Tencent RTC

Seamlessly Integrate Video and Voice Calling with Ease

Tencent Cloud Media Services

Contents

What is TRTC?

TRTC: Tencent Real-Time Communication

| Developed by the QQ audio/video team based on its over 21 years of experience in audio/video technologies, TRTC is a sellable RTC service deployed on Tencent Cloud.

| TRTC supports various Tencent services, including Tencent Meeting (VooV Meeting), WeChat live streaming (via group or Channels), WeCom live streaming, Tencent Classroom, and WeSing, making it the best practice among Tencent's rich audio/video scenarios.

Real-Time	Low Latency	High Latency
End-to-end latency: < 400 ms	End-to-end latency: 400-1000 ms	End-to-end latency: > 3s
Strong interaction: **zero tolerance** for perceptible latency; scenarios that require audio/video throughout the entire process for real-time audio/video interaction, audio/video call/co-anchoring, audio/video conferencing, etc.	Medium interaction: low tolerance to latency; interactive live streaming scenarios where the audience needs to maintain strong synchronization with the anchor or co-anchoring with the anchor at any time	Light interaction: the audience can accept a certain latency, and the anchor needs to respond to the audience's text, on-screen comment, and gift giving information in a timely manner

Tencent RTC Products

Tencent RTC

Call
1-to-1 and group video & voice call experience on any platform

Chat
Bring higher engagements with a chat API

Conference
Create interactive classrooms and meetings with real-time chat experiences

RTC Engine
Build your real-time interaction globally with our all-platform SDKs

Website: https://trtc.io/

RTC-Engine: Next-generation RTC SDK, Global, Flexible, Efficient

Tencent Cloud Media Services

> 99.9%

High Stability and Availability
We sustain tens of millions of concurrent requests with at least 99.9% service availability guaranteed by SLA. Its highly elastic and scalable network architecture has been well proven by tens of thousands of enterprise users.

< 300ms

Guaranteed Audio/Video Quality
We deliver a global end-to-end latency of below 300 ms on average. It can make audio calls under a packet loss rate of 80% and make video calls under a packet loss rate of 70%.

200+

Optimized Global Deployment
We are available in over 200 countries and regions and have been especially optimized for networks in Southeast Asia, the Middle East, and North America.
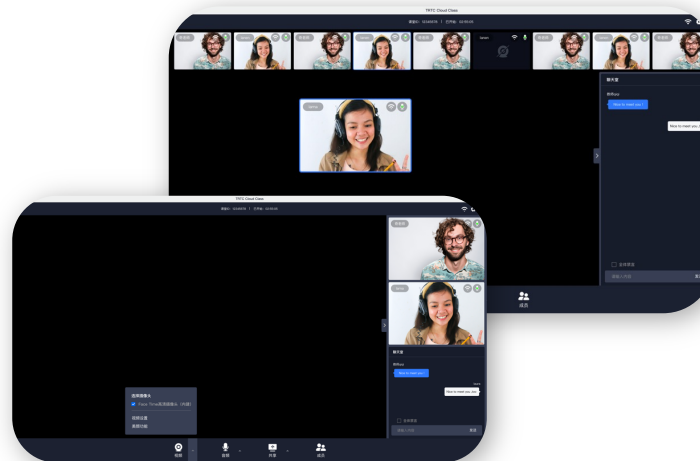
20,000+

High Compatibility
We support multiple platforms, including iOS, Android, Windows, macOS, web, Flutter, Electron, Unity, Unreal, and React Native, and are perfectly adaptable to over 20,000 device models.

Top trending use case scenarios

1. Audio Chat Room
2. Live PK
3. Gaming
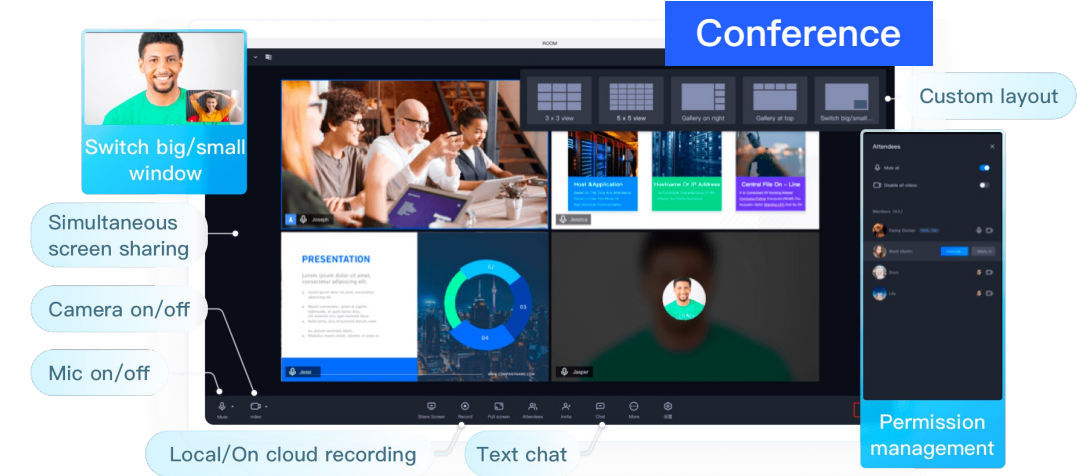4. Dating

1. Online Education
2. Remote Healthcare

1. Recruitment
2. Customer services
3. Comm. App
4. Remote housing services

For more info: https://trtc.io/

Call & Conference: With UI similar to Whatsapp & Zoom.
Deliver in-app video and voice calling & meeting within 30 minutes

Tencent Cloud Media Services

1-to-1 Call

Network connection monitoring

other party's signal is weak

Front/Rear camera switch

Mic on/off

Switch to audio

Cancel/Hang up

Camera on/off

Group Call

Big/Small window switch

Floating window

00:10

Cancel/Hang up

Speaker on/off

Mic on | Cancel | Speaker on

Conference

Switch big/small window

Simultaneous screen sharing

Camera on/off

Mic on/off

Custom layout

3 x 3 view | 5 x 5 view | Gallery on right | Gallery at top | Switch big/small

PRESENTATION

Permission management

Local/On cloud recording

Text chat

Use cases

✓ **Social & Community**
Blind dating, Happy hours, Online virtual parties, Family video board games

✓ **Telehealth**
Online medical consultation, Interactive medical education, Video first aid, Post-discharge follow ups

✓ **Sales and Consult**
Insurance consultation, Online financial services, Experts services

✓ **Online Education**
1-to-1 tutoring, Teacher-led lectures at scale, Exam proctoring, Webinars

Strengths

✓ **Easy Integration & UI Customization**

Experience seamless integration with Call & Conference: Our cutting-edge components and visually stunning UIs empower developers to accelerate audio/video app development by **a staggering 90%,** revolutionizing project launch timelines.

✓ **Cross-platform**

Discover cross-platform compatibility like never before, supporting Windows, Mac, Android, iOS, Web, Electron, and more. Experience seamless interoperability across diverse platforms, **fostering a truly interconnected development ecosystem.**

For more info: https://trtc.io/

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Basic Features

Tencent Cloud Media Services

Feature	Description	User Cases
Video call	720p/1080p one–to–one or group video calls Each room allows up to 300 concurrent users, and up to 50 of them can turn their cameras on at the same time.	One–to–one video calls, video conferences with up to 300 participants, online medical consultation, video chat, video customer service, video interviews, dual–channel recording, online insurance claim settlement, and video–based party games
Interactive video streaming	Video communication between anchors and audience members Cross–room anchor communication Smooth mic on/off without waiting; anchor latency less than 300 ms No upper limit on the cumulative number of co–anchoring users in a room; up to 50 users can keep their mics on at the same time. Streaming to up to 100,000 concurrent users and a playback latency as low as 1,000 ms in the low–latency live streaming mode No upper limit on audience size in the CDN live streaming mode	Low–latency live video streaming, interactive classrooms with up to 100,000 participants, live video competitions, video dating, remote training, large–scale conferences
On–Cloud Recording	Uses a recording MCU cluster to record the upstream audio and video streams in a room either separately or after mixing. Recording files are saved securely and in real time to VOD.	Dual–channel recording, archiving, compliance
On–Cloud MixTranscoding	Uses an MCU cluster to mix and transcode the audio and video streams in a room and publishes the mixed stream to CSS for on–cloud recording or CDN playback.	Stream mixing, recording format conversion
Publishing to CSS CDN	Uses a relay and transcoding cluster to convert UDP streams into RTMP streams in the cloud, pushes the streams to CSS, and distributes them via CDNs. This feature is also called "Relay to CDN".	Interactive live streaming, live sharing, large–scale conferencing, live stream viewing by remote users

Key Advanced Features

Tencent Cloud
Media Services

| Feature	Description	User Cases
AI noise suppression	Removes intermittent noises that traditional noise suppression technologies cannot handle, such as cough, sneeze, and car horn. If Chat features are used, noise suppression can work for both TRTC calls and local recordings.	Audio call, video call, interactive live streaming, audio chat room, online class
3A processing	Leverages the industry-leading 3A (acoustic echo cancellation, active noise suppression, automatic gain control) technologies of Tencent Ethereal Audio Lab to deliver high audio quality even when multiple people speak at the same time or in the presence of background noises.	All audio scenarios
Less stutter under poor network conditions	Reduces stutter rate and loading time under poor network conditions.	Audio call, video call, interactive live streaming, audio chat room, online class
RTMP Streaming with TRTC	Publishes and plays streams using RTMP.	Online class, sports event streaming
Cross-room communication	Anchors from different rooms can communicate with each other while audience members watch.	Showroom streaming, cross-room match, cross-room class
Screen sharing	The anchor can share the desktop, a window (for example, a Microsoft PowerPoint window), or a portion of the desktop to others.	Online class, slide sharing, remote assistance
Audio effects	Audio effects such as applauding, cheering, whistling, and booing	Audio call, video call, interactive live streaming, audio chat room, karaoke, FM radio

TRTC: TRAE, industry-leading audio engine

3A processing* is mandatory for real-time interaction scenarios where user audio data is both received and sent.

TRAE**: Industry-leading real-time audio engine developed by Tencent

Outstanding 3A processing effect, excellent audio processing capability, and premium performance

Underlying audio technologies for various applications such as QQ, WeChat, WeSing, and QQ Music


Before

After

Speech at the remote end   Speech at the local end   Speech at both ends
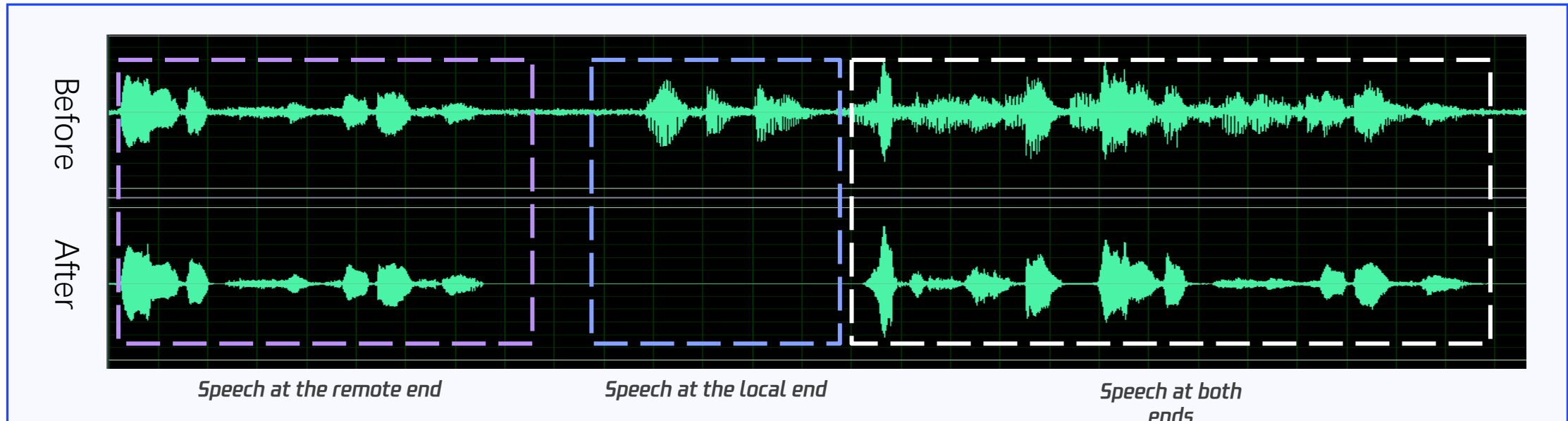
* 3A processing: acoustic echo cancellation (AEC), active noise suppression (ANS), and automatic gain control (AGC)   ** TRAE: Tencent Real-time Audio Engine

*** The figure shows TRAE's AEC capability in the scenarios with speaking at both ends

TRTC: cFEC, Context-based forward error correction (FEC)

TRTC builds a model for audio signals and establishes FEC capabilities on the signal source side to improve the audio quality where the packet loss rate is high.

Male voice (Opus)   Male voice (cFEC)

Female voice (Opus)   Female voice (cFEC)
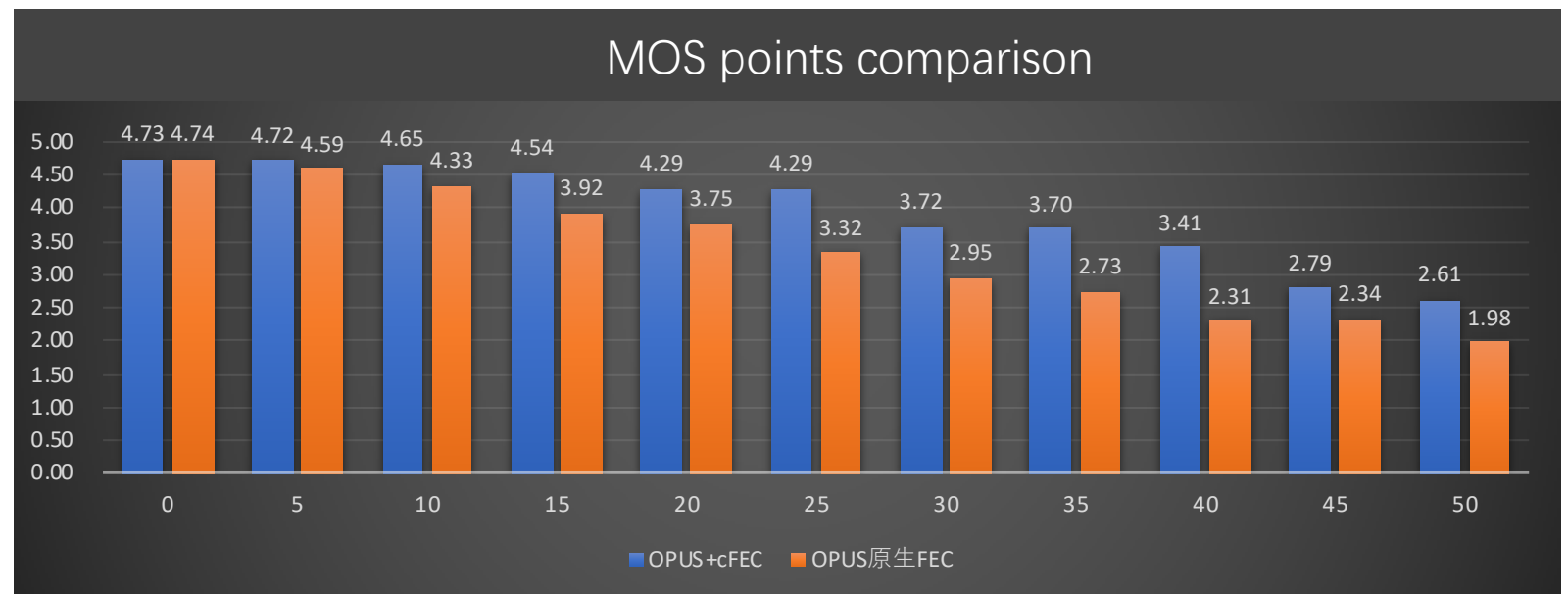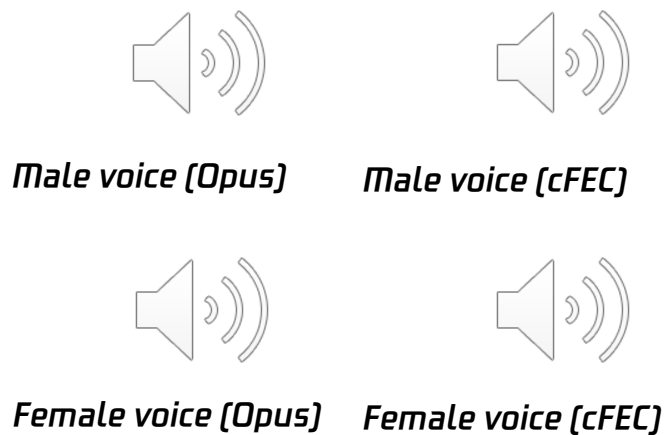
Effect comparison with 40% PLR

* PLR: package loss rate

* MOC: mean opinion score, Important Index of Voice Quality in Communication System

MOS points comparison

PLR	OPUS+cFEC	OPUS原生FEC
0	4.73	4.74
5	4.72	4.59
10	4.65	4.33
15	4.54	3.92
20	4.29	3.75
25	4.29	3.32
30	3.72	2.95
35	3.70	2.73
40	3.41	2.31
45	2.79	2.34
50	2.61	1.98

Comparison between cFEC and native FEC capabilities of Opus

TRTC: cPLC, context-based packet loss concealment (PLC)

cPLC: Context-based PLC

Original audio

Multiple consecutive frames are lost, seriously compromising the experience

Audio with packet loss

Random sudden packet loss for 120 ms

cPLC compensation effect

TRTC: Poor Network Field Test and Comparison
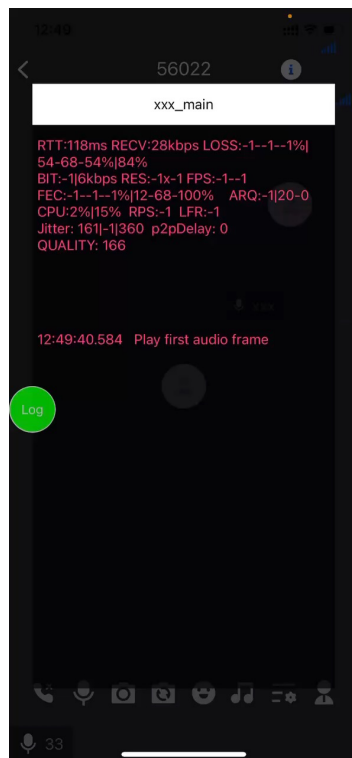
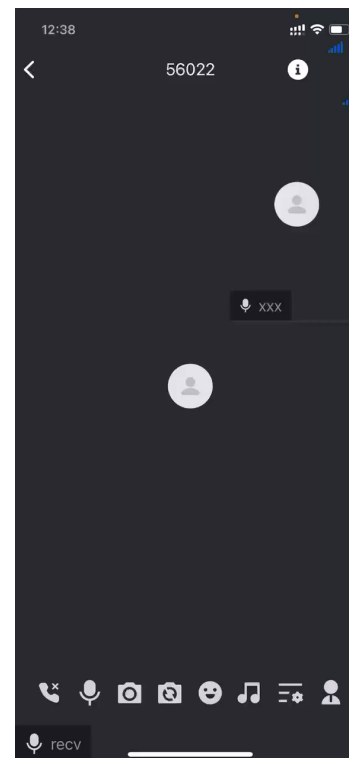**Poor Network Simulation:**

80%
Downstream Packet Loss

+100MS
Additional transmission delay

Tencent Cloud TRTC

Other RTC provider

TRTC: Audio quality comparison

iOS upstream，Android downstream

Scenario	TRTC		Third Party	
	MOS Score	Latency（ms）	MOS Score	Latency（ms）
No loss	4.749	256.6	2.69	468.28
Upstream network 30% loss	4.669	349.47	1.933	328.57
Upstream poor network 1.5Mbps + 10%loss	4.25	533.82	2.394	482.88
Downstream network 30% loss	4.72	355.16	2.167	634.57
Downstream network 10%loss + 200ms delay	4.729	663.75	2.765	707.41

Android upstream，iOS downstream

Scenario	TRTC		Third Party	
	MOS Score	Latency（ms）	MOS Score	Latency（ms）
No loss	4.749	193.04	4.172	513.22
Upstream network 30% loss	4.592	277.79	2.934	521.71
Upstream poor network 1.5Mbps + 10%loss	4.304	411.28	3.495	491.85
Downstream network 30% loss	4.736	293.33	2.817	345.91
Downstream network 10%loss + 200ms delay	4.675	604.4	3.25	731.79

RTC-Engine Version Features

Tencent RTC

Free Trial

Enjoy 10,000 free minutes every month – experience top-notch RTC without needing a credit card!

Pay-as-you-go not supported

Standard

Buy one, get one free*

Most flexible and widely used real-time audio and video SDK, with special discounted durations.

Pay-as-you-go

Pro

Buy one, get one free*

Elevate your application above the competition with 3D spatial audio and stunning 2K/4K video quality.
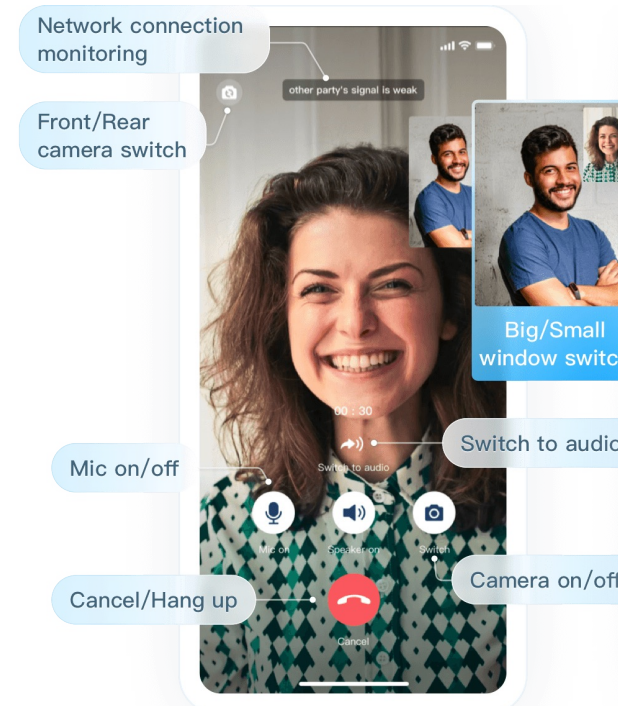
Pay-as-you-go

*Buy one, get one free with your first UIN purchase and automatic renewal.

| Item	Free Trail	Standard $499/month	Pro $1499/month
Durations	10,000 minutes/month	500,000 minutes/month	1,500,000 minutes/month
Audio/Video Call	✓	✓	✓
On-cloud recording	✓	✓	✓
On-Cloud MixTranscoding	✓	✓	✓
Relay to CSS	✓	✓	✓
AI noise suppression	–	✓	✓
Less stutter under poor network conditions	–	✓	✓
RTMP publish/playback	–	✓	✓
3D spatial audio	–	–	✓
Scaled video coding	–	–	✓
Region of interest coding	–	–	✓
2K/4K video quality	–	–	✓
Pay-as-you-go	Not Supported	Audio：$0.99/1,000minutes Video HD：$3.99/1,000minutes	

For more info: https://trtc.io/

Call: With UI similar to WeChat.
Deliver in-app video and voice calling within 30 minutes

Tencent RTC

Feature	Free Trail $0-7 days	1-to-1 Call $598/month	Group Call $1298/month
Free Minutes	10,000	200,000 minutes/month	600,000 minutes/month
Free MAU	100/month	10,000/month	10,000/month
1-to-1 Call	✓	✓	✓
Complete UI	✓	✓	✓
Make/Answer/Decline/Hang up a Call	✓	✓	✓
Offline Push	✓	✓	✓
Floating Window	✓	✓	✓
Group Call	✓	✕	✓
Multi-Platform/Multi-Platform Call	✓	✕	✓
AI Noise Suppression	✓	✕	✓
Less Stutter Under Poor Network Conditions	✓	✕	✓
Chat Features	Developer Plan Features	Standard Plan Features	Premium Plan Features
Out-of-plan Fee (Pay-as-you-go]	Not Supported	Audio Call：$0.99/1,000minutes Video Call-HD：$3.99/1,000minutes MUA：$0.015/user/month	
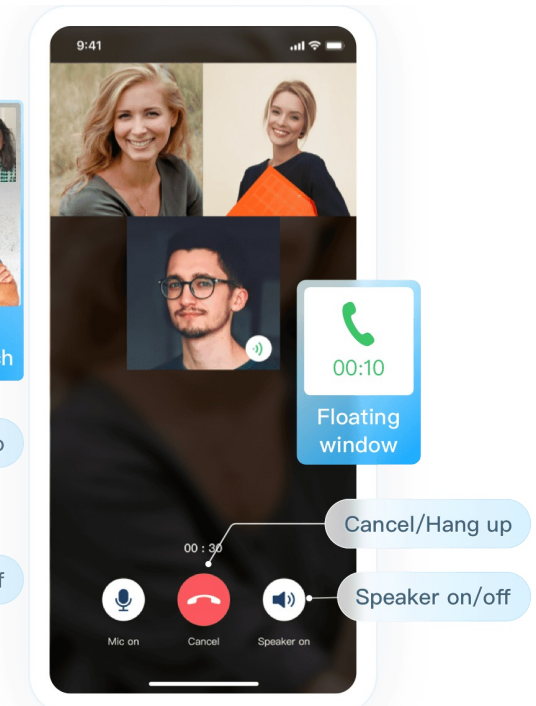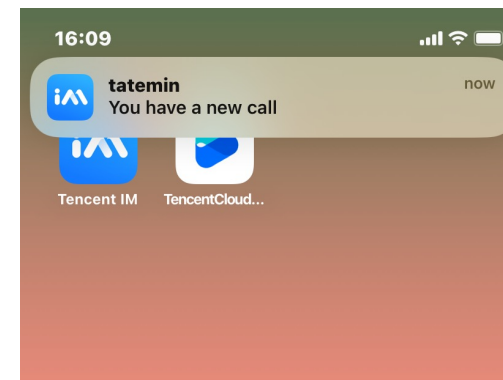
For more info: https://trtc.io/

1-to-1 Call

Group Call

Offline Push
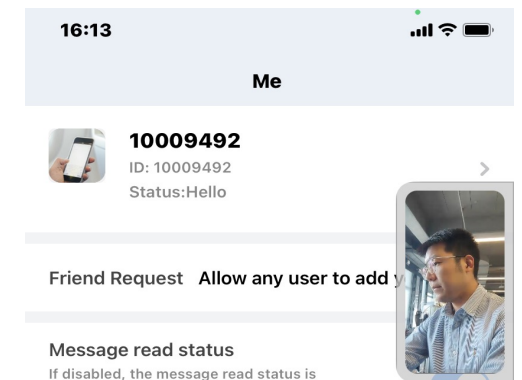
Floating Window

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Media Services

Pan–entertainment
Rich variety of scenario–specific features, improving the value of traffic

Tencent Cloud
Media Services

Audio social networking

Online karaoke/duet
High sound quality in low–latency in–ear monitoring scenario Ultra low end–to–end latency of below 100 ms
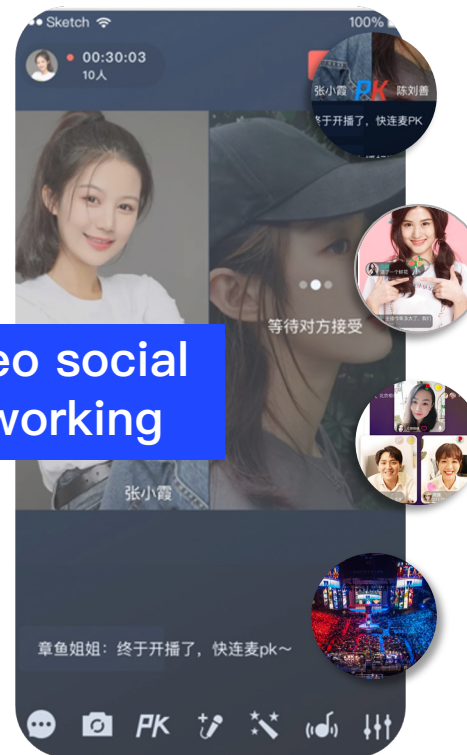
Voice chat room/Chat salon
Large room with no user limit and support for fast mic–on In–room audio stream mix reduces bandwidth exponentially

Interactive voice game
Fun features such as voice changing, reverb, and sound effects The same 3A engine used by VooV Meeting

FM radio
48 kHz sample rate
192 Kbps dual–channel stereo

Video social networking

Anchor competition live streaming
Special optimizations in image quality for High Profile
Flexible cloud–based control policies such as "image quality preferred" or "smoothness preferred"

Ecommerce/Enterprise live streaming
Cross–platform SDK ultra–low latency live broadcast

Multi–Person interactive live streaming
Instant streaming, optimization of room entry latency, and image rendering within milliseconds
Multi–Screen sharing with more new features
Seamless viewer mic–on/off supported for high–frequency interaction

Sports live streaming
Support for Nvidia and Intel hardware encoding
Support for high frame rate (60 FPS) and high bitrate 1080p stream push

Success stories   JOOX LIVE YOUR MUSIC   .yellinc.   Pokekara   wesing   MOMO   papayaglobal

Online Education
Easy implementation of interactive teaching with ultra low latency and high quality

Tencent Cloud
Media Services

Small class

It uses the same 3A engine used by VooV Meeting and a smart noise cancellation algorithm
Its performance is specifically optimized for low-end devices
It supports personalized on-cloud recording

Big class

It supports watch with an ultra-low latency of below 1s and sync between audio/video and whiteboard
It offers large rooms that can accommodate over one million users each and supports seamless student mic-on/off

Mini class

Its APIs are designed to support business-level sub-rooms and push/pull styles

Team A

Team B

One-on-one online teaching

It is deployed globally and optimizes level-2 ISP network
It supports nearby access for users in the last mile
It provides a lightweight WYSIWYG recording solution

Online music teaching

Its noise reduction algorithm guarantees the music quality in music scenarios Its 48 kHz sample rate and the 192 Kbps bitrate deliver a high audio quality

AI Class

Its server can push media streams (raw streams and video files are supported)
Its high-performance server SDK saves computing power

Success stories

VIPKID   掌门1对1   TAL 好未来   EF   新东方 XDF.CN

Communication
Fast access and integrated communication

Tencent Cloud Media Services

Remote consultation

Based on TRTC and instant messaging IM services, it supports 1v1 and multi–person video/voice calls

Supports Android, iOS, PC, Mac, Web, and Flutter full–end and full–platform solutions
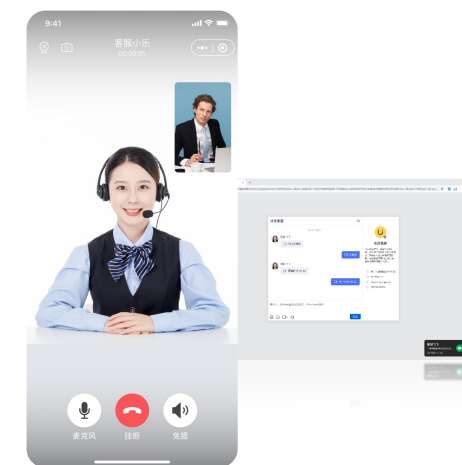
Intelligent hardware

Conference

Unifying TRTC and PSTN, the same Tencent Meeting mixing engine, and narrowband audio super–resolution algorithm are used.

Remote customer service

Highly reliable multi–copy cloud recording Full–link custom encryption and decryption meets financial–level security requirements

Success stories

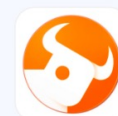Tencent QiDian   WeCom   VooV Meeting   Bank of China   Ping An Insurance   China Pacific Insurance   Shanghai Pudong Development Bank   Gw.com.cn   Futubull
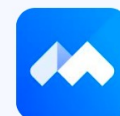
Tencent Cloud
Media Services

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Overall competitiveness Comparison

Tencent Cloud TRTC is leading in overall competitiveness, with more diverse product matrices compared to vendors in specific segments such as Agora ZEGO. Compared to comprehensive manufacturers like Huawei Cloud and Alibaba Cloud, Tencent Cloud TRTC's products are more mature. For example, Agora ZEGO, you can focus on developing a product combination strategy.

Main Competitors	Tencent Cloud Media Services	Agora	Zego
Main Scenario	Relying on RT–One+Video Cube, we provide an audio and video solution that can be used out of the box for the entire industry	RTC + IM, mainly promoting education and pan–entertainment scenes	Focusing on RTC, promoting pan–entertainment scenarios, as well as private and small scenarios such as XiaoYiBang.
Advantages and disadvantages	● Rich in product matrix, solid foundation. ● Audio and video PaaS is the No.1 in entertainment, e–commerce, online education and other sub–segments. ● RTC growth rate is No.1.	● There is a clear advantage in the RTC sub–track, with a leading position in both existing customers and industry influence ● The overseas brand and customer base have a head start.	● The pan–entertainment scenario solution is complete, and the scenarios such as mini–games and the metaverse are rich. ● Private revenue is impressive.

- The authoritative market research organization Sullivan released the "Sharing of Asia-Pacific Media Service Market Report, 2022" (Sharing of Asia-Pacific Media Service Market Report, 2022), which analyzed mainstream video clouds in 9 Asia-Pacific regions, including China, Japan, South Korea, Malaysia, and Singapore. Market analysis and research

- Tencent Cloud Media Services' solutions have ranked first in market share for five consecutive years, according to the "IDC China Semiannual Video Cloud Tracker, 2022H2".

Features Comparison

Tencent Cloud Media Services

In terms of product features, TRTC has surpassed Zego and Agora, and has leading advantages in AI noise reduction, cross–platform support, and video ROI coding.

Classification	Features	Tencent Cloud TRTC	Agora.io	Zego
Basic Feature	Video Call	✓	✓	✓
	Audio Call	✓	✓	✓
	Interactive Live Streaming	✓	✓	✓
	Beauty Filtering	✓	by Extension	by Extension
	Audio Effects	✓	✓	✓
	Voice Process	✓	✓	✓
Advanced Features	Interactive Whiteboard	✓	✓	✓
	Builting UI SDK	✓	✓	✓
	Screen sharing	✓	✓	✓
	On–Cloud MixTranscoding	✓	✓	✓
	3A processing	✓	✓	✓
	AI–based noise suppression	✓	✓	✓
	Auto Screenshot	✓	✓	API Trigger Only
	Moderation	✓	by Extension	by Extension
	E2E Encryption	✓	✓	✓
	Strongest Volumn Pick	✓	✓	Need Development
	On–Cloud recording	✓	✓	✓
	Compatibility	Web, Electron, iOS, Android, Win, Mac, Flutter, Unity, QT, ReactNative	Web, Electron, iOS, Android, Win, Mac, Flutter, Unity, QT, ReactNative, Unreal Engine	iOS, Android, macOS, Windows, HarmonyOS, Linux, Web, Flutter, Electron, Unity3D, React Native, CocosCreator

Performance Comparison

performance comparison: TRTC has a clear lead in audio quality, stability, and success rate in entering the room. In other areas, it has advantages. In terms of AI noise reduction, Agora is average, and ZEGO is worse in overall stability.

Key Performance Indicators	Tencent RTC	Agora	Zego
Audio Quality	Excellent	Average	Average
Video Quality	Excellent	Excellent	Excellent
Room Entry Success Rate	Excellent	Average	Excellent
CPU and Memory Consumption	Lowest	Lowest	Medium
Stability	High	High	Medium

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Tencent Cloud
Media Services

MixChannel

MIXCHANNEL is a top–tier streaming platform in Japan. MixChannel was officially launched in 2013 and launched a live broadcast service in 2017. Currently, it has more than 17 million users and 5 million monthly active users. Focus on short video and live broadcast business.

Challenges:
- Speed up smartphone app development
- Reduce running and maintenance costs
- Reduce live streaming latency

Tencent Cloud
Media Services

Main Scenarios:

Anchor Streaming

Live Streaming Playing

Short Video Playing

Video Editing and Uploading

TRTC

High quality and low latency
Anti–network jitter
Anti–packet loss

CSS

End–to–end low latency

Record

VOD

Smart cold storage
Lower Storage Cost

MPS

Higher quality
Lower traffic cost

Upload

Effect SDK

A one–stop beauty effects and stickers integration solution
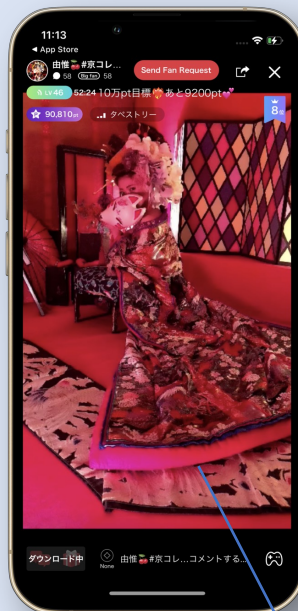
Player
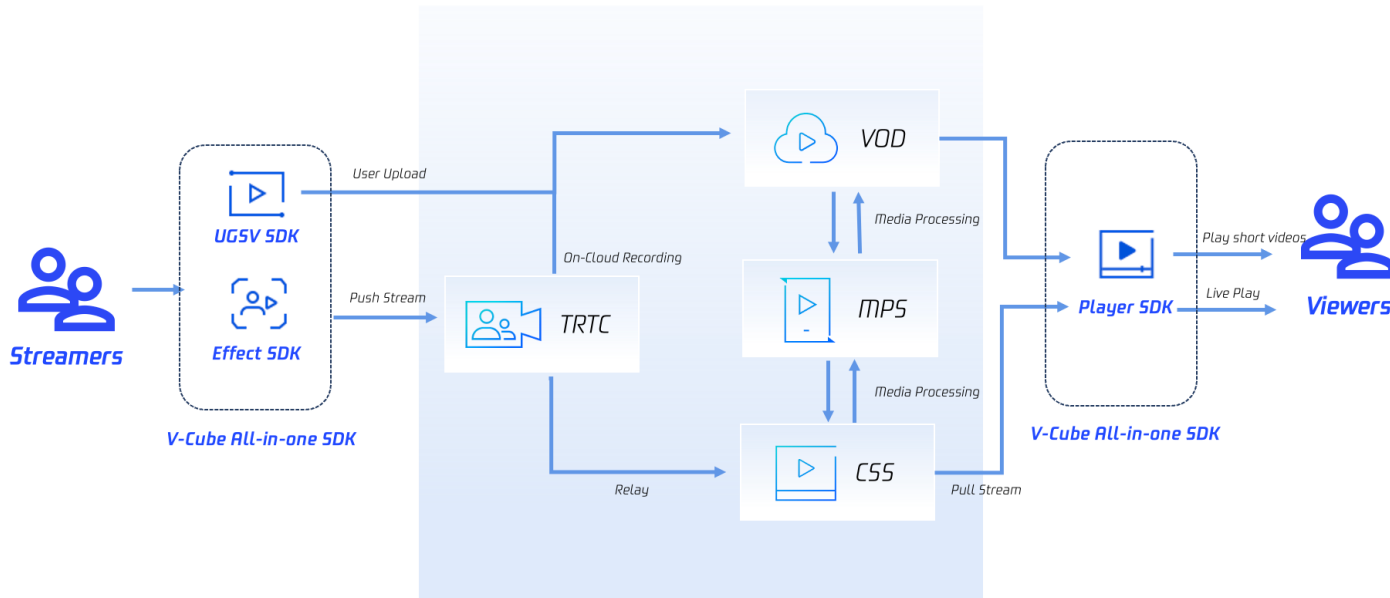
Live playing and video playing

UGSV SDK

A one–stop short video integration solution

Summary of Successful Case

Key Success Factors:

1. One-stop solution, low cost, and high quality
2. TRTC with low latency

Solution Architecture:

Streamers → **V-Cube All-in-one SDK** (UGSV SDK, Effect SDK)
- User Upload → VOD
- Push Stream → TRTC
- On-Cloud Recording
- Relay → CSS

VOD ↔ Media Processing ↔ MPS ↔ Media Processing ↔ CSS

Player SDK (**V-Cube All-in-one SDK**) → Play short videos / Live Play → **Viewers**
Pull Stream

Key Solutions and Benefits

User Generated Short Video (UGSV) / Tencent Effect SDK
- One-stop SDK easy-to-use
- Speed up development

Tencent Real-Time Communication (TRTC)
- TRTC features an end-to-end latency of less than 300ms
- Anti-network jitter and anti-packet loss

Live Event Broadcasting (LEB) – the ultra-low-latency version of Cloud Streaming Services (CSS)
- LEB features end-to-end latency of less than 1 sec for all platforms with unlimited connections.
- Build system with all PaaS products; maintenance-free

VOD
- Smart cold storage reduce storage costs
- Industry-Leading Upload Acceleration

MPS
- Top speed codec
- flexibly adjust bitrates reduce traffic cost

Highlights

- Low development cost with UGSV/Tencent Effect/TRTC multi-platform SDKS
- Smooth live streaming with ultra-low-latency product LEB
- Maintenance-free for all the media PaaS products
- Distinctive features like online karaoke are available in TRTC

Results

- Smart phone app has been quickly develop
- Ready to use PaaS solution to save infra operation costs
- Low latency and high quality help to acquire more end users

Momo

腾讯云

Momo is a leading Chinese location-based open mobile video and social networking application launched by Hello Group Inc. (NASDAQ: Momo) in August 2011.

TRTC has been serving various businesses of Momo such as **Hezi, audio chat room, Werewolf, Duidui, show live streaming, and Tantan**, covering diverse scenarios including **social networking through audio chat, video matchmaking, show live streaming, and audio/video call**.

Requirements and challenges
- High quality: audio/video quality is the lifeline of the customer's businesses, and live streaming effects directly determine anchor/viewer retention.
- Stability: the customer's user base is huge, which creates high requirements for platform stability and SLA.

Solutions
- **High quality**
    - AI-Based noise cancellation: support from Tencent Ethereal Audio Lab with the **same 3A engine used by VooV Meeting**
    - **Seamless viewer mic-on/off,** enhancing the frequent interaction experience
    - Audio: **192 Kbps dual-channel stereo** and HE-AAC support for stream mix relaying
    - Video: special optimizations for **High Profile**, with **H.265** support for stream mix, improving the watch experience
    - In-ear monitoring with an ultra-low latency optimized for major phone brands, **delivering a latency of down to 50 ms**
    - Wide availability in **more than 200** countries and regions and Direct Connect-based node interconnection
- **Stability**
    - Support for tens of millions of concurrent users every day, with a daily peak combined call duration of **3 billion minutes**
    - Support from dedicated service teams and customized alarming granularities

Show live streaming   **Video matchmaking**   **Audio chat room**

Bixin

Established in 2014, Bixin aims to create a digital entertainment community centered on esports, connect to generation Z users through various ways such as skill sharing, and grow together with users. It has over 8 million anchors and over 60 million registered users.

TRTC has been serving various businesses of Bixin such as **Bixin app, Yuer Voice, and Yuer Live,** covering diverse scenarios including **audio-enabled team battling, online karaoke, game live streaming, co-anchoring competition, audio-enabled interactive gaming, and audio chat room.**

Requirements and challenges

- **High sound quality:** karaoke rooms require a high sound quality.
- **Low latency:** audio-enabled team battling requires low latency and high immunity to bad network conditions.
- **High image quality:** PvP games require a high video image quality and great smoothness.
- **Copyright:** karaoke requires copyright support.

Solutions

- **High sound quality:**
  - Support from Tencent Ethereal Audio Lab with the **same 3A engine used by VooV Meeting**
  - **192 Kbps dual-channel stereo** and HE-AAC support for stream mix relaying
- **Low latency:**
  - Co-anchoring latency **of below 300 ms** and a packet loss prevention rate of **over 50%,** making interactions smoother
  - Accurate **clock sync algorithm:** multiple time syncs with NTP, ensuring accurate and synchronous video playback across terminal devices
  - Wide availability in **more than 200** countries and regions and Direct Connect-based node interconnection
- **High image quality:**
  - Support for real-time audio/video live streaming with **8 Mbps bitrate, 60 fps frame rate, and 1080p resolution**
  - Support for hardware encoding and decoding with NVIDIA and Intel devices
- **Copyright: direct access to over 200,000 copyrighted songs billed by effective playbacks**

Karaoke room   **Play-Together**   **Game live streaming**

Zhenai.com

Established in 2005, Zhenai.com has been providing dating and matchmaking services to over 220 million registered members for 16 years. With more than 50 brick-and-mortar direct-sale stores in 39 major cities across China and over 5,000 professional matchmakers, it has ranked first in the China Brand Power Index in the Chinese dating and matchmaking industry for many years in a row and was awarded "Brand of the Year 2013" by the China Central Television. As a pioneer in the efficient dating and matchmaking service model of "online selection + matchmaker", Zhenai.com aims to create a secure and trustworthy dating platform.

TRTC provides various features such as audio/video call, stream mix, and audit for the video dating room service of Zhenai.com.

Requirements and challenges
- High quality: audio/video quality is the lifeline of the customer's businesses, and poor call performance, lags, and black screen would affect user retention.
- Compliance: video recording, screencapturing, and porn detection features are required.

Solutions
- High quality
  - AI-Based noise cancellation: support from Tencent Ethereal Audio Lab with the same 3A engine used by VooV Meeting
  - Co-anchoring latency of below 300 ms and a packet loss prevention rate of over 50%, making interactions smoother
  - Support from dedicated service teams and customized alarming granularities, delivering a smooth user experience
  - Smooth mic-on/off with no lags and black screen
- Compliance:
  - The On-Cloud MixTranscoding feature of TRTC adjusts the room layout based on the call conditions, which reduces the audit costs

Xiaohongshu

Xiaohongshu is a lifestyle platform for youngsters, where users can capture the moments in their life in the forms of short video, rich media, and live streaming to share their lifestyles and interact with each other based on hobbies. As of October 2019, Xiaohongshu had over 100 million MAUs, and 70% of them were post-90s. Its user base continues to grow rapidly.

TRTC has been serving various business scenarios of **Xiaohongshu**, including **influencer marketing and viewer co-anchoring.**

Requirements and challenges
- High image quality: an HD watch experience is desired.
- Ultra-Low latency: campaigns such as marketing promotions, flash sales, and limited-time offers require an ultra-low latency interactive experience.
- Stability: the customer's user base is huge, which creates high requirements for platform stability and SLA.
- One-Stop service: a one-stop influencer marketing solution is required.

Solutions
- **High quality**
  - Special optimizations for **High Profile**, with **H.265** support for stream mix, enabling a fast HD watch experience backed by Tencent Extreme Speed High Definition (TESHD)
- **Ultra-Low latency**
  - Co-anchoring latency **of below 300 ms** and a packet loss prevention rate of **over 50%**, making interactions smoother
- **Stability**
  - Support from **dedicated service teams** and customized alarming granularities, delivering a smooth user experience
- **One-Stop service**
  - TRTC offers a one-stop ecommerce live streaming solution that supports stream push, co-anchoring, and live event broadcasting (LEB) watch
  - **IM** is used to present products and enable interactive commenting

Influencer marketing

KE
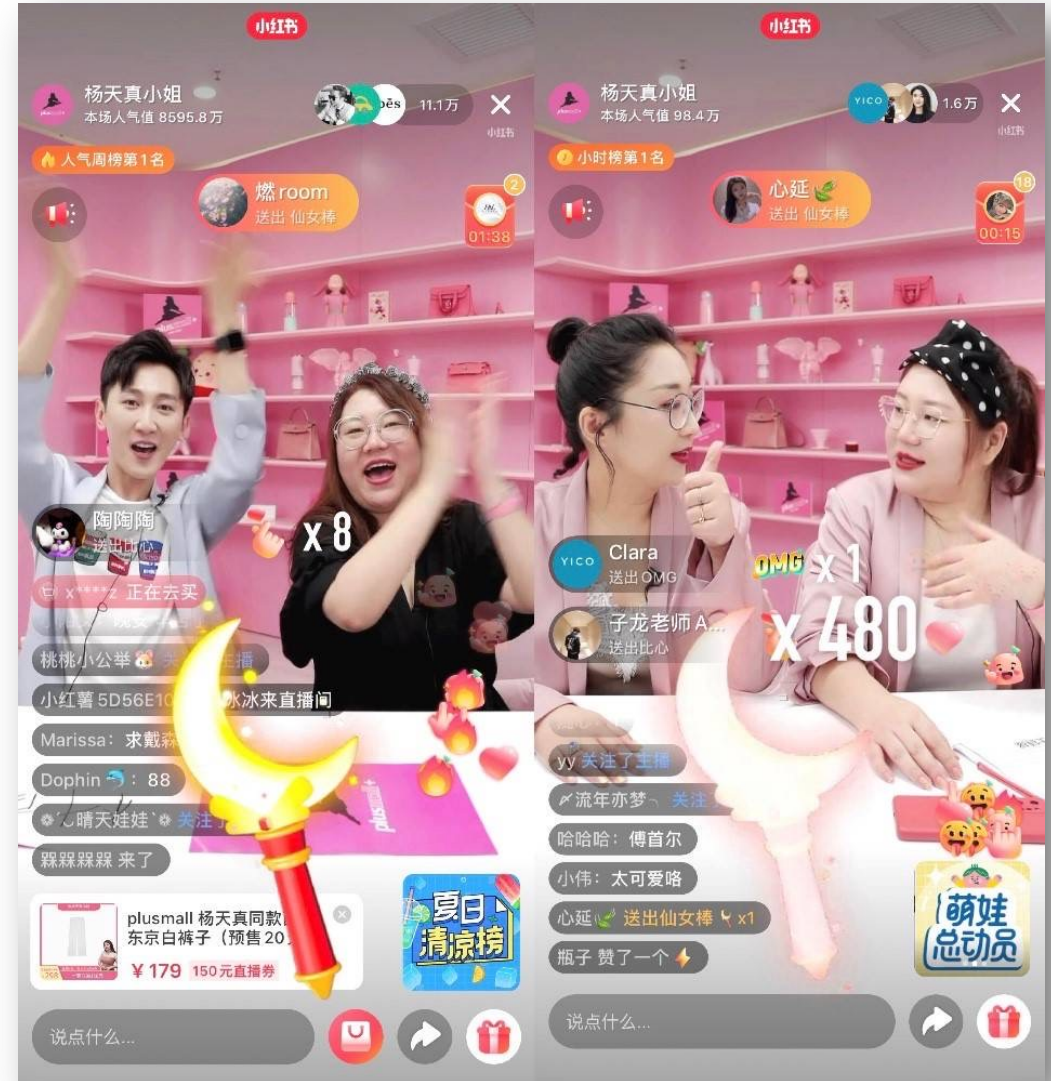
As a technology-driven new housing service provider, KE is committed to moving the housing service industry into a digital and smart era and helping users find ideal housing with the aid of excellent service providers through aggregation. It covers more than 300 cities across China, serves over 300 million community households, connects 1 million real estate brokers and 100,000 agencies, and empowers 100+ brands.

TRTC has been serving various businesses of KE such as **VR-enabled property viewing and Shell Future Home**, covering diverse scenarios including **audio co-anchoring and video transfer**.

Requirements and challenges
- High quality: FHD video quality is required to deliver optimal rendering effects.
- Ultra-Low latency: an ultra-low latency is required for video calls.
- Mini program: support for mini program-based interactions is required.

Solutions
- High quality:
  - **2K resolution**, enabling the clear display of the decoration rendering effects
- Ultra-Low latency:
  - Video transfer with a latency of **below 150 ms**
- Mini program:
  - Exclusive **support for RTC-enabled video call on WeChat Mini Program**, meeting the needs for **communication between different terminals**

Shell Future Home

Zhaopin

Founded in 1994, Zhaopin has more than 180 million users, with more than 6.3 million DAUs on average and more than 4.56 million enterprise partners. It has set up 39 branches in 200+ cities across China and successively invested in strategic partners such as 51shebao, Maimai, and Oxcoder to constantly expand its ecosystem. In early 2021 when face-to-face interviews were made impossible by the COVID-19 pandemic, the Zhaopin app launched the live streaming and interview features, allowing fresh graduates to have video interviews with recruiters.

TRTC has been serving various business scenarios of Zhaopin, including live co-anchoring and video interview.

Requirements and challenges
- High quality: a low latency and high performance in weak network environments are required to ensure the smooth conduct of interviews in China's tier-3/4 cities.
- Recording solution: a personalized recording solution is required.
- One-Stop service: a one-stop recruitment solution is required.

Solutions
- High quality:
  - Co-anchoring latency of below 300 ms and a packet loss prevention rate of over 50%, making interactions smoother
- Recording solution:
  - On-cloud recording (companion system), providing personalized recording templates for individual rooms
- One-Stop service:
  - Rich use cases implemented through IM, such as flash sales and text interaction

Live streaming   Job fair

视频会诊类

GE healthcare是GE集团旗下（NYSE: GE）的医疗健康业务部门，年营收超170亿美元。致力于成为引领精准医疗的创新者，GE医疗提供智能设备、数据分析、软件应用和服务，实现从疾病诊断、治疗到监护的全方位精准医疗生态体系。GE医疗拥有100多年的悠久历史，在全球160多个国家拥有约5.6万名员工**。**

业务上为了提升诊断效率和专家资源的利用， GE healthcare**把基于**TRTC**搭建的远程会诊应用搭配超声主机一起售卖，超声操作员和患者在诊室里做现场检查，专家远程实时对超声影响做诊断。本套系统随着**GE healthcare**一起售卖到南北美、印度等地区**

Requirements and challenges
- High quality: support for global coverage is required, mainly in North America. Co-anchoring requires a low latency.
- Global availability: a high global service quality is required.
- Recording solution: a personalized recording solution is required.

Solutions
- High quality
  - Tencent Cloud's wide node coverage in North America China and India, supporting nearby access and delivering a smoother playback experience
  - Co-anchoring latency **of below 300 ms** and a packet loss prevention rate of **over 50%**, making interactions smoother
  - **Smooth viewer mic-on/off,** enhancing the frequent interaction experience
- Recording solution:
  - On-cloud recording (companion system), providing personalized recording templates for individual rooms
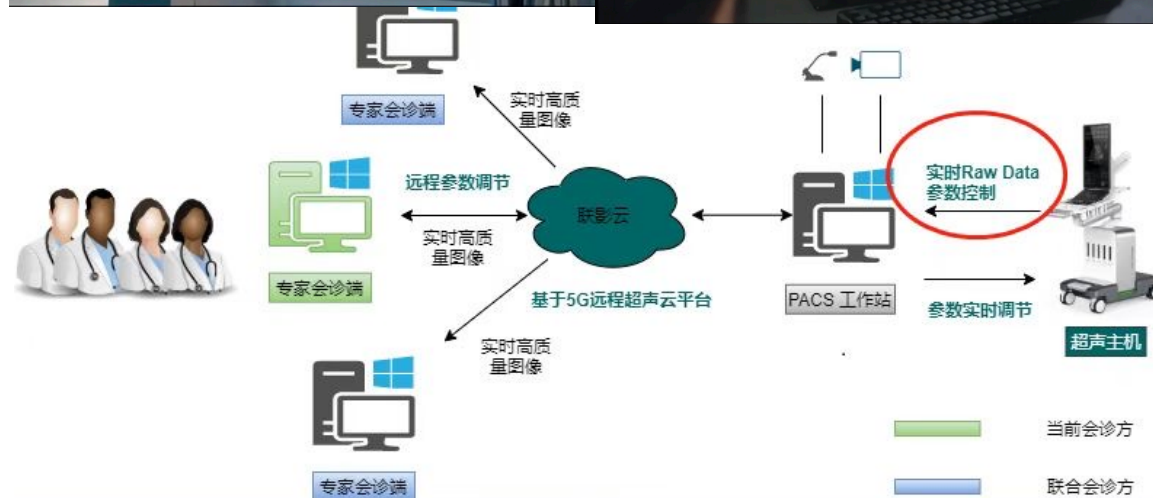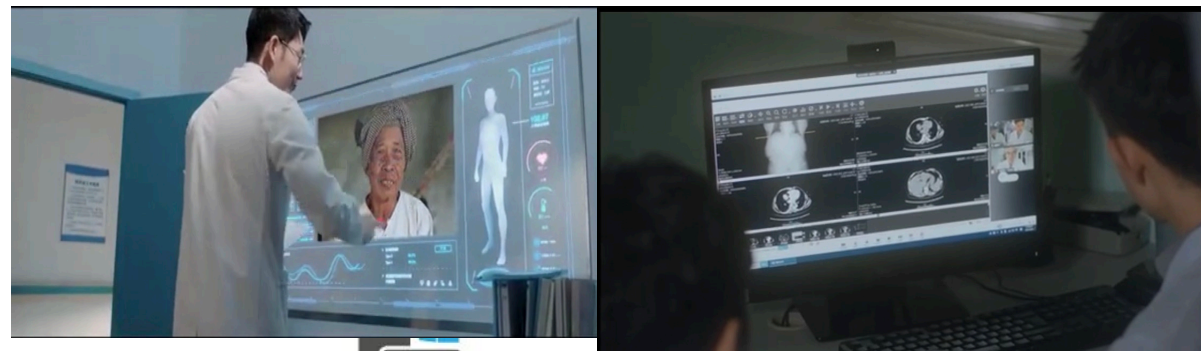
其他落地案例：和缓医疗、红云智控

7×24小时伴随式服务 快速匹配合适的权威专家
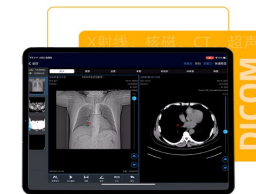
数字化影像和数字化病理 移动会诊更高效更专业

知名三甲专家权威网络 覆盖各专科主要病种

老百姓大药房〔上海证券交易所主板上市公司，股票代码603883〕是中国具有影响力的药品零售连锁企业，中国药品零售企业综合竞争力百强冠军、中国服务业500强企业、湖南省百强企业。

自2001年创立以来，现已成功开发了湖南、陕西、浙江、江苏等20个省级市场，拥有门店10000+家、总资产169.58亿元、员工3万人、2021年销售额156.96亿元。

处方管理办法出台以来，提高处方质量，促进合理用药，处方药分等级需要医师面对面跟患者视频确认来保障医疗安全。受covid-19影响，促进了医师和患者的线上沟通，老百姓大药房也集成TRTC

Requirements and challenges

- High quality: support for global coverage is required, mainly in North America. Co-anchoring requires a low latency.
- One-Stop service: a one-stop interactive co-anchoring and IM solution is required.

Solutions

- **High quality**
  - **Tencent Cloud's wide node coverage, supporting nearby access and delivering a smoother playback experience**
  - **Co-anchoring latency of below 300 ms and a packet loss prevention rate of over 50%, making interactions smoother**
  - **Ethereal audio engine developed by Tencent Media Lab, offering a higher sound quality**

- **One-Stop service:**
  - **Interactive features such as mic sequence management, interaction, and liking can be implemented through IM**
  - **Send Instant Message via Tencent IM SDK**

其他落地案例：致医、肖瘤医生
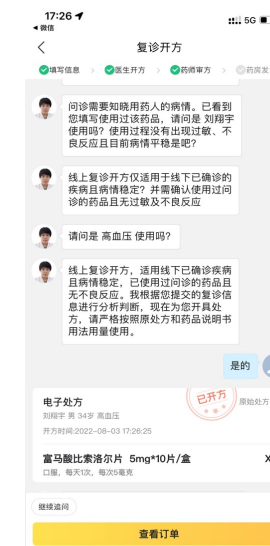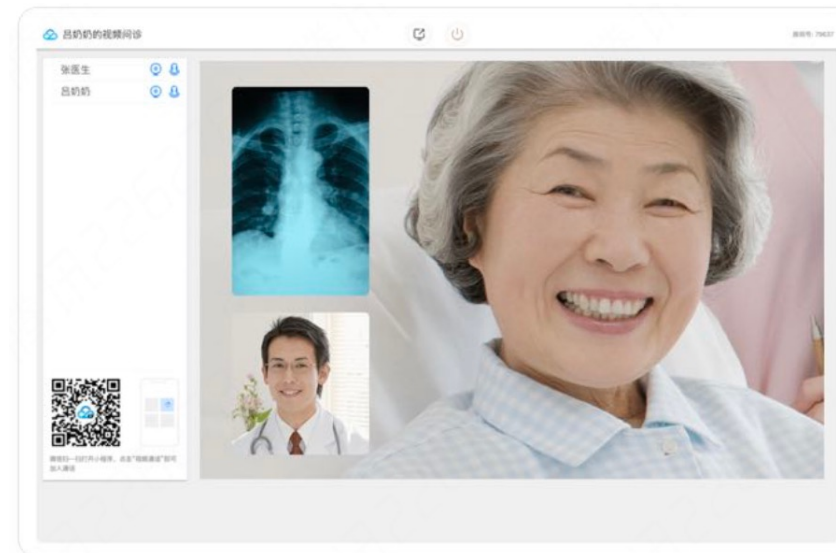
医疗会议办公类

无论医院内部专家探讨还是在诊断过程中医患交流，医疗会议是提升跨科室协同会诊的效率的重要手段，为了提升诊疗效率和沟通成本，越来越多的医疗行业客户选择线上做联合会诊，需要屏幕共享的方式来共享病历单来一起研讨

Morehealth用timmerse搭建医疗办公环境，上线后大大提高了诊断效率降低医疗风险

Timmerse官网web: https://www.timmerse.com

Requirements and challenges

- **High quality**: audio/video quality is the lifeline of the customer's businesses, and live streaming effects directly determine anchor/viewer retention.
- **Stability**: the customer's user base is huge, which creates high requirements for platform stability and SLA
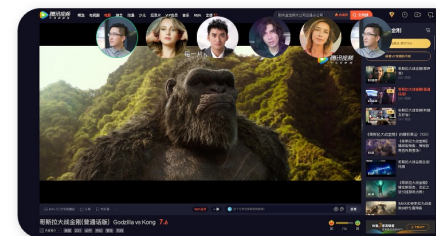- **Multi- screen sharing**

Solutions
- **High quality**
  - AI-Based noise cancellation: support from Tencent Ethereal Audio Lab with the **same 3A engine used by VooV Meeting**
  - Co-anchoring latency **of below 300 ms** and a packet loss prevention rate of **over 50%**, making interactions smoother
  - Support from **dedicated service teams** and customized alarming granularities, delivering a smooth user experience
  - Smooth **mic-on/off** with no lags and black screen
- **Ultra-Low latency**
  - Wide availability in **more than 200** countries and regions and Direct Connect-based node interconnection
  - Full-Linkage latency optimization, delivering an end-to-end latency of **65 ms**
  - Accurate **clock sync algorithm**: multiple time syncs with NTP, ensuring accurate and synchronous background music playback across terminal devices

More fun features
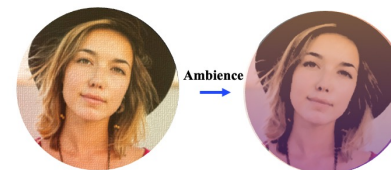
- It offers fun features like custom stickers, voice changing, ambient sound effects, and text chat
- It supports innovative video interactions, including beauty filter and face tracking

More immersive online interactive experience

- It displays the profile photo frame in a more user-friendly way, which is not affected by the environment
- The profile photo frame can be dragged freely to float

Simultaneous multi-screen sharing
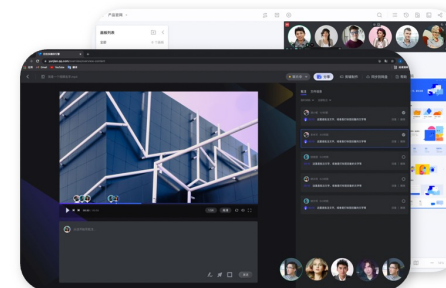
- All users can share their desktops or application windows together

Tencent Cloud
Media Services

Thanks for listening