Media Processing Service

User Guide

Issue 01

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Huawei Cloud Computing Technologies Co., Ltd.

Address: Huawei Cloud Data Center Jiaoxinggong Road
Qianzhong Avenue
Gui'an New District
Gui Zhou 550029
People's Republic of China

Website: https://www.huaweicloud.com/intl/en-us/

Contents

1 Prerequisites

Before using MPC, you need to perform the operations in this section.

Real-Name Authentication

Individual or enterprise users must complete real-name authentication. For details, see **Real-Name Authentication**.

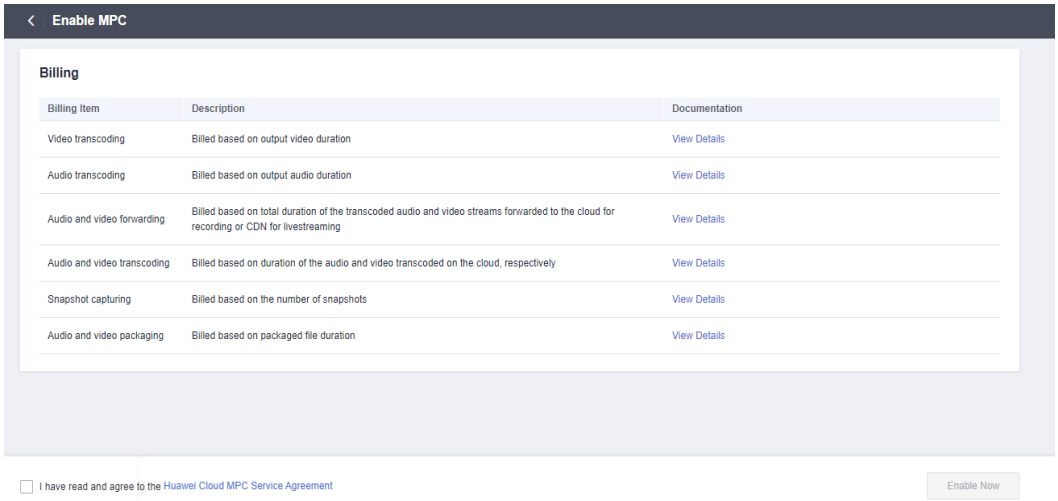
Account Balance

By default, MPC adopts pay-per-use billing. The generated service fees will be directly deducted from your account balance. Ensure that your account is available and has sufficient balance.

Risk Warning on the First Service Enabling

If you purchase MPC for the first time, the page shown in **Figure 1-1** will be displayed. You need to view the details of each billing item and read the *Huawei Cloud MPC Service Agreement* carefully before enabling MPC.

Figure 1-1 Enabling MPC



2 Permissions Management

2.1 Creating a User and Granting MPC Permissions

This section describes how to use **Identity and Access Management (IAM)** to implement refined permissions management for your MPC resources. With IAM, you can:

- Create IAM users for employees based on your enterprise's organizational structure using your Huawei Cloud account. Each IAM user will have their own security credentials for accessing MPC resources.
- Grant only the permissions required for users to perform a specific task.
- Entrust a Huawei Cloud account or cloud service to perform efficient O&M on your MPC resources.

If your Huawei Cloud account does not require individual IAM users, skip this section.

This section describes the procedure for granting permissions (see **Figure 2-1**).

MPC System Permissions

By default, new IAM users do not have permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

NOTICE

If a new IAM user needs to use the MPC console, the user at least must have the policy permissions of the following services:

- **BILLINGFullAccessPolicy**: CBC
- **IAMFullAccessPolicy**: IAM
- **MPCFullAccessPolicy**: MPC
- **OBSFullAccessPolicy**: OBS
- **SMNFullAccessPolicy**: SMN

MPC is a project-level service deployed and accessed in specific physical regions. To assign permissions to a user group, specify the scope as region-specific (for example, **CN North-Beijing4**) projects and select projects (cn-north-4) for the permissions to take effect. If **All projects** is selected, the permissions will take effect for the user group in all region-specific projects. When accessing MPC, the users need to switch to a region where they have been authorized to use the MPC service.

Currently, the system role of MPC is **MPC Administrator**, which has all of the permissions for MPC.

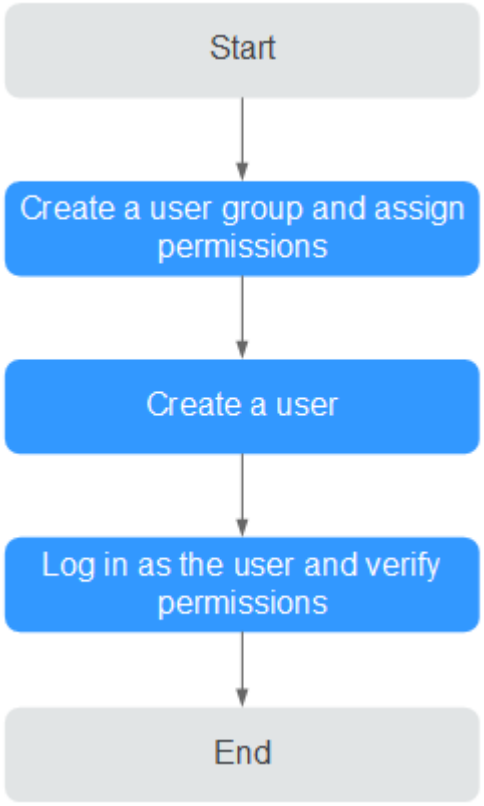
For the permissions of other services, see **System Permissions**.

Prerequisites

Learn about the permissions (see **MPC System Permissions**) supported by MPC and choose policies or roles according to your requirements.

Process Flow

Figure 2-1 Process of assigning MPC permissions



1. **Create a user group and assign permissions**.

   Create a user group on the IAM console, and attach the **MPC Administrator** policy to the group.

2. **Create a user and add them to a user group**.

   Create a user on the IAM console and add the user to the group created in **1**.

3. **Log in as the user** and verify permissions.

   Log in to the console as the created user, and verify that the user only has read permissions for MPC.

   - Choose **Service List** > **Media Processing Center**. If all functions work well, the **MPC Administrator** policy has already taken effect.
   - Choose any other service in **Service List**. If a message appears indicating that you have insufficient permissions to access the service, the **MPC Administrator** policy has already taken effect.

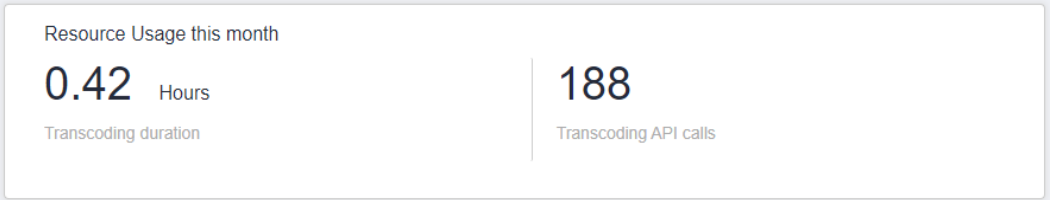
3 Overview

On the **Dashboard** page of the MPC console, you can view resource usage of this month, usage trends, billing mode, process, SDKs, and documentation to get started with MPC quickly.

Statistics of This Month

View resource usage of this month.

Figure 3-1 Resource usage



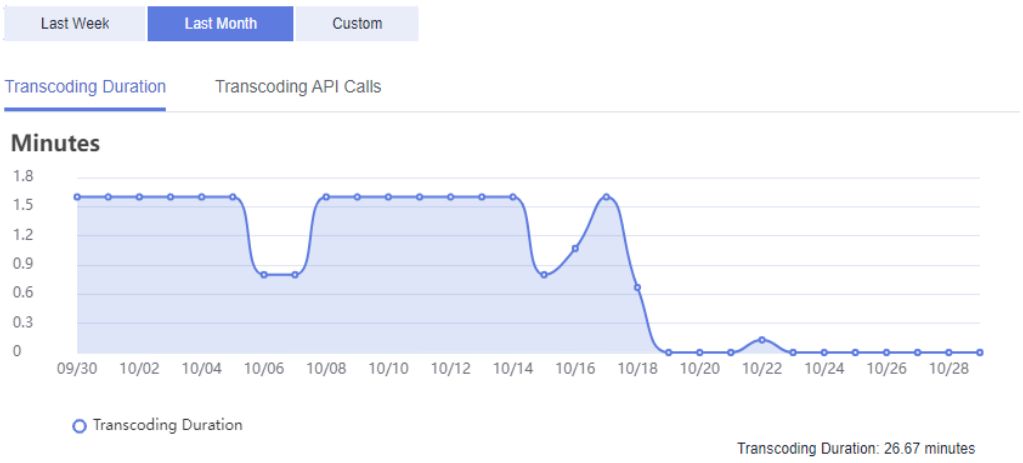
Resources include API calls and transcoding duration.

Item	Description
Transcoding duration	Total duration of the content that you output
Transcoding API calls	Total number of transcoding API calls

Usage Trends

View the resource usage trends of last week, last month, or a custom time period.

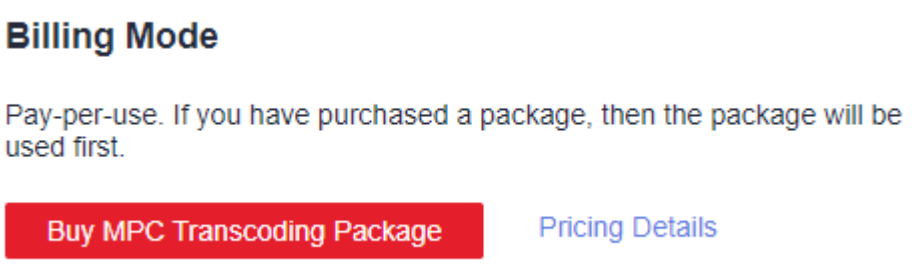
Figure 3-2 Transcoding statistics



Billing Mode

View the billing mode you have chosen and buy MPC packages if needed.

Figure 3-3 Billing mode



4 Uploading Media Files

4.1 Uploading Media Files

MPC does not store media files. You need to upload a video file to be transcoded to an OBS bucket before transcoding.

Notes

MPC can process only media files stored in OBS buckets in the same region. If you want to use MPC in the **CN North-Beijing4** region, the OBS bucket for storing media files must be in the **CN North-Beijing4** region.

Procedure

Step 1 Log in to the OBS console.

Step 2 Click **Create Bucket** in the upper right corner of the page.

The created bucket is used to store MPC media files.

Step 3 On the displayed page, enter the bucket name and select the **storage class** and **bucket policy** as needed.

Step 4 Click **Create Now**.

If the input and output files are stored in the same bucket, create one bucket. Otherwise, create two buckets as the input and output buckets respectively.

Table 4-1 Storage classes

Storage Class	Application Scenario
Standard	Stores frequently accessed (multiple times per month) data such as small and essential files that require low latency.
Infrequent Access	Stores infrequently accessed (once per month) data that requires low latency.

Storage Class	Application Scenario
Archive	Stores rarely accessed (once per year) data.

Table 4-2 Bucket policies

Bucket Policy	Description
Private	Only the bucket owner can read, write, and delete objects in the bucket.
Public Read	Any user can read objects in the bucket. Only the bucket owner can write and delete objects in the bucket.
Public Read and Write	Any user can read, write, and delete objects in the bucket.

NOTE

- Select a region where you want MPC to do the transcoding. If you use MPC in **CN North-Beijing 4**, then you need to create a bucket in **CN North-Beijing 4**.
- If input files and output files are stored in different buckets, you are advised to set the storage class of the input bucket to **Infrequent Access** and that of the output bucket to **Standard**.

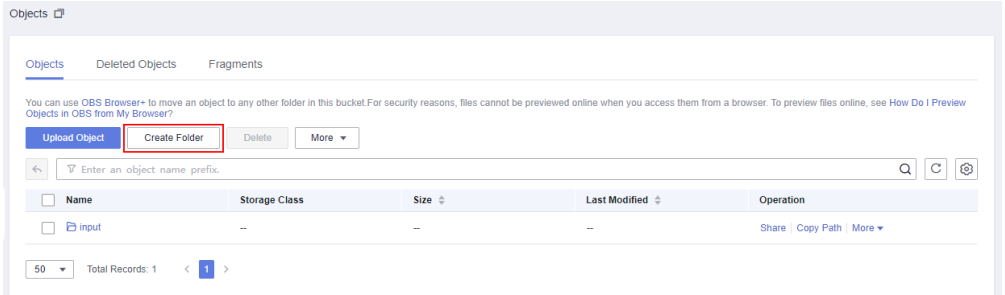
Step 5 Configure the input folder.

1. Click the name of the bucket created in **Step 3**. The bucket details page is displayed.

   The **Objects** tab on the **Objects** page is displayed.

2. Click **Create Folder** to configure the input folder of MPC.

   Figure 4-1 Creating folders



Step 6 Configure the output folder. The procedure is similar to that in **Step 5**.

1. Click the name of the output bucket created in **Step 3**. The bucket details page is displayed.
2. On the **Objects** page, click **Create Folder** to configure the output folder of MPC.

Step 7 Upload a media file.

1. On the input bucket details page, click the name of the input folder.
2. Click **Upload Object** and select a media file.
3. Select the **storage class** and encryption mode of the file, and click **Upload**.

----End

4.2 Authorizing Access to Cloud Resources

After an input video file is uploaded to an OBS bucket, you need to authorize MPC to access the input bucket and output bucket.

Notes

The OBS bucket that MPC is authorized to access must be in the same region as MPC.

Authorization Methods

MPC provides two authorization methods. You can select either of them. The difference between two authorization methods lies in the roles that access OBS. As a result, transcoded files belong to different roles.

Authorization Method	Description
Bucket authorization	• MPC only has the read and write permissions on authorized buckets. • MPC accesses your OBS resources as an MPC role. The transcoded file is stored in an output bucket. You can download or delete the file. The file belongs to MPC and does not inherit the bucket policy of the output bucket. • If you need to change the permissions on the transcoded file, set the ACL for the file separately. For details, see **Configuring an Object ACL**.
OBS authorization	• MPC has the read and write permissions on all your buckets. OBS authorization is unavailable for IAM users. • MPC accesses OBS resources as your role. The transcoded file belongs to you and inherits the bucket policy of the output bucket by default.

Procedure

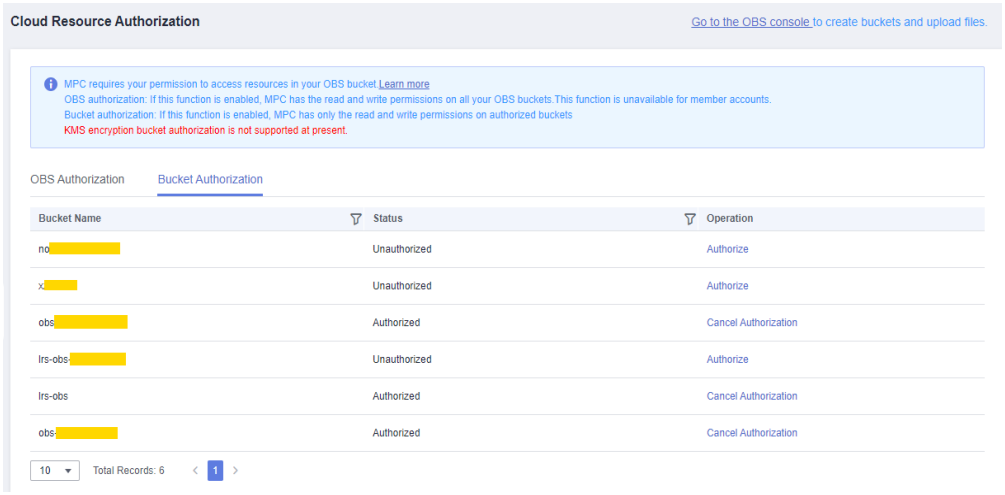
Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Cloud Resource Authorization**.

Step 3 Select an authorization method.

- OBS authorization
  After authorization is enabled, MPC can access all buckets of the user.
- Bucket authorization
  In the row containing the input and output buckets, click **Authorize**.

Figure 4-2 Cloud resource authorization



----End

5 Global Settings

5.1 Custom Templates

In addition to the presets, you can customize one-in one-out transcoding templates based on your needs.

Creating a Transcoding Template

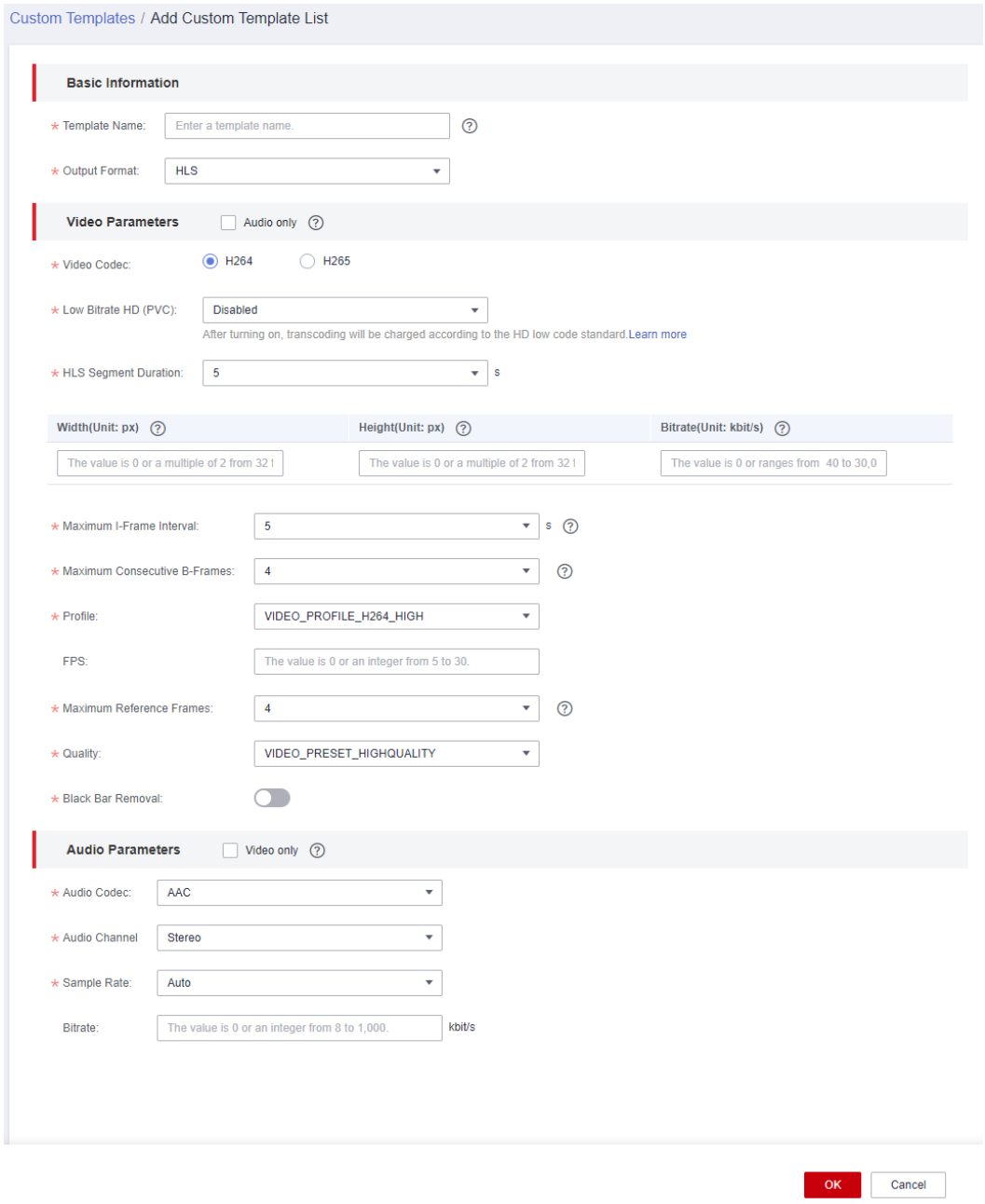
You can specify transcoding parameters as needed.

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Custom Templates**.

Step 3 Click **Custom Templates**. On the displayed page, specify related parameters.

Figure 5-1 Custom templates



Step 4 Set basic information. See **Table 5-1**.

Table 5-1 Basic information

Parameter	Description
Template Name	Enter a maximum of 128 characters. Only letters, underscores (_), and digits are allowed. Example: MP4_H264

Parameter	Description
Output Format	Format of an output audio or video file. The following output formats are supported: • Video formats: MP4, HLS, DASH+HLS, and DASH • Audio formats: ADTS and MP3 Note: If you select **Audio only**, the video parameters are disabled and only audio is transcoded.

Step 5 Configure video parameters by referring to **Table 5-2**.

If **Audio only** is selected, the output file does not contain any video information. This option applies to the scenario where audio is extracted from a media file. Perform **step 7** to set audio parameters.

Table 5-2 Basic video parameters

Parameter	Description
Video Codec	The H.264 and H.265 formats are supported.
Low Bitrate HD (PVC)	Whether to enable low bitrate HD. The function is disabled by default. If this function is enabled, the output bitrate is about 20% lower than the configured bitrate.
HLS Segment Duration	Duration of an HLS segment. This parameter is only used when **Output Format** is set to **HLS** or **DASH+HLS**. The value ranges from 2 to 10. Default value: **5** Unit: second
Dash Segment Duration	Length of a dash segment. This parameter is only used when **Output Format** is set to **DASH** or **DASH+HLS**. The value ranges from 2 to 10. Default value: **5** Unit: second
Width (Unit: px)	Width of an output video. Its value range: • If **H.264** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 32 to 4,096. • If **H.265** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 160 to 4,096.

Parameter	Description
Height (Unit: px)	Height of an output video. Its value range: • If **H.264** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 32 to 2,880. • If **H.265** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 96 to 2,880.
Bitrate (Unit: kbit/s)	Bitrate of an output video. The value is 0 or ranges from 40 to 30,000, in kbit/s. You are advised to set it to a recommended value. For details, see **Table 5-3**. If **Bitrate** is set to **0**, the recommended bitrate is used.

NOTE

- If both the width and height of the transcoded video are set to **0**, the transcoded video is output based on the source video resolution.
- If only one side (width or height) of the transcoded video is set to **0**, the value of the other side is used to perform proportional scaling based on the source video resolution and output the transcoded video.

Table 5-3 Recommended resolutions and bitrates

Video Quality	Recommended Resolution	Recommended Bitrate for H.265 (kbit/s)	Recommended Bitrate for H.264 (kbit/s)
4K	3840 x 2160	5600	8000
2K	2560 x 1440	4900	7000
UHD	1920 x 1080	2100	3000
HD	1280 x 720	700	1000
SD	854 x 480	500	600
LD	480 x 270	200	300

NOTE

If the bitrate is set to 0 and the configured resolution is not one of the recommended resolutions in the preceding table, use the recommended bitrate for the recommended resolution which is close to the configured resolution.

For example, if the bitrate is set to 0 and the resolution is set to 900 x 500, the output bitrate is the recommended bitrate for the resolution 854 x 480, that is, 500 for H.265 and 600 for H.264.

Step 6 Configure advanced video parameters by referring to **Table 5-4**.

Table 5-4 Advanced video parameters

Parameter	Description
Maximum I-Frame Interval	Maximum interval between I frames (initial frame during playback). The value ranges from 2 to 5.
Maximum Consecutive B-Frames	Maximum number of consecutive B-frames (intermediate frames during playback). Value range: • 0 to 7 for H.264. The default value is **4**. • 0 to 7 for H.265. The default value is **7**.
Profile	Video encoding level, which is related to the video codec. It cannot be modified. • If **Video Codec** is **H.264**, the default value is **VIDEO_PROFILE_H264_HIGH**. • If **Video Codec** is **H.265**, the default value is **VIDEO_PROFILE_H265_MAIN**.
FPS	Frame rate of an output video file. The value is 0 or ranges from 5 to 30. The value **0** indicates that the FPS of the output video is the same as that of the input video.
Maximum Reference Frames	Number of past and future frames affected during decoding. Its value is: • An integer ranging from 1 to 8 for H.264 • Permanently **4** for H.265
Quality	Quality level of video encoding. It cannot be modified. Possible values are: • VIDEO_PRESET_HSPEED2 • VIDEO_PRESET_HSPEED • VIDEO_PRESET_NORMAL (default value)
Black Bar Removal	Whether to automatically detect black bars and remove them. This function is disabled by default.

Step 7 Configure audio parameters by referring to **Table 5-5**.

If **Video only** is selected, the output file does not contain any audio information. This option applies to the scenario where video is extracted from a media file.

Table 5-5 Audio parameters

Parameter	Description
Audio Codec	Audio codec. Possible values include **AAC** and **HEAAC1**. The default value is **AAC**.
Audio Channel	Possible values include **Stereo**, **Mono**, and **5.1 Channel**. The default is **Stereo**.
Sampling Rate	Choose one from **Auto**, **22050**, **32000**, **44100**, **48000**, and **96000**. The default value is **Auto**. The unit is Hz. **Auto** indicates adaptive sampling.
Bitrate	Bitrate of an output audio. The value is 0 or an integer ranging from 8 to 1,000. Unit: kbit/s

Step 8 Click **OK**.

----End

Modifying a Transcoding Template

You can modify a custom template, including the video parameters, audio parameters, and template name, to meet your service requirements.

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Custom Templates**.

Step 3 Locate the target template and click **Modify** in the **Operation** column.

Step 4 Reconfigure the parameters that you want to modify. For details about the parameters, see **Creating a Transcoding Template**.

Step 5 Click **OK**.

----End

Deleting a Transcoding Template

You can delete a template that is no longer used.

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Custom Templates**.

Step 3 Locate the target template and click **Delete** in the **Operation** column.

Step 4 Click **Yes**.

----End

5.2 Custom Template Groups

In addition to the preset templates, you can customize one-in multiple-out transcoding templates based on your needs.

Creating a Transcoding Template Group

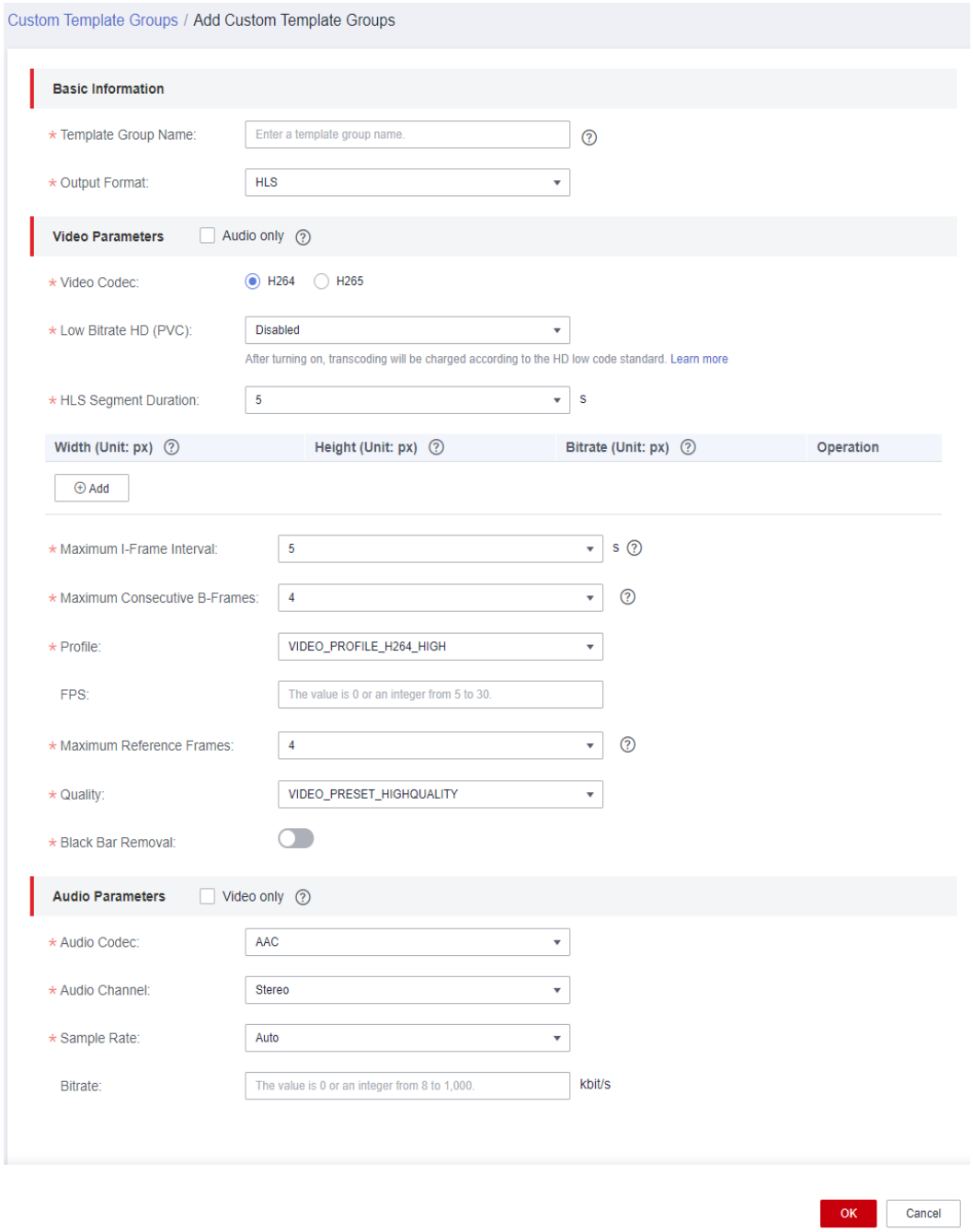
You can specify transcoding parameters as needed.

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Custom Template Groups**.

Step 3 Click **Custom Template Groups**. On the displayed page, specify related parameters.

Figure 5-2 Custom template groups



Step 4 Set basic information. See **Table 5-6**.

Table 5-6 Basic information

Parameter	Description
Template Group Name	Enter a maximum of 128 characters. Only letters, underscores (_), and digits are allowed. Example: MP4_H264

Parameter	Description
Output Format	Format of an output audio or video file. The following output formats are supported: • Video formats: MP4, HLS, DASH+HLS, and DASH • Audio formats: ADTS and MP3 Note: If you select **Audio only**, the video parameters are disabled and only audio is transcoded.

Step 5 Configure video parameters by referring to **Table 5-7**.

If **Audio only** is selected, the output file does not contain any video information. This option applies to the scenario where audio is extracted from a media file. Perform **step 7** to set audio parameters.

Table 5-7 Basic video parameters

Parameter	Description
Video Codec	The H.264 and H.265 formats are supported.
Low Bitrate HD (PVC)	Whether to enable low bitrate HD. The function is disabled by default. If this function is enabled, the output bitrate is about 20% lower than the configured bitrate.
HLS Segment Duration	Duration of an HLS segment. This parameter is only used when **Output Format** is set to **HLS** or **DASH+HLS**. The value ranges from 2 to 10. Default value: **5** Unit: second
Dash Segment Duration	Length of a dash segment. This parameter is only used when **Output Format** is set to **DASH** or **DASH+HLS**. The value ranges from 2 to 10. Default value: **5** Unit: second
Width (Unit: px)	Width of an output video. Its value range: • If **H.264** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 32 to 4,096. • If **H.265** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 160 to 4,096.

Parameter	Description
Height (Unit: px)	Height of an output video. Its value range: • If **H.264** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 32 to 2,880. • If **H.265** is selected for **Video Codec**, this value is 0 or a multiple of 2 from 96 to 2,880.
Bitrate (Unit: kbit/s)	Bitrate of an output video. The value is 0 or ranges from 40 to 30,000, in kbit/s. You are advised to set it to a recommended value. For details, see **Table 5-8**. If **Bitrate** is set to **0**, the recommended bitrate is used.

NOTE

- If both the width and height of the transcoded video are set to **0**, the transcoded video is output based on the source video resolution.
- If only one side (width or height) of the transcoded video is set to **0**, the value of the other side is used to perform proportional scaling based on the source video resolution and output the transcoded video.

Table 5-8 Recommended resolutions and bitrates

Video Quality	Recommended Resolution	Recommended Bitrate for H.265 (kbit/s)	Recommended Bitrate for H.264 (kbit/s)
4K	3840 x 2160	5600	8000
2K	2560 x 1440	4900	7000
UHD	1920 x 1080	2100	3000
HD	1280 x 720	700	1000
SD	854 x 480	500	600
LD	480 x 270	200	300

NOTE

If the bitrate is set to 0 and the configured resolution is not one of the recommended resolutions in the preceding table, use the recommended bitrate for the recommended resolution which is close to the configured resolution.

For example, if the bitrate is set to 0 and the resolution is set to 900 x 500, the output bitrate is the recommended bitrate for the resolution 854 x 480, that is, 500 for H.265 and 600 for H.264.

Step 6 Click **Add** to add resolutions and bitrates.

Step 7 Configure advanced video parameters by referring to **Table 5-9**.

Table 5-9 Advanced video parameters

Parameter	Description
Maximum I-Frame Interval	Maximum interval between I frames (initial frame during playback). The value ranges from 2 to 5.
Maximum Consecutive B-Frames	Maximum number of consecutive B-frames (intermediate frames during playback). Value range: • 0 to 7 for H.264. The default value is **4**. • 0 to 7 for H.265. The default value is **7**.
Profile	Video encoding level, which is related to the video codec. It cannot be modified. • If **Video Codec** is **H.264**, the default value is **VIDEO_PROFILE_H264_HIGH**. • If **Video Codec** is **H.265**, the default value is **VIDEO_PROFILE_H265_MAIN**.
FPS	Frame rate of an output video file. The value is 0 or ranges from 5 to 30. The value **0** indicates that the FPS of the output video is the same as that of the input video.
Maximum Reference Frames	Number of past and future frames affected during decoding. Its value is: • An integer ranging from 1 to 8 for H.264 • Permanently **4** for H.265
Quality	Quality level of video encoding. It cannot be modified. Possible values are: • VIDEO_PRESET_HSPEED2 • VIDEO_PRESET_HSPEED • VIDEO_PRESET_NORMAL (default value)
Black Bar Removal	Whether to automatically detect black bars and remove them. This function is disabled by default.

Step 8 Configure audio parameters by referring to **Table 5-10**.

If **Video only** is selected, the output file does not contain any audio information. This option applies to the scenario where video is extracted from a media file.

Table 5-10 Audio parameters

Parameter	Description
Audio Codec	Audio codec. Possible values include **AAC** and **HEAAC1**. The default value is **AAC**.
Audio Channel	Possible values include **Stereo**, **Mono**, and **5.1 Channel**. The default is **Stereo**.
Sampling Rate	Choose one from **Auto**, **22050**, **32000**, **44100**, **48000**, and **96000**. The default value is **Auto**. The unit is Hz. **Auto** indicates adaptive sampling.
Bitrate	Bitrate of an output audio. The value is 0 or an integer ranging from 8 to 1,000. Unit: kbit/s

Step 9 Click **OK**.

----End

Modifying a Transcoding Template Group

You can modify a custom template group, including the video parameters, audio parameters, and template name, to meet your service requirements.

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Custom Template Groups**.

Step 3 Locate the target template group and click **Modify** in the **Operation** column.

Step 4 Reconfigure the parameters that you want to modify. For details about the parameters, see **Creating a Transcoding Template Group**.

Step 5 Click **OK**.

----End

Deleting a Transcoding Template Group

You can delete a template group that is no longer used.

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Custom Template Groups**.

Step 3 Locate the target template group and click **Delete** in the **Operation** column.

Step 4 Click **Yes**.

----End

5.3 System Templates

There are multiple preset one-in multi-out and one-in one-out transcoding templates. You can select one that meets your needs when creating a transcoding task.

Procedure

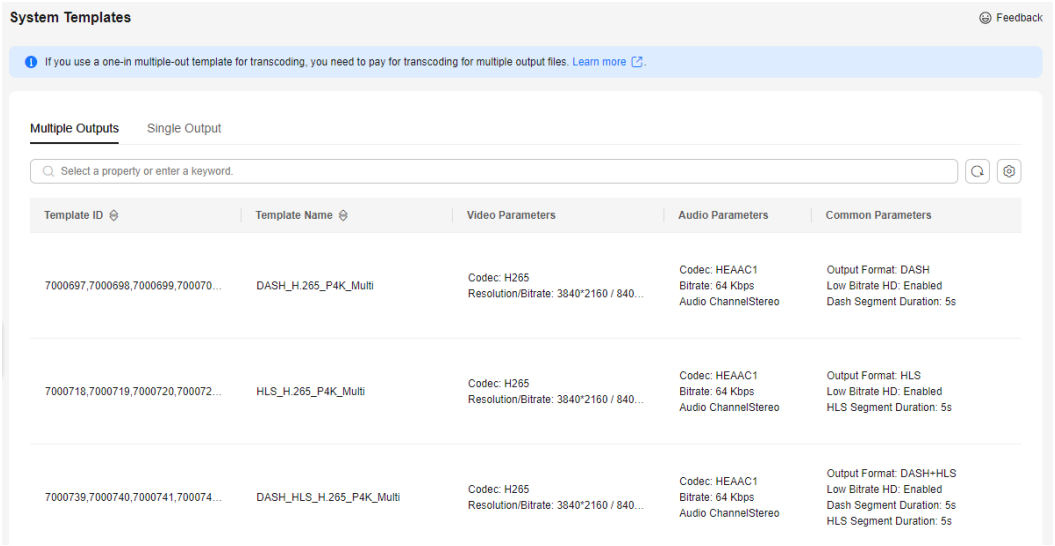
Step 1 Log in to the **MPC console**.

Step 2 In the navigation pane on the left, choose **Global Settings** > **System Templates** to go to the **System Templates** page, as shown in **Figure 5-3**.

View one-in multi-out transcoding templates under the **Multiple Outputs** tab, and one-in one-out transcoding templates under the **Single Output** tab.

You can view the parameter settings of a transcoding template by **Template ID**, **Template Name**, **Video Parameters**, **Audio Parameters**, and **Common Parameters** to facilitate transcoding task creation.

Figure 5-3 System templates



----End

5.4 Event Notifications

You can configure event notifications before submitting a media processing task. Once the task is executed, you will receive notifications on the event you subscribe to. This function depends on the SMN service. Therefore, SMN charges you based on the number of notification messages. For details about the price, see **SMN Pricing Details**.

Creating an SMN Topic

Step 1 Log in to the SMN console.

Step 2 In the navigation pane on the left, choose **Topic Management** > **Topics**.

Step 3 Click **Create Topic** in the upper right corner.

The **Create Topic** dialog box is displayed. **Table 5-11** describes the required parameters.

Table 5-11 Topic parameters

Parameter	Description
Topic Name	Specifies the topic name, which • Contains only letters, digits, hyphens (-), and underscores (_), and must start with a letter or digit. • Contains 1 to 255 characters. • Must be unique and cannot be modified after the topic is created.
Display Name	This parameter is optional. When sending an email: • If the display name is not specified, the sender is displayed as ***username*@example.com**. • If the display name is specified, the email sender is presented as ***Display name*<*username*@example.com>**.
Enterprise Project	Centrally manages cloud resources and members by project.
Tag	Specifies a key-value pair. Tags identify cloud resources so that you can easily categorize and search for your resources.

Step 4 Click **OK**.

Step 5 Click **Add Subscription** in the **Operation** column of the new topic. The **Add Subscription** dialog box is displayed.

Configure the subscription protocol and endpoints. See **Figure 5-4**.

Figure 5-4 Adding a subscription

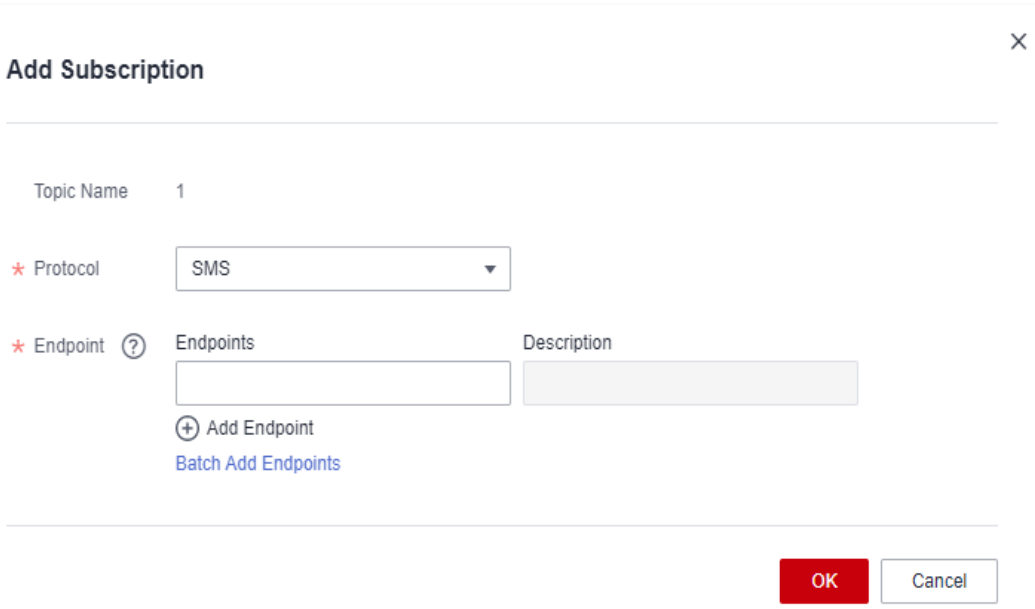


Table 5-12 describes the subscription parameters.

Table 5-12 Subscription parameters

Parameter	Description
Topic Name	Name of the topic to be subscribed to. Retain the default value.
Protocol	Message notification method. Select a protocol from the drop-down list. The common protocols used by MPC are **SMS**, **Email**, **HTTP**, and **HTTPS**.
Endpoint	Specifies the IP address of a subscription endpoint. You can enter up to 10 SMS, email, HTTP, or HTTPS endpoints, one in each line. • **SMS**: Enter one or more valid phone numbers. The format is **+** *country code phone number*, for example, +8600000000000. Subscribers will receive a subscription confirmation message valid for 48 hours and must confirm the subscription to receive messages published to the topic. • **Email**: Enter one or more valid email addresses, for example, ***username*@example.com**. Subscribers will receive a subscription confirmation email valid for 48 hours and must confirm the subscription to receive messages published to the topic. • If you select **HTTP** or **HTTPS**, enter a public network address and confirm the subscription, for example, **https://example.com/notification/action**. HTTPS is recommended, as it is more secure than HTTP.

Step 6 Click **OK** to add a subscription. You can view the subscription on **Topic Management** > **Subscriptions**.

After the subscription is added, the configured subscription endpoint will receive a subscription confirmation message. The subscription confirmation link is valid for 48 hours. You need to confirm the subscription within the validity period so that you can receive messages published to the topic.

----End

Configuring a Topic Policy

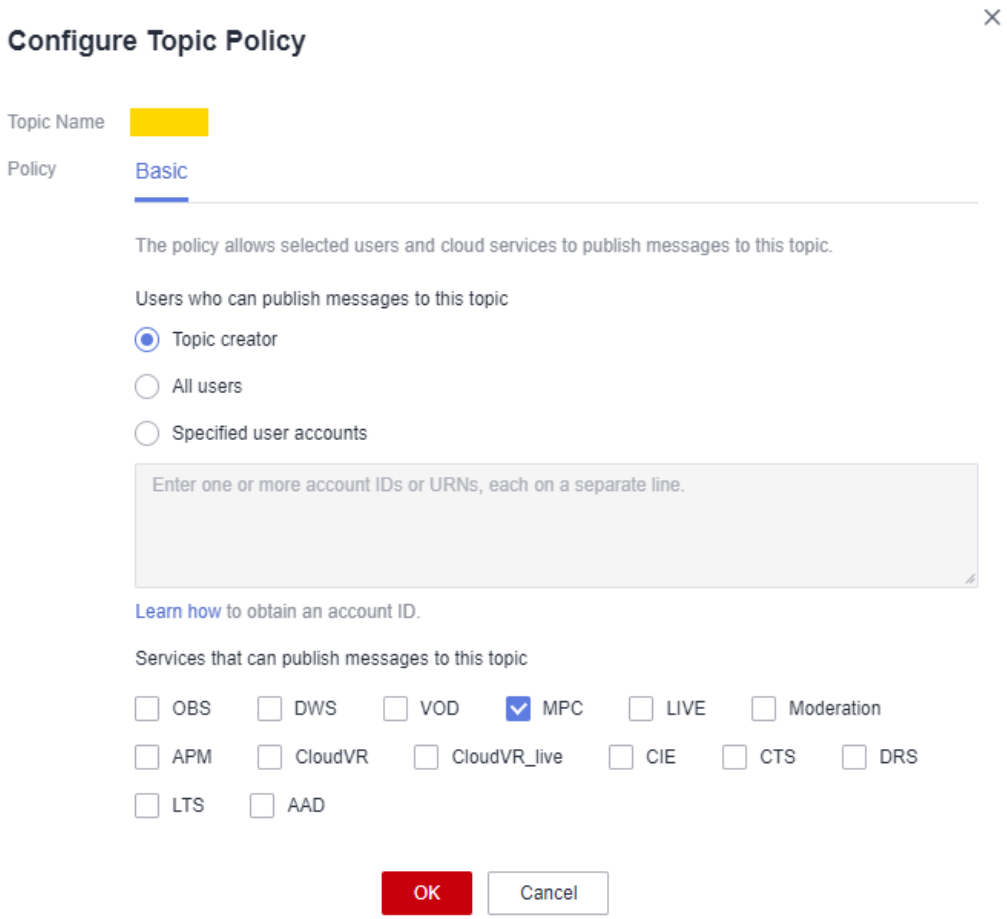
Step 1 Log in to the SMN console.

Step 2 In the navigation pane on the left, choose **Topic Management** > **Topics**.

Step 3 Click **More** > **Configure Topic Policy** in the **Operation** column of the created topic.

Step 4 Configure topic policy parameters. See **Figure 5-5**.

Figure 5-5 Configuring a topic policy



On the displayed page, set **Policy** of the access policy to **Basic**. In the basic mode, you can only set the permission to publish messages for users and services. See **Figure 5-5**.

Table 5-13 Description for configuring topic policies in basic mode

Parameter	Settings	Description
Users who can publish messages to this topic	Topic creator	Only users under the same account as the topic creator have the permission to publish messages to this topic.
	All users	All users have the permission to publish messages to the topic.
	Specified user accounts	Only specified users have the permission to publish messages to the topic. Users are specified in the format of **urn:csp:iam::*domainId*:root**, in which ***domainId*** indicates the account ID of a user. Every two users are separated with a comma (,). SMN does not limit the number of users you can specify, but the total length of a topic policy cannot exceed 30 KB. **NOTE** • Enter the account ID of the user and click **OK**. Other information is automatically supplemented by the system. • To obtain a user's account ID, log in to the SMN console, hover the mouse cursor over the username in the upper right corner and choose **My Credentials** from the drop-down list.
Services that can publish messages to this topic	An example is **MPC**. The services that can publish messages to a topic vary depending on regions.	Select **MPC**. MPC has the permissions to access the topic.

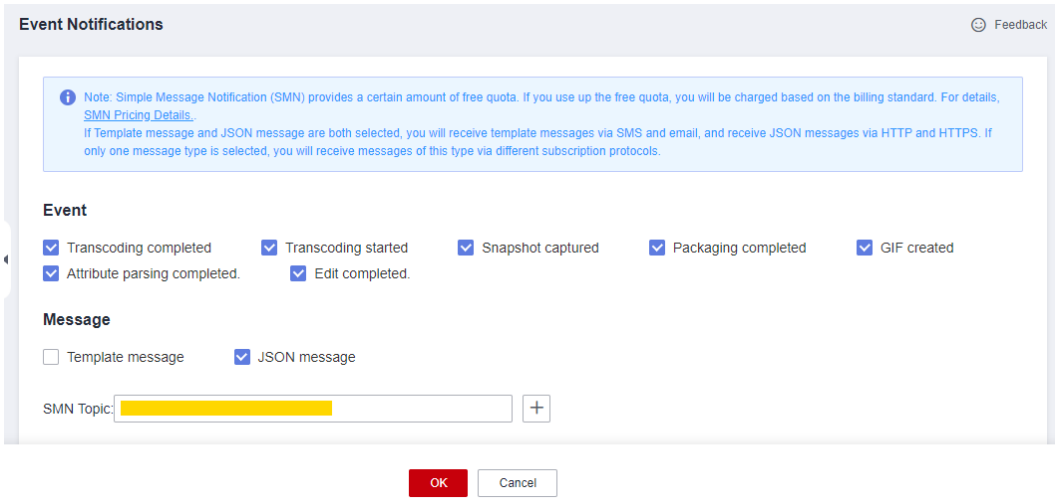
----End

Configuring Event Notifications

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Event Notifications**.

Figure 5-6 Event notifications



Step 3 Select one or more events.

Step 4 Select one or more message types.

Template Message Body describes a template message body. **JSON Message Body** describes the fields in a JSON message body.

NOTE

If **Template message** and **JSON message** are both selected, you will receive template messages via SMS and email, and receive JSON messages via HTTP and HTTPS.

Step 5 Select an SMN topic.

Step 6 Click **OK**.

----End

Template Message Body

- The following is an example of a template message used for transcoding started:
  Dear user, your video transcoding task (task ID: {task_id}) has been started. Log in to the MPC console or call the transcoding API to obtain transcoding details.
- The following is an example of a template message used for a successful transcoding, snapshot, packaging, and animated GIF task:
  Dear user, your video {transcoding/snapshot/packaging/animated GIF} task (task ID: {task_id}) has been completed. Log in to the MPC console or call the transcoding API to obtain details.
- The following is an example of a template message used for a failed transcoding, snapshot, packaging, and animated GIF task:
  Dear user, an error occurs when processing your video {transcoding/snapshot/packaging/animated GIF} task (task ID: {task_id}). Error code: {err_code}. Error information: {err_msg}.

6 Media Processing

6.1 Creating a Video Transcoding Task

You can select a video transcoding template and create a video transcoding task to transcode video files stored in OBS buckets.

Prerequisites

- An input video file has been uploaded to an OBS bucket. MPC is used in the same region as the OBS bucket. If the video file has not been uploaded, upload it by referring to **Uploading Media Files**.
- MPC has been authorized to access the buckets that store the input file and output file. If MPC has not been authorized, authorize MPC by referring to **Authorizing Access to Cloud Resources**.
- If you want to receive the task status updates, configure the event notifications function. For details, see **Configuring Event Notifications**.
- If you want to use a custom transcoding template, create a transcoding template first. For details, see **Creating a Transcoding Template**.

Restrictions

Supported video codecs: H.264, H.265, MPEG-2, MPEG-4, MJPEG, VP6/7/8/9, WMV1/2/3, and ProRes 422. If the input file is not in one of the preceding formats, transcoding will fail.

Procedure

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Media Processing** > **Transcoding**.

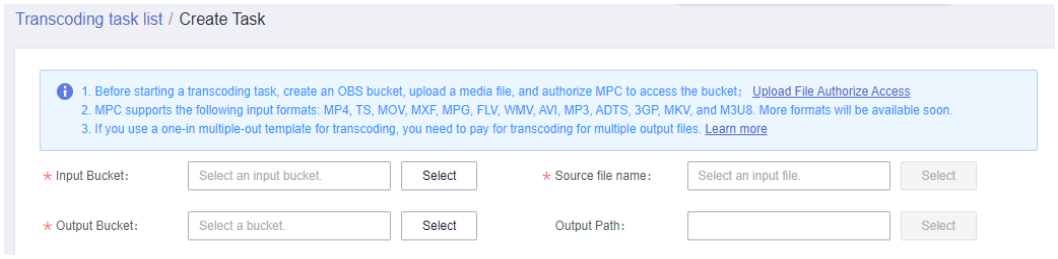
Step 3 On the displayed page, click **Create Task**.

On the **Create Task** page, configure video transcoding parameters.

Step 4 Configure basic parameters, as shown in **Figure 6-1**.

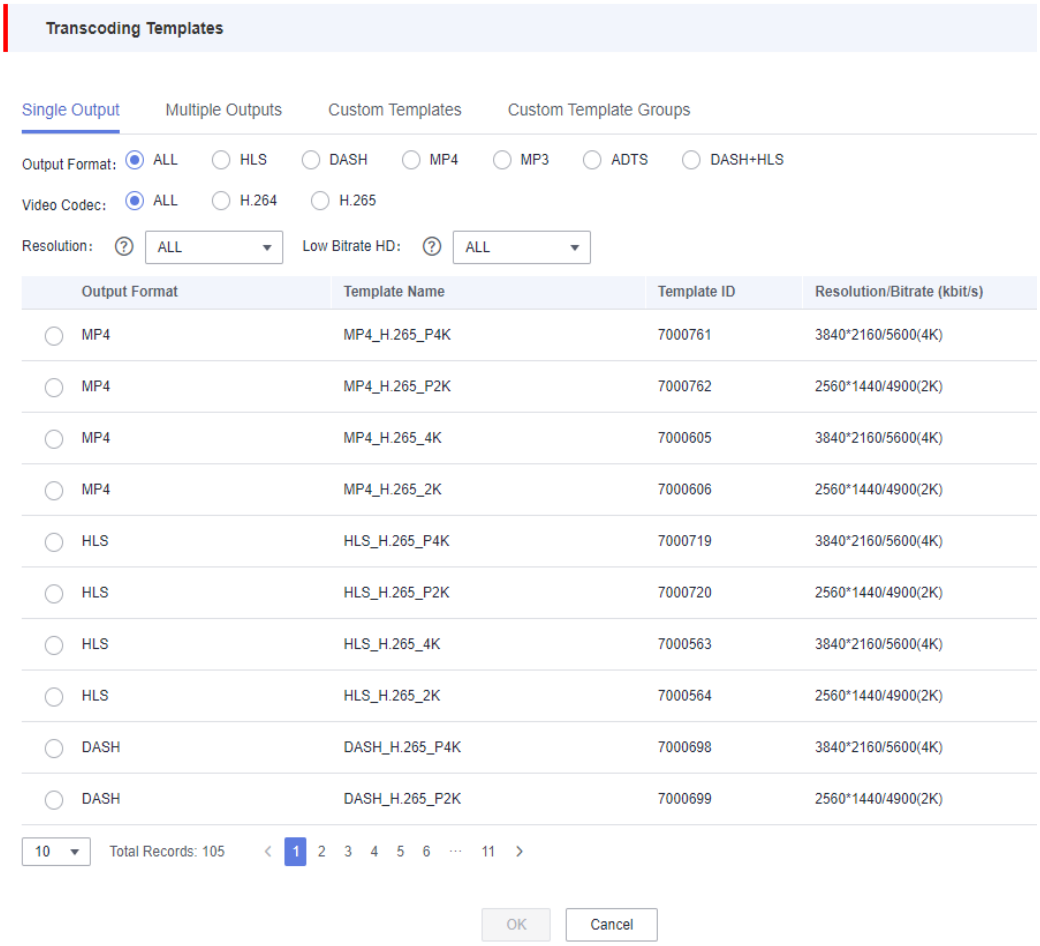
Select the bucket and file name of the source video, and the bucket and output path of the transcoded video.

Figure 6-1 Creating a transcoding task



Step 5 Select a transcoding template that best fits your needs, as shown in **Figure 6-2**.

Figure 6-2 Transcoding templates



A large number of **Single Output** and **Multiple Outputs** templates are preset in MPC. System templates are preferred as they contain common parameters such as the definition, bitrate, and resolution. You can choose **Global Settings** > **System Templates** to view the parameters of a system template on the MPC console.

NOTICE

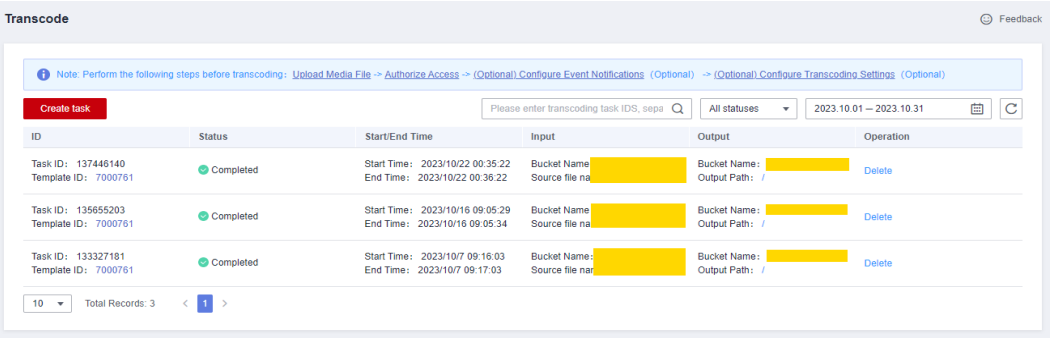
- Audio files cannot be transcoded using a video transcoding template.
- GIF files can be transcoded only to MP4 files.

Step 6 Click **OK**.

Step 7 View the task status in the task list.

You can view details about transcoding tasks of the past 60 days.

Figure 6-3 Transcoding task list



- If transcoding succeeds, click **Output Path** in the **Output** column to switch to the OBS console, where you can view, download, and share the transcoded video file.
- If transcoding fails, view the failure cause in the **Output** column for troubleshooting.

----End

6.2 Creating an Audio Transcoding Task

You can select an audio transcoding template and create an audio transcoding task to transcode audio files stored in OBS buckets. The fee for audio transcoding is different from that for video transcoding. For details, see **Pricing Details**.

Prerequisites

- An input audio file has been uploaded to an OBS bucket. MPC is used in the same region as the OBS bucket. If the audio file has not been uploaded, upload it by referring to **Uploading Media Files**.
- MPC has been authorized to access the buckets that store the input file and output file. If MPC has not been authorized, authorize MPC by referring to **Authorizing Access to Cloud Resources**.
- If you want to receive the task status updates, configure the event notifications function. For details, see **Configuring Event Notifications**.

Restrictions

The supported audio codecs: AAC, AC3, EAC3, HE-AAC, MP2, MP3, PCM (s161e, s16be, s241e, s24be, DVD), and WMA If the encoding format of the input file is not one of the preceding formats, transcoding will fail.

Creating an Audio Transcoding Template

MPC has six built-in one-in one-out audio transcoding templates. If the presets do not meet your requirements, you can perform the following steps to customize a one-in one-out audio transcoding template.

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Global Settings** > **Custom Templates**.

Step 3 Click **Custom Templates**.

Step 4 Set the basic information, including the template name and output format.

- The template name can be up to 128 characters long. Only letters, underscores (_), and digits are allowed.
- Select **MP3** or **ADTS** as the output format.

Step 5 Set audio parameters. See **Table 1**.

Table 6-1 Audio parameters

Parameter	Description
Audio Codec	Audio codec. Possible values include **AAC** and **HEAAC1**. The default value is **AAC**.
Audio Channel	Possible values include **Stereo**, **Mono**, and **5.1 Channel**. The default is **Stereo**.
Sampling Rate	Choose one from **Auto**, **22050**, **32000**, **44100**, **48000**, and **96000**. The default value is **Auto**. The unit is Hz. **Auto** indicates adaptive sampling.
Bitrate	Bitrate of an output audio. The value is 0 or an integer ranging from 8 to 1,000. Unit: kbit/s

Step 6 Click **OK**.

----End

Procedure

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Media Processing** > **Transcoding**.

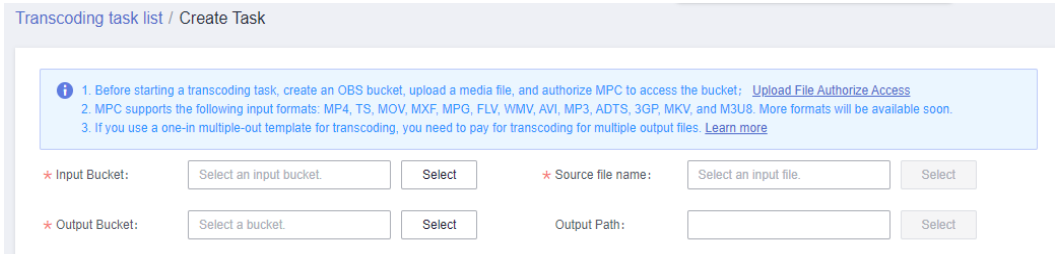
Step 3 On the displayed page, click **Create Task**.

On the **Create Task** page, configure audio transcoding parameters.

Step 4 Configure basic parameters, as shown in **Figure 6-4**.

Select the bucket and file name of the source audio, and the bucket and output path of the transcoded audio.

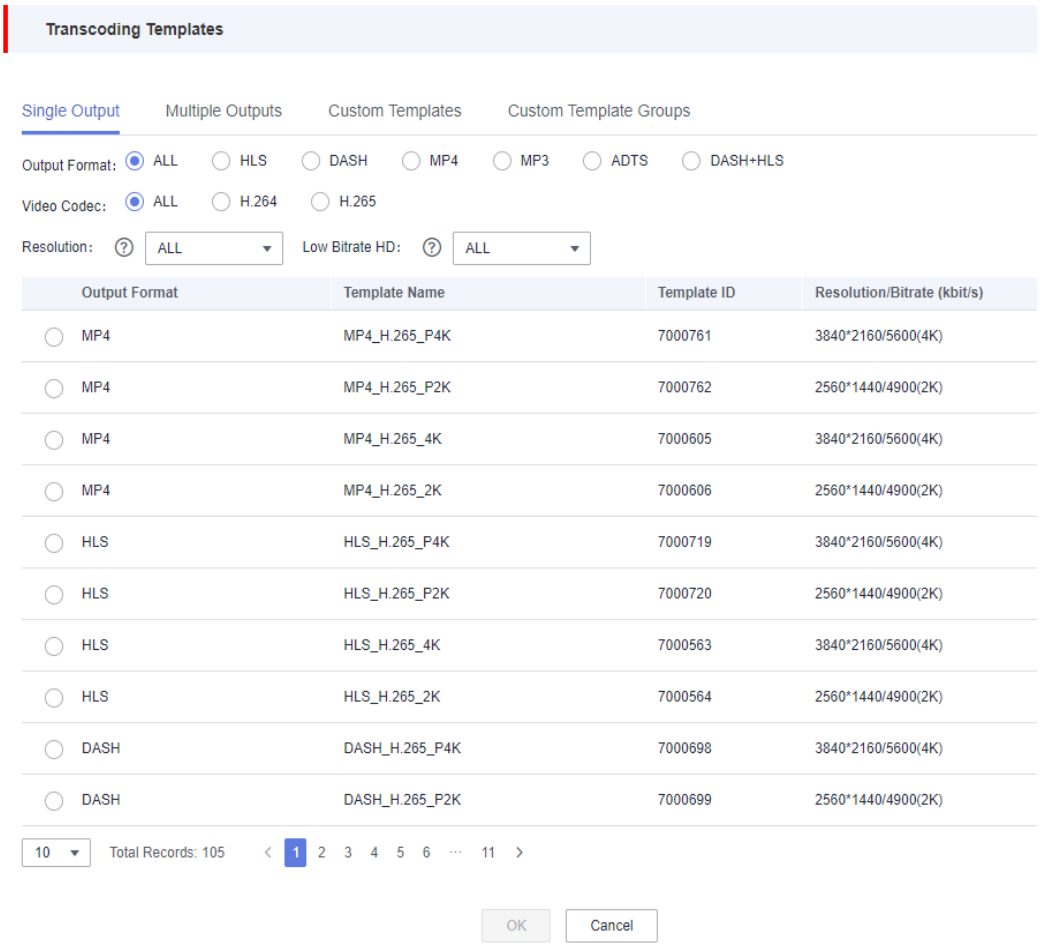
Figure 6-4 Creating a transcoding task



Step 5 Select a transcoding template that best fits your needs.

- If you select the preset **One Output** template, select **MP3** or **ADTS** for **Output Format**.
- If you select **Custom Templates**, **create an audio transcoding template**.

Figure 6-5 Transcoding templates

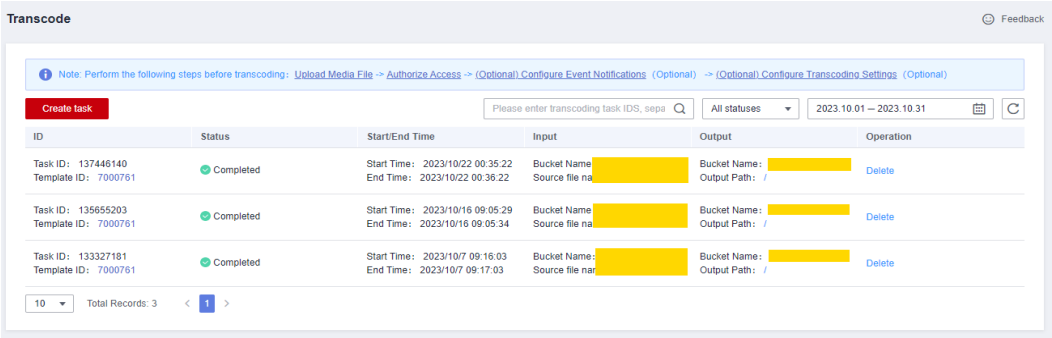


Step 6 Click **OK**. The transcoding task starts running.

Step 7 View the task status in the task list.

You can view details about transcoding tasks of the past 60 days.

Figure 6-6 Transcoding task list



----End

6.3 Creating a Packaging Task

You can create a packaging task to convert the packaged format of a video file stored in an OBS bucket without changing its resolution and bitrate.

Prerequisites

- An input video file has been uploaded to an OBS bucket. MPC is used in the same region as the OBS bucket. If the video file has not been uploaded, upload it by referring to **Uploading Media Files**.
- MPC has been authorized to access the buckets that store the input file and output file. If MPC has not been authorized, authorize MPC by referring to **Authorizing Access to Cloud Resources**.
- If you want to receive the task status updates, configure the event notifications function. For details, see **Configuring Event Notifications**.

Restrictions

- Supported input formats: MP3, MP4, FLV, and TS
- Supported output formats: HLS and MP4

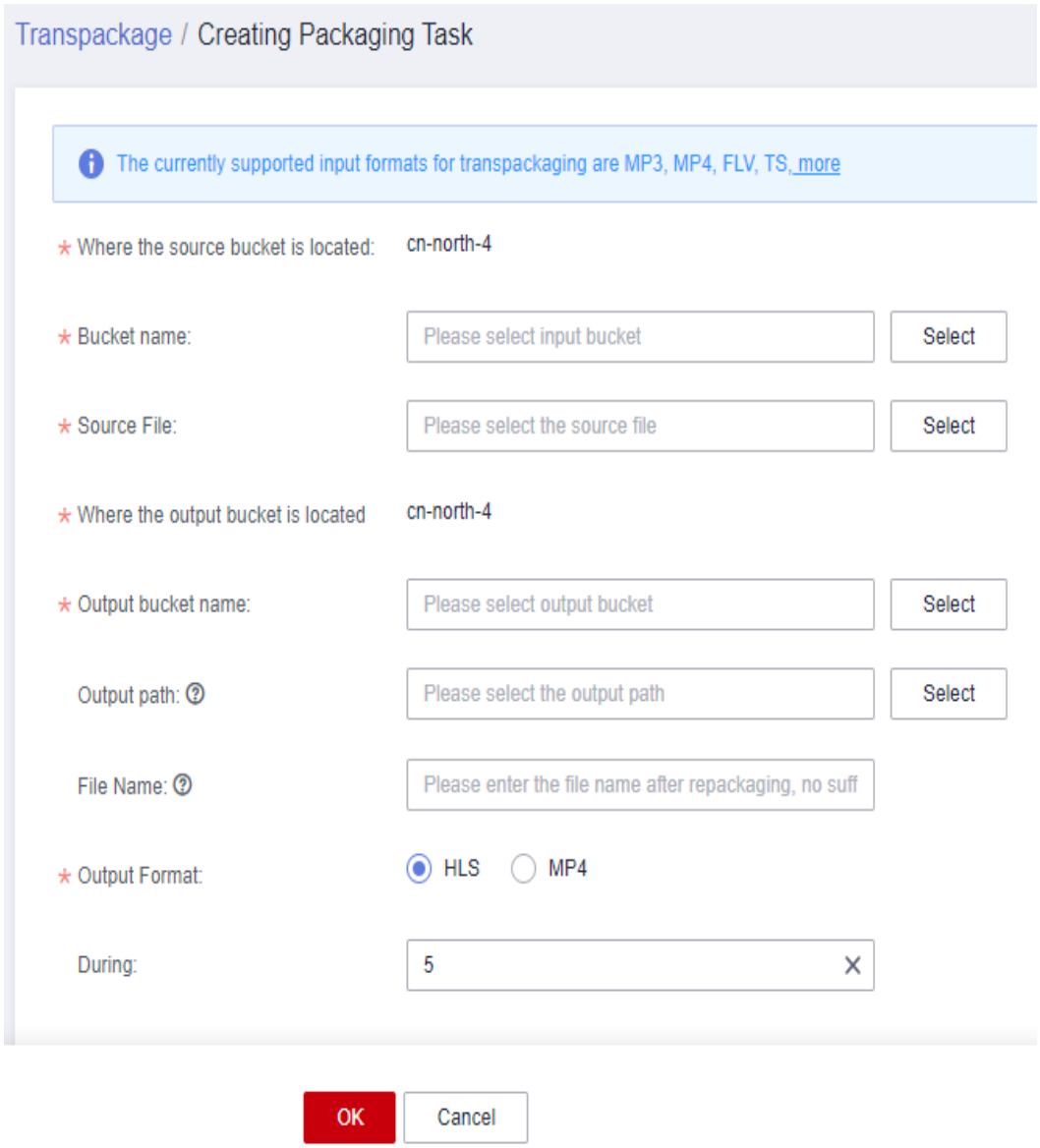
Procedure

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Media Processing** > **Packaging**.

Step 3 On the displayed page, click **Create Task**.

Figure 6-7 Packaging tasks



Step 4 Configure task parameters by referring to **Table 6-2**.

Table 6-2 Parameters

Parameter	Description
Where the source bucket is located	Region where the OBS bucket for storing the source video file is
Bucket name	OBS bucket for storing the source video file
Source File	Path for storing the source video file
Output Region	Where the output bucket is located

Parameter	Description
Output bucket name	OBS bucket for storing the packaged video file
Output Path	Path for storing the output file
File Name	Name of the packaged file
Output Format	Format of the output file. Currently, only HLS and MP4 are supported.
During	HLS segment length. This parameter is used only when **Output Format** is **HLS**. The value ranges from 2 to 10. Default value: **5**

Step 5 Click **OK**.

Step 6 View the task status in the task list.

When the task status changes to **Completed**, you can obtain the packaged file from the output path.

----End

6.4 Creating an Animated GIF Task

You can create an animated GIF task to capture video segments at the specified time range for generating an animated GIF file.

Prerequisites

- An input video file has been uploaded to an OBS bucket. MPC is used in the same region as the OBS bucket. If the video file has not been uploaded, upload it by referring to **Uploading Media Files**.
- MPC has been authorized to access the buckets that store the input file and output file. If MPC has not been authorized, authorize MPC by referring to **Authorizing Access to Cloud Resources**.
- If you want to receive the task status updates, configure the event notifications function. For details, see **Configuring Event Notifications**.

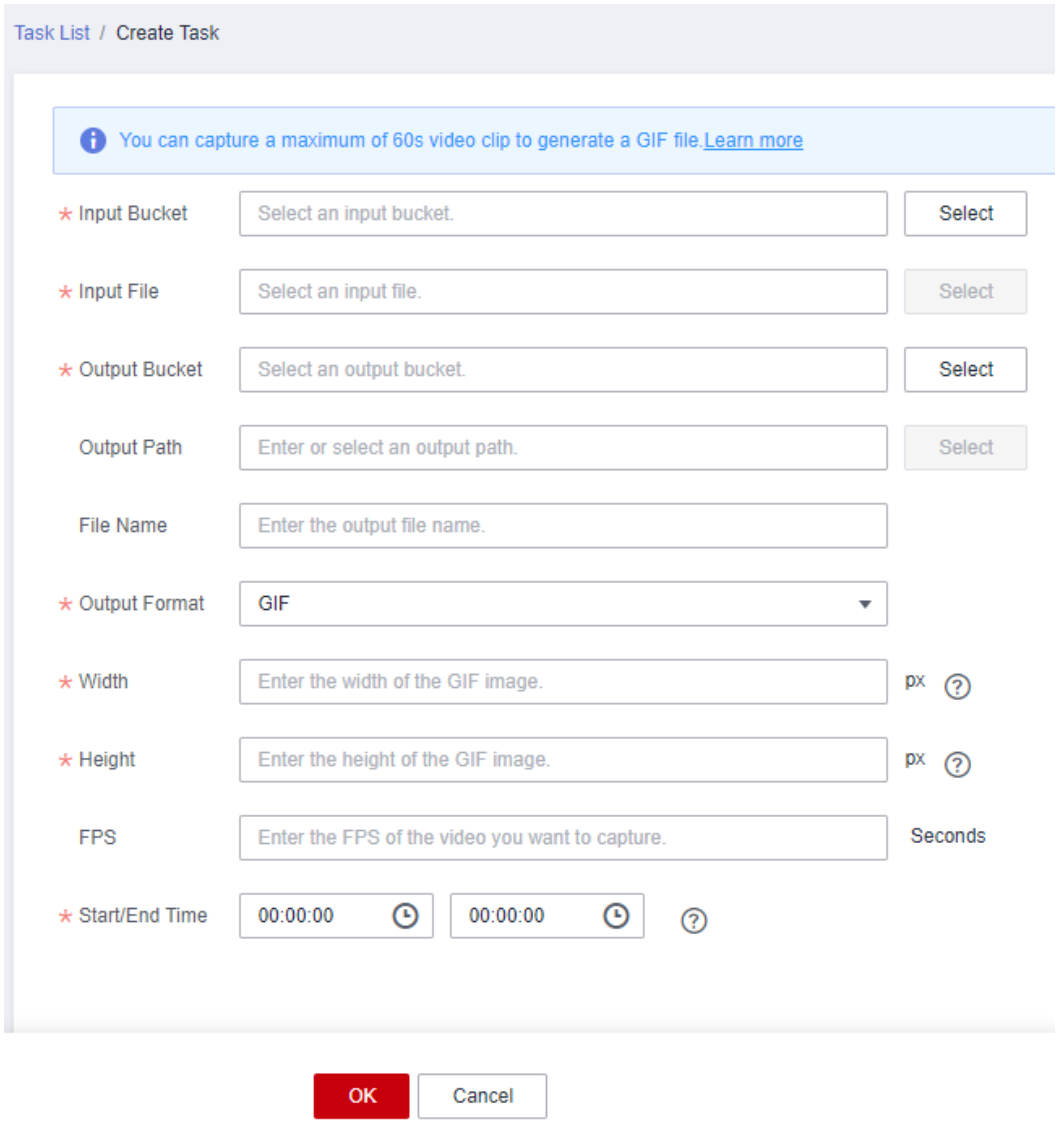
Procedure

Step 1 Log in to the MPC console.

Step 2 In the navigation pane, choose **Media Processing** > **Animated GIFs**.

Step 3 Click **Create Task**. The **Create Task** page is displayed.

Figure 6-8 Creating a task



Step 4 Configure parameters, as shown in **Table 6-3**.

Table 6-3 Parameters

Parameter	Description
Input Bucket	OBS bucket for storing the source video file
Input File	Path for storing the source video file
Output Bucket	OBS bucket for storing the animated GIF file
Output Path	Path for storing the animated GIF file
File Name	Name of the animated GIF file
Output Format	Only GIF is supported.

Parameter	Description
Width	Width of the animated GIF file. The value is **–1**, **0,** or a multiple of 2 from 32 to 3840. **NOTE** • If the width is **–1**, the width is automatically auto-filled based on the height. In this case, the height cannot be **–1** or **0**. • If the width is **0**, the height must be **0**. The GIF image width and height depend on the video width and height.
Height	Height of the animated GIF file. The value is **–1**, **0,** or a multiple of 2 from 32 to 2160.
FPS	Frame rate of the animated GIF file. Value range: an integer ranging from 1 to 75 Default value: **15**
Start/End Time	Start time and end time for generating an animated GIF file. The end time cannot be earlier than or equal to the start time, and the maximum difference between the start time and end time is 60 seconds.

Step 5 Click **OK**.

Step 6 View the task status in the task list.

When the task status changes to **Completed**, you can obtain the animated GIF file from the output path.

----End

A Appendix

A.1 JSON Message Body

Table A-1 describes the fields in a JSON message.

Table A-1 JSON message body

Parameter	Type	Description
event_type	String	Event type. Possible values include: • **TranscodeComplete**: A transcoding task has completed. • **TranscodeStart**: A transcoding task starts. • **ThumbnailComplete**: A snapshot task has completed. • **RemuxComplete**: A packaging task has completed. • **AnimatedGraphicsComplete**: An animated GIF file has been generated. • **ParseComplete**: Attribute parsing completed
transcode_info	**TranscodeInfo**	Transcoding information. This parameter is used only when **event_type** is **TranscodeComplete** or **TranscodeStart**.
thumbnail_info	**ThumbnailInfo**	Snapshot information. This parameter is used only when **event_type** is **ThumbnailComplete**.
animated_graphics_info	**AnimatedGraphicsInfo**	GIF image information. This parameter is used only when **event_type** is **AnimatedGraphics-Complete**.

Parameter	Type	Description
remux_info	**RemuxInfo**	Packaging information. This parameter is used only when **event_type** is **RemuxComplete**.

Table A-2 TranscodeInfo parameter description

Parameter	Type	Description
task_id	string	Task ID
status	tring	Event status. • **TRANSCODING**: started • **SUCCEED**: completed • **FAILED**: failed
create_time	string	Time when a task is created
start_time	string	Time when a task starts
end_time	string	Time when a task ends
intput	**FileAddress**	Storage location of an input file
output	**FileAddress**	Storage location of an output file
description	string	Task description
media_detail	**MediaDetail**	Transcoding details. This field is unavailable if transcoding fails.

Table A-3 MediaDetail parameter description

Parameter	Type	Description
features	String[]	Task name
origin_para	**OriginPara**	Input file information
output_video_paras	**OutputVideoPara**[]	Information about multiple output media files
output_watermark_para	**OutputWatermarkPara**	Watermark information

Table A-4 OriginPara parameter description

Parameter	Type	Description
duration	Integer	Duration of an input file

Parameter	Type	Description
file_format	String	Input file format
video	**Video**	Input video file information
audio	**Audio**	Input audio file information

Table A-5 Video parameter description

Parameter	Type	Description
width	Integer	Video width
height	Integer	Video height
bitrate	Integer	Video bitrate
frame_rate	Integer	Video frame rate
codec	string	Video codec

Table A-6 Audio parameter description

Parameter	Type	Description
codec	string	Audio codec
sample	Integer	Audio sampling rate
channels	Integer	Audio channel
bitrate	Integer	Audio bitrate

Table A-7 OutputVideoPara parameter description

Parameter	Type	Description
template_id	Integer	ID of the template used by the output video
size	Integer	Video size
pack	string	Video packaging format
video	Video	Output file (video) information
audio	Audio	Output file (audio) information
file_name	string	Output file name
conver_duration	double	Converted duration

Parameter	Type	Description
error	Error	Error information

Table A-8 OutputWatermarkPara parameter description

Parameter	Type	Description
time_duration	Int32	Watermark duration

Table A-9 AnimatedGraphicsInfo parameter description

Parameter	Type	Description
task_id	String	Task ID
status	String	Event status. • **SUCCEED**: completed • **FAILED**: failed
create_time	String	Time when a task is created
start_time	String	Time when a task starts
end_time	String	Time when a task ends
description	String	Task description. If a task is abnormal, this field indicates error details.
input	**FileAddress**	Input file information
output	**FileAddress**	Output file information
output_param	**AnimatedGraphicsOutputParam**	Animated GIF parameters

Table A-10 FileAddress parameter description

Parameter	Type	Description
location	String	Region where the OBS bucket is.
bucket	String	OBS bucket name.

Parameter	Type	Description
object	String	File path. • If this parameter is used for an input, a specific path must be specified. • If this parameter is used for an output, only the directory for storing the outputs needs to be specified.
file_name	String	Name of an output file. • If this parameter is specified, the output object name is **object/file_name**. • If this parameter is not specified, the output object name is **object/***xxx*, where *xxx* is allocated by the system.

Table A-11 AnimatedGraphicsOutputParam parameter description

Parameter	Type	Description
format	String	Output file format. Currently, only GIF format is supported.
width	Integer	Width of an output file
height	Integer	Height of an output file
start	Integer	Start time Unit: millisecond
end	Integer	End time
frame_rate	Integer	Frame rate of the output file

Table A-12 ThumbnailInfo parameter description

Parameter	Type	Description
task_id	string	Task ID
status	tring	Event status. • **SUCCEED**: completed • **FAILED**: failed
create_time	string	Time when a task is created
start_time	String	Time when a task starts
end_time	string	Time when a task ends

Parameter	Type	Description
intput	**FileAddress**	Storage location of an input file
output	**FileAddress**	Storage location of an output file
description	string	Task description
output_file_name	String	Output file name
thumbnail_info	**PicInfo**[]	Snapshot details. This field is unavailable if capturing snapshots fails.

Table A-13 PicInfo parameter description

Parameter	Type	Description
pic_name	String	Snapshot file name

Table A-14 RemuxInfo parameter description

Parameter	Type	Description
task_id	String	Task ID
status	String	Event status. • **SUCCEED**: completed • **FAILED**: failed
create_time	String	Time when a task is created
start_time	String	Time when a task starts
end_time	String	Time when a task ends
description	String	Task description. If a task is abnormal, this field indicates error details.
input	**FileAddress**	Input file information
output	**FileAddress**	Output file information
output_param	**RemuxOutputParam**	Packaging parameters

Table A-15 RemuxOutputParam parameter description

Parameter	Type	Description
format	String	Output format. Possible values are: • HLS • MP4
segment_duration	Integer	Segment duration. This parameter is only used when **format** is **HLS**. The value ranges from 2 to 10. Default value: **5** Unit: second

