HIKVISION

Network Video Recorder

User Manual

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Hikvision® Network Digital Video Recorder User Manual

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Regulatory information

FCC information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Preventive and Cautionary Tips

Before connecting and operating your NVR, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the NVR.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the NVR in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact dealer.

This manual is applicable to the models listed in the following table.

Series	**Model**	**Type**
9500NI-ST	DS-9508NI-ST DS-9516NI-ST DS-9532NI-ST DS-9564NI-ST	Network Video Recorder
9500NI-RT	DS-9508NI-RT DS-9516NI-RT DS-9532NI-RT DS-9564NI-RT	Network Video Recorder
8500NI-ST	DS-8508NI-ST DS-8516NI-ST DS-8532NI-ST DS-8564NI-ST	Network Video Recorder

Product Key Features

General

- Connectable to the network cameras, network dome and encoders.
- Connectable to the third-party network cameras like ACTI, Arecont, AXIS, Bosch, Brickcom, Canon, PANASONIC, Pelco, SAMSUNG, SANYO, SONY, Vivotek and ZAVIO, and cameras that adopt ONVIF or PSIA protocol.
- Each channel supports dual-stream.
- Up to 64 network cameras can be added.
- Independent configuration for each channel, including resolution, frame rate, bit rate, image quality, etc.
- The quality of the input and output video is configurable.

HDD Management

- Up to 8 SATA hard disks, 8 network disks (8 NAS disks, or 7 NAS disks+1 iSCSI disk) and 1 eSATA disk can be connected, each disk with a maximum of 4TB storage capacity.
- Support RAID0, RAID1, RAID5, RAID10 storage scheme. And 8 virtual disks can be configured.(Only for DS-9500NI-RT series NVR)
- Support eSATA disk for recording or backup.
- Support S.M.A.R.T. and bad sector detection. (Not supported with DS-9500NI-RT series NVR.)
- HDD group management.
- Support HDD standby function.
- HDD property: redundancy, read-only, read/write (R/W).
- HDD quota management; different capacity can be assigned to different channel.

Recording and Capturing

- Holiday recording schedule configuration.
- Cycle and non-cycle recording mode.
- Multiple recording types: manual, continuous, alarm, motion, motion | alarm, motion & alarm.
- 8 recording time periods with separated recording types.
- Pre-record and post-record for alarm, motion detection for recording or capture, and pre-record time for schedule and manual recording.
- Searching record files and captured pictures by events (alarm input/motion detection).
- Locking and unlocking record files.
- Local redundant recording and capturing.
- Manual capturing and continuous capturing are supported.

Backup

- Support NTFS and FAT32 formatted backup devices.
- Export data by USB or eSATA devices.
- Management and maintenance of backup devices.
- Either Normal or Hot Spare working mode is configurable to constitute an N+1 hot spare system.

Alarm and Exception

- Configurable arming time of alarm input/output.
- Alarm for video loss, motion detection, tampering, abnormal signal, illegal login, network

disconnected, IP confliction, abnormal record/capture, video signal exception, resolution mismatch, HDD error, and HDD full, etc.

- Alarm triggers full screen monitoring, audio alarm, notifying surveillance center, sending email and alarm output.
- Automatic restore when system is abnormal.

Network Functions

- 2 self-adaptive 10M/100M/1000M network interfaces, with working modes configurable: multi-address, load balance, network fault tolerance, etc.
- IPv6 is supported.
- TCP/IP protocol, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, SNMP, NFS, UPnP, and iSCSI are supported.
- TCP, UDP and RTP for unicast.
- Auto/Manual port mapping by UPnP.
- Remote web browser access by HTTPS ensures high security.
- Remote reverse playback through RTSP.
- Support accessing by the platform via ONVIF.
- Remote search, playback, and download, lock/unlock of record files, support breakpoint resume.
- Remote parameters setup; remote import/export of device parameters.
- Remote viewing of the device status, system logs and alarm status.
- Remote keyboard operation.
- Remote HDD formatting and program upgrading.
- Remote system restart and shutdown.
- RS-232, RS-485 transparent channel transmission.
- Alarm and exception information can be sent to the remote host.
- Remotely start/stop recording.
- Remotely start/stop alarm output.
- Remote PTZ control.
- Remote JPEG capture.
- Embedded WEB server.

Other Functions

- Control via mouse, remote control and special keyboard.
- Three-level user management; admin user is allowed to create many operating accounts and define their operating permission, which includes the limit to access any channel.
- Powerful recording and search for logs of operation, alarm, exceptions and information.
- Import/export of device configuration files.

Development Scalability

- SDK for Windows and Linux system.
- Source code of application software for demo.
- Development support and training for application system.

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Chapter 1 Introduction

1.1 Front Panel

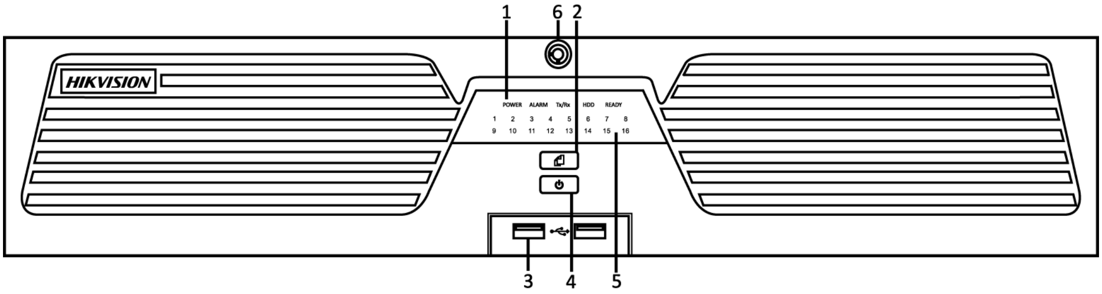


Figure 1. 1 DS-9500NI-ST/RT

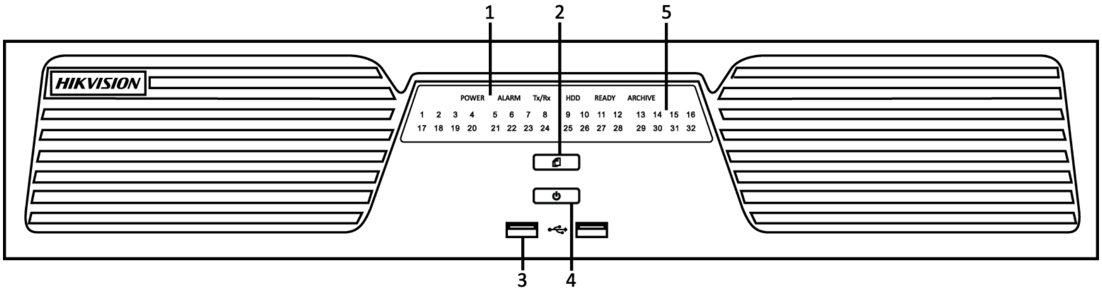


Figure 1. 2 DS-8500NI-ST

Table 1. 1 Description of Front Panel

No.	Name		Description
1	Status LED Indicators	Power	Turning red indicates power is connected but the system isn't running; turning blue indicates power is connected and the system is running.
		Alarm	Alarm LED turns red when a sensor alarm is detected.
		TX/RX	TX/RX LED flashes blue when network connection is functioning properly.
		HDD	HDD LED flashes red when data is being read from or written to HDD.
		Ready	Ready LED turns blue when NVR is functioning properly.
		Backup	Backup LED flashes blue when data is being backed up.
2	Backup Button		Back up video files.
3	USB Ports		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
4	Power Button		Powers NVR on/off.
5	Channel Status Indicators		Blue indicates recording, red indicates network connection, and purple indicates recording and network connection.
6	Front Panel Lock (for DS-9500NI-ST&RT series)		You can lock or unlock the panel by the key.

1.2 Rear Panel

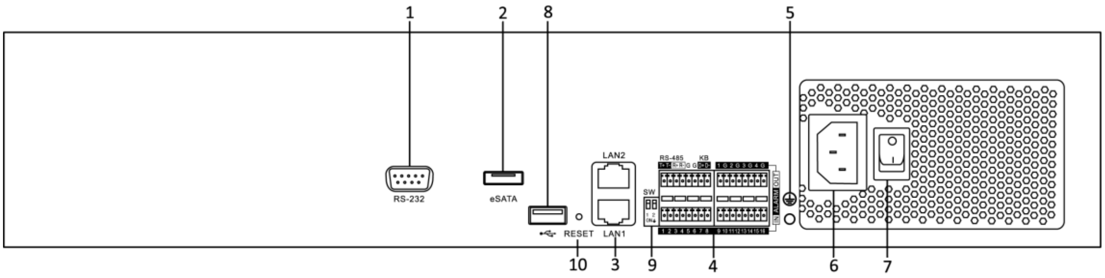


Figure 1. 3 DS-9500NI-ST/RT and DS-8500NI-ST

Table 1. 2 Description of Rear Panel

No.	Item	Description
1	RS-232	Connect to RS-232 devices.
2	eSATA	Connect to external SATA HDD, DVD-R/W.
3	LAN	2 network interfaces.
4	RS-485	Connect to RS-485 devices, e.g., P/T receiver, etc. Use the T+ and T－terminals of RS-485 interface to connect to the R+ and R- terminals of the receiver.
	ALARM IN	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
5	GND	Grounding
6	POWER	100 ~ 240 VAC power supply
7	Power Switch	Switch for turning on/off the device.
8	USB	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
9	Termination Switch	RS-485 termination switch. Up position is not terminated. Down position is terminated with 120Ω resistance.
10	RESET	Press and hold it for 10 seconds to reset all parameters to factory defaults.

Note: The RS-485 interface is reserved for future use.

1.3 Starting and Shutting Down Your NVR

Power On

If the power LED indicator on the front panel is off, please check if the power supply is plugged into an electrical outlet and the power switch is turned on; the LED should turn red, indicating the unit is receiving power.

When the LED is red, please press the Power button on the front panel. The Power indicator will turn blue. The unit will begin to start.

Note: When the Ready indicator turns blue, the device is powered on and works properly.

Power Off

Standard Shutdown

Press and hold the POWER button for 3 seconds, and the device will enter power-off process. When the Power LED turns red, turn off the power switch on the rear panel.

Other Methods of Shutdown

- **Shutdown with Power Switch**

  Please try to avoid shutting down the unit by turning off the power switch on the back panel (especially during recording).

- **Shutdown by Unplugging Power Supply**

  Please try to avoid shutting down the unit by unplugging power supply (especially during recording).

Note: It is highly recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the unit.

Chapter 2 Network Parameters Configuration

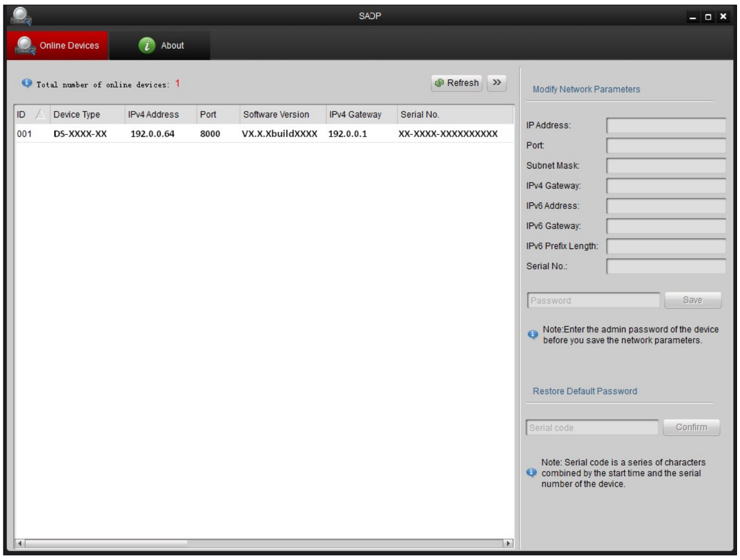
DS-9500/8500NI-ST and DS-9500NI-RT Series NVR is mainly used with IPC, DVS for network video storage and playback. Network configurations are needed before operating, including: IP address, subnet mask, gateway and port.

The factory default IP address of DS-9500/8500NI-ST and DS-9500NI-RT series NVR is 192.0.0.64.

Steps:

1. Open the SADP software to search online devices which in the same subnet with PC.

Start> All programms> SADP



Total number of online devices: 1

ID	Device Type	IPv4 Address	Port	Software Version	IPv4 Gateway	Serial No.
001	DS-XXXX-XX	192.0.0.64	8000	VX.X.XbuildXXXX	192.0.0.1	XX-XXXX-XXXXXXXXXX

Modify Network Parameters

IP Address:
Port:
Subnet Mask:
IPv4 Gateway:
IPv6 Address:
IPv6 Gateway:
IPv6 Prefix Length:
Serial No.:

Password Save

Note:Enter the admin password of the device before you save the network parameters.

Restore Default Password

Serial code Confirm

Note: Serial code is a series of characters combined by the start time and the serial number of the device.

Figure 2. 1 SADP interface

2. Edit the network parameters.

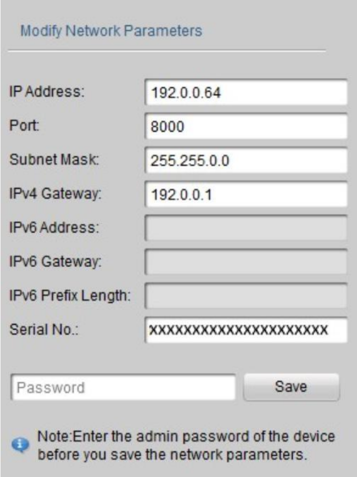
Steps:

(1) Click to select the device you want to edit.

(2) You can edit the IP Address, Port, Subnet Mask, and Gateway.

(3) Input the correct password of admin and click **Save** button to modify the parameters.

Note: The factory default password is 12345.



Modify Network Parameters

IP Address: 192.0.0.64
Port: 8000
Subnet Mask: 255.255.0.0
IPv4 Gateway: 192.0.0.1
IPv6 Address:
IPv6 Gateway:
IPv6 Prefix Length:
Serial No.: XXXXXXXXXXXXXXXXXXXXXX

Password Save

Note:Enter the admin password of the device before you save the network parameters.

Figure 2. 2 Editing the network parameters

Chapter 3 Getting Started

3.1 Plug-in Control Installation

DS-8500/9500NI-ST, DS-9500NI-RT series NVR can be accessed and configured by web server. Open web browser, input the IP address of the device and then press Enter. The system will remind you to install the Plug-in control. After the installation, you can configure and manage the NVR remotely.

Notes:

- The default IP address is 192.0.0.64.
- You may use one of the following web browsers: Internet Explorer 6.0, Internet Explorer 7.0, Internet Explorer 8.0, Internet Explorer 9.0, Internet Explorer 10.0, Apple Safari, Mozilla Firefox, and Google Chrome.
- The supported resolutions include 1024*768 and above.

3.2 User Login

Steps:

1. Open web browser, input the IP address of NVR, and the web server will select the language automatically according to the system language and maximize the web browser.

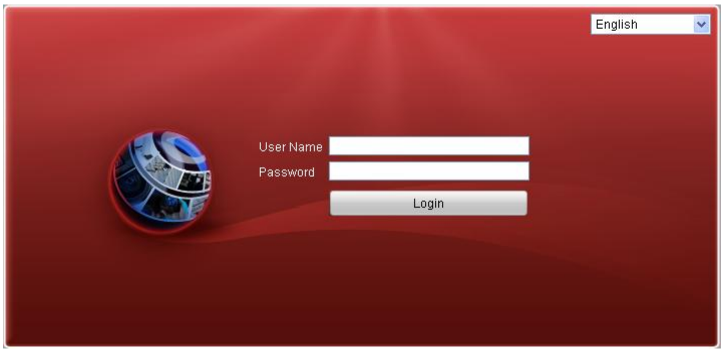


Figure 3. 1 Login Interface

On the top right corner, language is selectable between Chinese and English.

2. Input the correct user name and password, and click **Login** to enter live view interface, or it will pop up an error box.

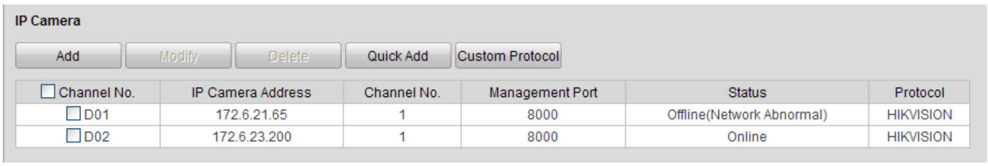
Note: The default user name is admin, and password is 12345.

3.3 Camera Management

Purpose:

The main function of the NVR is to connect the network cameras and record the video got from it. So before you can get a live view or record of the video, you may add the network cameras to the device. You can enter the camera management interface by:

Configuration> Remote Configuration> Camera Management> IP Camera



IP Camera

□ Channel No.	IP Camera Address	Channel No.	Management Port	Status	Protocol
□ D01	172.6.21.65	1	8000	Offline(Network Abnormal)	HIKVISION
□ D02	172.6.23.200	1	8000	Online	HIKVISION

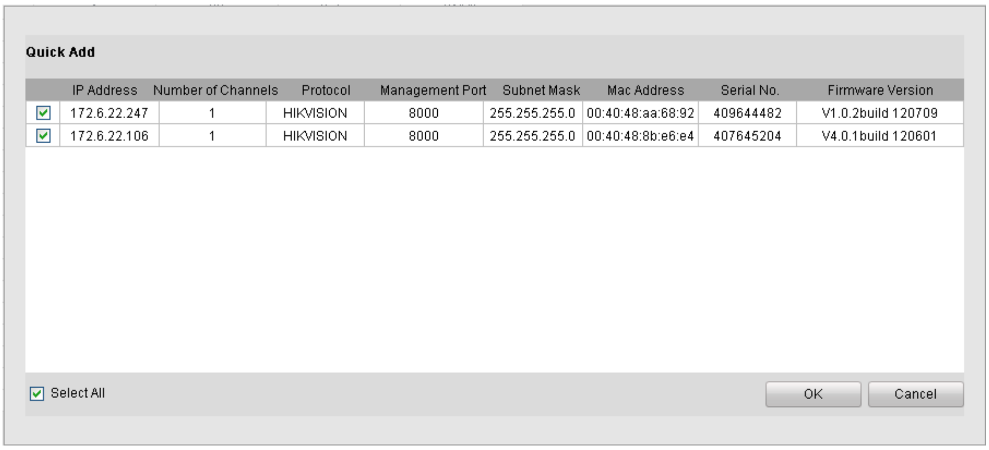
Figure 3. 2 IP Camera Management Interface

3.3.1 Quick Adding of IP Cameras

DS-8500/9500NI-ST and DS-9500NI-RT series NVR provide a function of remote auto searching IP camera. When there are supported IP cameras in the same network segment of a LAN with NVR, you may add it in one button with default user name, password and port number.

Note: Before applying Quick Add function, please make sure that IP camera is compatible with NVR and the default user name, password and port number are not changed.

Click **Quick Add** button, the online IP cameras will be listed as figure shown below:



Quick Add

	IP Address	Number of Channels	Protocol	Management Port	Subnet Mask	Mac Address	Serial No.	Firmware Version
☑	172.6.22.247	1	HIKVISION	8000	255.255.255.0	00:40:48:aa:68:92	409644482	V1.0.2build 120709
☑	172.6.22.106	1	HIKVISION	8000	255.255.255.0	00:40:48:8b:e6:e4	407645204	V4.0.1build 120601

☑ Select All

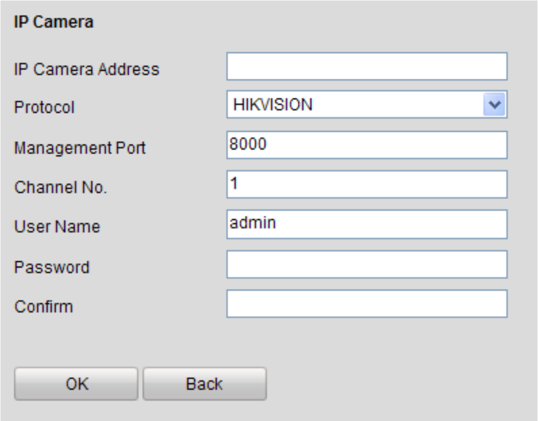
Figure 3. 3 Quick Adding Interface

Check the checkbox of the listed cameras to select them and click the **OK** button to finish adding.

3.3.2 Manually Adding IP Cameras

Steps:

1. Click the **Add** button, and the following interface will be shown:



IP Camera

IP Camera Address	
Protocol	HIKVISION
Management Port	8000
Channel No.	1
User Name	admin
Password	
Confirm	

Figure 3. 4 Manually Adding interface

2. Input the IP address or domain name of the network camera in the **IP Camera Address** text field, and user name and password.

Note: Before you input the domain name of the network camera, make sure you have registered the device on the DDNS server.

3. Click the **OK** button to finish adding.

And the camera and its information will be added in the list of cameras.

Chapter 4 Live View

4.1 Operations in Live View

Note: We take the operation of DS-9500NI-RT as the example, and other models may be different depending on their functions.

After login, the live view interface will display, as shown in the figure below.

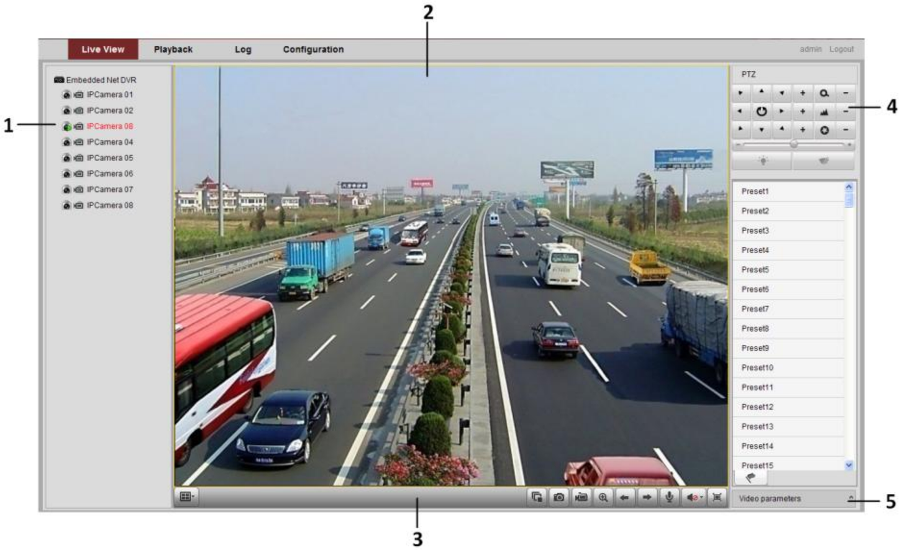


Figure 4. 1 Live View Interface

Table 4. 1 Live View Interface Descriptions

Area	Description	Area	Description
1	Channel list	2	Live view
3	Play control	4	PTZ control
5	Video parameters configuration		

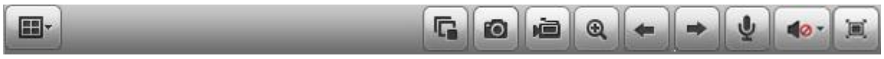


Figure 4. 2 Live View Control Bar

Table 4. 2 Play Control Buttons Descriptions

Button	Description	Button	Description
⊞	Window division mode	🔇/🔊	Open/Close audio
⧉/⧉	Start/Stop all live view	📷	Capture
🎥/🎥	Start/Stop all recording	🎤/🎤	Start/Stop two-way Audio
←	Previous page	→	Next page
─○─	Adjust volume	🔍/🔍	Enable/Disable digital zoom
⛶	Full Screen		

4.1.1 Start Live View

Live View by channel:

Select one window, and click on channel list or double-click the camera name to view the current camera. If live view successful, the icon will become .

Click → to switch to the next page, click ← to view the previous page.
Or just click ← and → to start live view by page.

4.1.2 Live View Control

Multi-window Division

In live view mode, the windows division can be selected by clicking the button on play control area.

It supports 1, 4, 9 and 16 windows-division modes: .

The change between different windows-division modes will not stop the current live view, and the window still can be operated.

Full-screen live view

Double click the selected window or click the button to maximize the window to full screen. Press **Esc** button on your keyboard or double click again to resume.

Open/Close audio

When live view is on, select the channel, and click to open audio, and the status changes to . Drag to adjust the audio volume.

When audio is open, click to close audio and the status will resume to .

Note: When live view with web browser, only the audio of one camera can be opened at one time.

Digital Zoom

When live view is on, click to activate digital zoom, the status will be .

Drag and draw a red rectangle to select the target area. Click the image to resume.

Click to disable digital zoom and the status will be resume to .

4.1.3 Stop Live View

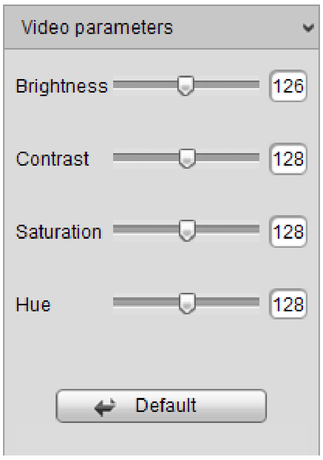
Click on the playlist to stop live view, and the icon changes to .

Click to stop live view of all channels.

4.2 Image Parameters Configurations

The **Video parameters** tab is folded by default; you may click to extend it. Then select the live view channel, and adjust the **Brightness**, **Contrast**, **Saturation** and **Hue** for it.

You can click ↩ Default button to resume the default values.



Video parameters

Brightness 126

Contrast 128

Saturation 128

Hue 128

Figure 4. 3 Video Parameters Configuration

Chapter 5 PTZ Control

In live view mode, you are allowed to use the PTZ control buttons to realize pan/tilt/zoom control of the camera.

Note: To realize PTZ control, the camera connected to the network must support the PTZ function or a pan/tilt device is connected to the camera.

5.1 Configuring RS-485

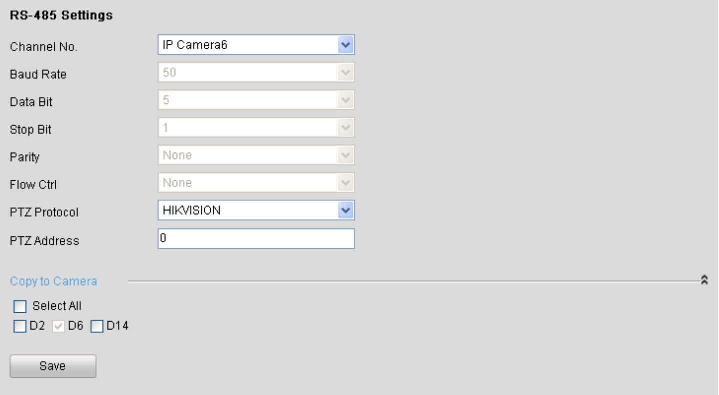
Purpose:

Follow the procedure to set the parameters for PTZ. Configure the PTZ parameters should be done before you control the PTZ camera.

Steps:

1. Enter the RS-485 Settings interface.

Configuration> Remote Configuration> Serial Port Settings> 485 Serial Port



RS-485 Settings

Channel No. IP Camera6

Baud Rate 50

Data Bit 5

Stop Bit 1

Parity None

Flow Ctrl None

PTZ Protocol HIKVISION

PTZ Address 0

Figure 5. 1 RS-485 Settings Interface

2. Choose the camera for PTZ setting in the drop-down list.

3. Edit the parameters of the PTZ camera.

Note: Only PTZ protocol and PTZ address can be configured, and the parameters should be exactly the same as the PTZ camera parameters.

4. Click **Save** to save the settings.

5.2 PTZ Control in Live View

5.2.1 PTZ Control Panel

Click on the direction buttons to control the pan/tilt movements.

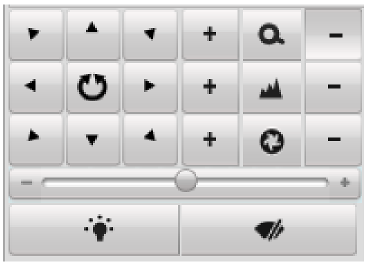


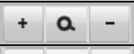
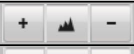
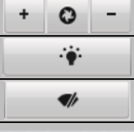
Figure 5. 2 PTZ Control Panel

Click the zoom/iris/focus buttons to realize lens control.

Notes:

- There will be 8 direction arrows (△, ▽, ◁, ▷, ◸, ◹, ◺, ◿) in the live view window when you click and drag the mouse in the relative positions.
- For the cameras which support lens movement only, the direction buttons are invalid.

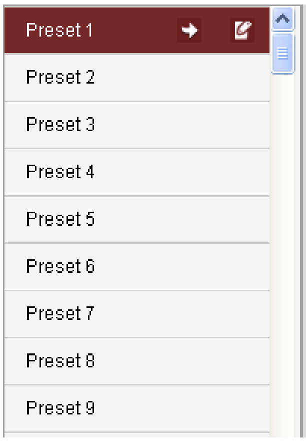
Table 5. 1 Descriptions of PTZ Control Panel

Button	Description
	Zoom in/out
	Focus near/far
	Iris open/close
	Light on/off
	Wiper on/off
	Adjust speed of pan/tilt movements

5.2.2 Setting a Preset

Steps:

1. In live view mode, select a preset number from the preset list.



Preset 1 ➜ ✎
Preset 2
Preset 3
Preset 4
Preset 5
Preset 6
Preset 7
Preset 8
Preset 9

Figure 5. 3 Preset List

2. Use the PTZ control buttons to move the lens to the desired position.

- Pan the camera to the right or left.
- Tilt the camera up or down.
- Zoom in or out.
- Refocus the lens.

3. Click ✎ to finish the setting of the current preset.

Note: Up to 256 presets can be configured.

5.2.3 Calling a Preset

Purpose: This feature enables the camera to point to a specified preset scene when an event takes place.

For the defined preset, you can call it at any time to the desired preset scene.

In live view mode, select a defined preset from the list and click ➜ to call a preset.

Note: You can set Pattern and Patrol mode in the iVMS-4200 client software. Please refer to the User Manual of iVMS-4200 Client Software for detailed information.

Chapter 6 Recoding and Capturing Settings

6.1 Manual Recording and Capturing

Before you start:

The channel for recording and capturing should be in the live view mode.

Note: When the live view of the current channel is stopped, the recording or the capturing of this channel will be stopped as well.

6.1.1 Manual Recording

Click icon to start recording of this channel, if the icon does not change to , it will pop up note message “Recording failed”. When the recording is on, click to stop recording.

When multiple channels are in live view mode, you may click to start recording for all the channels, or click to stop recording for all the channels.

Note: If the free disk space is less than 500M, the web server will stop recording automatically.

You can refer to *Chapter 13 Local Configuration* to edit the recording saving directory.

6.1.2 Manual Capturing

Select a live view window, click to capture image.

Note: If the free space of the saving file disk is less than 500M, capture image will be failed.

You can refer to *Chapter 13 Local Configuration* to edit the capture image saving directory.

6.2 Schedule Recording and Capturing

Note: In this section, we take the record schedule procedure as an example, and the same procedure can be applied to configuring schedule for both recording and capture. To schedule the automatic capture, you need to choose the Capture tab in the Schedule interface.

Steps:

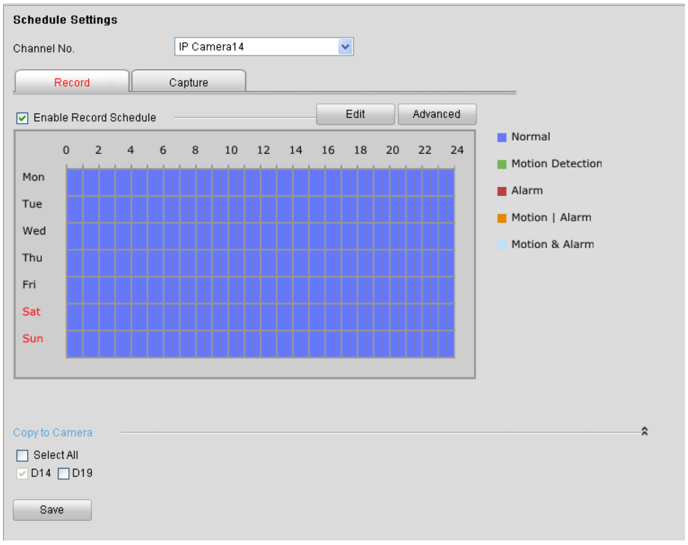
1. Enter Schedule Settings interface:

Configuration> Remote Configuraion> Camera Settings> Schedule Settings

2. Select the camera to configure the record schedule.

3. Check the checkbox of **Enable Record Schedule.**

Note: When NVR succeeds to connect to IP camera, it will start schedule recording which means recording for 24*7 hours by default.



Schedule Settings

Channel No. IP Camera14

Record | Capture

☑ Enable Record Schedule   Edit   Advanced

🟦 Normal
🟩 Motion Detection
🟥 Alarm
🟧 Motion | Alarm
🟦 Motion & Alarm

Copy to Camera

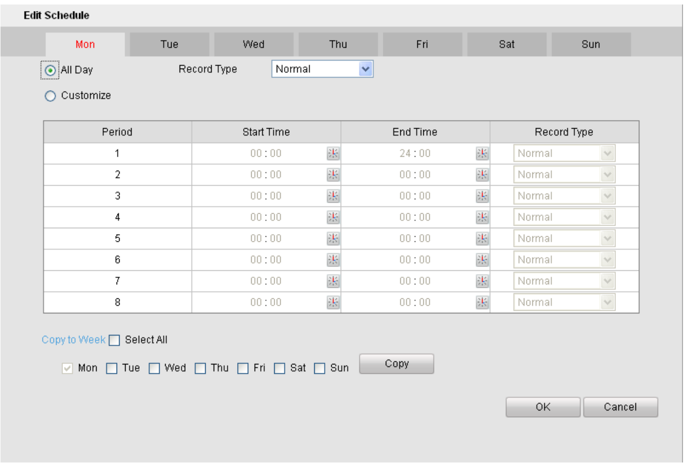
□ Select All

☑ D14 □ D19

Save

Figure 6. 1 Schedule Recording Configuration

4. Click **Edit** button to enter setup page.



Edit Schedule

Mon | Tue | Wed | Thu | Fri | Sat | Sun

● All Day   Record Type Normal

○ Customize

Period	Start Time	End Time	Record Type
1	00 : 00	24 : 00	Normal
2	00 : 00	00 : 00	Normal
3	00 : 00	00 : 00	Normal
4	00 : 00	00 : 00	Normal
5	00 : 00	00 : 00	Normal
6	00 : 00	00 : 00	Normal
7	00 : 00	00 : 00	Normal
8	00 : 00	00 : 00	Normal

Copy to Week □ Select All

☑ Mon □ Tue □ Wed □ Thu □ Fri □ Sat □ Sun   Copy

OK   Cancel

Figure 6. 2 Schedule Editing Interface

1) Choose the day in a week to configure scheduled recording.

2) Configure **All Day** or **Customize** Record:

- If you want to configure the all-day recording, please check the **All Day** checkbox.
- If you want to record in different time sections, check the **Customize** checkbox. Set the Start Time and End Time.

  Note: Up to 8 segments can be configured and each segment cannot be overlapped.

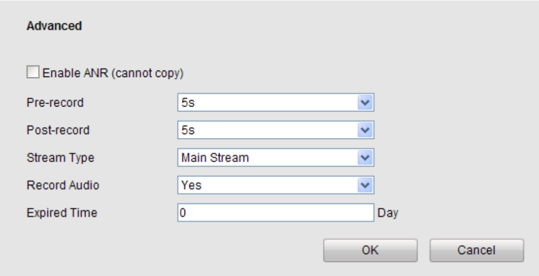
3) Select a **Record Type**. The record type can be Normal, Motion, Alarm, Motion & Alarm, and Motion | Alarm.

   Note: There five recording types supported, including "Normal", "Motion Detection", "Alarm", "Motion detection & Alarm", "Motion detection | Alarm". "&" means recording is triggered when two situations happened together and "|" means recording is triggered when one of the situations happened.

4) Check the checkbox of **Select All** and click **Cop**y to copy settings of this day to the whole week. You can also check any of the checkboxes before the date and click **Copy**.

5) Click **OK** to save the settings and exit the **Edit Schedule** interface.

5. Click **Advanced** to configure advanced record parameters.
Configure the supported parameters which are listed below, and click **OK** button to save and return to the previous interface.



Advanced

□ Enable ANR (cannot copy)

Pre-record: 5s

Post-record: 5s

Stream Type: Main Stream

Record Audio: Yes

Expired Time: 0 Day

Figure 6. 3 Advanced Parameters Configuration

- **Enable ANR:** Enable the ANR function to save the recording files in the IP camera when the network is disconnected, and synchronize the files to the NVR when the network is resumed.
- **Pre-record:** The time you set to record before the scheduled time or event. For example, when an alarm triggered the recording at 10:00, if you set the pre-record time as 5 seconds, the camera records it at 9:59:55.
- **Post-record:** The time you set to record after the event or the scheduled time. For example, when an alarm triggered the recording ends at 11:00, if you set the post-record time as 5 seconds, it records till 11:00:05.
- **Stream Type:** Select the stream type of recording, Main Stream and Sub Stream are selectable.
- **Record Audio:** Select in the drop-down list to enable or disable audio recording.
- **Expired Time:** The expired time is the longest time for a record file to be kept in the HDD, if the deadline is reached, the file will be deleted. You can set the expired time to 0, and then the file will not be deleted. The actual keeping time for the file should be determined by the capacity of the HDD.

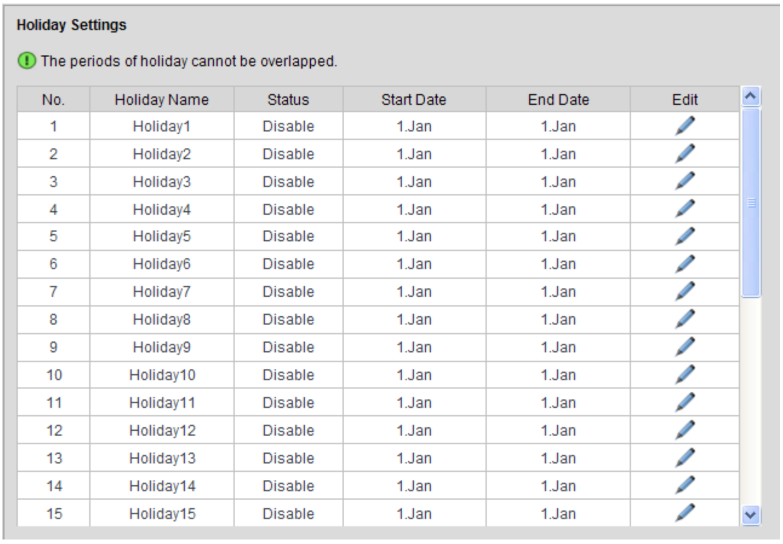
6. Click **Save** to validate the above settings.

6.3 Holiday Recording and Capturing

Steps:

1. Enter Holiday Settings interface:

Configuration> Remote Configuration> Camera Settings> Holiday Settings



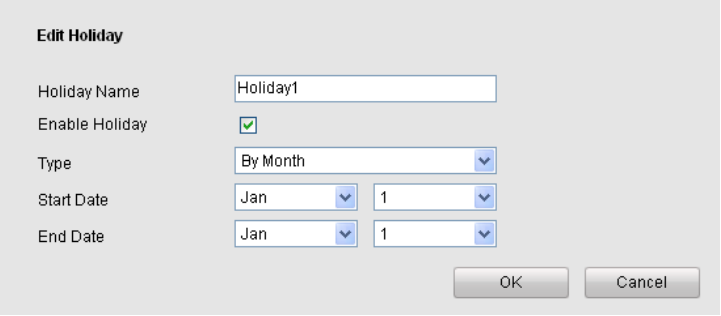
Holiday Settings

The periods of holiday cannot be overlapped.

No.	Holiday Name	Status	Start Date	End Date	Edit
1	Holiday1	Disable	1.Jan	1.Jan	✎
2	Holiday2	Disable	1.Jan	1.Jan	✎
3	Holiday3	Disable	1.Jan	1.Jan	✎
4	Holiday4	Disable	1.Jan	1.Jan	✎
5	Holiday5	Disable	1.Jan	1.Jan	✎
6	Holiday6	Disable	1.Jan	1.Jan	✎
7	Holiday7	Disable	1.Jan	1.Jan	✎
8	Holiday8	Disable	1.Jan	1.Jan	✎
9	Holiday9	Disable	1.Jan	1.Jan	✎
10	Holiday10	Disable	1.Jan	1.Jan	✎
11	Holiday11	Disable	1.Jan	1.Jan	✎
12	Holiday12	Disable	1.Jan	1.Jan	✎
13	Holiday13	Disable	1.Jan	1.Jan	✎
14	Holiday14	Disable	1.Jan	1.Jan	✎
15	Holiday15	Disable	1.Jan	1.Jan	✎

Figure 6. 4 Holiday Settings Interface

2. Click ✎ to enter the parameters settings interface.



Edit Holiday

Holiday Name: Holiday1

Enable Holiday: ☑

Type: By Month

Start Date: Jan 1

End Date: Jan 1

Figure 6. 5 Holiday Editing

3. Check the checkbox of **Enable Holiday** and modify the corresponding parameters, including Holiday Name, Type, Start Date and End Date.

4. Click **OK** to save and exit the settings.

Chapter 7 Playback

7.1 Playing Back Record Files

Note: Playing back by time is only supported playing back function when you success and configure the device by web browser. You can refer to the User Manual of iVMS-4200 to get more information of playing back by other ways. And only single-screen playback is supported.

Steps:

1. Click **Playback** tab to enter playback interface.

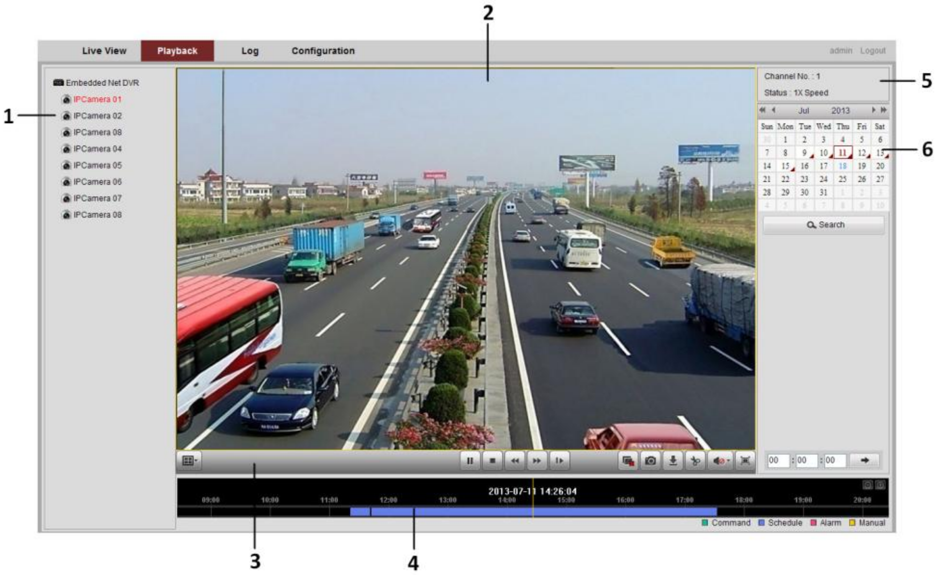


Figure 7. 1 Playback Interface

Table 7. 1 Playback interface description

Area	Description	Area	Description
1	Channel list	2	Playback video
3	Playback Control	4	Time Line
5	Playback Status	6	Calendar

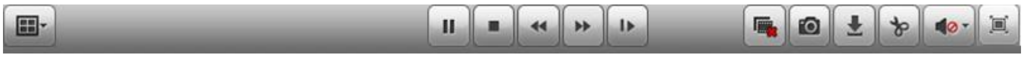


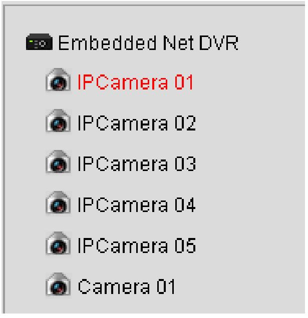
Figure 7. 2 Playback Control Bar

Table 7. 2 Playback control buttons description

Button	Description	Button	Description
▶/⏸	Play/Pause	■	Stop
◀◀	Slow down	▶▶	Speed up
▮▶	Play by single frame	📷	Capture
⏹	Stop All Playback	⬇	Download

✂/✂	Video Clip	🔇/🔊	Open/Close audio
⛶	Full screen		

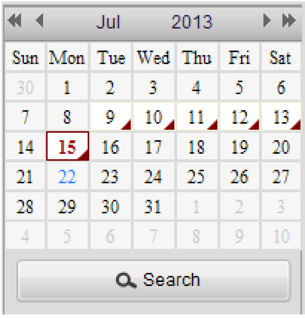
2. Select a channel on the channel list. (Channel 1 is the default.)



Embedded Net DVR
- IPCamera 01
- IPCamera 02
- IPCamera 03
- IPCamera 04
- IPCamera 05
- Camera 01

Figure 7. 3 Channel List

3. Select a date in calendar. The date with recording files is marked as ◢.



◀◀ ◀ Jul 2013 ▶ ▶▶

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	1	2	3	4	5	6
7	8	9◢	10◢	11◢	12◢	13◢
14	15◢	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Search

Figure 7. 4 Calendar

4. Click the **Search** button to search the matched recorded files. If there are search results, then they will be shown in the time bar area.

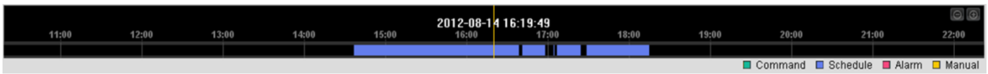
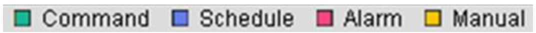


Figure 7. 5 Time Bar

You can drag the time bar to select the specific time, or input the time in 09 : 01 : 10 ➔ and click ➔ to locate the playback point. This will start the file playback from the specified time.

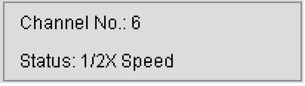
Different file types are indicated with different colors.



🟩 Command 🟦 Schedule 🟥 Alarm 🟨 Manual

Figure 7. 6 Video Type

5. After searching file, click ▶ to play.
When playback, the the channel number and status is displayed.



Channel No.: 6

Status: 1/2X Speed

Figure 7. 7 Playback Status

Note: More types of playback are supported in iVMS-4200 client software; please refer to the User Manual of iVMS-4200 for detailed information.

7.2 Video Clips

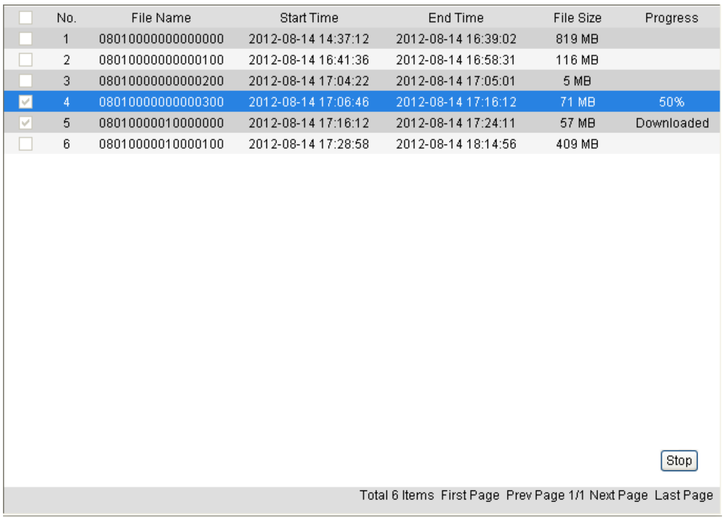
Click the ✂ button on the play control bar to start video clipping, and the button will become ✂.

Click ✂ to stop clipping. There will be note of clip succeed, and the video clips will be saved in the default saving path. You can refer to *Chapter 13 Local Configuration* to configure the saving path.

7.3 Capturing Image and Download

When playback, click 📷 to capture image.

When playback, click ⬇ to pop up saving file window.



□	No.	File Name	Start Time	End Time	File Size	Progress
□	1	08010000000000000	2012-08-14 14:37:12	2012-08-14 16:39:02	819 MB	
□	2	08010000000000100	2012-08-14 16:41:36	2012-08-14 16:58:31	116 MB	
□	3	08010000000000200	2012-08-14 17:04:22	2012-08-14 17:05:01	5 MB	
☑	4	08010000000000300	2012-08-14 17:06:46	2012-08-14 17:16:12	71 MB	50%
☑	5	08010000010000000	2012-08-14 17:16:12	2012-08-14 17:24:11	57 MB	Downloaded
□	6	08010000010000100	2012-08-14 17:28:58	2012-08-14 18:14:56	409 MB	

Figure 7. 8 Download Files Interface

Check the checkbox of the files and click **Download** to download the selected file(s). There will display the progress of downloading ratio.

7.4 Backup

DS-9500/8500NI-ST and DS-9500NI-RT support local one-touch backup function, and can also support backup to USB or eSATA storage devices remotely.

7.4.1 One-touch Backup

Steps:

1. Connect the backup device to the NVR.

2. Press the BACKUP button on the front panel and the device will start to search the recording files in the recent 24 hours, and then back up them to the default backup device.

If the size of the searched files is larger than the free space of backup device, the more recent files will be backed up preferentially.

The backup indicator blinks when backup is on.

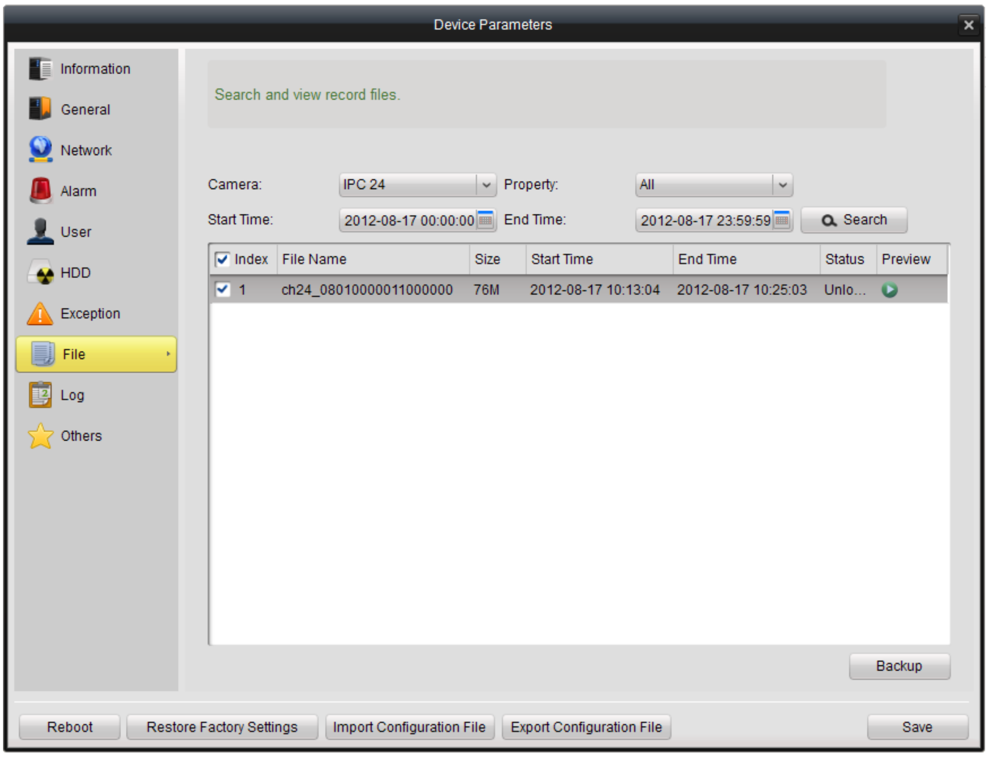
Note: A player will be copied to the backup device together with the backup record files.

7.4.2 Remote Backup

Note: This function is only supported by the iVMS-4200 client software.

1. Enter the File Backup interface:

Device Management> Remote Configuration> File



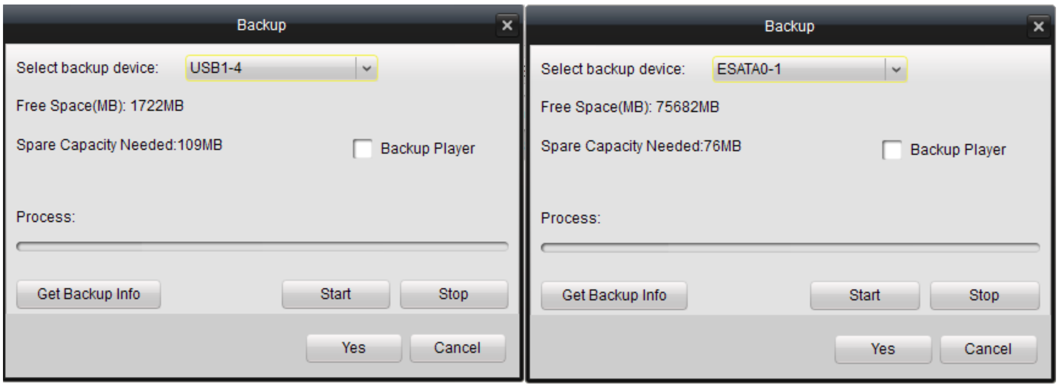
Search and view record files.

Camera: IPC 24
Property: All
Start Time: 2012-08-17 00:00:00
End Time: 2012-08-17 23:59:59

☑ Index	File Name	Size	Start Time	End Time	Status	Preview
☑ 1	ch24_08010000011000000	76M	2012-08-17 10:13:04	2012-08-17 10:25:03	Unlo...	▶

Figure 7. 9 File Search Interface

2. Select Camera and Property in the drop-down menu; modify Start Time and End Time. Then click **Search** button.
3. Check the checkbox in front of file name and click the **Backup** button.



Backup

Select backup device: USB1-4

Free Space(MB): 1722MB

Spare Capacity Needed:109MB

□ Backup Player

Process:

Backup

Select backup device: ESATA0-1

Free Space(MB): 75682MB

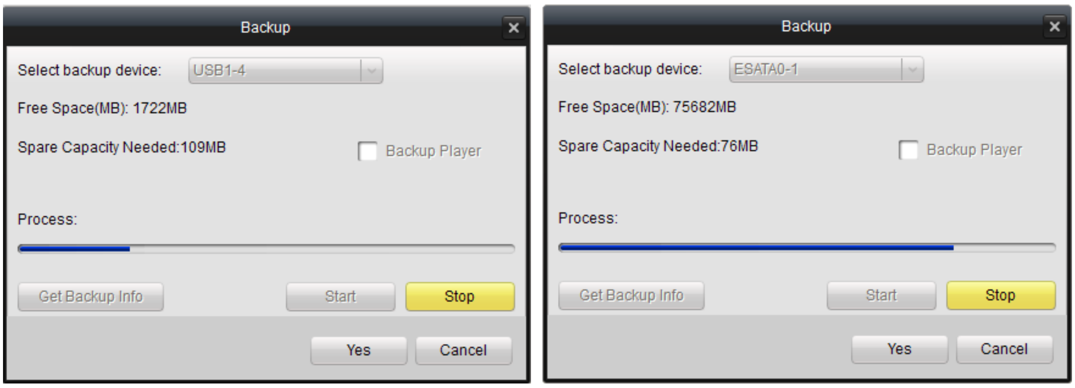
Spare Capacity Needed:76MB

□ Backup Player

Process:

Figure 7. 10 Backup Window

4. Select backup device in the drop-down menu, and you can check the checkbox of **Backup Player**.
5. Click the **Start** button to start backup.



Backup

Select backup device: USB1-4

Free Space(MB): 1722MB

Spare Capacity Needed:109MB

□ Backup Player

Process:

Backup

Select backup device: ESATA0-1

Free Space(MB): 75682MB

Spare Capacity Needed:76MB

□ Backup Player

Process:

Figure 7. 11 Backup in process

6. The backup ratio will display in process bar. You can click the **Stop** button to stop backup.

Note: If the backup device cannot be detected, please try to connect again. If it still cannot be detected, this may be because of the compatible problem between NVR and backup device.

7.5 Hot Spare Device Backup

Purpose:

Several devices which run on the same basis can form an N+1 hot spare system. The system consists of several working devices and a hot spare device; when the working device fails, the hot spare device switches into operation, thus increasing the reliability of the system.

Before you start:

At least 2 devices are online.

Note: This function is only supported by the iVMS-4200 client software.

7.5.1 Setting Hot Spare Device

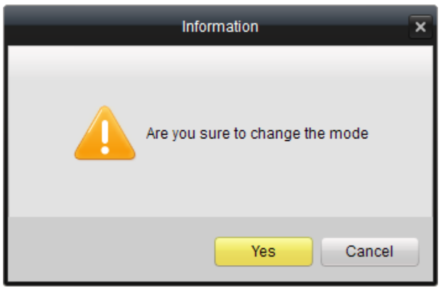
Notes:

- The camera connection will be disabled when the device works in the hot spare mode.
- It's highly recommended to restore the defaults of the device to ensure the normal operation afterwards after switching the working mode of the hot spare device to normal mode.

Steps:

1. Enter the HDD settings interface.

   Device Management> Remote Configuration> HDD
2. Click the **N+1 Configuration** button to set the hot spare function.
3. Set the Working Mode as Hot Spare Mode, click the **Yes** button in the pop-up message box.



Are you sure to change the mode

Figure 7. 12 Reboot Attention

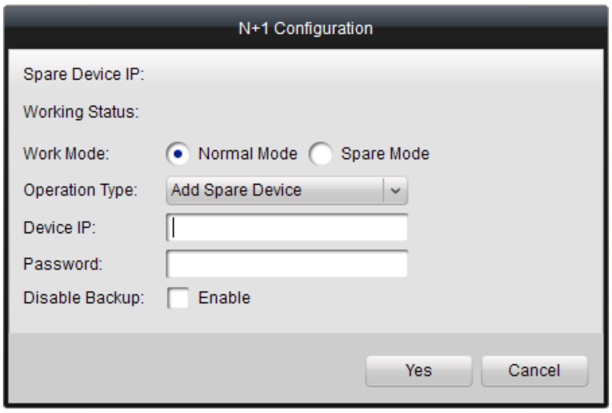
The device reboots automatically to make the change take effect.

7.5.2 Setting Working Device

Steps:

1. Enter the HDD settings interface.

   Device Management> Remote Configuration> HDD
2. Click the **N+1 Configuration** button to set the hot spare function.



Spare Device IP:

Working Status:

Work Mode: ● Normal Mode ○ Spare Mode

Operation Type: Add Spare Device

Device IP:

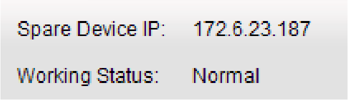
Password:

Disable Backup: □ Enable

Figure 7. 13 N+1 Configuration Interface

3. Set the Work Mode as Normal Mode (default).
4. Select the Operation type as Add Spare Device in the drop-down list and enter the IP address and password of hot spare device.
5. Check the checkbox of Enable to enable the hot spare function.
6. Click the **Yes** button to save the settings.

   If the working device connects to the hot spare device successfully, you can see the working status in the N+1 configuration interface.



Spare Device IP: 172.6.23.187

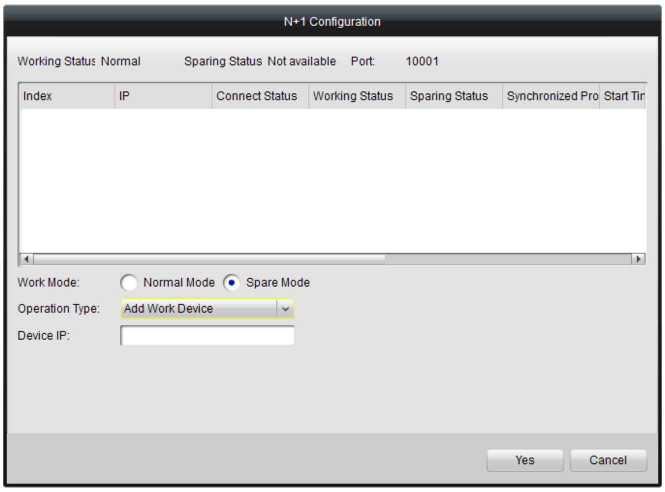
Working Status: Normal

Figure 7. 14 Hot Spare Information

7.5.3 Managing Hot Spare System

Steps:

1. Enter the Hot Spare Settings interface of the hot spare device.



Working Statu: Normal   Sparing Status Not available   Port: 10001

Index	IP	Connect Status	Working Status	Sparing Status	Synchronized Pro	Start Tir

Work Mode: ○ Normal Mode ● Spare Mode

Operation Type: Add Work Device

Device IP:

Figure 7. 15 Add Working Device

2. Select the Operation Type as Add Work Device, input the IP address in the text filed and click the **Yes** button

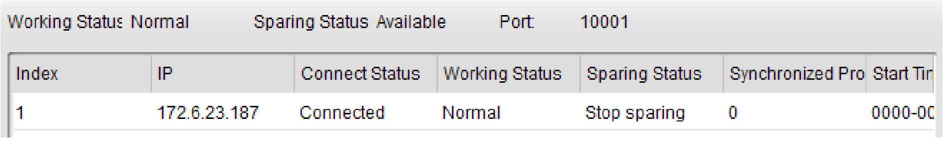
to link the working device to the hot spare device.

You can also select the Operation Type as Delete Work Device, and

Note: A hot spare device can connect up to 32 working devices.

3. You can view the working status of the hot spare device on the Working Device Status list.

When the working device works properly, the working status of the hot spare device is displayed as *Stop Sparing*.

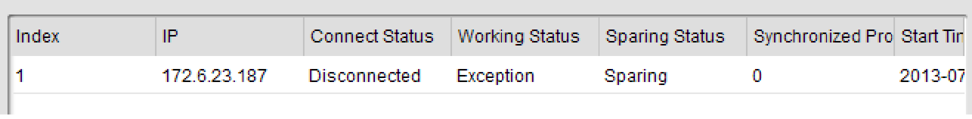


Working Status Normal Sparing Status Available Port: 10001

Index	IP	Connect Status	Working Status	Sparing Status	Synchronized Pro	Start Tir
1	172.6.23.187	Connected	Normal	Stop sparing	0	0000-00

Figure 7. 16 No Recording

When the working device gets offline, the hot spare device will record the video of the IP Camera connected to the working device for backup, and the working status of the hot spare device is displayed as *Sparing*.



Index	IP	Connect Status	Working Status	Sparing Status	Synchronized Pro	Start Tir
1	172.6.23.187	Disconnected	Exception	Sparing	0	2013-07

Figure 7. 17 Backing up

When the working device comes online, the lost video files will be restored by the record synchronization function.

Note: The record synchronization function can be enabled for up to 1 working device at a time.

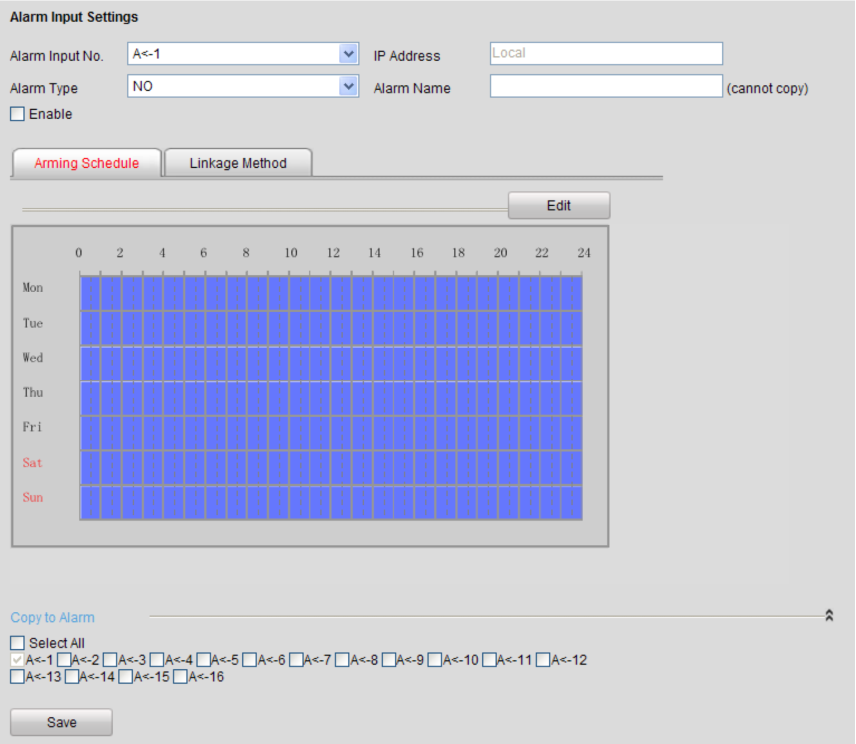
Chapter 8 Alarms Settings

8.1 Configuring Alarm Input

Steps:

1. Enter Alarm Input Settings interface:

Configuration> Remote Configuration> Alarm Settings> Alarm Input



Alarm Input Settings

Alarm Input No. A<-1

IP Address Local

Alarm Type NO

Alarm Name (cannot copy)

□ Enable

Copy to Alarm

□ Select All

☑ A<-1 □ A<-2 □ A<-3 □ A<-4 □ A<-5 □ A<-6 □ A<-7 □ A<-8 □ A<-9 □ A<-10 □ A<-11 □ A<-12
□ A<-13 □ A<-14 □ A<-15 □ A<-16

Figure 8. 1 Alarm Input Settings

2. Select the alarm input number and alarm type, “NO” or “NC”.

Note: “NO” is the default type. The settings will become effective after rebooting.

If you are using IP camera that is not from our manufacturer, please set this function by using its own software.

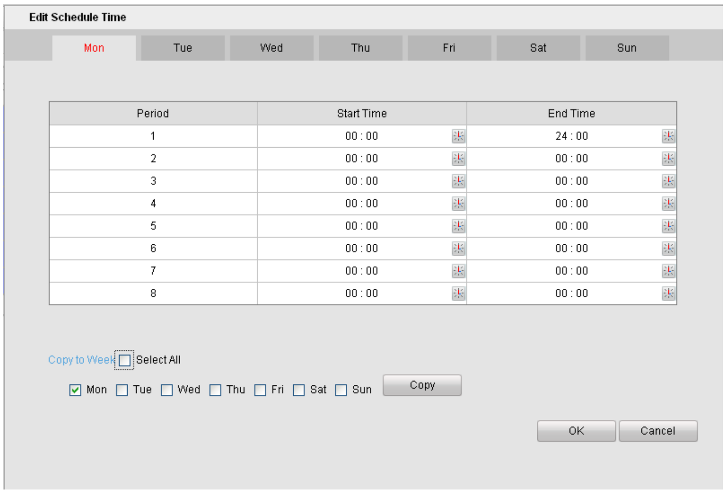
3. Check the checkbox of Enable to enable the alarm input channel.

4. Set arming schedule.

steps:

(1) Click **Arming Schedule** tab to enter arm schedule settings interface.

(2) Click **Edit** button to set recording schedule.



Edit Schedule Time

Mon | Tue | Wed | Thu | Fri | Sat | Sun

Period	Start Time	End Time
1	00 : 00	24 : 00
2	00 : 00	00 : 00
3	00 : 00	00 : 00
4	00 : 00	00 : 00
5	00 : 00	00 : 00
6	00 : 00	00 : 00
7	00 : 00	00 : 00
8	00 : 00	00 : 00

Copy to Week □ Select All

☑ Mon □ Tue □ Wed □ Thu □ Fri □ Sat □ Sun Copy

OK Cancel

Figure 8. 2 Schedule Editing

(3) Choose the day you want to set the arming schedule.

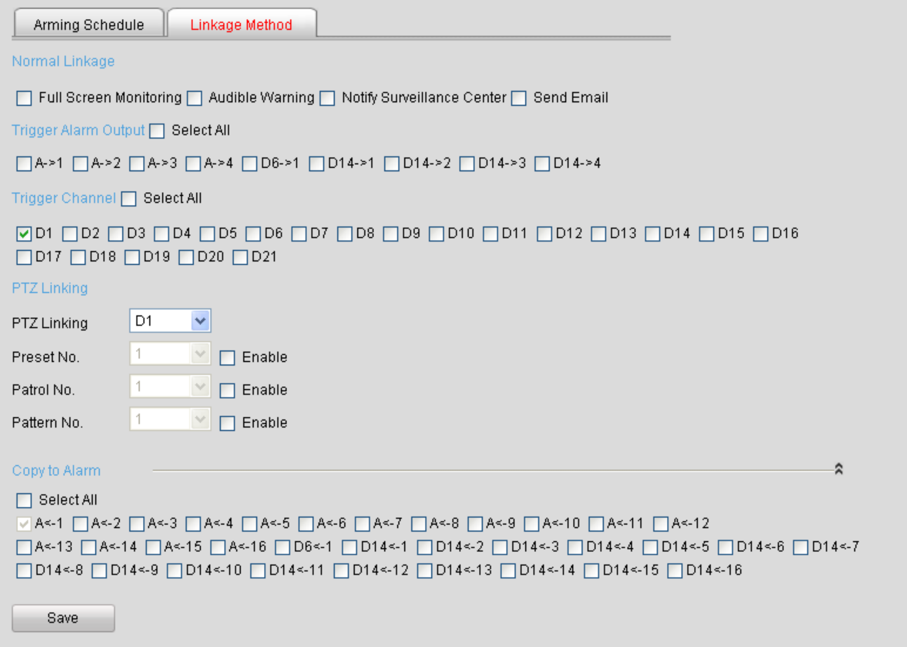
(4) Click ⌚ to set the time period for the arming schedule.

(5) (Optional) After you set the arming schedule, you can copy the schedule to other days.

(6) Click **OK** button to save the settings.

5. Click **Linkage Method** tab to set alarm actions.

Check the checkbox to select the linkage method. Full screen monitoring, audible warning, notify surveillance center, send email, trigger channel, trigger alarm output, and PTZ linking are selectable.



Arming Schedule | Linkage Method

Normal Linkage

□ Full Screen Monitoring □ Audible Warning □ Notify Surveillance Center □ Send Email

Trigger Alarm Output □ Select All

□ A->1 □ A->2 □ A->3 □ A->4 □ D6->1 □ D14->1 □ D14->2 □ D14->3 □ D14->4

Trigger Channel □ Select All

☑ D1 □ D2 □ D3 □ D4 □ D5 □ D6 □ D7 □ D8 □ D9 □ D10 □ D11 □ D12 □ D13 □ D14 □ D15 □ D16
□ D17 □ D18 □ D19 □ D20 □ D21

PTZ Linking

PTZ Linking D1

Preset No. 1 □ Enable

Patrol No. 1 □ Enable

Pattern No. 1 □ Enable

Copy to Alarm

□ Select All

☑ A<-1 □ A<-2 □ A<-3 □ A<-4 □ A<-5 □ A<-6 □ A<-7 □ A<-8 □ A<-9 □ A<-10 □ A<-11 □ A<-12
□ A<-13 □ A<-14 □ A<-15 □ A<-16 □ D6<-1 □ D14<-1 □ D14<-2 □ D14<-3 □ D14<-4 □ D14<-5 □ D14<-6 □ D14<-7
□ D14<-8 □ D14<-9 □ D14<-10 □ D14<-11 □ D14<-12 □ D14<-13 □ D14<-14 □ D14<-15 □ D14<-16

Save

Figure 8. 3 Linkage Method

Table 8. 1 Linkage Method Description

Parameters	Description
Full Screen Monitoring	Pop the image to full-screen when the event occurs.

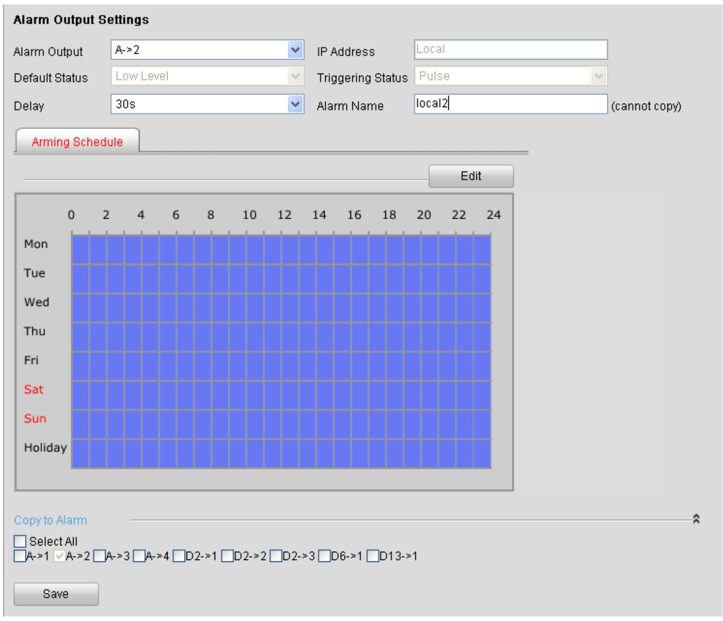
Parameters	Description
Audible Warning	Trigger the audible warning in the NVR locally.
Notify Surveillance Center	Send an exception or alarm signal to remote management software when an event occurs.
Send Email	Send an email with alarm information to a user or users when an event occurs.
Trigger Channel	The video will be recorded when the motion is detected.
Trigger Alarm Output	Trigger one or more external alarm outputs when an event occurs. Be sure the alarm output is configured. Please refer to chapter 8.2 configuring alarm output for detailed information.
PTZ Linking	Execute a specific PTZ action when an event occurs. Make sure you have configured the PTZ settings. Please refer to chapter 5.1 Configuring RS-485 for detailed information.

8.2 Configuring Alarm Output

Steps:

1. Enter Alarm Output Settings interface:

Configuration> Remote Configuration> Alarm Settings> Alarm Output



Alarm Output Settings

Alarm Output: A->2

IP Address: Local

Default Status: Low Level

Triggering Status: Pulse

Delay: 30s

Alarm Name: local2 (cannot copy)

□ Select All

□ A->1 ☑ A->2 □ A->3 □ A->4 □ D2->1 □ D2->2 □ D2->3 □ D6->1 □ D13->1

Figure 8. 4 Alarm Output Settings

2. Select alarm output number in the drop-down list.

3. Set delay time and alarm name.

4. Set arming schedule. Please refer to step 3 of *Chapter 8.1 Configuring Alarm Input* for detailed information.

5. Click the **Save** button to save the settings.

8.3 Configuring Motion Detection

Purpose:

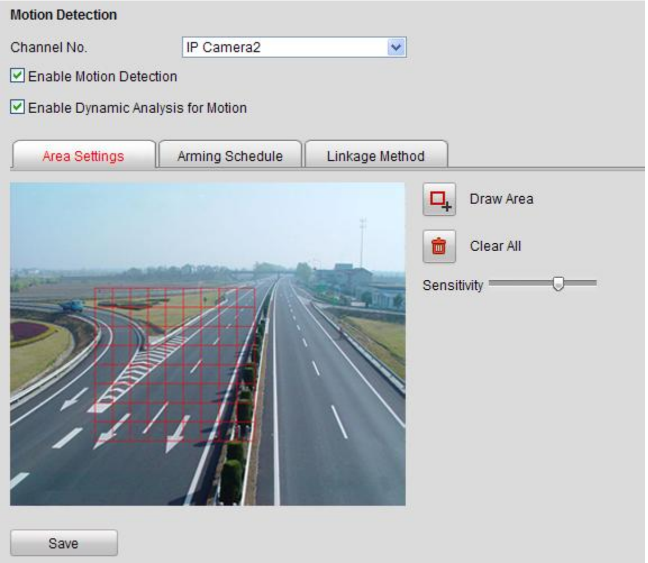
Follow the steps to set the motion detection parameters. In the live view mode, once a motion detection event takes place, the NVR can analyze it and perform many actions to handle it. Enabling motion detection function can trigger certain channels to start recording, or trigger full screen monitoring, audible warning, notify the surveillance center and so on. In this chapter, you can follow the steps to schedule a record which triggered by the detected motion.

Steps:

1. Enter Schedule Settings interface:

Configuration> Remote Configuraion> Camera Settings> Motion Detection

2. Set Motion Detection parameters.



Motion Detection

Channel No. IP Camera2

☑ Enable Motion Detection

☑ Enable Dynamic Analysis for Motion

Figure 8. 5 Enable Motion Detection Interface

Steps:

(1) Select Channel No. for motion detection recording.

(2) Check the checkbox of **Enable Motion Detection**.

(3) (Optional) Check the checkbox of **Enable Dynamic Analysis for Motion** if you want the detected moving object got marked with rectangle in the live view.

(4) Click button to draw area, you can click it again to stop drawing. Click button if you want to clear all areas.

(5) Drag Sensitivity bar to adjust the sensitivity.

Notes:

- Up to 8 areas can be configured.
- If you are using IP camera that from third-party manufacturer, please set this function by using its own software.

3. Set Arming Schedule.

Please refer to step 3 of *Chapter 8.1 Configuring Alarm Input* for detailed information.

4. Click tab **Linkage Method** to edit linkage method.

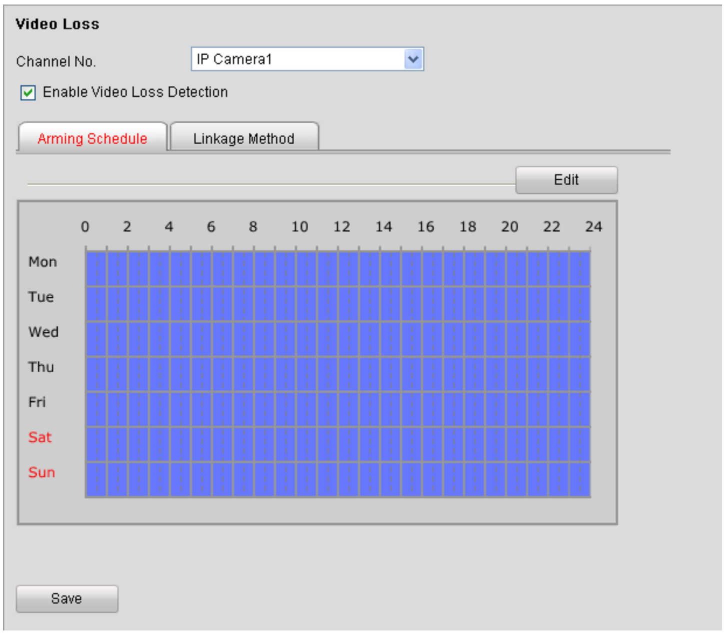
Check the checkbox to activate the linkage method; you may refer to Table 8. 1 for details of linkage methods.

8.4 Configuring Video Loss

Steps:

1. Enter video loss settings interface

Configuration> Remote Configuration> Camera Settings> Video Loss



Video Loss

Channel No. IP Camera1

☑ Enable Video Loss Detection

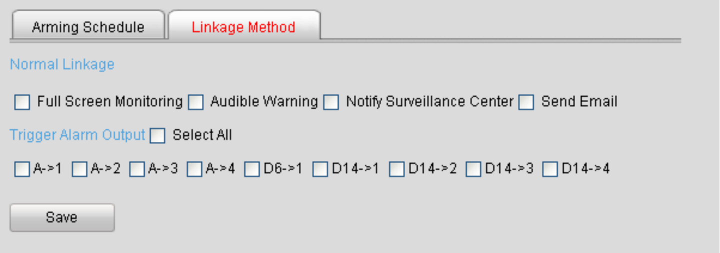
Figure 8. 6 Video Loss Settings

2. Select the channel number for video loss.

3. Check the checkbox to enable video loss detection.

4. Click **Edit** button to edit arming schedule. Please refer to step 3 of *Chapter 8.1 Configuring Alarm Input*.

5. Click tab **Linkage Method** to edit linkage method.



Normal Linkage

□ Full Screen Monitoring □ Audible Warning □ Notify Surveillance Center □ Send Email

Trigger Alarm Output □ Select All

□ A->1 □ A->2 □ A->3 □ A->4 □ D6->1 □ D14->1 □ D14->2 □ D14->3 □ D14->4

Figure 8. 7 Video Loss Linkage Method Settings

Check the checkbox to activate the linkage method; you may refer to Table 8. 1 for details of linkage methods.

Note: This function is only available on IP cameras from our manufacturer.

8.5 Configuring Tamper-proof

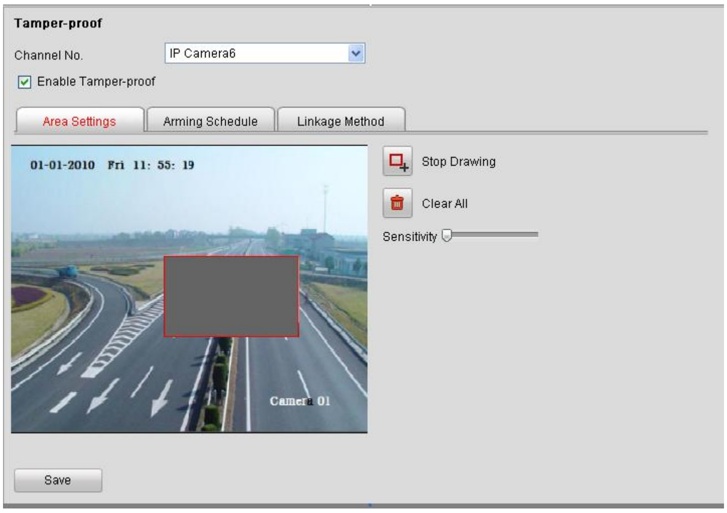
Purpose:

Trigger alarm when the lens is covered and take alarm response action(s).

Steps:

1. Enter Tamper-proof settings interface

Configuration> Remote Configuration> Camera Settings> Tamper-proof



Tamper-proof

Channel No. IP Camera6

☑ Enable Tamper-proof

Area Settings | Arming Schedule | Linkage Method

Figure 8. 8 Tamper-proof

2. Select the channel number for tamper-proof.

3. Check the checkbox of **Enable Tamper-proof**.

4. Click □ button to draw a detecting area, click it again to stop drawing. Click 🗑 button if you want to clear the area.

5. Drag Sensitivity bar to adjust the sensitivity.

6. Please refer to step 3 of *Chapter 8.1 Configuring Alarm Input* to set arming schedule.

7. Please refer to step 5 of *Chapter 8.4 Configuring Video Loss* to set linkage method.

8.6 Configuring Exceptions

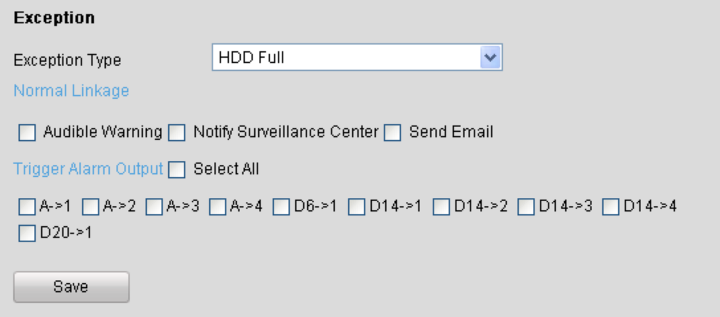
Purpose:

Exception parameters are for the alarm handling of abnormal event, which include “HDD Full”, “HDD Error” (HDD errors or HDD not initialization), “Network Disconnected”, “IP Address Conflicted”, “Illegal Login” (user name or password wrong), “Record / Capture Exception” and “Resolution Mismatch”.

Steps:

1. Enter exception configuration interface

Configuration> Remote Configuration> Exception



Exception

Exception Type: HDD Full

Normal Linkage

□ Audible Warning □ Notify Surveillance Center □ Send Email

Trigger Alarm Output □ Select All

□ A->1 □ A->2 □ A->3 □ A->4 □ D6->1 □ D14->1 □ D14->2 □ D14->3 □ D14->4
□ D20->1

Figure 8. 9 Exceptions

Table 8. 2 Exception Parameter Descriptions

Parameter	Description
HDD Full	The HDD is full.
HDD Error	Writing HDD error or unformatted HDD.
Network Disconnected	Disconnected network cable.
IP Address Conflicted	Duplicated IP address.
Illegal Login	Incorrect user ID or password.
Record/Capture Exception	No space for saving recorded files or captured pictures.
Resolution Mismatch	The configured video input standard mismatches with the video output of the camera.

2. Select the exception type in the drop-down list and set linkage method.

3. Click the **Save** button to save the settings.

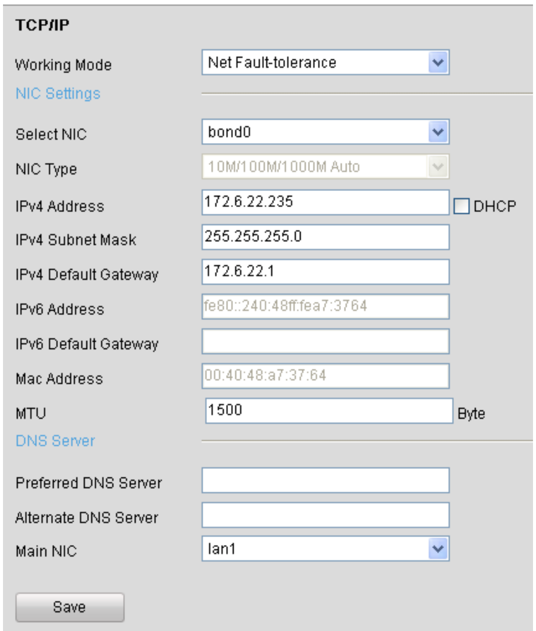
Chapter 9 Network Configuration

9.1 Basic Configuration

Steps:

1. Enter basic configuration interface

Configuration> Remote Configuration> Network Settings> TCP/IP



TCP/IP

Working Mode: Net Fault-tolerance

NIC Settings

Select NIC: bond0

NIC Type: 10M/100M/1000M Auto

IPv4 Address: 172.6.22.235 ☐ DHCP

IPv4 Subnet Mask: 255.255.255.0

IPv4 Default Gateway: 172.6.22.1

IPv6 Address: fe80::240:48ff:fea7:3764

IPv6 Default Gateway:

Mac Address: 00:40:48:a7:37:64

MTU: 1500 Byte

DNS Server

Preferred DNS Server:

Alternate DNS Server:

Main NIC: lan1

Figure 9. 1 Network Settings Interface

2. In the General Settings interface, you can configure the following settings: Working Mode, NIC Type, IPv4 Address, IPv4 Gateway, MTU and DNS Server.

If the DHCP server is available, you can click the checkbox of DHCP to automatically obtain an IP address and other network settings from that server.

Note: The valid value range of MTU is 500 ~ 9676.

3. After having configured the general settings, click **Save** to save the settings.

Working Mode

There are two 10M/100M/1000M NIC cards provided by the NVR, and it allows the device to work in the Multi-address, Load Balance and Net-fault Tolerance modes.

Multi-address Mode: The parameters of the two NIC cards can be configured independently. You can select LAN1 or LAN2 in the NIC type field for parameter settings.

You can select one NIC card as default route. And then the system is connecting with the extranet and the data will be forwarded through the default route.

Net-fault Tolerance Mode: The two NIC cards use the same IP address, and you can select the Main NIC to LAN1 or LAN2. By this way, in case of one NIC card failure, the device will automatically enable the other standby NIC card so as to ensure the normal running of the whole system.

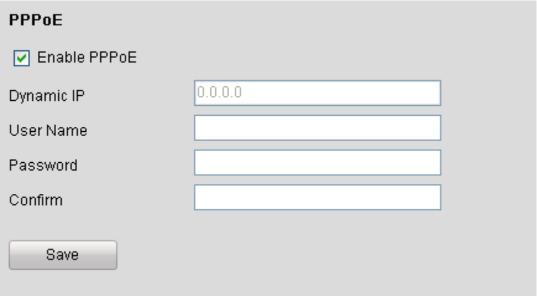
Load Balance Mode: By using the same IP address and two NIC cards share the load of the total bandwidth, which enables the system to provide two Gigabit network capacity.

9.2 PPPoE Settings

Steps:

1. Enter PPPoE setting interface:

Configuration> Remote Configuration> Network Settings> PPPoE Settings



PPPoE

☑ Enable PPPoE

Dynamic IP: 0.0.0.0

Figure 9. 2 PPPoE Settings

2. Check the checkbox to enable PPPoE.

3. Input the user name, password and confirm password.

4. Click **Save** to save the changes and reboot the device to make the parameters become effective.

If dial succeeded, the current IP address will be displayed in the blank “Dynamic IP”.

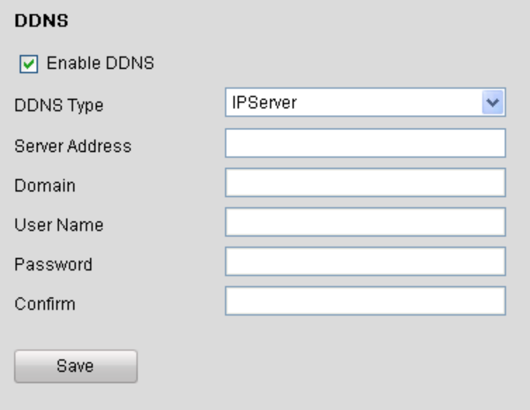
9.3 DDNS Settings

Purpose:

Adopting DDNS function can solve the problems caused by dynamic IP.

Steps:

1. Enter DDNS settings interface:
Configuration> Remote Configuration> Network Settings> DDNS



DDNS

☑ Enable DDNS

DDNS Type: IPServer

Server Address:

Domain:

User Name:

Password:

Confirm:

Figure 9. 3 DDNS Settings

2. Check the **Enable DDNS** checkbox to enable this feature.

3. Select **DDNS Type**. Five different DDNS types are selectable: IPServer, DynDNS, PeanutHull, NO-IP and HiDDNS.

- **IPServer:** Enter **Server Address** for IPServer.
- **DynDNS:**
  1) Enter **Server Address** for DynDNS (i.e. members.dyndns.org).
  2) In the NVR Domain Name text field, enter the domain obtained from the DynDNS website.
  3) Enter the **User Name** and **Password** registered in the DynDNS website.
- **PeanutHull:** Enter the **User Name** and **Password** obtained from the PeanutHull website.
- **HiDDNS:**
  1) The **Server Address** of the HiDDNS server appears as www.hik-online.com by default.
  2) Enter the **Device Domain Name.** You can use the alias you registered in the HiDDNS server or define a new device domain name. If a new alias of the device domain name is defined in the NVR, it will replace the old one registered on the server. You can register the alias of the device domain name in the HiDDNS server first and then enter the alias to the **Device Domain Name** in the NVR; you can also enter the domain name directly on the NVR to create a new one.

     Register the device on the HiDDNS server.

     1) Go to the HiDDNS website: www.hik-online.com.
     2) Click Register new user to register an account if you do not have one and use the account to log in.

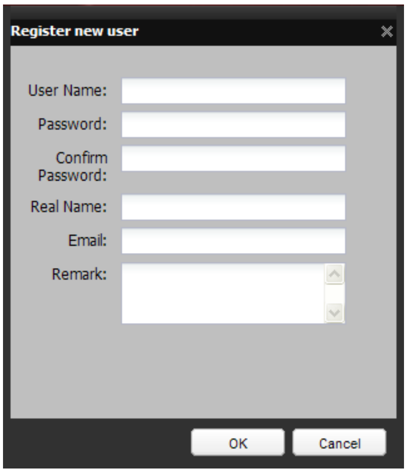
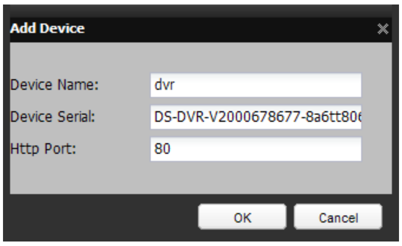


Figure 9. 4 Register an Account

3) In the Device Management interface, click Add to register the device.



Device Name: dvr

Device Serial: DS-DVR-V2000678677-8a6tt80

Http Port: 80

Figure 9. 5 Register the Device

Note: The device name can only contain the lower-case English letter, numeric and '-'; and it must start with the lower-case English letter and cannot end with '-'.

Access the Device via Web Browser or Client Software

After having successfully registered the device on the HiDDNS server, you can access your device via web browser or Client Software with the **Device Domain Name** (**Device Name**).

Task 1: Access the Device via Web Browser

Open a web browser, and enter *http://www.hik-online.com/alias* in the address bar. Alias refers to the **Device Domain Name** on the device or the **Device Name** on the HiDDNS server**.**

Example: *http://www. hik-online.com/nvr*

Note: If you mapped the HTTP port on your router and changed it to port No. except 80, you have to enter *http://www. hik-online.com/alias:HTTP port* in the address bar to access the device. You can refer to *Chapter 9.8* for the mapped HTTP port No.

Task 2: Access the devices via iVMS4200

For iVMS-4200, in the Add Device window, select ● HiDDNS and then edit the device information.

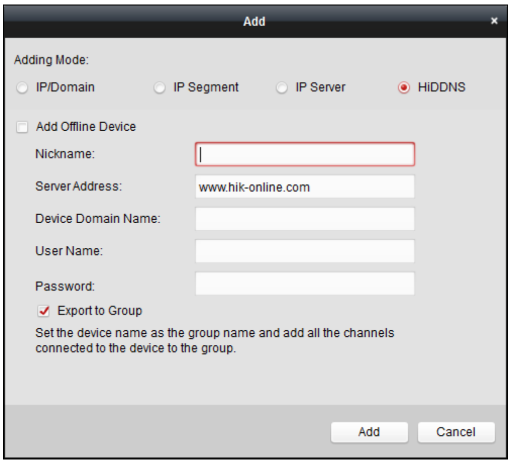
Nickname: Edit a name for the device as you want.

Server Address: www. hik-online.com

Device Domain Name: It refers to the **Device Domain Name** on the device or the **Device Name** on the HiDDNS server you created**.**

User Name: Enter the user name of the device. By default it is admin.

Password: Enter the password of the device. By default it is 12345.



Add ×

Adding Mode:

○ IP/Domain ○ IP Segment ○ IP Server ● HiDDNS

□ Add Offline Device

Nickname:

Server Address: www.hik-online.com

Device Domain Name:

User Name:

Password:

☑ Export to Group

Set the device name as the group name and add all the channels connected to the device to the group.

Figure 9. 6 Access Device via iVMS4200

4. Click the **Save** button to save and exit the interface.

9.4 NTP Settings

Purpose:

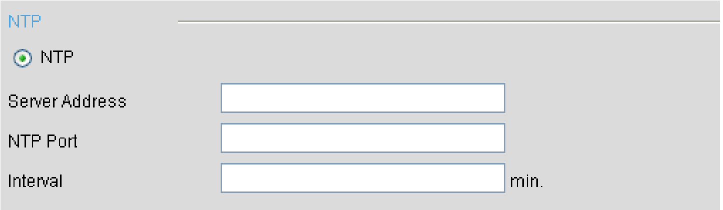
A Network Time Protocol (NTP) Server can be configured on your NVR to ensure the accuracy of system date/time.

Steps:

1. Enter the Network Settings interface.

Configuration> Remote Configuration> Device Parameters> Time Settings

2. Select the **NTP** tab to enter the NTP Settings interface, as shown in Figure 9. 7



NTP

● NTP

Server Address

NTP Port

Interval min.

Figure 9. 7 NTP Settings Interface

3. Check the **Enable NTP** checkbox to enable this feature.

4. Configure the following NTP settings:

- **Interval:** Time interval between the two synchronizing actions with NTP server. The unit is minute.
- **NTP Server:** IP address of NTP server.
- **NTP Port:** Port of NTP server.

5. Click **Save** to save the settings.

Note: The time synchronization interval can be set from1 to 10080 minutes, and the default value is 60 minutes. If the NVR is connected to a public network, you can use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the NVR is setup in a private network, NTP software can be used to establish a NTP server for time synchronization.

9.5 Email Settings

Purpose:

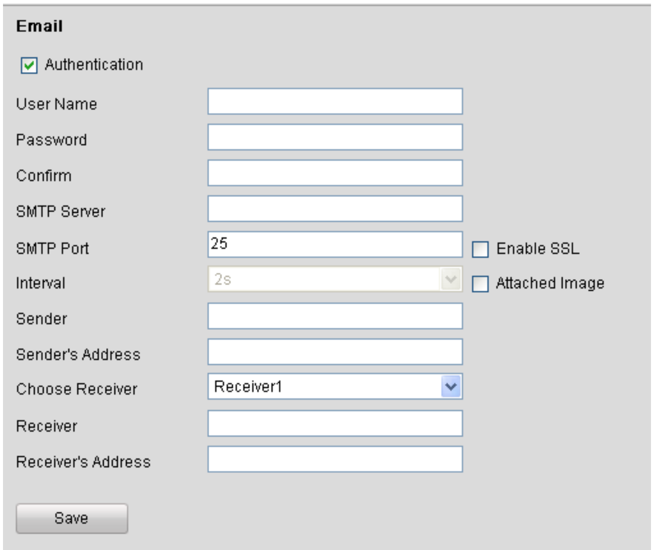
The system can be configured to send an Email notification to all designated users if an alarm event is detected, etc., an alarm or motion event is detected or the administrator password is changed.

Before configuring the Email settings, the NVR must be connected to a local area network (LAN) that maintains an SMTP mail server. The network must also be connected to either an intranet or the Internet depending on the location of the e-mail accounts to which you want to send notification.

Steps:

1. Enter Email settings interface:

Configuration> Remote Configuration> Network Settings> Email



Email

☑ Authentication

User Name

Password

Confirm

SMTP Server

SMTP Port 25 □ Enable SSL

Interval 2s □ Attached Image

Sender

Sender's Address

Choose Receiver Receiver1

Receiver

Receiver's Address

Save

Figure 9. 8 Email Settings

2. Configure the following Email settings:

Enable Server Authentication (optional): Check the checkbox to enable the server authentication feature.

User Name: The user account of sender's Email for SMTP server authentication.

Password: The password of sender's Email for SMTP server authentication.

Confirm: Repeat the password you input before.

SMTP Server: The SMTP Server IP address or host name (e.g., smtp.263xmail.com).

SMTP Port No.: The SMTP port. The default TCP/IP port used for SMTP is 25.

Enable SSL (optional): Click the checkbox to enable SSL if required by the SMTP server.

Interval: The interval refers to the time between two actions of sending attached pictures.

Attached Image(optional): Check the checkbox to enable the function of attaching image when send email.

Sender: The name of sender.

Sender's Address: The Email address of sender.

Select Receivers: Select the receiver. Up to 3 receivers can be configured.

Receiver: The name of user to be notified. Up to 3 receivers can be modified.

Receiver's Address: The Email address of user to be notified.

3. Click **Save** button to save the settings.

9.6 Port Settings

Purpose:

The HTTP port is used for remote web browser access.

The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in communication systems to control streaming media servers.

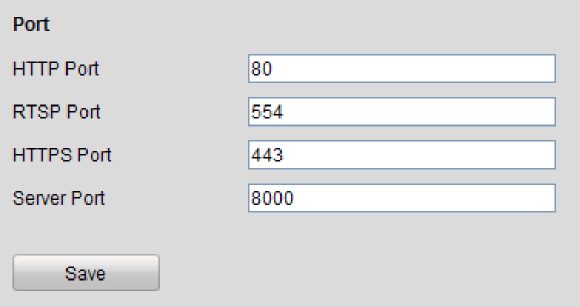
For details of HTTPS, please refer to *Chapter 9.9 HTTPS Settings*.

The Server port is used for the remote client software access.

Steps:

1. Enter Port settings interface:

Configuration> Remote Configuration> Network Settings> Port



Port

HTTP Port	80
RTSP Port	554
HTTPS Port	443
Server Port	8000

Figure 9. 9 Port Settings

2. Edit the port number it according to the actual demand.

3. Click **Save** to save the settings.

9.7 SNMP Settings

Purpose:

You can use SNMP protocol to get device status and parameters related information. By setting the Trap Address, the device is allowed to send the alarm event and exception message to the surveillance center.

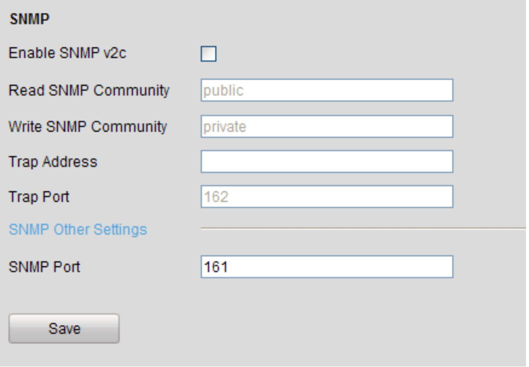
Before you start:

Please download the SNMP software and manage to receive the device information via SNMP port.

Steps:

1. Enter SNMP settings interface:

   Configuration> Remote Configuration> Network Settings> SNMP



SNMP

Enable SNMP v2c	□
Read SNMP Community	public
Write SNMP Community	private
Trap Address	
Trap Port	162
SNMP Other Settings	
SNMP Port	161

Figure 9. 10 SNMP Settings

2. Check the **Enable SNMP v2c** checkbox to enable this feature.
3. Configure the following SNMP settings:

   Trap Address: IP Address of SNMP host.

   Trap Port: Port of SNMP host.
4. Click Save to save the settings.

9.8 NAT Settings

Purpose:

Two ways are provided for port mapping to realize the remote access via the cross-segment network, UPnP™ and manual mapping.

9.8.1 UPnP™

UPnP™ can permit the device seamlessly discover the presence of other network devices on the network and establish functional network services for data sharing, communications, etc. If you want to use the UPnP™ function to enable the fast connection of the device to the WAN via a router, you should configure the UPnP™ parameters of the device.

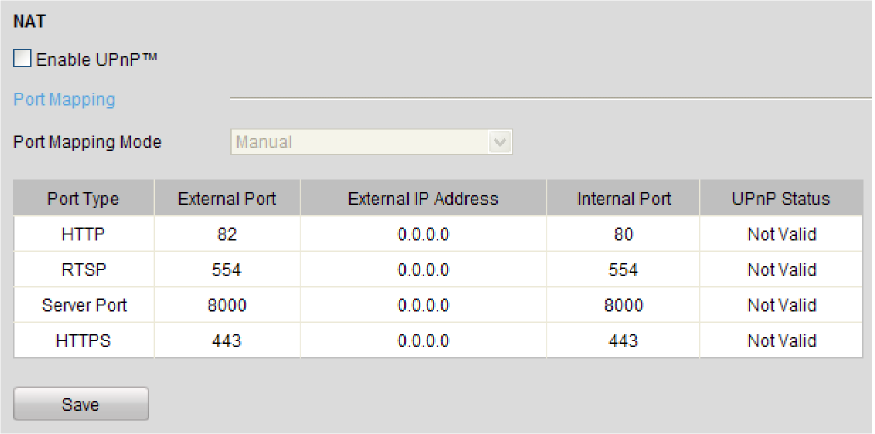
Before you start:

To enable the UPnP™ function of the device, you must enable the UPnP™ function of the router to which your device is connected. When the network working mode of the device is set as multi-address, the default route address of the device should be in the same network segment as that of the LAN IP address of the router.

Steps:

1. Enter the NAT Settings interface.

Configuration> Remote Configuration> Network Settings> NAT



NAT

□ Enable UPnP™

Port Mapping

Port Mapping Mode: Manual

Port Type	External Port	External IP Address	Internal Port	UPnP Status
HTTP	82	0.0.0.0	80	Not Valid
RTSP	554	0.0.0.0	554	Not Valid
Server Port	8000	0.0.0.0	8000	Not Valid
HTTPS	443	0.0.0.0	443	Not Valid

Figure 9. 11 UPnP™ Settings Interface

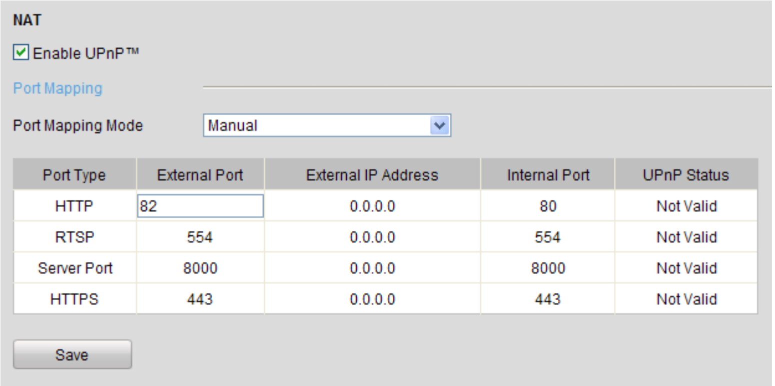
2. Check the checkbox to enable UPnP™.
3. Select the Port Mapping Mode in the drop-down list, as Manual and Auto are selectable.

   Task1: Auto

   If you select Auto, the Port Mapping items are read-only, and the external ports are set by the router automatically.

   Task2: Manual

   If you select Manual as the mapping mode, you can edit the external port on your demand.



NAT

☑ Enable UPnP™

Port Mapping

Port Mapping Mode: Manual

Port Type	External Port	External IP Address	Internal Port	UPnP Status
HTTP	82	0.0.0.0	80	Not Valid
RTSP	554	0.0.0.0	554	Not Valid
Server Port	8000	0.0.0.0	8000	Not Valid
HTTPS	443	0.0.0.0	443	Not Valid

Figure 9. 12 Editing Port Number

Steps:

1) Click on the External Port area of the corresponding port type, and edit the port number.

2) Click other place to finish editing.

Notes:

- You can use the default port No., or change it according to actual requirements.
- External Port indicates the port No. for port mapping in the router.
- The value of the RTSP port No. should be 554 or between 1024 and 65535, while the value of the other ports should be between 1 and 65535 and the value must be different from each other. If multiple devices are configured for the UPnP™ settings under the same router, the value of the port No. for each device should be unique.

4. Click **Save** to save the settings.

When the port mapping succeeded, the UPnP Status will change from *Not Valid* to *Valid*.

9.8.2 Manual Mapping

If your router does not support the UPnP^{TM} function, perform the following steps to map the port manually in an easy way.

Before you start:

Make sure the router support the configuration of internal port and external port in the interface of Forwarding.

Steps:

1. Enter the NAT Settings interface.

Configuration> Remote Configuration> Network Settings> NAT

2. Leave the Enable UPnP checkbox unchecked.

3. Edit the external port number.

Steps:

1) Click on the External Port area of the corresponding port type, and edit the port number.

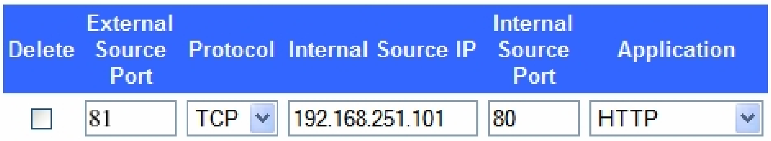
2) Click other place to finish editing.

Note: The value of the RTSP port No. should be 554 or between 1024 and 65535, while the value of the other ports should be between 1 and 65535 and the value must be different from each other. If multiple devices are configured for the UPnP™ settings under the same router, the value of the port No. for each device should be unique.

4. Click **Save** to save the settings.

5. Enter the virtual server setting page of router; fill in the blank of Internal Source Port with the internal port value, the blank of External Source Port with the external port value, and other required contents.

   Note: Each item should be corresponding with the device port, including server port, http port, RTSP port and https port.



Delete	External Source Port	Protocol	Internal Source IP	Internal Source Port	Application
□	81	TCP	192.168.251.101	80	HTTP

Figure 9. 13 Setting Virtual Server Item

Note: The above virtual server setting interface is for reference only, it may be different due to different router manufactures. Please contact the manufacture of router if you have any problems with setting virtual server.

9.9 HTTPS Settings

Purpose:

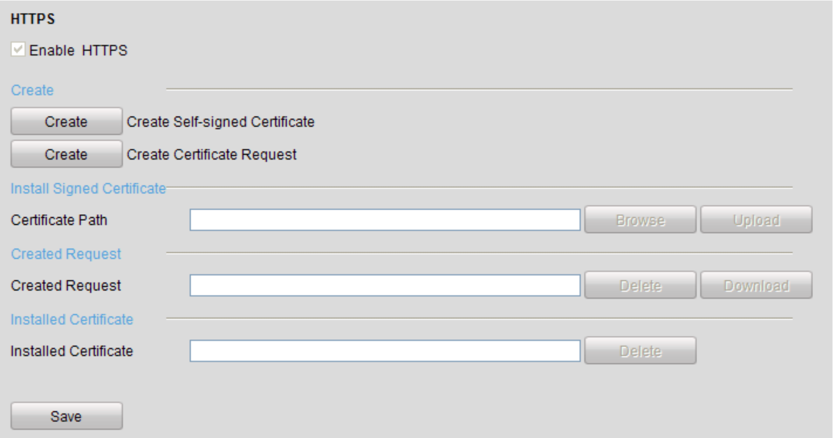
HTTPS provides authentication of the web site and associated web server that one is communicating with, which protects against Man-in-the-middle attacks. Perform the following steps to set the port number of https.

Example:

If you set the port number as 443 and the IP address is 192.0.0.64, you may access the device by inputting *https://192.0.0.64:443* via the web browser.

Steps:

1. Enter the HTTPS settings interface.
   Configuration > Remote Configuration > Network Settings > HTTPS
2. Create the self-signed certificate or authorized certificate.



HTTPS

☑ Enable HTTPS

Create

Create | Create Self-signed Certificate

Create | Create Certificate Request

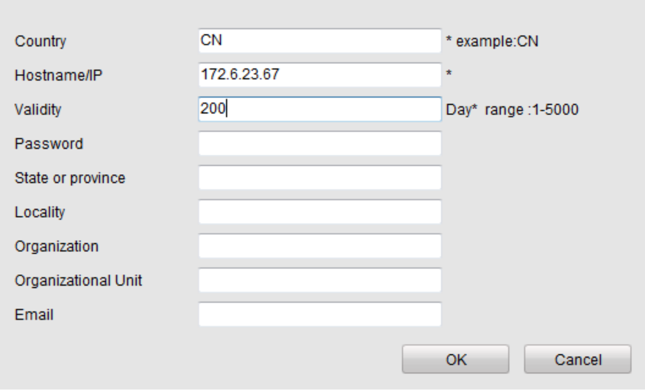
Install Signed Certificate

Certificate Path		Browse	Upload
Created Request		Delete	Download
Installed Certificate		Delete	

Figure 9. 14 HTTPS Settings

OPTION 1: Create the self-signed certificate

(1) Click the **Create** button to create the following dialog box.



Country	CN	* example:CN
Hostname/IP	172.6.23.67	*
Validity	200	Day* range :1-5000
Password		
State or province		
Locality		
Organization		
Organizational Unit		
Email		

Figure 9. 15 Create Self-signed Certificate

(2) Enter the country, host name/IP, validity and other information.

(3) Click **OK** to save the settings.

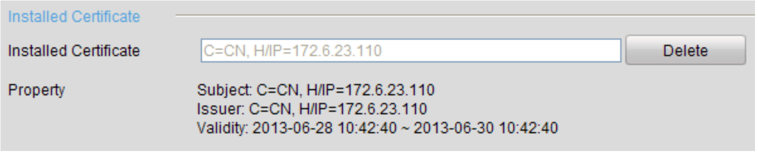
OPTION 2: Create the authorized certificate

(1) Click the **Create** button to create the certificate request.

(2) Download the certificate request and submit it to the trusted certificate authority for signature.

(3) After receiving the signed valid certificate, import the certificate to the device.

3. There will be the certificate information after you successfully create and install the certificate.



Installed Certificate

Installed Certificate: C=CN, H/IP=172.6.23.110

Property: Subject: C=CN, H/IP=172.6.23.110
Issuer: C=CN, H/IP=172.6.23.110
Validity: 2013-06-28 10:42:40 ~ 2013-06-30 10:42:40

Figure 9. 16 Installed Certificate Property

4. Check the checkbox to activate the HTTPS function.
5. Click the **Save** button to save the settings.

9.10 Remote Alarm Host Settings

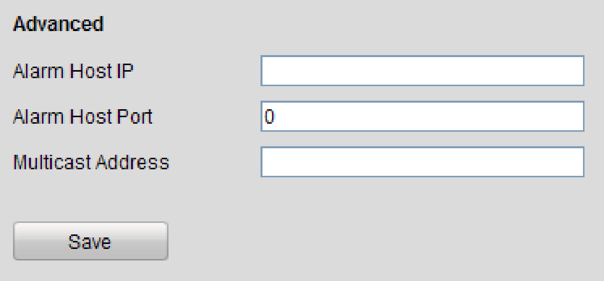
Purpose:

With a remote alarm host configured, the NVR will send the alarm event or exception message to the host when an alarm is triggered. The remote alarm host must have the Network Video Surveillance software installed.

Steps:

1. Enter the Advanced settings interface.

   Configuration > Remote Configuration > Network Settings > Advanced



Advanced

Alarm Host IP:

Alarm Host Port: 0

Multicast Address:

Figure 9. 17 Advanced Settings Interface

2. Input **Alarm Host IP** and **Alarm Host Port** in the text fields.

   The **Alarm Host IP** refers to the IP address of the remote PC on which the Network Video Surveillance Software (e.g., iVMS-4200) is installed, and the **Alarm Host Port** must be the same as the alarm monitoring port configured in the software.
3. Click the **Save** button to save the settings.

9.11 Multicast Address Settings

Purpose:

The multicast can be configured to realize live view for more than 128 connections through network for the device. A multicast address spans the Class-D IP range of 224.0.0.0 to239.255.255.255. It is recommended to use the IP address ranging from 239.252.0.0 to 239.255.255.255.

Steps:

1. Enter the Advanced settings interface, as shown in the Figure 9. 17.
   Configuration > Remote Configuration > Network Settings > Advanced
2. Set **Multicast IP**. When adding a device to client software, the multicast address must be the same as the one of NVR.
3. Click the **Save** button to save and exit the interface.

Note: The multicast function should be supported by the network switch to which the NVR is connected.

Chapter 10 Camera Settings

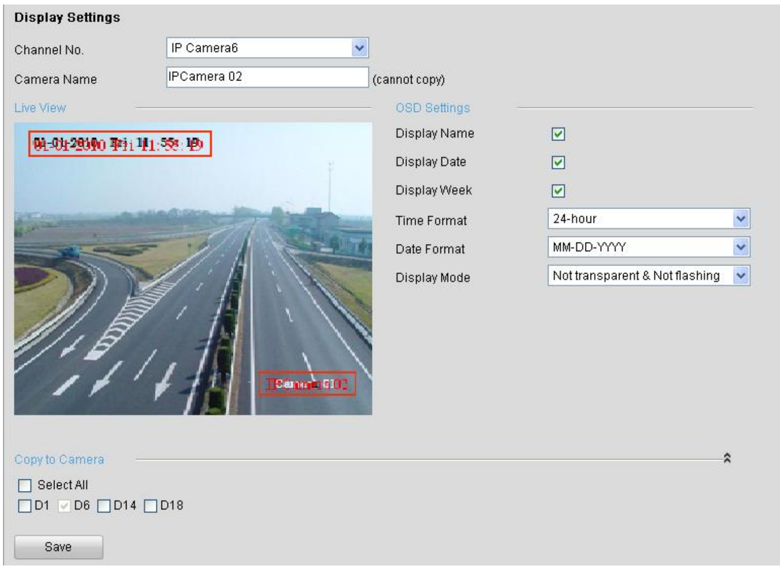
10.1 Channel Display Settings

Note: This function is only supported by IP cameras from certain manufacturers.

Steps:

1. Enter OSD settings interface:

Configuration> Remote Configuration> Camera Settings> Display Settings



Display Settings

Channel No. IP Camera6

Camera Name IPCamera 02 (cannot copy)

Live View

OSD Settings

Display Name ☑

Display Date ☑

Display Week ☑

Time Format 24-hour

Date Format MM-DD-YYYY

Display Mode Not transparent & Not flashing

Copy to Camera

□ Select All

□ D1 ☑ D6 □ D14 □ D18

Figure 10. 1 Display Settings Interface

2. Select the channel No. for Display Settings, and you can configure the **Camera Name.**

3. Check the corresponding checkbox to enable the function.

4. Select the Date Format, Time Format and Display Mode.

You can use the mouse to click and drag the text frame on the live view window to adjust the OSD position

5. You can check the corresponding checkbox to copy the settings to other camera(s).

6. Click **Save** button to save the settings.

10.2 Text Overlay

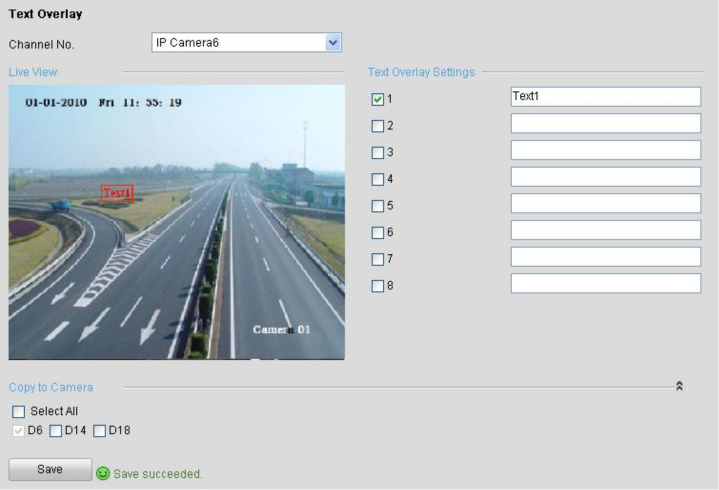
Purpose:

You can customize the text overlay to display on the selected channel.

Steps:

1. Enter text overlay configuration inteface:

Configuration> Remote Configuraion> Camera Settings> Text Overlay



Text Overlay

Channel No. IP Camera6

Live View

Text Overlay Settings

☑ 1 Text1

□ 2

□ 3

□ 4

□ 5

□ 6

□ 7

□ 8

Copy to Camera

□ Select All

☑ D6 □ D14 □ D18

Save

Save succeeded.

Figure 10. 2 Text Overlay Settings

2. Check the checkbox to enable the text overlay.

3. Enter the content in the textfiled.

You can use mouse to click and drag the text frame on the live view window to adjust the position.

You can check the corresponding checkbox to copy the settings to other camera.

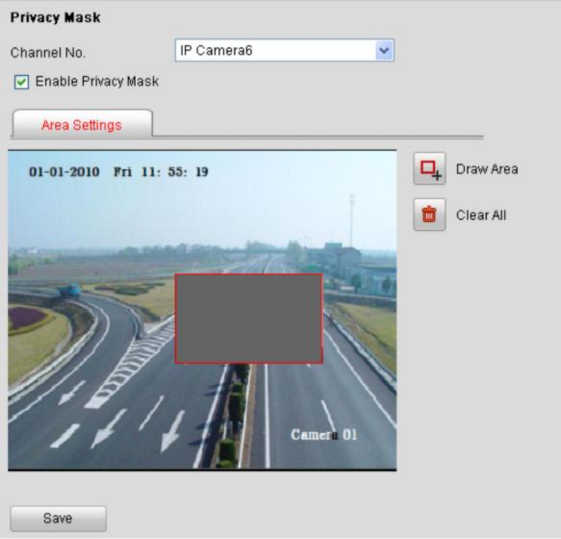
4. Click **Save** button to save the settings.

10.3 Privacy Mask

Steps:

1. Enter Privacy Mask interface:

Configuration> Remote Configuration> Camera Settings> Privacy Mask



Privacy Mask

Channel No. IP Camera6

☑ Enable Privacy Mask

Figure 10. 3 Privacy Settings

2. Select the channel number for privacy mask.

3. Check the checkbox to enable privacy mask function.

4. Click button to draw area, click it again to stop drawing. Click button to clear all areas.

5. Click **Save** button to save the settings.

Note: Up to 4 areas can be added.

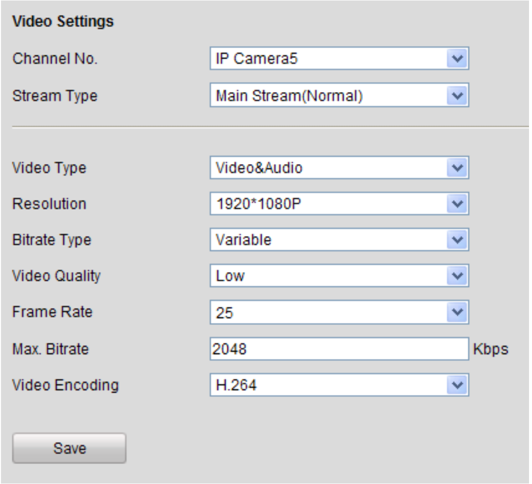
10.4 Video and Continuous Capture Parameter Settings

10.4.1 Video Parameter Settings

Steps:

1. Enter Video Encoding Configuration interface:

Configuration> Remote Configuraion> Camera Settings> Video Settings



Video Settings

Channel No. IP Camera5

Stream Type Main Stream(Normal)

Video Type Video&Audio

Resolution 1920*1080P

Bitrate Type Variable

Video Quality Low

Frame Rate 25

Max. Bitrate 2048 Kbps

Video Encoding H.264

Figure 10. 4 Video Settings Interface

2. Edit the parameters and click the **Save** button to save the settings.

Table 10. 1 Video Parameter Settings

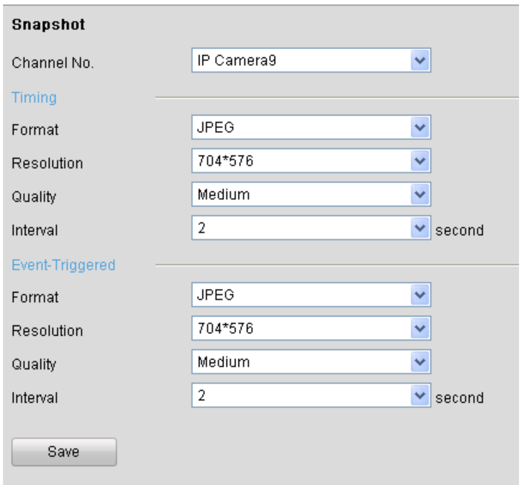
Items	**Descriptions**
Stream Type	Main Stream (Normal): Usually used for the local recording without any event happens. Main Stream (Event): Usually used for the local recording when the event happens. Sub-stream: For the remote monitoring. Transcoding Stream: For the remote monitoring through mobile devices or when the network bandwidth is narrow.
Video Type	Video Stream and Video & Audio
Resolution	Recording Resolution
Bitrate Type	Variable and Constant
Video Quality	Highest, Higher, Medium, Low, Lower, Lowest
Frame Rate	The number of frames per second

10.4.2 Continuous Capture Parameters Settings

Steps:

1. Enter continuous capture settings interface:

   Configuration> Remote Configuration> Camera Settings> Snapshot



Snapshot

Channel No.	IP Camera9	
Timing		
Format	JPEG	
Resolution	704*576	
Quality	Medium	
Interval	2	second
Event-Triggered		
Format	JPEG	
Resolution	704*576	
Quality	Medium	
Interval	2	second

Figure 10. 5 Capture Settings

2. Select a channel number in the drop-down list of Channel No..
3. Edit the parameters of the corresponding channel.

   Note: The interval is the time period between two capturing actions.
4. Click the **Save** button to save the settings.

Chapter 11 RAID Configuration

Notes:

- This chapter is supported by DS-9500NI-RT series only.
- The RAID Configuration interface is only provided in iVMS-4200 client software.

11.1 Configuring Array and Logical Disk

Purpose:

The DS-9500NI-RT is capable of realizing Redundant Array of Independent Disk, supporting RAID0, RAID1, RAID5 and RAID10.

Before you start:

Please install the HDD(s) properly and it is recommended to use the same enterprise-level HDDs (including model and capacity) for array creation and configuration so as to maintain reliable and stable running of the disks.

Introduction:

The DS-9500NI-RT series can store the data (such as record, picture, log information) in the HDD only after you have created the logical disk or you have configured network HDD (refer to Chapter 11.2 Managing Network HDD). Our device provides two ways for creating the logical disk, including one-touch configuration and manual configuration. The following flow chart shows the process of creating logical disk.

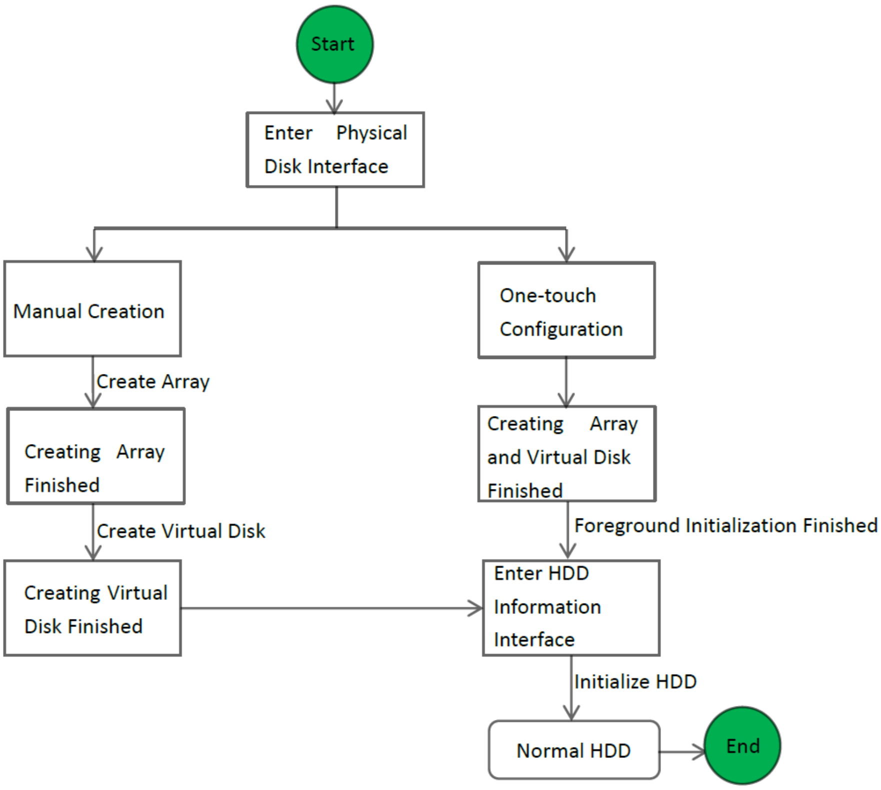

Start
Enter Physical Disk Interface
Manual Creation
One-touch Configuration
Create Array
Creating Array Finished
Creating Array and Virtual Disk Finished
Create Virtual Disk
Foreground Initialization Finished
Creating Virtual Disk Finished
Enter HDD Information Interface
Initialize HDD
Normal HDD
End

Figure 11. 1 RAID Working Flow

11.1.1 One-touch Configuration

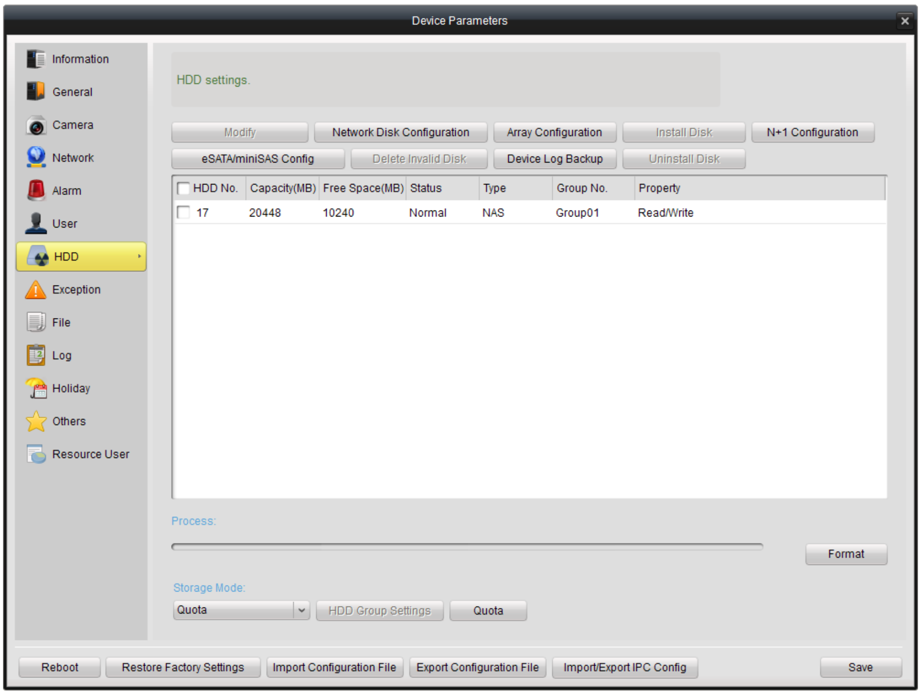
Purpose:

By one-touch configuration, you can quickly create the disk array and logical disk. By default, the array type to be created is RAID 5.

Steps:

1. Enter the HDD Management interface.

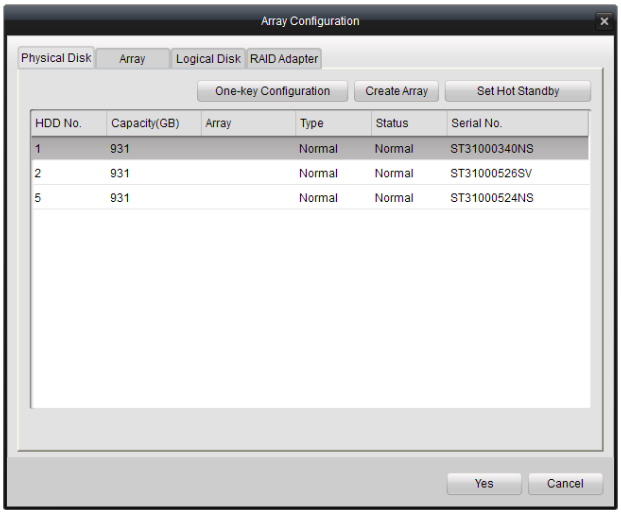
Device Management> Remote Configuration> HDD



□ HDD No.	Capacity(MB)	Free Space(MB)	Status	Type	Group No.	Property
□ 17	20448	10240	Normal	NAS	Group01	Read/Write

Figure 11. 2 HDD Management Interface

2. Click the **Array Configuration** button to enter Array Configuration interface.



HDD No.	Capacity(GB)	Array	Type	Status	Serial No.
1	931		Normal	Normal	ST31000340NS
2	931		Normal	Normal	ST31000526SV
5	931		Normal	Normal	ST31000524NS

Figure 11. 3 Array Configuration Interface

You can see information of physical disks.

3. Click One-key Configuration to enter the One-key Array Configuration interface.

Note: As the default array type is RAID 5, at least 3 HDDs must be installed on you device.

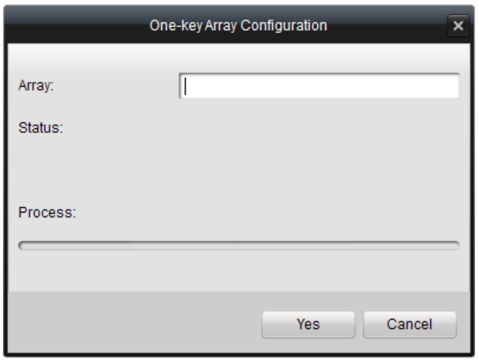


Figure 11. 4 One-key Array Configuration

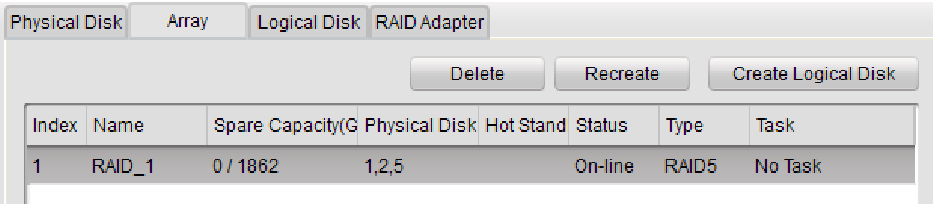
4. Edit the array name in the Array text filed and click **Yes** button to start configuring array.

   Note: If you install 4 HDDs or above for one-touch configuration, a hot spare disk will be set by default. It is recommended to set hot spare disk for automatically rebuilding the array when the array is abnormal.

   There will be note if the operation is completed.

5. You can click Array tab to view the information of the successfully created array.

   Note: By default, one-key configuration creates an array and a logical disk.

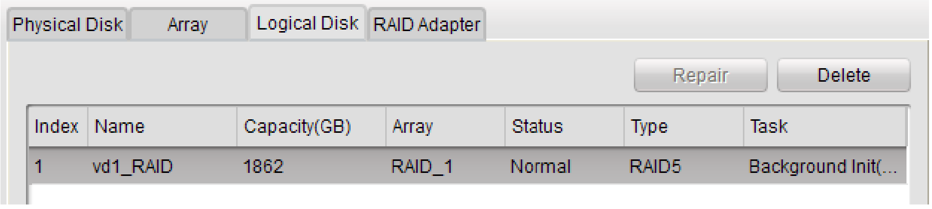


Index	Name	Spare Capacity(G	Physical Disk	Hot Stand	Status	Type	Task
1	RAID_1	0 / 1862	1,2,5		On-line	RAID5	No Task

Figure 11. 5 Array Settings Interface

6. Click Logical Disk tab to view the automatically created logical disk.

   Note: By default, one-touch configuration adopts background initialization to initialize the RAID. By using background initialization, the logical disk can be used immediately.



Index	Name	Capacity(GB)	Array	Status	Type	Task
1	vd1_RAID	1862	RAID_1	Normal	RAID5	Background Init(...

Figure 11. 6 Logical Disk Settings Interface

7. You can see the information of the logical disk in the HDD Information interface.

   Note: For configuring hot spare disk manually, please refer to steps 12-14 of *Chapter 11.1.2 Manually Creating Array and Logical Disk.*

11.1.2 Manually Creating Array and Logical Disk

Purpose:

You can manually create the array of RAID 0, RAID 1, RAID 5 and RAID 10.

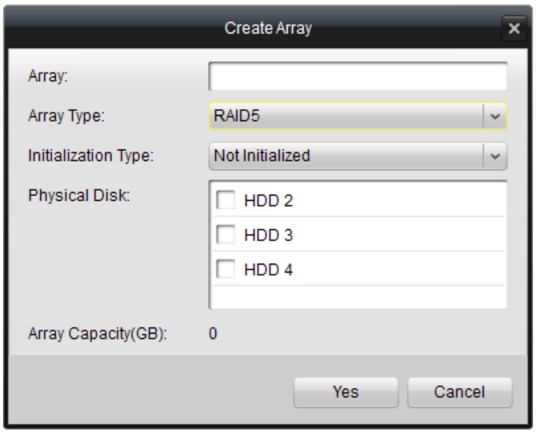
Note: In this section, we take RAID 5 as an example to describe the manual configuration of array and logical disk.

Steps:

1. Enter the HDD Management interface.

Device Management> Remote Configuration> HDD

2. Click **Create Array** button to enter the Create Array interface.



Create Array

Array:

Array Type: RAID5

Initialization Type: Not Initialized

Physical Disk:
□ HDD 2
□ HDD 3
□ HDD 4

Array Capacity(GB): 0

Figure 11. 7 Create Array Interface

3. Edit the array name in the text filed of Array; set the RAID Type to RAID 0, RAID 1, RAID 5 or RAID 10; select the Physical Disk that you want to configure array.

Notes:

- If you choose RAID 0, at least 2 HDDs must be installed.
- If you choose RAID 1, 2 HDDs need to be configured for RAID 1.
- If you choose RAID 5, at least 3 HDDs must be installed.
- If you choose RAID 10, 4/6/8 HDDs need to be configured for RAID 10.

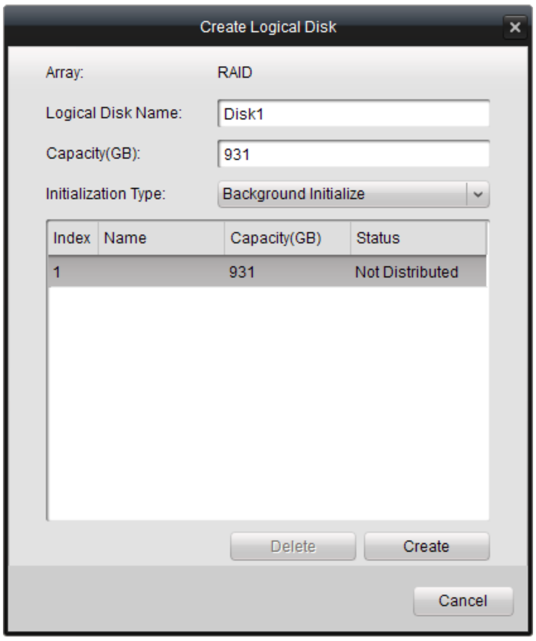
4. Click **Yes** button to create array.

Note: If the number of HDDs you select is not compatible with the requirement of the RAID level, the error message will pop up.

5. You can click Array tab to view the successfully created array.

6. Click to select an array and click **Create Logical Disk** to enter the logical disk creating interface.

Note: The device supports creating at most 8 logical disks.



Array: RAID

Logical Disk Name: Disk1

Capacity(GB): 931

Initialization Type: Background Initialize

Index	Name	Capacity(GB)	Status
1		931	Not Distributed

Figure 11. 8 Create Logical Disk Interface

7. Edit the name of the logical disk, set the capacity for the logical disk and select the initialization type for the logical disk.

   Notes:

   - The remaining capacity of the array displays as a logical disk of which the status is *Not Distributed*.
   - It is recommended to create one logical disk of an array.
   - At least 100GB capacity must be configured for each logical disk.

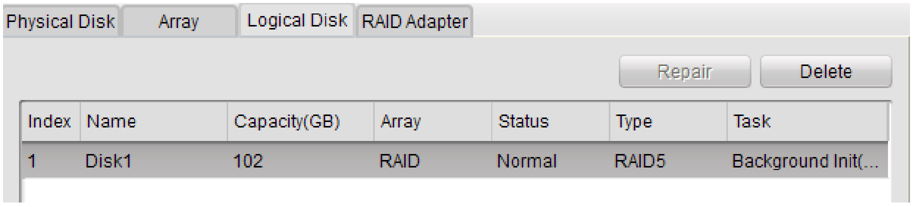
   There are three initialization types, including Background, Foreground and Quick.

   Quick (Not Recommended): The fast initialization usually takes a short time and only initializes part of the data of the logical disk, and cannot detect the bad sector.

   Foreground (Recommended): By using foreground initialization, the logical disk will be initialized totally and the bad sector of the hard disks can be detected and repaired. The logical disk can be used only after the initialization is complete.

   Background: The background initialization can synchronize the disks, and detect and repair the bad sector of the disks. During the background initialization, the logical disk is allowed to be used. You can set the speed of background initialization in the RAID adapter interface by clicking the **RAID Adapter** tab.

8. Click **Create** button to create the logical or click **Cancel** button to return to Array Settings interface.
9. Click Logical Disk tab to enter the Logical Disk interface. The successfully created logical disk will be listed on the interface.



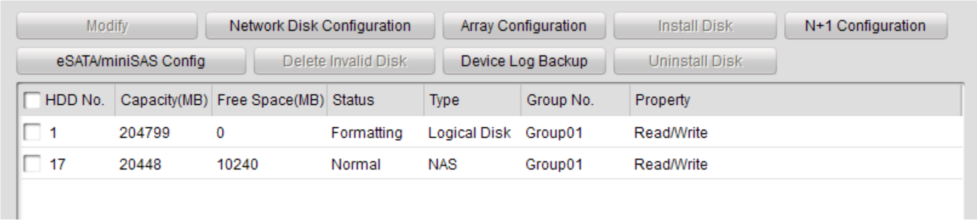
Index	Name	Capacity(GB)	Array	Status	Type	Task
1	Disk1	102	RAID	Normal	RAID5	Background Init(...

Figure 11. 9 Logical Disk Interface

10. Enter the HDD Management interface (Device Management> Remote Configuration> HDD) and the logical

disk appears. For operation guide of initializing the logical disk, please refer to *Chapter 12.1 Local HDD Settings*.

Note: When the logical disk is created in the Quick or Background type, the initialization will be done automatically.

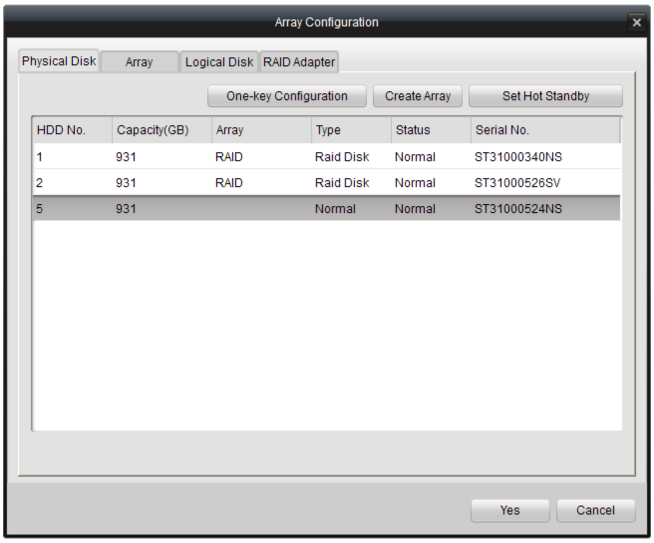


□ HDD No.	Capacity(MB)	Free Space(MB)	Status	Type	Group No.	Property
□ 1	204799	0	Formatting	Logical Disk	Group01	Read/Write
□ 17	20448	10240	Normal	NAS	Group01	Read/Write

Figure 11. 10 HDD Information Interface

11. After the logical disk has been initialized, the status will change to Normal.

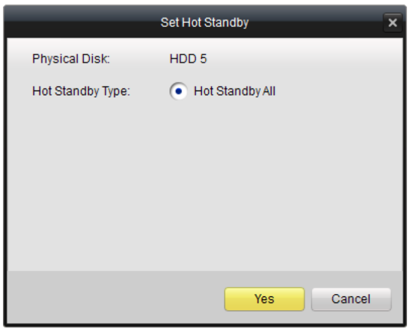
12. Enter the Physical Disk Settings interface to configure the hot standby disk.



HDD No.	Capacity(GB)	Array	Type	Status	Serial No.
1	931	RAID	Raid Disk	Normal	ST31000340NS
2	931	RAID	Raid Disk	Normal	ST31000526SV
5	931		Normal	Normal	ST31000524NS

Figure 11. 11 Physical Disk Settings Interface

13. Select a disk and click **Set Hot Standby** to enter hot standby interface.



Physical Disk: HDD 5

Hot Standby Type: ● Hot Standby All

Figure 11. 12 Hot Standby Interface

14. Click **Yes** button to finish the settings.

11.2 Rebuilding Array

Purpose:

The working status of array includes Functional, Degraded and Offline. By viewing the array status, you can take immediate and proper maintenance for the disks so as to ensure the high security and reliability of the data stored in the disk array.

When there is no disk loss in the array, the working status of array will change to Normal; when the number of lost disks has exceeded the limit, the working status of array will change to Offline; in other conditions, the working status is Disk Loss.

When the logical disk is in Degrade status, you can restore it to Normal by array rebuilding.

11.2.1 Automatically Rebuilding Array

Purpose:

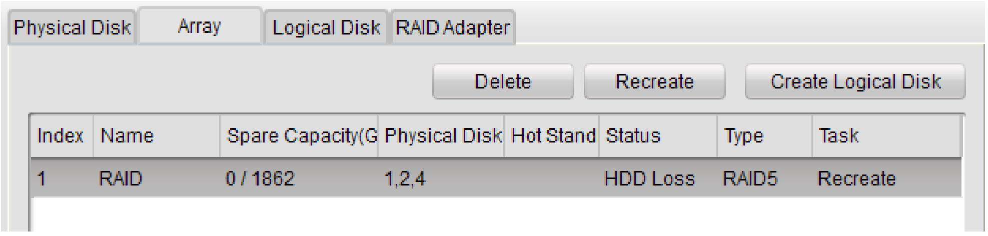
When the logical disk is in Degraded status, the device can start rebuilding the array automatically with the hot spare disk to ensure the high security and reliability of the data.

Note: The Auto Recreation function is enabled by default.

Steps:

1. Enter the Array Settings interface. The status of the array is HDD Loss. Since the hot spare disk is configured and Auto-rebuild function is enabled. The hot spare disk will be automatically used for array rebuilding.

Device Management> Remote Management> HDD >Array Configuration> Array

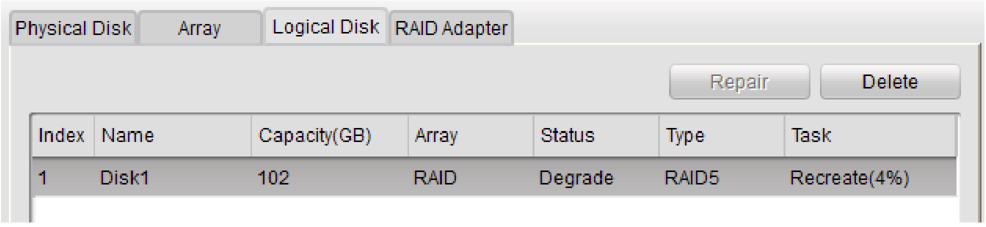


Index	Name	Spare Capacity(G	Physical Disk	Hot Stand	Status	Type	Task
1	RAID	0 / 1862	1,2,4		HDD Loss	RAID5	Recreate

Figure 11. 13 Array Settings Interface

2. Enter the Logical Disk interface to view the rebuilding status of the logical disk.

Device Management> Remote Management> HDD >Array Configuration >Logical Disk



Index	Name	Capacity(GB)	Array	Status	Type	Task
1	Disk1	102	RAID	Degrade	RAID5	Recreate(4%)

Figure 11. 14 Logical Disk Settings Interface

Note: If there is no hot spare disk after rebuilding, it is recommended to install a HDD into the device and set is as a hot spare disk to ensure the high security and reliability of the array. For detailed operation guide, please refer to steps 12-14 of *Chapter 11.1.2 Manually Creating Array and Logical Disk.*

11.2.2 Manually Rebuilding Array

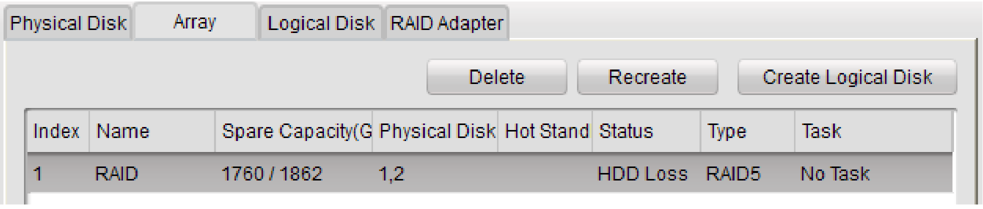
Purpose:

If the hot spare disk has not been configured, you can rebuild the array manually to restore the array when the array is in the HDD Loss status.

Steps:

1. Enter the Array Settings interface. The disk 5 is lost.

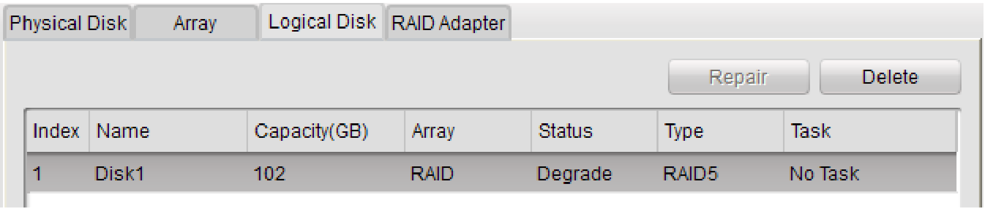
Device Management> Remote Management> HDD >Array Configuration >Array



Index	Name	Spare Capacity(G	Physical Disk	Hot Stand	Status	Type	Task
1	RAID	1760 / 1862	1,2		HDD Loss	RAID5	No Task

Figure 11. 15 Array Settings Interface

2. Enter the Logical Disk interface to check the status of the logical disk. The logical disk is in Degrade status.

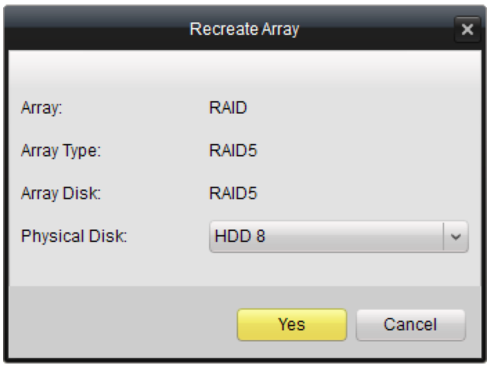


Index	Name	Capacity(GB)	Array	Status	Type	Task
1	Disk1	102	RAID	Degrade	RAID5	No Task

Figure 11. 16 Logical Disk Interface

3. Click Array tab to back to the Array Settings interface and click **Recreate** button to configure the array rebuilding.

Note: At least one physical disk should be available for rebuilding the array.



Array: RAID

Array Type: RAID5

Array Disk: RAID5

Physical Disk: HDD 8

Figure 11. 17 Rebuild Array Interface

4. Select the available physical disk and click **Yes** to confirm to rebuild the array.

You can enter the Array Settings interface and Logical Disk interface to view the rebuilding status.

5. After rebuilding, the status of array and logical disk will restore to Normal.

Note: It is recommended to set the hot spare disk for automatically rebuilding the array.

11.3 Repairing Logical Disk

Purpose:

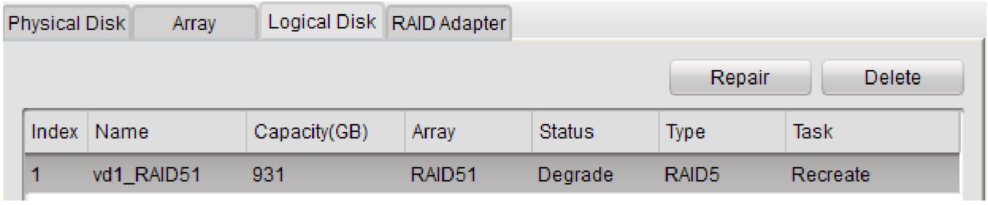
When the disk cannot display in the HDD Information interface while the logical disk can still show in the Array Settings interface, you have to repair the logical disk.

Note: If the logical disk is in foreground initialization status, the repairing cannot be done.

Steps:

1. Enter the Logical Disk interface.

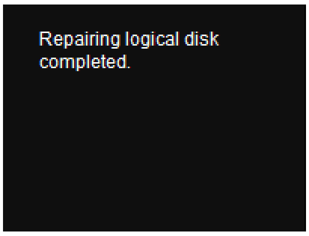
Device Management> Remote Management> HDD >Array Configuration > Logical Disk



Index	Name	Capacity(GB)	Array	Status	Type	Task
1	vd1_RAID51	931	RAID51	Degrade	RAID5	Recreate

Figure 11. 18 Logical Disk Interface

2. Click the **Repair** button to repair the logical disk. After successfully repairing, there will be note on the lower-right side.



Repairing logical disk completed.

Figure 11. 19 Repairing Logical Disk Successfully

3. The disk shows again in the HDD Information interface (Device Management> Remote Management> HDD).

11.4 Deleting Array / Logical Disk

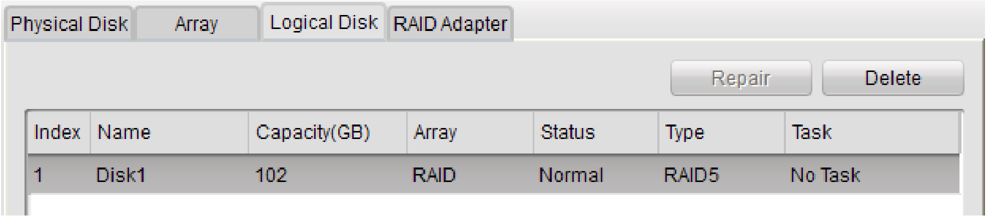
Note: Before deleting the array, the logical disk(s) existing under this array must be deleted first. Deleting array and logical disk will delete all the data saved in the disk.

11.4.1 Deleting the Logical Disk

Steps:

1. Enter the Logical Disk interface.

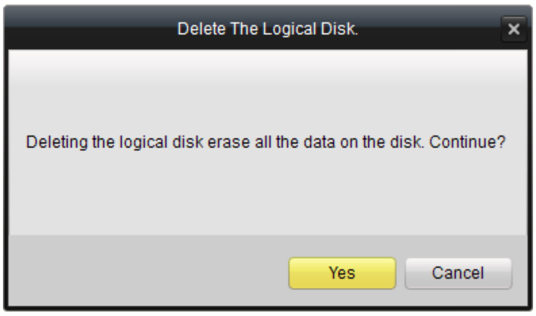
Device Management> Remote Management> HDD >Array Configuration> Logical Disk



Index	Name	Capacity(GB)	Array	Status	Type	Task
1	Disk1	102	RAID	Normal	RAID5	No Task

Figure 11. 20 Logical Disk Interface

2. Select a logical disk and click **Delete** button to delete the logical disk.



Deleting the logical disk erase all the data on the disk. Continue?

Figure 11. 21 Confirm Logical Disk Deletion

3. In the pop-up message box, click the **Yes** button to confirm the logical disk deletion.

Note: Deleting logical disk will delete all the data saved in the disk.

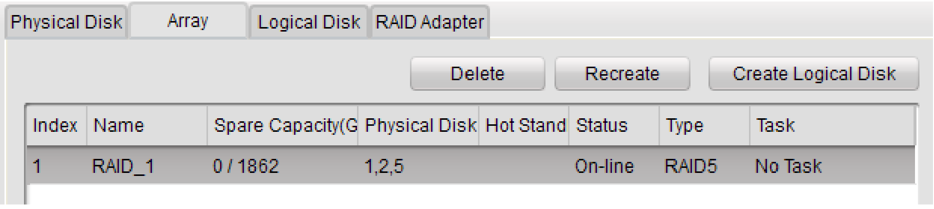
11.4.2 Deleting the Array

Note: You can delete the array only after all the logical disks under that array have been deleted.

Steps:

1. Enter the Array Settings interface.

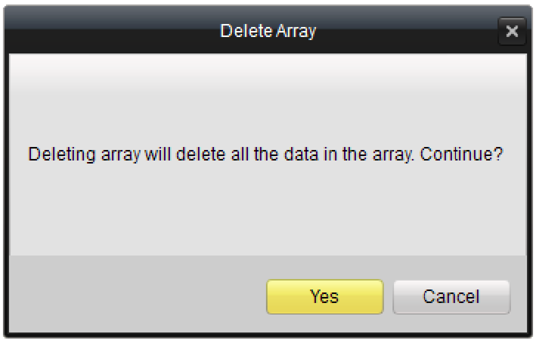
Device Management> Remote Management> HDD >Array Configuration> Array



Index	Name	Spare Capacity(G	Physical Disk	Hot Stand	Status	Type	Task
1	RAID_1	0 / 1862	1,2,5		On-line	RAID5	No Task

Figure 11. 22 Array Settings Interface

2. Select an array and click the **Delete** button to delete the array.



Deleting array will delete all the data in the array. Continue?

Figure 11. 23 Confirm Array Deletion

3. In the pop-up message box, click the **Yes** button to confirm the array deletion.

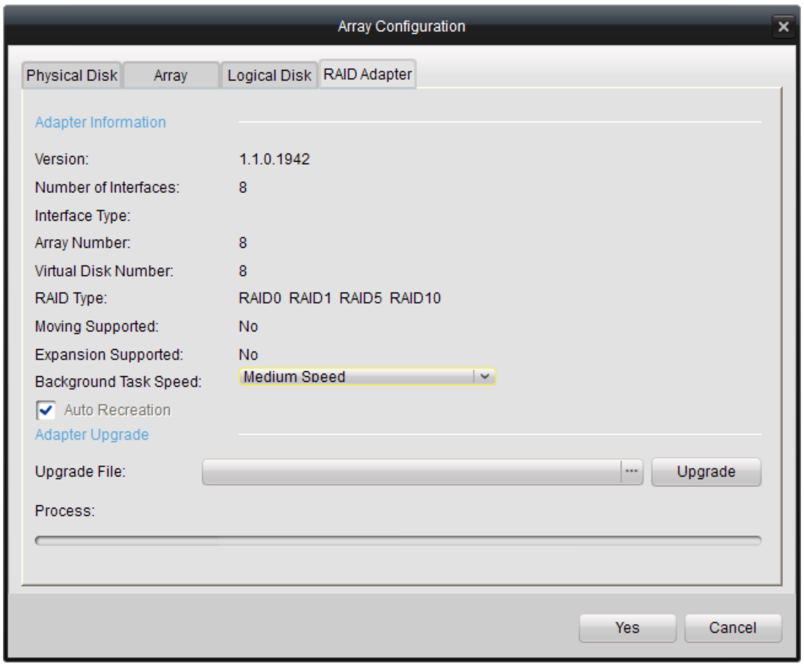
11.5 Upgrading RAID Adapter

Purpose:

You can view the information of the adapter and upgrade the adapter.

Steps:

1. Enter the RAID Adapter interface to check the information of the adapter.



Adapter Information

Version: 1.1.0.1942

Number of Interfaces: 8

Interface Type:

Array Number: 8

Virtual Disk Number: 8

RAID Type: RAID0 RAID1 RAID5 RAID10

Moving Supported: No

Expansion Supported: No

Background Task Speed: Medium Speed

☑ Auto Recreation

Adapter Upgrade

Upgrade File:

Process:

Figure 11. 24 Firmware Interface

2. Click ⋯ to extend the directory window of your computer and select an upgrade file.

3. Click the **Upgrade** button to upgrade.

Note: Please contact the dealer immediately if the device cannot work properly after upgrading.

Chapter 12　HDD Settings

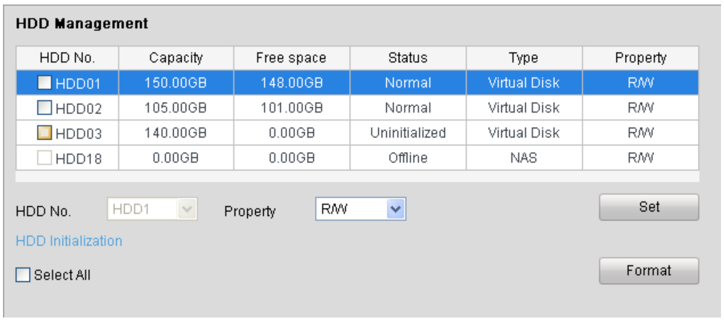
12.1 Local HDD Settings

12.1.1 Disk Initializing

Steps:

1. Enter HDD Management Settings interface.

   Configuration> HDD Management > Basic Settings



HDD Management

HDD No.	Capacity	Free space	Status	Type	Property
□ HDD01	150.00GB	148.00GB	Normal	Virtual Disk	R/W
□ HDD02	105.00GB	101.00GB	Normal	Virtual Disk	R/W
□ HDD03	140.00GB	0.00GB	Uninitialized	Virtual Disk	R/W
□ HDD18	0.00GB	0.00GB	Offline	NAS	R/W

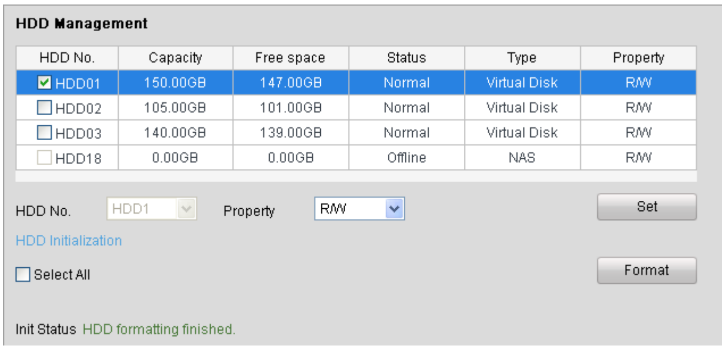
HDD No. HDD1 Property R/W

Figure 12. 1 Local Disk Management(1)

2. Check the checkbox of HDD No..
3. Click the **Format** button to initialize the disk.

Note: Initializing the HDD will erase all the data saved on it, please backup the data before formatting hard disk if necessary.

4. The status changes from *Uninitialized* to *Normal*.



HDD Management

HDD No.	Capacity	Free space	Status	Type	Property
☑ HDD01	150.00GB	147.00GB	Normal	Virtual Disk	R/W
□ HDD02	105.00GB	101.00GB	Normal	Virtual Disk	R/W
□ HDD03	140.00GB	139.00GB	Normal	Virtual Disk	R/W
□ HDD18	0.00GB	0.00GB	Offline	NAS	R/W

HDD No. HDD1 Property R/W

Init Status HDD formatting finished.

Figure 12. 2 Local Disk Management(2)

12.1.2 Disk Property Management

Purpose:

Multiple HDDs can be managed in groups. Video from specified channels can be recorded onto a particular HDD group through HDD settings. You can refer to the User Manual of iVMS-4200 for detailed information.

Before you start:

Make sure you have set the storage mode to Group before configuring the HDD property. You may refer to the User Manual of iVMS-4200 for detailed information.

Steps:

1. Check the checkbox of disk.
2. Configure its property by selecting R/W, Read-Only or Redundancy from drop-down menu.
3. Click the **Set** button to save the settings.

Table 12. 1 Disk Property Description

Parameter	**Description**
R/W	Writing in and reading from this disk is allowed when selecting this option.
Read-Only	Unable to write in this disk to protect existed recordings from being overwritten when selecting this option.
Redundancy	Redundant recording in this disk is allowed when selecting this option to double secure the data.

Note: Multiple HDDs can be managed in groups. Video from specified channels can be recorded onto a particular HDD group through HDD settings. You can refer to the User Manual of iVMS-4200 for detailed information.

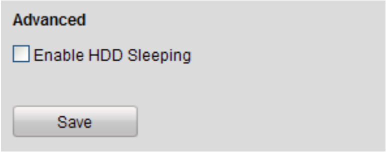
12.1.3 HDD Sleeping

Purpose:

The HDD sleeping function can switch the HDD into sleeping status to reducing the consumption when there is no need to read or write.

Steps:

1. Enter HDD Advanced Settings interface.
   Configuration> HDD Management > Advanced



Advanced

□ Enable HDD Sleeping

Figure 12. 3 HDD Sleeping Setting

2. Check the checkbox of Enable HDD Sleeping and click the **Save** button.

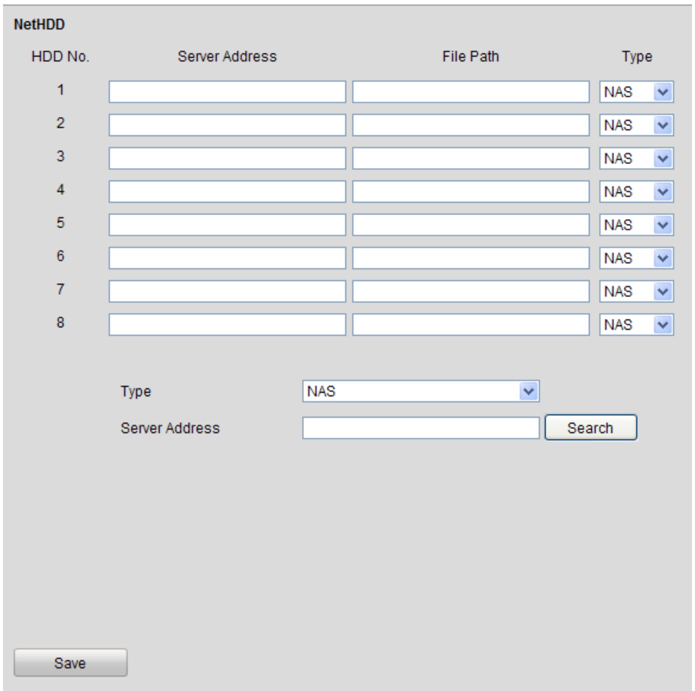
12.2 Network HDD Settings

By Net Disk Settings, recorded data can be saved to the network storage disk provided by NAS or IP SAN server.

Steps:

1. Enter the Net Disk settings interface:

   Configuration> Remote Configuration> Network Settings> NetHDD



NetHDD

HDD No.	Server Address	File Path	Type
1			NAS
2			NAS
3			NAS
4			NAS
5			NAS
6			NAS
7			NAS
8			NAS

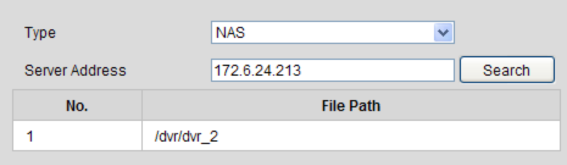
Type: NAS

Server Address:

Figure 12. 4 Network HDD Settings

2. Searching directory is provided if you do not know the created directory in the NetHDD.

   Select the Type in the drop-down list and input the IP address of NetHDD, and click **Search** button.



Type: NAS

Server Address: 172.6.24.213

No.	File Path
1	/dvr/dvr_2

Figure 12. 5 Searching Directory

3. Input Server Address, File Path and select NetHDD Type in the drop-down list on the upper text field.
4. Click **Save** button to save the settings.
5. Repeat steps of *Chapter 12.1.1 Disk Formatting* to initialize the added net HDD.

12.3 Managing eSATA

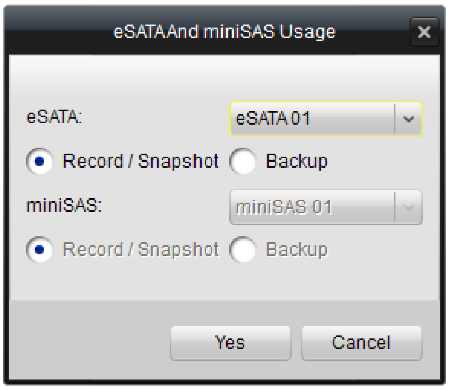
Purpose:

When there is an eSATA device connected to NVR, you can configure the eSATA to record and capture directly on the eSATA disk or you can configure it for export the record data on the local HDD for backup, and the management interface is provided in the NVR.

Note: The eSATA configuration interface is only provided in the iVMS-4200 Client Software.

Steps:

1. Enter the HDD Information interface.
   Device Management> Remote Configuration> HDD
2. Click the eSATA/miniSAS Config button.
3. Select the eSATA number in drop-down list of eSATA, and click to select type to Export or Record/Snapshot.
   Export: use the eSATA for backup. Refer to *Chapter 7.4 Backup* for operating instructions.
   Record/Snapshot: use the eSATA for record/capture. Refer to the following steps for operating instructions.



eSATAAnd miniSAS Usage

eSATA: eSATA 01

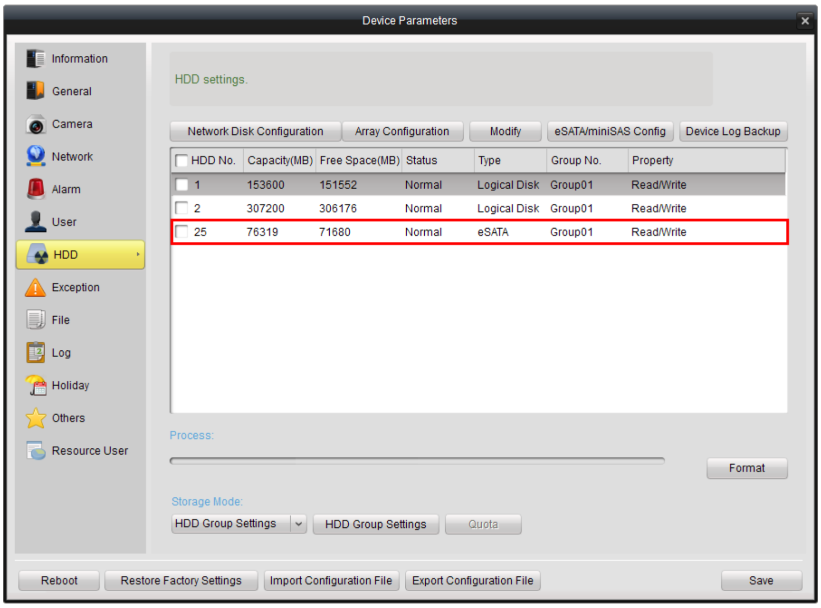
● Record / Snapshot ○ Backup

miniSAS: miniSAS 01

● Record / Snapshot ○ Backup

Figure 12. 6 Set eSATA Mode

4. When the eSATA type is selected to Record/Capture, the eSATA device will be displayed in the HDD list, as shown in the figure below.
   Note: Two storage modes can be configured for the eSATA when it is used for Record/Capture. Please refer to *chapter12. 1 Local HDD Settings* for details.



HDD No.	Capacity(MB)	Free Space(MB)	Status	Type	Group No.	Property
1	153600	151552	Normal	Logical Disk	Group01	Read/Write
2	307200	306176	Normal	Logical Disk	Group01	Read/Write
25	76319	71680	Normal	eSATA	Group01	Read/Write

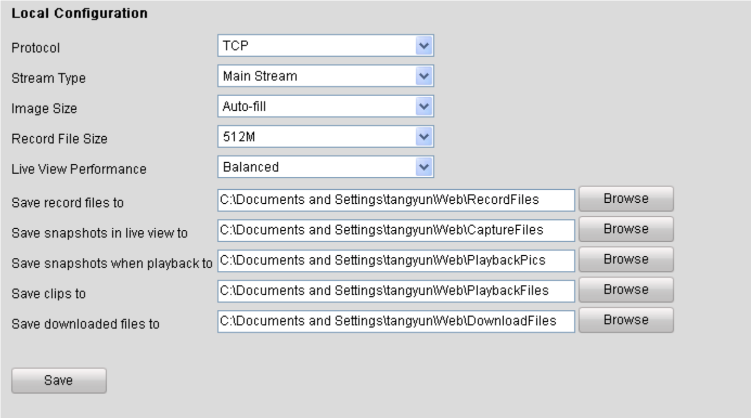
Figure 12. 7 eSATA Information

Chapter 13 Local Configuration

Purpose:

Local parameters configuration refers to the configuration for the NVR and not the connected remote devices to the NVR.

Click the **Configuration** button in the menu bar and enter parameters setup menu, which displays local configuration by default.



Local Configuration

Protocol	TCP
Stream Type	Main Stream
Image Size	Auto-fill
Record File Size	512M
Live View Performance	Balanced
Save record files to	C:\Documents and Settings\tangyun\Web\RecordFiles
Save snapshots in live view to	C:\Documents and Settings\tangyun\Web\CaptureFiles
Save snapshots when playback to	C:\Documents and Settings\tangyun\Web\PlaybackPics
Save clips to	C:\Documents and Settings\tangyun\Web\PlaybackFiles
Save downloaded files to	C:\Documents and Settings\tangyun\Web\DownloadFiles

Figure 13. 1 Local Configuration Interface

Table 13. 1 Local Parameters Descriptions

Parameters	Descriptions
Protocol	Select network transmission protocol: TCP or UDP.
Stream Type	Main Stream for recording. Sub-stream for viewing live images.
Image Size	Set the size of image. Auto-fill, 4:3, 16:9 are selectable.
Record File Size	Set the size of recordings.
Live View Performance	Set the live view performance to Shortest Delay, Real Time, Balanced or Best Fluency.
Path of saving record files to	Select a folder to save the recordings
Path of saving snapshots in live view	Select a folder to save the pictures captured while live view
Path of saving snapshots when playback	Select a folder to save the pictures captured while playback
Path of saving clips	Select a folder to save the clips while playback
Path of saving downloaded files	Select a folder to save downloaded recordings

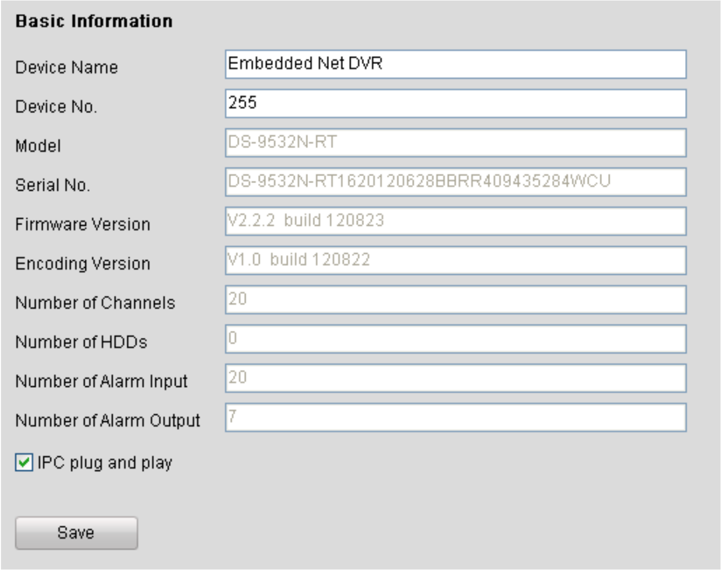
Chapter 14 Maintenance

14.1 View Device Information

Steps:

1. Enter device information interface

Configuration> Remote Configuration> Device Parameters> Device Information



Basic Information

Device Name: Embedded Net DVR

Device No.: 255

Model: DS-9532N-RT

Serial No.: DS-9532N-RT1620120628BBRR409435284WCU

Firmware Version: V2.2.2 build 120823

Encoding Version: V1.0 build 120822

Number of Channels: 20

Number of HDDs: 0

Number of Alarm Input: 20

Number of Alarm Output: 7

☑ IPC plug and play

Figure 14. 1 Device Information

2. You can modify Device Name and Device No., and other fields are read-only.

Device No.: Edit the device number of NVR, it can be set in the range of 1 to 255, and the default number is 255. The number is used for the remote and keyboard control.

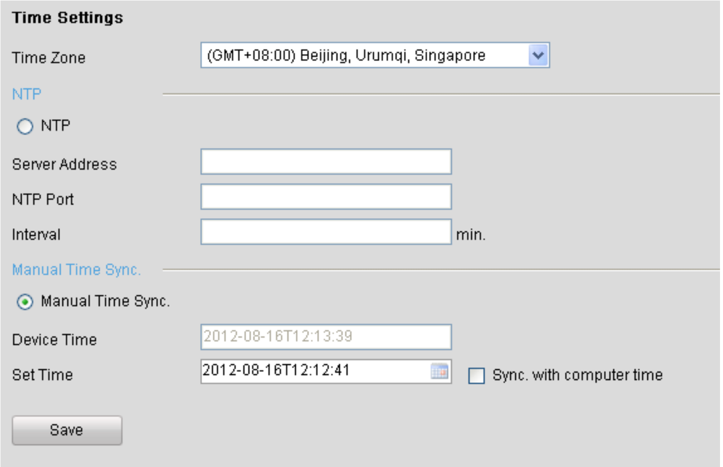
3. Click **Save** to save the settings.

14.2 Time Settings

Steps:

1. Enter device information interface

Configuration> Remote Configuration> Device Parameters> Time Settings



Time Settings

Time Zone: (GMT+08:00) Beijing, Urumqi, Singapore

NTP

○ NTP

Server Address:

NTP Port:

Interval: min.

Manual Time Sync.

● Manual Time Sync.

Device Time: 2012-08-16T12:13:39

Set Time: 2012-08-16T12:12:41 □ Sync. with computer time

Figure 14. 2 Time Settings

2. Select Time Zone by clicking drop-down menu.

3. Choose NTP service or Manual Time Sync. You can refer to *Chapter 9.4 NTP Settings* to modify the NTP server parameters.

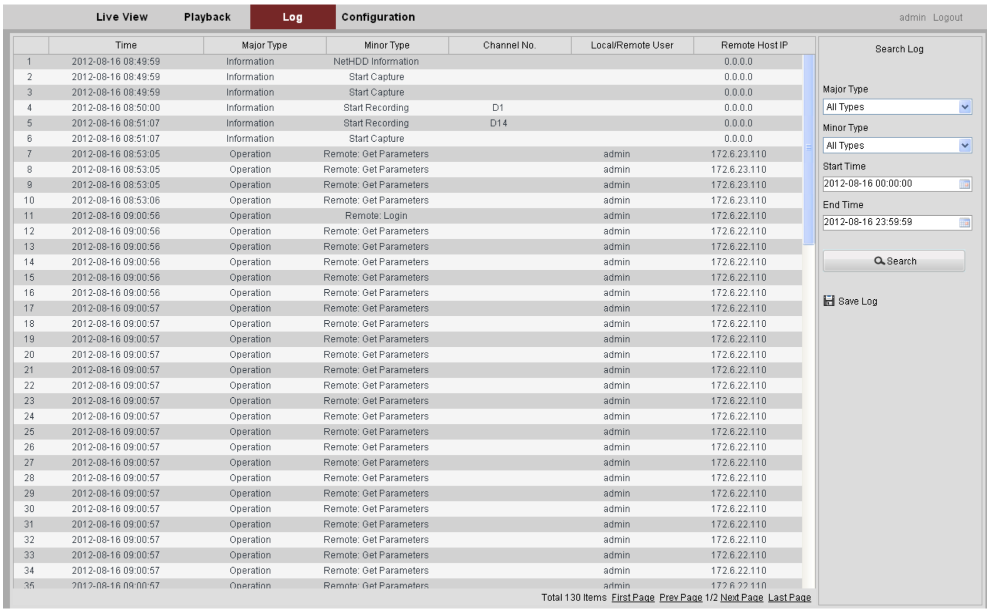
14.3 Log Search

Purpose:

The operation, alarm, exception and information of the NVR can be stored in log files, which can be viewed and exported at any time.

Steps:

1. Click **Log** tab to enter log query menu.



	Time	Major Type	Minor Type	Channel No.	Local/Remote User	Remote Host IP
1	2012-08-16 08:49:59	Information	NetHDD Information			0.0.0.0
2	2012-08-16 08:49:59	Information	Start Capture			0.0.0.0
3	2012-08-16 08:49:59	Information	Start Capture			0.0.0.0
4	2012-08-16 08:50:00	Information	Start Recording	D1		0.0.0.0
5	2012-08-16 08:51:07	Information	Start Recording	D14		0.0.0.0
6	2012-08-16 08:51:07	Information	Start Capture			0.0.0.0
7	2012-08-16 08:53:05	Operation	Remote: Get Parameters		admin	172.6.23.110
8	2012-08-16 08:53:05	Operation	Remote: Get Parameters		admin	172.6.23.110
9	2012-08-16 08:53:05	Operation	Remote: Get Parameters		admin	172.6.23.110
10	2012-08-16 08:53:06	Operation	Remote: Get Parameters		admin	172.6.23.110
11	2012-08-16 09:00:56	Operation	Remote: Login		admin	172.6.22.110
12	2012-08-16 09:00:56	Operation	Remote: Get Parameters		admin	172.6.22.110
13	2012-08-16 09:00:56	Operation	Remote: Get Parameters		admin	172.6.22.110
14	2012-08-16 09:00:56	Operation	Remote: Get Parameters		admin	172.6.22.110
15	2012-08-16 09:00:56	Operation	Remote: Get Parameters		admin	172.6.22.110
16	2012-08-16 09:00:56	Operation	Remote: Get Parameters		admin	172.6.22.110
17	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
18	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
19	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
20	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
21	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
22	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
23	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
24	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
25	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
26	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
27	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
28	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
29	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
30	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
31	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
32	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
33	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
34	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110
35	2012-08-16 09:00:57	Operation	Remote: Get Parameters		admin	172.6.22.110

Total 130 Items First Page Prev Page 1/2 Next Page Last Page

Major Type: All Types

Minor Type: All Types

Start Time: 2012-08-16 00:00:00

End Time: 2012-08-16 23:59:59

Figure 14. 3 Log Searching Interface

2. Select the log type and time.

3. Click the **Search** button to list all matched logs.

You can click Save Log to save the logs in the local directory on your PC as Excel or TXT file.

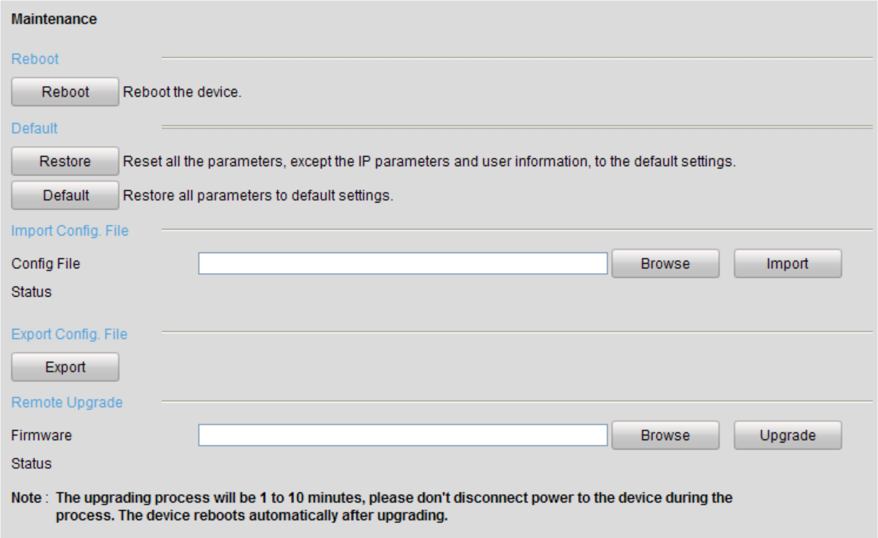
Note: Up to 2000 logs can be listed; if the number of items is larger than 2000, please choose a certain period and search again.

14.4 Rebooting NVR

Steps:

1. Enter Maintenance interface.

Configuration> Remote Configuration> Maintenance



Reboot the device.

Reset all the parameters, except the IP parameters and user information, to the default settings.

Restore all parameters to default settings.

Note : **The upgrading process will be 1 to 10 minutes, please don't disconnect power to the device during the process. The device reboots automatically after upgrading.**

Figure 14. 4 Maintenance Interface

2. Click **Reboot** to reboot remotely.

14.5 Restoring Default Settings

Steps:

1. Enter Maintenance interface, as shown in the Figure 14.4.
Configuration> Remote Configuration> Maintenance

2. Click **Restore** to reset all the parameters, except the IP parameters and user information, to the default settings. Or you can click **Default** to restore all the parameters to default settings.

14.6 Upgrade Remotely

Steps:

1. Enter Maintenance interface, as shown in the Figure 14.4.

Configuration> Remote Configuration> Maintenance

2. Click **Browse** to select the upgrade file in the local directory.

3. Click **Upgrade** to start upgrade remotely.

14.7 Importing/Exporting Configuration File

Purpose: The configuration files of the NVR can be exported to local device for backup; and the configuration files of one NVR can be imported to multiple NVR devices if they are to be configured with the same parameters.

14.7.1 Importing Configuration File

Steps:

1. Enter Maintenance interface, as shown in the Figure 14.4.
Configuration> Remote Configuration> Maintenance

2. Click **Browse** to select the local configuration file.

3. Click **Import** to start import configuration file.

14.7.2 Exporting Configuration File

Steps:

1. Enter Maintenance interface, as shown in the Figure 14.4.
Configuration> Remote Configuration> Maintenance

2. Click **Export**.

3. Select the local direction of saving configuration file in the pop up window

14.8 RS-232 Configuration

Purpose:

The RS-232 port can be used in two ways:

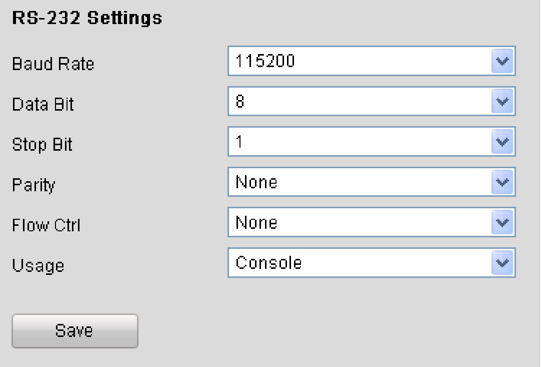
• Parameters Configuration: Connect a PC to the NVR using the PC serial interface. Device parameters can be configured by using software such as HyperTerminal. The serial port parameters must be the same as that of the NVR when connecting with the PC serial port.

• Transparent Channel: Connect a serial device directly to the NVR. The serial device will be controlled remotely by the PC via the network and the protocol of the serial device.

Steps:

1. Enter RS-232 Configuration interface:

Configuration> Remote Configuration> Serial Port Settings> 232 Serial Port



RS-232 Settings

Baud Rate: 115200

Data Bit: 8

Stop Bit: 1

Parity: None

Flow Ctrl: None

Usage: Console

Figure 14. 5 RS-232 Configuration Interface

2. Configure RS-232 parameters, including baud rate, data bit, stop bit, parity, flow control and usage.

3. Click **Save** to save the settings.

14.9 Account Management

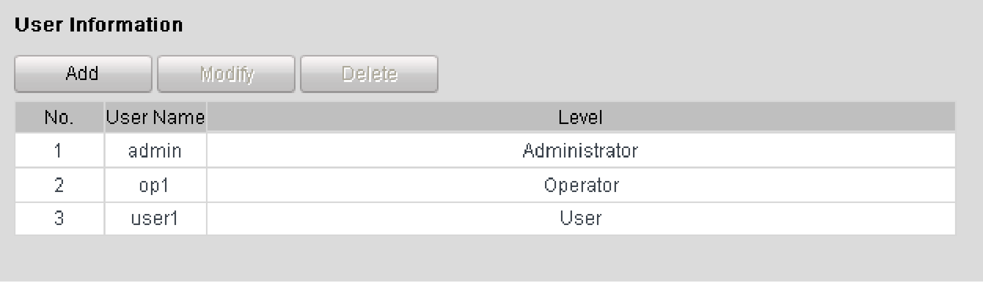
The default user name and password of device administrator are “admin” and “12345”. Administrator can add, delete users or distribute authority for users. There are two user levels: user and operator.

Note: For “Remote Configuration” permission, operator has the permission of “Two-way Audio”, while user doesn’t; for “Channel Configuration” permission, operator has all the permissions, while user only has the local playback and remote playback permissions.

Steps:

1. Enter User Management interface:

Configuration> Remote Configuration> User Management



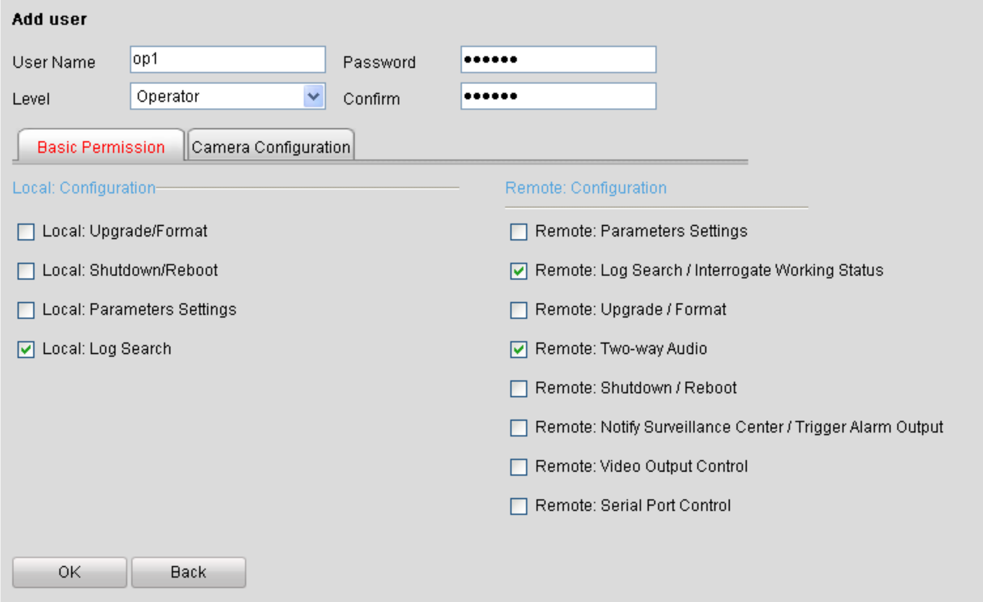
User Information

No.	User Name	Level
1	admin	Administrator
2	op1	Operator
3	user1	User

Figure 14. 6 User Information List

2. You can check user information there, including User Name and Level.

3. Click **Add** to add user.



Add user

User Name: op1   Password: ••••••

Level: Operator   Confirm: ••••••

Local: Configuration

□ Local: Upgrade/Format

□ Local: Shutdown/Reboot

□ Local: Parameters Settings

☑ Local: Log Search

Remote: Configuration

□ Remote: Parameters Settings

☑ Remote: Log Search / Interrogate Working Status

□ Remote: Upgrade / Format

☑ Remote: Two-way Audio

□ Remote: Shutdown / Reboot

□ Remote: Notify Surveillance Center / Trigger Alarm Output

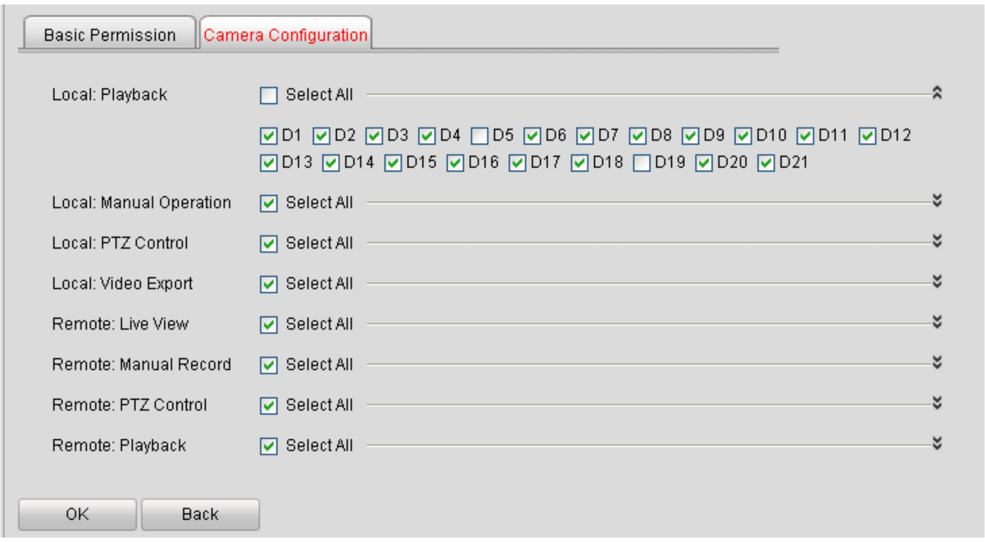
□ Remote: Video Output Control

□ Remote: Serial Port Control

Figure 14. 7 Basic Permission Management Interface

4. You can configure basic permissions by checking the checkbox of corresponding option.

5. Click **Camera Configuration** tab to configure the detail permission of every single channel. Click ⏬ to expand the tab.



Local: Playback □ Select All

☑D1 ☑D2 ☑D3 ☑D4 □D5 ☑D6 ☑D7 ☑D8 ☑D9 ☑D10 ☑D11 ☑D12
☑D13 ☑D14 ☑D15 ☑D16 ☑D17 ☑D18 □D19 ☑D20 ☑D21

Local: Manual Operation ☑ Select All

Local: PTZ Control ☑ Select All

Local: Video Export ☑ Select All

Remote: Live View ☑ Select All

Remote: Manual Record ☑ Select All

Remote: PTZ Control ☑ Select All

Remote: Playback ☑ Select All

Figure 14. 8 Camera Configuration Management Interface

Table 14. 1 Camera Configuration Parameters Description

Parameters	**Descriptions**
Local Playback	Locally play recorded files that are on the NVR.
Local Manual Record	Locally start and stop manual recording on any of the channels
Local PTZ Control	Locally control PTZ cameras.
Local Video Export	Locally export video to devices.
Remote Live View	Select and view live video over the network.
Remote Manual Record	Start and stop manual recording on any of the channels over the network
Remote PTZ Control	Control PTZ cameras over network.
Remote Playback	Remotely play and download recorded files that are on the NVR

6. Select a user name, and click **Modify** to change the options. The interface of Modify user is same as add user interface.

7. Select a user name, and click **Delete** to delete it.

8. Click **OK** to save the settings.

Appendix

Glossary

- **Dual Stream:** Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the DVR, with the main stream having a maximum resolution of 4CIF and the sub-stream having a maximum resolution of CIF.
- **HDD:** Acronym for Hard Disk Drive. A storage medium which stores digitally encoded data on platters with magnetic surfaces.
- **DHCP:** Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
- **HTTP:** Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network
- **PPPoE:** PPPoE, Point-to-Point Protocol over Ethernet, is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet networks.
- **DDNS:** Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.
- **Hybrid DVR:** A hybrid DVR is a combination of a DVR and NVR.
- **NTP:** Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network.
- **NTSC:** Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of anNTSC signal contains 525 scan lines at 60Hz.
- **NVR:** Acronym for Network Video Recorder. An NVR can be a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs.
- **PAL:** Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast televisions systems in large parts of the world. PAL signal contains 625 scan lines at 50Hz.
- **PTZ:** Acronym for Pan, Tilt, Zoom. PTZ cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out.
- **USB:** Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer.

Troubleshooting

- **There is an audible warning sound "Di-Di-Di-DiDi" after a new bought NVR starts up.**

Possible Reasons

a) No HDD is installed in the device.

b) The installed HDD has not been initialized.

c) The installed HDD is not compatible with the NVR or is broken-down.

Steps

1. Verify at least one HDD is installed in the NVR.
   1) If not, please install the compatible HDD.

      Note: Please refer to the "Quick Operation Guide" for the HDD installation steps.
   2) If you don't want to install a HDD, select "Configuration > Remote Configuration >Exceptions", and uncheck the Audible Warning checkbox of "HDD Error".
2. Verify the HDD is initialized.
   1) Select "Configuration> Remote Configuration >HDD Management>Basic Settings".
   2) If the status of the HDD is "Uninitialized", please check the checkbox of corresponding HDD and click the "Format" button.
3. Verify the HDD is detected or is in good condition.
   1) Select "Configuration > Remote Configuration >HDD Management>Basic Settings".
   2) If the HDD is not detected or the status is "Abnormal", please replace the dedicated HDD according to the requirement.
4. Check if the fault is solved by the step 1 to step 3.
   1) If it is solved, finish the process.
   2) If not, please contact the engineer from Hikvision to do the further process.

- **The status of the added IPC displays as "Disconnected" when it is connected through Hikvision Protocol. Select "Menu>Camera>Camera>IP Camera" to get the camera status.**

Possible Reasons

a) Network failure, and the NVR and IPC lost connections.

b) The configured parameters are incorrect when adding the IPC.

c) Insufficient bandwidth.

Steps

1. Verify the network is connected.
   1) Connect the NVR and PC with the RS-232 cable.
   2) Open the Super Terminal software, and execute the ping command. Input "ping IP" (e.g. ping 172.6.22.131).

      Note: Simultaneously press **Ctrl** and **C** to exit the ping command.

      If there exists return information and the time value is little, the network is normal.
2. Verify the configuration parameters are correct.
   1) Select "Configuration> Remote Configuration >Camera Management>IP Camera".
   2) Verify the following parameters are the same with those of the connected IP devices, including IP address, protocol, management port, user name and password.
3. Verify the whether the bandwidth is enough.
4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from Hikvision to do the further process.

- **The IPC frequently goes online and offline and the status of it displays as "Disconnected".**

  Possible Reasons

  a) The IPC and the NVR versions are not compatible.

  b) Unstable power supply of IPC.

  c) Unstable network between IPC and NVR.

  d) Limited flow by the switch connected with IPC and NVR.

  Steps

  1. Verify the IPC and the NVR versions are compatible.

     1) Log in the IPC directly and view the firmware version of it.

     2) Enter the System Info interface "Configuration>Remote Configuration>Device Parameters>Device Information", and view the firmware version of NVR.

  2. Verify power supply of IPC is stable.

     1) Verify the power indicator is normal.

     2) When the IPC is offline, please try the ping command on PC to check if the PC connects with the IPC.

  3. Verify the network between IPC and NVR is stable.

     1) When the IPC is offline, connect PC and NVR with the RS-232 cable.

     2) Open the Super Terminal, use the ping command and keep sending large data packages to the connected IPC, and check if there exists packet loss.

     Note: Simultaneously press **Ctrl** and **C** to exit the ping command.

     Example: Input **ping 172.6.22.131 –l 1472 –f.**

  4. Verify the switch is not flow control.

     Check the brand, model of the switch connecting IPC and NVR, and contact with the manufacturer of the switch to check if it has the function of flow control. If so, please turn it down.

  5. Check if the fault is solved by the step 1 to step 4.

     If it is solved, finish the process.

     If not, please contact the engineer from Hikvision to do the further process.

- **Live view stuck when video output remotely via the Internet Explorer or platform software.**

  Possible Reasons:

  a)Poor network between NVR and IPC, and there exists packet loss during the transmission.

  b)Poor network between NVR and PC, and there exists packet loss during the transmission.

  c)The performances of hardware are not good enough, including CPU, memory, etc..

  Steps:

  1. Verify the network between NVR and IPC is connected.

     1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.

     2) Open the Super Terminal, and execute the command of "**ping** *192.168.0.0* **–l 1472 –f**" (the IP address may change according to the real condition), and check if there exists packet loss.

Note: Simultaneously press **Ctrl** and **C** to exit the ping command.

  2. Verify the network between NVR and PC is connected.

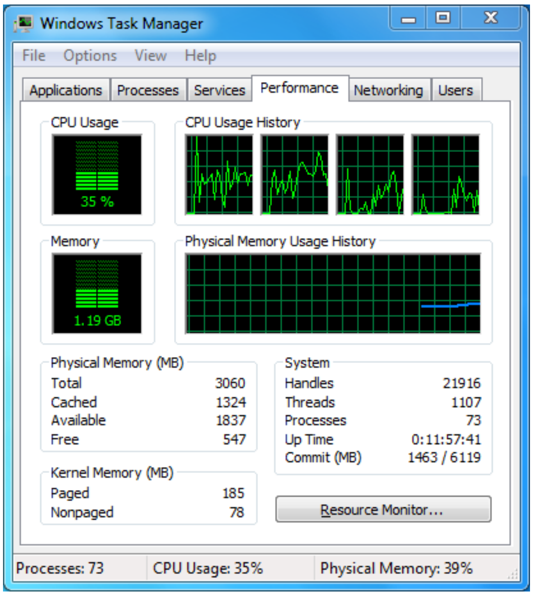
     1) Open the cmd window in the Start menu, or you can press "windows+R" shortcut key to open it.

     2) Use the ping command to send large packet to the NVR, execute the command of "ping 192.168.0.0 –l 1472 –f" (the IP address may change according to the real condition), and check if there exists packet loss.

     Note: Simultaneously press **Ctrl** and **C** to exit the ping command.

  3. Verify the hardware of the PC is good enough.

     Simultaneously press **Ctrl**, **Alt** and **Delete** to enter the windows task management interface, as shown in the following figure.



CPU Usage: 35 %

Memory: 1.19 GB

Physical Memory (MB)	
Total	3060
Cached	1324
Available	1837
Free	547

Kernel Memory (MB)	
Paged	185
Nonpaged	78

System	
Handles	21916
Threads	1107
Processes	73
Up Time	0:11:57:41
Commit (MB)	1463 / 6119

Processes: 73 CPU Usage: 35% Physical Memory: 39%

Select the “Performance” tab; check the status of the CPU and Memory.

If the resource is not enough, please end some unnecessary processes.

4. Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from Hikvision to do the further process.

- **When using the NVR to get the live view audio, there is no sound or there is too much noise, or the volume is too low.**

Possible Reasons:

a) Cable between the pickup and IPC is not connected well; impedance mismatches or incompatible.

b) The stream type is not set as “Video & Audio”.

c) The encoding standard is not supported with NVR.

Steps:

1. Verify the cable between the pickup and IPC is connected well; impedance matches and compatible.

   Log in the IPC directly, and turn the audio on, check if the sound is normal. If not, please contact the manufacturer of the IPC.

2. Verify the setting parameters are correct.

   Select “Configuration>Remote Configuration> Camera Settings> Video Settings”, and set the Video Type as “Audio & Video”.

3. Verify the audio encoding standard of the IPC is supported by the NVR.

   NVR supports G722.1 and G711 standards, and if the encoding parameter of the input audio is not one of the previous two standards, you can log in the IPC to configure it to the supported standard.

4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from Hikvision to do the further process.

- **The image gets stuck when NVR is playing back by single or multi-channel.**

Possible Reasons:

a) Poor network between NVR and IPC, and there exists packet loss during the transmission.

b) The frame rate is not the real-time frame rate.

c) The NVR supports up to 16-channel synchronize playback at the resolution of 4CIF, if you want a 16-channel synchronize playback at the resolution of 720p, the frame extracting may occur, which leads to a slight stuck.

Steps:

1. Verify the network between NVR and IPC is connected.
   1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.
   2) Open the Super Terminal, and execute the command of "**ping** *192.168.0.0* **–l 1472 –f**" (the IP address may change according to the real condition), and check if there exists packet loss.

      Note: Simultaneously press the **Ctrl** and **C** to exit the ping command.
2. Verify the frame rate is real-time frame rate.

   Select "Configuration>Remote Configuration> Camera Settings> Video Settings", and set the Frame Rate to "Full Frame".
3. Verify the hardware can afford the playback.

   Select "Configuration>Remote Configuration> Camera Settings> Video Settings", and set the resolution and bitrate to a lower level.
4. Reduce the number of local playback channel.
5. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from Hikvision to do the further process.

No record file found in the NVR local HDD, and prompt "No record file found".

Possible Reasons:

a) The time setting of system is incorrect.

b) The search condition is incorrect.

c) The HDD is error or not detected.

Steps:

1. Verify the system time setting is correct.

   Select "Configuration>Remote Configuration>Device Parameters>Time Settings", and verify the "Device Time" is correct.
2. Verify the search condition is correct.

   Select "Playback", and verify the channel and time are correct.
3. Verify the HDD status is normal.

   Select "Configuration>Remote Configuration> HDD Management>Basic Settings" to view the HDD status, and verify the HDD is detected and can be read and written normally.
4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from Hikvision to do the further process.

List of Compatible IP Cameras

List of Hikvision IP Cameras

Note: For the list, our company holds right to interpret.

Type	Model	Version	Max. Resolution	Sub-stream	Audio
HD Network Camera	DS-2CD883F-E	V5.0.0 build 130412	2560×1920	√	√
	DS-2CD783F-E	V5.0.0 build 130412	2560×1920	√	√
	DS-2CD8283F-EI	V5.0.0 build 130412	2560×1920	√	√
	DS-2CD886BF-E	V4.0.3 build 120913	2560×1920	√	√
	DS-2CD886MF-E	V4.0.3 build 120913	2560×1920	√	√
	DS-2CD854F-E	V5.0.0 build 130412	2048×1536	√	√
	DS-2CD754F-E	V5.0.0 build 130412	2048×1536	√	√
	DS-2CD8254F-E	V5.0.0 build 130412	2048×1536	√	√
	DS-2CD754FWD-E	V5.0.0 build 130412	1920×1080	√	√
	DS-2CD753F-E(I)	V5.0.0 build 130412	1600×1200	√	√
	DS-2CD853F-E	V5.0.0 build 130412	1600×1200	√	√
	DS-2CD8253F-E	V5.0.0 build 130412	1600×1200	√	√
	DS-2CD7153-E	V5.0.0 build 130412	1600×1200	√	×
	DS-2CD876BF-E	V4.0.3 build 120913	1600×1200	√	√
	DS-2CD876MF-E	V4.0.3 build 120913	1600×1200	√	√
	DS-2CD877BF	V4.0.3 build 120913	1920×1080	√	√
	DS-2CD855F-E	V5.0.0 build 130412	1920×1080	√	√
	DS-2CD752MF-E	V2.0 build 110614	1600×1200	√	√
	DS-2CD852MF-E	V2.0 build 110426			
	DS-2CD852F-E	V2.0 build 100521			
	DS-2CD862MF-E	V2.0 build 110614	1280×960	√	√
		V2.0 build 110426			
		V2.0 build 100521			
	DS-2CD8464F-EI	V5.0.0 build 130412	1280×960	√	√
	DS-2CD863PF/NF-E	V5.0.0 build 130412	1280×960	√	√
	DS-2CD864FWD-E	V5.0.0 build 130412	1280×720	√	√
	DS-2CD763PF/NF-E	V5.0.0 build 130412	1280×960	√	√
	DS-2CD763PF/NF-EI	V5.0.0 build 130412	1280×960	√	√
	DS-2CD7164-E	V5.0.0 build 130412	1280×720	√	×
	DS-2CD8264FWD-EI	V5.0.0 build 130412	1280×720	√	√
	DS-2CD2012-I	V5.0.0 build130412	1280×960	√	×
	DS-2CD2112-I	V5.0.0 build130412	1280×960	√	×
	DS-2CD2212-I	V5.0.0 build130412	1280×960	√	×

Type	Model	Version	Max. Resolution	Sub-stream	Audio
	DS-2CD2312-I	V5.0.0 build130412	1280×960	√	×
	DS-2CD2612-I	V5.0.0 build130412	1280×960	√	×
	DS-2CD2712-I	V5.0.0 build130412	1280×960	√	×
	DS-2CD2132-I	V5.0.0 build130412	2048×1536	√	×
	DS-2CD2232-I	V5.0.0 build130412	2048×1536	√	×
	DS-2CD2332-I	V5.0.0 build130412	2048×1536	√	×
	DS-2CD2632-I	V5.0.0 build130412	2048×1536	√	×

	DS-2CD4012F
	DS-2CD4212F-IS(2.8-12mm)
	DS-2CD4112F-I(2.8-12mm)
		V5.0.3 build 130425	1280×960	√	√

	DS-2CD4212F-I(2.8-12mm)	V5.0.3 build 130425	1280×960	√	×
	DS-2CD4124F-I(2.8-12mm)	V5.0.3 build 130425	1920×1080	√	√

	DS-2CD4232FWD-IS(2.8-12mm)
	DS-2CD4132FWD-I(2.8-12mm)
		V5.0.3 build 130425	2048×1536	√	√

	DS-2CD4232FWD-I(2.8-12mm)	V5.0.3 build 130425	2048×1536	√	×
	DS-2CD6233F	V4.2.2 build 130407	2048×1536	√	×
SD Network Camera	DS-2CD7133F-E	V5.0.0 build 130412	640×480	√	×
	DS-2CD733F-E(I)	V5.0.0 build 130412	640×480	√	√
	DS-2CD8433F-EI	V5.0.0 build 130412	640×480	√	√
	DS-2CD802NF DS-2CD812PF DS-2CD832F DS-2CD892PF/NF	V2.0 build 090522 V2.0 build 090715 V2.0 build 110301	704×576	√	√
	DS-2CD893PF(WD)-E	V5.0.0 build 130412	704×576	√	√
	DS-2CD793PF(WD)-E(I)	V5.0.0 build 130412	704×576	√	√
	DS-2CD793NF(WD)-E(I)	V5.0.0 build 130412	704×576	√	√
Intelligent Traffic Camera	DS-2CD9121	V3.4.0 build 130513	1600×1200	×	×
	iDS-2CD9121	V3.3.1 build 130416	1600×1200	×	×
	DS-2CD9121A	V3.4.0 build 130502	1600×1200	×	×
	DS-2CD9122	V3.3.1 build130301	1920×1080	×	×
	DS-2CD9122-H	V3.3.1 build 130309	1920×1080	×	×
	DS-2CD9131	V3.4.0 build 130502	2048×1536	×	×
	iDS-2CD9131	V3.4.0 build 130513	2048×1536	×	×
	DS-2CD9111(B)	V3.4.0 build130529	1360×1024	×	×
	DS-2CD9151A iDS-2CD9151A	V3.3.1 build 130313	2448×2048	×	×
	DS-2CD9182	V3.3.1 build 130321	3296×2472	×	×
	DS-2CD9152 iDS-2CD9152	V3.3.1 build 130301	2560×1920	×	×
	DS-2CD9152-H	V3.4.1 build 130604	2592×2048	×	×
	iDS-2CD9152-H	V3.4.1 build 130604	2592×2048	×	×

Type	Model	Version	Max. Resolution	Sub-stream	Audio
	DS-2CD966-V(B)	V3.1.0 build120423	1360×1024	×	×

	DS-2CD976(B)
	DS-2CD976-V(B)
		V3.1.0 build120423	1600×1200	×	×

	DS-2CD977(B)
	DS-2CD977(C)
		V3.1 build 120423	1920×1080	×	×

	DS-2CD986A(B)	V3.1.0 build120423	2448×2048	×	×
	DS-2CD986C(B)	V2.3.6 build 120401	2560×1920	×	×
Network Speed Dome	DS-2DF1-572	V4.1.6 build 130422	1280×720	√	√
	DS-2DF1-57A	V4.1.6 build 130422	1280×720	√	√
	DS-2DM1-772	V4.1.6 build 130422	1280×720	√	√
	DS-2DF7284-A/D/AF	V5.0.0 build 130518	1280×960	√	√
	DS-2DF1-402	V3.1.4 build 130204	704×576	√	√
	DS-2DF1-718	V2.0.1 build 110520	704×576	√	√
	DS-2DF1-518	V3.1.2 build 121124	704×576	√	√
SD Encoder	DS-6501HCI-SATA DS-6502HCI-SATA DS-6504HCI-SATA	V1.0.1 build 110104	704×576	×	√
	DS-6502HFI-SATA DS-6508HFI-SATA	V1.0.1 build110104	704×576	×	√
	DS-6602HCI	V1.2.0 build 120215	704×576	×	√
	DS-6602HFI DS-6604HFI	V1.2.0 build 120215	704×576	×	√

List of Third-party IP Cameras

Note: **ONVIF compatibility** refers to the camera can be supported both when it uses the ONVIF protocol and its private protocols. **Only ONVIF is supported** refers to the camera can only be supported when it uses the ONVIF protocol. **Only AXIS is supported** refers to the function can only be supported when it uses the AXIS protocol.

IPC Manufacturer or Protocol	Model	Version	Max. Resolution	Sub-stream	Audio
ACTI	TCM4301-10D-X-00083	A1D-310-V4.12.09-AC	1280×1024	×	√
	TCM5311-11D-X-00023	A1D-310-V4.12.09-AC	1280×960	×	√
	TCM3401-09L-X-00227	A1D-220-V3.13.16-AC	1280×1024	×	×
ARECONT	AV8185DN	65172	1600×1200	×	×
	AV1305M	65175	1280×1024	√	×
	AV2155	65143	1600×1200	√	×
	AV2815	65220	1920×1080	√	×
	AV3105M	65175	1920×1080	√	×
	AV5105	65175	1920×1080	√	×
AXIS	M1114	5.09.1	1024×640	√	×
	M3011(ONVIF compatibility)	5.21	704×576	√(Only AXIS is supported)	×
	M3014(ONVIF compatibility)	5.21.1	1280×800	√	×
	P3301(ONVIF compatibility)	5.11.2	768×576	√	√(Only AXIS is supported)
	P3304(ONVIF compatibility)	5.20	1440×900	√	√(Only AXIS is supported)
	P3343(ONVIF compatibility)	5.20.1	800×600	√	√(Only AXIS is supported)
	P3344(ONVIF compatibility)	5.20.1	1440×900	√	√(Only AXIS is supported)
	P5532	5.15	720×576	√	×
	Q7404	5.02	720×576	√	√
Bosch (ONVIF compatibility)	AutoDome Jr 800HD	39500450	1920×1080	×	√
	NBC 265 P	07500453	1280×720	×	√
	Dinion NBN-921-P	10500453	1280×720	×	√
Brickcom	FB-130Np (ONVIF compatibility)	V3.1.0.8	1280×1024	×	√
	CB-500Ap (ONVIF compatibility)	V3.2.1.3	1920×1080	×	√
	WFB-100Ap	V3.1.0.9	1280×800	×	√
Canon	VB-M400	Ver.+1.0.0	1280×960	×	√
	VB-M6000D	Ver.+1.0.0	1280×960	×	×

IPC Manufacturer or Protocol	Model	Version	Max. Resolution	Sub-stream	Audio
	VB-M7000F	Ver.+1.0.0	1280×960	×	√
HUNT	HLC_79AD	V1.0.40	1600×1200	√	×
Panasonic	WV-SW152(ONVIF compatibility)	Application:1.66 Image data:1.05	800×600	√	×
	WV-SC386(ONVIF compatibility)	Application:1.66 Image data:1.05	1280×960	√	√
	WV-SW155(ONVIF compatibility)	Application:1.66 Image data:1.05	1280×960	√	×
	WV-SW316(ONVIF compatibility)	Application:1.66 Image data:2.03	1280×960	√	√
	WV-SP105(ONVIF compatibility)	Application:1.66 Image data:1.03	1280×960	√	×
	WV-SF132(ONVIF compatibility)	Application:1.66 Image data:1.03	640×360	√	×
	WV-SP102(ONVIF compatibility)	Application:1.66 Image data:1.03	640×480	√	×
	WV-SP509(ONVIF compatibility)	Application:1.30 Image data:2.21	1280×960	√	√
	WV-SW559(ONVIF compatibility)	Application:1.30 Image data:2.21	1920×1080	√	√
	WV-SW558(ONVIF compatibility)	Application:1.30 Image data:2.21	1920×1080	√	×
	WV-SW355(ONVIF compatibility)	Application:1.66 Image data:1.04	1280×960	√	√
	WV-SW352(ONVIF compatibility)	Application:1.66 Image data:1.04	800×600	√	√
	WV-SF342(ONVIF compatibility)	Application:1.66 Image data:1.06	800×600	√	√
	WV-SF332(ONVIF compatibility)	Application:1.66 Image data:1.06	800×600	√	√
	WV-SF346(ONVIF compatibility)	Application:1.66 Image data:1.06	1280×960	√	√
	WV-SP306H	Application:1.34 Image data:1.06	1280×960	√	√
	WV-SP336H	Application:1.06 Image data:1.06	1280×960	√	√
PELCO	D5118	1.8.2-20120327-2.9310-A1.7852	1280×960	√	×
	IXE20DN-AAXVUU2	1.8.2-20120327-2.9081-A1.7852	1920×1080	√	×
	IX30DN-ACFZHB3	1.8.2-20120327-2.9080-A1.7852	2048×1536	√	×
SAMSUNG (ONVIF compatibility)	SNB-5000P	V3.10_130416	1280×1024	√(Only ONVIF is supported)	√
SANYO	VCC-HD2300P	2.03-02(110318-00)	1920×1080	×	×

IPC Manufacturer or Protocol	Model	Version	Max. Resolution	Sub-stream	Audio
	VCC-HD2500P	2.02-02(110208-00)	1920×1080	×	√
	VCC-HD4600P	2.03-02(110315-00)	1920×1080	×	√
SONY	SNC-CH220	1.50.00	1920×1080	×	×
	SNC-RH124(ONVIF compatibility)	1.73.00	1280×720	√	√
	SNC-EP580(ONVIF compatibility)	1.53.00	1920×1080	√	√
	SNC-DH220T(Only ONVIF is supported)	1.50.00	2048×1536	×	×
Vivotek	IP7133	0203a	640×480	×	×
	FD8134(ONVIF compatibility)	0107a	1280×800	×	×
	IP8161(ONVIF compatibility)	0104a	1600×1200	×	√
	IP8331(ONVIF compatibility)	0102a	640×480	×	×
	IP8332(ONVIF compatibility)	0105b	1280×800	×	×
ZAVIO	D5110	MG.1.6.03P8	1280×1024	√	×
	F3106	M2.1.6.03P8	1280×1024	√	√
	F3110	M2.1.6.01	1280×720	√	√
	F3206	MG.1.6.02c045	1920×1080	√	√
	F531E	LM.1.6.18P10	640×480	√	√

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