METHOD, DEVICE AND SYSTEM FOR RECORDING MULTIMEDIA DATA

FIELD OF THE INVENTION

[0001] The present invention relates to the field of communications technologies, and in particular, relates to a method, device and system for recording multimedia data.

BACKGROUND OF THE INVENTION

[0002] In multimedia data communication (for example, audio and video communication), it is a common function to record multimedia data (for example, audio data and video data) transferred between communication terminals. With the development of a unified communication ~~service~~ (UC~~, unified communication~~) service and an IP contact center ~~service~~ (IPCC~~, IP contact center~~) service, clients already regard a recording function as an indispensable feature of a newly built networking office, and at the same time need reconstruction of a large amount of offices in existing networks to add the recording function.

[0003] Currently a mainstream recording method is based on a multimedia data distribution mechanism, that is, a distribution device first acquires all multimedia data from received data packets and distributes all the multimedia data to each recording device in a centralized manner. Each recording device obtains multimedia data of a certain number of paths and records the obtained multimedia data as files. For example, assuming 3000 calls at the same time, the data of the 3000 calls includes 3000 pieces of multimedia data (including audio and video data) and signaling for establishing and managing channels used for transmitting the 3000 pieces of multimedia data, and after receiving data packets of the 3000 calls, the distribution device first obtains multimedia data (for example, audio and video data) of 3000 calls from the data packets and distributes the 3000 pieces of multimedia data to 12 recording devices for recording. For example, the 3000 pieces of multimedia data are evenly distributed to 12 recording devices for recording in an even distribution manner, and each recording device obtains 250 pieces of multimedia data, and records the received 250 pieces of multimedia data as files.

[0004] The distribution device needs to process and distribute all the received multimedia data. If the data amount of the multimedia data processed and distributed by the distribution device at the

same time is relatively large, the amount of consumed resources is large, causing that the received multimedia data cannot be processed and distributed in time and resulting in a performance bottleneck, so that efficiency of recording multimedia data is relatively low.

SUMMARY OF THE INVENTION

[0005] Embodiments of the present invention provide a method for recording multimedia data, so as to solve the problem of low efficiency of recording multimedia data.

[0006] In a first aspect, a method for recording multimedia data is provided, where the method includes:

generating, by a distribution device, a recording instruction, where the recording instruction includes multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded; and

sending, by the distribution device, the recording instruction to a recording device, so that the recording device identifies the multimedia data corresponding to the multimedia data identification information and records the multimedia data.

[0007] In a first possible implementation manner, before the generating, by a distribution device, a recording instruction, the method further includes: receiving, by the distribution device, signaling, where the signaling is signaling for establishing a channel for transmitting the multimedia data; and the generating, by a distribution device, a recording instruction is ~~specifically~~: obtaining, by the distribution device and according to the signaling, the multimedia data identification information, and generating the recording instruction including the multimedia data identification information.

[0008] In combination with the first possible implementation manner in the first aspect, in a second possible implementation manner:

the obtaining the multimedia data identification information according to the signaling ~~specifically~~ includes:

obtaining a call identifier from a call identifier header field of the signaling, and using the call identifier as the multimedia data identification information; or

the signaling includes session description protocol SDP information, obtaining an IP address from a connection information field of the SDP information, and using the IP address as the multimedia data identification information; or, obtaining a port number from a media name and transport address field of the SDP information, and using the port number as the multimedia data identification information; or, obtaining an IP address from a connection information field of the SDP information, obtaining a port number from a media name and transport address field of the SDP information, and using the IP address and the port number as the multimedia data identification

information.

[0009] In combination with the first possible implementation manner or the second possible implementation manner in the first aspect, in a third possible implementation manner, the generating the recording instruction including the multimedia data identification information ~~specifically~~ includes: recording the obtained multimedia data identification information, obtaining recording instruction information for instructing recording of the multimedia data corresponding to the multimedia data identification information, and generating the recording instruction.

[0010] In a fourth possible implementation manner, before the generating, by a distribution device, a recording instruction, the method further includes: receiving, by the distribution device, signaling, where the signaling is signaling for establishing a channel for transmitting the multimedia data and the signaling includes the multimedia data identification information; and the generating, by a distribution device, a recording instruction is ~~specifically~~: using, by the distribution device, the signaling as the recording instruction.

[0011] In combination with any one of the first to the fourth possible implementation manners in the first aspect, a fifth possible implementation manner, before the generating a recording instruction, further includes: deciding that the signaling satisfies a preset first recording policy, where the first recording policy is used for deciding signaling corresponding to the multimedia data that needs to be recorded.

[0012] In combination with the fifth possible implementation manner in the first aspect, in a sixth possible implementation manner, the deciding that the signaling satisfies a preset first recording policy ~~specifically~~ includes: deciding that the signaling includes a calling number or a called number that is matched with a preset recording number; or, deciding that the signaling includes an IP address that is matched with a preset IP address.

[0013] In a seventh possible implementation manner, before the generating, by a distribution device, a recording instruction, the method further includes: receiving, by the distribution device, the multimedia data identification information from a control device.

[0014] In combination with the seventh possible implementation manner in the first aspect, an eighth possible implementation manner, before the generating the recording instruction including the multimedia data identification information, further includes: receiving, by the distribution device, a calling number or a called number corresponding to the multimedia data identification information from the control device, and deciding that the calling number or the called number is matched with a preset recording number.

[0015] In combination with any one of the first to the eighth implementation manners in the first aspect, in a ninth possible implementation manner:

the distribution device decides, according to a preset second recording policy, a recording device for recording the multimedia data, and sends the recording instruction to the decided recording device; or,

the distribution device sends the recording instruction to all recording devices that communicate with the distribution device, so that each recording device in all the recording devices determines whether the multimedia data corresponding to the multimedia data identification information is the multimedia data that the recording device is instructed to record and and records the multimedia data when the determination result is yes.

[0016] In combination with the first aspect or the first or fourth or seventh or eighth possible implementation manner in the first aspect, in a tenth possible implementation manner, the multimedia data identification information includes:

a call identifier corresponding to the multimedia data;

an IP address corresponding to the multimedia data;

a port number corresponding to the multimedia data; or

an IP address and a port number that are corresponding to the multimedia data.

[0017] In the eleventh possible implementation manner, the distribution device generates the recording instruction according to a preset third recording policy, where the third recording policy is used for deciding multimedia data identification information corresponding to multimedia data that the recording deviceneeds to record.

[0018] In combination with the eleventh possible implementation manner in the first aspect, in a twelfth possible implementation manner, the generating, by the distribution device, the recording instruction according to the third recording policy, ~~specifically~~ includes: obtaining, by the distribution device, preset user identity information corresponding to the recording device, obtaining preset multimedia data identification information corresponding to the user identity information, and generating the recording instruction including the multimedia data identification information; or, obtaining, by the distribution device, preset multimedia data identification information corresponding to the recording device, and generating the recording instruction including the multimedia data identification information.

[0019] In combination with the eleventh or twelfth possible implementation manner in the first aspect, in a thirteenth possible implementation manner, the multimedia data identification information includes:

an IP address corresponding to the multimedia data;

a port number corresponding to the multimedia data; or

an IP address and a port number that are corresponding to the multimedia data.

the multimedia data identification information includes a call identifier, the recording device obtains signaling including the call identifier, obtains an IP address and a port number from the obtained signaling, determines whether a destination IP address and a destination port number in a received data packet are the obtained IP address and port number, and if the determination result is yes, decides that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes a call identifier, the recording device obtains signaling including the call identifier, obtains an IP address and a port number from the obtained signaling, determines whether a source IP address and a source port number in a received data packet are the obtained IP address and port number, and if the determination result is yes, decides that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes an IP address, the recording device determins whether a destination IP address or a source IP address in a received data packet is the IP address included in the recording instruction, and if the determination result is yes, decides that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes a port number, the recording device determines, whether a destination port number or a source port number in a received data packet is the port number included in the recording instruction, and if the determination result is yes, decides that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes an IP address and a port number, the recording device determines whether a destination IP address and a destination port number in a received data packet are the IP address and the port number that are included in the recording instruction, and if the determination result is yes, decides that data included in the data packet is the multimedia data that needs to be recorded; or

the multimedia data identification information ~~specifically~~ includes an IP address and a port number, the recording device determines whether a source IP address and a source port number in a received data packet are the IP address and the port number that are included in the recording instruction, and if the determination result is yes, decides that data included in the data packet is the multimedia data that needs to be recorded.

[0024] In combination with the second aspect or the first possible implementation manner in the second aspect or the second possible implementation manner in the second aspect, in a third possible implementation manner, before the identifying, by the recording device and according to the multimedia data identification information, multimedia data that needs to be recorded, the

method further includes: screening received multimedia data by the recording device to acquire multimedia data which is corresponding to a multimedia data identification information set, and the multimedia data identification information set is preconfigured or obtained from the distribution device, or generated according to the multimedia data identification information included in a previously received recording instruction; and ~~specifically~~ identifying, by the recording device and according to the multimedia data identification information, the multimedia data, which needs to be recorded, from the multimedia data that is acquired through screening.

[0025] In combination with the third possible implementation manner in the second aspect, in a fourth possible implementation manner, the multimedia data identification information set ~~specifically~~ includes: an IP address range; or a port number range.

[0026] In a third aspect, a distribution device for recording multimedia data is provided, where the distribution device includes:

an instruction generation unit, configured to generate a recording instruction, where the recording instruction includes multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded;

an instruction sending unit, configured to send the recording instruction to a recording device, so that the recording device identifies the multimedia data corresponding to the multimedia data identification information and records the multimedia data.

[0027] In a first possible implementation manner, the distribution device further includes: a first data receiving unit, configured to receive signaling, where the signaling is signaling for establishing a channel for transmitting the multimedia data; and the instruction generation unit is ~~specifically~~ configured to obtain the multimedia data identification information according to the signaling, and generate the recording instruction including the multimedia data identification information.

[0028] In combination with the first possible implementation manner in the third aspect, in a second possible implementation manner:

the instruction generation unit is ~~specifically~~ configured to obtain a call identifier from a call identifier header field of the signaling, use the call identifier as the multimedia data identification information, and generate a recording instruction including the call identifier; or,

the signaling includes session description protocol SDP information, and the instruction generation unit is ~~specifically~~ configured to obtain an IP address from a connection information field of the SDP information, use the IP address as the multimedia data identification information, and generate a recording instruction including the IP address; or obtain a port number from a media name and transport address field of the SDP information, use the port number as the multimedia data identification information, and generate a recording instruction that includes the port number;

or obtain an IP address from a connection information field of the SDP information, obtain a port number from a media name and transport address field of the SDP information, use the IP address and the port number as the multimedia data identification information, and generate a recording instruction including the IP address and the port number.

[0029] In combination with the first or the second possible implementation manner in the third aspect, in a third possible implementation manner, the instruction generation unit is ~~specifically~~ configured to obtain the multimedia data identification information according to the signaling, record the obtained multimedia data identification information, and generate the recording instruction after obtaining recording instruction information for instructing recording of the multimedia data.

[0030] In a fourth possible implementation manner, the distribution device further includes: a second data receiving unit, configured to receive signaling, where the signaling is signaling for establishing a channel for transmitting the multimedia data and the signaling includes the multimedia data identification information; and the instruction generation unit is ~~specifically~~ configured to use the signaling as the recording instruction.

[0031] In combination with any one of the first to the fourth possible implementation manners in the third aspect, in a fifth possible implementation manner, the instruction generation unit is further configured to decide that the signaling satisfies a preset first recording policy; the deciding that the signaling satisfies a preset first recording policy ~~specifically~~ includes: deciding that the signaling includes a calling number or a called number that is matched with a preset recording number; or, deciding that the signaling includes an IP address that are matched with a preset IP address.

[0032] In a sixth possible implementation manner, the distribution device further includes: a multimedia data identification information receiving unit, configured to receive the multimedia data identification information from a control device.

[0033] In combination with the sixth possible implementation manner in the third aspect, in a seventh possible implementation manner, the multimedia data identification information receiving unit is further configured to receive, from the control device, a calling number or a called number corresponding to the multimedia data identification information; and the instruction generation unit is further configured to decide that the calling number or the called number is matched with a preset recording number.

[0034] In combination with the third aspect or any one of the first to the seventh implementation manners in the third aspect, in an eighth possible implementation manner:

the distribution device further includes a recording device decision unit, configured to

decide, according to a preset second recording policy, a recording device for recording the multimedia data; and the instruction sending unit is ~~specifically~~ configured to send the recording instruction to the decided recording device; or,

the instruction sending unit is ~~specifically~~ configured to send the recording instruction to all recording devices that communicate with the distribution device, so that each recording device in all the recording devices determines whether the multimedia data corresponding to the multimedia data identification information is the multimedia data that the recording device is instructed to record, and records the multimedia data when the determination result is yes.

[0035] In a ninth possible implementation manner, the instruction generation unit is ~~specifically~~ configured to generate the recording instruction according to a preset third recording policy, where the third recording policy is used for deciding multimedia data identification information corresponding to multimedia data that the recording device needs to record.

[0036] In combination with the ninth possible implementation manner in the third aspect, in a tenth possible implementation manner:

the instruction generation unit is ~~specifically~~ configured to obtain preset user identity information corresponding to the recording device, obtain preset multimedia data identification information corresponding to the user identity information, and generate the recording instruction including the multimedia data identification information; or,

the instruction generation unit is ~~specifically~~ configured to obtain preset multimedia data identification information corresponding to the recording device, and generate the recording instruction including the multimedia data identification information.

[0037] In a fourth aspect, a recording device for recording multimedia data is provided, where the recording device includes:

an instruction receiving unit, configured to receive a recording instruction from a distribution device, where the recording instruction includes multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded;

a multimedia data identification unit, configured to identify, according to the multimedia data identification information, the multimedia data that needs to be recorded; and

a recording unit, configured to record the multimedia data.

[0038] In a first possible implementation manner,

the multimedia data identification information includes a call identifier; the multimedia data identification unit is ~~specifically~~ configured to determine whether a received data packet includes the call identifier, and if yes, decide that data included in the data packet is the multimedia

data that needs to be recorded; or,

the multimedia data identification information includes a call identifier, the multimedia data identification unit is ~~specifically~~ configured to obtain signaling including the call identifier according to the call identifier, obtain an IP address from the obtained signaling, determine whether a destination IP address or a source IP address in a received data packet is the obtained IP address, and if the determination result is yes, decide that data included in the data packet is the multimedia data that needs to be recorded; or

the multimedia data identification information includes a call identifier, the multimedia data identification unit is ~~specifically~~ configured to obtain signaling including the call identifier according to the call identifier, obtain a port number from the obtained signaling, determine whether a destination port number or a source port number in a received data packet is the obtained port number, and if the determination result is yes, decide that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes a call identifier, the multimedia data identification unit is ~~specifically~~ configured to obtain signaling including the call identifier according to the call identifier, obtain an IP address and a port number from the obtained signaling, determine whether a destination IP address and a destination port number in a received data packet are the obtained IP address and port number, and if the determination result is yes, decide that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes a call identifier, the multimedia data identification unit is ~~specifically~~ configured to obtain signaling including the call identifier according to the call identifier, obtain an IP address and a port number from the obtained signaling, determine whether a source IP address and a source port number in a received data packet are the obtained IP address and port number, and if the determination result is yes, decide that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes an IP address, the multimedia data identification unit is ~~specifically~~ configured to determine whether a destination IP address or a source IP address in a received data packet is the IP address included in the recording instruction, and if the determination result is yes, decide that data included in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information includes a port number, the multimedia data identification unit is ~~specifically~~ configured to determine whether a destination port number or a source port number in a received data packet is the port number included in the recording instruction, and if the determination result is yes, decide that data included in the data packet is the

multimedia data that needs to be recorded; or,

the multimedia data identification information ~~specifically~~ includes an IP address and a port number, the multimedia data identification unit is ~~specifically~~ configured to determine whether a destination IP address and a destination port number in a received data packet are the IP address and the port number that are included in the recording instruction, and if the determination result is yes, decide that data included in the data packet is the multimedia data that needs to be recorded; or

the multimedia data identification information ~~specifically~~ includes an IP address and a port number, the recording device determines whether a source IP address and a source port number in a received data packet are the IP address and the port number that are included in the recording instruction, and if the determination result is yes, decide that data included in the data packet is the multimedia data that needs to be recorded.

[0039] In combination with the fourth aspect or the first possible implementation manner in the fourth aspect, in a second possible implementation manner:

the recording device further includes a data receiving unit, configured to receive multimedia data;

the recording device further includes a multimedia data screening unit, configured to screen received multimedia data to acquire multimedia data which is corresponding to a multimedia data identification information set, and the multimedia data identification information set is preconfigured or obtained from the distribution device, or generated according to the multimedia data identification information included in the previously received recording instruction; and

the multimedia data identification unit is ~~specifically~~ configured to identify, according to the multimedia data identification information included in the recording instruction, the multimedia data that needs to be recorded from the multimedia data that is acquired through screening.

[0040] In a fifth aspect, a system for recording multimedia data is provided, where the system includes:

a distribution device, which is ~~specifically~~ the distribution device in the third aspect or any one of the first to the tenth possible implementation manners in the third aspect; and

a recording device, which is ~~specifically~~ the recording device in the fourth aspect or the first or the second possible implementation manner in the fourth aspect.

[0041] In a first possible implementation manner, the system further includes a mirrored switch, and the recording device receives multimedia data from the mirrored switch.

[0042] In combination with the fifth aspect or the first possible implementation manner in the fifth aspect, in a second possible implementation manner, the system further includes a control device, and the distribution device receives signaling or multimedia data identification information

from the control device.

[0043] Through the foregoing solutions, a distribution device does not need to process and distribute all multimedia data and only needs to decide multimedia data identification information corresponding to multimedia data that needs to be recorded and send the multimedia data identification information to a recording device, and the recording device identifies the multimedia data corresponding to the multimedia data identification information and records the multimedia data, so that the amount of data that the distribution device processes is small, thereby improving the efficiency of recording multimedia data.

BRIEF DESCRIPTION OF THE DRAWINGS

[0044] To illustrate the technical solutions in the embodiments of the present invention more clearly, the following briefly describes the accompanying drawings needed for describing the embodiments or the prior art. Apparently, the accompanying drawings in the following description merely show some embodiments of the present invention, and persons skilled in the art may derive other drawings from these accompanying drawings without creative efforts.

[0045] FIG. 1 is a schematic view of an architecture of a system according to an embodiment of the present invention;

[0046] FIG. 2 is a schematic flow chart of a method according to Embodiment 1 of the present invention;

[0047] FIG. 3-1 and FIG. 3-2 show structural examples of a SIP (session initiation protocol, ~~session initiation protocol~~) message;

[0048] FIG. 4-1 and FIG. 4-2 show structural examples of an IP packet encapsulating an RTP (real-time transport protocol, ~~real-time transport protocol~~) packet;

[0049] FIG. 5 is a schematic view of an optimal exemplary implementation manner according to Embodiment 1 of the present invention;

[0050] FIG. 6 is a schematic structural view of a device according to Embodiment 2 of the present invention;

[0051] FIG. 7 is a schematic structural view of another device according to Embodiment 2 of the present invention;

[0052] FIG. 8 is a schematic structural view of another device according to Embodiment 2 of the present invention;

[0053] FIG. 9 is a schematic structural view of a device according to Embodiment 3 of the present invention;

[0054] FIG. 10 is a schematic structural view of another device according to Embodiment 3 of

the present invention;

[0055] FIG. 11 is a schematic structural view of another device according to Embodiment 3 of the present invention;

[0056] FIG. 12 is a schematic structural view of a system according to Embodiment 4 of the present invention; and

[0057] FIG. 13 is a schematic structural view of a computer system according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0058] The following clearly and completely describes the technical solution according to the embodiments of the present invention with reference to the accompanying drawings in the embodiments of the present invention. Apparently, the embodiments in the following description are merely a part rather than all of the embodiments of the present invention. All other embodiments obtained by persons skilled in the art based on the embodiments of the present invention without creative efforts shall fall within the protection scope of the present invention.

[0059] As shown in FIG. 1, a recording system provided in an embodiment of the present invention includes a distribution device and a recording device. The distribution device sends a recording instruction including multimedia data identification information to the recording device. The recording device identifies multimedia data corresponding to the multimedia data identification information and records the multimedia data. Optionally, the recording device may receive multimedia data and identifies, from the received multimedia data, multimedia data corresponding to the multimedia data identification information.

[0060] The distribution device may be deployed separately and may also be combined with other devices, for example, combined with one of the recording devices or combined with at least one device of control devices such as a computer telephony integration (CTI~~, computer telephony integration~~) device, an automatic call distribution (ACD~~, automatic call distribution~~) device, a private branch exchange (PBX~~, private branch exchange~~), a universal access platform (UAP~~, universal access platform~~).

[0061] Embodiment 1 of the present invention provides a method for recording multimedia data, in which a schematic flow chart of the method is shown in FIG. 2, and the method includes:

[0062] 110: A distribution device generates a recording instruction, where the recording instruction includes multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded.

[0063] 120: The distribution device sends the recording instruction to a recording device.

[0091] Exemplary implementation manner 1: Obtain, from the signaling, a call identifier corresponding to the multimedia data and use the call identifier as multimedia data identification information in the recording instruction.

[0092] Specifically, a call identifier is obtained from a call identifier header field of the signaling; if the signaling is a SIP signaling, then a Call-ID is obtained from a Call-ID header field of the signaling, the Call-ID is the call identifier. The call identifier may be obtained from any type of signaling, or the call identifier may be obtained from a specific type of signaling, for example, from a signaling such as call request signaling INVITE, successful response signaling 200 OK and successful response acknowledgment signaling ACK. By taking the INVITE signaling as an example, as shown in FIG. 3-1, a call identifier may be obtained from a Call-ID header field of the INVITE signaling.

[0093] Exemplary implementation manner 2: Obtain, from the signaling, an IP address or a port number corresponding to multimedia data, and use the IP address or the port number as the multimedia data identification information.

[0094] Specifically it may includ that a destination IP address or a destination port number or a destination IP address and a destination port number of multimedia data 2 is obtained from at least one piece of signaling sent from a first communication device to a second communication device in the signaling, and a destination IP address or a destination port number or a destination IP address and a destination port number of multimedia data 1 is obtained from at least one piece of signaling sent from the second communication device to the first communication device in the signaling.

[0095] Preferably, the signaling includes session description protocol (SDP ~~information, session description protocol~~) information and the IP address is obtained from a connection information ~~(connection information)~~ field (namely, line "c=") of the SDP information, or the port number is obtained from a media name and transport address ~~(media name and transport address)~~ field (namely, line "m=") of the SDP information, or the IP address is obtained from a connection information field of the SDP information and the port number is obtained from a media name and transport address field of the SDP information.

[0096] If the source IP address of multimedia data 1 is the same as the destination IP address of multimedia data 2, or the source port number of multimedia data 1 is the same as the destination port number of multimedia data 2, the destination IP address or destination port number of multimedia data 2 may also be obtained from at least one piece of signaling sent from the first communication device to the second communication device.

[0097] In an actual communication scenario, the first communication device and the second communication device are a calling device and a called device, respectively. Specifically, a call

[0174] Preferably, the instruction generation unit is further configured to determine whether the signaling satisfies a first recording policy that is used for deciding the signaling corresponding to multimedia data that needs to be recorded. If yes, the instruction generation unit generates the recording instruction according to the signaling. For example, it is determined whether the signaling includes a calling number or a called number that is matched with a preset recording number, and if yes, the recording instruction is generated according to the signaling, where the recording number is specifically a number (for example, a telephone number) of a communication device corresponding to multimedia data that needs to be recorded; further, determine whether the signaling includes an IP address that is matched with a preset IP address, where the preset IP address specifically includes a source IP address or a destination IP address of the multimedia data that needs to be recorded, and if yes, generate the recording instruction according to the signaling.

[0175] Preferably, as the signaling includes session description protocol SDP information, the instruction generation unit is specifically configured to obtain an IP address from a connection information ~~(connection information)~~ field (namely, line "c=") of the SDP information and generate a recording instruction including the IP address, or obtain a port number from a media name and transport address ~~(media name and transport address)~~ field (namely, line "m=") of the SDP information and generate a recording instruction that includes the port number, or obtain an IP address from a connection information field of the SDP information and obtain a port number from a media name and transport address field of the SDP information and generate a recording instruction including the IP address and the port number; or, specifically configured to obtain a call identifier from a call identifier Call-ID header field of the signaling and generate a recording instruction including the call identifier.

[0176] If the data includes signaling and multimedia data, the device may further include a signaling detection unit, configured to detect signaling from the data.

[0177] Preferably, if the distribution device further has the function of recording multimedia data, the distribution device may further include a recording unit 1004, and the instruction sending unit is further configured to send a recording instruction to the recording unit so as to instruct the recording unit to record multimedia data corresponding to the multimedia data identification information; and the recording unit records the multimedia data corresponding to the multimedia data identification information. Specifically, after receiving the recording instruction, the recording unit identifies, from the received multimedia data, multimedia data corresponding to multimedia data identification information included in the recording instruction and records the multimedia data corresponding to the multimedia data identification information. Preferably, the recording unit receives the multimedia data through a second network adapter (which may include one or more

identification information, and specifically receive, from a control device, the multimedia data identification information obtained by the control device from received signaling; the instruction generation unit is specifically configured to generate the recording instruction including the multimedia data identification information. Perferably, the multimedia data identification information receiving unit is further configured to obtain a calling number or a called number corresponding to the multimedia data identification information, and the instruction generation unit is further configured to determine whether the calling number or the called number is matched with a preset recording number, and when the determination result is yes, generate the recording instruction including the multimedia data identification information.

[0181] Perferably, the device further includes a recording device decision unit, configured to decide, according to a preset second recording policy, a recording device for recording the multimedia data corresponding to the multimedia data identification information; the instruction sending unit is specifically configured to send the recording instruction to the decided recording device; or, the instruction sending unit is specifically configured to send the recording instruction to all recording devices that communicate with the distribution device, so that each recording device determines whether the multimedia data corresponding to the multimedia data identification information included in the recording instruction is the multimedia data that the recording device is instructed to record, and when the determination result is yes, record the multimedia data.

[0182] Specifically, a dedicated hardware circuit (for example, a hardware circuit such as a field programmable gate array (FPGA~~, field programmable gate array~~)) may be used to implement a part or all of the functions of the distribution device; specifically, the hardware circuit is adopted to implement the function of one or more units included in the distribution device, thereby further improving the performance of a distribution device.

[0183] Fro the specific function implementation of the distribution device 100. reference may be made to Embodiment 1 of the present invention.

[0184] According to Embodiment 1 of the present invention, Embodiment 3 of the present invention provides a recording device for recording multimedia data 200.

[0185] As shown in FIG. 9, the recording device for recording multimedia data 200 includes:

an instruction receiving unit 2001, configured to receive a recording instruction from a distribution device, where the recording instruction includes multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded;

a multimedia data identification unit 2005, configured to identify, according to the multimedia data identification information, the multimedia data that needs to be recorded; and

information from the received signaling and send the obtained multimedia data identification information to the distribution device, and the distribution device is specifically configured to generate the recording instruction including the multimedia data identification information. Perferably, the control device is further configured to obtain, from the signaling, a calling number or a called number corresponding to the multimedia data identification information and send the calling number and the called number to the distribution device, and the distribution device is further configured to determine whether the calling number or the called number is matched with a preset recording number, and if the determination result is yes, generate the recording instruction including the multimedia data identification information.

[0205] For the specific function implementation of the recording system, reference may be made to Embodiments 1 to 3 of the present invention.

[0206] The distribution device in Embodiments 1 and 2 of the present invention can be implemented by electronic hardware or a combination of computer software and electronic hardware. If it is implemented by a combination of computer software and electronic hardware, specifically, it may be implemented by running a computer program on a computer. The computer program includes a program code ~~(program code)~~, and the method in Embodiment 1 of the present invention may be implemented by running the computer program on a computer. The computer includes, but is not limited to, a PC, a server, a PAD, and a notebook computer.

[0207] The schematic structural view of the system of the computer is shown in FIG. 13, which includes a processor, a memory, a storage controller, a communication apparatus, and may further include a persistent memory, a persistent storage controller, a display apparatus, a display controller, an input apparatus, and an I/O controller.

[0208] The memory is configured to store a computer program and data, the computer program includes a program code, and the program code includes a computer operation instruction. The computer operation instruction includes a computer operation instruction for implementing the function of each unit of the distribution device provided in Embodiment 2 of the present invention. The data includes data needed for processing the computer operation instruction and data generated in executing the computer operation instruction, and may specifically include data (include signaling) received by a distribution device, multimedia data identification information obtained from signaling, a preset recording policy written in a memory, received multimedia data identification information, a generated recording instruction, and the like. The memory is specifically a volatile memory.

[0209] The storage controller is configured to address and access operation instructions and data that are stored in the memory. The storage controller is controlled by the processor.

[0210] The main processor is configured to execute a computer program stored in a memory. The main processor is a central processing unit (CPU~~, central processing unit~~) and is a core unit of a computer.

[0211] The persistent memory is configured to persistently store an application, an operating system, and file data. The application may specifically include an application corresponding to a computer program of the distribution device, and the stored file data specifically includes a file saving a preset recording policy. The persistent storage apparatus includes, but is not limited to, a magnetic disk, a magnetic tape, a memory card, and the like.

[0212] The persistent storage controller is configured to address and access an application, an operating system, and file data in the persistent memory. The persistent memory is controlled by the processor.

[0213] The display apparatus is configured to present a processing result of a computer. The processing result of a computer may be specifically an operation process and an operation result in Embodiments 1 and 2, which includes a configuration process and a configuration result of configuring a recording policy. The display apparatus includes, but is not limited to, a display, a display screen, a touchscreen, and the like.

[0214] The display controller is configured to control the display apparatus to present the processing result of the computer.

[0215] The input apparatus is configured to input an operation instruction. The operation instruction may specifically include an operation instruction for configuring a recording policy in Embodiments 1 and 2. The input apparatus includes, but is not limited to, a keyboard, a mouse, a touchscreen, and the like.

[0216] The I/O controller is configured to control input and output of a computer system. The I/O controller is specifically configured to control input of the input apparatus.

[0217] The communication apparatus is configured to connect the distribution device to the Internet, an intranet or a local area network. Specifically, in Embodiments 1 and 2, the distribution device may receive information through the communication apparatus, for example, receive signaling, multimedia data identification information, a recording number set that is sent by a control device, and the like, and may further send information through the communication apparatus, for example, send a recording instruction, recording additional information, and the like to the recording device. The communication apparatus includes, but is not limited to, a network adapter, a GPRS module, a WIFI module, a 3G module, and the like.

[0218] The recording device in Embodiments 1 and 3 of the present invention may be implemented by electronic hardware or a combination of computer software and electronic

hardware. If it is implemented by a combination of computer software and electronic hardware, specifically, it may be implemented by running a computer program on a computer, the computer program includes a program code ~~(program code)~~, and the method in Embodiment 1 of the present invention may be implemented by running the computer program on a computer. The computer includes, but is not limited to, a PC, a server, a PAD, and a notebook computer.

[0219] The system structure of the computer includes a processor, a memory, a storage controller, and a communication apparatus, and may further include a persistent memory, a persistent storage controller, a display apparatus, a display controller, an input apparatus, an I/O controller.

[0220] The memory is configured to store a computer program and data, the computer program includes a program code, and the program code includes a computer operation instruction. The computer operation instruction includes a computer operation instruction for implementing the function of each unit of the recording device provided in Embodiment 3 of the present invention. The data includes data needed for processing the computer operation instruction and data generated in executing the computer operation, and may specifically include data received by a recording device (which includes multimedia data), a multimedia data identification information set, a recording instruction received from the distribution device, and the like. The memory is specifically a volatile memory.

[0221] The storage controller is configured to address and access the operation instruction and data that are stored in the memory. The storage controller is controlled by the processor.

[0222] The main processor is configured to execute a computer program stored in a memory. The main processor is the central processing unit (CPU~~, central processing unit~~) and is a core unit of a computer.

[0223] The persistent memory is configured to persistently store an application, an operating system, and file data. The application may specifically include an application corresponding to a computer program of the recording device, and the stored file data specifically includes a multimedia data file saving the records and generation in Embodiments 1 and 3, a database file for recording communication-related description information, and the like. The persistent storage apparatus includes, but is not limited to, a magnetic disk, a magnetic tape, a memory card, and the like.

[0224] The persistent storage controller is configured to address and access an application, an operating system, and file data in the persistent memory. The persistent memory is controlled by the processor.

[0225] The display apparatus is configured to present a processing result of a computer. The

units or components may be combined or integrated into another system, or some features may be ignored or not performed. In addition, displayed or discussed mutual couplings or direct couplings or communication connections may be implemented through some interfaces. The indirect couplings or communication connections between devices or units may be implemented in electronic, mechanical or other forms.

[0256] The units described as separate parts may or may not be physically separate, and parts displayed as units may or may not be physical units, may be located in one position, or may be distributed on multiple network elements. A part or all of the units may be selected according to the actual needs to achieve the objectives of the solutions of the embodiments.

[0257] In addition, each functional unit in each embodiment of the present invention may be integrated into a processing unit, or each unit may exist alone physically, or two or more units are integrated into a unit.

[0258] When being implemented in the form of a software functional unit and sold or used as a separate product, the functions may be stored in a computer-readable storage medium. Based on such understanding, the technical solutions of the present invention essentially, or the part contributing to the prior art, or part of the technical solutions may be implemented in a form of a software product. The computer software product is stored in a storage medium, and includes several instructions for instructing a computer device (which may be a personal computer, a server, a network device, and the like) to execute all or part of the steps of the method described in the embodiment of the present invention. The foregoing storage medium includes: any medium that may store program code, such as a U-disk, a removable hard disk, a read-only memory (~~Read-Only Memory,~~ ROM), a random access memory (~~Random Access Memory,~~ RAM), a magnetic disk, or a CD-ROM.

[0259] The foregoing descriptions are merely exemplary embodiments of the present invention, but not intended to limit the protection scope of the present invention. Any variation or replacement made by persons skilled in the art without departing from the ~~spirit~~idea of the present invention shall fall within the protection scope of the present invention. Therefore, the protection scope of the present invention shall be subject to the appended claims.

CLAIMS

What is claimed is:

1. A method for recording multimedia data, comprising:

generating, by a distribution device, a recording instruction, wherein the recording instruction comprises multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded; and

sending, by the distribution device, the recording instruction to a recording device, so that the recording device identifies multimedia data corresponding to the multimedia data identification information and records the multimedia data.

2. The method according to claim 1, wherein,

before the generating, by a distribution device, a recording instruction, the method further comprises: receiving, by the distribution device, a signaling, wherein the signaling is a signaling for establishing a channel for transmitting the multimedia data; and

the generating, by a distribution device, a recording instruction specifically is: obtaining, by the distribution device, according to the signaling, the multimedia data identification information, and generating the recording instruction comprising the multimedia data identification information.

3. The method according to claim 2, wherein the obtaining the multimedia data identification information according to the signaling specifically comprises:

obtaining a call identifier from a call identifier header field of the signaling, and using the call identifier as the multimedia data identification information; or

obtaining an IP address from a connection information field of session description protocol SDP information contained in the signaling, and using the IP address as the multimedia data identification information; or, obtaining a port number from a media name and transport address field of the SDP information, and using the port number as the multimedia data identification information; or, obtaining an IP address from a connection information field of the SDP information, obtaining a port number from a media name and transport address field of the SDP information, and using the IP address and the port number as the multimedia data identification information.

4. The method according to claim 2 or 3, wherein the generating the recording instruction comprising the multimedia data identification information specifically comprises: recording the obtained multimedia data identification information, and generating the recording instruction after obtaining recording instruction information for instructing recording of the multimedia data corresponding to the multimedia data identification information.

5. The method according to claim 1, wherein,

before the generating, by the distribution device, the recording instruction, the method further comprises: receiving, by the distribution device, a signaling, wherein the signaling is a signaling for establishing a channel for transmitting the multimedia data and comprises the multimedia data identification information; and

the generating, by the distribution device, the recording instruction is specifically: using, by the distribution device, the signaling as the recording instruction.

6. The method according to any one of claims 2 to 5, wherein before the generating the recording instruction, the method further comprises: deciding that the signaling satisfies a preset first recording policy, wherein the first recording policy is used for deciding the signaling corresponding to the multimedia data that needs to be recorded.

7. The method according to claim 6, wherein the deciding that the signaling satisfies the preset first recording policy specifically comprises:

deciding that the signaling comprises a calling number or a called number that is matched with a preset recording number; or

deciding that the signaling comprises an IP address that is matched with a preset IP address.

8. The method according to claim 1, wherein before the generating, by the distribution device, the recording instruction, the method further comprises:

receiving, by the distribution device, the multimedia data identification information from a control device.

9. The method according to claim 8, wherein before the generating the recording instruction comprising the multimedia data identification information, the method further comprises:

receiving, by the distribution device, a calling number or a called number from the control device, wherein the calling number or the called number is corresponding to the multimedia data identification information, and deciding that the calling number or the called number is matched with a preset recording number.

10. The method according to any one of claims 2 to 9, wherein,

the distribution device decides, according to a preset second recording policy, the recording device for recording the multimedia data, and sends the recording instruction to the decided recording device; or

the distribution device sends the recording instruction to all recording devices that communicate with the distribution device, so that each recording device in all the recording devices determines whether the multimedia data corresponding to the multimedia data identification information is the multimedia data that the recording device is instructed to record and records the multimedia data when a determination result is yes.

11. The method according to claim 1 or 2 or 5 or 8 or 9, wherein the multimedia data identification information comprises:

a call identifier corresponding to the multimedia data;

an IP address corresponding to the multimedia data;

a port number corresponding to the multimedia data; or

an IP address and a port number that are corresponding to the multimedia data.

12. The method according to claim 1, wherein the distribution device generates the recording instruction according to a preset third recording policy, and the third recording policy is used for deciding the multimedia data identification information corresponding to multimedia data that the recording device needs to record.

13. The method according to claim 12, wherein the generating, by the distribution device, the recording instruction according to the third recording policy specifically comprises:

obtaining, by the distribution device, preset user identity information corresponding to the recording device, obtaining preset multimedia data identification information corresponding to the user identity information, and generating the recording instruction comprising the multimedia data identification information; or

obtaining, by the distribution device, preset multimedia data identification information corresponding to the recording device, and generating the recording instruction comprising the multimedia data identification information.

14. The method according to claim 12 or 13, wherein the multimedia data identification information comprises:

an IP address corresponding to the multimedia data;

a port number corresponding to the multimedia data; or

an IP address and a port number that are corresponding to the multimedia data.

15. The method according to any one of claims 1 to 14, wherein,

the recording instruction further comprises a data type of the multimedia data that needs to be recorded, so that the recording device records the multimedia data corresponding to the data type.

16. A method for recording multimedia data, comprising:

receiving, by a recording device, a recording instruction from a distribution device, wherein the recording instruction comprises multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded;

identifying, by the recording device, the multimedia data that needs to be recorded according to the multimedia data identification information; and

recording, by the recording device, the multimedia data.

17. The method according to claim 16, wherein the multimedia data identification information comprises:

a call identifier corresponding to the multimedia data;

an IP address corresponding to the multimedia data;

a port number corresponding to the multimedia data; or

an IP address and a port number that are corresponding to the multimedia data.

18. The method according to claim 17, wherein,

the recording device determines whether a received data packet comprises a call identifier which is included in the multimedia data identification information, and if yes, decides that data contained in the data packet is the multimedia data that needs to be recorded; or

the recording device obtains a signaling comprising a call identifier which is included in the multimedia data identification information, obtains an IP address from the obtained signaling, and determines whether a destination IP address or a source IP address in a received data packet is the obtained IP address, and if a determination result is yes, decides that data contained in the data packet is the multimedia data that needs to be recorded; or

the recording device obtains a signaling comprising the call identifier which is included in the multimedia data identification information, obtains a port number from the obtained signaling, and determines whether a destination port number or a source port number in a received data packet is the obtained port number, and if a determination result is yes, decides that data comprised in the data packet is the multimedia data that needs to be recorded; or

the recording device obtains a signaling comprising the call identifier which is included in the multimedia data identification information, obtains an IP address and a port number from the obtained signaling, and determines whether a destination IP address and a destination port number in a received data packet are the obtained IP address and port number, and if a determination result is yes, decides that data comprised in the data packet is the multimedia data that needs to be recorded; or

the recording device obtains a signaling comprising the call identifier which is inlcuded in the multimedia data identification information, obtains an IP address and a port number from the obtained signaling, and determines whether a source IP address and a source port number in a received data packet are the obtained IP address and port number, and if a determination result is yes, decides that data ccomprised in the data packet is the multimedia data that needs to be recorded; or

the multimedia data identification information comprises an IP address, the recording device determines whether a destination IP address or a source IP address in a received data packet is the IP

address comprised in the recording instruction, and if a determination result is yes, decides that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information comprises a port number, the recording device determines whether a destination port number or a source port number in a received data packet is the port number comprised in the recording instruction, and if a determination result is yes, decides that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information comprises an IP address and a port number, the recording device determines whether a destination IP address and a destination port number in a received data packet are the IP address and the port number that are comprised in the recording instruction, and if the determination result is yes, decides that data contained in the data packet is the multimedia data that needs to be recorded; or

the multimedia data identification information specifically comprises an IP address and a port number, the recording device determines whether a source IP address and a source port number in a received data packet are the IP address and the port number that are comprised in the recording instruction, and if the determination result is yes, decides that data contained in the data packet is the multimedia data that needs to be recorded.

19. The method according to any one of claims 16 to 18, wherein,

before the identifying, by the recording device, the multimedia data that needs to be recorded according to the multimedia data identification information, the method further comprises: screening received multimedia data, by the recording device, to acquire multimedia data which is corresponding to a multimedia data identification information set, and the multimedia data identification information set is preconfigured or obtained from the distribution device or generated according to the multimedia data identification information comprised in a previously received recording instruction;

and specifically, according to the multimedia data identification information, identifying, by the recording device, the multimedia data, whichneeds to be recorded, from the multimedia data that is acquired through screening.

20. The method according to claim 19, wherein the multimedia data identification information set specifically comprises:

an IP address range; or

a port number range.

21. A distribution device for recording multimedia data, wherein the distribution device comprises:

an instruction generation unit, configured to generate a recording instruction, wherein the

recording instruction comprises multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded; and

an instruction sending unit, configured to send the recording instruction to a recording device, so that the recording device identifies the multimedia data corresponding to the multimedia data identification information and records the multimedia data.

22. The distribution device according to claim 21, wherein,

the distribution device further comprises: a first data receiving unit, configured to receive a signaling, wherein the signaling is a signaling for establishing a channel for transmitting the multimedia data; and

the instruction generation unit is specifically configured to obtain the multimedia data identification information according to the signaling, and generate the recording instruction comprising the multimedia data identification information.

23. The distribution device according to claim 22, wherein,

the instruction generation unit is specifically configured to obtain a call identifier from a call identifier header field of the signaling, use the call identifier as the multimedia data identification information, and generate the recording instruction comprising the call identifier; or,

the signaling comprises session description protocol SDP information, the instruction generation unit is specifically configured to obtain an IP address from a connection information field of the SDP information, use the IP address as the multimedia data identification information, and generate the recording instruction comprising the IP address; or obtain a port number from a media name and transport address field of the SDP information, use the port number as the multimedia data identification information, and generate the recording instruction that comprises the port number; or obtain an IP address from a connection information field of the SDP information, obtain a port number from a media name and transport address field of the SDP information, use the IP address and the port number as the multimedia data identification information, and generate the recording instruction comprising the IP address and the port number.

24. The distribution device according to claim 22 or 23, wherein,

the instruction generation unit is specifically configured to obtain the multimedia data identification information according to the signaling, record the obtained multimedia data identification information, and after obtaining recording instruction information for instructing recording of the multimedia data, generate the recording instruction.

25. The distribution device according to claim 21, wherein,

the distribution device further comprises: a second data receiving unit, configured to receive a signaling, wherein the signaling is a signaling for establishing a channel for transmitting the

multimedia data and the signaling comprises the multimedia data identification information; and

the instruction generation unit is specifically configured to use the signaling as the recording instruction.

26. The distribution device according to any one of claims 22 to 25, wherein,

the instruction generation unit is further configured to decide that the signaling satisfies a preset first recording policy; and

the deciding that the signaling satisfies the preset first recording policy specifically comprises:

deciding that the signaling comprises a calling number or a called number that is matched with a preset recording number; or

deciding that the signaling includes an IP address that is matched with a preset IP address.

27. The distribution device according to claim 21, wherein,

the distribution device further comprises: a multimedia data identification information receiving unit, configured to receive the multimedia data identification information from a control device.

28. The distribution device according to claim 27, wherein,

the multimedia data identification information receiving unit is further configured to receive, from the control device, a calling number or a called number corresponding to the multimedia data identification information; and

the instruction generation unit is further configured to decide that the calling number or the called number is matched with a preset recording number.

29. The distribution device according to any one of claims 21 to 28, wherein,

the distribution device further comprises a recording device decision unit, configured to decide, according to a preset second recording policy, the recording device for recording the multimedia data; the instruction sending unit is specifically configured to send the recording instruction to the decided recording device; or,

the instruction sending unit is specifically configured to send the recording instruction to all recording devices that communicate with the distribution device, so that each recording device in all the recording devices determines whether the multimedia data corresponding to the multimedia data identification information is the multimedia data that the recording device is instructed to record, and records the multimedia data when a determination result is yes.

30. The distribution device according to claim 21, wherein,

the instruction generation unit is specifically configured to generate the recording instruction according to a preset third recording policy, and the third recording policy is used for deciding the multimedia data identification information corresponding to multimedia data that the recording

device needs to record.

31. The distribution device according to claim 30, wherein,

the instruction generation unit is specifically configured to obtain preset user identity information corresponding to the recording device, obtain preset multimedia data identification information corresponding to the user identity information, and generate the recording instruction comprising the multimedia data identification information; or,

the instruction generation unit is specifically configured to obtain preset multimedia data identification information corresponding to the recording device, and generate the recording instruction comprising the multimedia data identification information.

32. A recording device for recording multimedia data, wherein the recording device comprises:

an instruction receiving unit, configured to receive a recording instruction from a distribution device, wherein the recording instruction comprises multimedia data identification information, and the multimedia data identification information is used for identifying multimedia data that needs to be recorded;

a multimedia data identification unit, configured to identify, according to the multimedia data identification information, the multimedia data that needs to be recorded; and

a recording unit, configured to record the multimedia data.

33. The recording device according to claim 32, wherein,

the multimedia data identification information comprises a call identifier; the multimedia data identification unit is specifically configured to determine whether a received data packet comprises the call identifier, and if yes, decide that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information comprises a call identifier, the multimedia data identification unit is specifically configured to obtain a signaling comprising the call identifier, obtain an IP address from the obtained signaling, determine whether a destination IP address or a source IP address in a received data packet is the obtained IP address, and if a determination result is yes, decide that data contained in the data packet is the multimedia data that needs to be recorded; or

the multimedia data identification information comprises a call identifier, the multimedia data identification unit is specifically configured to obtain a signaling comprising the call identifier, obtain a port number from the obtained signaling, determine whether a destination port number or a source port number in a received data packet is the obtained port number, and if a determination result is yes, decide that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information comprises a call identifier, the multimedia data identification unit is specifically configured to obtain a signaling comprising the call identifier, obtain an IP address and a port number from the obtained signaling, determine whether a destination IP address and a destination port number in a received data packet are the obtained IP address and port number, and if a determination result is yes, decide that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information comprises a call identifier, the multimedia data identification unit is specifically configured to obtain a signaling comprising the call identifier, obtain an IP address and a port number from the obtained signaling, determine whether a source IP address and a source port number in a received data packet are the obtained IP address and port number, and if a determination result is yes, decide that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information comprises an IP address, the multimedia data identification unit is specifically configured to determine whether a destination IP address or a source IP address in a received data packet is the IP address comprised in the recording instruction, and if a determination result is yes, decide that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information comprises a port number, the multimedia data identification unit is specifically configured to determine whether a destination port number or a source port number in a received data packet is the port number comprised in the recording instruction, and if a determination result is yes, decide that data contained in the data packet is the multimedia data that needs to be recorded; or,

the multimedia data identification information specifically comprises an IP address and a port number, the multimedia data identification unit is specifically configured to determine whether a destination IP address and a destination port number in a received data packet are the IP address and the port number that are comprised in the recording instruction, and if a determination result is yes, decide that data contained in the data packet is the multimedia data that requires to be recorded; or

the multimedia data identification information specifically comprises an IP address and a port number, the recording device determines whether a source IP address and a source port number in a received data packet are the IP address and the port number that are comprised in the recording instruction, and if a determination result is yes, decides that data contained in the data packet is the multimedia data that needs to be recorded.

34. The recording device according to claim 32 or 33, wherein,

the recording device further comprises a data receiving unit, configured to receive multimedia

data;

the recording device further comprises a multimedia data screening unit, configured to screen received multimedia data to acquire multimedia data which is corresponding to a multimedia data identification information set, and the multimedia data identification information set is preconfigured or obtained from the distribution device or generated according to the multimedia data identification information comprised in a previously received recording instruction; and

the multimedia data identification unit is specifically configured to: according to the multimedia data identification information comprised in the recording instruction, identify the multimedia data, which needs to be recorded, from the multimedia data that is acquired through screening.

35. A system for recording multimedia data is provided, comprising:

a distribution device, specifically, the distribution device of any one of claims 21 to 31; and

a recording device, specifically, the recording device according to any one of claims 32-34.

36. The system according to claim 35, wherein the system further comprises a mirrored switch, and the recording device receives multimedia data from the mirrored switch.

37. The system according to claim 35 or 36, wherein the system further comprise a control device, and the distribution device receives signaling or multimedia data identification information from the control device.

CLAIMS

1. A method for recording multimedia data of communications between communication devices in a system comprising a mirror switch, a distribution device and a plurality of recording devices, the method comprising, wherein the method is performed by the distribution device and comprises:

receiving communication data sent from the mirror switch, the communication data comprising first multimedia data of a first call, second multimedia data of a second call, and a first signaling message and a second signaling message used to establish channels for transmitting the first multimedia data and the second multimedia data respectively;

obtaining first multimedia data identification information corresponding to the first multimedia data from the first signaling message, and obtaining second multimedia data identification information corresponding to the second multimedia data from the second signaling message;

generating a first recording instruction including the first multimedia data identification information and a second recording instruction including the second multimedia data identification information;

identifying a first recording device and a second recording device from the plurality of recording devices;

sending the first recording instruction to the first recording device to instruct the first recording device to record the first multimedia data of the first call without sending the first multimedia data of the first call to the first recording device; and

sending the second recording instruction to the second recording device to instruct the second recording device to record the second multimedia data of the second call without sending the second multimedia data of the second call to the second recording device;

wherein the first signalling message is a Session Description Protocol (SDP) message, and the first multimedia data identification information is an IP address included in a connection information field of the SDP message, and

wherein the second signaling message is an SDP message, and the second multimedia data identification information is an IP address including in a connection information field of the SDP message.

2. The method according to claim 1,

wherein the first signalling message is a Session Initiation Protocol (SDP) message, and the first multimedia data identification information is call identifier included in a call identifier header of the SIP message, and

wherein the second signaling message is a SIP message, and the second multimedia data identification information is a call identifier included in a call identifier header of the SIP message.

3. The method according to claim 1,

wherein the first signalling message is a Session Description Protocol (SDP) message, and the first multimedia data identification information is a port number included in a media name and transport address field of the SDP message,

wherein the second signaling message is an SDP message, and the second multimedia data identification information is a port number included in a media name and transport address field of the SDP message.

4. The method according to claim 1, further comprising:

determining that the first multimedia data needs to be recorded by comparing a preset IP address or port number with an IP address or port number included in the first signaling message; and

determining that the second multimedia data needs to be recorded by comparing a preset IP address or port number with an IP address or port number included in the second signaling message.

5. The method according to claim 1, further comprising:

determining that the first multimedia data needs to be recorded by comparing a preset calling number or called number with a calling number or a called number included in the first signaling message; and

determining that the second multimedia data needs to be recorded by comparing a preset calling number or called number with a calling number or a called number included in the second signaling message.

6. The method according to claim 1, wherein the distribution device identifies the first recording device and the second recording device based on a load balance for the plurality of recording devices.

7. A distribution device which is configured to receive multimedia data of communications between network devices and assign recording devices to record the multimedia data, comprising:

a hardware processor; and

a memory storing instructions executable by the hardware processor to perform operations

comprising:

receiving, from a mirror switch, communication data comprising first multimedia data of a first call, second multimedia data of a second call, and a first signaling message and a second signaling message used to establish channels for transmitting the first multimedia data and the second multimedia data respectively;

obtaining first multimedia data identification information corresponding to the first multimedia data from the first signaling message, and obtaining second multimedia data identification information corresponding to the second multimedia data from the second signaling message;

generating a first recording instruction including the first multimedia data identification information and a second recording instruction including the second multimedia data identification information;

identifying a first recording device and a second recording device from a plurality of recording devices;

sending the first recording instruction to the first recording device to instruct the first recording device to record the first multimedia data of the first call without sending the first multimedia datra of the first call to the first recording device; and

sending the second recording instruction to the second recording device to instruct the second recording device to record the second multimedia data of the second call without sending the second multimedia data of the second call to the second recording device;

wherein the first signalling message is a Session Description Protocol (SDP) message, and the first multimedia data identification information is an IP address included in a connection information field of the SDP message, and

wherein the second signaling message is an SDP message, and the second multimedia data identification information is an IP address including in a connection information field of the SDP message.

8. The distribution device according to claim 7, wherein the first signaling message is a Session Initiation Protocol (SIP) message, and the first multimedia data identification information is a call identifier included in a call identifier header field of the SIP message,

wherein the second signaling message is a SIP message, and the second multimedia data identification information is a call identifier included in a call identifier header field of the SIP message.

9. The distribution device according to claim 7, wherein the first signaling message is a Session

Description Protocol (SDP) message, and the first multimedia data identification information is a port number included in a media name and transport address field of the SDP message,

wherein the second signaling message is an SDP message, and the second multimedia data identification information is a port number included in a media name and transport address field of the SDP message.

10. The distribution device according to claim 7, wherein the operations further comprises:

determining that the first multimedia data needs to be recorded by comparing a preset calling number or called number with a calling number or a called number included in the first signaling message; and

determining that the second multimedia data needs to be recorded by comparing a preset calling number or called number with a calling number or a called number included in the second signaling message.

11. The distribution device according to claim 7, wherein the operations further comprises:

determining that the first multimedia data needs to be recorded by comparing a preset IP address with the IP address included in the first signaling message; and

determining that the second multimedia data needs to be recorded by comparing a preset IP address with the IP address included in the second signaling message.

12. The distribution device according to claim 9, wherein the operations further comprises:

determining that the first multimedia data needs to be recorded by comparing a preset port number with the port number included in the first signaling message; and

determining that the second multimedia data needs to be recorded by comparing a preset port number with the port number included in the second signaling message.

13. The distribution device according to claim 7, wherein the distribution device is integrated with a recording device.

14. The distribution device according to claim 7, wherein the hardware processor identifies the first recording device and the second recording device based on a load balance of the plurality of recording devices.