Hikvision video intercom SIP function Introduction (2019-12-03)

Product involved:					
Device Model	Firmware				
DS-KH8350-WTE1	v2.1.2_build191014				
DS-KH8350-TE1	v2.1.2_build191014				
DS-KH6320-WTE1	v2.1.2_build191014				
DS-KH6320-TE1	v2.1.2_build191014				
DS-KH8520-WTE1	v2.1.2_build191014				
DS-KH6320-WTE2	v2.1.2_build191014				
DS-KD8003-IME1	v2.0.8_build191029				
DS-KD8003-IME2	v2.0.8_build191029				

List of supported SIP servers:

Logo-Company	SIP	Version	interoperabi
	Server		lity
(*) Asterisk	Asterisk	A11	*
† Yeastar	Yeastar	A11	*
MYYVOIIPAJPIP	Minisip	v34/v36	★▲
bicom s y s t e m s	Pbxware	v. 4. 1/v5. 2/ v5. 3	✓▲
Sbrekeke	Brekeke	V3. 4. 9	*

★: Support Video and Audio ✔: Only support Audio ▲: Support alarm upload ★: Not support now

Note:

- 1. Since standard SIP services involved DDNS, signaling forwarding, diverse audio and video formats, The function of existing Hikvision standard SIP is limited.
- 2. If you have any questions about SIP, please complete this excel sheet and contact Hikvision's technical support.



3. In the public network environment, the video transmission of the device is limited by many factors. It will cause poor picture quality, inability to display pictures, and so on when congestion, long latency and packet loss.

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If you still have questions about the Hikvision SIP service, please contact your local Hikvision technical support team. https://www.hikvision.com/en/Corporate/Contact-Us

What's SIP

The Session Initiation Protocol (SIP) is a signaling protocol used for initiating, maintaining, and terminating real-time sessions that include voice, video and messaging applications. The SIP system works flow as below figure.



Hikvision video intercom version1.5.0 and above support private SIP and standard SIP switchable. Standard SIP is a common protocol which means device could be integrated with 3rd Party standard SIP devices. The Comparison of private protocol and standard SIP protocol as below table.

Indoor station	Private Protocol	SIP Protocol
HikConnect APP	\checkmark	×
Indoor extension	\checkmark	×
Live view	\checkmark	X
Call to the door station	\checkmark	X
Private password	\checkmark	X
Automatic capture picture	\checkmark	×

Door station	Private Protocol	SIP Protocol
Sub-door station	\checkmark	X
Doorphone Mode	\checkmark	×
Outer door station	\checkmark	X
Public password	\checkmark	\checkmark

So we strongly suggest to use Hikvision private protocol when all intercom video equipment from Hikvision company. If need to interconnect with 3^{rd} party SIP terminal, we have to change intercom protocol from private protocol to SIP Protocol on the related Hikvision intercom video equipment. This document will introduce how to configure SIP Protocol between Hikvision intercom video equipment and 3^{rd} party's.

How to add new user in brekeke SIP server

1. Login the SIP server via IE web and add the new users for indoor station / door station / $3^{\rm rd}$ party SIP phone / etc.

1) User is unique in same SIP server.

2) Name is local parameter for reference in SIP database.

3) Email add	res	s and Descri	ipt	tion are opti-	0	n.
& brekeke	\$	User Authenticatio	n	Import/Export		
SIP Server		User Authentication >>				
		New User				
Registered Clients Active Sessions User Authentication Dial Plan Allases Logs Push Notification Domains Configuration]	User Password Confirm Password Name Email Address	000	13 		Generate a password
SYSTEM Status Block List Provisioning SDN Redundancy Tools	_	Description		Add Cancel		

2. Click MAINTENANCE button and record SIP server IP & local port which will be used in SIP client (indoor station / door station / 3^{rd} party SIP phone / etc) configuration.



How to configure device's SIP service through

the client

1.	1. Add the device to the Client and status is online.											
88	KVMS-4200 AC Maintenance and Management											
₹			+ Add			iere 😅 Refresh						
100	Device Management			Name 🗘	Connecti	Connection Param	Device Type	Serial No.	Security .	Status	Operation	
				K118350	IP/Domain	10.9.96.166:8000	Indoor Station	DS-KH8350-WTE101	Weak	🥝 Online		
	Device				IP/Domain	10.9.96.167:8000	Door Station	DS-KD8003-IME101	Weak	🥥 Online		
	Event Management											
\$	User Management											
\$	System Configuration											
同	System Log											

2. Click the remote configuration \rightarrow System Maintance \rightarrow restore default settings, and set the settings as default. (option)

+ Add	Q Online De	evice X Del	ete 😺 Refresh						
	Name 🗊	Conne I	Connecti	Device	Serial No.	Securit	Status	Operation	
D	10.9. <mark>11</mark>	IP/Dom	10.9.112	Indoor	DS-KH8350-WT	Weak	🧭 Online	2 8 8 2	
D	10.9.11	IP/Dom	10.9.112	Door St	DS-KD8102-V01.	. Weak	🤣 Online	r 🖗 🖻 S	
	10.9.11	IP/Dom	10.9.112	Indoor	DS-KH6320-WT	Weak	🥪 Online	r 🗟 🗃 S	
	Remote Configuration								
		- 🗞 Syster	n	Syste	em Maintenance				
		🏶 Dev	ice Informatio	n					
		🏶 Gen	eral	System	Management				~
		🏶 Tim	e			Reboot			
	System Maintenance		nce	Restore All					
⇔ Üser					Export C	onfiguration File			
		🏶 RS4	85	Remote	Upgrade				

3. Click the remote configuration \rightarrow Intercom \rightarrow Intercom Protocol, and change the protocol to 'SIP protocol', then click reboot the device.

Remote Configuration	>					
🕨 🊱 System	Configure Intercom Protocol.					
🝷 🚳 Intercom	Intercom Protocol					
ID Configuration	Protocol: Private Proto					
🏶 Time Parameters	Private Protocol					
Permission Password	SIP Protocol					
🏶 Zone Alarm	SIP Protocol					
IP Camera Information						
Volume Input/Output						
🏶 Ring Import						
🏶 Deploy Info						
🏶 Intercom Protocol						
Incoming Call Linkage						
🏶 Relay						
🕨 🗟 Network						

4. Click the remote configuration \rightarrow Network \rightarrow SIP settings, check the user data which you set in your SIP server, then fill the corresponding column.

Remote Configuration						
🕨 🎡 System	Configuring the	SIP Parameters				
🕨 🎡 Intercom				Status Sum	mary	
🝷 🈘 Network	Login Status:	Unregistered		Status Interface Local Port	Active 10.40.253.10, 1 9000	5
🏶 Local Network Configuration	Server:	Domain Name				
🏶 SIP Settings	Server Domain:	10.40.253.10		User	0003	
🏶 Linked Network Configuration	Server Port:	5060		Password Confirm Password	•••••	
🐱 Advanced Settings	User Name:	0003		Name	0003	×
	Password:	•••••				
	Local No.:	0003				
	Display Name:	KH8350]			
	Login Cycle:	60	Minute(s)			
			Save			

Server Domain: SIP server IP address Server Port: SIP local port User Name: SIP user Local No.: If no No. in SIP server setting, re-use SIP user as local No.

5. Click save button to register device on SIP server. Refresh the window and check whether the device has been registered or not. If yes, login status will be updated as below.

Remote Configuration						×	
🕨 🎡 System	Configuring the	Configuring the SIP Parameters					
🕨 🎡 Intercom							
• 🚯 Network	Login Status:		Registered				
Second Section Local Network Configuration	Server:	Domain Nam	1e				
🏶 SIP Settings	Server Domain:	10.40.253.10					
🏶 Linked Network Configuration	Server Port:	5060					
Advanced Settings	User Name:	0003					
	Password:	•••••					
	Local No.:	0003					
	Display Name:	KD8350					
	Login Cycle:			Minute(s)			
				Save			

How to configure indoor station's SIP service

through local interface

1. click the Settings button 17:19 2019-1-30 Wednesday Room No::1 Message Live View Settings

2. Select 'More' interface then click the Configuration

<	More		¢
Configuration		2	> Ū
TF Card OGB/29GB		0	
Clear Screen			**
Device Information		5	More
Time		2019/06/10 15:34	>
Reboot Device		9	>
• 1			

Then input the admin password which is 888999.

<	More			
Configuration			>	
TF Card 068/2968	Admin P	assword	>	
Clear Screen	******	assword		
Device Information	Canaal		>	
Time	Cancel	OK	06/10 15:37 >	
Reboot Device			>	

3. Select 'SIP Settings' interface and click the SIP Protocol Settings

<	SIP Settings		(j)
SIP Protocol Setting		Private Protocol \rightarrow	
			\oplus
			SIP
			Õ

Select Standard Protocol

<	SIP Settings		O
SIP Protocol Setting		Private Protoc	iol >
	SIP Protocol S	ettings	\oplus
	Private Protocol		a.
	Standard Protocol	~	
	Cancel	OK	
			Ö

Then click OK to reboot the device.

<	SIP Settings		
SIP Protocol Setting		Private Protocol >	
	The SIP protocol is e	dited, reboot now?	\oplus
			Ê
	Cancel	OK	
			Ö

4. The SIP Settings window will be changed like below picture. Click the VOIP Account Setting to set the SIP register information..

<	SIP Settings		()
SIP Protocol Setting	Standard Protocol	>	
VOIP Account Setting		>	ŧ
L	_		
			SIP
			Õ

5. Input SIP user information, same from SIP server side.

<	SIP Settings	at Setting			\bigcirc	
SIP Protocol Setting	Please enter the user name	it setting	rotocol	>	Æ	
VOIP Account Setting	Please enter your number			Iser	0003	
	Please enter your user ham	e	P	assword confirm Password lame	••••••	×
	Please enter the password			Status Sur	nmary	
	Please enter the SIP server	domain		Status Interface Local Port	1 9	Active 0.40.253.10, 9000
	Cancel	OK				

Please enter the user name: local parameter for reference. Please enter your number: If no No. in SIP server setting, re-use SIP user as your No.

Please enter your User Name: SIP user Please enter The SIP Server Domain: SIP server IP address Please enter The SIP Server Port: SIP local port Please enter the expiration date: as your system design

6. Go back to the main window and below icon shows SIP registered successes.



How to set the SIP phone and how to use the

SIP phone to open the door

Note: Test example product is GXV3275 of Grand Stream. Firmware: 1.0.1.54



a. Configuring the GXV3275 Using Web Browser

G	KV327 Enterprise	7 5 Multimedia Phone for Android	d
	Username Password Language	admin ••••• English v Login	

The default username and password for administrator are "admin" and "admin";

The default username and password for user are "user" and "123".

Click the Account \rightarrow Account1 (any Account 1[~]6 is ok) to set the SIP account. The interface is shown below and input SIP user information, same with server side.

G X V 3 2	7 5 * Theme Q	Reboot 🔀 Exit
	Enterprise Phone Administration Interface	English 👻
General Settings	Account 1 Account 2 Account 3 Account 4 Account 5 Account 6	6
🔞 Network Settings		Status Summary
SIP Settings	Account Active : ØYes	Status Active Interface 10.40.253.10, 1 Local Port 0000
Codec Settings	Account Name : 0005	
Call Settings	SIP Server : 10.40.253.10:9000	10.0
	SIP User ID : 0005	Password •••••
	SIP Authentication ID : 0005	Name 0005 ×
	SIP Authentication Password :	
	Voice Mail Access Number :	
	Name : 0005	
	Show Account Name Only : Yes	
	Tel URI : Disable	
	Save	

Click the Save icon and select 'Apply'
Apply configuration changes. Apply

Then go back to the status interface to confirm that the device is registered to the sip server

F	Status Acco	ount Advanced Settings	Maintenance	
ccount Status				
etwork Status	Account	Number	SIP Server	Status
	Account 1 :	0005	10.40.253.10:9000	Registered
	Account 2 :			
	Account 3 :			
	Account 4 :			
	Account 5 :			
	Account 6 :	000b829eed50	sip.ipvideotalk.com:48879	UnRegistered
Configurin	g the GXV3	275 by local :	interface	
				L 🗉 🗘 00:05

Click to enter the account configuration interface

FileManager

MPK

MPK

Click the Settings to enter settings interface

9

1

Conference

Settings

Settings		🖬 土 🗘 03:52
	Security settings My location, screen lock, passwords & device administration	
	Language & keyboard Language settings & keyboard settings	
0	Accounts Account data sync	
\bigcirc	Date & time Date, timezone, time & date format settings	
(j)	About phone Account status, network status & system information	
Ж	Advanced settings Account advanced settings, upgrade, syslog & factory reset	
0	Reboot Reboot your phone	

Click Account to enter the SIP account interface

Advanced settings	🖬 📩 🗘 03:52
Account	
Upgrade	
Syslog	
Factory reset	
Disable Web GUI Web GUI is enabled	OFF
Developer mode Developer mode off	OFF

Account		⊾ 土 🗈 🗘 00:05
Account1	Account (not configured)	
Account2	Account (not configured)	
Account3	Account (not configured)	
Account4	Account (not configured)	
Account5	Account (not configured)	
PVideoTalk	000b829eed50	
UCM auto config numbe	er	

We only use the Account1 (any Account $1^{\sim}6$ is ok), so enter the account1 interface

SIP server example and finished condition

Saving screenshot					
× Cancel	✓ ок				
Account activation	ON				
Account name:	0005				
SIP server:	10.40.253.10:9000				
SIP user ID:	0005				
SIP authentication ID:	0005				
SIP authentication password:					

Go back to the main interface and below shows the SIP phone connected to SIP server.

					± ♀ 03:52
	10.9.96.5	52			
		0 005 1005			
	¢.	*	<u></u>	мрк	
Se	ttings	Conference	FileManager	МРК	
		<u>مہ</u>		1	

c. Test to use the door station to call the $\ensuremath{\text{SIP}}$ phone

Ringing			😋 🖬 🖭 🗬 🗘 00:22
1 call + New Call		Ringing (0005)	Ę
КД8102 →			
		KD8102 0003	
	Audio Answer	Video Answer	Reject

Click the Video Answer to answer the call



And you can choose to use the keypad, press key '#' to open the door





List of supported SIP phone

GrandStream GXV3275 Yealink SIP-T46G

First Choice for Security Professionals *HIKVISION*Technical Support