Honeywell
THE POWER OF CONNECTED

equIP® Series Cameras

4K ULTRA HD IP CAMERA

H4D8GR1
HBD8GR1
HCD8G

USER GUIDE

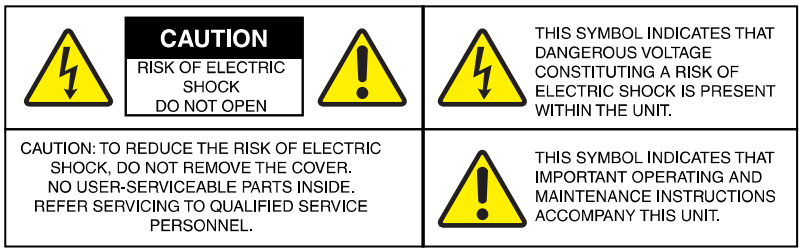
Document 800-22468 – Rev A – 04/2017

User Guide

Revisions

Issue	Date	Revisions
A	04/2017	New document.

Cautions and Warnings



CAUTION To ensure compliance with electrical safety standards, CSA Certified/UL Listed LPS or Class 2 power adapters are required. Power over Ethernet (PoE) shall be provided by listed information technology equipment meeting the IEEE 802.3af PoE standard. The PoE is not intended to be connected to exposed (outside plant) networks.

CAUTION To comply with EN50130-4 requirements, a UPS should be employed when powering on the camera from 24 V AC.

CAUTION Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

Regulatory Statements

FCC Compliance Statement

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

Note Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

Manufacturer's Declaration of Conformity

North America

The equipment supplied with this guide conforms to UL 60950-1 and CSA C22.2 No. 60950-1.

Europe

The manufacturer declares that the equipment supplied is compliant with the European Parliament and Council Directive on the Restrictions of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (2011/65/EU), General Product Safety Directive (2001/95/EC), and the essential requirements the EMC directive 2004/108/EC, conforming to the requirements of standards EN 55032 for emissions, EN 50130-4 for immunity, and EN 60950-1 for electrical equipment safety.

Waste Electrical and Electronic Equipment (WEEE)

Correct Disposal of this Product (applicable in the European Union and other European countries with separate collection systems).

This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Safety Instructions

Before installing or operating the unit, read and follow all instructions. After installation, retain the safety and operating instructions for future reference.

1. **HEED WARNINGS** - Adhere to all warnings on the unit and in the operating instructions.
2. **INSTALLATION**
   - Install in accordance with the manufacturer's instructions.
   - Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.
   - Do not install the unit in an extremely hot or humid location, or in a place subject to dust or mechanical vibration. The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.
   - Any wall or ceiling mounting of the product should follow the manufacturer's instructions and use a mounting kit approved or recommended by the manufacturer.
3. **POWER SOURCES** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your facility, consult your product dealer or local power company.
4. **HEAT** - Situate away from items that produce heat or are heat sources such as radiators, heat registers, stoves, or other products (including amplifiers).
5. **WATER AND MOISTURE** - (*Indoor models only*) Do not use this unit near water or in an unprotected outdoor installation, or any area classified as a wet location.

6. **MOUNTING SYSTEM –** Use only with a mounting system recommended by the manufacturer, or sold with the product.
7. **ATTACHMENTS** - Do not use attachments not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
8. **ACCESSORIES** - Only use accessories specified by the manufacturer.
9. **CLEANING** - Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
10. **SERVICING** - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
11. **REPLACEMENT PARTS** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards. Using replacement parts or accessories other than the original manufacturers may invalidate the warranty.
12. **DAMAGE REQUIRING SERVICE** - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
    - When the power supply cord or plug is damaged.
    - If liquid has been spilled, or objects have fallen into the unit.
    - If the unit has been exposed to rain or water.
    - If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
    - If the unit has been dropped or the enclosure has been damaged.
    - When the unit exhibits a distinct change in performance - this indicates a need for service.
13. **SAFETY CHECK** - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

Warranty and Service

Subject to the terms and conditions listed on the Product warranty, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective products returned prepaid.

In the event you have a problem with any Honeywell product, please call Customer Service at 1.800.323.4576 for assistance or to request a **Return Merchandise Authorization (RMA)** number. Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative.

Prior authorization must be obtained for all returns, exchanges, or credits. **Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA) number may be refused.**

List of Symbols

The following table contains a list of symbols that may appear on the camera:

Symbol	Explanation
	The WEEE symbol. This symbol indicates that when the end-user wishes to discard this product, it must be sent to separate collection facilities for recovery and recycling. By separating this product from other household-type waste, the volume of waste sent to incinerators or landfills will be reduced, and thus natural resources will be conserved.
	The UL compliance logo. This logo indicates that the product has been tested and is listed by UL (formerly Underwriters Laboratories).
	The FCC compliance logo. This logo indicates that the product conforms to Federal Communications Commission compliance standards.
	The direct current symbol. This symbol indicates that the power input/output for the product is direct current.
	The alternating current symbol. This symbol indicates that the power input/output for the product is alternating current.
	The RCM compliance logo. This logo indicates that the product conforms with Australian RCM guidelines.
	The CE compliance logo. This logo indicates that the product conforms to the relevant guidelines/standards for the European Union harmonization legislation.
	The caution symbol. This symbol indicates important information.
	The protective earth (ground) symbol. This symbol indicates that the marked terminal is intended for connection to the protective earth/grounding conductor.

Contents

About This Document

This manual is intended for system installers, administrators, and users of Honeywell's equIP® Series 4K Ultra HD network cameras and contains instructions for accessing, configuring, and operating the cameras.

Overview of Contents

This manual contains the following chapters and appendixes:

- *Chapter 1, Accessing the Camera*, describes how to access the camera remotely from a web browser.
- *Chapter 2, Logging In and Viewing Live Video*, describes how to log in to the camera and how to use the Live interface.
- *Chapter 3, Playing Back Recorded Video*, describes how to play back and export recorded video and snapshots.
- *Chapter 4, Configuring Video and Audio Settings*, describes how to set up video and audio streams.
- *Chapter 5, Configuring Network Settings*, describes how to set up the camera on a network. (For advanced users only.)
- *Chapter 6, Configuring Event Settings*, provides instructions for configuring alarm inputs/outputs, motion detection, audio detection, tampering detection, and system event settings.
- *Chapter 7, Configuring Recording Settings*, describes how to set up a recording schedule and how to manage recording and storage settings.
- *Chapter 8, Configuring System Settings*, provides instructions for configuring language and date and time options, managing user accounts and permissions, setting maintenance tasks, upgrading firmware, and resetting a camera to its factory defaults.
- *Appendix A, Technical Specifications*, lists camera specifications.
- *Index*, provides a searchable list of key terms used in the manual.

Related Documents

For more information relating to equIP Series 4K Ultra HD cameras, refer to the following documents:

Document Title	Part Number
equIP Series Network Security Guide	800-23224
equIP Series Outdoor Dome H4D8GR1 Quick Installation Guide	800-22486
equIP Series Bullet HBD8GR1 Quick Installation Guide	800-22463
equIP Series Box HCD8G Quick Installation Guide	800-22498

You can find these and other documents on the product webpages:

- **H4D8GR1** http://www.honeywellvideo.com/products/video-systems/video-redefined/equIP-family/1274473.html
- **HBD8GR1** http://www.honeywellvideo.com/products/video-systems/video-redefined/equIP-family/1274472.html
- **HCD8G** http://www.honeywellvideo.com/products/video-systems/video-redefined/equIP-family/1274471.html

1

Accessing the Camera

This chapter contains the following sections:

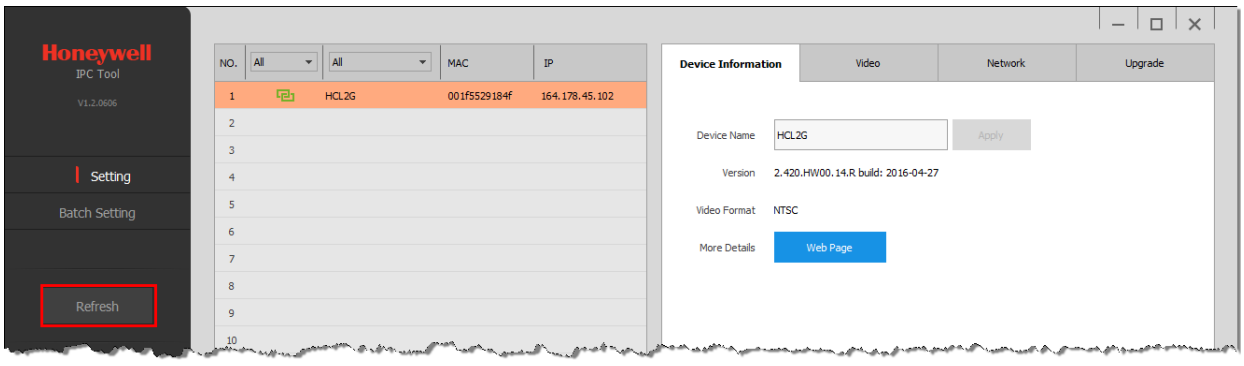
Installing the IPC Tool Utility

To install the IPC Tool utility and create a desktop shortcut:

1. Insert the included Software and Document disc into your PC's disc drive.
2. Install the IPC Tool utility to your PC. The shortcut is added to the desktop.

Discovering Your Camera on the Network

To discover your network camera(s), open the IPC Tool utility , enter your user name and password, and then click **Connect**. Cameras that are online have a green connected icon next to them. Cameras that are offline have a gray X next to them. To refresh the list, click **Refresh**.



Assigning a New IP Address to Your Camera

The current IP address of your camera appears in the **IP** column of the devices list. If you want, you can assign a new static IP address to the camera.

To change the IP address of a single camera:

1. Select the camera that you want to configure from the devices list.
2. Click the **Network** tab.
3. Clear the **DHCP** check box.
4. Enter the new IP settings in the **IP Address**, **Subnet Mask**, and **Default Gateway** fields.
5. Click **Apply** to apply the settings.

To change the IP addresses of multiple cameras at the same time:

1. In the left-most pane of the IPC Tool utility, click **Batch Setting**.
2. Select all of the cameras that you want to configure from the devices list.
3. Click the **Network** tab.
4. Do one of the following:
   - To assign dynamic IP addresses, select the **Set all to DHCP** check box, and then click **Apply**.
   - To assign static IP addresses, enter the settings in **IP Range**, **Subnet Mask**, and **Default Gateway** fields, and then click **Apply**.

Upgrading the Camera's Firmware

Before you begin using your camera, make sure you have the latest firmware installed. You can upgrade a single camera or multiple cameras at the same time.

To upgrade a single camera:

1. Select the camera that you want to upgrade from the devices list.
2. Click the **Upgrade** tab.
3. Click **Browse**, navigate to the directory that contains the firmware file (.bin), select the file, and then click **Open**. The firmware file appears in the **Target File** field.
4. Click **Upgrade**. When the upgrade is complete, the camera will reboot.

To upgrade multiple cameras at the same time:

1. In the left-most pane of the IPC Tool utility, click **Batch Setting**.
2. Select all of the cameras that you want to upgrade from the devices list.
3. Click the **Upgrade** tab.
4. Click **Browse**, navigate to the directory that contains the firmware file (.bin), select the file, and then click **Open**. The firmware file appears in the **Target File** field.
5. Click **Upgrade**. When the upgrade is complete, the cameras will reboot.

Accessing the Camera from a Web Browser

To access the camera from a web browser:

1. Select the camera that you want to access from the devices list. The camera must be online .
2. On the **Device Information** tab, click **Web Page**. The web client opens in your default browser.

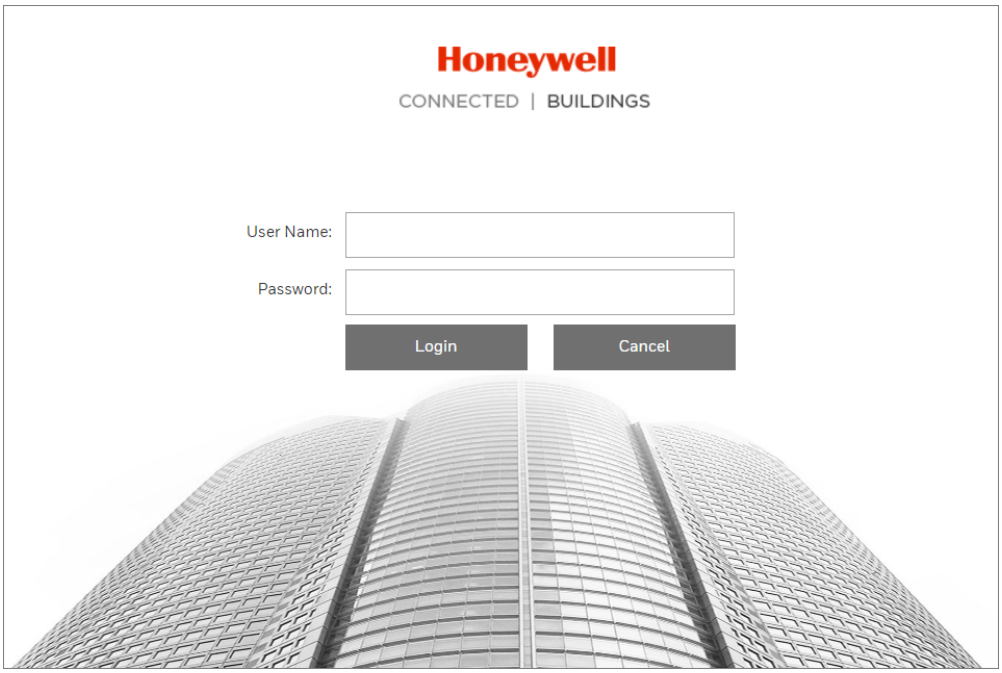
2

Logging In and Viewing Live Video

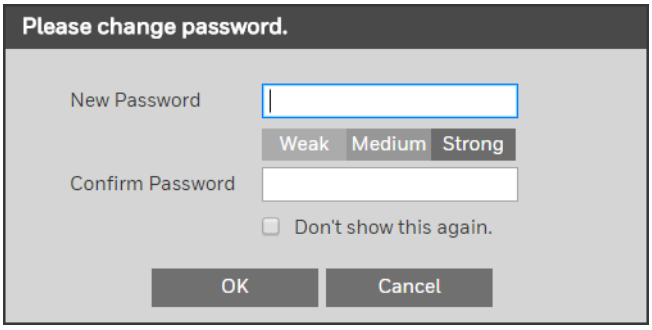
This chapter contains the following sections:

Logging In to the Web Client

If this is your first time logging in to the web client, on the login page, enter the default user name (**admin**) and password (**1234**), and then click **Login**.



For security purposes, we strongly recommend that you create a new secure password.

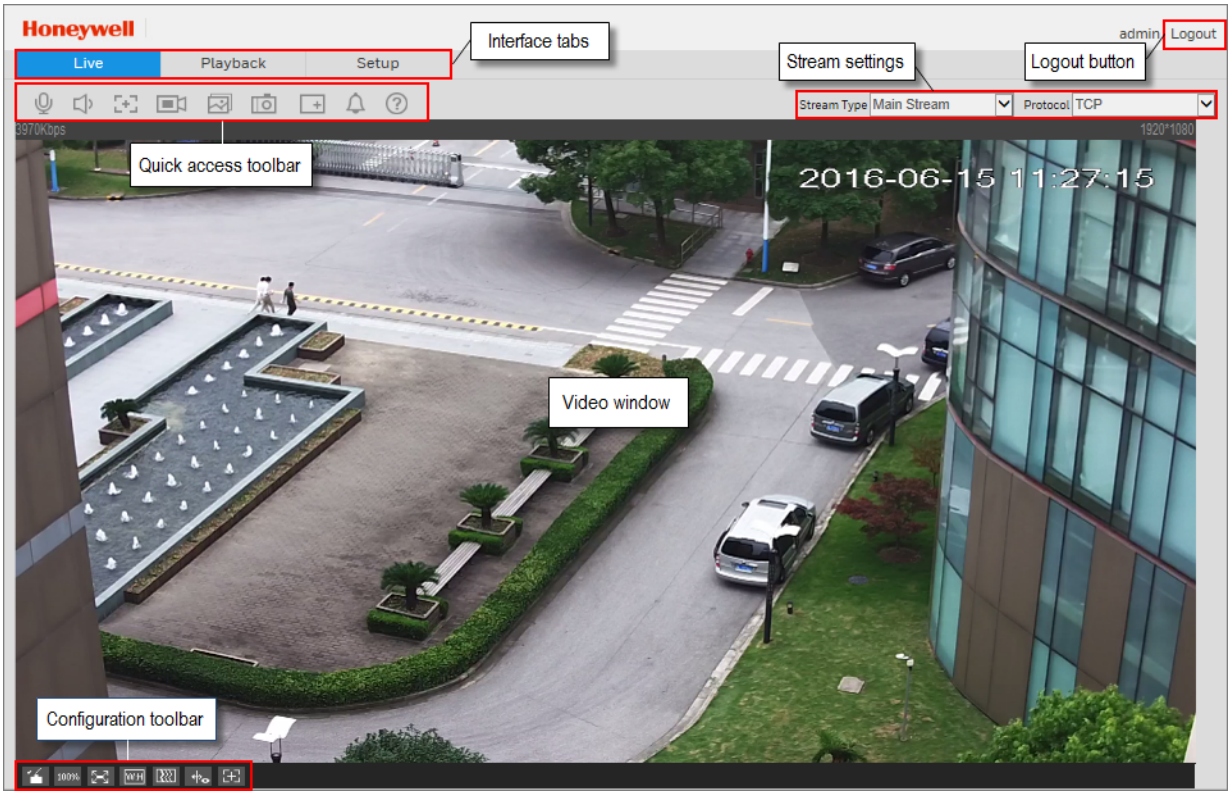


The password must be at least 8 characters long and contain at least one lowercase letter, one number, and one special character. The password cannot be blank.

Overview of the Live Interface

Figure 2-1 shows the layout of the web client's Live interface.

Figure 2-1 Live Interface



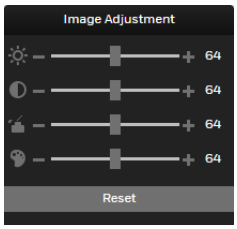
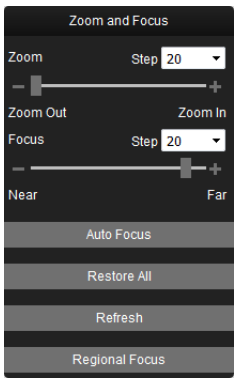
Configuring the Live Interface

Note The first time you log into the web client, follow the on-screen instructions to download and install the web browser plug-in.

You can configure the Live interface using the configuration controls located in the lower left corner of the screen, immediately below the video window (*Figure 2-2*).

Figure 2-2 Live Configuration Toolbar

Table 2-1 Live Configuration Controls

	Image Adjustment	Opens the **Image Adjustment** panel. Move the sliders to adjust the image brightness, contrast, hue, or saturation. Click the **–** and **+** signs to make fine adjustments. To restore the settings to their default values (**64**), click **Reset**. **Note** These settings only apply to the client end. To change the settings at the camera end, go to **Setup > Camera Setup > Conditions > Picture**. 
100%	**Original Size**	Displays the video at actual size (the exact dimensions are determined by the stream resolution).
	Full Screen	Displays the video in full-screen mode. Double-click (or press Esc) to exit full-screen mode.
W:H	**Width:Height Ratio**	Displays the video in its original size (**Original**) or fitted to your screen (**Adaptive**).
	Fluency	Sets the video fluency level (**Realtime**, **Normal**, or **Fluency**). Select a fluency level based on the capabilities of your network. For example, if your connection is slow, selecting **Fluency** will prioritize smoothness over image quality.
	Rules Info	Tracks movement in the video window when intelligent video surveillance (IVS) is enabled.
	Zoom and Focus	Opens the **Zoom and Focus** panel. Move the sliders to adjust the zoom and focus settings. Click the **–** and **+** signs to make fine adjustments. The **Step** number determines the magnitude of the adjustment. To set the focus automatically, click **Auto Focus**. To restore the default zoom and focus settings, click **Restore All**. To focus on a specific region, click **Regional Focus**, and then drag your mouse over the area in the video window. 

Working in the Live Interface

The toolbar in the upper left corner of the screen, immediately above the video window, provides quick access to commonly used controls (*Figure 2-3*).

Figure 2-3 Quick Access Toolbar

Table 2-2 Quick Access Controls

	Talk	Click to enable or disable bidirectional talk (audio must also be enabled).
	Audio	Click to enable or disable the audio input stream.
	Easy Focus	Displays the current video definition (AF Peak) and target video definition (AF Max). For auto focus to work, the AF Peak and AF Max values must be close together. If the values are far apart, the camera must be re-aimed or focused manually.
	Record	Click to start or stop recording video. The icon appears red when video is being recorded, gray when video is not being recorded. The recorded video is saved to the location specified in **Setup > Storage Setup > Destination > Path > Live Record**.
	Triple Snapshot	Click to take three snapshots in quick succession (1 per second). The snapshots are saved to the location specified in **Setup > Storage Setup > Destination > Path > Live Snapshot**.
	Snapshot	Click to take a snapshot of the current video. The snapshot is saved to the location specified in **Setup > Storage Setup > Destination > Path > Live Snapshot**.
	Digital Zoom	When this function is enabled, you can drag your mouse over an area of the video to enlarge that area. Right-click to return to the previous magnification.
	Alarm Output	Click to generate or cancel an alarm output. The icon appears red when the alarm is active, gray when the alarm is inactive.
	Help	Displays online help for the **Live** interface.

Setting Up Live Video Streaming

In the upper right corner of the screen, immediately above the video window, you can set the stream type and protocol for live video streaming.

Setting the Stream Type

To set the stream type, in the **Stream Type** list, select **Main Stream**, **Sub Stream 1**, or **Sub Stream 2**.

Main Stream	Delivers high definition video for real-time monitoring, recording, and storage. Uses the most bandwidth.
Sub Stream 1	Delivers low/standard definition video, typically for remote monitoring in lower network bandwidth environments.
Sub Stream 2	Delivers low, standard, or high definition video.

The properties for each stream type are configured on the **Setup > Compression Setup > Video** page (see *Configuring Streaming Settings* on page 36).

Setting the Stream Protocol

To set the stream protocol, in the **Protocol** list, select **TCP**, **UDP**, or **Multicast**.

TCP	Provides most reliable data transmission. Higher latency and bandwidth use than UDP.
UDP	Provides fastest data transmission. Lower latency and bandwidth use than TCP but allows some data loss (such as dropped frames).
Multicast	Provides the most efficient use of bandwidth if large numbers of clients are viewing the video simultaneously.

Logging Out of the Web Client

To log out of the web client, in the upper right corner of the screen, click **Logout**.

3

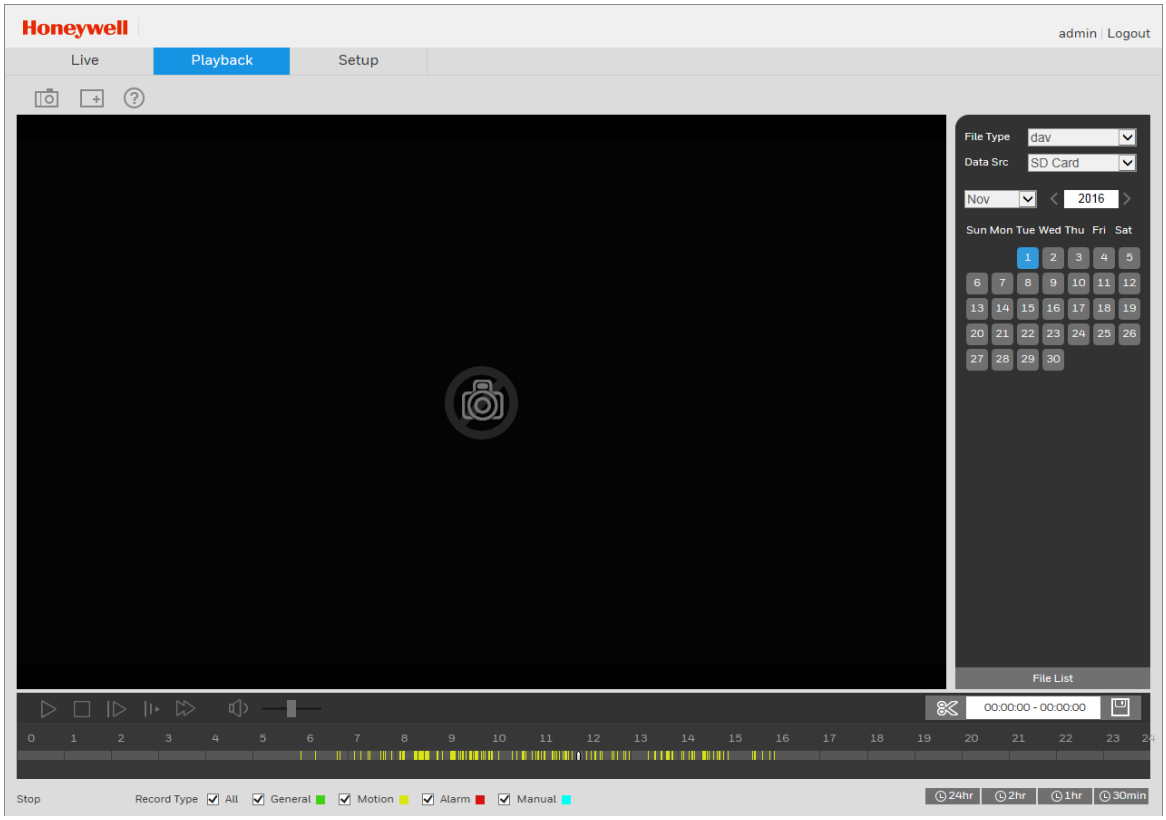
Playing Back Recorded Video

This chapter contains the following sections:

Overview of the Playback Interface

Figure 3-1 shows the layout of the web client's Playback interface.

Figure 3-1 Playback Interface



Playback Controls

The playback controls are located in the lower left corner of the screen, immediately below the video window. For instructions on how to play back video, see *Playing Back Recorded Video* on page 27.

Figure 3-2 Playback Toolbar

Table 3-1 Playback Controls

	Play/Pause	Click to play recorded video.
	Pause	Click to pause playback.
	Stop	Click to stop playback.
	Next Frame	Click to advance to the next frame when playback is paused.
	Slow Play	Click to slow down playback.
	Fast Play	Click to speed up playback.
	Volume	Click to enable sound.
	Mute	Click to disable sound.
	Volume Level	Drag the slider to adjust the sound volume.

Video Clip Controls

The video clip controls are located in the lower right corner of the screen, immediately below the file list button. For instructions on how to create and export a video clip, see *Downloading Recorded Video* on page 28.

Figure 3-3 Video Clip Area

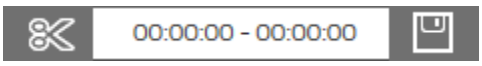


Table 3-2 Video Clip Controls

	Clip	Click to start/stop clipping video.
	Download	Click to download the video clip that you have created to a local drive on your PC.

Timeline

The timeline is located below the playback and video clip controls.

Figure 3-4 Timeline Area

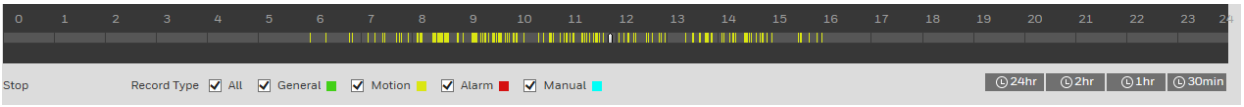


Table 3-3 Timeline Controls

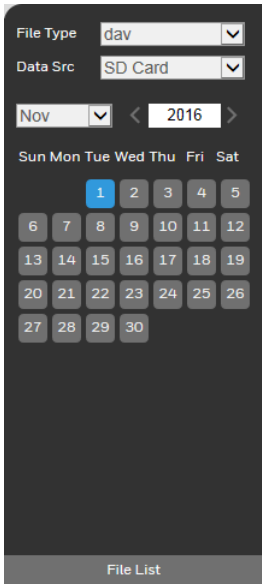
Record Type	**General**	Displays video saved during normally scheduled recording in the timeline.
	Motion	Displays video saved during a motion detection event in the timeline.
	Alarm	Displays video saved during an alarm event in the timeline.
	Manual	Displays video saved manually during live monitoring in the timeline.
24hr	**24hr**	Displays 24 hours of video in the timeline.
2hr	**2hr**	Displays 2 hours of video in the timeline.
1hr	**1hr**	Displays 1 hour of video in the timeline.
30min	**30min**	Displays 30 minutes of video in the timeline.

Playing Back Recorded Video

To play back recorded video:

1. From the **File Type** list, select **dav**.
2. From the **Data Src** list, select the location where the video files are stored.

   The storage location is configured in **Setup > Storage Setup > Destination** (see *Configuring Storage Settings* on page 70).
3. Locate the file that you want to play back.
   a. Above the calendar, select the month and year that you want to search.
   b. On the calendar, click the date that you want to search. Recordings for the selected date appear in the timeline (color coded according to recording type).
   c. Below the calendar, click the **File List** button to narrow your search by time period and/or by download format.



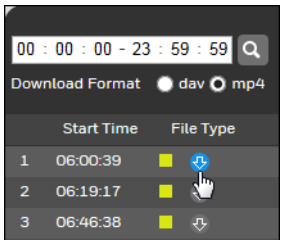
4. Play the file using one of the following methods:
   - In the file list, double-click the file that you want to play.
   - In the timeline, click a colored bar at the time that you want to start playing from (click 30min to zoom in on the timeline), and then click the **Play** button.

Downloading Recorded Video

There are two ways to download recorded video: you can download a complete video file (the maximum length is specified in **Setup > Storage Setup > Record Control**) or you can create and export a video clip that you have created.

To download a video file:

1. From the **File Type** list, select **dav**.
2. From the **Data Src** list, select the location where the video files are stored.
3. On the calendar, click the date that the video was recorded.
4. Click **File List** to display the list of video files for that date.
5. Set the **Download Format** to **dav** or **mp4**.
6. From the file list, click the download button of the file that you want to download.



The button changes to and the file is saved to the location specified in **Setup > Compression Setup > Path > Playback Download**.

To create and export a video clip:

1. Open a video file in the playback window.
2. Pause the video at the time when you want to start the clip.
3. In the video clip area, click the **Select Start Time** button .
4. Resume playing the video.
5. Pause the video at the time when you want to stop the clip.
6. Click the **Select Stop Time** button .
7. Stop the video, and then click the **Download** button .

Note You cannot download the clip while the video file is still open in the web client.

The clip is saved to the location specified in **Setup > Compression Setup > Path > Video Clips**.

Viewing Snapshots

You can take snapshots of video during playback by clicking the **Snapshot** button  . The snapshot is saved to the location specified in **Setup > Compression Setup > Path > Playback Snapshot**.

To view a snapshot that you have saved manually during live monitoring, go the directory specified in **Setup > Compression Setup > Path > Live Snapshot** and double-click the file to open it.

To view a snapshot that you have saved manually during playback, go the directory specified in **Setup > Compression Setup > Path > Playback Snapshot** and double-click the file to open it.

If you have configured the system to take snapshots on a schedule, or during motion detection or alarm events, you can view and download them.

To view or download a system-generated snapshot:

1. From the **File Type** list, select **jpg**.
2. From the **Data Src** list, select the location where the snapshot files are stored.
3. On the calendar, click the date that the snapshot was taken.
4. Click **File List** to display the list of snapshots for that date.
5. Double-click the snapshot file that you want to view. The file opens in the video window.
6. To download the file, click the download button. The file opens in a new browser window. Right-click the image and then click **Save picture as** or **Save image as** to save the snapshot to a local directory.

4

Configuring Video and Audio Settings

This chapters contains the following sections:

Configuring Video Settings

This section describes how to configure camera properties (picture, exposure, lighting compensation, white balance, day and night, IR light, and defog) and video streaming properties (format, resolution, frame rate, bit rate, and I-frame interval).

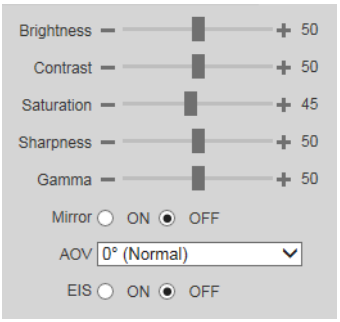
Configuring Camera Settings

You can configure camera properties on the **Setup > Camera Setup > Properties** page.

Profile

In the **Profile** box, select the camera profile that you want to configure settings for: **Normal**, **Day**, or **Night**.

Picture



In the **Picture** area, you can manually adjust the image brightness, contrast, saturation, sharpness, and gamma levels.

Drag the slider left or right to decrease or increase the value.

Click the – and + signs to make fine adjustments.

Brightness	Adjusts the black level of the image.
Contrast	Adjusts the white level of the image.
Saturation	Adjusts the intensity of the image colors.
Sharpness	Adjusts the edge sharpness of image elements. Keep in mind that increasing sharpness in a moving image will create more noise, resulting in a larger bit stream and saved file size.
Gamma	Adjusts the amount of gamma correction applied to the image. Use fine adjustments to accent darker areas of the image.

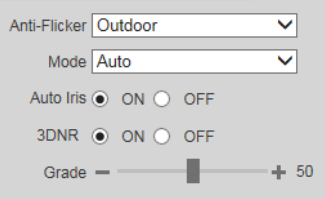
You can also change the image orientation:

- To reverse the image, set **Mirror** to **ON**.
- To rotate the image 90 degrees, 180 degrees, or 270 degrees, set **AOV** to **90° (Flip Mode 1)**, **180° Inverted**, or **270° (Flip Mode 2)** respectively.

If the camera is mounted on a pole or in an environment subject to vibration, you can set **EIS** (Electronic Image Stabilization) to **ON** to improve image stability.

Click **Save** to apply the settings.

Exposure



In the **Exposure** area, you can set the anti-flicker mode, exposure mode, auto iris, and digital noise reduction level.

Set **Anti-Flicker** to **Outdoor**, **50Hz**, or **60Hz**.

Outdoor	Minimizes flicker in outdoor applications. Works with auto, low noise, low motion blur, and manual exposure modes
50Hz	Minimizes flicker in indoor applications where the AC frequency is 50 Hz (generally PAL regions). Works with auto and manual exposure modes.
60Hz	Minimizes flicker in indoor applications where the AC frequency is 60 Hz (generally NTSC regions). Works with auto and manual exposure modes.

Set **Mode** to **Auto**, **Gain Priority**, **Shutter Priority**, **Iris Priority**, or **Manual**.

Auto	Exposure settings change automatically with changes in the scene's lighting.
Gain Priority	The shutter speed and iris are adjusted automatically for the specified gain value.
Shutter Priority	The iris and gain are adjusted automatically for the specified shutter speed.
Iris Priority	The shutter speed and gain are adjusted automatically for the specified iris value.
Manual	Maximum shutter speed and maximum gain for normal light conditions are set by the user.

3DNR (3D noise reduction) is enabled by default. Drag the **Grade** slider left or right to decrease or increase the level of digital noise reduction applied to the image. To disable 3D noise reduction, set **3DNR** to **OFF**.

Click **Save** to apply the settings.

Lighting Compensation

In the **Lighting Compensation** area, you can apply backlight compensation (BLC), highlight compensation (HLC), digital wide dynamic range (DWDR), or smart scene adaptive (SSA) adjustment to the image.

Set **Lighting Mode** to **OFF**, **BLC**, **HLC**, **DWDR**, or **SSA**.

BLC	Corrects the exposure of strongly backlit scenes. To apply BLC to the entire scene, click **Default**. To apply BLC to a specific area of the scene, click **Customized**. A yellow rectangle appears in the preview window. To move it, drag the center of the frame. To resize it, drag one of the corner handles.
HLC	Masks strong light sources in the scene. Drag the slider to adjust the HLC level. Click the – and + signs to make fine adjustments.
DWDR	Corrects the exposure of overexposed and underexposed areas of the scene. Drag the slider to adjust the DWDR level. Click the – and + signs to make fine adjustments.
SSA	Automatically decreases the brightness of bright areas and increases the brightness of dark areas according to the environmental lighting.

Click **Save** to apply the settings.

White Balance

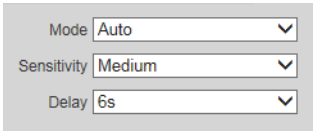
White balance compensates for the different color temperatures of different light sources, ensuring consistent colors- in the image.

In the **White Balance** area, you can set the white balance mode to **Auto**, **Natural**, **Street Lamp**, **Outdoor**, **Manual** or **Customize Region**.

Auto	White balance is adjusted automatically.
Natural	White balance is optimized for natural lighting.
Street Lamp	White balance is optimized for yellow-tinted lighting.
Outdoor	White balance is optimized for outdoor environments.
Manual	Red gain and blue gain values are set by the user.
Customize Region	White balance is applied to a user-defined area within the scene.

Click **Save** to apply the settings.

Day and Night



In the **D&N Mode** area, you can set the day and night mode, sensitivity, and delay time.

By default, the camera automatically outputs color video or black-and-white video depending on the amount of light in the scene. To output *only* color video, set **Mode** to **Color**. To output *only* black-and-white video, set **Mode** to **Black & White**.

Sensitivity controls the sensitivity to lighting changes that cause the camera to switch between day (color) and night (black-and-white) mode. Select **Low**, **Medium**, or **High**.

Delay defines the delay time before switching between modes. Select a value between **2s** and **10s**.

Click **Save** to apply the settings.

IR Light

In the **IR Light** area, you can set the infrared LED mode and other settings.

Set **Mode** to **Manual**, **Zoom Priority**, **Smart IR**, or **OFF**.

Manual	IR near and far distance brightness are set by the user.
Zoom Priority	IR settings are adjusted automatically based on the zoom setting.
Smart IR	IR settings are adjusted automatically to prevent overexposure or underexposure.

If **Mode** is set to **Manual**, set the **Near Light** and **Far Light** brightness levels. Drag the slider left or right to decrease or increase the value. Click the – and + signs to make fine adjustments.

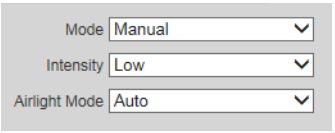
If **Mode** is set to **Zoom Priority**, set the **IR Correction** level to correct focusing problems caused by bright IR light.

Defog

To enable the defog function, set **Mode** to **OFF**, **Manual**, or **Auto**.

Auto	The defog function is enabled automatically when the scene is obscured by fog or haze.
Manual	The defog function is always enabled.

If **Mode** is set to **Manual**, do the following:



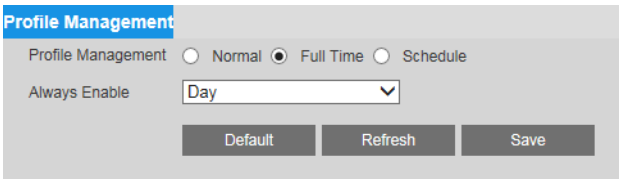
1. Set **Intensity** to **Low**, **Medium**, or **High**.
2. Set **Airlight Mode** to **Auto** or **Manual**.

Auto	The defog function is fine-tuned automatically (recommended).
Manual	The defog function is fine-tuned by the user using the **Grade** slider.

Click **Save** to apply the settings.

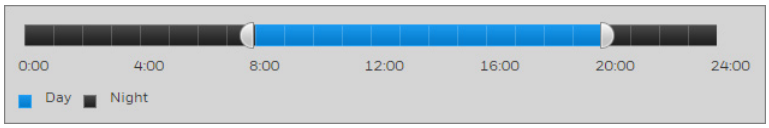
Managing Profiles

After you have configured the camera properties for each profile (Normal, Day, Night), you can set the profile(s) that you want the system to use on the **Setup > Camera Setup > Profile Management** page.



Next to **Profile Management**, select **Normal**, **Full Time**, or **Schedule**. By default, the system has the **Day** profile always enabled.

Normal	The Normal profile is always enabled.
Full Time	The Day profile or Night profile is always enabled, depending on your selection.
Schedule	The system switches between the Day profile and Night profile. Drag the sliders on the left and right sides of the timeline to set the Night-to-Day and Day-to-Night switching times.

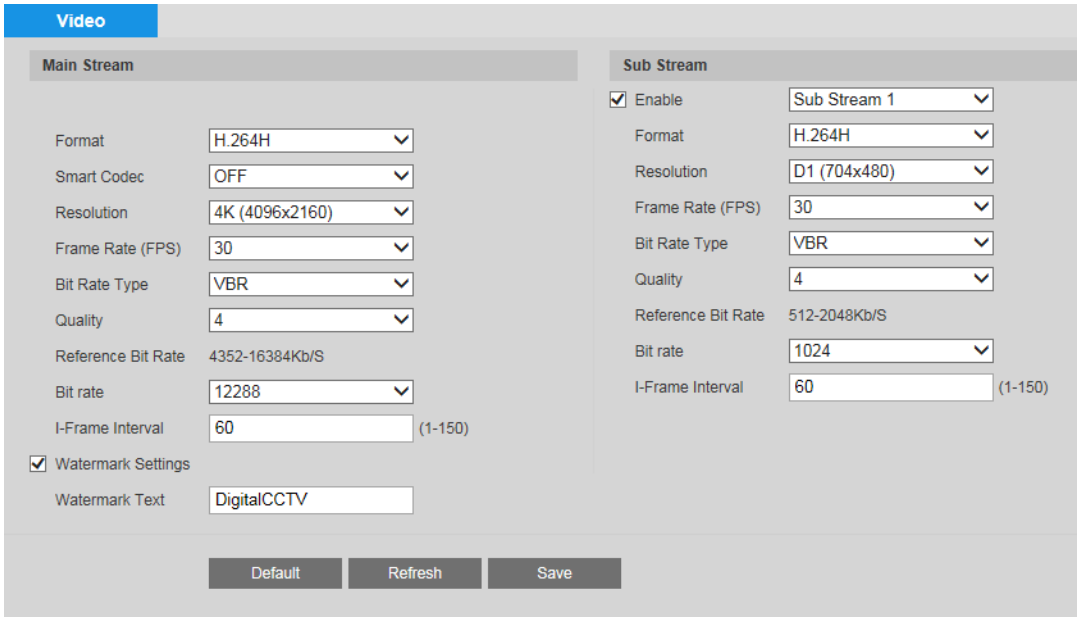


Click **Save** to apply the settings.

Configuring Streaming Settings

You can configure video streaming properties on the **Setup > Compression Setup > Video** page.

The page is divided into two sections: **Main Stream** and **Sub Stream**. In the **Sub Stream** section, two sub streams are configurable: **Sub Stream 1** and **Sub Stream 2**. To enable a sub stream, select one of the sub streams, and then select the **Enable** check box.



For each record type (**General**, **Motion**, **Alarm**), you can configure the encoding format, resolution, frame rate, bit rate, and I-frame interval settings. You can also apply a custom watermark to the main stream.

Format

In the **Format** box, select **H.264B**, **H.264**, **H.264H**, **MJPEG**, or **H.265**.

H.264	Main Profile. Uses less bandwidth than Baseline Profile at the same quality.
H.264B	Baseline Profile. Uses up to 50% less bandwidth than MPEG4 and up to 80% less than MJPEG. Higher compression and lower quality than H.264.
H.264H	High Profile. Uses less bandwidth than Main Profile at the same quality. Lower compression and higher quality than H.264.
MJPEG	Uses the most bandwidth but produces excellent image quality with access to every image in the stream.
H.265	High Efficiency Video Coding. Supports 4K resolution. Twice as efficient as H.264.

Smart Codec

Set **Smart Codec** to **ON** or **OFF**.

By taking reference frames and applying them to refreshed frames, Smart Codec eliminates the need to transmit data for an unchanged image or parts of the image where there is no movement. Used together with H.264, Smart Codec can lead to storage savings of up to 60 percent and bandwidth savings of up to 40 percent over H.264 alone.

Resolution

In the **Resolution** box, select a resolution from the list. The available options differ between the main stream and sub streams.

Frame Rate

In the **Frame Rate (FPS)** box, select a frame rate within the available range (1–30 fps for NTSC cameras; 1–25 fps for PAL cameras).

Bit Rate

In the **Bit Rate Type** box, select **CBR** or **VBR**.

CBR	Constant bit rate. The bit rate remains constant (recommended for low-bandwidth environments). Required if MJPEG compression is used.
VBR	Variable bit rate. The bit rate changes according to the complexity of the scene. Select a **Quality** level between **1** (lowest quality) and **6** (highest quality).

In the **Bit Rate** box, select a bit rate from the list using the **Reference Bit Rate** as a guide.

I-Frame Interval

In the **I-Frame Interval** box, enter a value between 1 and 150. The default I-frame interval is two times the frame rate. For example, if the frame rate is 30 fps, the I-frame interval will be 60.

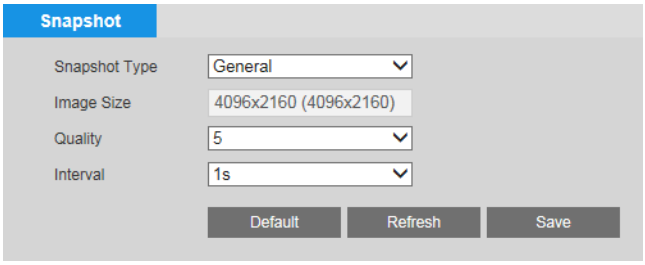
Watermark

To apply a custom watermark to the main stream, select the **Watermark Settings** check box. In the **Watermark Text** box, enter the watermark text. The text cannot have any spaces but underscores (_), and hyphens (-) are acceptable.

Click **Save** to apply the settings.

Configuring Snapshot Settings

You can configure snapshot properties on the **Setup > Compression Setup > Snapshot** page.



Snapshot Type

Set the **Snapshot Type** to **General** or **Event**.

General	Snapshots are taken according to a user-defined schedule.
Event	Snapshots are taken whenever an alarm, motion detection, camera tampering, or system event occurs.

Image Size

The image size is determined by the main stream resolution setting. It is not configurable. (See *Resolution* on page 37).

Quality

Set the **Quality** to a value between **1** (lowest) and **6** (highest).

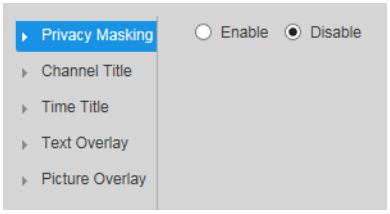
Interval

Select a snapshot frequency between 1 snapshot per second (**1s**) and 7 snapshots per second (**7s**), or click **Customized** to define a custom setting between 1 and 50,000 seconds.

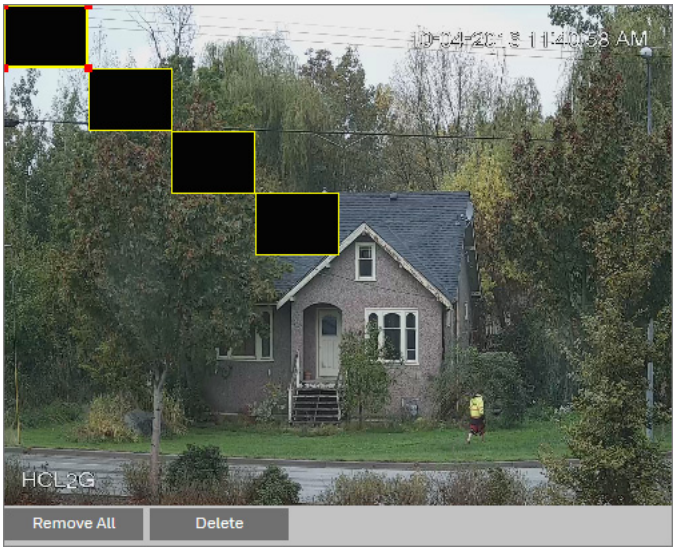
Click **Save** to apply the settings.

Configuring Privacy Masks

You can configure privacy mask properties on the **Setup > Compression Setup > Overlay > Privacy Masking** page.



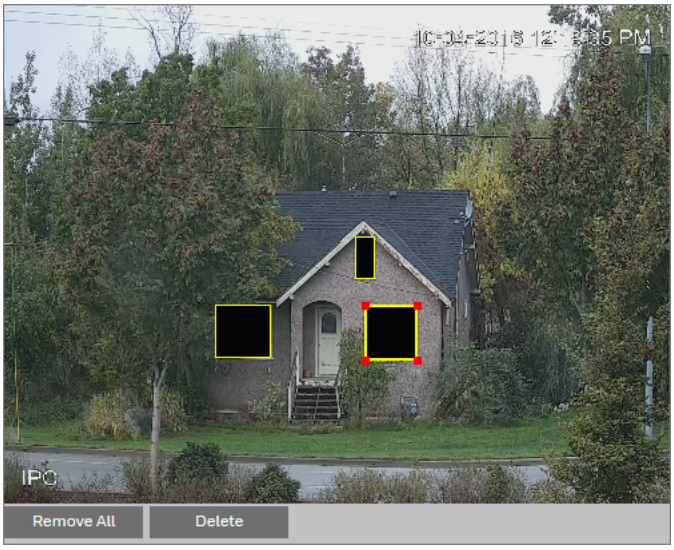
To enable privacy masking, click **Enable**. Four privacy masks appear in the preview window.



Delete any masks that you don't need. To delete a mask, right-click it or select it and then click **Delete**. To remove all the masks, click **Remove All**.

To move a mask, select it and drag the center of the mask.

To resize a mask, drag one of the corner handles. To draw a new mask, drag your mouse anywhere in the preview window.

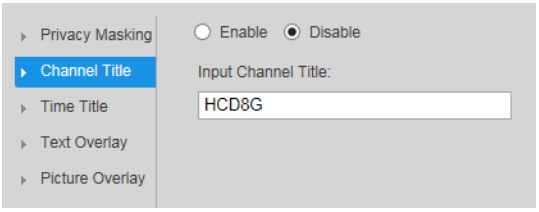


Click **Save** to apply the settings.

Configuring the Channel Title

You can configure the channel title properties on the **Setup > Compression Setup > Overlay > Channel Title** page.

To display the channel title, click **Enable**, and then click **Save**. By default, the channel title appears in the lower left corner of the video image.



To move the channel title, drag the yellow **Channel Title** box to the desired location in the preview window, and then click **Save**.

To modify the channel title, enter the new title in the **Input Channel Title** field, and then click **Save**.

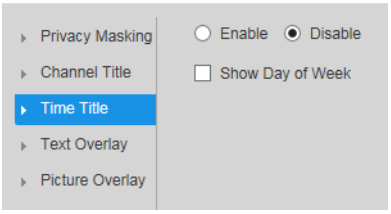
To hide the channel title, click **Disable**, and then click **Save**.

Configuring the Time Title

You can configure the time title properties on the **Setup > Compression Setup > Overlay > Time Title** page.

To display the channel title, click **Enable**, and then click **Save**. By default, the channel title appears in the upper right corner of the video image.

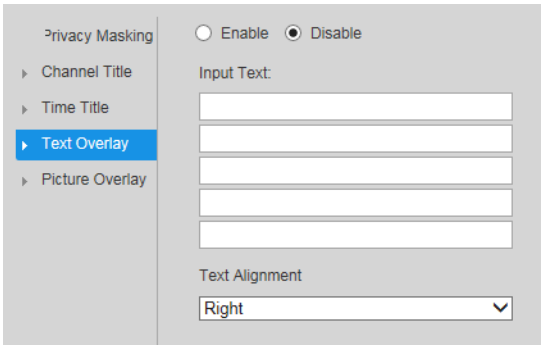
To display the day of the week, select the **Show Day of Week** check box, and then click **Save**.



To move the time title, drag the yellow **Time Title** box to the desired location in the preview window, and then click **Save**.

To hide the time title, click **Disable**, and then click **Save**.

Configuring Customized Text Overlays



You can configure customized text overlays on the **Setup > Compression Setup > Overlay > Text Overlay** page.

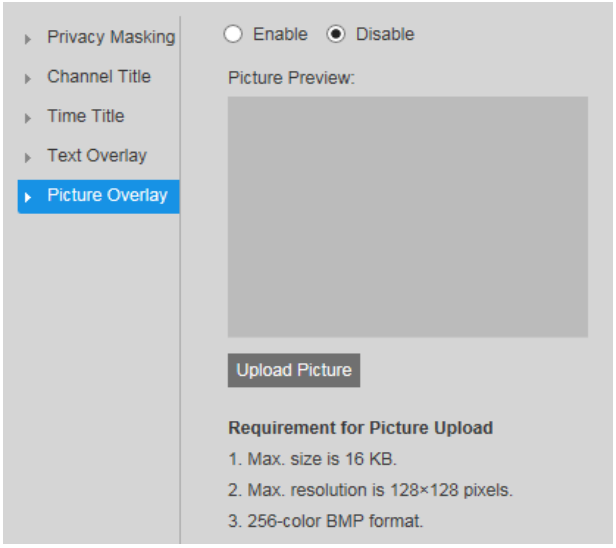
To display the text overly, click **Enable**, enter the desired text in the **Input Text** field, and then click **Save**. By default, the text overlay appears in the lower right corner of the video image.

Set **Text Alignment** to **Left** or **Right**.

To move the text overlay, drag the yellow **Text Overlay** box to the desired location in the preview window, and then click **Save**.

To hide the text overlay, click **Disable**, and then click **Save**.

Configuring Picture Overlays



You can configure picture overlays on the **Setup > Compression Setup > Overlay > Picture Overlay** page.

To display a picture overlay, click **Enable**, click Upload Picture, upload the picture, and then click **Save**. The file must be in BMP format, less than 16 KB, and no more than 128×128 pixels.

To move the picture overlay, drag the yellow frame to the desired location in the preview window, and then click **Save**.

To hide the picture overlay, click **Disable**, and then click **Save**.

Configuring Regions of Interest

You can configure regions of interest (ROI) on the **Setup > Compression Setup > ROI** page.

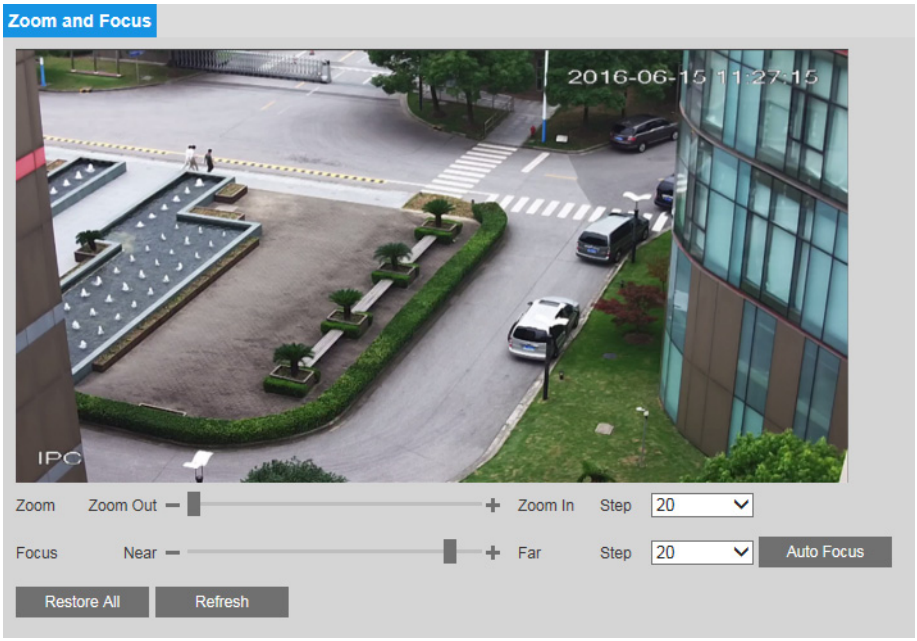
To enable the ROI function, click **Enable**.

In the preview window, drag your mouse over the portion of the scene that you want to designate as a region of interest, select an **Image Quality** level between **1** (lowest) and **6** (highest), and then click **Save**. You can add up to 4 regions of interest.

To delete a single region of interest, select it, and then click **Delete**. To delete all regions of interest, click **Remove All**.

Configuring Zoom and Focus Settings

You can configure zoom and focus on the **Setup > Zoom and Focus > Zoom and Focus** page.



To adjust the zoom magnification, drag the slider right or left. Click the + and - signs to make fine adjustments. The **Step** number determines the magnitude of the adjustment.

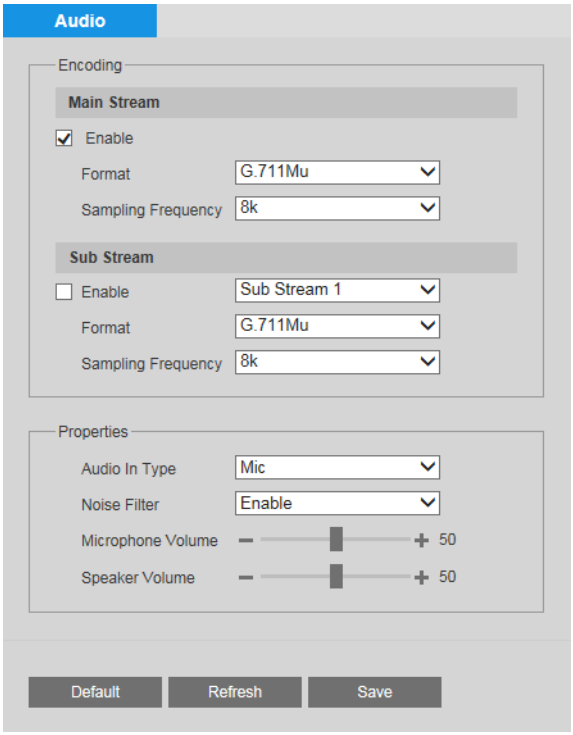
To adjust the focus manually, drag the slider right or left. Click the + and - signs to make fine adjustments. The **Step** number determines the magnitude of the adjustment.

To set the focus automatically, click **Auto Focus**.

To restore the default zoom and focus settings, click **Restore All**.

Configuring Audio Settings

You can configure audio settings for Main Stream, Sub Stream 1, and Sub Stream 2 profiles on the **Setup > Audio Setup > Audio** page.



To enable audio for the stream, select the **Enable** check box, select the format (**G.711A**, **G.711Mu**, **G.726**, **AAC**), and then select a sampling frequency (**8–64 kHz**).

In the **Properties** area, select the audio input type (**LineIn**, **Mic**), enable or disable noise filtering, and adjust the microphone and/or speaker volumes by moving the sliders. Click the + and - signs to make fine adjustments.

Click **Save** to apply the settings.

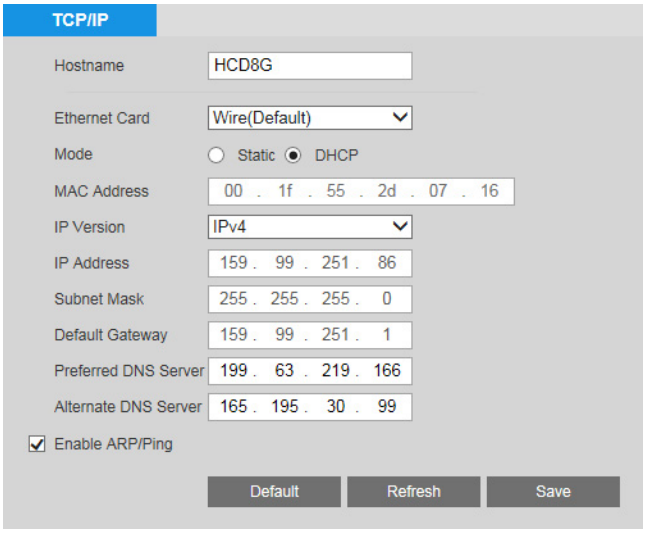
5

Configuring Network Settings

This chapter contains the following sections:

Configuring TCP/IP

You can configure TCP/IP settings, including IPv4/IPv6 and ARP/Ping settings, on the **Setup > Network Setup > TCP/IP** page.



IPv4 Address Configuration

By default, the camera uses IPv4 and obtains IP settings automatically via DHCP.

In the **Hostname** field, enter a nickname for the camera that can be mapped to the IP address and used to identify the camera.

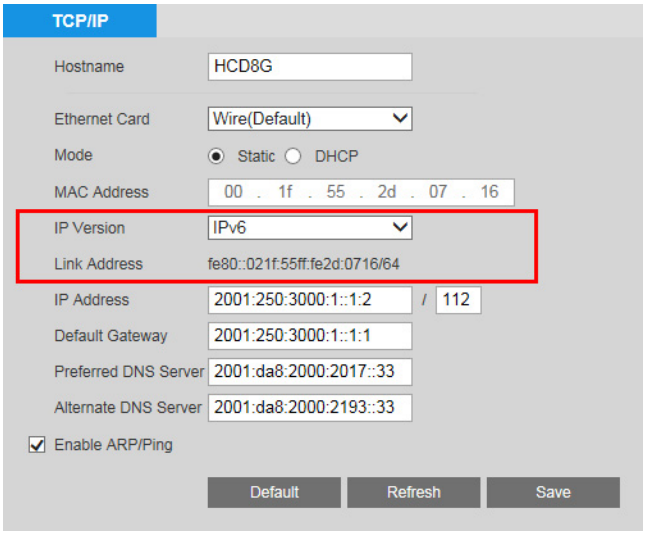
To manually assign IP address settings, set **Mode** to **Static**, and then replace the values in the **IP Address**, **Subnet Mask**, and **Default Gateway** fields.

To manually assign DNS server addresses, replace the values in the **Preferred DNS Server** and **Alternate DNS Server** fields.

Click **Save** to apply the settings.

IPv6 Address Configuration

To enable IPv6, set **IP Version** to **IPv6**. Verify that the IP address and default gateway (router) address are in the same network segment. Click **Save** to apply the settings.

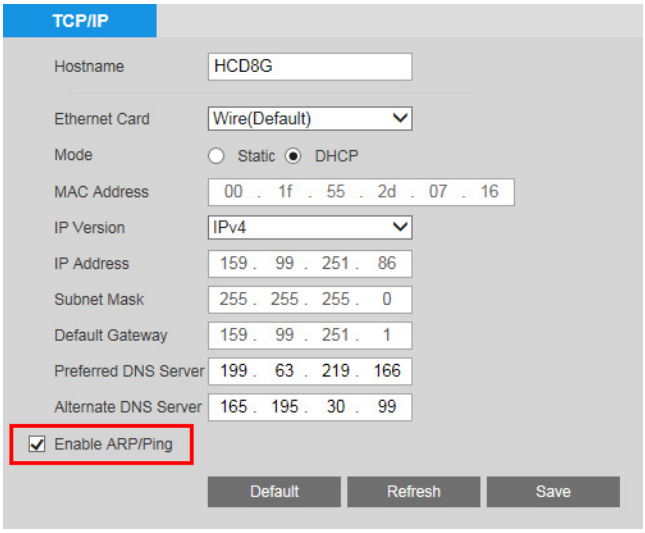


ARP/Ping

You can assign an IP address to the camera using the ARP/Ping service.

To enable ARP/Ping to set the IP address:

1. Obtain an unused IP address in the same LAN as your PC.
2. Write down the MAC address of the camera (it is listed on the label).
3. Select the **Enable ARP/Ping** check box, and then click **Save**.



4. Open the **Command Prompt** window on your PC (in Windows 7, click **Start > All Programs > Accessories > Command Prompt**) and type the appropriate commands for your operating system:

Windows syntax
arp –s <IP Address> <MAC> ping –l 480 –t <IP Address>
Windows example
arp -s 192.168.0.125 11-40-8c-18-10-11 ping -l 480 -t 192.168.0.125

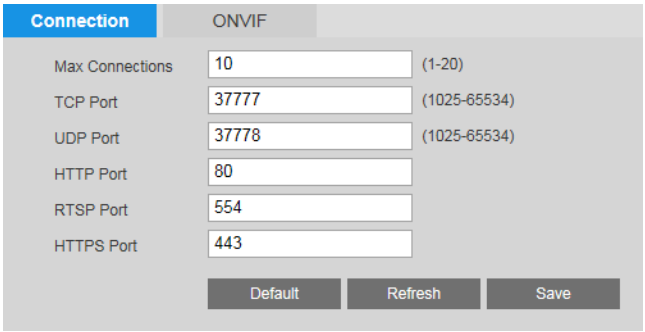
UNIX/Linux/Mac syntax
arp –s <IP Address> <MAC> ping –s 480 <IP Address>
UNIX/Linux/Mac example
arp -s 192.168.0.125 11:40:8c:18:10:11 ping -s 480 192.168.0.125

5. Reboot the camera. If the setup was successful, the Command Prompt window will display “Reply from" and the IP address (for example, "Reply from 192.168.0.125 ...”).

   To verify that the IP address works, open your browser and type in the address bar **http://** followed by the IP address (for example, http://192.168.0.125), then press Enter.

Configuring Network Connections

You can configure network connections and port settings on the **Setup > Network Setup > Connection** > **Connection** page.



By default, the maximum number of simultaneous connections the camera will support is set to **10**. To change this setting, in the **Max Connections** field, enter a value between **1** and **20**.

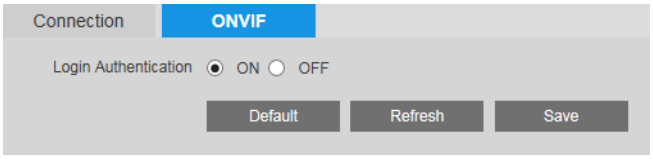
If you want, you can change the TCP, UDP, HTTP, RTSP, and HTTPS port numbers from their defaults.

Click **Save** to apply the settings.

Configuring ONVIF

ONVIF (Open Network Video Interface Forum) is a global standard for the interoperability of IP-based physical security products.

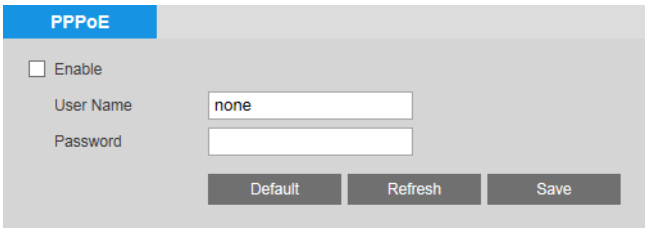
You can enable or disable ONVIF authentication on the **Setup > Network Setup > Connection > ONVIF** page.



ONVIF login authentication is enabled by default. To disable it, next to **Login Authentication**, click **OFF**, and then click **Save**.

Configuring PPPoE Settings

You can configure Point-to-Point Protocol over Ethernet (PPPoE) settings on the **Setup > Network Setup > PPPoE** page.

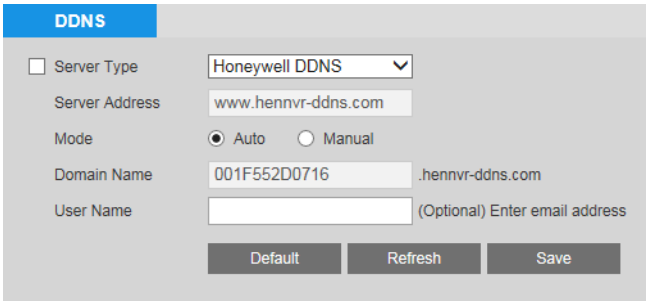


To enable PPPoE:

1. Select the **Enable** check box.
2. In the **User Name** and **Password** fields, enter the user name and password that you received from your Internet service provider (ISP).
3. Click **Save** to apply the settings. The camera will connect to the Internet via PPPoE after rebooting.

Configuring DDNS Settings

You can configure Dynamic DNS (DDNS) settings on the **Setup > Network Setup > DDNS** page.



You can use a DDNS service to track and update your camera's dynamic IP address, so that even when the numeric IP address changes the DDNS address always remains the same.

To access your camera using a DDNS service:

1. Register an account with a supported DDNS service, such as DynDNS or Honeywell's free DDNS service (www.hennvr-ddns.com).
2. Select the **Server Type** check box.
3. Select your DDNS service from the **Server Type** drop-down list.
4. In the **Domain Name** field, enter the domain name (hostname) that you registered with the DDNS service (for example, *mycamera*.dyndns.org).
5. In the **User Name** and **Password** fields, enter the user name and password of the account that you registered in step 1.
6. In the **Update Period** field, enter the interval in minutes between address updates sent to the DDNS server.

Note If you selected Honeywell DDNS as your DDNS service, the domain name is set to the camera's MAC address by default and no user name or password are required. Set **Mode** to **Auto** or **Manual**. If you configure the domain name manually, click **Test** to verify that the domain name is registered.

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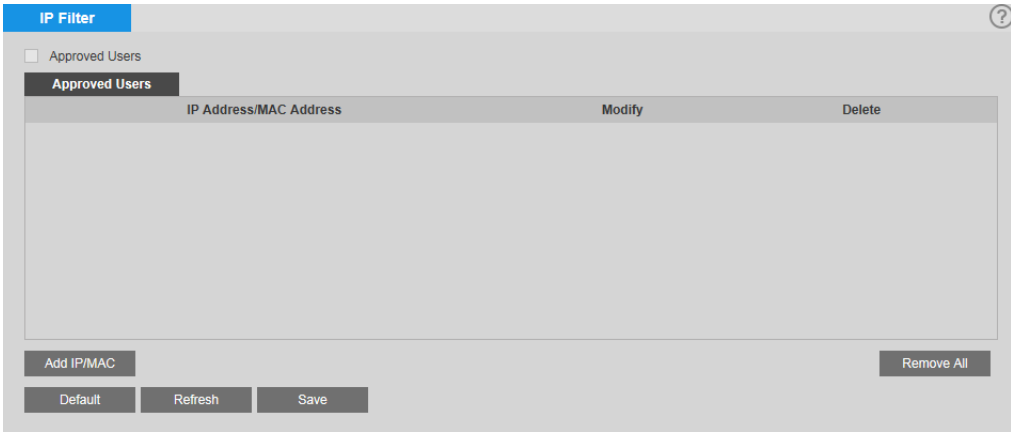
7. Click **Save** to apply the settings. You can now access the camera by entering the domain name in your browser's address bar.

Filtering IP/MAC Addresses

You can configure IP filter settings on the **Setup > Network Setup > IP Filter** page.

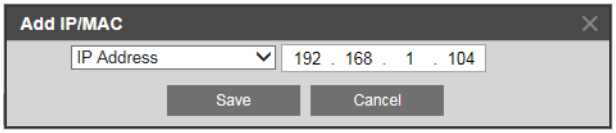


When the IP filter is enabled, remote access to the camera is restricted to specific IP or MAC addresses. You can add or remove addresses from the list at any time. If a user is accessing the camera over a WAN, enter the MAC address of the user's router instead of an IP address.

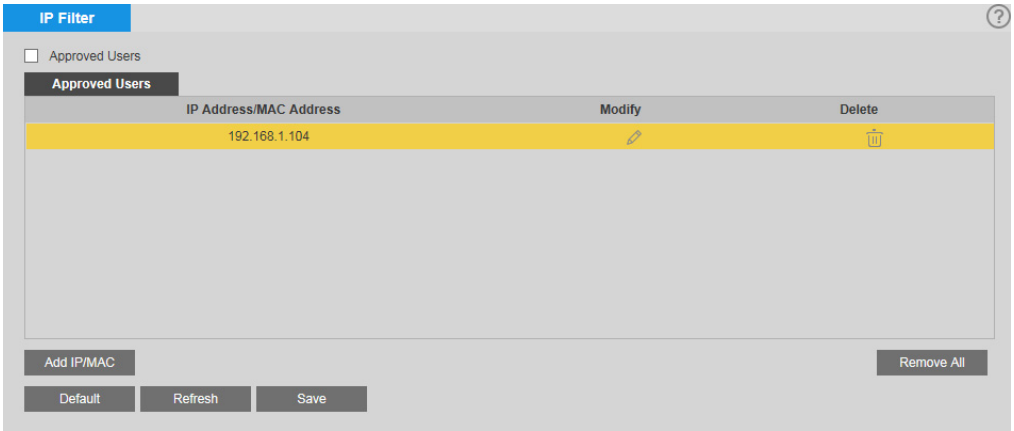
Adding IP/Mac Addresses to the List of Approved Users

To add an IP/MAC address:

1. Click **Add IP/MAC**.
2. In the **Add IP/MAC** window, select **IP Address**, **IP Segment,** or **MAC** from the drop-down list, enter the relevant address, and then click **Save**.



The address is added to the list of approved users.

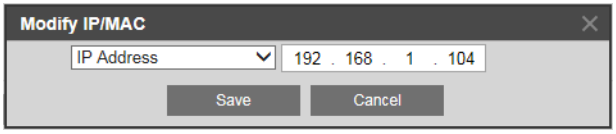


3. Select the **Approved Users** check box, and then click **Save** to apply the settings.

Editing IP/Mac Addresses

To edit an IP/MAC address:

1. In **Address List**, click the **Modify** icon of the address that you want to edit.
2. In the **Modify IP/MAC** window, edit the address as needed, and then click **Save**.



Deleting IP/Mac Addresses from the List of Approved Users

To delete a single IP/MAC address:

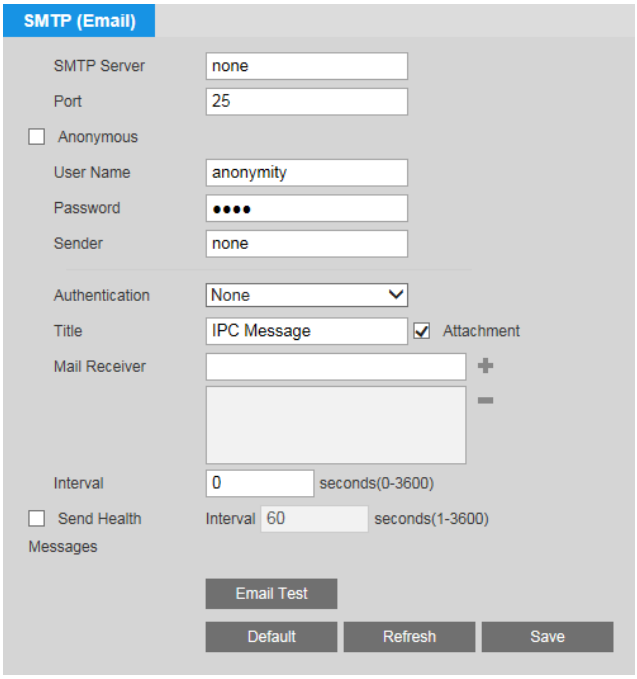
1. In the **Address List**, click the **Delete** icon of the address that you want to delete.
2. A confirmation message appears. Click **OK** to continue, and then click **Save** to apply the settings. The address is removed from the list of approved users.

To delete multiple IP/MAC addresses:

1. Click **Remove All**.
2. A confirmation message appears. Click **OK** to continue, and then click **Save** to apply the settings. All addresses are removed from the list of approved users.

Configuring Email Settings

You can configure email notification settings on the **Setup > Network Setup > SMTP** page.



To set up email notifications:

1. In the **SMTP Server** and **Port** fields, enter the SMTP server and port information.
2. In the **User Name** and **Password** fields, enter the sender's email user name and password. Alternatively, if the server supports anonymous login, you can select the **Anonymous** check box to log in without a user name and password.
3. In the **Sender** field, enter the sender's email address.
4. From the **Authentication** list, select an encryption mode (**SSL** or **TLS**) or select **None**.
5. In the **Title** field, enter the text that you want to appear in the subject line of the email.
6. Select the **Attachment** check box if you want to enable snapshot attachments.
7. In the **Mail Receiver** field, enter the recipient's email address, and then click the **+** sign to add it to the list. You can enter up to three email addresses. To remove an address from the list, select it, and then click the – sign.
8. In the **Interval** field, specify the interval between email notification messages. Enter a value between **0** (no interval) and **3600** seconds (60 minutes).

Note Setting an interval between email notifications reduces the load on the email server if multiple notifications are triggered simultaneously.

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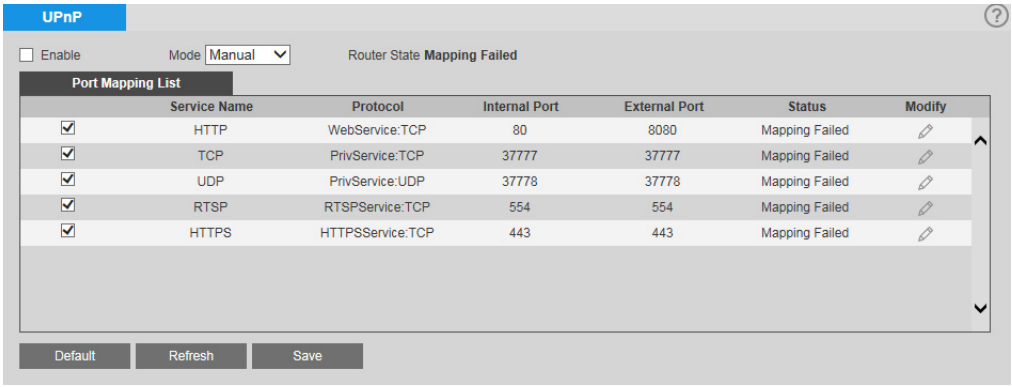
9. To have the system periodically verify that the email notification settings are working, select the **Send Health Messages** check box, and specify the **Interval**.
10. Click **Save** to apply the settings.
11. Click **Email Test** to send a test email to verify that the settings are configured properly.

Configuring UPnP Port Mapping

You can configure Universal Plug and Play (UPnP) settings on the **Setup > Network Setup > UPnP** page.



The UPnP protocol is used to detect network devices with clients running Windows.

To enable UPnP, select the **Enable** check box. The camera can now be detected by Windows' built-in network browser (My Network Places in Windows XP; Network in Windows 7).

To enable UPnP in Windows XP:

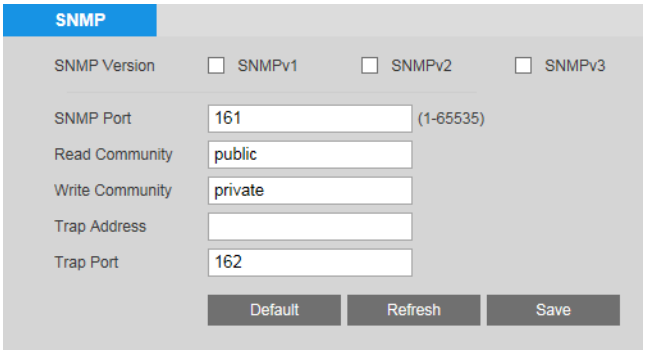
1. Go to **Start > Control Panel > Add or remove programs**.
2. Click **Add or remove programs**, then select **Networking Services** in the Windows Components Wizard.
3. Click **Details**, then select **Internet Gateway Device Discovery** and **Control Client and UPnP User Interface**.
4. Click **OK** to begin the installation.

To enable UPnP in Windows 7:

1. Go to **Start > Control Panel > Network and Internet > Network and Sharing Center**.
2. On the left pane, click **Change advanced sharing settings**.
3. On your current network profile, in the **Network discovery** area, click **Turn on network discovery**, and then click **Save changes**.

Configuring SNMP Settings

You can configure Simple Network Management Protocol (SNMP) settings on the **Setup > Network Setup > SNMP** page.



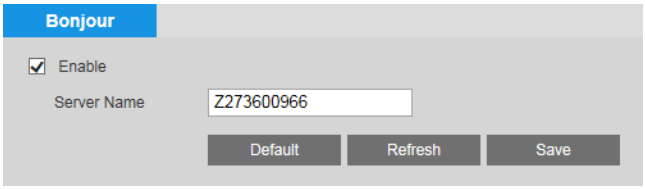
SNMP is a protocol for collecting, organizing, and exchanging management information between managed devices on a network.

To enable SNMPv1 and/or SNMPv2:

1. Next to **SNMP Version**, select the SNMP version(s) that you want to use. You can select SNMPv1 only, SNMPv2 only, both SNMPv1 and SNMPv2, or SNMPv3 only.
2. By default, the **SNMP Port** is **161**. To change the port, enter a number in the range 1–65535.
3. In the **Trap Address** field, enter the IP address of the SNMP server where trap notifications will be sent.
4. By default, the **Trap Port** is **162**. To change the port, enter a number in the range 1–65535.
5. Click **Save** to apply the settings.

Configuring Bonjour

You can configure Bonjour settings on the **Setup > Network Setup > Bonjour** page.



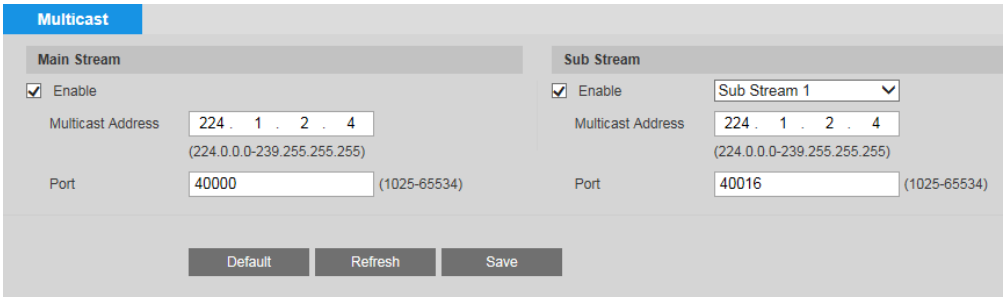
Bonjour is a zero configuration networking application that allows you to create a network in which devices can discover each other without requiring any user configuration.

When this function is enabled, you can discover the camera on a Mac OS computer by opening Safari and going to **Display All Bookmarks > Bonjour**.

Bonjour is enabled by default. To disable it, clear the **Enable** check box, and then click **Save**.

Configuring Multicast Settings

You can configure multicast settings on the **Setup > Network Setup > Multicast** page.



Multicast is a transmission mode for data packets that minimizes bandwidth use and CPU load when multiple computers are receiving the same data packet simultaneously. You can configure multicast for Main Stream, Sub Stream 1, and Sub Stream 2 profiles.

To enable multicast:

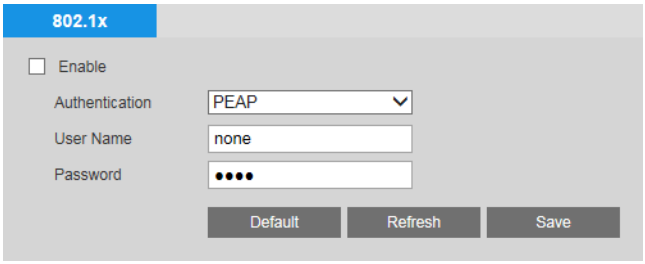
1. For each stream that you want to enable multicast in, select the **Enable** check box, and then enter a multicast address and port, using the suggested ranges as a guide.
2. Click **Save** to apply the settings.

To view video in multicast mode:

- In **Live** view, select **Multicast** from the **Protocol** drop-down list.

Configuring 802.1X Settings

You can configure 802.1X settings on the **Setup > Network Setup > 802.1X** page.



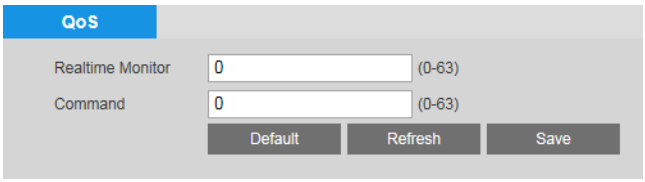
802.1X is a port-based network access control protocol for preventing unauthorized devices from accessing the LAN. You can set up user name and password credentials for the camera so that it is not blocked by the network switch.

To enable 802.1X:

1. Select the **Enable** check box.
2. In the **User Name** field, enter the user name that will be used to authenticate the camera.
3. In the **Password** field, enter the password that will be used to authenticate the camera.
4. Click **Save** to apply the settings.

Configuring QoS Settings

You can configure Quality of Service (QoS) settings on the **Setup > Network Setup > QoS** page.



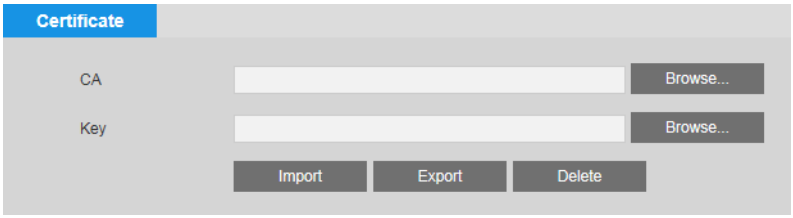
QoS settings control bandwidth use by prioritizing certain data packets over others.

To enable QoS:

1. In the **Realtime Monitor** field, enter a DSCP (Differentiated Services Codepoint) value for live video packets. Select a value between 0 (lowest priority) and 63 (highest priority).
2. In the **Command** field, enter a DSCP (Differentiated Services Codepoint) value for non-video packets. Select a value between **0** (lowest priority) and **63** (highest priority).
3. Click **Save** to apply the settings.

Working with Certificates

You can configure certificate settings on the **Setup > Network Setup > Certificate** page.



To install a Honeywell-signed root certificate:

1. Click **Export**, navigate to the directory where you want to save the certificate (**ca.crt**) on your PC, and then click **Save**.
2. Go to the directory where you saved the certificate and double-click the certificate. The **Certificate** window opens.
3. In the **Certificate** window, on the **General** tab, click **Install Certificate** to open the Certificate Import Wizard.
4. Click **Next** to continue.
5. Click **Place all certificates in the following store**, click **Browse**, click **Trusted Root Certification Authorities**, and then click **OK**.
6. Click **Next**, and then click **Finish** to close the Certificate Import Wizard. A confirmation dialog box appears with the message "The import was successful."
7. Click **OK**, and then click **OK** to close the **Certificate** window.

To import a certificate or private key:

- Next to **CA** or **Key**, click **Browse**, navigate to the location of the certificate or key on your PC, and then click **Import**.

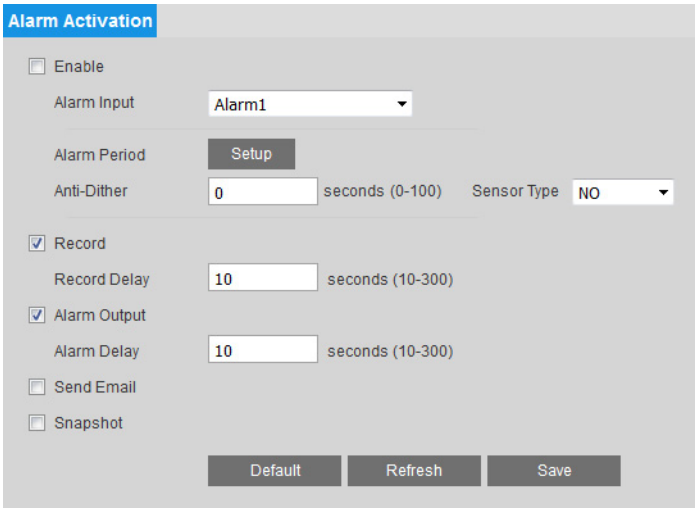
6

Configuring Event Settings

This chapter contains the following sections:

Configuring Alarm Events

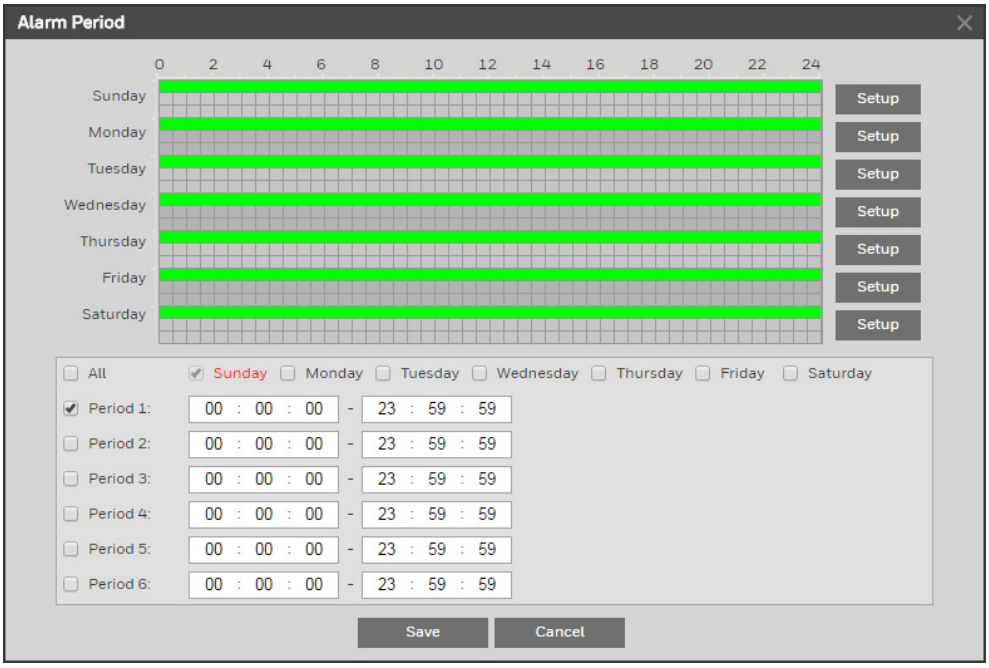
You can configure alarm event settings on the **Setup > Alarm Setup > Alarm Setup** page.



To enable the alarm function:

1. Select the **Enable** check box.
2. From the **Alarm Input** list, select the alarm input that you want to configure (**Alarm1** or **Alarm2**).

3. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.



4. Set the days and times when you want the alarm function to be active, and then click **Save**.
5. In the **Anti-Dither** field, enter the anti-dither time in seconds. Enter a value between **0** and **100** seconds. The system will only allow one alarm event within this period.
6. Set **Sensor Type** to **NO** (normally open) or **NC** (normally closed), depending on the alarm input type.
7. To start recording video when an alarm event is detected, select the **Record** check box.
8. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after an alarm event has ended. Enter a value between **10** and **300**.
9. To generate an alarm output when an alarm event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
10. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after an alarm event has ended. Enter a value between **10** and **300**.
11. To send an email notification when an alarm event is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email).** See *Configuring Email Settings* on page 51.
12. To take a snapshot when an alarm event is detected, select the **Snapshot** check box.

Note For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup > Network Setup > SMTP (Email)**. See *Configuring Email Settings* on page 51.

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13. Click **Save** to apply the settings.

Configuring System Events

You can configure system event settings (for SD card and network errors and illegal login attempts) on the **Setup > Alarm Setup > Event** page.

Configuring SD Card Event Settings

There are three types of SD card events:

- **No SD Card**: There is no microSD card installed in the camera.
- **SD Card Error**: The installed microSD card is not working.
- **Capacity Warning**: The installed microSD card is full.

You can configure settings for each type of event.

To enable SD card event detection:

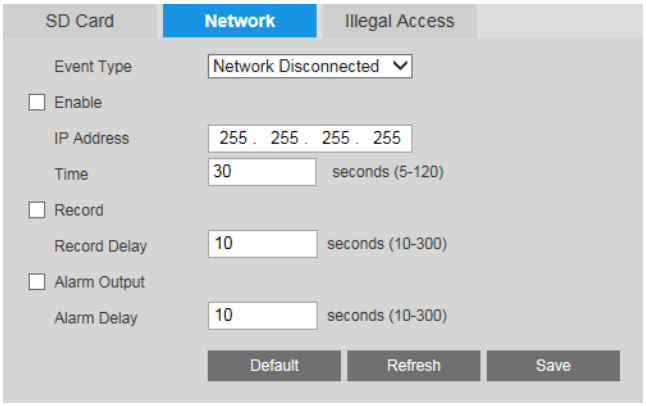
1. On the **SD Card** tab, select the event type that you want to configure from the **Event Type** list (**No SD Card**, **SD Card Error**, or **Capacity Warning**).
2. Select the **Enable** check box.
3. To generate an alarm output when an event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
4. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after the event has ended. Enter a value between **10** and **300**.
5. To send an email notification when the event is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email)**. See *Configuring Email Settings* on page 51.
6. Click **Save** to apply the settings.

Configuring Network Event Settings

There are two types of network events:

- **Network Disconnected**: The camera is offline.
- **IP Conflict**: The camera has the same IP address as another device on the network.

You can configure settings for each type of event.

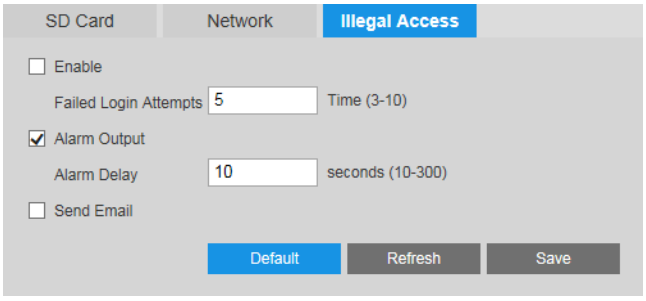


To enable network event detection:

1. On the **Network** tab, select the event type that you want to configure from the **Event Type** list (**Network Disconnected** or **IP Conflict**).
2. Select the **Enable** check box.
3. In the **IP Address** field, enter the IP address of the headend, and in the **Time** field, enter the countdown time. If no connection is established with the IP address within the specified time, the system will will detect a network disconnection event.
4. To start recording video when the event is detected, select the **Record** check box.
5. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after the event has ended. Enter a value between **10** and **300**.
6. To generate an alarm output when an event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
7. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after the event has ended. Enter a value between **10** and **300**.
8. Click **Save** to apply the settings.

Configuring Illegal Access Event Settings

An illegal access event occurs when a specified number of unsuccessful login attempts is exceeded.

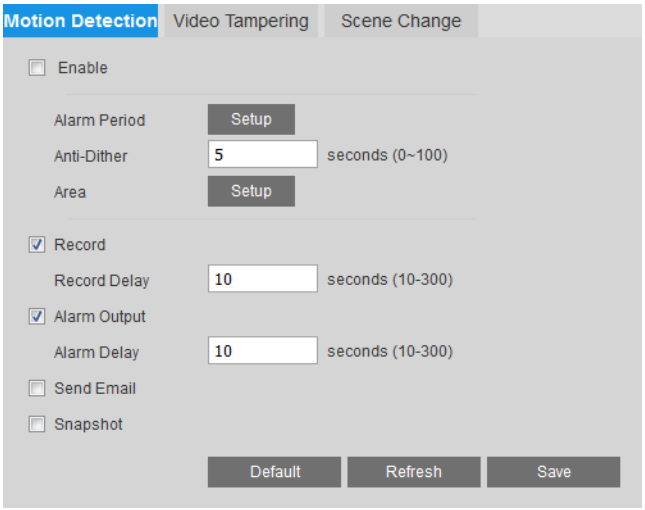


To enable illegal access detection:

1. On the **Illegal Access** tab, select the **Enable** check box.
2. In the **Failed Login Attempts** field, enter the number of unsuccessful login attempts the system will allow before an illegal access event is detected. Enter a value between **3** and **10**.
3. To generate an alarm output when an event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
4. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after the event has ended. Enter a value between **10** and **300**.
5. To send an email notification when an illegal access event is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email)**, See *Configuring Email Settings* on page 51.

Configuring Motion Detection Events

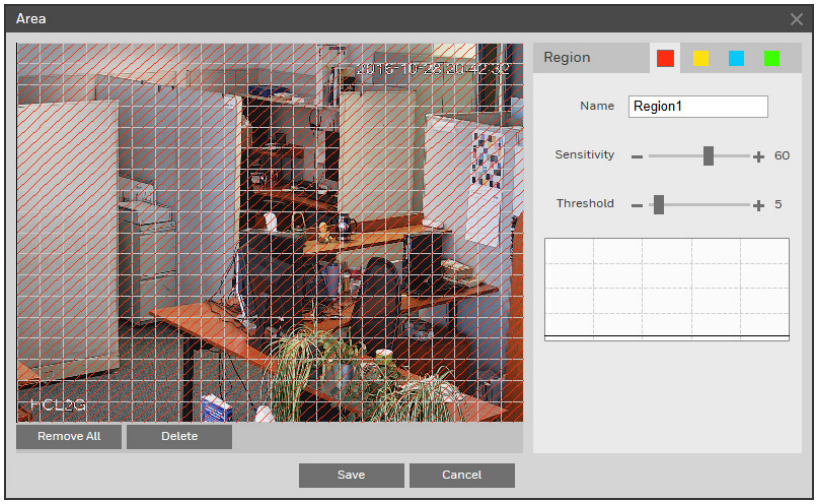
You can configure motion detection event settings on the **Setup > Video Analytics > Video Detection > Motion Detection** page.



To enable motion detection:

1. Select the **Enable** check box.
2. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.
3. Set the days and times when you want the alarm function to be active, and then click **Save**.
4. In the **Anti-Dither** field, enter the anti-dither time in seconds. Enter a value between **0** and **100** seconds. The system will only allow one motion detection event within this period.
5. Set up motion detection areas:

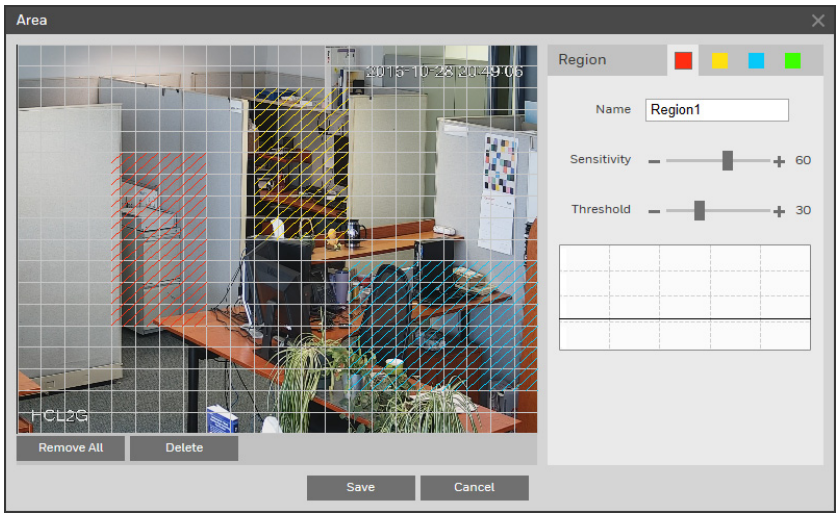
a. Next to **Area**, click **Setup**. The **Area** window opens.



b. By default, the whole video window is configured as a motion detection area. To define a smaller area, drag your mouse over the area(s) that you want to deselect, or click **Remove All**, and then redraw the area(s) with your mouse.

c. You can define up to 4 motion detection profiles (regions), each with different sensitivity and threshold settings. Next to **Region**, click one of the solid color tiles to select a region. Drag the **Sensitivity** and **Threshold** sliders to the desired values. Click the – and + signs to make fine adjustments.

Sensitivity measures the amount of change in a scene that qualifies as motion. Threshold measures the amount of motion in a scene required to trigger a motion detection event.



d. Click **Save** to apply the settings.

6. To start recording video when motion is detected, ensure that the **Record** check box is selected.
7. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after the event has ended. Enter a value between **10** and **300**.
8. To generate an alarm output when motion is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.

9. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after the event has ended. Enter a value between **10** and **300**.
10. To send an email notification when motion is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email).** See *Configuring Email Settings* on page 51.
11. To take a snapshot when motion is detected, select the **Snapshot** check box.

Note For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup > Network Setup > SMTP (Email)**. See *Configuring Email Settings* on page 51.

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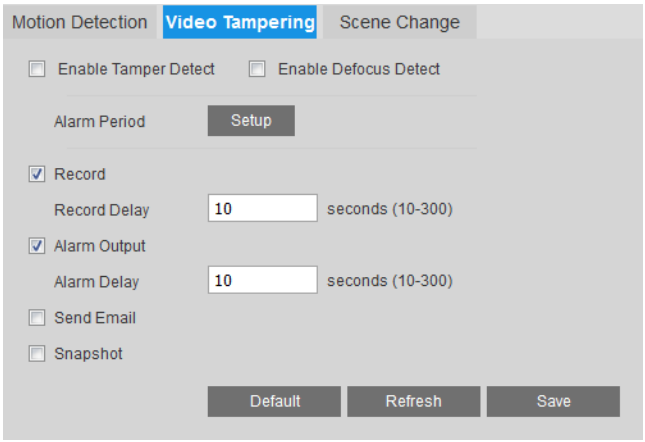
12. Click **Save** to apply the settings.

Configuring Camera Tampering Events

You can configure camera tampering event settings on the **Setup > Video Analytics > Video Detection > Video Tampering** page.



To enable camera tampering detection:

1. Select the **Enable Tamper Detect** and/or the **Enable Defocus Detect** check box(es).
2. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.
3. Set the days and times when you want the alarm function to be active, and then click **Save**.
4. To start recording video when a tampering event is detected, ensure that the **Record** check box is selected.
5. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after a tampering event has ended. Enter a value between **10** and **300**.
6. To generate an alarm output when a tampering event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
7. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after a tampering event has ended. Enter a value between **10** and **300**.

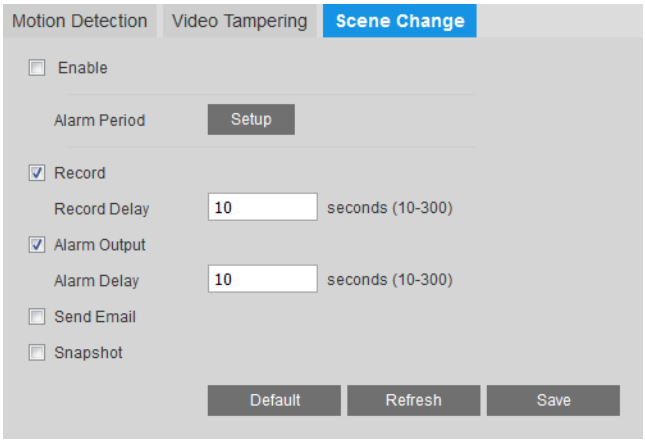
8. To send an email notification when a tampering event is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email).** See *Configuring Email Settings* on page 51.
9. To take a snapshot when a tampering event is detected, select the **Snapshot** check box.

> **Note** For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup > Network Setup > SMTP (Email)**. See *Configuring Email Settings* on page 51.

10. Click **Save** to apply the settings.

Configuring Scene Change Events

You can configure scene change event settings on the **Setup > Video Analytics > Video Detection > Scene Change** page.



To enable scene change detection:

1. Select the **Enable** check box.
2. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.
3. Set the days and times when you want the alarm function to be active, and then click **Save**.
4. To start recording video when a scene change event is detected, select the **Record** check box.
5. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after a scene change event has ended. Enter a value between **10** and **300**.
6. To generate an alarm output when a scene change event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
7. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after a scene change event has ended. Enter a value between **10** and **300**.

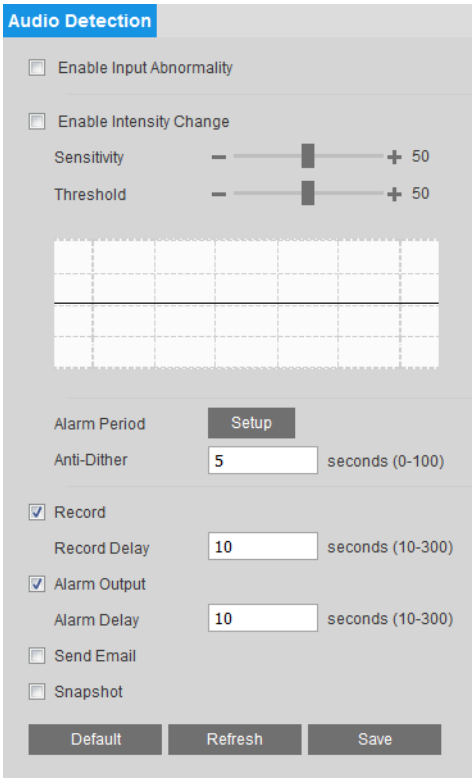
8. To send an email notification when an alarm event is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email).** See *Configuring Email Settings* on page 51.
9. To take a snapshot when an alarm event is detected, ensure that the **Snapshot** check box is selected.

> **Note** For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup > Network Setup > SMTP (Email)**. See *Configuring Email Settings* on page 51.

10. Click **Save** to apply the settings.

Configuring Audio Events

You can configure audio event settings on the **Setup > Video Analytics > Audio Detection** page.



To enable audio event detection:

1. To detect faults in the audio input, select the **Enable Input Abnormality** check box.
2. To detect unusual changes in the audio input:
   a. Select the **Enable Intensity Change** check box.

b. Drag the **Sensitivity** and **Threshold** sliders to the desired values. Click the – and + signs to make fine adjustments. **Sensitivity** controls changes to the audio input volume. **Threshold** controls the amount of change allowed in the audio environment before an audio detection event is triggered.

3. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.
4. Set the days and times when you want the alarm function to be active, and then click **Save**.
5. In the **Anti-Dither** field, enter the anti-dither time in seconds. Enter a value between **0** and **100** seconds. The system will only allow one audio event within this period.
6. To start recording video when an audio event is detected, ensure that the **Record** check box is selected.
7. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after an audio event has ended. Enter a value between **10** and **300**.
8. To generate an alarm output when an audio event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
9. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after an audio event has ended. Enter a value between **10** and **300**.
10. To send an email notification when an audio event is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email).** See *Configuring Email Settings* on page 51.
11. To take a snapshot when an audio event is detected, select the **Snapshot** check box.

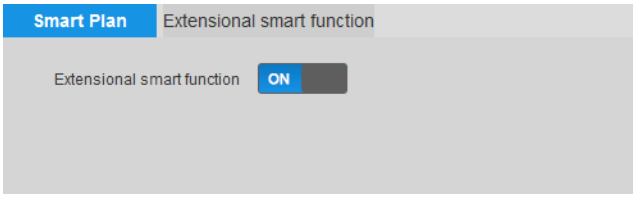
Note For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup > Network Setup > SMTP (Email)**. See *Configuring Email Settings* on page 51.

---

12. Click **Save** to apply the settings.

Accessing IntrusionTrace

IntrusionTrace is a video analytics application designed for 24/7 outdoor operation. You can access IntrusionTrace from the **Setup > Video Analytics > Smart Plan** page.

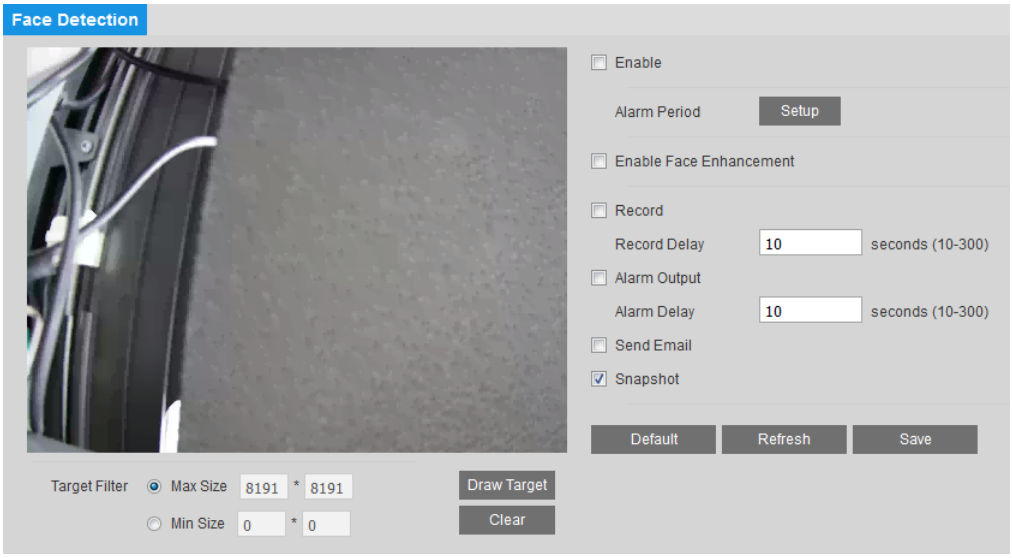


To access IntrusionTrace:

1. Set **Extensional smart functio**n to **ON**.
2. Click the **Extensional smart function** tab, and then click **Open**. The IntrusionTrace webpage opens.

Configuring Face Detection Events

You can configure face detection event settings on the **Setup > Video Analytics > Face Detection** page.



To enable face detection:

1. Select the **Enable** check box.
2. Click **Draw Target** to set up the face detection area. You can move or resize the area using your mouse. To move the area, drag one of the sides. To resize the area, drag one of the corner handles.
3. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.
4. Set the days and times when you want the alarm function to be active, and then click **Save**.
5. To enable face enhancement, select the **Enable Face Enhancement** check box.
6. To start recording video when an event is detected, select the **Record** check box.
7. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after the event has ended. Enter a value between **10** and **300**.
8. To generate an alarm output when an event is detected, select the **Alarm Output** check box and select the alarm output(s) to be activated.
9. In the **Alarm Delay** field, enter the number of seconds that the system will continue to generate an alarm output after the event has ended. Enter a value between **10** and **300**.
10. To send an email notification when an event is detected, select the **Send Email** check box. Email settings must be configured in **Setup > Network Setup > SMTP (Email).** See *Configuring Email Settings* on page 59.
11. To take a snapshot when an event is detected, select the **Snapshot** check box.

> **Note** For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup > Network Setup > SMTP (Email)**.
> See *Configuring Email Settings* on page 59.

12. Click **Save** to apply the settings.

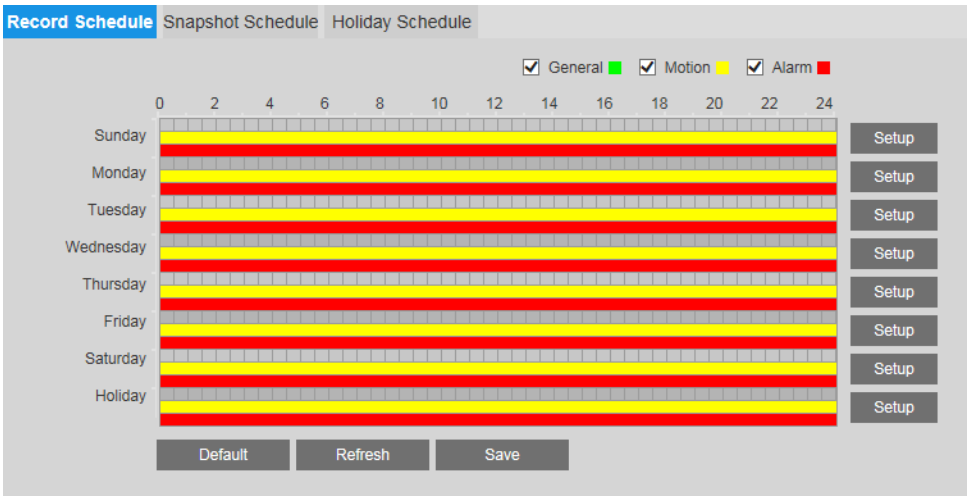
7

Configuring Recording Settings

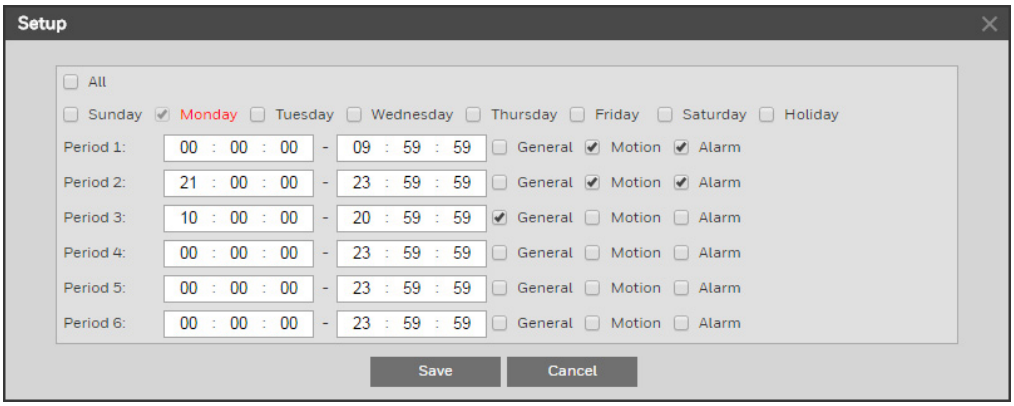
This chapter contains the following sections:

Configuring Recording Schedules

You can set up both regular and holiday schedules for recording video and saving snapshots on the **Setup > Storage Setup > Schedule** page.



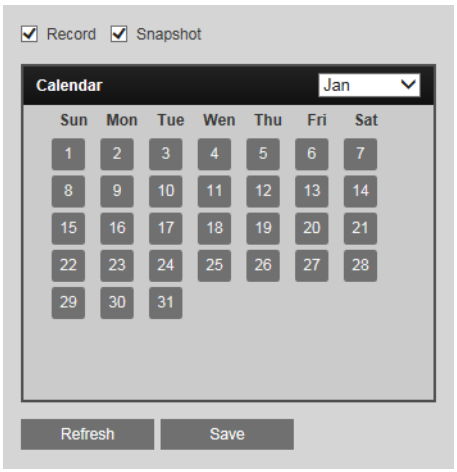
On the **Record Schedule** tab, click the **Setup** buttons to configure weekend, weekday, and holiday settings, for general video recording as well as motion detection and alarm recording.



You can configure up to 6 different recording periods per day. Click **Save** to apply the settings.

Follow the same procedure to configure the settings on the **Snapshot Schedule** tab.

On the **Holiday Schedule** tab, you can designate holidays by clicking dates on the calendar.



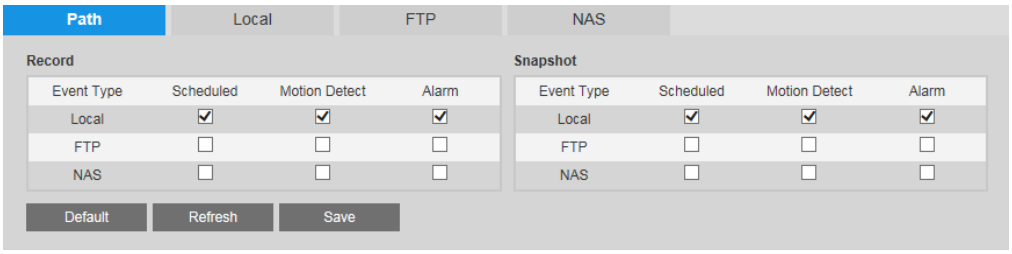
On the selected dates, the video recording/snapshot schedule will follow the holiday settings you configured in the **Record Schedule** and **Snapshot Schedule** tabs. Click **Save** to apply the settings.

Configuring Storage Settings

You can configure recording storage settings on the **Setup > Storage Setup > Destination** page.

Configuring Storage Paths

On the **Path** tab, you can specify where you want recorded video and snapshots—whether scheduled or triggered by a motion detection or alarm event—to be saved: to a local SD card, to an FTP server, or to an NAS disk.

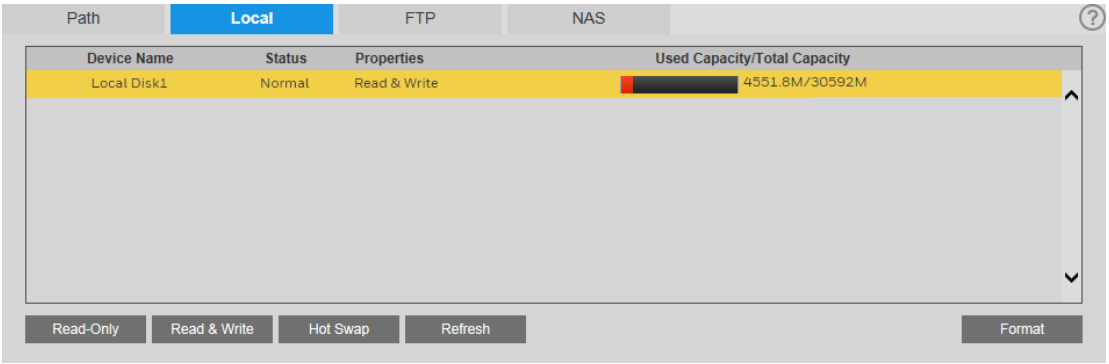


Select which recorded events you want to save and where you want to save them, then click **Save** to apply the settings.

Note Only one network storage option can be used at a time. FTP and NAS cannot be used together.

Configuring the Local SD Card for Storage

If the camera has a microSD card installed, the **Local** tab displays the microSD card details.



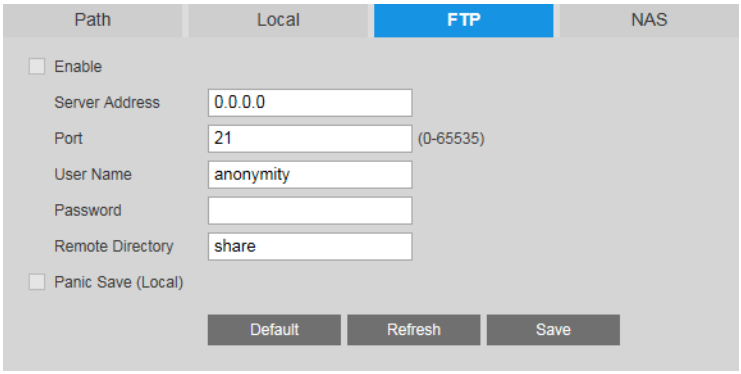
You can set up the installed microSD card for read-only, read-and-write, or hot swap operation by clicking the corresponding button.

- **Read Only**: Data on card can be displayed but not modified.
- **Read & Write**: Data on card can be displayed and modified.
- **Hot Swap**: Card can be inserted or removed without turning off the camera.

If you want to erase all of the data on the microSD card, click **Format**. A confirmation message appears. Click **OK** to continue. The card is formatted and the camera reboots.

Configuring an FTP Server for Storage

On the **FTP** tab, you can enable FTP storage and configure storage settings.



To enable FTP storage:

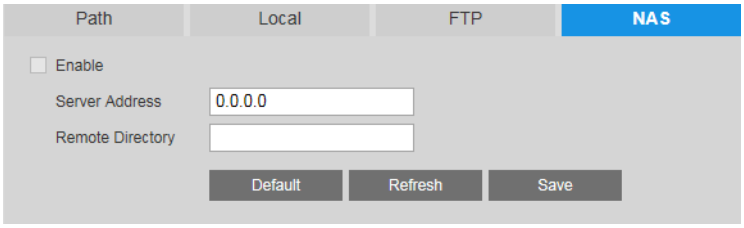
1. Select the **Enable** check box.
2. In the **Server Address** and **Port** fields, enter the address and port number of the FTP server.
3. In the **User Name** and **Password** fields, enter the user name and password of the server.
4. In the **Remote Directory** field, enter the directory on the server where the recorded video/snapshot files will be stored.
5. Click **Save** to apply the settings.

Panic Save

To save recorded video/snapshots to the camera's microSD card when the network connection to the FTP is offline or unavailable, select the **Panic Save (Local)** check box, and then click **Save** to apply the setting.

Configuring an NAS Disk for Storage

On the **NAS** tab, you can enable network attached storage and configure storage settings.

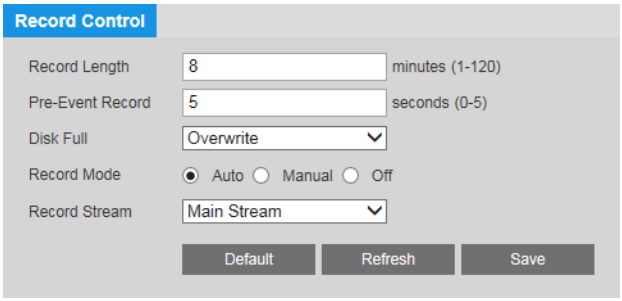


To enable network attached (NAS) storage:

1. Select the **Enable** check box.
2. In the **Server Address** field, enter the address of the NAS server.
3. In the **Remote Directory** field, enter the directory on the server where the recorded video/snapshot files will be stored.
4. Click **Save** to apply the settings.

Configuring Recording Settings

You can configure recording settings on the **Setup > Storage Setup > Record Control** page.



By default, recorded video files are 8 minutes or 30 minutes long (depending on your camera model). To change this setting, enter a time between **1** and **120** minutes in the **Record Length** field.

By default, the pre-event record time (the number of seconds the system stores in a buffer) is 5 seconds. To change this setting, enter a time between **0** and **5** seconds in the **Pre-Event Record** field.

From the **Disk Full** list, select **Overwrite** or **Stop**.

- **Overwrite**: Recording continues when disk capacity is reached and overwrites previously saved video.
- **Stop**: Recording stops when disk capacity is reached. Nothing is overwritten and no further video is recorded.

Set **Record Mode** to **Auto**, **Manual**, or **Off**.

- **Auto**: Video records continuously.
- **Manual**: Video recording must be initiated by user.
- **Off**: Video recording is disabled.

From the **Record Stream** list, select the stream profile that you want to use for recording video: **Main Stream** or **Sub Stream**.

Click **Save** to apply the settings.

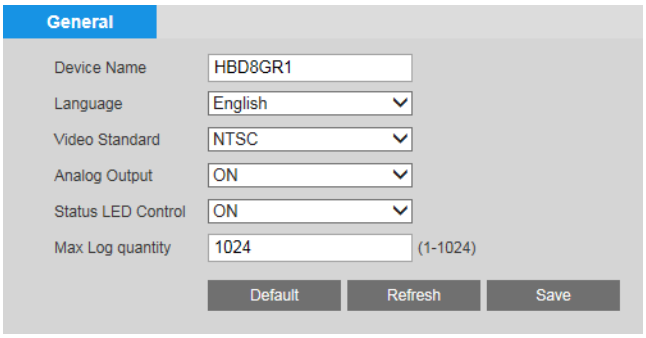
8

Configuring System Settings

This chapter contains the following sections:

Configuring General System Settings

You can configure the device name, user interface language, video standard, analog output, and status LED settings on the **Setup > System Setup > General** page.



To change the device name, in the **Device Name** field, enter a new name, and then click **Save**.

To change the interface language, select a language from the **Language** list, and then click **Save**.

To change the video standard, select **NTSC** or **PAL** from the **Video Standard** list, and then click **Save**.

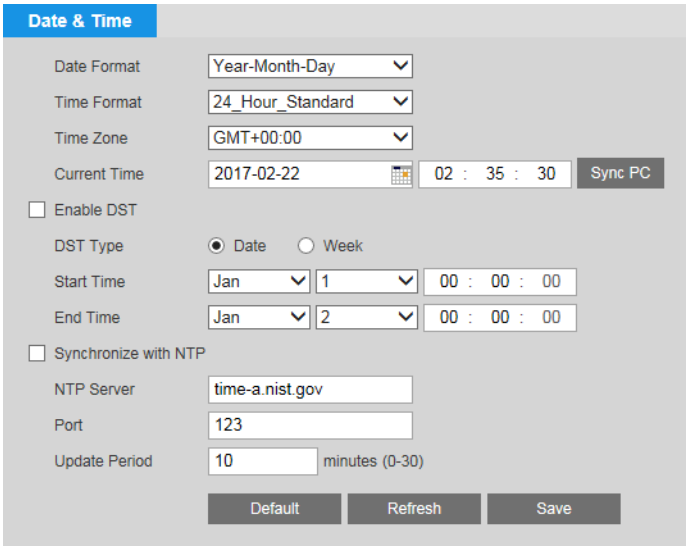
To change the analog output, select **ON** or **OFF** from the **Analog Output** list, and then click **Save**.

To change the **Max Log Quantity**, enter a value between **1** and **1024**, and then click **Save**.

For HBD8GR1 and HCD8G only: The status LED is enabled by default. To disable it, set **Status LED Control** to **OFF**, and then click **Save**.

Configuring Date and Time Settings

You can configure the date and time settings on the **Setup > System Setup > Date & Time** page.



Changing the Date and Time Format

You can change the format of the date and time that appear in the text overlay on the video.

To change the date format, select one of the following formats from the **Date Format** list: **Year-Month-Day**, **Month-Day-Year**, or **Day-Month-Year**. Click **Save** to apply the settings.

To change the time format, select **24_Hour_Standard** or **12_Hour_Standard** from the **Time Format** list.

Setting the Date and Time

There are three ways you can set the camera's date and time. You can manually enter the date and time, synchronize with your PC's internal clock, or set up the camera to synchronize automatically with a Network Time Protocol (NTP) server at regular intervals.

To manually set the date and time, enter the date and time in the **Current Time** fields, and then click **Save**.

To synchronize the date and time with your PC, click **Sync PC**. If the synchronization is successful, the message "Save succeeded" appears. You must manually click **Sync PC** each time you want the date and time to synchronize with the PC.

To synchronize the time with an NTP server:

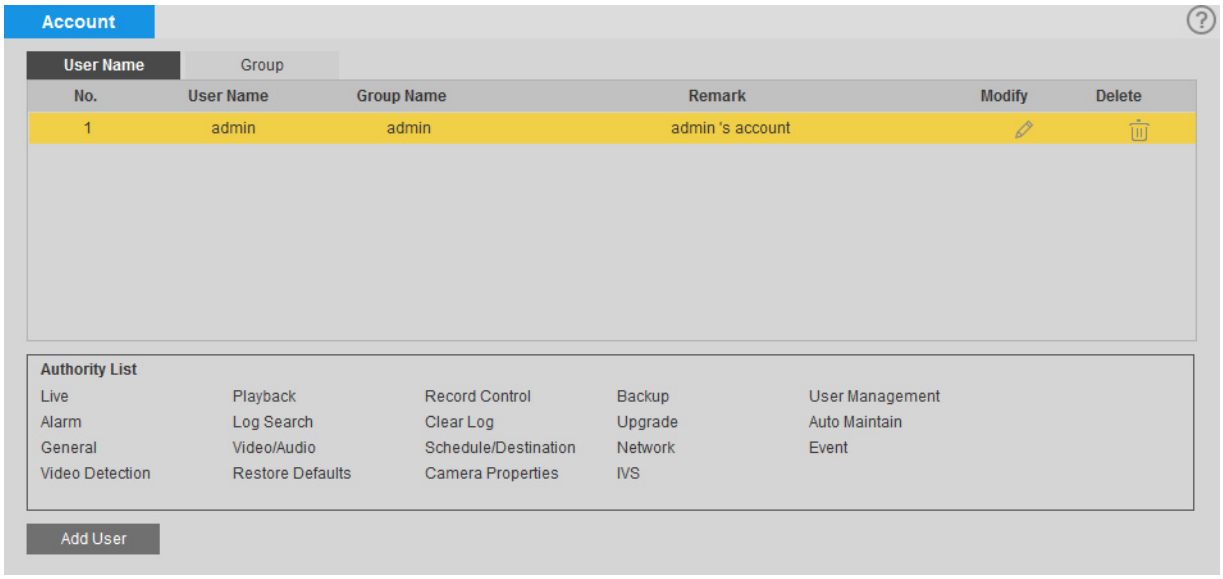
1. From the **Time Zone** list, select your time zone.
2. If you are in an area that observes Daylight Saving Time (DST):

a. Select the **Enable DST** check box.
b. Set **DST Type** to **Week**.
c. Set **Start Time** to **Mar 2nd Sunday 02:00:00 AM**.
d. Set **End Time** to **Nov 1st Sunday 02:00:00 AM**.

3. Select the **Synchronize with NTP** check box.
4. If you want, you can change the **NTP Server** from the default (time-a.nist.gov).
5. In **Update Period** field, enter the interval at which you want the camera's date and time to synchronize with the NTP server. You can enter a value between **0** and **30**.
6. Click **Save** to apply the settings.

Configuring Account Settings

You can manage user accounts and permissions on the **Setup > System Setup > Account** page.



Managing Groups

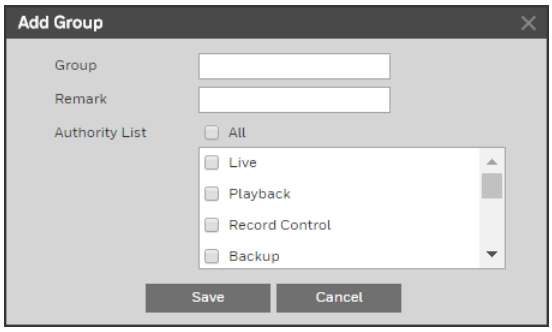
By default, there are two categories or "groups" of users: **admin** and **user**. If you want, you can create additional custom groups.

Creating a Group

You can create a new custom group and assign permissions to it.

To create a group:

1. On the **Group** tab, click **Add Group** to open the **Add Group** window.



2. Enter a name for the group in the **Group** field.
3. If you want, you can enter a brief description in the **Remark** field.
4. From the **Authority List**, select permissions for the group (see *Table 8-1*).

Table 8-1 Permissions

Name	Description
Live	The user can view live video and access all of the controls in the **Live** interface.
Playback	The user can play back recorded video and access all of the controls in the **Playback** interface.
Record Control	The user can access the settings in **Setup** > **Storage Setup** > **Record Control**.
Backup	The user can save and export video clips in the **Playback** interface.
User Management	The user can access the settings in **Setup** > **System Setup** > **Account**.
Alarm	The user can access the settings in **Setup** > **Alarm Setup** > **Alarm**.
Log Search	The user can search logs in **Setup** > **Information** > **Log**.
Clear Log	The user can clear logs in **Setup** > **Information** > **Log**.
Upgrade	The user can upgrade firmware in **Setup** > **System Setup** > **Upgrade**.
Auto Maintain	The user can access the settings in **Setup** > **System Setup** > **Auto Maintain**.
General	The user can access the settings in **Setup** > **System Setup** > **General**.
Video/Audio	The user can access the settings in **Setup** > **Compression Setup** > **Video** and in **Setup** > **Audio Setup**.
Schedule/Destination	The user can access the settings in **Setup** > **Storage Setup** > **Schedule** and in **Setup** > **Storage Setup** > **Destination**.
Network	The user can access the settings in **Setup** > **Network Setup**.
Event	The user can access the settings in **Setup** > **Alarm Setup** > **Event**.
Video Detection	The user can access the settings in **Setup** > **Video Analytics** > **Video Detect**.
Restore Defaults	The user can access the settings in **Setup** > **System Setup** > **Default**.
Camera Properties	The user can access the settings in **Setup** > **Camera Setup** > **Properties**.
IVS	The user can access the settings in **Setup** > **Video Analytics**.

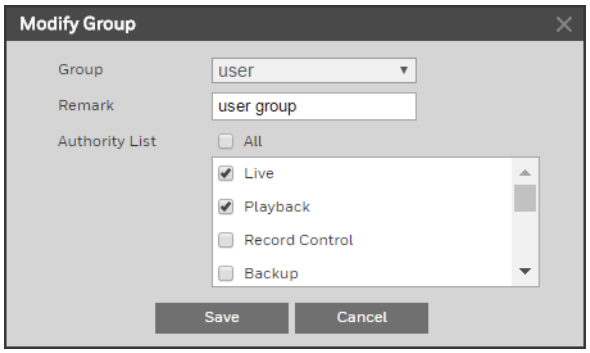
5. Click **Save** to apply the settings. The group is added to the list.

Modifying a Group

You can modify the permissions of the administrator group, user group, and any custom groups that you have created.

To modify a group:

1. On the **Group** tab, select the group that you want to modify (your selection will be highlighted yellow), and then click the **Modify** icon to open the **Modify Group** window.



2. If you want, you can edit the description in the **Remark** field.
3. From the **Authority List**, select or deselect specific permissions for the group (see *Table 8-1*), or select the **All** check box to select/deselect all of the permissions.
4. Click **Save** to apply the settings.

Deleting a Group

You can delete any custom group that you have created (you cannot delete the administrator group or the user group).

To delete a group:

1. On the **Group** tab, select the group that you want to delete (your selection will be highlighted yellow), and then click the **Delete** icon .
2. A confirmation message appears. Click **OK** to continue. The group is removed from the list.

Managing Users

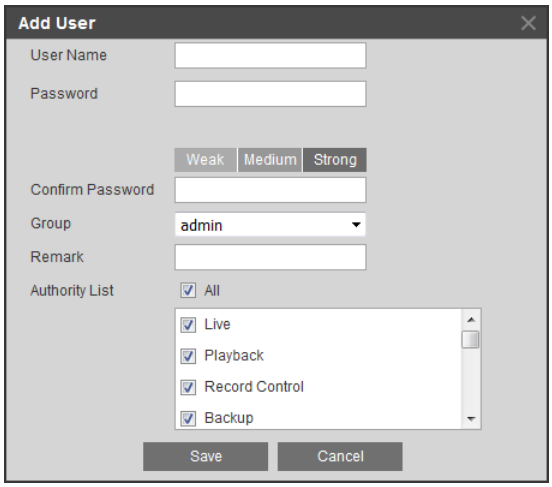
You can create, modify, or delete a user account.

Creating a User Account

You can create a new user account and assign permissions to it.

To create a user account:

1. On the **User Name** tab, click **Add User** to open the **Add User** window.



2. Assign the account a user name and password.
   a. In the **User Name** field, enter a unique user name.
   b. In the **Password** field, enter a password. The password must be at least 8 characters in length and contain a combination of uppercase and lowercase letters, at least one number, and at least one special character.
3. Assign the account to a group (**admin**, **user**, or a custom group that you have created) chosen from the **Group** list.
4. If you want, you can enter a brief description in the **Remark** field.
5. From the **Authority List**, select permissions for the account (see *Table 8-1*).

Note Each user is assigned to a group. The individual user's permissions cannot exceed those of the group to which the user belongs. To modify permissions at the group level, see *Modifying a Group* on page 79.

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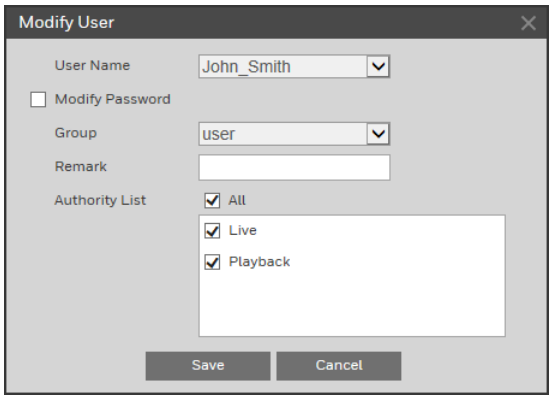
6. Click **Save** to apply the settings. The user account is added to the list.

Modifying a User Account

You can modify the user name, password, and permissions of a user account.

To modify a user account:

1. On the **User Name** tab, select the user account that you want to modify (your selection will be highlighted yellow), and then click the **Modify** icon to open the **Modify User** window.



2. To change the password, select the **Modify Password** check box, enter the **Old Password** and the **New Password** in the corresponding fields, and then re-enter the new password in the **Confirm Password** field.
3. To change the group, select a group from the **Group** list.
4. If you want, you can edit the description in the **Remark** field.
5. From the **Authority List**, select or deselect specific permissions for the account (see *Table 8-1*), or select **All** to select/deselect all of the available permissions.

Note Each user is assigned to a group. The individual user's permissions cannot exceed those of the group to which the user belongs. To modify permissions at the group level, see *Modifying a Group* on page 79.

---

6. Click **Save** to apply the settings.

Deleting a User Account

You can delete any user account that you have created (you cannot delete the admin user).

To delete a user account:

1. On the **User Name** tab, select the user account that you want to delete (your selection will be highlighted yellow), and then click the **Delete** icon .
2. A confirmation message appears. Click **OK** to continue. The user account is removed from the list.

Resetting the Camera

You can reset the camera to its factory default settings on the **Setup > System Setup > Default** page.

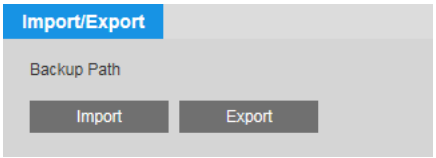
Note Some configuration information, including the IP address, will be lost when the camera reverts to its factory default settings.

To reset the camera:

1. Click **Default**.
2. A confirmation message appears. Click **OK** to continue. The camera reboots automatically and reverts to its factory default settings.

Backing Up/Restoring a Configuration

You can back up or restore configuration settings on the **Setup > System Setup > Import/Export** page.



To back up a configuration:

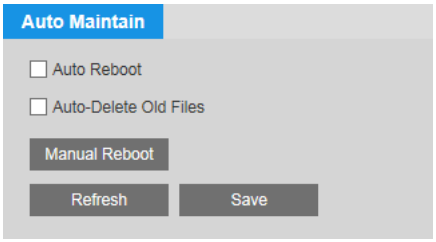
1. Click **Export**. The **Save As** window opens.
2. By default, the backup file is named **DeviceConfig.backup**. Rename the file if you want, navigate to the directory where you want to save the file, and then click **Save**. The file path is displayed under **Backup Path**.

To restore a saved configuration:

1. Click **Import**. The directory displayed under **Backup Path** opens in a new window.
2. Click the backup file (for example, **DeviceConfig.backup**). The configuration settings are applied immediately.

Configuring Maintenance Settings

Two automatic maintenance functions are available on the **Setup > System Setup > Auto Maintain** page. You can set up the camera to reboot daily or weekly and delete old files automatically.



To enable the auto reboot function, select the **Auto Reboot** check box, and then specify the reboot schedule (for example, every Tuesday at 2 a.m.). Click **Save** to apply the settings.

To enable the auto delete function, select the **Auto Delete Old Files** check box, and then specify the age (in days) of the files to be deleted. For example, if you enter **30**, files that are 30 days old and older will be deleted automatically. Click **Save** to apply the settings.

Upgrading the Firmware

You can upgrade the camera firmware on the **Setup > System Setup > Upgrade** page.

Note Before you begin, you will need to obtain the new firmware and save it to your PC or to an external drive.

To upgrade the firmware:

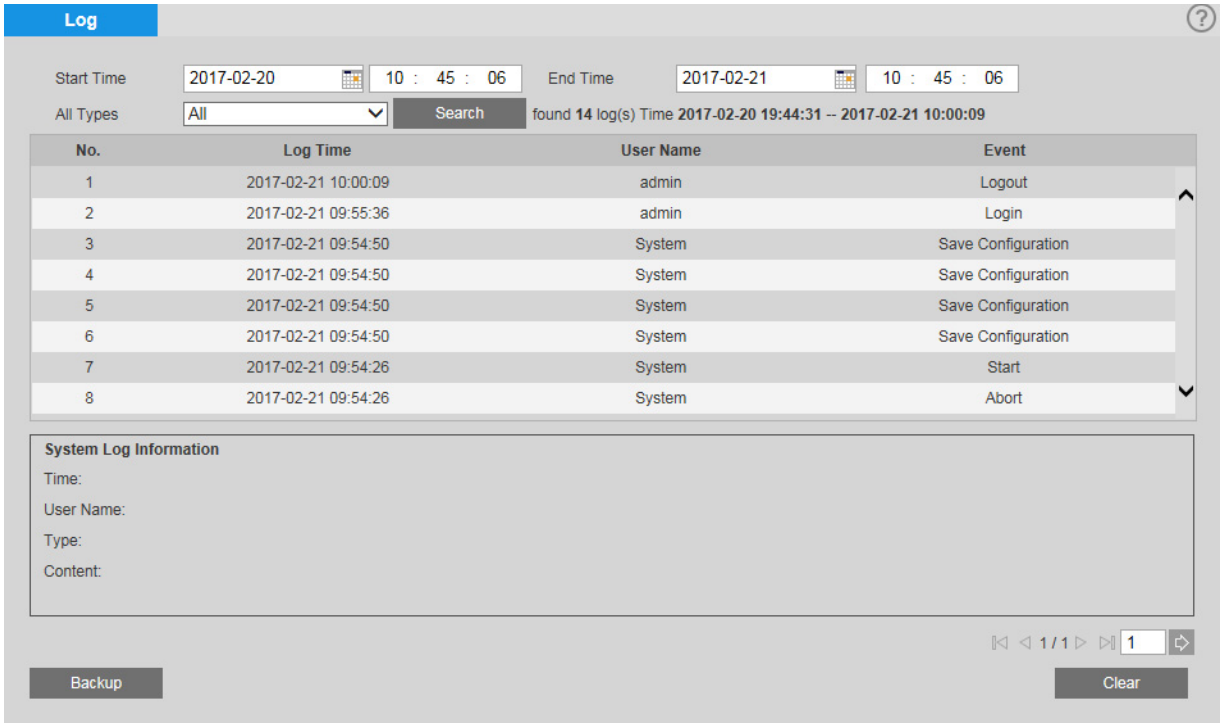
1. Click **Import**.
2. Navigate to the location of the firmware file (.bin), select it, and then click **Open**. The file name appears in the **Firmware File** field.
3. Click **Upgrade** to install the firmware.
4. Reboot the camera.

Viewing Version Information

You can view the camera's firmware version, web client version, ONVIF version, and serial number on the **Setup > Information > Version** page.

Managing Logs

You can view, back up, and delete log files on the **Setup > Information > Log** page.



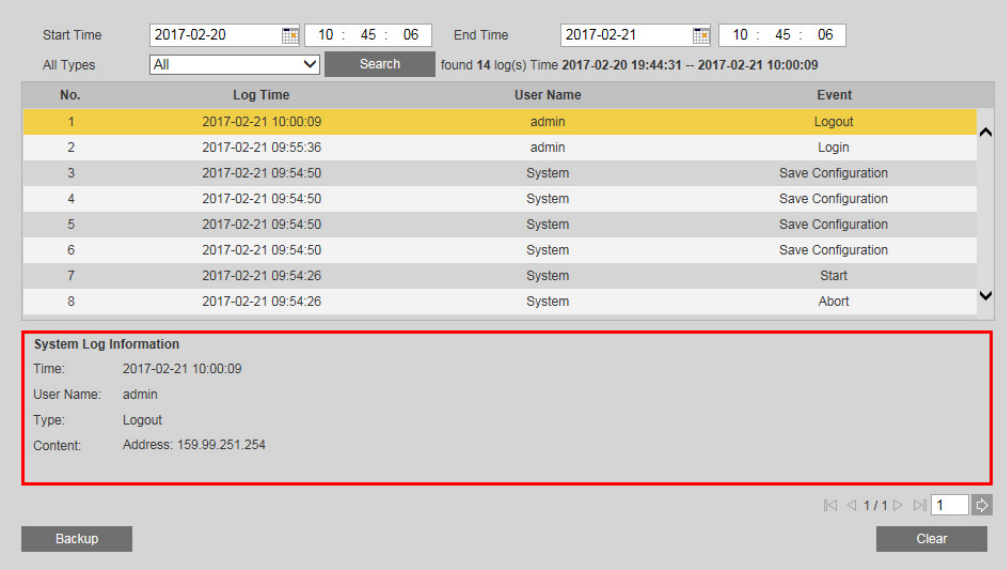
Viewing Logs

There are seven log types: System, Setting, Data, Event, Record, Account, and Clear Log.

To view logs by type:

1. Enter the **Start Time** and **End Time** search parameters.
2. From the **All Types** list, select the log type(s) that you want to retrieve, and then click **Search**. The logs are listed by time, user name, and event (if applicable).

3. To view detailed information about a specific log, click the log. The information is displayed in the **System Log Information** box.



Backing Up Logs

To back up a log:

1. Click **Backup**. The **Save As** window opens.
2. By default, the backup file is named **LogBackup[*YYYY-MM-DD*].txt**. Rename the file if you want, locate the directory where you want to save the file, and then click **Save**.

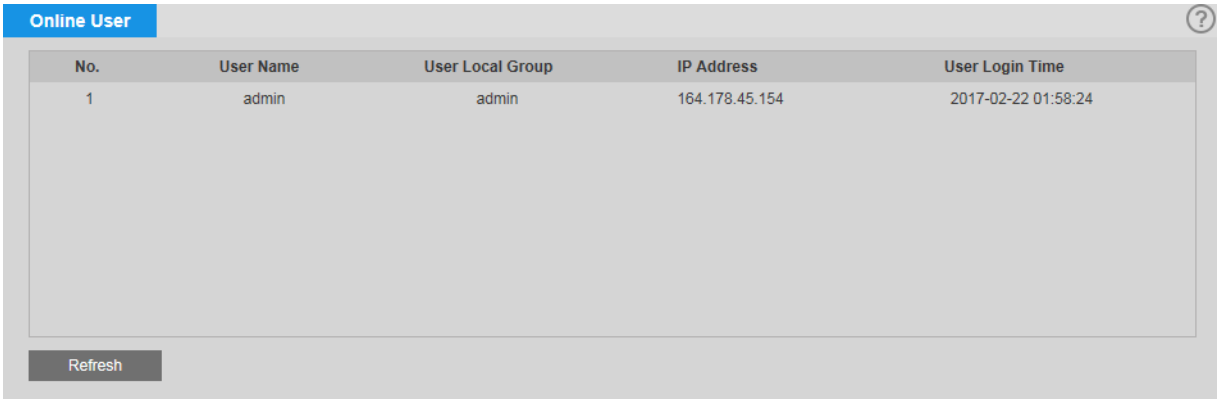
Deleting Logs

To delete all logs:

1. Click **Clear**.
2. A confirmation message appears. Click **OK** to continue. All of the logs that you have not backed up are deleted.

Viewing Online Users

You can see which users are currently online on the **Setup > Information > Online User** page. The users are listed by user name, IP address, and login time. To refresh the list, click **Refresh**.



A

Technical Specifications

H4D8GR1 Mini Dome Camera

Table A-1 H4D8GR1 Specifications

Camera	
Video Standard	NTSC/PAL
Image Sensor	1/1.7" 12 MP progressive scan CMOS
Number of Pixels (H×V)	4000×3000
Minimum Illumination	0.02 lux color @ F1.53, 0 lux b/w with IR LEDs on @ F1.5
Lens	4.1–12.8 mm, MFZ, F1.53
Horizontal Angle of View	112°–35°
S/N Ratio	50 dB or more
Electronic Shutter Speed	Auto, Manual, 1/3(4)–1/100 000 s
IR Distance	Up to 145 ft (45 m), depending on scene reflectance
Day/Night	Auto(ICR)/Color/BW
Backlight Compensation	BLC/HLC/DWDR/SSA
Wide Dynamic Range	Digital WDR
White Balance	Auto/Natural/Street Lamp/Outdoor/Customize Region
Gain Control	Auto/Manual
Noise Reduction	3DNR
Privacy Masking	Up to 4 configurable areas
Corridor Mode	Yes
Electronic Image Stabilization	Off/On
Defog	Auto/Manual/Off
Audio Input/Output	Line In/Out
Alarm Input/Output	2/1
Onboard Storage	Up to 128 GB microSD card, Class 10 (not included)

Network		
Video Compression		H.265/H.264+/H.264/MJPEG
Resolution	**16:9**	8 MP (3840×2160) / 3 MP (2304×1296) / 1080p (1920×1080) / 720p (1280×720)
	4:3	12 MP (4000×3000) / 5 MP (2560×1920) / 3 MP (2048×1536) / 1.3 MP (1280×960) / VGA (640×480) / CIF (352×288/352×240)
	Other	8 MP (4096×2160) / 6 MP (3072×2048) / SXGA (1280×1024) / D1 (704×480)
Frame Rate	**Main Stream**	12 MP (4000×3000) 1–20 fps, 8 MP (4096×2160) or lower at 1–25/30 fps
	Sub Stream	D1/VGA/CIF up to 25/30 fps
	Triple Stream	1080p/720p/D1/VGA up to 25/30 fps
Audio Compression		G.711a/G.711mu/AAC/G.726
Audio Stream		Full duplex, simplex
Ethernet		RJ-45 (10/100/1000Base-T)
Protocols		IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, SSL, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, Bonjour, DNS, DDNS, IEEE 802.1X, QoS, NTP, IP Filter, Multicast, ONVIF
Compatibility		ONVIF Profile S/G
Max. Users		20
Supported Web Browsers		Internet Explorer (11.0+), Firefox, Chrome
Supported OS		Windows 7, 32-bit/64-bit, Windows 10
Security		Multiple user access levels with enhanced password policy, IP filtering, IEEE 802.1X, strong digest authentication for access permission, HTTPS, TLS1.2 only, high-strength encrypted algorithm AES-256, SSH/Telnet closed, FTP disabled to reduce surface being attacked, PCI-DSS compliant, built-in cybersecurity hardware chipset
Languages		English, Arabic, Czech, Dutch, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Turkish

General	
Input Voltage	PoE+ (802.3at) Class 4, 12 VDC/24 VAC
Power Consumption	18 W max. (with IR LEDs on and motorized lens working)
Dimensions	6.2 × 4.6 in. (159.0 × 118.0 mm)
Weight	2.3 lb (1.05 kg)
Construction	Die-cast aluminum housing with powder coat
Color	RAL 9003 (White)
Temperature	–40°F to 140°F (–40°C to 60°C)
Relative Humidity	Less than 95%, non-condensing
Ingress Protection	IP67

General		
Impact Resistance		IK10
Regulatory	**Emissions**	EN 55032, FCC Part 15B, AS/NZ CISPR 22:2009 + A1 (2010)
	Immunity	EN 50130-4
	Safety	EN 60950-1, EN 60950-22, UL Listed to UL/CSA 60950-1, UL/CSA 60950-22
	RoHS	EN 50581

Integration	
MAXPRO NVR Family	Entry to Enterprise Level Network Video Recorders (4.0 and greater)
MAXPRO VMS Family	Entry to Enterprise Level Network Video VMS (R410 and greater)
DVM	DVM R600.1 SP1
HUS	HUS 5.1
Accessories	HB4G-PM Pole Mount Adapter HB34G-CM Corner Mount Adapter HD4CHIP-PK2 Pendant Mount Bracket HD4CHIP-WK2 Wall Mount Bracket H4G-CB Replacement Dome (Clear) H4G-SB Replacement Dome (Smoke)

HBD8GR1 Bullet Camera

Table A-2 HBD8GR1 Specifications

Camera		
Video Standard		NTSC/PAL
Image Sensor		1/1.7" 12 MP progressive scan CMOS
Number of Pixels (H×V)		4000×3000
Minimum Illumination		0.02 lux color, 0 lux b/w with IR LEDs on @ F1.7
Lens		5.1–12.8 mm, MFZ, F1.7
Horizontal Angle of View		86°–35°
S/N Ratio		50 dB or more
Electronic Shutter Speed		Auto, Manual, 1/3(4)–1/100 000 s
IR Distance		Up to 210 ft (65 m), depending on scene reflectance
Day/Night		Auto(ICR)/Color/BW
Backlight Compensation		BLC/HLC/DWDR/SSA
Wide Dynamic Range		Digital WDR
White Balance		Auto/Natural/Street Lamp/Outdoor/Customize Region
Gain Control		Auto/Manual
Noise Reduction		3DNR
Privacy Masking		Up to 4 configurable areas
Corridor Mode		Yes
Electronic Image Stabilization		Off/On
Defog		Auto/Manual/Off
Audio Input/Output		Line In/Out
Alarm Input/Output		2/1
Analog Output		BNC connector
Onboard Storage		Up to 128 GB microSD card, Class 10 (not included)

Network		
Video Compression		H.265/H.264+/H.264/MJPEG
Resolution	**16:9**	8 MP (3840×2160) / 3 MP (2304×1296) / 1080p (1920×1080) / 720p (1280×720)
	4:3	12 MP (4000×3000) / 5 MP (2560×1920) / 3 MP (2048×1536) / 1.3 MP (1280×960) / VGA (640×480) / CIF (352×288/352×240)
	Other	8 MP (4096×2160) / 6 MP (3072×2048) / SXGA (1280×1024) / D1 (704×480)

Network		
Frame Rate	**Main Stream**	12 MP (4000×3000) 1–20 fps, 8 MP (4096×2160) or lower at 1–25/30 fps
	Sub Stream	D1/VGA/CIF up to 25/30 fps
	Triple Stream	1080p/720p/D1/VGA up to 25/30 fps
Audio Compression		G.711a/G.711mu/AAC/G.726
Audio Stream		Full duplex, simplex
Ethernet		RJ-45 (10/100/1000Base-T)
Protocols		IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, SSL, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, Bonjour, DNS, DDNS, IEEE 802.1X, QoS, NTP, IP Filter, Multicast, ONVIF
Compatibility		ONVIF Profile S/G
Max. Users		20
Supported Web Browsers		Internet Explorer (11.0+), Firefox, Chrome
Supported OS		Windows 7, 32-bit/64-bit, Windows 10
Security		Multiple user access levels with enhanced password policy, IP filtering, IEEE 802.1X, strong digest authentication for access permission, HTTPS, TLS1.2 only, high-strength encrypted algorithm AES-256, SSH/Telnet closed, FTP disabled to reduce surface being attacked, PCI-DSS compliant, built-in cybersecurity hardware chipset
Languages		English, Arabic, Czech, Dutch, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Turkish

General		
Input Voltage		PoE+ (802.3at) Class 4, 12 VDC/24 VAC
Power Consumption		18 W. max (with IR LEDs on and motorized lens working)
Dimensions		11.1 × 4.3 in. (281.0 × 110.0 mm)
Weight		4.4 lb (2.0 kg)
Construction		Die-cast aluminum housing with powder coat
Color		RAL 9003 (White) and RAL 7022 (Gray)
Temperature		–40°F to 140°F (–40°C to 60°C)
Relative Humidity		Less than 95%, non-condensing
Ingress Protection		IP67
Impact Resistance		IK10
Regulatory	**Emissions**	EN 55032, FCC Part 15B, AS/NZ CISPR 22:2009 + A1 (2010)
	Immunity	EN 50130-4
	Safety	EN 60950-1, EN 60950-22, UL Listed to UL/CSA 60950-1, UL/CSA 60950-22
	RoHS	EN 50581

Integration	
MAXPRO NVR Family	Entry to Enterprise Level Network Video Recorders (4.0 and greater)
MAXPRO VMS Family	Entry to Enterprise Level Network Video VMS (R410 and greater)
DVM	DVM R600.1 SP1
HUS	HUS 5.1
Accessories	HBG-BB IP66 Back Box With Rubber Gasket HB4G-PM Pole Mount Adapter HB34G-CM Corner Mount Adapter HBG-FP Front Lens Plate Replacement

HCD8G Box Camera

Table A-3 HCD8G Specifications

Camera		
Video Standard		NTSC/PAL
Image Sensor		1/1.7" 12 MP progressive scan CMOS
Number of Pixels (H×V)		4000×3000
Minimum Illumination		0.02 lux color @ F1.53, 0.01 lux b/w @ F1.5
Lens		Ordered separately, support for DC-iris lens
S/N Ratio		50 dB or more
Electronic Shutter Speed		Auto, Manual, 1/3(4)–1/100 000 s
Day/Night		Auto(ICR)/Color/BW
Backlight Compensation		BLC/HLC/DWDR/SSA
Wide Dynamic Range		Digital WDR
White Balance		Auto/Natural/Street Lamp/Outdoor/Customize Region
Gain Control		Auto/Manual
Noise Reduction		3DNR
Privacy Masking		Up to 4 configurable areas
Corridor Mode		Yes
Electronic Image Stabilization		Off/On
Defog		Auto/Manual/Off
Auto Back Focus		Yes
Audio Input/Output		Line In/Out; 1 built-in mic
Alarm Input/Output		2/1
Analog Output		BNC connector
Onboard Storage		Up to 128 GB microSD card, Class 10 (not included)

Network		
Video Compression		H.265/H.264+/H.264/MJPEG
Resolution	**16:9**	8 MP (3840×2160) / 3 MP (2304×1296) / 1080p (1920×1080) / 720p (1280×720)
	4:3	12 MP (4000×3000) / 5 MP (2560×1920) / 3 MP (2048×1536) / 1.3 MP (1280×960) / VGA (640×480) / CIF (352×288/352×240)
	Other	8 MP (4096×2160) / 6 MP (3072×2048) / SXGA (1280×1024) / D1 (704×480)
Frame Rate	**Main Stream**	12 MP (4000×3000) 1–20 fps, 8 MP (4096×2160) or lower at 1–25/30 fps
	Sub Stream	D1/VGA/CIF up to 25/30 fps
	Triple Stream	1080p/720p/D1/VGA up to 25/30 fps

Network	
Audio Compression	G.711a/G.711mu/AAC/G.726
Audio Stream	Full duplex, simplex
Ethernet	RJ-45 (10/100/1000Base-T)
Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, SSL, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, Bonjour, DNS, DDNS, IEEE 802.1X, QoS, NTP, IP Filter, Multicast, ONVIF
Compatibility	ONVIF Profile S/G
Max. Users	20
Supported Web Browsers	Internet Explorer (11.0+), Firefox, Chrome
Supported OS	Windows 7, 32-bit/64-bit, Windows 10
Security	Multiple user access levels with enhanced password policy, IP filtering, IEEE 802.1X, strong digest authentication for access permission, HTTPS, TLS1.2 only, high-strength encrypted algorithm AES-256, SSH/Telnet closed, FTP disabled to reduce surface being attacked, PCI-DSS compliant, built-in cybersecurity hardware chipset
Languages	English, Arabic, Czech, Dutch, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Turkish

General		
Input Voltage		PoE (802.3af) Class 0, 12 VDC/24 VAC
Power Consumption		8 W. max (with ABF and ICR on)
Dimensions		4.92 × 2.72 × 2.98 in. (125.0 × 69.0 × 75.8 mm)
Weight		1.21lb (0.55 kg)
Construction		Die-cast aluminum housing with powder coat
Color		RAL 9003 (White) and RAL 7022 (Gray)
Temperature		–22°F to 140°F (–30°C to 60°C)
Relative Humidity		Less than 95%, non-condensing
Regulatory	**Emissions**	EN 55032, FCC Part 15B, AS/NZ CISPR 22:2009 + A1 (2010)
	Immunity	EN 50130-4
	Safety	EN 60950-1, UL Listed to UL/CSA 60950-1
	RoHS	EN 50581

Integration	
MAXPRO NVR Family	Entry to Enterprise Level Network Video Recorders (4.0 and greater)
MAXPRO VMS Family	Entry to Enterprise Level Network Video VMS (R410 and greater)
DVM	DVM R600.1 SP1
HUS	HUS 5.1
Lenses	HLM105V42MPD (10.5–42 mm), HLM37V16MPD (3.7–16 mm)

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