

# Cloud Object Storage

## Data Processing

### Product Documentation



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# Data Processing

## Data Processing Overview

Last updated : 2024-05-30 15:03:36

### Overview

COS's data processing services are provided by [Cloud Infinite \(CI\)](#). CI specializes in data processing services, capable of processing various types of data in the cloud. It offers image processing, media processing, content moderation, file processing, AI Content Recognition (CR), file preview, intelligent speech, and other comprehensive multimedia data processing capabilities, providing you with a professional integrated data processing solution to meet the needs of various scenarios. The specific supported capabilities are as follows:

| Feature Module     | Description  | Documentation   |
|--------------------|--|---|
| Image processing   | Includes basic processing such as image cropping/rotation/scaling/format conversion, image compression, blind watermark, image AI processing, and more.  | <a href="#">Image Processing Overview</a><br><a href="#">Image Compression</a><br><a href="#">Blind Watermark</a> |
| Media processing   | Includes capabilities such as audio/video transcoding, video frame capturing, audio/video splicing, video enhancement, TSC, video montage, and video to animated image conversion, and provides an example of an audio and video player. | <a href="#">Media Processing Overview</a>   |
| Content moderation | Includes image moderation, text moderation, audio/video moderation, document moderation, webpage moderation, and live stream moderation capabilities.  | <a href="#">Content Moderation</a>  |
| File processing    | Includes file decompression, multi-file zipping, hash calculation, and more.   | <a href="#">File Processing Service</a>   |
| File preview       | Includes capabilities such as transcoding files into images, PDFs, or HTML pages for online preview.   | <a href="#">File Preview</a>  |

# Image Processing

## Image Processing Overview

Last updated : 2024-03-25 15:33:39

### Overview

Image Processing is a set of image processing capabilities provided by [Cloud Infinite \(CI\)](#). It supports basic processing capabilities such as image cropping, format conversion, scaling, and watermarking, image downsizing capabilities such as Guetzli compression and AVIF transcoding and compression, blind watermarking for copyright protection, and AI-based recognition and analysis features such as image enhancement, tagging, scoring, and repair and image matting, meeting your image processing requirements in diverse business scenarios.

#### Note:

Image Processing is available only in public cloud regions.

Image Processing is charged by CI. For detailed pricing, see **Basic image processing fee** in [Billing and Pricing](#).

Currently, image processing is not supported for multi-AZ buckets.

| Service                | Feature                            | Description  |
|------------------------|------------------------------------|--|
| Basic Image Processing | <a href="#">Scaling</a>            | Proportional scaling, scaling image to target width and height, and more   |
|                        | <a href="#">Cropping</a>           | Cut (regular cropping), crop (scaling and cropping), iradius (inscribed circle cropping), and scrop (smart cropping) |
|                        | <a href="#">Rotation</a>           | Adaptive rotation and common rotation  |
|                        | <a href="#">Format conversion</a>  | Format conversion, GIF optimization, and progressive display   |
|                        | <a href="#">Quality conversion</a> | Changes the quality of images in JPG and WEBP formats  |
|                        | <a href="#">Gaussian blurring</a>  | Blurs images   |
|                        | <a href="#">Sharpening</a>         | Sharpens images  |
|                        | Watermarking                       | <a href="#">Image watermarks</a> , <a href="#">text watermarks</a>   |
|                        | Obtaining image                    | <a href="#">Basic information</a> , <a href="#">EXIF data</a> , <a href="#">average hue</a>                          |

|                            |  |   |
|----------------------------|--|---|
|                            | information                              |   |
|                            | <a href="#">Removing metadata</a>        | Includes EXIF data  |
|                            | <a href="#">Quick thumbnail template</a> | Performs quick format conversion, scaling, and cropping to generate thumbnails  |
|                            | <a href="#">Setting styles</a>           | Sets image styles to easily manage images for different purposes  |
| AI-Based Image Recognition | Image repair                             | Removes content like logos, objects, and watermarks from images and intelligently fills it with the background to repair certain areas in images effectively.   |
|                            | Image matting                            | Intelligently recognizes the body part in images and makes the remaining part transparent.  |
|                            | Logo recognition                         | Recognizes brand logos in images and returns information such as logo characters and positions in the images.   |
|                            | QR code recognition                      | Recognizes QR codes in images and returns their positions and content. Recognized QR codes can be pixelated.  |
|                            | Image tagging                            | Intelligently recognizes information such as scenes, objects, animals (including cats, dogs, and birds), and food (including fruits and vegetables) in images and adds corresponding tags. Thousands of tags in dozens of categories are supported. |
|                            | Image quality assessment                 | Assesses the visual image quality in various dimensions and outputs objective definition scores and subjective aesthetic scores.  |
|                            | Face recognition                         | Detects the face positions, facial features, face quality information in given face images and supports various special effects, including beauty filters, portrait keying, age change, and gender swap.  |
|                            | FaceID                                   | Provides capabilities like ID card recognition and face liveness detection.   |
|                            | Vehicle recognition                      | Detects vehicles in images and recognizes information such as vehicle brand, color, location, and license plate number.   |
|                            | Text recognition                         | Intelligently recognizes words in images and converts them into editable text.  |
|                            | Search by image                          | Creates image libraries in a bucket and quickly searches for the same and similar images in the specified image libraries.  |
| Others                     | Abnormal                                 | Detects images with abnormal and suspicious information such as images  |

|  |                    |                        |
|--|--------------------|------------------------|
|  | image<br>detection | with TS video streams. |
|--|--------------------|------------------------|

## How to Use

### Using COS console

You can perform basic image processing operations in the COS console as instructed in [Basic Image Processing](#).

### Using RESTful APIs

You can perform basic image processing operations or AI-based recognition by using the APIs provided by COS as instructed in [Data Processing APIs](#).

## Restrictions

**Format:** JPG, BMP, GIF, PNG, and WebP images can be processed, and HEIF images can be decoded and processed.

**Size:** The input image cannot be larger than 32 MB, with its width and height not exceeding 30,000 pixels, and the total number of pixels not exceeding 250 million. The width and height of the output image cannot exceed 9,999 pixels. For an input animated image, the total number of pixels (Width x Height x Number of frames) cannot exceed 250 million pixels.

**Number of frames (for animated images):** For GIF, the number of frames cannot exceed 300.

# Image Compression

Last updated : 2024-05-21 15:31:41

## Overview

Image compression is the process of downsizing an image as much as possible without sacrificing quality so that it can be stored at a lower cost and accessed more quickly.

COS offers a variety of image compression options based on [CI](#) for your choice based on your business scenario.

Available compression options are as follows:

**AVIF compression:** Converts images to the .avif format, which is a new image format launched by Netflix based on AV1 in February 2020 and currently is supported by browsers such as Chrome and Firefox.

**WebP compression:** Converts images to the .webp format, which is superior to .jpg in terms of compression. A .webp image is over 25% smaller than a .jpg image with the same quality. This format is suitable for multi-terminal use cases.

**HEIF compression:** Converts images to the .heif format, which has a super high compression ratio. A .webp image is over 80% smaller than a .jpg image with the same quality. iOS adopts .heif as the default format for photos, and Android P natively supports .heif.

**TPG compression:** Converts images to the .tpg format, which is a proprietary image format launched by Tencent and supports animated images. Currently, QQ Browser, Qzone, and other Tencent products support .tpg by default. A .tpg image is over 90% or 50% smaller than a .gif or .png image with the same quality, respectively.

**Smart image compression:** Intelligently determines the subjective quality of an image and automatically adjusts it. It significantly reduces the image size without changing the original format, and delivers a visual effect as closest to the original image as possible.

### Note:

Image compression is a paid service charged by CI. For detailed pricing, see [Image Processing Fees](#).

Currently, the smart image compression service is available only in Beijing and Shanghai regions.

## Use Cases

The image compression feature meets the needs of image compression on various terminals such as PC and app in diverse use cases like ecommerce and media. This effectively reduces the transmission time, loading time, and use of bandwidth and traffic.

Different compression features have different compatibility with existing image formats and browser environments as detailed below:

| Feature | Supported | Supported | Compatibility | Compression | Compression |
|---------|-----------|-----------|---------------|-------------|-------------|
|---------|-----------|-----------|---------------|-------------|-------------|



|                         | Formats   | Browsers and Systems  |             | Effect    | Speed |
|-------------------------|---|---|-------------|-----------|-------|
| AVIF compression        | .jpg, .png, .bmp, .gif, .heif, .webp, and .tpg                    | A few browsers and systems such as Firefox, Chrome, and Android                                       | Average     | Very good | Fast  |
| WebP compression        | .jpg, .png, .bmp, .gif, .heif, .tpg, and .avif                    | More than 95% of browsers and systems such as Edge, Firefox, Chrome, Safari, Android, iOS, and Weixin | Strong      | Average   | Fast  |
| HEIF compression        | .jpg, .png, .bmp, .webp, and .avif                                | Not supported in browsers but natively supported on iOS 11 or later and Android P                     | Weak        | Good      | Fast  |
| TPG compression         | .jpg, .png, .bmp, .gif, .heif, .webp, and .avif                   | Only a few browsers such as QQ Browser as special decoders are required                               | Weak        | Good      | Fast  |
| Smart image compression | .jpg and .png (without changing the format of the original image) | All   | Very strong | Good      | Fast  |

**Note:**

CI provides [Windows SDK](#) that integrates TPG and AVIF decoders, so you only need to integrate it into your client to decode and preview TPG and AVIF images.

## How to Use

### AVIF, HEIF, and TPG compression

These three are advanced image formats, and you need to enable the [image advanced compression](#) feature first before you can use them.

After enabling the advanced compression feature, you can use it by setting the image [format conversion parameter](#) to the desired compression format. Specific parameters are as follows:

| Parameter              | Description  |
|------------------------|--|
| imageMogr2/format/avif | Converts the original image to .avif format for compression. |
| imageMogr2/format/heif | Converts the original image to .heif format for compression. |
| imageMogr2/format/tpg  | Converts the original image to .tpg format for compression.  |

## WEBP compression

You can directly use the WEBP compression feature through the format conversion capabilities of basic image processing. Specific parameters are as follows:

| Parameter              | Description  |
|------------------------|--|
| imageMogr2/format/webp | Converts the original image to .webp format for compression. |

## Smart image compression

The smart image compression feature automatically compresses the images in matching formats, without changing the way you access your images and requiring additional compression parameters.

You need to [enable the smart image compression feature](#) using the console. After the feature is enabled, you can access images in the same way as before, and images will be automatically compressed.

## Compression Examples

Perform all the above compression operations on the original .png image. Assume the link of the original image is: <https://examples-125xxxxx.cos.ap-shanghai.myqcloud.com/test.png>

### Example 1. Convert to .jpeg format

Final request URL:

```
https://examples-125xxxxx.cos.ap-shanghai.myqcloud.com/test.png?imageMogr2/format/j
```

### Example 2. Convert to .webp format

Final request URL:

```
https://examples-125xxxxx.cos.ap-shanghai.myqcloud.com/test.png?imageMogr2/format/w
```

### Example 3. Convert to .heif format

Final request URL:

```
https://examples-125xxxxx.cos.ap-shanghai.myqcloud.com/test.png?imageMogr2/format/h
```

### Example 4. Convert to .tpg format

Final request URL:

```
https://examples-125xxxxx.cos.ap-shanghai.myqcloud.com/test.png?imageMogr2/format/t
```

### Example 5. Convert to .avif format

Final request URL:

```
https://examples-125xxxxx.cos.ap-shanghai.myqcloud.com/test.png?imageMogr2/format/a
```

### Example 6. Perform smart image compression

Final request URL:

```
https://examples-125xxxxx.cos.ap-shanghai.myqcloud.com/test.png
```

The following table compares the compression ratio of different image compression options (the values are for reference only):

| Format                  | Size                   |
|-------------------------|------------------------|
| .png (original image)   | 465 KB                 |
| .jpeg                   | 114 KB (75.5% smaller) |
| .avif                   | 32 KB (93.1% smaller)  |
| .webp                   | 64 KB (86.2% smaller)  |
| .heif                   | 54 KB (88.4% smaller)  |
| .tpg                    | 56 KB (88.0% smaller)  |
| Smart image compression | 59 KB (87.3% smaller)  |

# Blind Watermarking

Last updated : 2024-05-21 15:34:25

## Overview

Blind watermarking is a brand-new watermarking feature based on Tencent Cloud CI. It allows you to add a watermark to the input image information without displaying the watermark or significantly affecting the image quality. If you suspect that your image has been stolen, you can extract the blind watermark from the suspected image to check whether the image belongs to you.

Blind watermarking comes in three types: semi-blind watermarking, perfectly blind watermarking, and text blind watermarking:

| Blind Watermarking Type               | Feature   | Applicable Scenario           |
|---------------------------------------|---|-------------------------------|
| Semi-blind watermarking (type 1)      | Has strong anti-theft effects but requires the input image for watermark extraction | Images smaller than 640 x 640 |
| Perfectly blind watermarking (type 2) | Is easy to extract and requires only the watermarked image for watermark extraction | Batch adding and verification |
| Text blind watermarking (type 3)      | Adds text to the image  | Adding terminal information   |

### Note:

Blind watermarking is a paid service, which needs to be activated with the **Enable** button in the configuration page of the bucket.

The blind watermarking feature is available in all public cloud regions.

## Use Cases

**Authentication and accountability:** By adding semi-blind watermarks to your images, you can claim your images when they are stolen and extract blind watermarks using the corresponding input images to prove that you own the images.

**Duplicate check upon upload:** Sometimes, other users might upload duplicate images (such as real estate images, car images, and product images). To solve this problem, you can perform perfectly blind watermark extraction before the upload, and if you can extract a blind watermark from an image, it has been uploaded before. In this case, you can

perform corresponding operations, such as telling the user not to upload duplicate images. If an image does not contain a blind watermark, you can add one to it to prevent duplicate uploads.

**Image disclosure avoidance:** For internal images, you can add information about the requester to the images by using text blind watermarks. In this way, when an image is disclosed, you can extract the blind watermark and get information about the disclosing party.

## Notes

Currently, you cannot add a blind watermark to animated images such as GIF.

Both the width and height of the image watermark must not be greater than 1/8 of the input image.

You need to choose a white watermark with a black background for the effect of blind watermarking.

When this service is used for the first time under an account, CI will issue a free resource pack of 6,000 times valid for two months, and any excessive usage and usage after the resource pack expires will be billed. For more information, see CI Free Tier.

Text watermarks can contain digits and letters.

Blind watermarking can protect against different kinds of image theft attacks such as clipping, smudging, and color change. The anti-theft effect is subject to the original image size and the attack intensity. For more information, [contact us](#).

<https://www.tencentcloud.com/contact-sales>).

## How to Use

### Through COS console

You can enable blind watermarking in the COS console as instructed in Setting Blind Watermark.

### Through RESTful APIs

You can use APIs to add or extract blind watermarks. For more information, see Blind Watermarking.

# Media Processing

## Media Processing Overview

Last updated : 2024-03-25 15:33:39

### Overview

Media processing is a multimedia file processing service provided by COS based on CI. It offers diverse features empowered by Tencent Cloud's cutting-edge AI technology, such as audio/video transcoding, video frame capturing, and intelligent thumbnail.

| Feature                               | Description  |
|---------------------------------------|--|
| Audio/Video transcoding               | Converts an audio/video file bitstream. It changes parameters of the source bitstream, such as codec, resolution, and bitrate, to adapt to different devices and network conditions.   |
| TESHD transcoding                     | Provides transcoding capabilities that make videos smaller and clearer. It integrates a complete set of video processing solutions such as image remastering and enhancement, adaptive content parameter selection, and V265 encoder to deliver a better visual experience with guaranteed low network resource usage. |
| Professional media format transcoding | Can transcode special formats such as XAVC and ProRes.   |
| Video montage                         | Accurately extracts highlights from a video by recognizing and aggregating the video content, postures, and scenes and quickly clipping them professionally.   |
| Video enhancement                     | Optimizes the video image quality and enhances the visual effect through a series of features, including details enhancement, color enhancement, and SDR-to-HDR.   |
| Super resolution                      | Reconstructs the details and local features of a video by recognizing its content and contour so as to generate a high-resolution video image through a series of low-resolution video images. It can be used in combination with video enhancement to remaster old videos.  |
| Custom function processing            | Helps you flexibly and quickly implement customized services on demand, accelerate the development, reduce costs, and increase the efficiency.   |
| Video encryption                      | Encrypts video data through HLS standard encryption to ensure the video security.  |
| Video tagging                         | Accurately recognizes video content and automatically outputs multidimensional content tags by analyzing the visuals, scenes, behaviors, and objects in the video based on multi-modal   |

|                                    |  |
|------------------------------------|--|
|                                    | information fusion and alignment technologies.   |
| Text to speech                     | Converts text to natural-sounding and smooth speeches in a variety of voices through advanced deep learning technology.  |
| Voice/Sound separation             | Separates the human voice and background sound in a specified video (or audio) to generate audio materials for subsequent artistic processing of other styles.   |
| Adaptive HLS muxing                | Generates a multi-bitrate adaptive file from a raw video to adapt the video to different devices and network conditions.   |
| HDR-to-SDR                         | Makes the image details of the output video as close as possible to those of the original video to adapt to different types of devices and avoid image distortion and darkness.  |
| Video frame capturing              | Captures the frames of a video at specified time points. You can customize the start time point of frame capturing, frame capturing interval, number of frames to be captured, and output image size and format to meet your diversified needs.  |
| Audio/Video splicing               | Adds a video/audio segment at the beginning or end of a video/audio file to generate a new one.  |
| Audio/Video segmentation           | Divides a video/audio file into several segments.  |
| Video to animated image conversion | Converts a video file into an animated image file. You can specify the video segment for conversion, frame sampling method, as well as the frame rate, size, and format of the output animated image to meet your different needs.   |
| Intelligent thumbnail              | Intelligently analyzes the quality, brilliance, and content relevance of video frames by understanding the video content with Tencent Cloud's advanced AI technologies. Then, it extracts optimal frames to generate thumbnails to make the content more engaging.   |
| Video metadata acquisition         | Gets the metadata of media files such as videos, audios, and subtitles stored in COS, including video file's encoding format, codec, pixel format, duration, bitrate, frame rate, width, and height, audio file's bitrate, sample format, sample rate, number of channels, and duration, as well as subtitles' language. This helps meet your needs for various media information. |

## Use Cases

### Multi-device adaptability

As content platforms are generally intended for multiple types of devices, they need to provide media files in different formats for different users. The audio/video transcoding feature covers most transcoding needs and provides

diversified compression capabilities to increase the compression efficiency and downsize files. This reduces lags, storage space usage, and traffic fees.

### Video platform

For traditional video platforms, reviewers need to watch videos and then manually select thumbnails, which is labor consuming and slows down video release.

The intelligent thumbnail feature can quickly select the most striking frames as thumbnails, which saves labor resources and accelerates video release.

The video to animated image conversion feature allows you to select the highlights in a video on your video platform to convert them into an animated image for video preview, so that users can get a glimpse of the video without playing it back. Compared with traditional static video thumbnails, animated image thumbnails increase the click rate and video playbacks.

## How to Use

You can use media processing features through [job](#) or [workflow](#). To increase the efficiency and reduce repeated operations, for the features of audio/video transcoding, audio/video splicing, video frame capturing, and video to animated image conversion, you can specify a template when creating a job or workflow. The template page provides [preset system templates](#), and you can also [customize templates](#) based on your business needs.

### Job

You can create a media processing job for existing data stored in COS.

#### Managing job

Console: You can create jobs visually in the COS console as instructed in [Configuring Job](#).

API: You can create, delete, query, and search for media processing jobs through APIs as instructed in [Job APIs](#).

### Workflow

With a media processing workflow, you can quickly and flexibly create audio/video processing flows as needed. A workflow is bound to a path of an input bucket. When a file is **uploaded** to the path, the media workflow will be **automatically triggered** to perform the specified processing operation, with the processing result automatically saved to the specified path of the output bucket. You can set **audio/video splicing**, **audio/video transcoding**, **video frame capturing**, **video to animated image conversion**, and **intelligent thumbnail** jobs in a workflow.

#### Managing workflow

Console: You can create workflows visually in the COS console as instructed in [Configuring Workflow](#).

API: You can create, delete, query, and search for media processing workflows through APIs as instructed in the API documentation.



# Content Moderation

Last updated : 2024-10-24 18:41:53

## Overview

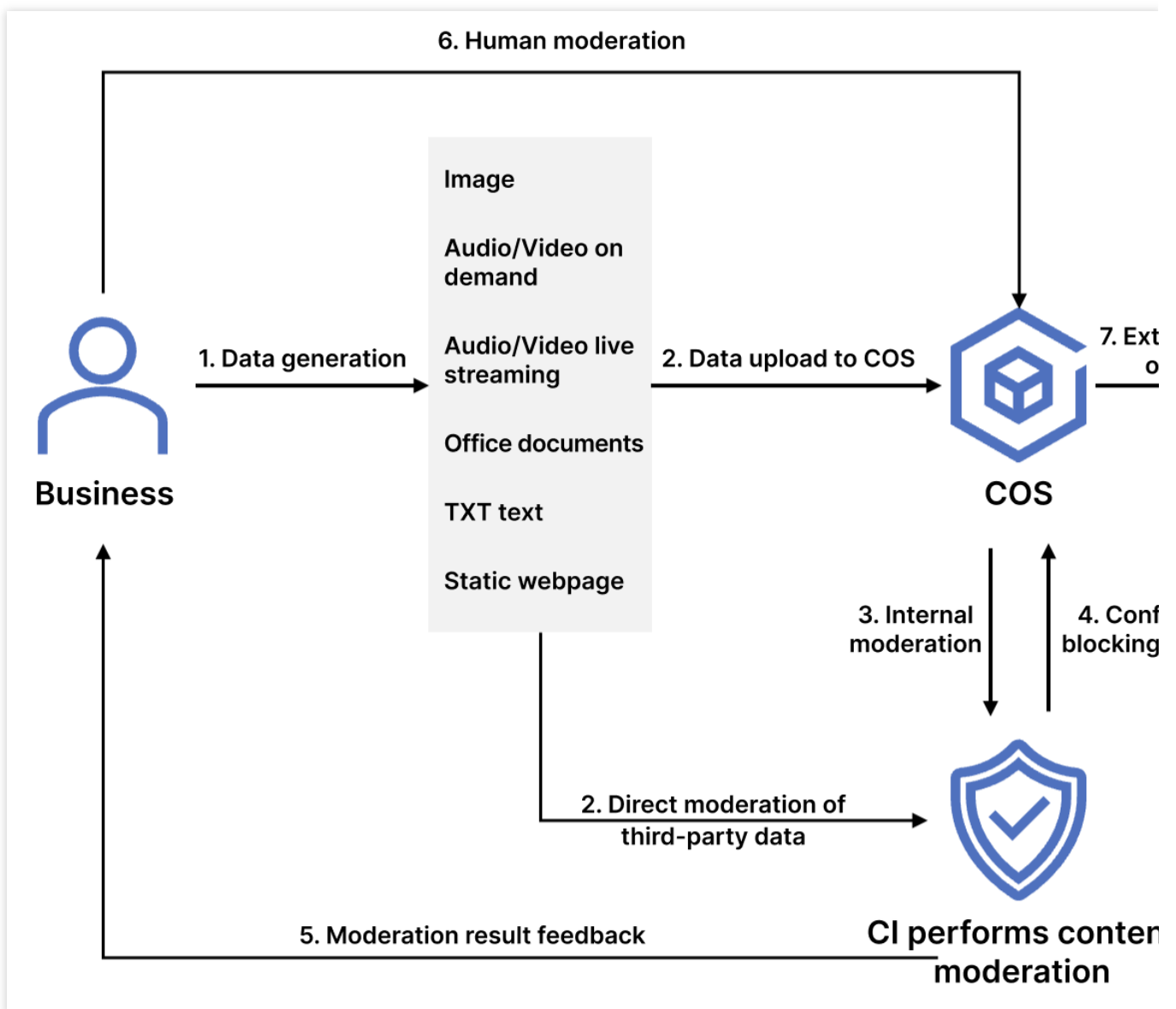
The COS content moderation service intelligently moderates the multimedia content of images, videos, audios, text, documents, and webpages. It helps you effectively identify non-compliant content such as pornographic, vulgar, terrorist, illegal, disgusting, and offensive information to avoid operational risks. Currently, files in the following formats can be moderated:

| File Type   | Limit   |
|-------------|---|
| Image       | <p>PNG, JPEG, JPG, BMP, WEBP, GIF, HEIF, and HEIC formats are supported.</p> <p>Image files below 32 MB are supported for moderation. For images above 5MB, use the large-image-detect parameter when calling requests.</p> <p>Image resolution should be no less than 20 x 20 and no more than 40,000 x 40,000 (synchronous moderation no more than 10,000 x 10,000). It is recommended that the resolution be greater than 256 x 256, otherwise the recognition effect may be affected.</p> |
| Video       | <p>MP4, AVI, MKV, WMV, RMVB, FLV, and M3U8 formats are supported.</p> <p>The video size cannot exceed 5 GB, and the number of captured frames cannot exceed 10,000.</p>   |
| Audio       | <p>Audio format: Currently supported are MP3, WAV, AAC, FLAC, AMR, 3GP, M4A, WMA, OGG and APE.</p> <p>Audio bitrate: 128–256 Kbps.</p> <p>Audio size: The file must be below 600 MB. The maximum duration is 3 hours.</p> <p>Audio file content languages: Mandarin, English and Cantonese are supported.</p> <p>When a video file is input, it supports separating the audio track from the video file and independent moderation of the audio content.</p>                                  |
| Text        | <p>Encoding in Base64 should be performed first. The length of the original text must not exceed 10,000 UTF-8 encoded characters.</p> <p>HTML and TXT formats are supported. Encoding in UTF8 and GBK is supported. The size of files can not exceed 1 MB.</p> <p>Chinese, English, and Arabic numerals are supported.</p>  |
| Live stream | <p>Live stream duration: less than 5 hours.</p> <p>Live stream protocols: RTMP, HLS, HTTP, HTTPS and other major protocols.</p> <p>Live stream resolution: up to 1920x1080 (1080p).</p> <p>Default concurrency moderation route limit: 10 routes. If the number of concurrency moderation routes are exceeded, the interface will return an error.</p>  |

|          |  |
|----------|--|
| Document | Documents are converted to images for moderation through the document processing service. Currently, dozens of document formats such as PDF, PPT, and Excel are supported. For more information, see <a href="#">Document Preview Overview</a> . |
| Webpage  | The system can automatically detect webpage files and recognize non-compliant content in OCR, object detection (such as object, advertising logo, and QR code), and image recognition dimensions based on the deep learning technology.          |

**Note:**

Content moderation is billed by CI.



After enabling the moderation service, you can perform the following operations:

Configure automatic moderation to automatically moderate the data uploaded to the bucket and block non-compliant data.

Call APIs to moderate third-party data.

Perform one-time batch moderation on historical data in the bucket.

## Use Cases

This feature is suitable for social networking, ecommerce, advertising, and gaming fields. It can check files in the above types for pornographic, illegal, and advertising content.

## Available Regions

The following regions are supported:

| Region                         |                   | Code         |
|--------------------------------|-------------------|--------------|
| Chinese mainland               | Beijing           | ap-beijing   |
|                                | Nanjing           | ap-nanjing   |
|                                | Shanghai          | ap-shanghai  |
|                                | Guangzhou         | ap-guangzhou |
|                                | Chengdu           | ap-chengdu   |
|                                | Chongqing         | ap-chongqing |
| Hong Kong (China) and overseas | Hong Kong (China) | ap-hongkong  |
|                                | Singapore         | ap-singapore |
|                                | Frankfurt         | eu-frankfurt |

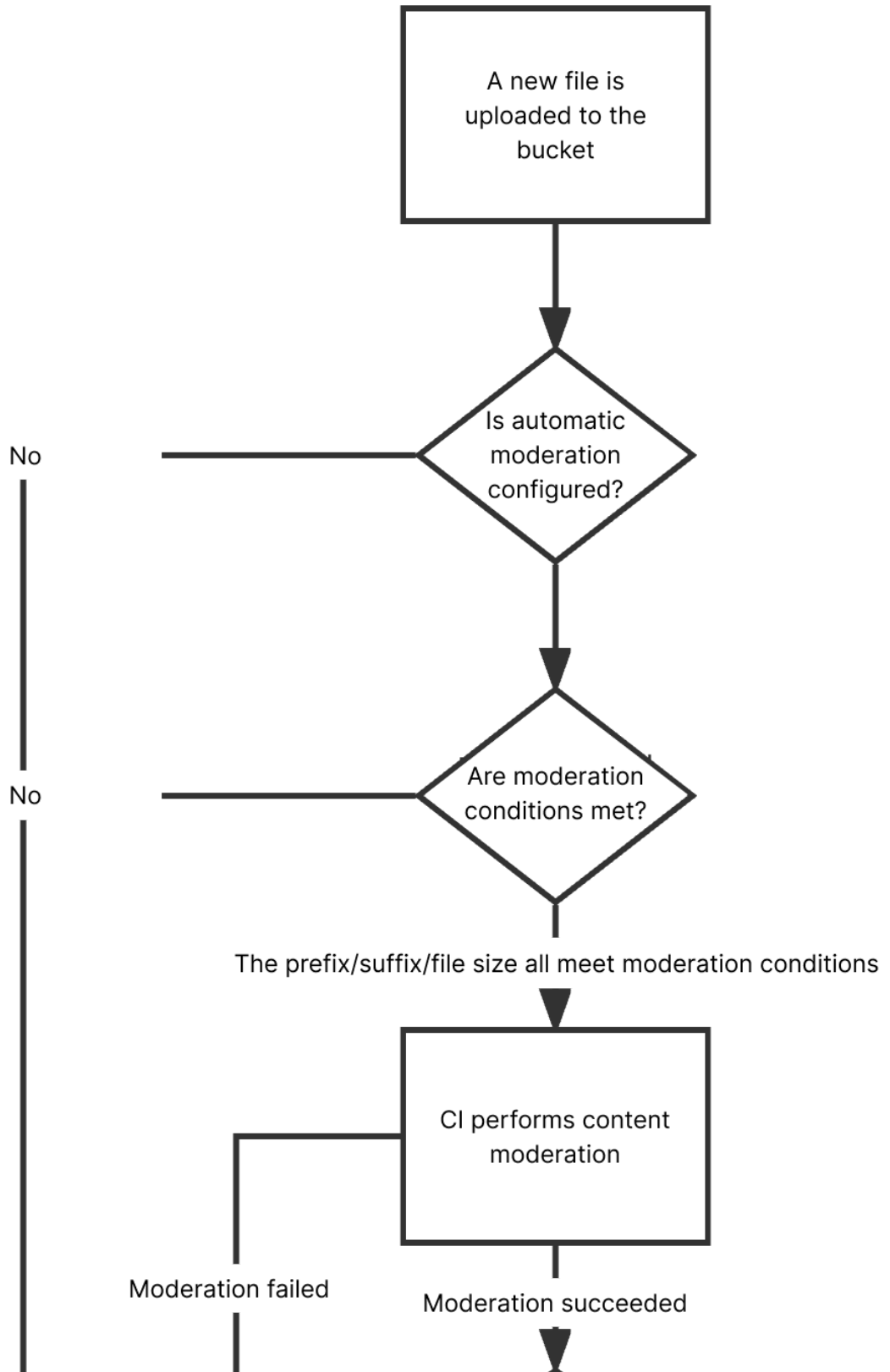
If you want to use the content moderation feature in other regions, [submit a ticket](#).

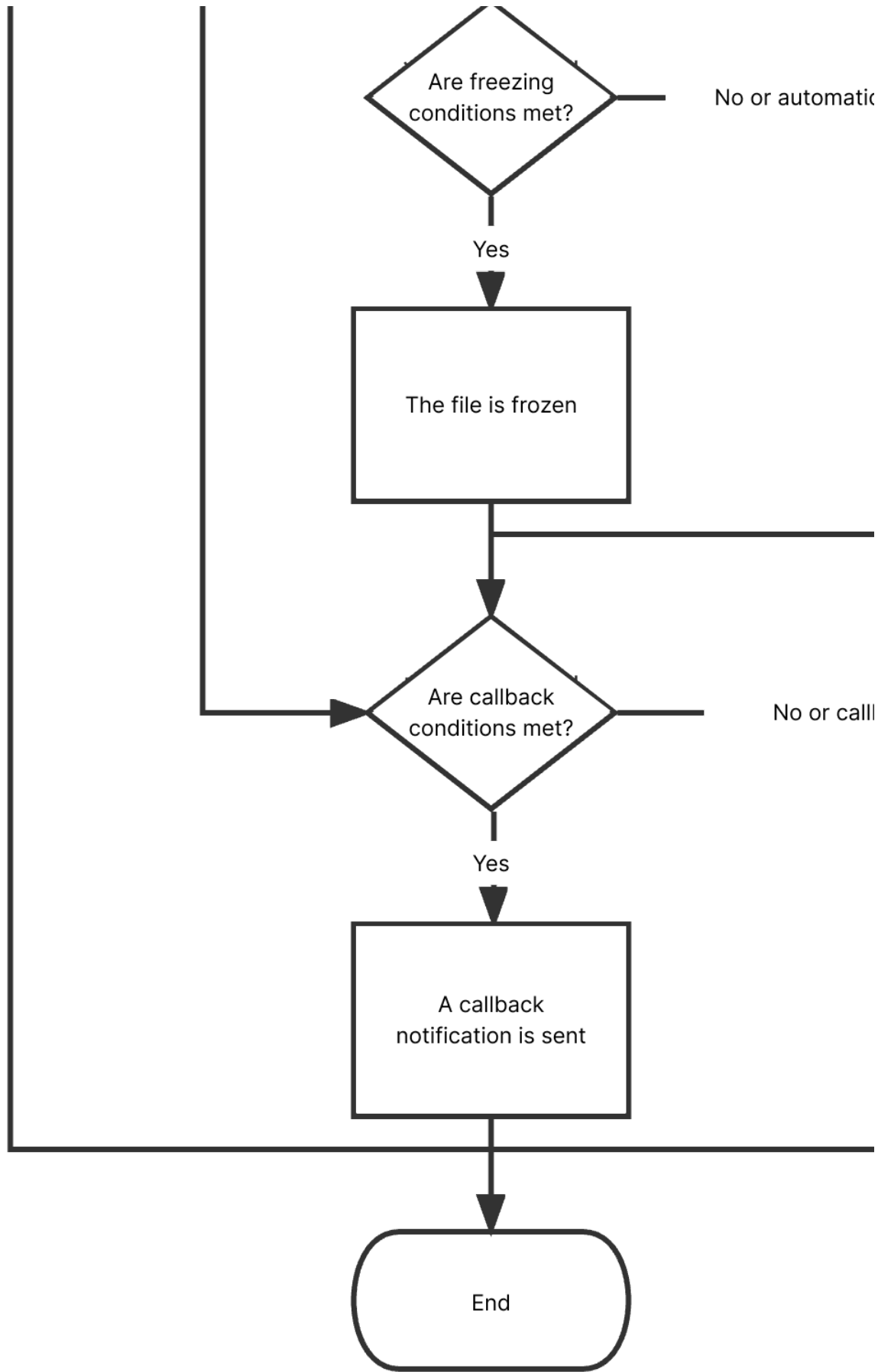
## How to Use

### Using COS console

#### Automatic moderation

You can enable the automatic moderation service in the COS console to automatically moderate newly uploaded images, videos, audios, files, documents, and webpages. For more information, see [Automatic Moderation](#).





## Historical data moderation

You can enable the historical data moderation service in the COS console to perform a one-time batch moderation on images, videos, audios, text, documents, and webpages already stored in the bucket.

## Using APIs

You can use APIs to moderate the content of images, videos, audios, text, documents, and webpages. For more information, see the following API documents:

[Single Image Moderation](#)

[Submitting Video Moderation Job](#)

[Submitting Audio Moderation Job](#)

[Text Moderation](#)

[Document Moderation](#)

[Webpage Moderation](#)

[Live Stream Moderation](#)

For a file that is found to be sensitive after moderation, we recommend that you choose one of the following methods to process it:

Change the file's access permission to private read to prevent users from accessing it anonymously over the public network. For more information, see [PUT Object acl](#).

Move the file to the backup directory. The file is moved by copying the original file to the specified directory and then deleting the original file. For more information, see [PUT Object - Copy](#) and [DELETE Object](#).

Delete the file. For more information, see [DELETE Object](#).

# File Processing Service

Last updated : 2024-03-25 15:33:39

## Overview

File processing features such as hash calculation, decompression, and compression and packaging are provided for all files stored in COS. Currently, the following file processing features are supported:

| Feature            | Description   |
|--------------------|---|
| Hash calculation   | It calculates the file hash. Currently, the following hash calculation algorithms are supported: MD5, SHA-1, and SHA-256. File size limits:<br>Sync request: Below 128 MB.<br>Async request: Below 50 GB. |
| File decompression | It decompresses .zip, .tar, .gz, or .7z packages in the cloud and dumps the extracted files to COS.<br>File size limit: Below 5 TB.   |
| Multi-file zipping | It compresses multiple files into a .zip, .tar, or tar.gz format.<br>File limit: Up to 10,000 files of less than 50 GB in total can be zipped.  |

### Note:

The file processing service is provided and charged by CI. For billing details, see [File Processing Fees](#).

Currently, file processing is supported in Beijing, Shanghai, Guangzhou, Chengdu, Hong Kong (China), Singapore, and Silicon Valley regions.

## Use Cases

### Data verification

The file hash calculation feature can be used to quickly check the data consistency.

### Daily tools

On-cloud PaaS file compression and decompression features are provided, which enable you to preview files after decompression and enrich online preview scenarios.

## How to Use

The file processing feature is provided by CI, so you need to click [here](#) to activate CI first.

After activating CI, you can enable file processing in the COS console and then use the feature in the console or via an API.

## Using COS console

### In the file list

You can click **More Actions** in the bucket file list to perform file processing operations such as hash calculation on files.

### Through a job

You can perform file processing operations through **jobs and workflows**.

#### Note:

Currently, this feature can be used only through a job but not a workflow.



# File Preview

Last updated : 2024-05-21 15:42:26

## Overview

The file preview feature leverages CI's capabilities to transcode files into images, PDFs, or HTML5 pages. It addresses the display problems of file content on webpages and enables easy **online file preview** on PC, app, and other terminals. It is widely suitable for diverse business scenarios, such as online education, enterprise OA, and website transcoding.

### Note:

Currently supported input file types include:

Presentation files: PPTX, PPT, POT, POTX, PPS, PPSX, DPS, DPT, PPTM, POTM, PPSM.

Text files: DOC, DOT, WPS, WPT, DOCX, DOTX, DOCM, DOTM.

Spreadsheet files: XLS, XLT, ET, ETT, XLSX, XLTX, CSV, XLSB, XLSM, XLTM, ETS.

Other files: PDF, LRC, C, CPP, H, ASM, S, JAVA, ASP, BAT, BAS, PRG, CMD, RTF, TXT, LOG, XML, HTM, HTML.

Currently, the above file types can be transcoded to JPG, PNG, PDF, or HTML formats.

The input file cannot exceed 200 MB in size or 5,000 pages.

## Architecture

Currently, the file preview feature provides two modes: sync transcoding and async transcoding.

## Use Cases

This feature addresses the display problems of file content on webpages and enables easy online file preview on PC, app, and other terminals. It is widely suitable for diverse business scenarios, such as online education, enterprise OA, and website transcoding.

## Directions

### Through the COS console

To use the file preview feature, you need to activate the file preview service first in the console as instructed in [Enabling File Preview](#).

### **Async transcoding**

You can asynchronously transcode files for preview in the COS console as instructed in [Configuring Job](#).

### **Through RESTful APIs**

#### **Sync transcoding**

You can use APIs to transcode files in your bucket for preview in real time:

To use non-HTML5 preview, see Sync Request API.

To use HTML5 preview, see Getting Started.