

Troubleshooting Guide

This guide provides solutions for potential problems that may occur while using a Hanwha network product.

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First Things to Check

If the product does not work properly, check for the following first.

Checklist	Reference Page
1 Is the power being properly supplied?	on page 14
2 Is the Ethernet cable properly connected?	on page 14
3 Are you using the latest firmware or software?	on page 15
4 Are you still experiencing the same problem after rebooting the product?	on page 15

If you continue to experience problems after performing the steps outlined in the checklist above, try going through each symptom to resolve the problem.

No device is found.

If IP Installer, NVR, or CMS cannot find your camera, check for the following.

Checklist	Reference Page
1 Is it possible to connect to the device via network?	on page 15
2 Is a Windows firewall or a security program blocking the port associated with the device?	on page 36
3 Is the device configured to filter specific IP addresses?	on page 20

Cannot connect to the device.

Refer to the following for further explanation.

- Tried to use the shortcut to access the camera web view from IP Installer, but could not connect to the web viewer.
- Tried to type the device's IP address in a web browser, but could not connect to the web viewer.
- Tried to register a device in NVR or CMS, but it fails to register.
- First, check to see if the device appears in IP Installer, NVR, or CMS.
- If the device does not appear, refer to "**No device is** (on page 5)."

If the device appears but you are still unable to make a connection, check for the following.

Checklist	Reference Page
1 Have you typed the user name and password properly to connect to the device?	on page 21
2 Are the device network items configured properly?	on page 21
3 Is the device configured to use DHCP?	on page 21
4 Are you using iPOLiS DDNS?	on page 22
5 Does any other equipment with the same IP address exist on the same network?	on page 16
6 Are all the router ports open?	on page 17
7 How many users are connected to the device at the same time?	on page 23
8 Check if another user has accessed the device and changed the settings.	on page 23
9 Is the PC network card working normally?	on page 38

- If you are looking for a camera on a hardware type NVR (SRN-1670D, SRN-470D, etc.): Check NVR Settings > Network > Connection Mode Setting. NVR has two network ports, [NETWORK1] and [NETWORK2], each specified for a different default gateway. If the gateway specified for the camera is different from the one connected to the NVR network port, the camera that appears in the NVR may be searchable, but not be registered or connected.

The video does not appear.

Take the following measures if video does not appear (black screen) when monitoring video in the web viewer, NVR, or CMS.

- If a "Disconnected" message appears on the black screen, check if a connection can be made to the camera.
- If no connection can be made to the camera, refer to "**Cannot connect to the device.**" (on page 6).
- Check if the camera is set to "Covert."
- If the camera is set to "Covert," you cannot view live or video in search. (Recording will continue.)

Common Issues		Reference Page
1	Are all the router ports open?	on page 17
2	Is too much data coming through the switch that is connected to the device?	on page 18
3	How many users are connected to the device at the same time?	on page 23
4	Is the camera streaming multiple videos simultaneously?	on page 23
5	Which communication system is specified for the camera?	on page 19
6	Do you want to use multicast to view video?	on page 19
Are you viewing the video on a VGA/HDM monitor connected to the hardware-type NVR?		
7	Check the video input status that appears on the monitor screen.	on page 26
Are you viewing the video on a PC?		
8	Has ActiveX or the Silverlight plug-in been properly installed?	on page 36
9	Has the PC graphic card been updated to the latest version?	on page 38

The video is jumpy.

The following explanations cover cases where not all of the frames specified are played when monitoring video on web view, NVR, or CMS.

Check the network status		Reference Page
1	Is too much data coming through the switch that is connected to the device?	on page 18
2	Which communication system is specified for the camera?	on page 19
3	Does any other equipment with the same IP address exist on the same network?	on page 16
Checklist for camera, NVR, and CMS performance		
4	Check if the camera's analog video output is enabled.	on page 24
5	Is the camera streaming multiple videos simultaneously?	on page 23
6	How many users are connected to the device at the same time?	on page 23
7	Check the Encoding Priority settings for the camera.	on page 24
8	Check the resolutions allowed in real time on the live NVR screen.	on page 27
9	Check if the camera's mobile profile is used as the live profile for the NVR.	on page 27
10	How many channels is NET-i viewer monitoring simultaneously?	on page 34
Other Check Points		
11	Check the recommended system specifications.	on page 37
12	Has the PC graphic card been updated to the latest version?	on page 38
13	Is the PC graphic card using the hardware acceleration?	on page 39

The video lags.

The following explanations cover cases where the video lags when monitoring video in the web viewer, NVR, or CMS.

Check the network status		Reference Page
1	Is too much data coming through the switch that is connected to the device?	on page 18
2	Which communication system is specified for the camera?	on page 19
Checklist for camera, NVR, and CMS performance		
3	How many users are connected to the device at the same time?	on page 23
Other Check Points		
4	Check the recommended system specifications.	on page 37

The video quality is poor.

The following explanations cover cases where the video quality is poorer than the one specified in the camera when monitoring video on web view, NVR, or CMS.

Checklist for camera and NVR performance		Reference Page
1	Check the Encoding Priority settings for the camera.	on page 24
2	Check if the camera's mobile profile is used as the live profile for the NVR.	on page 27

Camera constantly reconnects.

The following explanations cover cases where a connection to the camera is made and lost repeatedly when monitoring video from the camera in the web viewer, NVR, or CMS.

Check the status of peripheral devices		Reference Page
1	Is the power supply sufficient for the PoE switch being used?	on page 20
2	Is too much data coming through the switch that is connected to the device?	on page 18
Checklist for camera performance		
2	Which communication system is specified for the camera?	on page 19
3	How many users are connected to the device at the same time?	on page 23

There is no recorded data in the search results.

The following explanations cover cases where there is no recorded data in the search results when playing or searching for stored videos in the web viewer, NVR, or CMS.

Checklist		Reference Page
1	Check if the NVR is recording properly.	on page 28
2	Check the settings related to recording.	on page 30
3	Does the user account have authorization to access the NVR?	on page 31
4	Does the saved data include any overlapping sections?	on page 32
5	Check if the channel is currently registered.	on page 32
6	Check if you are viewing the time line in zoom mode.	on page 33

Will not record the specified number of frames.

The following explanations cover cases where the recorded video does not contain all the frames specified in NVR when playing video in the web viewer, NVR, or CMS.

- First, check that the camera is transmitting frames fully.
- The number of the frames received and stored may differ from the frame rate specified in the menu. In the event that fewer frames are received from the camera, only the number of frames received is stored.
- If the number of the frames received from the camera does not meet the camera specifications, refer to "**The video is** (on page 8)" to take appropriate measures.

Checklist		
1	Check if maximum recording capacity has been exceeded.	on page 33
2	Check if the network transmission speed has been exceeded.	on page 34
3	Check the settings related to recording.	on page 30

Common Issues

0. Is the power being properly supplied?

Check if the system power is properly connected.

- Check if the camera power lamp (red) is on.

Check if the power adapter is properly connected and check the voltage.

For a PoE connection, review the PoE switch's power supply specifications to check if sufficient power is being supplied.

Check the power board or power adapter if the power lamp remains off after following the above procedures.

- Check if the camera system lamp (orange) is on.

If the network board has a problem it may not boot properly even though the camera is connected to power. If this is the case, you need to check the network board.

Related information	First Things to Check
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1. Is the Ethernet cable properly connected?

- Check if the camera network lamp (green) is blinking.
- Check if the LED is blinking for the port connected to the camera.

If the port LED is not blinking properly:

- Check if the Ethernet cable is properly connected.
- Check if the switch (or router) connected to the camera is powered on.

Related information	First Things to Check
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2. Are you using the latest firmware or software?

You can download the latest firmware or software from Hanwha Techwin's CCTV homepage at (<http://www.hanwhasecurity.com>).

Related information	First Things to Check
----------------------------	---------------------------------------

3. Are you still experiencing the same problem after rebooting the product?

Turn off the problematic product and turn it back on again to check. Or, press the Reset button to initialize the product and check if the problem still persists.

Related information	First Things to Check
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Network Check Points

4. Is it possible to connect to the device via network?

Check if the camera attempting to access My PC or NVR can be connected via network.

- Use the camera IP address to carry out a ping test.

If there is a gateway ping response but no ping response from the camera, check if the camera has failed.

- Use the camera's gateway address to carry out the ping test.

If the camera's IP address is 192.168.1.100, the gateway address is usually 192.168.1.1.

If there is a ping response from the gateway but no ping response from the camera, you need to check the camera's network board or the main body. If there is no ping response from the gateway, check the switch that serves as the gateway or the intermediate network.

(If the connected network equipment is normal or if routing operates properly, etc.)

If the camera is not connected to the NVR hardware (e.g. SRN-1670D or SRN-470D), check NVR Settings > Network > Connection Mode Setting. NVR has two network ports, [NETWORK1] and [NETWORK2], each specified for a different default gateway. If the gateway specified for the camera is different from the one connected to the NVR network port, the camera that appears in the NVR may be searchable, but not be registered or connected.

Related information	No device is found.
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5. Does any other equipment with the same IP address exist on the same network?

You can check for duplicate IP addresses by following these steps.

- If you are using a local network, use IP Installer to check for any cameras with duplicate IP addresses.

Assign a different IP address to the camera with a duplicate address to resolve issues with conflicting IP addresses.

- If IP Installer fails to find a duplicate IP address, turn off My Equipment and carry out a ping test using the IP address for My Equipment.

If there is a ping response, some other equipment is using the same IP address. If this is the case, you can change the IP address of My Camera to resolve any IP address conflicts.

Related information	Cannot connect to the device. <u>The video is jumpy.</u>

6. Are all the router ports open?

If you are using a router, check if all camera ports are port forwarding. You must enable port forwarding to allow a computer on an external network to connect via LAN to a specific network camera. Port forwarding predetermines a setting for a certain port, so that packets sent from a specific port are re-routed to a specific IP address.

- You should know the numbers of the ports to be opened for each network camera.
- If two or more cameras are connected to the IP router, the IP addresses and port settings for the two cameras should be different.
- For more information on how to port forward routers, please refer to the router's manual.

Classification	Port Name	Default Value	Example		Description
			No. 1 Equipment	No. 2 Equipment	
Network Camera	IP Address	192.168.1.100	192.168.1.110	192.168.1.111	For Device Connection
	HTTP Port	80	8000	8001	For Web Viewer or Mobile View Connection
	VNP Port	4520	4520	4521	For Communication with CMS

	RTSP Port	554	554	2080	For VLC Media Player and Mobile Viewer Video Streaming	
	Web Viewer Port	4520	4520	4521	Same with VNP	
	Silverlight Policy Port	943	943	-	§ Fixed Value § Connecting Permission Policy Port Used by Silverlight § No need to open the port 943 since an ActiveX plug-in is used when connecting with IE	
SRN-1670D SRN-470D SRD Series DVR	IP Address	192.168.1.100	192.168.1.100	192.168.1.101	For Device Connection	
	Web Viewer Port	80	8080	8081	For Web Viewer Connection	
	TCP Port		554	559	559	
			555	555	560	For Real-time Video, Storing and Settings Control
			556	556	561	
			557	557	562	
		558	558	563	Mobile Viewer (SRD Series)	
NET-I ware	IP Address	192.168.1.100	192.168.1.100	192.168.1.101	For Device Connection	
	Web Viewer Port	80	8080	8081	For Web Viewer Connection	
	Silverlight Policy Port	943	943	-	Refer to the Network Camera Section	
	System Port		4505	4505	4510	
			4506	4506	4511	
			4507	4507	4512	For Real-time Video, Storing and Settings Control
			4508	4508	4513	
		4509	4509	4514		

- The web viewer port should have a value between 4502 and 4534. If the VNP port has a value within this range, the web viewer port has the same value as the VNP port.
- The web viewer port and the Silverlight policy port cannot be changed by the user.

Related information

Cannot connect to the device. The video does not appear.

7. Is too much data coming through the switch that is connected to the device?

If there is too much data for switch capacity coming from the device, even though you can connect to the device, you may not be able to view any videos. In general, a switch can handle 40 - 50% of the indicated specifications.

Take the following measures:

- Increase the switch capacity. For example, if the switch capacity is 100 Mbps, replace it with a 1 Gbps switch.
- Separate the office network from the security equipment network.
- Reduce the target bit rate value of the camera.

Related information

The video does not appear. The video is jumpy. The video lags. Camera constantly reconnects.

8. Do you want to use multicast to view video?

- If you use multicast for your video connection, check if a switch that supports multicast was used to build the network.

Refer to the switch data sheet and check if multicast protocols such as IGMP, PIM-SM, PIM-DM, and DVMRP are supported. If they are not supported, replace the switch with one that supports these protocols.

- Check if the multicast switch is set up properly.

Connect the console to the switch to check if multicast is set up properly. In general, the multicast protocol is not activated at the time of initialization.

The multicast switch setting differs by manufacturer. Refer to the equipment manual or contact the network switch installer.

Related information

The video does not appear.

9. Which communication system is specified for the camera?

Check if you are using Multicast (RTP), a UDP protocol, or RTSP to view videos.

- For UDP, you may experience protocol associated lag, distortion, or connectivity issues.
- If the connection is not smooth with UDP, change the communication system to TCP.

Related information	The video does not appear. The video is jumpy. The video lags. Camera constantly reconnects.
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10. Is the power supply sufficient for the PoE switch being used?

Check the power supply of the PoE switch to which the network camera is connected. If sufficient electrical power is not supplied to the network camera, normal operation cannot be guaranteed.

- Box or dome type network camera

This camera follows the IEEE 802.3af-2003 standard and requires a stable supply of 15.4 W (48 V).

- PTZ type network camera

This camera follows the IEEE802.3at-2009 (PoE+) standard and requires a stable supply of 25.5 W(48 V). In this case, you cannot operate the heater built in the PTZ camera.

To supply sufficient power to the network camera, you can use a proper PoE switch or connect to a separate power source.

Related information	Camera constantly reconnects.
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Equipment Check Points

11. Is the device configured to filter specific IP addresses?

Check if IP filtering from the camera or NET-i ware blocks access to My PC or NVR.

If you are trying to connect to a PC or NVR IP address that is on a blocked filter list, you can modify the camera and NET-i ware block list so that access is permitted. Or, if the IP address for My PC or NVR does not appear on the allowed filter list, add an address so that access is permitted.

Related information	No device is found.
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12. Have you typed the user name and password properly to connect to the device?

The default user name and password for Hanwha network devices are admin and 4321, respectively. If you changed the default password, type the new password.

Related information	Cannot connect to the device.
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13. Are the device network items configured properly?

Check if the IP address, subnet mask, default gateway, and other items are configured properly.

Related information	Cannot connect to the device.
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14. Is the device configured to use DHCP?

Check the IP type in the camera's network settings. If the camera is configured for dynamic IP addressing, you can check for the following:

- The IP address is subject to change when dynamic IP addressing is used. If the changed IP address is not known, connection may not be possible. Check the IP address or change the settings to use a static IP address.
- Use IP Installer to check that dynamic mode is enabled and the IP address has been obtained properly.

If you cannot obtain an IP address from the DHCP server, check the DHCP server (router).

Even though you have obtained an IP address, connection may not be possible if it is not a normal IP address. In such a case, you can use IP Installer to change the IP address.

Related information	Cannot connect to the device.
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15. Are you using iPOLiS DDNS?

- Check if the camera is configured to use "Samsung DDNS."
- Have you registered the product at the iPOLiS web site?

Go to DDNS Service > MY DDNS on Samsung's iPOLiS website and check if the product has been properly registered.

- Is the host name of the registered product identical to the host name specific to the camera?
- Have you typed the correct URL?

Check if <http://www.samsungipolis.com/hostname> has been properly typed.

If the web viewer's HTTP port specified to the device is not 80, you should add ":port number" to the end of the URL.

Related information	Cannot connect to the device.
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16. How many users are connected to the device at the same time?

Check the number of users simultaneously connected to the camera. You can guess how many users are logged on at any given moment by selecting System > Log > Evtlog > Admin Login and Admin Logout conditions in the camera web view settings screen.

- The maximum number of users that can be connected simultaneously is limited to ten for the network camera. If an eleventh user tries to connect, an error message such as "No more login" appears.
- If multiple users try to connect to the camera under poor network conditions, the video may disconnect, lag, or display a black screen.

Related information	Cannot connect to the device. The video does not appear. The video is jumpy. The video lags. Camera constantly reconnects.
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17. Check if another user has accessed the device and changed the settings.

Is there another user connected to the device? If another user changes the camera or network settings, you will lose connection to the web viewer.

If you lose connection to the web viewer due to a system port change, you can reconnect by refreshing the web browser and logging on again.

Related information	Cannot connect to the device.
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18. Is the camera streaming multiple videos simultaneously?

The Hanwha Techwin network camera can stream video in various formats. The user can create and manage various video streams, also called "profiles", accordingly. If two or more profiles are served at the same time, the number of frames actually transmitted may be lower than the values specified by the camera user depending on the environment.

Related information	The video does not appear. The video is jumpy.
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19. Check if the camera's analog video output is enabled.

For installation purposes, the Hanwha network camera supports analog video output, which has been enabled as the default. For most models, the number of frames may be reduced if analog video output is used. Therefore go to Web Viewer > Settings > Audio & Video > Video Settings > Video Output and "Disable" the analog video output.

Related information	The video is jumpy.
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20. Check the Encoding Priority settings for the camera.

If the camera is configured to use a fixed bit rate (CBR or Constant Bit Rate), you can select the areas you wish to prioritize. When the video data size exceeds the target bit rate value, the camera adjusts the data size by as much as the target bit rate. The encoding priority determines which part of the video data should have priority for adjustment. You can choose between the frame rate or the video quality.

If the priority is the frame rate, the camera lowers the video quality to keep the number of frames when the data size exceeds the bit rate value.

If the priority is the video quality, some frames are removed to keep the video quality when the data size exceeds the bitrate value.

If the video quality is more important, select "video quality". If the number of frames is more important, select "frame rate."

- If the camera is configured to use CBR, selecting "frame rate" or "compression" becomes meaningless in cases where the target bitrate value is significantly lower than the appropriate value of the video. In these cases, not only is the frame rate affected but a poorer video quality may also occur.

Related information	The video is jumpy. The video quality is poor.
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21. Check the video input status that appears on the monitor screen.

If the video does not appear properly on the NVR screen, refer to the video input status that appears on the screen to determine the cause.

- No Video: This message appears when there is no video input even when the camera input settings are "On." When the same problem occurs as with loss of video and the "No Video" logo continues to appear, check "**Cannot connect to the device.**(on page 6)."
- You can connect to the camera's web viewer to check the video output.
- Samsung logo: This logo appears when the account that is logged on the NVR has no live view authorization for the channel.
- When OSD signs such as camera event or recording information appear, but there is no video, the camera is set to Covert 1. For detailed information on Covert 1, refer to the NVR manual.
- If there is no logo or video, either the camera input is "Off" or the camera is set to Covert 2.
- HD sign: This sign appears when the video cannot be seen due to a live NVR screen performance. The video profile played in the live screen mode is automatically selected as the most suitable one from the camera profiles after considering the screen split and video output of the monitor. To check the camera profile that appears, right-click on the live screen mode to display the pop-up menu. Select "Live Information" to view the the live transmission information and the camera status assigned to the channels. If the network camera supports the HD profile only, you can monitor videos in 1CH mode in the SRN-1670D/470D live screen mode. However in the multi-split screen mode, you cannot view videos due to the NVR performance, but the HD sign may appear. Therefore you need to add a low-definition profile to the network camera so that video monitoring is allowed in the multi-split screen mode on the NVR. Refer to the following figure for SRN-1670D resolutions allowed for each channel.

Related information	The video does not appear.
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22. Check the resolutions allowed in real time on the live NVR screen.

Check the maximum resolutions for real-time video on each split screen on the live screen of the NVR hardware (SRN-1670D or SRN-470D). Although the camera sends video at 30 fps, if the resolution is exceeded, some of the frames may skip due to NVR's live screen performance.

For SRN-1670D resolutions capable of displaying in real time, refer to the following figure.

Related information	The video is jumpy.
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23. Check if the camera's mobile profile is used as the live profile for the NVR.

Hanwha Techwin's network camera provides Profile 10 as the mobile standard. Profile 10 is set at 320 x 240 resolution, 3 fps, and 200 kbps.

The video profile played in the live mode screen of the NVR hardware is automatically selected as the most suitable one from the camera profiles after considering the screen split and video output, and Profile 10 for mobile purposes can be automatically used as the live profile. In this case, Profile 10 has a lower resolution than the actual resolution for each channel so the video quality may look poorer. If you do not monitor the camera for mobile purposes, delete Profile 10 and create a new profile suitable for live NVR.

For the information on monitor resolutions and the actual resolutions for each channel on an NVR split-screen, refer to the following figure.

Related information	The video is jumpy. The video quality is poor.
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24. Check if the NVR is recording properly.

- Check if the NVR is recording properly.

For NVR hardware (SRN-1670D or SRN-470D), the REC LED on the body front turns on during recording.

For NET-i ware, you can go to NET-i ware Tool > Settings > Hardware > Register to check the status of registered cameras. If the camera icon has a red or green circle, it means that recording is underway.

- Check if the HDD has been correctly recognized.

For NVR hardware (SRN-1670D or SRN-470D), the HDD LED on the body front turns on when the HDD is properly connected. Go to Menu > Device > Storage Media > Device to check the type of use and status of the connected HDD. If the status of the HDD is "Check" or "Replace", you need to check the HDD.

For NET-i ware, go to NET-i ware Tool > Settings > Recording > NET-i ware > HDD Information to check the status of the connected disk. If the disk status is "Released", you will not be able to Record even though the Search or Play functions are enabled.

- Check if there is sufficient space for the HDD.

For NVR hardware (SRN-1670D or SRN-470D), go to Menu > Device > Storage Media > Device > Used/Total to check the remaining storage.

For NET-i ware, go to NET-i ware Tool > Settings > Recording > NET-i ware > HDD Information to check the total space, used space, and remaining space for each disk.

You can check for remaining space, use "Overwrite" and "Auto Delete" to remove old data, or add a HDD.

- Check if the saved data actually exists on the NVR.

For NET-i ware, check if the model/time data exists in the PC's storage folder.

Under the equipment folder, a folder is created based on the recording date. (The date and time is based on the UTC.) The recording file's extension is NMD and a file is created for every 300 MB of data.

- For NET-i ware, if you use NAS to build storage, you can only use the storage device for saving data that supports iSCSI protocol.
- If you use NET-i viewer to search for video recorded in NET-i ware, the same version of NET-i viewer and NET-i ware must be used. Otherwise, you may not be able to view the data recorded in NET-i ware storage due to conflicting software versions.

If no data has been saved until now, refer to "**Check the settings related to recording.**(page 30)" to check that the saving schedule is configured correctly and that events are being created properly.

Related information

There is no recorded data in the search results.

25. Check the settings related to recording.

If the recording settings are not correct, you may not be able to record.

- For NET-i ware, cameras cannot record if they are not assigned to a disk.
- Check the reserved recording settings.

Check if the recording is set to start at the time you want for each channel. If "Continuous" is selected, the recording begins at the scheduled time unconditionally. If "Event" is selected, the recording begins only when an event is triggered by an alarm, motion detection, or video loss. The recording will not begin if there is no event.

For NET-i ware, check if a user-created schedule has been applied to the camera you want.

- Check the event recording settings.

NVR starts recording only when the connected network camera transmits an event regarding sensor input/output, motion detection, or video loss detection. Check if events occur normally and if event recording is enabled.

- The event will record properly only if event recording is enabled in the camera and in the storage.
- Check the frame recording settings.

For NVR hardware, go to Menu > Recording > Recording Settings > NVR to check the number of frames and data size of "Record All Scenes" and "Record Major Scenes" for each channel, or to manually enter the permitted data size. If the number of frames is set to "Off", you cannot record.

- Check the data overwrite recording settings.

If storage is full and you want to delete the oldest data while recording new data, select "Overwrite". If you do not want to delete old data, select "Stop." If you select "Stop", you will not be able to save any more once the storage is full.

- Check the auto delete function settings.

If you set the auto delete period, all data prior to this period is automatically deleted. You will not be able to search for this data. The auto delete function begins as soon as it is activated, so if you want to save data make backups first.

Related information	There is no recorded data in the search results. Will not record the specified number of frames.
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26. Does the user account have authorization to access the NVR?

A user who is not an administrator for NVR hardware (SRN-1670D, SRN-470D, etc.) should check the authorization status of the account.

- Go to Menu > System Environment > Authorizatin Management > Settings > Network Access Limitation and set the web viewer to "Enabled" to access the web viewer.
- Go to Menu > System Environment > Authorization Management > User > Add User and set the viewer to "Enabled" to receive permission to use the web viewer and network viewer.
- To carry out data search, in Menu > System Environment> Authorization Management, the group that belongs to the account should have a permission to search the channel.
- If authorization is not given to search a specific channel, it is impossible to select the channel even if the search function is enabled.
- If the maximum number of users that can search simultaneously on the NVR is exceeded, close the current connection and try again. To remove the NVR connection (for search) in NET-i viewer, close the play window for all cameras related to the device in Search viewer and deselect all selections in the tree view. If the camera is connected to the web viewer, a status log appears in the live window when the number of remotely connected users is full. The moment you click the search menu, a warning window appears. To close the NVR connection (for search) in the web viewer, just leave the Search page.

Related information	There is no recorded data in the search results.
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27. Does the saved data include any overlapping sections?

Check if any overlapping data is generated as a result of a time change in the NVR system or Daylight Saving Time (DST). If a recording is set for 24:00 DST on a given day, the data may be missing because the recording is carried over to the next day.

For NET-i ware, check if the PC time has been changed. If time is modified (including DST), the data may be lost depending on the "overwrite" option. Go to NET-i ware Tool > Settings > System > Settings and select "Delete data recorded between the changed and previous system times" in the overwrite option. The overlapping data is deleted when the PC time changes.

If you search for saved data in the overlapping data section, you can select "Time overlapping data" in the search screen of the NET-i viewer, web viewer, or NVR monitor. The data appears in List0, beginning with the most recent data. Select the time list you want and perform a search. If you are searching in NET-i viewer, you can select the overlapping section only when searching in one device.

Related information

There is no recorded data in the search results.

28. Check if the channel is currently registered.

For SRN-1670D/470D, you cannot perform a search for channels if a camera is not registered, even if there is a record log. In such cases, register a camera for the channel to search for and play the data saved in the channel.

NET-i ware recognizes the camera before searching. You can view the recorded video only when a registered camera is activated.

Related information

There is no recorded data in the search results.

29. Check if you are viewing the time line in zoom mode.

Check that the current playing time line is in zoom mode and check again in 24-hours.

Related information

There is no recorded data in the search results.

30. Check if maximum recording capacity has been exceeded.

Check if the total size of the video data sent from the camera connected to the NVR exceeds the NVR recording capacity. If the total recording data size exceeds the maximum recording capacity, some channels only will record "Record Major Scenes", even though "Record All Scenes" is selected.

NET-i ware's maximum recording capacity is 250 Mbps.

- For recording stability, use a HDD that is SATA2 7200 rpm or faster.

- It is recommended that a HDD's capacity should not exceed 125 Mbps.
- Each camera should be equally allocated to the HDD.
- The write speed of the recording HDD and the size of the data received appear. If the disk write size exceeds the limit, the value appears in red.

The NVR hardware (SRN-1670D, SRN-470D, etc.) maximum recording capacity is 64 Mbps.

- You can go to Live Context Menu > Recording Information to find the permitted bandwidths, input bandwidths, and recording bandwidths for each channel and the total bandwidth. If the bandwidth for each channel exceeds the defined limit, some recording frames may be lost.
- You can allocate allowances to each channel. Adjust channel allowances if there is a gap between incoming data and allowances, or if allowances are specified for unused channels.

If the maximum recording capacity is exceeded:

- Adjust the camera profile so that the total data bandwidth of the network camera currently transmitting will not exceed the NVR's storage capacity. Adjust the settings so that data will be reduced in the network camera's web page. (Codec type, resolution, frame rate, or compression level)
- If you do not want to change the video settings for the network cameras currently being transmitted, install an additional NVR.
- For NET-i ware, you can distribute the cameras that have exceeded their write size to other disks.

Related information	Will not record the specified number of frames.
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31. Check if the network transmission speed has been exceeded.

The network bandwidth from SRN-1670D/470D to the viewer is limited to 48 Mbps. You can go to Menu > Network > Live Transmission to check the profile of each channel currently being transmitted. If the total bandwidth of the channel profiles exceeds 48 Mbps, SRN-1670D transmits the data with some frames lost.

When you play the saved video in NET-i ware, the play performance is 25 Mbps. If you are playing data exceeding 25 Mbps, only I-Frame may be played even though it is under 16 channels.

If you want to transmit without losing frames, adjust the camera profile so that the bandwidth limit will not be exceeded. You can do so by lowering the profile settings or adding a low-bandwidth profile in the camera's web page.

Related information	Will not record the specified number of frames.
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32. How many channels is NET-i viewer monitoring simultaneously?

NET-i viewer guarantees real-time monitoring up to 1,670 frames. (NET-i viewer v 1.35 or higher can monitor 55 VGA-grade cameras at 30 fps.)

- The number of cameras that can be displayed when monitoring at 30 fps

Camera Resolution	When Using One Monitor				When Using Four Monitors			
	Number of Cameras	Number of Frames	Bandwidth	CPU(%) Live / NIS	Number of Cameras	Number of Frames	Bandwidth	CPU(%) Live / NIS
3MP (CBR 10Mbps, 20fps)	8Ch	160fps	83Mbps	62/1	10Ch	200fps	106Mbps	84/2
1.3MP (CBR 5Mbps, 30fps)	17Ch	520fps	88Mbps	83/3	16Ch	480fps	82Mbps	84/2
VGA / 4CIF (CBR 1.2Mbps, 30fps)	55Ch	1,670fps	67Mbps	55/7	27Ch	820fps	33Mbps	35/8

- The total number of frames that can be displayed when monitoring all 64 channels

Camera Resolution	When Using One Monitor				When Using Four Monitors			
	Number of Cameras	Number of Frames	Bandwidth	CPU(%) Live / NIS	Number of Cameras	Number of Frames	Bandwidth	CPU(%) Live / NIS
3MP (CBR 5Mbps, 30fps)	64Ch	430fps	256Mbps	85/13	64Ch	450fps	280Mbps	59/12
VGA / 4CIF (CBR 1.2Mbps, 30fps)	64Ch	1,790fps	78Mbps	70/9	64Ch	450fps	78Mbps	35/8

Related information	The video is jumpy.
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PC Checklist

33. Is a Windows firewall or a security program blocking the port associated with the device?

To add a port in the Windows firewall, move to Windows > Start > Control Panel and double-click Windows Firewall to open it. (To complete this process, you need to log on to the computer as an administrator.)

- In the Exception tab, click Add Port.
- Type the port number to be added in the Port Number.
- Select TCP or UDP.
- Type a short name to remember easily the purpose of the port.
- Click Change Scope to designate the computer that will use the port.
- Proceed with one of the following.
- If you want to connect from any computer including those on Internet, select Any Computer (to include Internet computers) and click OK.
- If you want to connect from a local subnet, select My Network (Subnet) Only and click OK.
- If you want to define a custom list, select Custom list and type a list of IP addresses and/or subnets separated by commas.

Related information	No device is found.
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34. Has ActiveX or the Silverlight plug-in been properly installed?

To install the web viewer plug-in properly, change the pop-up blocker settings as in the following.

Ex. Internet Explorer → Tools → Pop-up Blocker → Turn Off Pop-up Blocker (B)

A Mac OS X user who has no Internet connection should use the CD provided with the network camera to install Runtime. (Run Silverlight_xxx.dmg from the CD.)

The running conditions for ActiveX or Silverlight are as follows.

- Internet Explorer: Run ActiveX. You can monitor in all resolutions.
- Other browsers (Safari, Chrome, or Firefox): Run Silverlight. For H.264, you can monitor up to 2 megapixels. (Resolutions beyond 1920 x 1080, including 1600 x 1200 and 2048 x 1536, are not supported. MPEG-4 is not supported.)

Related information	The video does not appear.
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35. Check the recommended system specifications.

The recommended system specifications for NET-i ware are as follows.

CPU	Intel Core i7
Memory	RAM: 4 GB Video Memory: 256 MB
HDD	One HDD (at least 500 GB for OS) + two HDDs (for data) or more <ul style="list-style-type: none"> • The recording HDD should be separate from the OS-installed HDD. • Record up to 125 Mbps per HDD • The recording HDD should be SATA2 7200 rpm or above
OS	Windows 7
Network Adapter	1 Gbps Ethernet
Others	Microsoft.NET Framework 4.0

The recommended system specifications for NET-i viewer are as follows.

CPU	Intel Core i7 2.93GHz
Memory	RAM: 4 GB Video Memory: 1 GB
Graphic	Radeon HD5700
OS	Windows 7
Network Adapter	1 Gbps Ethernet

Related information	The video is jumpy. The video lags.
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36. Is the PC network card working normally?

Go to My Computer > Properties > Device Manger and check if the network manager appears properly.

If the network adapter appears abnormally, deactivate and then re-activate the network adapter.

Related information	Cannot connect to the device.
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37. Has the PC graphic card been updated to the latest version?

Even though the recommended system specifications are satisfied, if the graphic card driver is an older version, it may affect system performance. Go to My Computer > Device Manager to check the driver version and update, if necessary. Graphic card versions differ by manufacturer. Refer to the manufacturer's website for the latest update.

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Related information	The video does not appear. The video is jumpy.
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38. Is the PC graphic card using the hardware acceleration?

The graphic card's hardware acceleration uses the video play algorithm from the graphic card, not the CPU. Using the graphic card to accelerate the video can resolve choppy video problems.

Related information	The video is jumpy.
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Case Study

1. Site #1: Video lag and lost recording data due to oversized data

Phenomenon:

The video from the camera connected to the network lagged and NVR's recording data was lost.

Site installation information:

The average data size for a network camera group is 90 Mbps and its associated switch is 100 Mbps. In general, a switch handles 40 - 50% of the indicated specifications and cannot handle 90 Mbps completely. For the installation site, the office network and CCTV network were used simultaneously and the total network were overloaded when the workload increased, interrupting video transmission.

Actions:

Replaced the network switch connected to the camera group with an 1 Gbps grade and separated the office network from the CCTV network to prevent overloading.

References:

1. [Is too much data coming through the switch that is connected to the device?\(on page 18\)](#)
2. Site #2: Lost recording data because exceeded maximum recording capacity

Phenomenon:

The recording data in the NET-i ware connected network camera was lost.

Site installation information:

The data size of the network camera connected to NET-i ware exceeded the maximum recording capacity of NET-i ware by 250 Mbps. Adjust the settings of the network camera to meet the recording capacity supported by NET-i ware.

For Hanwha network cameras, MJPEG is set to Profile 1 and H.264 codec is set to Profile 2. Therefore, Profile 1 is often used when connecting to the NVR. In general, MJPEG data is larger than H.264. If you don't adjust the settings, the large data may overload the network and NET-i ware, resulting in data loss.

Actions:

In this case, the total network data was reduced without modifying the video quality or size by changing the video codec of the network camera connected to NET-i ware from MJPEG to H.264.

References:

1. Check if maximum recording capacity has been exceeded.(on page 33)

1. **Site #3: Video lag and lost recoding data due to network overload**

Phenomenon:

There was video delay and lost recoding data in NET-i viewer and SRN-1650D for monitoring and storing video from the network camera.

Site installation information:

The video delay and lost recoding data occurred because SRN-1650D misused the camera profiles for live monitoring, recording, and network transmission causing a network overload.

Actions:

SRN-1650D used only one profile for the network camera to reduce the load on the network while carrying out monitoring, recording, and network transmission, resolving the video delay and lost recoding data problem.

1. **Site #4: Video lag caused by overlapping profile connections**

Phenomenon:

The real-time monitoring failed because the video from a network camera lagged.

Site installation information:

The video from the network camera was stored by NET-i ware and monitored by NET-i viewer.

The network camera was registered on NET-i ware and NET-i viewer, and a connection was established for NET-i viewer to search for data in NET-i ware. The camera sent the same video to both NET-i ware and NET-i viewer causing the camera and network to overload, and as a consequence, the video lagged.

Actions:

To remove this redundant connection, the scheme was improved so that the network camera is connected to NET-i ware, and the video stream received from NET-i ware is sent to NET-i viewer.

The improved network connection reduced the unnecessary client connection to the camera, decreasing the load on the network.

1. **Site #5: Lost recording data caused by insufficient PC performance**

Phenomenon:

The network camera's total data did not exceeded the NET-i ware capacity of 250 Mbps, but saved data loss still occurred.

Site installation information:

The average data for a camera connected to NET-i ware was 235 Mbps, which meets the storage capacity of NET-i ware. But the PC specifications recommended by NET-i ware were not met, which resulted in a failure to save data.

Actions:

NET-i ware's system specifications recommends having two or more HDDs, in addition to the OS-installed HDD.

It also recommends SATA2 7200 rpm or faster HDDs. If you are using a HDD below the recommended speed, you may experience data loss when storing data.

References:

1. [Check the recommended system specifications. \(on page 37\)](#)
2. [Site #6: Video loss due to incorrect evaluation of PoE power consumption](#)

Phenomenon:

The camera continuously reboots, resulting in data loss.

Site installation information:

The PoE switch installed at the site is capable of supporting 48 ports, but only supports up to 24 ports if PoE+ standard is used. However, 48 cameras were connected to a PTZ camera which uses PoE+ standards. Therefore the power was not sufficiently supplied to each camera, and the camera could not boot properly.

Actions:

Another switch was added to cover the 48 cameras installed at the site. 24 PTZ cameras were connected to a switch and a maximum power of 30 W was supplied under the condition that the heater built in to the camera will not be operated to satisfy the camera's electric power needs of 25 W.

Or, another solution is to connect 48 cameras to a switch and provide separate AC power.

References:

1. [Is the power supply sufficient for the PoE switch being used? \(on page 20\)](#)

The functions and specifications outlined in this document are subject to change without notice to improve quality.