Network Video Recorder

Quick Start Guide

Cybersecurity Recommendations

Mandatory actions to be taken towards cybersecurity

1. Change Passwords and Use Strong Passwords:

The number one reason systems get "hacked" is due to having weak or default passwords. It is recommended to change default passwords immediately and choose a strong password whenever possible. A strong password should be made up of at least 8 characters and a combination of special characters, numbers, and upper and lower case letters.

2. Update Firmware

As is standard procedure in the tech-industry, we recommend keeping NVR, DVR, and IP camera firmware up-to-date to ensure the system is current with the latest security patches and fixes.

"Nice to have" recommendations to improve your network security

1. Change Passwords Regularly

Regularly change the credentials to your devices to help ensure that only authorized users are able to access the system.

2. Change Default HTTP and TCP Ports:

- Change default HTTP and TCP ports for systems. These are the two ports used to communicate and to view video feeds remotely.
- These ports can be changed to any set of numbers between 1025-65535. Avoiding the default ports reduces the risk of outsiders being able to guess which ports you are using.

3. Enable HTTPS/SSL:

Set up an SSL Certificate to enable HTTPS. This will encrypt all communication between your devices and recorder.

4. Enable IP Filter:

Enabling your IP filter will prevent everyone, except those with specified IP addresses, from accessing the system.

5. Change ONVIF Password:

On older IP Camera firmware, the ONVIF password does not change when you change the system's credentials. You will need to either update the camera's firmware to the latest revision or manually change the ONVIF password.

6. Forward Only Ports You Need:

- Only forward the HTTP and TCP ports that you need to use. Do not forward a huge range of numbers to the device. Do not DMZ the device's IP address.
- You do not need to forward any ports for individual cameras if they are all connected to a recorder on site; just the NVR is needed.

7. Disable Auto-Login on SmartPSS:

Those using SmartPSS to view their system and on a computer that is used by multiple people should disable auto-login. This adds a layer of security to prevent users without the appropriate credentials from accessing the system.

8. Use a Different Username and Password for SmartPSS:

In the event that your social media, bank, email, etc. account is compromised, you would not want someone collecting those passwords and trying them out on your video surveillance system. Using a different username and password for your security system will make it more difficult for someone to guess their way into your system.

9. Limit Features of Guest Accounts:

If your system is set up for multiple users, ensure that each user only has rights to features and functions they need to use to perform their job.

10. UPnP:

- UPnP will automatically try to forward ports in your router or modem. Normally this would be a good thing. However, if your system automatically forwards the ports and you leave the credentials defaulted, you may end up with unwanted visitors.
- If you manually forwarded the HTTP and TCP ports in your router/modem, this feature should be turned off regardless. Disabling UPnP is recommended when the function is not used in real applications.

11. SNMP:

Disable SNMP if you are not using it. If you are using SNMP, you should do so only temporarily, for tracing and testing purposes only.

12. Multicast:

Multicast is used to share video streams between two recorders. Currently there are no known issues involving Multicast, but if you are not using this feature, deactivation can enhance your network security.

13. Check the Log:

If you doubt that someone has gained unauthorized access to your system, you can check the system log. The system log will show you which IP addresses were used to login to your system and what was accessed.

14. Physically Lock Down the Device:

Ideally, you want to prevent any unauthorized physical access to your system. The best way to achieve this is to install the recorder in a lockbox, locking server rack, or in a room that is behind a lock and key.

15. Connect IP Cameras to the PoE Ports on the Back of an NVR:

Cameras connected to the PoE ports on the back of an NVR are isolated from the outside world and cannot be accessed directly.

16. Isolate NVR and IP Camera Network

The network your NVR and IP camera resides on should not be the same network as your public computer network. This will prevent any visitors or unwanted guests from getting access to the same network the security system needs in order to function properly.

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General

This Quick Start Guide (hereinafter referred to be "the Guide") introduces the functions and operations of the NVR devices (hereinafter referred to be "the Device").

Safety Instructions

The following categorized signal words with defined meaning might appear in the Guide.

Signal Words	Meaning	
DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.	
WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.	
! CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.	
©TIPS	Provides methods to help you solve a problem or save you time.	
₩ NOTE	Provides additional information as the emphasis and supplement to the text.	

Revision History

No.	Version	Revision Content	Release Time
1	V1.0.0	First Release.	May, 2017
2	V1.1.0	 Add GDPR information. Update HDD installation. Add note: Device does not support wall mounting. Add note: Install the PoE frontend devices indoors. 	July, 2018

Privacy Protection Notice

As the device user or data controller, you might collect personal data of others such as face, fingerprints, car plate number, Email address, phone number, GPS and so on. You need to be in compliance with the local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures including but not limited to:

providing clear and visible identification to inform data subject the existence of surveillance area and providing related contact.

About the Guide

- The Guide is for reference only. If there is inconsistency between the Guide and the actual product, the actual product shall prevail.
- We are not liable for any loss caused by the operations that do not comply with the Guide.
- The Guide would be updated according to the latest laws and regulations of related regions. For detailed information, see the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the Guide. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, please refer to our final explanation.
- Upgrade the reader software or try other mainstream reader software if the Guide (in PDF format) cannot be opened.
- All trademarks, registered trademarks and the company names in the Guide are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if there is any problem occurred when using the device.
- If there is any uncertainty or controversy, please refer to our final explanation.

Important Safeguards and Warnings

The following description is the correct application method of the device. Read the guide carefully before use to prevent danger and property loss. Strictly conform to the guide during application and keep it properly after reading.

Operating Requirement

- Install the PoE front-end devices indoors.
- Don't place and install the device in an area exposed to direct sunlight or near heat generating device.
- Don't install the device in a humid, dusty or fuliginous area.
- Keep its horizontal installation, or install it at stable places, and prevent it from falling.
- Don't drip or splash liquids onto the device; don't put on the device anything filled with liquids, in order to prevent liquids from flowing into the device.
- Install the device at well-ventilated places; don't block its ventilation opening.
- Use the device only within rated input and output range.
- Don't dismantle the device arbitrarily.
- Transport, use and store the device within allowed humidity and temperature range.

Power Requirement

- Make sure to use the designated battery type. Otherwise there may be explosion risk.
- Make sure to use batteries according to requirements. Otherwise, it may result in fire, explosion or burning risks of batteries!
- To replace batteries, only the same type of batteries can be used.
- Make sure to dispose the exhausted batteries according to the instructions.
- The product shall use electric wires (power wires) recommended by this area, which shall be used within its rated specification.
- Make sure to use standard power adapter matched with this device. Otherwise, the user shall undertake resulting personnel injuries or device damages.
- Use power supply that meets SELV (safety extra low voltage) requirements, and supply power with rated voltage that conforms to Limited Power Source in IEC60950-1. For specific power supply requirements, please refer to device labels.
- Products with category I structure shall be connected to grid power output socket, which is equipped with protective grounding.
- Appliance coupler is a disconnecting device. During normal use, please keep an angle that facilitates operation.

1

Installing the Device



The Device does not support wall mount.

1.1 Checking the Components

When you receive the Device, please check against the following checking list. If any of the items are missing or damaged, contact the local retailer or after-sales engineer immediately

Sequence	Checking items		Requirement
		Appearance	No obvious damage.
1	Package	Packing materials	No broken or distorted positions that could be caused by hit.
		Accessories	No missing.
2	Labels	Labels on the device	 Device model conforms to the purchase order. Not torn up. NOTE Do not tear up or throw away the labels; otherwise the warranty services are not ensured. You need to provide the serial number of the product when you call the after-sales service.
	3 Device	Appearance	No obvious damage.
3 Dev		Data cables, power cables, fan cables,	No connection loose. NOTE If there is any loose, please contact
		mainboard	the company after-sales service in time.

1.2 Installing HDD

For the first time installation, make sure whether the HDD has been installed or not. We recommend to use HDD of enterprise level or surveillance level. It is not recommended to use PC HDD.

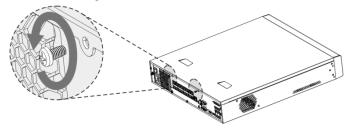


CAUTION

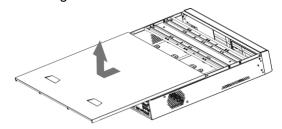
- Shut off the power before you replace the HDD.
- Different models have different HDD numbers. The actual product shall govern.

Step 1 Remove the fixing screws on the rear panel of the device.

Figure 1-1 Remove the screws



<u>Step 2</u> Remove the case cover along the direction shown in the following arrow. Figure 1-2 Remove case cover



Step 3 Remove the screws on the sides of HDD bracket to take out the bracket.

- 4-HDD device has one HDD bracket. For the way to remove the bracket, see Figure 1-3.
- 8-HDD device has two HDD brackets. For the way to remove the brackets, see Figure 1-4.

Figure 1-3 Remove HDD bracket (4-HDD)

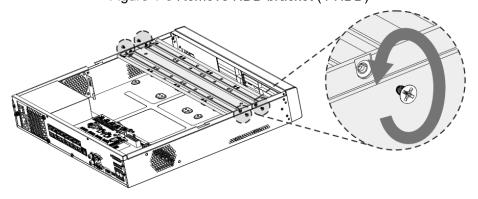
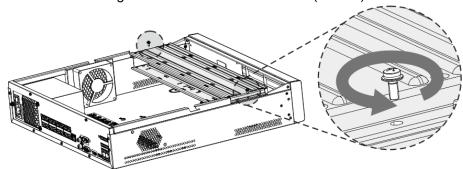
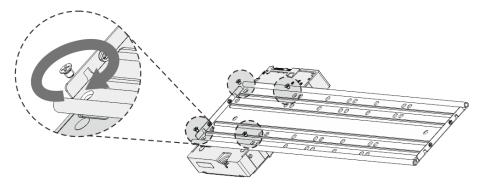


Figure 1-4 Remove HDD bracket (8-HDD)



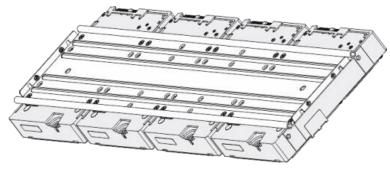
<u>Step 4</u> Match the four screw holes on the HDD with the four holes on the bracket and then fasten the screws. The HDD is fixed to the bracket.

Figure 1-5 Fix the HDD (1)



Step 5 Refer to Step 4 to install other HDDs.

Figure 1-6 Fix the HDD (2)

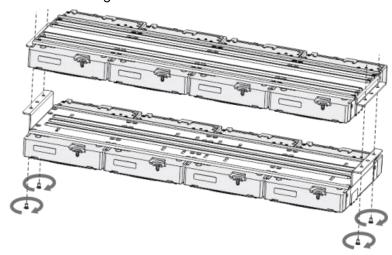


Step 6 Lock the two HDD brackets.



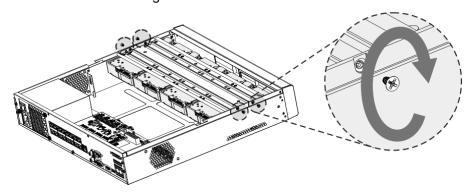
This step is required for 8-HDD devices only.

Figure 1-7 Lock two HDD brackets



Step 7 Place the bracket to the device and then fasten the screws on the sides of the bracket.

Figure 1-8 Fasten HDD bracket

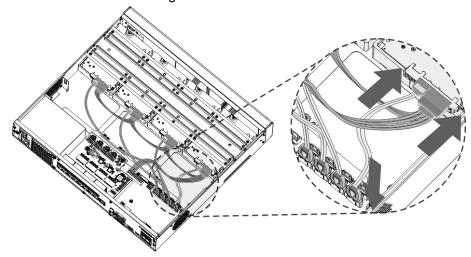


Step 8 Connect the HDD data cable and power cable to the device.



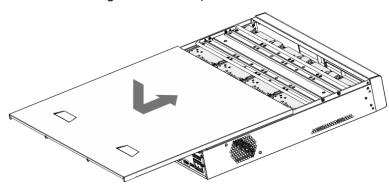
Figure 1-9 takes 4-HDD device as an example. The actual product shall govern.

Figure 1-9 Connect cables



<u>Step 9</u> Put back the cover and fasten the screws on the rear panel to complete the installation.

Figure 1-10 Complete installation



2 Device Structure

M NOTE

- The following figures are for reference only. The actual product shall govern.
- See User's Manual for detailed information.

Figure 2-1 Front panel

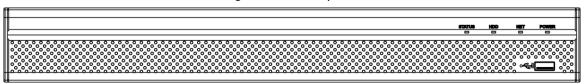


Table 2-1 Description of front panel functions

Icon	Name	Description
STATUS	Status indicator	After booting up the Device, the indicator glows
		blue.
HDD	HDD status indicator	The indicator is off when the HDD is normal.
		 The indicator glows blue when the HDD is in malfunction.
NET	Network status indicator	The indicator is off when the network is
		normal.
		The indicator glows blue when the network is
		in malfunction.
POWER	Power status indicator	The indicator glows blue when the power supply is
		normal.
~ €	USB 2.0 port	Connects to external devices such as USB storage
		device, keyboard and mouse.

Figure 2-2 Rear panel

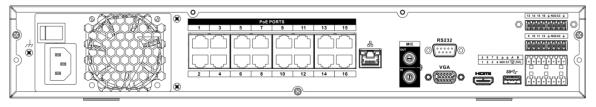


Table 2-2 Description of rear panel functions

Icon	Port Name	Function
	Power button	Turns on/off the NVR.
B	Power input port	Input power.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive analog audio signal from devices such as microphone, sound pickup.
MIC OUT	Audio output port	Audio output port. It is to output analog audio signal to

lcon	Port Name	Function	
		 devices such as sound box. Bidirectional talk output. Audio output for 1-window video monitor. Audio output for 1-window video playback. 	
1-16	Alarm input port (1-16)	 There are four groups: 1-4, 5-8, 9-12 and 13-16. They receive signals from external alarm source. Alarm input includes two types; NO (normal open) and NC (normal close). When your alarm input device is using external power, make sure the device and the NVR have the same GND. 	
<u></u>	GND	Alarm input ground port.	
NO1-NO3	Alarm output port 1-3	 Three groups of alarm output ports (NO1-C1; NO2-C2; NO3-C3). Output alarm signal to the external alarm device. Make sure power supply is available for the external alarm device. NO: Normal open alarm output port. C: Alarm output public end. 	
А	D0405 mark	RS485_A port. Control cable A of the 485 device. It connects external devices such as speed dome and PTZ.	
В	RS485 port	 RS485_B port. Control cable B of the 485 device. It connects external devices such as speed dome and PTZ. 	
CTRL 12V	-	Controllable 12V power output. It is to control the on-off alarm relay output. It can be used to control the device alarm output. At the same time, it can also be used as the power input source of some devices such as alarm detector.	
+12V	-	+12V power output port. It can provide power to some peripheral devices such as camera and alarm device. Make sure the power supply of peripheral device shall be below 1A.	
00	Network port	10M/100M/1000Mbps self-adaptive Ethernet port. Connect to the network cable.	
eSATA	eSATA port	External SATA port. It can connect device with SATA port. You need to jump the HDD when there is peripherally connected HDD.	
SS∕₹	USB port	Connect to devices such as mouse, USB storage device and USB burner.	
RS232	RS232 port	It is for general COM debugging to configure IP address and transfer transparent COM data.	
HDMI	HDMI port	High definition audio and video signal output port. It transmits uncompressed high definition video and	

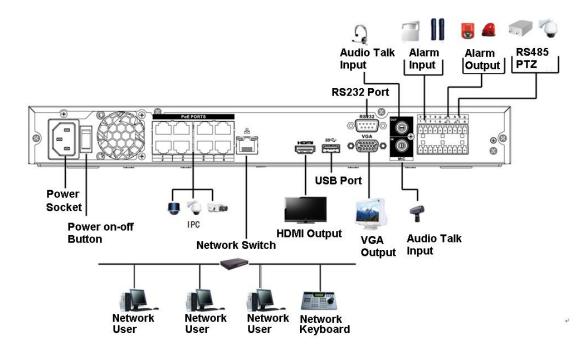
Icon	Port Name	Function
		multiple-channel audio data to display devices with
		HDMI port.
VGA	VGA port	VGA video output port. Output analog video signal. It
VGA		can connect to the monitor to view analog video.
4	GND	Ground.

3 Connection

MOTE

- The following figure is for reference only. The actual product shall govern.
- See User's Manual for detailed information.

Figure 3-1 Device connection



4 GUI Operations

M NOTE

Slight difference might be found on the interfaces of different models. Following figures are for reference only. The actual product shall govern.

4.1 Booting Up



Before the boot up, please make sure:

- The rated input voltage shall match with the device power requirement. Make sure the power wire connection is ready and then turn on the power button.
- For device security, connect the Device to the power adapter first and then connect it to the power socket.
- Always use the stable current. It is recommended to use UPS.

Connect the Device to the monitor, plug into the power socket, and then press the power button to boot up the Device.

4.2 Initializing the Device

When booting up for the first time, you need to configure the password information for **admin** (by default). To guarantee device security, keep the login password for admin properly and modify it regularly.

Step 1 Turn on the Device.

The **Device Initialization** interface is displayed. See Figure 4-1.

Figure 4-1 Enter password



<u>Step 2</u> Configure the password information for admin. For details, see Table 4-1.

Table 4-1 Password information description

Parameter	Description	
User	By default, the user is admin .	
Password	In the Password box, enter the password for admin.	
	The new password can be set from 8 characters through 32	
Confirm Password	characters and contain at least two types from number, letter and	
	special characters (excluding"", """, ";", ":" and "&").	
	In the Prompt Question box, enter the information that can remind	
	you of the password.	
Prompt Question	NOTE	
	On the login interface, click and the prompt will display to help	
	you find back the password.	

Step 3 Click Next.

The unlock pattern setting interface is displayed. See Figure 4-2.

Device Initialization

1 Enter Password
2 Unlock Pattern
3 Password Protection

Please draw the unlock pattern.

Figure 4-2 Unlock pattern

Step 4 Draw an unlock pattern.

Back

After setting unlock pattern, the password protection setting interrface is displayed. See Figure 4-3.

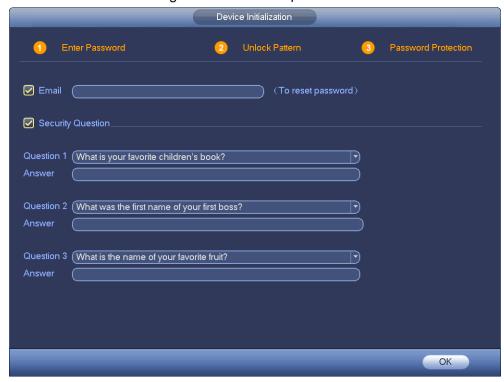
Ⅲ NOTE

 Once you have configured the unlock pattern, the system will require the unlock pattern as the default login method. If you skip this setting, enter the password for login.

Skip

• If you do not want to configure the unlock pattern, click Skip.

Figure 4-3 Password protection



<u>Step 5</u> Configure the protection parameters for password. For details, see Table 4-2.

MOTE

- After configuration, if you forgot the password for admin user, you can reset the
 password through the reserved email address or security questions. For details
 about resetting the password, see *User's Manual*.
- If you do not want to configure the settings, disable the email address and security questions functions on the interface.

Table 4-2 Password protection parameter description

Password	Description	
Protection Mode		
	Enter the reserved email address.	
	In the Email Address box, enter an email address for password	
Email Address	reset. In case you forgot password, enter the security code that you	
	will get from this reserved email address to reset the password of	
	admin.	
Coourity	Configure the security questions and answers.	
Security	In case you forgot password, entering the answers to the questions	
Questions	can make you reset the password.	
NOTE		
If you want to configure the email or security questions fucntion later or you want to		
change the configurations, select Main Menu > ACCOUNT > USER.		

Step 6 Click **OK** to complete the settings.

The **Startup Wizard** interface is displayed. For details about quick settings during startup, see "4.4 Startup Wizard."

4.3 Resetting Password

If you forgot the admin password, you can reset the password by the following ways:

- When the password reset function is enabled, you can scan the QR code on the local interface to reset the password.
- When the password reset function is disabled, you can reset password via the security
 questions configured before. If the security questions are not configured, system displays
 that Password reset is closed! You need to contact the customer service for help.

Step 1 Click on the login interface.

The Reset Password interface is displayed. See Figure 4-4.

M NOTE

- On the unlock pattern interface, click **Forgot Unlock Pattern** to switch to the password login interface, and then click
- If you have not input email address in device initialization, the interface is shown as in Figure 4-5. Configure an email address, click **Next**, and then the Device goes to Figure 4-4.

Figure 4-4 Reset password (1)



Figure 4-5 Reset password (2)



Step 2 Click OK.

The password resetting interface is displayed. See Figure 4-6.

MOTE

After clicking OK, we will collect your personal information such as cell phone number, MAC address and device serial number. The collected information is used for verifying device legality and sending security code. Please read the notice carefully and confirm if you agree with the collection or not.

Figure 4-6 Reset password (3)



Step 3 Reset login password.

Email

In Figure 4-6, follow the prompts on the interface to scan the QR code, and then enter the security code you get via the assigned email.

MOTE

- For the same QR code, you can scan max twice to get two security codes. Refresh the QR code if you want to get security code again.
- The security code in your email is only valid for 24 hours.
- Security questions

In Figure 4-6, in the **Reset Type** drop-down list, select security question. The security question interface is displayed. See Figure 4-7. Enter the preset correct answers in the text boxes.

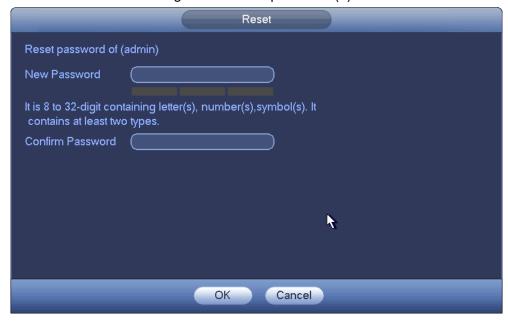
Figure 4-7 Reset password (4)



Step 4 Click Next.

The interface to set new password is displayed. See Figure 4-8.

Figure 4-8 Reset password (5)



Step 5 Enter the new password and confirm it.



The password can be set from 8 characters through 32 characters and contain at least two types from number, letter and special character (excluding"", """, ";", ":" and "&"). It is recommended to set a password of high security according to the prompt.

Step 6 Click **OK** to complete the settings.

4.4 Startup Wizard

M NOTE

After completing all items on the startup wizard, the startup wizard automatically hides when booting up the Device next time.

After you successfully initialize the Device, the **Startup Wizard** is displayed. See Figure 4-9. Click **Next**, log in the Device, and then you can enter the startup wizard to configure the Device quickly. For details, see *User's Manual*.

 Selecting the check box of Auto-check for updates, the Device automatically checks for new application every day.

M NOTE

After auto-check for updates is enabled, in order to inform you of the latest firmware upgrades, we will collect your personal information such as IP address, device name, firmware version and device SN. The collected information is used for verifying device legality and pushing upgrade notice.

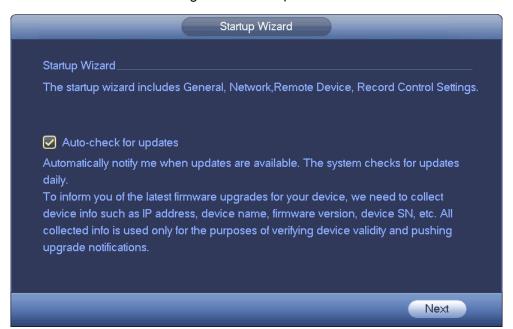


Figure 4-9 Startup wizard

4.5 Registration

Select **Main Menu > SETTING > CAMERA > Registration**. The Registration interface is displayed. See Figure 4-10.

You can register remote devices through the following two ways:

- Click **Device Search**. In the result list, double-click the remote device or select the check box in front of the device, and then click **Add** to register the remote device.
- Click Manual Add and enter the IP address of the remote device to register it.





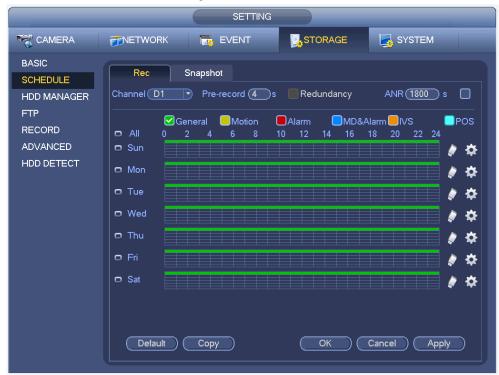
4.6 Schedule

All channels are 24-hour recording continuously by factory default. You can customize the record period and record type.

Step 1 Select Main Menu > SETTING > STORAGE > SCHEDULE.

The **Rec** interface is displayed. See Figure 4-11.

Figure 4-11 Schedule



Step 2 Configure parameters such as channel, pre-record, ANR and record type.

- After setting one HDD to be redundant disk, select the Redundancy check box to realize video file backup. It is to save video files to different HDDs at the same time. Once one of the HDDs is damaged, there is still a backup file in another disk to ensure data reliability.
- Select the ANR check box to enable this function. When the IPC is out of network
 access, it keeps on recording and saves the records in the SD card. After the
 network is recovered, IPC transmits the records during the network outage back
 to the NVR device to ensure record integrity.

Step 3 Set the schedule period. It includes drawing and editing.

- Drawing: Press and hold down the left button of the mouse and drag the mouse in the time figure to draw the period.
- Editing: Click to configure the period and then click **OK**.

Step 4 Click **Apply** or **OK** to save the settings.



The configured record schedule can come into effect only when the auto record function is enabled. For details to enable auto record, see *User's Manual*.

4.7 Instant Playback

Move the mouse to the top center of the current channel preview interface and you can see

the control bar. See Figure 4-12. Click in the control bar and the system starts to reply the records 5 minutes to 60 minutes ago in the current channel.



Figure 4-12 Control bar

For icon description on the control bar, see Table 4-3.

Table 4-3 Control bar icon description

No.	Icon	Description
1	1	Instant playback
2	•	Digital zoom
3		Instant backup
4	•	Manual snapshot
5	•	Bidirectional talk
6	<u>G</u>	Remote Device
7	M	Switch bit streams

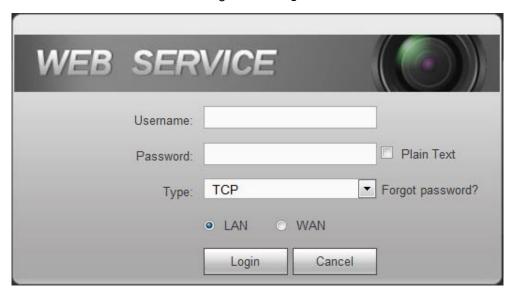
You can log in the Web interface of the Device via browsers such as Safari, Firefox and Chrome.

MOTE

- Slight difference might be found on the interfaces of different models. Following figures are for reference only. The actual product shall govern.
- Use ChromeApp to log in the Web if the Chrome version is 45 or higher. Go to the Chrome online store to download the ChromeApp installation package.
- Before logging in Web, make sure the network connection between PC and the Device is ready.
- <u>Step 1</u> Open the browser and enter the IP address of the Device into the address bar. Press Enter key.

The **Login** interface is displayed. See Figure 5-1.

Figure 5-1 Login



Step 2 Enter the username and password.

The default username is admin, and the login password is the one you set in device initialization. To ensure device security, it is recommended to modify the admin password regularly and keep it properly.

Step 3 Click Login.

The **Preview** interface is displayed. On the Web interface, you can perform operations such as system settings, device management and network settings. For details, see *User's Manual*.

□ NOTE

 When you log in Web for the first time, install the control according to system prompts.

- When you want to upgrade the control, delete the original control first. See the following two ways to delete the control:
 - ♦ Enter C:\Program Files\webrec\WEB30\WebPlugin, and run the uninstall tool uninst.exe. The system automatically deletes the control.
 - ♦ Enter C:\Program Files\webrec and delete the **Single** folder.