MetaStudio

User Guide

Issue 01

Date 2025-08-22





Copyright © Huawei Cloud Computing Technologies Co., Ltd. 2025. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Cloud Computing Technologies Co., Ltd.

Trademarks and Permissions

HUAWEI and other Huawei trademarks are the property of Huawei Technologies Co., Ltd. All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei Cloud and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

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/

i

Contents

1 Prerequisites	1
2 Service Overview	2
3 Data Analysis	5
4 Purchase Guide	8
4.1 Purchasing Yearly-billed MetaStudio Resources	8
4.2 Renewing a Resource Package	11
5 Permissions Management	13
5.1 Creating a User and Assigning MetaStudio Permissions	
5.2 IAM User Isolation	15
5.2.1 Account Settings	15
5.2.2 Asset Ownership Allocation	19
6 Image Modeling	21
6.1 Shooting a Video of a Human	21
6.2 Downloading the Video Shooting Guide	38
6.3 Creating a Virtual Avatar Customization Task	38
6.4 Viewing a Created Virtual Avatar	41
6.5 Script Examples	43
6.5.1 Script 1: About MetaStudio	43
6.5.2 Script 2: Virtual Avatar Video Production Guide	44
6.5.3 Script 3: A Deep Dive into West Lake	45
7 Voice Modeling	47
7.1 Recording an Audio of a Human	47
7.2 Downloading the Audio Recording Guide	50
7.3 Creating a Voice Modeling Task (with In-House Models)	50
7.4 Creating a Voice Modeling Task (with Third-party Models)	53
7.5 Checking a Voice	56
7.6 Voice Update History	57
7.7 Purchasing a Voice Package	58
7.7.1 Languages Supported by Third-party Voices	58
7.7.2 Purchasing a DupDub Voice Package	
7.8 Script Examples (Advanced Edition)	68

7.8.1 Live Commerce	68
7.8.2 Marketing	72
8 Video Production	76
8.1 About the GUI	
8.2 Video Production	78
8.3 Video Asset Management	85
8.4 Common Configuration for Video Production	87
8.5 Special Words	111
8.6 Action Insertion	113
8.7 Subtitling	116
9 Livestreaming	119
9.1 About the GUI	119
9.2 Livestreams	123
9.3 Interactions	139
9.4 Products	142
9.5 Livestreaming Tasks	144
9.6 Interconnection with a Live Platform	144
9.7 Livestream Settings	147
9.8 Configuring Livestreaming Materials	149
10 Intelligent Interaction	163
10.1 Prerequisites	163
10.2 Intelligent Interaction Scenarios	163
10.3 Creating an Interactive Dialog Project (with Third-party Intelligent Brains)	165
10.3.1 Using AI Ask	165
10.3.2 Creating an Interactive Dialog Project	166
10.4 Creating an Interactive Dialog Project (Custom Development)	171
10.4.1 Using SDKs and APIs	172
10.4.2 Using SDKs	175
10.5 Viewing an Interactive Dialog Project	177
10.6 Verifying the Interactive Dialog Link Validity	
10.7 Saving Interactive Dialog Records	
10.8 Common Configuration for Intelligent Interaction	
10.9 Creating a Keyword List	189
11 Asset Management	192
11.1 Asset Sources	192
11.2 Uploading Assets	192
11.3 Managing Assets	194
11.4 Receiving Assets	196
11.5 Returning Assets	198
12 Cloud Eye Monitoring	200

12.1 Monitored MetaStudio Events	
12.2 Creating Alarm Rules	201
13 Appendix	204
13.1 Recording an Audio on a Mobile Phone	204
13.2 Guide to Livestreaming on a Third-party Platform	206
13.3 FAQs	207
13.3.1 In Which Regions Is MetaStudio Available?	
13.3.2 What Content Is Not Allowed on MetaStudio?	207
13.3.3 How Do I Integrate MetaStudio?	
13.3.4 FAQs Related to MetaStudio Virtual Avatars	207
13.3.5 What If the Live Video on a Third-party Platform Is Not Clear?	209
13.3.6 What If the Livestream on a Third-party Platform Is Interrupted Unexpectedly?	210
13.3.7 How Do I Switch the Language and Voice of Intelligent Interaction in Real Time on Met	
	212

1 Prerequisites

Prerequisites

Subscribe to MetaStudio by referring to the following procedure:

- 1. Register a Huawei Cloud account.
- 2. Complete real-name authentication.

If you are a Huawei Cloud (International) user, you need to complete realname authentication when you:

purchase and use cloud services on Huawei Cloud nodes in the Chinese mainland. In this case, real-name authentication is required by the laws and regulations of the Chinese mainland. If the regions you select when subscribing to MetaStudio contains the Chinese mainland, real-name authentication is required.

- 3. You need to top up your account before using MetaStudio.
- 4. Log in to the **MetaStudio console** to subscribe to MetaStudio as instructed.

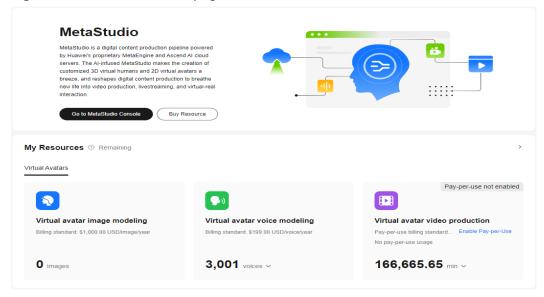
Notes

- Access the MetaStudio console from the Chrome browser.
- If your Huawei Cloud account cannot meet your requirements, you can create IAM users by following Creating a User and Assigning MetaStudio Permissions for refined permissions management.
- If your Huawei Cloud account is frozen, you can only view the MetaStudio service content but cannot add, delete, or modify content. If your Huawei Cloud account is restricted, you cannot subscribe to MetaStudio resources or enable pay-per-use billing. In case of account freezing or restriction, solve the issue in a timely manner to prevent service unavailability. For details, see What If My Account Is Frozen, Deleted, or Has a Low Balance?
- If MetaStudio is frozen, its service is unavailable to you but you can still subscribe. To ensure service availability, **submit a service ticket** to unfreeze MetaStudio.

2 Service Overview

Access the **MetaStudio console** and select **Overview** to go to the page shown in **Figure 2-1**.

Figure 2-1 Service overview page



The MetaStudio service overview page consists of three areas:

- Overview
- My Resources

Overview

You can see the introduction to MetaStudio on top of the page and perform the following operations:

- Click **Go to MetaStudio Console** to perform operations such as voice modeling, image modeling, video production, and livestreaming.
- Click Buy Resource to go to the page for buying resources. You can select Region, Service, Product, and Billing Mode. For details about the billing of each product, see Billing Overview.

My Resources

In the **My Resources** area, you can view the remaining resource details, as shown in **Table 2-1**. You can also click **My Resources** in the navigation pane to view the remaining resource list.

If a billing item supports pay-per-use billing, you can enable or disable pay-per-use billing:

- Enabling pay-per-use billing: Click **Enable Pay-per-Use** in the resource card. In the dialog box displayed, agree to the agreement. Click **OK**.
- Disabling pay-per-use billing: Click **Disable** in the resource card. In the dialog box displayed, click **OK**.

Table 2-1 My resources

Resource Category	Resource	Description
	Virtual avatar image modeling	The lower left of the card shows the remaining resource quantity. You can click to view the remaining resource quantity details.
	Virtual avatar voice modeling	The lower left of the card shows the remaining resource quantity. You can click to view the remaining resource quantity details.
1	Virtual avatar video production	The lower left of the card shows the remaining resource quantity. You can click to view the remaining resource quantity details. You can enable or disable pay-per-use billing
	Virtual avatar livestreaming	for virtual avatar video production. This card appears only when the administrator has allocated livestream resources to you and the remaining resource quantity is not 0.
		The lower left of the card shows the number of remaining livestreams available.
		You can enable or disable pay-per-use billing for virtual avatar livestreaming.

Resource Category	Resource	Description
	Virtual avatar intelligent interaction	 This card appears only when: you have submitted a service ticket for enabling virtual avatar intelligent interaction;
		 the administrator has allocated intelligent interaction resources to you and the remaining resource quantity is not 0.
		The lower left of the card shows the number of remaining dialogs available.

3 Data Analysis

You can view the number of created virtual avatars, number of voice model training tasks, and number and duration of composited videos, as well as the corresponding trend charts.

Constraints

- By default, Data Analysis is not displayed. You need to submit a service ticket to apply for the permission to use it.
- You can view only historical data of the previous day and earlier.
- An IAM user can log in as an IAM user or a federated user. If an IAM user logs
 in with both roles simultaneously, only the IAM username is displayed in the
 IAM User drop-down list box when the master account is used for login. The
 federated username of the current user and the data generated after the
 federated username-based login cannot be viewed, but other data can.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- Step 2 In the navigation pane on the left, choose **Data Analysis** to go to the **Data Analysis** page, as shown in **Figure 3-1**.

For details, see Table 3-1.

Figure 3-1 Data analysis

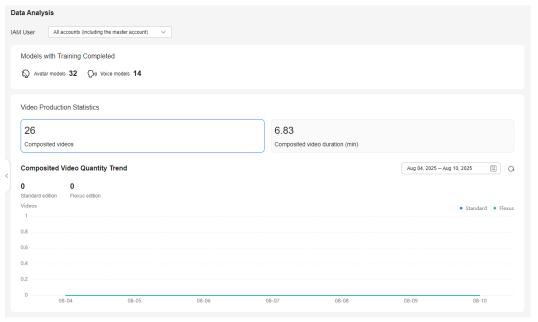


Table 3-1 About the Data Analysis page

Area	Description
IAM User	This parameter is available only when the master account is used for login.
	• If IAM User Isolation is enabled and you log in using the master account, you can view data of all IAM users or filter to view data of a specific IAM user. If you log in as an IAM user, you can view only the data of this IAM user.
	If IAM User Isolation is disabled and you log in using both the master account and IAM account, you can view data of all IAM users.
	Note: An IAM user can log in as an IAM user or a federated user. If an IAM user logs in with both roles simultaneously, only the IAM username is displayed in the IAM User dropdown list box when the master account is used for login. The federated username of the current user and the data generated after the federated username-based login cannot be viewed, but other data can.
Models with Training Completed	You can view the number of created virtual avatar models and that of voice models.
	The created, unactivated, activated, and frozen model assets, as well as those moved to the recycle bin, are counted.

Area	Description
Video Production Statistics	You can view the number and duration of composited videos. You can click the Composited videos or Composited video duration (min) area to view the daily statistics in the trend chart below.
	The trend chart shows the number and duration of composited videos of the standard and Flexus editions, respectively.
	Note: You can view only historical data of the previous day and earlier.

----End

4 Purchase Guide

4.1 Purchasing Yearly-billed MetaStudio Resources

You can purchase yearly-billed resources for virtual avatar image modeling and voice modeling on the MetaStudio console. During the valid period of the purchased resources, you can create images or voices.

Prerequisites

You can **submit a service ticket** to buy yearly-billed resources for virtual avatar image modeling and voice modeling.

Notes

• The following applies to resources of both image and voice modeling. Voice modeling is used as an example here.

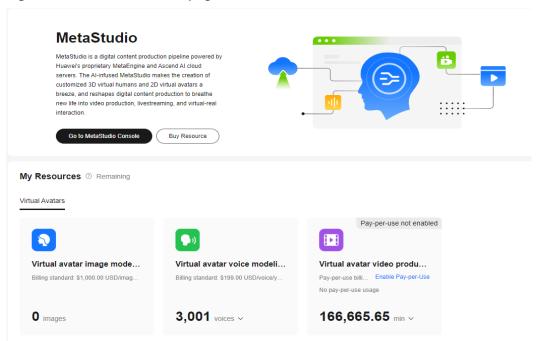
Assume that you purchase a one-year voice modeling resource package:

- You can create only one voice asset within the validity period (one year).
- After one year, the purchased resource package will be frozen. If you do not renew after the package is frozen, the voice asset created using the package will also be frozen and unavailable.
- If the grace period and retention period expire after the one-year validity period, the billed resources will be deleted, along with the voice asset created using these resources.
- To delete a voice or image asset created using a purchased package with auto-renewal enabled, you need to cancel auto-renewal first. A message will appear in the warning dialog box when you delete the voice or image asset. Perform operations as prompted.
- If auto-renewal is not enabled for the purchased package but you need to use the created voice or image asset after it expires, renew the package by referring to **Renewing a Resource Package**.

Procedure

Step 1 Log in to the **MetaStudio console** and select **Overview** to go to the page shown in **Figure 4-1**.

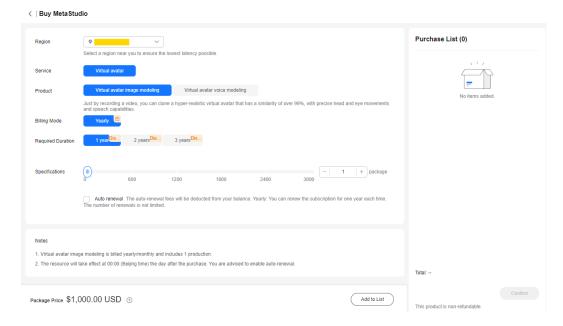
Figure 4-1 Service overview page



Step 2 Click Buy Resource to go to the Buy MetaStudio page, as shown in Figure 4-2.

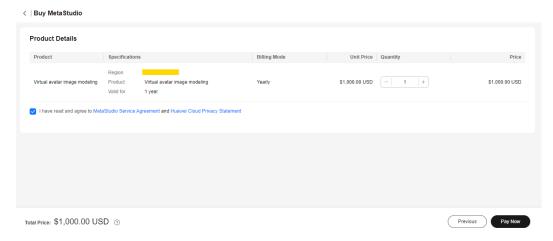
You can purchase yearly-billed resources for virtual avatar image modeling and voice modeling.

Figure 4-2 Purchase page



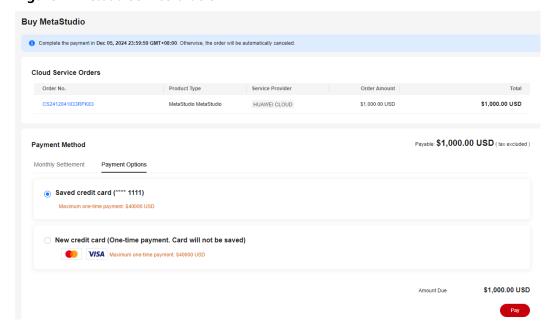
- **Step 3** You can specify the duration and quantity of resources to purchase. Then click **Add to List** to add them to the purchase list on the right.
- **Step 4** After adding all desired resources to the purchase list, click **Confirm** to go to the **Product Details** page, as shown in **Figure 4-3**.

Figure 4-3 Product details



Step 5 Check the box of I have read and agree to MetaStudio Service Agreement and Huawei Cloud Privacy Statement, and click Pay Now. You can see the order in the Cloud Service Orders area, as shown in Figure 4-4.

Figure 4-4 Cloud service orders



Step 6 Check the order, select a payment method, and click **Pay**.

After the order is paid, a message indicating successful purchase will appear.

----End

4.2 Renewing a Resource Package

If auto-renewal is not enabled for the purchased package but you need to use the created voice or image asset after it expires, please follow this section to renew the package.

When viewing and using image or voice assets, you can follow the reminder of expiration and renewal to renew your resource packages. You can also use any of the following methods for renewal.

- Renewal Method 1
- Renewal Method 2
- Renewal Method 3

Notes

- When a resource package is about to expire, a **notification** will be sent to remind the user of renewal.
- No discount is provided for resource package renewal.

Prerequisites

You have purchased at least one resource package by referring to **Purchasing Yearly-billed MetaStudio Resources**.

Renewal Method 1

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** In the navigation pane, choose **My Resources**.
- **Step 3** Click **Renew** in the **Operation** column of the desired resource to go to the resource renewal page.
- **Step 4** Configure package parameters as prompted.
- **Step 5** Confirm the configuration, click **Pay**, and then complete the payment.
 - ----End

Renewal Method 2

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Models**.
- **Step 4** Select the **Virtual Humans** tab, move the cursor to the desired avatar card, and click **Renew** to go to the resource renewal page.
- **Step 5** Configure package parameters as prompted.

Step 6 Confirm the configuration, click **Pay**, and then complete the payment.

----End

Renewal Method 3

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Billing** on the top navigation bar to go to the **Overview** page of Billing Center.
- **Step 3** In the navigation pane, choose **Orders** > **Renewals** to go to the **Renewals** page.
- **Step 4** In the **Manual Renewals** tab, find the desired resource package and click **Renew** or **More** > **Enable Auto-Renewal** in the **Operation** column on the right.
- **Step 5** Configure package parameters as prompted.
- **Step 6** Confirm the configuration, click **Pay**, and then complete the payment.

----End

5 Permissions Management

5.1 Creating a User and Assigning MetaStudio Permissions

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

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

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

This section describes the procedure for assigning permissions (see **Process Flow**).

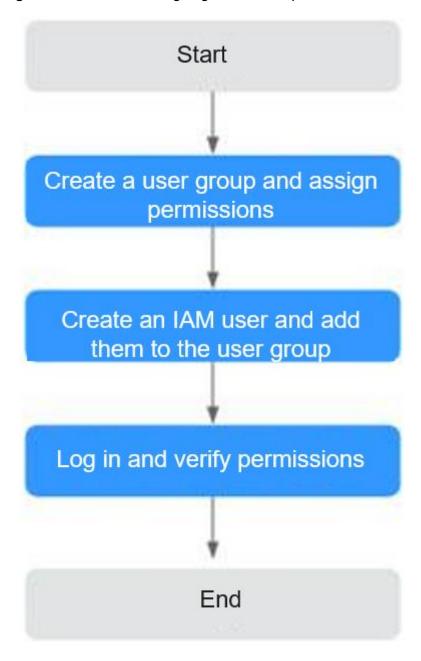
Prerequisites

Before assigning permissions to user groups, you should learn about systemdefined policies supported by MetaStudio and select the policies based on service requirements.

For details about the system-defined policies supported by MetaStudio, see **MetaStudio Permissions**. For the permissions of other services, see **System-defined Permissions**.

Process Flow

Figure 5-1 Process for assigning MetaStudio permissions



1. Create a user group and assign permissions.

Create a user group on the IAM console, and assign the group the **MetaStudio FullAccess** permission (of MetaStudio administrator).

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

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

3. Log in and verify permissions.

Log in to the console as the newly created user, and verify whether the user has the **MetaStudio FullAccess** permission.

Choose **MetaStudio** from the service list. On the page displayed, click **Create** under **Image modeling** and create a virtual avatar by referring to **Image Modeling**. If the creation is successful, **MetaStudio FullAccess** has taken effect.

MetaStudio Custom Policies

You can create custom policies to supplement the system-defined policies of MetaStudio.

To create a custom policy on Huawei Cloudthe cloud service platform, choose either visual editor or JSON.

- Visual editor: Select cloud services, actions, resources, and request conditions. This does not require knowledge of policy syntax.
- JSON: Create a JSON policy or edit an existing one.

For details, see **Creating a Custom Policy**. Examples of common MetaStudio custom policies:

Example 1: Assigning all permissions for MetaStudio

Example 2: Assigning the read-only permission for MetaStudio

5.2 IAM User Isolation

5.2.1 Account Settings

By default, IAM users under the same Huawei Cloud account share resources. Specifically:

• Sharing of resources purchased by each IAM user: Each IAM user's total available resource quantity is the sum of available resources purchased by all IAM users. Since these resources are shared, an IAM user's available quantity

- will decrease if other IAM users consume resources, even if this user has not used any.
- Sharing of all IAM users' assets: All assets uploaded by each IAM user can be shared, such as image and voice assets (including production tasks), composited videos (including scripts and tasks), live rooms, and intelligent interaction projects.

Prerequisites

By default, **IAM User Isolation** is not displayed in the navigation pane of the MetaStudio console. To obtain the permission for using this function, you need to **submit a service ticket** and provide the **project ID** of the region where the current Huawei Cloud account is.

Once enabled, **IAM User Isolation** is visible only to Huawei Cloud account users, but not IAM users.

Notes

If the Huawei Cloud account has customized the asset isolation capability using the API field **X-App-UserId**:

- After IAM user isolation is enabled, asset isolation by IAM accounts overrides the custom asset isolation capability.
- Enabling IAM user isolation makes custom asset isolation invalid, but disabling it restores custom asset isolation.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** In the navigation pane, choose **IAM User Isolation** > **Account Settings** to go to the **Account Settings** page, as shown in **Figure 5-2**.

Figure 5-2 Account settings



See Table 5-1.

Table 5-1 Parameters

Item	Parameter	Description
IAM User Settings	IAM User Isolation	 IAM user isolation can be enabled. Options: Disable: By default, this function is disabled. That is, purchased resources and assets of each IAM user under the current account can be shared by all IAM users. Enable: An IAM user cannot view or use the
		assets uploaded or created by another IAM user before this function is enabled. An asset uploaded or created after this function is enabled is managed and used by its owner. For details about asset isolation, see Table 5-2 .
		Enabling or disabling IAM user isolation does not change the following:
		• Purchased resources of all IAM users are shared.
		 The Huawei Cloud account can view and use the resources and assets of all IAM users.

After IAM user isolation is enabled, you can see the isolation details, as shown in **Table 5-2**. If an asset or configuration is not in the table, IAM user isolation is not enabled.

Table 5-2 Asset isolation

Asset	Asset Subcategor y	Isolated	Description
Image modelin g	Image modeling task	Yes	IAM users can only view the image modeling tasks that they will submit.
	Image model	Yes	IAM users can only view the virtual avatar image models that they will generate.
Voice modelin g	Voice modeling task	Yes	IAM users can only view the voice modeling tasks that they will submit.
	Voice model	Yes	IAM users can only view the virtual avatar voice models that they will generate.

Asset	Asset Subcategor y	Isolated	Description
Video producti on	Video draft	Yes	IAM users can only view and edit the video drafts that they will create. NOTE Each time a video is composited, a video production task is generated.
	Video production task	Yes	IAM users can only view the video production tasks that they will submit.
	Composited video	Yes	IAM users can only view and edit the videos that they will composite.
Intellige nt	Dialog project	Yes	IAM users can only view and edit the dialog projects that they will create.
interacti on	Skill	No	The skills of all IAM users can be viewed and used.
Livestrea ming	Live room	Yes	IAM users can only view and edit the live rooms that they will create. NOTE Each time a livestream starts, a livestreaming task is generated.
	Live template	No	The live templates of all IAM users can be viewed and used. If the current IAM user uses another IAM user's live template that contains isolated assets, the isolated assets are unavailable. Consequently, an error will be reported. IAM users are advised to use their own live templates.
	Interaction rule library	Yes	IAM users can only view and edit the interaction rule libraries that they will create.
	Intelligent interaction	No	The intelligent interaction settings of all IAM users can be viewed and used.
	Product	Yes	IAM users can only view and edit the products that they will create.
	Livestreami ng task	Yes	IAM users can only view and edit the livestreaming tasks that they will create.
	Interconnect ed live platform	No	The information about interconnected live platforms of all IAM users can be viewed and used.

Asset	Asset Subcategor y	Isolated	Description
	Livestream settings	No	Each IAM user can configure a livestream as needed. The configuration takes effect for all IAM users.
Asset uploade d locally	-	Yes	IAM users can only view and edit the assets that they will upload.

----End

5.2.2 Asset Ownership Allocation

After IAM user isolation is enabled, you can use your Huawei Cloud account to change the ownership of all assets on the **Asset Ownership Allocation** page.

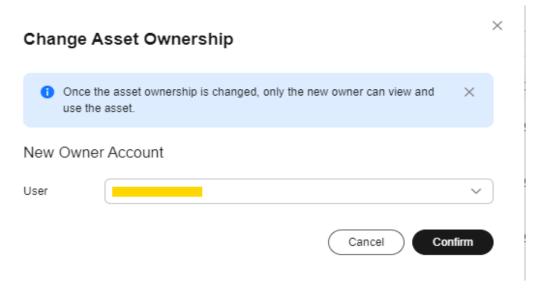
Notes

- After IAM user isolation is enabled, the ownership of assets uploaded or created by each IAM user automatically changes to the Huawei Cloud account.
- The ownership of assets in video drafts, live rooms, and interactive dialogs cannot be changed.
- The ownership of assets of federated users (virtual enterprise users) cannot be changed.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** In the navigation pane, choose **Asset Ownership Allocation**.
 - On the page displayed, you can view the name/ID, type, owner account name/ID, and update time of all assets.
- **Step 3** Locate the desired asset and click **Change Ownership** in the **Operation** column to go to the **Change Asset Ownership** dialog box, as shown in **Figure 5-3**.

Figure 5-3 Changing asset ownership



Step 4 Select the new asset owner from the drop-down list and click **Confirm**.

The asset ownership has been changed.

----End

6 Image Modeling

6.1 Shooting a Video of a Human

Thanks for using Huawei Cloud MetaStudio. This guide will help you produce virtual avatar images.

♠ CAUTION

- Please note that the quality of virtual avatar image modeling is closely related to your recordings. To create better virtual avatars, please read the following virtual avatar video shooting standards carefully.
- Do not enable the HDR mode (available on some devices) during shooting.

Overview of virtual avatar video shooting standards:

1. Shooting Specifications

The total video duration is 5 minutes, the resolution and frame rate are 4K/25 FPS or higher, and the format is MP4/MOV.

2. Site Layout

- Background: Use a green-screen background with even color and without damage or wrinkles.
- Lighting: Use even and stable illumination and standard daylight color temperature. Ensure that the model is well-lighted and there is no shadow on his/her face, and the light does not change significantly during recording.
- Camera position: The camera is aligned with the person's eyes and focuses on the face area to ensure that the face is clear. A vertical video is recommended.
- Voice pickup: Keep the recording environment quiet and free from noise interference.

3. Model Image

Face: Avoid light reflection caused by excessive oil on the face. Ensure that there is no scattered hair on the face. To avoid light reflection,

do not wear glasses. Ensure that the facial outline is clear and the model is enthusiastic.

 Dress code: Do not wear clothes in a color similar to green, or clothes with green patterns. Do not wear metal earrings, bracelets, or watches that may reflect light.

4. Shooting Process

The model should smile and act naturally (including the head). After the action is complete, hands should be put back to the initial position. **The model should keep the mouth closed when he or she is not speaking**.

5. Video Submission

The **original voice** of the video for training **must be retained**, and the audio and video must be in sync. Do not clip the video. **Ensure that the narration**, **silence**, **and gestures of the video are retained in the same video**.

Shooting guide and script examples

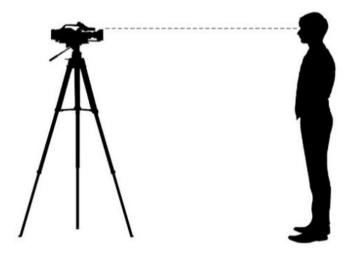
- Appendix 1: Check Items
- Appendix 2: Guide to Choreography Customization
- Appendix 3: Script Examples

Camera Installation & Shooting Specifications

Notes:

- You are advised to use a lens with an equivalent focal length of 40 mm to 85 mm. Do not use an ultra-wide angle lens.
- Vertically secure the camera to the tripod at a proper height. The camera is aligned with the person's eyes and focuses on the face area (see Figure 6-1) to ensure that the face is clear. If you record the whole body, ensure that there is a green-screen gap at the bottom of the model's feet.

Figure 6-1 Camera position



• A vertical video is recommended. The model is in the middle of the frame. Keep the margin to ensure that the model is within the frame when he or she is making a gesture. See Figure 6-2.

Figure 6-2 Shooting example





Full coverage of green screen

Gesture within the frame

- Avoid overexposure and underexposure.
- The model should be at least 1.5 meters away from the green-screen background to avoid shadows.
- See Table 6-1.

Table 6-1 Recommended camera shooting specifications

Shooting Specification s	Standard
Resolution and frame rate	4K/25 FPS or higher
Aperture	Less than F4 to avoid significant blurring due to a shallow depth of field
ISO	100-800 to avoid noise caused by excessive ISO
White balance	3,500–5,500 K, fixed white balance throughout the process
Recording format	H.264/H.265 encoding
Bitrate	> 60 Mbit/s
Color bit depth	10 bits or 8 bits

Shooting Specification s	Standard
Shutter speed	\leq 1/ (Frame rate x 4) Example: When the frame rate is 60 FPS, the shutter speed must be \leq 1/ (60 x 4 = 240).

FAQs:

- What if my device can shoot 1080p videos only?
 If the device cannot shoot 4K videos, try 1080p (1080 x 1920) half-body shooting to capture face details.
- 2. Can I use my mobile phone for shooting if I do not have a camera?

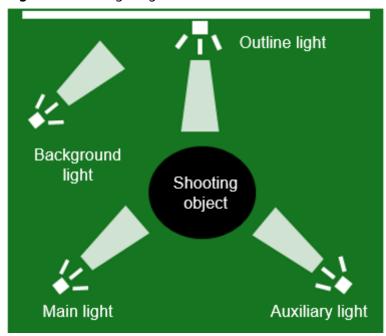
 Mobile phones are not recommended for photo taking. If necessary, adjust the recording specifications of your phone to 4K/30 FPS or 4K/60 FPS and use a stabilizer to ensure video stability. Other shooting requirements, such as lighting and green screen, are the same as those in Camera Installation & Shooting Specifications.

Lighting

A proper lighting environment will significantly improve the shooting. We recommend that:

 Use three or four professional photography lights for lighting, including the main light, auxiliary light, product light (for the shooting of desktop products), background light, and outline light (optional). For details, see Figure 6-3.





- Ensure that the light does not change significantly during recording.
- The green-screen background is even and bright to avoid shadows or uneven brightness. Ensure that there is no shadow or reflection between the model/ object and the green-screen background.

FAQs:

1. What if I do not have so many lighting devices?

There is no need to worry about this. You only need to ensure that the person is evenly and stably illuminated and can be clearly distinguished from the green-screen background. **Ensure that there is no significant shadow on the face or body of the person.** If the number of lighting devices is limited, **light the subject to be photographed first**, and then fill light on the green screen.

Voice Pickup

MetaStudio will synchronize the voice in the video with the lip movement of the person to improve lip sync training. The training result will go through technical review by experts.

For voice pickup:

- The audio and video must be in sync.
- The environment is quiet and free from noise interference, and the voice of the model is clear. **Minimize the background noise of the video**.
- Use a loudspeaker or other professional microphones with the camera, which will greatly reduce the background noise and other environmental noise.
 Avoid including the microphone in the frame so that the microphone will not appear in the image of the virtual avatar.

FAQs:

1. If someone intrudes or there is unexpected sound, such as thunder or car horn, during my shooting, do I need to shoot the video again?

According to our experience, a sound intrusion shorter than three seconds does not significantly affect the training. You only need to minimize the occurrences of similar burst sounds.

2. If I do not have a professional microphone or loudspeaker, can I use the built-in microphone of the camera for recording?

Most cameras' built-in microphones can also meet our voice recording requirements. MetaStudio can make a moderate compromise on the clarity of the voice, but ensure that the background noise is not too loud and there is no other sound, especially when the model is speaking.

Model Image

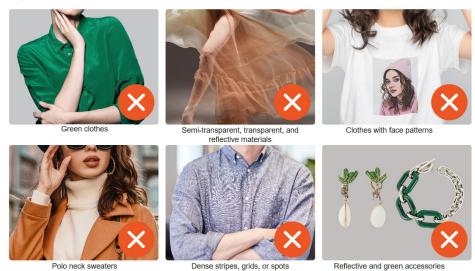
Virtual avatars do not support replacement of clothes, so the wearing of the model during recording will be the wearing of the virtual avatar.

Before shooting, check the following items of the image:

Dress code

- Avoid any color that is similar to that of the background. For example, do not wear green clothes or clothes with any green pattern when a green screen is used.
- Avoid using semi-transparent, transparent, and reflective materials, or wearing clothes with face patterns or excessive wrinkles.
- Avoid wearing turtleneck sweaters and turtleneck T-shirts.
- Avoid wearing clothes with dense stripes, grids, or spots because clothes
 of these types may cause moire patterns on the image.
- Avoid wearing reflective and green watches, ear nails, necklaces, or bracelets.

Figure 6-4 Dress code



• Facial requirements

- Keep a light and clean makeup to avoid reflection caused by excessive oil on the face.
- Do not wear glasses, sunglasses, or hats that will block your forehead and eyebrows.
- There is no scattered hair on the face and the background cannot be seen through the hair gap.
- There is no long scattered beard on the face.

Figure 6-5 Incorrect examples

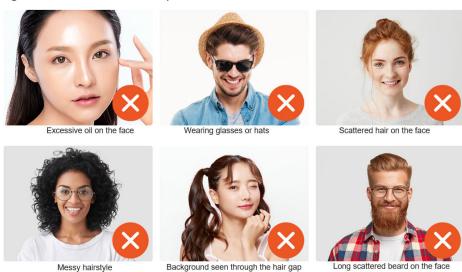
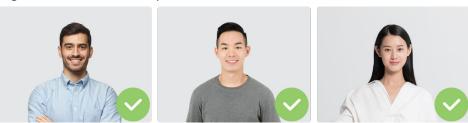


Figure 6-6 Correct examples



Requirements for Green-Screen Virtual Avatar Video Shooting

The hand movements, facial expressions, and postures of the model determine the postures and actions of the virtual avatar. Therefore, models should act and speak as naturally as possible during video shooting.

Record the video as instructed and **evaluate the recording process based on the actual requirements**.

- **Interaction not required**: 15–20 seconds of silence + 4–5 minutes of natural expression
- Interaction required: 15-20 seconds of silence + non-semantic action + 4-5 minutes of natural expression (For details, see Requirements for Interactive Virtual Avatar Video Shooting.)
- Choreography: 15-20 seconds of silence + 4-5 minutes of natural expression + shooting of video clips with choreography (Keep the camera position and person position unchanged. For details, see Appendix 2: Guide to Choreography Customization.)

Details:

• Silent period: Record the person in silence for about 15–20 seconds.

The model looks at the camera, smiles with his or her mouth closed, and remains silent. The model puts the hands at the initial position, as shown in the following figure.

Keep a proper proportion of the model.

Figure 6-7 Silent period



- Natural expression period: The lip movement, action, posture, and facial expression of the model speaking naturally are recorded for about four and half minutes.
 - The model reads the script paragraph by paragraph at a natural speaking speed and acts slightly. The head can move naturally.

Figure 6-8 Demo

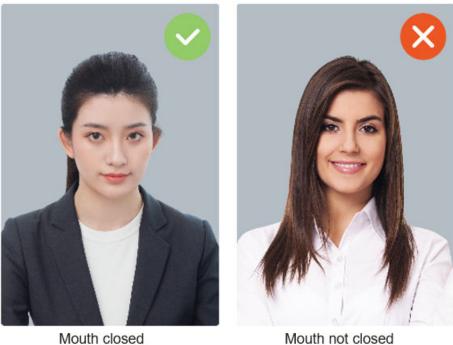


 The model's mouth should be fully closed and hands should be put back to the initial position during pauses. (Practice is recommended before shooting.)

Figure 6-9 Incorrect examples



Figure 6-10 Correct and incorrect examples



Mouth not closed

Recording precautions:

- If a speech error occurs, skip it or continue the speech without interrupting the shooting.
- Rotate or move the head within 15 degrees.
- Avoid actions with clear meanings, such as thumbs-up signs and number.
- Avoid actions that may block the face, such as resting the cheek on hands and scratching the head.
- Move within the frame and do not block the face (such as hands above the chin).

- Keep eye contact with the lens.
- Avoid wrong pronunciation. Do not speak too fast, too slow, or abruptly.

Requirements for Interactive Virtual Avatar Video Shooting

Recording requirements

- Keep the body still: Record all actions at a time. During the shooting, the model remains at the same position and does not shake. When the shooting starts, the model should keep the silent action for more than ten seconds.
- Keep silent during the five-second interval of actions: There are four actions. When speaking, act as naturally as possible. Keep silent during the silent period.

For details, see the example figure. Act as naturally as possible based on the action habits of the model.

• Recording examples

When acting, the model can **remain silent or read related text**. According to our experience, **speaking while acting makes the action more natural**. The reference text is as follows.

Table 6-2 Recording examples

Step	1	2	3
Text and action (Perform an action marked in <> while reading the text in the same line.)	<keep action="" for="" seconds.="" silent="" ten="" the=""></keep>	Welcome to the virtual human forum. Now, let's learn about the main application scenarios of virtual humans and related cutting-edge technologies.	5, 4, 3, 2, 1. < Count the number without speaking.> As mentioned above: < Stretch hands and then perform the silent action.>
Examples			

Table 6-3 Recording examples

Step	4	5	6
Text and action (Perform an action marked in <> while reading the text in the same line.)	5, 4, 3, 2, 1. <count number="" speaking.="" the="" without=""> Next, let's look at product A. <move action.="" and="" chest="" hand="" left="" past="" perform="" silent="" the="" then=""></move></count>	5, 4, 3, 2, 1. <count number="" speaking.="" the="" without=""> Next, let's look at product B. <move action.="" and="" chest="" hand="" past="" perform="" right="" silent="" the="" then=""></move></count>	5, 4, 3, 2, 1. < Count the number without speaking.> That is all for today's interaction recording. < Perform the silent action after lying down hands.>
Examples			

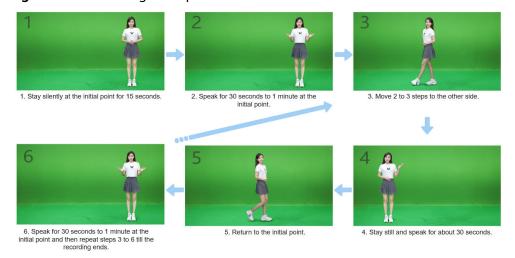
Then, let's shoot a video with natural expression of four to five minutes.

Requirements for Walking Virtual Avatar Video Shooting

If you need to record the image of a walking virtual avatar, the model should:

- 1. face the camera (kept still) and look at the lens when walking
- 2. walk in one direction for up to three steps.

Figure 6-11 Shooting example



Requirements for Real-Scene Virtual Avatar Video Shooting

If you want to create a real-scene virtual avatar image, **ensure that the background is static and does not change regularly or significantly**.

Real-scene virtual avatar videos do not need to be cropped. Therefore, green or transparent clothes is allowed.

Video Submission

See Table 6-4.

Table 6-4 Video submission requirements

Item	Description			
Deliverable	 After the shooting is complete, upload a video for training: MP4 (recommended) Less than 5 GB Original voice retained Same frame rate for the exported video and the source video when the video is post-processed 			
Duration	Five to six minutes. Do not clip the video. Ensure that the narration, silence, and gestures of the video are retained in the same video.			
Filter	If you need to add filters to the video, check the filter effect and ensure that the video is not distorted, blurred, or shaken. Then you can upload the video for training.			
Cropping	Within a specified period of time, the streamer's entire body must be included in the frame, and other unnecessary elements around the portrait, such as the edge of the green screen and shooting devices, must be eliminated.			
Naming	Naming rule: Company name_Model name_Shooting time (YYYYMMDD) Example: Huawei Cloud_Yunling_20230925.mp4			

Appendix 1: Check Items

After the shooting is complete, check whether the video meets the requirement of each check item in the table.

Table 6-5 Check items

Item	Satisfied (Yes/No)
The model keeps the mouth closed when he or she is not speaking.	
There is no significant shadow on the green screen.	
There is no broken or scattered hair on the model's face and head.	
The model remains at the same position throughout the shooting.	
The model does not stare at the teleprompter.	
The video duration is at least five minutes.	
The model does not wear green clothes or clothes with green patterns.	
The model does not wear reflective metal watches, ear nails, or bracelets.	
The model does not wear semi-transparent, transparent, or reflective clothes.	
The model does not wear glasses, sunglasses, or a hat.	
The model is within the frame when making gestures.	
The model keeps the microphone unseen.	
The video does not contain actions with clear meanings, such as thumbs-up sign and number.	
The model acts appropriately without blocking the face.	

Appendix 2: Guide to Choreography Customization

Due to the complexity of the choreography algorithm, the following requirements are added:

- After the 5-minute video of natural expression is recorded, keep the camera and model positions unchanged when recording the video of choreography.
- Keep the body still for more than 10 seconds.
- Putting hands back to the initial position each time an action is completed, and ensure that the hand movements are consistent, including the positions of two hands (for example, keeping the left hand above the right hand) and finger shapes. Wait for three to four seconds before starting the next action.
- To ensure natural facial expressions of the virtual avatar, the model needs to speak while acting.

Details:

Reference actions:

Number: 1, 2, 3

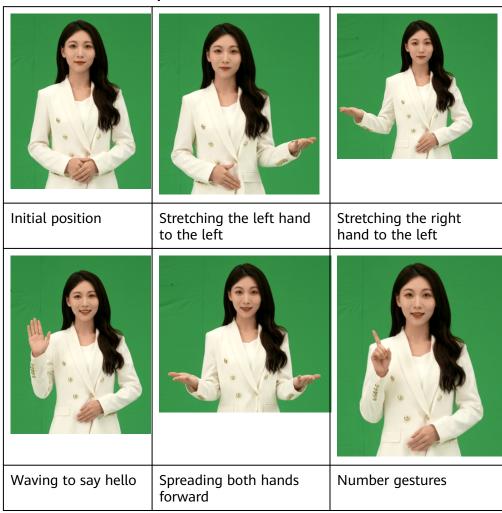
Common actions: greeting, saying goodbye/OK, giving likes, spreading hands leftward/rightward, lifting the left/right hand, and clenching a fist, etc.

Basic actions: stretching to the left or right, slightly/fully stretching to both sides, pointing to the upper left or upper right, and spreading forwards with one hand

Other actions: You can record any action you need. The number of actions is not limited, as long as the initial positions before and after recording the action are the same.

Note that the result of choreography depends on the consistency between the initial positions of the hand and body during recording. If the recording result is poor, choreography cannot be performed. Record videos as instructed by the guide. You are advised to record an action twice or three times and select the best one from them.

• Reference action examples:



• Script examples of choreography:

When acting, the model can remain silent or read related text. According to our experience, speaking while acting makes the action more natural.

Reference process and text:

Start recording the atomic actions as arranged.

<Speak without acting.>



5, 4, 3, 2, 1. *<Count the number without speaking.*>

Give the gesture of the number 1.

<Return to the silent action after making the gesture of the number 1 with either the left or right hand.>



5, 4, 3, 2, 1. *<Count the number without speaking.*>

Give the gesture of the number 2. < Return to the silent action after making the gesture of the number 2 with either the left or right hand.>



5, 4, 3, 2, 1. *<Count the number without speaking.*>

Give the gesture of the number 3. < Return to the silent action after making the gesture of the number 3 with either the left or right hand.>



5, 4, 3, 2, 1. *<Count the number without speaking.*>

Please make a gesture of greeting or saying goodbye.

< Return to the silent action after making the gesture of greeting with either the left or right hand.>

The model can perform different directional actions, as long as their hands can be put back to the initial position between each action and wait for four to five seconds before performing the next action.



Other actions:

- Let's make an <OK gesture>.
- Let's make a gesture of < giving likes>.
- Let's make a gesture of < clenching a fist>.
- Let's take a look at the right screen. < *Point to the right with the right hand and then perform the silent action*>.
- Let's take a look at the left screen. < Point to the left with the left hand and then perform the silent action>.
- Let's review. < Point forwards with both hands and then perform the silent action>.
- As mentioned above: <*Point forwards slightly with both hands and then perform the silent action*>.
- Let's go on. < Point forwards with the right hand and then perform the silent action>.
- That's all for today's choreography. < Silence>

The text in black is the recommended text to read. Text in <> indicates actions. The interval between two actions is three to four seconds.

Appendix 3: Script Examples

You can select any of the following examples to read. Errors and stuttering do not affect the video recording. The same content can be repeated twice at most. These examples are for reference only. You are advised to read a piece of script that you are familiar with or improvise without script. A natural speech can improve the virtual avatar performance.

Script 1: About MetaStudio

- Script 2: Virtual Avatar Video Production Guide
- Script 3: A Deep Dive into West Lake

6.2 Downloading the Video Shooting Guide

Click Video Shooting Guide.pdf to download the file of **Shooting a Video of a Human**.

6.3 Creating a Virtual Avatar Customization Task

You can view the preset virtual avatars provided by MetaStudio on the Video Production page or Page of Creating a Live Room. You can also refer to this section to customize a virtual avatar.

Notes

Only enterprise users can customize virtual avatars on MetaStudio.

Preparations

Before creating a virtual avatar customization task, you need to prepare the following items by referring to **Procedure**:

• Shoot a green-screen video of 5 to 6 minutes by referring to **Shooting a Video of a Human**.

Note: If you choose **Retain** for **Video Background** when creating a virtual avatar, you need to prepare a video of location shooting.

Video

Watch this video to learn how to create your virtual avatar on the MetaStudio console.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Image Modeling** card to go to the virtual avatar creation page.
 - You can upload data of a customized virtual avatar on the left of the page.
 - You can see the virtual avatar customization process on the right of the page. The training video shoot guide is in the lower part. The guide contains three parts: before, during, and after video shoot. You can follow the guide to shoot and generate a complete video available for training your virtual avatar.

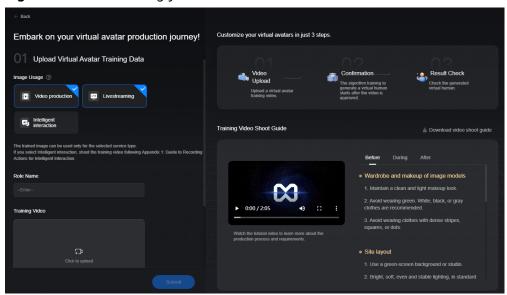


Figure 6-12 Customizing your virtual avatar

Step 4 Upload data for virtual avatar training.

For details, see Table 6-6.

Table 6-6 GUI operations

Area	Paramet er	Description		
Upload Virtual Avatar Training Data	Role Name	Enter the role name of the virtual avatar. Example: Sara After the virtual avatar training is complete, to change the role name, you can choose Assets > My Models > Virtual Humans , find the card of the trained avatar, click in the lower right corner, and select Rename from the drop-down list.		
	Training Video	Upload a video of a human from your local device for training to generate a virtual avatar. Supported video: MP4/MOV, 4K, 5–6 minutes, ≥ 1080p, 16:9 (landscape) or 9:16 (portrait, recommended), with the person in the video standing upright The virtual avatar generated after training is the same as its human counterpart.		

Area	Paramet er	Description		
	Video Backgrou nd	Specifies whether the background of a virtual avatar video can be changed. Options: • Remove: You can change the background when creating a virtual avatar video.		
		Retain: The preset background cannot be changed.		

Step 5 Click Submit.

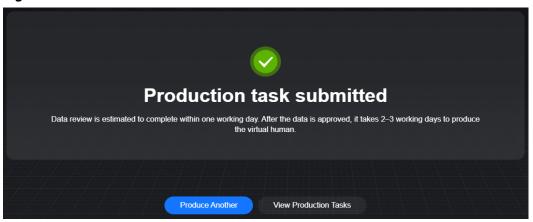
After the data is uploaded, the message **Production task submitted** appears, as shown in **Figure 6-13**.

Model review and modeling take about seven working days.

□ NOTE

To rectify the H.265 video upload failure, see What If H.265 Training Video Submission Fails on Some Browsers?

Figure 6-13 Production task submitted



- **Step 6** You can click **View Production Tasks** to view the virtual avatar customization task list.
- **Step 7** Click **View Details** in the row of the task to go to the **Customization Task Details** page.

View the review progress of the virtual avatar customization task. If the status is **Reviewing**, the status will not change to **Waiting for algorithm training** until the service administrator approves the task.

■ NOTE

If a model training task fails the review, see What If a Virtual Avatar Production Task Fails the Review?

Step 8 If the virtual avatar customization task is rejected, you need to view the rejection cause, record another video as instructed, and upload the new video.

Procedure:

- 1. In the navigation pane on the left, choose **Task Center**.
- 2. View the virtual avatar customization task list on the **Virtual Avatars** tab and find the rejected task.

The status is **Unapproved**.

- 3. Click **View Causes** on the right of the task. In the dialog box displayed, view the rejection cause.
 - Record another video as instructed or provide a qualified video.
- 4. Click **Re-upload** on the right of the task to upload the new video. The virtual avatar customization task review starts again.

----End

FAQs

- FAQs Related to MetaStudio Virtual Avatars
- Can I Re-Generate My MetaStudio Avatar Image/Voice Without Using Additional Resources?
- How Do I Request Retraining for a Standard Virtual Avatar Model?
- Can I Use MetaStudio Voice and Image Models on Other Platforms?
- What Is the Relationship Between Voice/Image Models and Audio/Video Content?

6.4 Viewing a Created Virtual Avatar

After the virtual avatar customization task is approved, algorithm training will be completed within three working days. Then a virtual avatar will be generated.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Task Center**.
- **Step 4** On the **Virtual Avatars** tab, click **View Details** on the right of a virtual avatar customization task to go to the **Customization Task Details** page.

After the task is approved, the task status changes to **Algorithm training ongoing**, as shown in **Figure 6-14**.

Click **Edit** in the upper right corner to add a tag to the virtual avatar. After adding the tag, click **Save**.

Customization Task Details

Teacher

Task Sta...

Reviewed — • Algorithm training ongoing — • To review

Tag

Task ID 176a fabat □

Submitted 2023-12-26 19:05:00

Figure 6-14 Virtual avatar customization tasks

Step 5 The virtual avatar model training will be completed within three working days. After the training is completed, the task status becomes **Algorithm training completed**, as shown in **Figure 6-15**.

View the generated virtual avatar. You can perform the following operations on the **Customization Task Details** page.

You can also click **Back** in the upper left corner to return to the task list page, where you can click **Approve** or **Reject** on the right of the desired task.

- If you are satisfied with the virtual avatar, click **Approve** in the lower right corner. In the dialog box displayed, click **OK**. The virtual avatar has been generated.
- If you are unsatisfied with the virtual avatar, click **Reject** in the lower right corner.

On the **Fill in Question** page, enter **Question Title** and **Question Description**, and upload related attachments, such as the updated greenscreen video file. If there is more than one question, you can click **Add Question** in the upper right corner of the page to add question descriptions. After all questions are added, click **OK** and wait for the handling by the service administrator.

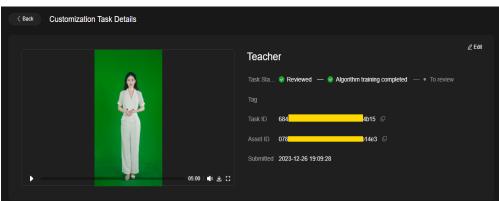


Figure 6-15 Virtual avatar customization tasks

Step 6 The service administrator will optimize the virtual avatar according to your feedback.

Model training of the virtual avatar customization task will be performed again. After the model training is completed, you can review the virtual avatar again. Repeat **Step 5** till a qualified virtual avatar is generated.

You can view the generated virtual avatar in either of the following locations:

- Assets > My Models > Virtual Humans
- Recent Projects > Virtual Avatars

----End

6.5 Script Examples

6.5.1 Script 1: About MetaStudio

Based on the Pangu virtual human model, Huawei Cloud MetaStudio, a digital content production pipeline, provides a one-stop and full-process virtual avatar livestreaming service. With efficient training and inference, the service reshapes live commerce.

Virtual avatar model generation and control: A virtual avatar model can be generated from just one photo or a three- to five-minute video, which is three times more efficient than the industry average. After the virtual avatar model is generated, the model control and inference service can create lifelike voices, facial expressions, lip movements, and body languages, with a lip sync accuracy higher than 95%.

Intelligent generation of livestreaming script: Based on the pre-training of 100,000 pieces of high-quality livestreaming script, professional script is automatically generated to control virtual avatars so that they can accurately and fluently introduce products.

Intelligent interactive Q&A: Virtual streamers powered by the Pangu foundation model can interact with viewers during livestreams, which helps convert more viewers into buyers.

The virtual avatar livestreaming service built on Huawei Cloud MetaStudio has been widely used across industries. Al helps virtual avatars become professional streamers. Here are some industry cases:

- 1. Huawei Cloud MetaStudio works with the Accessibility Research Association to build virtual avatars for hearing-impaired people to make their voice heard and enjoy better life powered by advanced technologies. The virtual avatar of Shi Xiaohui, a hearing-impaired painter, tells the story behind her works to make her voice heard by more people.
- 2. 491 million people in rural areas in China engage in the production of agricultural products, and there are more than 100,000 rural industry segments with local characteristics. Livestreaming makes these local products known by more people and is unleashing huge market potential for rural areas. However, livestreaming is still too new for many rural citizens, who are camera-shy and need to spend a long time practicing what they will say during livestreams. In addition, it is time- and labor-consuming to set up livestreaming rooms near their houses. This is exactly where virtual avatars come into play. Unlike human streamers, virtual avatars on the cloud can

stream for a whole day anytime and anywhere, while farmers can mind their own work. Professional messages are automatically generated and fluently presented by virtual streamers to sell agricultural products to more areas worldwide.

- 3. Wondershare joins hands with Huawei Cloud MetaStudio to develop Wondershare Virbo, an AI video app for international livestreaming by virtual avatars. Based on MetaStudio, the app supports end-to-end AIGC creation from scripting, virtual avatar presentation, to automatic video generation. This solution solves many pain points of marketing videos outside China, such as the unavailability of professional promoters, difficult multilingual adaptation, long production period and the consequent high video shooting and livestreaming costs.
- 4. To stay relevant in the snack industry, Xu Fuji embraces new online marketing techniques. Xu Fuji leverages Huawei Cloud MetaStudio to build a virtual assistant, which can stream 24 hours a day anytime and anywhere for over 3,500 suppliers and 300,000 store owners nationwide. Virtual streamers focus on consumers' preference and enable immersive scenario-specific marketing to bring brands closer to their consumers.

6.5.2 Script 2: Virtual Avatar Video Production Guide

Hello, everyone. Today, I will show you how to create a virtual avatar image and voice. Now let's take a look at the shooting requirements of virtual avatar image creation.

First, let's check our clothes before shooting. For green-screen shooting, do not wear green or transparent clothes, or clothes with dense stripes. Ensure that there is no scattered hair on the face. Do not wear glasses or jewelry such as necklaces, earrings, and watches, because silver or mirror jewelry may cause reflection that affects the final background segmentation.

Second, you need to shoot a five-minute 4K green-screen video. Within 15 to 20 seconds at the beginning of the video, you need to find a comfortable posture and keep silent, with your mouth closed. After the silent period ends, you can start speaking. You can read the script example provided by Huawei Cloud MetaStudio, or improvise without looking at the teleprompter. Generally, improvising is a better option for video shooting. When speaking, you can move your hands naturally, but actions with clear meanings are not allowed, such as number, waving, and holding fists. Significant gestures are also not allowed, such as moving your hands over your shoulders or blocking your face with your hands. After each action is complete, you need to put your hands back to the initial position before performing the next action. When speaking, avoid shaking or turning significantly. During the recording, focus on the camera. If you stutter or forget words, do not stop and just continue the recording.

After completing the four- to five- minute speech, upload the entire video to MetaStudio. You can add filters and adjust the color of the video before uploading it. However, do not change the video duration.

Well, these are the precautions for video shooting. If the photographer has not stopped recording, you can read the script again or read the next one.

6.5.3 Script 3: A Deep Dive into West Lake

West Lake of Hangzhou, boasting dainty landscape of lakes and mountains as well as many places of historic interests, is considered A Paradise on Earth. As part of the World Heritage List, the West Lake not only has natural beauty, but also is a symbol of the Chinese garden art and historical culture.

Dainty landscape of lakes and mountains

The beauty of the West Lake lies in the harmonious co-existence of mountains and waters. The lake is rippling and the mountains are mysterious, with different sceneries in four seasons. In spring, peach blossoms and willows thrive. In summer, the fragrance of lotus flowers is everywhere and lotus leaves are so dense that they look like piling up to the sky. In autumn, the peaceful lake reflects the soft moonlight and the fragrance of cinnamon flowers is everywhere. In winter, bridges covered by snow give a different kind of feeling.

Long history

The West Lake has such a long history that it was recognized as one of the ten most beautiful places in China as early as in the Southern Song Dynasty. The scenic spots are natural and historical, such as Leifeng Pagoda, Baochu Pagoda, Yuewang Temple, and Lingyin Temple. These monuments have witnessed Hangzhou's long history and diverse culture.

Culture and art

The West Lake is not only a scenic spot of natural beauty, but also of magnificent culture and art. It inspired many famous poets, such as Su Dongpo and Bai Juyi, who created literary works that would be remembered by the future generations. In particular, the poem of Su Dongpo perfectly describes the charm of the West Lake.

Garden buildings

The garden buildings of the West Lake are also amazing. Sudi and Baidi are two major causeways of the West Lake. They not only separate the lake, but also connect the small islands in the lake and the scenic spots along the lake. In spring, peach blossoms and willows make the causeway a must-go place. In addition, there are many pavilions around the West Lake, such as the Huxin Pavilion and Wanghu Pavilion, where you can enjoy a perfect view of the lake.

Modernized scenic spot

The West Lake has also been better protected and developed in the modern times. Public facilities, such as walkways and bicycle lanes around the lake, make the travel easier and more comfortable. The intelligent lighting project also offers a brand-new visual experience in the evening.

Positive impacts

The West Lake is not only a symbol of Hangzhou, but also an important part of the global culture. It has huge impact on many aspects.

The West Lake serves as a bridge that connects the Chinese culture with other
cultures. International cultural festivals, art exhibitions, and cultural exchange
activities are held at the West Lake, where artists, scholars, and tourists
around the world gather together to get inspired from each other.

- The West Lake plays a significant role in the tourism and economy of Hangzhou and the whole Zhejiang province. Hotels, restaurants, and transportation benefit from the arrival of tourists, and a large number of jobs have been created for local communities.
- The beautiful scenery and culture of the West Lake make Hangzhou more attractive, not only to tourists, but also to businesses and investors worldwide.

Protection and inheritance

Protecting the natural beauty and cultural heritage of the West Lake is one of the priorities of Hangzhou.

- The government has taken a series of measures, including limiting industrial emissions, controlling water pollution, and restoring and protecting wetlands.
- Historic buildings, monuments, and gardens around the West Lake have been renewed and protected.
- Laws and regulations have been formulated for the protected areas of the West Lake to crack down on activities that may damage the environment and cultural heritage.
- People are encouraged to contribute to the protection of the West Lake. The government has made effort to raise the public's awareness of environmental protection and cultural inheritance.
- Technologies such as the geographic information system (GIS) and drone have been used to monitor and analyze the natural environment and cultural heritage of the West Lake in real time.
- Educational and promotional activities enable more people to understand the value of the West Lake. In doing so, the young generation becomes more interested in traditional culture and its protection.

Summary

West Lake of Hangzhou, with its unique natural scenery, brilliant culture, and perfect convergence of the ancient and modern worlds, has become a treasure of the global culture. A trip to the West Lake not only means a visual feast, but also a good chance to dive deeper into the Chinese civilization. The doubled effort of protection and development will make the West Lake a better place, attracting more tourists from all over the world with its unique beauty.

7 Voice Modeling

7.1 Recording an Audio of a Human

You can upload an audio recording of a human to MetaStudio for AI training to obtain a voice model that reproduces the human timbre at 1:1.

The voice model can be used for text-to-speech conversion and applied to scenarios such as virtual avatar video production, livestreaming, and intelligent interaction.

For voice modeling, record a complete, uninterrupted WAV or MP3 audio file of 10 to 30 minutes (recommended: 15 minutes).

Preparing for Recording

Table 7-1 Recording preparations

Recording Device and Software	Recording Environment	Recording Script	
Professional recording devices (recommended: Adobe Audition) are preferred for audio recording. If professional recording devices are not available, you can use your mobile phone for recording. See Recording an Audio on a Mobile Phone.	 Try to record the audio in a quiet environment without echo, reverberation, and noises caused by car horns, talking, or walking. You can use the decibel (dB) meter app to test the background noise in the recording environment. The background noise should be lower than 0 dB. The recording device and environment cannot be changed for the same recording task. 	You are advised to use Script Examples (Advanced Edition). You can also customize the script. The length of one phrase must be the same as that in the example. Improvised recording is not recommended as there may be too many fillers that compromise the speech coherence.	

Starting Recording

The recorded audio must be high-quality, free of noises and background sounds, and of the same person. You can use an iPhone or Android mobile phone to record videos. See **Recording an Audio on a Mobile Phone**.

Table 7-2 describes the precautions for recording.

Table 7-2 Recording precautions

Item	Description			
Distance from the micropho ne	Adjust the distance from the microphone. The one-punch distance is appropriate. To avoid pop sound effects or recording the breath sound, do not be too close to the microphone.			
Recording content	The starting number of each piece of script does not need to be read .			
	For example, for the script "4. It features a multitude of functions and superior performance", 4 does not need to be read.			

Item	Description				
Audio format	Save the audio file in a lossless format, such as WAV and MP3. The recording data should not be encoded (sample rate of 48 kHz, sample bit of 16 bits, and mono).				
Speech style	Keep the speech style consistent throughout the recording to avoid excessive emotions.				
Pronuncia tion	Pronunciation should be clear and accurate, and the volume should be moderate. If there is undesired sound, record the phrase again.				
Speed and rhythm	The speed of speech should be natural and stable. Do not be too fast or too slow .				
Moderate volume	The volume cannot be too low or too high, or fluctuate. Clipping noise is not allowed.				
Pause	Pause naturally and breathe softly upon punctuations and appropriate positions. There must be a pause of 2–3 seconds between phrases for a long audio file.				
Accent position	Find the correct accent position to avoid wrong accent .				
Reading pronuncia tion	Read in order, ensure the phonetic consistency (avoid missing or adding words), and avoid wrong pronunciation . If there is a misreading or the reading is not smooth , record the whole phrase again .				
Content	Merging several audio files into one for training will fail the review.				

Submitting an Audio File

Record all phrases in **one single** WAV or MP3 audio file, with a pause of two to three seconds between each phrase. You can upload the WAV or MP3 file to the MetaStudio console without compressing it or providing a TXT script file. The preset script is recommended. You can also customize the script. The text is automatically split based on pauses and identified.

You can customize the audio file name, for example, Voice.wav.

Creating a Voice Model

After the audio file is available, you can upload it to the MetaStudio console for voice training by following:

- Creating a Voice Modeling Task (with In-House Models)
- Checking a Voice

The task takes about seven working days.

Application scenarios of a customized voice:

- After a customized voice is generated, it is automatically displayed in the voice list on the MetaStudio console. This voice can be used for virtual avatar video production, livestreaming, or intelligent interaction.
- A customized voice can be called using the APIs of MetaStudio.

7.2 Downloading the Audio Recording Guide

Click Voice Recording Guide.pdf to download the file of **Recording an Audio of a Human**.

7.3 Creating a Voice Modeling Task (with In-House Models)

You can view the preset voices of MetaStudio on the **Video Production** or **Livestreams** page. If the preset voices cannot meet your requirements, you can use an in-house model to customize a voice.

Constraints

Only enterprise users can customize voices on MetaStudio.

Preparations

Before creating a voice modeling task, see **Procedure**.

• If you select **Script Upload**, record an audio in advance by referring to the recording guide on the voice modeling page.

Video

Watch this video to learn how to train your voice model and create a lifelike voice for your virtual avatar.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Voice Modeling** card to go to the voice modeling page.

On the page displayed, the area on the left is for voice modeling, and the area on the right shows the voice modeling process.

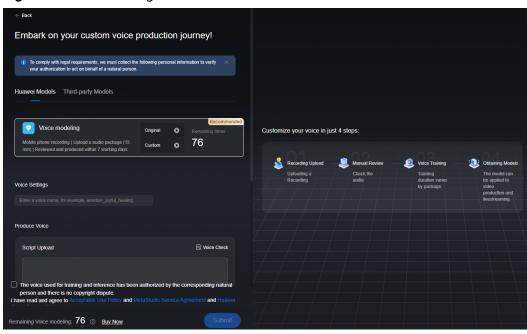


Figure 7-1 Customizing a voice

Step 4 Under the **Huawei Models** tab, configure voice modeling parameters.

For details, see Table 7-3.

Table 7-3 GUI operations

Parameter	Description				
Voice modeling	Voice modeling requires recording a complete, uninterrupted WAV or MP3 audio file of 10 to 30 minutes (recommended: 15 minutes).				
	The remaining voice modeling quota will be displayed. Ensure that there is a pause of 2 to 3 seconds between sentences in an audio recording.				
Voice	Enter a voice name.				
Settings	Example: emotion_joyful_healing				
Produce Voice	The method of voice modeling is Script Upload . You can follow the audio recording guide on the page to record a WAV or MP3 audio file.				
	WAV or MP3 audio files can be uploaded without being compressed or containing TXT files.				
	If no preset script is used, the voice tag is used only to indicate the voice application scenario.				
Voice Gender	Gender of the voice. Specify this parameter to improve voice model precision.				
	Options:				
• Male					
	Female				

Parameter	Description				
Input	Language of the uploaded script.				
Language	Options:				
	• Chinese				
	English				
	Note: The current parameter setting is only an identifier and does not influence the training result.				
Voice Field	Field to which a voice applies. You can select a field to quickly find the desired voice.				
	There is preset text of different styles for different fields. After voice training is completed, you can choose Assets > My Models > Voices to preview how the voice reads text in the selected field.				
	Script of each of the preceding tags is preset in MetaStudio, as shown in Script Examples (Advanced Edition) . When using the preset script, you must select the corresponding tag.				

Step 5 Check the box for authorizing the voice use and click **Submit**.

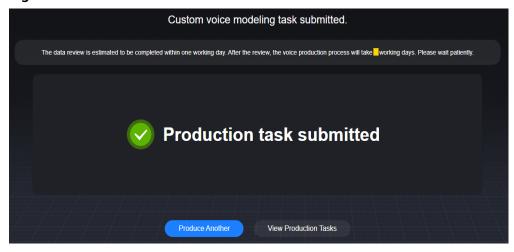
The **Information** dialog box appears, notifying you of the remaining voice modeling quota and indicating that one resource will be consumed this time.

Step 6 After confirming the information, click **Submit**.

After the voice modeling task is submitted, the message **Production task submitted** appears, as shown in **Figure 7-2**.

Model review and modeling take about seven working days.

• Figure 7-2 Production task submitted



Step 7 You can click **View Production Tasks** to view the review progress of the voice modeling task.

When the status changes to **Reviewed**, algorithm training is automatically started. If there are multiple algorithm training tasks, queuing and delay may occur.

----End

7.4 Creating a Voice Modeling Task (with Third-party Models)

You can view the preset voices of MetaStudio on the **Video Production** or **Livestreams** page. If the preset voices cannot meet your requirements, you can use the third-party model DupDub to customize a voice:

- Chinese, English, Cantonese, German, French, Turkish, Tagalog, Japanese, Italian, Malay, Russian, Korean, Finnish, Dutch, Spanish, Indonesian, Arabic, and Portuguese can be input for voice modeling. See Procedure (for DupDub).
- 17 languages (Chinese, English, German, French, Turkish, Tagalog, Japanese, Italian, Malay, Russian, Korean, Finnish, Spanish, Indonesian, Arabic, Portuguese, and Dutch; Thai not available yet) are supported in an output voice model that uses a non-preset voice for speech synthesis.

Constraints

Only enterprise users can customize voices on MetaStudio.

Preparations

Before creating a voice modeling task, see **Procedure** (for **DupDub**).

- If you select **Script Upload**, record an audio in advance by referring to the recording guide on the voice modeling page.
- Purchase and activate a DupDub non-English/Chinese language cloning package by referring to Purchasing a DupDub Voice Package.

Procedure (for DupDub)

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Voice Modeling** card to go to the voice modeling page.
- **Step 4** Click the **Third-party Models** tab and select **Voice modeling (DupDub)**, as shown in **Figure 7-3**.

On the page displayed, the area on the left is for voice modeling, and the area on the right shows the voice modeling process.

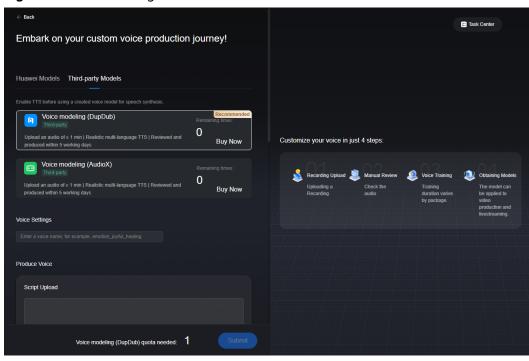


Figure 7-3 Customizing a voice

Step 5 Configure voice modeling parameters.

For details, see Table 7-4.

Table 7-4 GUI operations

Parameter	Description				
Voice modeling (DupDub)	Select Voice modeling (DupDub) . Upload a WAV or MP3 audio file of 0.5–180 minutes (recommended: 5 minutes) for voice modeling in 19 languages.				
	If remaining quota is 0, click Buy Now to purchase a non- English/Chinese language cloning package by referring to Process of Purchasing a DupDub Non-English/Chinese Language Cloning Package .				
Voice Settings	Enter a voice name. Example: emotion_joyful_healing				
Produce Voice	You can follow the audio recording guide on the page to record a one-minute WAV or MP3 audio file. WAV or MP3 audio files can be uploaded without being compressed or containing TXT files.				
	If no preset script is used, the voice tag is used only to indicate the voice application scenario.				

Parameter	Description				
Voice Gender	Gender of the voice. Specify this parameter to improve voice model precision. Options: • Male • Female				
Input Language	Language of the uploaded script. Options: Chinese, English, Cantonese, German, French, Turkish, Tagalog, Japanese, Italian, Malay, Russian, Korean, Finnish, Dutch, Spanish, Indonesian, Arabic, Portuguese, and Thai. Note: The current parameter setting is only an identifier and does not influence the training result.				
Output Language	 Language of the output voice model. Options: An output voice model can be in Chinese, English, German, French, Turkish, Tagalog, Japanese, Italian, Malay, Russian, Korean, Finnish, Spanish, Indonesian, Arabic, Portuguese, or Dutch. Cantonese 				
Voice Field	Field to which a voice applies. You can select a field to quickly find the desired voice. There is preset text of different styles for different fields. After voice training is completed, you can choose Assets > My Models > Voices to preview how the voice reads text in the selected field. You can also enter text to preview how the voice reads the text. For details, see the parameter setting of Text to Preview. Script of each of the preceding tags is preset in MetaStudio, as shown in Script Examples (Advanced Edition). When using the preset script, you must select the corresponding tag.				
Text to Preview	Enter the text to preview. After the voice training is complete, you can preview the text you entered.				
Mobile Number (Optional)	Enter a mobile number.				

Step 6 Check the box for authorizing the voice use and click **Submit**.

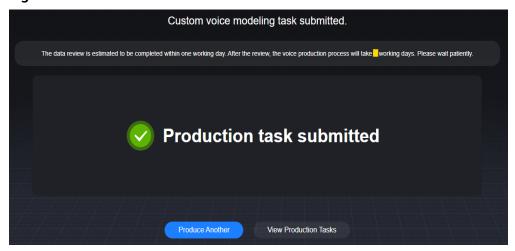
The **Information** dialog box appears, notifying you of the remaining voice modeling quota and indicating that one resource will be consumed this time.

Step 7 After confirming the information, click **Submit**.

After the voice modeling task is submitted, the message **Production task submitted** appears, as shown in **Figure 7-4**.

After the voice modeling task is submitted, the task review will take about one day. After the task is approved, voice modeling starts. The task takes about 5 working days.

Figure 7-4 Production task submitted



Step 8 You can click **View Production Tasks** to view the review progress of the voice modeling task.

When the status changes to **Reviewed**, algorithm training is automatically started. If there are multiple algorithm training tasks, queuing and delay may occur.

----End

7.5 Checking a Voice

After the algorithm training of the voice modeling task is complete, you can check the voice.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Task Center**.
- **Step 4** Select **Voice Modeling** and confirm that the training of the voice modeling task has been completed.
- **Step 5** In the navigation pane, choose **Assets** > **My Models**.
- **Step 6** Select the **Voices** tab, find the generated voice, and click the avatar in the voice card to preview the voice.

You can also perform the following operations:

• Click **Create**, select **Video Production** from the drop-down list, and create a video in which the virtual avatar speaks with the generated voice. For details, see **Video Production**.

- Click Create, select Livestreaming from the drop-down list, and create a livestream in which the virtual avatar speaks with the generated voice. For details, see Livestreams.
- Click **Create**, select **Intelligent interaction** from the drop-down list, and create an interactive dialog project in which the virtual avatar speaks with the generated voice. For details, see **Intelligent Interaction**.

Figure 7-5 Voice



----End

FAQs

- How Do I Request Voice Model Retraining?
- Can I Use MetaStudio Voice and Image Models on Other Platforms?
- What Is the Relationship Between Voice/Image Models and Audio/Video Content?

7.6 Voice Update History

April 2025

Table 7-5 Voice update history

Voice Name	Gender	TTS Version	Style	Language	Change By
Daniel	Male	-	News	English	Updating
Emma	Female	-	News	English	Updating

January 2025

Table 7-6 Voice update history

Voice Name	Gender	TTS Version	Style	Language	Change By
Daniel	Male	TTS V9	-	English	Updating
Emma	Female	TTS V9	-	English	Updating

7.7 Purchasing a Voice Package

7.7.1 Languages Supported by Third-party Voices

See Table 7-7.

Table 7-7 Languages supported by third-party voices

Voice	Supported Language	
DupDub (preset voices)	Chinese, English, German, French, Korean, Portuguese, Japanese, Spanish, Italian, Russian, Tagalog, Dutch, Indonesian, Vietnamese, Arabic, Turkish, Malay, Thai, and Finnish	
DupDub (cloned voices)	Languages supporting generalization: Chinese, English, German, French, Turkish, Tagalog, Japanese, Italian, Malay, Russian, Korean, Finnish, Dutch, Spanish, Indonesian, Arabic, and Portuguese	
	Cantonese does not support language generalization.	

7.7.2 Purchasing a DupDub Voice Package

For details about how to purchase a DupDub text to speech (TTS) package, see **Process of Purchasing a DupDub TTS Package**.

Process of Purchasing a DupDub TTS Package

To use a preset third-party voice, you need to purchase a DupDub TTS package. For details, see **Languages Supported by Third-party Voices**.

- Purchasing a DupDub TTS Package: Purchase a TTS package in KooGallery to activate and use the third-party voices of DupDub.
- Obtaining a Third-party Voice Usage Credential: Use the username and password of the purchased package as the credential for using third-party voices on the MetaStudio console.
- Activating a Third-party Voice Usage Credential: On the MetaStudio console, add a credential, which is the username and password of the purchased package.
- **Viewing Expenditure Details on the MetaStudio Console**: You can view the expenditure details of a purchased package on the MetaStudio console.
- Renewing a Package: If the quota of a package is used up or a package expires, you can purchase another package.

Process of Purchasing a DupDub Non-English/Chinese Language Cloning Package

If you select **Voice modeling (DupDub)**, the created voice can be used only for video production, not for intelligent interaction and livestreaming. For details, see **Languages Supported by Third-party Voices**.

- Purchasing a DupDub Non-English/Chinese Language Cloning Package: If you select Voice modeling (DupDub), you need to purchase a DupDub non-English/Chinese language cloning package in KooGallery.
- Obtaining a Third-party Voice Usage Credential: Use the username and password of the purchased package as the credential for using third-party voices on the MetaStudio console.
 - After purchasing a DupDub non-English/Chinese language cloning package, you also need to obtain a credential.
- Activating a Third-party Voice Usage Credential: On the MetaStudio console, add a credential, which is the username and password of the purchased package.
 - After purchasing a DupDub non-English/Chinese language cloning package, you also need to activate the credential. If you purchase multiple packages using the same Huawei Cloud account, the credentials of these packages are the same by default. You only need to configure the credential once.
- Viewing Expenditure Details on the MetaStudio Console: You can view the
 expenditure details of a purchased DupDub non-English/Chinese language
 cloning package on the MetaStudio console. See the operation for DupDub
 TTS packages.
- Renewing a Package: If the quota of a package is used up or a package expires, you can purchase another package.

Prerequisites

The Huawei Cloud account must be bound to a valid mobile number.

Purchasing a DupDub TTS Package

Purchase a TTS package in KooGallery to activate and use the third-party voices of DupDub.

Step 1 Go to the DupDub Text to Speech page.

The following packages can be purchased:

DupDub Text to Speech: All preset third-party voices can be used after you purchase this package. The video compositing fee of each voice is \$20 USD per one million characters, which is deducted from the purchased DupDub Text to Speech package.

The following specifications are included:

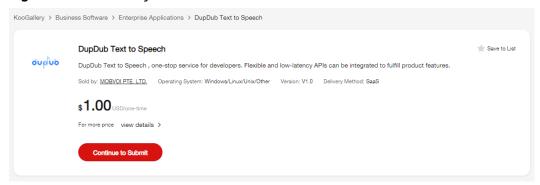
- Text To Speech Experience Package
- Text To Speech Small Package
- Text To Speech Medium Package

Text To Speech Large Package

• Voice Clone Basic Edition

A cloned voice can be used for video compositing and the fee is \$300 USD per one million characters, which is deducted from the purchased **DupDub Text to Speech** package.

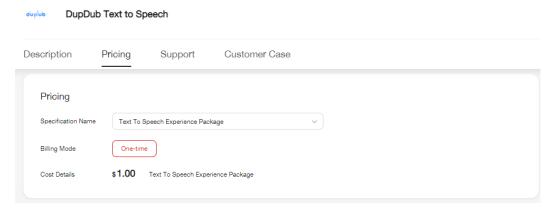
Figure 7-6 KooGallery



Step 2 Click **view details** to view the package specifications and prices, as shown in **Figure 7-7**.

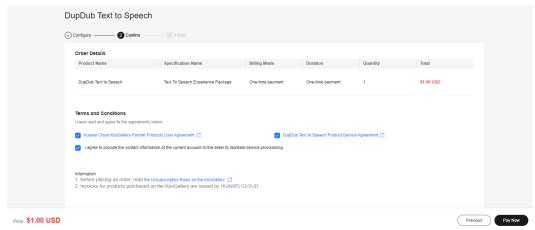
Purchase the specification that fits your needs. The following is an example of purchasing a **Text To Speech Experience Package**.

Figure 7-7 Package specifications



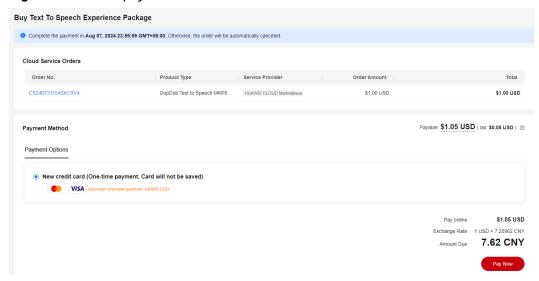
Step 3 Select **Text To Speech Experience Package** for **Specification Name** and click **Continue to Submit** to go to the purchase page.

Figure 7-8 Package purchase page



Step 4 Read and select all agreements and related authorizations. Click **Pay Now** to go to the order payment page.

Figure 7-9 Order payment



Step 5 Select a payment method and complete the payment.

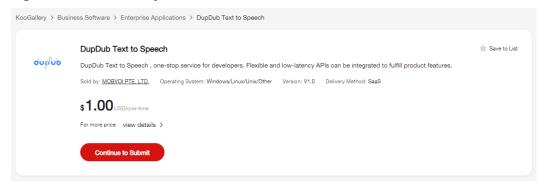
----End

Purchasing a DupDub Non-English/Chinese Language Cloning Package

If you select **Voice modeling (DupDub)**, you need to purchase a DupDub non-English/Chinese language cloning package in KooGallery.

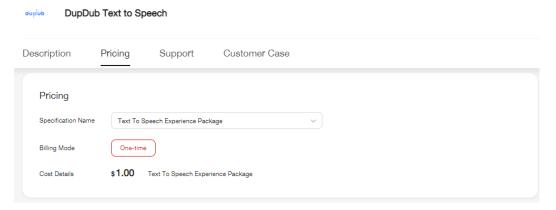
Step 1 Go to the **DupDub Text to Speech** page.

Figure 7-10 KooGallery



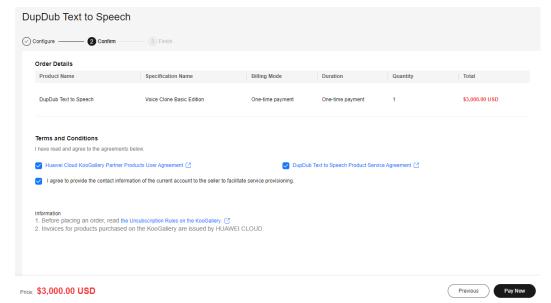
Step 2 Click **view details** to view the package specifications and prices, as shown in **Figure 7-11**.

Figure 7-11 Package specifications



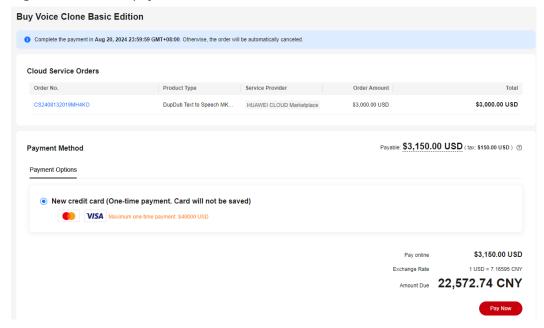
Step 3 Select Voice Clone Basic Edition for Specification Name. Click Continue to Submit to go to the purchase page.

Figure 7-12 Package purchase page



Step 4 Read and select all agreements and related authorizations. Click **Pay Now** to go to the order payment page.

Figure 7-13 Order payment



Step 5 Select a payment method and complete the payment.

----End

Obtaining a Third-party Voice Usage Credential

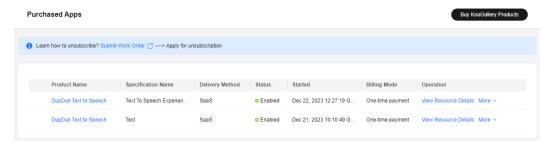
The following uses the TTS package as an example. The operation is the same for other voice packages.

View the purchased TTS package and obtain the username and password of the package, which are the credential for activating third-party voices on the MetaStudio console.

Step 1 Access My KooGallery to go to the Purchased Apps page.

You can see information about the purchased TTS package.

Figure 7-14 Purchased apps

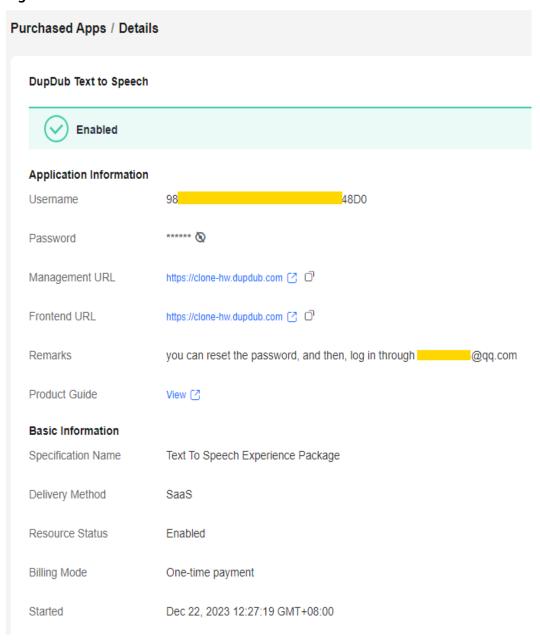


Step 2 Click **Resource Details** on the right of the purchased package to go to the resource details page.

Record the username and password, as shown in Figure 7-15.

As shown in **Activating a Third-party Voice Usage Credential**, the access key and secret key are used to add or update a credential on MetaStudio to activate third-party voices.

Figure 7-15 Resource details



----End

Activating a Third-party Voice Usage Credential

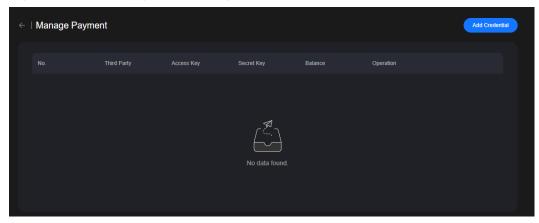
After purchasing a third-party voice, you need to activate it on the MetaStudio console.

After purchasing a DupDub non-English/Chinese language cloning package, you also need to activate the credential. If you purchase multiple packages using the

same Huawei Cloud account, the credentials of these packages are the same by default. You only need to configure the credential once.

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Models**.
- **Step 4** Click the **Voices** tab and click **Manage Payment** on the right of the page to go to the **Manage Payment** page, as shown in **Figure 7-16**.

Figure 7-16 Voice payment management



Step 5 Click Add Credential in the upper right corner of the page to go to the Buy Serial Number dialog box, as shown in Figure 7-17.

See Table 7-8.

Figure 7-17 Buying a serial number

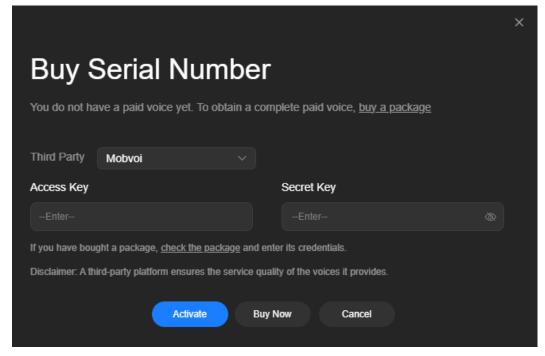


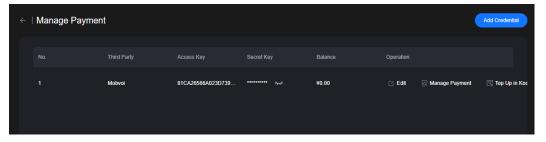
Table 7-8 Parameter description

Parameter	Description	
Third Party	Owner of the package purchased in Purchasing a DupDub Voice Package . Select Mobvoi from the drop-down list box.	
	If you purchase multiple packages using the same Huawei Cloud account, the credentials of these packages are the same by default. You only need to configure the credential once.	
	The voices marked as Third-party are of DupDub. You need to purchase a DupDub TTS package to use the voices.	
	 Before selecting Voice modeling (DupDub), you need to purchase a DupDub non-English/Chinese language cloning package. 	
Access Key	This parameter will be set as Username on the Resource Details page, as shown in Step 2 .	
Secret Key	This parameter will be set as Password on the Resource Details page, as shown in Step 2 .	

Step 6 Click **Activate**. The message **Activated**. appears.

A new user credential appears on the page. Now you can use the third-party voice on MetaStudio. You can purchase a non-English/Chinese language cloning package to use **Voice modeling (DupDub)**.

Figure 7-18 Voice credentials



----End

Viewing Expenditure Details on the MetaStudio Console

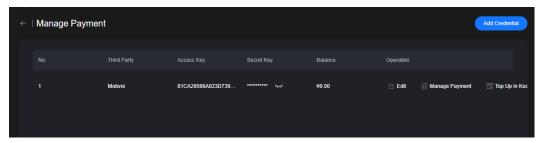
The following uses the TTS package as an example. The operation is the same for other voice packages.

You can view the expenditure details of a purchased package on the MetaStudio console.

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Models**.
- **Step 4** Click the **Voices** tab and click **Manage Payment** on the right of the page to go to the **Manage Payment** page, as shown in **Figure 7-19**.

On the page displayed, you can view access keys, secret keys, and balance.

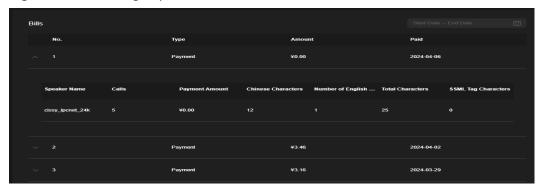
Figure 7-19 Voice credentials



Step 5 Click **Manage Payment** in the **Operation** column of the target voice. The **Resource Details** dialog box displayed, as shown in **Figure 7-20**.

In the **Bills** area, view expenditure details.

Figure 7-20 Viewing expenditure details



----End

Renewing a Package

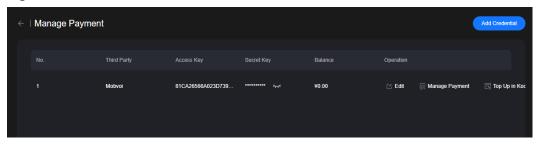
The following uses the TTS package as an example. The operation is the same for other voice packages.

After the purchased TTS package resources are used up:

- If you use the same Huawei Cloud account to purchase a package, the access key and secret key remain unchanged.
- If you use another Huawei Cloud account to purchase a package, update the access key and secret key by referring to **Renewing a Package**.
- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Models**.
- **Step 4** Click the **Voices** tab and click **Manage Payment** on the right of the page to go to the **Manage Payment** page, as shown in **Figure 7-21**.

You can view the activated access key and secret key.

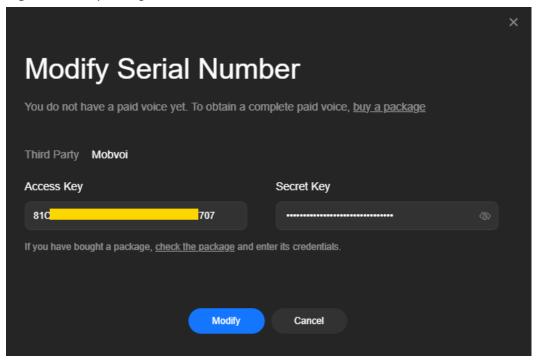
Figure 7-21 Voice credentials



Step 5 Click **Edit** in the **Operation** column of the target voice. In the **Modify Serial Number** dialog box displayed, enter the user credential of the TTS package that is purchased using another Huawei Cloud account, as shown in **Figure 7-22**.

Obtaining a Third-party Voice Usage Credential describes how to query user credentials.

Figure 7-22 Updating a credential



Step 6 Click **Modify**. The message **Modified**. appears.

The modification takes effect automatically. You do not need to activate the third-party voice again.

----End

7.8 Script Examples (Advanced Edition)

7.8.1 Live Commerce

1. Hello, everybody. Welcome to our live room.

- 2. Stay tune to our live room if you want to learn more about cuisines or shopping.
- 3. This is our first time of livestreaming, so we bring many amazing special offers for you guys.
- 4. If you are already in the live room, type 1 in the comments.
- 5. First, let's start with a lucky draw!
- 6. We will send gifts to five of the people in this live room.
- 7. We have cookies, chips, and one of my favorites: Mala Xiang Guo.
- 8. But the quantity is limited. So first come, first served, guys!
- 9. During the livestream today, we will offer flash sales that help you save more than the Double Eleven.
- 10. We will livestream from eight to twelve. Please type what you want to know in the live comments.
- 11. If you have not followed me, just click Follow in the upper left corner.
- 12. I would appreciate if you could click Likes in the lower right corner. We will have lucky draws for people who give likes during the livestream.
- 13. The first item I would like to show you is cookies that are suitable even for people on a diet.
- 14. This package looks very attractive, doesn't it?
- 15. It is good for people who are really into snacks but don't want to gain too many calories.
- 16. You won't feel a thing even if you have three packets at a time.
- 17. The calories of these three packets are the same as one packet of other brands.
- 18. More importantly, there are no additives. Let me show you the ingredients.
- 19. You can eat a lot without gaining weight. That's fantastic, isn't it?
- 20. There is no oil in the cookies but you can still feel the fragrance of oil. Tasty and healthy.
- 21. Non-fried and no additives. You can eat them without worrying about getting acne.
- 22. Whether you are watching TV series, shopping, or working, a packet of cookies will bring you energy when you are hungry.
- 23. The cookies taste very special. Even my colleagues who do not love snacks like these cookies.
- 24. As I said, we will offer you some special offers today.
- 25. So the prices will be lower.
- 26. Generally it is 7.9 yuan per packet.
- 27. Today, you can grab ten packets for just 49 yuan in our live room!
- 28. If you buy ten packets, I will give you two more for free.
- 29. That would be 49 yuan for twelve packets! You can save a lot.
- 30. Less than five yuan for each packet. The price is almost halved.
- 31. However, we have only 500 discounted packets. Please buy as soon as possible!

- 32. I will show you the purchase link after countdown. Five, four, three, two, one.
- 33. Now you can click the number one link of the yellow shopping cart to enjoy the discount.
- 34. The half-price cookies are available only during the livestreaming.
- 35. 49.9 yuan for 12 packets. You can save more than the Double Eleven.
- 36. Only 500 packets tonight. First come, first served.
- 37. No more hesitation, guys!
- 38. Tell me on the live comments if you have placed orders. We will give priority to the delivery of your orders.
- 39. All of our products have passed food safety tests. There is no need to worry.
- 40. If you take a look at the comments of these cookies, you will know how good they are.
- 41. Click the link and place orders right now! These discounts are available only in our live room.
- 42. What you buy during the livestreaming will be covered with freight insurance.
- 43. Take advantage of the discounts in the live room!
- 44. I know many of you want to buy the cookies, but I have to tell you that only 500 packets will have discounts.
- 45. We got only five seconds to go for the discounted cookies. Then I will show you the next discounted offering.
- 46. No more discounts in five seconds.
- 47. Let's count down. Five, four, three, two, one. Now let's move on to the next offering.
- 48. I will recommend one of my favorite Mala Xiang Guo brands.
- 49. This brand is the most stunning one that I have ever seen.
- 50. Today we will present two flavors: sauce and spicy.
- 51. With the sauce flavor, you can enjoy Mala Xiang Guo even if you don't like spicy food.
- 52. Choose the sauce flavor if you don't want to eat spicy.
- 53. You can also try both flavors at the same time.
- 54. Now let me tell you what makes this Mala Xiang Guo brand different.
- 55. First, it is tasty but not salty.
- 56. Second, there are abundant ingredients, including Udon, vegetables, and fish balls.
- 57. Third, the vegetables are fresh, such as the crispy lotus roots.
- 58. Let's see what there are in the Mala Xiang Guo.
- 59. First, we have a water bag.
- 60. It is drinking water, not tap water.
- 61. Then we have a dish bag that contains both meat and vegetables.
- 62. All the stuff is fresh and good for health.
- 63. All of our products have obtained food safety certificates.
- 64. This dish is one of the good choices for a family dinner.

- 65. What's more, the dining boxes are made of aluminum foil.
- 66. Actually most self-heating food uses plastic boxes.
- 67. When these plastic boxes get heated, there will be unpleasant odor.
- 68. Our aluminum foil dining boxes can be heated without producing harmful substances.
- 69. Each Mala Xiang Guo hotpot is 450 grams. That's enough for a meal.
- 70. If you eat alone, generally you can't finish all of them.
- 71. The shelf life is eight months.
- 72. You can just store them at room temperature at home, without occupying refrigerator capacity.
- 73. This offering is suitable for us that go home after working a whole day.
- 74. When we go home, we don't need to buy food or cook.
- 75. What we need is just a glass of cold water. After 15 minutes, we can have delicious Mala Xiang Guo.
- 76. The price of Mala Xiang Guo is also amazing today. Generally one box costs 29.9 yuan.
- 77. If you buy three boxes in our live room, the first box is 29.9 yuan, the second 19.9 yuan, and the third is free!
- 78. Only 49.8 yuan for three boxes. That is, 16.6 yuan per box!
- 79. I will show you the purchase link after countdown. Five, four, three, two, one. Just buy three boxes at a time. That will save the most.
- 80. If you have any questions, leave them in the comments to let me know.
- 81. You can buy one box for just 16.6 yuan in our live room.
- 82. That's way cheaper than the price of restaurants.
- 83. It is convenient and economical.
- 84. If you click the number 2 link, you can get some instant noodles and three fried tofu rolls for free.
- 85. These gifts will cost ten plus yuan.
- 86. But they are free of charge if you buy Mala Xiang Guo in our live room.
- 87. First come, first served.
- 88. There are very few special offers left. Grab them right now!
- 89. No more hesitation. Just come on board!
- 90. If you have any questions, contact our customer service in the live room. We will guarantee the after-sales service.
- 91. The delivery of any orders purchased in the live room will be started tomorrow.
- 92. I would appreciate if you guys can give more likes. If there are ten thousand plus likes, we will have a lucky draw.
- 93. Here comes the lucky draw. You can participate in the lucky draw only after following our live room.
- 94. We have lucky draws every day in the live room. Join us at eight o'clock every night and stand a chance of receiving benefits.
- 95. Type "I want it" in the live comments!

- 96. Let's give a second to our newcomers so that they can follow the live room and send on-screen comments.
- 97. Okay, now let's count down for the lucky draw. Five, four, three, two, one.
- 98. There are just ten minutes left before our livestreaming ends. Feel free to ask any questions in the live comments.
- 99. If you haven't got the exclusive coupon of our live room, claim it as soon as possible. The coupons are available only during the livestreaming.
- 100. We're about to stop the streaming today. See you guys at 8 p.m.tomorrow. Stay tuned! See you.

7.8.2 Marketing

- 1. Learn about the recent technology trends and the latest intelligent products.
- 2. In this fast-changing world, technology has become an indispensable part of our lives.
- 3. It constantly drives society progress and human development.
- 4. A cutting-edge intelligent product will soon be launched.
- 5. The domestic robot is an intelligent device built on advanced technologies.
- 6. It frees you from a variety of domestic tasks and makes life more convenient and comfortable.
- 7. The abundant built-in functions of domestic robots can meet a diverse range of requirements.
- 8. It connects to home devices and can be tasked with housework through voice control.
- 9. Domestic robots make your home smarter and your life more convenient.
- 10. The smarter your home, the happier your family will be.
- 11. Domestic robots are innovative in many ways.
- 12. It features a simple yet pretty design and is easy to use.
- 13. It can be connected to smart home devices for smart control.
- 14. Domestic robots are ever-evolving.
- 15. New functions and services are continuously launched to meet changing needs.
- 16. Now we will introduce the functions and performance of this domestic robot.
- 17. The domestic robot can be a smart cleaner, chef, housekeeper, and even companion.
- 18. These functions make the domestic robot an essential part of a smart home.
- 19. The domestic robot makes short work of all cleaning tasks.
- 20. It smoothly navigates around your furniture and can clean your entire house with ease.
- 21. The domestic robot can also adapt its cleaning methods based on its environment and your preferences.
- 22. The robot is able to clean different areas of a house.
- 23. The intelligent robot is also a powerful cleaner.
- 24. It rotates its brushes to complete cleaning faster.

- 25. It can remove all kinds of dirt from floors, including pet hair.
- 26. Our intelligent robots are equipped with advanced sensors for intelligent navigation.
- 27. The robots will not knock into furniture, and will move only in areas where they have been permitted to.
- 28. The intelligent robot also supports automatic charging.
- 29. When the battery level is low, it can automatically return to the charging station.
- 30. The intelligent robot can also be controlled through voice commands.
- 31. You can select the most appropriate cleaning method as needed.
- 32. The domestic robot can also adapt its cleaning methods based on its environment and your preferences.
- 33. The intelligent robot provides you with fast and efficient home cleaning services.
- 34. A domestic robot will refresh your kitchen.
- 35. It is not only a good chef, but also a qualified kitchen cleaner.
- 36. It can cook meals that suit your taste and make a variety of food.
- 37. You just need to deliver an instruction and the robot will make whatever food you desire.
- 38. Domestic robots save you time in the kitchen, so that you can spend more time with your loved ones.
- 39. A smart kitchen is powered by smart technology.
- 40. Smart kitchens can change the traditional way of cooking, making it more convenient, fast, and healthy.
- 41. Smart kitchens can adapt traditional cooking methods to make meals more convenient and healthy.
- 42. Natural language processing allows smart robots to understand your needs and automatically adjust cooking parameters as needed.
- 43. Smart robots can also work with intelligent ovens to make cooking smarter.
- 44. Smart robots can automatically cook meals based on your taste and needs.
- 45. They can provide nutritional information and suggest recipes based on what you have.
- 46. They can automatically add what you need.
- 47. They can also recommend dishes based on your personal preferences and historical cooking records.
- 48. A smart kitchen not only improves the efficiency and quality of cooking, but also provides a new view on healthy eating.
- 49. A smart kitchen makes our lives healthier, more convenient, and more efficient.
- 50. A domestic robot is not just an assistant. It can be your housekeeper too.
- 51. They can remind you of your schedule and keep you on time.
- 52. They can answer your questions and provide various forms of entertainment, such as playing your favorite music.
- 53. Domestic robots will immediately respond to you once they receive your instructions.

- 54. Speech recognition and natural language processing enable the smart housekeeper to interact and even talk with your family.
- 55. Tell the smart housekeeper what you need, and it will execute the task immediately.
- 56. The smart housekeeper is qualified for all kinds of housework.
- 57. The smart housekeeper helps you manage your schedule and reminds you of important meetings and appointments.
- 58. Simply tell it about an appointment, and it will remind you at the appropriate time.
- 59. The smart housekeeper can also record and monitor your health data, such as heart rate and sleep quality.
- 60. It will provide personalized health suggestions to help you manage your health.
- 61. After being connected to a health device, the smart housekeeper transmits data in real time and generates a health report, which allows you to better understand your health status.
- 62. The smart housekeeper can also connect to smart home devices for remote control and automatic operations.
- 63. You can adjust the brightness and volume of your home devices simply by running commands on your phone.
- 64. The smart housekeeper can also provide you with personalized shopping and take-out services.
- 65. It will recommend suitable food for you and help you place orders and pay.
- 66. Smart domestic robots provide you with considerate home services and life management.
- 67. The smart housekeeper makes your life more comfortable.
- 68. Ensuring home safety is one of our top priorities.
- 69. Domestic robots will become a powerful assistant in safeguarding your home.
- 70. Multiple built-in sensors and cameras allow domestic robots to monitor everything in your home.
- 71. Once a problem is detected, an alert notification will be sent to you immediately and appropriate actions will be taken.
- 72. Domestic robots will inform you of what is happening in your home, no matter where you are.
- 73. Robots can check whether doors and windows are closed, whether there is unauthorized access, smoke, or fire.
- 74. Once an anomaly is detected, an alert notification will be sent to you and your family.
- 75. They patrol around your area of residence to ensure the safety and privacy of your home.
- 76. Domestic robots can also monitor the air quality of your home.
- 77. Robots can detect the indoor environment and temperature, and even dangers such as fires in a timely manner.
- 78. They are able to quickly extinguish a fire.
- 79. Robots can provide help for your family, such as caring for the elderly.

- 80. Robots can protect your home network from hacker intrusion and data loss.
- 81. They can monitor network traffic, track abnormal activities, and provide solutions that ensure secure data storage.
- 82. Domestic robots are powerful in terms of home protection and assistance services.
- 83. Domestic robots are not just your assistants. They can even be your housekeepers and loyal companions.
- 84. They can entertain you and talk with you to enrich your life.
- 85. You can enjoy your time at home by dancing or watching movies with smart robots.
- 86. Domestic robots can be an interactive and valued companion.
- 87. They can tell jokes and stories, sing, and even dance and play instruments.
- 88. You can talk with robots and ask them questions about anything, such as today's weather forecast, current news, and recipes.
- 89. Domestic robots can monitor your health data and provide health suggestions.
- 90. Domestic robots can be your study buddies, providing answers to your questions and educational support.
- 91. They can answer your questions, explain concepts and knowledge.
- 92. As a thank you to our customers, we are presenting a limited-time offer.
- 93. Snap up a smart robot at a discounted price with our limited-time offer.
- 94. Place an order in just a few clicks and you can enjoy not only the convenience brought by the product, but also free installation and considerate after-sales service.
- 95. Why wait? Make a purchase now! Don't miss out on our limited-time offer!
- 96. We guarantee good after-sales service and assurance for designated domestic robots.
- 97. We will provide comprehensive support to ensure a good experience and high satisfaction.
- 98. Domestic robots purchased during the promotion can enjoy free after-sales services and upgrade support.
- 99. At such a low price, why wait?
- 100. Get a domestic robot to make your home smarter.

8 Video Production

8.1 About the GUI

Before producing a video, you can familiarize yourself with the **Virtual Production** page.

See Figure 8-1. Table 8-1 describes details of the page.

Videos that you created using virtual avatar images are automatically saved on the **Video Projects** tab in the **Recent Projects** area on the MetaStudio console. You can edit these videos as needed.

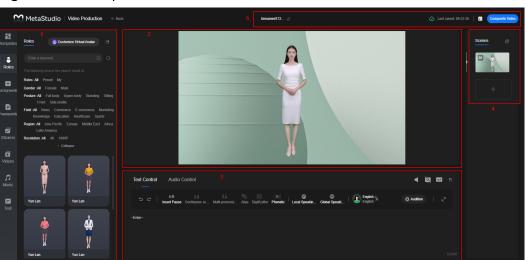


Figure 8-1 Video production

Table 8-1 About the GUI

N o.	Area	Description
1	Video materials	Set the following elements of a video scene by referring to Common Configuration for Video Production.
		Templates: list of preset video templates, which can be used to produce virtual avatar videos Note: Only the administrator can customize new templates.
		Roles: The list of preset virtual avatars is automatically displayed. You can use them to produce videos. If the preset virtual avatars do not meet your requirements, click Customize Virtual Avatar.
		Backgrounds: background image list. You can import an image from your local device, or use a preset image of transparent background or solid color background.
		PowerPoints: PowerPoint file list. You need to import a PowerPoint file from your local device.
		Overlays: image overlay list. You can import an image from your local device to overlay it on the video.
		Videos: silent video list. You can import a video file from your local device and set it as the background video.
		Music: music file list. You can import an audio file from your local device and set it as the background music.
		Text: You can overlay text on a video.
2	Video layout	You can create and preview a video.
3	Audio productio	You can select one of the following methods to generate an audio:
	n	Text Control: Enter text to generate an audio. You can insert pauses and adjust the speaking speed of the text. For a multi-pronunciation word, you can set the correct pronunciation. You can preview the generated audio with different voices, and enable subtitling by referring to Subtitling.
		Audio Control: Upload an audio file as the voice of the video from your local device. For audio control, subtitling can be enabled only in Mandarin Chinese.
		You can also set the audio volume and adjust the landscape/portrait display of the image layout.
4	Video scenes	If a video needs to contain multiple scenes, you can add and play these scenes in sequence.

N o.	Area	Description
5	File settings	 From left to right: Click on the right of the file name to customize the video draft name. Click to save a video production task. Click In the Video Production Task Center dialog box displayed, you can view the video production task list and
		the video compositing progress.Click Composite Video to composite a virtual avatar video.

8.2 Video Production

Video production on the MetaStudio console allows creating virtual avatar videos.

Preparations

• If the preset virtual avatar images do not meet requirements, customize a virtual avatar image by referring to **Image Modeling**.

Constraints

- The preset virtual avatar images on the MetaStudio console are valid for three years (till the middle of 2027). The notice of taking a preset image offline will be released on the live network three months in advance.
- See Constraints on virtual avatar video production.
- Access the MetaStudio console from the Chrome browser.

Video

Watch this video to learn how to create your virtual avatar video on the MetaStudio console.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Video production** card to go to the video production page, as shown in **Figure 8-1**.
- **Step 4** Produce a video by referring to **Common Configuration for Video Production**.
 - In the video material area, in addition to preset materials, you can add a custom virtual avatar in the **Roles** area; you can also import a background

- image, PowerPoint file, image overlay, video overlay, and music from your local device.
- PowerPoint slides, image overlays, video overlays, and virtual avatar added from the video material area to the video preview area can be adjusted, for example, Bring Forward (), Send Backward (), Bring to Front (), Send to Back (), Apply Everywhere (), and Delete (). You can also set the size of the overlays and drag them to change their positions.
- You can click in the upper part of the video preview area to switch the video aspect ratio to 16:9 in landscape mode or 9:16 in portrait mode.

Step 5 Generate the audio of the virtual avatar's reading the input script.

Use any of the following methods:

Text control

Enter text in the text box to generate an audio file, as shown in **Figure 8-2**. Example: Today is September 26, Tuesday. The weather is agreeable. Welcome all of you. The site is well decorated with various types of plants and flowers, and is spacious and bright for all of you to talk with each other comfortably.

Figure 8-2 Text control



Table 8-2 describes the operations of text control. The support for operations in **Table 8-2** varies with voice models. If the icon of an operation in **Table 8-2** is grayed out on the page, the voice model in use does not support this operation. You need to re-select a voice model that supports the required operation.

Table 8-2 Operations

Item	Description
Voice selection	Click the voice name. In the window displayed, select the desired voice.
	Preset voices that are not marked can be used free of charge.
	 Voices marked with Third-party can be used only after being purchased and activated. For details, see Purchasing a DupDub Voice Package.
Insert Action	For details, see Action Insertion .

Item	Description
Insert Pause	Move the cursor to the right of the text to be paused and click Insert Pause. In the dialog box displayed, select Changes in Breathing or set the pause length.
Continuous Reading	Select the text to be read continuously and click Continuous reading.
Multi- pronunciati on Word	Select a multi-pronunciation word in the text and click Multi-pronunciation Word. In the dialog box displayed, select the correct pronunciation or customize one.
	The multi-pronunciation word set here applies only to the current video draft. To apply it to all tasks under your account, refer to Special Words .
Alias	Select the text to be read in a different way and click Alias . Then set the reading method for the selected text.
	The alias set here applies only to the current video draft. To apply it to all tasks under your account, refer to Special Words .
Digit/Letter	For example, the number 1024 can be read as follows:
	– Digit: One zero two four
	Value: One thousand and twenty-four
	– Date: October twenty-fourth
	– Phone number: One zero two four
	For example, the word API can be read as follows:
	– Letter: A P I (read one by one)
	- Word: api
Phonetic	Select an English word and enter its appropriate phonetic. You can also click Phonetic Search . Then enter a word to search for its correct pronunciation in the dictionary and copy the desired phonetic.
Local	Select the text that requires adjustment to speaking speed.
Speaking	The value ranges from 0.5x to 2x :
Speed	- 0.5x : read at the 0.5x speed
	– 2x : read at the 2x speed
Global	Set the global speaking speed.
Speaking	The value ranges from 0.5x to 2x :
Speed	- 0.5x : read at the 0.5x speed
	- 2x : read at the 2x speed

Item	Description
Special Words	You can enable or disable the special word function. Enabling it means you can set the pinyin, phonetics, continuous reading, aliases, and digits/letters for specific text and apply the settings to all the video drafts of your account. For details, see Special Words.
Audition	Click Audition to listen to the voice.
Generate Preview	Click Generate Preview and select Current scene or All scenes to preview the audio and subtitle display. Note: Only some models support dynamic preview. The lip movements and actions in the preview are for reference only and may differ from the final video. For models that support only static preview, you can view the actual lip movements and actions of the virtual avatar only after compositing the video.
27	You can click to zoom in the Text Control tab. Click OK to return to the original page.
4	Click this icon to adjust the volume of text reading.
	 Subtitling. To enable subtitling, refer to Subtitling or perform the following steps: Click to enable subtitling. Click Generate Preview and select Current scene or All scenes to generate subtitles and the preview video. For text control, the input text is extracted to generate subtitles. For audio control, the audio is converted to text before subtitles are generated. You can see the subtitle on the left of the preview area. You can adjust the content and style of the subtitle. Note: For audio control, subtitling can be enabled only in
_	Mandarin Chinese.
16:9	Shows the aspect ratio of the video.
<u>*</u>	When you click this icon for the first time, the Text Control or Audio Control area will be hidden. Clicking this icon again will show the hidden area.

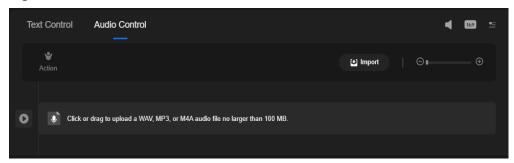
Audio control

Upload a recorded audio file (WAV, MP3, or M4A and no larger than 100 MB) from the local PC.

You can click Import to upload an audio file or drag a local audio file to the

target area. Click on the left to listen to the audio. If the quality is below expectations, click Import to upload a new audio file.

Figure 8-3 Audio control



Step 6 After the audio file is uploaded, you can click the volume icon to adjust the audio volume.

After the preceding operations are complete, the video content of the first scene has been created.

Step 7 If you need to create more scenes, click the + icon under the **Scenes** tab to add a scene. The scene creation process is the same.

If you want to present a PowerPoint file in the video, click the **PowerPoints** tab, import the PowerPoint file from the local PC, and insert the PowerPoint slides to present. For details, see **PowerPoints**. A scene will be generated for each slide. Set all scenes in sequence.

Step 8 After all scenes are set, click **Composite Video** in the upper right corner of the page to go to the **Compositing Settings** dialog box.

Configure the parameters by referring to Table 8-3.

Table 8-3 Parameters

Parameter	Description
Exported File Name	Name of the exported file.
Format	Format of the composited video. The default format is MP4. You can export videos with transparent backgrounds in MOV format. However, the function of exporting an MOV video is invisible by default. You can see this function only after you submit a service ticket to obtain the permission for this function. The composited MOV video has the following constraints: • The text used to control the virtual avatar in all scenes can contain a maximum of 1,500 characters. • The audio files used to control the virtual avatar in all scenes cannot be longer than 5 minutes. • You can watch the MOV video exported from the MetaStudio console only by using supported video players
Resolution	on the local PC. Select a suitable resolution.

Parameter	Description	
lmage Enhancement	Enabling this function means higher video definition but longer time for compositing.	
	Determine whether to enable it.	

Step 9 Click **OK** to go to the **Video Production Task Center** dialog box.

You can check the progress of the video compositing task.

Step 10 When the task status becomes **Composited**, click on the right of **Composited** to go to the video details page, as shown in **Figure 8-4**.

Click **Preview** to watch the composited video. During the preview, you can play the video in full screen or download the video. By default, the composited video is activated. You can click **Deactivate** to deactivate the video.

Note:

- You can preview an MOV video only after downloading it and using a supported video player.
- If video compositing fails, rectify the fault by referring to What If Video Compositing Failed?
- You can view the usage of a purchased resource package for video production by referring to How Do I View the Minutes Used from a Purchased MetaStudio Resource Package for Video Production?
- If you use a transparent background for video compositing, only a WebM video can be exported.

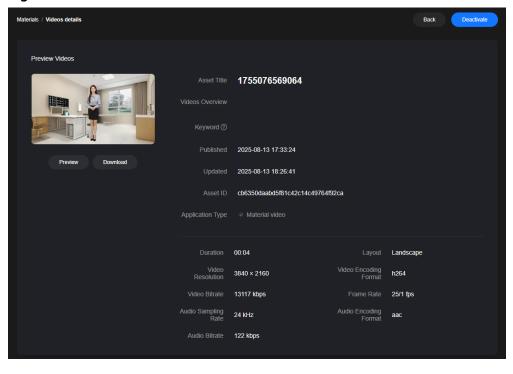


Figure 8-4 Video details

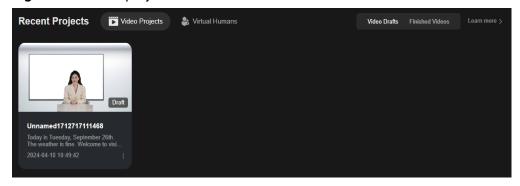
----End

Video Re-Compositing

If you are not satisfied with the composited video, perform the following steps to edit the video and composite it again.

- 1. In the navigation pane, choose **Workbench**.
- In the Recent Projects area, click the Video Projects tab and click Video Drafts on the right to view the video draft list, as shown in Figure 8-5.

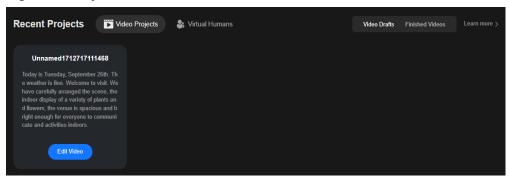
Figure 8-5 Video projects



3. Move the cursor to the text description area of the card and click **Edit Video**, as shown in **Figure 8-6**.

On the video editing page, update the video content and composite the video again.

Figure 8-6 My videos



8.3 Video Asset Management

Video production assets include video drafts, video production tasks, and composited videos.

You can perform the following operations on video assets:

- You can download composited videos to your local device, view their details, rename, and delete them.
- You can edit video drafts, view details about composited videos, rename and delete videos, and create copies of videos. Choose Create Copy in a video draft to copy the draft.
- You can view details about submitted video production tasks.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Creations**.
- **Step 4** You can choose **Video Production** > **My Videos** to view the list of all composited videos.
 - Click in the lower right corner of a video card to perform the following operations on the composited video:
 - **Download**: Download the video to your local device.
 - View Details: View details such as the video asset ID, resolution, and bitrate.
 - Rename: Rename the video.
 - Delete: Delete the video.
- **Step 5** You can choose **Video Production** > **Video Drafts** to view the list of all generated video drafts.
 - Click in the lower right corner of a video draft card to perform the following operations on the draft:
 - **Edit Video**: Go to the video production page, modify the video content following **Video Production**, and composite the video again.

- View Details: Go to the Task Center page to view the records of composited videos.
- Rename: Rename the video draft.
- Delete: Delete the video draft.
- **Create Copy**: Copy the video draft and modify the copied one to composite the video.
- **Step 6** In the navigation pane, choose **Task Center**.
- **Step 7** When the task status becomes **Composited**, click on the right of **Composited** to go to the video details page, as shown in **Figure 8-7**.

Click **Preview** to watch the composited video. During the preview, you can play the video in full screen or download the video. By default, the composited video is activated. You can click **Deactivate** to deactivate the video.

Note:

- You can preview an MOV video only after downloading it and using a supported video player.
- If video compositing fails, rectify the fault by referring to What If Video Compositing Failed?
- You can view the usage of a purchased resource package for video production by referring to How Do I View the Minutes Used from a Purchased MetaStudio Resource Package for Video Production?
- If you use a transparent background for video compositing, only a WebM video can be exported.

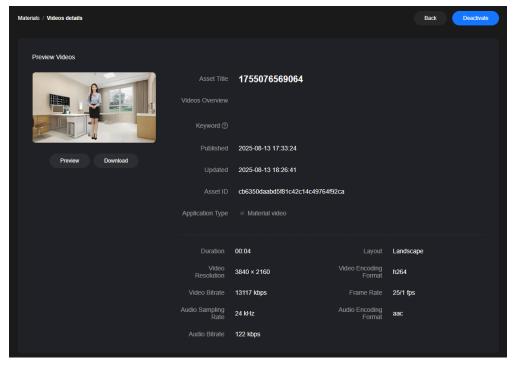


Figure 8-7 Video details

----End

8.4 Common Configuration for Video Production

On the Video Production page, you can overlay materials, such as roles, backgrounds, PowerPoints, overlays, videos, music, and text on a video. This section describes the operation procedure of each material type.



If the pixel of an uploaded image is too high, solve the problem by referring to What If the Pixel of an Uploaded Image Is Too High?

Roles

Figure 8-8 shows the Roles area.

Figure 8-8 Roles

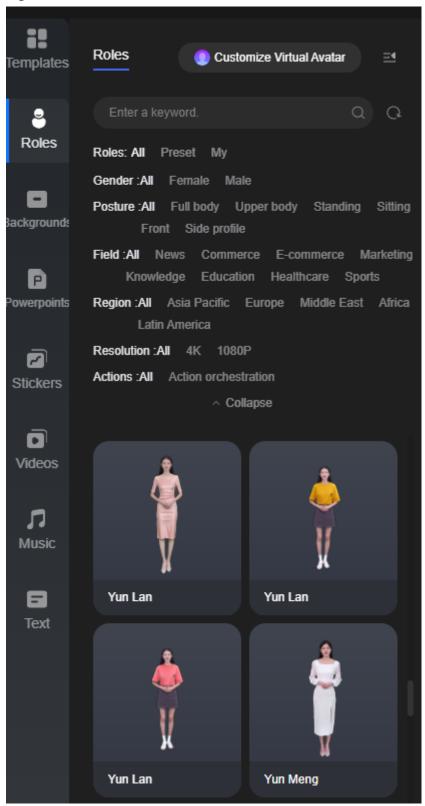


Table 8-4 describes the Roles area.

Table 8-4 GUI elements

GUI Element	Description
Customize Virtual Avatar	Click Customize Virtual Avatar to go to the avatar creation page. See Creating a Virtual Avatar Customization Task .
=4	By default, two columns of virtual avatars are displayed in the Roles area. After you click , only one column is displayed. You can click to display two columns.
Enter a keyword. Q	You can enter a virtual avatar name in the search box for an exact search. Example: yun lan
Q	Icon of refreshing. If there are keywords, the virtual avatar display is refreshed based on the keywords. If no, the default display will be used.
Filter criteria	You can filter and display virtual avatars by role, gender, posture, field, region, resolution, and action.
List of virtual avatars	By default, all virtual avatars are displayed. Click a virtual avatar image. The image will be automatically applied to all scenes in the video draft.
	In the video preview area, you can perform the following operations on different overlays: Bring Forward (), Send Backward (), Bring to Front (), Send to Back (), Apply Everywhere (),
	and Delete (). You can also set the size of the overlays and drag them to change their positions.

Table 8-5 can apply to the role selected in the preview area.

Figure 8-9 Role settings

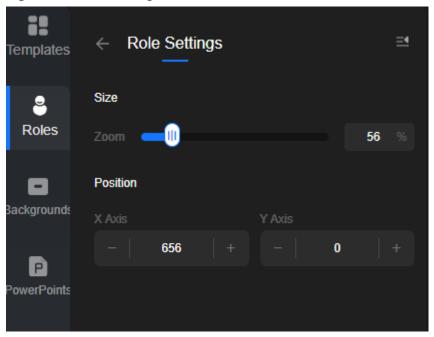


Table 8-5 Role settings

Item	Para mete r	Description
Size	Zoo m	A virtual avatar can be zoomed in or out for preview.
Positi on	X Axis	You can adjust the virtual avatar's position in the preview area.
	Y Axis	

Backgrounds

Figure 8-10 shows the **Backgrounds** area. An uploaded background image cannot be modified. You can modify it only on the local PC and then upload the new one to the console.

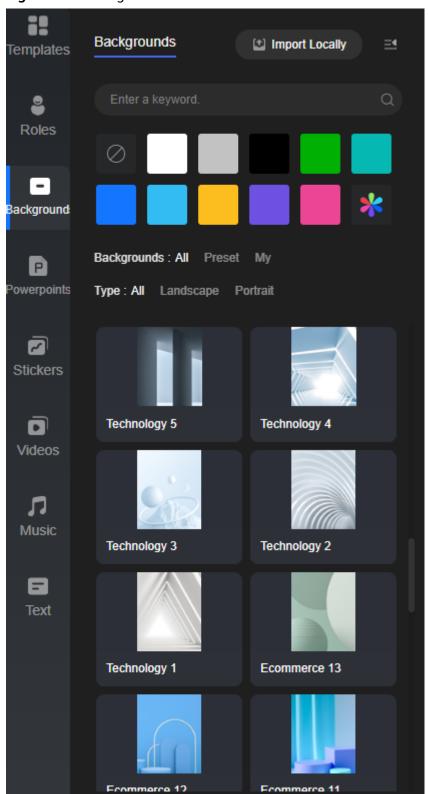


Figure 8-10 Backgrounds

Table 8-6 describes the Backgrounds area.

Table 8-6 GUI elements

GUI Element	Description
Importing locally	Click Import Locally to upload a PNG, JPG, JPEG, or BMP image.
	You can also drag an image from the PC to the image list area for upload.
=4	By default, two columns of images are displayed in the Backgrounds area. After you click , only one column is displayed. You can click to display two columns.
Enter a keyword. Q	You can enter an image name in the search box for an exact search. Example: Technology
Solid color background	 You can set a transparent background using the first image. In this case, you cannot add video materials, and all added materials will be cleared. If you use a transparent background for video compositing, only a WebM video can be exported. You can set a solid color background using either the preset colors or your own colors.
Filter criteria	Images can be filtered and displayed by background and type.
Image list	By default, all images are displayed. Select a scene and click an image to replace the background of the scene.
€	If you move the pointer over an image, will be displayed in the upper right corner of the image. Click the icon to use the image as the background of all scenes.

Table 8-7 can apply to the background image selected in the preview area.

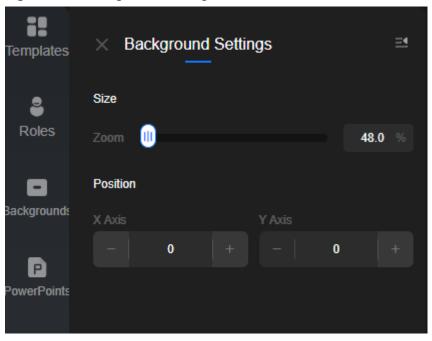


Figure 8-11 Background settings

Table 8-7 Background settings

Item	Para mete r	Description
Size	Zoo m	A background image can be zoomed in or out for preview. The background image cannot be smaller than the preview area; it must cover or extend beyond its boundaries. If the image is larger, only the content within the preview area will be shown.
Positi on	X Axis	If the background image is as large as the preview area, its position cannot be adjusted.
	Y Axis	 If the background image is larger than the preview area, adjust its position within the prompted value range.

PowerPoints

Figure 8-12 shows the **PowerPoints** area. An uploaded PowerPoint file cannot be modified. You can modify it only on your local device and then upload the new one to the console.

Figure 8-12 PowerPoints

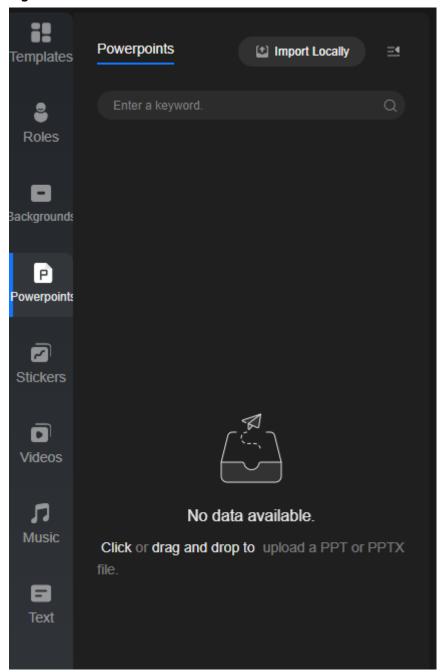


Table 8-8 describes the PowerPoints area.

Table 8-8 GUI elements

GUI Element	Description
Import Locally	Click Import Locally to upload a PPTX, PPT, or PDF file from the PC.
	You can also drag a file from the PC to the file list area for upload.
	Constraints:
	 You can upload a PowerPoint file of no more than 100 slides.
	 If the font of the PowerPoint file cannot be displayed on the MetaStudio console, convert the PowerPoint file to a PDF file before importing it. For details, see How Do I Convert a PowerPoint File to a PDF File?
	 A PowerPoint file containing special effects such as animation cannot be displayed on the MetaStudio console. You are advised to export the PowerPoint file as a video and then import it. See How Do I Present the Animation of a PowerPoint File?
	 If a PowerPoint file fails the parsing and cannot be uploaded, rectify the fault by referring to What If a PowerPoint File Cannot Be Uploaded Due to a Parsing Failure?
=4	By default, two columns of files are displayed in the
	PowerPoints area. After you click , only one column is displayed. You can click to display two columns.
Enter a keyword. Q	You can enter a file name in the search box for an exact search.
	Example: sales guide
File list	By default, all files are displayed.
Viewing files	If you move the pointer over a file, will be displayed in the upper right corner of the file. Click the icon to preview all slides of the PowerPoint file on the page displayed.

GUI Element	Description
Inserting a file	If you move the pointer over a file, will be displayed in the upper right corner of the file. Click the icon to go to the page shown in Figure 8-13. Select slides in the file to insert them.
	In the video preview area, you can perform the following operations on different overlays: Bring Forward (), Send Backward (), Bring to Front
	(三), Send to Back (三), Apply Everywhere (🖾),
	and Delete (). You can also set the size of the overlays and drag them to change their positions.
Deleting a file	Click in the lower right corner of the file to:
	Select Delete from the drop-down list box to delete the file.
	 Select Batch Delete from the drop-down list box and select all files to be deleted. Click Delete in the lower right corner to delete all the selected files.

After the file is uploaded, perform the following operations:

Step 1 In the file list of the **PowerPoints** area, click the uploaded file to go to the dialog box shown in **Figure 8-13**.

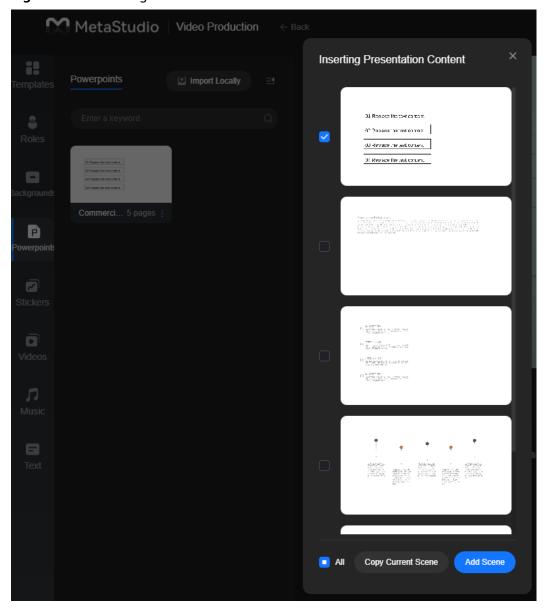


Figure 8-13 Inserting a slide

Step 2 Select the slide to be inserted or select all slides, and click **Copy Current Scene** or **Add Scene** to add scenes to the video draft.

One scene will be generated for each inserted PowerPoint slide. You can choose whether to modify the scene.

Specifically:

- **Copy Current Scene**: A new scene will be generated, including the selected slide and all video materials (such as the virtual avatar and background) of the selected scene.
 - If there are multiple scenes before the slide is inserted, you need to select the desired scene. Then insert the slide into the selected scene.
- **Add Scene**: A new scene will be generated, including the selected slide and the virtual avatar and background of the selected scene. However, other video materials of the selected scene will not be retained in the new scene.

If there are multiple scenes before the slide is inserted, you need to select the scene with the desired virtual avatar and background. Then insert the slide into the selected scene.

Step 3 After all slides are inserted, customize the scene by referring to Video Production.

You can also set the PowerPoint slide overlaid as an image on the preview area, as shown in **Figure 8-14**.

Figure 8-14 Image settings

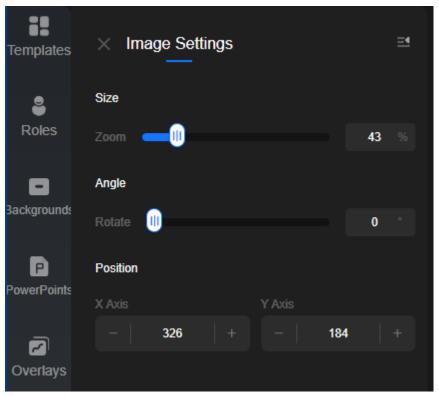


Table 8-9 Image settings

Item	Para mete r	Description
Size	Zoo m	A PowerPoint slide overlaid as an image can be zoomed in or out for preview.
Angle	Rotat e	The PowerPoint slide image can be rotated by up to 360 degrees.
Positi on	X Axis	You can adjust the position of the image in the preview area.
	Y Axis	

----End

Overlays

Figure 8-15 shows the Overlays area.

- An uploaded image overlay cannot be modified. You can modify it only on your local device and then upload the new one to the console.
- If a GIF is overlaid, you can preview the animation.

Figure 8-15 Overlays



Table 8-10 describes the Overlays area.

Table 8-10 GUI elements

GUI Element	Description
Import Locally	Click Import Locally to upload a PNG, JPG, JPEG, BMP, or GIF image.
	You can also drag an image from the PC to the image list area for upload.
=	By default, two columns of images are displayed in the Overlays area. After you click , only one column is displayed. You can click to display two columns.
Enter a keyword. Q	You can enter an image name in the search box for an exact search. Example: tips
Filter criteria	Images can be filtered and displayed by My or Preset .
Image list	By default, all images are displayed.
Viewing an image overlay	If you move the pointer over an image, will be displayed in the upper right corner of the image. Click the icon to zoom in.
Overlaying an image	If you move the pointer over an image, will be displayed in the upper right corner of the image. Click the icon to overlay the image on the video.
	In the video preview area, you can perform the following operations on different overlays: Bring
	Forward (=), Send Backward (=), Bring to Front (=), Send to Back (=), Apply Everywhere (©),
	and Delete (). You can also set the size of the overlays and drag them to change their positions.

You can also set the image overlay in the preview area, as shown in Figure 8-16.

100

0

321

Templates × Image Settings
Size

678

Figure 8-16 Image settings

Angle

Position

Roles

3ackgrounds

e

PowerPoints

Overlays

Table 8-11 Image settings

Item	Para mete r	Description
Size	Zoo m	An image overlay can be zoomed in or out for preview.
Angle	Rotat e	The image overlay can be rotated by up to 360 degrees.
Positi on	X Axis	You can adjust the position of the image overlay in the preview area.
	Y Axis	

Videos

Figure 8-17 shows the Videos area.

Note:

 An uploaded video overlay cannot be modified. You can modify it only on your local device and then upload the new one to the console.

- The aspect ratio of a video overlay is locked. You can adjust its width and height only on your local device and then import the new one.
- A video overlay cannot exceed 30 minutes.

Figure 8-17 Videos

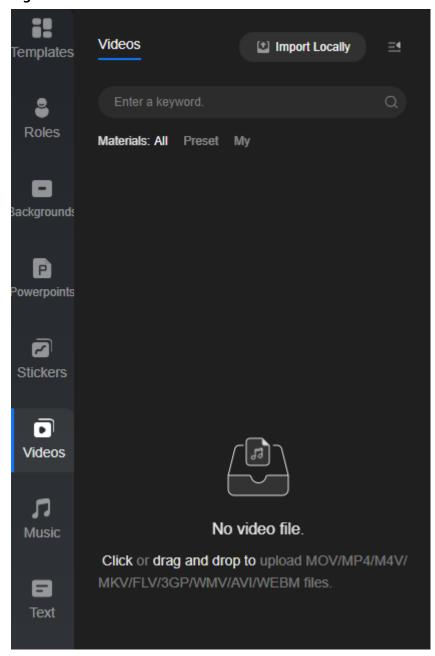


Table 8-12 describes the Videos area.

Table 8-12 GUI elements

GUI Element	Description
Import Locally	Click Import Locally to upload an MOV, MP4, M4V, MKV, FLV, 3GP, WMV, AVI, or WebM video file from your local device.
	You can also drag a video from your local device to the video list area for upload.
	NOTE On the MetaStudio console:
	 An uploaded MOV video file with alpha channel will be transcoded into a WebM video file and stored in the MetaStudio asset library.
	 An uploaded MOV video file without alpha channel will be transcoded into an MP4 video file and stored in the MetaStudio asset library.
=	By default, two columns of videos are displayed in
	the Videos area. After you click , only one column is displayed. You can click to display two columns.
Enter a keyword. Q	You can enter a video name in the search box for an exact search.
	Example: marketing video
Filter criteria	Videos can be filtered and displayed by My or Preset .
Video list	By default, all videos are displayed.
Watching a video	If you move the pointer over a video, will be displayed in the upper right corner of the video. Click the icon to watch the video.

GUI Element	Description
Overlaying a video	If you move the pointer over a video, will be displayed in the upper right corner of the video. Click the icon to overlay the video.
	If the video overlay is with sound, the sound can be heard after the video is overlaid. You can also adjust the volume by referring to Table 8-13 . After video compositing, you can hear both the script read by the virtual avatar and the sound of the video overlay.
	In the video preview area, you can perform the following operations on different overlays: Play
	Once (), Loop (), Bring Forward (), Send Backward (), Bring to Front (), Send to Back (), Copy (), Apply Everywhere (), and Delete
	(III). You can also set the size of the overlays and drag them to change their positions.

You can set the video overlay in the preview area by referring to **Table 8-13**, as shown in **Figure 8-18**.

Video Settings

Figure 8-18 Video settings

Table 8-13 Parameters

Item	Parameter	Description
Playback Settings	Complete Video	Whether to play an entire video overlay. This function is disabled by default.
	Playback	Enabled: A video overlay can be merged into the final video even if there is no content for text/ speech control in this scene. It will be played once.
		 If there is no content for text/speech control, the audio in the video overlay will be merged into the final video.
		 If there is content for text/speech control, the final video will play the audio of both the virtual avatar and the video overlay. The longest duration among the video overlay, content for text control, and content for speech control will determine the length of video overlay playback.
		Disabled: There must be content for text/speech control in this scene. Its audio duration will determine the length of video overlay playback.
	Volume	Volume of the video overlay, in percentage. 0 means muting the video overlay.
Size	Zoom	Zoom ratio of the video overlay.
Angle	Rotate	Video rotation angle, which can be up to 360 degrees.
Position	X Axis	X-axis position of the video overlay.
	Y Axis	Y-axis position of the video overlay.

Music

Figure 8-19 shows the Music area.

Figure 8-19 Music

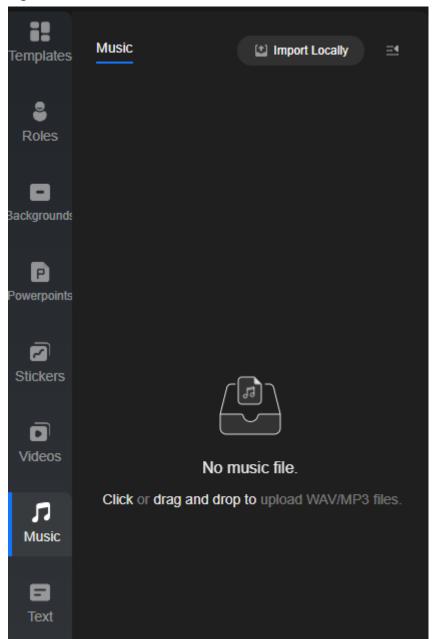


Table 8-14 describes the Music area.

Table 8-14 GUI elements

GUI Element	Description
Import Locally	Click Import Locally to upload a WAV or MP3 music file from your local device.
	You can also drag a music file from your local device to the music file list area for upload.

GUI Element	Description
=4	Clicking zooms out the Music area. You can click to expand the area size.
Music list	By default, all music files are displayed.
Listening to music	If you move the pointer over a music file, will be displayed on the left of the file name. Click the icon to listen to music.
Inserting music	If you move the pointer over a music file, will be displayed in the upper right corner of the file. Click the icon to add the music file to all scenes of the video draft, as the background music of the video.
Removing background music	If you want to remove the background music of the video, you can click Do Not Apply in the upper right corner of the music file.

Text

Figure 8-20 shows the Text area.

Figure 8-20 Text

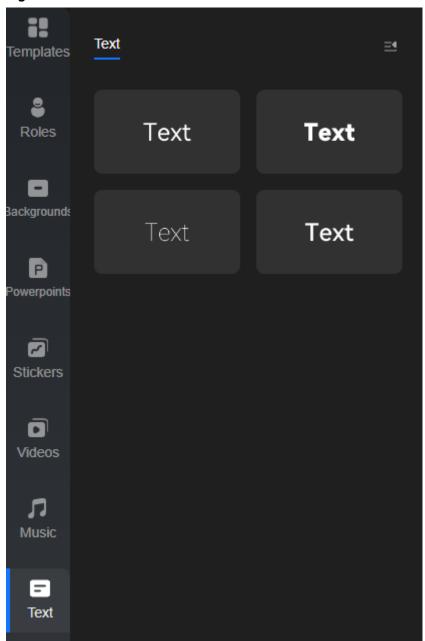


Table 8-15 describes the Text area.

Table 8-15 GUI elements

GUI Element	Description
==	By default, two columns of text are displayed in the Text area. After you click, only one column is displayed. You can click to display two columns.

GUI Element	Description
Text list	Supported text fonts: HarmonyOS normal, HarmonyOS bold, HarmonyOS light, and HarmonyOS medium black.
Inserting text	If you move the pointer over a piece of text, be displayed in the upper right corner of the text. Click the icon to overlay the text.
	In the Text Settings area on the left, set the text content, font, rotation angle, and position in the preview area, as shown in Figure 8-21 .
	In the video preview area, you can perform the following operations on different overlays: Bring
	Forward (三), Send Backward (三), Bring to Front
	(三), Send to Back (三), Apply Everywhere (氫),
	and Delete (). You can also set the size of the overlays and drag them to change their positions.

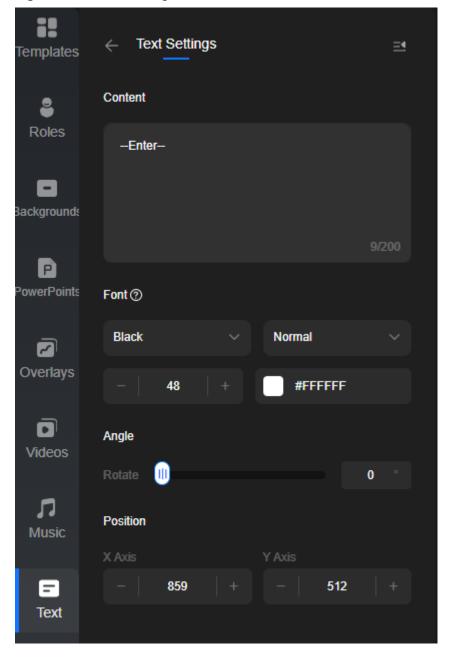


Figure 8-21 Text settings

8.5 Special Words

You can customize the pronunciations of some words and the setting will automatically apply to all video drafts.

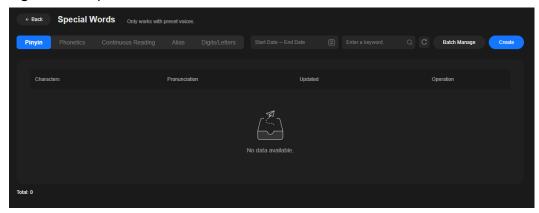
Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Models**.

Step 4 Choose the **Voices** tab and click **Special Words** on the right of the page to go to the page shown in **Figure 8-22**.

You can choose the **Pinyin**, **Phonetics**, **Continuous Reading**, **Alias**, or **Digits/Letters** tab to set each item.

Figure 8-22 Special words



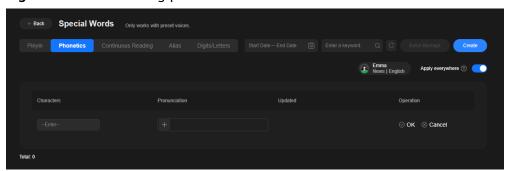
Step 5 The operation method for each item is the same. The following uses phonetics as an example.

Choose the **Phonetics** tab and click **Create** on the right. You can see a row of custom pronunciation, as shown in **Figure 8-23**.

- Enter content in the **Characters** column, for example, **live**.
- In the **Pronunciation** column, click the plus sign (+). You can see multiple possible pronunciations of **live**. Select the desired one.

If none of the provided options are suitable, click **Customize** to enter the desired phonetic. Alternatively, click **Phonetic Search** to copy the desired pronunciation from the online dictionary.

Figure 8-23 Customizing pronunciations



Step 6 After setting **Characters** and **Pronunciation**, click **OK** on the right. The new pronunciation has been added.

Repeat the preceding steps to customize the pronunciations of more words. The setting will automatically apply to all video drafts.

- **Step 7** You can perform the following operations on the **Special Words** page:
 - Editing a special word: Click **Edit** on the right of the word to change its pronunciation, or to enter a new word in the **Characters** column.

- Deleting a special word: Click **Delete** on the right of the word.
- Batch deleting special words: Click Batch Manage in the upper right corner of the page, select the special words to delete (you can select all), and click Batch Delete.

----End

8.6 Action Insertion

An action can be inserted only for a virtual avatar marked with in video production. Yunge, our preset virtual avatar, now supports choreography, with more avatars to follow. This section uses the choreography of Yunge as an example.

Notes

- You can insert actions for a custom virtual avatar only when:
 - you have submitted a service ticket to obtain the permission for choreography.
 - the video used for virtual avatar training contains choreography. For details, see Appendix 2: Guide to Choreography Customization.
- The audio duration should be long enough for the virtual avatar to complete the inserted action. For example, the virtual avatar may not perform the inserted action after finishing its speech at the end of a video scene.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Video Production** card to go to the video production page.

Select the preset avatar Yunge for choreography, enter text for text-based avatar control, and customize other information.

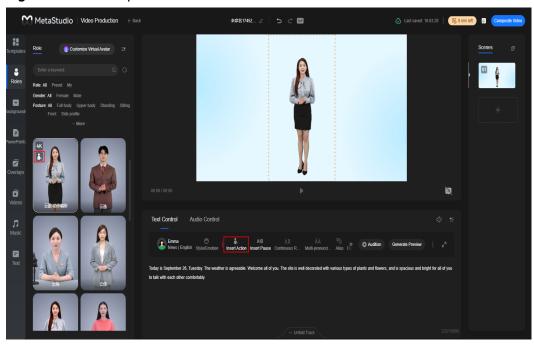


Figure 8-24 Video production

Step 4 Move the cursor to the right of the text where an action needs inserting and click **Insert Action** to go to the **Insert Action** dialog box, as shown in **Figure 8-25**.

You can insert actions as required or enable **Auto Insert Action**. For details, see **Table 8-16**.

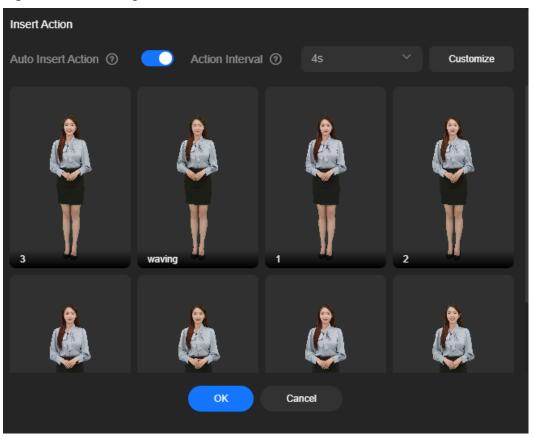


Figure 8-25 Inserting an action

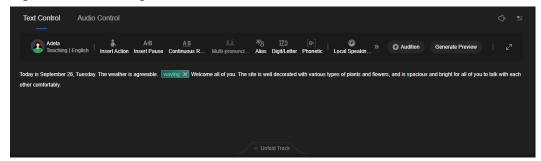
Table 8-16 Parameters

Table 6-10 Parameters		
Parameter	Description	
Auto Insert	Whether to enable auto action insertion.	
Action	If this function is enabled, the generated video contains both manually inserted actions and actions inserted according to text semantics. You can set the interval for auto action insertion.	
	If this function is disabled, the generated video contains only manually inserted actions.	
Action Interval	This parameter is available only when Auto Insert Action is enabled.	
	You can set the interval of automatically inserted actions. Options:	
	2s: frequent action insertion	
	4s: moderate action insertion	
	6s: infrequent action insertion	
	Custom: You can also customize the interval.	

Step 5 Select the action to insert, for example, greeting, and click **OK**.

You can manually insert more actions. Note that choreography preview is not supported.

Figure 8-26 Inserting an action



----End

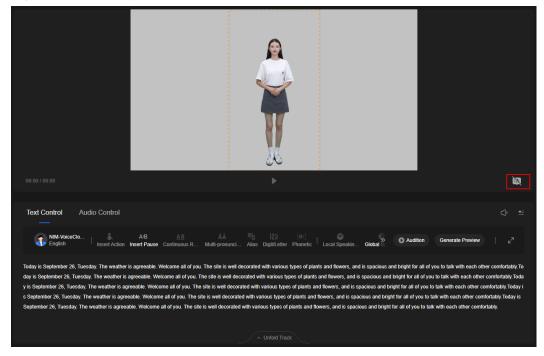
8.7 Subtitling

You can subtitle a virtual avatar video.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- Step 2 Click Go to MetaStudio Console to go to the MetaStudio console.
- Step 3 Click the Video Production card to go to the video production page.Select an avatar, enter text for text-based avatar control, and customize other information.

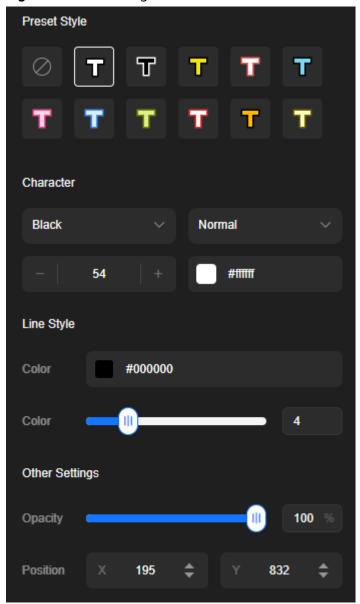
Figure 8-27 Video production



Step 4 Click to enable subtitling.

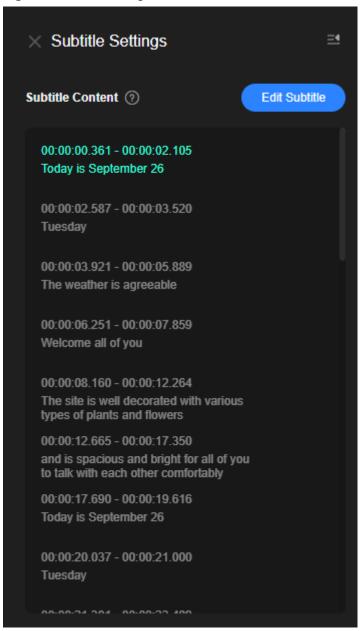
After enabling subtitling, you can adjust the font, color, and position of the subtitles on the left of the page. For details, see **Figure 8-28**.

Figure 8-28 Subtitling



- **Step 5** Click **Generate Preview** and select **Current scene** or **All scenes** to generate a preview video. You can play the video to view the subtitles.
 - For text-based avatar control, the input text is extracted to generate subtitles. For audio-based avatar control, the audio is converted to text before subtitles are generated.
- **Step 6** In the **Subtitling** area on the left of the page, you can view the generated subtitles. You can click **Edit Subtitle** to edit the subtitles, as shown in **Figure 8-29**.
 - For audio-based avatar control, subtitling can be enabled only in Mandarin Chinese.

Figure 8-29 Subtitling



Step 7 After editing the subtitles, click **Save**.

----End

9 Livestreaming

9.1 About the GUI

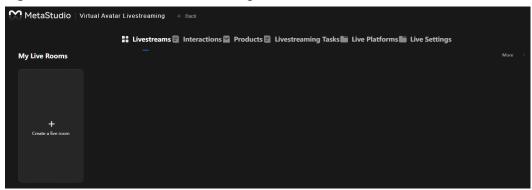
Before starting livestreaming, you can familiarize yourself with the **Virtual Avatar Livestreaming** page and the page of creating a live room.

Home page of virtual avatar livestreaming

Figure 9-1 shows the home page of virtual avatar livestreaming. The description of each tab is as follows:

- **Livestreams**: You can create a live room with a virtual avatar. See **Livestreams**.
- Interactions: You can add an interaction rule library and interaction rules. The
 added interaction rule library can be directly imported to and used in the live
 room. See Interactions.
- Products: You can add products. Products are automatically displayed on the Products tab of the live room, and can be used during livestreaming. See Products.
- **Livestreaming Tasks**: shows the list of live rooms you have created. You can click this tab to enter a live room, modify the content in the live room, and start the streaming again. See **Livestreaming Tasks**.
- Live Platforms: You can add a third-party live platform and interconnect it with a live room of MetaStudio. For details, see Interconnection with a Live Platform.
- Live Settings (tenant-level): Parameters include Max Duration, Auto End After, and Notify on Livestream Interruption. For details, see Livestream Settings.

Figure 9-1 Virtual avatar livestreaming



Page of Creating a Live Room

Figure 9-2 shows the page of creating a live room. **Table 9-1** describes details of the page.

Figure 9-2 Creating a live room

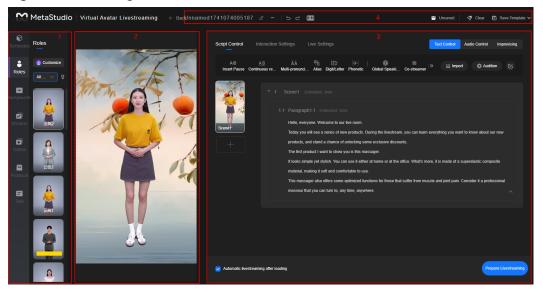


Table 9-1 About the GUI

Area	Description
1	Material area. For details, see Configuring Livestreaming Materials.
	Templates: livestreaming template. This tab is visible only to administrators.
	Roles: virtual avatar image list. You can select the desired virtual avatar image or customize one.
	Backgrounds: background image list. You can import images from the local PC or select a preset background image.
	Overlays: image overlay list. You can import an image from a local device to overlay it on the video.
	Videos: muted video list. An MOV, MP4, M4V, MKV, FLV, 3GP, WMV, or AVI video can be imported from the local PC and set as the background video.
	Products: product list. You need to customize a product, which can contain image overlays, videos, text, and audios.
	Text: text template list. You can select a text template and insert text to the live video.
2	Livestream preview window, which is used to preview the static live video.

Area	Description
3	A live script consists of multiple scenes, and each scene consists of multiple paragraphs.
	 You can add or copy a scene, and set the virtual avatar image, background, and voice for each scene.
	 You can add or copy a paragraph, or import a piece of script in TXT format. The input content will be automatically parsed.
	Live script settings:
	Script Control You can select any of the following methods:
	 Text Control: Enter text to control the speaking of virtual avatars.
	 Audio Control: Upload an audio to control the speaking of virtual avatars.
	 Improvising: Streaming starts without script. After the streaming starts, the virtual streamer remains silent, and will not speak until interaction content is input or the streaming is taken over by a real person.
	 Interaction Settings: You can choose On-screen Comments, Joining Live Rooms, Likes, or Gifts.
	 Live Settings: You can configure Playback Startup, Output, Risk Control, and More.
	Elements in the lower part of the page:
	 Automatic livestreaming after loading: selected by default. Click Prepare Livestreaming. The livestream starts automatically after the loading is complete. If Automatic livestreaming after loading is deselected, a livestream will be started only after you click Start Streaming.
	Livestream Billing Mode: You can select the billing mode of a livestream in the live room.
	Prepare Livestreaming: Click it to load the resources needed for the livestream.

Area	Description
4	The ongoing livestream name (customizable) is on the left.
	From left to right:
	 Unnamed{Number}: This is the live room name automatically generated after you enter the live room.
	Click it to change the live room name.
	• Click it to interconnect MetaStudio with a third-party platform. For details, see Interconnection with a Live Platform.
	Click it to roll back your operation.
	Click it to restore your operation.
	• 9:16: Screen layout (9:16 by default). You can change it to 16:9.
	Icon of saving. The latest time of saving is automatically displayed on the right of the icon.
	• St. Click it to clear all content of a live room.

9.2 Livestreams

You can use a virtual avatar to create a live room.

Procedure:

- 1. Creating a Live Room
- 2. Setting the Livestream Script
- 3. Setting the Interaction
- 4. Live Settings
- 5. Starting the Livestream

Preparations

- If the preset virtual avatar image does not meet the requirements, customize a virtual avatar image in advance by referring to **Image Modeling**.
- Access the MetaStudio console from the Chrome browser.

Constraints

- The preset virtual avatar images on the MetaStudio console are valid for three years (till the middle of 2027). The notice of taking a preset image offline will be released on the live network three months in advance.
- For details, see constraints on virtual avatar livestreaming.

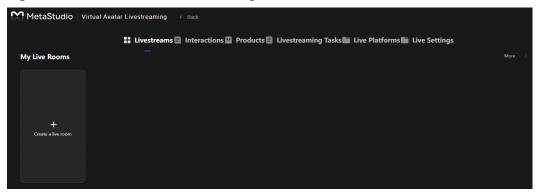
Video

Watch this video to learn how to livestream with your MetaStudio virtual avatar.

Creating a Live Room

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Livestreaming** card to go to the virtual avatar livestreaming page, as shown in **Figure 9-3**.

Figure 9-3 Virtual avatar livestreaming



Step 4 On the **Livestreams** tab, click the **Create a live room** area.

See About the GUI.

- **Step 5** Configure live video elements by referring to **Configuring Livestreaming Materials**.
 - In the material area on the left, there are preset video materials. You can also customize a role, import background images, image overlays, and video overlays from your local device, create a product, and set the format of the text to display.
 - You can adjust the images, videos, and virtual avatar overlaid on the video preview area, for example, **Bring Forward** (), **Send Backward** (), **Bring to Front** (), **Send to Back** (), **Copy** (), **Apply Everywhere** (), and **Delete** (). You can also set the size of the overlays and drag them to change their positions.

----End

Setting the Livestream Script

After setting the live video frame, you can set the livestream script using one of the following three methods: text control, audio control, and improvising.

• Method 1: Text control

The virtual avatar speaks as instructed by the input text. You can add text in either of the following ways:

Enter text in the paragraph box of each scene. You can click to add paragraphs.

Click Import in the upper right corner to import a TXT file of at least 200 characters from the PC. If there are multiple paragraphs, you can use line breaks. The input text will be automatically parsed.

Note: Text should contain at least 200 characters in each scene, and no more than 2,000 characters in each paragraph.

Figure 9-4 Text control

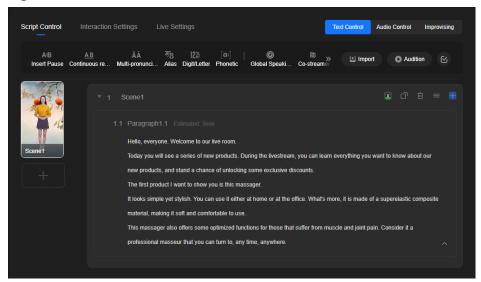


Table 9-2 describes the operations of text control. The support for operations in **Table 9-2** varies with voice models. If the icon of an operation in **Table 9-2** is grayed out on the page, the voice model in use does not support this operation. You need to re-select a voice model that supports the required operation.

Table 9-2 Operations

Operation	Description
Insert Pause	Move the cursor to the right of the text to be paused and click Insert Pause . In the dialog box displayed, select Changes in Breathing or set the pause length.
Continuous Reading	Select the text to be read continuously and click Continuous reading.
Multi- pronunciati on Word	Select the text and set the correct pronunciations of multi- pronunciation words. The multi-pronunciation word set here applies only to the current video script. To apply it to all tasks under your account, refer to Special Words.
Alias	Select the text to be read in a different way and click Alias . Then set the reading method for the selected text. The alias set here applies only to the current video script. To apply it to all tasks under your account, refer to Special Words .

Operation	Description
Digit/Letter	 For example, the number 1024 can be read as follows: Digit: One zero two four Value: One thousand and twenty-four Date: October twenty-fourth Phone number: One zero two four For example, the word API can be read as follows: Letter: A P I (read one by one) Word: api
Phonetic	Select an English word and enter its appropriate phonetic. You can also click Phonetic Search . Then enter a word to search for its correct pronunciation in the dictionary and copy the desired phonetic.
Global Speaking Speed	Sets the global speaking speed, which ranges from 0.5x to 2x . When the speed is set to 0.5x , the voice is played at 0.5x speed. When the speed is set to 2x , the voice is played at 2x speed.
Co-streamer	Select a piece of text for it to be read by the co-streamer.
Streamer	Global voice of the streamer, which is applicable to all scenes in the live room. If there is a specific voice for a scene, this voice will be prioritized. There is a default voice. You can also select other voices as needed. If you want to use a preset voice marked with Third-party, perform operations in Purchasing a DupDub Voice Package.
Co-streamer	Global voice of the co-streamer, which is applicable to all scenes in the live room. The co-streamer's voice cannot be set separately for a single scene. Figure 9-5 shows an ongoing livestream. If you want to interact, click to switch to the co-streamer's voice. Enter and send the interaction content. The streamer pauses the reading and the co-streamer reads the sent interaction content.
Import	Text files can be imported from the PC and parsed to generate paragraphs. A file to be imported must: 1. be a TXT file of at least 200 characters 2. be automatically parsed to generate paragraphs based on the line breaks.

Operation	Description
Audition	Click Audition to listen to the current live room script.
	By default, the global voice of the streamer is used. If there is a specific voice for a scene, this voice will be prioritized. Costreamer's content that is separately marked will be read by the co-streamer.
	You can also click (in a specific paragraph area to listen to the content of that paragraph.
Scene	You can perform the following operations on a scene:
	• Scene 1: changing the scene name, which defaults to Scene 1
	setting the prioritized voice of the current scene
	copying a scene to add a same one
	deleting a scene
	adjusting the position of a scene
	adding a blank paragraph to the current scene
Paragraph	You can perform the following operations on a paragraph:
	Paragraph 1.1: changing the paragraph name, which defaults to Paragraph 1.1
	listening to the reading of the current paragraph
	• 🔲: copying a paragraph to add a same one
	• 🗓: deleting a paragraph
	• = : adjusting the position of a paragraph in the scene
	adding a blank paragraph

Script Control

RXXX/R

RXXX/R

Engich

X XXX/R

Engich

X 1 MSR1 Estimated data

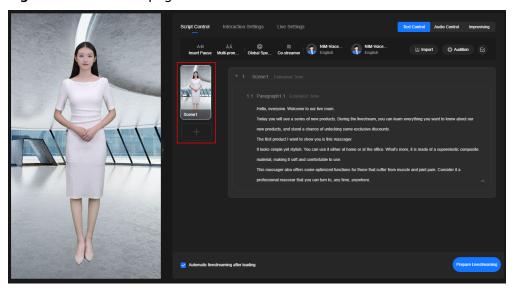
Hello, everyonel Winkcome to our five broadcast!
Today is a special day, because we have a series of new products to meet your likes, you will have the opportunity to learn about our new product information in the first time, and you will have the opportunity to repry exclasive offers and benefited. First of all, bring you time would be placed at home or in the office, can become a beautiful fundacape. Moreover, its inner wall material is made of high elastic composite material, which is soft and comfortable to louch, so that you can feel its behavior and quality all every moment of use.

Our massager is also optimized for those over the age of 45. As you age, muscle and joint problems may become more promisent. This massager can help you releve these problems, so you can eyey prefersional massage services anytime, anywhere.

Figure 9-5 Ongoing livestream

If you need to create multiple scenes, click the + icon under **Scene 1** on the right of the livestream preview window to add a scene. Then set the layout and script of the new scene based on the previous scene.





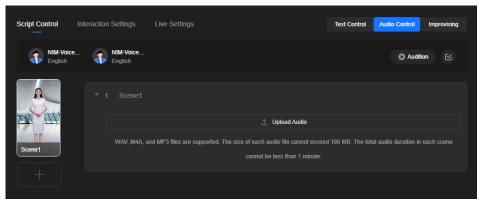
Method 2: Audio control

a. Click **Upload Audio** to upload a recorded audio file from the PC, as shown in **Figure 9-7**.

WAV, M4A, and MP3 files are supported. The size of each audio file cannot exceed 100 MB. The total audio duration in each scene cannot be less than 1 minute.

After a livestream starts, the uploaded audio is played in its original voice. You can also set the voices of the streamer and co-streamer to read interaction content.

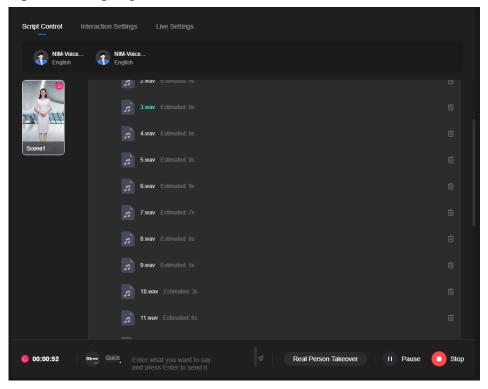
Figure 9-7 Audio control



b. After the audio file is uploaded, click **Audition** to listen to the audio file.

After the livestream starts, you can click shown in Figure 9-8 to switch to the global voice of the streamer or the co-streamer's voice. The sent interaction content will be read with the voice you choose.

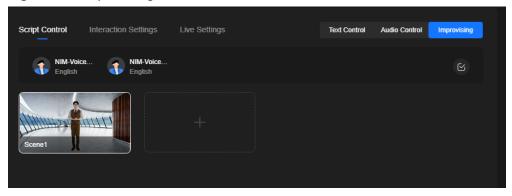
Figure 9-8 Ongoing livestream



Method 3: Improvising

A livestream starts without script, as shown in **Figure 9-9**. After the livestream starts, the virtual streamer remains silent, and will not speak until interaction content is sent or the livestream is taken over by a real person.

Figure 9-9 Improvising



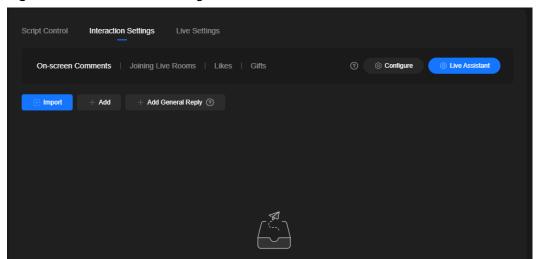
Setting the Interaction

After setting the layout and scripts for all scenes, you can proceed with interaction settings, including **On-screen Comments**, **Joining Live Rooms**, **Likes**, and **Gifts**.

You can set an interaction rule library by referring to **Interactions** and then import it here. Alternatively, set the interaction rules here. A maximum of 100 interaction rules of all types can be added.

The operation for adding interaction rules is similar for these four types. The following uses the operation for on-screen comments as an example.

Step 1 On the live video production page, click the **Interaction Settings** tab on the right, as shown in **Figure 9-10**.



No interaction rules set yet.

Add Rule

Figure 9-10 Interaction settings

Step 2 Click Add Rule in Figure 9-10 to go to the page shown in Figure 9-11.

Figure 9-11 On-screen comment settings

You can set the rule in the lower part of the page.

- Set the on-screen comment keywords that trigger replies by the streamer. If
 there are multiple keywords, separate them with vertical bars (|), for example,
 link|model|discount. When a keyword is identified in a comment, the preset
 reply of this keyword will be automatically read.
- 2. Select **Streamer** or **Co-streamer** to reply to the user's question. The reply can be set in one of the following ways:
 - Text: Set the reply as text. A maximum of five replies can be added. After a livestream starts, the replies are matched in sequence based on the number of triggering times. Only one reply will be read each time.
 Example: For details about the link, model, and discount of the product, see the description in the upper part of the page.
 - Audio: Upload an audio file in MP4, WAV, or M4A format from the PC.
 When the rule is triggered, the audio file is used for reply.
- 3. Images or videos can be displayed in the live video to make a reply more informative.

The method of adding and setting images is the same as that of adding and setting videos. The following uses the operation of images as an example.

a. Click select an image or video from the local PC, and add it to the + area.

After adding the image, you can see the thumbnail of the image, as



- b. Move the pointer to the area. The area changes to
- c. Click **Preview**. The image is added to the livestream preview window. You can drag the image or adjust the image size.

Step 3 Click **Add** to add more rules for replying to on-screen comments by repeating **Step 2**.

Preview

Step 4 After all rules for replying to on-screen comments are added, you can click Add General Reply to add a general reply. The setting method is the same as that in Step 2.

Only one general reply can be set. The general reply is triggered when a user question does not trigger any of the preset reply rules.

- **Step 5** You can perform the following operations on a rule:
 - **Batch Manage**: You can batch set the application scenarios of selected rules or delete selected rules.
 - **Viewer Mention**: After this function is enabled, you can see a text message "Replying to *[name]*: *[content]*" on the live video.
 - Enable All: You can enable all rules.
 - All scenes >: setting the application scenario of a single rule
 - cnabling or disabling the current rule

----End

Live Settings

Step 1 On the live video production page, click the **Live Settings** tab on the right, as shown in **Figure 9-12**.

See Table 9-3.

Figure 9-12 My videos

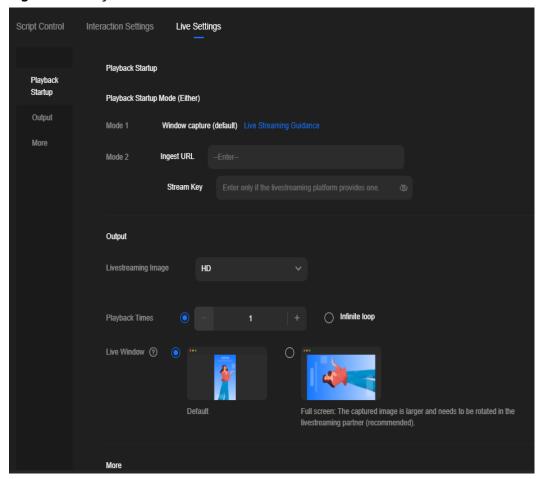


Table 9-3 Live settings

Area	Parameter	Description
Playback Startup	Playback Startup Mode	Select a livestream startup mode as needed and perform operations as prompted.
		There are two livestream startup modes:
		Obtain the ingest URL from the live platform. The method for obtaining the ingest URL varies with platforms. On the MetaStudio console, you only need to enter the ingest URL to push the livestream to a platform. With RTMP stream push, the live video feed is transmitted from the Huawei Cloud server to the server of the live platform, so you can close the console page even during the livestream.
		If the ingest URL is not available, you can start livestreaming through window capture. Note:
		 With RTMP stream push, closing the console page does not end the livestreaming task, and the ongoing livestream will incur fees continuously. To end the livestream, you need to either click End or call the API to deliver a command.
		You need to understand the regulations and policies of the live platform. Some platforms may restrict livestreaming with virtual content.
Output	Livestreamin g Image	Select the definition of the livestreaming image. Options:
		Smooth
		• HD
		• UHD
		Default value: HD
	Playback Times	Set the number of times that a livestream should be played in a cyclical manner, or select Infinite loop .
		The livestream ends after it is played for the configured times. However, if Max Duration is set on the Livestream Settings page and differs from Playback Times , the livestream will end whichever comes soonest.
		By default, the livestream is played once.

Area	Parameter	Description
	Live Window	Size of the live window. The window can be adjusted to vertical orientation. You can start a livestream on the current page or in the new window.
		Options for the new window:
		- Portrait
		 Full screen (recommended): The captured frame is larger and needs to be rotated in the third-party live studio.
		The default value is Portrait .
		 When the window is used for livestreaming, the options are as follows:
		 Default: The layout of the window is retained.
		 Rotate: Expand the preview area to obtain a larger display (recommended).
		 Rotate and expand by default: The preview area is rotated and expanded by default to offer a larger display.
More	Event Callback Address	Fields of scene and paragraph events can be returned during a livestream. This parameter is applicable to API calling or secondary development.
	Live Room ID	You do not need to set it. It is automatically displayed after the current live room is saved.

Step 2 Click in the upper right corner to save the livestream settings.

If livestream script saving fails, rectify the fault by referring to **What If Livestream Script Saving Failed?**

----End

Starting the Livestream

- **Step 1** In the lower right corner of the livestream creation page, select pay-per-use or yearly/monthly for **Livestream Billing Mode**.
- **Step 2** Automatic livestreaming after loading is selected by default. Click **Prepare** Livestreaming in the lower right corner of the page. The livestream starts automatically after the loading is complete.

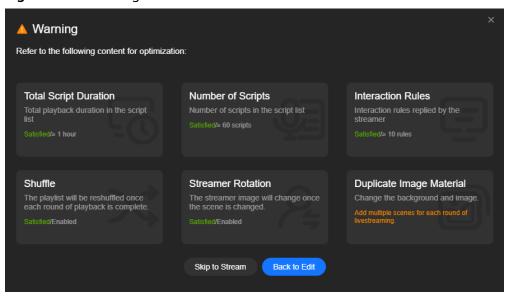
If **Automatic livestreaming after loading** is deselected, a livestream will be started only after you click **Start Streaming**.

 To livestream with improvising, you only need to click Prepare Livestreaming, as shown in Step 5.

- For text control and audio control, you need to confirm the risks before starting a livestream, as shown in **Step 3**.
- **Step 3** For text control and audio control, the **Warning** dialog box will be displayed, as shown in **Figure 9-13**.

You need to check the warning items one by one to optimize the livestreaming content.

Figure 9-13 Warning



- **Step 4** You can start livestreaming after the risks are eliminated, or select **Skip to Stream**.
- **Step 5** You can view the livestream loading progress in the preview window.

Figure 9-14 shows an ongoing livestream. **Table 9-4** describes the operations in the lower right corner of the page.

Figure 9-14 Ongoing livestream

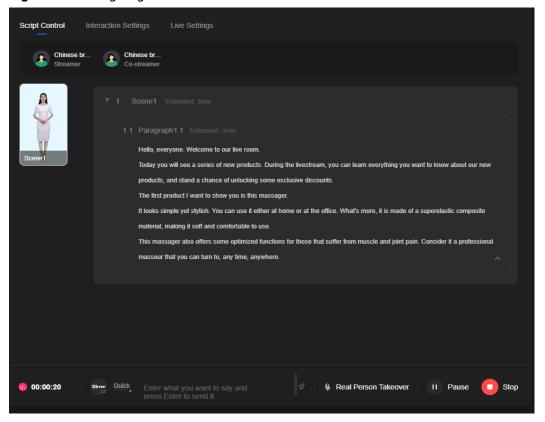


Table 9-4 About the GUI

GUI Element	Description
00:01:20	Livestream timing. For example, 00:01:20 indicates that the livestream has lasted one minute and 20 seconds.
Strum =	Switches the voice of reading interaction content. The streamer's voice is used by default. You can switch to the co-streamer's voice.
Quick	Click this icon to select and send the preset interaction content for the streamer to read.
Entering interaction content and pressing Enter to send the content	After the interaction content is entered and sent, the streamer or co-streamer reads the newly sent content. Then they continue reading the original content.

GUI Element	Description
Real Person Takeover	Click Real Person Takeover . In this case, the virtual streamer stops voicing and only acts as programmed, and a real person voices for the virtual streamer.
	After the real person stops speaking, click Cancel Real Person Takeover to let the virtual streamer continue reading the original content.
Pause	Click Pause to pause the livestream.
	Click Continue to resume the livestream.
Stop	Click Stop to stop the livestream.
	Closing the window will not stop the livestream. To do that, click Stop at the bottom. You can also set the livestream to automatically end by specifying Playback Times or Max Duration . It will end whichever comes soonest.

----End

Livestream Interruption Troubleshooting

To handle livestream interruptions in time, you are advised to enable **Notify on Livestream Interruption** (see **Livestream Settings**). When a livestream is interrupted, you can receive internal messages, SMS messages, and emails to know the causes and solutions in detail.

See Table 9-5.

Table 9-5 Common causes for livestream interruption and their solutions

Cause	Solution
Network and other issues	You can configure Auto End After on the MetaStudio console by referring to Livestream Settings .
	If Notify on Livestream Interruption is enabled, you can troubleshoot according to the received information and resume the livestream.
Livestream duration about to reach Max Duration	You can set Max Duration by referring to Livestream Settings . A warning notification will be sent before the livestream reaches the Max Duration limit. You need to increase the value of Max Duration before the current limit is reached to avoid livestream interruptions.
Insufficient tenant resources	A warning notification will be sent before your livestream resources are used up. In this case, you must enable pay-per-use billing or purchase yearly/monthly resources to avoid livestream interruptions.

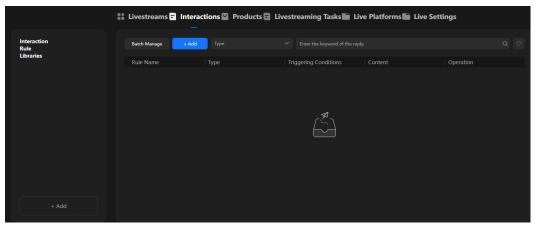
9.3 Interactions

On the **Interactions** tab of the **Virtual Avatar Livestreaming** page, you can add an interaction rule library and interaction rules. The added interaction rule library can be directly imported to and used in the live room.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Livestreaming** card to go to the virtual avatar livestreaming page.
- Step 4 Click Interactions, as shown in Figure 9-15.

Figure 9-15 Interactions



Step 5 In the **Interaction Rule Libraries** area on the left, click **Add** in the lower part. A horizontal line will be displayed, as shown in **Figure 9-16**.

Enter an interaction rule library name. You can perform the following operations on a library:

- Click on the right of the interaction rule library and select **Rename** from the drop-down list box to rename the library.
- Click on the right of the interaction rule library and select **Copy** from the drop-down list box to generate a new library.
- Click on the right of the interaction rule library and select **Delete** from the drop-down list box to delete the library.

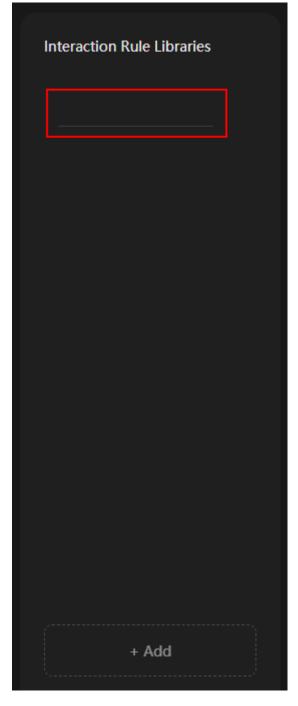


Figure 9-16 Interaction rule libraries

Step 6 Select an interaction rule library on the left and click **Add** to go to the **Add Interaction Rule** dialog box, as shown in **Figure 9-17**.

You can add an interaction rule to the interaction rule library. See Table 9-6.

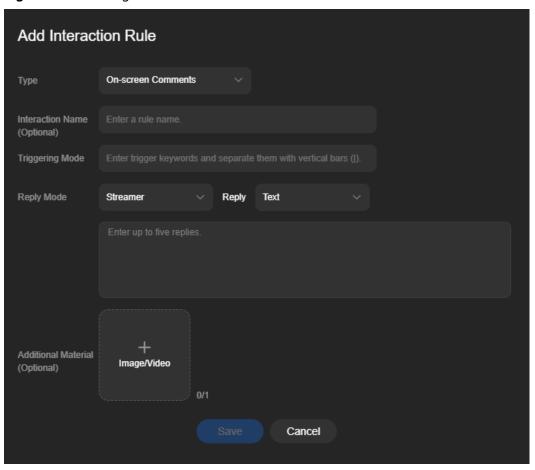


Figure 9-17 Adding an interaction rule

Table 9-6 Parameters for adding an interaction rule

Parameter	Description
Туре	Interaction type. Options: On-screen Comments Joining Live Rooms Likes Gifts
Interaction Name (Optional)	Name of an interaction rule.
Triggering Mode	Enter trigger keywords and separate them with vertical bars (), for example, link model discount. When a keyword is identified in a comment, the preset reply of this keyword will be automatically read.
Reply Mode	Select Streamer or Co-streamer . Then select Text or Audio for Reply .

Parameter	Description
Additional Material (Optional)	Upload an image or video from the local PC. When a reply related to the uploaded material is read in the live room, the image or video uploaded here will be displayed in the live video.

Step 7 Click Save. An interaction rule has been added.

You can add more interaction rules to the interaction rule library or add more interaction rule libraries as needed.

You can perform the following operations on an interaction rule:

- Click **Edit** in the **Operation** column on the right of an interaction rule. In the **Edit Interaction Rule** dialog box displayed, edit the interaction rule.
- Click **Copy** in the **Operation** column on the right of an interaction rule to copy the rule and generate a new one.
- Click **Delete** in the **Operation** column on the right of an interaction rule to delete the rule.

----End

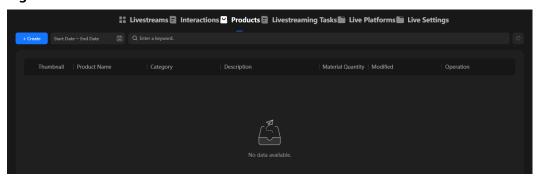
9.4 Products

On the **Products** tab of the **Virtual Avatar Livestreaming** page, you can add products. Products are automatically displayed on the **Products** tab of the live room, and can be used during livestreaming.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Livestreaming** card to go to the virtual avatar livestreaming page.
- Step 4 On the page displayed, click Products, as shown in Figure 9-18.

Figure 9-18 Products



Step 5 Click Create to go to the Create Product page shown in Figure 9-19.

Table 9-7 describes the required parameters.

Figure 9-19 Creating a product

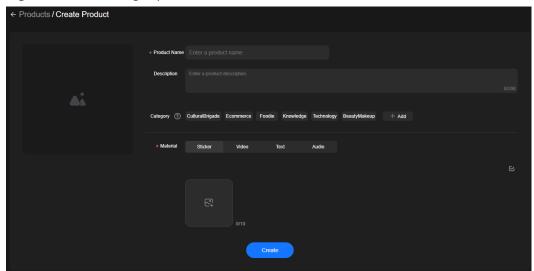


Table 9-7 Parameters for creating a product

Parameter	Description
Product Name	Product name.
Description	Product description.
Category	Product category. The selected category will become the product tag, which facilitates product search.
	You can select more than one category or add new categories.
Material	Materials integrated into a product.
	Options:
	Overlay: Select a local image.
	Video: Select a local video file.
	Text: Enter text.
	Audio: Select a local audio file.

Step 6 Click **Create**. The message **Created successfully** appears.

The newly created product is displayed in the product list on the **Products** page.

You can perform the following operations on a product:

- Click **View** in the **Operation** column of a product. On the **Product Details** page displayed, click **Edit** to edit the product information.
- Click **Edit** in the **Operation** column of a product. On the page displayed, edit the product information and click **Save**.
- Click **Delete** in the **Operation** column of a product to delete the product.

----End

9.5 Livestreaming Tasks

The live rooms that you created are displayed in the list on the **Livestreaming Tasks** tab of the **Virtual Avatar Livestreaming** page. You can access a live room, modify the livestream content, and restart the livestream.

Procedure

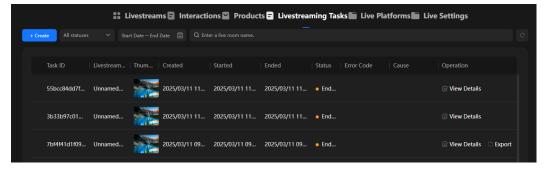
- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Livestreaming** card to go to the virtual avatar livestreaming page.
- **Step 4** Choose the **Livestreaming Tasks** tab to go to the page shown in **Figure 9-20**.

You can view all the livestreaming tasks you created. If there are multiple livestreams in one live room, one task will be generated for each livestream.

You can view the task ID, name, thumbnail, creation time, start time, end time, billing mode, error code, error cause, and status of each livestream.

You can click **View Details** in the **Operation** column of a livestream task in the **Ended** status to access the live room, modify the livestream content, and restart the livestream.

Figure 9-20 Livestreaming tasks



----End

9.6 Interconnection with a Live Platform

You can specify third-party platform information to interconnect a third-party platform with a live room of MetaStudio.

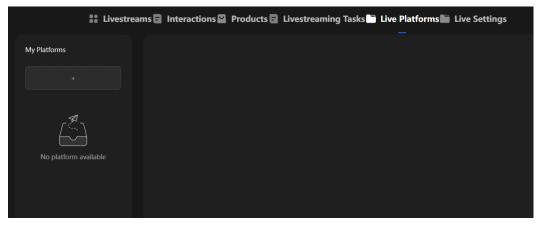
Prerequisites

To interconnect a live platform with MetaStudio, you need to **submit a service ticket** or contact the account manager. You can perform operations of this section only after the interconnection and joint commissioning are successful.

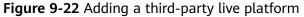
Procedure

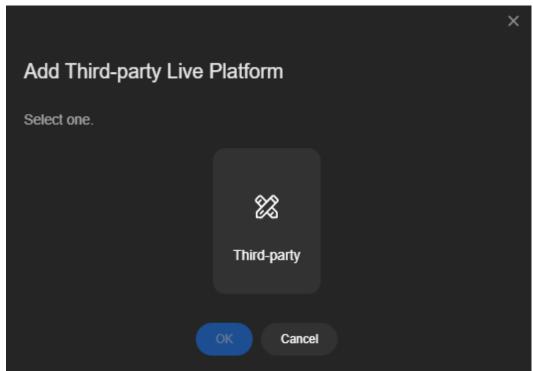
- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Livestreaming** card to go to the virtual avatar livestreaming page.
- **Step 4** Click **Live Platforms** to go to the page shown in **Figure 9-21**.

Figure 9-21 Interconnecting with a live platform



Step 5 Click the plus icon (+) on the left to go to the Add Third-party Live Platform dialog box, as shown in Figure 9-22.





Step 6 Select **Third-party** and click **OK** to go to the third-party platform configuration page, as shown in **Figure 9-23**.

See Table 9-8.

Figure 9-23 Configuration page

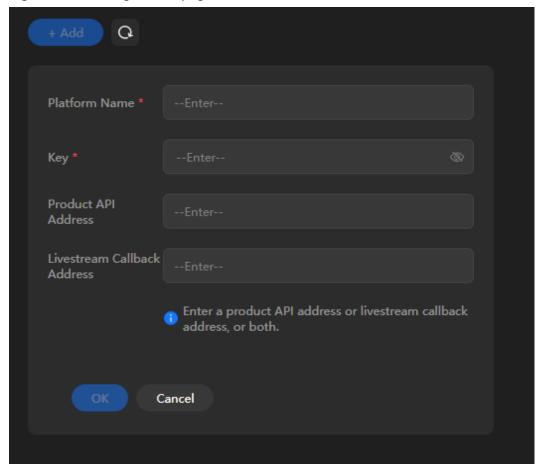


Table 9-8 Third-party platform configuration

Parameter	Description
Platform Name	Name of the third-party live platform.
Key	Authentication key for MetaStudio to access the third-party platform.
Product API Address	API address and livestream callback address of a product. Enter at least one of them.
Livestream Callback Address	

Step 7 Click **OK**. The third-party platform has been added.

The new third-party platform is displayed as a card on the current page.

You can perform the following operations:

- Click in the upper right corner of the card to edit the third-party platform information.
- Click in the upper right corner of the card to delete the third-party platform.
- **Step 8** To make the interconnection take effect, perform the following operations on the page for editing a live room:
 - 1. Click on the right of the live room name. In the dialog box displayed, click **Edit**, as shown in **Figure 9-24**.

See Table 9-9.

Figure 9-24 Editing a live room

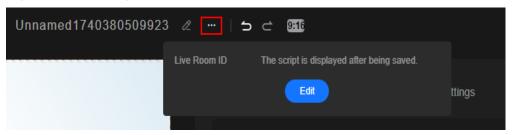


Table 9-9 Configuring the interconnected third-party platform

Parameter	Description
Live Room ID	This parameter is automatically generated and displayed after the livestream script is saved.
Third-party Live Platform	On the Add Third-party Live Platform dialog box, select a Third-party card that corresponds to the third-party platform you added.
Platform Name	From the drop-down list box, select the name of the third-party platform you added on the Live Platforms page.
Third-party Livestream ID	ID of the third-party livestream.

2. Click OK.

The current live room has been interconnected with the selected third-party live platform. You can use the message callback function during a livestream.

----End

9.7 Livestream Settings

Livestream settings are tenant-level and apply to all live rooms of the tenant.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Livestreaming** card to go to the virtual avatar livestreaming page.
- **Step 4** Click **Livestream Settings** to go to the page shown in **Figure 9-25**. See **Table 9-10**.

Figure 9-25 Livestream settings



Table 9-10 Playback settings

Parameter	Description
Max Duration	Select Unlimited or specify the duration.
	Unit: hour
	A livestream ends when reaching the specified Max Duration . However, if Playback Times is also specified and differs from Max Duration , the livestream will end whichever comes soonest.
Auto End After	If a livestream is interrupted unexpectedly with quota remaining, attempts for resuming the livestream will be made. If you select Not specified , the value defaults to 3 min . That is, if the attempts for resuming the livestream fail within three minutes, the livestream automatically ends. You can specify the value. 0 means continuously making attempts till the livestream is resumed. Unit: minute

Parameter	Description
Notify on Livestream Interruption	After enabling this function, you need to go to the Notification Settings page to add a recipient and set the notification receiving mode (see Setting the Notification on Livestream Interruptions).
	Then you will receive notifications on livestream interruptions via the channel you set, such as email, SMS, or system notification.

Step 5 Click Save.

----End

Setting the Notification on Livestream Interruptions

Enabling **Notify on Livestream Interruption** requires you to then specify your notification receiving mode on the **Notification Settings** page.

- **Step 1** Click in the upper right corner of the page to go to the **Message Center** page.
- **Step 2** In the navigation pane on the left, choose **Message Receiving Management** > **SMS & Email Settings**.
- **Step 3** Locate the **O&M** row and select a desired notification mode (**Email**, **SMS**, or **System Notification**) for **O&M reminder**.
- **Step 4** Click **Modify Recipient** in the **Operation** column of the **O&M reminder** row to go to the **Modify Recipient** dialog box.

Add recipient information, including the name, email address, and phone number.

Step 5 Click **OK** to save the recipient information.

----End

9.8 Configuring Livestreaming Materials

On the **Virtual Avatar Livestreaming** page, you can add livestreaming materials such as **roles**, **backgrounds**, **overlays**, **videos**, **products**, and **text**. This section describes the operation procedure of each material type.

Roles

Figure 9-26 shows the **Roles** area.

Figure 9-26 Roles

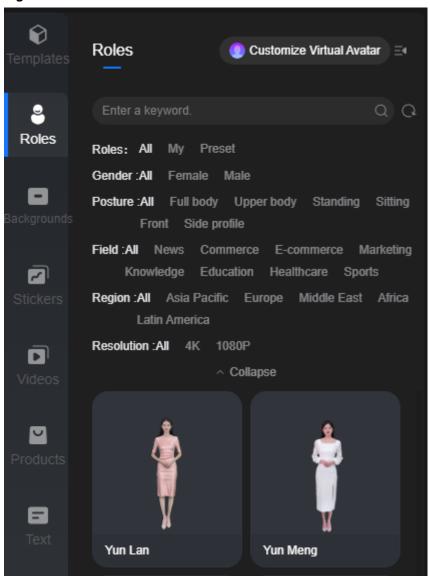


Table 9-11 describes the Roles area.

Table 9-11 GUI elements

GUI Element	Description
Customizing virtual avatars	Click Customize Virtual Avatar to go to the avatar creation page. See Creating a Virtual Avatar Customization Task .
=	By default, two columns of virtual avatars are displayed in the Roles area. After you click , only one column is displayed. You can click to display two columns.

GUI Element	Description
Enter a keyword. Q	Keyword search box. You can enter a virtual avatar name for precise search. Example: yun lan
Q	Icon of refreshing. If there are keywords, the virtual avatar display is refreshed based on the keywords. If no, the default display will be used.
Filter criteria	You can filter and display virtual avatars by role, gender, posture, field, region, and resolution.
List of virtual avatars	By default, all virtual avatars are displayed. Click a virtual avatar image. The image will be automatically applied to all scenes in the livestream. In the live video preview area, you can perform the following operations on the virtual avatar: Bring Forward (), Send Backward (), Bring to Front (), Send to Back (), Apply Everywhere (), and Delete (). You can also set the size of the overlays and drag them to change their positions.
8	If you move the pointer over an avatar, will be displayed in the upper right corner of the avatar. Click the icon to apply the virtual avatar to all scenes of the current livestream.

Backgrounds

Figure 9-27 shows the **Backgrounds** area. An uploaded background image cannot be modified. You can modify it only on the local PC and then upload the new one to the console.

Figure 9-27 Backgrounds

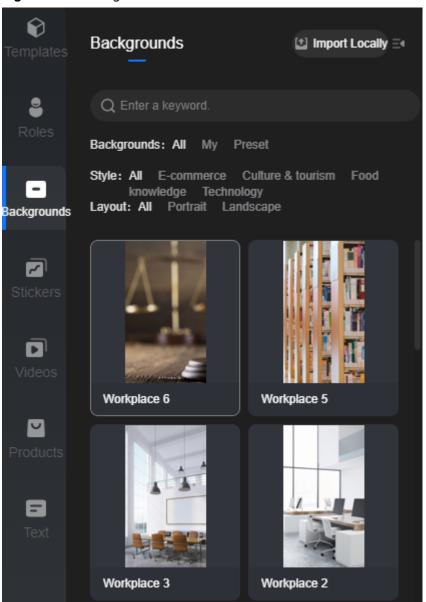


Table 9-12 describes the Backgrounds area.

Table 9-12 GUI elements

GUI Element	Description
Importing locally	Click Import Locally to upload a PNG, JPG, or JPEG image with a resolution level of 4K or below.
	You can also drag an image from the PC to the image list area for upload.

GUI Element	Description
=	By default, two columns of images are displayed in the Backgrounds area. After you click, only one column is displayed. You can click to display two columns.
Enter a keyword. Q	You can enter an image name in the search box for an exact search. Example: Technology
Filter criteria	Images can be filtered and displayed by background, style, and layout.
Image list	By default, all images are displayed. Select a scene and click an image to replace the background of the scene.
8	If you move the pointer over an image, will be displayed in the upper right corner of the image. Click the icon to use the image as the background of all scenes.

Overlays

Figure 9-28 shows the Overlays area.

- An uploaded image overlay cannot be modified. You can modify it only on your local device and then upload the new one to the console.
- If a GIF is overlaid, you can preview the animation.

Figure 9-28 Overlays

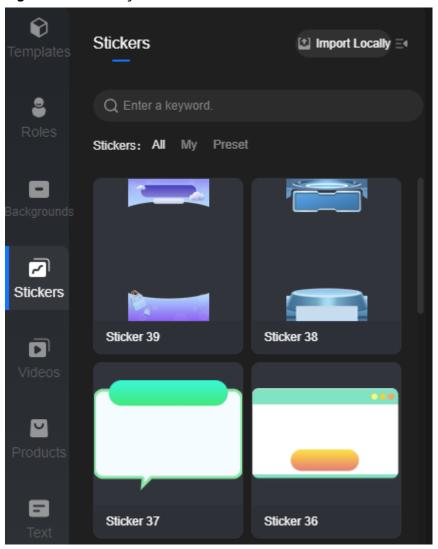


Table 9-13 describes the Overlays area.

Table 9-13 GUI elements

GUI Element	Description
Importing locally	Click Import Locally to upload a PNG, JPG, JPEG, or BMP image.
	You can also drag an image from the PC to the image list area for upload.
==	By default, two columns of images are displayed in the Overlays area. After you click , only one column is displayed. You can click to display two columns.

GUI Element	Description
Enter a keyword. Q	You can enter an image name in the search box for an exact search.
	Example: tips
Filter criteria	Images can be filtered and displayed by My or Preset .
Image list	By default, all images are displayed.
Viewing an image overlay	If you move the pointer over an image, will be displayed in the upper right corner of the image. Click the icon to zoom in.
Overlaying an image	If you move the pointer over an image, will be displayed in the upper right corner of the image. Click the icon to overlay the image on the live video.
	In the live video preview area, you can perform the following operations on image overlays: Bring
	Forward (), Send Backward (), Bring to Front (), Send to Back (), Copy (), Apply
	Everywhere (), and Delete (). You can also set the size of the overlays and drag them to change their positions.

Videos

Figure 9-29 shows the **Videos** area.

Note:

- An uploaded video overlay cannot be modified. You can modify it only on your local device and then upload the new one to the console.
- The aspect ratio of a video overlay is locked. You can adjust its width and height only on your local device and then import the new one.
- Transparent videos can be overlaid only in video production, but not on a live video.

An uploaded MOV video file with alpha channel (that is, a transparent video) will be transcoded into a WebM video file and stored in the MetaStudio asset library. The livestreaming service allows importing a transparent MOV video file, but the imported MOV video file will be transcoded into a WebM one. WebM videos cannot be overlaid on a live video.

Figure 9-29 Videos

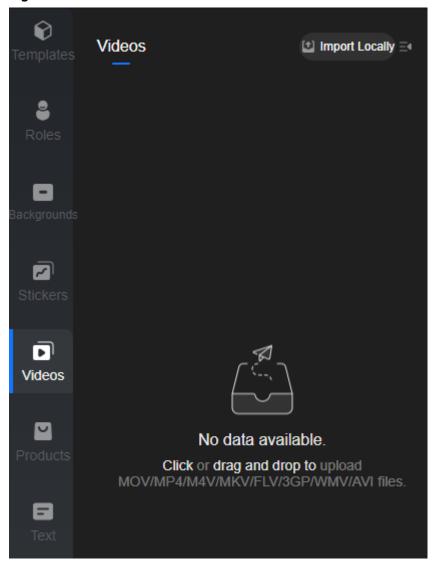


Table 9-14 describes the **Videos** area.

Table 9-14 GUI elements

GUI Element	Description
Importing locally	Click Import Locally to upload an MOV, MP4, M4V, MKV, FLV, 3GP, WMV, or AVI video file from the PC.
	You can also drag a video from the PC to the video list area for upload.
=	By default, two columns of videos are displayed in the Videos area. After you click , only one column is displayed. You can click to display two columns.

GUI Element	Description
Enter a keyword. Q	Keyword search box. You can enter a video name for precise search. Example: marketing video
Filter criteria	Videos can be filtered and displayed by My or Preset .
Video list	By default, all videos are displayed.
Watching a video	If you move the pointer over a video, will be displayed in the upper right corner of the video. Click the icon to watch the video.
Overlaying a video	If you move the pointer over a video, will be displayed in the upper right corner of the video. Click the icon to add the video to the current scene.
	An inserted video is played mutedly.
	In the live video preview area, you can perform the following operations on video overlays: Bring
	Forward (), Send Backward (), Bring to Front (), Send to Back (), Copy (), Apply
	Everywhere (), and Delete (). You can also set the size of the overlays and drag them to change their positions.

Products

Figure 9-30 shows the **Products** area.

Figure 9-30 Products

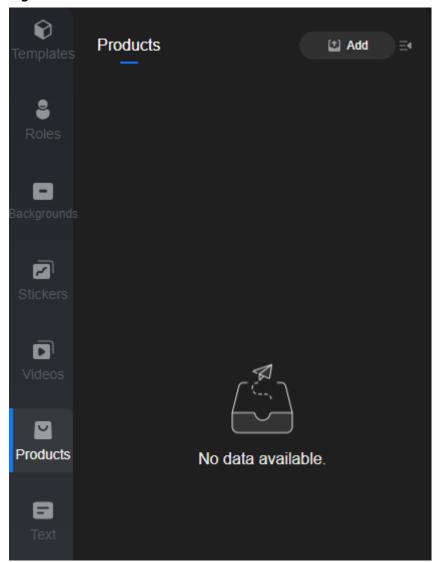


Table 9-15 describes the Products area.

Table 9-15 GUI elements

GUI Element	Description
Creating a product	Click Add . In the Create Product dialog box displayed, specify product information by referring to Products .
	You can also add products by referring to Products .
=1	Clicking zooms out the Products area. You can click to expand the area size.
Product list	By default, all products are displayed.

GUI Element	Description
Inserting materials	Click Insert Material in the product. The existing image overlays, videos, text, and audios of the product are displayed in the lower part.
	You need to select a material and click the + icon to add the material to the live video of the current scene.
	You can edit a product by:
	Clicking to select a material type and add a material.
	Clicking to delete materials that are not needed.
	In the live video preview area, you can perform the following operations on different overlays: Bring
	Forward (=), Send Backward (=), Bring to Front
	(三), Send to Back (三), Copy (旦), Apply
	Everywhere (), and Delete (). You can also set the size of the overlays and drag them to change their positions.

Text

Figure 9-31 shows the Text area.

Figure 9-31 Text

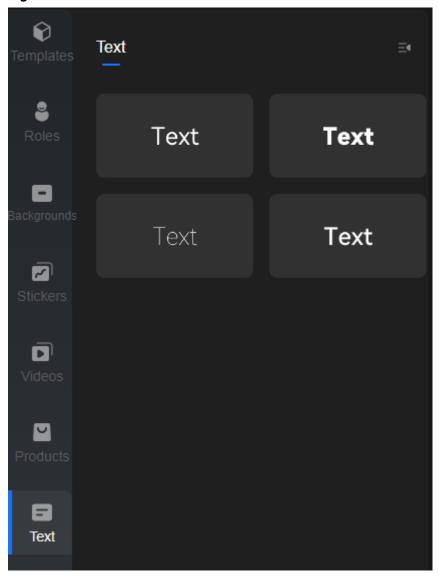


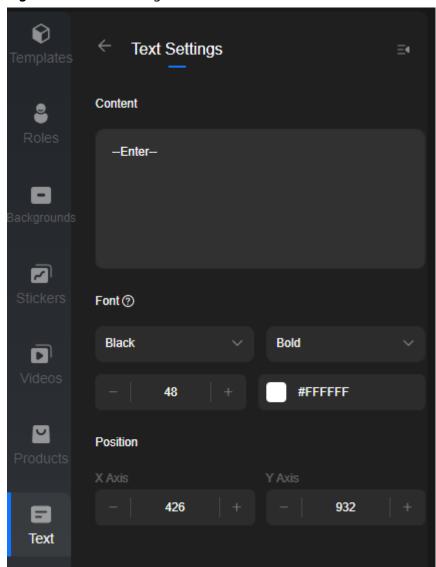
Table 9-16 describes the Text area.

Table 9-16 GUI elements

GUI Element	Description
=1	By default, two columns of text are displayed in the Text area. After you click, only one column is displayed. You can click to display two columns.
Text list	Supported text fonts: HarmonyOS normal, HarmonyOS bold, HarmonyOS light, and HarmonyOS medium black.

GUI Element	Description
Inserting text	If you move the pointer over a piece of text, will be displayed in the upper right corner of the text. Click the icon to add the text to the current scene.
	In the Text Settings area, set Content and Font , as shown in Figure 9-32 .
	In the live video preview area, you can perform the following operations on text overlays: Bring
	Forward (=), Send Backward (=), Bring to Front
	(🗐), Send to Back (🗐), Copy (🖳), Apply
	Everywhere (), and Delete (). You can also set the size of the overlays and drag them to change their positions.

Figure 9-32 Text settings



10 Intelligent Interaction

10.1 Prerequisites

- By default, the Intelligent Interaction feature is not displayed on the MetaStudio console. To use it, you need to submit a service ticket to obtain the permission.
- See the minimum hardware configuration requirements for intelligent interaction.
- See the browser requirements of the intelligent interaction GUI.

10.2 Intelligent Interaction Scenarios

MetaStudio's virtual avatar intelligent interaction can be integrated using one of the following methods:

- Method 1: MetaStudio interconnects with third-party intelligent brains and LLMs. Integrators or customers develop intelligent interaction applications using the SDK.
- Method 2: The MetaStudio APIs are provided by the real-time inference service (virtual avatars acting as instructed by the input text), without AI assistants. Integrators or customers integrate LLMs and automatic speech recognition (ASR), and develop intelligent interaction applications using the SDK.

<u>A</u> CAUTION

- Method 1 requires pre-integrating the ASR service (Al Ask). Customers need to purchase the service and authorize MetaStudio to use it.
- Method 2 does not provide ASR, which should be prepared by customers.

Method 1

MetaStudio interconnects with third-party intelligent brains and LLMs. Integrators or customers develop intelligent interaction applications using the SDK. For details, see Figure 10-1.

To interconnect MetaStudio with third-party intelligent brains and LLMs, you need to use the LLM callback API of MetaStudio for custom development. For details, see Creating an Interactive Dialog Project (with Third-party Intelligent Brains).

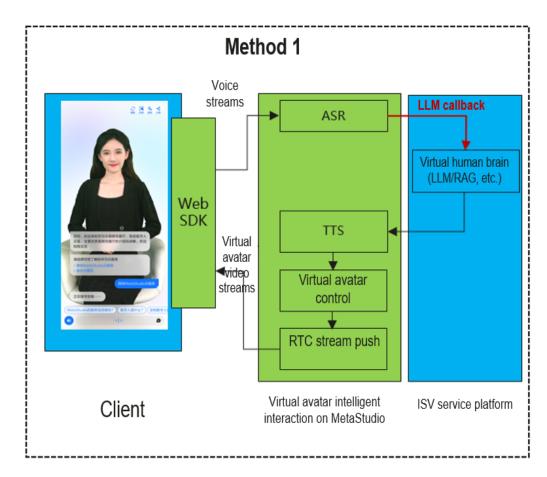
Third-party intelligent brains and LLMs include:

- Dify + MaaS + third-party LLMs deployed on Huawei Ascend, such as DeepSeek
- Intelligent brains and LLMs deployed by customers

Scenarios: ISVs have the LLM capability and need to overlay virtual avatars.

Figure 10-1 Method 1



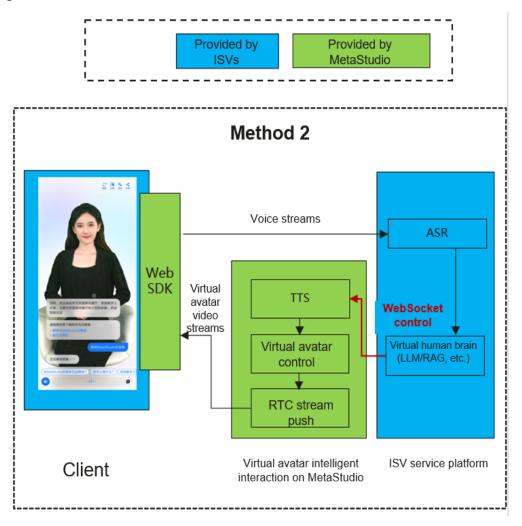


Method 2

The MetaStudio APIs are provided by the real-time inference service (virtual avatars acting as instructed by the input text), without AI assistants. Integrators or customers integrate LLMs and ASR, and develop intelligent interaction applications using the SDK. For details, see Figure 10-2 and Creating an Interactive Dialog Project (Custom Development).

Scenarios: ISVs need to control virtual avatars' speech.

Figure 10-2 Method 2



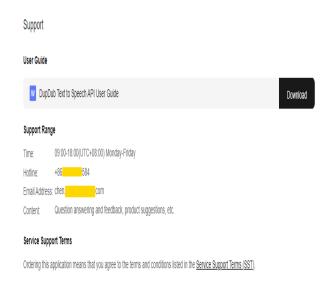
10.3 Creating an Interactive Dialog Project (with Third-party Intelligent Brains)

10.3.1 Using AI Ask

You can create a role on AI Ask and feed the LLM used by the role with the uploaded external knowledge base and Q&A library to diversify the answers.

Before using Al Ask, contact its account manager to register and enable the service. You can view the contact information of the account manager on the **DupDub Audio service** page, as shown in **Figure 10-3**.

Figure 10-3 Viewing contact information



The procedure is as follows. For details, contact the customer service of Al Ask.

- 1. Adding a knowledge base: Upload a common file or add a Q&A library.
- 2. Creating a role: Create a Q&A role on AI Ask.
- Viewing role information: View the AppSecret of the role created on Al Ask, that is, the role key required for API calling on MetaStudio.
- 4. You can view all session records of a role on AI Ask.

10.3.2 Creating an Interactive Dialog Project

This section describes how to create an interactive dialog project on MetaStudio for users to engage with a virtual avatar. For details, see **Intelligent Interaction Scenarios**.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Intelligent Interaction** card. On the page of creating an interactive dialog project, set the **role** and **background** in sequence.
- **Step 4** Choose the **Q&A** tab on the right of the page, as shown in **Figure 10-4**.

Configure parameters by referring to **Table 10-1**.

Figure 10-4 Q&A

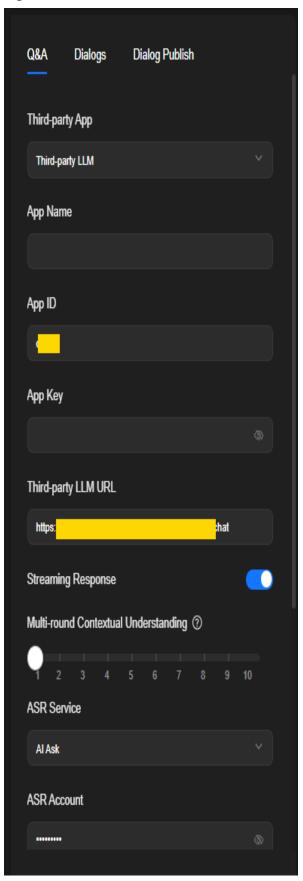


Table 10-1 Q&A settings

Parameter	Description
Third-party App	Select Third-party LLM.
App Name	Enter a custom application name.
App ID	App ID provided by the third-party LLM that interconnects with MetaStudio.
Арр Кеу	App key provided by the third-party LLM that interconnects with MetaStudio.
Third-party LLM URL	API address of the third-party LLM called by MetaStudio. When MetaStudio interconnects with the third-party LLM, you need to develop the LLM API following the API parameter format defined by MetaStudio. For details, see Third-Party LLM Callback API for Intelligent Interaction. MetaStudio calls this API to implement intelligent interaction.
Streaming Response	MetaStudio intelligent interaction supports both streaming and non-streaming Q&A. You can enable streaming Q&A for faster response, but this feature may not be supported by all interconnected third-party LLMs.
Multi-round Contextual Understanding	 A larger value indicates more historical dialogs in the Q&A request and better contextual understanding. Specifically: If this parameter is set to 1, the Q&A request does not contain any historical dialogs. If this parameter is set to a value other than 1, the Q&A request contains historical dialogs. For example, if this parameter is set to 3, the Q&A request contains one latest question and two latest rounds of Q&A. The same logic applies to other values.
ASR Service	Select AI Ask from the drop-down list.
ASR Account	Enter the account for accessing AI Ask. For details, see Using AI Ask.
ASR Key	Enter the key for accessing AI Ask. For details, see Using AI Ask.
Check Configuration	Click Check Configuration to automatically check the configuration on the current tab. Any errors will be displayed in a message.
End-of- sentence Pause Duration	Voice activity detection (VAD) is performed on the cloud. If the pause at the end of a sentence exceeds the value of this parameter, speech recognition will end. A value greater than 500 ms is recommended.

Parameter	Description
Keyword	If the speech recognition result of some business-specific words is below expectations, you can use the keyword management feature. Adding these words to a keyword list will improve recognition accuracy and enhance user experience of virtual avatar interaction. You can configure a keyword list by referring to Creating a Keyword List.

Step 5 Click **OK**. The application has been created, as shown in **Figure 10-5**. You can click **Modify** to modify the Q&A settings.

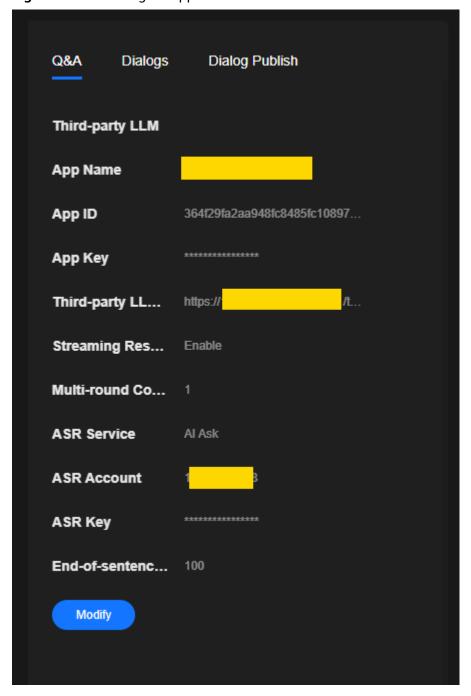


Figure 10-5 Creating an application

- **Step 6** (Optional) Choose the **Dialogs** tab to configure a dialog by referring to **Dialogs**.
- **Step 7** Choose the **Dialog Publish** tab and configure parameters by referring to **Table** 10-2.

Table 10-2 Publish settings

Parameter	Description
	An activation code is automatically generated after an intelligent interaction project is published.

Parameter	Description
Concurrency	Maximum number of users who use the generated activation code to access the intelligent interaction dialog project simultaneously. If the number of concurrent users exceeds the value of this parameter, the error code MSS.20010135 indicating insufficient dialog resources will appear on the intelligent interaction page.
Valid For	Available duration of intelligent interaction from the time of project publishing.

Step 8 Click **Publish** in the upper right corner of the page to publish the interactive dialog project.

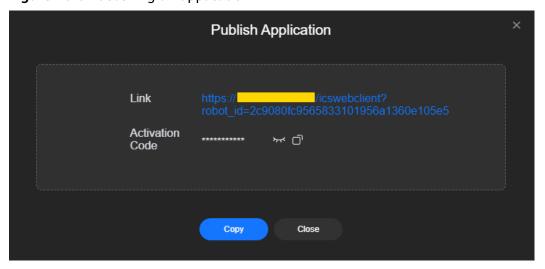
The dialog box shown in **Figure 10-6** appears. You can click the link to go to the page of activating intelligent interaction. Then copy and enter the activation code on the page to activate the project and interact with the virtual avatar.

You can also click **Copy** to copy and share the link and activation code with other users.

□ NOTE

You can obtain the publish link and activation code of the dialog project by referring to **Viewing an Interactive Dialog Project**.

Figure 10-6 Publishing an application



----End

10.4 Creating an Interactive Dialog Project (Custom Development)

10.4.1 Using SDKs and APIs

This section describes how to create an interactive dialog project on MetaStudio for users to engage with a virtual avatar. For details, see **Intelligent Interaction Scenarios**.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Intelligent Interaction** card. On the page of creating an interactive dialog project, set the **role** and **background** in sequence.
- **Step 4** Choose the **Q&A** tab on the right of the page, as shown in **Figure 10-7**. Configure parameters by referring to **Table 10-3**.

Figure 10-7 Q&A

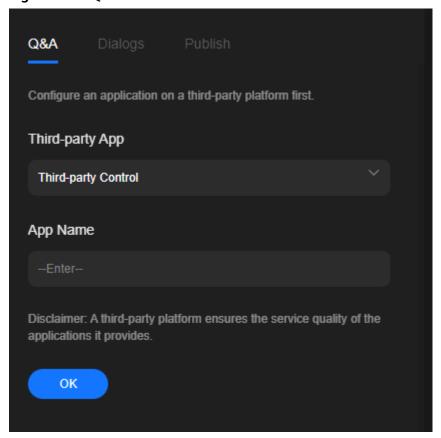
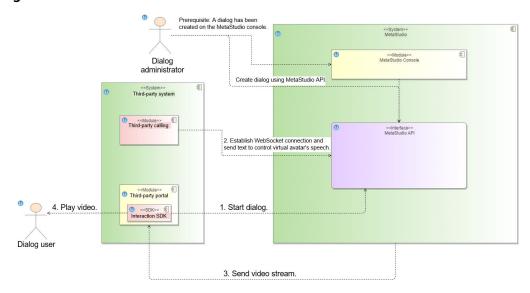


Table 10-3 Q&A settings

Parameter	Description
Third-party App	Select Third-party text control from the drop-down list box.
App Name	Enter a custom application name.

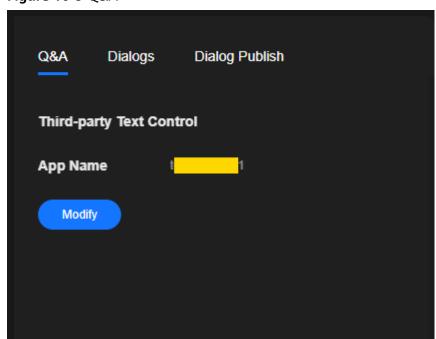
- **Step 5** After the settings in the **Q&A** area are complete, you need to perform operations as instructed by **Figure 10-8**.
 - Download and integrate the intelligent interaction web SDK.
 - 2. In the input parameter **eventListeners** of the API **create** of the web SDK, listen to the notification of the event **jobInfoChange** to obtain the task ID.
 - 3. Establish a WebSocket connection to implement dialogs between users and the virtual avatar.

Figure 10-8 Flowchart



Step 6 Click **OK**. The application has been created, as shown in **Figure 10-9**. You can click **Modify** to modify the Q&A settings.

Figure 10-9 Q&A



- **Step 7** (Optional) Choose the **Dialogs** tab to configure a dialog by referring to **Dialogs**.
- **Step 8** Choose the **Dialog Publish** tab and configure parameters by referring to **Table** 10-4.

Table 10-4 Publish settings

Parameter	Description
Activation Code	An activation code is automatically generated after an intelligent interaction project is published.
Concurrency	Maximum number of users who use the generated activation code to access the intelligent interaction dialog project simultaneously. If the number of concurrent users exceeds the value of this parameter, the error code MSS.20010135 indicating insufficient dialog resources will appear on the intelligent interaction page.
Valid For	Available duration of intelligent interaction from the time of project publishing.

Step 9 Click **Publish** in the upper right corner of the page to publish the interactive dialog project.

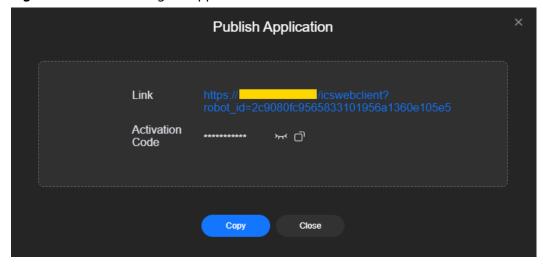
The dialog box shown in **Figure 10-10** appears. You can click the link to go to the page of activating intelligent interaction. Then copy and enter the activation code on the page to activate the project and interact with the virtual avatar.

You can also click **Copy** to copy and share the link and activation code with other users.

□ NOTE

You can obtain the publish link and activation code of the dialog project by referring to **Viewing an Interactive Dialog Project**.

Figure 10-10 Publishing an application



----End

10.4.2 Using SDKs

This section describes how to create an interactive dialog project on MetaStudio for users to engage with a virtual avatar. For details, see **Intelligent Interaction Scenarios**.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Intelligent Interaction** card. On the page of creating an interactive dialog project, set the **role** and **background** in sequence.
- **Step 4** Choose the **Q&A** tab on the right of the page, as shown in **Figure 10-11**. Configure parameters by referring to **Table 10-5**.

Figure 10-11 Q&A

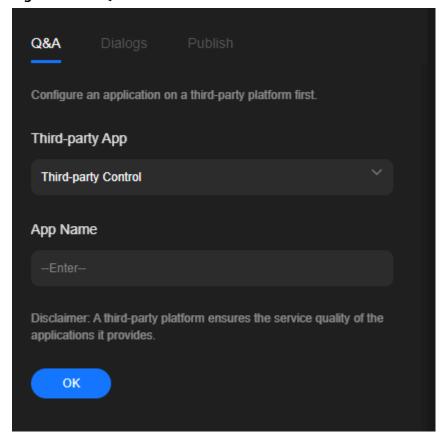


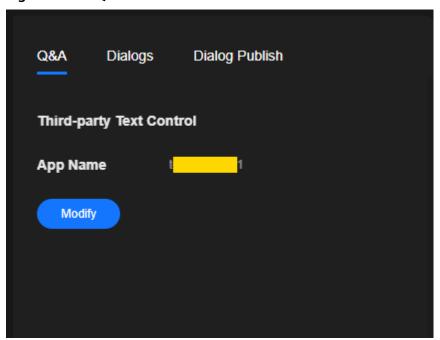
Table 10-5 Q&A settings

Parameter	Description
Third-party App	Select Third-party text control from the drop-down list box.
App Name	Enter a custom application name.

- **Step 5** After the settings in the **Q&A** area are complete, you need to download and integrate the **intelligent interaction web SDK**.
- **Step 6** Click **OK**. The application has been created, as shown in **Figure 10-12**.

You can click **Modify** to modify the Q&A settings.

Figure 10-12 Q&A



- Step 7 (Optional) Choose the Dialogs tab to configure a dialog by referring to Dialogs.
- **Step 8** Choose the **Dialog Publish** tab and configure parameters by referring to **Table 10-6**.

Table 10-6 Publish settings

Parameter	Description
Activation Code	An activation code is automatically generated after an intelligent interaction project is published.
Concurrency	Maximum number of users who use the generated activation code to access the intelligent interaction dialog project simultaneously. If the number of concurrent users exceeds the value of this parameter, the error code MSS.20010135 indicating insufficient dialog resources will appear on the intelligent interaction page.
Valid For	Available duration of intelligent interaction from the time of project publishing.

Step 9 Click **Publish** in the upper right corner of the page to publish the interactive dialog project.

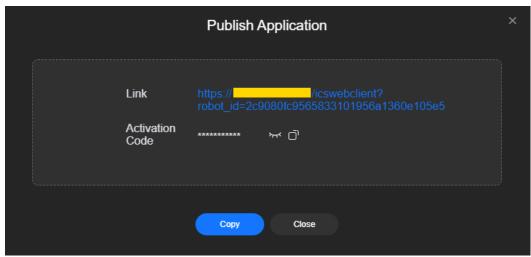
The dialog box shown in **Figure 10-13** appears. You can click the link to go to the page of activating intelligent interaction. Then copy and enter the activation code on the page to activate the project and interact with the virtual avatar.

You can also click **Copy** to copy and share the link and activation code with other users.

∩ NOTE

You can obtain the publish link and activation code of the dialog project by referring to **Viewing an Interactive Dialog Project**.

Figure 10-13 Publishing an application



----End

10.5 Viewing an Interactive Dialog Project

You can view a dialog project by referring to this section.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Creations**.
- **Step 4** Choose **Intelligent Interaction** > **Dialog Projects**, find the desired dialog project, and click **Copy URL and Activation Code** on the right.

You can share the URL and activation code with other users by performing the following steps:

- 1. Copy the URL to the browser to go to the page of intelligent interaction activation.
- 2. Copy the activation code to the activation code box and click the button of activation.
 - After the verification and loading are complete, you can start the dialog.

 Video Production
 Intelligent Interaction
 Dialog Records
 Create Dialog

 Dialog Projects
 Skills
 Enter a name
 Q

 No.
 Name
 Thumbnail
 Updated
 Concurrency
 Billing Option
 Dialog URL
 Operation

 1
 1751538476020
 2025/07/03 17:55:00
 0
 Concurrency
 Concurrency
 Concurrency
 Concurrency
 Concurrency
 Concurrency
 LE dit
 To Delete

 2
 1744169269070
 2025/05/14 14:18:07
 0
 Concurrency
 Concurrency
 Copy URL and Activation Code
 LE dit
 To Delete

Figure 10-14 Dialog projects

----End

10.6 Verifying the Interactive Dialog Link Validity

A published intelligent interaction dialog project will contain the following content:

- Activation code: CP****TL

You can add parameters in **Table 10-7** to the publish link to implement the functions of these parameters on the dialog page. Link combination example: https://IP address/icswebclient?

Table 10-7 Parameters

Parameter	Default Value	Туре	Description
enableCaption	1	0 1	Whether to display subtitles.
enableJobCache	1	0 1	Whether to enable task cache.
enableNetworkC heck	1	0 1	Whether to enable network quality check.
enableLocalWak eup	0	0 1	Whether to enable voice wakeup.
enableVadInterr upt	0	0 1	Whether to enable human voice interruption.
firstCreateLocal- Stream	0	0 1	Whether to create a local stream first.
enableMediaVie wer	1	0 1	Whether to enable image preview.

Parameter	Default Value	Туре	Description
enableCollectAu dioDemand	0	0 1	Whether to collect microphone sound as needed.
enableOriginCut Algorithm	0	0 1	Whether to use the original transparent background algorithm.
enableVerbatim	0	0 1	Whether to enable the function of displaying subtitles word by word.
useWorkerWake up	1	0 1	Whether to enable the worker process.
showDebugTool s	0	0 1	Whether to enable the debugging mode.

10.7 Saving Interactive Dialog Records

Dialog records cannot be viewed on MetaStudio. You can transfer dialog records to an OBS bucket.

Prerequisites

- 1. You have purchased an OBS bucket. For details, see **OBS Billing**. OBS buckets in the CN North-Beijing4 region are recommended.
- 2. You have created an OBS bucket.
- 3. You have created an OBS bucket policy by referring to **Creating a Custom Bucket Policy (JSON View)**. Perform operations on the OBS console.

The JSON content of the bucket policy is as follows. Use the region where MetaStudio is located. Set *Bucket name* to the name of the OBS bucket you use.

```
– CN East-Shanghai1:
```

- CN North-Beijing4:

– AP-Singapore:

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Creations**.
- **Step 4** Select the **Intelligent Interaction** tab and click **Dialog Records** on the right to go to the **Dialog Records** dialog box, as shown in **Figure 10-15**.

Enable Dialog Data Sync to OBS and configure the parameters in Table 10-8.

Figure 10-15 Dialog records

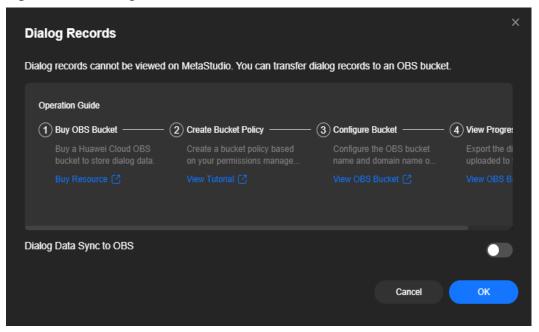


Table 10-8 Parameters

Parameter	Description
OBS Bucket Name	Copy the OBS bucket name from the Object Storage page of the OBS console.
Endpoint	Copy the domain name of the endpoint of the OBS bucket, as shown in Querying Endpoint Information of an OBS Bucket .

Step 5 Click OK.

The directory **Intelligent_Interaction_Chat_Dialog** has been added to the OBS bucket. Subdirectories will be created by date under this directory to store corresponding daily dialog data.

- See Dialog Data Fields.
- To download dialog data, see **Downloading an Object**.
- You can also refer to this section to disable **Dialog Data Sync to OBS**.

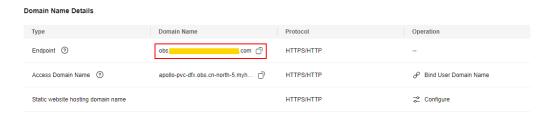
----End

Querying Endpoint Information of an OBS Bucket

- Step 1 Log in to the OBS console.
- **Step 2** In the bucket list, click the name of the OBS bucket that stores dialog records to go to the **Objects** page of the bucket.
- **Step 3** In the navigation pane, choose **Overview**.

In the **Domain Name Details** area, you can view the domain name of the endpoint, as shown in **Figure 10-16**.

Figure 10-16 Endpoint



----End

Dialog Data Fields

Table 10-9 describes the fields of intelligent interaction dialog data saved to the OBS bucket.

Table 10-9 Dialog data fields

Field	Туре	Description
session_id	string	Session ID.
wakeup_type	string	 Wakeup type. Options: BUTTON: wakeup by pressing the button VOICE: voice wakeup RADAR: radar-based wakeup INFRARED: wakeup based on infrared access control CAMERA: camera wakeup Default value: BUTTON
wakeup_tim e	long	Wakeup time.
end_time	long	End time.
rounds	int	Number of dialog rounds.
client_info	Object of ClientInfo	Client information.
detail_info_li st	Arrays of DetailInfo	Dialog details.

Table 10-10 ClientInfo

Field	Туре	Description
client_id	string	Client ID (store GID).
client_code	string	Client code (store code).
client_sn	string	Client device SN (SN of the virtual avatar device).
client_type	string	Client type. Options:

Table 10-11 DetailInfo

Field	Туре	Description
round	int	Number of dialog rounds.
intention	string	Intent.
question_tim e	long	Time of asking questions.
question	string	Question content.
answer_time	long	Q&A time.
answer	string	Q&A content.

10.8 Common Configuration for Intelligent Interaction

This section tells you how to add **roles**, **backgrounds**, and **dialogs** on the intelligent interaction page.

Roles

Figure 10-17 shows the Roles area.

Figure 10-17 Roles

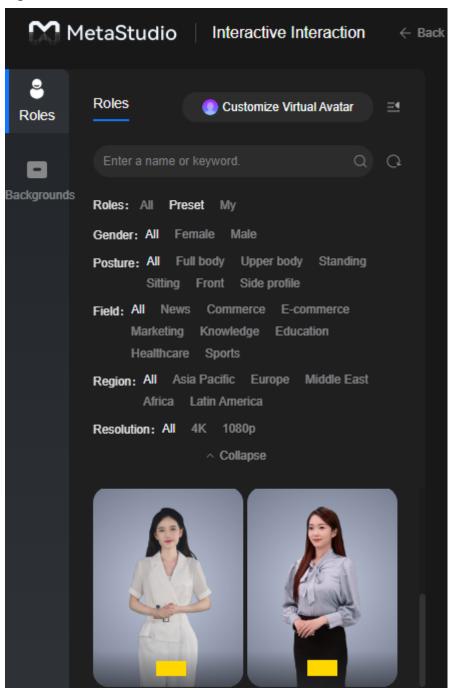


Table 10-12 describes the Roles area.

Table 10-12 GUI elements

GUI Element	Description
	Click Customize Virtual Avatar to go to the avatar creation page. See Creating a Virtual Avatar Customization Task .

GUI Element	Description
Enter a name or keyword. Q	You can enter a virtual avatar name in the search box for an exact search. Example: Yunlan
Q	Icon of refreshing. If there are keywords, the virtual avatar display is refreshed based on the keywords. If no, the default display will be used.
Filter criteria	You can filter virtual avatars by role, gender, posture, field, region, and resolution.
Virtual avatar card	By default, all virtual avatar cards are displayed. You can click the desired one to put the virtual avatar in the frame on the right.

Backgrounds

Figure 10-18 shows the **Backgrounds** area. An uploaded background image cannot be modified. You can modify it only on your local device and then upload the new one to the console.

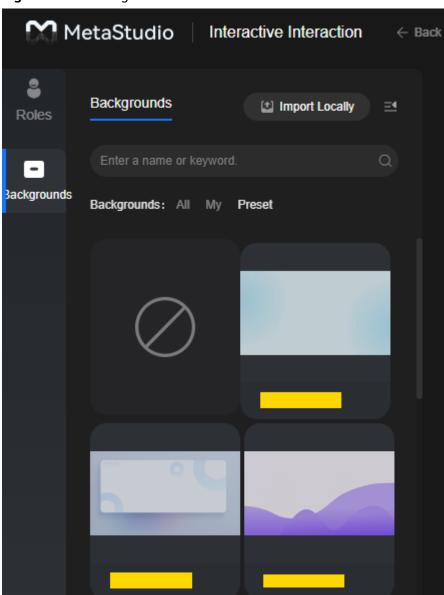


Figure 10-18 Backgrounds

Table 10-13 describes the **Backgrounds** area.

Table 10-13 GUI elements

GUI Element	Description
Import Locally	Click Import Locally to upload a PNG, JPG, JPEG, or BMP image. You can also drag an image to the image list.
Enter a name or keyword. Q	You can enter a background name in the search box for an exact search. Example: Technology

GUI Element	Description
Filter criteria	You can select All , My , or Preset to filter the background images to display.
Image list	All background images are displayed by default. Click the desired one to set it as the background of the preview area on the right. The first image has a transparent background. After you click it, the transparent background will be applied only to the preview page. To apply the transparent background to the final video, you must configure any of the following parameters of the intelligent interaction SDK. For details about the browsers and versions that support the transparent background, see Table 3 in "Getting Started".
	 Change the value of useDefaultBackground in the parameter config of the API create from true (default value) to false. Code example: HwICSUiSdk.create({ serverAddress: 'serverAddress', onceCode: 'onceCode', robotId: 'robotId', containerId: 'ics-root', config: { useDefaultBackground: false }, });
	 Change the value of useDefaultBackground in the API setConfig from true (default value) to false. Code example: HwICSUISdk.setConfig({ useDefaultBackground: false });

Dialogs

You can select the **Dialogs** tab to set the language and timbre for virtual avatar intelligent interaction.

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Intelligent Interaction** card. On the right of the interactive dialog page, select the **Dialogs** tab, as shown in **Figure 10-19**.

See Table 10-14.

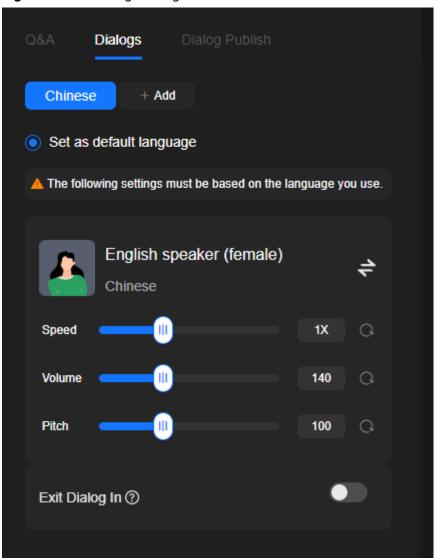


Figure 10-19 Dialog settings

Table 10-14 Dialog settings

Parameter	Description
Language	Language of the UI where users interact with the virtual avatar. Chinese and English are available.
	You can add both Chinese and English and set one of them as the default language. On the interaction UI, the default language is automatically displayed and used by the virtual avatar to answer users' questions. You can click the icon of switching the language in the upper right corner of the page.

Parameter	Description
Voice	Click to the right of a voice to switch the voice.
	The selected voice must match the selected language to avoid problematic spoken expressions by the virtual avatar.
	You can also adjust the speed, volume, and pitch of the virtual avatar as needed.
	• Speed : The value ranges from 0.5x (speaking at 0.5x speed) to 2x (speaking at 2x speed).
	• Volume : The value ranges from 90 to 240 . You are advised to increase the initial volume.
	Pitch: The value ranges from 50 to 200. Pitch refers to the perceived highness or lowness of a voice. A higher pitch value results in a sharper voice.
Exit Dialog In	If no operation is performed during the specified period of time, the dialog is automatically closed and resources will be released. To restart the dialog, you can click to refresh the page.
	The value of this parameter (if enabled) is an integer ranging from 5 to 1440.

Step 4 After setting the intelligent interaction, click **Save** in the upper right corner.

----End

10.9 Creating a Keyword List

If the speech recognition result of some business-specific words is below expectations, you can use the keyword management feature. Adding these words to a keyword list will improve recognition accuracy and enhance user experience of virtual avatar interaction.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **My Creations**.
- **Step 4** Choose **Intelligent Interaction** > **Keywords** and click **Create Keyword List** on the upper right corner of the page, as shown in **Figure 10-20**.

Configure parameters by referring to Table 10-15.

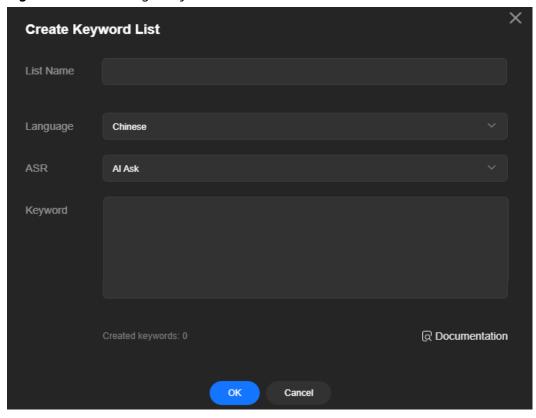


Figure 10-20 Creating a keyword list

Table 10-15 Creating a keyword list

Parameter	Description	
List Name	Enter the keyword list name.	
Language	Select the language of the keyword list: Chinese, English, Arabic, Portuguese, Spanish, or Thai.	
ASR	ASR service to use. Currently, AI Ask is available.	
Keyword	Enter a keyword, which can contain letters, spaces, digits, - (hyphens), (vertical bars), and () (parentheses). You can enter a keyword in either of the following format: MetaStudio or HUAWEI(HUA WEI WHILE WE). In the second example, the word to the left of the parenthesis is the target word for correction. The words inside the parenthesis, separated by vertical bars (), are the alternative pronunciations or common misrecognitions that the system will automatically convert to the target word. After entering a keyword, press Enter to enter the next one. A keyword table can contain a maximum of 100 keywords, with no more than 64 characters for each keyword.	

Step 5 Click **OK**. A new keyword list will appear on the page.

You can perform the following operations on the added keyword table:

- Click **Edit** in the **Operation** column of the keyword list. In the dialog box displayed, modify the keyword list configuration.
- Click **Delete** in the **Operation** column of the keyword list. In the dialog box displayed, click **OK** to delete the keyword table.

Note: If a keyword table has been configured in an intelligent interaction dialog project, the keyword table cannot be deleted or its language cannot be changed.

----End

11 Asset Management

11.1 Asset Sources

User asset sources:

- Assets created on the MetaStudio console:
 - Virtual avatars created by users on the console (see Image Modeling)
 are displayed on the Assets > My Models > Virtual Humans page.
 - Voices created by users on the console (see Voice Modeling) are displayed on the Assets > My Models > Voices page.
 - Videos created by users on the console (see Video Production) are displayed on the Assets > My Creations > Video Production page, or the Assets > Materials > Videos page.
 - Dialog projects and skills generated by users on the console (see
 Intelligent Interaction) are displayed on the Assets > My Creations >
 Intelligent Interaction page.
- Assets uploaded from the local device or transferred by the asset administrator are displayed on the **Assets** > **Materials** page.

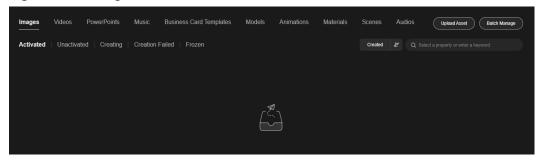
11.2 Uploading Assets

Assets can be uploaded from the local PC, including models, PowerPoints, animations, materials, videos, scenes, images, and music. The asset upload operation is the same for different asset types. This section uses image asset upload as an example.

Procedure

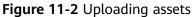
- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **Materials**.
- **Step 4** Select the **Images** tab, as shown in **Figure 11-1**.

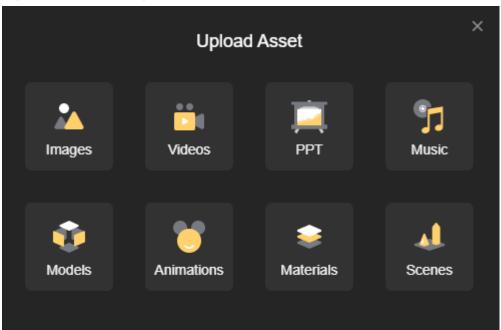
Figure 11-1 Images



Step 5 Click **Upload** in the upper right corner of the page to go to the **Upload Asset** window, as shown in **Figure 11-2**.

You can upload assets, including images, videos, PowerPoint files, music, models, animations, materials, and scenes, from the local device.





Step 6 Choose **Images** to go to the **Upload Images** page, as shown in **Figure 11-3**.

Configure the following parameters:

- Asset Title: title of the image
- Images Overview: basic introduction to the image
- Style: keyword tag, which is used to search for assets of this type
- **Image Type**: image usage

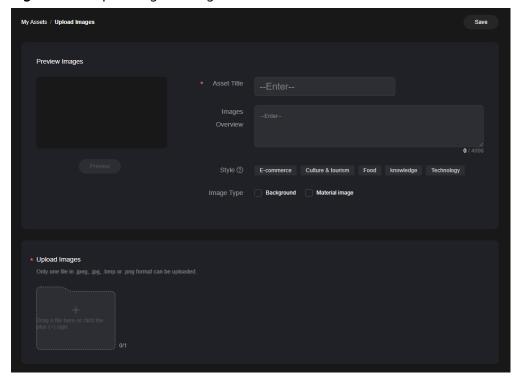
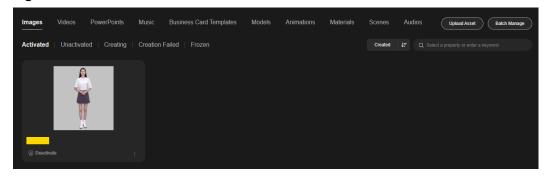


Figure 11-3 Uploading an image

- **Step 7** Click the plus sign (+) in the **Upload Images** area and select the image to be uploaded from the local PC.
- **Step 8** Click **Save** in the upper right corner of the page. In the displayed dialog box, click **OK**

After the asset is saved, the **Assets** > **Materials** > **Images** > **Activated** page is displayed, as shown in **Figure 11-4**. After the asset is uploaded, it is activated by default and can be used on the console.

Figure 11-4 Assets



----End

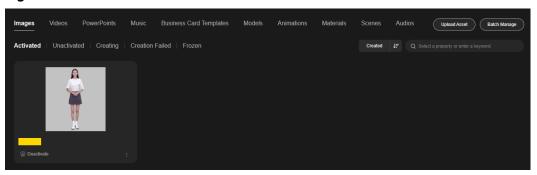
11.3 Managing Assets

You can manage assets on the MetaStudio console, including querying, renaming, activating, deactivating, editing, deleting, and restoring assets, and viewing asset details.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **Materials**, as shown in **Figure 11-5**.

Figure 11-5 Assets



Step 4 Manage assets by referring to **Table 11-1**.

Table 11-1 Asset management

Operation	Description
Querying	Enter an asset name or asset ID in the search box in the upper right corner of the page to query asset information.
Deactivating	Click Deactivate in the asset card to set the asset status to Unactivated . Unactivated assets are unavailable on the console.
Viewing details	Click in the asset card and select View Details from the drop-down list box to view asset information on the asset details page. Figure 11-6 shows an example of image asset details.
Renaming	Click in the asset card and select Rename from the drop-down list box to rename the asset.
Editing	Only unactivated assets can be edited. Click Edit in the asset card area to modify the asset information on the asset upload page displayed.
Deleting	Only unactivated assets can be deleted. If an asset has been activated, click Deactivate on the asset card. After the asset is deactivated, click on the card in the Deactivated tab, and select Delete from the drop-down list box to delete the asset.
Restoring	Choose Assets > Recycle Bin to restore the deleted asset. Assets in the recycle bin will be permanently deleted after seven days.

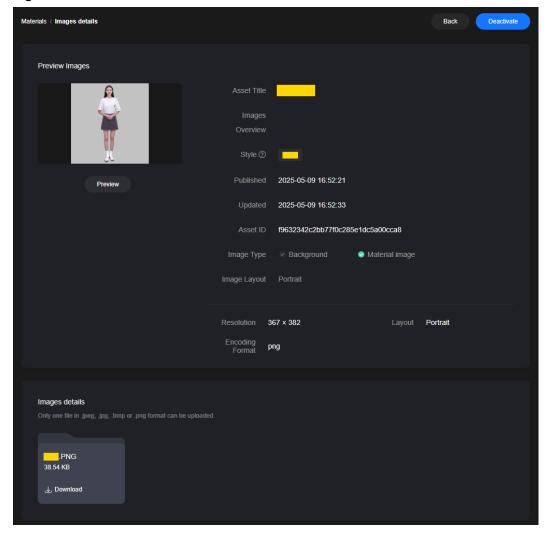


Figure 11-6 Asset details

----End

11.4 Receiving Assets

A tenant can receive voice and avatar model assets transferred by the asset administrator. The asset receiving and activation operations are the same for both voice and avatar model assets. This section uses avatar model asset receiving and activation as an example.

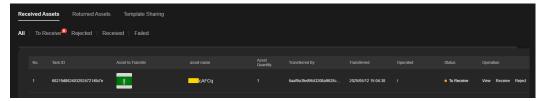
Notes

If the administrator transfers voice or avatar model assets to a tenant, the tenant must receive and activate the assets within seven days. If not, the administrator needs to re-transfer the assets to the tenant.

Procedure

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **Asset Maintenance**.
- **Step 4** Select **Received Assets** > **All**, as shown in **Figure 11-7**.

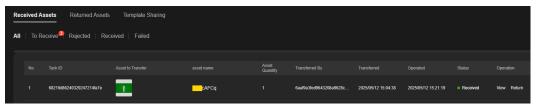
Figure 11-7 Received asset management



Step 5 Click **Receive** in the **Operation** column of the asset to receive.

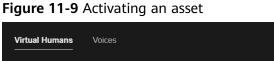
After the asset is received, the asset status changes from **To Receive** to **Received**, as shown in Figure 11-8.

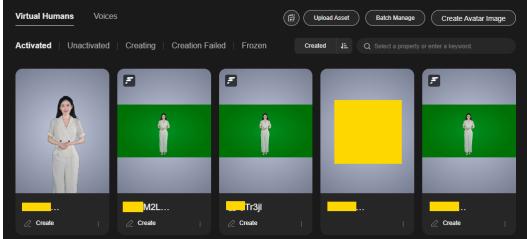
Figure 11-8 Received asset management



- **Step 6** In the navigation pane, choose **Assets** > **My Models**.
- **Step 7** Select **Virtual Humans** > **Unactivated** and click **Activate** in the desired received asset card. In the dialog box displayed, click **OK**.

If the message **Asset activated.** appears, the asset has been activated. You can click the **Activated** tab to view activated avatar model assets.





Step 8 After the preceding operations are complete, the voice and avatar model assets of the account have taken effect. You can use the activated assets for video production or livestreaming.

----End

11.5 Returning Assets

Assets received by the current tenant can be returned to the asset administrator. The asset return operation is the same for both voice and avatar model assets. This section uses avatar model asset return as an example.

Procedure

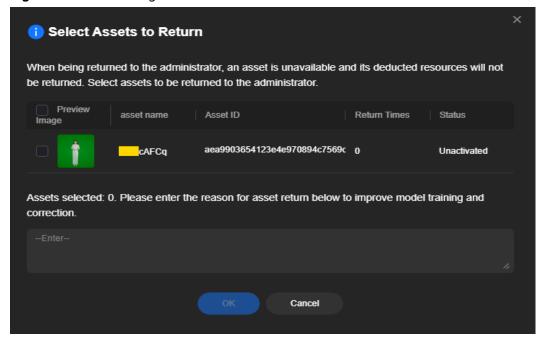
- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** In the navigation pane, choose **Assets** > **Asset Maintenance**.
- **Step 4** Select **Received Assets** > **All**, as shown in **Figure 11-10**.

Figure 11-10 Received asset management



Step 5 Click **Return** in the **Operation** column of the desired asset to go to the **Select Assets to Return** dialog box, as shown in **Figure 11-11**.

Figure 11-11 Selecting assets to return



Step 6 Select the asset to return, enter the reason for returning the asset, and click **OK**.

After the asset is returned, the **Assets** > **Asset Maintenance** > **Returned Assets** page is displayed. You can view the task corresponding to the returned asset, as shown in **Figure 11-12**.

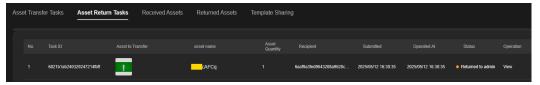
Figure 11-12 Returned asset management



Step 7 On the Assets > Asset Maintenance > Asset Return Tasks page, the asset administrator can view the task corresponding to the returned asset, as shown in Figure 11-13.

Click **View** in the **Operation** column of the task. On the **Transfer Task Details** page, you can view the reason for returning the asset.

Figure 11-13 Asset return task management



----End

12 Cloud Eye Monitoring

12.1 Monitored MetaStudio Events

Functions

Event monitoring provides data collection, query, and alarm reporting for events. You can create alarm rules for both system events and custom events. When there are specified events, you will receive alarm notifications.

Namespaces

SYS.MetaStudio

Monitored Events

Table 12-1 Monitored MetaStudio events

Event Name	Event ID	Eve nt Sev erit y	Event Description	Handling Suggestion	Impact
Virtual avatar video production failure	DigitalH umanVi deoTask Fail	Ma jor	The virtual avatar video production task failed.	1. Check whether the virtual avatar video quota of the current user is sufficient. 2. Check whether the input API parameters are correct.	Virtual avatar video productio n failure affects service stability.

12.2 Creating Alarm Rules

Scenarios

You can set alarm rules and notifications for MetaStudio to stay informed about its status and receive timely alarms.

This section describes how to set alarm rules for MetaStudio.

Procedure

- 1. Log in to the management console.
- 2. In the navigation pane, choose **Management & Governance > Cloud Eye**.
- 3. In the navigation pane, choose **Alarm Management > Alarm Rules**.
- 4. Click **Create Alarm Rule** or select and modify an existing alarm rule for MetaStudio.
- 5. Configure basic information of the alarm rule.

Figure 12-1 Alarm rule information



Table 12-2 Basic parameters for alarm rules

Parameter	Description	Example Value
Name	Name of the alarm rule. The system generates a random name, and you can change it as needed.	alarm-cprn
Description	Description of the alarm rule. This parameter is optional.	-

Select an object to be monitored and configure alarm parameters.
 If you select **Event** for **Alarm Type**, you can create an alarm rule for MetaStudio events.

Figure 12-2 Event alarm configuration



Key parameters are described below. For details, see **Creating an Alarm Rule** and **Notifications**.

- **Event Type**: You can select **System event** or **Custom event**.
- Event Source: Select the name of the cloud service from which events are reported.
- Method: Select Associate template or Configure manually.
- **Alarm Policy**: The policy for triggering an alarm.
- 7. Set alarm notification parameters.

To send alarm notifications by email, SMS, HTTP, or HTTPS, enable **Alarm Notifications**.

For details about related parameters, see **Creating an Alarm Rule and Notifications**.

^	\sim			_	
8.	rı		/	(ro	ate
Ο.	<u> </u>	ווע	N	\sim 10	alc

□ NOTE

For more information about MetaStudio alarm rules, see Cloud Eye User Guide.

13 Appendix

13.1 Recording an Audio on a Mobile Phone

Perform operations based on the mobile phone type:

- Operations on iPhone
- Operations on Android

Operations on iPhone

Easy Voice Recorder is recommended for recording on iPhone.

See Table 13-1.

Table 13-1 Audio recording requirements

Audio Recordi ng	Description
Samplin	48 kHz is recommended for audio recording.
g rate	Configure the recording parameters of Easy Voice Recorder:
	1. Open Easy Voice Recorder and switch to the Settings page.
	Select Format . The Format page is displayed. Configure the following parameters:
	• FILE FORMAT: Select .wav (PCM) or MP3.
	SAMPLE RATE: Select 48 kHz (high quality).
	3. The recording page is displayed and the recording starts.
Samplin g bit	48 bits is recommended for audio recording.
	The default sampling bit of Easy Voice Recorder is 16 bits. You do not need to change it.

Audio Recordi ng	Description	
Audio channel	Mono is recommended for audio recording. Mono is set by default for Easy Voice Recorder. You do not need to change it.	
Audio format	Save the audio file in a lossless format, such as WAV and MP3.	
Audio naming	All script pieces are recorded in a WAV or MP3 file (file name example: Voice.wav).	
Audio export	 Procedure: Open Easy Voice Recorder and click Listen at the bottom. On the page displayed, click Edit in the upper right corner. The page for editing audio files is displayed. Select all audio files and click Share. You can transfer the audio files to the PC or use other third-party applications to export the audio files to the PC. You can upload a long audio file to the MetaStudio console for voice training without compressing it. 	

Operations on Android

Super Recorder is recommended for recording on Android.

See Table 13-2.

Table 13-2 Audio recording requirements

Audio Recordi ng	Description
Samplin g rate	48 kHz is recommended for audio recording. The default sample rate is 44,100 Hz (HD). You do not need to change it.
Samplin g bit	48 bits is recommended for audio recording. The default sampling bit of Super Recorder is 16 bits. You do not need to change it.
Audio channel	Mono is recommended for audio recording. Mono is set by default for Super Recorder. You do not need to change it.

Audio Recordi ng	Description	
Audio	Save the audio file in a lossless format, such as WAV and MP3.	
format	Configure the recording parameters of Super Recorder:	
	1. Open Super Recorder.	
	2. To record and save files properly, you need to grant the recording and storage permissions to Super Recorder.	
	3. The Record Options area is displayed. Configure the following parameters:	
	Recording quality: Select High.	
	 Recording format: Select WAV or MP3. 	
	4. Exit the settings page and go to the recording page to start recording.	
Audio naming	All script pieces are recorded in a WAV or MP3 file (file name example: Voice.wav).	
Audio	Procedure:	
export	1. Open Super Recorder and go to the audio file list page.	
	2. Touch and hold an audio file, select all files, and touch the icon of sharing to transfer the audio files to the PC or use other third-party applications to export the audio files to the PC. You can upload a long audio file to the MetaStudio console for voice training without compressing it.	

13.2 Guide to Livestreaming on a Third-party Platform

MetaStudio generates the media content used for virtual avatar livestreaming, and is not a livestreaming platform.

You can livestream on a third-party platform in either of the following ways:

- Window capture: The window returned by MetaStudio can be captured by a third-party platform to livestream.
- RTMP stream push: The live video feed is transmitted from the Huawei Cloud server to the server of a third-party platform, so you can close the console page even during the livestream. An ingest URL is provided by the third-party platform. The method for obtaining the ingest URL varies with platforms. On the MetaStudio console, you only need to enter the ingest URL to push the livestream to a platform.

Notes:

 With RTMP stream push, closing the console page does not end the livestreaming task, and the ongoing livestream will incur fees continuously. To end the livestream, you need to either click **End** or call the API to deliver a command. • You need to understand the regulations and policies of the third-party platform. Some platforms may restrict livestreaming with virtual content.

FAQs

- What If the Live Video on a Third-party Live Platform Is Not Clear?
- What If the Livestream on a Third-party Live Platform Is Interrupted Unexpectedly?
- What If the Live Video on a Third-party Platform Is Muted?

13.3 FAQs

13.3.1 In Which Regions Is MetaStudio Available?

MetaStudio has been put into commercial use in CN North-Beijing4, and in open beta testing (OBT) in AP-Singapore. MetaStudio is still in internal testing in CN East-Shanghai1. To use MetaStudio in this region, submit a service ticket.

Note: Resources are region-specific.

13.3.2 What Content Is Not Allowed on MetaStudio?

Content that is not allowed on MetaStudio:

- Pornography, gambling, illegal drugs, frauds, or infringement
- Pirated games/software/videos
- P2P financial fraud
- Lottery
- Unlicensed hospitals and pharmaceutical information
- Inaccessible websites or websites that do not contain any substantial information

13.3.3 How Do I Integrate MetaStudio?

You can integrate MetaStudio using APIs. For details, see **API Reference**. For any questions related to the integration, contact your account manager.

For commercial integration, provide the enterprise name, region, and contact information, and briefly describe the capabilities of MetaStudio to be integrated and the purpose of integration.

13.3.4 FAQs Related to MetaStudio Virtual Avatars

See Table 13-3.

Table 13-3 FAQs related to virtual avatars

No	Question	Answer
1	Is face swap supported?	No.
2	Is clothes swap supported?	No.
3	Can actions be added?	An action can be added only when both of the following conditions are met:
		 You submit a service ticket to obtain the permission for choreography.
		 The video used for virtual avatar training should include choreography. For details, see Guide to Choreography Customization.
		Action insertion is now allowed only for video
		production, as shown in Figure 13-1 . on a virtual avatar card indicates that this virtual avatar supports action insertion. Note that the audio duration should be long enough so the virtual avatar can perform the inserted action in a timely manner.
4	Do virtual avatars speak as instructed by the input text or speech?	Virtual avatars in videos and livestreams can speak as instructed by the input text or audio.
5	5 Is semantic understanding of	No. Semantic understanding is a capability of knowledge bases, not of virtual avatars.
	knowledge bases supported?	Virtual avatars perform intelligent interaction with users by answering their questions. The answers are given by the large language model (LLM) or knowledge base.
6	Are text to speech (TTS) and automatic speech recognition (ASR) supported?	TTS is supported but ASR (speech to text) is not. If you need ASR, try ASR services such as Speech Interaction Service (SIS) .

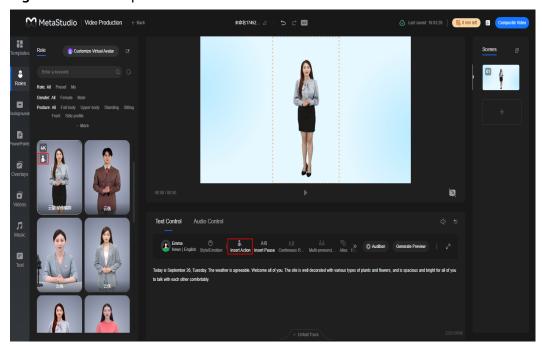


Figure 13-1 Video production

13.3.5 What If the Live Video on a Third-party Platform Is Not Clear?

If the live video on a third-party live platform is not clear, possible causes are:

- 1. The computer does not have a discrete graphics card.
- 2. **Base (Canvas) Resolution** and **Output (Scaled) Resolution** of Open Broadcaster Software (OBS) are not the same.

Checking the Discrete Graphics Card

The computer on which the third-party live platform is used must be installed with a discrete graphics card.

Checking the OBS Video Resolution

Base (Canvas) Resolution and **Output (Scaled) Resolution** of OBS must be the same.

Check method:

- **Step 1** Open OBS on the local PC.
- **Step 2** On the top navigation bar, choose **File** > **Settings**. The **Settings** dialog box is displayed.
- Step 3 In the navigation pane on the left, choose Video and check whether Base (Canvas) Resolution and Output (Scaled) Resolution are the same.

If they are different, change them to the same value.

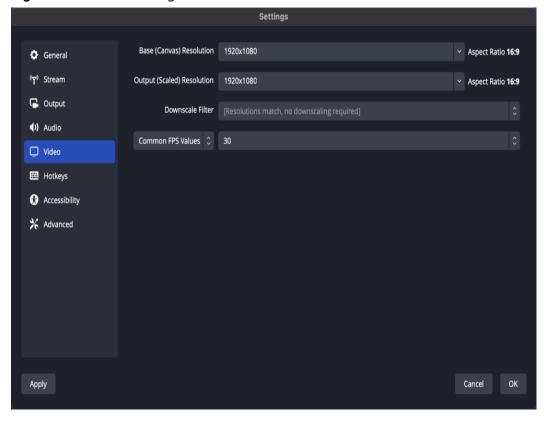


Figure 13-2 Video settings

----End

13.3.6 What If the Livestream on a Third-party Platform Is Interrupted Unexpectedly?

The possible cause is the automatic logout from the MetaStudio console. Check method:

- **Step 1** After a livestream is started on the MetaStudio console, click on the right of the URL and select the option of allowing pop-ups from the drop-down list box.
- **Step 2** Click **OK**. Two new browser windows are displayed, as shown in **Figure 13-3** and **Figure 13-4**.

If you do not perform any operation on the MetaStudio console for more than 10 minutes, automatic logout will be triggered, causing the live video on the third-party live platform to be interrupted. Keep the page in **Figure 13-4** open throughout the livestream to avoid unexpected interruptions.

Figure 13-3 Live video window

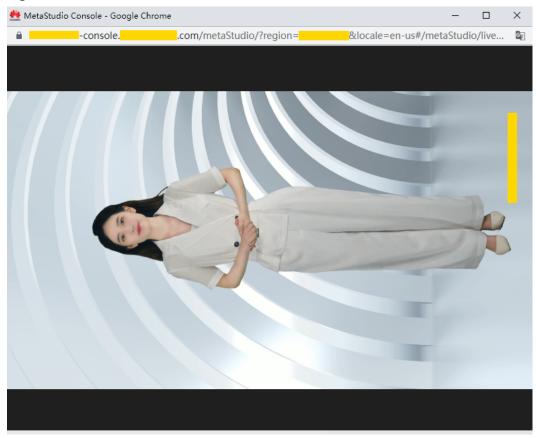
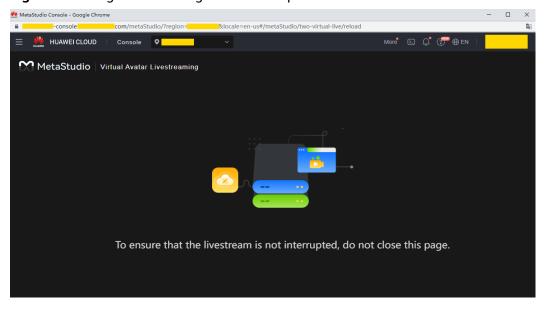


Figure 13-4 Page for ensuring an uninterrupted livestream



----End

13.3.7 How Do I Switch the Language and Voice of Intelligent Interaction in Real Time on MetaStudio?

Interactive dialogs support both Chinese and English. You can switch between two languages on the intelligent interaction page in real time.

Procedure:

- **Step 1** Log in to the **MetaStudio console** and go to the **Overview** page.
- **Step 2** Click **Go to MetaStudio Console** to go to the MetaStudio console.
- **Step 3** Click the **Intelligent Interaction** card. On the right of the interactive dialog page, select the **Dialogs** tab, as shown in **Figure 13-5**.

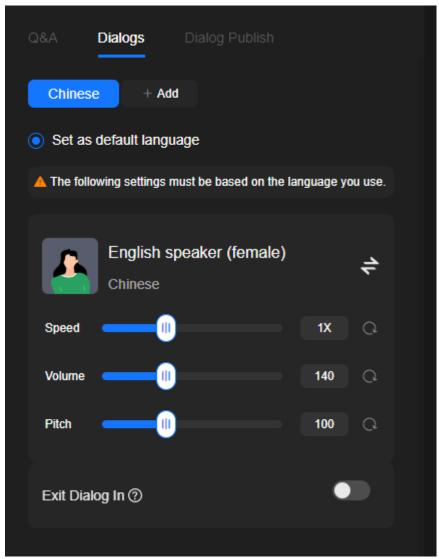
For exhibition halls, you need to switch to CN North-Beijing4, where you can perform related configuration.

Configure the following parameters. For details about more parameters, see **Dialog Settings**.

- Language: You can add both Chinese and English and set one of them as the default language.
 - On the GUI of virtual avatar intelligent interaction, the default language is automatically displayed and used by the virtual avatar to answer users' questions. You can click the icon of switching the language in the upper right corner of the page.
- Voice: Click to the right of the voice to switch the voice.

 The selected voice must match the selected language to avoid problematic spoken expressions by the virtual avatar.

Figure 13-5 Dialog settings



----End