

SparkRTC

User Guide

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1 Functions

You can quickly create and edit apps and analyze communication quality on the SparkRTC console.

Table 1-1 Functions

Category	Function	Description
Apps	App Management	You can create and manage apps, and use the ID and domain name of an app to access interactive channels.
	Recording	You can configure recording rules for real-time communication. SparkRTC records streams using recording rules of specific IDs and stores the recordings in Object Storage Service (OBS) buckets.
Analytics	Calls	You can view details about call quality indicators of users in each room to locate, analyze, and solve call quality issues.
	Data Insights	You can view the call usage and quality data to see how calls evolve and distribute, as well as daily data details.
	Real-Time Data	You can view the real-time data and its analysis charts to check the scale, experience, and network indicators of voice and video calls. The data informs you of the overall project status in real time so that you can quickly identify abnormal calls and their root causes.
	Diagnostics	You can view information about all users with abnormal call experience and exception details in real time.
Duration Statistics	Duration Statistics	You can obtain the audio and video duration of the past 90 days.

Category	Function	Description
OBS Authoriza tion	OBS Authorization	You can authorize SparkRTC to access OBS buckets for storing recordings in the buckets.

2 App Management

You can create an app and query its basic information on the SparkRTC console, and use the ID and domain name of the app to access interactive channels.

Notes

If this is the first time you use Huawei Cloud SparkRTC, [submit a service ticket](#) to contact Huawei Cloud technical service for more information.

Creating an App

- Step 1** Log in to the SparkRTC console.
- Step 2** In the navigation pane, choose **Apps**.
- Step 3** Click **Create App**. The **Create App** page is displayed.

[Table 2-1](#) describes the required parameters.

Figure 2-1 Creating an app

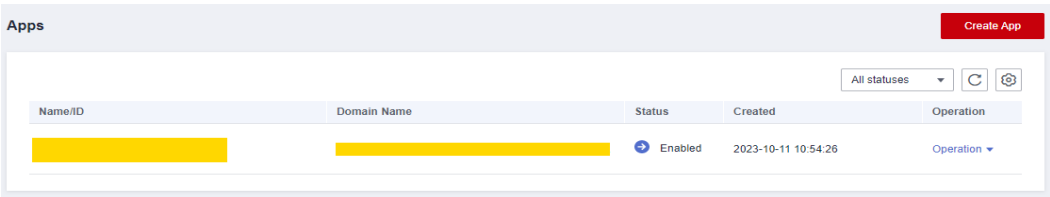


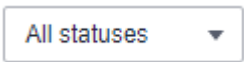
Table 2-1 Parameters

Parameter	Description
App Name	App name. The value can contain a maximum of 64 characters, including letters, digits, hyphens (-), and underscores (_).

Parameter	Description
App Type	App type. The options are as follows: • EDUCATION • ENTERTAINMENT • FINANCE • OTHER • EXCLUSIVE-A • EXCLUSIVE-B • EXCLUSIVE-C NOTICE The exclusive scenario is special and you are advised not to select it. Otherwise, the current app cannot work.

Step 4 Click **Create**.

When the app is created, view its information in the app list, including the app name, app ID, domain name, creation time, and status. You can also perform the following operations as required:

- Click  to filter apps by status.
- Click  to refresh the app list.
- Click  to customize the app list.
- Click  to copy the app ID.
- **Editing an app:** Enable, disable, or delete an app and generate a temporary token.
- **Querying call quality information:** Query details about the audio and video call quality of each room.
- **Querying call duration statistics:** Query audio and video duration in the past 90 days.
- **Configuring recording:** Create recording rules to record audio and video and store recordings in OBS buckets.

----End

Editing an App

You can enable, disable, or delete an app and generate a temporary token.

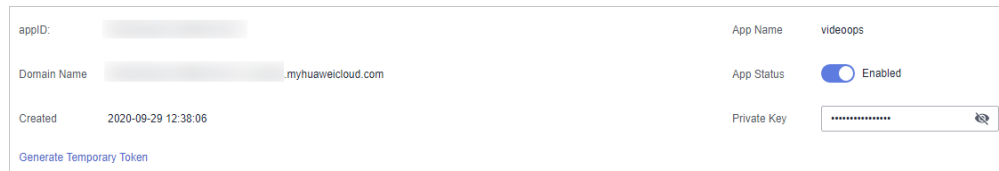
Step 1 Log in to the SparkRTC console.

Step 2 In the navigation pane, choose **Apps**.

Step 3 Click an app name.

On the app details page, you can view information such as the app ID, name, domain name, creation time, and authentication key.

Figure 2-2 Editing an app



The screenshot displays the 'Editing an app' interface. It contains the following fields and controls:

- appID:** A text input field with a greyed-out value.
- App Name:** A text input field with the value 'videoops'.
- Domain Name:** A text input field with the value 'my.huaweicloud.com'.
- App Status:** A toggle switch currently set to 'Enabled'.
- Created:** A timestamp field showing '2020-09-29 12:38:06'.
- Private Key:** A text input field with masked characters and a copy icon.
- Generate Temporary Token:** A blue link at the bottom left.

Step 4 On the app details page, perform the following operations as required:

- Enable or disable **App Status**.
- Click **Delete** to delete the app if it is no longer needed.

----End

Document

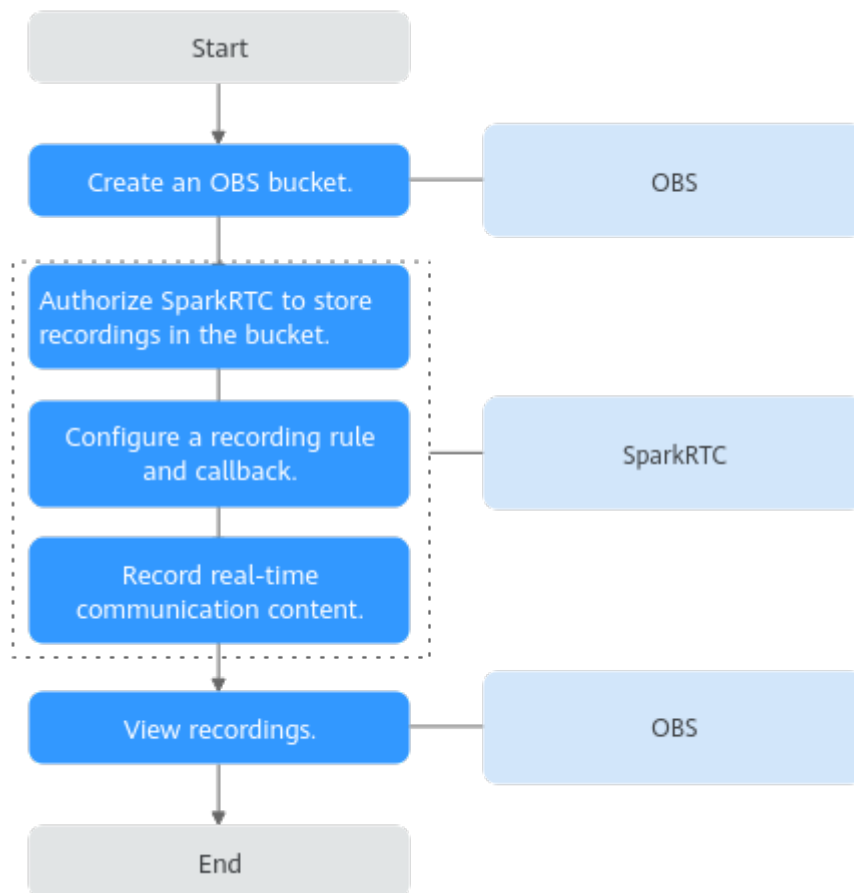
- You can call [app management APIs](#) to create, delete, and enable an app.
- You can configure cloud recording rules and recording callbacks for created apps to record real-time audio and video content and store the recordings in OBS buckets. For details, see [Configuring a Recording Rule](#) and [Configuring Recording Callback](#).

3 Cloud Recording Management

3.1 Configuring a Recording Rule

SparkRTC records real-time communication content and stores the recordings in OBS buckets. You can download and share the recordings in OBS. [Figure 3-1](#) shows the operation process.

Figure 3-1 Recording process



1. [Create an OBS bucket](#) for storing recordings. If you already have one, go to [2](#).
2. [Authorize SparkRTC to store recordings in the bucket](#).
3. [Configure a recording rule](#) for real-time communication. Then you can use the recording rule ID to start a recording task. The recording will be stored in OBS based on the recording settings. You can set a callback URL to obtain notifications about the recording status.
4. [Record content](#) of real-time communication. You can call [SparkRTC APIs](#) to start, query, and control cloud recording tasks. SparkRTC performs single-stream recording on images based on the recording rule ID in the API calling request.
5. [View recordings](#). After the recording is complete, you can receive the callback message of the recording task in the configured callback URL. You can obtain the basic information about the recordings and manage the recordings in OBS, such as downloading, sharing, and deleting them.

 NOTE

The resolution of recordings is the same as that of the pushed streams.

Notes

- Only one recording rule can be configured for an app in each region.
- Recording will fail if OBS is suspended due to arrears. Ensure that OBS is running properly before starting the recording.
- Ensure that OBS is not suspended due to arrears. Otherwise, recording will fail. You are advised to [buy an OBS package](#).

Prerequisites

- You have [created an app](#).
- You have enabled OBS before storing recordings in OBS buckets. For details, see [OBS Getting Started](#).

Billing

- Recording is a billing item based on the total duration of recordings. For details, see [SparkRTC Pricing Details](#).
- Recordings are stored in OBS buckets. Therefore, OBS charges you for the storage. For details, see [OBS Pricing Details](#).

Step 1: Create an OBS Bucket

If you do not have an OBS bucket for storing recording files, create a bucket by referring to [OBS Documentation](#). If you already have one, go to [Step 2: Authorize Access to the OBS Bucket](#).

NOTICE

Currently, recordings can be stored only in OBS buckets in **CN North-Beijing4**.

Step 2: Authorize Access to the OBS Bucket

Authorize SparkRTC to store recordings in OBS buckets. For details, see [OBS Authorization](#).

Step 3: Configure a Recording Rule

1. Log in to the SparkRTC console.
2. In the navigation pane, choose **Apps**.
3. Click **Configure** in the row of the app for which a recording callback needs to be created.

The **Configuration** page is displayed.

4. In the **Recording Rule** area, click **Add**. The **Add Recording Rule** page is displayed.

NOTE

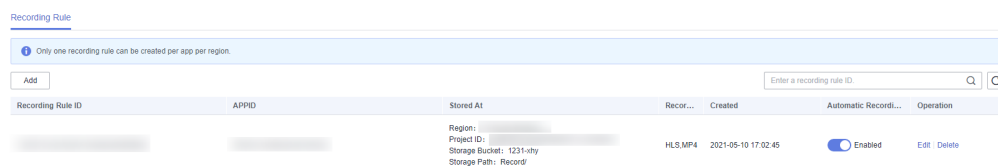
Only one recording rule can be configured for an app in each region.

5. Configure recording parameters according to [Table 3-1](#).

Table 3-1 Recording parameters

Parameter		Description
Storage Bucket		OBS bucket where the recording is stored. Currently, recorded files can be stored only in OBS buckets of CN North-Beijing4 .
Region		Region where the OBS bucket is deployed.
Storage Path		Path of the OBS bucket where the recording is stored.
Record As		Recording format, which can be HLS and MP4.
HLS	File Naming	Storage path and filename prefix of M3U8 files. Default format: {app_id}/{record_format}/{stream}_{file_start_time}/{stream}_{file_start_time} The meanings of the preceding variables are as follows: • <i>app_id</i>: app ID • <i>record_format</i>: recording format • <i>stream</i>: stream name • <i>file_start_time</i>: file generation time
	Recording Length	The recording length can be 0 or 1 to 720 minutes (12 hours). If a stream has been recorded for more than 12 hours, another file will be created based on the naming rule. If the recording length is 0 , the entire stream is recorded as a file.

Parameter		Description
	Max Stream Pause Length	Values: • Generate a new file when a stream is paused • Do not generate a new file when a stream is paused: The maximum stream pause length is 30 days. • Other: If the stream pause length is within the specified range, the system does not generate a new file. Otherwise, a new file is generated.
MP4	File Naming	Storage path and filename prefix of MP4 files. Default format: {app_id}/{record_format}/{stream}_{file_start_time}/{stream}_{file_start_time} The meanings of the preceding variables are as follows: • <i>app_id</i>: app ID • <i>record_format</i>: recording format • <i>stream</i>: stream name • <i>file_start_time</i>: file generation time
	Recording Length	The recording length ranges from 1 to 180 minutes (3 hours). If a stream has been recorded for more than 3 hours, another file will be created based on the naming rule.
	Max Stream Pause Length	Values: • Generate a new file when a stream is paused • Other: If the stream pause length is within the specified range, the system does not generate a new file. Otherwise, a new file is generated.

6. Click **OK**.

7. In the recording rule list, enable automatic recording as required. When automatic recording is enabled, if a new room is created under the app, the system automatically performs single-stream recording during real-time communication in the room based on the configured recording rule.

NOTE

Automatic recording takes effect only for rooms created under the app after you enable it.

Step 4: Record Content

After the recording rule is configured, call the [SparkRTC APIs](#) to start a cloud recording task. SparkRTC records real-time audio and video content based on the recording rule ID in the API calling request.

Step 5: View Recordings

When the recording is complete, view recordings on the OBS console or through callback messages.

- Viewing recordings on the OBS console
 - a. In the navigation pane of the OBS console, choose **Object Storage**.
 - b. In the bucket list, click the bucket that stores SparkRTC recordings.
The **Overview** page is displayed.
 - c. In the navigation pane, choose **Objects** to view the recording information.
 - d. Download and share the recordings as required. For details, see [OBS Documentation](#).
- Viewing recordings through callback messages

If you configure a recording callback URL, you will receive a recording callback message each time a recording is generated. For details about the configuration method and message fields, see [Configuring Recording Callback](#).

3.2 Configuring Recording Callback

You can configure an HTTP/HTTPS URL to receive recording task status callback. SparkRTC will send POST requests to your server, so that you can know the recording task status.

Callback Protocols

- Request: HTTP POST. The request body is in JSON format.
- Response: HTTP STATUS CODE = 200. The response body is in JSON format. You can customize the response body.

Example:

```
{
  "status": 1,
  "result": "success"
}
```

Prerequisites

You have [created an app](#).

Procedure

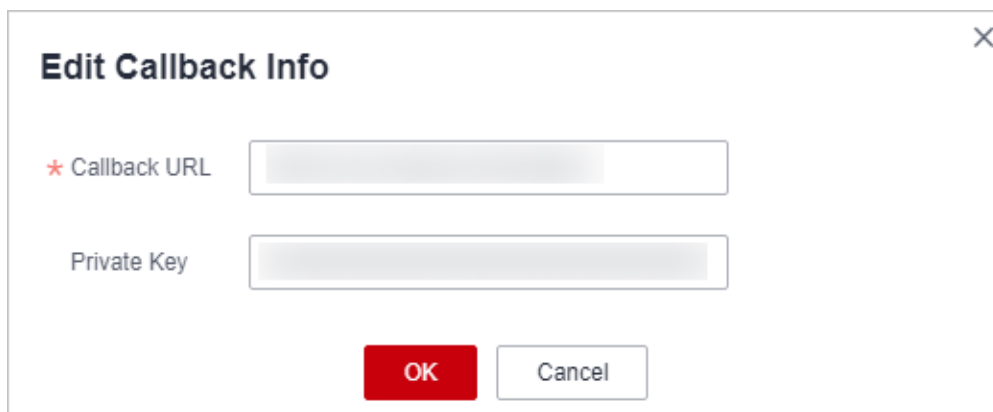
- Step 1** Log in to the SparkRTC console.
- Step 2** In the navigation pane, choose **Apps**.

Step 3 Click **Configure** in the row of the app for which a recording callback needs to be created.

The **Configuration** page is displayed.

Step 4 In the **Recording Callback** area, click **Edit** and configure callback information, as shown in [Figure 3-2](#).

Figure 3-2 Adding a callback URL

A dialog box titled "Edit Callback Info" with a close button (X) in the top right corner. It contains two input fields: "Callback URL" (marked with a red asterisk) and "Private Key". At the bottom, there are two buttons: "OK" (red) and "Cancel" (gray).

- **Callback URL:** address of the server that receives callback information. Only the HTTP and HTTPS protocols are supported.
- **Private Key:** authentication key for recording callback. The key can contain 32 to 64 characters. For details about how to generate a recording callback authentication signature, see "How Do I Authenticate a Recording Callback?" in *FAQs*.

----End

Callback Example

[Table 3-2](#) describes the fields in a callback message body.

```
{
  "event_type": "RECORD_FILE_COMPLETE",
  "stream_name": "mystream",
  "record_format": "HLS",
  "download_url": "https://abc-rtc-bucket2.obs.cn-north-4.myhuaweicloud.com/Record/Record/5fcd5651xxxxx6f835d0d4.SparkRTC.myhuaweicloud.com/live/continuous_record/hls/mystream_2021-04-28-08-57-07/mystream_2021-04-28-08-57-07.m3u8",
  "file_size": 26254952,
  "record_duration": 65,
  "start_time": "2021-04-28T08:56:57Z",
  "end_time": "2021-04-28T08:58:02Z",
  "width": 1280,
  "height": 720,
  "obs_location": "http://obs.cn-north-4.myhuaweicloud.com",
  "obs_bucket": "abc-rtc-bucket2",
  "obs_object": "Record/Record/5fcd5651xxxxx6f835d0d4.SparkRTC.myhuaweicloud.com/live/continuous_record/hls/mystream_2021-04-28-08-57-07/mystream_2021-04-28-08-57-07.m3u8",
  "app_id": "5fcd5651xxxxx6f835d0d4",
  "job_id": "608196a2fa1xxxxx515147f32ef463b",
  "room_id": "room01"
}
```

Table 3-2 JSON message body

Field	Description
event_type	Notification event type. Values: • RECORD_NEW_FILE_START. This event is triggered in either of the following scenarios: – The system starts creating the first recording file. – When a stream is resumed, if Max Stream Pause Length is set to Generate a new file when a stream is paused, the system starts creating another recording file. – If the current recording duration exceeds the configured recording length, the system starts creating another recording file. • RECORD_FILE_COMPLETE. This event is triggered in either of the following scenarios: – When the recording duration reaches the configured recording length, the current recording file recording is complete and the system starts creating another recording file. – When a stream is interrupted, if Max Stream Pause Length is set to Generate a new file when a stream is paused, the current recording file recording is complete.
stream_name	Stream name.
record_format	Recording format, which can be HLS and MP4.
download_url	URL for downloading the recording. This field is used only when event_type is RECORD_FILE_COMPLETE. NOTE The address cannot be used for playback.
file_size	File size. Unit: byte.
record_duration	Duration of a recording. Unit: second. This field is used only when event_type is RECORD_FILE_COMPLETE.
start_time	UTC time when the recording starts, which is, time when the first frame is received. The format is YYYY-MM-DDThh:mm:ssZ. This field is used only when event_type is RECORD_FILE_COMPLETE.

Field	Description
end_time	UTC time when the recording ends. The format is YYYY-MM-DDThh:mm:ssZ. This field is used only when event_type is RECORD_FILE_COMPLETE .
width	Width of the recording. This field is used only when event_type is RECORD_FILE_COMPLETE .
height	Height of the recording. This field is used only when event_type is RECORD_FILE_COMPLETE .
obs_location	Region where the OBS bucket for storing the recording is located. This field is used only when event_type is RECORD_FILE_COMPLETE .
obs_bucket	OBS bucket where the recording is stored. This field is used only when event_type is RECORD_FILE_COMPLETE .
obs_object	OBS storage path. This field is used only when event_type is RECORD_FILE_COMPLETE .
app_id	App ID.
job_id	Recording task ID, which can be used to modify, view, or stop the task.
room_id	Room ID.
detail_message	Recording task status description.

4 Analytics (Beta)

4.1 Calls

You can view details about call quality indicators of users in each room to locate, analyze, and solve call quality issues.

Notes

- Data in **Calls** is for data analysis and quality issue query only. Services are charged based on bills.
- The latest data will be displayed at most 5 minutes after it is generated.

About Query

- You can query data in a time span of up to 14 days.
- You can query the real-time data of the last 24 hours.
- You can view the following data in **Calls**:
 - Device status, including the app CPU usage and system CPU usage
 - Audio/Video/Presentation bitrate
 - Video/Presentation frame rate
 - Audio/Video/Presentation freeze rate
 - Audio/Video/Presentation packet loss rate
 - Video resolution width/height
 - Presentation resolution width/height
 - Video/Presentation latency
 - User behavior, such as joining or exiting a room and enabling or disabling the video function

Procedure

Step 1 Log in to the SparkRTC console.

Step 2 In the navigation pane on the left, choose **Analytics (Beta) > Calls**.

Step 3 On the displayed page, enter or select an app ID to view the call information of the target room.

You can select desired calls by time segment, call status, or room ID.

Step 4 Click **Room ID** or **Details** in the **Operation** column. The **Call Details** page is displayed.

On the displayed page, you can view the following information:

- **Info:** displays the room ID, app ID, domain name, room status, and start and end time of a call. You can click **View Events** to view all operation events of the user in the room. For details about event types and IDs, see [Table 4-1](#).
- **Room profile:** displays the total number of users, maximum number of online users, accumulated number of users with issues, success rates of joining a room (in 5 seconds), stream push and pull, and recording, and audio and video freeze rates.
- **User list:** displays user information, including the username, nickname, call status, region, time of joining or leaving a room, SDK version, carrier, and device.

Click **View Experience Data** in the **Operation** column on the right to determine whether to display the user information in the **Call Experience Quality** panel.

- **Call Experience Quality:** displays the experience of each user (receiver) in each call, for example, whether frame freezing, blurring, and sound/image problems occur, and details about the audio and video quality indicators from a specified sender to a receiver.

----End

Checking Call Experience Quality

The **Call Experience Quality** panel displays the call experience quality of each user (receiver), which is determined by the received audio and video bitrates. Move the mouse pointer to the call experience quality chart and scroll the mouse wheel to zoom in or out on the time axis within a specified time range.

Note: By default, the call experience quality panel displays data of all senders. You can select only the desired senders from the drop-down list box on the panel.

In the **Call Experience Quality** panel, the horizontal axis indicates the call duration, and the video and audio call experience is displayed above and below the horizontal axis, respectively.

- The line above the horizontal axis indicates the video receive bitrate of a sender. Senders are distinguished from each other by color.
- The upward red burr indicates video freezes.
- The line below the horizontal axis indicates the audio receive bitrate of a sender. Senders are distinguished from each other by color.
- The downward red burr indicates audio freezes.

If you find that the call quality of a sender is low, click **View Details** in the upper right corner of the panel. Select the sender in the **Video Subscription**, **Audio Subscription**, and **Presentation Subscription** tabs, respectively, to view details.

about its audio and video quality indicators. For details about each quality indicator, see [Analyzing Call Quality Problems](#).

Analyzing Call Quality Problems

On the **User details** page, you can view the [call information](#), [user profile](#), [video subscription](#), [audio subscription](#), and [presentation subscription](#). The **Video Subscription**, **Audio Subscription**, and **Presentation Subscription** tabs display details about audio and video quality indicators from a specified sender to a receiver. You can analyze these indicators to locate call experience problems.

- **Info**: displays the room ID, app ID, domain name, room status, and start and end time of a call
- **User profile**: displays user information, including online duration, and number of failures of joining a room within 5s and pushing or pulling streams
- **Video Subscription**: displays the video call quality data of the selected sender and receiver, including the device status, video resolution, bitrate, frame rate, packet loss rate, and frame freeze rate
- **Audio Subscription**: displays the audio call quality data of the selected sender and receiver, including the audio bitrate, packet loss rate, and frame freeze rate
- **Presentation Subscription**: displays the quality data of the screen (window) shared by the selected sender and receiver, including the bitrate, frame rate, frame freeze rate, packet loss rate, resolution, jitter, and latency

Viewing User Operation Events

On the **Video Subscription**, **Audio Subscription**, and **Presentation Subscription** tabs, click **Event** in the **Operation** column to view details about all user operations during a call. You can analyze these operations performed on the client to reproduce, locate, and solve software issues. [Table 4-1](#) lists the user IDs and event types.

Table 4-1 Description of user operation events

Event ID	Event Type
1	Join room
2	Leave room
3	Video/Batch subscribe
5	Mute/Unmute
6	Switch network
7	Enable/Disable camera
9	Switch device
10	DNS query, TCP/TLS link setup, start and end time of first frame display

Event ID	Event Type
11	Switch role
12	Send media stream
13	Output stream
14	Share screen
16	Subscribe to audio/Cancel subscription
17	Cross room
18	Connect to signaling/media channel
19	Set uplink video
20	Set downlink audio
21	Server scheduling failed
22	Successful stream push measurement
23	Successful stream pull measurement

4.2 Data Insights

You can view the call usage and quality data to see how calls evolve and distribute, as well as daily data details.

Notes

Data in **Data Insights** is for data analysis and quality issue query only. Services are charged based on bills.

About Query

- You can query historical data of the last 90 days.
- You can query data in a time span of up to 31 days.

Procedure

- Step 1** Log in to the SparkRTC console.
- Step 2** In the navigation pane on the left, choose **Analytics (Beta) > Data Insights**.
- Step 3** On the displayed page, enter or select an app ID to view the call usage and quality data of the target app.
- Step 4** You can view the following call data:
 - **Usage:** You can view the call duration, room and user data, and user call usage distribution, as well as network types, OSs, and SDK versions of users. Click **Details** in the upper right corner to check the daily usage details in a table.

- **Quality:** You can view the success rate of joining a room, change of user experience quality indicators, and call quality data of each region, network type, OS, and SDK version. Click **Details** in the upper right corner to check the daily usage details in a table.

----End

Usage

You can view the following call usage data:

- **Duration:** displays the total call duration, video call duration, and audio call duration
 - **Total call duration:** indicates the total real-time audio and video call duration of all users, in minutes
 - **Video call duration:** indicates the total real-time video call duration of all users, in minutes
 - **Audio call duration:** indicates the total real-time audio call duration of all users, in minutes
- **Rooms and Users:** displays the total online rooms, maximum concurrent online rooms and users per day, total call participants, and total call sessions
 - **Total rooms:** A room is online after the first user joins the room and before the last user leaves it.
 - **Max concurrent online rooms per day:** indicates the average peak number of concurrent online rooms
 - **Max concurrent online users per day:** indicates the average peak number of concurrent online users (a user can be in different rooms)
 - **Total call participants:** One user ID in n rooms is counted as n participants ($n > 1$).
 - **Total call sessions:** One call session is counted each time a user joins a room.
- **Distribution:** displays the total call duration of each province/municipality/autonomous region and its proportion to the total call duration
- **Network Types:** displays the call usage of each network type and its proportion to the total call usage

Note: In the statistical chart, if the number of data items is less than or equal to 5, all network types and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **OSs:** displays the call usage of each OS and its proportion to the total call usage

Note: In the statistical chart, if the number of data items is less than or equal to 5, all OSs and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **SDK Versions:** displays the call usage of each SDK version and its proportion to the total call usage

Note: In the statistical chart, if the number of data items is less than or equal to 5, all SDK versions and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **Max concurrent online users per day:** displays the maximum number of concurrent online users of an application by time segment

Quality

You can view the following call quality data:

- **Room Loading:** displays the average successful attempts of joining a room and that of joining a room in 5 seconds per day
 - **Room loaded per day:** Number of users who join a room / Number of users who attempt to join a room
 - **Room loaded in 5s per day:** Number of users who join a room in 5 seconds / Number of users who attempt to join a room
- **User Experience:** displays the average video and audio freeze, and high-quality video and audio transmission per day
 - **Video freeze:** Video freeze duration / Total video duration. The video freeze duration is counted once it reaches 600 ms.
 - **Audio freeze:** Audio freeze duration / Total audio duration. The audio freeze duration is counted once it reaches 200 ms.
 - **HQ video transmission per day:** indicates the proportion of videos with a packet loss rate $\leq 5\%$ during transmission
 - **HQ audio transmission per day:** indicates the proportion of audios with a packet loss rate $\leq 5\%$ during transmission
- **Distribution:** Regions are sorted by call usage and the call quality data of each region is displayed.
- **Network Types:** Network types are sorted by call usage and the call quality data of each network type is displayed.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all network types and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **OSs:** OSs are sorted by call usage and the call quality data of each OS is displayed.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all OSs and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **Max Concurrent Online Users:** displays the maximum number of concurrent online users of an application by time segment
- **SDK Versions:** SDK versions are sorted by call usage and the call quality data of each SDK version is displayed.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all SDK versions and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

4.3 Real-Time Data

You can view the real-time data and its analysis charts to check the scale, experience, and network indicators of voice and video calls. The data informs you of the overall project status in real time so that you can quickly identify abnormal calls and their root causes.

Notes

- Data in **Real-Time Data** is for data analysis and quality issue query only. Services are charged based on bills.
- The latest data will be displayed at most 5 minutes after it is generated.

About Query

- You can query the real-time data of the last 24 hours.
- You can query data in a time span of up to 24 hours.

Procedure

- Step 1** Log in to the SparkRTC console.
- Step 2** In the navigation pane on the left, choose **Analytics (Beta) > Real-Time Data**.
- Step 3** On the displayed page, enter or select an app ID to view the real-time monitoring data of the target app.
- Step 4** You can view the following real-time monitoring data of a call project:
 - **Dashboard**: displays the quantity of online users/rooms, quality, and exceptions
 - **Scale**: displays the online user-related data within a specified time range
 - **Experience**: displays the experience data within a specified time range
 - **Network**: displays the network data within a specified time range

-----End

Dashboard

Click the **Dashboard** tab to check the overall project status, including the number of online rooms/users, success rate of joining a room in 5 seconds, audio/ video smoothness, and call exceptions.

- **Online Rooms**: A room is online after the first user joins the room and before the last user leaves it.
- **Online Users**: indicates the number of online users. If a user joins n rooms using the same username, the number is n ($n > 1$).

- **Room Loaded in 5s:** Number of users who join a room in 5 seconds / Number of users who attempt to join a room
- **Smooth Audio:** (Total audio duration – Audio freeze duration) / Total audio duration. The audio freeze duration is counted once it reaches 200 ms.
- **Smooth Video:** (Total video duration – Video freeze duration) / Total video duration. The video freeze duration is counted once it reaches 600 ms.
- The number of online users in each region is displayed in the map of China.
- **Alarms:** This area is displayed only when an exception occurs. A maximum of 6 alarms can be displayed. [Table 4-2](#) lists the abnormal events and their respective detection thresholds.

Table 4-2 Abnormal event description

Abnormal Event	Detection Threshold
Heavy system CPU usage	80%
Heavy app CPU usage	70%
Uplink audio latency	500 ms
Uplink audio jitter	500 ms
Uplink video latency	500 ms
Uplink video jitter	500 ms
Downlink audio latency	500 ms
Downlink audio jitter	500 ms
Downlink video latency	500 ms
Downlink video jitter	500 ms
Uplink audio packet loss	20%
Uplink video packet loss	20%
Downlink audio packet loss	20%
Downlink video packet loss	20%
Downlink video freeze	5%
Downlink audio freeze	3%

Scale

Click the **Scale** tab to check the number of online rooms and online users and how these two indicators change within a specified time range. You can also view the number of online users in different regions, as well as the network types, OSs, and SDK versions of online users.

In the upper part of the page, you can adjust the desired time range and specify whether to update chart data in real time.

- **Overview:** displays the number of online rooms and online users and how these two indicators change within a specified time range
 - **Online rooms:** A room is online after the first user joins the room and before the last user leaves it.
 - **Online users:** indicates the number of online users. If a user joins n rooms using the same username, the number is n ($n > 1$).
- **Distribution:** Regions are sorted by the number of online users in descending order. The number of online users in each region and its proportion to the total number of online users are displayed.
- **Network Types:** Network types are sorted by the number of online users in descending order. The number of online users of each network type and its proportion to the total number of online users are displayed.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all network types and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **OSs:** Operating systems are sorted by the number of online users in descending order. The number of online users of each OS and its proportion to the total number of online users are displayed.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all OSs and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **SDK Versions:** SDK versions are sorted by the number of online users in descending order. The number of online users of each SDK version and its proportion to the total number of online users are displayed.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all SDK versions and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

Experience

Click the **Experience** tab to check the success rate of joining a room and that of joining a room in 5 seconds, audio and video freeze rates, and successful stream push/pull. You can also view the number of online users by network type, OS, and SDK version, as well as the experience data (real-time or within a specified time range).

In the upper part of the page, you can adjust the desired time range and specify whether to update chart data in real time.

- **Overview:** displays the success rate of joining a room and that of joining a room in 5 seconds, audio and video freeze rates, and success rates of pushing and pulling streams
 - **Room loaded:** Number of users who join a room / Number of users who attempt to join a room

- **Room loaded in 5s:** Number of users who join a room in 5 seconds / Number of users who attempt to join a room
- **Audio freeze:** Audio freeze duration / Total audio duration. The audio freeze duration is counted once it reaches 200 ms.
- **Video freeze:** Video freeze duration / Total video duration. The video freeze duration is counted once it reaches 600 ms.
- **Successful stream pull:** Number of successful audio and video playback times / Total number of playback times
- **Successful stream push:** Number of successful audio and video stream pushes / Total number of stream pushes
- **Distribution:** Regions are sorted by the number of online users in descending order. The **Room loaded**, **Room loaded in 5s**, **Audio freeze**, **Video freeze**, **Successful stream pull**, and **Successful stream push** of each region are displayed. For details about the data items, see [Overview](#) under the **Experience** tab.
- **Network Types:** Network types are sorted by the number of online users in descending order. The **Room loaded**, **Room loaded in 5s**, **Audio freeze**, **Video freeze**, **Successful stream pull**, and **Successful stream push** of each network type are displayed. For details about the data items, see [Overview](#) under the **Experience** tab.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all network types and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **OSs:** OSs are sorted by the number of online users in descending order. The **Room loaded**, **Room loaded in 5s**, **Audio freeze**, **Video freeze**, **Successful stream pull**, and **Successful stream push** of each OS are displayed. For details about the data items, see [Overview](#) under the **Experience** tab.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all OSs and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **SDK Versions:** The SDK versions are sorted by the number of online users in descending order. The **Room loaded**, **Room loaded in 5s**, **Audio freeze**, **Video freeze**, **Successful stream pull**, and **Successful stream push** of each SDK version are displayed. For details about the data items, see [Overview](#) under the **Experience** tab.

Note: In the statistical chart, if the number of data items is less than or equal to 5, all SDK versions and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

Network

Click the **Network** tab to view the high-quality audio and video upload rates of the client and those of each region.

In the upper part of the page, you can adjust the desired time range and specify whether to update chart data in real time.

- **Overview:** displays the high-quality audio and video upload rates of clients
 - **HQ video upload:** indicates the high-quality video upload rate from the sender to SparkRTC
 - **HQ audio upload:** indicates the high-quality audio upload rate from the sender to SparkRTC
- **Distribution:** Regions are sorted by the number of online users in descending order. The high-quality audio and video upload rates of clients in each region are displayed. For details about the data items, see [Overview](#) under the **Network** tab.

4.4 Diagnostics

You can view information about all users with abnormal call experience and exception details in real time to quickly identify the types and causes of call exceptions.

Notes

The latest data will be displayed at most 5 minutes after it is generated.

About Query

- You can query the real-time data of the last 24 hours.
- You can query data in a time span of up to 24 hours.

Procedure

Step 1 Log in to the SparkRTC console.

Step 2 In the navigation pane on the left, choose **Analytics (Beta) > Diagnostics**.

Step 3 On the displayed page, enter or select an app ID to view all call exception data of the target app.

The diagnosis data chart displays the following information: user data by exception type, exception causes, and details about all users with abnormal call experience.

- **Overview**

Displays user data by exception type, including **Users with slow loading**, **Users with audio freeze**, and **Users with video freeze**.

- **Users with audio freeze:** indicates the number of users who take a long time to join a room
- **Users with audio freeze:** indicates the number of users who have audio freezes during calls
- **Users with video freeze:** indicates the number of users who have video freezes during calls

- **Exception Causes**

Displays details about the exception causes in a specified period, including exception types and the proportion and number of affected users by exception. For details about the exception causes, see [Table 4-3](#).

Note: In the statistical chart, if the number of data items is less than or equal to 5, all exception causes and their proportions are displayed in descending order. If the number of data items is greater than 5, the fifth one and all data items following it are classified as **Other** and displayed as the fifth item in descending order.

- **Type:** indicates the type of a call experience exception, including slow room loading, video freeze, and audio freeze
- **Cause:** indicates the cause of a call experience exception. For details, see [Table 4-3](#).
- **Proportion:** indicates the proportion of the number of users affected by an exception
- **Users:** indicates the number of users affected by an exception

Table 4-3 Exception cause description

Cause	Detection Threshold
Heavy system CPU usage	80%
Heavy app CPU usage	70%
Uplink audio latency	500 ms
Uplink audio jitter	500 ms
Uplink video latency	500 ms
Uplink video jitter	500 ms
Downlink audio latency	500 ms
Downlink audio jitter	500 ms
Downlink video latency	500 ms
Downlink video jitter	500 ms
Uplink audio packet loss	20%
Uplink video packet loss	20%
Downlink audio packet loss	20%
Downlink video packet loss	20%
Downlink video freeze	5%
Downlink audio freeze	3%

- **Exception Details**

Displays details about all users with abnormal call experience, including the call time, room ID, username, and the phase, type, cause, and source of an exception.

- **Phase:** indicates the phase where a call experience exception occurs, including joining a room and making a call
- **Type:** indicates the type of a call experience exception, including slow room loading, video freeze, and audio freeze
- **Cause:** indicates the cause of a call experience exception. For details, see [Table 4-3](#).
- **Source:** indicates the call experience exception source, which can be either a local user or a remote user

----End

5 Duration Statistics

You can query the audio and video interaction duration of the last 90 days by application name.

Notes

The latest data will be displayed about 5 minutes after it is collected.

About Query

You can query data in a time span of 31 days and historical data of the last 90 days.

Procedure

Step 1 Log in to the SparkRTC console.

Step 2 In the navigation tree on the left, choose **Duration Statistics**.

You can also choose **Apps** and click **Duration** in the **Operation** column to go to the **Duration Statistics** page.

Step 3 Select the desired time and application name to view its statistics and details.

The statistical chart displays the voice call duration and the video call duration by resolution (SD/HD/UHD). In the chart, you can:

- Click the following icons to view the desired audio or video call duration statistics
- Move the mouse pointer to a line to view the audio call duration and the video call duration of different resolutions
- Move the mouse pointer to the statistical chart and scroll the mouse wheel to zoom in or out on the time axis within a specified time range

NOTE

Data in **Duration Statistics** is for data analysis and reference only. Services are charged based on bills.

----End

6 OBS Authorization

You can authorize SparkRTC to store recordings in OBS buckets.

Notes

OBS buckets must be deployed in **CN North-Beijing4**.

Prerequisites

- You have enabled OBS before storing recordings in OBS buckets. For details, see [OBS Getting Started](#).
- You have created an OBS bucket for storing recordings. For details about how to create a bucket, see [OBS Documentation](#).

Procedure

Step 1 Log in to the SparkRTC console.

Step 2 In the navigation pane, choose **OBS Authorization**.

You can also click **Authorize** below **Storage Bucket** on the **Add Recording Rule** page to access the **OBS Authorization** page.

Step 3 Click **Authorize** in the **Operation** column of the row containing the target bucket.

Figure 6-1 OBS bucket authorization

Bucket	Region	Authorized	Operation
1037871	CN North-Beijing4	Unauthorized	Authorize

----End

Follow-up Operations

When SparkRTC is authorized to access an OBS bucket, you can select the bucket for recording storage when configuring recording rules, and then manage the recordings in OBS, such as downloading and sharing them. For details about recording configuration, see [Configuring a Recording Rule](#).