

Video on Demand

Service Overview

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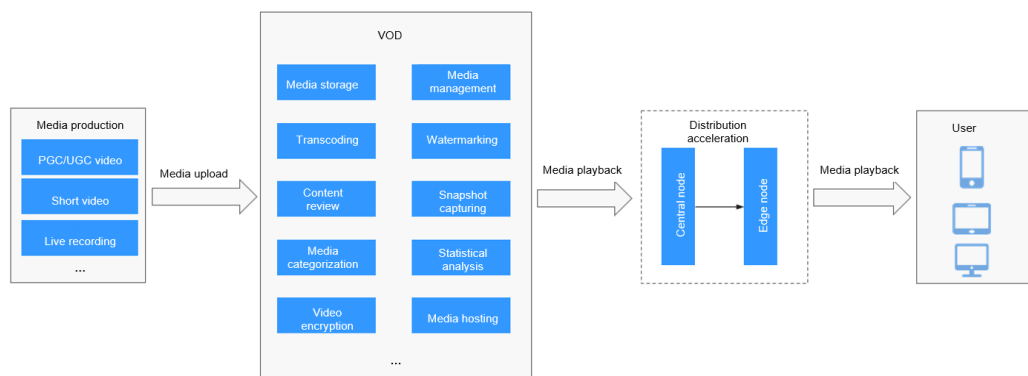
1 What Is VOD?

Video on Demand (VOD) is a one-stop media service that enables you to upload, transcode, and manage media files and distribute them to your users.

VOD offers premium media processing to help you quickly build a secure and scalable VOD platform, eliminating the hassle of managing underlying infrastructure.

VOD provides a web-based management console, APIs, and software development kits (SDKs) for you to use and manage VOD resources.

VOD billing is usage-based.



Application Scenarios

Audio and video websites: Huawei Cloud VOD helps you quickly build a secure and reliable VOD application regardless of your video resource size.

Video replay: Live recordings stored in OBS buckets are hosted to VOD for replay. Functions such as media file management, media processing, and CDN distribution acceleration are also supported.

Online education: Teaching videos can be uploaded through the console or by calling APIs. Videos can be transcoded for quick publishing. Edge nodes around the world ensure a smooth viewing experience for students. Hotlink protection and copyright protection prevent courseware and educational videos from being stolen.

2 Product Advantages

Ease of Use and Low O&M Costs

- Functions are available via VOD SDKs, APIs, and the VOD console.
- You pay only for what you use. There is no need to consider underlying facilities.

Fast Transcoding

VOD uses parallel transcoding to transcode a single input into multiple outputs with different resolutions.

Fast Content Distribution

Video resources are cached on CDN nodes. If users request the content, nearby CDN nodes directly serve the content, speeding up content distribution and improving user experience.

Superior Watching Experience

- VOD transcodes an input into multiple outputs with different resolutions for playback on a wide range of devices.
- Media categorization, custom thumbnail, and labeling enable users to find target resources by category or label.
- You can drag the time axis and see whether to drag to the target position from the preview image and play the content from the target position.

Multi-level Assurance

- Highly reliable Object Storage Service (OBS) ensures secure storage of your massive amounts of resources.
- Monitoring system and service system ensure 24/7 technical support.

Rock-solid Reliability

- Hotlink protection prevents other websites from linking to your resources.
- Video encryption and playback authentication safeguard your video assets.

3 Functions

This section describes the functions of VOD. You can check if a certain function is available in a region on the console.

Audio/Video Upload

After enabling VOD, you can [upload audio/video files](#) to VOD for management.

VOD supports the following methods for uploading audio/video files:

- Local upload: You can upload audio/video files stored on a local disk to VOD.
- Pull from URLs: You can pull source audio/video files from their URLs and then upload them to VOD.
- APIs for file upload and server SDKs in Java, Python, Go, Node.js, .Net, PHP, and C++ languages are provided.

Audio/Video file upload mechanism:

- Each video file is split into multiple small files (20 MB by default) and uploaded to VOD.
- The timeout interval for uploading a small file is 60 minutes.

Formats of audio/video files that can be uploaded:

- Video: MP4, TS, MOV, MXF, FLV, MPG, WMV, AVI, M4V, F4V, MPEG, 3GP, ASF, MKV, WEBM, RMVB, VOB, RM, MTS, DV, DAT, QT, M2T, SWF and M3U8. An M3U8 file can be uploaded only by pulling it from its URL.
- Audio: MP3, OGG, WAV, WMA, APE, FLAC, AAC, AC3, MMF, AMR, M4A, M4R, WV, MP2, RA, and CAF.

Audio/Video Categorization

You can categorize uploaded audio/video files to facilitate file search. For details, see [Category Settings](#).

- You can add up to 128 categories.
- You can create up to three levels of subcategories.
- If no category is set, the uploaded audio/video files fall into the **Other** category by default.

Audio/Video Transcoding

VOD can transcode audio/video files during or after the file upload. VOD provides four preset templates and allows you to customize transcoding templates. For details, see [Transcoding Settings](#).

Input audio/video files of the following formats can be transcoded:

- Supported input audio formats: MP4, TS, MOV, FLV, MPG, MXF, WMV, ADTS, AVI, MKV, MPEG, VOB, RM, and MTS
- Supported input video codecs: H.264, H.265, MPEG-2, MPEG-4, MJPEG, WMV1/2/3, and ProRes 422
- Supported input audio codecs: AAC, AC3, EAC3, HE-AAC, MP2, MP3, PCM (s16le, s16be, s24le, s24be, DVD), and WMA

Input audio/video files can be transcoded into the following formats:

- Output audio file formats: DASH, HLS, MP4, MP3, and ADTS
- Output audio file codecs: H.264, H.265, HE_AAC, AAC, and MP3

NOTE

If you need to transcode a media file into different formats, [submit a service ticket](#) to obtain the permission.

Audio/Video Transmuxing

Transmuxing changes only the audio/video file format, not the resolution and bitrate. The preset template group **original_template_group** on the transcoding settings page is the audio/video transmuxing template. For details, see [Transcoding Settings](#).

- The container format of audio/video files in FLV and HLS formats can be changed to MP4.
- The container format of audio/video files in MP3, MP4, and FLV formats can be changed to HLS.

Audio/Video Review

VOD supports [audio/video review](#) to detect and filter out pornographic, terrorism-related, and politically sensitive information in audio/video files. In doing so, inappropriate media files can be removed in a timely manner to avoid or reduce the adverse impact.

Audio/Video Management

[Audio/Video management](#) capabilities:

- You can transcode, pre-load, categorize, publish, export, and delete audio/video files, as well as cancel the transcoding.
- You can extract audio from video files and save it as MP3 format.
- You can upload a thumbnail and subtitles for a video file.
- You can view the streaming URL, subtitles, and thumbnail of an audio/video file.

- You can change the storage class of an audio/video file in OBS.
 - The storage class of an uploaded audio/video file is **Standard** by default, and can be changed to **Infrequent Access** or **Archive**.
 - **Infrequent Access** and **Archive** can be restored to **Standard**.

Media Asset Cold Storage

Media asset cold storage can be based on media asset ID or intelligent cold storage policy.

- Based on media asset ID: The storage class of media assets can be batch changed from **Standard** to **Infrequent Access** or **Archive** by media asset ID.
- Based on intelligent cold storage policy: The storage class of media assets can be batch changed by creating and enabling an intelligent cold storage policy, which specifies the upload time or storage duration, category, and storage class of media assets.

Workflow Management

You can create a workflow template to transcode an audio/video file and change its container format, perform content moderation, take snapshots, and extract audio. All tasks in the workflow are executed at the same time, boosting media processing efficiency. For details, see [Workflow Settings](#) and [Workflow Management](#).

Snapshot Capturing

You can take snapshots of uploaded video files at a specified interval or at a specified time. After a snapshot is taken, you can set the snapshot as the video thumbnail. You are charged by the number of snapshots. For details, see [Snapshot Capturing](#).

- At a specified interval: The system takes snapshots at regular intervals from the first frame to the last frame. The interval cannot exceed 12 seconds.
- At a specified time: The system takes snapshots at fixed time points. A maximum of 10 time points can be set for a video.

Video Watermarking

You can upload an image as the watermark template for your video. During video transcoding, the watermark is overlaid at a specified position of the video. For details, see [Watermark Settings](#).

HLS Encryption

VOD supports HLS video encryption to prevent video leakage and hotlinking. Encrypted videos cannot be distributed after downloaded by malicious users. For details, see [HLS Encryption Settings](#).

See [Protecting Videos with HLS Encryption](#) to learn about how HLS encryption works.

Notifications

VOD sends notification messages to notify you of the execution status of tasks such as transcoding and snapshot capturing in real time. Currently, two notification services are available: MFS and SMN. If you are a new user, MFS is used by default. If you want to use SMN, [submit a service ticket](#). For details, see [Notifications](#).

CAUTION

The callback message forwarding mode can be switched only when you have modified the callback message logic.

HTTPS Secure Acceleration

You can [configure HTTPS secure acceleration](#) to protect your VOD resources. If you use your own domain name for VOD acceleration, you must enable HTTPS. Otherwise, you cannot preview and play media files on the VOD console.

URL Authentication

VOD provides referer validation and URL validation to identify and filter out malicious visitors. Only authenticated visitors can use VOD. For details, see [Configuring Hotlink Protection](#).

- Referer validation: You can set a referer blacklist or whitelist to identify and filter out malicious playback requests.
- URL validation: You can customize the authentication key and expiration time and use multiple authentication algorithms provided by VOD.

Pseudo-Streaming

[Pseudo-streaming](#) leverages the playback control capability of VOD to play VOD files like a livestream. You can generate VOD files, specify the time of starting a livestream, and use VOD to distribute streaming-like content, reducing livestream risks and costs. Pseudo-streaming does not support fast forward and is ideal for online teaching videos, gala livestreaming, and broadcasting and television.

Data Analysis

VOD provides [data analysis](#) for you to view data such as the traffic, bandwidth, and traffic hit ratio on CDN. You can also query the number of playback times and the most played audio/video files by domain name.

Usage Query

VOD provides [usage query](#) for you to view the traffic and peak bandwidth statistics on CDN, as well as the storage space and transcoded file duration on the VOD origin server.

There is a delay of about one hour in usage statistics.

Monitoring and Alarms

VOD has integrated with Cloud Eye. You can use the console or APIs of Cloud Eye to query and search for the monitoring metrics (traffic, access requests, and status codes) and alarm information of VOD domain names. For details, see [Viewing Monitoring Metrics](#).

Note that the configuration of domain name monitoring by Cloud Eye on the console is still not available. To use this function, [submit a service ticket](#).

Audit

VOD has integrated with Cloud Trace Service (CTS). With CTS, you can record operations related to ECSs for later query, audit, and backtrack. For details, see [Querying Real-Time Traces](#).

CTS retains operation records generated in the latest seven days.

4 Notes and Constraints

Before using VOD, you need to know the following constraints.

Resource Constraints

VOD has constraints on resources such as domain names and watermarks.

Table 4-1 Resource constraints

Item	Description	Constraint
Region	Users of the International website can use VOD only in CN North-Beijing4 , AP-Singapore , and AP-Bangkok .	-
Domain name	Maximum number of self-owned domain names that you can add on the VOD console. NOTE <ul style="list-style-type: none">All domain names of the system have been assigned. If you do not have an assigned domain name after subscribing to VOD, you need to add licensed domain names to VOD for media file distribution acceleration.The system automatically checks all domain names in your account and deletes domain names that have been idle for a long time. For details, see Configuring Domain Names.	5
Pull from URLs	Maximum number of media files that can be pulled at a time	<ul style="list-style-type: none">Console: 100API: 16
URL pull rate	Global maximum rate for pulling audio/video files offline to VOD using the URLs of source audio/video files	1 Gbit/s
Watermarking	Maximum number of watermarks that can be added to a video file at a time	2

Item	Description	Constraint
Categorization	Maximum number of subcategories can be added to each category. A maximum of three levels of categories are allowed.	128
Labeling	Maximum number of labels that you can add to a media file	16
Referer validation	Maximum number of domain names that can be added to a referer blacklist or whitelist	100
Media pre-loading	Maximum number of times that you can pre-load media files in a day	1,000

Function Constraints

Table 4-2 Function constraints

Item	Description
Domain name	When you delete a domain name that has been idle for more than half a year, an error will be reported, and you need to submit a service ticket .
Transcoding	To retain transcoded outputs of different formats, you need to submit a service ticket .
HLS media file upload	HLS media files can be ingested and played, but processing operations (such as screenshot capturing, parsing, transcoding, and review) on HLS source files are not supported.
Subtitling	<ul style="list-style-type: none">External subtitles are not supported for HLS outputs that are saved to a different OBS bucket but in the same directory as input files.If the language you specify is not in the subtitle list in the HLS index file, the configuration will fail.Subtitling is not supported if you use the original_template_group.External subtitles are not supported when both HLS and DASH outputs are generated using a template group. For details about how to create a transcoding template group, see Creating a Transcoding Template Group.The native iOS browser Safari does not support parsing and playing of VTT subtitle files.

Item	Description
Audio/Video review	<ul style="list-style-type: none"> • Audio and video moderation is not available in the AP-Bangkok region. • Audio and video moderation is not available for HLS. • Since October 15, 2025, the audio and video moderation capabilities of VOD have been updated, as a part of the overall upgrade of Content Moderation, a Huawei Cloud EI service. For details, see Notice on Updates to the VOD Audio and Video Moderation Function. <ul style="list-style-type: none"> – To use audio and video moderation, you need to enable Content Moderation. The required moderation services vary with the region: text and single-image moderation for CN North-Beijing1; text, single-image, and audio moderation for CN North-Beijing4; and text, single-image, and audio moderation for AP-Singapore. – Using the audio and video moderation functions of VOD will incur charges from the Content Moderation service. For details, see Content Moderation Billing. • VOD uses only the text, image, and audio moderation capabilities of Content Moderation. You can buy the corresponding packages from Content Moderation.

APIs Supporting Cross-Origin Requests

Only the VOD APIs listed in [Table 4-3](#) support cross-origin requests.

Table 4-3 APIs supporting cross-origin requests

API	URI
Uploading Media Files to VOD	/v1.0/{project_id}/asset
Confirming Media File Upload	/v1.0/{project_id}/asset/status/uploaded
Verifying the Upload	/v1.0/{project_id}/asset/duplication
Querying Media Assets	/v1.0/{project_id}/asset/info
Obtaining Authorization for Multipart Upload	/v1.0/{project_id}/asset/authority

API Constraints

VOD sets a limit on the number of API calls to prevent service interruption caused by repeated API calls in a short period of time.

Table 4-4 API request throttling

Category	API	API Calls for a Single Tenant Per Minute	API Calls for All Tenants Per Minute
Media upload	<ul style="list-style-type: none"> • Uploading media files to VOD • Obtaining authorization for multipart upload • Confirming media file upload • Authorizing access to OBS • Replicating media files from OBS to VOD 	1,500	12,000
	<ul style="list-style-type: none"> • Pulling media files from URLs • Verifying the upload 	100	1,000
Media processing	<ul style="list-style-type: none"> • Updating a video • Media processing • Canceling a media asset transcoding task • Extracting audio • Canceling an audio extraction task • Creating a media asset review task • Setting a thumbnail 	100	1,000
Media management	<ul style="list-style-type: none"> • Deleting media files • Publishing media files • Canceling media publish • Modifying media asset attributes • Querying media asset tasks 	100	1,000

Category	API	API Calls for a Single Tenant Per Minute	API Calls for All Tenants Per Minute
	Querying media asset information	1,500	24,000
	<ul style="list-style-type: none"> • Querying file details • Querying media files 	1,500	12,000
Media pre-loading	CDN pre-loading	10	250
	Querying pre-loading results	100	1,000
Media file refresh	<ul style="list-style-type: none"> • CDN cache refresh • Querying CDN cache refresh results 	100	1,000
Media category	<ul style="list-style-type: none"> • Creating a media category • Modifying a media category • Deleting a media category • Querying media categories 	100	1,000
Key query	Querying a Key	1,500	12,000
Statistical analysis	<ul style="list-style-type: none"> • Querying CDN statistics • Querying origin server statistics • Querying the most frequently requested content • Querying playback logs of a domain name • Querying daily playback statistics of a media asset 	100	1,000

Category	API	API Calls for a Single Tenant Per Minute	API Calls for All Tenants Per Minute
Watermark template management	<ul style="list-style-type: none">• Creating a watermark template• Modifying a watermark template• Querying watermark templates• Deleting a watermark template• Confirming watermark image upload	100	1,000
Subtitle management	Managing subtitles	100	1,000
Transcoding template management	<ul style="list-style-type: none">• Creating a custom transcoding template• Querying transcoding templates• Updating a transcoding template• Deleting a custom template	100	1,000
Transcoding template group management	<ul style="list-style-type: none">• Creating a transcoding template group• Modifying a transcoding template group• Querying custom template groups• Deleting a transcoding template group	100	1,000
Transcoded output management	Deleting transcoded outputs	100	1,000

Category	API	API Calls for a Single Tenant Per Minute	API Calls for All Tenants Per Minute
Media asset storage mode management	<ul style="list-style-type: none"> Modifying the cold storage scope of a media asset Changing the OBS storage class of a media asset Querying the cold storage settings of a media asset Querying data retrieval information 	100	1,000
Snapshot management	<ul style="list-style-type: none"> Querying snapshot task results Querying snapshot details 	1,500	12,000
	Deleting snapshots of a media asset	100	1,000

5 Billing

VOD is billed on a pay-per-use basis by default.

NOTICE

- To use VOD properly, you need to top up your account (by at least \$0.15 USD) in [Billing Center](#).
 - Package usage is restricted by region. Cross-region usage is only supported between CN North-Beijing1 and CN North-Beijing4. Packages in all other regions can only be used within their respective regions. Please purchase packages based on the regions actually used by your account.
 - Even if your CDN acceleration domain name has no active services, its exposure to the public network may result in sniffing and abnormal URL requests, which can generate a small amount of traffic and costs.
 - Real-time packaging is currently free. If billing is introduced for this feature, an announcement will be posted on the official website in advance.
-

Billing Items

The VOD billing structure includes media management, media processing, and content distribution. For details, see the following table. Billing items are settled hourly. For pricing details, see [Product Pricing Details](#).

Table 5-1 Billing items

Category	Billing Item	Description	Billing Mode
Media management	Storage space	<p>Billed based on your actual storage usage, including uploaded audio and video files, thumbnails, subtitles, and transcoded media files.</p> <p>NOTICE About storage billing:</p> <ul style="list-style-type: none"> The minimum storage duration is 30 days for Infrequent Access storage and 90 days for Archive storage. If you retrieve or delete media files before the minimum storage duration ends, you will still be billed based on the minimum storage duration. Take Infrequent Access as an example. If the actual storage duration is less than 30 days, you will be billed based on the minimum storage duration (30 days). If the actual storage duration is 30 days or longer, you will be billed based on the actual storage duration. Retrieval costs are incurred when you restore media assets from Infrequent Access or Archive to Standard. 	Pay-per-use (postpaid)
Media processing	Video transcoding	<p>Billed based on the duration of the content you output</p> <p>NOTICE</p> <ul style="list-style-type: none"> For outputs in 4K or HD with the frame rate less than 30 fps, the duration is converted to SD-equivalent time using the ratios 4:2:1 (4K:HD:SD) for statistical purposes. For outputs in 4K or HD with the frame rate greater than 30 fps, the duration is converted to SD-equivalent time using the ratios 5:2.5:1.25 (4K:HD:SD) for statistical purposes. 	Pay-per-use (postpaid)
	Audio transcoding	Billed based on the duration of the content you output	Pay-per-use (postpaid)
	Audio extraction	Billed based on the duration of the content you extract	Pay-per-use (postpaid)

Category	Billing Item	Description	Billing Mode
	Audio and video packaging	Billed based on the duration of the content you output	Pay-per-use (postpaid)
Content distribution	Downstream traffic	<p>Billed based on the downstream traffic for audio and video playback</p> <p>NOTE</p> <ul style="list-style-type: none">You cannot switch to the 95th percentile bandwidth billing mode on the console. To do so, you need to submit a service ticket.You cannot switch from the 95th percentile bandwidth billing mode to another mode on the console. To do so, you need to submit a service ticket.Only traffic-based billing is supported in the AP-Bangkok region, and the billing mode cannot be changed.If you change the billing mode in the AP-Singapore region, the new mode will take effect at 00:00 (local time) on the following day. If you change the billing mode multiple times in a single day, only the last change made before 00:00 (local time) will take effect.	Pay-per-use (postpaid)
	Daily peak bandwidth	Billed based on the daily peak bandwidth consumed by audio and video playback. The system measures and records the peak bandwidth every 5 minutes, resulting in 288 data points per day. The highest value for a day is used as the billable bandwidth.	Pay-per-use (postpaid)

Category	Billing Item	Description	Billing Mode
	Monthly 95th percentile bandwidth	Within a calendar month, the system measures the peak bandwidth for audio and video playback on each active day. At the end of the month, all values are sorted from highest to lowest, and the top 5% of them are thrown away. The highest remaining value then becomes the billable bandwidth for the entire month, and a bill is generated based on the contract price.	Pay-per-use (postpaid)

Billing Modes

VOD is billed on a pay-per-use basis. In each billing cycle, the system calculates the costs by multiplying the actual usage of each resource by its unit price and then deducts the amounts from your account balance.

For distribution acceleration, the billing mode is traffic-based, that is, based on the actual downstream traffic used each day. Settlement occurs hourly, and the billed amounts are typically deducted four hours after the end of each billing cycle (one hour). The specific bill run time is subject to the system.

Expiration and Overdue Payment

- **Arrears:** In pay-per-use mode, billing is calculated based on each billing item. If your balance is insufficient to cover the outstanding amount from the previous billing cycle, your account will fall into arrears, and VOD services will be suspended. A retention period will be granted. To resume VOD services, top up your account during the retention period. Huawei Cloud defines the retention period based on your customer tier. Go to the page to view your customer tier. For more information about service suspension rules, see [Retention Period](#).
- **Service expiration:** Pay-per-use resources do not expire.

6 Security

6.1 Certificates

Compliance Certificates

Huawei Cloud services and platforms have obtained various security and compliance certifications from authoritative organizations, such as International Organization for Standardization (ISO). You can [download](#) them from the console.

Figure 6-1 Downloading compliance certificates

Download Compliance Certificates

Please enter a keyword to search

BS 10012:2017

BS 10012 provides a best practice framework for a personal information management system that is aligned to the principles of the EU GDPR. It outlines the core requirements organizations need to consider when collecting, storing, processing, retaining or disposing of personal records related to individuals.

Download

ENS

Mandatory law for companies in the public sector and their technology suppliers

Download

Singapore Multi Tier Cloud Security (MTCS) Level 3

The MTCS standard was developed under the Singapore Information Technology Standards Committee (ITSC). This standard requires cloud service providers to adopt well-rounded risk management and security practices in cloud computing. The HUAWEI CLOUD Singapore region has obtained the Level 3 (highest) certification of MTCS.

Download

Trusted Partner Network (TPN)

The Trusted Partner Network (TPN) is a global, industry-wide media and entertainment content security initiative and community network, wholly owned by the Motion Picture Association. TPN is committed to raising content security awareness and standards and building a more secure future for content partners. TPN can help identify vulnerabilities, increase security capabilities, and efficiently communicate security status to customers.

Download

ISO 27001:2022

ISO 27001 is a widely accepted international standard that specifies requirements for management of information security systems. Centered on risk management, this standard ensures continuous operation of such systems by regularly assessing risks and applying appropriate controls.

Download

ISO 27017:2015

ISO 27017 is an international certification for cloud computing information security. It indicates that HUAWEI CLOUD's information security management has become an international best practice.

Download

Resource Center

Huawei Cloud also provides the following resources to help users meet compliance requirements. For details, see [Resource Center](#).

Figure 6-2 Resource center

Resource Center

White Papers

Privacy Compliance White Papers | Industry Regulation Compliance White Papers | Guidelines and Best Practices

Compliance with Argentina PDPL

Base on the compliance requirements of Argentina PDPL and Resolution 47/2018, the whitepaper shares Huawei Cloud's privacy protection experience and practices and the measures that help customer meet the compliance requirements of Argentina PDPL and Resolution

Compliance with Brazil LGPD

Huawei Cloud shares the experience and practice in privacy protection in compliance with Brazil's LGPD and describes how to help customers meet Brazil's LGPD compliance requirements.

Compliance with Chile PDPL

Huawei Cloud shares the experience and practices regarding privacy protection when complying with PDPL from the Republic of Chile, as well as describe how to help customers meet PDPL compliance requirements in the Republic of Chile.

Compliance with PDPO of the HK

Huawei Cloud shares the experience and practices regarding privacy protection when complying with PDPO from Hong Kong SAR, China, as well as describe how to help customers meet PDPO compliance requirements in Hong Kong SAR, China.

6.2 Identity Authentication and Access Control

Identity Authentication

You can access VOD through the VOD console, APIs, and SDKs. Regardless of the access method, requests are sent through REST APIs provided by VOD.

VOD APIs can be accessed only after requests are authenticated. You can use either of the following authentication methods to call APIs:

- Token authentication: Requests are authenticated using tokens.
- AK/SK authentication: Requests are encrypted using AK/SK pairs. AK/SK authentication is recommended because it is more secure than token authentication.

For details about authentication and authorization, see [Authentication](#).

Access Control

VOD supports access control based on IAM permissions and URL validation.

Table 6-1 VOD access control

Method	Description	Details
IAM permission control for VOD	IAM permissions define which actions on your cloud resources are allowed or denied. After creating an IAM user, the administrator needs to add it to a user group and grant the permissions required by VOD to the user group. Then, all users in this group automatically inherit the granted permissions.	VOD Permissions Management
URL validation	To prevent your data on VOD from being stolen, VOD provides referer validation, URL validation, and IP address blacklist/whitelist authentication to identify and filter out malicious visitors. Only authorized visitors can use VOD.	Configuring Hotlink Protection

6.3 Data Protection

VOD takes different measures to keep data stored in VOD secure and reliable.

Table 6-2 VOD data protection methods and features

Measure	Description	Details
Transmission encryption (HTTPS)	VOD supports HTTP and HTTPS, but HTTPS is recommended to enhance the security of data transmission.	HTTPS Configuration Methods
Sensitive data encryption and protection	Your sensitive data such as URL validation keys is stored using secure encryption algorithms.	-
HLS encryption	Media streams can be encrypted using the standard HLS protocol to prevent malicious paid users from downloading and distributing the media streams.	HLS Encryption
Video watermarking	You can configure a watermark template and add a specific watermark image to an uploaded video during transcoding to prevent video theft.	Watermark Settings

6.4 Auditing and Logging

Cloud Trace Service (CTS) records operations on cloud resources in your account. You can use the logs to perform security analysis, trace resource changes, audit compliance, and locate faults.

After CTS is enabled, it can record operations on VOD resources.

- For details about how to enable and configure CTS, see [CTS Overview](#).
- For details about operations that CTS can record, see [Key Operations Recorded by CTS](#).
- For details about how to view traces, see [Viewing Traces](#).

6.5 Resilience

VOD provides a three-level reliability architecture. It ensures data durability and reliability through technical solutions such as cross-region/AZ data DR, intelligent scheduling at edge nodes, and microservice scale-out.

Reliability Level	Measure
Level 1 Service reliability	Microservice scale-out
Level 2 Data center reliability	Multi-AZ
Level 3 Region reliability	Multi-region

6.6 Security Risk Monitoring

Cloud Eye provides multi-dimensional monitoring for your resources on the cloud. With Cloud Eye, you can view the resource usage and service status, and respond to exceptions in a timely manner.

VOD uses Cloud Eye to perform monitoring over resources and operations, helping you monitor domain name usage and receive alarms and notifications in real time. You can monitor the metrics and alarms of your domain names in real time.

For details about the monitoring metrics supported by VOD and how to create monitoring alarm rules, see [Viewing Monitoring Metrics](#).

7 Personal Data

Scenario	You upload audio and video files and manage them.	End users use VOD to play audio and video files.	VOD statistics
Collected Personal Data	Uploaded audio/video files, subtitles, and images	Distributed audio/video files, subtitles, and images	IP addresses of user devices
Data Source and Collection Method	Manual submission	Manual submission	IP addresses of user devices are logged when end users use VOD.
Purpose and Security Measure	Used to upload and manage audio/video files. Audio/video files will be encrypted before transmission.	Used to play audio/video files.	IP addresses are used for user identification and VOD statistical analysis. IP addresses are anonymized before being logged.
Retention Period and Policy	You can delete or modify the data. The data is deleted immediately upon deregistration.	You can determine the retention period and policy.	Data is stored in log files for three months.
Destruction Method	Deleted by the system without rewriting.	Deleted by the system without rewriting.	The system automatically deletes expired logs.
Export Method	No export is involved.	No export is involved.	You can download logs.

Export Guide	No export is involved.	No export is involved.	For details, see Querying Playback Logs of a Domain Name .
---------------------	------------------------	------------------------	--

8 Related Services

To use the event notifications and permissions management functions, you need to enable the dependent services. See [Table 8-1](#).

Table 8-1 Related services

Interaction	Service Name	Reference
Selecting an SMN topic during the configuration of event notifications on the VOD console	Simple Message Notification (SMN)	Creating a Topic Adding a Subscription Configuring Topic Policies
Managing users and user groups using IAM	Identity and Access Management (IAM)	Create User Groups and Assign Permissions Create IAM Users and Log In

9 Concepts

H.264

H.264 or MPEG-4 Part 10, a video compression standard developed by the ITU-T Video Coding Experts Group (VCEG) and ISO/IEC JTC1 Moving Picture Experts Group (MPEG).

H.265

H.265 is a video compression standard, designed as a successor to H.264. Based on the video coding standard H.264, H.265 keeps some of the original technologies, while improves some relevant techniques. H.265 adopts the advanced techniques to improve the bit-stream, promote the coding quality, and better the relationship between time delay and algorithm complexity, to achieve best possible optimization. H.264 can transmit SD (resolution lower than 1280 x 720) digital images at a rate lower than 1 Mbit/s, whereas H.265 can transmit standard HD (resolution of 1280 x 720) audio and video at a rate of 1 Mbit/s to 2 Mbit/s.

Low-Bitrate HD

Based on the human visual system model and Huawei's transcoding technology, Live analyzes each scenario, action, content, and texture in a video to deliver lower bitrate while keeping the bandwidth costs down but without compromising the video quality.

Weak Network

The QoS of a weak network is not stable.

95th Percentile Bandwidth

A billing option. Within a calendar month, the bandwidth is measured and recorded every 5 minutes on each valid day. At the end of the month, the records are sorted from the highest to the lowest, and the top 5% of the recorded bandwidth values are thrown away. Then the highest bandwidth value in the remaining records is the billable bandwidth of the month.

Upscaling

Low-resolution videos are transcoded to high-resolution ones.

Standard Transcoding

Process of compressing the bitrate, adjusting the resolution, converting the packaging format, and adding watermarks based on standard video encoding and decoding technologies

One-in Multiple-out

It is a transcoding method. That is, a video file is transcoded into video files of multiple resolutions and bitrates to meet the playback requirements of different devices and different network speeds.

Image Enhancement

The combination of the traditional super-resolution algorithm and AI-powered image enhancement algorithm converts 2K videos to 4K videos, repairs damaged images, and improves the image quality of existing videos.

Offline Transcoding

A video file is transcoded to one or more video files with different bitrates to meet different network bandwidth and device requirements. Different from real-time transcoding, offline transcoding is started only after a complete video file is obtained.

Container

Video and audio streams that have been encoded and compressed are stored in a file according to certain format specifications. Common protocols include MP4, FLV, and HLS.

Frame Rate

A measurement unit of the number of frames displayed in a video per unit time. The measurement unit is frames per second (FPS).

10 Permissions Management

If you need to assign different permissions to different employees in your enterprise to access your VOD resources, IAM is a good choice for fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you secure access to your Huawei Cloud resources.

With IAM, you can use your Huawei Cloud account to create IAM users, and assign permissions to the users to control their access to specific resources. For example, some software developers in your enterprise need to use VOD but are not allowed to delete VOD resources or perform any high-risk operations. To this end, you can create IAM users for the software developers and assign them only the permissions for using VOD.

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

IAM is a free service. You pay only for the resources in your account. For more information about IAM, see [IAM Service Overview](#).

Notes

As of December 30, 2024, policies will be the only way to manage VOD permissions. Policies are easy to configure and allow flexible permission settings, meeting your requirements for IAM user permissions management in different scenarios.

NOTICE

If you enabled VOD before December 30, 2024 and are using both roles and policies to manage VOD permissions, you can continue with the approach. For details, see [Permissions Management](#).

To switch to the policy-only approach for VOD permissions management, [submit a service ticket](#).

VOD Permissions

New IAM users do not have any permissions assigned by default. You need to first add them to one or more groups and then attach policies or roles to these groups.

The users then inherit permissions from the groups and can perform specified operations on cloud services based on the permissions they have been assigned.

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

Currently, only policies are available for fine-grained permissions management. **You only need to configure policies for user groups to assign them specific permissions.**

Policies: A fine-grained authorization strategy that defines permissions required to perform operations on specific cloud resources under certain conditions. This mechanism allows for more flexible policy-based authorization, meeting requirements for secure access control. For example, you can grant IAM users only the permissions for managing a certain type of VOD resources.

Table 10-1 lists all the system-defined policies supported by VOD.

NOTICE

You can configure policies for user groups to assign them permissions. For details, see [Creating a User and Assigning VOD Permissions](#).

Table 10-1 System-defined policies for VOD

System-defined Policy	Description	Type	Dependency
VOD FullAccess	Full permissions for VOD.	System-defined policy	None
VOD ReadOnlyAccess	Read-only permissions for VOD.	System-defined policy	None
VOD CommonOperations	Permissions for basic operations (except global settings, domain name management, permissions management, and review setting) on VOD resources	System-defined policy	None

Table 10-2 lists the common operations supported by each system-defined policy of VOD. Select the policies as required.

Table 10-2 Common operations supported by each system-defined policy

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Adding a domain name	√	x	x
Modifying a domain name	√	x	x
Deleting a domain name	√	x	x
Viewing the domain name list	√	√	x
Enabling a domain name	√	x	x
Disabling a domain name	√	x	x
Modifying the HTTPS acceleration configuration of a domain name	√	x	x
Querying the HTTPS acceleration configuration of a domain name	√	√	x
Modifying the URL validation configuration of a domain name	√	x	x
Querying the URL validation configuration of a domain name	√	√	x
Modifying the referer validation configuration of a domain name	√	x	x
Querying the referer validation configuration of a domain name	√	√	x

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Querying media files	√	√	√
Querying media asset information	√	√	√
Modifying media asset attributes	√	x	√
Querying media asset details	√	√	√
Uploading media files	√	x	√
Updating a video	√	x	√
Deleting media files	√	x	√
Publishing media files	√	x	√
Canceling media file publish	√	x	√
Creating a URL pull task	√	x	√
Querying a URL pull task	√	√	√
Deleting a URL pull task	√	x	√
Canceling a URL pull task	√	x	√
Resuming a URL pull task	√	x	√
Creating a pre-loading task	√	x	√
Querying a pre-loading task	√	√	√
Creating a media file processing task	√	x	√
Canceling a media file processing task	√	x	√

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Creating an audio extraction task	√	x	√
Canceling an audio extraction task	√	x	√
Reviewing media files	√	x	√
Blocking media files	√	x	√
Querying information about blocked media files	√	√	√
Creating a custom template group	√	x	x
Querying custom template groups	√	√	x
Modifying a custom template group	√	x	x
Deleting a custom template group	√	x	x
Creating a watermark template	√	x	x
Querying watermark templates	√	x	x
Modifying a watermark template	√	x	x
Deleting a watermark template	√	x	x
Creating a media category	√	x	x
Modifying a media category	√	x	x

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Deleting a media category	√	x	x
Querying media categories	√	√	x
Configuring event notifications	√	x	x
Querying event notifications	√	√	x
Creating a workflow template	√	x	x
Modifying a workflow template	√	x	x
Deleting a workflow template	√	x	x
Querying workflow templates	√	√	x
Viewing a workflow template	√	√	x
Creating a review template	√	x	x
Querying review templates	√	x	x
Modifying a review template	√	x	x
Deleting a review template	√	x	x
Querying buckets	√	√	x
Authorizing access to a bucket	√	x	x
Querying users	√	√	x

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Updating roles associated with a user	√	x	x
Querying roles	√	√	x
Querying role details	√	√	x
Creating a role	√	x	x
Modifying a role	√	x	x
Deleting roles	√	x	x
Updating users associated with a role	√	x	x
Updating the permission template associated with a role	√	x	x
Querying the permission template list	√	√	x
Creating a permission template	√	x	x
Modifying a permission template	√	x	x
Deleting a permission template	√	x	x

Creating a Custom Policy

You can create a custom policy to grant granular permissions for VOD resource operations. For details, see [Creating a Custom Policy](#).

Helpful Links

- [IAM Service Overview](#)
- [Creating a User and Granting VOD Permissions](#)

Content of the VOD FullAccess Policy

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "vod:*"
      ]
    }
  ]
}
```

Content of the VOD ReadOnlyAccess Policy

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "vod:*get*",
        "vod:*list*"
      ]
    }
  ]
}
```

Content of the VOD CommonOperations Policy

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "vod:asset:*"
      ]
    }
  ]
}
```

11 Region and AZ

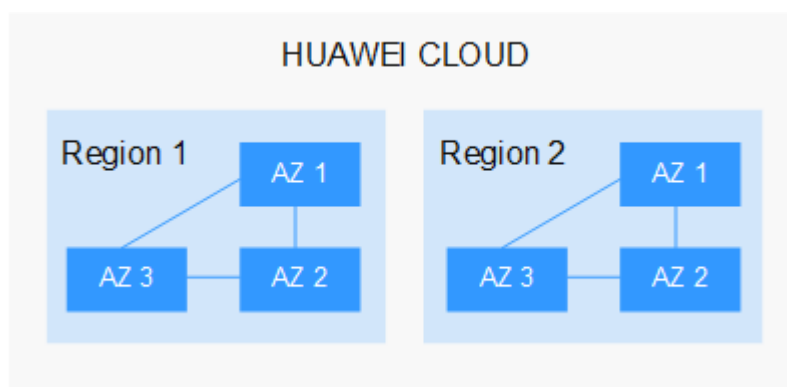
Concepts

A region and availability zone (AZ) identify the location of a data center. You can create resources in a specific region and AZ.

- Regions are divided from the dimensions of geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified as universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides services of the same type only or for specific tenants.
- An AZ contains one or multiple physical data centers. Each AZ has independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Within an AZ, computing, network, storage, and other resources are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.

Figure 11-1 shows the relationship between regions and AZs.

Figure 11-1 Regions and AZs



Huawei Cloud provides services in many regions around the world. You can select a region and AZ as needed. For more information, see [Huawei Cloud Global Regions](#).

How Do I Select a Region?

When selecting a region, consider the following factors:

- Location
You are advised to select a region close to you or your target users. This reduces the network latency and improves the access speed. Regions within the Chinese mainland provide the same infrastructure, BGP network quality, as well as resource operations and configurations. Therefore, if your target users are in the Chinese mainland, you do not need to consider the network latency differences when selecting a region.
- Resource price
Resource prices may vary in different regions. For details, see [Product Pricing Details](#).

How Do I Select an AZ?

When determining whether to deploy resources in the same AZ, consider your application's requirements on disaster recovery (DR) and network latency.

- For high DR capability, deploy resources in different AZs in the same region.
- For low network latency, deploy resources in the same AZ.

Regions and Endpoints

Before using an API to call resources, specify its region and endpoint. For more details, see [Regions and Endpoints](#).

12 Appendixes

12.1 Permissions Management

If you need to assign different permissions to different employees in your enterprise to access your VOD resources, IAM is a good choice for fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you secure access to your Huawei Cloud resources.

With IAM, you can use your Huawei Cloud account to create IAM users, and assign permissions to the users to control their access to specific resources. For example, some software developers in your enterprise need to use VOD but are not allowed to delete VOD resources or perform any high-risk operations. To this end, you can create IAM users for the software developers and assign them only the permissions for using VOD.

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

IAM is a free service. You pay only for the resources in your account. For more information about IAM, see [IAM Service Overview](#).

VOD Permissions

New IAM users do not have any permissions assigned by default. You need to first add them to one or more groups and then attach policies or roles to these groups. The users then inherit permissions from the groups and can perform specified operations on cloud services based on the permissions they have been assigned.

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

You can grant users permissions by using roles and policies. **You can configure roles and polices for user groups to assign them permissions.**

- **Roles:** A type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. This mechanism provides only a limited number of service-level roles for authorization. If one role has a dependency role required for accessing VOD, assign both roles to the users. However, roles are not an ideal choice for fine-grained authorization and secure access control.
- **Policies:** A fine-grained authorization strategy that defines permissions required to perform operations on specific cloud resources under certain conditions. This mechanism allows for more flexible policy-based authorization, meeting requirements for secure access control. For example, you can grant IAM users only the permissions for managing a certain type of VOD resources.

Table 12-1 lists all the system-defined roles and policies supported by VOD.

NOTICE

You can configure roles and policies for user groups to assign them permissions. For details, see [Creating a User and Assigning VOD Permissions](#).

Table 12-1 System-defined roles supported by VOD

Role Name	Description	Type	Dependency
VOD Administrator	Administrator permissions on all media files in your Huawei Cloud account	System-defined role	None
VOD Operator	Permissions for operations (except media file review, watermark management, security settings, category settings, and domain name management) on all media files in your account	System-defined role	None
VOD Guest	Read-only permissions for all media files in your account	System-defined role	None
VOD Group Administrator	Permissions for operations (except global settings and domain name management) on media files created by users in the current group. This role isolates media files.	System-defined role	None
VOD Group Operator	Permissions for operations (except media review, media deletion, watermark management, security settings, category settings, and domain name management) on media files created by users in the current group. This role isolates media files.	System-defined role	None

Role Name	Description	Type	Dependency
VOD Group Guest	Read-only permissions for media files created by all users in the current group. This role isolates media files.	System-defined role	None
VOD FullAccess	Full permissions for VOD.	System-defined policy	None
VOD ReadOnlyAccess	Read-only permissions for VOD.	System-defined policy	None
VOD CommonOperations	Permissions for basic operations (except global settings, domain name management, permissions management, and review setting) on VOD resources	System-defined policy	None

Table 12-2 lists the common operations supported by each system-defined policy of VOD. Select the policies as required.

Table 12-2 Common operations supported by each system-defined policy

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Adding a domain name	√	x	x
Modifying a domain name	√	x	x
Deleting a domain name	√	x	x
Viewing the domain name list	√	√	x
Enabling a domain name	√	x	x
Disabling a domain name	√	x	x
Modifying the HTTPS acceleration configuration of a domain name	√	x	x

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Querying the HTTPS acceleration configuration of a domain name	√	√	x
Modifying the URL validation configuration of a domain name	√	x	x
Querying the URL validation configuration of a domain name	√	√	x
Modifying the referer validation configuration of a domain name	√	x	x
Querying the referer validation configuration of a domain name	√	√	x
Querying media files	√	√	√
Querying media asset information	√	√	√
Modifying media asset attributes	√	x	√
Querying media asset details	√	√	√
Uploading media files	√	x	√
Updating a video	√	x	√
Deleting media files	√	x	√
Publishing media files	√	x	√
Canceling media file publish	√	x	√

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Creating a URL pull task	√	x	√
Querying a URL pull task	√	√	√
Deleting a URL pull task	√	x	√
Canceling a URL pull task	√	x	√
Resuming a URL pull task	√	x	√
Creating a pre-loading task	√	x	√
Querying a pre-loading task	√	√	√
Creating a media file processing task	√	x	√
Canceling a media file processing task	√	x	√
Creating an audio extraction task	√	x	√
Canceling an audio extraction task	√	x	√
Reviewing media files	√	x	√
Blocking media files	√	x	√
Querying information about blocked media files	√	√	√
Creating a custom template group	√	x	x
Querying custom template groups	√	√	x

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Modifying a custom template group	√	x	x
Deleting a custom template group	√	x	x
Creating a watermark template	√	x	x
Querying watermark templates	√	x	x
Modifying a watermark template	√	x	x
Deleting a watermark template	√	x	x
Creating a media category	√	x	x
Modifying a media category	√	x	x
Deleting a media category	√	x	x
Querying media categories	√	√	x
Configuring event notifications	√	x	x
Querying event notifications	√	√	x
Creating a workflow template	√	x	x
Modifying a workflow template	√	x	x
Deleting a workflow template	√	x	x

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Querying workflow templates	√	√	x
Viewing a workflow template	√	√	x
Creating a review template	√	x	x
Querying review templates	√	x	x
Modifying a review template	√	x	x
Deleting a review template	√	x	x
Querying buckets	√	√	x
Authorizing access to a bucket	√	x	x
Querying users	√	√	x
Updating roles associated with a user	√	x	x
Querying roles	√	√	x
Querying role details	√	√	x
Creating a role	√	x	x
Modifying a role	√	x	x
Deleting roles	√	x	x
Updating users associated with a role	√	x	x
Updating the permission template associated with a role	√	x	x

Operation	VOD FullAccess	VOD ReadOnlyAccess	VOD CommonOperations
Querying the permission template list	√	√	x
Creating a permission template	√	x	x
Modifying a permission template	√	x	x
Deleting a permission template	√	x	x

Helpful Links

- [IAM Service Overview](#)
- [Creating a User and Granting VOD Permissions](#)

Content of the VOD FullAccess Policy

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "vod:*"
      ]
    }
  ]
}
```

Content of the VOD ReadOnlyAccess Policy

```
{
  "Version": "1.1",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "vod:*get*",
        "vod:*list*"
      ]
    }
  ]
}
```

Content of the VOD CommonOperations Policy

```
{
  "Version": "1.1",
  "Statement": [
```

```
{  
  {  
    "Effect": "Allow",  
    "Action": [  
      "vod:asset:*"  
    ]  
  }  
]
```