Reach Video Conference Recorder (VCR)

Recording and Streaming Server

User Manual

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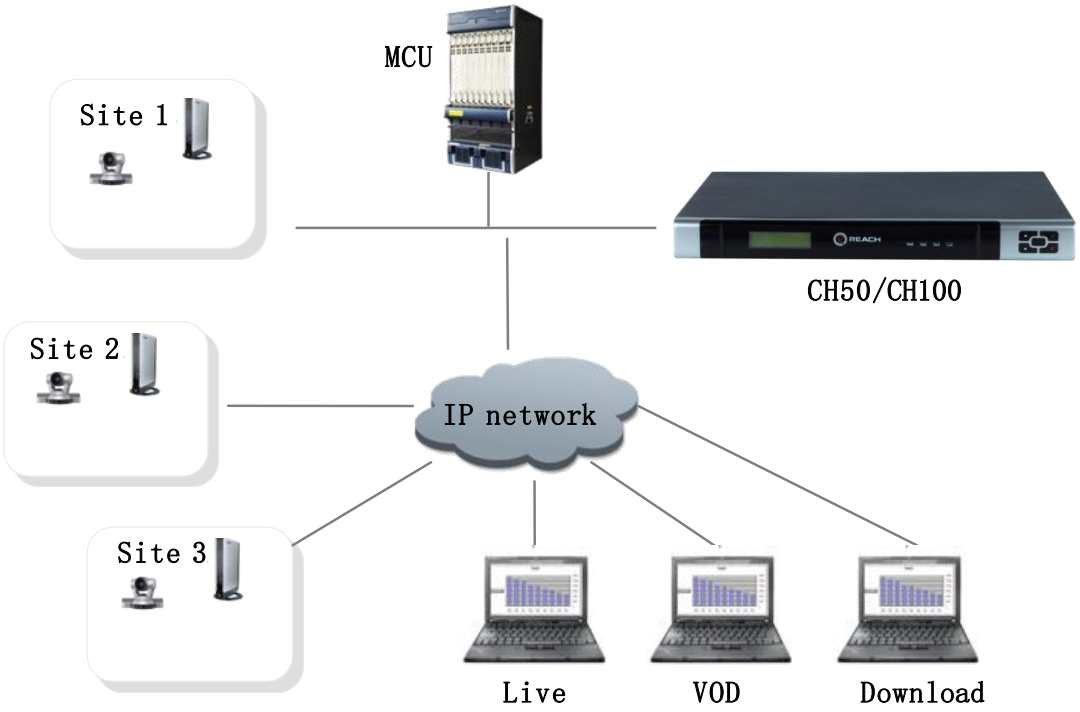
Contents

Chapter I Introduction

1.1 Product Overview

VCR series network recording and streaming server is the latest generation of the multi-media recording and streaming system. It is developed independently by Reach Ltd., Co. to meet the requirements of the video conferencing industry. This recording and streaming system can work together with all standard H.323 MCUs and terminals to record and stream multiple conferences at various rates and in different modes. In addition, this system supports various functions including live streaming, VOD playback, remote management, and file management. With the characteristics of simple operation, stable performance, and easy management, VCR series network recording and streaming server allows users to record and disseminate visual information in the conference, training, and teaching scenarios.

1.2 Networking Diagram



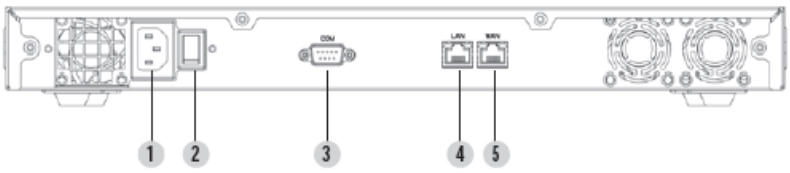
The recording and streaming server, MCU, and video conferencing terminals are in the same network and use H.323 protocol for mutual communication. Upon adding to a conference, the recording and streaming server enables the recording port to start and stop recording.

The recording and streaming server records the code streams from the MCU and terminals.

Users can log onto the recording and streaming server to view conferences in live or VOD mode using a web browser. In addition, users can download recorded conference files.

1.3 IP Address Configuration

- Place the VCR network recording and streaming server in a cabinet of the conference or control room.
- Insert each power cable connector into the power jack of the recording and streaming server.
- Connect a network cable to the WAN port at the back of the server.
- Turn on the power switch.



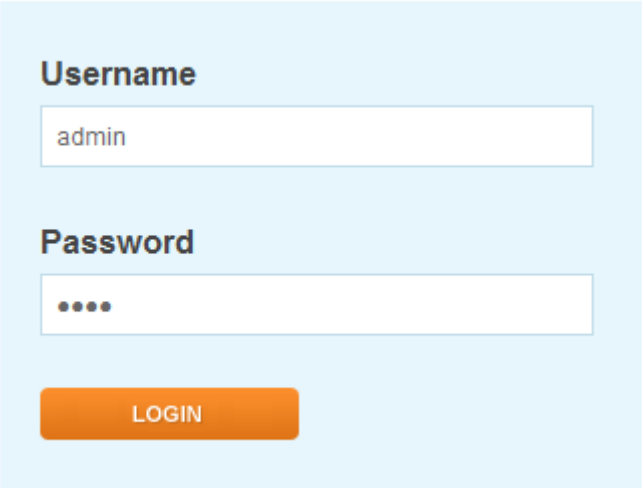
1 Power Input
2 Power Switch
3 COM (RS232)
4 LAN
5 WAN

Network port description:

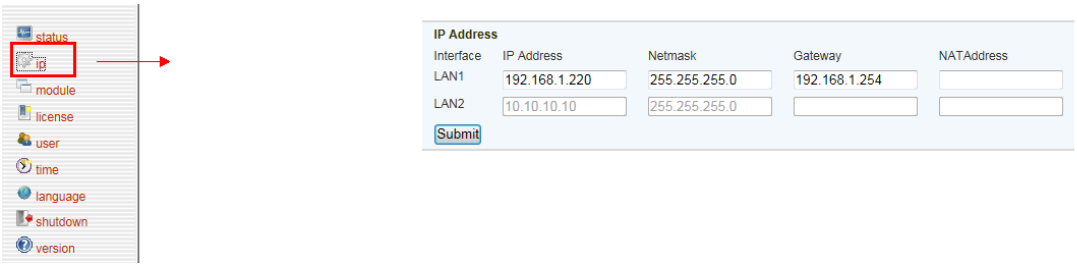
WAN port: used by the administrator for system setting. The default IP address is 10.10.10.10 (which cannot be changed) and the default port number is 800.

LAN port: used by the administrator and users for login. The administrator can obtain the IP address of the LAN port after logging onto the system through the WAN port. The default port number is 80.

- Add an IP address to the client PC, such as 10.10.10.x (where x is any integer between 1 and 254, except 10), with the subnet mask of 255.255.255.0.
- Open the IE browser and enter the URL in the address bar, such as http://10.10.10.10:800 (the WAN port has been enabled and the port number needs to be entered). Enter the username and password (the default values are **admin** and **1234** respectively) in the login page of the recording and streaming server.



Click the **IP** menu to change the IP address, subnet mask, and default gateway of the LAN port (LAN1). Click **Submit** to reboot the system.(Note: The reboot process takes about two minutes.)



- Connect the LAN port to a switch to enable the recording and streaming server.

1.4 Cautions

- It is recommended to change the password for the admin user though the default username cannot be changed. If the password is changed and subsequently lost, ask for the technical support of the manufacturer to restore the username and password to **admin** and **1234** respectively.

- Ensure that the power supply and network connection are normal during the IP configuration and upgrade process.

Chapter II System Application

2.1 Web Login

H.323 recording and streaming server uses web pages for management and application. It supports the mainstream browsers (such as Internet Explorer and Firefox). The default number of the LAN port is 80.

After entering the server address http://IP/ in the address bar of the web browser and the username and password in the login page, you can log onto the server system. The default username and password of the super administrator are both **admin**.

Note: For 1.7 and later versions of web pages, the login username and password are both **admin** by default; for 1.6 and earlier versions, the login username and password are both **root** by default.

Figure 2-2 Login home page

2.2 Application Mode

An application scenario is used as an example to describe different functions of the recording and streaming server.

2.2.1 Concept Overview

1. Superuser (admin): The admin user is the super administrator of the recording and streaming server and can use all the functions of the server. Only the admin user can manage user groups.

2. Group: In the scenario where the recording and streaming server supports the concurrent and separate recording, groups are used to manage separate recording tasks and related unicast, VOD, and multicast resources.
3. Group administrator: Each group has at least one administrator to manage group resources including users, recording templates, and files.
4. Group user: A group user can view unicast, multicast, and VOD streams, but cannot manage recording tasks and recording files.

2.2.2 User Group Management

After logging onto the system using the admin user account (the name of superuser is **root** for the web page in versions earlier than 1.7), click **Users** and **Group Management** in sequence. Click **Add** in the pop-up **Group Information** window.

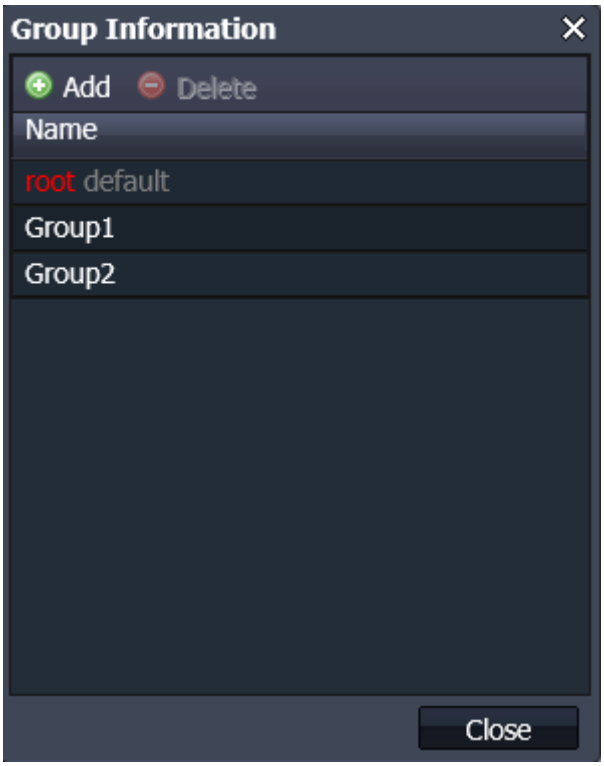


Figure 2-3 User group management

Enter the name of a new group in the **Name** entry and click **OK** to add the new group.As shown in figure 2-3, the system currently has three user groups: general user group, administrator group, and test group 1.

To delete a user group, select the group and click **Delete**, as shown in the following diagram:

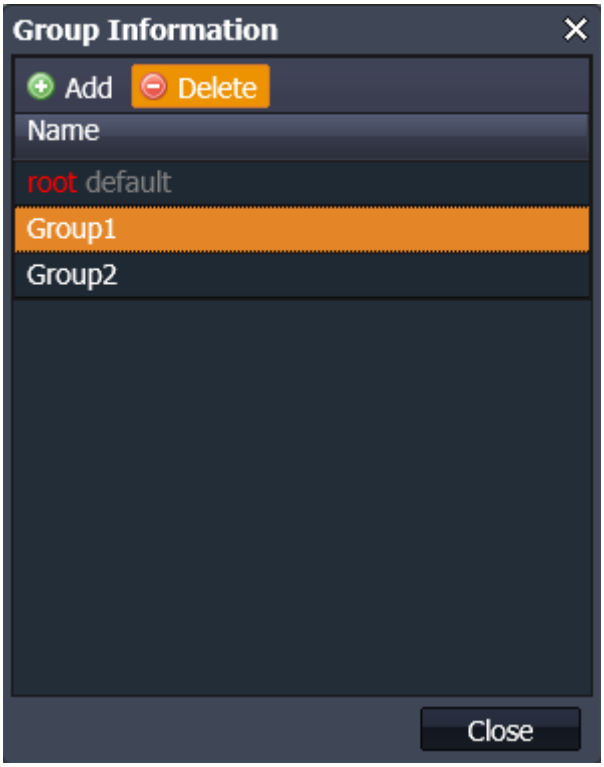


Figure 2-4 Deletion of a user group

2.2.3 User Management

The superuser **admin** (the name of superuser is **root** for the web page in versions earlier than 1.7) and each user group administrator can manage users as needed. The detailed procedure is as follows:Click **Add** in the **Users** tab to display the following window:

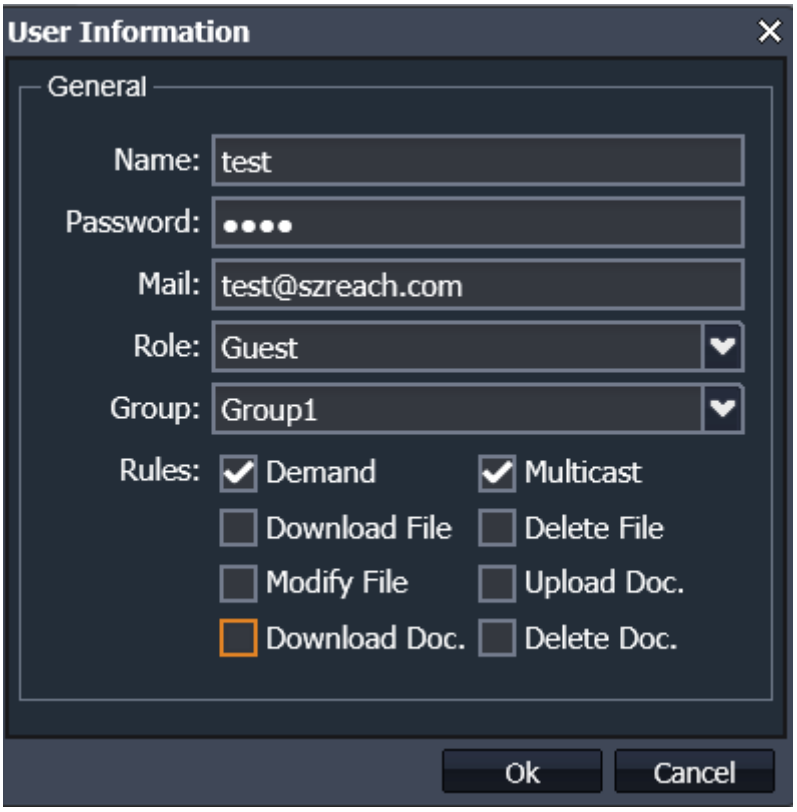


Figure 2-5 Addition of a user

Enter the username, password, and mail in the corresponding entries. Select the user role and the group to which the user belongs, grant users the permission to view live or VOD streams as needed, and click **OK**.

Click  in the user list to delete a selected user.

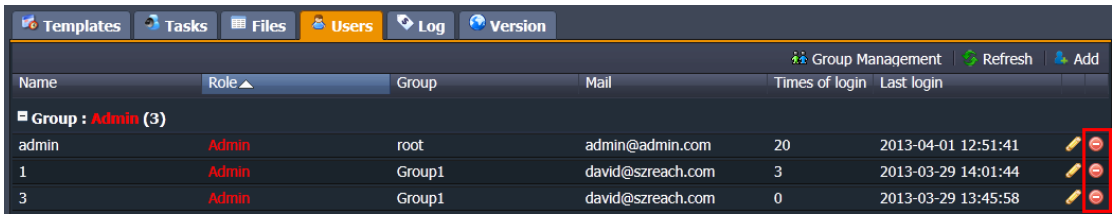


Figure 2-6 Deletion of a user

Each user is allowed to change the password after login.

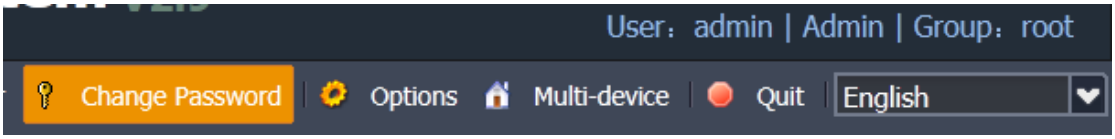


Figure 2-7 Changing of a user password

2.2.4 Template Management

After a user group and group users are added, each user group administrator and the superuser **admin** can create a recording template for each user group. The detailed procedure is as follows:Click **Add** in the **Templates** tab to display the following window:

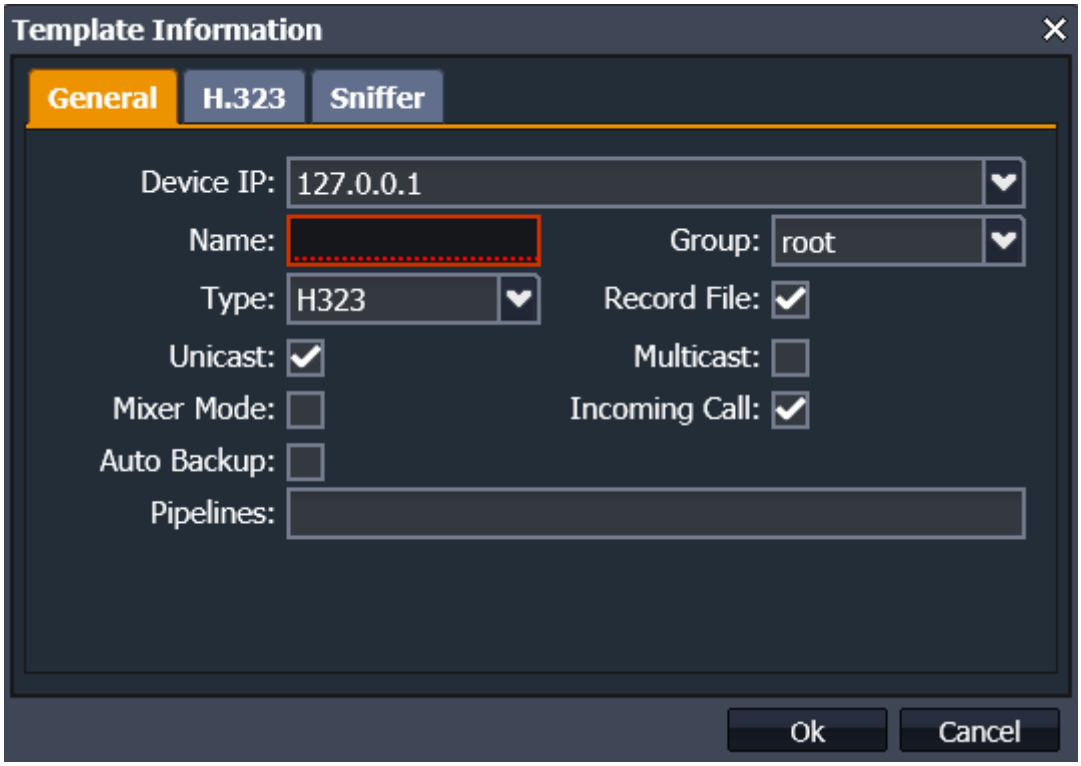


Figure 2-8 Addition of a template

Enter information in the corresponding entries and click **OK** to complete the

creation process. Templates newly created are displayed in the template list as shown in the following diagram:

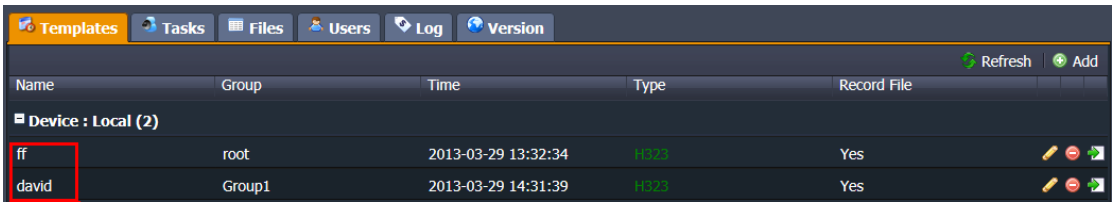


Figure 2-9 Template list

The meaning of each entry is described as follows:

Entry	Description
General	
Name	Indicates the name of a template, which is user-defined.
Group	Indicates the group to which a template belongs. All unicast streams, multicast streams, and files recorded under the template belong to this group.
Type	Indicates the recording type. The value can be: H.323: used for the H.323 recording. H.323_P: used for the H.323 recording with customized streaming. Encoder: used for the analog recording. At present, only the Launch encoder is supported. Sniffer: used for the packet capture recording (where mirroring is performed on the switch).
Record File	Indicates whether recording files are generated.
Unicast	Indicates whether unicast streams are permitted.
Multicast	Indicates whether multicast streams are permitted.
Mixer Mode	Indicates whether the main and secondary streams are integrated into a single video stream. If ticked off, a single recording file is generated for both the main and secondary streams, but the two

	streams are displayed in the same window in split-screen mode. If not ticked off, a single recording file is generated for both the main and secondary streams, and the two streams are displayed separately in two different windows.
Incoming Call	Indicates whether an incoming call of a remote H.323 terminal can trigger the recording and play task.
Auto Backup	Indicates whether recording files can be automatically backed up in a third-party FTP server.
H.323	
Remote Addr	Indicates the IP address of the remote MCU. If the MCU has multiple IP addresses, they need to be separated by commas “**,**”.
E164	Indicates the number used by a remote terminal for registration to the GK netshell.
Audio	Indicates whether audio streams are permitted.
Video	Indicates whether video streams are permitted.
Dual Video	Indicates whether dual streams are permitted.
H.239	Indicates whether H.239 dual streams are permitted.
Force Dual	This option is not ticked-off by default. You can tick off this option only when the recording and streaming server is connected to certain ZTE MCUs.
FECC	Indicates the remote control function, allowing the terminal to display videos on demand through a remote control.
Bandwidth	Indicates the bit rate of a recording task. The value can be 384K, 512K, 768K, 1M, 1.5M, 2M, 4M, or

	8M, in bits.
Audio Codec	Indicates an audio codec, which can be G.711A, G.711U, G.722, G.729, or Auto (automatically adaptive).
Video Codec	Indicates a video codec, which can be H.261, H.263, H.263, or Auto (automatically adaptive).
Dual Codec	Indicates a dual-stream codec, which can be H.261, H.263, H.263, or Auto (automatically adaptive).
Video Size	Indicates the resolution of a video stream, which can be SQCIF, QCIF, CIF, 4CIF, 16CIF, SVGA, VGA, XGA, 720P, 1080P, or Auto (the resolution provided by the adaptive terminal or MCU).
Dual Size	Indicates the resolution of dual streams, which can be SQCIF, QCIF, CIF, 4CIF, 16CIF, SVGA, VGA, XGA, 720P, 1080P, or Auto (the resolution provided by the adaptive terminal or MCU).
Play File	Indicates the media file played for the remote H.323 terminal.
Sniffer	
Name	Indicates the name of an encoder, which is user-defined.
Src	Indicates a source IP address. For codec recording, enter the IP address of the encoder. For monitoring recording, enter the IP address of the sender.
Dst	Indicates a destination IP address. For codec recording, enter the IP address of the encoder.

	For monitoring recording, enter the IP address of the receiver.
Parameter	Indicates the parameter settings. No action is required by default.

Table 2-1 Template parameter description

In most cases, entries such as **Name**, **Type**, **Remote Addr** (for H.323 or H.323_P), or **E164** in the preceding table must be filled up.

To use a template for starting a recording task or to delete/edit a template, select the template name in the list and click any of the  icons as needed. The dialog box that is displayed after the template editing button is clicked is used as an example:

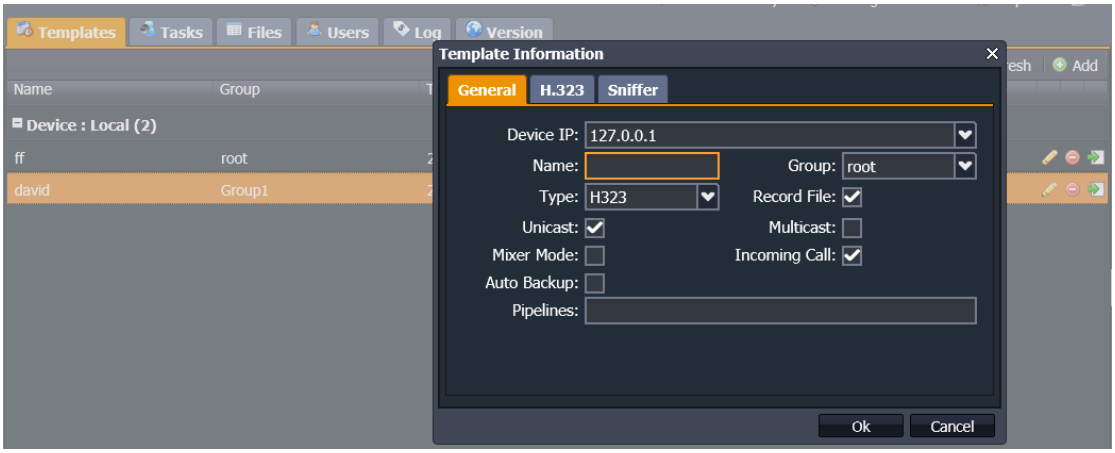


Figure 2-10 Editing of a template

Note that the name can be specified for a task or a recorded file.

2.2.5 Task Management

If a recording task is started through the **Template** tab or an incoming call of an H.323 remote terminal, a list of all tasks in the current group will be displayed in the task management page.

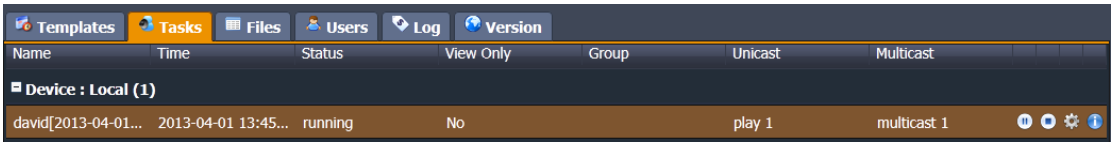


Figure 2-11 Running task list

Double-click a running task to view its details in the dialog box shown as follows:

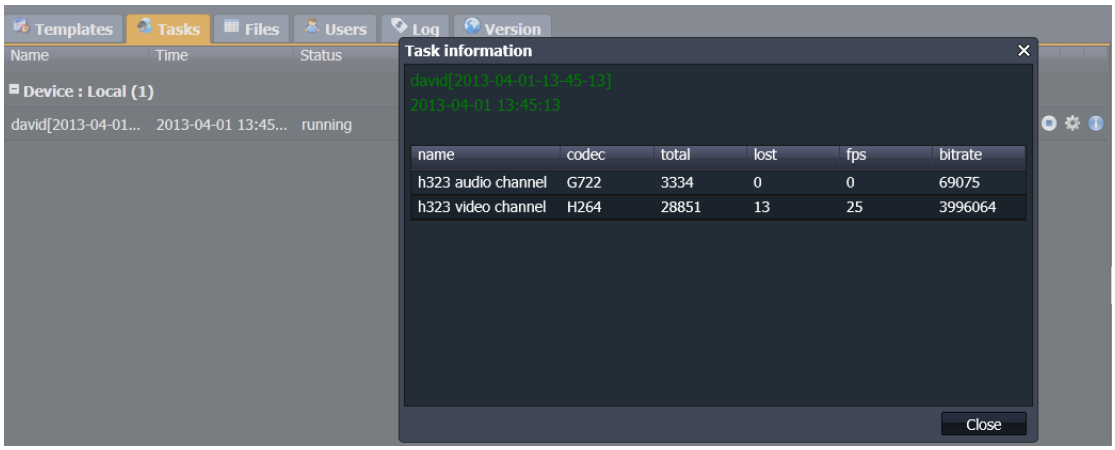


Figure 2-10 Task management

The group administrator can stop a recording task and view unicast streams, while the group users can only view unicast streams.To view unicast streams, the user needs to click **Unicast** to prompt a new window in which unicast streams are played.

Figure 2-11 Receiving of live streams

The following diagram shows the control icons of the player:

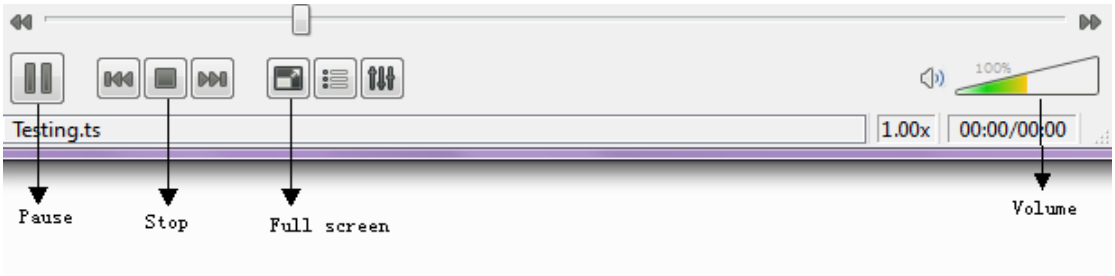


Figure 2-12 Control icons of the player

2.2.6 File Management

1. Generating a recording file

When a group administrator stops a recording task or a remote H.323 terminal stops calling, the task ends, with a recording file being generated automatically. At present, the VCR recording and streaming server supports only files in MP4 format. To download, delete, edit, or view a recording file, first select the file and click any of the  icons as needed.

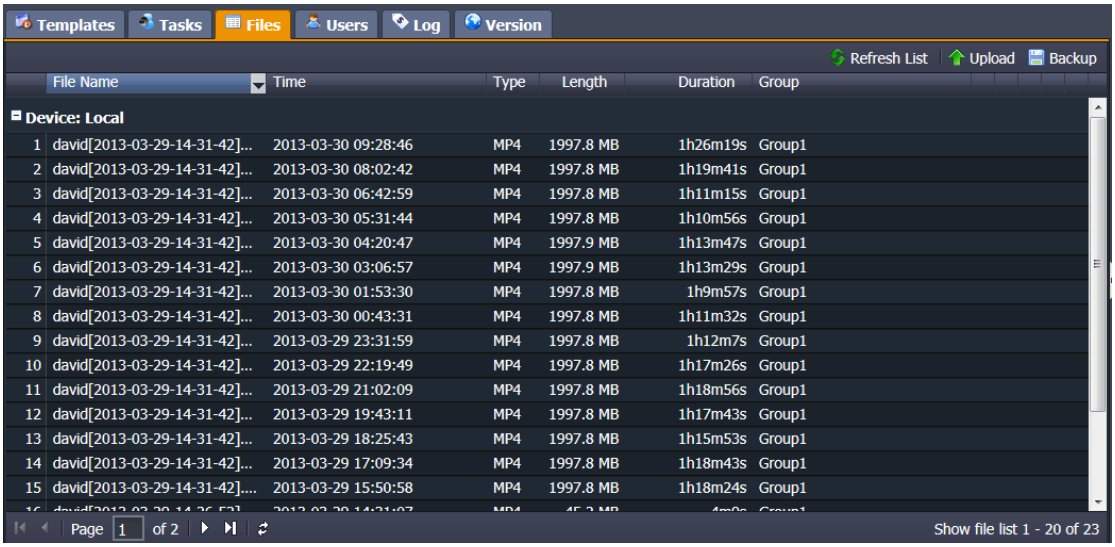


Figure 2-13 File management

2. Viewing a recording file

To view a recording file, double-click the file name or click  as shown in the following diagram:

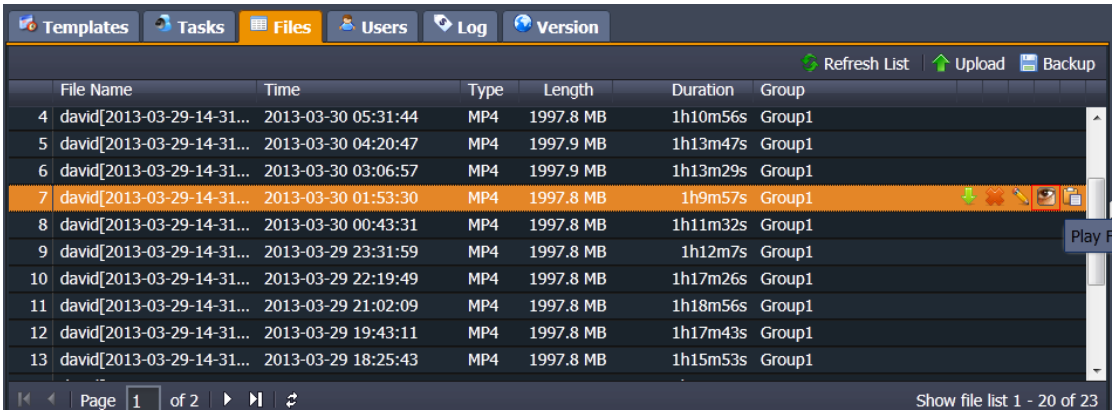


Figure 2-14 File display

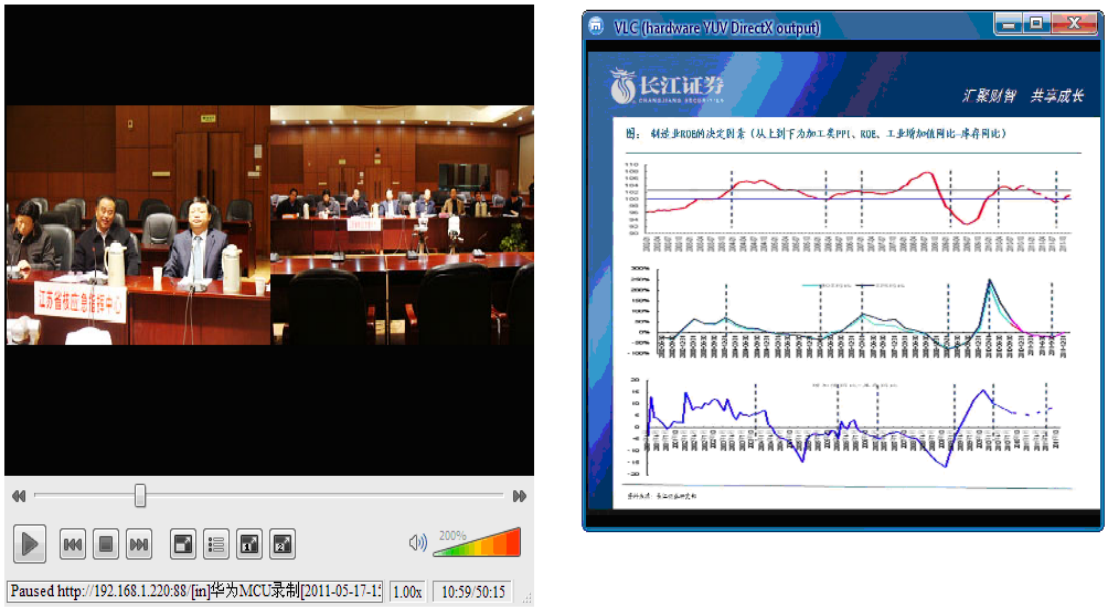


Figure 2-15 Playing interface

3. Changing a file name

To change a file name, click  and enter the new name. After that, click **OK**.

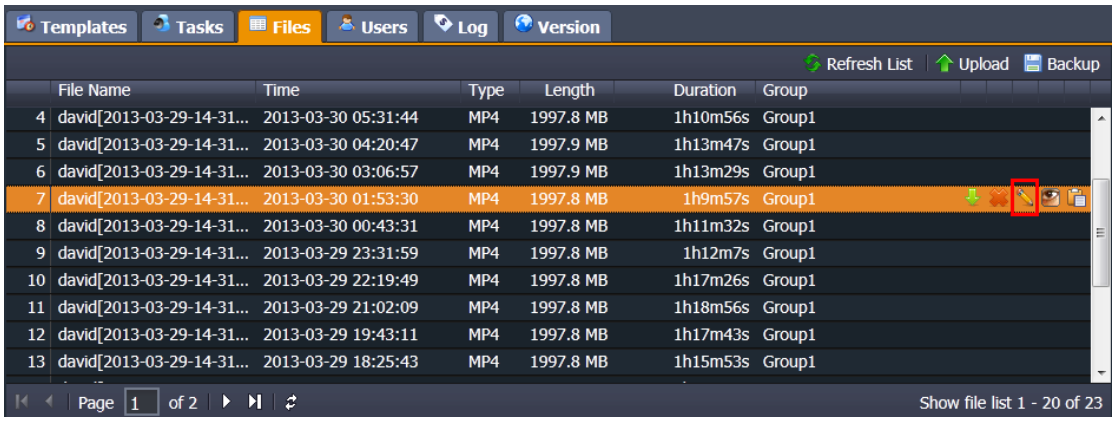


Figure 2-16 Changing of a file name

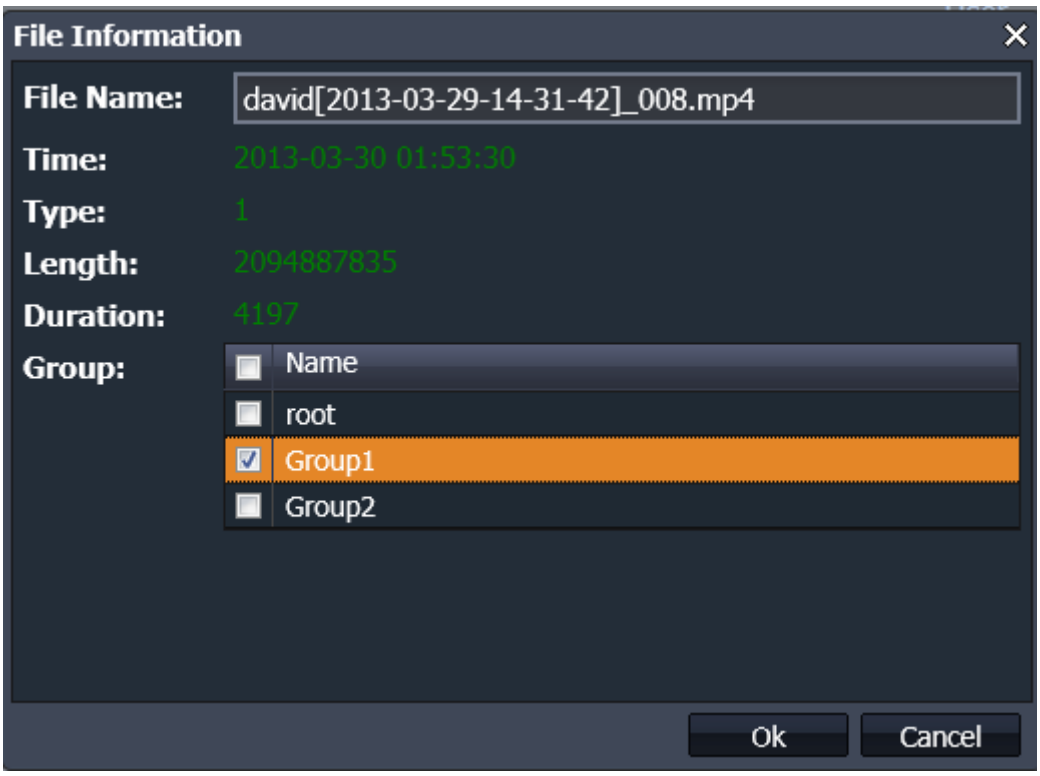


Figure 2-17 File information query

4. Downloading a file

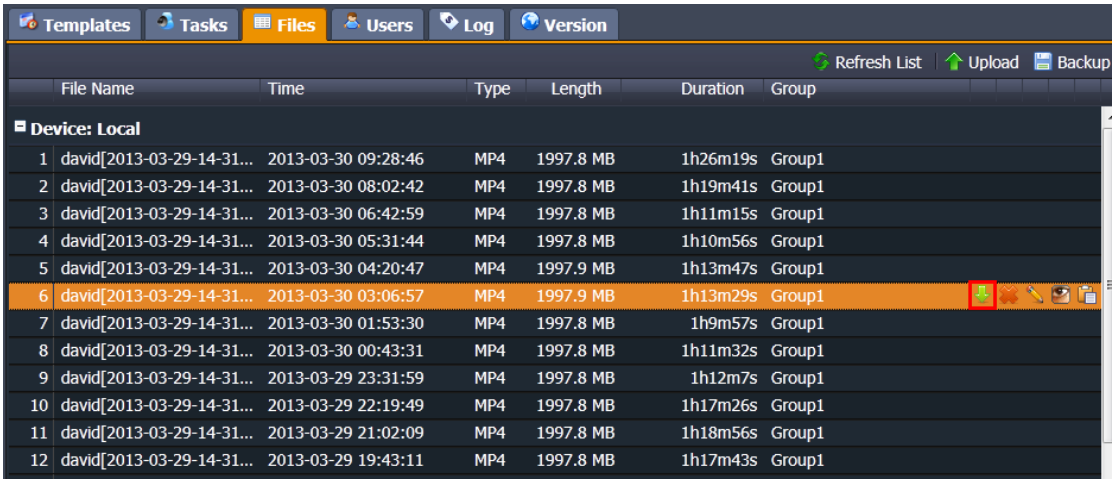
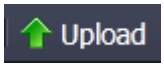


Figure 2-18 File download

Select a file and click  to download the file to a specific directory.

2.2.7 File Upload and Backup

1. Uploading a file

Click  in the **Files** tab to upload media files on the client PC to the

recording and streaming server for resource sharing.

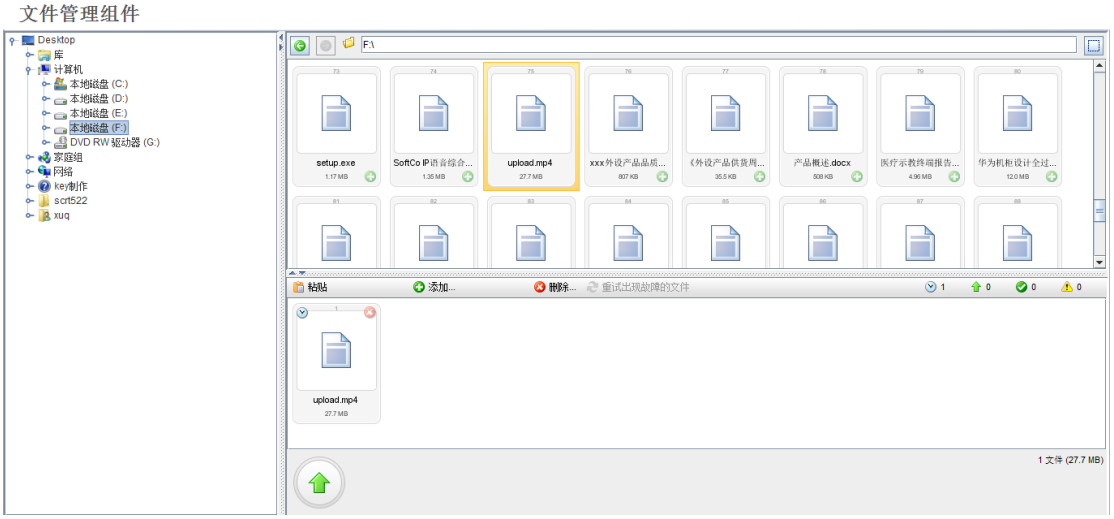


Figure 2-19 File upload

2. Backing up a file

Click Backup in the **Files** tab to back up recording files on the recording and streaming server to a third-party server.

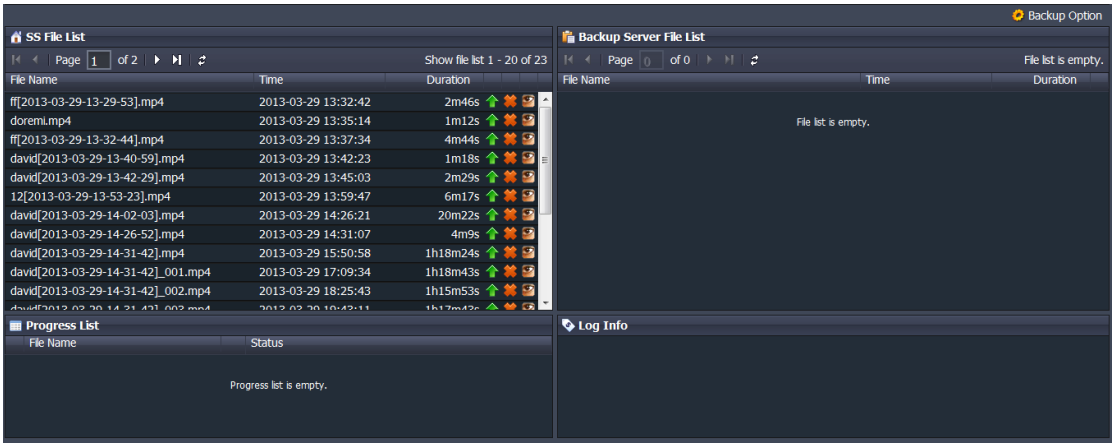


Figure 2-20 File backup

Click Backup Option to configure the backup server of the current user group.

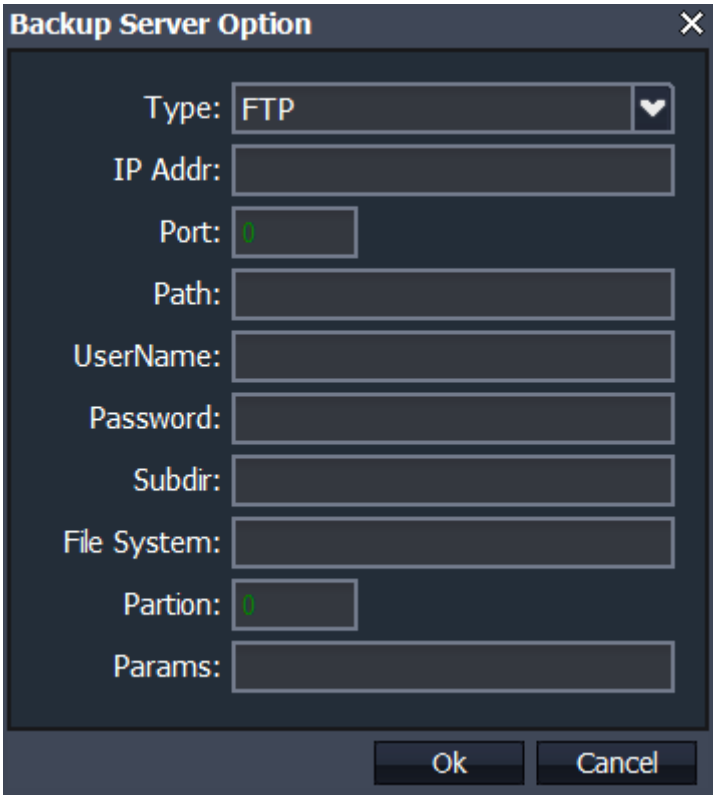


Figure 2-21 Backup server configuration

At present, the backup servers running FTP, Samba (CIFS), Iscsi (IP-SAN) and other protocols are supported.

For an FTP server, information about the IP address, port number, username, and password is required; for a Samba server, information about the IP address, path, username, and password is required; for an Iscsi server, information about the IP address, port number, portion number, and file system is required.

After all required information is filled up, back up local recording files to a backup server. When necessary, recording files backed up on the backup server can be restored to the local recording and streaming server.

System Log

As shown in the following diagram, the operating logs of the system can be viewed in real time in the **Log** interface. In the case of a fault, you can download and send logs to the technical support personnel for further analysis and fault location.

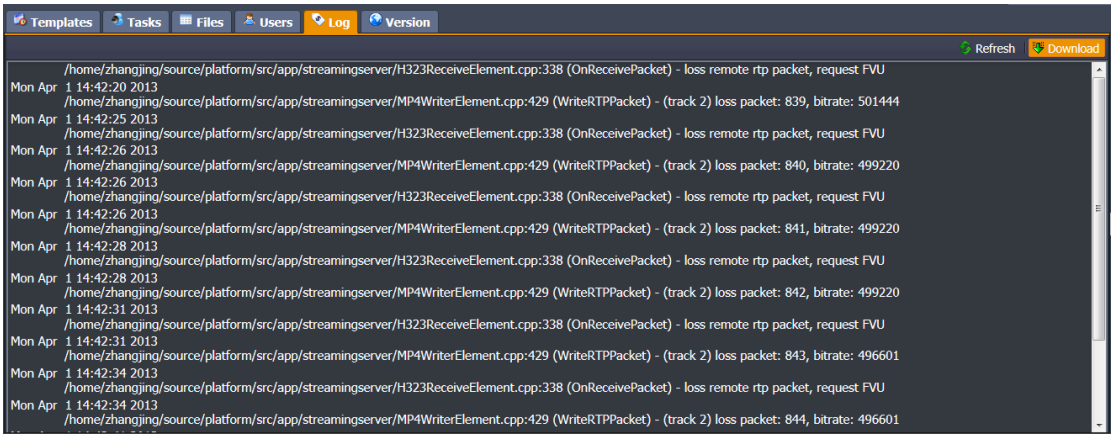


Figure 2-2 System log query

2.2.9 System Information

1. Querying system information

System information that can be queried includes the system version, UI version, CPU usage, memory usage, and disk usage of the server.

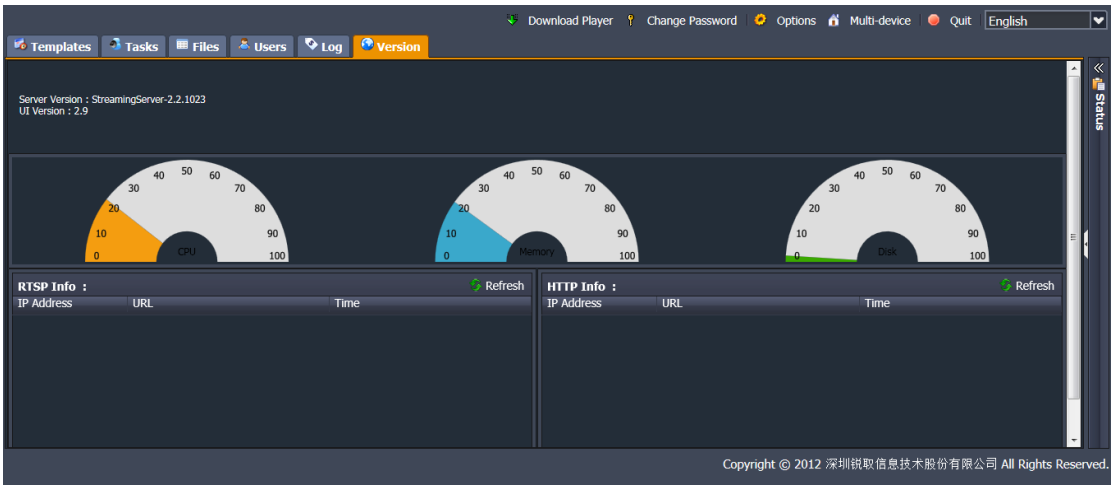


Figure 2-23 System information query

2. Downloading a player plug-in

To ensure that files can be played in live or VOD mode, you need to download a player and install the vlc player plug-in.

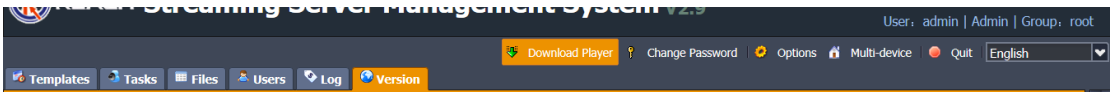


Figure 2-24 Download of a player plug-in

Note: If Google Chrome is used, tick off **Mozilla plugin** in the **Choose Components**

window during the player setup, as shown in the following diagram. If not, the videos cannot be played in Google Chrome.

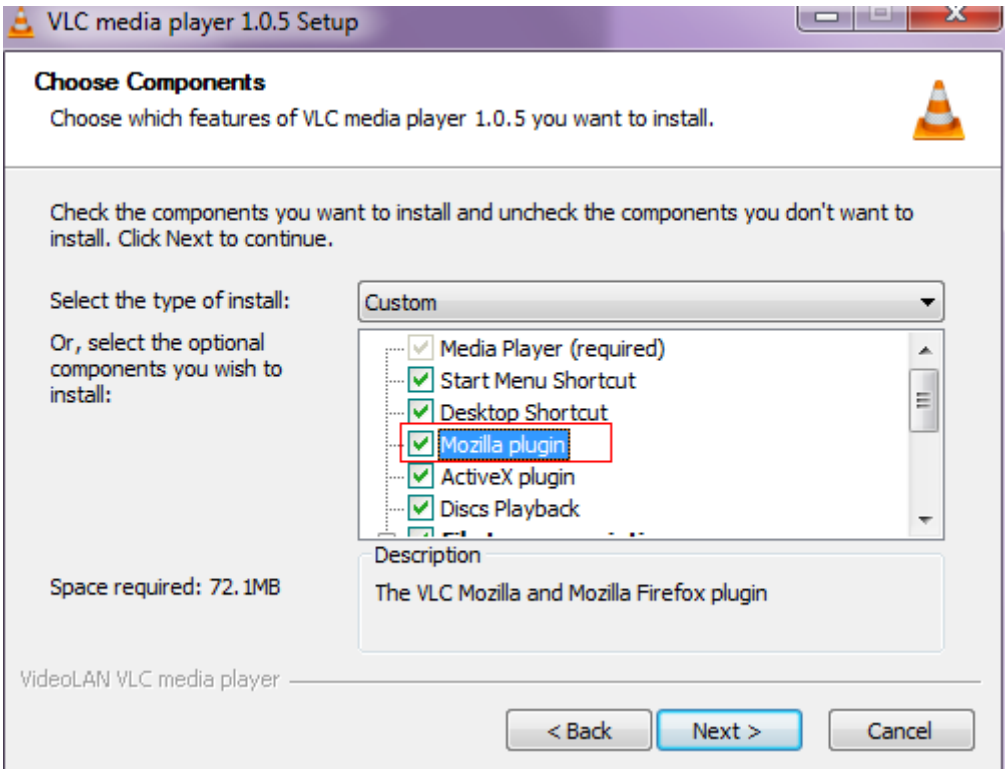


Figure 2-25 Setup of a player plug-in

Chapter III System Settings

3.1 Parameter Settings

For some special cases (for example, registration to GK), the IP address and E164 number need to be entered. You can click Options to find the corresponding tab and enter the number and password allocated to the recording and streaming server in the corresponding entries.

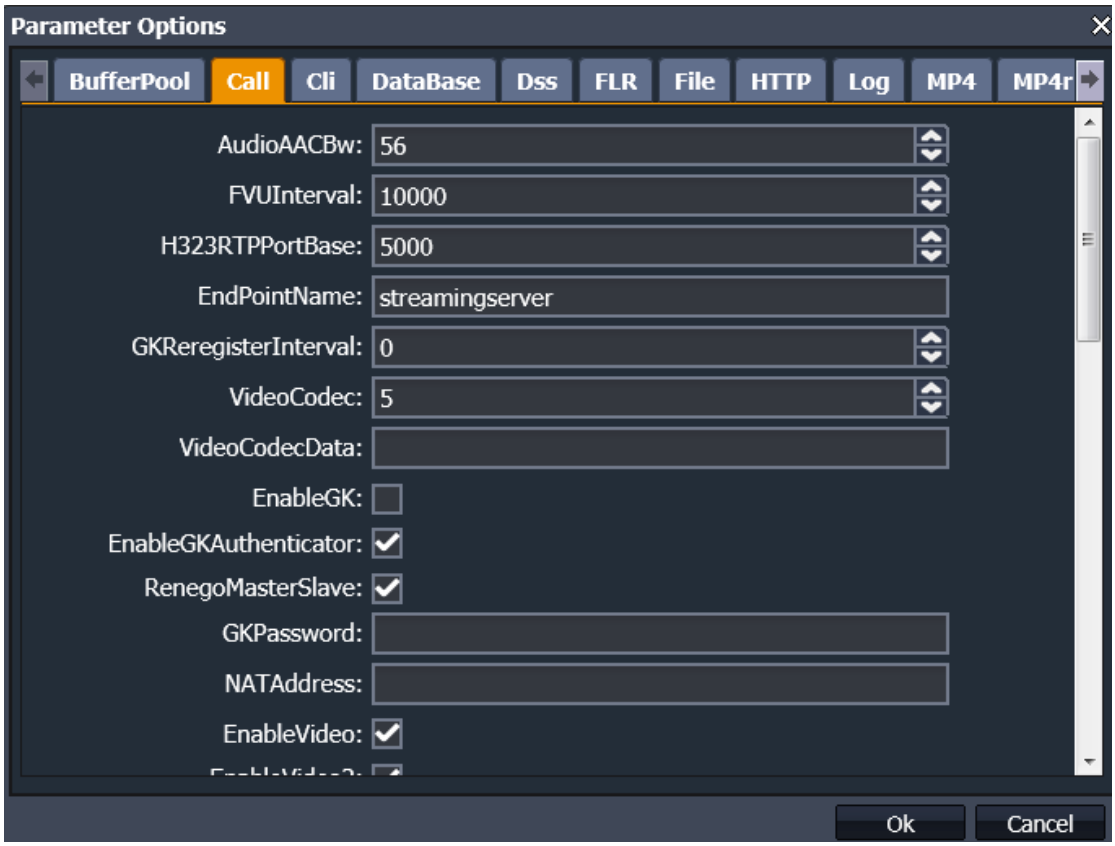


Figure 3-1 System parameter settings

Descriptions of other parameters are as follows:

Parameter	Description
GK-related	
EnableGK	Indicates whether registration to GK is enabled.
GKAddress	Indicates the GK IP address.

GKIdentifier	Indicates the GK identifier.
GKPassword	Indicates the GK registration password.
E164ID	Indicates the E164 number that is specified during the registration to GK.
H.323-related	
Bandwidth	Indicates the default bandwidth.
EnableAudio	Indicates that audio is enabled.
EnableVideo	Indicates that video is enabled.
EnableVideo2	Indicates that dual-stream is enabled.
EnableH239	Indicates that H.239 (related to dual-stream) is enabled.
EnableFECC	Indicates that FECC (remote control signaling) is enabled.
AudioCodec	Indicates the default audio codec.
VideoCodec	Indicates the default video codec.
Video2Codec	Indicates the default dual-stream codec.
VideoBandwidthPercent	Indicates the percentage of bandwidths occupied separately by video and dual streams.
FVUInterval	Indicates the interval at which video streams are refreshed. The value is in seconds.
FVUMinInterval	Indicates the minimum interval at which images are refreshed forcibly.
NATAddress	Indicates the NAT address of the external network (if the DMZ mapping is performed on the recording and streaming server).
Sniffer-related	
SnifferInterface	Indicates the network interface through which the mirroring port of the switch is connected to the recording and streaming server. The value can be

	Eth0 or Eth1.
LPCAddress	Indicates the IP address of the LPC module.
Live streaming-related	
DssUseLocalTimeAsDts	Indicates whether the time at which packets arrive is used as the frame time (this is because the packet timestamp from some terminals is incorrect).
DssLowLatency	Indicates whether the low-delay live streaming mode is used. This parameter takes effect after the system reboot.
Recording-related	
MP4UseLocalTimeAsDts	Indicates whether the local time is used as the timestamp of files in MP4 format.
MP4InterleaveInterval	Indicates the interval at which different streams are interleaved. This value cannot be changed.
MP4SliceSize	Indicates the fragmentation size of files in MP4 format. This parameter is configured in case the file system of the user does not support large-size file.
Debugging-related	
EnableTrace	Enables the debugging information to contain more details.
Others	
MiscMaxTaskDuration	Indicates the maximum task duration.
MiscTaskDebug	Displays more details about the task status.

Table 3-1 System parameter configuration

3.2 System Upgrade

The system can be upgraded using the **Module** option in the configuration page, as shown in the following diagram.

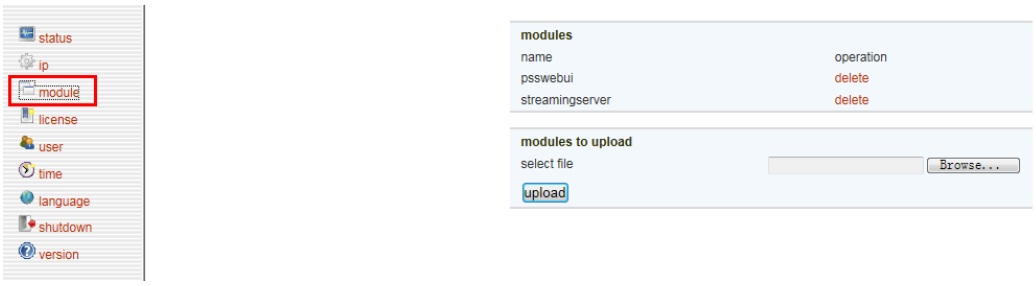


Figure 3-1 System upgrade

Select a file and click **upload** for system upgrade.

Chapter IV FAQs

Q1: Why does IE fail to open the system page?

A: The system supports only IE 7.0 or a later version. If your IE version is earlier than 7.0, upgrade it to a later version.

Q2: Why images of the recorded 1080i videos cannot be played normally in VOD mode?

A: This is because 1080i uses the interlaced scan mode. The problem can be addressed by clicking the icons  .

Q3: Why the downloaded recording files cannot be played smoothly on the computer?

A: The problem may occur if the configuration of your computer is low. Upgrade the configuration or display recording files on another computer.

Q4: Can downloaded recording files be played on other players?

A: Yes. Recording files can be played on mainstream players including QQ Video, Thunder Player, Storm Player, and Youku.

Q5: Can I use a video conferencing terminal to play recording files in VOD mode?

A: Yes. Enter the terminal address in the **General** tab of **Template Information**, untick the **Record File** option, and tick off the **VOD file** option. Alternatively, you can choose the **Auto** mode and select the recording file using the terminal remote control. After filling up template information, enable the template or use incoming calls of the terminal to play the selected recording files.

Q6: Can I convert the format of recording files?

A: Yes. You can convert the format of recording files using format conversion

software (such as Ulead VideoStudio).

Q7: Can I play recording files for dual streams separately?

A: If the **Mixer Mode** option is ticked off in the **Template** tab, recording files for dual streams will be integrated into a single file; if not, the recording files are saved and played separately.

In the following diagram, recording files for dual streams are integrated and displayed in a single window. The main and dual-stream images are of fixed sizes.

Figure 4-1 File display in mixer mode

In the following diagram, recording files for dual streams are not integrated and therefore displayed in two different windows. Sizes of the main and dual-stream images can be adjusted separately as needed.

Figure 4-2 File display in non-mixer mode

Chapter V Compatible Device

Manufacturer	Type	Model
Huawei	MCU	8650
	Terminal	9036, 9039, 9039S, 8036
ZTE	MCU	MVC8900
	Terminal	T502, T600
Polycom	MCU	MGC50, RMX1000, RMX2000
	Terminal	HDX6000, HDX7000, HDX8000, HDX9000, VSX5000, M500, M100
RadVision	MCU	Elite series (5110, 5230), SCOPIA 24
	Terminal	XT1000, XT1200, XT4000, XT5000
Aethra	Terminal	X5, X7
Lifesize	Terminal	Room 220, Team 220
Cisco	Terminal	C20, C40, C60, C90
SONY	Terminal	XG50, XG80
DVISION	Terminal	focus 3800
Aver	Terminal	HA100, HA300

Note: This table is used for reference and devices listed have passed the compatibility test.Due to limited test resources, it is impossible for us to test the compatibility of H.323 devices in all types. For devices from manufacturers not mentioned in the preceding table, you shall test whether they are compatible with the VCR recording and streaming server.