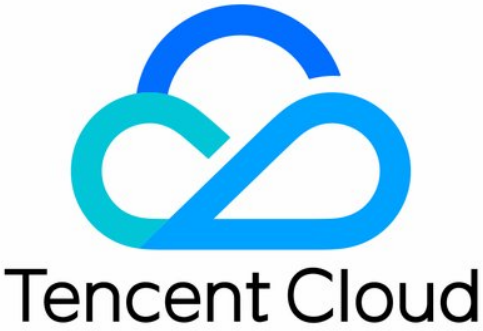
Video on Demand

Product Introduction

Product Documentation



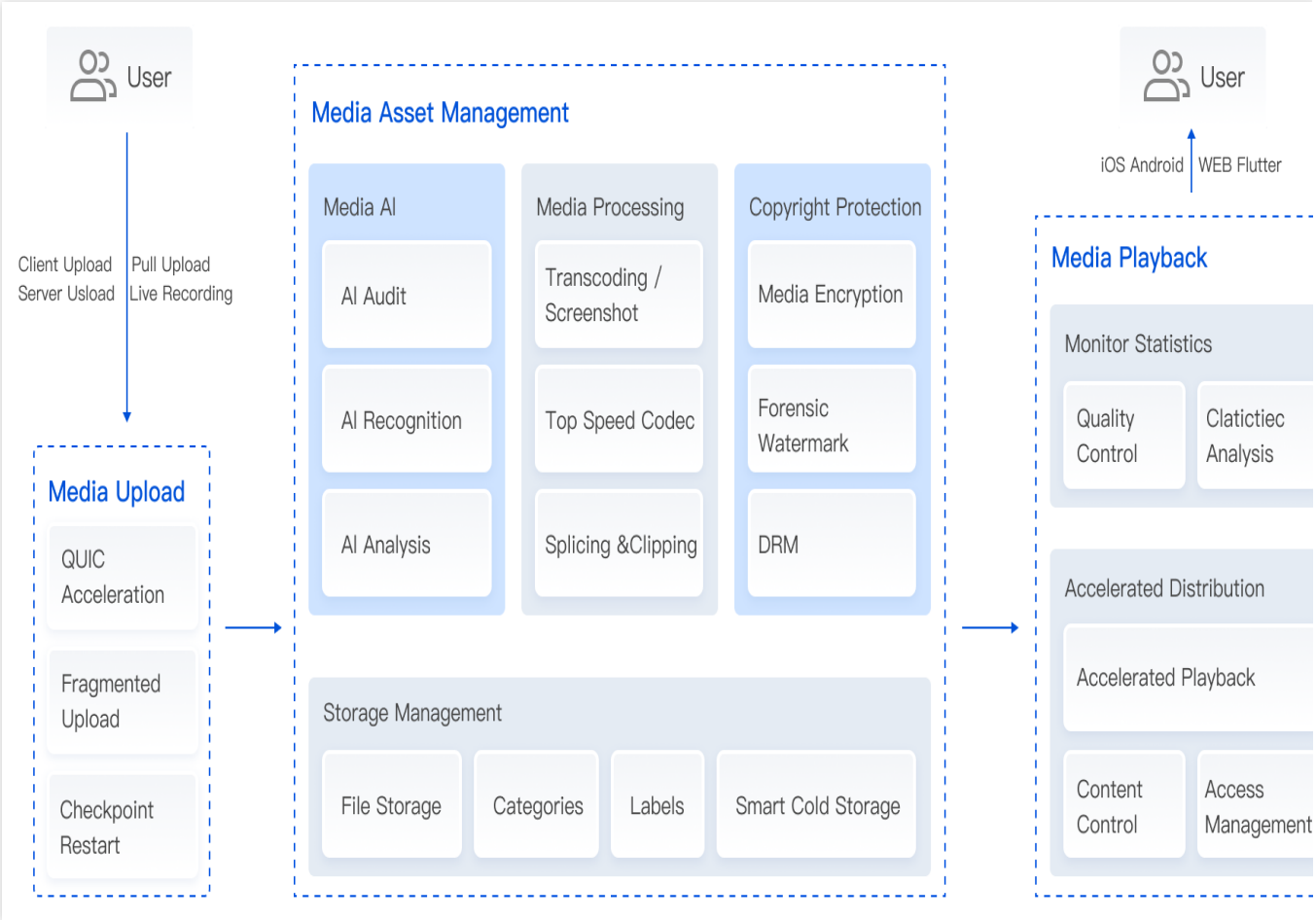
Contents

Product Introduction
Overview

Last updated：2022-12-23 16:15:40

Tencent Cloud Video on Demand (VOD) provides one-stop VPaaS (Video Platform as a Service) solutions for audio/video capture, upload, storage, automated transcoding, and accelerated playback, as well as media asset management and audio/video communications. It enables you to deliver high-quality video in a quick and flexible way, so you can focus on your business, select services as needed, and respond to market changes with agility.

Product Architecture



Cloud video storage, video transcoding service, and video playback acceleration are the core components of Tencent Cloud video solutions.

Cloud media storage

You can upload or pull media using the VOD console or SDK, store and manage media files, retrieve video information, and create cold storage policies for your media assets.

Video transcoding

In the VOD console, you can perform recognition and auditing on the content of your videos. You can also transcode, screenshot, watermark, encrypt, and generate thumbnails for videos.

Playback acceleration

Leveraging Tencent Cloud's global network of CDN cache nodes, VOD can distribute your audio/video resources to deliver a smooth, multi-channel playback and viewing experience. You can integrate your own or Tencent Cloud's player SDKs with your existing services.

Features Overview

Last updated：2025-02-17 19:36:12

Category	Feature	Description
Media upload	Multi-End Upload	VOD offers multiple ways to upload media, including uploading from a mobile or web client, from a server with multi-language SDKs, from the VOD console, pulling from a URL, or uploading a live recording directly to VOD.
	Client Upload Acceleration	Upload acceleration leverages Tencent Cloud's globally deployed acceleration network to intelligently select the optimal access point and connection when users upload media from a client, significantly increasing upload speed and success rate. VOD also supports QUIC transmission, which is more efficient and stable under poor network conditions.
Media management	Attribute Settings	You can configure different attributes for media files to facilitate search and management. You can also specify how your videos are displayed to improve viewing experience.
	Filtering and Search	You can use media attributes as search criteria for exact, fuzzy, and prefix matches and export the search results.
	Media Deletion	You can delete unwanted media files to reduce storage costs.
	Smart Cold Storage	You can configure smart cold storage policies with trigger conditions such as playback count, upload time, and upload type to automatically move files that meet the conditions to a colder storage class to help you save storage costs.
	Smart Bitrate Reduction	Automatically reduces the bitrate of videos based on criteria such as playback count to help you save bandwidth and storage costs.
Media processing	Audio/Video Transcoding	Transcodes audios and videos with specific codec to specific frame rate, bitrate, and resolution, so media can be played back on different devices that support different definitions and formats. You can also add watermarks and opening and ending segments during transcoding.
	TSC Transcoding	Top Speed Codec (TSC) transcoding uses smart scene recognition, dynamic encoding, and precise bitrate control technologies to deliver a higher image quality at a lower bitrate, helping you reduce traffic and storage costs.

	Adaptive Bitrate Streaming	Supports mainstream formats such as HLS and DASH and enables the video player to automatically select the most appropriate resolution to play based on network conditions. Adaptive bitrate streams are also the main format for advanced features such as media encryption, DRM, subtitles, and ads.
	Remaster	Uses restoration and enhancement AI algorithms to offer capabilities including image noise removal, outline restoration, super resolution, detail enhancement, color enhancement, and SDR to HDR conversion, while at the same time improving video resolution. You can use this feature to improve the quality of user- or professionally generated videos, restore old videos, and generate 4K videos, among others.
	Image Cropping and Scaling	Scales image and crops images into circle or square in real time to meet various display requirements.
	Video Screencapturing	Takes a screenshot of a video at the specified time point (which can be used as the thumbnail), takes multiple screenshots at a specified time interval or sample rate, or generates an image sprite consisting of those regularly taken screenshots.
	Splicing and Clipping	Removes the opening and ending segments of audio/video files, clips files, or splice multiple files to generate a new audio/video file.
	Complex Compositing	Allows you to perform various editing operations on audio and video tracks, including image rotation, overlaying, audio mixing, volume level adjustment, splicing and clipping, and transition adding. This feature is suitable for the production of ads, news, and promotional videos.
Playback	Accelerated Delivery and Playback	Leverages Tencent Cloud's globally deployed acceleration network to route playback requests to the access point closest to the viewer. This reduces playback failure rate and lag rate and delivers an ultra smooth playback experience.
	Smart Multi-Bitrate Switch	Based on adaptive bitrate streaming technologies including HLS and DASH, the player can switch the playback resolution dynamically based on network conditions. This allows you to deliver the best video quality possible to viewers while ensuring smooth playback.
	Multilingual Subtitles	You can bind multilingual subtitles to a video so that the player can display a subtitle as requested.
	Multi-Platform Player	VOD offers player SDKs for various platforms including Android, iOS, web, and Flutter. They come with over 50 features such as playback speed change, progress bar, picture-in-picture, on-screen comments, definition switch, offline download, and encrypted video playback. In

		addition, VOD also provides a lightweight player adapter to work with your existing player.
Media AI	Smart Subtitles	Our platform facilitates the automatic recognition of audio content within media through AI technology, converting it into text in the source language or automatically translating it into a target language. It outputs subtitles in formats such as VTT, SRT. The file can be directly associated with the media so that subtitles can be displayed during playback.
	Labeling and Categorization	Leverages AI technologies to analyze media content, classify media into categories such as news, entertainment, game, technology, and food, and add labels such as game, vehicle, musician, auto racing, or pet.
	Face Recognition	Automatically recognizes faces in images based on public and custom face libraries and locates the time points and positions at which certain faces appear in a video.
Content compliance	Smart Moderation	Leverages AI capabilities to intelligently moderate audios, videos, and images for non-compliant content to help you avoid legal risks and brand damage caused by non-compliant media.
	Media Blocking	You can block non-compliant content to prevent it from being spread.
Copyright protection	Hotlink Protection	Prevents playback URLs from being hotlinked, so as to avoid losses in playback revenue caused by leaked copyrighted content.
	Encryption and DRM	Encrypts video content to allow only authorized users to play it. This prevents unauthorized users from accessing and sharing your copyrighted content and reduces piracy.
	Piracy Tracking	If a video is recorded without authorization, VOD can extract the information of the user who recorded and pirated the video, helping to identify, track, and reduce piracy.
VOD and live streaming	Live Recording	Records live streams so that they can be played on demand after live streaming ends.
	Time Shifting	Allows end users to drag the progress bar during live streaming to watch content from earlier time points.
	Live Stream Clipping	Clips out a segment of a specific time period from a live stream. This feature allows streamers to quickly capture highlights during live streaming.
	Broadcast Channel	Enables the scheduling of multiple videos, converts VOD content into live streams at specified times, distributes them to various live streaming platforms, and supports real-time switching and modification of VOD videos during live broadcasts.

Media Upload
Multi-End Upload

Last updated：2024-07-22 15:08:42

Overview

End users can upload video, audio, and image files to VOD from a client, a server, or via a URL, among other methods. Recorded live sessions can also be uploaded to the VOD automatically.
Specifically, VOD supports the following upload methods:

Feature	Description
Upload from client	Upload media files from a client to VOD. VOD offers client-side upload SDKs for iOS, Android, web, and mini programs.
Upload from server	Upload media files on a server to VOD. It supports SDKs for various programming languages, including Java, C#, PHP, Python, Node.js, and Go.
Upload through console	Upload media files directly from the VOD console after logging in.
Pull from URL	Pull media resources on the network to VOD via URL.
Live recording upload	Record live media directly to VOD when recording is enabled in CSS.
Upload through origin server migration tool	Upload media files from other cloud vendors to VOD through a tool provided by VOD.

The upload methods of VOD cover almost all media sources, so you can upload files from any source.

Use Cases

Feature	Description
Upload from client	In UGC and PGC scenarios, most media files are created by general users. After a user creates content using a device like their mobile phone or PC, the user can upload the media on the client to VOD.
Upload from server	Large video portals or platforms that own the copyright of their media usually store media on their own servers. In this case, they can upload the media files on their servers to VOD in

	batches.
Upload through console	If you want to upload a local media file on your PC, you can quickly upload it from the console.
Pull from URL	If the video you want to upload is already available on the network, you can upload it to VOD directly using the media URL of the video.
Upload through origin server migration tool	If you want to migrate all existing videos from another cloud vendor or migrate a large number of videos from local storage, you can use the origin server migration tool to upload them to VOD.

Directions

Upload from client
Upload from server
Upload from the console
Pull from URL
Live recording upload
Upload through the origin server migration tool

Client Upload Acceleration

Last updated：2024-07-22 15:07:54

Overview

The client upload acceleration feature leverages Tencent Cloud's globally deployed acceleration network to intelligently select the fastest route for file uploads. It supports the QUIC protocol for data transmission, making media uploads more reliable in weak network environments.

VOD uses the following methods to accelerate video upload from clients.

Method	Description
Upload data to the nearest edge node	VOD has deployed edge nodes globally and can route an upload request to the nearest edge node.
Smart acceleration network	Leveraging Tencent Cloud's acceleration network, VOD can intelligently select the optimal route to transfer data to the storage center.
Support for transfer over the QUIC protocol	The QUIC protocol allows multiplexing and connection migration. It transfers data more efficiently and is more stable under poor network conditions.

Use Cases

Scenario	Description
Long-distance data upload	Upload performance tends to be poor if an end user is far away from a VOD storage center (for example, if they are located in a different region or continent). With client upload acceleration, Tencent Cloud will route an upload request to its nearest edge node and transfer data over the acceleration network, greatly improving the upload performance.
Data upload under poor network conditions	Mobile users may experience unstable network connection and high packet loss due to frequent network changes and weak signal. VOD supports QUIC transmission, which ensures more reliable data transfer under poor network conditions.
General data upload	If you do not enable upload acceleration, HTTP 1.1 is used for data transfer, which has a relatively low performance when dealing with a large amount of data. In contrast, the QUIC protocol allows multiplexing and features zero RTT, making it more efficient at transferring data.

Directions

For directions on how to use the feature, see Client Upload Acceleration.

For the billing details, see Value-Added Services.

Media Management
Attribute Settings

Last updated：2024-07-22 15:02:53

Overview

VOD allows you to set a rich variety of attributes for media files, including media name, description, category, tag, thumbnail, timestamp information, subtitle information, expiration time, storage class, and block status.
The media name, description, category, and tags add additional information to media files to help you manage them more efficiently.
Media thumbnails, timestamps, and subtitle information can be displayed during media playback to improve the viewing experience.
Expiration time and block status enable you to automatically delete files and block non-compliant media files more easily.

Media Attribute	Description
Media name	The name of the media file, for example, the title of a movie, a TV series episode, a video course title, a product video, etc. This is used for: Playlist: The media name Displaying each media file by its name in the user's playlist Media search: A user can enter a media name for prefix match or fuzzy search.
Media description	The description of the media file. Its use cases include: Media search: A user can fuzzy search for a media file by its description.
Media category	The category of the media file, such as movie, TV series, or variety show. Its use cases include: Media search: A user can search for files based on the specified category. Smart cold storage: Files in the specified category can be transitioned to a colder storage class.
Media tag	The tag of the media file, such as ACG, action, or imperial drama. Its use cases include: Media search: A user can search for files with the specified tag.
Media thumbnail	The thumbnail URL of the media file. Its use cases include: Media asset console: Thumbnails can be displayed in the media file list.
Timestamp	Media timestamps are a set of playback time points and the content (including text, images, and links) displayed at those points. When you hover over a timestamp on the progress bar, the content at that time point will be displayed. Timestamps can be used to:

	Highlights: Viewers can go directly to the important time points in a movie or the goals in a sports match, allowing them to save time during playback. Ad: When a viewer drags the progress bar to a timestamp, the relevant ad information will be displayed.
Subtitles information	The subtitle information of the media file. It is used to display subtitles during media playback.
Expiration time	The expiration time of the media file. Once expired, the file will be automatically deleted by VOD.
Storage class	The storage class of the media file. VOD offers the following storage classes (in descending order by storage fees and file read speed): STANDARD, STANDARD_IA, ARCHIVE, and DEEP ARCHIVE. You can select an appropriate storage class based on your needs to help control your media storage costs.
Block status	The block status of the media file. You can block non-compliant media content to prevent it from being further spread.

Use Cases

Use Case	Description
Online education	Online education platforms can manage teaching videos by assigning categories and tags based on the subject content, so that students can quickly find the videos they want. The platform can also recommend relevant videos based on the category and tag information.
Video portal	Users can specify multiple search conditions, such as category, label, and video name, to quickly find the video they want among a massive amount of media content. Files can be bound with multilingual subtitles, allowing viewers from across the world to watch with subtitles in their own languages.
Live streaming platform	To meet regulatory and moderation requirements, live videos need to be recorded and retained for a certain period of time and can be deleted upon expiration. For those live videos, you can set an expiration time, and VOD will automatically delete them upon expiration to reduce storage costs.
UGSV on social media platforms	Short video platforms can manage different channels by category or label. For popular content, timestamp information can be added to show purchase links at certain time points. Non-compliant content can be blocked.

Directions

Relevant console guides:

Quick Edit

Filtering Video

Managing Video

Associating Subtitles

Modifying Image Category

Managing Image

Relevant server APIs:

ModifyMediaInfo

SearchMedia

DescribeMediaInfos

ForbidMediaDistribution

Filtering and Search

Last updated：2024-07-22 15:02:01

Overview

VOD allows you to use media attributes as search criteria to search for media files based on exact, prefix, or fuzzy match.
The list of found files can be exported as local files (currently, files can be exported in CSV and JSON Lines formats).
You can use multiple filter fields to search for files. The table below lists the media attributes that can be used as filter fields.

Media Attribute Category	Description
Basic attributes	Mainly includes: FileId: The unique ID of the VOD media file. Media source: The source of the media file, such as recording, upload, and video processing. Media upload time: The upload time of the media. Stream ID: The stream ID if the media source is Record.
Custom attribute	Mainly includes: Media name: The name of the media file. Media description: The description of the media file. Media category: The category of the media file. Media tag: The tag of the media file. Expiration time: The expiration time of the media file. Once the file expires, it will be deleted automatically. Storage class: The storage class of the media file, such as STANDARD, STANDARD_IA, ARCHIVE, and DEEP ARCHIVE.

Use Cases

Use Case	Description
Online education	Students can quickly find a video course by typing in the search box the subject name, chapter title, or course description and using categories and labels to filter the results.
Video portal	The staff of video platforms can first get a list of files filtered by category, label, or storage class and then perform bulk operations such as remove, move to new category, change

	labels, and move to new storage class. Viewers can also search for videos by title, category, and label.
Live streaming platform	An operator can search for VOD recording files by stream ID. For example, if a live stream is interrupted, multiple VOD files may be generated for the same stream ID, and searching by stream ID makes it easier for the operator to find and splice the files together.
UGSV on social media platforms	End users can use a keyword like “street dance” or “concert” to fuzzy search a list of videos.

Directions

Relevant console guides:

Filtering Video

Exporting Videos

Managing Image

Relevant server APIs:

SearchMedia

Media Deletion

Last updated：2024-07-22 15:00:47

Overview

Customers can delete media files stored in VOD to reduce storage costs. VOD provides a rich-featured and easy-to-use media deletion service.

Strengths	Description
Comprehensive features	Two deletion modes are supported: Complete deletion: The source file uploaded to VOD and all the files generated after processing such as transcoded files and screenshots are deleted. Partial deletion: Only a part of files such as the source file and the transcoded file of the specified definition are deleted.
Ease of use	Automatic deletion and manual deletion are supported. Automatic deletion: You can specify the expiration time when uploading a media file. Upon expiration, the media file and its related resources (such as transcoding results and image sprites) will be permanently deleted. You can specify the expiration time when using a server API for upload application. You can specify the expiration time for an uploaded media file. Upon expiration, the media file and its related resources (such as transcoding results and image sprites) will be permanently deleted. You can set this through the console or an API. Manual deletion: You can delete files in the console. You can call an API to delete files.

Use Cases

Media deletion is generally used to reduce the storage costs or remove non-compliant media.

Use Case	Description
Ecommerce platform	After an item is removed, the images and videos of the item are also removed to reduce the storage costs.
Video website	Video websites can delete copyright-infringing and non-compliant media content. For older or less-viewed videos, a low-definition version can be retained, and the original high-definition videos can be deleted to reduce storage costs.

Game/Sports event recording	Old game and sports media files that are confirmed to be no longer needed can be deleted.
Enterprise event	Photos taken and media resources generated during enterprise team building activities generally don't need to be retained permanently. You can set a validity period for enterprise employees to view, watch, and download them. You can specify an expiration time when uploading the media files to automatically delete them upon expiration.
Burn-after-reading application	In burn-after-reading applications, resources uploaded by end users will become unavailable after a certain period of time (such as 24 hours). For such applications, the media expiration time can be specified during upload, and VOD will automatically delete relevant media resources upon expiration.

Directions

For detailed directions on how to delete media files in the console, see:

Deleting Video.

Deleting Image.

For media deletion server APIs, see:

ApplyUpload. Enter the `ExpireTime` parameter to specify the expiration time of the uploaded file in VOD.

ModifyMediaInfo. Enter the `ExpireTime` parameter to modify the expiration time of the media file.

DeleteMedia.

Smart Cold Storage

Last updated：2024-07-29 17:14:46

Overview

Smart cold storage is executed based on custom cold storage policies. VOD can automatically move files that meet certain conditions (creation time, type, access frequency) to a more cost-efficient storage class. The storage classes supported are STANDARD, STANDARD_IA, ARCHIVE, and DEEP_ARCHIVE. The table below compares the cost and access performance of the storage classes.

Metric	Ranking (highest to lowest)
Storage cost	STANDARD > STANDARD_IA > ARCHIVE > DEEP_ARCHIVE
Access performance	STANDARD > STANDARD_IA. ARCHIVE and DEEP_ARCHIVE storage classes don't support direct access. You need to retrieve the data first before you can access it.

You can change the storage class of VOD files from STANDARD to STANDARD_IA, ARCHIVE, or DEEP_ARCHIVE according to certain cold storage policies based on your business characteristics so as to effectively reduce your storage costs.

Smart cold storage policy

VOD supports flexible smart cold storage polices and various cold storage dimensions, including creation time, file category, and playback count.

Dimension	Description
File creation time	You can specify the upload time and storage time. Specify the upload time: You can configure a cold storage policy by specifying a time point or time period. Specify the time period: In cases where a time period is specified, if the start time is missing, cold smart storage will be executed on all files uploaded before the specified end time. If the end time is missing, cold smart storage will be executed on all files uploaded after the specified start time. If neither is specified, smart cold storage will be executed on all files stored in VOD. Specify the storage time: A media asset will be automatically transitioned to the cold storage class after the entered time elapses.
File category	Cold storage by category ID is supported. You can set multiple category IDs/names.
File source	Cold storage is supported for different media sources. You can set multiple media sources.

Playback count	The cold storage policy depends on the number of times a video is played by during a specified period of time. A cold storage policy supports only one access policy.
Media type	Whether to perform the cold storage logic will be determined based on the media type. A cold storage policy supports only one media type.

In addition to configuring cold storage policies, VOD also allows you to manually transition multiple files at a time. You can do this directly in the console as instructed in Cold Storage or by calling the ModifyMediaStorageClass API.

Use Cases

Use Case	Description
Ecommerce live streaming	As required by Measures for the Supervision and Administration of Online Trading issued by the State Administration for Market Regulation of China, live streaming service providers must retain live videos of online transactions for at least three years after the live streaming ends. Such videos are generally stored in VOD in STANDARD storage class, some of which will seldom or never be played back and are only used for review by applicable authorities. The smart cold storage feature can effectively help you reduce the storage costs of these media assets.
Cold storage of infrequently accessed media	For video portals, streaming media platforms, and UGC management platforms, media assets that are infrequently accessed or watched by users cannot be directly removed from the platform for various reasons and often incur unnecessarily high storage costs. The smart cold storage feature of VOD can store media files in a cold storage class according to their access frequency, which effectively reduces the storage costs of media assets while still allowing infrequent views.
Media asset archive	In the news, media, radio, and TV industries, some media files are only relevant for a short period of time but are generally archived for long periods of time so they can be available for occasional playback in the future. Such playback usually does not have high requirements for time to first frame. You can save these assets in ARCHIVE or DEEP_ARCHIVE storage of VOD to reduce storage costs.

Directions

Refer to:

Smart Cold Storage of VOD Media Asset Files

Cold Storage

ModifyMediaStorageClass (server API)

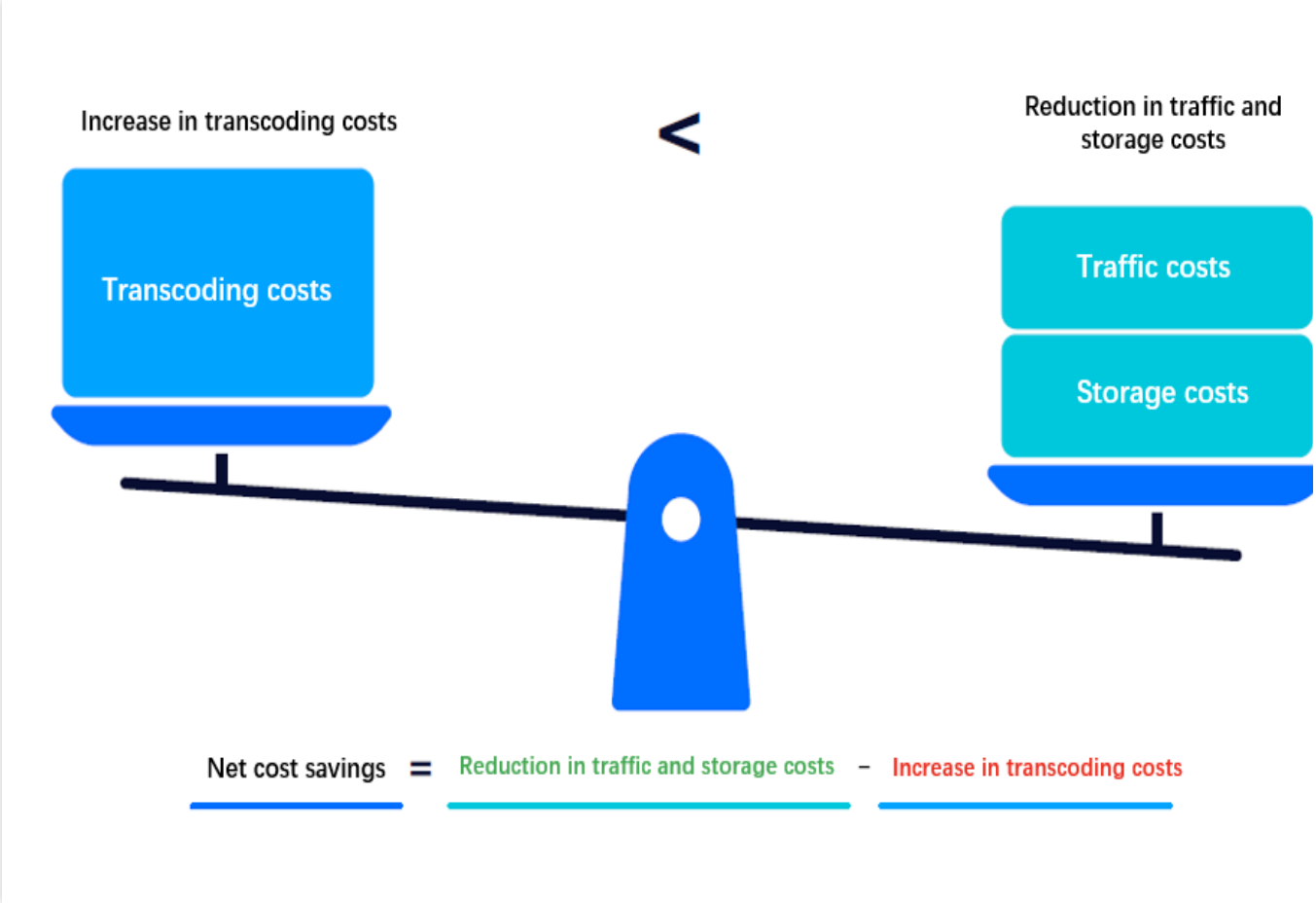
RestoreMedia (server API). This API can be used to generate a media file that can be accessed temporarily for files stored in ARCHIVE or DEEP ARCHIVE storage class.

Smart Bitrate Reduction

Last updated：2024-07-22 14:23:48

Overview

VOD's Top Speed Codec (TSC) feature can achieve **high video quality at lower bitrates** and help you reduce your traffic and storage costs. However, TSC transcoding fees are higher than general transcoding fees. This raises the question of how the TSC technology can be used to maximize your **net cost savings** (**the reduction in traffic and storage costs minus the increase in transcoding costs**).



With VOD's smart bitrate reduction feature, you can configure policies to automatically perform TSC transcoding on frequently played files. The general transcoding outputs of the files will be replaced with the low-bitrate files that are generated, while the playback URL remains unchanged, increasing your net cost savings.

Note:

Smart bitrate reduction works on a file ID level. If a media file meets the conditions of a bitrate reduction policy, the policy will be applied to all its transcoding and adaptive bitrate outputs in HLS format (which have the same file ID).

Smart bitrate reduction (TSC transcoding) does not work on files whose bitrates have already been reduced.

Bitrate reduction policies are not applied to transcoding and adaptive bitrate outputs generated before September 19, 2022.

Use Cases

Use Case	Description
UGSV platforms	Short video platforms manage a huge number of videos which differ greatly in terms of popularity. VOD's bitrate reduction feature can automatically reduce the bitrate of popular videos without compromising their quality, helping you save traffic and storage costs.
Live streaming platforms	Live streaming platforms record a large number of streaming sessions, often at high resolutions, and replaying them may consume a lot of traffic. VOD's smart bitrate reduction feature can be used to automatically lower the bitrate of popular hosts' videos and reduce traffic and storage costs.
Online education platforms	The teaching courses provided by online education platforms vary in popularity. To save traffic and storage costs, you can use VOD's smart bitrate reduction feature to reduce the bitrate of popular courses without compromising their video quality.

Directions

For detailed directions on how to use this feature, see the following document:

Console Guide - Smart Bitrate Reduction

Media Processing
Just-In-Time Transcoding

Last updated：2024-08-20 14:12:10

Overview

Just-in-time (JIT) transcoding is a transcoding method that packages content only when it is requested. The process happens quickly enough (much faster than offline processing) not to cause a noticeable delay in distribution. What's more, the transcoding outputs are cached in VOD's CDN nodes rather than saved in your VOD storage, helping you save storage costs.

Advantages	Description
Fast	Unlike offline transcoding, which has a waiting time, JIT transcoding allows playback of transcoded videos only a few seconds or even a few milliseconds after they are requested, regardless of the video duration.
Lower storage costs	With offline transcoding, you have to save the transcoding outputs in your own storage. JIT transcoding does not take up your storage space and therefore can significantly reduce your storage costs.
Easy to use	You can configure JIT transcoding with no coding required.

Use Cases

Use case	Description
Long-form videos	Generating and saving transcoding outputs for long-form videos drives up your storage usage notably. For example, if you transcode an MP4 video to 720p, 1080p, and 2K in HLS format, you will need to store three more files in addition to the original file. However, with JIT transcoding, you only need to save the original file. This greatly cuts down your storage costs.
TV stations and OTT	TV stations and OTT services may need to edit their content constantly. By using JIT transcoding, you only need to keep an MP4 copy of your content's latest version while still being able to deliver transcoded and packaged content immediately after it is requested.
UGC	UGC platforms host a large number of videos, over 90% of which are infrequently accessed. JIT transcoding allows you to transcode your videos only when they are requested, helping you save storage costs.

Free Trial

JIT transcoding is currently in beta testing. If you are interested in trying them out for free, please join our Telegram or WhatsApp group.

Scenario Transcoding

Last updated：2024-07-11 17:55:58

Overview

VOD scenario transcoding is based on Tencent Cloud's extensive experience in industry scenarios, providing optimized TSC transcoding solutions tailored to different industry characteristics. With high quality and low bit rate, it offers targeted solutions with better person recognition, higher smoothness, and smaller video size.

Use Case

Scenario	Description
Short Drama	Optimizing characters in short dramas and specifically enhancing person recognition, as well as optimizing video size to save distribution traffic costs for users.
E-commerce	Efficiently compressing e-commerce videos to significantly reduce video size, thereby saving storage and distribution costs for users.
Feed	Addressing issues such as information feed loading time, achieving higher subjective image quality with lower video bitrate, comprehensively reducing video loading time, and saving storage and distribution costs for users.

Use Method

Scene transcoding is one type of TSC transcoding. The usage method is the same as TSC transcoding, only the transcoding template needs to choose the scene transcoding template, not the TSC template. For related documentation, please refer to the transcoding documentation:
Practical Tutorial: How to Transcode Videos.
Development Guide: Transcoding.

Audio/Video Transcoding

Last updated：2024-12-10 11:15:55

Overview

With audio/video transcoding, you can transcode media to different formats, frame rates, bitrates, resolutions, etc. so that it can be played back on different devices.

Category	Item	Description
Input	Container formats	Common audio/video container formats are supported, including WMV, RM, MOV, MPEG, MP4, 3GP, FLV, AVI, RMVB, TS, ASF, MPG, WEBM, MKV, M3U8, WM, ASX, RAM, MPE, VOB, DAT, MP4V, M4V, F4V, MXF, QT, WAV and OGG.
	Video codecs	Common video codecs are supported, including AV1, AVS2, H.263, H.263+, H.264/AVC, H.265/HEVC, H.266/VVC, MPEG-1, MPEG-2, MPEG-4, MJPEG, VP8, VP9, QuickTime, RealVideo, and Windows Media Video.
	Audio codecs	AAC, ADPCM, AMR, DSD, MP1, MP2, MP3, PCM, RealAudio, Windows Media Audio, and Vorbis.
Output	Container formats	Video: FLV, MP4, HLS (M3U8 + TS).
		Audio: MP3, MP4, OGG, FLAC, and M4A.
		Image: GIF and WebP.
	Video codecs	H.264/AVC, H.265/HEVC, H.266/VVC, and AV1.
	HD video	8K UHD and HDR.
	Audio codecs	MP3, AAC, FLAC, and MP2.
	Sound channels	Mono-channel, dual-channel, and stereo.
Other features	Watermarking	Image, text, and image-text watermarks.
	Opening and ending segment splicing	Adds an opening or ending segment to the media.
	Clipping	Transcodes and outputs the specified portion of a video.

Use Cases

Use Case	Description
Adapt to different devices	A source media file can be transcoded to formats (such as MP4 and HLS) that are compatible with more types of devices for smooth playback.
Increased bandwidth compatibility	A source video can be transcoded for output in multiple definitions such as LD, SD, HD, and FHD. End users can select the most appropriate bitrate depending on their network conditions.
Faster loading	The moov atom can be moved from the end of an MP4 file to the beginning of the file, allowing the video to be played before it is entirely downloaded.
Watermarking	A watermark can be added to a video to mark video ownership or copyright.
Opening and ending segments	Content such as ads and promotional materials can be added to the beginning or end of a video.
Reduce bandwidth usage	To reduce your bandwidth usage, you can use a more advanced codec (such as H.266 and AV1) or transcoding mode (Top Speed Codec transcoding) to significantly cut the bitrate without compromising the video quality.

How to Use

To learn about how to use the feature, please see Transcoding.

TSC Transcoding

Last updated：2024-08-20 14:13:01

Overview

VOD's Top Speed Codec (TSC) transcoding feature uses smart scenario recognition, dynamic encoding, and a precise bitrate control model to achieve a higher subjective video quality at a lower bitrate (nearly 50% lower), reducing traffic and storage costs.

Use Cases

Use Case	Description
TV	TSC transcoding meets the TV industry's technical requirements for videos. TV content producers can use VOD to transcode sports programs, animations, variety shows, and other content.
UGSV platform	TSC transcoding supports a wide variety of codecs and container formats. It allows UGSV platforms to improve the quality of their videos while reducing the bitrate, helping them save on traffic and storage costs and deliver a smoother playback experience.
Video website	Video websites host a lot of long videos and therefore incur high traffic and storage costs. They can perform TSC transcoding on videos to generate outputs with higher video quality and lower bitrate.
Gaming platform	Live recordings on gaming platforms usually have a high bitrate and complex images. TSC transcoding leverages the smart dynamic encoding technology and a precise bitrate control model to transcode videos into a higher definition and a lower bitrate. Without changing the subjective video quality, TSC transcoding can reduce bandwidth costs by nearly 50%.

How to Use

You can perform TSC transcoding the same way you do general transcoding. The only difference is that you need to use a TSC transcoding template rather than a video transcoding template.
For detailed directions, see the following documents:
How to Transcode Videos.
Transcoding.

Image Cropping and Scaling

Last updated：2024-08-20 14:14:08

Overview

The real-time image processing feature of VOD allows you to scale and crop images.

Category	Operation
Scaling	The width is adjusted to the specified value, and the height changes with it proportionally.
	The height is adjusted to the specified value, and the width changes with it proportionally.
	The long sides are adjusted to the specified length, and the short sides change with them proportionally.
	The short sides are adjusted to the specified length, and the long sides change with them proportionally.
	Adjust both the width and height as specified
Cropping	Crop to a circle with the specified radius
	Crop to a rectangle with the specified height and width

Compared with traditional image editing, VOD's real-time image processing feature has the following strengths:

Aspect	Traditional Image Editing	VOD Real-Time Image Processing
Processing steps	Multiple steps are required, including download, editing, and upload, which are time-consuming and laborious.	All operations are performed directly in the cloud, with no need for download or upload.
Ease of use	You need to have some knowledge of image editing to be able to use image editing software.	You can edit images in real time simply by specifying URL parameters.
Access speed	Image access and download through cloud storage URLs are slow, affecting the user experience.	VOD uses CDN to accelerate global image delivery, so that you can get the processed images in very little time.

Use Cases

Use Case	Description
User profile photo	User profile photos are usually circular or square images of the same resolution. You can use VOD's scaling and cropping capability to generate them.
Photo ID	Photos taken for identity documents may need to be cropped in order to meet the requirements.
Image close-up	An image may need to be cropped for close-ups.

How to Use

To learn about how to use the feature, see Real-Time Image Processing.

Video Screencapturing

Last updated：2024-08-20 14:14:48

Overview

The video screencapturing feature allows you to take a screenshot of a video at the specified time to generate an image. VOD supports the following screencapturing methods:

Method	Description
Time point screenshots	Takes screenshots at specified time points.
Sampled screenshots	Takes screenshots at the specified interval.
Thumbnail screenshot	Takes a screenshot of a video at the specified time point and uses it as the thumbnail.
Image sprite	Takes a set of screenshots at the specified interval, splices them into a large image (image sprite), and generates a VTT file for displaying thumbnail previews on the progress bar.

Use Cases

Common use cases include the following:

Use Case	Description
Thumbnail generation	The screenshot taken at the specified time point of a video can be used as the video thumbnail.
Highlight collection	Highlight moments can be captured and used for promotional purposes to attract more viewers.
Manual moderation	To moderate uploaded videos, sampled screenshots can be taken from the videos, and moderators can quickly determine whether the videos are compliant based on the screenshots.
Video summary	Multiple screenshots can be taken from a video and merged into a large image to give viewers a quick overview of the video content.
Preview on the progress bar	Together with a VTT file, an image sprite can be used to preview the video content at a time point on the player progress bar.

How to Use

For detailed directions on how to use the feature, see Screencapturing.

Adaptive Bitrate Streaming

Last updated：2024-09-11 14:42:07

Overview

Adaptive bitrate streaming (ABR streaming) involves creating audio/video files with various bitrates. After using adaptive bitrate streaming, a player can dynamically select and play back the most appropriate bitrate based on the viewer's current bandwidth. VOD can convert videos to mainstream adaptive bitrate streaming formats such as HLS and DASH.

Capability	Description
Supported formats	HLS and DASH.
Ultra fast start	An adaptive bitrate stream contains multiple resolutions. The player generally starts playback at a low resolution to help playback start faster.
Smart resolution switch	The player dynamically selects the most appropriate resolution for playback based on the current bandwidth.
Zero-lag switch	The frames of each stream are aligned, ensuring zero-lag when switching between streams with different resolutions.
High video/audio quality	Up to 8K FHD resolution is supported. Stereo is supported. HDR is supported.
Advanced encoding technologies	You can use advanced encoding formats such as H.265, H.266, and AV1 and Top Speed Codec transcoding to reduce the video bitrate.
Encryption and DRM	Media encryption and DRM schemes such as Widevine and FairPlay all depend on adaptive bitrate streaming.

Note:

Differences between **adaptive bitrate streaming** and **transcoding**:

An adaptive bitrate streaming URL contains outputs in multiple resolutions, while a transcoding URL contains an output in only one resolution.

With adaptive bitrate streaming, the player switches to the optimal resolution in real time based on current network conditions. Transcoding outputs do not support intelligent resolution switch.

Use Cases

Use Case	Description
Online education	For copyright protection, online education platforms often need to encrypt their video courses or enable DRM.
Video website	Video websites have rich video resources, and adaptive bitrate streaming can deliver a smoother viewing experience.
Online TV	Online TV platforms may need to protect their resources. In addition, viewers may want to switch to a higher resolution while watching a video.

How to Use

For detailed directions on how to use the feature, see Transcoding to Adaptive Bitrate Streaming.

Splicing and Clipping

Last updated：2024-09-11 14:42:32

Overview

The splicing and clipping feature allows you to clip audio/video files accurately down to the millisecond and splice multiple different audio/video files into a new audio/video file.

Feature	Description
Audio/Video clipping	Clips a file in VOD to generate a new audio/video file.
Audio/Video splicing	Splices multiple files in VOD to generate a new audio/video file.
Audio/Video clipping and splicing	Clips multiple files in VOD and then splices the clips to generate a new audio/video file.
Live stream to on-demand audio/video	Processes a live stream recorded to VOD to generate a new audio/video file.
Live stream clipping	Clips a live stream recorded to VOD to generate a new audio/video file.
Live stream splicing	Splices multiple live streams recorded to VOD to generate a new audio/video file.
Live stream clipping and splicing	Clips multiple live streams recorded to VOD and then splices the clips to generate a new audio/video file.

Use Cases

Use Case	Description
Opening and ending segment splicing	You can use audio/video splicing to add an opening or ending segment to a video, such as an ad, promotional materials, or a video introduction.
Highlight clipping	You can use audio/video clipping to create highlight clips from a media file.
Interrupted live stream splicing	If live streaming is interrupted, multiple video files will be generated when the live stream is recorded to VOD. In this case, you can use live stream splicing to merge them back into one video.

How to Use

For detailed directions on how to use the feature, see Video Editing.

Complex Compositing

Last updated：2024-09-11 14:43:09

Overview

The complex compositing feature can meet a wide range of audio/video editing needs. With this feature, you can perform various compositing operations, including image rotation, overlaying, audio mixing, volume level adjustment, splicing and clipping, and transition adding.

Feature	Description
Image rotation	Rotates videos/images by certain degrees or in a certain direction.
Image overlaying	Overlays videos/images in sequence to achieve the picture-in-picture effect.
Image scaling	Scales videos/images proportionally and places them on the canvas.
Volume level adjustment	Increases, decreases, or mutes the volume of audio/video files.
Audio mixing	Mixes the sound in videos/audios.
Audio extraction	Extracts audio from a video file to generate an audio-only file.
Clipping	Cuts an audio/video file to a specific time frame.
Splicing	Splices videos/audios/images together in chronological order.
Transition	Adds transition effects between segments when splicing multiple videos/images together.
Speed adjustment	Adjusts the playback speed of a video/audio file.

Use Cases

Use Case	Description
Ecommerce	In addition to product images, ecommerce platforms usually need to produce attractive product presentation videos as well.
News media	When preparing a news release, news media outlets need to produce news videos that combine various collected materials.

TV series promotion	Promotional videos can be produced for TV series to attract viewers.
Social media video	Travel, food, and parenting vloggers produce vlogs and other content.
Live camera broadcasting	For security monitoring and public area surveillance, videos that last several hours can be sped up and played back in minutes.

How to Use

For detailed directions on how to use the feature, see Video Compositing.

Remaster

Last updated：2024-09-11 14:43:30

Overview

VOD's remaster feature uses advanced restoration and enhancement AI algorithms to offer capabilities including image noise removal, outline restoration, super resolution, detail enhancement, color enhancement, and SDR to HDR conversion, while at the same time improving video resolution.

Capability	Description
Audio/Image noise removal	Removes the random noise introduced from the camera and the environment during video recording while maintaining audio/video details.
Artifact removal	Effectively repairs distortions caused by repeated compressions of videos during transcoding, such as blocking artifacts, ringing artifacts, color contamination, and mosquito noise.
Scratch removal	Removes scratches and spots caused by damage to the film during recording, storage, or transfer.
Detail enhancement	Makes the video image clearer by enhancing details which may have been compromised by the camera quality or during video saving or transcoding.
Overall enhancement	Uses AI-based analysis to improve the overall image quality by balancing image textures, removing compression artifacts, and enhancing key details.
Super resolution	Enhances and restores details in low-resolution videos with the help of an AI model and outputs high-resolution videos with clearer details.
Face enhancement	Enhances key facial features with the help of face recognition technologies.
Color enhancement	Restores video colors that may have been distorted due to camera problems or storage and enhances colors so they are more pleasing to viewers.
Low-light enhancement	Automatically recognizes scenes and adaptively enhances video images to increase details and contrast in dark areas and improve image quality, especially in low-light scenes.
HDR	Converts SDR videos to HDR and increases the color depth to up to 10 bits to represent a wider gamut and display more color details.
Frame interpolation	Adds additional video frames between existing ones to offer a smoother viewing experience and fix stuttering and shaky videos shot at low frame rates.

Use Cases

You can use VOD's remaster feature to improve the quality of user- or professionally generated videos, restore old videos, and generate 4K videos, among others.

Use Case	Description
UGC/PGC	The face enhancement capability increases the efficiency of content production by allowing users to quickly locate specific people from a large number of videos and obtain information including when a person starts to appear, where the person appears on an image, and how long the appearance lasts.
Video restoring	Artifacts and scratches are common in old videos due to the limitations of camera technologies at that time. VOD's remaster feature can restore video quality and bring your old videos back to life.
4K videos	VOD's remaster feature can convert ordinary videos to 4K using techniques including super resolution, frame interpolation, HDR conversion.

How to Use

Console

For detailed directions, see Media Management > Remaster.

APIs

1. For how to start a remaster task, see RebuildMedia.
2. For how to get the remastering result, see DescribeTaskDetail and PullEvents.

Billing Details

To learn about how the remaster feature is billed, see Remaster.

Media Quality Inspection

Last updated：2024-09-11 14:43:52

Introduction

Media quality inspection uses advanced AI algorithms to assess the quality of video frames and audio and generates an overall quality score. The assessment detects problems including video shaking, ghosting, blur, low light, overexposure, glitch, and audio abnormalities. According to the detection results, you can quickly locate and fix audio/video quality issues, improving the efficiency of media restoration.

Inspection Item	Description
Video shaking, ghosting	Detects problems such as shaking and ghosting in video images caused by unstable camera setup and environment during video shooting.
Video image blur	Detects blur caused by shooting conditions or repeated transcoding or compression.
Video image low light, overexposure	Detects low brightness and contrast (which result in dark or overexposed video images) caused by poor shooting environment or hardware limitations.
Video image glitch	Detects glitch problems in video images caused by some unknown factors during shooting, saving, and transferring.
Black or white bars	Detects black/white bars and black/white screens introduced during shooting, saving, or transferring.
Video image noise	Detects random noise introduced by the camera or due to poor shooting environment.
Video pixelation	Detects pixelated video images.
QR codes, mini program codes, and barcodes	Detects QR codes, mini program codes, and barcodes in video images.
Video image quality evaluation	The system performs no-reference quality assessment on a video segment and generates a score. If the score is lower than the threshold you specify, the assessment result will be sent to you.
Audio	Detects audio issues such as no sound, low audio volume, and audio popping.

Use Cases

You can use VOD's media quality inspection feature to assess the quality of user-generated videos, restore old videos, generate 4K videos, and more.

Use Case	Description
UGC	The quality of short videos on UGC platforms varies. To increase click-through rates, platforms can use VOD’s media quality inspection feature to quickly detect and fix quality issues in multiple videos. They can also give recommendation scores to videos based on their quality and, if low quality is detected, block the video or ask users to upload a higher-quality version. This can encourage users to create higher-quality videos, leading to better overall content quality on the platform.
Live broadcast platform	For high-value live content, platforms often record and edit content so it can be live streamed later. The media quality inspection feature allows platforms to quickly identify low-quality video segments, which can either be restored or removed, improving the overall quality of the video. This helps platforms attract more viewers and generate higher revenue.
Old video restoration	Artifacts and scratches are common in old videos due to the limitations of camera technologies at that time. VOD's video quality inspection feature can detect quality issues in old videos, making it easier to restore video quality.

How to Use

Development Guide

1. For how to create a media quality inspection template, see `CreateQualityInspectTemplate` .
2. For how to start a media quality inspection task, see Initiate media quality inspection task.
3. For how to get the results of a media quality inspection task, see `DescribeTaskDetail` and `PullEvents` .

Billing Details

To learn about how the Media Quality Inspection feature is billed, see Media Quality Inspection.

Ultimate Playback
Accelerated Delivery and Playback

Last updated：2024-10-16 16:13:27

Overview

VOD has over 2,800 CDN cache nodes around the globe to enable global users to access nearby nodes to get the media content they want. This makes downloading media content faster and smoother by avoiding problems such as network instability and high access delay due to cross-ISP, cross-region, and cross-border communication. VOD provides a built-in default domain name. If you do not have a domain name, the default domain name can be used to deliver resources from a nearby region. In addition, VOD also supports custom domain name management, purge and prefetch, and CDN usage statistics.

Feature	Description
Domain name management	Supports the use of Tencent Cloud domain names or custom playback domain names. Supports configuring different hotlink protection and distribution rules for different playback domain names.
Purge and prefetch	Supports purging CDN cache for a specific media asset identified by VOD ID or URL. When you perform a cache purge on a resource, the system will delete the existing cache of the resource from all CDN nodes. When a user request arrives at a node, the node will pull the resource from the origin, return the requested resource, and cache the resource. This ensures that the user gets the latest resource. Supports prefetching a media asset identified by VOD ID or URL. When a resource is prefetched, it will be cached in advance to all CDN nodes. When a user request arrives at a node, the resource can be directly obtained from the node, which shortens the response time.
CDN usage statistics	Provides statistics for CDN, allowing you to keep track of traffic, bandwidth, and clicks by time, region, and ISP. Provides statistics for media files, including playback count and playback traffic for each file. Provides CDN access logs for the connected domain name.

Use cases

The accelerated delivery and playback feature of VOD is suitable for almost all online scenarios in which images or audio/video content need to be displayed, such as social media, ecommerce, video platforms, news websites, and forums. The globally deployed CDN cache nodes enable VOD to deliver a high-quality media content access service even in a complicated network environment.

Scenario	Description
Social media platforms	Users may be located in different regions or countries and use different ISPs with different levels of network quality. CDN uses various optimization policies such as dynamic acceleration policies to automatically find and apply the optimal linkage for users during video playback, so as to deliver a smooth playback experience.
Ecommerce platforms	Merchants upload images, audio, and videos for their products, and customers upload images, audio, and videos for product reviews. Resource delivery is accelerated through CDN to enable ultra-fast loading of images, audio, and videos, significantly improving the user access and shopping experience.
Video platforms	Video platforms contain many long videos, which have a large file size and high requirements for the network stability. Video playback based on CDN allows users to enjoy a stable and smooth viewing experience even under poor network conditions.
News websites	When breaking news occurs, there will be an immediate traffic surge. If large numbers of users access the origin server to view news content, the origin server may crash, and the website may lose the opportunity to attract viewers. The media content can be hosted in VOD and pushed to global cache nodes through CDN, so that users can get the media content quickly and reliably.

Learn More

For more information on domain name management, see the following:

Customizing Domain Names

Managing Domain Names

Configuring CNAME

Default Distribution Configuration

For more information on purge and prefetch, see:

Purge and Prefetch

For more information on usage statistics analysis, see:

Usage Statistics

Data Analysis

Downloading Logs

Smart Multi-Bitrate Switch

Last updated：2024-10-16 16:17:12

Overview

Adaptive bitrate streaming allows the video player to automatically switch to the audio/video stream with the most appropriate bitrate based on the user's current network conditions. Under poor network conditions, a video stream with a low resolution will be played back to guarantee playback smoothness. Under good network conditions, a video stream with a higher resolution will be switched to automatically to fully utilize the bandwidth and deliver an optimal image quality. To implement this feature, you need to convert the source audio/video stream into audio/video streams with various specifications (including bitrate and video resolution) and package them to generate an adaptive bitrate file, so that the player can automatically select and play back the stream best suiting the current bandwidth.
The adaptive bitrate streaming feature of VOD is industry-leading in terms of feature comprehensiveness and ease of use.

Strength	Description
Comprehensive features	Adaptive bitrate streaming supports HLS and MPEG-DASH formats. Adaptive bitrate streaming supports advanced features such as encryption and digital rights management (DRM).
Ease of use	All parameters of an adaptive bitrate streaming task of VOD can be set in a template. Rather than configuring complex parameters, you only need to enter a template ID. VOD provides preset templates of common parameter combinations for you to use directly. You can also manage your own custom templates. Adaptive bitrate streaming supports automatic task triggering upon upload completion. You can specify the task flow parameters during upload, and the adaptive bitrate streaming task will be triggered automatically upon the completion of audio/video upload, eliminating the need to initiate a task manually. Adaptive bitrate streaming can be initiated manually for existing audios/videos. You only need to specify the template ID when initiating a task. The VOD Player SDK supports adaptive bitrate streaming and can be integrated quickly and easily.

Use cases

Scenario	Description
Ecommerce	Audios/videos are available in multiple definitions. When a viewer plays a product video,

platforms	playback smoothness is guaranteed first, and the stream with the optimal video definition is switched to automatically based on the viewer's network conditions.
Video websites	The same video is available in multiple definitions. The player automatically switches to the optimal definition based on the current network conditions, guaranteeing a smooth playback.
UGSV platforms	The bitrate is automatically selected based on the network conditions of the user's playback device to guarantee smooth playback.
Online education platforms	Multiple definitions can be provided for pre-recorded video courses, so that the player can automatically choose the optimal definition for playback based on network conditions. If a course is particularly important and must be watched in a high definition, students can also manually choose the definition (If the bitrate is too high for the video to be played smoothly, pause playback and wait for the video to buffer).

Learn More

For information on how to use the feature, see Transcoding to Adaptive Bitrate Streaming.

Multilingual Subtitles

Last updated：2024-10-16 17:18:31

Overview

VOD's multilingual subtitling feature allows you to associate/unassociate standard multilingual subtitle files with an output file of adaptive bitrate streaming. During playback, users can switch between subtitles in different languages. This feature allows content to be enjoyed by a wider audience across different regions and countries.
Supported languages include English, Simplified Chinese, Traditional Chinese, French, German, Spanish, Portuguese, Russian, Japanese, Korean, Thai, Vietnamese, and Indonesian. For the language tags, see RFC 5646.

Use cases

Scenario	Description
International enterprise meetings	International enterprises often hold internal meetings that involve attendees speaking different languages. You can add multilingual subtitles to recorded meetings so that employees in different countries or regions can watch and share the videos with coworkers.
International conference/sporting events	For recordings of international video conferences and world-wide esports and sporting events, multilingual subtitles can be added to allow viewers from different countries and regions to understand what is said by speakers and sports announcers.
Video websites	Multiple languages can be added to foreign movies/TV series so that viewers of different languages can watch their favorite shows and share with their friends.
Online education platforms	If the teaching content involves a foreign language, such as a foreign language course, or involves communication with foreign experts and scholars, multilingual subtitles can be added to help viewers learn and understand the video content.
Cross-border ecommerce platforms	Multilingual subtitles can be added to product presentation videos so that they can be understood by shoppers from different countries/regions.
Online advertisement	Online ads can be shown with multilingual subtitles so that they can be delivered to users in different countries/regions around the world.

How to Use

Multilingual subtitling is supported for HLS adaptive bitrate streaming. To use this feature, you need to add a subtitle set to the media file by calling the ModifyMediaInfo API. You can use the input parameter `AddSubtitles.N` to add subtitles and the input parameter `DeleteSubtitleIds.N` parameter to delete subtitles. The API will return a list of the added subtitles (the output parameter `AddedSubtitleSet` , which contains the ID of each subtitle). After a subtitle set is added to a media file, you can associate/unassociate the subtitles with an existing adaptive bitrate streaming file by calling the AttachMediaSubtitles API. You can also initiate a new adaptive bitrate streaming task and set the task's input parameter SubtitleSet (MediaProcessTask > AdaptiveDynamicStreamingTaskSet > `SubtitleSet`).

Multi-Platform Player

Last updated：2024-10-16 17:06:18

Overview

VOD provides a Player SDK for multiple platforms, which has the following strengths:

Strength	Description
Compatibility with various platforms	The Player SDK is compatible with iOS, Android, web (Flash/HTML5), and Flutter.
Rich features	The Player SDK provides various capabilities such as instant loading of the first frame, pre-roll, mid-roll, and post-roll images, buffering while playback, adjustable-speed playback, video timestamping, on-screen comments, addon subtitles, player logo customization, and player password configuration. The Player SDK supports video security solutions such as hotlink protection, URL authentication, HLS encryption, private protocol encryption, and offline download. It also features video security capabilities such as dynamic watermarking to help protect the security of your media assets in different scenarios. The Player SDK offers APIs for getting the playback status and setting events. The Player SDK supports quick release through iframe and progressive loading of video files.
High playback quality	The Player SDK uses a CDN to accelerate distribution and play media more smoothly. The Player SDK supports the QUIC protocol, which delivers a better quality under poor network conditions.
Ease of use	The playback API is easy to use. The only information required to play a file is the file ID. A player plugin is offered, which enables third-party players to play VOD files.
Detailed playback quality data	The Player SDK supports end-to-end playback quality monitoring based on metrics including playback performance, user behaviors, and file attributes.

The Player SDK and CDN jointly implement high-quality, rich-featured, and easy-to-use media playback across various platforms.

Use cases

Scenario	Description
Short video playback	Together with other VOD capabilities such as content moderation, media management, seamless definition switching, instant streaming, and floating window, the Player SDK is widely used in UGSV scenarios.

Long video playback	The Player SDK integrates VOD features such as adaptive bitrate streaming, seamless definition switch, thumbnail generation, screencapturing, and adjustable-speed playback. It can be used for playback of long videos such as TV series on video platforms as well as portal development.
Video copyright protection	The Player SDK has video security capabilities including private protocol encryption, offline download, moving text watermarks, and hotlink protection.
Live recording playback	The Player SDK supports live recording playback, time shifting during live streaming, and pseudo-live streaming to help you deliver an integrated viewing experience in audio/video live and VOD playback scenarios.

Learn More

For more information on how to use the Player SDK, see Overview.

Media Intelligence
Smart Subtitles

Last updated：2024-11-04 10:46:28

Overview

With VOD II capabilities, you can automatically generate multilingual subtitle files for video content. This is suitable for short dramas aimed at international markets, multilingual online education courses, and organizing multinational audio and video conference minutes.
The smart subtitling feature includes the **Full Speech Recognition** and **Voice Translation** capabilities. The former uses advanced ASR algorithms combined with massive training data, providing high accuracy even in conditions with ambient noise and background sounds. The latter leverages the advantages of Neural Machine Translation (NMT) and Statistical Machine Translation (SMT), learning translation knowledge from large multilingual corpora to achieve high-accuracy translations from the source language to target languages. Currently, it supports translation for dozens of languages, including Chinese, English, Japanese, Korean, French, Spanish, Italian, German, Turkish, Russian, Portuguese, Vietnamese, Indonesian, Thai, Malay, Arabic, and Hindi.

Suitable Scenarios

Voice Translation Scenarios

Scenario	Description
Short Dramas Going Global	For short dramas targeting international audiences, smart subtitling supports efficient output of multilingual translated subtitles, increasing the efficiency of generating global versions of short dramas.
Movie/TV series	When movies and TV series are released in different countries or regions, adding local language subtitles helps in their dissemination. Smart Translation Subtitles can automatically generate subtitles in the target country's or region's language, which greatly improves efficiency compared to manual subtitling.
Multinational Audio/Video Meetings	For key multinational meetings, recordings can have participants' native language subtitles automatically generated to help with organizing meeting minutes and viewing.
Multilingual Recorded	When online education courses are released in different countries or regions, smart translation subtitles can automatically generate local language subtitles, making it easier to

Courses Learning	understand and learn.

Speech Full Text Recognition Scenarios

Scenario	Description
Online classes	Smart subtitling can automatically generate subtitles for online course recordings to make it easier for viewers to learn the content of the course.
Social media platforms	General users can add subtitles to their vlogs and share them with others.
Movie/TV series	Old videos are often not subtitled, which makes it difficult for some viewers to enjoy them. The smart subtitling feature can automatically generate subtitles for such videos, which is much more efficient than manual subtitling.
Audio/Video meetings	Subtitles can be automatically generated for recordings of important meetings to facilitate minutes generation. Subtitles also make it easier for viewers to navigate meeting recordings.
Speech quality control	Subtitles can be generated for call recordings to help call centers quickly evaluate the quality of customer service, improving the efficiency of speech quality assurance.

How to Use

Method 1: Launching tasks via the console

You can launch **Speech Recognition** tasks via the VOD console. Use templates to specify the recognition items as either "Speech Full Text Recognition" or "Voice Translation" for the tasks. Once the task is complete, refresh the subtitle list to view the recognized or translated subtitle files. For detailed instructions, please refer to How to Add Subtitles to Videos.

Method 2: Launching tasks via API

Launching Voice Translation Tasks

Intelligent subtitles are implemented through the audio and video CR feature of **speech translation**. Specific usage steps:

1. Create an audio and video CR template, enable the speech translation configuration option (`AsrTranslateConfigure`) switch (`Switch`), set the media source language (`SrcLanguage`) and the translation target language (`DstLanguage`), specify the subtitle file format (`SubtitleFormats`) and set the subtitle name (`SubtitleName`):

```
{
 "AsrTranslateConfigure": {
     "Switch": "ON",
     "SrcLanguage": "zh",
     "DstLanguage": "en",
     "SubtitleFormats": ["vtt", "srt"],
     "SubtitleName": "test"
 }
}
```

Get the template ID from the response.

2. With the template ID obtained in step 1, initiate a smart subtitling task as instructed in Task Initiation.

3. Get the task result as instructed in Getting Result.

Initiate a full speech recognition task

You can implement subtitles through the Video Content Recognition **full speech recognition** feature as follows:

1. Create an audio/video content recognition template, enable the full speech recognition configuration item (`AsrFullTextConfigure`) switch (`Switch`), set the media source language (`SrcLanguage`), specify the format for the generated subtitle file (`SubtitleFormats`) and set the subtitle name (`SubtitleName`):

```
{
 "AsrFullTextConfigure": {
     "Switch": "ON",
     "SrcLanguage": "zh",
     "SubtitleFormats": ["vtt", "srt"],
     "SubtitleName": "test"
 }
}
```

Get the template ID from the response.

2. With the template ID obtained in step 1, initiate a smart subtitling task as instructed in Initiating a Task.

3. Get the task result as instructed in Getting the Result.

Labeling and Categorization

Last updated：2024-10-16 17:14:48

Overview

The labeling and categorization feature performs structured analysis on various dimensions, including people, behavior, speech, text, objects, and scenes in audios/videos to generate high-accuracy audio/video labels, frame-specific labels, and audio/video categories automatically.

Feature	Description
Audio/Video labeling	Audio/Video labeling gives suggestions on the labels that can be added to an audio/video. Currently, it supports over 3,000 labels such as game, vehicle, musician, race car, pet, drum, bike, World of Warcraft, computer, and school, and it supports categories like people, event, scene, objects, landscape, food, animals.
Frame-specific labeling	Frame-specific labeling automatically recognizes labels in the video frames captured at the custom frame capturing interval, and locates the labels in the video. Frame labels are divided into nine categories, such as people, landscape, artificial object, building, plant, animal, and food, covering various aspects of daily life.
Audio/Video categorization	Audio/Video categorization gives suggestions on which category an audio/video should belong to. There are currently over twenty categories, such as car, parenting, fashion and entertainment, game, military, technology, politics, animals, food, sports, travel, animation, dance, music, television, variety show, host, political news, international news, and social news.

The labeling and categorization feature helps you efficiently manage media resources and can be used to give personalized audio/video recommendations.

Use cases

Scenario	Description
Media resource management	Users can search for media resources on audio/video platforms by category and label, greatly improving the search efficiency.
Audio/Video creation	Audio/Video creators can quickly search for materials by category or by label, helping them create content more efficiently.

Personalized audio/video recommendations	Short video platforms, e-commerce platforms, and social media applications can push media content that precisely matches users' preferences. This not only helps increase the clicks of the media content on platforms but also allows users to more easily find the content they are interested in.
TV cataloging	The TV industry can use the labeling and categorization feature of VOD to efficiently manage massive amounts of video content. Based on the recognized labels and categories, it's easier to archive and search for videos.

How to Use

Audio/Video labeling, frame-specific labeling, and audio/video categorization are enabled by the **intelligent labeling**, **intelligent labeling by frame**, and **intelligent categorization** capabilities of Video Content Analysis. To use the features, follow the steps below:

1. Create an audio/video content analysis template and configure intelligent labeling (`TagConfigure`), intelligent labeling by frame (`FrameTagConfigure`), and intelligent categorization (`ClassificationConfigure`) as needed. For example, in the following API call, all three labeling and categorization features are enabled, and the interval for frame-specific labeling is set to three seconds.

```
{
 "TagConfigure": {
     "Switch": "ON"
 },
 "FrameTagConfigure": {
     "Switch": "ON",
     "ScreenshotInterval": 3
 },
 "ClassificationConfigure": {
     "Switch": "ON"
 }
}
```

Get the template ID from the response.

If you intend to enable all three labeling and categorization features, you can also use our preset content analysis template whose ID is 20.

2. Initiate a labeling and categorization task with the template ID obtained in step 1 as instructed in Video Content Analysis.

3. Get the task result as instructed in Video Content Analysis.

Face Recognition

Last updated：2024-10-16 17:32:17

Overview

Based on Tencent's industry-leading AI technology, VOD's face recognition feature helps you quickly recognize faces in a video and provides information including the frames a face appears in and the coordinates of the face frame. You can use VOD's public person libraries or customize and manage your own person libraries. The public person libraries contain celebrities in various fields, such as movies, music, sports, and academics.

Use cases

Face recognition in media content has been widely used for video creation, media search, and generation of personalized recommendations.

Scenario	Description
Video creation	The face recognition capability increases the efficiency of content production by allowing users to quickly locate specific people from a large number of videos and obtain information including when a person starts to appear, where the person appears on an image, and how long the appearance lasts.
Event replays and highlights	You can add timestamps for when a certain player appears during a sports and esports event, so users can quickly locate the relevant time points. You can also find the time points and capture the video frames in which a certain celebrity appears in a video, making it easier to create a highlight reel or generate an animated image as the thumbnail to attract more viewers.
Video websites	Users can search for relevant videos by the name of a person. Video websites can also recommend videos based on the list of persons followed by a user.

How to Use

Face recognition is enabled by the face recognition capability of Video Content Recognition. To use the feature, follow the steps below:

1. Prepare an audio/video content recognition template.

You can use a preset audio/video content recognition template to recognize all people in the public person libraries. You can also create your own template and specify the categories of faces in public or custom person libraries to

recognize by setting the FaceConfigure parameter. For example, the following code sample indicates to recognize only sports celebrities in the public person libraries:

```
{
 "FaceConfigure": {
     "Switch": "ON",
     "DefaultLibraryLabelSet": ["sport"]
 }
}
```

Get the template ID from the response.

* You can manage custom person libraries using the AI-based Sample Management APIs (**CreatePersonSample**/**DeletePersonSample**/**DescribePersonSamples**/**ModifyPersonSample**).

2. Initiate a face recognition task with the template ID obtained in step 1 as instructed in Video Content Recognition.

3. Get the task result as instructed in Video Content Recognition.

Remaster

Last updated：2024-10-16 17:34:16

Overview

VOD's remaster feature uses advanced AI restoration and enhancement algorithms to offer capabilities including image noise removal, outline restoration, super resolution, detail enhancement, color enhancement, and SDR to HDR conversion, while at the same time improving video resolution.

Capability	Description
Audio/Image noise removal	Removes the random noise introduced from the camera and the environment during video recording while maintaining audio/video details.
Artifact removal	Effectively repairs distortions caused by repeated compressions of videos during transcoding, such as blocking artifacts, ringing artifacts, color contamination, and mosquito noise.
Scratch removal	Removes scratches and spots caused by damage to the film during recording, storage, or transfer.
Detail enhancement	Makes the video image clearer by enhancing details which may have been compromised by the camera quality or during video saving or transcoding.
Overall enhancement	Uses AI-based analysis to improve the overall image quality by balancing image textures, removing compression artifacts, and enhancing key details.
Super resolution	Enhances and restores details in low-resolution videos with the help of an AI model and outputs high-resolution videos with clearer details.
Face enhancement	Enhances key facial features with the help of face recognition technologies.
Color enhancement	Restores video colors that may have been distorted due to camera problems or storage and enhances colors so they are more pleasing to viewers.
Low-light enhancement	Automatically recognizes scenes and adaptively enhances video images to increase details and contrast in dark areas and improve image quality, especially in low-light scenes.
HDR	Converts SDR videos to HDR and increases the color depth to up to 10 bits to represent a wider gamut and display more color details.
Frame interpolation	Adds additional video frames between existing ones to offer a smoother viewing experience and fix stuttering and shaky videos shot at low frame rates.

Use Cases

You can use VOD's remaster feature to improve the quality of personal or professionally generated videos, restore old videos, generate 4K videos, and more.

Use Case	Description
UGC/PGC quality enhancement	VOD's face enhancement capability can fix blurry faces, remove compression artifacts, and enhance facial features by adding details and texture to the eyes, mouth, ears, skin, and hair.
Video restoration	Artifacts and scratches are common in old videos due to the limitations of camera technologies at that time. VOD's remaster feature can restore video quality and bring your old videos back to life.
4K videos	VOD's remaster feature can convert ordinary videos to 4K using techniques including super resolution, frame interpolation, and HDR conversion.

How to Use

1. For how to start a remaster task, see RebuildMedia.
2. For how to get the remaster outputs, see DescribeTaskDetail and PullEvents.

Media Compliance
Smart Moderation

Last updated：2024-12-03 14:48:09

Overview

The content moderation feature can help you effectively recognize non-compliant content (pornographic, violent, illegal, abusive, ads, moaning) in images, text in images, speech, and audio. Based on advanced speech, text, and image recognition algorithms and models continuously trained on massive amounts of non-compliant data, VOD's content moderation feature delivers industry-leading recognition accuracy and recall rate, helping you ensure content compliance.

Use Cases

As the multimedia industry grows, more diverse content is being produced and distributed at a faster rate. At the same time, compliance guidelines are also being updated continuously. This has raised new challenges for content hosting platforms regarding moderation:
Comprehensive: The moderation rules must be comprehensive to meet the regulatory compliance requirements without any omissions.
Accurate: Compliant content must not be falsely flagged as non-compliant, and accurate details should be provided for flagged content.
Quick: As large amounts of media content are generated every day, moderation must be fast so that compliant videos can be released quickly.
Content moderation has the following use cases:

Use case	Description
Social media platforms	Social media platforms, including forums, short video platforms, and vlogs, are primarily comprised of user-generated content (UGC). Characteristics: Fast update, large quantity, and diverse content. Challenges: Users want their content to be released immediately, but traditional manual moderation can hardly satisfy the requirements for quick moderation.
Live recording	Live streams can be delivered again after they are recorded and saved. The sources of live streaming content are diverse, including the online education, live shopping, and entertainment industries. Characteristics: Long videos, typically several hours or even dozens of hours long. The media content involves trending events in various industries.

	Challenges: Because the recording files are usually large, traditional manual moderation can be time-consuming (low efficiency) and may miss non-compliant segments (low accuracy).
Video platforms	Professional content production platforms, such as online video portal websites. Characteristics: Long videos with professional production quality. Challenges: With traditional manual moderation, non-compliant video segments are labeled by human moderators, which is time-consuming, and trending videos cannot be published in time. In addition, human moderators may miss content due to lack of professional knowledge, resulting in complaints.

How to Use

For detailed directions on how to use the smart moderation feature, see the following documents:

Best Practice - How to Moderate Media Content

Console Guide - Audio/Video Moderation

Development Guide - Audio/Video Moderation, Image Moderation.

Media Blocking

Last updated：2024-12-03 14:52:01

Overview

The media blocking feature allows you to block or unblock specific media content. When non-compliant media content is discovered, you can immediately block the content. Blocked media (including the original file and the transcoding outputs and screenshots generated from that file) can no longer be accessed, except in the VOD console. This prevents non-compliant media content from being spread and reduces the security risks faced by media platforms and damage to their brand image. After the content is reviewed and the risks are resolved, you can unblock the media to make it accessible again.

Use Cases

Use case	Description
Online education platforms	Because the target audience of online classes is mainly minors, online education platforms are very sensitive to non-compliant content. If, for example, a controversial topic or improper gesture appears during a live class, it should be blocked immediately.
TV stations and OTT	TV networks and OTT services have a large user base and face strict regulations. If a new TV show contains improper content, but it's missed by human moderators before being published, it's necessary to block the show immediately. Some old videos may also need to be blocked if non-compliant content is detected.
UGSV platforms	On UGSV platforms, to get more clicks, some users may publish sexually suggestive or other non-compliant content that is difficult to be detected by the moderation system. Such content has a bad influence, especially on minors, and needs to be blocked immediately.

How to Use

You can block the playback of a media or unblock it in the console or by calling the API. For more information, see the following:

Managing Audio/Video Files

ForbidMediaDistribution

Copyright Protection
Hotlink Protection

Last updated：2024-12-03 14:57:22

Overview

Hotlinking refers to a media playback URL from one site being added to another site where it can be played back by non-authorized viewers. This infringes the copyright of the original website, which also has to bear the cost of additional CDN bandwidth or traffic usage.
VOD can prevent hotlinking based on referer or key.

Category	Feature	Description
Referer hotlink protection	Address control based on the source of a request	The HTTP referer mechanism makes it possible to identify the source of a request through the referer field in the playback request header. You can add domain names to the blocklist or allowlist, based on which a CDN node will determine whether to allow or deny a playback request.
Key hotlink protection	Access control based on URL validity	If you set a validity period for a video URL, the requested video can no longer be played after the URL expires. In this way, even if a video is hotlinked by another website, it will only be exploited for a limited time.
	Access control based on IP count	You can specify the maximum number of viewers that can access a video URL. Devices that are not on the same private network generally have different public IPs. Therefore, you can limit the number of people who can play a video URL by specifying the maximum number of IP addresses allowed. In this way, even if a video URL is hotlinked by another website, it can only be played by a limited number of devices.
	Access control based on playback duration	You can specify the preview duration in a video URL (for example, the first five minutes of a video) to implement preview for non-paying users.

Use cases

Use case	Description
Protecting proprietary videos	Some video providers want to make their high-value videos playable only on their own platforms. In this case, they can use referer and key hotlink protection to prevent video links from being stolen by others and played back on other platforms.
Preventing malicious video hosting	On UGC platforms, malicious users may upload videos irrelevant to the platform's topic and deliver them by using the platform links, essentially using the platform as a free video hosting service. You can use hotlink protection to prevent this problem. For detailed directions, see How to Prevent Malicious Video Hosting.
Video previews	Key hotlink protection allows you to implement video previews, so users can view a several minute-long preview of a video before they pay for the full video.

How to Use

For detailed directions on referer hotlink protection, see Referer Hotlink Protection.

For detailed directions on key hotlink protection, see Key Hotlink Protection.

Encryption and DRM

Last updated：2024-12-03 15:01:31

Overview

If media files are not encrypted, or if they are encrypted but are decrypted by pirates, they may be sent to a third party for unauthorized playback. VOD offers HLS private encryption and commercial-grade DRM, both of which can effectively prevent various cracking behaviors and safeguard media copyrights.

Feature	Description	Security Level	Player Compatibility
HLS private encryption	VOD's proprietary media content encryption solution. The content key is protected by Tencent Cloud's private protocol.	High: It effectively prevents videos from being decrypted by various browser extensions and cracking tools.	High: It supports playback on almost all mainstream devices.
Commercial-grade DRM	The copyright protection system promoted by Apple (FairPlay) and Google (Widevine). The content key is protected by the protocol designed in the DRM system.	Very high: It is a hardware-level encryption/decryption solution and can meet the requirements of international movie and TV content providers.	Average: It is highly compatible with iOS, but isn't supported by some Android devices.

Use Cases

Use case	Description
Online education	Online courses are costly to produce, so it's important to protect them against decryption and piracy. If your courses demand high playback device compatibility, we recommend you use HLS private encryption. If you have very high requirements for security and are willing to compromise on compatibility, consider commercial-grade DRM.
Copyrighted TV series	TV series are provided by professional copyright holders, and copyright protection is essential for this type of content. For TV series produced in the Chinese mainland, we recommend you use HLS private encryption.

	If a copyright holder outside the Chinese mainland requires DRM protection, we recommend you use commercial-grade DRM.

How to Use

For how to use HLS private encryption, see HLS Private Encryption.

For how to use commercial-grade DRM, see DRM Encryption.

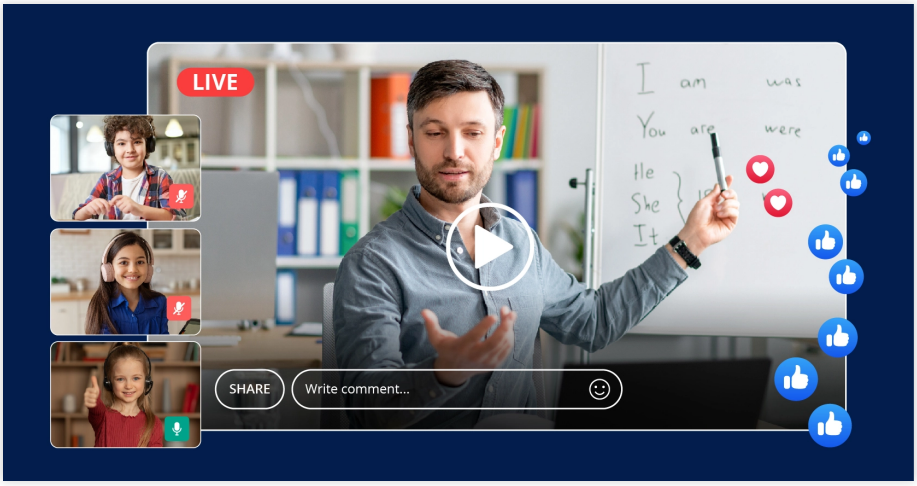
Live-VOD Mix Broadcast Channel

Last updated：2025-02-24 14:57:36

VOD's Virtual Live Streaming and Broadcast Channels allow users to assemble one or multiple on-demand videos for playback in a live streaming format. This capability can be applied to the following three scenarios:

Scenario	Description
Virtual Live Streaming	Virtual live classes: Teachers pre-record course content and play it for students at scheduled times. Live commerce product showcases: Pre-record product promotion content creating a virtual live shopping experience.
Video Program Channels	Broadcast OTT channels: Preset TV program schedules in advance, enabling users to watch content in a traditional TV channel format. Video platform screening room: Allow users to join a virtual "screening room" to watch the same video simultaneously while interacting in real time.

Virtual Live Streaming



Assume that the course originally streamed on CSS has been recorded to VOD (in HLS format) and is scheduled to be played back as a simulated live lesson at 20:00 Beijing Time on December 1, 2024.
The operation steps are as follow:

1. Call the CreateRoundPlay API.
In the RoundPlaylist.N parameter, enter the course video ID in FileId, and set AudioVideoType to Original.
Set StartTime to 2024-12-01T20:00+08:00 (Beijing time).
Specify PlaybackMode as Linear.
After the API call, retrieve the playlist URL from the response's Url parameter and obtain the playlist ID from RoundPlayId.
2. Starting at 20:00 on December 1, 2024 (Beijing time), provide the playlist URL to players. The players will begin streaming the pre-recorded course in a live broadcast format.
3. After playback concludes, call the ModifyRoundPlay API by setting RoundPlayId to the channel ID and updating Status to Disabled to stop the playlist. Call the DeleteRoundPlay API to delete the playlist.

Note：

China's online travel service provider, Ctrip, has utilized the broadcast channel feature to implement interactive virtual live rooms, enabling low-cost promotion of travel products.

Video Program Channels

Assume that a program channel needs to be set up, which will start broadcasting at 10:00 Beijing Time on December 1, 2024, and automatically stop after playing 5 programs.

The operation steps are as follow:

1. Upload the 5 videos to VOD and transcode them into HLS format using the transcoding template with ID 100240 (refer to the Transcoding Task Initiation section for transcoding guidelines).
2. Call the CreateRoundPlay API.

In the RoundPlaylist.N parameter, specify the programs to be played in the channel, enter the uploaded video IDs in FileId, set AudioVideoType to Transcode, and set Definition to 100240 (transcoding template ID).
Set StartTime to 2024-12-01T10:00+08:00 (Beijing time).
Specify PlaybackMode as Linear.
After the API call, retrieve the playlist URL from the response's Url parameter and obtain the playlist ID from RoundPlayId.
3. Starting at 10:00 on December 1, 2024 (Beijing time), provide the playlist URL to players. The players will sequentially play the 5 programs and automatically stop after the last program finishes.
4. After playback concludes, call the ModifyRoundPlay API by setting RoundPlayId to the channel ID and updating Status to Disabled to stop the playlist. Call the DeleteRoundPlay API to delete the playlist.

Live Recording

Last updated：2024-12-03 15:11:36

Overview

CSS can record live streams so that they can be played again on demand. You can also perform operations such as transcoding, screencapturing, watermarking, and encryption on the recording files.

Strength	Description
Quick	CSS provides a one-stop, reliable, and smooth live-to-VOD solution. With simple configurations, you can record and store live streams in the cloud.
Efficient	CSS offers high-availability services and can handle high concurrency. It supports multi-channel streaming, real-time monitoring, and preview, allowing for efficient management of live rooms. Together with the video processing and acceleration capabilities of VOD, CSS has built an integrated, efficient, and easy-to-use live recording solution.
Cross-platform compatibility	Recording files can be transcoded in the cloud into formats suitable for playback on a wide range of platforms, including iOS, Android, web, and HTML5. They can also be distributed via VOD platforms like Tencent Video to attract more views.
Diverse use cases	Live recording integrates the core capabilities of CSS and VOD and is suitable for various application scenarios such as live sports editing, live class distribution, and video moderation.

Use Cases

Live recording is suitable for many industry-specific scenarios such as enterprise live streaming, ecommerce live streaming, and education live streaming.

Use case	Description
Live streamed classes	Live classes, such as courses offered by online tutoring platforms and employee training given by enterprises, can be recorded. The recordings can be archived, encrypted, replayed, or streamed again in the form of pseudo-live streaming.
Media live streaming	Live streams can only be watched in real time. In order to distribute the content again, platforms need to record live streaming sessions. It’s also necessary to record live streams and retain the recordings for post-streaming moderation. CSS provides pseudo-live streaming and other solutions to meet such needs.

Game/Sports live streaming	Such scenarios have the following challenges: The time when events will be live streamed may change, so viewers may not be able to conveniently watch entire events. Viewers want to rewatch events after the live stream ends. It may be necessary to generate highlight clips from a live stream, enable time shifting during live streaming, or cut a live stream into multiple segments. The live recording solution of CSS supports the following features: You can quickly configure global or real-time recording of live streams either in the console or by calling APIs. Recordings of live streams in HLS format can be time-shifted, enabling viewers to replay earlier parts of the live stream. Video AI capabilities enable quick clipping, processing, and delivery of VOD files, so that video content can be released and spread more efficiently.
Ecommerce live streaming	Merchants' live product introductions are recorded so that shoppers late to the live streaming can rewatch the introductions any time. SDKs are provided for different platforms to help merchants quickly set up live streaming for shopping. The on-cloud recording feature enables them to quickly record the live streams of product presentations, and the time shifting feature allows shoppers to watch previous parts of the live stream. After a live shopping session ends, the recording file can be quickly transcoded and distributed again.

How to Use

For information on how to use the live recording feature, see Recording to VOD and Processing Video.

Time Shifting

Last updated：2022-09-02 15:47:00

Overview

Combining the time shifting feature of CSS and the delivery acceleration capability of VOD, time shifting for live stream playback allows users to rewind and play back earlier parts of a live stream. This is commonly used to play back highlights during live streamed sports events. Users can drag the progress bar to view earlier parts of a live stream, and they can also switch back to continue viewing the currently ongoing live stream.

Use cases

Scenario	Description
Live streamed classes	For live streamed education or training content, the time shifting feature allows viewers to return to earlier parts of the stream and rewatch the parts they are interested in. This greatly improves their study efficiency, and they can return to the current streaming time at any time.
Game/Sports live streaming	Viewers may want to rewatch exciting battles or goals scored during a live streamed game or sports match. In this case, they can use the time shifting feature configured with an hourly shifting granularity.
Ecommerce live streaming	When an ecommerce live streaming event is ongoing, new viewers entering the live room may see on-screen comments about a previous product and want to see the product information from earlier. Time shifting allows viewers to drag the progress bar to an earlier point to view previously shown products and then switch back to the current live stream whenever they want to.
TV series live streaming	A TV series is generally long, and when a TV series is live streamed, new viewers may miss the earlier episodes that have already played. You can configure a long time shifting duration to allow users to return to earlier parts of the stream and watch the episodes they missed.

Directions

For more information, see Live Streaming Time Shifting.

Live Stream Clipping

Last updated：2022-09-02 15:47:00

Overview

You can use live clipping to clip out an earlier portion of an ongoing live stream and generate a video in real time so it can be shared immediately or stored persistently.

Use cases

Scenario	Description
Meeting live streaming	The live meeting stream can be pulled in real time, and the key meeting content can be clipped as a meeting review.
Game/Sports live streaming	The live game/sports event stream is pulled in real time, and highlights can be clipped and sent to a UGSV or live streaming platform, so that users can quickly view the highlights.
Live teaching	Course content can be pulled in real time, and important course content can be clipped for students to review.

Directions

For more information, see LiveRealTimeClip.

VOD to Live Streaming

Last updated：2022-09-02 15:47:00

Overview

Based on VOD's playback control capability, VOD-to-CSS (pseudo-live streaming) adds access controls of "playback time constraint" and "syncing playback progress" to implement pseudo-live streaming. You first generate VOD files, and then specify a time point to use such files for pseudo-live streaming, which incurs lower risks and costs compared with real live streaming. Ongoing pseudo-live streaming cannot be sped up. This feature is commonly used in live courses, live gala, and other scenarios of radio and TV. It has the following strengths:

Strength	Description
Low development costs	To convert a VOD video to a common live stream for delivery, you need to use OBS software to push the video to the live streaming system and integrate with the entire system, which incurs high development costs. In contrast, pseudo-live streaming can be implemented within the VOD platform as long as transcoding and hotlink protection are enabled.
Low non-compliance risks	Pseudo-live streaming enables you to moderate and edit VOD files in advance to avoid non-compliance risks during live streaming, so as to improve the live streaming quality.
Easy and flexible use	No live rooms are needed, and any videos can be used for pseudo-live streaming. There is no upper limit on concurrency. You can specify a start time of the pseudo-live stream and distribute the playback URL in advance.

Use cases

Psuedo-live streaming is mainly used in when videos need to be recorded in advance and then live streamed to concurrent viewers at a later scheduled time. Users can get the playback URL in advance but cannot watch the video before the scheduled time. This is useful for scenarios such as online education, event live streaming, and esports events.

Scenario	Description
Online education platforms	A validity period can be set for the playback URL of a recorded video to urge students to study promptly (the video cannot be watched once the URL expires, or students need to pay again to get a new playback URL). A released URL will automatically expire after a certain period of time, so as to protect valuable resources.
Radio and TV	Regularly updated variety shows and interview programs can be recorded and edited in

or OTT	advance, and their URLs placed on the preview page, so that the target audience can favorite the page and URLs in advance.
Event announcements	The event holder can record an event video in advance and then release the playback URL in the event announcement, and viewers will be able to access the video only after the event starts. This allows users to save the URL in advance so they can quickly access it upon the start of the event.

Directions

For more information, see How to Make VOD Videos Live Streaming-Like.

Strengths

Last updated：2024-06-07 11:27:36

Upload

VOD supports multiple ways to upload media, including from local storage, a URL, or a client. You can also upload media using an API.
VOD allows you to record live streams in multiple formats and store them in multiple formats for on-demand playback.
You can upload large files, upload files from breakpoints, and set up multiple backups of your media files.
By using different acceleration methods including routing optimization, global multi-region coverage, transfer optimization, protocol optimization, as well as multi-linkage transmission, VOD is able to deliver an industry-leading upload success rate of over 99.5% (upload under poor network conditions and large file upload are taken into account).

Production

VOD provides a wide range of media production features, including frame-by-frame editing, multi-track production, picture-in-picture, cropping, filters, playback speed adjustment, audio mixing, transitions, audio/video separation, animated text/image effects, and shortcut keys, covering a wide range of content production needs.
The VOD console offers video production capabilities that allow you to quickly process videos online.

Storage

VOD supports redundant storage across architectures and devices, remote site disaster recovery, and isolated storage.
The smart cold storage feature provides you with more storage options and helps you reduce your storage costs.
Media files can be deleted automatically when they expire, saving storage space and reducing storage costs.
For infrequently accessed videos, you can save only a low-definition version and delete the high-definition versions to reduce your storage costs.

Transcoding

VOD has more than 12,000 distributed transcoding clusters, which can support up to 2,000 concurrent transcoding tasks.
You can add watermarks to videos as needed and set different transcoding formats to adapt to different scenarios.
VOD supports various screencapturing operations, including thumbnail, image sprite, and animated image generation, as well as time point screenshots and sampled screenshots. You can use them to generate thumbnail previews and timestamp your videos.

Distribution

With access to Tencent Cloud's over 2,800 CDN cache nodes, VOD provides smooth and accelerated content delivery to users around the globe based on BGP networks.
VOD provides a default playback domain you can use to deliver your content, or you can use your own custom domain.
VOD provides a comprehensive CDN usage analysis service. It also allows you to download CDN logs on domain visits.

Media AI

Powered by Tencent Cloud’s advanced AI technologies and rich experience in content management, VOD offers media AI capabilities including content moderation, content analysis, and content recognition, helping you minimize manual work.
Content moderation: VOD leverages AI technologies to detect pornographic and other non-compliant content in images, speech, and text. It can detect various types of sensitive information with different levels of strictness to meet your and your customers’ needs, helping you protect your brand image and avoid potential legal risks.
Content analysis: Intelligent categorization, labeling, and thumbnail generation
Content recognition: Face recognition, speech recognition (subtitle generation), OCR, opening and closing segment recognition

Copyright Protection

VOD's hotlink protection, digital watermark, and DRM encryption features provide high-level protection for your content.
Hotlink protection: VOD provides referer and key hotlink protection solutions to prevent your content from being hotlinked or downloaded and spread without authorization. This helps to safeguard your copyrighted content and protect your revenue.
Digital watermarking: VOD offers watermark solutions with high protection levels and low costs to protect your content against piracy. Using a digital watermark, you can extract a user ID from a video to find the user responsible for distributing it without authorization. This deters piracy and enables you to take action against copyright infringement.
DRM encryption: VOD offers an easy-to-use DRM scheme that is built on established DRM solutions and integrates a full range of features including DRM encryption, license management, license distribution, decryption, and playback.

Image Processing

VOD provides easy-to-use and rich-featured real-time image processing capabilities.
You can scale and crop multiple images at a time and distribute them using VOD's acceleration service.
With the help of AI technology, VOD can detect non-compliant content in video images, helping you manage your content more efficiently.

Adaptive Bitrate Streaming

VOD can automatically select the most appropriate bitstream for playback based on user's changing network conditions, guaranteeing a smooth and clear playback experience.
VOD allows you to bind multilingual subtitles to the output file of adaptive bitrate streaming. During playback, users can switch between subtitles of different languages. This feature helps increase cross-border viewer rates.

Top Speed Codec

Leveraging technologies including intelligent scene recognition, dynamic encoding, and CTU/line/frame-level bitrate control, Top Speed Codec transcoding allows you to deliver a better viewing experience and reduce storage and traffic costs by providing higher-definition streaming services at lower bitrates (almost 50% lower on average).

Player

VOD provides a free Player SDK, which is compatible with many mainstream platforms, easy to use, and offers rich features and detailed playback quality data.
The Player SDK is compatible with iOS, Android, web (Flash/HTML5), and Flutter.
The Player SDK supports adaptive bitrate streaming. It can automatically select the optimal bitrate to play based on users' network conditions, delivering a smooth playback experience.
The Player SDK provides various features including instant streaming, pre-roll, mid-roll, and post-roll images, buffering during playback, playback speed change, video timestamping, on-screen commenting, and subtitles.
The Player SDK supports various security solutions such as hotlink protection, URL authentication, HLS encryption, and private protocol encryption.
The Player SDK uses CDNs to accelerate the delivery of audio/video content and guarantee smooth playback. It also supports the QUIC protocol, which delivers a better quality under poor network conditions.
The playback APIs are simple and can play back media files by file ID.
The Player SDK provides third-party player plugins to play back VOD videos.
The Player SDK supports end-to-end playback quality monitoring using different metrics including playback performance, user behaviors, and file attributes to help you manage your business operations more efficiently.

CSS and VOD

A series of solutions that combine live streaming and VOD are provided based on the unified ecosystem of CSS and VOD.
Live recording: Live streams can be saved to VOD after packaging (without modifying the audio and video data or timestamps). This allows you to archive your live streams, post-process live content, as well as distribute recorded live streams on demand.
Time shifting: After a live stream is started, a viewer can choose a previous time point to start watching and switch back to the latest live content whenever they want to. This feature can be used to replay highlights of live streamed sports events.
Live clipping: You can generate video clips (in HLS format) from an earlier segment of an ongoing live stream so they can be shared or saved for future processing or distribution. This makes it easy to quickly generate highlights during a

live stream.
Pseudo-live streaming: This feature allows you to live stream pre-recorded videos at the specified time. You can limit the playback time and sync the playback progress. This helps you reduce compliance risks and save costs. It's often used to stream classes, concerts, and TV shows.

Media Compliance

Content moderation: VOD can intelligently recognize non-compliant content, helping you improve moderation efficiency and reduce the cost of manual moderation.
Media playback blocking: VOD allows you to block the playback of non-compliant videos when they are detected and prevent them from being viewed and shared.

Scenarios
Online Education

Last updated：2023-04-17 15:01:47

Use Case

Online education platforms allow students and teachers to attend classes and communicate over the internet. These platforms generally have a massive amount of audio/video content recorded and uploaded by teachers. Their main requirements are as follows:

Requirement	Description
Playback on various platforms	Students may need to watch videos on different platforms and devices.
Smart subtitling	Subtitles help students at different levels better understand the teachers, who may speak with different speeds and accents. Class videos are often long, and manual subtitling can be time-consuming.
Copyright protection	Educational platforms often need to rent dedicated sites, purchase professional equipment, and hire teachers to produce educational content. This content can be costly to produce and is a valuable digital asset. Therefore, educational platforms need copyright protection schemes to protect their content from piracy.
Time shifting	Students entering ongoing classes may need to watch content from an earlier time point.
Psuedo-live streaming	Platforms need to be able to live stream pre-recorded courses at the scheduled time. Compared with offering content on demand, students usually pay better attention when watching a live stream. Psuedo-live streaming also helps platforms cut costs (for renting sites, buying equipment, and hiring teachers) and reduce risks (because they can moderate the content in advance).
Content moderation	Educational platforms need to moderate their content to prevent inappropriate content from having a bad influence on students and bringing them legal risks and negative publicity. Most class videos are long. Human moderators are inefficient and may miss content.
Media blocking	Because online courses are mostly watched by minors, platforms need to pay special attention not to expose them to inappropriate content. For non-compliant video segments that incorrectly passed moderation, platforms need to be able to quickly block them.
Cost reduction	Students need high video quality and smooth playback for effective online learning. This means high storage costs for platforms.

Solutions

Requirement	Recommended VOD Feature
Playback on various platforms	Smart Multi-Bitrate Switching VOD can convert one video source to streams of different bitrates to meet playback requirements under different network conditions. Multi-Platform Player VOD offers a player SDK that comes in editions for different platforms including iOS, Android, web (Flash/HTML5), and Flutter, allowing you to distribute high quality videos to different devices. The player can collect statistics on playback performance.
Smart subtitling	Smart Subtitles VOD can quickly and accurately recognize speech and generate subtitles in standard formats.
Copyright Protection	Hotlink Protection VOD offers hotlink protection schemes based on referer and key. Encryption and DRM VOD supports HLS private encryption and commercial-grade DRM schemes to protect your content from piracy.
Time shifting	Time Shifting Students can watch content from an earlier time point during a live streamed class and can switch back to live at any time.
Psuedo-live streaming	VOD to Live Streaming Psuedo-live streaming allows you to stream better planned and more condensed content. It also helps you reduce costs.
Content moderation	Smart Moderation VOD can automatically recognize non-compliant content in courses to help you offer a healthy learning experience and reduce risks.
Media blocking	Media Blocking This feature allows you to quickly block videos when non-compliant content is detected.
Cost reduction	Media Deletion For infrequently accessed videos, you can save only a low-definition version and delete the high-definition versions to reduce your storage costs. You can also specify expiration time for videos so that expired videos can be automatically deleted. Smart Cold Storage To reduce storage costs, you can configure smart cold storage policies to downgrade the storage class of files based on their creation time, category, and playback count.

Ecommerce Application

Last updated：2022-09-02 15:47:00

Use case

Ecommerce apps are online transaction platforms where enterprises and individuals can market and sell their products. Sellers typically produce and upload product images and videos to better showcase their products. Buyers can also upload images and videos to share feedback about their shopping experience or write product reviews. Ecommerce apps generally involve the following core needs:

Core Need	Description
Smart switch between multiple definitions	When playing a video, the optimal video definition needs to be selected intelligently based on changes in the user's network environment to ensure a smooth playback experience.
Screencapturing features	The platform needs to provide diverse ways to showcase products so as to attract more sellers. For example, the platform needs to allow sellers to generate static thumbnails to use on the homepage and generate animated thumbnails for video previews, so as to display the product content more quickly and directly.
High image quality at a low bitrate	Sellers want their videos to be available in HD and loaded quickly so their product videos can attract more consumers to browse and purchase the products.
High-quality upload from client	Consumers may use various mobile device models and want a fast and stable video upload even under poor network conditions. A poor upload experience may cause consumers to give up uploading and form negative opinions about the platform, which damages the platform’s image.
Time shifting	Consumers who enter a live shopping room during live streaming and miss previous information about a product may want to watch from an earlier time point to get more product information.
Smart product recommendations	The platform needs to intelligently analyze click counts for product videos and make recommendations to users based on the categories and tags of the products that interest them, so as to increase the purchase rates.
Reduced costs	Many live shopping video recordings need to be retained only for audit by applicable authorities, some of which will never or seldom be played back but will incur a large proportion of the storage costs.

Solutions

Core Need	Recommended VOD Feature
Smart switch between multiple definitions	Adaptive bitrate streaming Multiple bitstreams are output for one input file, which allows for smooth playback under various changing network conditions.
Screencapturing features	Video screencapturing Sellers can perform various screencapturing operations, including generating point-in-time screenshots, sampled screenshots, thumbnails, image sprites, and animated images, so they can showcase products in diverse ways.
High image quality at a low bitrate	TSC transcoding VOD's TSC transcoding feature ensures that consumers can enjoy a smooth and clear video playback experience.
High-quality upload from client	Multi-end upload VOD supports upload from clients for different platforms such as Android, iOS, and web. Upload acceleration VOD uses a series of technical methods such as scheduling optimization to deliver an industry-leading upload quality (with an upload success rate of over 99.5%). The excellent upload experience encourages consumers to share their purchase experiences and improves the platform's reputation.
Time shifting	Time shifting When an ecommerce live stream is ongoing, consumers entering the live room can manually drag the progress bar to watch the content at an earlier time point, so as to get more information about the products.
Smart product recommendations	Labeling and categorization The labeling and categorization feature of VOD can automatically label and categorize videos, so that the platform can recommend relevant products to consumers based on their product video clicks and playback completion rates.
Reduced costs	Smart cold storage VOD allows you to configure smart cold storage policies for live video recordings that are seldom played back and retained mainly for auditing purposes, which effectively helps you reduce the cost of storing those required videos. Media deletion You can configure an expiration time for recording files that are stored only for auditing purposes. Such media files will be automatically deleted upon expiration, which effectively helps you reduce storage costs.

UGSV

Last updated：2023-04-17 15:01:47

Use Case

Short video platforms allow users to post and share their short videos with their friends and followers on social media. Short video services typically have the following requirements:

Requirement	Description
Quick video production and sharing	Users record and share their lives in the form of short videos and involve themselves in video production, processing, upload, delivery, and playback. Therefore, allowing users to implement these operations quickly and easily will increase their involvement and facilitate the development of the social networking short video platform, which is one of the core needs of the platform.
Smart media	UGSV platforms need to be able to make personalized recommendations based on the people or groups a user follows. They also need to support subtitles so that users who are from different regions and speak different languages can understand each other.
Compliance control	User-generated content is diverse and may contain pornographic and other non-compliant content. It is also generated quickly and in large quantities. Unlike traditional manual moderation, which is inefficient and may overlook some content, VOD's moderation feature can quickly recognize inappropriate content to help platforms meet compliance guidelines and reduce operation costs.
Smart switching between video definitions	Short video platforms want to provide the highest video quality possible while guaranteeing smooth playback for viewers on mobile devices.
High image quality at a low bitrate	A large number of high-quality videos bring high storage and traffic costs to short video platforms, and higher bitrate brings higher bandwidth costs to viewers. Short video platforms want to be able to deliver a high video quality while also reducing bitrate as much as possible.

Solutions

Requirement	Recommended VOD Feature
Quick video production and	UGSV

sharing	Leveraging Tencent Cloud's powerful upload, storage, transcoding, and delivery capabilities, VOD provides a client SDK that integrates features including video capturing, editing, splicing, special effects, sharing, and playback. You can use the SDK to quickly and easily build a mobile application and allow your users to quickly produce, edit, and publish short videos.
Smart media	Labeling and Categorization VOD can intelligently label and categorize short videos uploaded by users and make accurate recommendations based on data such as click-through rate. Face Recognition VOD can recognize faces in videos and make recommendations based on the results. Smart Subtitles VOD can automatically generate subtitles for short videos to help users understand even fast speakers or speakers with accents.
Compliance control	Smart Moderation VOD's moderation feature delivers a high accuracy and recall rate. It can recognize non-compliant content quickly and correctly. You can use this feature to save manpower and reduce your operating costs, especially if you host a huge number of videos that span different categories and genres.
Smart switch between video definitions	Smart Multi-Bitrate Switching VOD can convert one video source to streams of different bitrates to meet playback requirements under different network conditions.
High image quality at a low bitrate	TSC Transcoding VOD leverages intelligent and dynamic technologies and a high-precision bitrate control model to produce HD video at a lower bitrate. This can help you deliver a better viewing experience and reduce your storage and traffic costs.

TV Stations and OTT

Last updated：2023-04-17 15:01:47

Use Case

TV stations and OTT media services deliver streaming media mainly to the TV in a user's home. They typically have the following requirements for content delivery:

Requirement	Description
High-resolution video	Because the content of TV stations and OTT services is generally played on large screens like smart TVs, high resolution is required to deliver a vivid video experience.
Smart switching between video definitions	TV stations and OTT platforms have a large user base with widely different network conditions. To adapt to different network environments, a platform needs to prepare multiple resolutions for a video resource, so that the user’s device can automatically select the most appropriate bitrate for playback based on the current network conditions.
Copyright protection	TV stations and OTT platforms have diverse media content, including movies, sports events, animations, and TV shows. Such content is prone to piracy, especially as they become accessible to more and more viewers. Therefore, effective copyright protection measures are needed to prevent piracy.
Content moderation	Because TV stations and OTT platforms have a wide audience, non-compliance can have serious impacts and cause huge losses to platforms. Most of the videos on TV and OTT platforms are long-form, and manual moderation can be time-consuming, inefficient, and prone to errors. Machine-based smart moderation can filter out a large number of compliant videos, greatly reducing manual moderation costs.
Media playback blocking	Media platforms need to be able to quickly block the playback of non-compliant videos that incorrectly passed moderation.
Psuedo-live streaming	Pseudo-live streaming (broadcasting a pre-recorded video to achieve a similar effect to live streaming) is common among TV stations and OTT platforms. TV dramas, variety shows, and interview programs are recorded and edited, and URLs are generated for them in advance. Viewers can bookmark the URLs and watch them at the scheduled time.
Efficient media cataloging	TV stations have a large number of long videos that need to be cataloged, which is inefficient to do manually.

Solutions

Requirement	Recommended VOD Feature
High-resolution video	Audio/Video Transcoding VOD supports transcoding to high resolutions including 2K, 4K, and 8K, as well as HDR, meeting the requirements of OTT content played on large screens.
Smart switch between video definitions	Smart Multi-Bitrate Switching One video source can be converted to streams of different bitrates to meet playback requirements under different network conditions.
Copyright protection	Hotlink Protection VOD offers hotlink protection schemes based on referer and key. Encryption and DRM VOD supports HLS private encryption and commercial-grade DRM schemes to protect your content from piracy.
Content moderation	Smart Moderation VOD's smart moderation feature delivers industry-leading recognition accuracy and recall rate, helping TV stations and OTT platforms ensure content compliance.
Media playback blocking	Media Blocking This feature allows TV stations and OTT platforms to quickly block non-compliant content when it's detected to reduce risks and losses.
Psuedo-live streaming	VOD to Live Streaming VOD supports distributing pre-recorded videos as live streams with low costs and fast speed, allowing TV stations and OTT platforms to attract more viewers with pre-recorded high-value content.
Efficient media cataloging	Labeling and Categorization TV stations and OTT platforms can use VOD's labeling and categorization capabilities to efficiently archive, search, and manage massive amounts of video content.

Live Streaming Application

Last updated：2022-09-02 15:47:01

Use case

Live streaming apps allow hosts to broadcast, deliver commentary, or perform for viewers over the network in real time. Since 2016, the live streaming industry has grown enormously, and more new forms have developed from entertainment (such as live shows and game live streaming) to live classes, live shopping, and live Q&A. Live streaming apps generally have the following core needs:

Core Need	Description
Live recording	Regulatory authorities require that the live videos be retained for a certain period of time for audit. Operators also need to record high-value live content to be viewed later, such as live concerts and live teaching courses.
Time shifting	During game or sports event live streaming, new viewers entering the live stream want to be able to go back to an earlier part of the stream to better understand the context.
Live stream editing	During live streaming, the host or the live streaming operator needs to be able to create video clips in real time so they can be quickly release to social media platforms, so as to attract more viewers.
Psuedo-live streaming	For high-value live content, the operator generally considers recording it for secondary editing and streaming it again at a later specified time, so as to attract more viewers. This is much cheaper than organizing a new live streaming event.
High image quality at a low bitrate	For content in which video images change quickly, such as game and sports event live streaming, the recorded video has a high bitrate and incurs high storage costs. In addition, users need a high network bandwidth for smooth playback. Therefore, to guarantee a high image quality at a low bitrate is good for both the platform and users.
Screencapturing features	After a live stream is recorded as a VOD video, the platform can perform various screencapturing operations on the VOD video. For example, it can take sampled screenshots for content moderation or generate an image sprite for video timestamping to help viewers quickly locate different time points in the video.
Splicing and clipping	When a live stream is interrupted multiple times, it generates multiple video files that need to be spliced together to get a complete live recording file. Editors also want to splice multiple live stream segments or recording file segments together to generate highlight videos.

Solutions

Core Need	Recommended VOD Feature
Live recording	CSS recordingVOD records and stores the live content for regulatory audit. Valuable video recordings can be edited for secondary delivery.
Time shifting	Time shiftingVOD allows viewers to drag the progress bar to watch the content from an earlier time point during live streaming and to switch back to the latest live content at any time.
Live stream editing	Live clippingDuring live streaming, the host or the operator can clip out historical highlights to generate a video in real time and share it immediately or store it persistently.
Psuedo-live streaming	VOD-to-CSSAfter recording a high-value live stream, the operator edits it and delivers it as a pseudo-live stream to make viewers feel more engaged and attract more attention and clicks. In addition, this is much cheaper than organizing a real live streaming event.
High image quality at a low bitrate	TCS transcodingIn scenarios where the bitrate is high and the image is complex, such as recording of game and sports event live streaming, VOD uses the smart dynamic encoding technology and the precise bitrate control model to maintain a high definition at a low bitrate, reducing the bandwidth costs by nearly 50% while guaranteeing the same subjective image quality.
Screencapturing features	Video screencapturingVOD allows you to generate point-in-time screenshots, sampled screenshots, thumbnails, image sprites, and animated images. The host or the operator can display the video content in various forms to improve the viewing experience.
Splicing and clipping	Splicing and clippingWhen a live stream is interrupted, multiple video files may be generated when the stream is recorded to VOD. In this case, you can splice the

	video stream segments together to generate a complete VOD video. You can also splice multiple live stream segments or recording file segments to generate highlight videos.

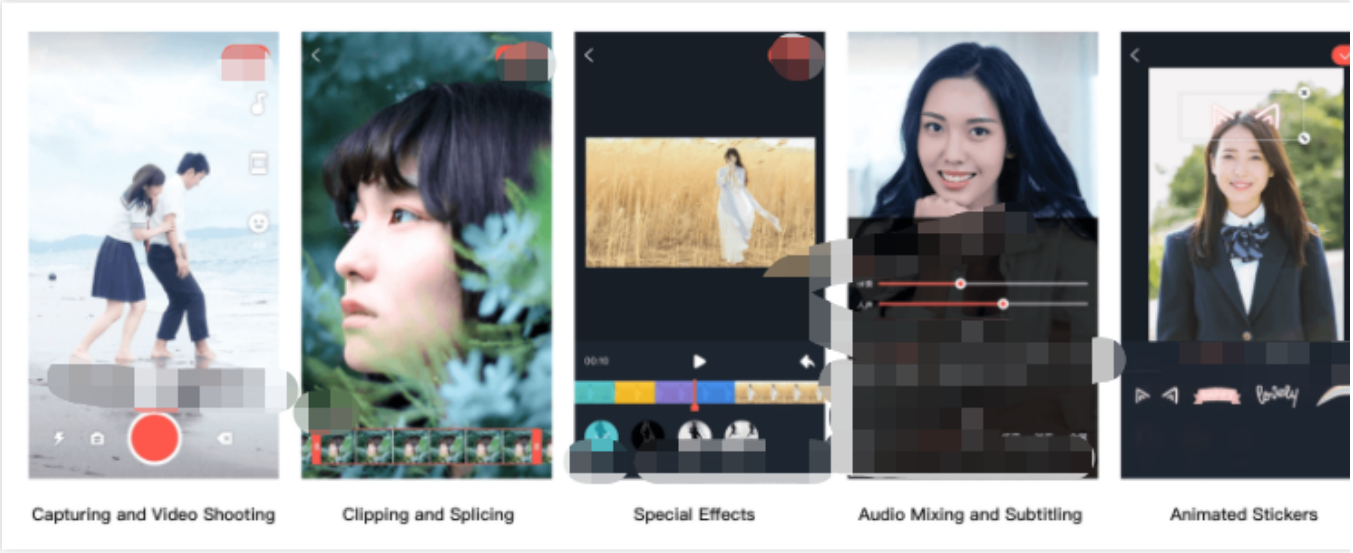
Solutions
UGSV

Last updated：2024-12-02 18:18:45

Short Video Applications

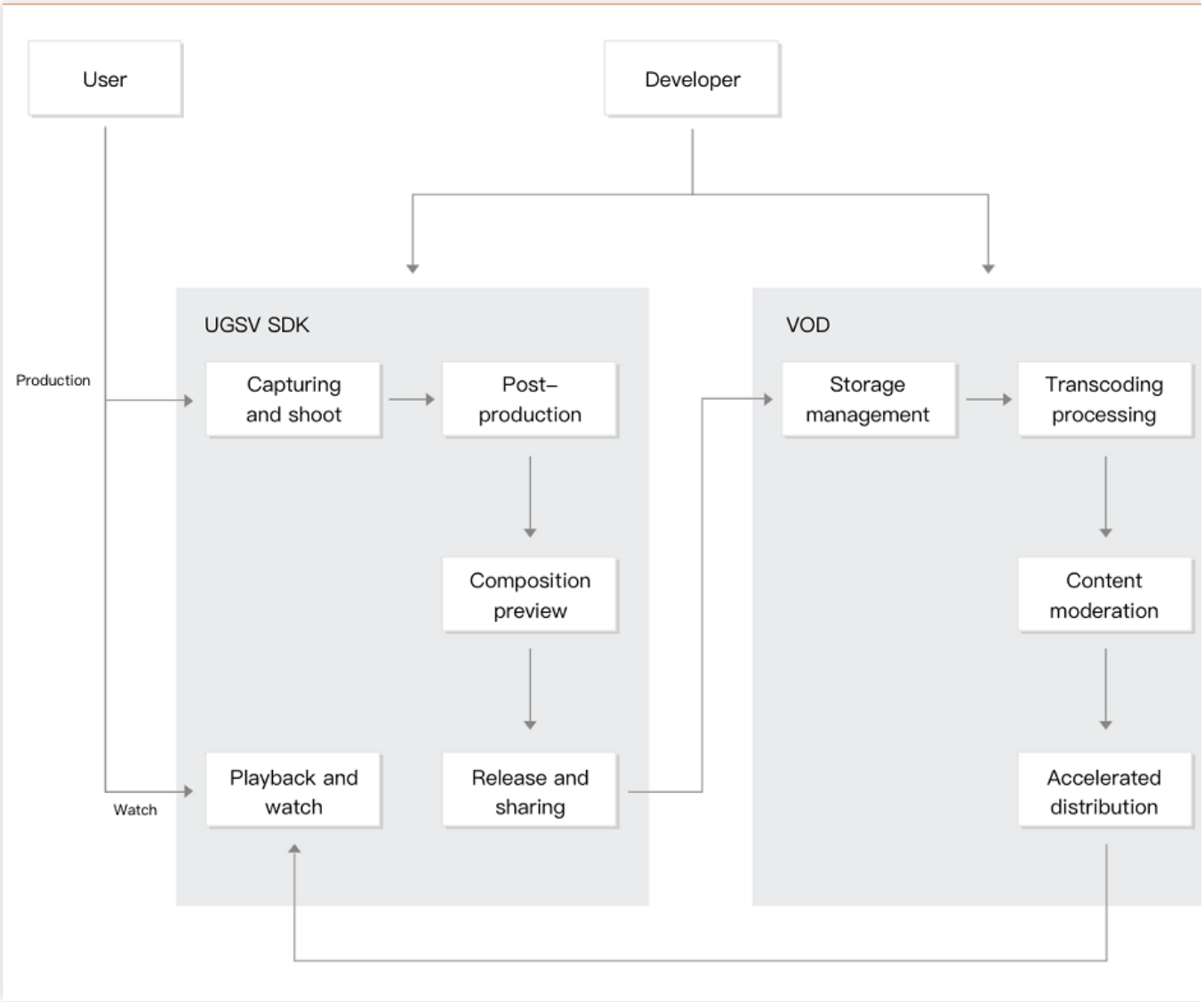
Background

Mobile user generated short video (UGSV) apps have a wide variety of use cases in online shopping, entertainment videos, and video software. Tencent Cloud VOD provides a one-stop UGSV solution covering all stages from video generation, upload, and processing to distribution and playback. This enables you to quickly implement and launch your mobile UGSV app while focusing on your business development.



VOD's UGSV SDK provides a rich set of features such as video capturing, editing and splicing, special effect production, reverb and subtitling, and other capabiliies. Combined with VOD's powerful backend capabilities, these make it easy for you to build your own UGSV applications. The UGSV SDK also provides:
Various filters, beauty filter effects, and dynamic stickers which improve the user experience of your application.
Options to quickly bind VOD resource packages to integrate video processing and playback acceleration capabilities.
UGSV demos, open-source code, and comments to help guide you through using the UGSV SDK.

Scheme architecture



Directions

1. Sign up for a Tencent Cloud account and activate the VOD service. For details, see Getting Started - Step 1. Activate VOD.
2. Add a UGSV license and enter the related information into the VOD console to activate the license.
3. Download the application source code and debug, compile, and run it. For details, see Quickly Building UGSV Application.

More Information

For more information on UGSV license fees, see Other Value-Added Services.
For more information on how to build a UGSV application, see Quickly Building UGSV Application.
For the list of UGSV SDK features, see SDK Download.

Video Website

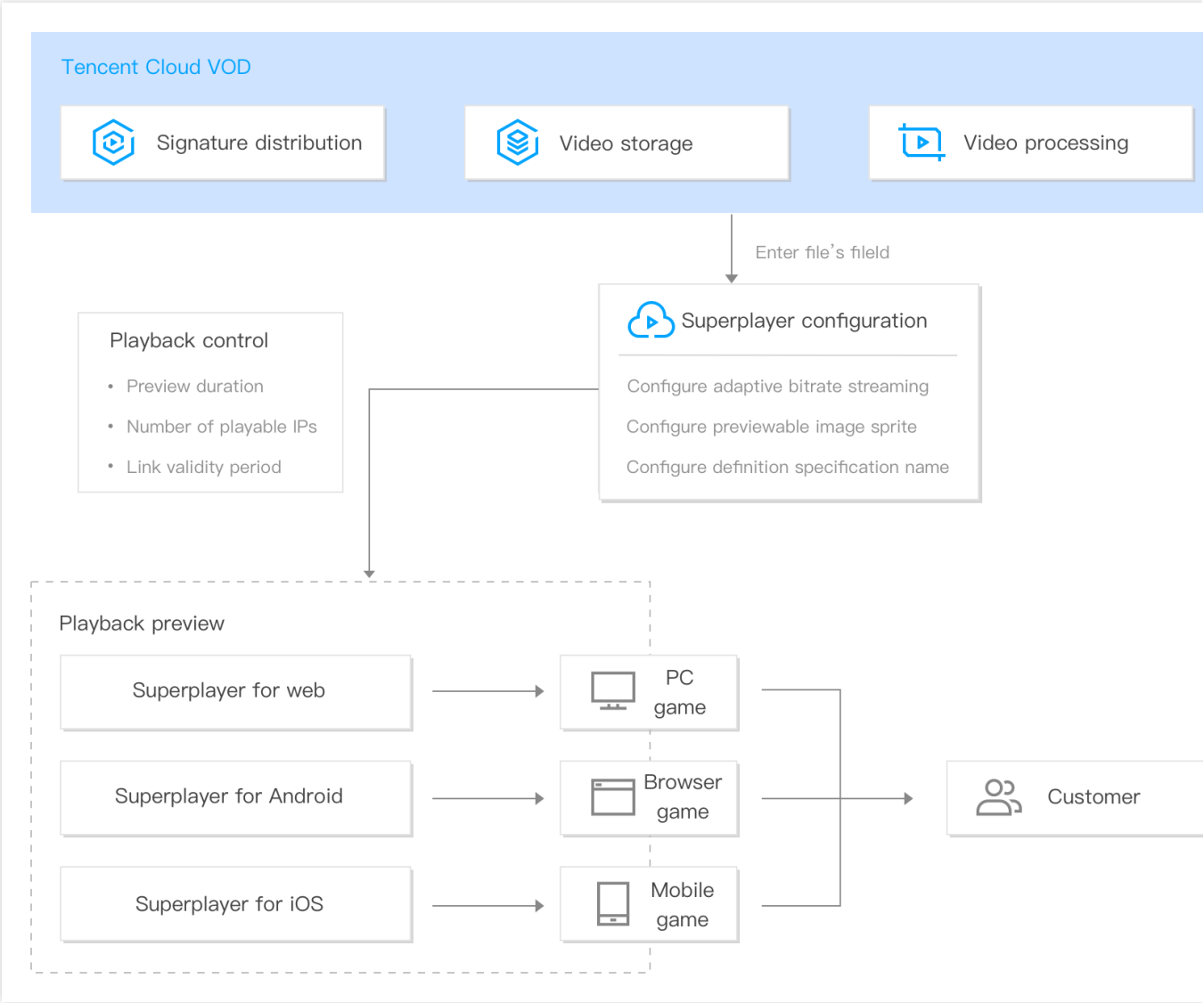
Last updated：2022-09-15 17:35:34

Video Encryption Scenarios

Background

Almost all scenarios throughout the video service industry, including video websites, video portals, and online education, require secure and reliable video on demand services. This is especially true with the rising awareness of copyright protection and the growing need for video encryption. Tencent Cloud VOD provides a video encryption solution that can be built quickly and delivers a smooth viewer experience.
In video encryption scenarios, VOD combines hotlink protection, encrypted adaptive bitrate streaming, and the Player SDK. You can quickly integrate the player into your mobile and web clients, which gives you capabilities such as resolution switching, thumbnail preview, video preview, and encrypted playback. Backed by the powerful backend of VOD, you can easily provide end-to-end video services ranging from video upload and transcoding to playback and acceleration. In addition, VOD also provides the following features:
Hotlink protection can be enabled to restrict video playback and guarantee video security.
VOD provides adaptive bitrate streaming that supports various resolutions and bitrates, allowing video players to dynamically switch to appropriate video streams based on the network bandwidth.
Encrypted adaptive bitrate streaming and hotlink protection can be configured for the VOD Player SDK to further enhance the security.

Scheme architecture



Playing back an encrypted video on a video website

Directions

1. Sign up for a Tencent Cloud account and activate the VOD service. For details, see Getting Started - Step 1. Activate VOD.
2. Initiate the video upload and transcoding services in VOD as instructed in Uploading Video.
3. Add the player configuration, select the encrypted adaptive bitstream for playback, select the image sprite used for preview, and set the playback control parameters (such as preview duration and number of IPs allowed for playback) as instructed in Superplayer Configuration.
4. Preview the video and player and get the corresponding player code as instructed in Managing Video.

More Information

For more information on hotlink protection, see Overview.

For more information on adaptive bitrate streaming, see Transcoding to Adaptive Bitrate Streaming.

For more information on the Player SDK, see Overview.

For more information on video encryption, see Overview.