

## Network Video Recorder

**Version: V4.21.005 build190509**

### Release Note

**(2019-5-9 Internal)**

<b>Firmware Basic Information</b>	Firmware Version:	V4.21.005 build190509
	SDK Version:	V6.0.2.30_build20190325
	Play Library:	V7.3.7.32_Build20190305
	Web component:	V4.0.1 build190505
	IVMS-4200:	V2.6.18.2 build20190326
	OpenSDK Version:	V1.5.55.1 build 181101

### Reason of Upgrade

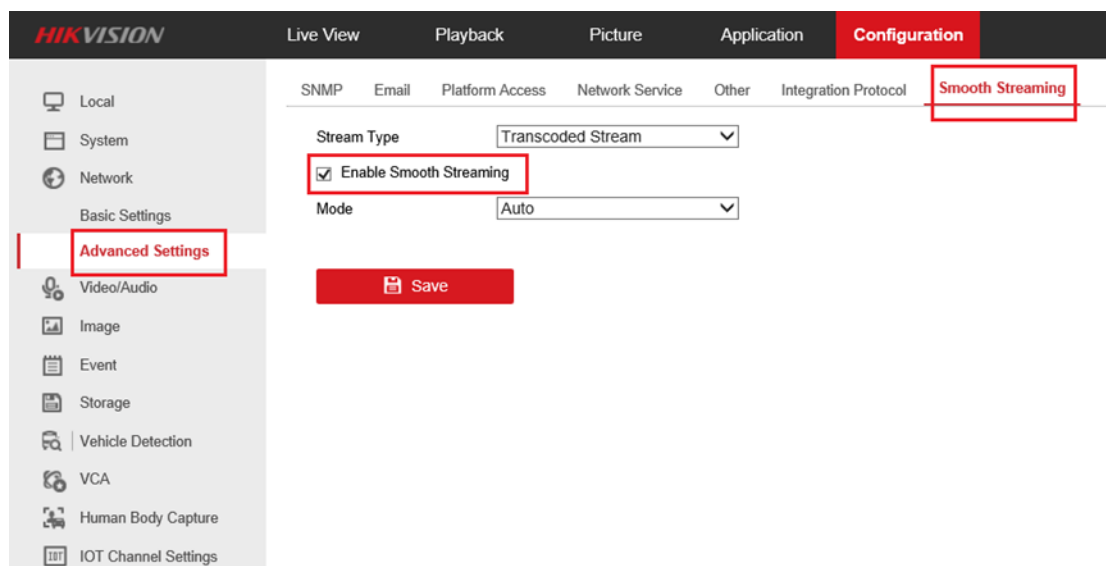
Add new features and optimize product performance.

## New features

### 1. 【Smooth Streaming】

- 1) Low bandwidth preview and playback, support up to 4 channels.
- 2) Web and 4200 support configuring, and only 4200 supports preview and playback.

Web doesn't support preview and playback.



### 2. 【Access Control Devices Access】

- 1) Support the access of Hikvision Access Control devices and Intercom devices. Note: Take Access Control as an example to show screenshots.

NVR 4.0



IoT Internet of Things

Access Control

Entrance and Exit Channel  
Control System

Alarm

Alarm Event Linkage  
Management System

AI Artificial Intelligence

Facial Attendance

< Access Control

Device Management

Card Swiping Record

+ Add

× Delete

Import

Export

Refresh

	Channel No.	Name	Device Type	IP Address	Protocol	Edit	Config	Status	Security
<input type="checkbox"/>	IoT01	P1 B1 U1 F1...	Hikvision Video Int...	10.9.96.19	Hikvision				Weak Pass
<input type="checkbox"/>	IoT03	P1 B1 U...	Add IoT Device						Weak Pass

Protocol

Device IP

Port

Transfer Protocol

User Name

Password

Hikvision

10.9.96.67

8000

TCP

admin

\*\*\*\*\*

- 2) Support alarm rule configuration and OSD display configuration.

← Access Control

Device Management  
Card Swiping Record

Back Config

Channel [IoT04] IOT01 Name IOT01 Device Type Hikvision Access Control Device

Event Configuration OSD Display Configuration

Event Type Authentication Passed ☒ Enable Copy to

Linkage Action Arming Schedule

<input type="checkbox"/> Normal Linkage	<input type="checkbox"/> Trigger Alarm Output	<input type="checkbox"/> Trigger Channel	PTZ Linkage
<input type="checkbox"/> Full Screen Monitoring	<input type="checkbox"/> Local->1	<input type="checkbox"/> D1	PTZ Linkage [D1] 12345678 Fro
<input type="checkbox"/> Audible Warning	<input type="checkbox"/> Local->2	<input type="checkbox"/> D2	Preset No. 1
<input type="checkbox"/> Notify Surveillance Center	<input type="checkbox"/> Local->3	<input type="checkbox"/> D3	Patrol No. 1
<input type="checkbox"/> Send Email	<input type="checkbox"/> Local->4	<input checked="" type="checkbox"/> D4	Pattern No. 1
<input checked="" type="checkbox"/> OSD Display	<input type="checkbox"/> Local->5	<input type="checkbox"/> D6	

3) Support Normal Linkage, Trigger Alarm Output, Trigger Channel, PTZ Linkage.

← Access Control

Device Management  
Card Swiping Record

Back Config

Channel [IoT04] IOT01 Name IOT01 Device Type Hikvision Access Control Device

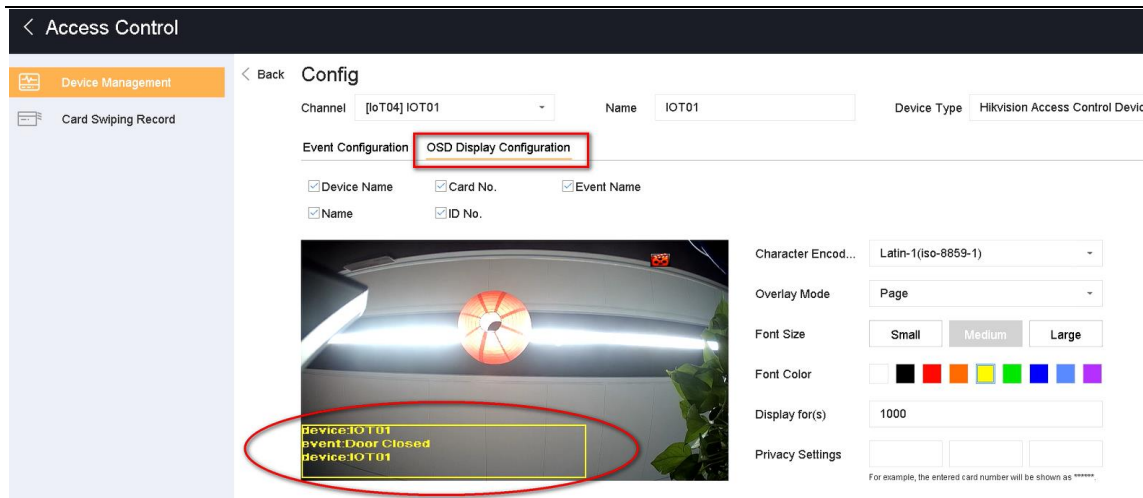
Event Configuration OSD Display Configuration

Event Type Authentication Passed ☒ Enable Copy to

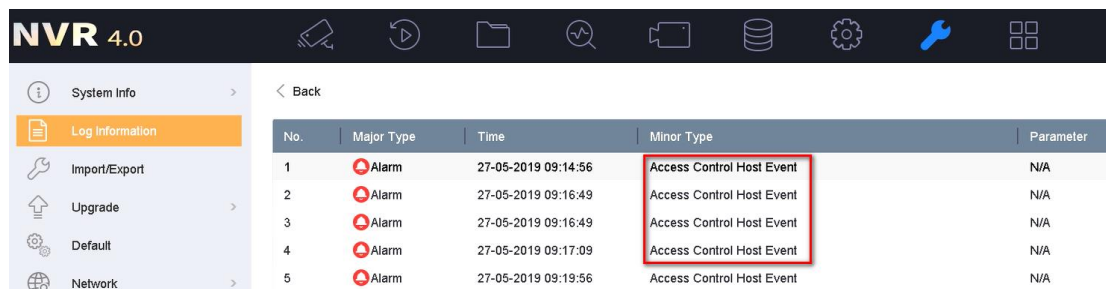
Linkage Action Arming Schedule

<input checked="" type="checkbox"/> Normal Linkage	<input checked="" type="checkbox"/> Trigger Alarm Output	<input checked="" type="checkbox"/> Trigger Channel	<input checked="" type="checkbox"/> PTZ Linkage
<input type="checkbox"/> Full Screen Monitoring	<input type="checkbox"/> Local->1	<input type="checkbox"/> D1	PTZ Linkage [D1] 12345678 Fro
<input type="checkbox"/> Audible Warning	<input type="checkbox"/> Local->2	<input type="checkbox"/> D2	Preset No. 1
<input type="checkbox"/> Notify Surveillance Center	<input type="checkbox"/> Local->3	<input type="checkbox"/> D3	Patrol No. 1
<input type="checkbox"/> Send Email	<input type="checkbox"/> Local->4	<input checked="" type="checkbox"/> D4	Pattern No. 1
<input checked="" type="checkbox"/> OSD Display	<input type="checkbox"/> Local->5	<input type="checkbox"/> D6	

4) The Access Control alarm information also can be overlapped on live view. Which IP channel will be overlapped with the OSD display depends on the trigger channel you select.



5) Support Access Control alarm event log.



6) Support to upload alarm to Hik-Connect.

7) The timeout period for recording after the call starts is 90 seconds, or 90 seconds if there is no call end.

### 3. 【Alarm Devices Access】

1) Support the access of HIKVISION alarm devices and GJD, OPTEx and Luminite alarm devices. Note: Take GJD as an example to show screenshots.

## IoT Internet of Things

### Access Control

Entrance and Exit Channel  
Control System

### Alarm

Alarm Event Linkage  
Management System

## AI Artificial Intelligence

Facial Attendance

### < Alarm Device

Device Management + Add × Delete ↻ Refresh

Alarm host

Search Data

Channel No.	Name	Device Type	IP Address	Protocol	Edit	Config	Status	Security
IoT02	IOT02	GJD Alarm Device	10.25.204.99	GJD				N/A

#### Add IoT Device

Protocol: OPTEX

Device IP: Hikvision

Transfer Protocol: OPTEX, GJD, Luminite

Add Cancel

2) Support alarm rule configuration and OSD display configuration.

### < Alarm Device

Device Management + Add × Delete ↻ Refresh

Alarm host

Search Data

Channel No.	Name	Device Type	IP Address	Protocol	Edit	Config	Status	Security
IoT02	IOT02	GJD Alarm Device	10.25.204.99	GJD				N/A

< Alarm Device

Device Management > Back Config

Channel [IoT02] IOT02 Name IOT02 Device Type GJD Alarm Device

Event Configuration OSD Display Configuration

Event Type PIR Detection alarm ☒ Enable Copy to

Linkage Action Arming Schedule

<input type="checkbox"/> Normal Linkage	<input type="checkbox"/> Trigger Alarm Output	<input type="checkbox"/> Trigger Channel	PTZ Linkage
<input type="checkbox"/> Full Screen Monitoring	<input type="checkbox"/> Local->1	<input checked="" type="checkbox"/> D1	PTZ Linkage [D1] 12345678 Fro
<input type="checkbox"/> Audible Warning	<input type="checkbox"/> Local->2	<input checked="" type="checkbox"/> D2	<input type="radio"/> Preset No. 1
<input type="checkbox"/> Notify Surveillance Center	<input type="checkbox"/> Local->3	<input checked="" type="checkbox"/> D3	<input type="radio"/> Patrol No. 1
<input type="checkbox"/> Send Email	<input type="checkbox"/> Local->4	<input checked="" type="checkbox"/> D4	<input type="radio"/> Pattern No. 1
<input checked="" type="checkbox"/> OSD Display	<input type="checkbox"/> Local->5	<input checked="" type="checkbox"/> D5	

3) Support alarm event log.

NVR 4.0

System Info > Back

Log Information

No.	Major Type	Time	Minor Type	Parameter	Play
1651	Alarm	27-05-2019 14:51:43	Motion Detection Started	N/A	▶
1652	Alarm	27-05-2019 14:51:57	Motion Detection Stopped	N/A	▶
1653	Alarm	27-05-2019 14:52:01	GJD Alarm Host Event	N/A	—
1654	Alarm	27-05-2019 14:52:03	GJD Alarm Host Event	N/A	—
1655	Alarm	27-05-2019 14:52:07	GJD Alarm Host Event	N/A	—
1656	Alarm	27-05-2019 14:52:08	GJD Alarm Host Event	N/A	—
1657	Alarm	27-05-2019 14:52:13	GJD Alarm Host Event	N/A	—
1658	Alarm	27-05-2019 14:52:16	GJD Alarm Host Event	N/A	—

4) Support Normal Linkage, Trigger Alarm Output, Trigger Channel, PTZ Linkage.

< Alarm Device

Device Management

Alarm host

Search Data

< Back Config

Channel [IoT02] IOT02 Name IOT02 Device Type GJD Alarm Device

Event Configuration OSD Display Configuration

Event Type PIR Detection alarm ☒ Enable Copy to

Linkage Action Arming Schedule

☐ Normal Linkage ☐ Trigger Alarm Output ☐ Trigger Channel ☐ PTZ Linkage

☐ Full Screen Monitoring ☐ Local->1 ☒ D1

☐ Audible Warning ☐ Local->2 ☒ D2

☐ Notify Surveillance Center ☐ Local->3 ☒ D3

☐ Send Email ☐ Local->4 ☒ D4

☒ OSD Display ☐ Local->5 ☒ D5

PTZ Linkage [D1] 12345678 Frc

Preset No. 1

Patrol No. 1

Pattern No. 1

- 5) The alarm information also can be overlapped on live view. Which IP channel will be overlapped with the OSD display depends on the trigger channel you select.

< Alarm Device

Device Management

Alarm host

Search Data

< Back Config

Channel [IoT02] IOT02 Name IOT02 Device Type GJD Alarm Device

Event Configuration OSD Display Configuration

Character Encod... Latin-1(iso-8859-1)

Overlay Mode Page

Font Size Small Medium Large

Font Color

Display for(s) 20

Privacy Settings

For example, the entered card number will be shown as \*\*\*\*\*

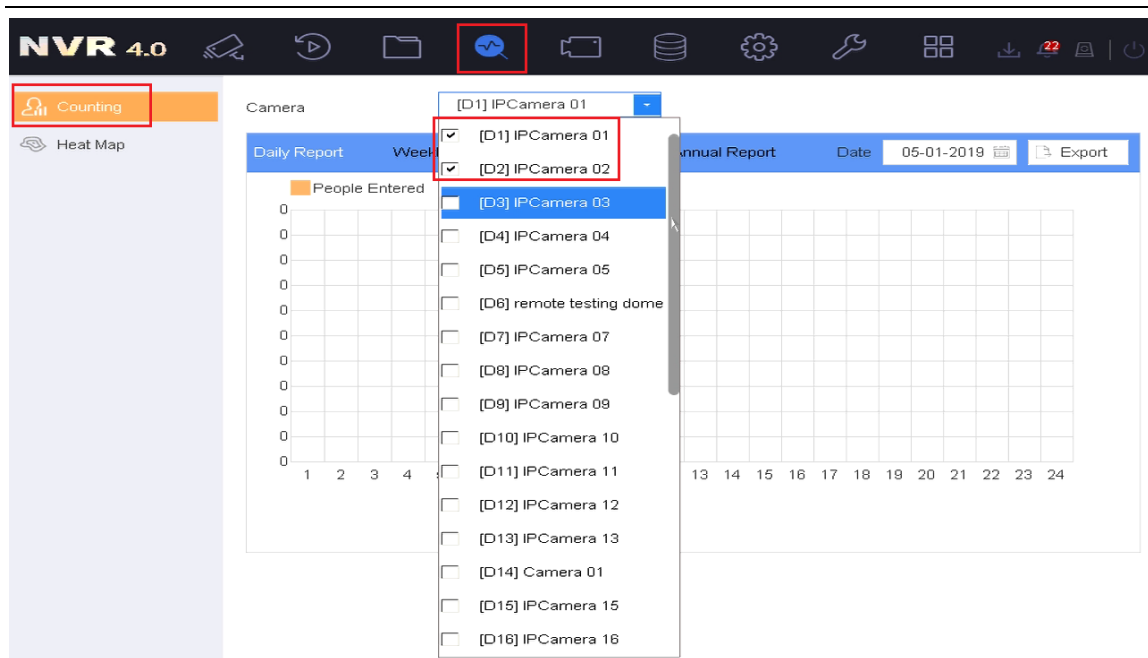
PIR Detection alarm Device IOT02

- 6) Support to upload alarm to Hik-Connect.
- 7) The default port for NVR to receive alarms is 30999, which can be modified.

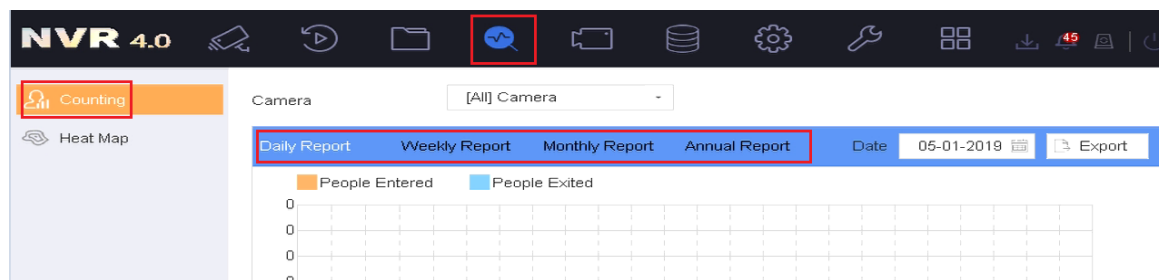
## 4. 【Counting Statistics】

- 1) It can support display counting statistics by selecting channels in local GUI and Ivms4200.



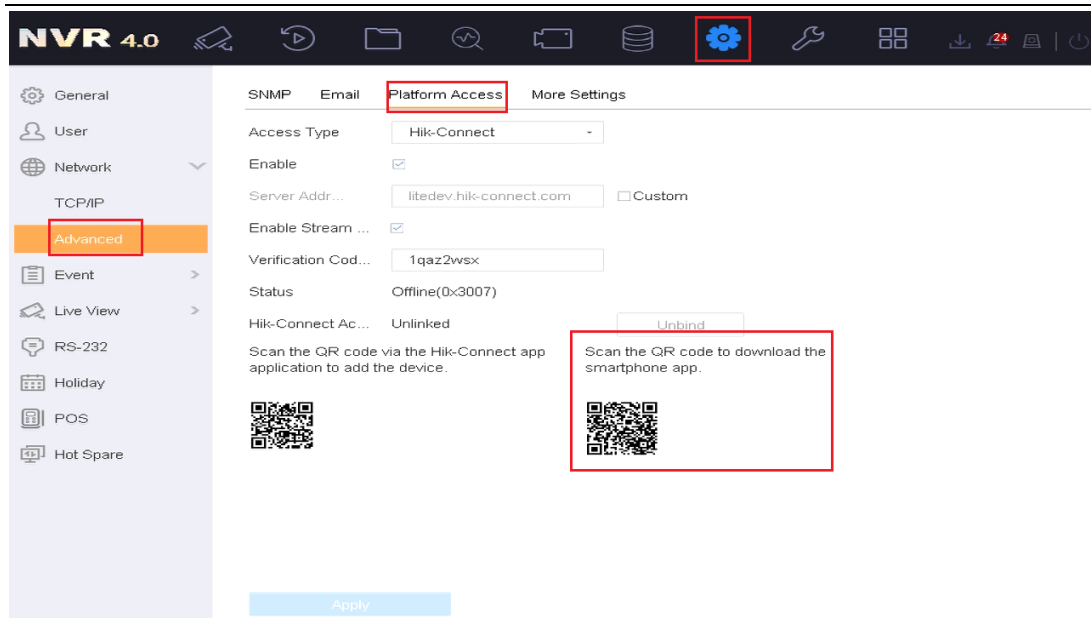


2) Support display and export reports by daily, weekly, monthly and annual.



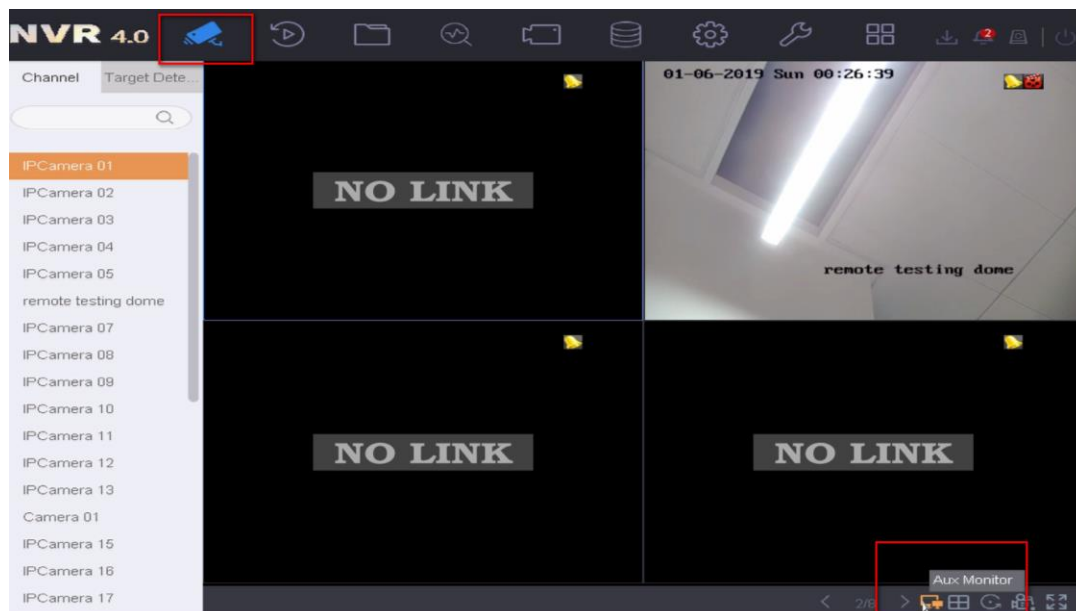
## 5. 【Hik-connect Download QR Code】

Hik-connect Download QR code is added in Platform Access interface of NVR local GUI.

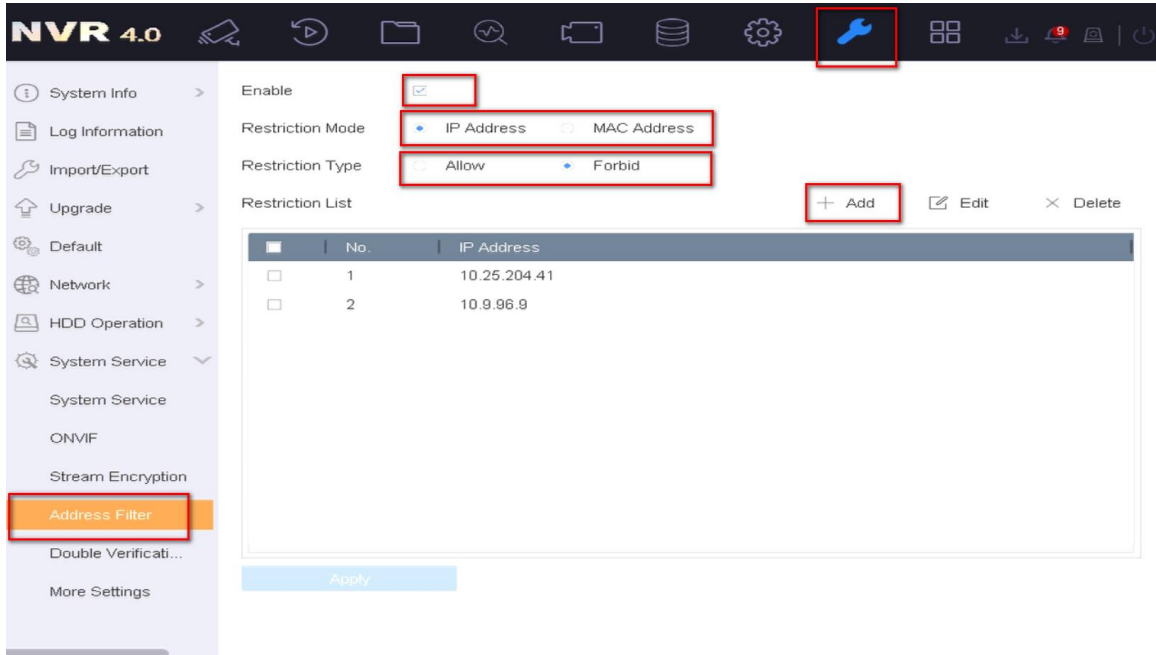


## 6. 【Main and Auxiliary Menu Switching】

- 1) Support non-homologous devices to support this function.
- 2) There is no resolution limit for the operation of primary and secondary ports, and they can be switched as long as they are supported.
- 3) Only the current port can operate PTZ after switching.



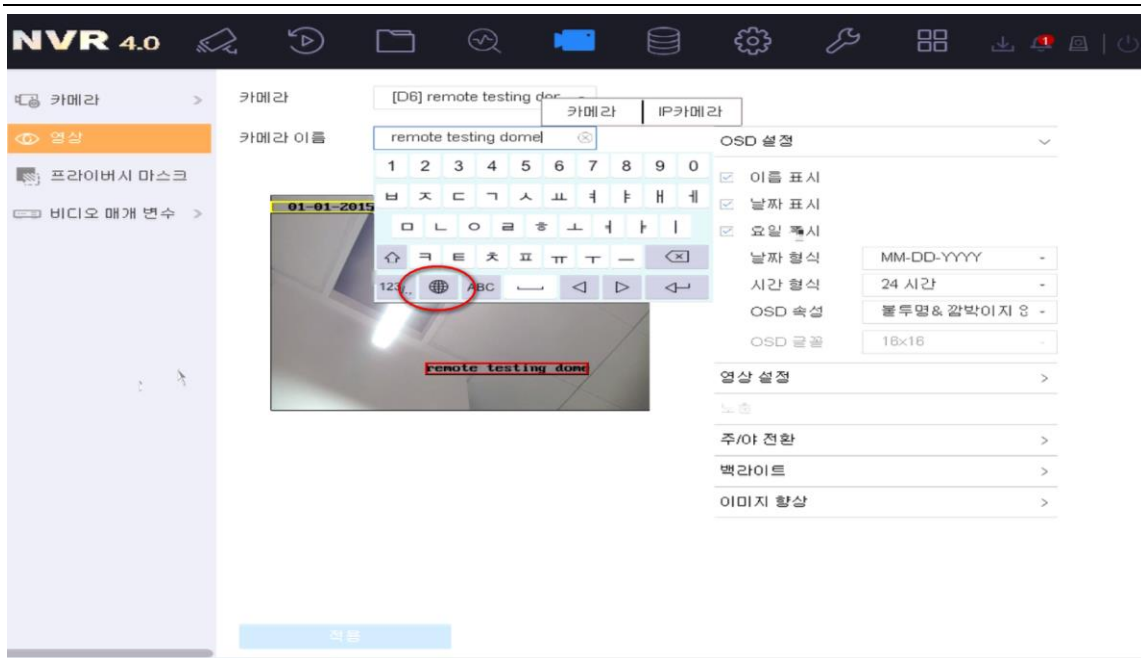
## 7. 【IP, MAC Address Black-and-white List Function】



- 1) Local GUI and web can set blacklists and whitelists of IP and MAC.
- 2) Only one (IP or MAC) black-and-white list can be enabled.
- 3) MAC and IP address black-and-white lists can support 32 addresses separately.
- 4) The actual IP and MAC are acquired in the router with IP and MAC addresses, and the IP and MAC on the router side are acquired outside the router.
- 5) The IP and MAC black-and-white list addresses set can be modified and deleted.

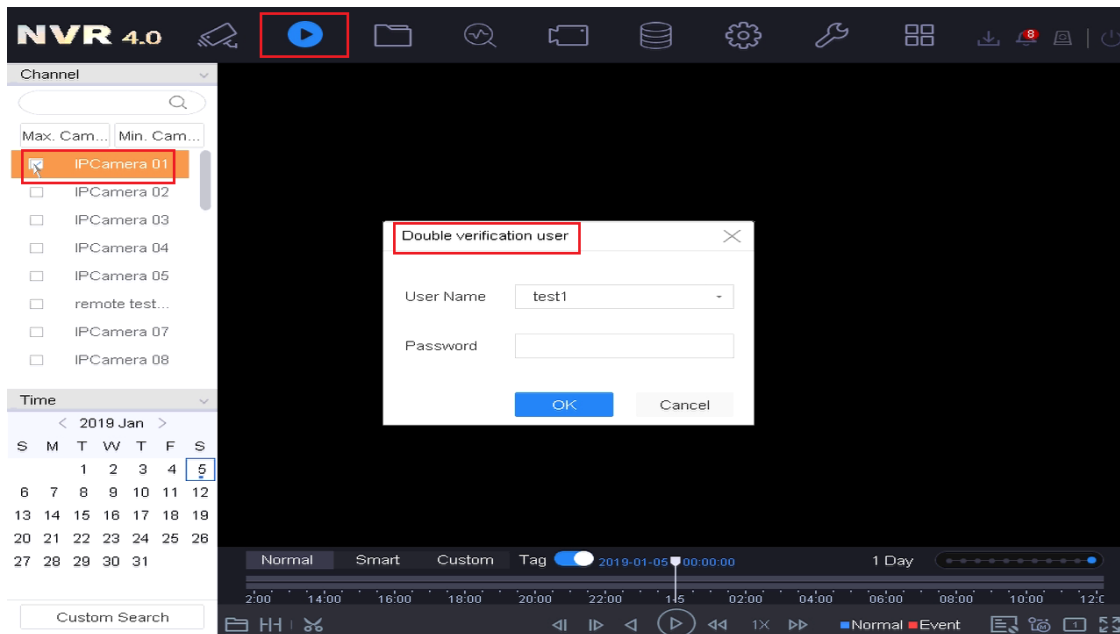
## 8. 【Support Korean Soft Keyboard】

When the local language is switched to Korean, the keyboard input supports Korean.

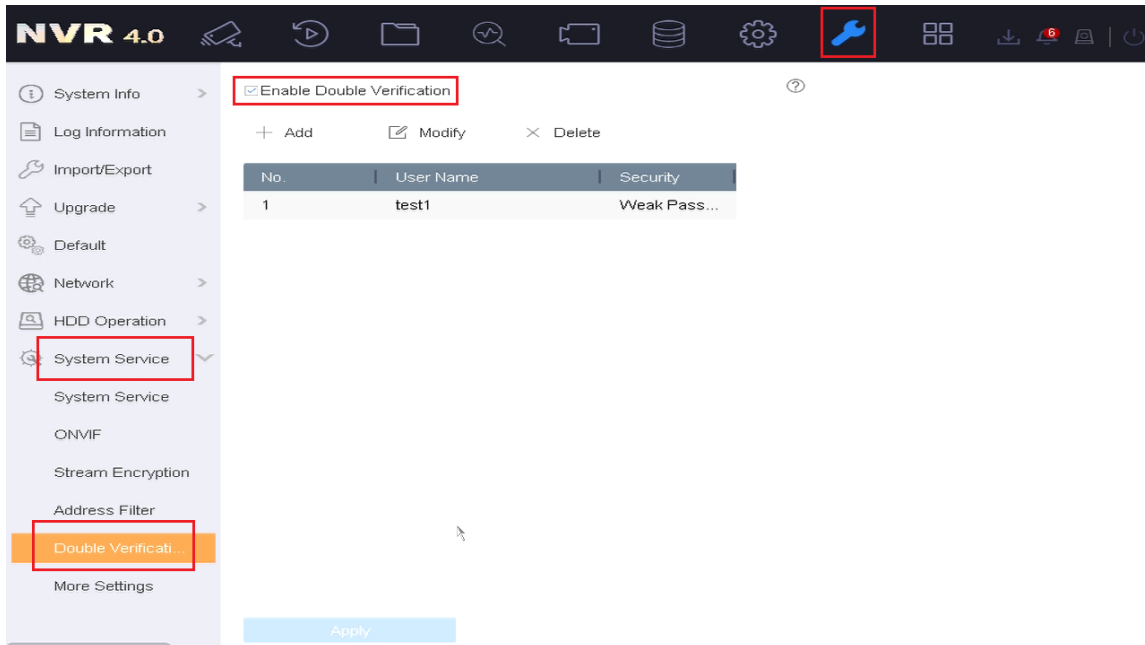


## 9. 【Double Verification】

- 1) If enabling Double Verification, non-admin users need secondary password authentication when local GUI playback, video export, remote video playback/download in web or IVMS4200.

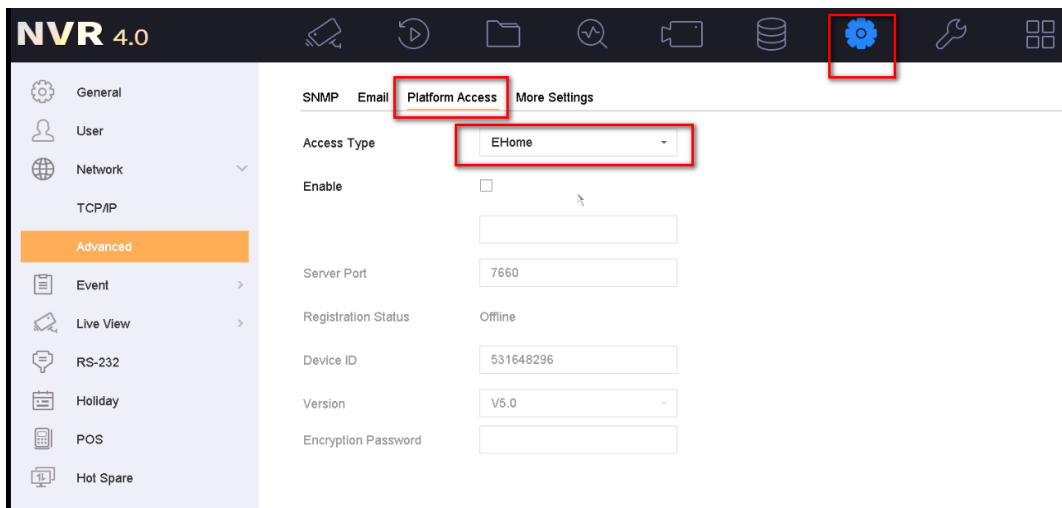


- 2) Admin users don't need Double Verification and only admin user can configure the function.
- 3) Double Verification can newly add up to 8 users. Double Verification users can only be used for secondary authenticate, but can't be used for logging in NVR.



## 10. 【EHOME 5.0 Protocol】

The device can be connected to the platform through E-home5.0 in LAN.



## 11. 【Two-way Audio Function between NVR Channels And Hik-Connect】

- 1) It can be turned on and off on Hik-connect.
- 2) Only one channel is supported, and the channel must be in living view.
- 3) The version of Hik-Connect must be V3.7.0 or later.

## 12. 【Thermal Camera Alarm Image Upload to Hik-Connect】

- 1) After the thermal camera reports the alarm to NVR, NVR synchronizes the alarm information to Hik-Connect.
- 2) The alarm picture is the thermal channel, not the visible light channel.

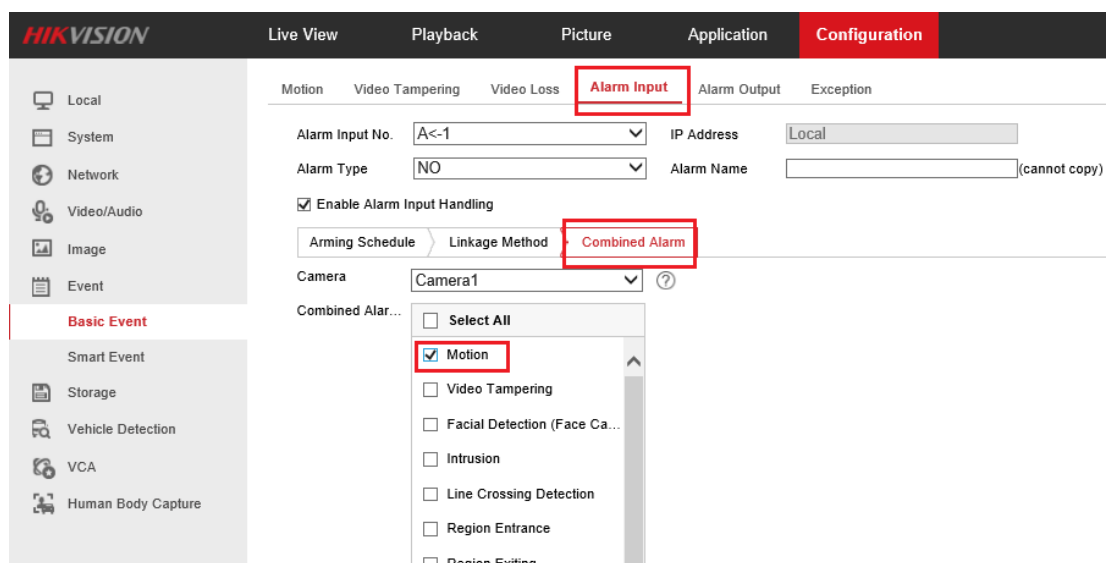
## 13. 【Add POE Setting in Web】

- 1) It is supported to configure IP address of POE network card in web.

The screenshot displays the Hikvision web interface for configuring a network card. The top navigation bar includes 'Live View', 'Playback', 'Picture', 'Application', and 'Configuration'. The left sidebar lists various system settings. The main area is titled 'TCP/IP' and shows the configuration for 'Lan1'. The configuration includes fields for NIC Type (set to Auto), DHCP (checked), IPv4 Address (10.9.96.28), IPv4 Subnet Mask (255.255.255.0), IPv4 Default Gateway (10.9.96.254), IPv6 Address (fe80::c62f:90ff:fea1:be4), IPv6 Default Gateway, Mac Address (c4:2f:90:a1:0b:e4), and MTU (1500). Below these are DNS Server settings (Auto DNS checked, Preferred DNS Server 10.1.7.97, Alternate DNS Server 10.1.7.98). At the bottom, the 'PoE Network Card Settings' section is highlighted with a red box, showing the IP address 192.168.254.1 for the network card.

#### 14. 【Alarm In And Other Event Types Support Combination Alarm】

- 1) If Alarm In is configured with a combination alarm, the Alarm Input will not alarm separately, but only alarm for other events such as motion or smart events; If Alarm In is not set combination alarm, Alarm In should be alarmed alone.
- 2) The Arming Schedule for combination alarm shall be the same as other events such as motion detection or smart event.



#### 15. 【Indonesian】

- 1) Indonesian language is supported in local GUI.

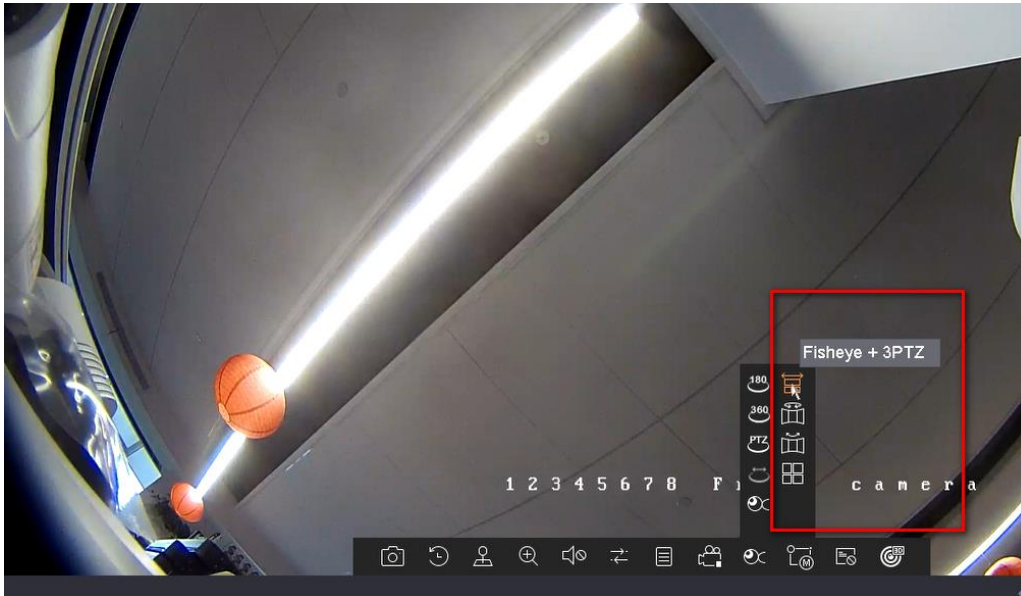
#### 16. 【Add four types of smart event】

- 1) Four smart events are added: gathering, fast moving, parking detection, and loitering detection.

#### 17. 【Fisheye Camera】

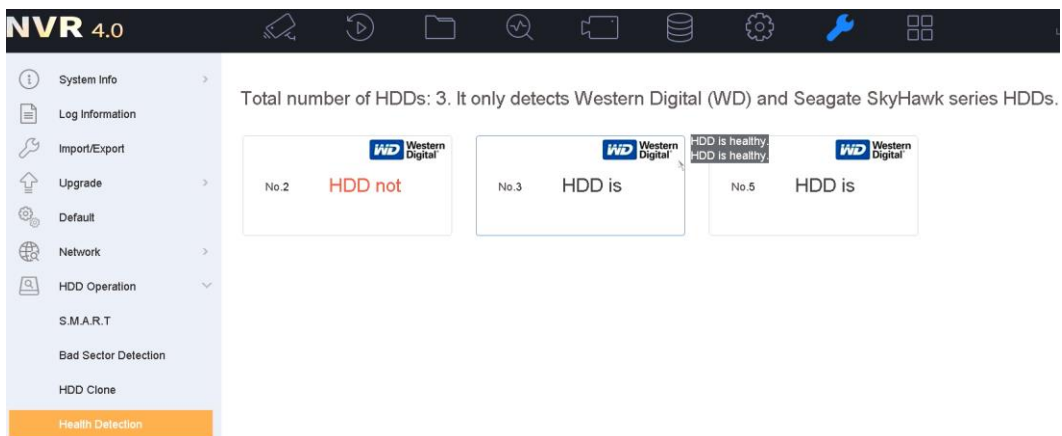
- 1) Support second generation fisheye camera access.

- 2) Four new fisheye expansion modes: Fisheye+3PTZ, Cylinder, Hemisphere, 4PTZ.



## 18. 【HDD Health Detection】

- 1) Only Western Digital HDD and Seagate Skyhawk Series HDD are supported.
- 2) The health status of various indexes of the hard disk can be visually checked.





The screenshot shows the NVR 4.0 web interface. On the left is a sidebar menu with options: System Info, Log Information, Import/Export, Upgrade, Default, Network, HDD Operation (expanded), S.M.A.R.T, Bad Sector Detection, HDD Clone, and Health Detection (highlighted in orange). The main area displays the 'HDD Operation' page. It includes a '< Back' button, a list of HDDs (No. 2, 3, 5) with status indicators, and a table of HDD health status.

No.	Alarm Name	Status	Current Value	Advice
1	Lifetime PowerOn Reset Alert	HDD is healthy.	306.00	
2	Power On Hours Alert	HDD is healthy.	N/A	
3	Head Load Lifetime Count Alert	HDD is healthy.	354.00	
4	Current Temperature Alert	HDD is healthy.	33.00	
5	Total Lifetime Workload Alert	HDD is healthy.	1.00	
6	Total Workload Rate Alert	HDD is healthy.	N/A	
7	Power On Reset Rate Alert	HDD is healthy.	N/A	
8	Head Load Rate Alert	HDD is healthy.	N/A	
9	Soft Reset Alert	HDD is healthy.	N/A	
10	Hard Reset Alert	HDD is healthy.	N/A	
11	Mechanical Failure Alert	HDD is healthy.	N/A	

## Modified functions

### 1. 【Optimize Keyboard Access】

- 1) For DS-1005K keyboard, after stopping patrol / starting patrol, the patrol icon will change and the tip text will change.
- 2) DS-1005K keyboard supports selecting the playback date for playback.
- 3) The target detection bar under the preview interface can be operated by keyboard.
- 4) Real-time playback can control the positioning, pause, start and exit functions of time points.

### 2. 【Optimize Thermal Camera Access】

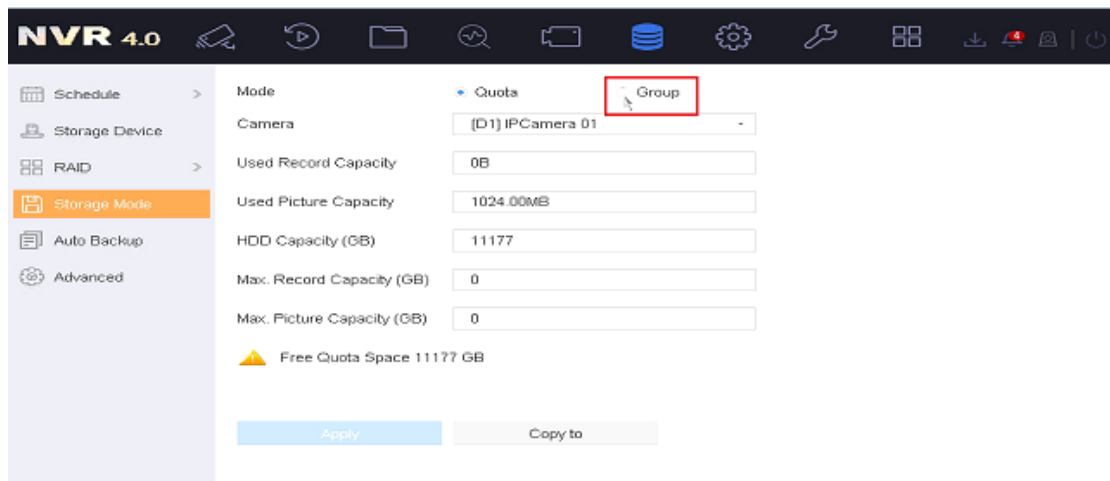
- 1) Support VCA behavior analysis configuration on NVR.
- 2) Support temperature measurement and VCA alarm.
- 3) Support real-time temperature measurement guide.

### 3. 【Virtual Host】

- 1) All models of I series including POE and non-POE NVR, can enable virtual host function, and generate connecting links.
- 2) After opening the virtual host, both POE and non-POE NVR can generate jump links for POE and non-POE channels.
- 3) Support skipping the website of third-party camera.

### 4. 【Array & group mode are mutually exclusive】

- 1) It can be detected when NVR is booting if Array and group mode coexist. If coexist, the local GUI will prompt "Quota mode provides higher data safety, and is recommended over array mode for HDD group". Select "Yes" and then the NVR will restart.
- 2) Array mode: It doesn't support Group mode when enabling Array. Group mode button is putting ash in local GUI, and there is no Group mode option in drop-down box in 4200.
- 3) Group mode: It doesn't support enabling Array when selecting Group mode. Enable RAID button is ash and cannot be selected, and array configuration page is hidden in 4200.



## 5. 【Optimize Search Speed of Hik-Connect Playback】

The hik-connects receives the alarm, and the alarm video can be played back after 5-15s.

## 6. 【Vehicle Detect black/white/other list support PTZ linkage】

- 1) PTZ linkage can be set in local and remote black and white list and other lists in vehicle detection and alarm.
- 2) When the vehicle detection alarm is triggered, the local trigger corresponding PTZ linkage item.

## 7. 【Optimize Onvif Access】

- 1) Optimize the bit stream access logic.
- 2) Support multi-channel camera access.
- 3) Pull-Point Notification is supported by default, and Base Notification is used if the device does not support Pull-Point Notification.

### **Related product list:**

I series NVR	DS-9600NI-I16, DS-9600NI-I8 DS-7700NI-I4(/P), DS-7732NI-I4/24P DS-7700NI-I4(B)(/P), DS-7600NI-I2(/P)
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**Customer Impact and Recommended Action**

This new firmware upgrade is to improve product performance, and will take effect automatically after upgrading from previous versions. We'd like to inform you the above changes. Also, we are sorry for any possible inconvenience of use-habit changes caused by this action.

Note:

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