HUAWEI RSE6500

V500R002C00

Product Overview

Issue 07
Date 2018-03-23

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
            Bantian, Longgang
            Shenzhen 518129
            People's Republic of China

Website: http://e.huawei.com

Contents

1 Product Positioning and Highlights

1.1 Positioning

HUAWEI Recording & Streaming Engine 6500 (RSE6500) provides conference recording, live broadcast, and video on demand (VoD). The RSE6500 supports program, user, and system management on the web page, and it provides a built-in web system for recording control. The RSE6500 can work with third-party service management systems, such as HUAWEI SMC2.0, to offer customers with an optimal videoconferencing solution. SMC is short for Service Management Center.

The RSE6500 supports conference recording and live broadcast, allowing users who are unable to attend conferences onsite to view broadcast video at any place and to view VoD at any time. This extends the conference coverage, greatly improves communication and work efficiency, and maximizes the usage of the videoconferencing system. The videoconferencing solution backed by the RSE6500 can be widely used across sectors, including education, healthcare, court, finance, transportation, and security.

Figure 1-1 Videoconferencing solution
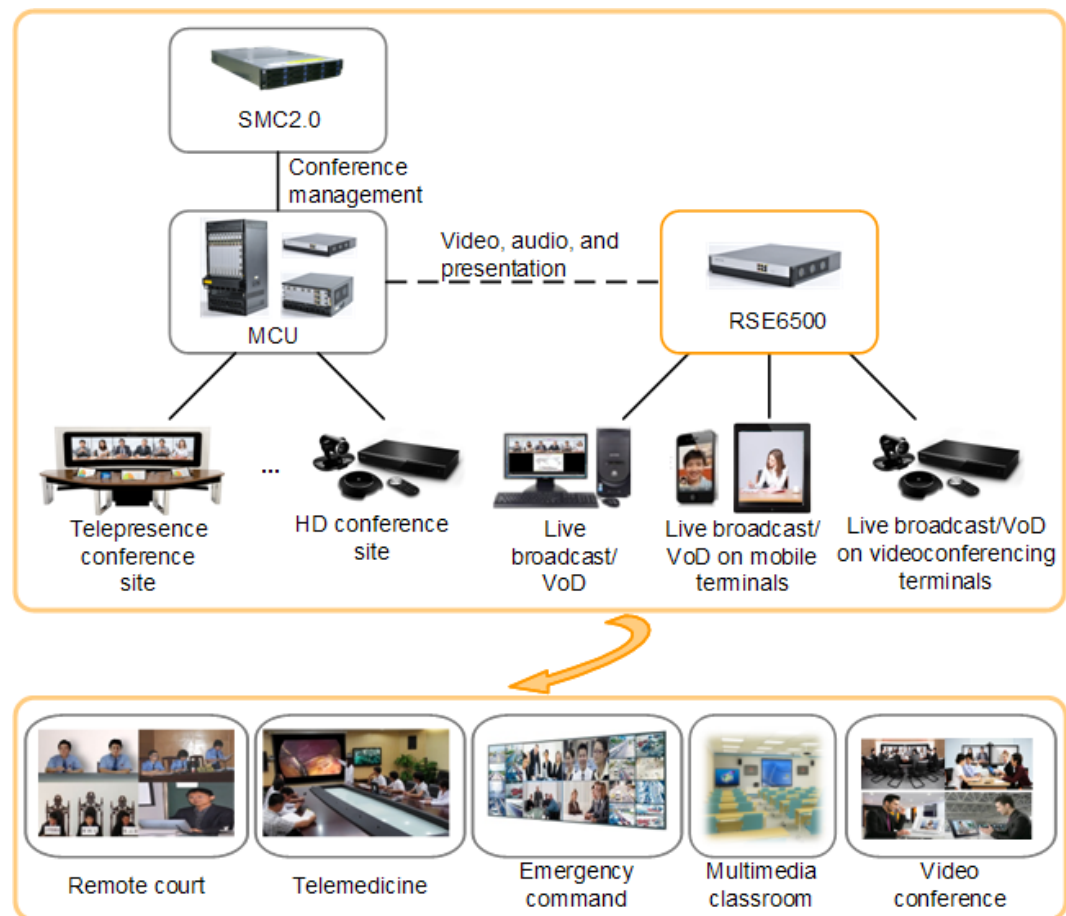
1.2 Highlights

Powerful Functions

- 1080p@60 fps HD recording and 1080p@60 fps HD live broadcast, first of its kind in the industry
- Up to 30 recording channels of HD conferences, 20 live broadcast channels of HD conferences, and 2000 web-based VoD channels for a single RSE6500
- Dual-stream live broadcast: 1080p conference image (video) and shared conference data (presentation)
- Panoramic recording and streaming of a video conference with three-screen Telepresence involved, completely saving and broadcasting conference images
- Smooth capacity expansion by licenses

Comprehensive Functions

- Enables management by the SMC2.0 (when working with the SMC2.0) or by the RSE6500 web interface (when working independently) to meet different scenarios.

- Allows a videoconferencing endpoint to directly call the RSE6500 for watching conference live video and VoD.

- Allows users to save and download the recorded conference files, and demands media files uploaded to the RSE6500.

- Allows users to edit information about a recorded conference file, including the type, name, overview, and conference materials.

- Provides open SDK interfaces to ease management and function expansion.

- Allows users to stack multiple RSE6500s for capacity expansion, meeting requirements of medium- and large-sized enterprises.

- Allows conversion of video files from the MP4 format to the AVI, WMV, ASF, and FLV formats.

- Allows users to add comments when watching video or communicate online during live broadcast.

- Enables connections to streaming media servers Wowza Media Server, QuickTime Streaming Server, Internet Information Services, and Akamai Media Services Live.

Ease of Use

- Mobile playing: supports HTML5, enabling users to watch live video and VoD using web browsers on mobile devices (laptops, tablets, and smartphones), without the need to install a plug-in.

- Multiple playing layouts: allows users to flexibly switch the playing layouts of conference video and presentation, meeting different watching requirements.

- Multi-platform recording and streaming control: allows users to control conference recording and streaming on the SMC2.0, the touchscreen at a telepresence site, or the web page of a conference endpoint.

- Automatic online image retrieval: displays in real time the conference images at any point of the playback progress.

- Text index: enables you to view texts on the video playback progress bar to quickly switch to the location you want to watch.

- Storage space expansion using the IP storage area network (SAN) or network attached storage (NAS), free of recording duration limits.

- Preview before release: enables you to preview the content and related information about a video before it is released.

- Conference template: uses a conference template to schedule conferences or hold recording conferences when the RSE6500 works independently.

High Stability and Reliability

- Provides backup of hard disks, power supplies, codec chips, and network ports (optical and electrical network ports).

- Supports super error concealment (SEC) and packet loss compensation (PLC) algorithms.

- Supports level- and rights-based user management and H.323/SIP encryption mechanisms for conference information security.

- Intactly saves audio and video files after a temporary IP storage area network (SAN) or network attached storage (NAS) network fault is cleared.

2 Application Scenarios

2.1 Recording and Streaming When Working with the SMC2.0

The RSE6500 can implement recording, live broadcast, and large-scale VoD under the unified scheduling and management of the SMC2.0. In a network where the SMC2.0 is not deployed, the built-in web system of the RSE6500 can be used for recording control.

Figure 2-1 Typical network of network conference recording and streaming
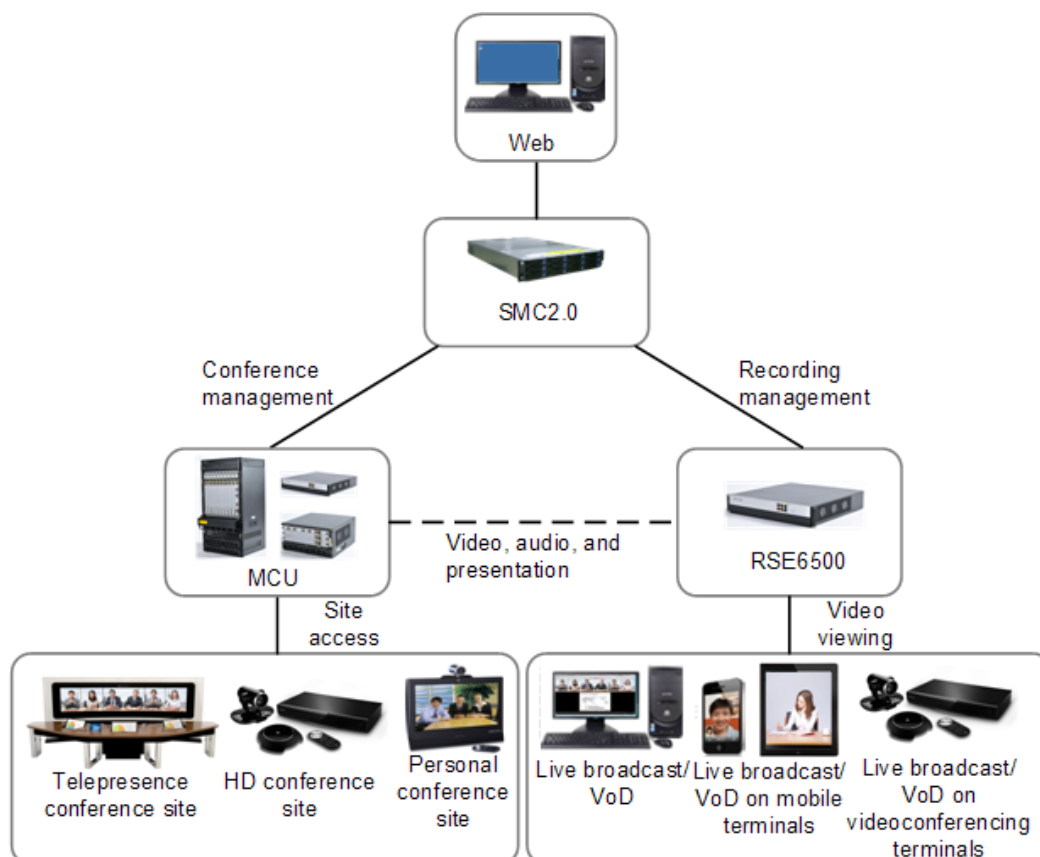
Network description:

- The RSE6500 and Multipoint Control Unit (MCU) are managed by the SMC2.0. The SMC2.0 provides conference management and recording control for the RSE6500.

- The RSE6500 exchanges media streams with the MCU for recording conference video, audio, and presentation at the same time.

- Real-time recording and streaming is supported in three-screen telepresence conference sites and common conference sites, and the recorded video format can reach 1080p@60 fps.

- Users can watch conference live video and VoD using their PCs, laptops, tablets, smartphones, and videoconferencing endpoints.

2.2 Conference Recording When Working Independently

The RSE6500 can record a local video conference at a time or multiple local video conferences concurrently.

Figure 2-2 Typical network of local conference recording
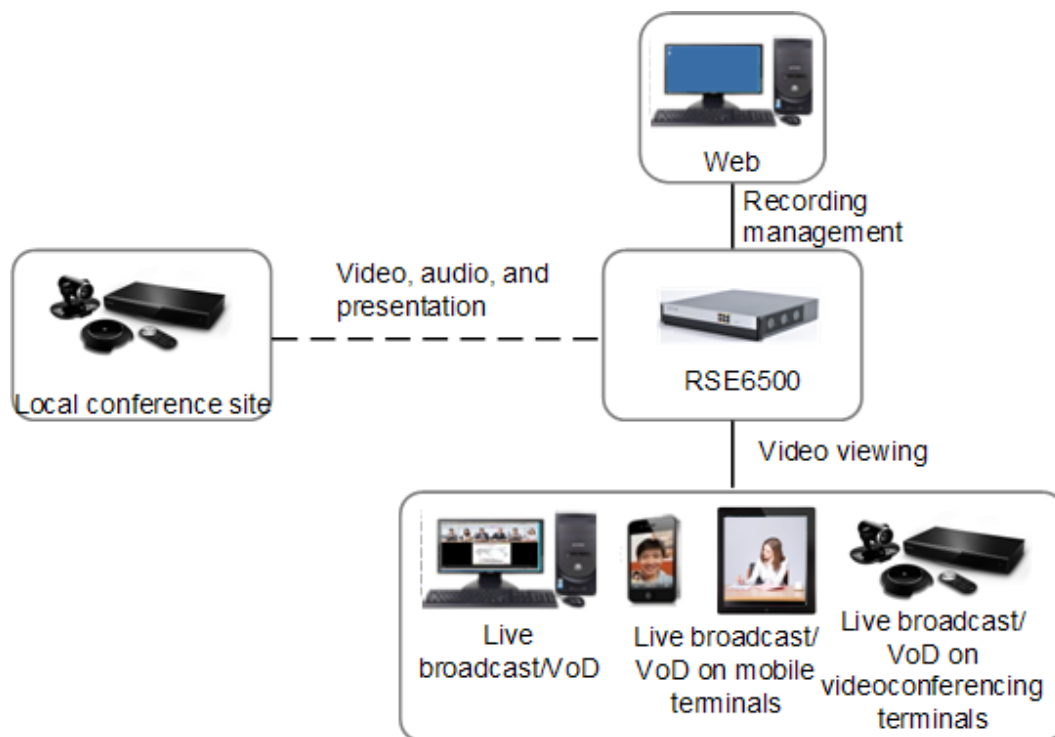
Network description:

- The RSE6500 manages and allocates recording resources and controls conference recording.

- The local conference site calls the RSE6500 IP address to initiate a recording request to the RSE6500. The RSE6500 interacts media streams with the local conference site to simultaneously record conference video, audio, and presentation.

- Users can watch conference live video and VoD using their PCs, laptops, tablets, smartphones, and videoconferencing endpoints.

□NOTE

If an SMC2.0 is deployed in the network, the SMC2.0 can also record local video conferences. The SMC2.0 manages the RSE6500 and conference sites in a unified manner. In addition, the SMC2.0 manages and allocates recording resources.

2.3 Recording and Streaming When Working with the MediaX

The RSE6500 can implement recording, live broadcast, and large-scale VoD under the unified scheduling and management of the MediaX.

Figure 2-3 Conference recording in the MediaX-based networking
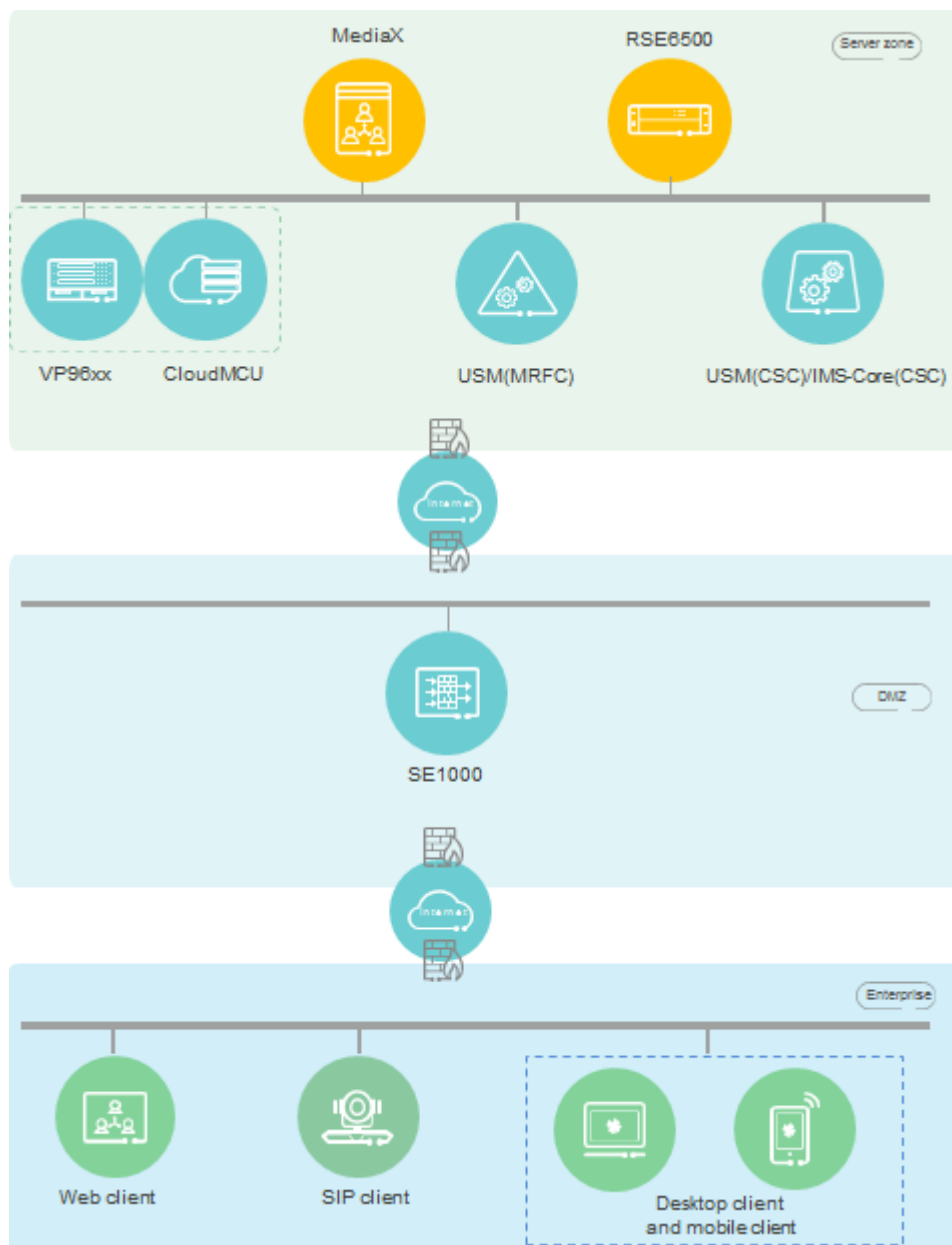
To learn more about conference recording in the MediaX-based networking, see the *CloudEC V600R006C10 Product Documentation (IMS Hosted/SP Hosted)*.

2.4 IPTV Live Conference

The RSE6500 supports Transport Stream (TS) multicast to connect to third-party stream media to implement Internet Protocol television (IPTV) live broadcast. In a network where the SMC2.0 is not deployed, the built-in web system of the RSE6500 can be used for recording control.

Figure 2-4 IPTV live broadcast network
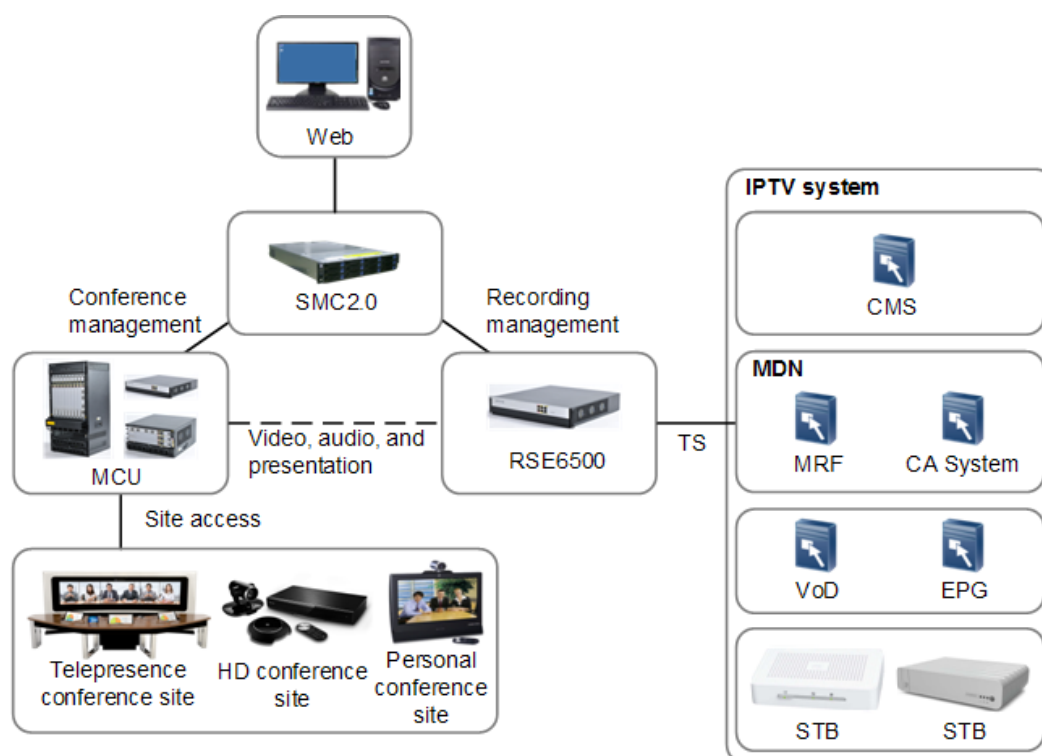
IPTV	Internet Protocol television
CMS	Content Management System
MDN	Media Delivery Network
MRF	Media Relay Function
CA	Certificate Authority
VoD	Video on Demand
EPG	Electronic Program Guide
STB	Set Top Box

The IPTV live broadcast network is described as follows:

- The RSE6500 and Multipoint Control Unit (MCU) are managed by the SMC2.0. The SMC2.0 provides conference management and recording control for the RSE6500.

- The RSE6500 exchanges media streams with the MCU for recording conference video, audio, and presentation at the same time.

- When a user adds a channel in the IPTV system, the RSE6500 sends TS to the Media Relay Function (MRF) of the IPTV system.

- A user uses the IPTV set top box (STB) to select a live broadcast channel to watch live conferences.

2.5 Watching VoD in the Streaming Media System

The RSE6500 can connect to streaming servers to provide live broadcast and VoD services for network users. The following assumes that the RSE6500 works with the SMC2.0 to hold a recording conference.

Figure 2-5 Network for a VoD conference in the streaming media system
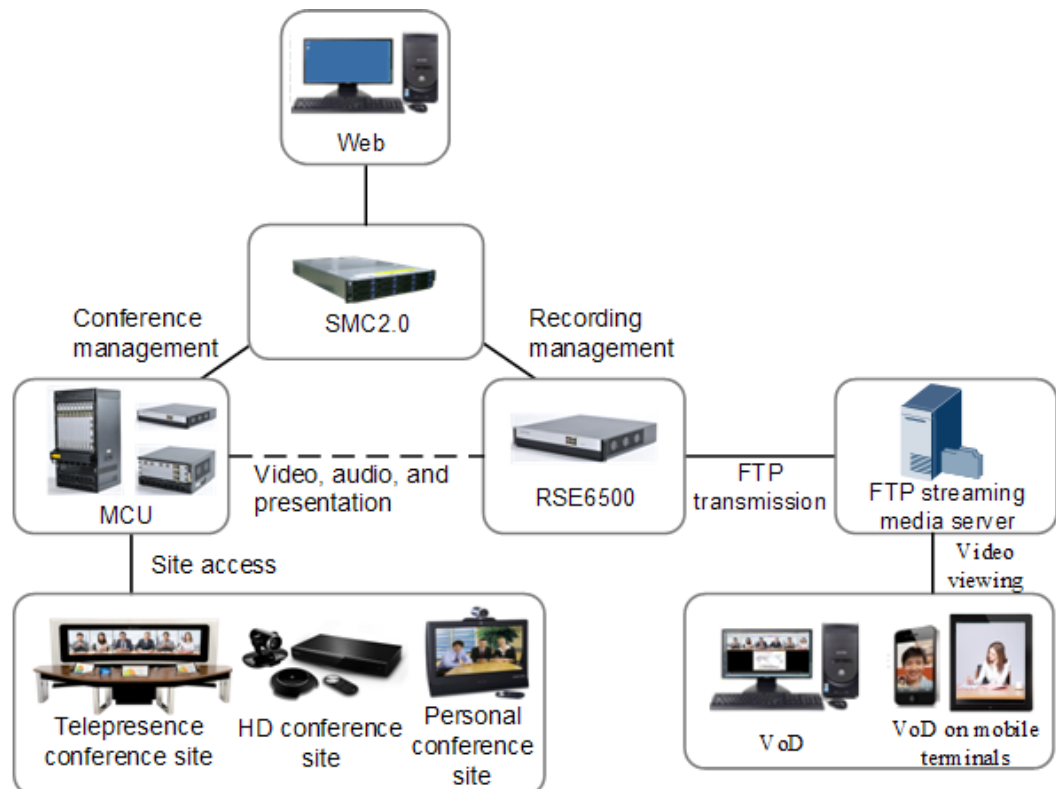
The network is described as follows:

- The RSE6500 and MCU are managed by the SMC2.0. The SMC2.0 provides conference management and recording control for the RSE6500.

- The RSE6500 exchanges media streams with the MCU for recording conference video, audio, and presentation at the same time.

- The RSE6500 can connect to streaming media servers Wowza Media Server, QuickTime Streaming Server, Internet Information Services and Akamai Media Services Live. After

streaming server parameters are set on the RSE6500, the RSE6500 sends video files or media streams to the configured streaming media server.

- Users can watch the video feeds of conferences through the video list provided by the streaming media server.

3 Product Structure

The RSE6500 is a case-shaped Recording & Streaming Engine. Its hardware components include an integrated chassis, power module, and fan assembly.

Appearance

The RSE6500 features well-designed layout, simple appearance, and easy cabling for convenient onsite deployment. **Figure 3-1** shows its appearance.
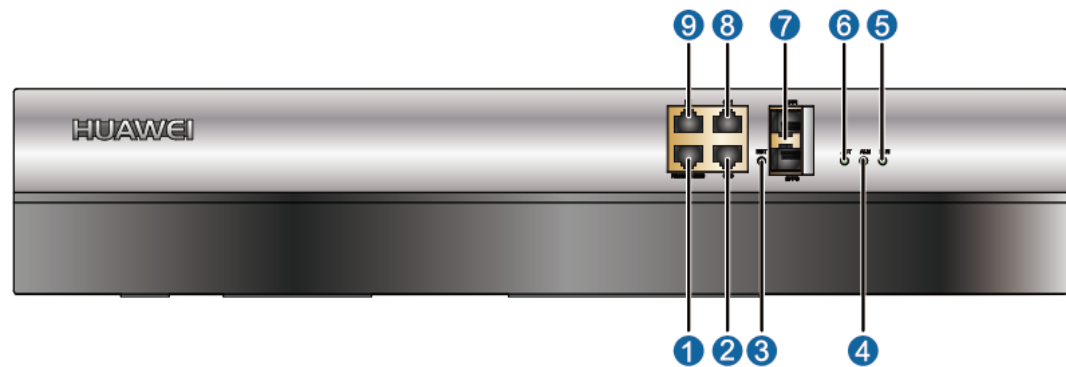
Figure 3-1 Appearance

Front Panel

Figure 3-2 shows the front panel of the RSE6500. **Table 3-1** describes the indicators on the front panel.

Figure 3-2 Front panel

1 RS-232 serial port	2 GE0 port	3 RST button (used to restart the RSE6500)
4 ALM indicator	5 RUN indicator	6 ACT indicator
7 Optical ports: SFP1 (upper) and SFP0 (lower)	8 GE1 port	9 FE port

☐ NOTE

The optical ports and electrical ports function as the backup for each other. When both optical and electrical ports are connected, the optical ports take priority over electrical ports. The GE0, GE1, and FE network ports must reside in different network segments.

● GE0 port or SFP0 optical port: recording and streaming service network port (small amount of data can also be used to connect IPSAN and NAS)

● GE1 port or SFP1 optical port: network port used for connecting to the IPSAN and NAS

● FE port: maintenance network port

Table 3-1 RSE6500 front panel indicators

Indicator	Status	Description
ACT	Steady green	There is power input, but the hard disk is not reading or writing data.
	Quickly blinking (about 4 Hz, four times per second)	The hard disk is reading or writing data.
	Off	The board is loading programs.
ALM	Off	The board is operating correctly.
	Steady red or quickly blinking	The board is malfunctioning.
RUN	Steady green	The board is powered on but is malfunctioning. NOTE It is normal if the indicator is steady on green during the startup of the board.
	Off	The board is powered off or the board fails to start.

Indicator	Status	Description
	Slowly blinking (about 0.5 Hz, once every 2 seconds)	The board is operating correctly according to the configuration.
	Quickly blinking (about 4 Hz, four times per second)	The board is loading programs or being upgraded.
GE/FE	Steady green	The network port connection is normal.
	Green off	No connection is established on the network port or the connection fails.
	Blinking orange	Data is being received or sent through the network port.
	Orange off	No data is being received or sent through the network port.

Rear Panel

Figure 3-3 shows the rear panel of the RSE6500.

Figure 3-3 Rear panel
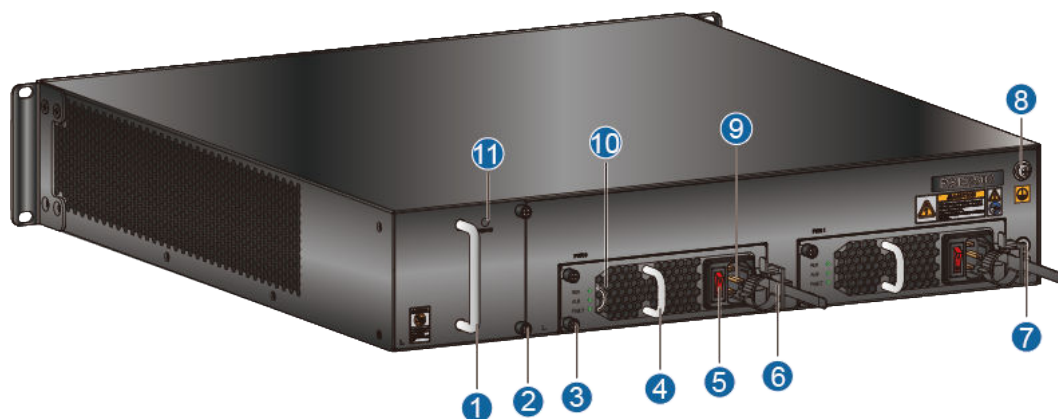
1 Fan assembly handle	2 Fan assembly fastening screw	3 Power module fastening screw
4 Power module handle	5 Power module switch	6 Cable tie support
7 ESD hole	8 Ground screw	9 Power module socket
10 Power module indicators	11 Fan assembly indicator	

Power Module

- Appearance

    The AC power port of the AC power module is located in the lower left corner of the front panel. This power port complies with the International Electrotechnical Commission (IEC) standard, and a cable tie is available. The air filter of the power module is located in the middle of the front panel, and fans of the power module are under the air filter. Two AC power modules are configured on the RSE6500 for power backup. **Figure 3-4** shows the appearance of the AC power module.

Figure 3-4 Appearance
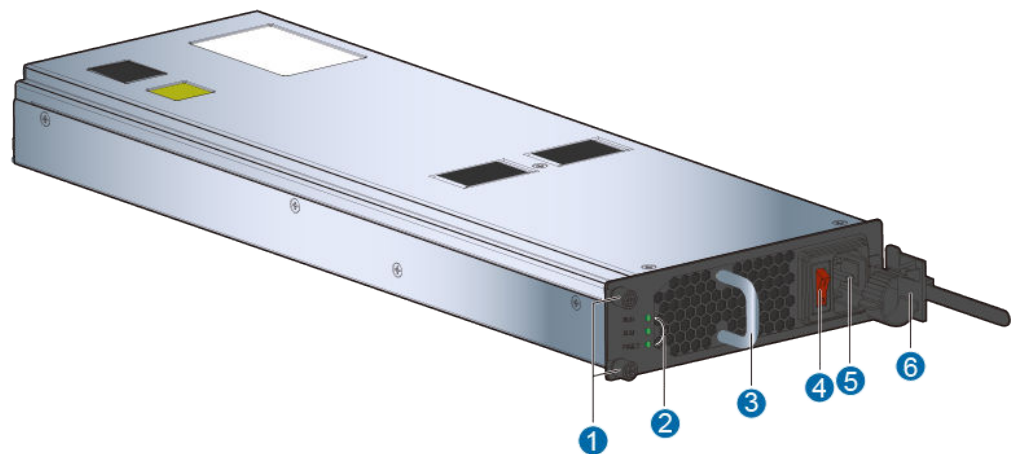
1 Captive screw	2 Indicator	3 Handle
4. Switch	5 AC power port	6 Cable tie

- Indicator meanings

    Users can learn about the running status of the AC power module by referring to the description in **Table 3-2**.

Table 3-2 Power module indicators

Indicator	Status	Description
RUN	Steady green	The power module is operating correctly.
	Off	- The power module is powered off. - The power module is powered on, but not operating correctly.
ALM	Steady yellow	You must power off the switches of power modules for power protection. Wait 10 minutes and power on the switches of power modules. If the ALM indicator is still steady yellow after you power on and power off the switches of power modules for three times, replace the power module or contact the technical support.

Indicator	Status	Description
	Off	The power module is operating correctly.
FAULT	Steady red	The power module is malfunctioning.
	Off	The power module is operating correctly.

Heat Dissipation System

The RSE6500's heat dissipation system consists of two parts:

- Fan assembly, dissipating the heat of the boards in the chassis
- Fans of the power module, dissipating the heat of the power module

The fan assembly is located on the right side of the RSE6500 chassis. The fan assembly has a fan monitoring board that provides the fan fault alarming function.

No switch is available on the fan assembly, and an indicator on the fan assembly tells its operating status. **Figure 3-5** shows the appearance of the fan assembly, and **Table 3-3** describes the indicator on the fan assembly.

Figure 3-5 Fan assembly

1 Handle	2 Indicator	3 Captive screw

Table 3-3 Fan assembly indicators

Indicator	Status	Description
STATUS	Steady green	The fan is operating correctly.
	Steady red	The fan is malfunctioning.
	Off	The fan is powered off.

4 Features

4.1 Leading Recording Capabilities

The RSE6500 provides diverse conference recording functions for adapting to the recording sources in different audio and video formats.

Multiple Conference Types

The RSE6500 can record video and presentation at the same time for local, point-to-point (P2P), and multi-party conferences.

- Local conference

  A single endpoint dials the unified recording access code to send a recording request for the RSE6500 to record the conference.

- P2P conference

  An endpoint uses the SiteCall function to start a P2P conference on the MCU. The MCU calls the RSE6500 to the conference for recording.

- Multi-party conference

  The MCU calls the RSE6500 to a multi-party conference. The RSE6500 records the conference according to the video switching policy configured on the MCU, or it records a specified site or continuous presence. On the on-premises network, the RSE6500 supports live presentation recording. The live presentation of each site is switched together with the video.

Users can control the in-progress recording on the SMC2.0 or chair site and view conference recording status in real time on the web page of the RSE6500.

Figure 4-1 Conference recording status

Three-Screen Telepresence Conference

The RSE6500 can record three-screen telepresence sites. In a multi-party conference, three video channels of a three-screen telepresence site are combined into 3-pane video. The 3-pane video is then sent to the RSE6500.

Figure 4-2 Recording effect of a three-screen telepresence conference
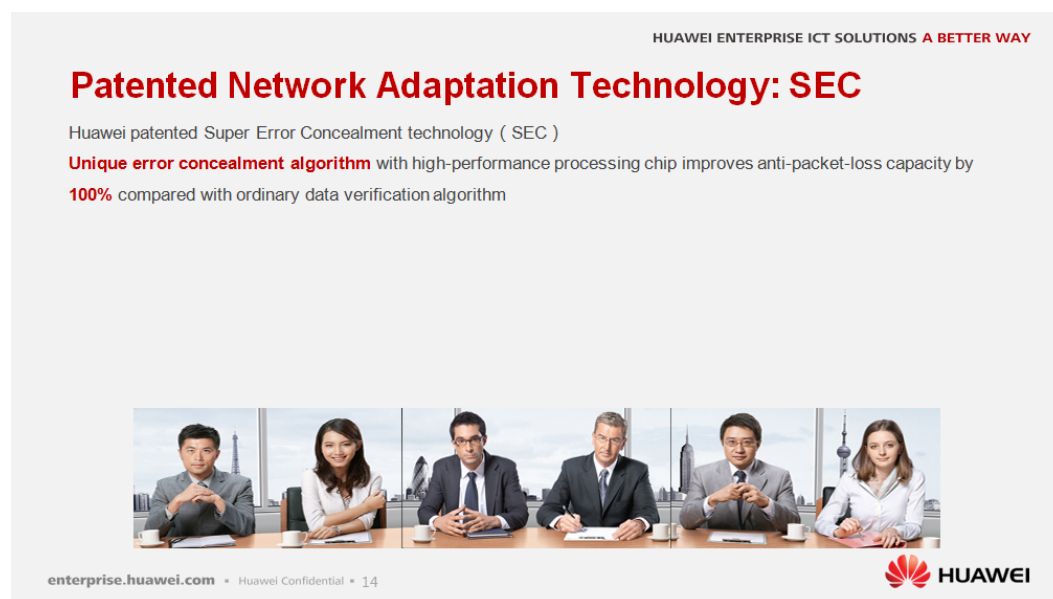
Support for Different Audio and Video Formats

The RSE6500 supports different audio and video formats.

- Video format
  - H263 CIF and 4CIF
  - H264 CIF, 4CIF/D1, 720p@30 fps, 720p@50/60 fps, 1080p@30 fps, and 1080p@60 fps
  - H264 HP CIF, 4CIF/D1, 720p@30 fps, 720p@50/60 fps, 1080p@30 fps, and 1080p@60 fps
- Audio format

  G.711a, G.711u, G.722, iLBC, and AAC_LD

Audio and Video IVR Announcements

The RSE6500 provides diverse audio and video IVR announcements during the recording, allowing users to view the recording status in real time. IVR announcements are available in scenarios such as when the recording starts or pauses, resource or disk space is insufficient, recording times out, or the video live broadcast or VoD ends.

The RSE6500 provides IVR announcements in multiple languages such as Chinese and English. Users can also upload customized IVR packages.

4.2 Convenient Playback Functions

The RSE6500 supports live broadcast and VoD of video conferences.

- Live broadcast: allows users to watch ongoing conferences in real time.
- VoD: allows users to watch recorded conferences or video uploaded by users.

Multiple Platforms, Free of Plug-ins

- The RSE6500 allows users to watch conference live video and VoD using their PCs, laptops, tablets, smartphones, and videoconferencing endpoints.
- Users can watch conference video using mainstream web browsers in the industry, without the need to install any plug-in. The web browsers supported are as follows:
  - Windows Internet Explorer 8 or later
  - Google Chrome 30 or later
  - Mozilla Firefox 24 or later
 - Apple Safari 5.0 or later
  - Android 4.0 or later

  ◫ NOTE

  For some devices, the flash component, if not installed, needs to be installed as prompted. If the flash component has been installed but you still cannot watch live video, upgrade the flash component to the latest version.

Video Watching Effect

The RSE6500 supports display of video and presentation in One Pane, Split Screen, or Picture in Picture mode, meeting diverse video experience requirements. Users can switch between the three modes with one click or by mouse drag-and-drop actions, and they can also switch between HD and smooth video. Note that mobile phone users can only watch smooth video.

Figure 4-3 Video layout switching
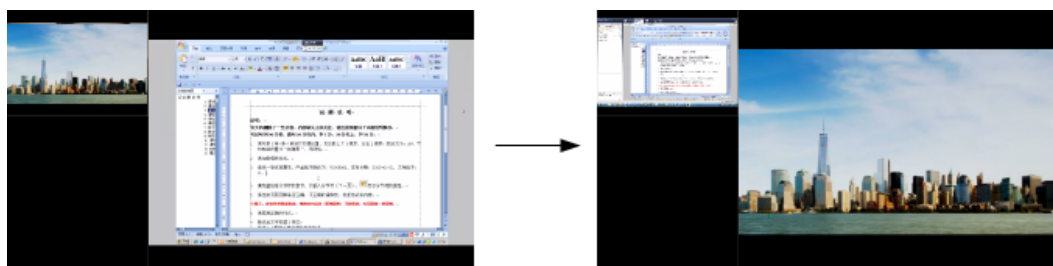
Video Download

Users are allowed to download video that they want. The default video format is MP4. Users can also export video in AVI, WMV, ASF, and FLV formats. If a video is attached with conference materials, they can also be downloaded.

4.3 Comprehensive Video Management

The RSE6500 provides a variety of video management functions, allowing users to easily upload video, preview video before release, edit text indexes, set popular video, and store video files.

Video Upload

The RSE6500 provides multiple entries for uploading video. During the video upload, users can add information, such as video cover, name, presenter, and keywords, for easier search in

the future. Before a video is uploaded, the administrator can preview the video and its information to ensure the correctness.

Figure 4-4 Video upload

Edit Text Index
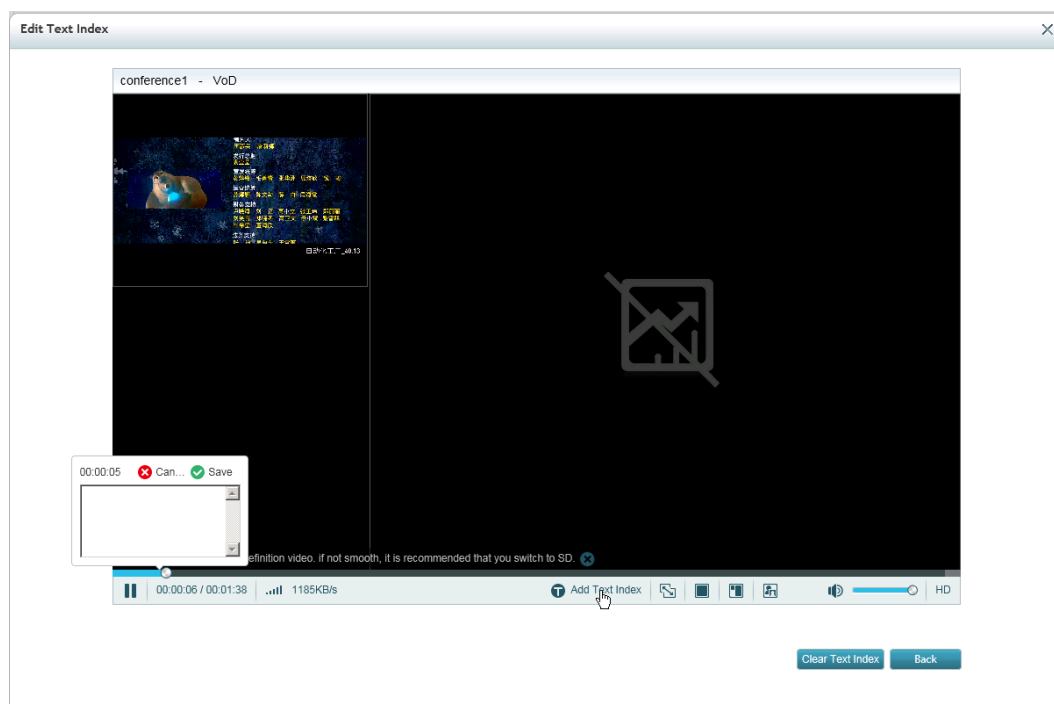
When uploading or editing video, the administrator can add text indexes to the video. When watching the video, users can browse the text indexes on their progress bars and click a text index to quickly switch to the location they want to watch.

Figure 4-5 Edit text index

Popular Video Setting

The RSE6500 allows users to set and sort popular video. The popular video will be displayed in scrolling mode in the popular video area on the home page.

Figure 4-6 Popular video
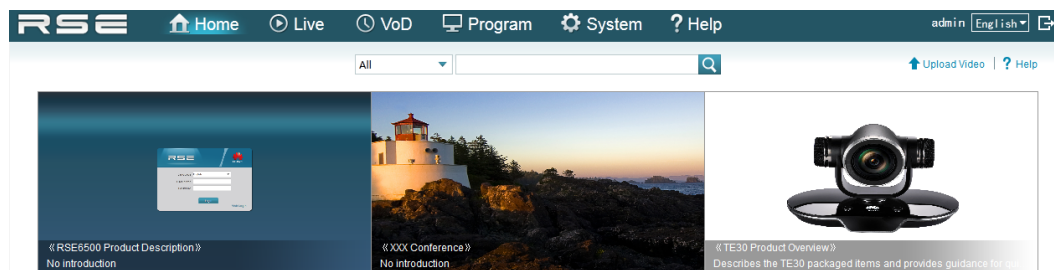
Offline Transcoding

After a conference is recorded, the system transcodes the recording when live broadcast resources are available. After the transcoding, users can watch conference video online. On the web page of the RSE6500, the administrator can view the status of the files before, under, and after transcoding.

☐**NOTE**

Offline transcoding is not required for live broadcast conferences.

Figure 4-7 Offline transcoding status

Transcoded			Retranscode	Clear Source File	Delete		🔍
☐ Video Name	Target Format		Status	Duration		Source File	
☐ Conference 2014-03-24 20:...	View Details		VoD - To-be-released	0:1:3		Not cleared	
☐ Conference 2014-03-24 20:...	View Details		VoD - Released	0:0:32		Cleared	
☐ Conference 2014-03-24 20:...	View Details		VoD - Released	0:0:52		Not cleared	

Network Storage

The RSE6500 stores video files on local or network disks. The network disks have two types: IP SAN and NAS. The RSE6500 also transfers the video files to the FTP server. After video files are stored on the FTP server, users can manually or enable the system to automatically delete local files to save storage space.

Group Management

The RSE6500 supports video grouping and labeling. The administrator can associate video groups with user groups and add video labels for enhanced video retrievability.

Figure 4-8 Video grouping

4.4 Easy-of-Use Conference Template

When the RSE6500 works independently, the administrator can create conference templates on the RSE6500 web interface so that users can use the templates to schedule conferences or hold live broadcast conferences.

Create Template

The RSE6500 allows the administrator to create a one-off or a permanent conference template. A live broadcast or recording conference that is scheduled using a template can be started immediately when the corresponding recording source number is called.

Figure 4-9 Create template

Template Management

The RSE6500 allows the administrator to edit and delete live broadcast and recording conference templates and to start live broadcast or recording conferences using the templates, simplifying live broadcast and recording conference operations.

Figure 4-10 Template management

4.5 Convenient Comment and Communication

After the administrator enables the online comment function, users can post comments when watching VoD or communicate online when watching live broadcast. The administrator can specify sensitive words and enable sensitive word screening. Then sensitive words in comments are replaced with the asterisk (*).

Online Comment

● After logging in to the RSE6500, a user can post comments on the video playback page or post comment anonymously, reply to comments publicly or anonymously, or delete their own comments.

● The administrator can delete any user's comments.

Figure 4-11 Online comment
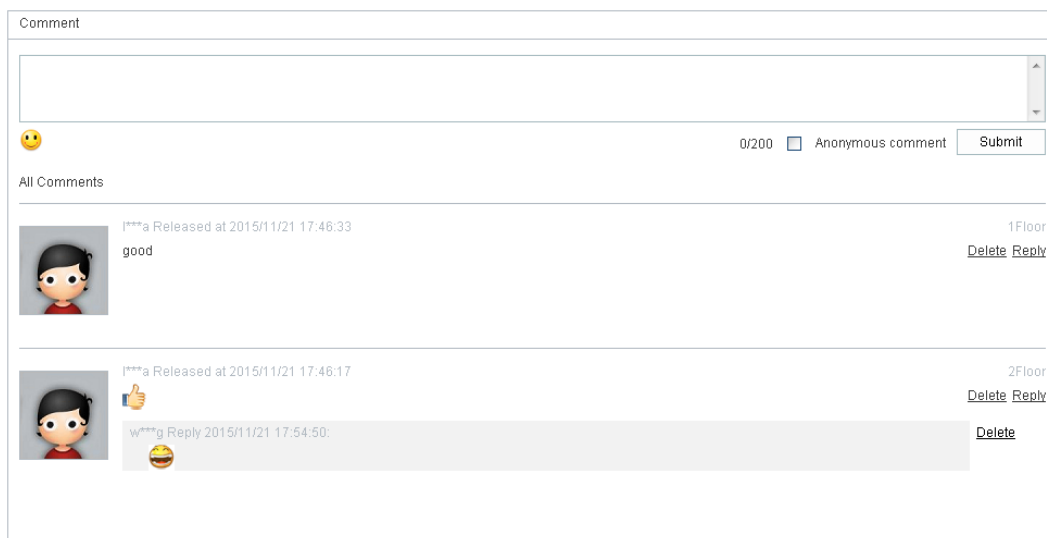
Real-Time Communication

After logging in to the RSE6500, users can communicate when watching live broadcast. The chat messages will not be stored after the live broadcast ends.

Figure 4-12 Real-time communication
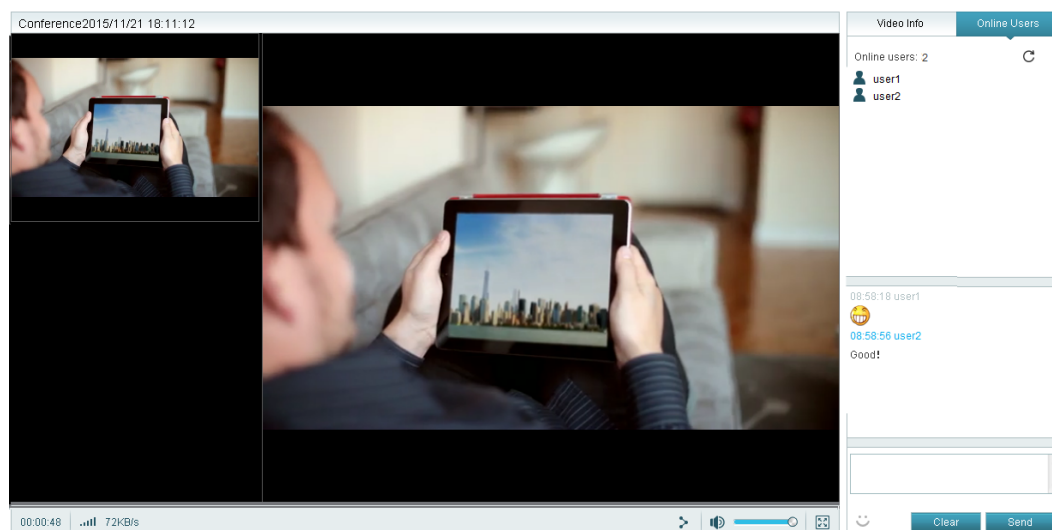
4.6 Flexible Rights Management

The RSE6500 supports flexible rights management based on the user group-role-video group rights model.

Role

The RSE6500 provides multiple roles. They are System administrator, Media administrator, Personal media administrator, Advanced user, Common user, and Guest. Different roles are assigned different operation rights.

Table 4-1 describes the roles and their operation rights.

Table 4-1 Roles and operation rights

Role	Operation Right
System administrator	- Setting system parameters - Managing users - Managing programs, such as uploading, editing, and releasing programs - Viewing and downloading video feeds
Media administrator	- Managing programs, such as uploading, editing, and releasing programs (The release rights can be configured based on the site requirements.) - Viewing and downloading video feeds
Personal media administrator	- Managing programs, such as uploading, editing, and releasing programs (The Offline Transcoding and Group menus are unavailable, and the release rights can be configured based on the site requirements.) - Viewing and downloading video feeds
Advanced user	Viewing and downloading video feeds
Common user	Viewing video feeds
Guest	Viewing only video feeds that have not been grouped **NOTE** After the guest login is disabled, the guest login entry is not displayed on the RSE6500 web interface, and all online guests are forcibly logged out.

User Group

The administrator can assign roles for each user group, add users to a user group, and select video groups that a user group can view.
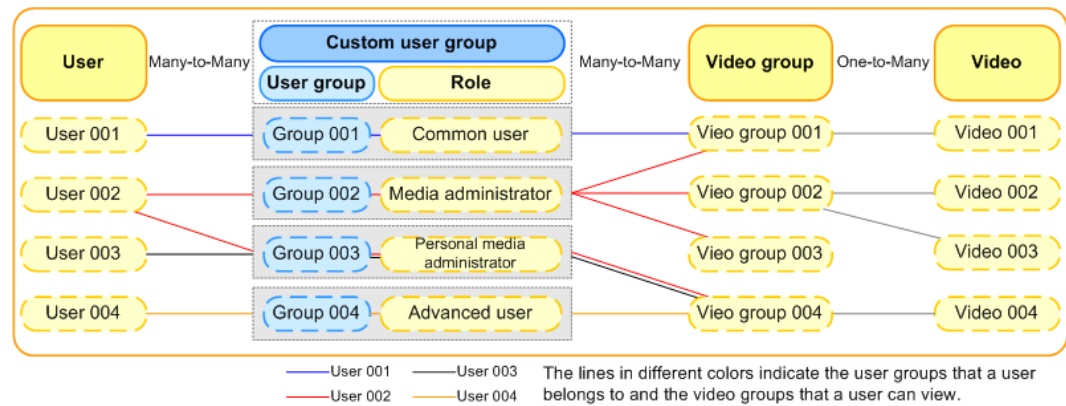
User

The RSE6500 can manage a maximum of 5000 local users. Each user can belong to one or more user groups. When a user belongs to multiple user groups, the user can view the videos that all the user groups can view and has all the rights assigned to these user groups.

Figure 4-13 Rights model example

4.7 High Security, Reliability, and Compatibility

The RSE6500 provides backup of hard disks, power modules, codec chips, and network ports (optical ports and electrical ports) to enhance device reliability. The RSE6500 supports IPv4/IPv6 dual stack, H.323/SIP hybrid networking, and super error concealment (SEC) and packet loss compensation (PLC) algorithms to enhance network adaptability.

Security

- Users are forced to change passwords at the first login. The system provides the password complexity verification.

- The interval of changing the password of the **admin** user for logging in to the RSE6500 web interface can be configured.

- The RSE6500 provides the whitelist function for web, MCU, endpoint, SSH, and Telnet.

- The RSE6500 provides the blacklist function.

- The AES key can be updated.

- After a user successfully logs in to the RSE6500 web interface, the system displays the IP address and time of the last successful authentication and the IP address, time, and number of failure login attempts for the last failed authentication.

- Data transmitted between RSE6500s and H.323 devices is encrypted using the H.235 encryption protocol to ensure media data security.

- Data transmitted between RSE6500s and SIP devices is encrypted using the Transport Layer Security (TLS) and Secure Real-Time Transport Protocol (SRTP) protocols.

- The RSE6500 uses the Simple Network Management Protocol version 3 (SNMPv3) protocol to connect to the upper-level NMS to provide a secure connection channel for user authentication.

- The RSE6500 provides the Hypertext Transfer Protocol Secure (HTTPS) connection mode to enhance data transmission security. Functions that require high security, for example, changing passwords, are forced to use the HTTPS to transfer old and new passwords in ciphertexts.

- Users can perform import and export operations in FTPS mode and perform commissioning and configuration operations in SSH mode.

- The RSE6500 provides a comprehensive log recording mechanism that can record all user operations.

- Symantec and McAfee are used to scan all software, patches, and documents to protect the device against viruses and Trojan horses.

- The digital signature verification tool is used to verify the integrity and validity of software packages.

- Secure encryption algorithms are used to encrypt sensitive data in the system.

- Data must be encoded in HTML mode before being transmitted to clients.

- Web security scanning software, for example, Nessus, is used to scan web servers and applications to avoid high-level vulnerabilities.

Reliability

- Provides two power modules in 1+1 backup mode. When a power module is faulty, the system can seamlessly switch to the other power module without interrupting services.

- Provides codec chip backup to ensure audio and video continuity of live broadcast conferences.

- Supports RAID 1 that can ensure video file security.

- Deploys network ports (optical ports and electrical ports) in mutual backup mode. When both optical and electrical ports are connected, the optical ports take priority over electrical ports. If communication through the working network port is interrupted, the system automatically switches the communication service to the backup network port.

- Provides the super error concealment (SEC) algorithm for video and the packet loss compensation (PLC) algorithm for audio. This ensures smooth conference recording in case of 20% packet loss rate.

- Intactly saves audio and video files after a temporary IP storage area network (SAN) or network attached storage (NAS) network fault is cleared, because the fault has no impact on recording and streaming services. Audio and video files can still be saved intactly after the fault is cleared.

IPv4/IPv6 Dual Stack

The RSE6500 supports IPv4/IPv6 dual stack. Users can deploy independent or hybrid networks that support both IPv4 and IPv6. This helps maximize return on investment (ROI) on IPv4 network devices and supports smooth evolution to the IPv6 network.

H.323/SIP Hybrid Networking

The RSE6500 supports hybrid networks that support both H.323 and SIP. The RSE6500 can register with the gatekeeper (GK) and SIP servers at the same time to allow conference endpoints and multipoint control units (MCUs) to record calls using the SIP or H.323 protocol.

4.8 Ease of Integration

The RSE6500 provides SDKs for third parties to integrate to implement functions such as program query, video management, recording and live broadcast control, offline transcoding, user management, and system status query. The code for embedding the program list and player of the RSE6500 into third parties is also provided.

5 Operation and Maintenance

5.1 Web Operation Page

The RSE6500 provides a web operation page that is easy to use. The web operation page features clear page layout and abundant parameter icons.

Figure 5-1 Web operation page

1. Menus
2. Current login user, language, and logout icon

5. Live broadcast
6. VoD

3. Search area, Upload Video, and Help   7. System status and time
4. Popular video

The easy-to-use web operation page provides a variety of operations such as conference recording, VoD, live broadcast, program management, and user management.

5.2 System Status

System Information

The RSE6500 allows users to view the following system information in real time:

- Live broadcast and recording resources
- Local disk and network disk capacity
- Maximum number of online users
- Numbers of online users, guests, and endpoints
- CPU and memory usage

Figure 5-2 System information
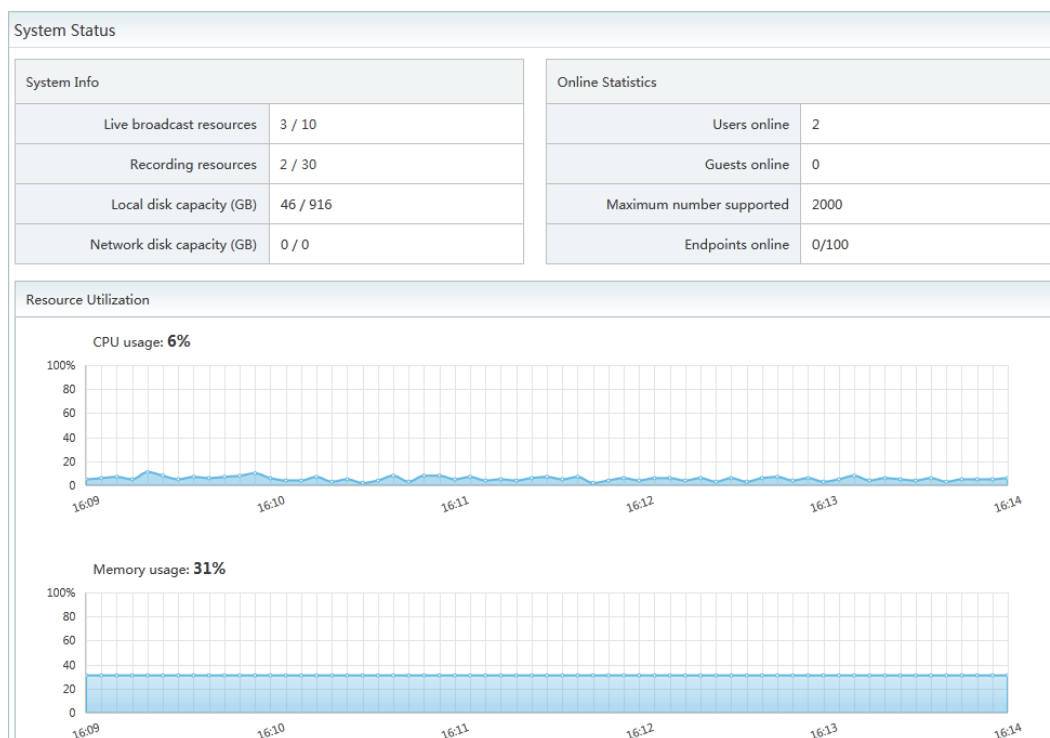
Version Information

The RSE6500 allows users to view the following system version information:

- System name
- Version

License Information

The RSE6500 allows users to view the following license information:

- License status
- Max. concurrent live broadcast videos
- Max. concurrent VoD
- Max. concurrent recordings
- Media stream encryption
- License validity period
- License ESN

5.3 Logs and Alarms

Logs

The RSE6500 allows users to view operation logs online. The log information includes:

- Web user login and logout records
- Live broadcast and VoD operation records
- Program management operations such as offline transcoding and popular setting
- File uploading and downloading records
- System operations such as device upgrade
- System parameter configuration

Figure 5-3 Logs

Operation Log		
Generation Time	Log Level	Content
2014/04/30 10:36:16	INFO	User<administrator> exectute command:shell success by ::ffff:10.170.48.152
2014/04/30 10:34:23	INFO	BNMS, User(admin) move key position up successfully!. operator ip=10.170.48.152
2014/04/30 10:34:22	INFO	BNMS, User(admin) move key position down successfully!. operator ip=10.170.48.152
2014/04/30 10:34:20	INFO	BNMS, User(admin) move key position up successfully!. operator ip=10.170.48.152

Alarms

The RSE6500 allows users to view alarms online. The following alarm information can be displayed: alarm name, severity, type, location, and occurrence time.

Figure 5-4 Alarms

Alarm				
Name	Severity	Type	Location	Generation Time
FE0 IP address conflict	Major	Fault	FE0 IP address conflict	2014/04/30 10:27:57
The number of live broadcast resources is l...	Major	Fault	The number of live broadcast resources is less than those ...	2014/04/30 10:27:28
Local hard disk 1 exception	Major	Fault	Local hard disk 1 exception	2014/04/30 10:27:28
Error in checking power supply 1(right)	Major	Fault	Error in checking power supply 1(right)	2014/04/30 10:27:27

6 Technical Specifications

6.1 Physical Counters

Table 6-1 describes the physical counters of the RSE6500.

Table 6-1 Physical parameters

Category	Item	Specifications
Physical specifications	Dimensions (H x W x D)	86.1 mm x 442 mm x 450 mm (3.39 in. x 17.40 in. x 17.72 in.)
	Weight	16 kg (35.27 lb)
Environment adaptability	Temperature	0°C to 45°C
	Relative humidity	5% RH to 90% RH
	Atmospheric pressure	55 kPa to 106 kPa
Electricity supply requirements	Rated operating voltage	100 V AC to 240 V AC 50/60 Hz
	Power consumption	< 300 W

☐**NOTE**

If the device is used 1800 meters to 5000 meters above the sea level, the upper limit of the temperature must be decreased by 1°C for every 220 meters.

6.2 Performance and Capacity

The RSE6500 has two models RSE6500-M and RSE6500-L. Table 6-2 describes the performance and capacity for each model.

Table 6-2 Performance and capacity counters

Item	RSE6500-M	RSE6500-L
Maximum number of conferences that can be recorded simultaneously	30 **NOTE** A maximum of 30 conferences can be recorded simultaneously. The video format is not limited.	
Maximum number of live broadcast conferences	10 **NOTE** Supports 10-channel 720p@30 fps, 5-channel 1080p@30 fps, or 2-channel 1080p@60 fps single-stream conferences.	20 **NOTE** Supports 20-channel 720p@30 fps, 10-channel 1080p@30 fps, or 5-channel 1080p@60 fps single-stream conferences.
Maximum number of online users (including registered users and guests)	2000	
Maximum number of online conference endpoints (including live broadcast and VoD endpoints)	100	
Built-in disk capacity	2 TB/4TB **NOTE** The disk capacity is reduced by half if RAID 1 is configured.	

6.3 Protocol Compliance

Table 6-3 lists the protocols to which the RSE6500 complies.

Table 6-3 Protocols to which the RSE6500 complies

Item	Standard
Communication framework protocols	ITU-T H.323 and SIP
Video protocols	H.264, H.264 HP, and H.263
Audio protocols	G.711a, G.711u, G.722, iLBC, and AAC_LD
Dual-stream protocols	H.239 and BFCP
Transmission protocols	TCP/IP, FTPS, RTP, RTCP, HTTP, HTTPS, SNMPv3, SSH, and SOAP
Encryption protocols	H.235 and TLS/SRTP
Video resolutions	CIF, 4CIF, 720p, and 1080p
Presentation resolutions	VGA, SVGA, XGA, WXGA, SXGA, 4CIF, 720p, and 1080p

7 Acronyms and Abbreviations

Acronym	Full Name
AAC_LD	Advanced Audio Coding with Low Delay
FTP	File Transfer Protocol
FTPS	File Transfer Protocol over SSL
GK	Gatekeeper
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
IEC	International Electrotechnical Commission
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
IVR	Interactive Voice Response
MCU	Multipoint Control Unit
PLC	Packet Loss Compensation
QoS	Quality of Service
RSE	Recording & Streaming Engine
SEC	Super Error Concealment
SIP	Session Initiation Protocol
SMC	Service Management Center
SNMPv3	Simple Network Management Protocol version 3
SOAP	Simple Object Access Protocol
SRTP	Secure Real-Time Transport Protocol

Acronym	Full Name
SSH	Secure Shell
TLS	Transport Layer Security