .
customButton	object[]	Configuration object of the third-party custom buttons in the meeting window, for example, 2 and 3 shown in Figure 9-5 and 1 and 2 shown in Figure 9-6 .

Table 9-368 statusBar object description

key	Type	Description
button	object[]	Button configuration object of the status bar in the upper left corner of the meeting window, as shown in Figure 9-7 .

Table 9-369 titleBar Object Description

Key	Type	Description
confDetail	object[]	for example, the meeting details shown in Figure 9-4 .

Table 9-370 confDetail object description

Key	Type	Description
button	object[]	Button objects in the meeting details window.

Table 9-371 Description of the button object in the toolBar and confDetail objects

Key	Type	Description
buttonId	string	Unique ID of a button. For details about the mapping between buttonId and buttons, see Table 9-373 .
showAsAction	string	Whether to display the button. The value can be never (not displayed) or ifRoom (displayed).
isCustomizedClick	bool	Whether to inject content if the button is clicked. true : yes. When a user clicks the button, a notification is sent, and the SDK does not process the click response.

Table 9-372 customButton object description

Key	Type	Description
buttonId	string	Custom button ID, for example, customMenu .
title	string	Custom button name, for example, Custom button .
buttonImg	string	Icon path of the custom button. Use an absolute path. For example, to/path/image.svg . SVG and PNG formats are supported. UTF-8 encoding is required.
buttonPos	int	Position of the custom button. 0 : More menu on the toolbar; 1 : bottom toolbar; 2 : sharing toolbar.

Table 9-373 Introduction to buttonId

Button Name	Button ID	Description
Microphone	"microphone"	Can be hidden.
Speaker	"speaker"	Can be hidden.

Button Name	Button ID	Description
Camera	"camera"	Can be hidden.
Invite	"invite"	Can be hidden and injected.
Leave	"leave"	Can be hidden and injected.
Share	"share"	Can be hidden and injected.
Participants	"attendee"	Can be hidden and injected.
Feedback	"feedback"	Can be hidden and injected.
Annotation	"annotation"	Can be hidden (valid only for the Windows platform).
Give control	"remote_control"	Can be hidden (valid only for the Windows platform).
Stop sharing	"stop_share"	Can be hidden.
Chat	"chat"	Can be hidden and injected.
Live captions (enabling live captions and caption translation)	"subtitle"	Can be hidden.
Security	"security"	Can be hidden.
Network detection	"network_detection"	Can be hidden.
Allow unmute	"allow_unmute"	Can be hidden (valid only for the Windows platform).
Dual screen	"dual_screen"	Can be hidden (valid only for the Windows platform).
Recording	"record"	Can be hidden.
Polls	"vote"	Can be hidden.
Copy meeting info	"copy_conf_info"	Can be injected.
Participant details	"participant_detail"	Can be injected. (The macOS SDK does not require injection.)

Button Name	Button ID	Description
Copy attendee link	"copy_audience_conf_info"	Can be injected.

According to the preceding definition, the complete configuration items in JSON format of the customizable UI elements are as follows:

```
{
  "frame": {
    "name": "demo",
    "confMenu": {
      "titleBar": {
        "confDetail": {
          "button": [
            {
              "buttonId": "copy_conf_info",
              "isCustomizedClick": true
            }
          ]
        }
      }
    },
    "statusBar": {
      "button": [
        {
          "buttonId": "record",
          "showAsAction": "never"
        }
      ]
    }
  },
  "toolBar": {
    "customButton": [
      {
        "buttonId": "customMenu",
        "title": "Custom button",
        "buttonPos": 1,
        "buttonImg": "imagePath",
        "subMenu": ""
      },
      {
        "buttonId": "customMore",
        "title": "Custom more",
        "buttonPos": 0,
        "buttonImg": "imagePath"
      },
      {
        "buttonId": "customShare",
        "title": "Custom sharing",
        "buttonPos": 2,
        "buttonImg": "imagePath"
      }
    ],
    "button": [
      {
        "buttonId": "microphone",
        "showAsAction": "never"
      },
      {
        "buttonId": "speaker",
        "showAsAction": "never"
      },
      {
        "buttonId": "camera",
        "showAsAction": "never"
      }
    ]
  }
}
```



```
{
  "buttonId": "invite",
  "showAsAction": "never",
  "isCustomizedClick": true
},
{
  "buttonId": "leave",
  "showAsAction": "never",
  "isCustomizedClick": true
},
{
  "buttonId": "attendee",
  "showAsAction": "never",
  "isCustomizedClick": true,
  "dialogPos": "center"
},
{
  "buttonId": "share",
  "showAsAction": "never",
  "isCustomizedClick": true
},
{
  "buttonId": "chat",
  "showAsAction": "never",
  "isCustomizedClick": true,
  "dialogPos": "center"
},
{
  "buttonId": "annotation",
  "showAsAction": "never"
},
{
  "buttonId": "stop_share",
  "showAsAction": "never"
},
{
  "buttonId": "feedback",
  "showAsAction": "ifRoom",
  "isCustomizedClick": true
},
{
  "buttonId": "dual_screen",
  "showAsAction": "never"
},
{
  "buttonId": "remote_control",
  "showAsAction": "never"
},
{
  "buttonId": "record",
  "showAsAction": "never"
},
{
  "buttonId": "subtitle",
  "showAsAction": "never"
},
{
  "buttonId": "security",
  "showAsAction": "never"
},
{
  "buttonId": "network_detection",
  "showAsAction": "never"
},
{
  "buttonId": "vote",
  "showAsAction": "never"
}
]
```

```
}  
}  
}  
}
```

NOTE

The **uiConfig** of the **config** function is of the string type. Therefore, you need to convert the preceding JSON string into a character string. For details, see the following sample code.

Sample Code

```
/**  
 * UI configurations  
 */  
async setInvite(){  
  let param = {  
    "frame": {  
      "confMenu": {  
        "toolBar": {  
          "button": [{  
            "buttonId": "invite",  
            "showAsAction": "ifRoom",  
            "isCustomizedClick": true  
          }]  
        }  
      }  
    }  
  }  
  const apiService = new ApiService();  
  // Convert JSON into a string and pass the string.  
  let setResult = await apiService.config(JSON.stringify(param));  
  if(setResult.ret != 0){  
    window.electron.ipcRenderer.send("show-error-alert", "config error = " + setResult.ret);  
  }  
}
```

9.6.2 Customizing Meeting Control Buttons

1. Add custom buttons. You can add buttons on the bottom toolbar, sharing toolbar, and **More** menus. Currently, you can customize one button on the bottom or sharing toolbar and the button is displayed before the **More** menu. More custom buttons are displayed in the **More** menu. Custom buttons in the **More** menu take effect on the bottom and sharing toolbars. Custom buttons in the **More** menu on the bottom toolbar are displayed at the end of the **More** menu. Custom buttons in the **More** menu on the sharing toolbar are displayed before the **Leave** button.
2. Delete custom buttons. Call the **Config** API to delete the button configuration in **customButton**. If **customButton:[]** is passed, all custom buttons are cleared. If a position is specified under **customButton** but no specific custom button is specified, all custom buttons in the position are cleared.

NOTE

When calling the **Config** API to add, delete, or modify custom buttons, pass all custom buttons in the corresponding position. The bottom and sharing toolbars can be dynamically refreshed. **More** menus can only be refreshed when they are regenerated.

- **Add custom buttons.**

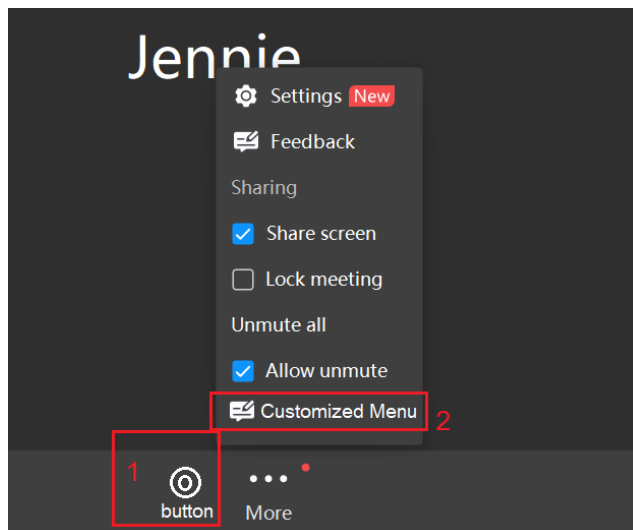
The following describes how to add a custom button with submenus on the bottom toolbar, sharing toolbar, and **More** menus.

```
{  
  "frame":{
```

```

"confMenu":{
  "toolBar":{
    "customButton": [
      {
        "buttonId": "customMenu",
        "title": "Custom button",
        "buttonImg": "D:/demoResource/icon-whiteboard.svg",
        "buttonPos": 1
      },
      {
        "buttonId": "customMore",
        "title": "Custom more",
        "buttonImg": "D:/demoResource/icon-whiteboard.svg",
        "buttonPos": 0
      },
      {
        "buttonId": "customShare",
        "title": "Custom sharing",
        "buttonImg": "D:/demoResource/icon-whiteboard.svg",
        "buttonPos": 2
      }
    ]
  }
}

```



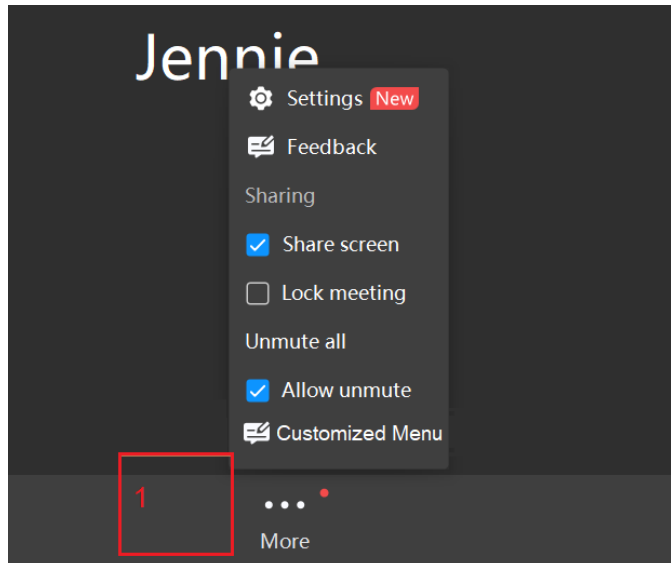
- **Update custom buttons.**

The following describes how to rename a button on the bottom toolbar.

```

{
  "frame":{
    "confMenu":{
      "toolBar":{
        "customButton": [
          {
            "buttonId": "customMenu",
            "title": "Renamed button",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 1
          },
          {
            "buttonId": "customMore",
            "title": "Custom more",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 0
          },
          {
            "buttonId": "customShare",

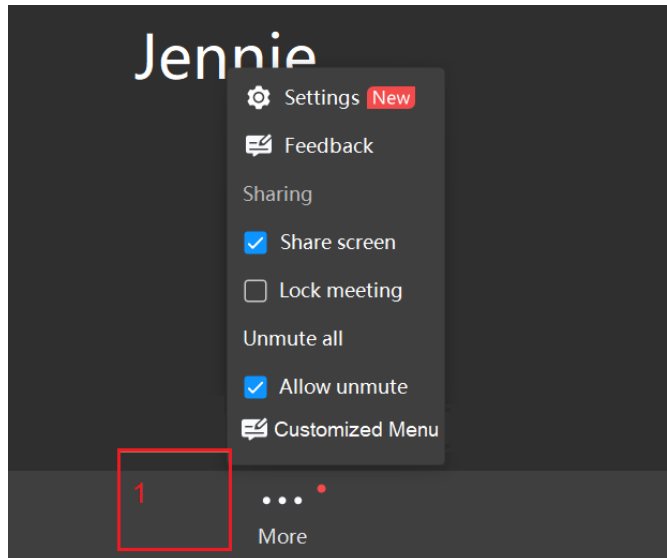
```

- **Clear custom buttons in a position.**

All custom buttons in the position defined in **customButton** are deleted. If no custom button is configured in the position defined in **customButton**, all custom buttons in the position are cleared. The following uses the bottom toolbar as an example:

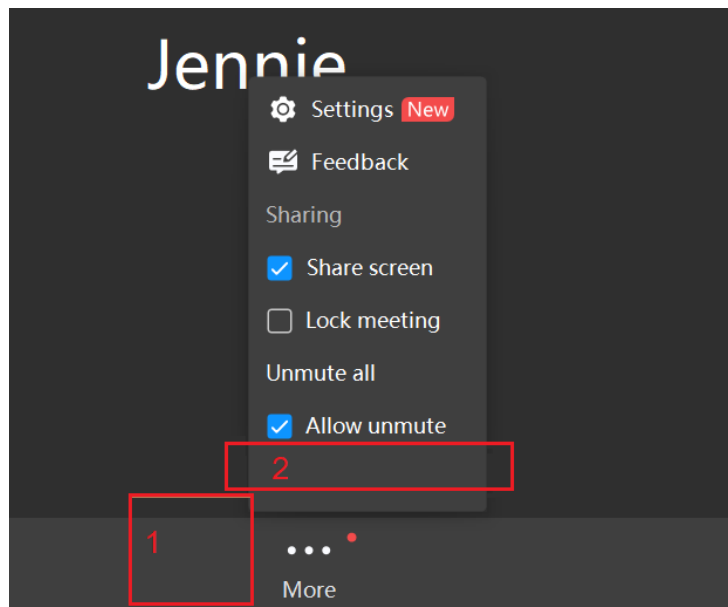
```
{
  "frame":{
    "confMenu":{
      "toolBar":{
        "customButton": [
          {
            "buttonId": "customMore",
            "title": "Custom more",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 0
          },
          {
            "buttonId": "customShare",
            "title": "Custom sharing",
            "buttonImg": "D:/demoResource/icon-whiteboard.svg",
            "buttonPos": 2
          }
        ]
      }
    }
  }
}
```



- **Clear all custom buttons.**

If an empty array is passed for **customButton**, custom buttons in all positions are cleared. The following is an example:

```
{  
  "frame":{  
    "confMenu":{  
      "toolBar":{  
        "customButton": [  
          ]  
      }  
    }  
  }  
}
```



9.6.3 Common Error Codes

Table 9-374 Enumerated values of SDKError

Variable	Value	Description
UISDK_COMMON_ERROR	43010001	Common error.
UISDK_API_INVALID_PARAMETERS	43010002	Invalid parameter.
USG_ERR_PASSWORD	20601000	Incorrect account or password.
SDK_LOGIN_ACCOUNT_LOCKED	41210010	The account is locked.
SDK_LOGIN_AUTH_ACCOUNT_DIACTIVE	41210015	The account or enterprise is not activated.
USG_APPID_AUTH_EXPIRE	20601057	The app ID authentication has expired.
USG_APPID_ACCOUNT_DISABLED	20601007	The account is not activated and cannot be used for login.
CMS_CONF_AUTHEN_NEED_PASSWORD	11107009	The meeting password cannot be empty.
CMS_CONF_NOT_FOUND_OR_AUTH_FAILED	111072065	The meeting does not exist or the password is incorrect.
CMS_CONF_LOCKED	111072050	The meeting is locked.
UISDK_NOT_IN_CONF_OR_CALL	43040008	You are not in a meeting or call.
CMS_VMR_ONLY_ALLOW_CHAIR_START_CONF	111071004	Guests are not allowed to join the cloud meeting room ahead of the host.
UISDK_SHARE_LOCKED	43040015	The sharing is locked.
UISDK_NOT_IN_DATACONF	43040016	You are not in a data meeting.
CMS_CONF_ONLY_ALLOW_USER_IN_ORG	111071074	Only corporate users are allowed to join the meeting.

Variable	Value	Description
CMS_CONF_ONLY_ALLOW_USER_INVITED	111071075	Only invited users are allowed to join the meeting.
UISDK_ALREADY_EXIST_CONF_OR_CALL	430400009	A meeting or call already exists.
CMS_CONF_ANONYMOUS_LOGIN_LOCKED	111071052	Anonymous login is locked. Try again later.
CMS_CONF_LINK_LOGIN_LOCKED	111071053	Login using the link is locked. Try again later.
CMS_CONF_IS_CLOSED	111072006	The meeting has ended.
USG_VMR_PWD_SAME_AS_CHAIRMAN_PWD	201080006	The host password and guest password cannot be the same. Check the parameters.
CMS_CONF_PORTAL_PARTICIPANT_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111076003	More participants in the cloud meeting room than allowed.
CMS_CONF_PORTAL_PARTICIPANT_RESOURCE_NOT_ENOUGH	111076004	Concurrent participants in the enterprise are insufficient.
CMS_CONF_NOT_ON_LOCAL_STATION	111100012	The meeting is not held at this site.
CMS_LOGICRES_PNUM_RESOURCE_NOT_ENOUGH	115022001	Concurrent participants in the enterprise are insufficient.
CMS_CONF_DATA_NOT_FOUND	111070005	The meeting does not exist.
CMS_VMR_DATA_NOT_FOUND	111070006	The personal cloud meeting room does not exist.
CMS_CONF_ROLE_AUTHENTICATION_FAILED	111070010	You do not have the permissions required to view the meeting.
CMS_ONLINE_CONF_IN_COMMUNAL	111071106	A meeting is being held in the cloud meeting room.
CMS_CONF_MODIFY_FAIL_AS_CONF_ALREADY_STARTED	111071065	The meeting is in progress and cannot be edited.

Variable	Value	Description
CMS_ORG_CONCURRENT_PARTICIPANTS_NUMBER_IS_ZERO	111071060	The enterprise has no concurrent participant resources configured and cannot use the personal meeting ID or random meeting ID to initiate a meeting.
CMS_CONF_USER_NOT_VMR_OWNER	111071063	The user is not the owner of the cloud meeting room.
CMS_CONF_CANCEL_FAIL_AS_CONF_STARTED	111071067	The meeting is in progress and cannot be canceled.
CMS_CONF_START_TIME_LESS_THAN_CURRENT_TIME	111071013	The meeting start time cannot be earlier than the current system time.
CMS_CONF_START_TIME_OVER_MAX_SCHEDULE_TIME	111071014	The start time exceeds the allowed range.
USG_VMR_PWM_SAME_AS_MEETING_PASSWORD	201080017	Same as the meeting password.
CMS_PARTICIPANT_CONF_NOT_SUPPORTED	111084013	The meeting is not supported.
CMS_CONF_ATTENDEES_NUMBER_EXCEED_LIMIT	111071066	The number of participants exceeds the upper limit.
CMS_VMR_DATA_STATUS_ILLEGAL	111073007	Invalid status of the cloud meeting room package.
CMS_WAIT_APPLY_RESOURCE	115029006	Resources are being requested.
SDK_SVN_DETECT_FAILED	411000017	SVN port detection failed.
SDK_ERR_RTC_NOT_SUPPORT_STG	411000019	RTC does not support the STG mode.
CMS_OVER_MAX_PARTICIPANT_NUMBER	111072101	More participants than allowed.
CMS_AUDIENCE_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111072202	The number of attendees exceeds the maximum number of concurrent participants in the cloud meeting room package.

Variable	Value	Description
CMS_PARTICIPANT_VMR_LOGIC_RESOURCE_NOT_ENOUGH	111072203	The number of the host and panelists exceeds the maximum number of concurrent participants in the cloud meeting room package.
CMS_PARTICIPANT_CONF_NOT_EXIST	111081002	The meeting does not exist or has ended.
USG_VMR_RESOURCE_UNAVAILABLE	201080000	Cloud meeting resources are unavailable.
USG_ACCOUNT_IS_UNBOUND	206010075	The account has been unbound.
RTC_SDK_JOIN_ROOM_FAIL	990000018	Failed to join the room.
RTC_SDK_JOIN_ROOM_STATUS_BUSY	990000019	The status is busy.
RTC_SDK_JOIN_ROOM_SERVER_ERROR	990000020	Failed to join the room. Server error.
RTC_SDK_JOIN_ROOM_AUTH_FAIL	990000022	Failed to join the room. Authentication failed.
RTC_SDK_JOIN_ROOM_URL_NOT_RIGHT	990000025	Failed to join the room. Incorrect URL.
SDK_LOGIN_CA_VERIFY_FAILED	412100012	Failed to verify the server CA certificate.
SDK_LOGIN_CURLE_EXTERN_CONNECT_TIMEOUT	412100017	The proxy communication times out, and the TCP connection fails to be set up. There is a high probability that the proxy configuration is incorrect.
SDK_LOGIN_CURLE_EXTERN_CLOSED_BY_PROXY	412100018	The link is disconnected by the proxy. There is a high probability that the configured server address is incorrect.
SDK_LOGIN_CURLE_COULDNT_RESOLVE_PROXY	412100024	Authentication failed. The gateway cannot be parsed.
SDK_LOGIN_CURLE_COULDNT_RESOLVE_HOST	412100025	Authentication failed. The host cannot be parsed.

Variable	Value	Description
UISDK_TIMEOUT	430100004	Timeout.
UISDK_IN_PROCESS	430100005	The API is being processed.
UISDK_UNLOGIN_ERROR	430200001	You have not logged in yet.
UISDK_NOT_INITED_END	430100006	The initialization is not started or not completed.
UISDK_NOT_SUPPORT_END	430100007	This version is not supported.
UISDK_OPERATION_INTERRUPT	430100008	The operation is interrupted.
UISDK_CONTACT_NOT_FOUND	430100009	The contact does not exist.
UISDK_ARGS_LENGTH_OVERRUN	430100010	The parameter value is too long.
UISDK_APPID_INFO_ILLEGAL	430100011	Invalid app ID.
UISDK_E2EENCRYPT_ALGORITHM_ERROR	430100012	The end-to-end encryption algorithm is asymmetric.
UISDK_REPEATED_LOGIN_ERROR	430200002	Repeated login.
UISDK_PASSWORD_OR_ACCOUNT_EMPTY	430200005	The account and password cannot be both empty.
UISDK_CALL_ACCOUNT_EMPTY	430300002	The point-to-point call account is empty.
UISDK_CALL_NICKNAME_EMPTY	430300003	The point-to-point call name is empty.
UISDK_INVALID_GUEST_PASSWORD_PARAMETER	430400007	Invalid guest password.
UISDK_CONFID_EMPTY	430400010	The meeting ID cannot be empty.
UISDK_SUBJECT_TOO_LONG	430400011	The meeting topic cannot contain up to 50 characters.
UISDK_VMR_HOST_PASSWORD_LENGTH_ILLEGAL	430400012	The length of the host password is invalid.

Variable	Value	Description
UISDK_VMR_NAME_EMPTY	430400 013	The cloud meeting room name is empty.

9.7 Version Updates

9.7.1 100.5.5 Updates

1. Added the **onAudioFrameNotify** notification to notify you of the audio stream frame data. For details, see [Subscribing to Notifications of Reporting Audio Stream Frame Data](#).
2. Added the **setAudioRawDataOutputConfig** API for enabling or disabling audio streams. For details, see [Enabling or Disabling Audio Streams](#).
3. Added the **userUUID** parameter to the basic participant information. For details, see [AttendeeBaseInfo](#).

9.7.2 100.3.7 Updates

1. Fixed an issue where custom profile pictures are not displayed in meetings on the macOS platform, improving user experience.

9.7.3 100.3.6 Updates

1. Added the enumerated value **HWM_CAPABILITY_SUPPORT_GUEST_INVITE** (participant invitation) to the **enableCapability** API. For details, see [Enabling or Disabling Functions](#).
2. Fixed issues and provided more stable experience.

9.7.4 90.12.7 Updates

1. Fixed issues and provided more stable experience.

9.7.5 90.12.5 Updates

1. Added the **showToast** API for displaying a toast message. For details, see [Displaying a Toast Message](#).
2. Added the **getMainWindowInfo** API for obtaining the main window information. For details, see [Obtaining Information About the Main Window](#).
3. Added the **confResType** parameter (meeting resource type) for creating and scheduling a meeting. For details, see [Creating a Meeting](#) and [Scheduling a Meeting](#).
4. Added **onShareVmrInfoNotify** to notify you when information about shared cloud meeting rooms was changed. For details, see [Subscribing to Shared Cloud Meeting Room Changes](#).

5. Added the **getErrorMessage** API for obtaining an error message, which can be used for prompt. For details, see [Obtaining an Error Message](#).
6. Added the **setGuaranteedIpAddresses** API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. For details, see [Setting Guaranteed IP Addresses for Meeting Control](#).
7. Added the **copy_audience_conf_info** parameter to the **config** API to support the injection of the button used to copy the link to a webinar for attendees. For details, see [JSON Description for UI Configuration](#).

9.7.6 90.10.8 Updates

1. Fixed issues and provided more stable experience.

9.7.7 90.10.5 Updates

1. Added the **onP2PConfRecordNotify** callback of MMR instant meeting records. For details, see [Subscribing to the Callback of Instant Meeting Records](#).
2. Decoupled .node files from the Electron version. You do not need to recompile the .node files.
3. Deleted the script for compiling .node files from the Electron SDK project package.

9.7.8 90.9.5 Updates

1. Added the **concurrentParticipants** parameter (maximum number of participants in a meeting) to **CreateConfInfo**, **BookConfParam**, **EditConfParam**, and **ConfDetail**. For details, see [Scheduling a Meeting](#), [Editing a Meeting](#), [Creating a Meeting](#), and [Obtaining Meeting Details](#).
2. Added the **setLogPath** API for setting a log path. For details, see [Setting the Path for Saving Logs](#).
3. Added the **onConfIncomingNotify** notification to notify you of incoming meeting calls. For details, see [Subscribing to Incoming Call Notifications](#).

9.7.9 90.7.5 Updates

1. Added the **startP2pConf** API for starting an instant meeting. For details, see [Starting an Instant Meeting](#).
2. Added the **getUserSavePath** API for obtaining the save path of a user (supported only by Windows). For details, see [Obtaining the Save Path](#).
3. Added the **domain** parameter to the API for joining a meeting using a random code. For details, see [Joining a Meeting Using a Random Code](#).

9.7.10 90.6.5 Updates

1. Deprecated the **StartCall** API.
2. Added the **customInfo** parameter to the APIs for scheduling, editing, creating, and querying a meeting and meeting details notifications. For details, see

[Scheduling a Meeting, Editing a Meeting, Creating a Meeting, Obtaining Meeting Details](#), and [Subscribing to Meeting Details Notifications](#).

3. Added the **isSupportMultiAppLogin** parameter (whether to support login to multiple applications on the same device) to the **Init** API. For details, see [Initializing the SDK](#).
4. Added **OnPoorNetworkQualityInfoNotify** for notifications about poor network connection. For details, see [Subscribing to Poor Network Connection Notifications](#).
5. Added error code 412100044 indicating that the server is degraded. After receiving this error code, you can continue to call the API to join a meeting offline. (For details about the adaptation mode of this error code, see the demo.)

9.7.11 80.15.21 Updates

1. Fixed issues and provided more stable experience.

9.7.12 80.15.5 Updates

1. Added the **isForcedVpn** parameter to the **setNetworkMode** API for setting the network mode. For details, see [Setting the Network Mode](#).

9.7.13 80.13.6 Updates

1. Fixed issues and provided more stable experience.

9.7.14 80.13.5 Updates

1. Added the language customization function (supported only by Windows) to the **setLanguage** API for setting the language. For details, see [Setting the Language](#).

9.7.15 80.12.7 Updates

1. Fixed issues and provided more stable experience.

9.7.16 80.12.6 Updates

1. Added the enumerated value **HWM_CAPABILITY_CONFIRM_RECORD** (whether to display the recording security prompt) to the **enableCapability** API. For details, see [Enabling or Disabling Functions](#).
2. Fixed issues and provided more stable experience.

9.7.17 80.12.5 Updates

1. Changed the conditions for uploading profile pictures (to check the type and size of profile pictures). The Windows supports the API for uploading a profile picture. For details, see [Uploading a Profile Picture](#).
2. Fixed issues and provided more stable experience.

9.7.18 80.10.5 Updates

1. Added the **confAllowJoinUser** and **isOpenWaitingRoom** parameters to the APIs for obtaining the cloud meeting room list and modifying cloud meeting room information.

For details, see [Obtaining the Cloud Meeting Room List](#) and [Modifying Cloud Meeting Room Information](#).

2. Added the **SetShareScreenPermission** API for setting the sharing permission. For details, see [Setting the Sharing Permission](#).

3. Added the **isStopConflictConf** parameter to the API for joining a meeting. For details, see [Joining a Meeting](#).

4. Added the **vmrConfIdType** parameter to the API for obtaining meeting details. For details, see [Obtaining Meeting Details](#).

5. Added the **deptCode** parameter to the API for login using an app ID. For details, see [App ID Login](#).

9.7.19 80.9.5 Updates

1. Added the **allowLive** parameter to the APIs for obtaining meeting details and editing a meeting for the macOS platform. For details, see [Obtaining Meeting Details](#) and [Editing a Meeting](#).

2. Added APIs related to recurring meetings. For details, see [Scheduling a Recurring Meeting Series](#), [Editing a Recurring Meeting Series](#), [Editing a Recurring Meeting](#), [Canceling a Recurring Meeting Series](#), and [Canceling a Recurring Meeting](#).

3. Added the enumerated value **HWM_CAPABILITY_BREAKOUT_CONF** (whether the breakout room function is enabled) to the API for enabling a function. For details, see [Enabling or Disabling Functions](#).

4. Added the **isInBreakoutSubConf** parameter to the meeting details notification. For details, see [Subscribing to Meeting Details Notifications](#). The macOS SDK will support this change in the next version.

5. Added common error codes for the Electron SDK. For details, see [Common Error Codes](#).

9.7.20 80.8.5 Updates

1. Added the **allowLive** parameter to the APIs for obtaining meeting details and editing a meeting. For details, see [Obtaining Meeting Details](#) and [Editing a Meeting](#). The macOS SDK will support this change in the next version.

2. Added the **isCreator** parameter to the meeting details notification. For details, see [Subscribing to Meeting Details Notifications](#).

3. Added the **allowGuestStartConf** parameter for allowing guests to join the meeting at the time you specify before the start time (**allowGuestStartConfTime**) when you schedule or edit a meeting. For details, see [Scheduling a Meeting](#) and [Editing a Meeting](#).

9.7.21 80.7.5 Updates

1. Added the **showSettingWindow** API for displaying the settings window. For details, see [Displaying the Settings Window](#).
2. Added the **isOtherCorpConf** parameter to the meeting details notification **OnConfInfoNotify**. For details, see [Subscribing to Meeting Details Notifications](#).
3. Added the participant details button type **HWM_CLICK_INJECT_PARTICIPANT_ITEM_BTN_PARTICIPANT_DETAIL** to the **OnClickInjectParticipantItemBtnNotify** notification and added the Huawei Cloud Meeting account parameter **accountId**. For details, see [Subscribing to Click Injection Notifications of Participant List Subitems](#).
4. Added the **participant_detail** parameter to the **Config** API to support participant profile picture injection. For details, see [JSON Description for UI Configuration](#).

9.7.22 80.5.11 Updates

1. Added the **statusBar** parameter for hiding the button on the recording status bar to the **config** API. For details, see [JSON Description for UI Configuration](#).
2. Added the **disableVoicePrompts** API for disabling prompt tones. For details, see [Disabling Prompt Tones](#).

9.7.23 80.5.5 Updates

1. Added the **exit** API for macOS. For details, see [Exiting the SDK](#).
2. Added the waiting room switch to the APIs for creating, scheduling, editing, and querying a meeting for macOS. For details, see [Creating a Meeting](#), [Scheduling a Meeting](#), [Editing a Meeting](#), and [Obtaining Meeting Details](#).
3. Added the configuration of hiding non-video participants to the API for configuring function statuses. For details, see [Enabling or Disabling Functions](#).
4. Added the server exception error code to the meeting end notification. For details, see [Subscribing to Meeting End Notifications](#).

9.8 Change History

Table 9-375 Change history

Released On	Version	Change Description
2024-06-13	100.5.5	<ol style="list-style-type: none"> 1. Added the onAudioFrameNotify notification to notify you of the audio stream frame data. 2. Added the setAudioRawDataOutput-Config API for enabling or disabling audio streams. 3. Added the userUUID parameter to the basic participant information. For details, see 100.5.5 Updates .
2024-05-09	100.3.7	<ol style="list-style-type: none"> 1. Fixed an issue where custom profile pictures are not displayed in meetings on the macOS platform, improving user experience. For details, see 100.3.7 Updates .
2024-04-23	100.3.6	<ol style="list-style-type: none"> 1. Added the enumerated value HWM_CAPABILITY_SUPPORT_GUEST_INVITE (participant invitation) to the enableCapability API. 2. Fixed issues and provided more stable experience. For details, see 100.3.6 Updates .
2024-02-17	90.12.7	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 90.12.7 Updates .

Released On	Version	Change Description
2024-01-15	90.12.5	<ol style="list-style-type: none"> 1. Added the showToast API for displaying a toast message. 2. Added the getMainWindowInfo API for obtaining the main window information. 3. Added the confResType parameter for creating and scheduling a meeting. 4. Added the onShareVmrInfoNotify notification to notify you when information about shared cloud meeting rooms was changed. 5. Added the getErrorMessage API for obtaining an error message, which can be used for prompt. 6. Added the setGuaranteedIpAddresses API for setting guaranteed IP addresses for meeting control to keep on-premises data within your enterprise or support network interruption survival. 7. Added the copy_audience_conf_info parameter to the config API to support the injection of the button used to copy the link to a webinar for attendees. <p>For details, see 90.12.5 Updates.</p>
2023-12-13	90.10.8	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. <p>For details, see 90.10.8 Updates.</p>
2023-11-23	90.10.5	<ol style="list-style-type: none"> 1. Added the onP2PConfRecordNotify callback of MMR instant meeting records. 2. Decoupled .node files from the Electron version. You do not need to recompile the .node files. 3. Deleted the script for compiling .node files from the Electron SDK project package. <p>For details, see 90.10.5 Updates.</p>

Released On	Version	Change Description
2023-10-9	90.9.5	<ol style="list-style-type: none"> 1. Added the concurrentParticipants parameter (maximum number of participants in a meeting). 2. Added the setLogPath API for setting a log path. 3. Added the onConflncomingNotify notification to notify you of incoming meeting calls. For details, see 90.9.5 Updates .
2023-08-24	90.7.5	Fixed Windows issues and provided more stable experience.
2023-08-10	90.7.5	<ol style="list-style-type: none"> 1. Added the startP2pConf API for starting an instant meeting. 2. Added the getUserSavePath API for obtaining the save path of a user. 3. Added the domain parameter to the API for joining a meeting using a random code. For details, see 90.7.5 Updates .
2023-06-01	90.6.5	<ol style="list-style-type: none"> 1. Deprecated the StartCall API. 2. Added the customInfo field to the APIs for scheduling, editing, creating, and querying a meeting. 3. Added the isSupportMultiAppLogin parameter (whether to support login to multiple applications on the same device) to the Init API. 4. Added OnPoorNetworkQualityInfo-Notify for notifications about poor network connection. 5. Added error code 412100044 indicating that the server is degraded. After receiving this error code, you can continue to call the API to join a meeting offline. (For details about the adaptation mode of this error code, see the demo.) For details, see 90.6.5 Updates .
2023-05-11	80.15.21	<ol style="list-style-type: none"> 1. Fixed issues and provided more stable experience. For details, see 80.15.21 Updates .

Released On	Version	Change Description
2023-03-29	80.15.5	1. Added the isForcedVpn parameter to the setNetworkMode API for setting the network mode. For details, see 80.15.5 Updates .
2023-02-23	80.13.6	1. Fixed issues and provided more stable experience. For details, see 80.13.6 Updates .
2023-02-07	80.13.5	1. Added the language customization function to the setLanguage API for setting the language. For details, see 80.13.5 Updates .
2023-01-17	80.12.7	1. Fixed issues and provided more stable experience. For details, see 80.12.7 Updates .
2023-01-09	80.12.6	1. Added the enumerated value HWM_CAPABILITY_CONFIRM_RECORD (whether to display the recording security prompt) to the enableCapability API. 2. Fixed issues and provided more stable experience. For details, see 80.12.6 Updates .
2022-12-24	80.12.5	1. Changed the conditions for uploading profile pictures (to check the type and size of profile pictures). The Windows supports the API for uploading a profile picture. 2. Fixed issues and provided more stable experience. For details, see 80.12.5 Updates .

Released On	Version	Change Description
2022-11-16	80.10.5	<ol style="list-style-type: none"> 1. Added the confAllowJoinUser and isOpenWaitingRoom parameters to the APIs for obtaining the cloud meeting room list and modifying cloud meeting room information. 2. Added the SetShareScreenPermission API for setting the sharing permission. 3. Added the isStopConflictConf parameter to the API for joining a meeting. 4. Added the vmrConfIdType parameter to the API for obtaining meeting details. 5. Added the deptCode parameter to the API for login using an app ID. <p>For details, see 80.10.5 Updates.</p>
2022-10-08	80.9.5	<ol style="list-style-type: none"> 1. Added the allowLive parameter to the APIs for obtaining meeting details and editing a meeting for the macOS platform. 2. Added APIs related to recurring meetings. 3. Added the enumerated value HWM_CAPABILITY_BREAKOUT_CONF (whether the breakout room function is enabled) to the API for enabling a function. 4. Added the isInBreakoutSubConf parameter to the meeting details notification. 5. Added common error codes for the Electron SDK. <p>For details, see 80.9.5 Updates.</p>
2022-09-02	80.8.5	<ol style="list-style-type: none"> 1. Added the allowLive parameter to the APIs for obtaining meeting details and editing a meeting. 2. Added the isCreator parameter to the meeting details notification. 3. Added the allowGuestStartConf parameter for allowing guests to join the meeting at the time you specify before the start time (allowGuestStartConf-Time) when you schedule or edit a meeting. <p>For details, see 80.8.5 Updates.</p>

Released On	Version	Change Description
2022-07-30	80.7.5	<p>1. Added the <code>showSettingWindow</code> API for displaying the settings window.</p> <p>2. Added the <code>isOtherCorpConf</code> parameter to the meeting details notification <code>OnConfInfoNotify</code>.</p> <p>3. Added the participant details button type <code>HWM_CLICK_INJECT_PARTICIPANT_ITEM_BTN_PARTICIPANT_DETAIL</code> to the <code>OnClickInjectParticipantItemBtnNotify</code> notification and added the Huawei Cloud Meeting account parameter <code>accountId</code>.</p> <p>4. Added the <code>participant_detail</code> parameter to the <code>Config</code> API to support participant profile picture injection.</p> <p>For details, see 80.7.5 Updates.</p>
2022-06-17	80.5.11	<p>1. Added the <code>statusBar</code> parameter for hiding the button on the recording status bar to the <code>config</code> API.</p> <p>2. Added the <code>disableVoicePrompts</code> API for disabling prompt tones.</p> <p>For details, see 80.5.11 Updates.</p>
2022-05-18	80.5.5	<p>1. Added the <code>exit</code> API for macOS.</p> <p>2. Added the waiting room switch to the APIs for creating, scheduling, editing, and querying a meeting for macOS.</p> <p>3. Added the configuration of hiding non-video participants to the API for configuring function statuses.</p> <p>4. Added the server exception error code to the meeting end notification.</p> <p>For details, see 80.5.5 Updates.</p>
2022-04-16	70.16.5	This issue is the first official release.

10 Known Security Vulnerabilities of SDKs

Table 10-1 Known SDK security vulnerabilities and rectification versions

Security Vulnerability	Involved SDKs	Rectification Version	Release Time
Updated the OpenSSL version to 3.0.7 to fix the following vulnerabilities: CVE-2023-0215 CVE-2023-2650 CVE-2023-0216 CVE-2022-4304 CVE-2023-0217 CVE-2023-1255 CVE-2023-0286 CVE-2023-0465 CVE-2023-0401 CVE-2023-0466 CVE-2023-0464 CVE-2023-2975 CVE-2023-5363 CVE-2023-3446 CVE-2022-3996 CVE-2023-3817 CVE-2022-4450 CVE-2022-4203	Android SDK/iOS SDK/ Windows SDK/Mac SDK/ Electron SDK	90.9.5	2023-9-26

Security Vulnerability	Involved SDKs	Rectification Version	Release Time
Updated the curl version to 8.1.2 to fix the following vulnerabilities: CVE-2023-27533 CVE-2023-27534 CVE-2023-27535 CVE-2023-27536 CVE-2023-27537 CVE-2023-27538	Android SDK/iOS SDK/ Windows SDK/Mac SDK/ Electron SDK	90.7.5	2023-8-4
Updated the wxSQLite3 version to 4.8.2 to fix the following vulnerability: CVE-2022-35737	Android SDK/iOS SDK/ Windows SDK/Mac SDK/ Electron SDK	80.9.5	2022-10-15

11 FAQs

11.1 Huawei Cloud Meeting Resource Types

Huawei Cloud Meeting resources are classified into two types:

1. Concurrent participant resources: If an enterprise purchases concurrent participant resources, users in the enterprise can flexibly hold meetings as long as the total number of online participants in all meetings does not exceed the number of concurrent participant resources of the enterprise. In a single meeting, the number of video participants cannot exceed 500.
2. Cloud meeting rooms: If an enterprise purchases cloud meeting rooms, the number of participants in each meeting room is fixed, which can be 10, 50, 100, 200, 300, 400, or 500. For example, if an enterprise purchases three 100-participant cloud meeting rooms, up to three meetings can be held at the same time, even if the number of participants in each meeting is less than 100.

The two types of resources can be purchased at the same time. When creating a meeting, you need to specify the resources used for holding the meeting. If you do not specify the resources, the meeting is held using concurrent participant resources by default. For details, see [Recommended Subscription Plans](#).

11.2 How Do I Collect SDK Logs?

Collecting Android SDK Logs

If the log storage path has not been changed during SDK initialization, the default log path is `/sdcard/Android/data/Application_package_name/files/log`. You can use the file management tool on your device to pack the entire log directory. You can also use adb to obtain log files. The procedure is as follows:

- Step 1** Connect your mobile phone to a computer using a USB cable, enable the developer mode on the mobile phone, open the **Command Prompt** window, type **adb devices**, and press **Enter** to check whether your mobile phone is connected to the computer.

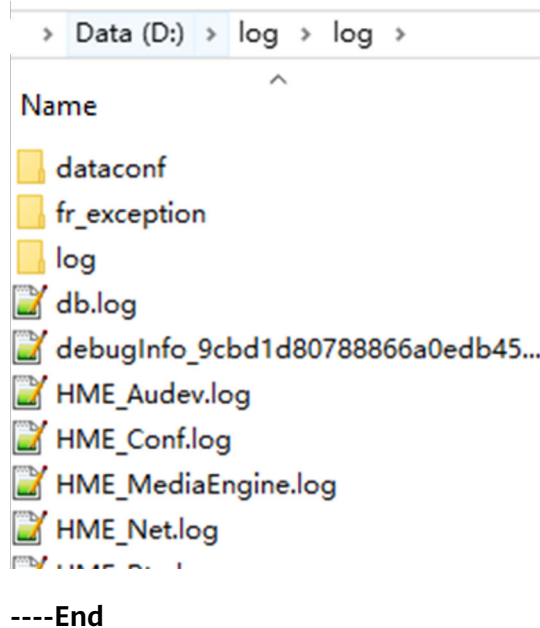
Step 2 Enter the `adb pull Log path Target path`, and press **Enter**.

Figure 11-1 Obtaining log using the CLI

```
C:\Users\pwx178217>adb pull /storage/sdcard0/Android/data/.../files/log d:/log
/storage/sdcard0/Android/data/.../files/log/: 46 files pulled. 33.1 MB/s (28781983 bytes in 0.830s)
```

Step 3 Find the SDK logs in the `D:\log\log` directory.

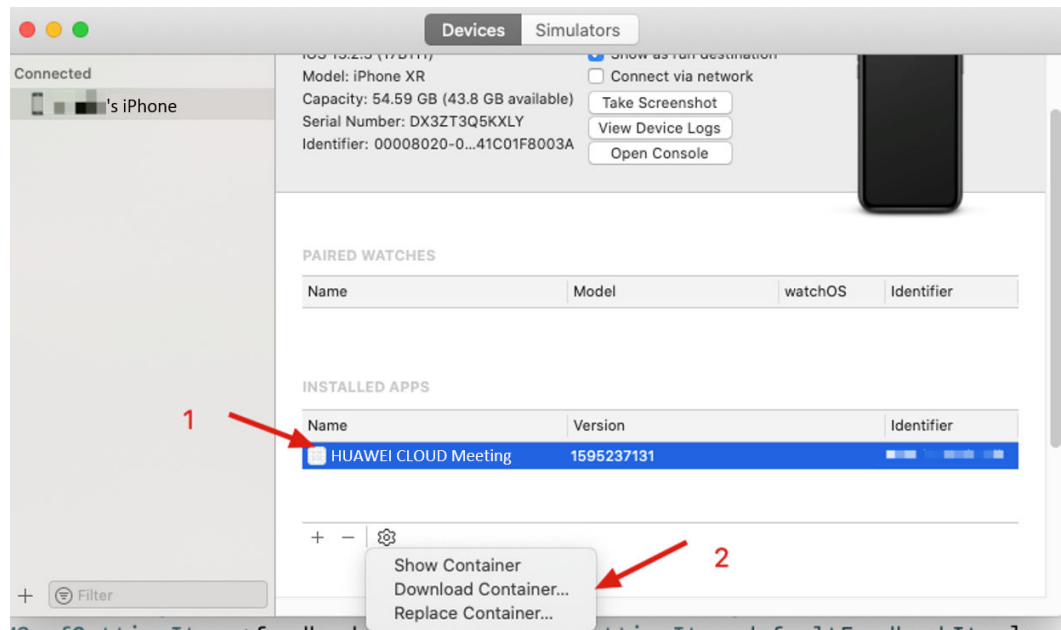
Figure 11-2 Log directory



Obtaining iOS SDK Logs

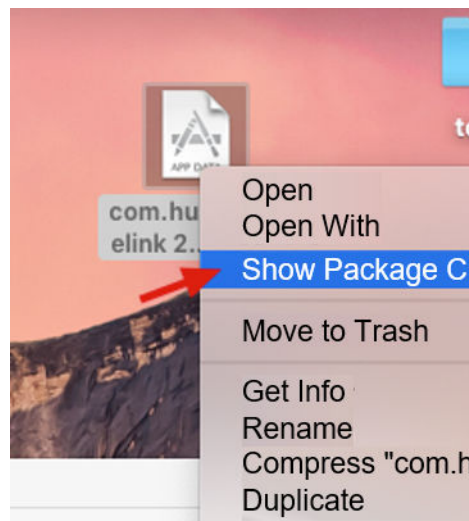
Step 1 Open the Xcode, and choose **Window > Devices and Simulators** from the menu bar.

Figure 11-3 Downloading the file



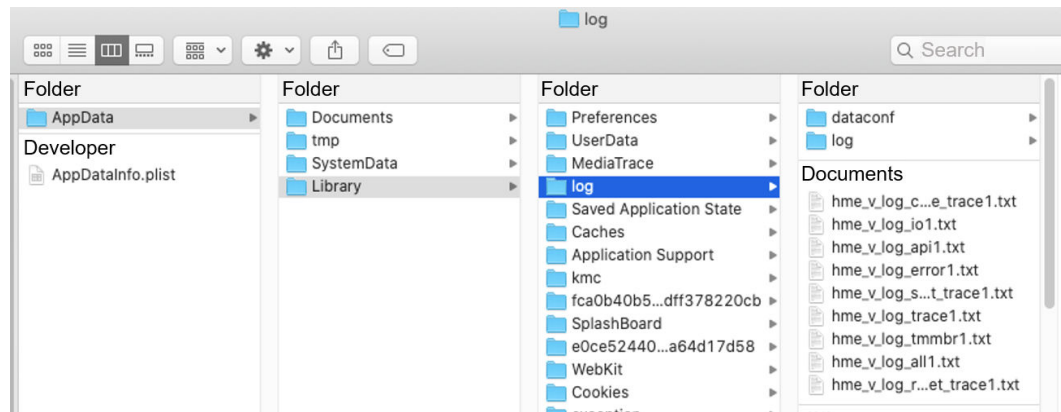
Step 2 Right-click the file downloaded in **Step 1** and choose **Show Package Contents** from the shortcut menu.

Figure 11-4 Choosing Show Package Contents



Step 3 View logs in the displayed package contents.

Figure 11-5 Log path



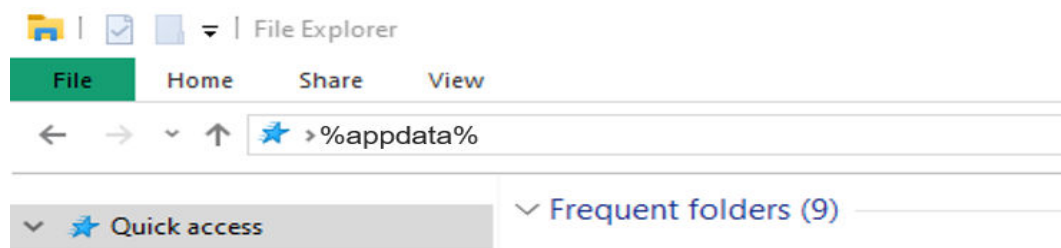
----End

Obtaining Windows SDK Logs

If you have customized a log storage path, obtain logs from that path. If the default log path is used, perform the following steps to obtain logs:

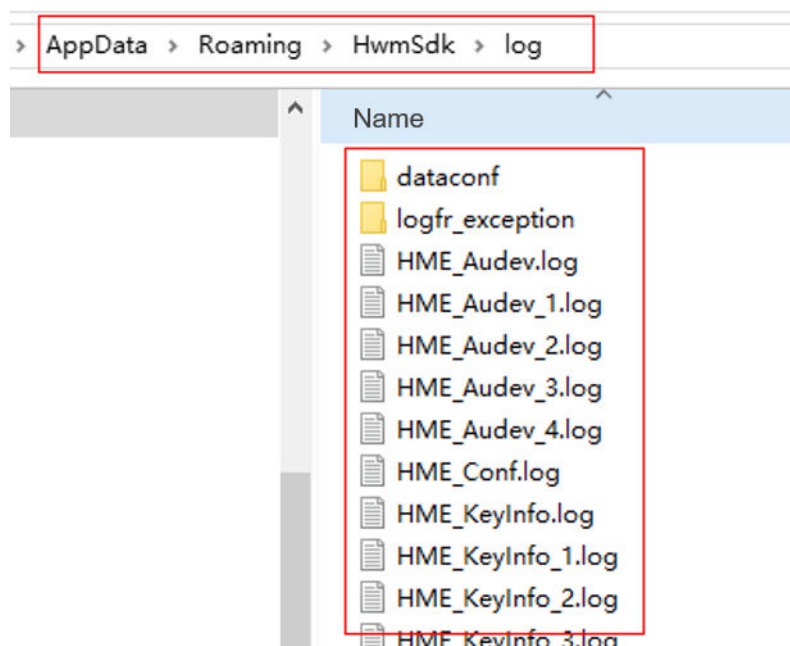
Step 1 Open **File Explorer**, enter **%appdata%** in the address bar, and press **Enter**.

Figure 11-6 File Manager



Step 2 Find the **HwmSdk** directory. The SDK logs are stored in **HwmSdk\log**.

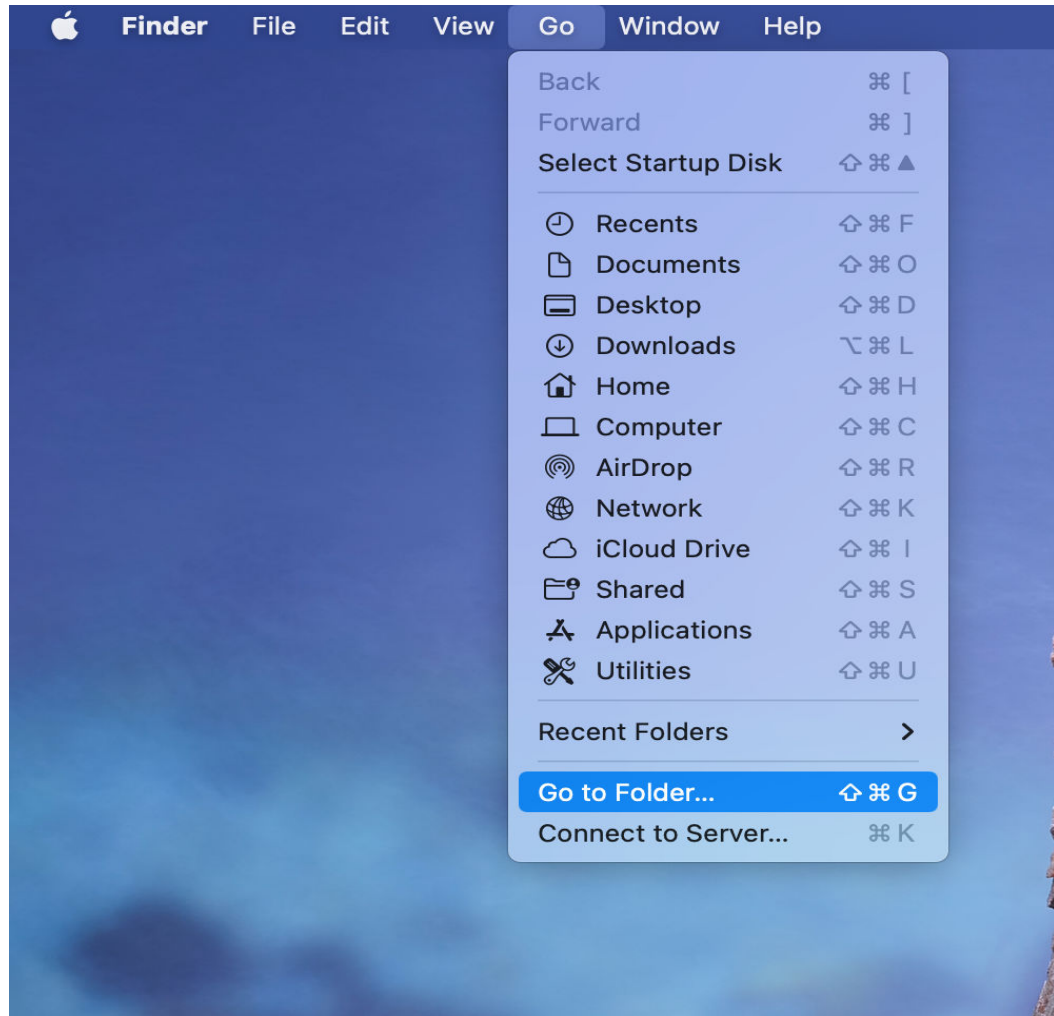
Figure 11-7 HwmSdk directory



----End

Obtaining macOS SDK Logs

Step 1 Go to **Finder** and choose **Go > Go to Folder**.



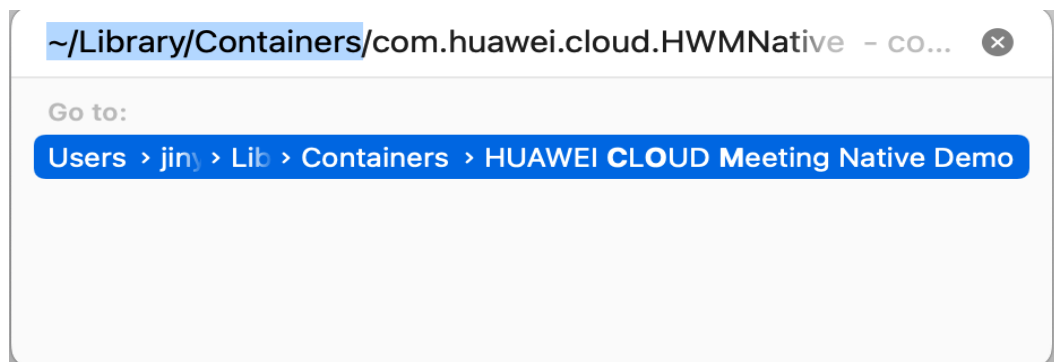
Step 2 Enter the path.

If App Sandbox is enabled, the log path is:

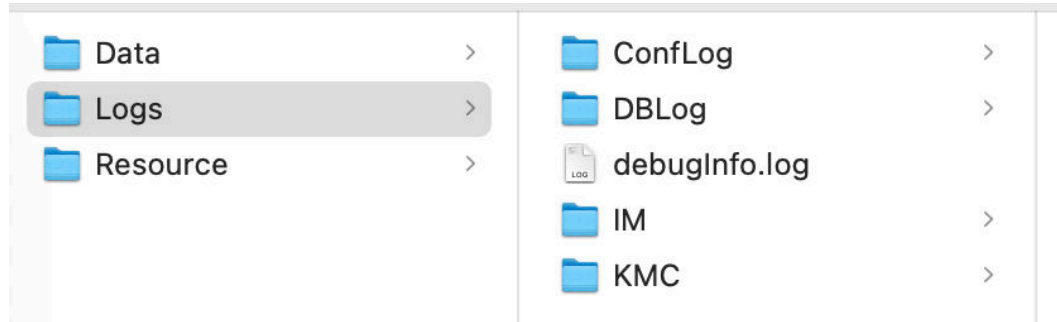
```
~/Library/Containers/com.huawei.cloud.welinkdemo/Data/Library/Application Support/HWMUISDKNativeDemo
```

If App Sandbox is disabled, the log path is:

```
~/Library/Application Support/HWMUISDKNativeDemo
```



Step 3 Open the **Logs** folder and find the logs of the corresponding module.



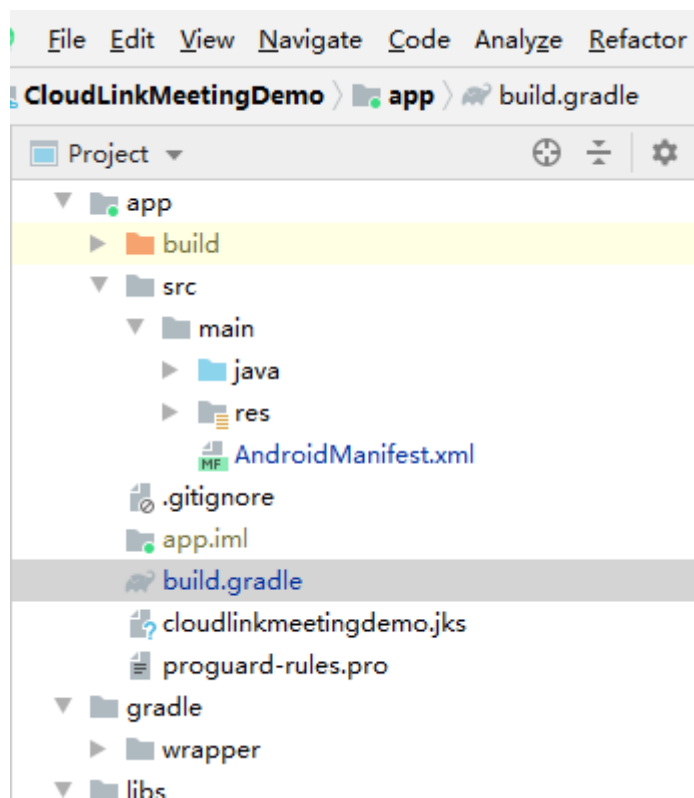
----End

11.3 Android SDK

11.3.1 How Do I Configure 64-bit Libraries?

Step 1 Open the **build.gradle** file in the project directory.

Figure 11-8 Project directories



Step 2 Add the following information to the **build.gradle** file:

```
ndk {  
    abiFilters "armeabi-v7a", "arm64-v8a"  
}
```

Figure 11-9 Supporting 32-bit and 64-bit libraries

```
defaultConfig {  
    applicationId "com.huawei.cloudlinkmeetingdemo"  
    minSdkVersion 21  
    targetSdkVersion 26  
    versionCode 1  
    versionName "1.0.0"  
    multiDexEnabled true  
    ndk {  
        abiFilters "armeabi-v7a", "arm64-v8a"  
    }  
}
```

Figure 11-10 Supporting only 32-bit libraries

```
defaultConfig {  
    applicationId "com.huawei.cloudlinkmeetingdemo"  
    minSdkVersion 21  
    targetSdkVersion 26  
    versionCode 1  
    versionName "1.0.0"  
    multiDexEnabled true  
    ndk {  
        abiFilters "armeabi-v7a"  
    }  
}
```


Figure 11-11 Supporting only 64-bit libraries

```
defaultConfig {  
    applicationId "com.huawei.cloudlinkmeetingdemo"  
    minSdkVersion 21  
    targetSdkVersion 26  
    versionCode 1  
    versionName "1.0.0"  
    multiDexEnabled true  
    ndk {  
        abiFilters "arm64-v8a"  
    }  
}
```

----End

11.3.2 What Do I Do If a Route Redirection Error Occurs After I Use a Third-Party Security Software?

A route scheme similar to ARouter is used in the SDK. If a route redirection error occurs after security hardening, the solutions are as follows:

- **Permanent solution:** Contact the technical support engineers of the third-party security software to ignore the package of the class automatically generated by the router. The package path is **com.huawei.cloudlink.router.routermap**.
- **Workaround:** For details, see the following figure. If this solution is used, you need to set the parameters each time an SDK version is released.

Figure 11-12 Workaround

File	Raw File Size	Download Size	% of Total Download
res	4.2 MB	4.2 MB	76.5%
classes.jar	1.2 MB	1.2 MB	22.4%
com	1.2 MB	1.2 MB	21.6%
huawei	1.2 MB	1.2 MB	21.6%
hwmconf	1 MB	1 MB	18.9%
hwmchat	150.2 KB	150.1 KB	2.7%
cloudlink	818 B	818 B	0%
router	818 B	818 B	0%
routermap	818 B	818 B	0%
RouterBinding_1605260221227.class	818 B	818 B	0%
hwmmobileconfui	461 B	461 B	0%
R.txt	65.1 KB	61.8 KB	1.1%
AndroidManifest.xml	706 B	702 B	0%
xml			0%
values			0%
raw			0%
mipmap-xxhdpi-v4			0%
layout			0%
drawable-xxhdpi-v4			0%
drawable-xxhdpi-v4			0%
drawable-xhdpi-v4			0%
drawable-mdpi-v4			0%
drawable			0%
color			0%
anim			0%

1. Decompress HWMobileConfUI.aar.
2. Decompile classes.jar, search for classes in com.huawei.cloudlink.router.routermap, and find the router class name.

```
try {
    HashMap<String, String> map = new HashMap<>();
    Set<String> classNames = new HashSet<>();
    classNames.add("com.huawei.cloudlink.router.routermap.RouterBinding_1605258662203");
    for (String className : classNames) {
        Class bindViewClass = Class.forName(className);
        Method method = bindViewClass.getMethod("bind");
        Object object = method.invoke(bindViewClass.newInstance());
        if (object instanceof HashMap) {
            HashMap tempMap = (HashMap) object;
            map.putAll(tempMap);
        }
    }

    Field privateMapField = RouterMap.class.getDeclaredField("map");
    privateMapField.setAccessible(true);
    privateMapField.set(null, map);
} catch (NoSuchFieldException | ClassNotFoundException | NoSuchMethodException e) {
    e.printStackTrace();
} catch (IllegalAccessException e) {
    e.printStackTrace();
} catch (InstantiationException e) {
    e.printStackTrace();
} catch (InvocationTargetException e) {
    e.printStackTrace();
}
```

3. Replace the class name displayed in the red box with the obtained class name.

4. Put these lines of codes before SDK initialization.

11.3.3 What Should I Do If the SDK Prompts a Message Indicating that It Cannot Switch Between Chinese and English?

Solution: Check whether resConfigs is enabled. If enabled, configure resConfigs("zh", "zh-rCN", "en").

11.3.4 What Should I Do If SDK Initialization Fails and No Callback or Message Is Displayed When the Meeting Creation or Joining API Is Called

Solution: Check whether the tinypinyin-2.0.3.jar package is successfully downloaded. If not, download it to the local computer and reference it to the project.


```
// Print the delegate.  
NSLog(@"Check whether the delegate exists:%@", globalHandler);  
// Check whether the delegate method exists.  
if(globalHandler && [globalHandler respondsToSelector:@selector(onKickedOut:)]){\n    NSLog(@"The delegate method exists.");  
}
```

11.4.3 What Should I Do If an Error Is Reported When AFNetworking Is Imported?

Add the following items under **General > HWMSDKDemo > Frameworks, Libraries, and Embedded Content**:

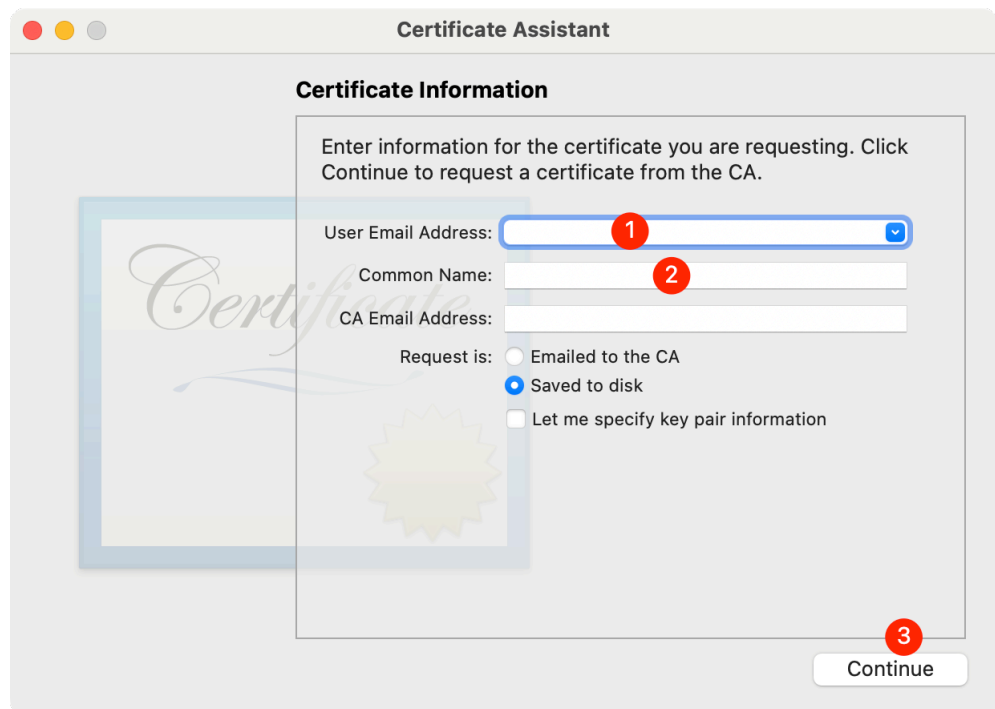
CFNetwork, SystemConfiguration, MobileCoreServices, and libz.

11.4.4 How Do I Apply for a Certificate for iOS?

Step 1 Create a developer certificate.

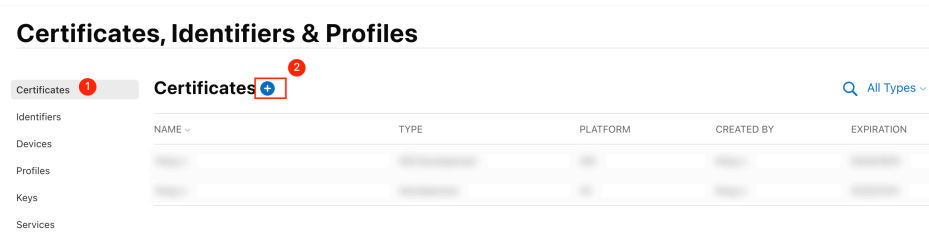
1. Launch Keychain Access. From the **Keychain Access** dropdown, select **Certificate Assistant > Request a Certificate from an existing CA**. Create a certificate request and save the request to the disk.

Figure 11-15 Requesting a certificate



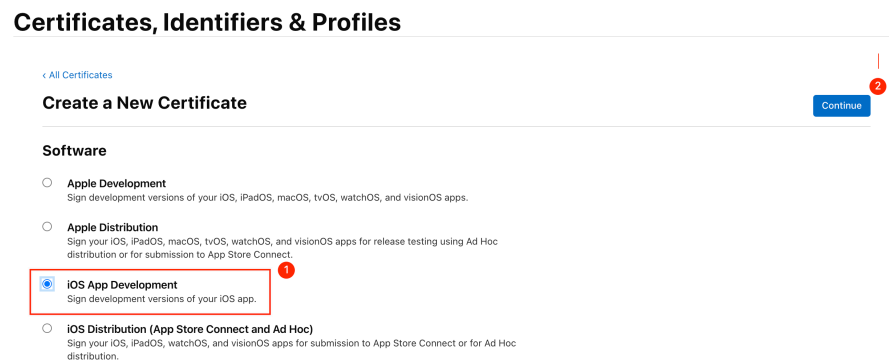
2. Create a developer certificate on the **Certificates** page.

Figure 11-16 Certificates



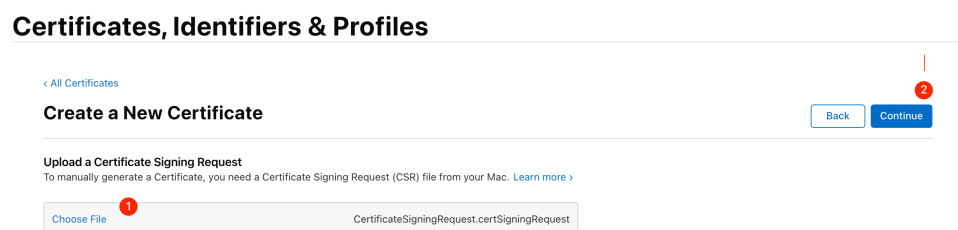
3. Select **iOS App Development** under **Software**.

Figure 11-17 Selecting a certificate type



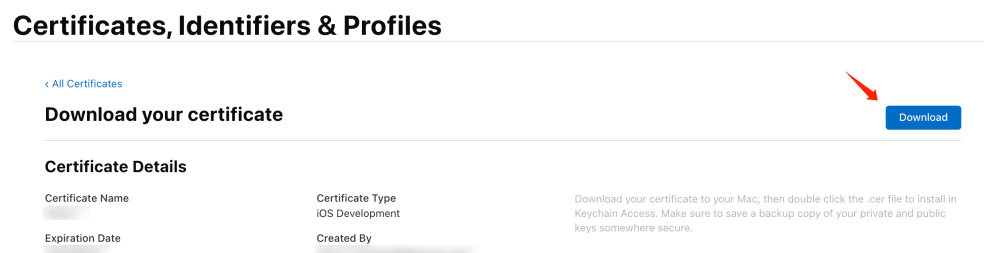
4. Upload the Certificate Signing Request (CSR) file created in [Step 1.1](#).

Figure 11-18 Uploading the CSR file



5. After the certificate is created, download it to the local computer and install it in Keychain Access.

Figure 11-19 Certificate created

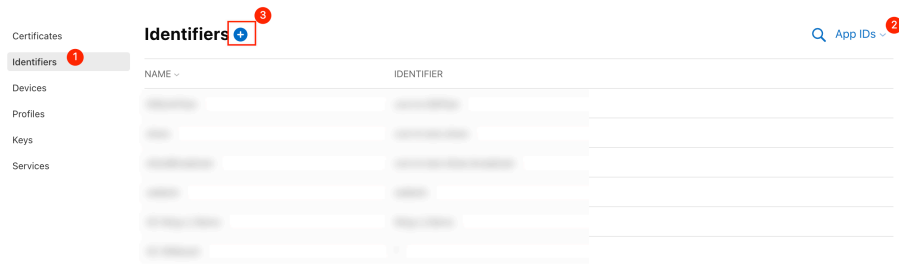


Step 2 Create bundle IDs.

1. Create a bundle ID for HWMSDKDemo on the **Identifiers** page.

Figure 11-20 Identifiers

Certificates, Identifiers & Profiles



2. Select **App IDs** as the identifier type.

Figure 11-21 Selecting the identifier type

Certificates, Identifiers & Profiles

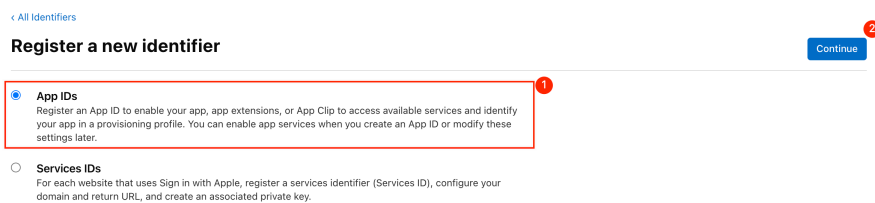
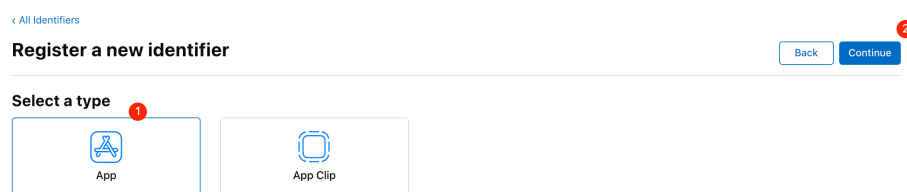


Figure 11-22 Selecting App

Certificates, Identifiers & Profiles



3. Set **Description** and **Bundle ID** and select **App Groups** under **Capabilities**.

Figure 11-23 Configuration

Certificates, Identifiers & Profiles

< All Identifiers

Register an App ID Back Continue ⁴

Platform
iOS, iPadOS, macOS, tvOS, watchOS, visionOS

Description
demo ¹

You cannot use special characters such as @, &, *, "

App ID Prefix

Bundle ID Explicit Wildcard
com.huawei. ²

We recommend using a reverse-domain name style string (i.e., com.domainname.appname). It cannot contain an asterisk (*).

Capabilities App Services

ENABLE	NAME	NOTES
<input type="checkbox"/>	5G Network Slicing [ⓘ]	
<input type="checkbox"/>	Access Wi-Fi Information [ⓘ]	
<input type="checkbox"/>	App Attest [ⓘ]	
<input checked="" type="checkbox"/> ³	App Groups [ⓘ]	
<input type="checkbox"/>	Apple Pay Later Merchandising	

4. Confirm the bundle ID and click **Register**.

Figure 11-24 Confirming the bundle ID

Certificates, Identifiers & Profiles

< All Identifiers

Confirm your App ID Back Register

Platform
iOS, iPadOS, macOS, tvOS, watchOS, visionOS

Description
demo

App ID Prefix

Bundle ID
com.huawei. (explicit)

Capabilities App Services

ENABLE	NAME	NOTES
<input type="checkbox"/>	5G Network Slicing [ⓘ]	
<input type="checkbox"/>	Access Wi-Fi Information [ⓘ]	
<input type="checkbox"/>	App Attest [ⓘ]	
<input checked="" type="checkbox"/>	App Groups [ⓘ]	
<input type="checkbox"/>	Apple Pay Later Merchandising	Review Agreement

Figure 11-25 Registration completed

Certificates, Identifiers & Profiles

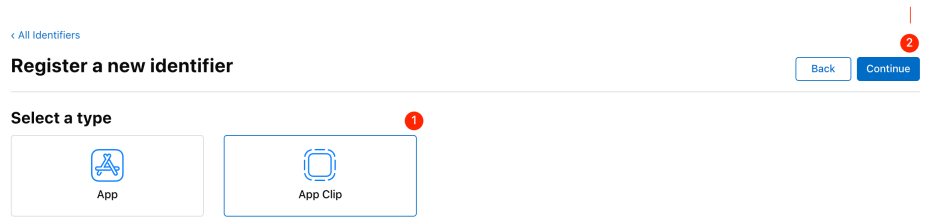
Certificates **Identifiers** ⁺ Q App IDs ^v

NAME	IDENTIFIER
demo	com.huawei. [ⓘ]

5. Create a bundle ID for ScreenShareExtension and select **App Clip** as the type.

Figure 11-26 Selecting App Clip

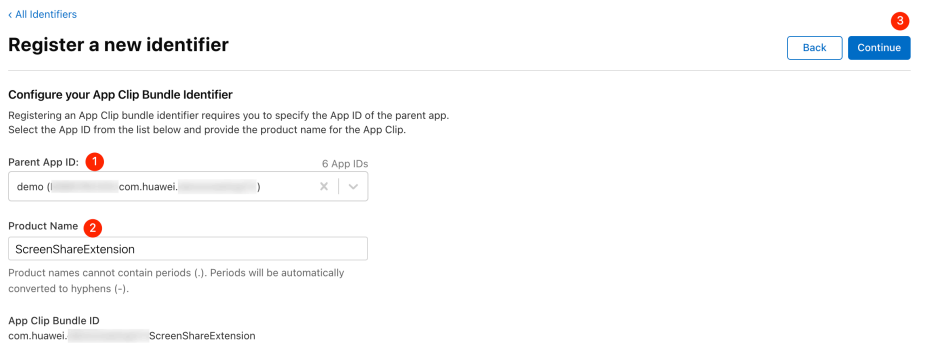
Certificates, Identifiers & Profiles



- When setting the bundle ID information of ScreenShareExtension, set **Parent App ID** to the bundle ID of HWMSDKDemo and customize a product name.

Figure 11-27 Setting the bundle ID information

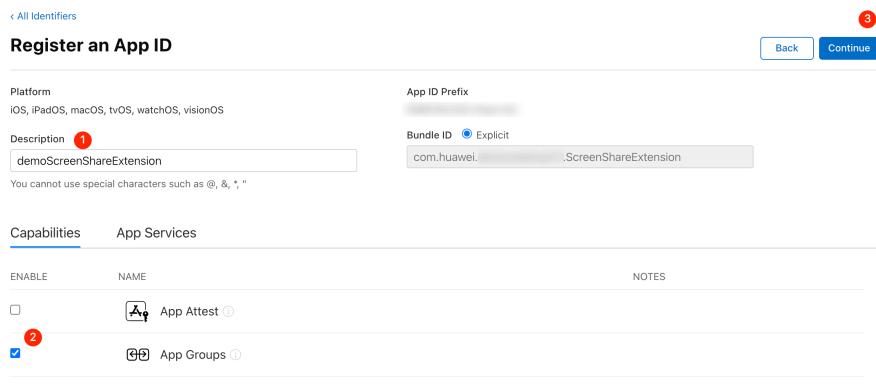
Certificates, Identifiers & Profiles



- Set **Description** and select **App Groups** under **Capabilities**.

Figure 11-28 Configuration

Certificates, Identifiers & Profiles



- Confirm the bundle ID of ScreenShareExtension and click **Register**.

Figure 11-29 Confirming the bundle ID
Certificates, Identifiers & Profiles

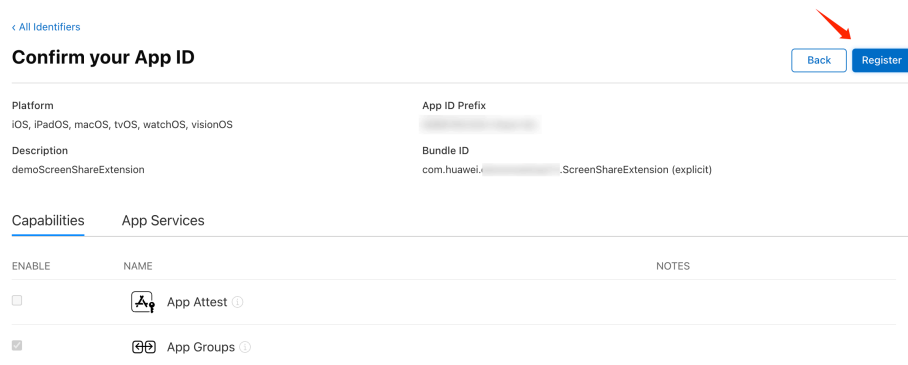
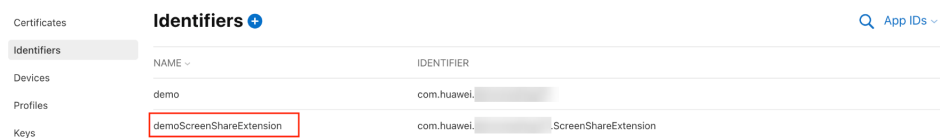
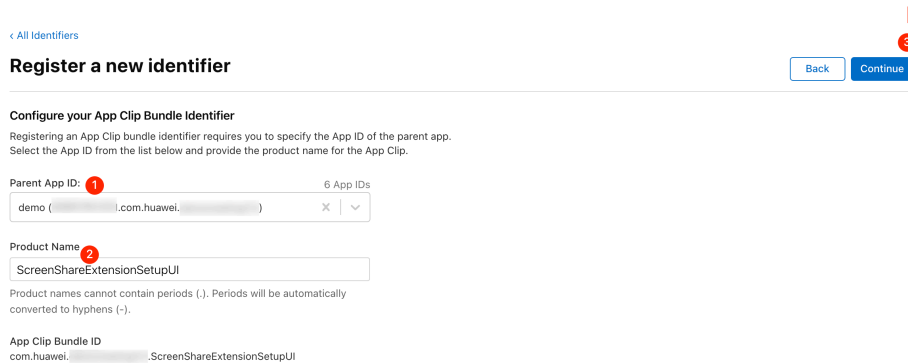


Figure 11-30 Registration completed
Certificates, Identifiers & Profiles



9. Create a bundle ID for ScreenShareExtensionSetupUI and select **App Clip** as the type. When setting the bundle ID information, set **Parent App ID** to the bundle ID of HWMSDKDemo and customize a product name.

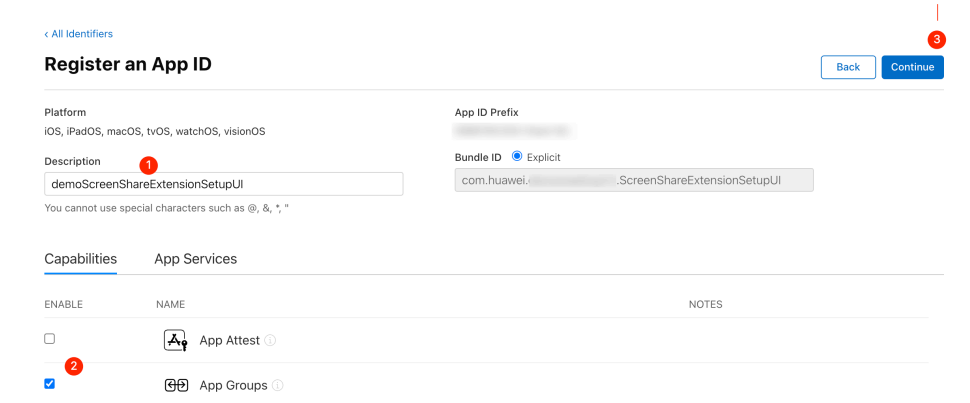
Figure 11-31 Setting the bundle ID information
Certificates, Identifiers & Profiles



10. Set **Description** and select **App Groups** under **Capabilities**.

Figure 11-32 Configuration

Certificates, Identifiers & Profiles



11. Confirm the bundle ID of ScreenShareExtensionSetupUI and click **Register**.

Figure 11-33 Confirming the bundle ID

Certificates, Identifiers & Profiles

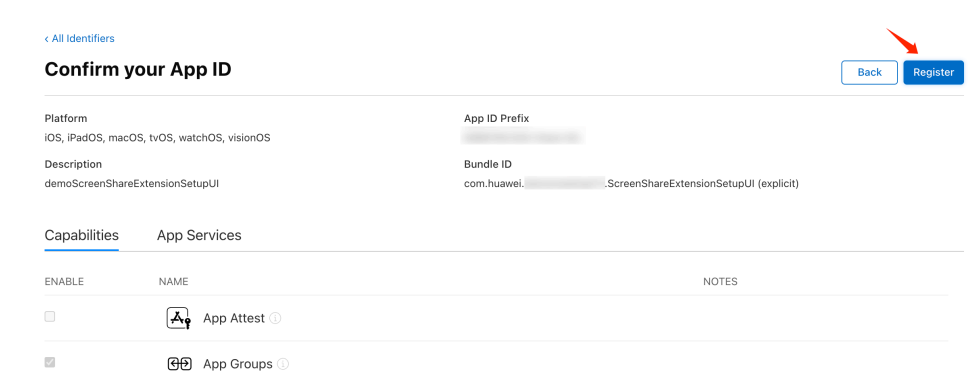
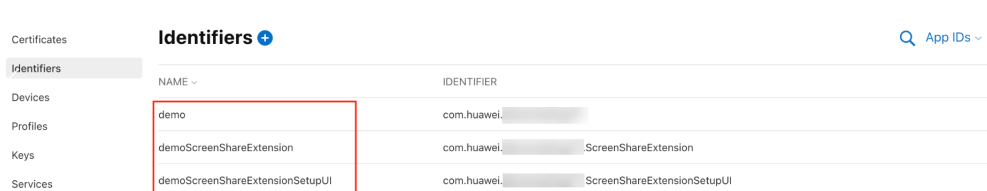


Figure 11-34 Registration completed

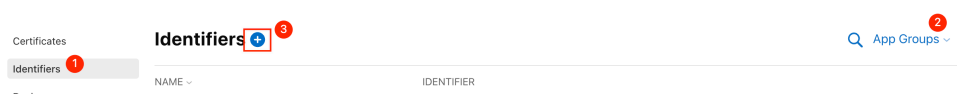
Certificates, Identifiers & Profiles



12. Create an app group.

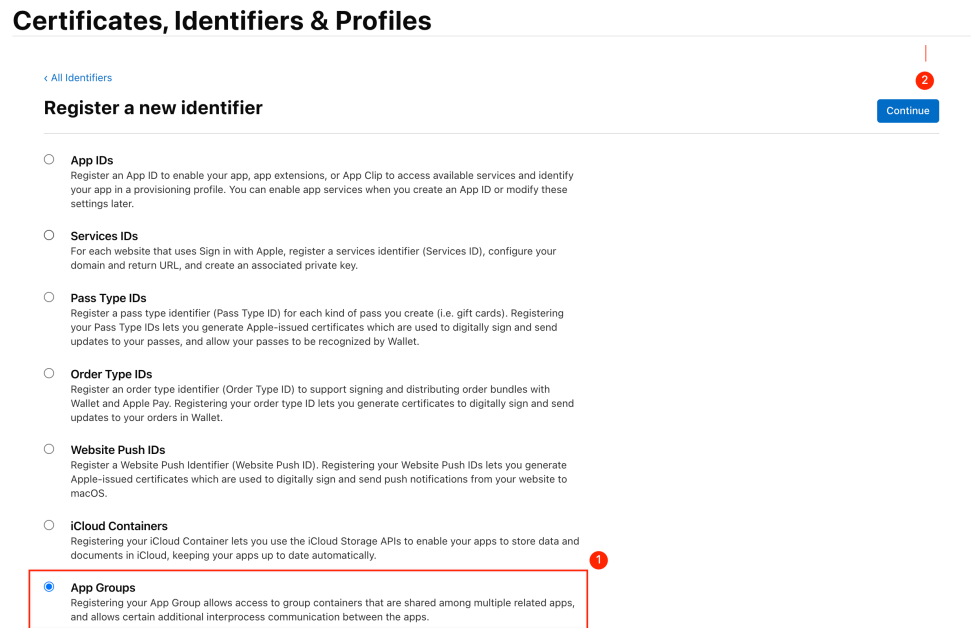
Figure 11-35 Identifiers

Certificates, Identifiers & Profiles



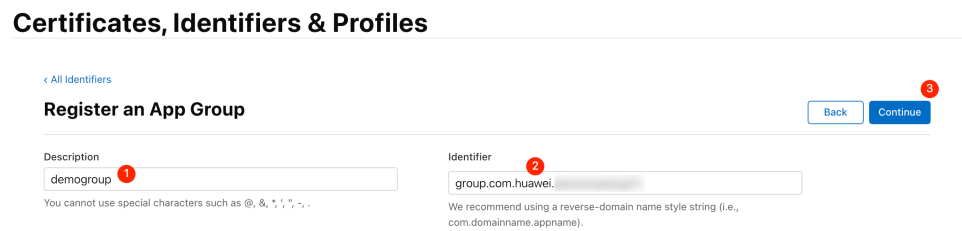
13. Select **App Groups** as the identifier type.

Figure 11-36 Selecting the identifier type



14. Set **Description** and **Bundle ID**.

Figure 11-37 Configuration



15. Confirm the bundle ID and click **Register**.

Figure 11-38 Confirming the bundle ID

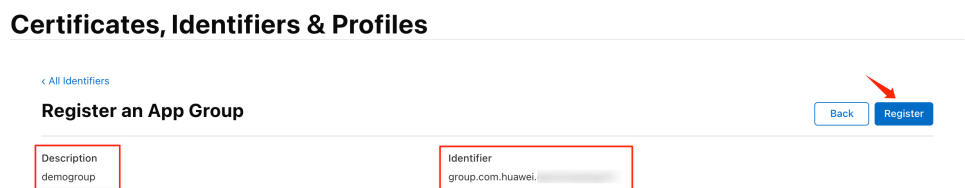
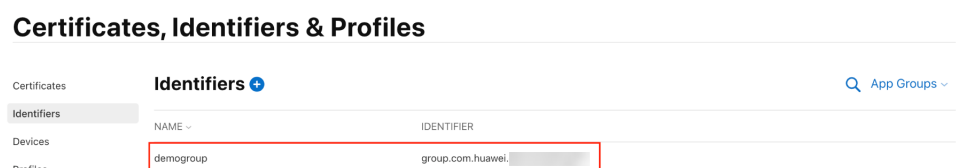


Figure 11-39 Registration completed



16. Edit the bundle ID of HWMSDKDemo, click **Configure** next to **App Groups**, select the created app group, and save the settings.

Figure 11-40 Editing the bundle ID

Certificates, Identifiers & Profiles

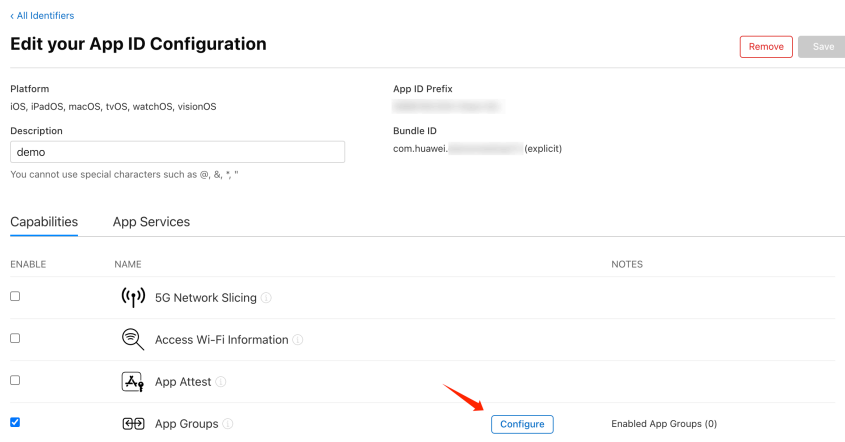


Figure 11-41 Selecting an app group

App Group Assignment

Select the App Groups you wish to assign to the bundle.

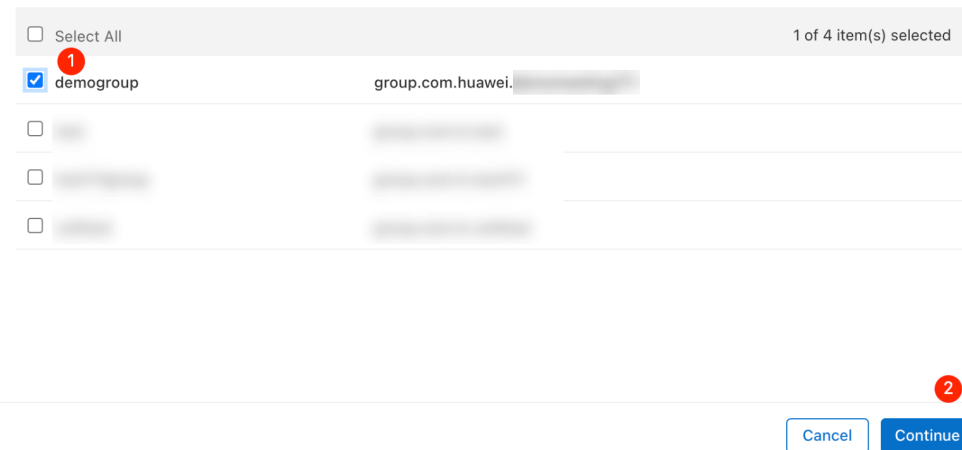
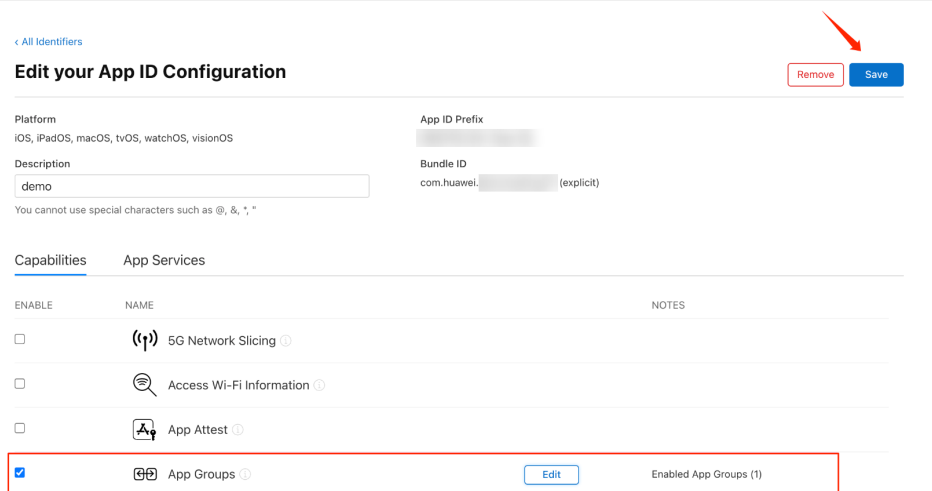


Figure 11-42 Page displayed after the selection
Certificates, Identifiers & Profiles



17. Edit the bundle ID of ScreenShareExtension, click **Configure** next to **App Groups**, select the created app group, and save the settings.

Figure 11-43 Editing the bundle ID
Certificates, Identifiers & Profiles

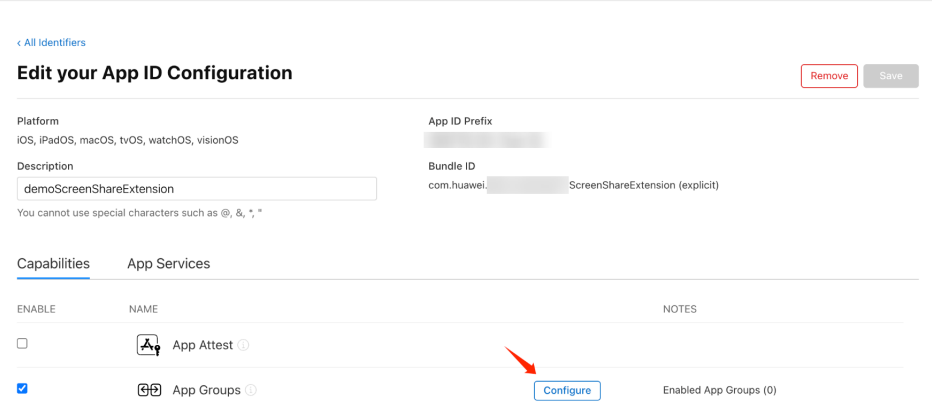


Figure 11-44 Selecting an app group

App Group Assignment

Select the App Groups you wish to assign to the bundle.

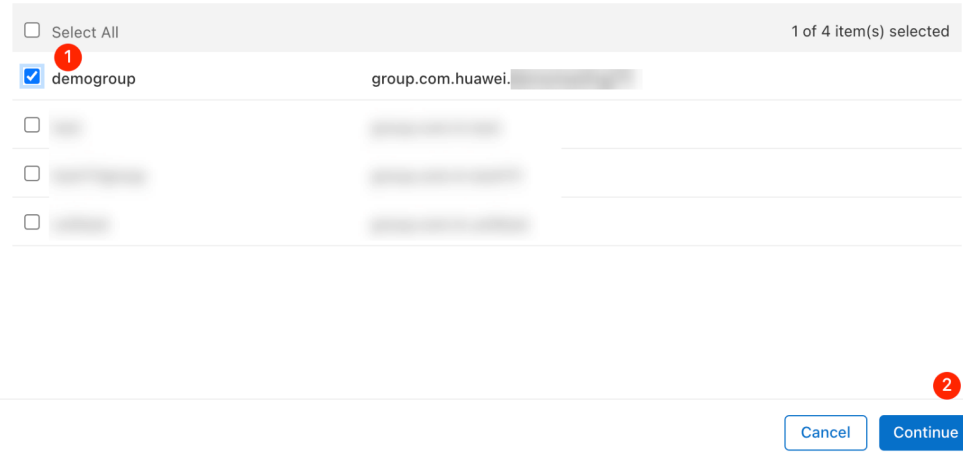
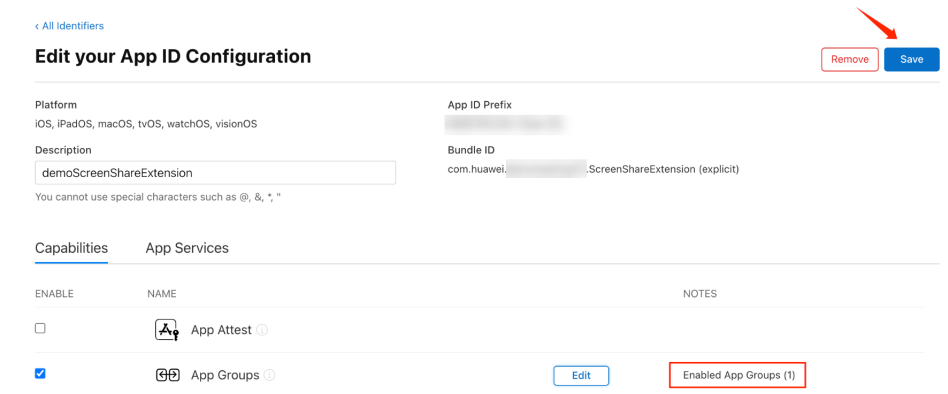


Figure 11-45 Page displayed after the selection

Certificates, Identifiers & Profiles



18. Edit the bundle ID of ScreenShareExtensionSetupUI, click **Configure** next to **App Groups**, select the created app group, and save the settings.

Figure 11-46 Editing the bundle ID

Certificates, Identifiers & Profiles

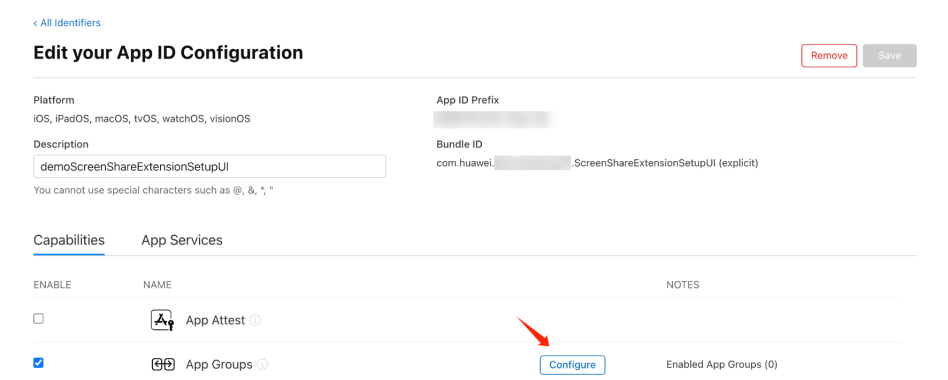


Figure 11-47 Selecting an app group

App Group Assignment

Select the App Groups you wish to assign to the bundle.

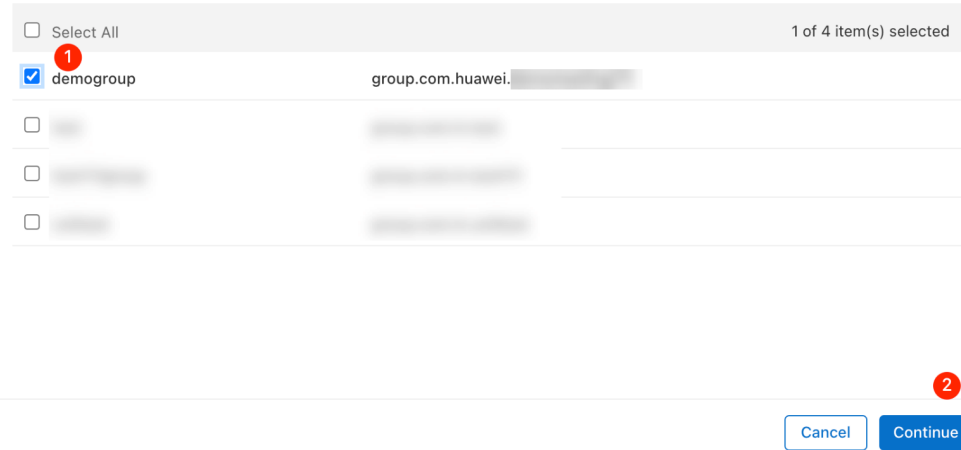
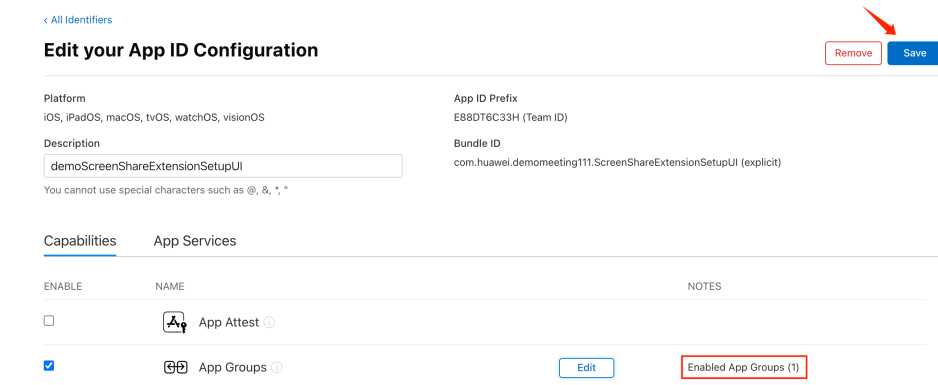


Figure 11-48 Page displayed after the selection

Certificates, Identifiers & Profiles

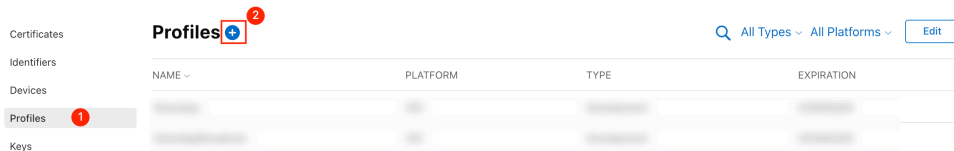


Step 3 Create description files.

1. Create a description file for HWMSDKDemo on the [Profiles](#) page.

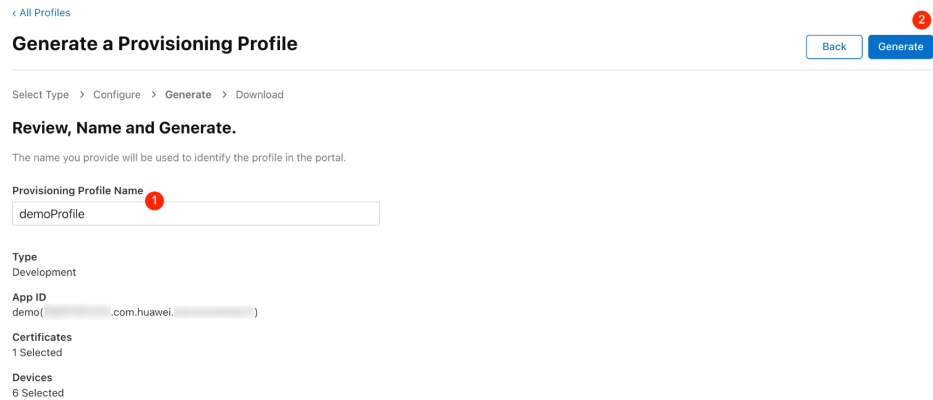
Figure 11-49 Profiles

Certificates, Identifiers & Profiles



2. Select **iOS App Development** as the profile type.

Figure 11-50 Selecting a profile type Certificates, Identifiers & Profiles



3. Select the bundle ID, certificate, and devices to be included.

Figure 11-51 Selecting a bundle ID Certificates, Identifiers & Profiles

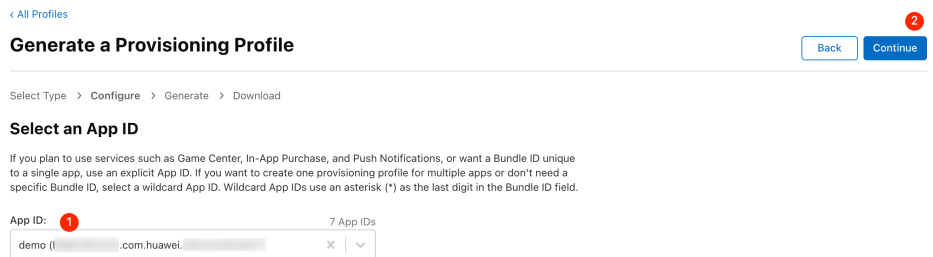


Figure 11-52 Selecting a certificate Certificates, Identifiers & Profiles

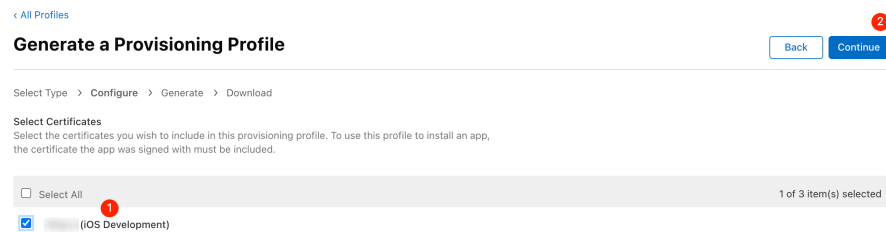
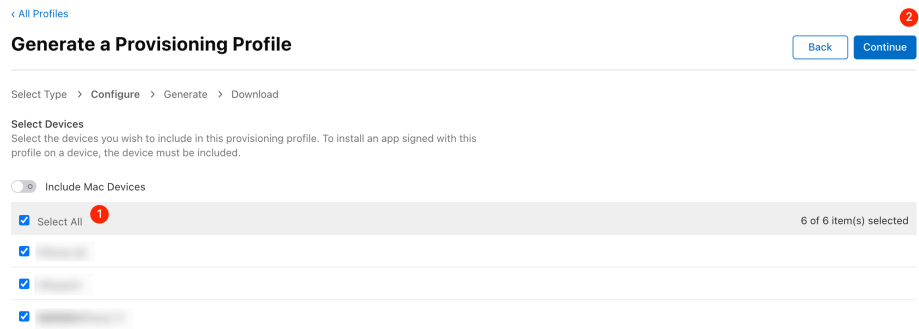


Figure 11-53 Selecting devices

Certificates, Identifiers & Profiles



4. Configure the profile information, click **Generate**, and download the profile to the computer.

Figure 11-54 Configuring information

Certificates, Identifiers & Profiles

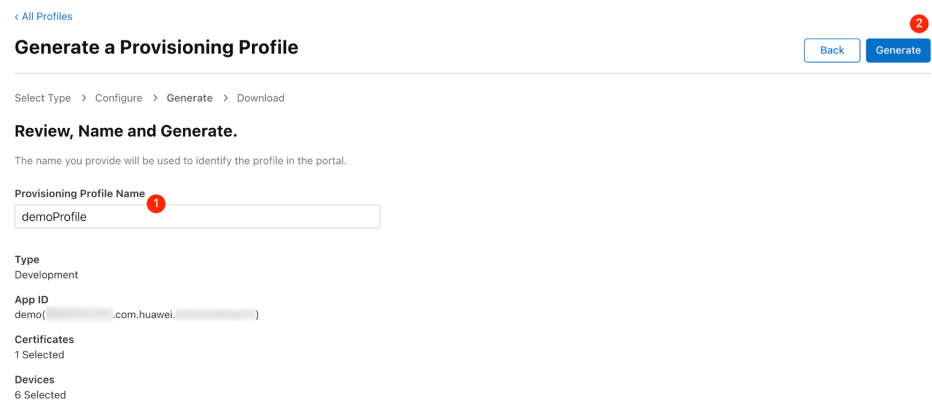
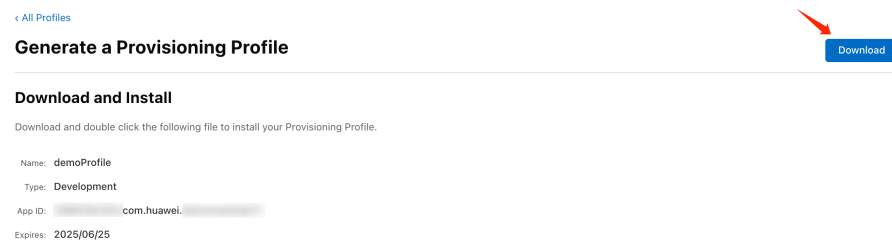


Figure 11-55 Profile created

Certificates, Identifiers & Profiles



5. Create a profile for ScreenShareExtension. Set the profile type to **iOS App Development**, and select the bundle ID, certificate, and devices to be included.

Figure 11-56 Selecting a bundle ID
Certificates, Identifiers & Profiles

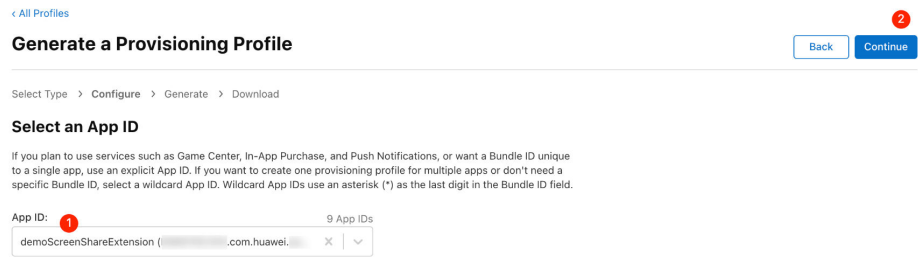


Figure 11-57 Selecting a certificate
Certificates, Identifiers & Profiles

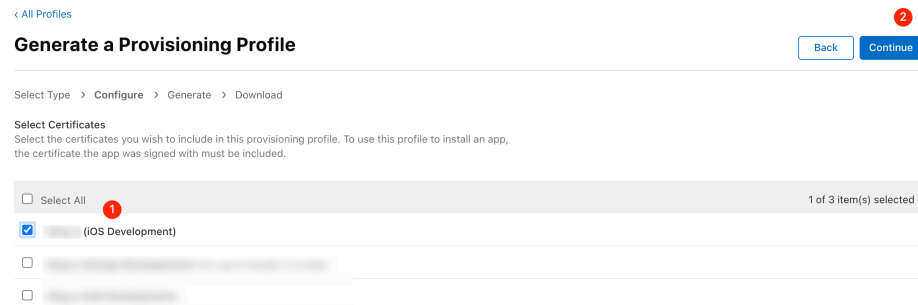
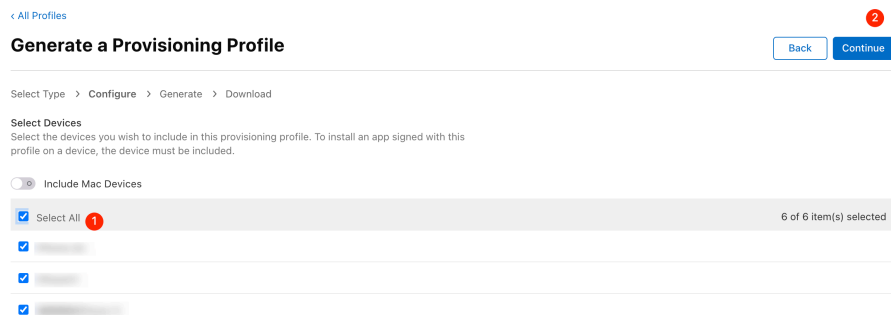


Figure 11-58 Selecting devices
Certificates, Identifiers & Profiles



6. Configure the profile information, click **Generate**, and download the profile to the computer.

Figure 11-59 Configuring information
Certificates, Identifiers & Profiles

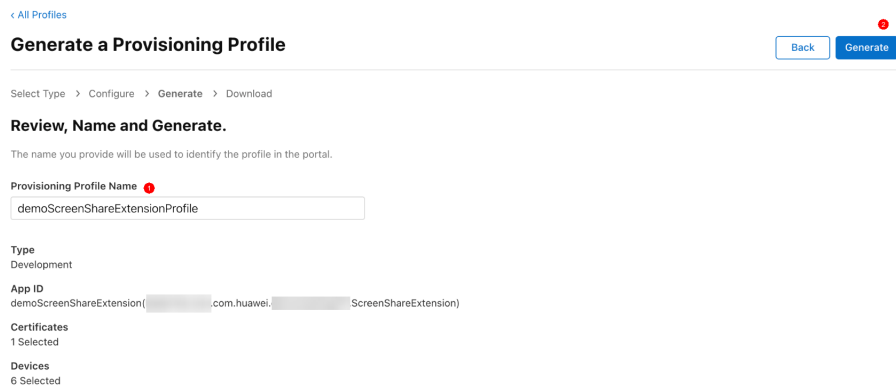
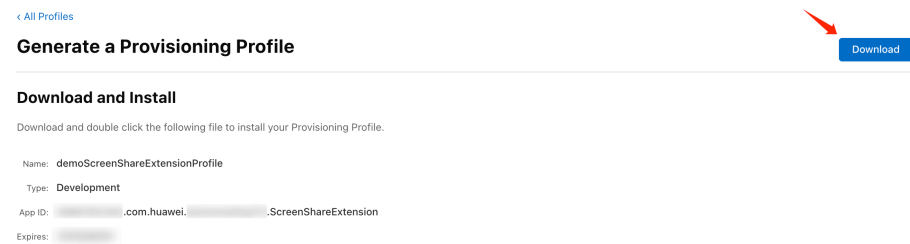


Figure 11-60 Profile created
Certificates, Identifiers & Profiles



7. Create a profile for ScreenShareExtensionSetupUI. Set the profile type to **iOS App Development**, and select the bundle ID, certificate, and devices to be included.

Figure 11-61 Selecting a bundle ID
Certificates, Identifiers & Profiles

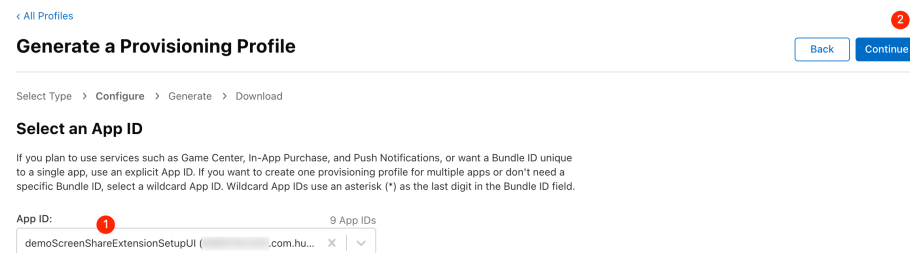


Figure 11-62 Selecting a certificate

Certificates, Identifiers & Profiles

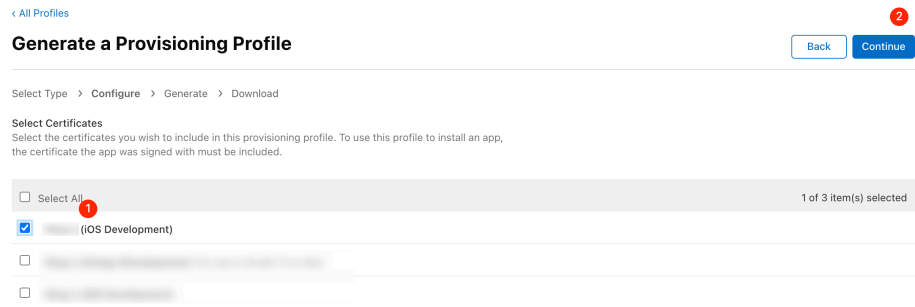
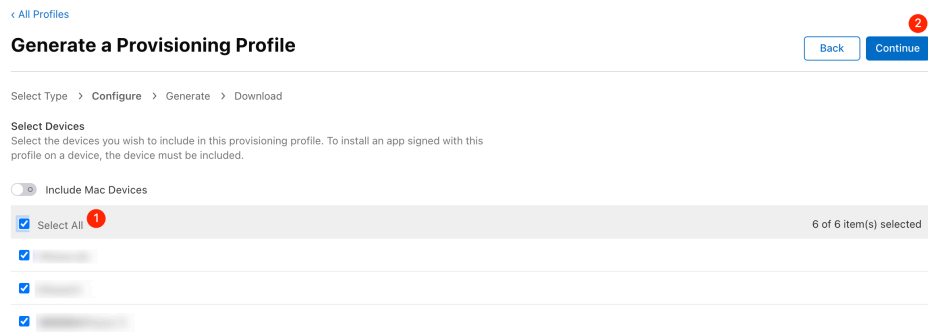


Figure 11-63 Selecting devices

Certificates, Identifiers & Profiles



8. Configure the profile information, click **Generate**, and download the profile to the computer.

Figure 11-64 Configuring information

Certificates, Identifiers & Profiles

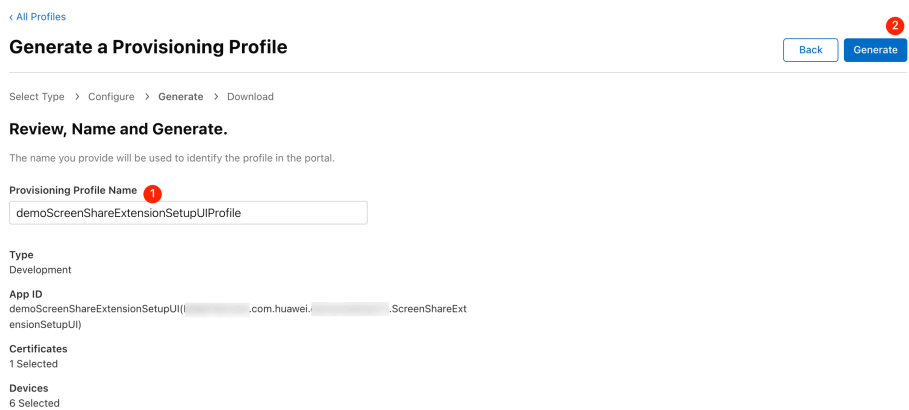
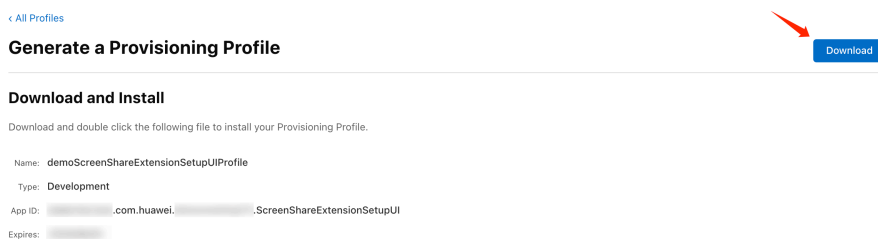


Figure 11-65 Profile created

Certificates, Identifiers & Profiles



----End

11.5 Windows SDK

11.5.1 What Should I Do If a Third-Party Client Needs to Wait for a Period of Time Before Exit When the Exit API Is Called?

Customer Case

A customer integrates the Windows SDK with their application. When the customer exits the application, the meeting process is still running, and the exit callback takes a long time.

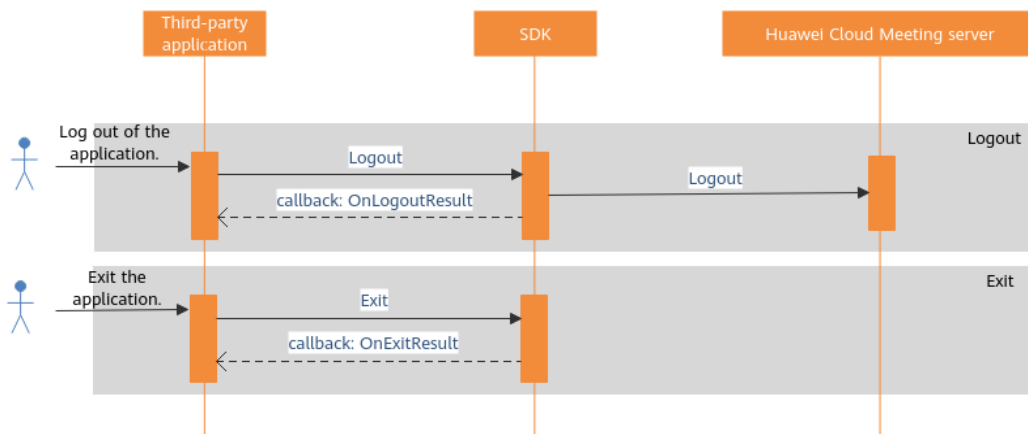
Cause Analysis

The customer calls the exit API in the logout callback. The exit API destroys resources only after the logout callback is complete, but the logout callback will be complete after the exit API exits the application. As a result, a thread deadlock occurs, causing the preceding issue.

Solution

Call the exit API after the logout callback is complete, as shown in the following figure. For details about more API calling sequence, see [API Call in Typical Scenarios](#).

Figure 11-66 API calling sequence diagram



11.6 Electron SDK

11.6.1 What Should I Do If the Message "electron failed to install correctly" Is Displayed When I Start the Electron Demo?

Customer Case

A customer has integrated the Electron SDK. When the Electron SDK is started, the message "electron failed to install correctly" is displayed.

```
> electron . --auto

/Users/p00576758/mac/222/hwmsdk-electron/demo/node_modules/electron/index.js:17
  throw new Error('Electron failed to install correctly, please delete node_modules/electron and try installing again');
  ^

Error: Electron failed to install correctly, please delete node_modules/electron and try installing again
    at getElectronPath (/Users/p00576758/mac/222/hwmsdk-electron/demo/node_modules/electron/index.js:17:11)
    at Object.<anonymous> (/Users/p00576758/mac/222/hwmsdk-electron/demo/node_modules/electron/index.js:21:18)
    at Module._compile (node:internal/modules/cjs/loader:1103:14)
    at Object.Module._extensions..js (node:internal/modules/cjs/loader:1157:10)
    at Module.load (node:internal/modules/cjs/loader:981:32)
    at Function.Module._load (node:internal/modules/cjs/loader:822:12)
    at Module.require (node:internal/modules/cjs/loader:1005:19)
    at require (node:internal/modules/cjs/helpers:102:18)
    at Object.<anonymous> (/Users/p00576758/mac/222/hwmsdk-electron/demo/node_modules/electron/cli.js:3:18)
    at Module._compile (node:internal/modules/cjs/loader:1103:14)
```

Cause Analysis

The local Node.js version does not match the installed Electron version.

Solution

Download Node.js of the version recommended by the Electron version from the official website of Node.js (for details about the mapping, see <https://www.electronjs.org/docs/latest/tutorial/electron-timelines>), install Node.js, and recompile and start the project.

11.6.2 What Should I Do If the Error Message "permission denied" Is Displayed When I Install an Environment on macOS?

Customer Case

A customer has integrated the Electron SDK. When the required environment is installed, the message "permission denied" is displayed.

```
> node install.js

Downloading electron-v13.6.9-darwin-x64.zip: [=====] 100% ETA: 0.0 seconds
Error: EACCES: permission denied, mkdir '/Users/p00576758/Library/Caches/electron/8236d1ab05b110f7e0f9e48b467a10a2fe06a46765fceab593d4e085ca7001e'
npm WARN @babel/plugin-bugfix-v8-spread-parameters-in-optional-chaining@7.16.7 requires a peer of @babel/core@^7.13.0 but none is installed. You must install peer dependencies yourself.
npm WARN @babel/plugin-proposal-class-static-block@7.17.6 requires a peer of @babel/core@^7.12.0 but none is installed. You must install peer dependencies yourself.
npm WARN tsutils@3.21.0 requires a peer of typescript@>=2.8.0 || >= 3.2.0-dev || >= 3.3.0-dev || >= 3.4.0-dev || >= 3.5.0-dev || >= 3.6.0-dev || >= 3.6.0-beta || >= 3.7.0-dev || >= 3.7.0-beta but none is installed. You must install peer dependencies yourself.
npm WARN hwmsdk-electron-demo@0.1.0 No repository field.
npm WARN hwmsdk-electron-demo@0.1.0 No license field.

npm ERR! code ELIFECYCLE
npm ERR! errno 1
npm ERR! electron@13.6.9 postinstall: `node install.js`
npm ERR! Exit status 1
npm ERR!
npm ERR! Failed at the electron@13.6.9 postinstall script.
npm ERR! This is probably not a problem with npm. There is likely additional logging output above.

npm ERR! A complete log of this run can be found in:
npm ERR!   /Users/p00576758/.npm/_logs/2022-04-07T12_13_03_860Z-debug.log
```

Cause Analysis

File permission issue.

Solution

Run the **chmod** command, for example, **chmod 777 XXX**, to modify the permission of the error file. Alternatively, add the **--unsafe-perm=true --allow-root** parameter when installing the dependency package.

For example, **npm install -electron@13.6.7 -g --unsafe-perm=true --allow-root**.

11.6.3 What Should I Do If the Error Message "no template named 'remove_cv_t'" Is Displayed When I Compile a .node File on macOS?

Customer Case

A customer has integrated the Electron SDK. When a .node file is compiled, the message "no template named 'remove_cv_t'" is displayed.

```
/Users/p00576758/Library/Caches/node-gyp/13.6.7/include/node/v8-internal.h:454:38: error: no template named 'remove_cv_t' in namespace 'std';  
did you mean 'remove_cv'?  
    !std::is_same<Data, std::remove_cv_t<T>>::value>::Perform(data);  
                                ~~~~~^~~~~~  
                                remove_cv  
/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/./include/c++/v1/type_traits:697:50: note: 'remove_cv'  
declared here  
template <class _Tp> struct _LIBCPP_TEMPLATE_VIS remove_cv  
                                ^
```

Cause Analysis

The cause is that **remove_cv_t** is supported from C++14, but **binding.gyp** that Node.js depends on requires C++11.

Solution

It is recommended that the Node.js version match the Electron version. Download Node.js of the version recommended by the Electron version from the official website of Node.js. For details about the mapping, see <https://www.electronjs.org/docs/latest/tutorial/electron-timelines>. If the problem persists, use either of the following methods to resolve the issue:

1. In the error file **v8-internal.h**, change **remove_cv_t** to **remove_cv**.
2. In the **binding.gyp** file, change **-std=c++11** to **-std=c++14** in the **OTHER_CPLUSPLUSFLAGS** configuration item.

11.6.4 What Should I Do If the Error Message "Could not find any Python installation to use" Is Displayed When I Compile a .node File on Windows?

Customer Case

When a .node file is compiled on the Windows platform, the message "Could not find any Python installation to use" is displayed.

```
Error: Could not find any Python installation to use

Error: node-gyp failed to rebuild 'D:\js uisdk\hwmsdk-electron-70.16.5-src-x64\hwmsdk-electron'.
For more information, rerun with the DEBUG environment variable set to "electron-rebuild".

Error: Could not find any Python installation to use

    at NodeGyp.rebuildModule (D:\js uisdk\hwmsdk-electron-70.16.5-src-x64\hwmsdk-electron\node_modules\electron-rebuild\lib\src\module-type\node-gyp.js:117:19)
    at processTicksAndRejections (internal/process/task_queues.js:93:5)
    at async ModuleRebuilder.rebuildNodeGypModule (D:\js uisdk\hwmsdk-electron-70.16.5-src-x64\hwmsdk-electron\node_modules\electron-rebuild\lib\src\module-rebuilder.js:94:9)
    at async ModuleRebuilder.rebuild (D:\js uisdk\hwmsdk-electron-70.16.5-src-x64\hwmsdk-electron\node_modules\electron-rebuild\lib\src\module-rebuilder.js:124:14)
    at async Rebuilder.rebuildModuleAt (D:\js uisdk\hwmsdk-electron-70.16.5-src-x64\hwmsdk-electron\node_modules\electron-rebuild\lib\src\rebuild.js:145:13)
    at async Rebuilder.rebuild (D:\js uisdk\hwmsdk-electron-70.16.5-src-x64\hwmsdk-electron\node_modules\electron-rebuild\lib\src\rebuild.js:108:17)
    at async D:\js uisdk\hwmsdk-electron-70.16.5-src-x64\hwmsdk-electron\node_modules\electron-rebuild\lib\src\cli.js:154:9
```

Cause Analysis

The Python environment variables are not properly configured.

Solution

1. Configure Python environment variables in the system.
2. Alternatively, reinstall Python, select **Customize Installation**, and select **Add Python to PATH** and **Install launcher for all users**.

11.6.5 What Should I Do If the Error Message "Could not find any Visual Studio installation to use" Is Displayed When I Compile a .node File on Windows?

Customer Case

When a .node file is compiled on the Windows platform, the message "Could not find any Visual Studio installation to use" is displayed.

```
An unhandled error occurred inside electron-rebuild
node-gyp failed to rebuild 'D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron'.
For more information, rerun with the DEBUG environment variable set to "electron-rebuild".

Error: Could not find any Visual Studio installation to use

Error: node-gyp failed to rebuild 'D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron'.
For more information, rerun with the DEBUG environment variable set to "electron-rebuild".

Error: Could not find any Visual Studio installation to use

    at NodeGyp.rebuildModule (D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron\node_modules\electron-rebuild\lib\src\module-type\node-gyp.js:117:19)
    at processTicksAndRejections (internal/process/task_queues.js:93:5)
    at async ModuleRebuilder.rebuildNodeGypModule (D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron\node_modules\electron-rebuild\lib\src\module-rebuilder.js:94:9)
    at async ModuleRebuilder.rebuild (D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron\node_modules\electron-rebuild\lib\src\module-rebuilder.js:124:14)
    at async Rebuilder.rebuildModuleAt (D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron\node_modules\electron-rebuild\lib\src\rebuild.js:145:13)
    at async Rebuilder.rebuild (D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron\node_modules\electron-rebuild\lib\src\rebuild.js:108:17)
    at async D:\jsuisdk\hwmsdk-electron-70.16.5-src\hwmsdk-electron\node_modules\electron-rebuild\lib\src\cli.js:154:9
```

Cause Analysis

Visual Studio is not installed or the environment variable **GYM_MSVS_VERSION** does not match the installed Visual Studio version.

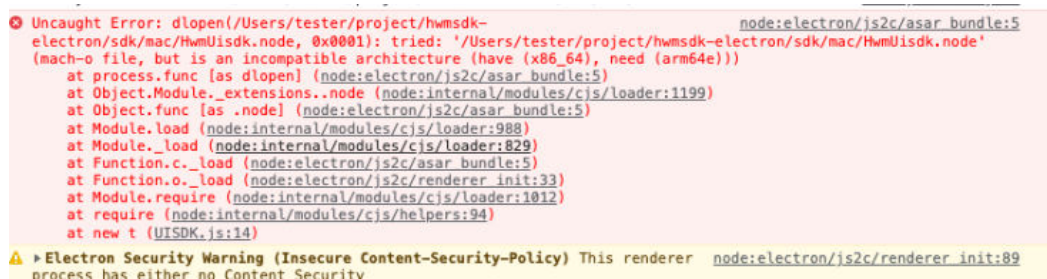
Solution

Reinstall Visual Studio or change the value of the environment variable `GYP_MSVS_VERSION` to the corresponding Visual Studio version.

11.6.6 What Should I Do If an Error Message Indicating that the Arm64 Architecture Is Required Is Displayed When I Run the Electron SDK on My MacBook?

Customer Case

After the Electron SDK is integrated with macOS, when the SDK is started, the error message `have(x86_64), need(arm64)` is displayed, indicating that the architecture is incorrect.



```
Uncaught Error: dlopen(/Users/tester/project/hwmsdk-electron/sdk/mac/HwMUsdk.node, 0x0001): tried: '/Users/tester/project/hwmsdk-electron/sdk/mac/HwMUsdk.node' (mach-o file, but is an incompatible architecture (have (x86_64), need (arm64e)))
    at process.func [as dlopen] (node:electron/js2c/asar_bundle:5)
    at Object.Module._extensions..node (node:internal/modules/cjs/loader:1199)
    at Object.func [as .node] (node:electron/js2c/asar_bundle:5)
    at Module.load (node:internal/modules/cjs/loader:988)
    at Module._load (node:internal/modules/cjs/loader:829)
    at Function.c._load (node:electron/js2c/asar_bundle:5)
    at Function.o._load (node:electron/js2c/renderer_init:33)
    at Module.require (node:internal/modules/cjs/loader:1012)
    at require (node:internal/modules/cjs/helpers:94)
    at new t (UITSdk.js:14)
Electron Security Warning (Insecure Content-Security-Policy) This renderer process has either no Content Security Policy or a Content Security Policy that does not include the required directives
```

Cause Analysis

The native UI SDK of macOS does not support Arm64. It supports only x86_64.

Solution

1. Set `export npm_config_arch` to `x64` to specify the x64 platform for Node.js.
2. Delete the downloaded `node_modules` folder.
3. Run the project again. To debug the demo, run the `run_demo_mac.sh` script.

11.6.7 Why Does My Application Crash When I Join a Meeting After Integrating the Electron SDK with macOS and Packaging My Application?

Customer Case

After the Electron SDK is integrated on the macOS, the locally compiled application runs properly, but the packaged application crashes unexpectedly when the customer joins a meeting.

Cause Analysis

The Electron SDK library is not signed during packaging.

Solution

Sign the library by referring to the signature script in the demo.

```

1 {
2   "name": "hwmsdk-electron-demo",
3   "version": "0.1.0",
4   "main": "main.js",
5   "homepage": ".",
6   "scripts": {
7     "copy-enum-win": "xcopy /y .\\..\\hwmsdk-electron\\js\\Api\\enum.js .\\src\\Constants\\ && xcopy /y .\\..\\hwmsdk-electron\\types\\Api\\enum.d.ts .\\src\\Constants\\",
8     "copy-enum-mac": "cp -RF ./.\\hwmsdk-electron\\js\\Api\\enum.js .\\src\\Constants && cp -RF ./.\\hwmsdk-electron\\types\\Api\\enum.d.ts .\\src\\Constants",
9     "build": "vite build",
10    "build:watch": "vite build --watch",
11    "auto": "electron ./dist/main.js",
12    "modifyElectronPlist": "node ./scripts/patch-electronRenderPlist.js",
13    "modifyElectronPackagePlist": "node ./scripts/patch-electronPackagePlist.js",
14    "copy-sdk-win32": "xcopy /y /s .\\..\\sdk\\win32\\*.\\* .\\app\\hwmsdk-electron-demo-win32-ia32\\resources\\sdk\\win32\\",
15    "copy-sdk-x64": "xcopy /y /s .\\..\\sdk\\x64\\*.\\* .\\app\\hwmsdk-electron-demo-win32-x64\\resources\\sdk\\x64\\",
16    "copy-sdk-mac": "mkdir -p .\\app\\hwmsdk-electron-demo-darwin-x64\\hwmsdk-electron-demo.app\\Contents\\Resources\\sdk\\mac && rsync -a ./.\\sdk\\mac\\hwmsdk.node .\\app\\hwmsdk-electron-demo-darwin-x64\\hwmsdk-electron-demo.app\\Contents\\Resources\\sdk\\mac",
17    "electronpackage-win32": "electron-packager ./dist --win32metadata.ProductName='HUAWEI CLOUD Meeting Demo' --win32metadata.FileDescription='HUAWEI CLOUD Meeting Demo' --win32metadata.OriginalFileName='HUAWEI CLOUD Meeting Demo' --win32metadata.FileName='HUAWEI CLOUD Meeting Demo' --win32metadata.FileName='HUAWEI CLOUD Meeting Demo'",
18    "electronpackage-x64": "electron-packager ./dist --win32metadata.ProductName='HUAWEI CLOUD Meeting Demo' --win32metadata.FileDescription='HUAWEI CLOUD Meeting Demo' --win32metadata.OriginalFileName='HUAWEI CLOUD Meeting Demo' --win32metadata.FileName='HUAWEI CLOUD Meeting Demo'",
19    "electronpackage-mac": "electron-packager ./dist --platform=darwin --arch=x64 --out ./app --electronVersion 13.6.7 --overwrite --no-prune",
20    "package-win32": "npm run electronpackage-win32 && npm run copy-sdk-win32",
21    "package-x64": "npm run electronpackage-x64 && npm run copy-sdk-x64",
22    "package-mac": "npm run electronpackage-mac && npm run copy-sdk-mac",
23    "copy_app_json": "cp -RF ./appmg.json ./app/appmg.json",
24    "demo_dev": "node .\\app\\index.mjs .\\hwmsdk-electron-demo",
25    "codesign-mac": "electron-osx-sign .\\app\\hwmsdk-electron-demo-darwin-x64\\hwmsdk-electron-demo.app --hardenedRuntime true --entitlements=./public/entitlements.mac.plist --entitlements-inherit=./public/entitlements.mac.plist",
26  },
27  "browserslist": {
28    "production": [
29      ">0.2%",
30      "not dead",
31      "not op_mini all"
32    ],
33    "development": [
34      "last 1 chrome version",
35      "last 1 firefox version",
36      "last 1 safari version"
37    ]
38  }
39 }

```

File path: `hwmsdk-electron\packages\hwmsdk-electron-demo\package.json`

Replace the certificate in the script with that of your application.

11.6.8 What Should I Do When the Electron SDK Fails to Be Run on Windows and the Message "HwmUisdk.node is not a valid Win32 application" Is Displayed?

Customer Case

After integrating the Electron SDK with Windows, the SDK cannot be run and the message **HwmUisdk.node is not a valid Win32 application** is displayed.

```

D:\Downloads\hwmsdk-electron-win-80.5.11-20220610-1322-Release220430\hwmsdk-electron-demo-   getNodePath.js:10
win-x64-80.5.11\hwmsdk-electron-x64\sdk\x64\HwmUisdk.node

NotifyService nodePath D:\Downloads\hwmsdk-electron-win-80.5.11-20220610-1322-   NotifyService.js:8
Release220430\hwmsdk-electron-demo-win-x64-80.5.11\hwmsdk-electron-x64/resources\sdk\x64\HwmUisdk.node

Uncaught Error: \\?\D:\Downloads\hwmsdk-electron-win-80.5.11-20220610-1322-   electron\js2c\asar_bundle.js:5
Release220430\hwmsdk-electron-demo-win-x64-80.5.11\hwmsdk-electron-x64/resources\sdk\x64\HwmUisdk.node is not a
valid Win32 application.
\\?\D:\Downloads\hwmsdk-electron-win-80.5.11-20220610-1322-Release220430\hwmsdk-electron-demo-win-x64-
80.5.11\hwmsdk-electron-x64/resources\sdk\x64\HwmUisdk.node
at process.func [as dlopen] (electron\js2c\asar_bundle.js:5)
at Object.Module._extensions..node (internal/modules/cjs/loader.js:1138)
at Object.func [as .node] (electron\js2c\asar_bundle.js:5)
at Module.load (internal/modules/cjs/loader.js:935)
at Module._load (internal/modules/cjs/loader.js:776)
at Function.f._load (electron\js2c\asar_bundle.js:5)
at Function.o._load (electron\js2c\renderer_init.js:33)
at Module.require (internal/modules/cjs/loader.js:959)
at require (internal/modules/cjs/helpers.js:88)
at new t (UISDK.js:14)

```

Cause Analysis

- The system lacks the required runtime library.
- The number of bits in .dll files is different from that in .node files.

Solution

Download the [Windows C++ demo installation package](#) on the official website and run it to identify the cause.

1. If the C++ demo fails to run and error **0xc000007b** is reported indicating that the application cannot be started, the fault is caused by the first cause. In this case, you need to download the runtime library of the corresponding version.

2. If the C++ demo runs successfully, re-integrate the Electron SDK by referring to [Getting Started](#) to ensure that the number of bits in .ddl files is the same as that in .node files.

11.6.9 What Should I Do When the Electron SDK Fails to Be Run on Windows and the Message "The specified module could not be found" Is Displayed?

Customer Case

After integrating the Electron SDK with Windows, the SDK cannot be run and the message **The specified module could not be found** is displayed.

```
✖ Uncaught (in promise) Error: The specified module could not be found.      electron/js2c/asar_bundle.js:5
  \\?\D:\jieheMeeting-win32-x64\resources\sdk\x64\HwmUisdk.node
    at process.func [as dlopen] (electron/js2c/asar_bundle.js:5)
    at Object.Module._extensions..node (internal/modules/cjs/loader.js:1104)
    at Object.func [as .node] (electron/js2c/asar_bundle.js:5)
    at Module.load (internal/modules/cjs/loader.js:935)
    at Module._load (internal/modules/cjs/loader.js:776)
    at Function.f._load (electron/js2c/asar_bundle.js:5)
    at Function.o._load (electron/js2c/renderer_init.js:33)
    at Module.require (internal/modules/cjs/loader.js:959)
    at require (internal/modules/cjs/helpers.js:88)
    at new t (UISDK.js:14)
```

Cause Analysis

DLL files are missing when the UI SDK library is integrated. As a result, an error is reported during **HwmUisdk.node** loading.

Solution

Re-integrate the SDK by referring to [Getting Started](#), or re-integrate the library in the **hwmsdk-electron-ia32\resources\sdk\win32** directory (Win32) or the **\hwmsdk-electron-x64\resources\sdk\x64** directory (x64) of the Electron demo.

12 Terms

12.1 Account-related Terms

- **Huawei Cloud account**

Tenant identity on Huawei Cloud, which is used to subscribe to Huawei Cloud Meeting or use tools (such as API Explorer) provided by Huawei Cloud. Account authentication is performed on Identity and Access Management (IAM) of Huawei Cloud.
- **Huawei Cloud Meeting account**

User identity on Huawei Cloud Meeting. Account authentication is performed on the USG of Huawei Cloud Meeting. Huawei Cloud Meeting accounts are classified into the following types:

 - **SP account**

A Huawei Cloud Meeting SP account is used by an SP administrator to manage multiple enterprises in the multi-tenant scenario, including enterprise provisioning and enterprise resource allocation.
 - **Enterprise administrator account**

A Huawei Cloud Meeting enterprise administrator account is used by an enterprise administrator to manage the enterprise, including departments, contacts, and cloud meeting rooms.
 - **Standard user account**

A Huawei Cloud Meeting standard user account is used by a meeting user to log in to the Huawei Cloud Meeting client or Huawei Cloud Meeting Management Platform, create meetings, and join meetings.

12.2 Meeting ID Terms

Terms related to meeting IDs are as follows:

- **Meeting ID:** generated by the system for a meeting created using concurrent participant resources or using a cloud meeting room resource and a random ID. Users can use this ID to join the meeting.

- **Cloud meeting room meeting ID:** ID of meetings held using a cloud meeting room or personal meetings created by an account. If the ID is fixed, users can use it to join the meetings.
- **Meeting UUID:** UUID generated by the system after a meeting starts. If a meeting with the same ID is held multiple times before the scheduled time (or before the host ends the meeting), multiple meeting UUIDs are generated. This ID is invisible to users.
- **Cloud meeting room ID:** unique ID of a cloud meeting room or personal meetings. This ID is required in the meeting creation API when a meeting is created using a cloud meeting room or a personal meeting with a fixed ID is created using concurrent participant resources. This ID is invisible to users.

The following figure shows the relationship between these IDs.

Figure 12-1 Relationships between meeting IDs

