



Installer's handbook

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May 2, 2014

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Chapter 1

Configuring devices and servers

1.1 Recording space and database

Normally recorder is pre-configured with at least 3 partitions. First partition is for operating system, second for database and third for recordings. Recording space settings can be changed from Settings (Figure 1.1).

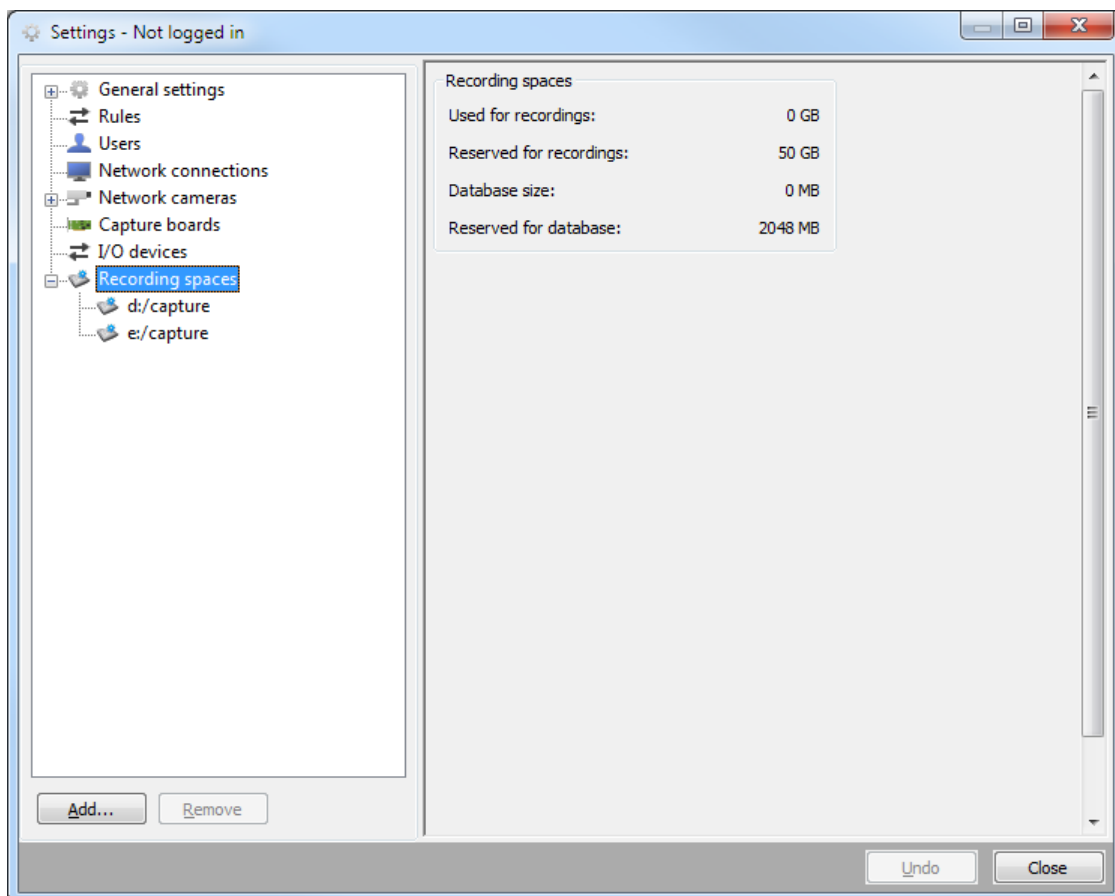


Figure 1.1: Recording spaces

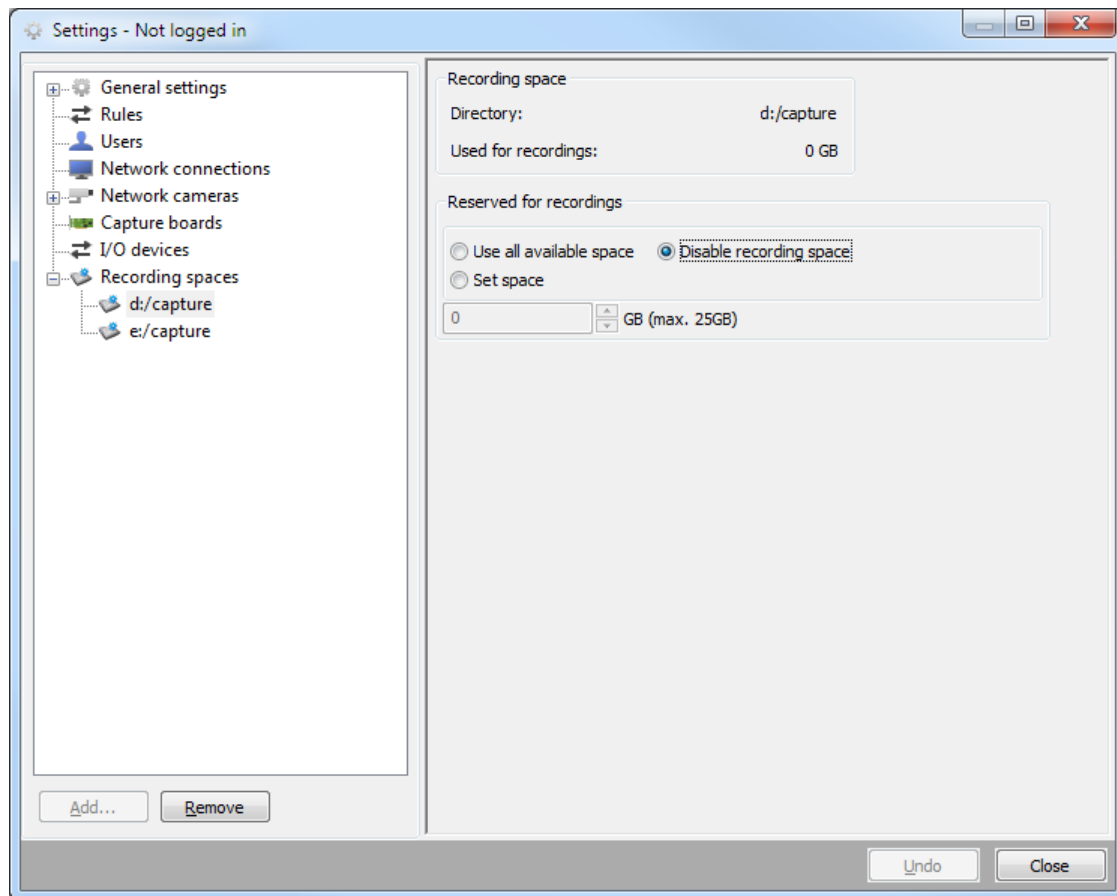


Figure 1.2: Recording space settings for one partition

Recording spaces settings will guide you in allocating partitions and inform you, if a configuration is not recommended. Database will be created to first added partition by default. If everything is in order with the recording space and database, you can move on to add cameras.

There is no way to calculate with certainty how long time of recordings will fit onto a hard drive of certain size. This depends on the quality of the images being recorded, frame rates, and the amount of motion, among other things. Similarly, the size of the database is hard to estimate, but normally it is enough to have five per cent of the total recording space reserved for the database. The size of the database depends mostly on the amount of the recorded frames, approximately 150 bytes of metadata per frame are stored in the database. Running out of disk space for the database will prevent all recording!

Chapter 2

Settings overview

The settings are divided into eight categories (Figure 2.1):

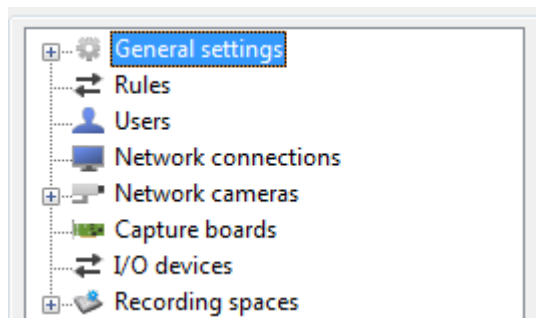


Figure 2.1: Settings.

General settings

The general settings of the program

Rules

Scheduling recordings, controlling digital outputs and so on.

Users

Users and user permissions.

Network connections

Server settings and remote connections.

Network cameras

The connected network cameras.

Capture boards

The installed analog capture boards and cameras.

I/O devices

PTZ joystick and digital I/O devices.

Recording spaces

Recording space settings.

2.1 Multiplexer

In addition to the camera window based view it is possible to set a full screen multiplexed view to the selected displays. This mode will show the live images of the selected cameras on a grid on the screen.



Figure 2.2: Multiplexer window settings.

The multiplexer settings can be found in the settings under “General settings”. There is a setting group named “Multiplexer window on Display ...” for each display connected to the system.

The number of simultaneously visible cameras in the multiplexer view can be altered with the “Multiplexer layout” setting. This layout will set the number of camera images shown in horizontal and vertical rows. If more cameras are selected than fits the layout, the cameras are split to multiple pages, which are switched at the interval set in the “Multiplexer switch timeout” setting.

The cameras shown in the multiplexer view are selected by pressing the “Select multiplexer cameras...” button. The button will open a new camera selection window.

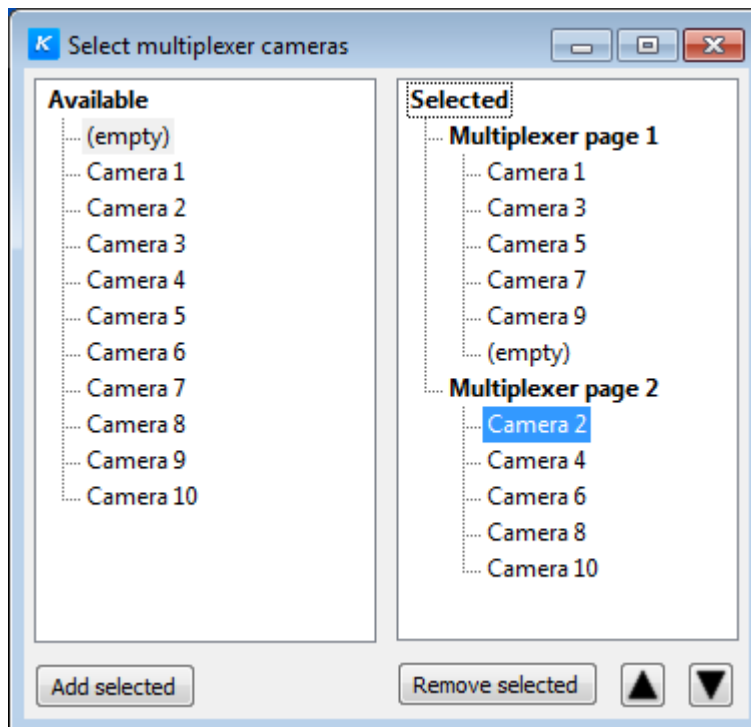


Figure 2.3: Select multiplexer camera

The selector is divided into two parts. The cameras that can be added to multiplexer view are shown on the left side. The cameras that are already added are listed on the right side.

Several cameras can be selected from both lists by pushing and holding down “Ctrl” -button while selecting cameras with a mouse. Cameras can be added to the right side list by selecting cameras on the left side list and by pushing the “Add selected” button. The same camera can be added several times. Respectively cameras can be removed from the right side list by selecting them and pushing the “Remove selected” button.

In addition to the cameras there is a selection called “(Empty)” on left side list. By adding these to the right side list you can add empty spaces in the multiplexer, and possibly move cameras to the next multiplexer view.

Camera positions can be changed on the right side list by choosing desired cameras and pressing the arrow keys in the window. The list is grouped into pages between which the multiplexer switches.

All changes made in editor come into effect immediately and need no separate approval.

Once the settings are OK, the multiplexer view can be shown by enabling the “Enabled” setting. From now on the multiplexer view will open on the selected display even when rebooting, unless the view is disabled again in the settings.

2.2 Email

The system can be configured to send notifications of various events by email (See chapter 5). The email settings must be configured for the transmission to work. The email settings can be found in the settings at “General settings”.

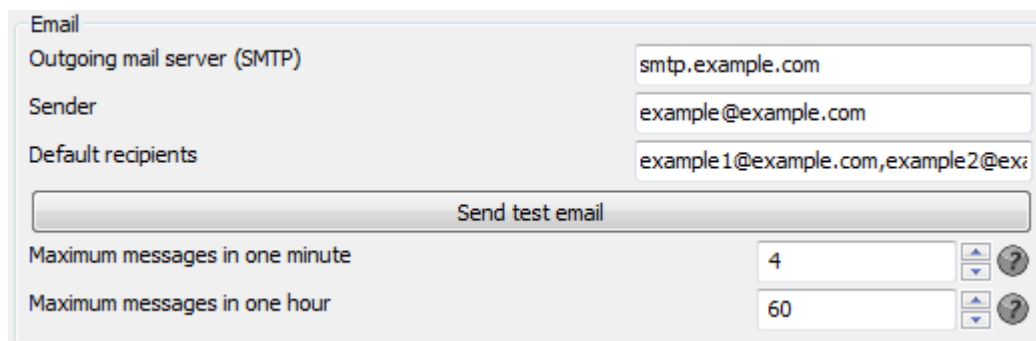
The image shows a screenshot of a software window titled "Email". It contains several input fields and a button. The "Outgoing mail server (SMTP)" field is set to "smtp.example.com". The "Sender" field is set to "example@example.com". The "Default recipients" field is set to "example1@example.com,example2@ex:". Below these fields is a button labeled "Send test email". At the bottom, there are two spinners: "Maximum messages in one minute" set to 4, and "Maximum messages in one hour" set to 60. Each spinner has up and down arrows and a question mark icon.

Figure 2.4: Outgoing mail server (SMTP)

At least the SMTP server address needs to be set in the email settings. The mail will be sent through this server. The server is expected to receive the mail into the port 25 without authentication. You can test sending email by entering your own email address into the “Default recipients” field and pressing the “Send test email” button.

2.3 Communications

The serial ports of the computer can be used for example to control analog PTZ cameras with an RS485 adapter. The speed of the port must be set for it to work. The communication settings are found in the settings at “General settings”. The speed to use depends on the device that is being communicated with through the serial port.



Figure 2.5: Communications.

2.4 Rules

You can automate different functions with rules. A rule consists of conditions, which can be different kinds of input or state information, and action, which is performed once the state of the condition is altered. Additional information of the rules can be found in the chapter 5.

2.5 User control

2.5.1 Operating system user details

- On Linux systems, default username is “ksenos”, with password “sonesk”.
- On Windows systems, default username is “ksenos”, with password “KSENOS” or “sonesk”.

These usernames and passwords are only for the operating system. All usernames and passwords are case sensitive. There are no users created for Ksenos by default, so keep the password of Ksenos safe.

OPERATING SYSTEM MUST LOGIN AUTOMATICALLY, OTHERWISE THE RECORDING WILL NOT START! RESTRICT THE USE OF THE RECORDER FROM KSENOS USER CONTROL (See chapter 2.5.2)!

2.5.2 Users

Users can be added by selecting “Users” from the settings window and pressing the “Add...” button. The first user created is the administrator, who has full privileges. The permissions of the users created after the first one can be modified by selecting the user in the settings window (Image 2.6).

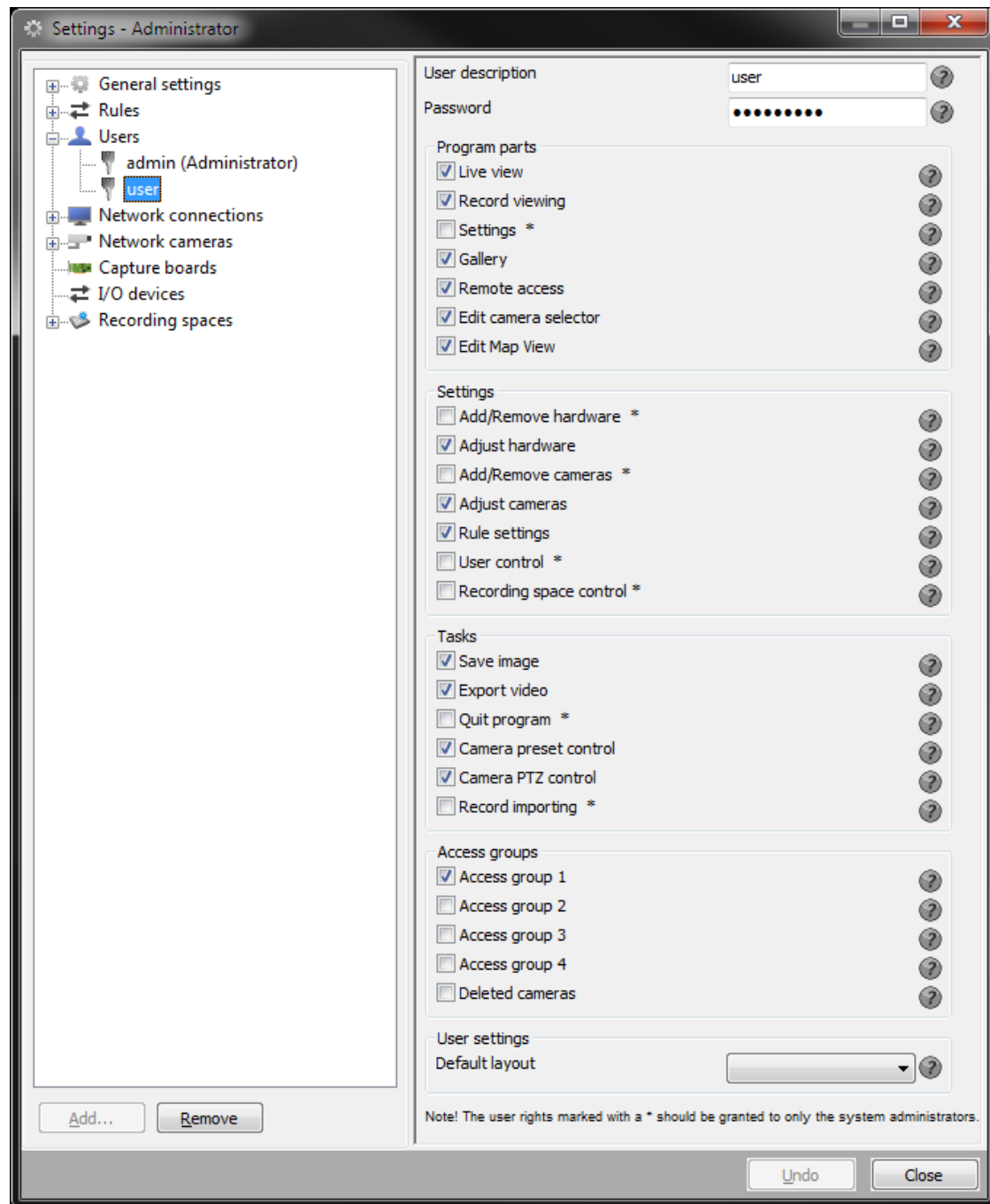


Figure 2.6: Changing user permissions.

If the system is connected to remotely, you must create at least one user, whose credentials are used to log into the system.

Examples on creating users:

Example 1:

Guard on a gate requires permissions to control PTZ cameras. There is no need for the guard to have all the permissions, so create a user "guard" with password "Gu4rd5". Required per-

missions for the user are chosen from settings. Lets leave the following permissions unchecked: “Remote access”, “User control” ja “Quit program”. Now the guard has almost same permissions as the admin, but no permission to modify user settings or quit the program.

Example 2:

Local store is using Ksenos Web server to stream live images to the cashier. Cashier is not supposed to see images from the loading bay. In this case the following user can be made: “cashier” user with password “l0c4l5t0r3”. Choose permissions: “Live view” and “Remote access”. Next add this user to access group number 2. Now the cameras can be configured to certain access groups so this user does not see all the cameras from the store.

Now the browser from cashier’s computer can be opened and directed to the address and port (for example 192.0.2.1:8080) of the recorder. The browser asks for authentication, after which all the cameras accessible for the given user account are now visible.

2.6 Network connections

The settings related to communication over a network can be altered from “Network connections” in the settings window. On a recorder you can enable servers, which allow you to use the services from other PCs. You can also create remote connections to other servers here.

Discover recorders from the network, enable or disable Ksenos Server and Ksenos Web server in “Network connections” (Figure 2.7).

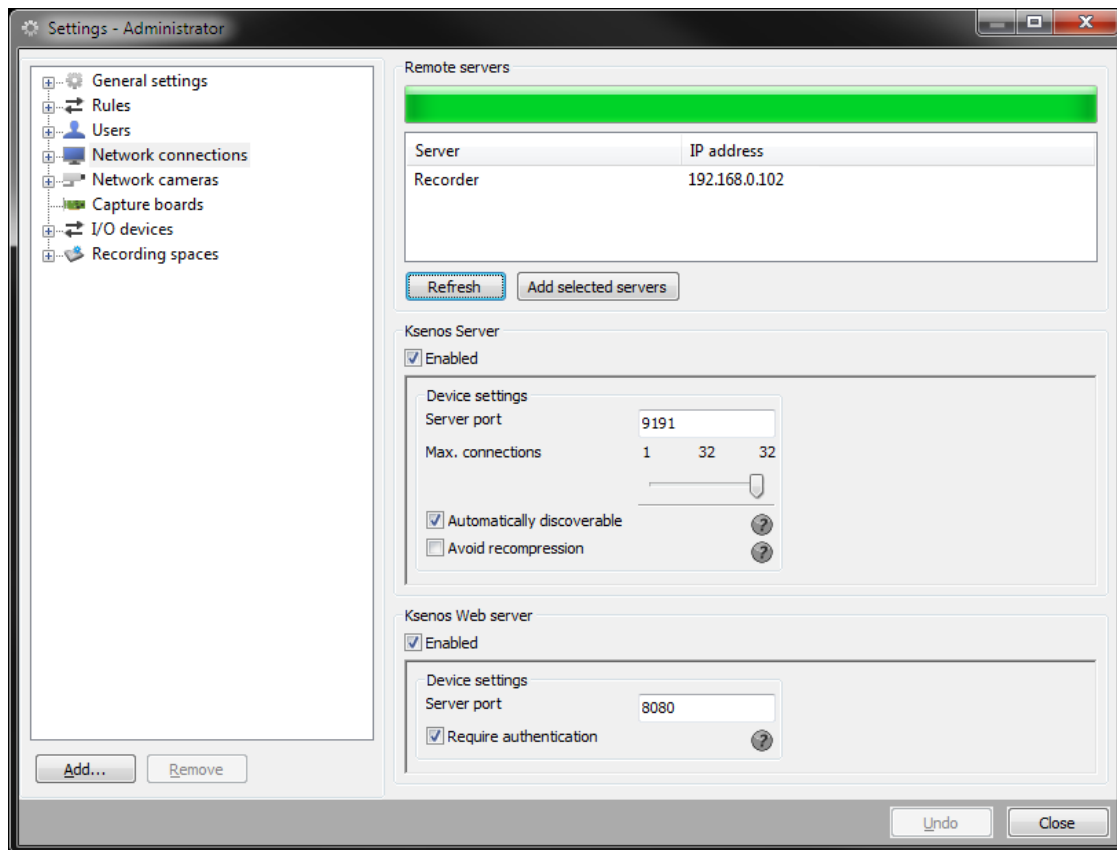


Figure 2.7: Network connections.

2.6.1 Automatic server search

Ksenos tries to discover all recorders from the local network when you open up “Network connections”.

Discovered servers will be shown in the list. The list tells the recorder name and its IP address. If the recorder is to be added to Ksenos, select the recorder from the list and click the “Add selected servers” button, and recorder will be added under the Network connections. Multiple servers can be chosen at once by holding Ctrl key while selecting recorders from list.

Ksenos tries to discover servers when ever the “Network connections” is opened. For manual refresh, click “Refresh”.

Username and passwords for added recorders must be set manually.

2.6.2 Ksenos Server

It is possible to access the recorder from any computer in the same network that has Ksenos installed (free client), by enabling Ksenos Server. Make sure there is at least one user created for remote login.

By default, recorder uses TCP port 9191 for remote connections. It is necessary to leave this port open on firewall and set up a proper port-forwarding if needed.

2.6.3 Ksenos Web server

It is possible to watch live stream on web-browser from this recorder, if the connection is properly configured. Direct the browser to this recorder's IP address and chosen port (8080 by default). For example the `http://192.0.2.1:8080` allows you to watch live stream from the recorder in that IP address. This server is limited to watching the active cameras' live stream only on the recorder. To ensure that the server is running, direct the web browser on the server to the local address `http://127.0.0.1:8080`.

You can request different views from the Ksenos web server by altering the browser URL. For example:

`http://192.0.2.1:8080/index.html?view=3&width=1024&height=768`

This results in a 3x3 grid at 1024x768 resolution.

`http://192.0.2.1:8080/index.html?view=4`

This results in a 4x4 grid. It is also possible to use 5x5 grid by simply modifying the “view” parameter value to 5.

By adjusting the height and width the grid can be fit on the computer screen. For example, the URL for a 5x5 grid on a 1280x1024-resolution display:

`http://192.0.2.1:8080/index.html?view=5&width=1280&height=1024`

Ksenos Web server can be made available to all the network users. This is however not recommended on big networks. As mentioned before, it may be necessary to open ports on firewall for the web server.

2.6.4 Remote settings

New remote connection is made by choosing “Network connections” and clicking “Add...” button.

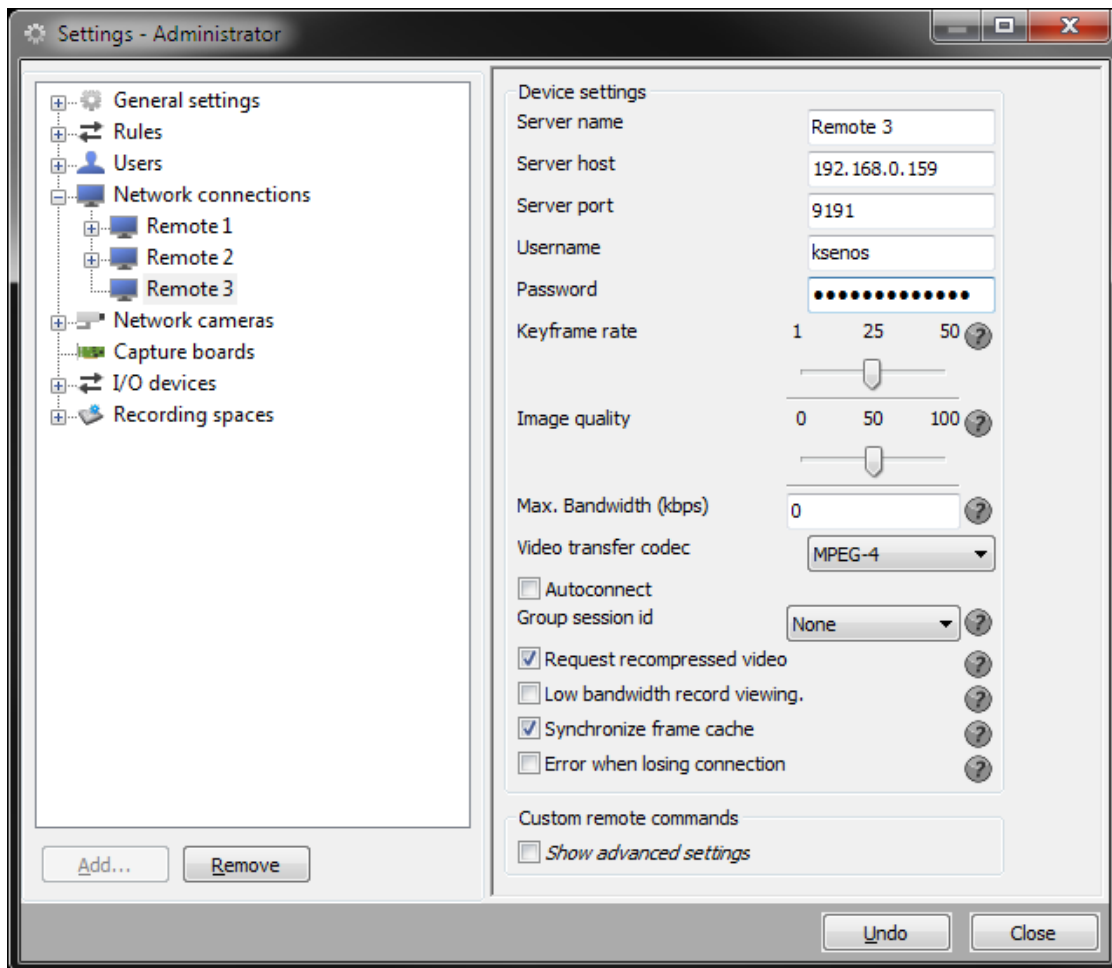


Figure 2.8: Remote settings.

Remote access requires username and password. The fields can be left empty, Ksenos will ask them when the connection is opened.

Connection can be set to automatically connect by choosing “Autoconnect”.

If the “Error when losing connection” is checked, error message appears on the main window when the connection to this recorder is lost.

2.7 Network cameras

2.7.1 Automatic camera search

Ksenos starts automatically searching for IP cameras as soon as the “Settings” window is opened. Select “Network cameras” to open the search window. The indicator above shows if the search is still running. Cameras found are shown in the list; each camera shows information about manufacturer, model, IP address and type. If the type is not correct, it can be changed by right-clicking the camera and selecting “Select camera type”. The list can be refreshed by clicking “Refresh”.

To add cameras to the system, choose a camera from the list and click “Add”. To add multiple cameras at once, hold the Ctrl key while choosing the cameras.

Search settings lets you choose the used search protocol. By default it is set to “All” and cameras are being searched using both UPnP and ONVIF protocols

2.7.2 Other IP cameras and servers

Most modern cameras use the RTSP protocol which works out-of-the-box on Ksenos using the “Generic RTSP” support. Some of the most common RTSP paths are listed in chapter 2.7.4. Also most ONVIF cameras are supported by Ksenos. General settings for both of these camera types should be done directly from the camera by its web configuration through a web browser. The web configuration can be reached by directing the browser to the camera’s IP address and logging in. On most cameras the default login and password for the administrator are: admin. Check the camera manual for default IP and login information.

Many video servers use the same RTSP protocol to convert analog signals to digitals. These video servers either have separate IP address for each channel, or one IP address and separate RTSP paths for different channels. For more information, check device manual.

2.7.3 Common default ports for IP cameras

RTSP - 554
HTTP - 80

2.7.4 Default RTSP paths for common camera brands

4XEM	-	live.sdp
	-	
ACTi	-	track1
	-	track2
Acumen	-	mpg4/rtsp.amp
Airlink101	-	mpeg4
Airlive	-	video.mp4
ALinking	-	cam1/mjpeg
	-	cam1/mpeg4
	-	cam1/h264
Alliede	-	0/1:1/main
Aviosys	-	mpeg4
AVS Uriel	-	mpeg4
	-	axis-media/media.amp
Axis	-	mpeg4/media.amp
	-	h264
Basler	-	mpeg4
BlueJay	-	mpeg4
Brickcom	-	channel1
	-	
CNB	-	mpeg4
	-	h264
Dynacolor	-	mpeg4
Edimax	-	ipcam.sdp
Hunt Electr	-	video1+audio1
iCanTek	-	StdCh1
Infinova	-	1.AMP
IOimage	-	ioImage/1
IQinVision	-	now.mp4
Linksys	-	img/video.sav
Lorex	-	video.mp4

Lumenera	-
Merit Li-Lin	- rtsph264
Messoa	- livestream/
Moxa	- multicaststream
MultiPix	- video1
Onix	- cam0_0
Optelecom	- mpeg4
Panasonic	- nphMpeg4/g726-640x480 - MediaInput/mpeg4 - MediaInput/h264
Samsung	- mpeg4unicast
Sanyo	- VideoInput/1/h264/1
Sentry	- mpeg4
Seyeon Tech	- cam0_1
Shany	- PSIA/Streaming/channels/2?videoCodecType=H.264 - h264
Sharx	- live_mpeg4.sdp
Siemens	- img/video.asf - livestream
Sony	- media/video1
Sparklan	- mpeg4
Speco	-
Swann	- mpeg4
TCLink	- live.sdp
TP-Link	- video.mp4
TRENDnet	- mpeg4
Truen	- video1
Videolarm	- mpeg4/1/media.amp
Vivotek	- live.sdp
Y-cam	- live_mpeg4.sdp
Zavio	- video.mp4

Modify the settings for single cameras from the quick menu from camera windows. This is a good way to try a different setting fast. Single camera settings can be applied to all similar cameras by clicking “...” button.

Rename cameras with descriptive names for easier browsing.

2.8 Capture boards

2.8.1 Adding capture board and analog signals

Ksenos supports Comart XeCap and Xed capture boards on analog recording.

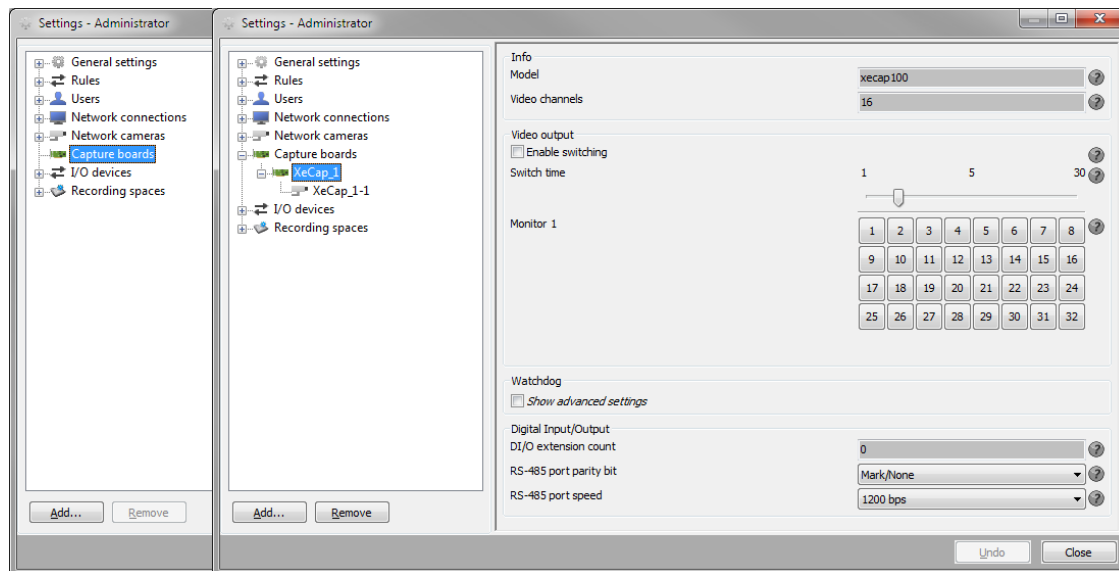


Figure 2.9: Capture boards.

Adding a capture board on Windows:

- Choose “Capture boards” from the settings tree.
- Click “Add...” to add a new capture card.
- Choose a capture card and click “Add...” to add analog signals.

Adding a capture board on Linux:

- Choose “Capture boards” from the settings tree.
- Click “Add...” to add new capture board.
- Choose “Comart-capturedevice”.
- Choose a capture card and click “Add...” to add analog signals.

Choose the amount of signals to be added (Figure 2.10). Ksenos suggests the maximum amount the license or capture board supports by default.

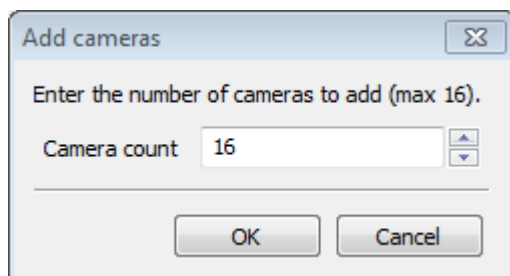


Figure 2.10: Add cameras.

2.9 I/O devices

2.9.1 PTZ control and joysticks

General settings

Ksenos supports Pelco-P, Pelco-D and Sony, Panasonic and Axis IP dome control protocols. PTZ control can be enabled in the camera settings by setting “P/T/Z control” to desired protocol. To control analog cameras, also serial port info is required. After these settings are set correctly, it is possible to use the mouse to control the pan, tilt and zoom functions by dragging on the image in camera window. In the settings, analog dome cameras must be identified by address. This address is the one set in the camera using a DIP switch. These addresses enable controlling different cameras or camera groups. Dome speed can be modified by using the sliders in the settings window.

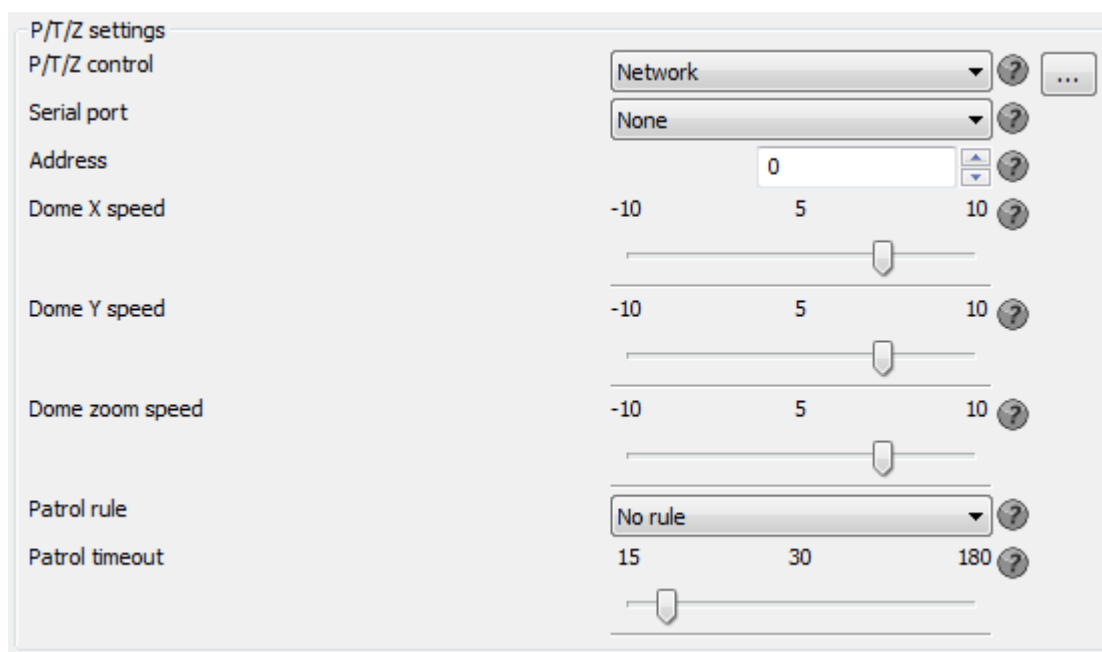


Figure 2.11: Default PTZ settings for analog dome camera.

Patrol

Patrols can be programmed to dome cameras via the graphical tools on camera window quick menu. Each dome camera can have its own patrol. Patrol stops when camera is being controlled manually.

Time after controlling the camera manually before camera starts pre-configured patrol. This can be set from camera settings from the “Patrol timeout” slider.

Joystick

Joystick can be used to control PTZ cameras or joystick buttons can be used to control digital inputs and outputs, like choose cameras, open gates and electric locks.

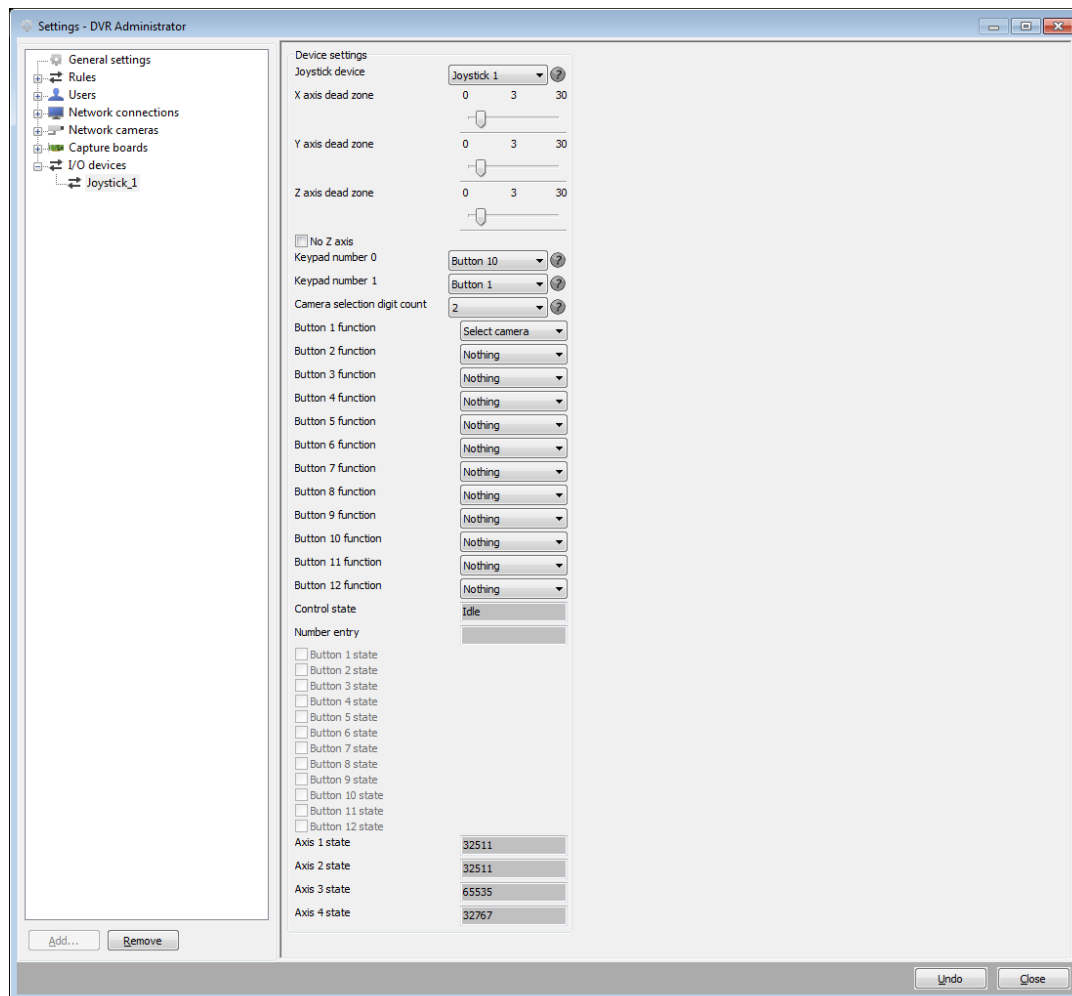


Figure 2.12: Joystick settings.

Joysticks can be added just as other devices. Choose “I/O devices” from settings tree in Settings window and click “Add...”. After the device is added, its settings can be adjusted by selecting it in the settings tree. It is possible to add multiple joysticks on one recorder. First the physical address of the joystick must be set. If there is only one joystick, physical address can be set to “automatic”. Joystick state and buttons are shown in the settings window.

The visible numbering on the joystick might not match the software numbering. For example, pressing the button 1 on the joystick might activate the button 11 on the program. In such case you should set the value of the “Keypad number 1” setting to 11, so that pressing the button number 1 outputs the number 1.

Joystick and rules

Joystick can be seen as digital input in settings. This means that any rule can be controlled from joystick keypad.

Example:

You want to open a gate by pressing a button. Set the condition type to “Digital input” and select the DIO device and input connected to the button. Set the action type to “Control a digital output” and select the DIO device which is connected to the gate opening system.

If necessary, closing the gate with a delay can be done using another rule. Set the condition type to “Wait for another rule”, set the rule to the gate opening rule created earlier, and select the desired delay in seconds. The action is created as previously, but set the digital output to the output that closes the gate.

Chapter 3

Camera settings

3.1 Analog camera settings

Settings for analog camera can be adjusted by selecting a camera from the settings tree. The most important settings are:

Framerate

How many image has been captured in a second

Compression

Compression codek that is being used for analog signal recordings. MPEG-4 is recommended.

Resolution

Resolution (image size) of the analog signal recordings.

Note! When installing the signals, input connectors must be in numbered order. If there are any empty connectors in-between, recorder might not work stable.

On a basic installation, these are possible example settings for 16 channel analog recorder with Comart XeCap 400 capture board.

Framerate: 25 fps (frames per second)
Compression: MPEG-4
Resolution: 2CIF (704x288 pixels)

Other settings should be adjusted depending on ambient light and personal preferences. Single camera settings can be copied easily to other cameras by clicking the “...” button in the camera's settings.

3.2 Camera viewing settings

The view settings of the cameras are opened by right-clicking the camera window and selecting “Image controls...” from the menu that opens. The view settings affect how the camera image is drawn and what additional information is displayed on the picture.

Show status

Shows the encoded image size, frames per second, average size, amount of recorded images, and image resolution.

Show motion

Shows small motion in the camera image in transparent green color. Transparent red color in the camera image indicates bigger changes. This function makes it easy to follow motion in image.

Show mask

You can isolate a portion of the camera image to not be included in the motion detection. This area is called the mask of the camera. The mask can be created from the camera settings in the settings window, and it is shown on the camera window by selecting “Show mask” in the view settings.

3.3 Custom buttons

You can add additional buttons, that perform rule actions, to the camera window. For example, you can create a button that opens a gate.

The custom buttons are enabled by checking “Show advanced settings” from “Custom buttons” in the camera settings. After the checking the button settings will appear.

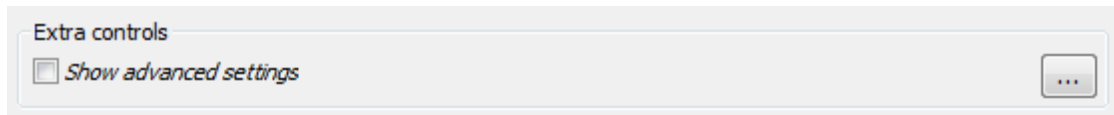


Figure 3.1: Enabling custom buttons.

You can add the button by checking the “Show custom button...” setting. You can give the button a description and an alternative icon. The added button does not do anything in itself, but the functionality must be added with rules. You can easily create a rule that responds to the new button being pressed by pressing the “Create rule” button. Once the rule is created, go to the created rule by selecting it under “Rules” in the settings window, and add an action to the rule. The action will be performed when the created button is pressed on the camera window, and the optional release action will be performed when the button is pressed again. More information about editing the rules in chapter 5.

3.4 Digital input

This feature is supported only with the ONVIF camera type. Make sure that the camera supports this feature. Enable the “ONVIF events” setting in the camera settings. The status field will display “OK” if the events are enabled. The digital input events can be handled through the rule system.

Chapter 4

Fisheye lenses

Ksenos has the “Ksenos fisheye viewer” camera type for cameras with a fisheye lens. The camera type allows dewarping and creating a view of multiple cameras from the fisheye image. You can also control the camera image with a mouse or a joystick.

The fisheye viewer is added by right-clicking the “Network cameras” item in the settings window and selecting “Add...” from the menu that opens. This opens a dialog for adding cameras, from which “Ksenos fisheye viewer” is selected. A camera with a fisheye lens should also be added for the fisheye viewer to be usable. Once the source camera has been selected to the fisheye viewer, you will need to select the cropping region to match the fisheye image. This can be achieved by using the radius and offset settings. An incorrect cropping is shown in the image 4.1, and a correct one in the image 4.2.

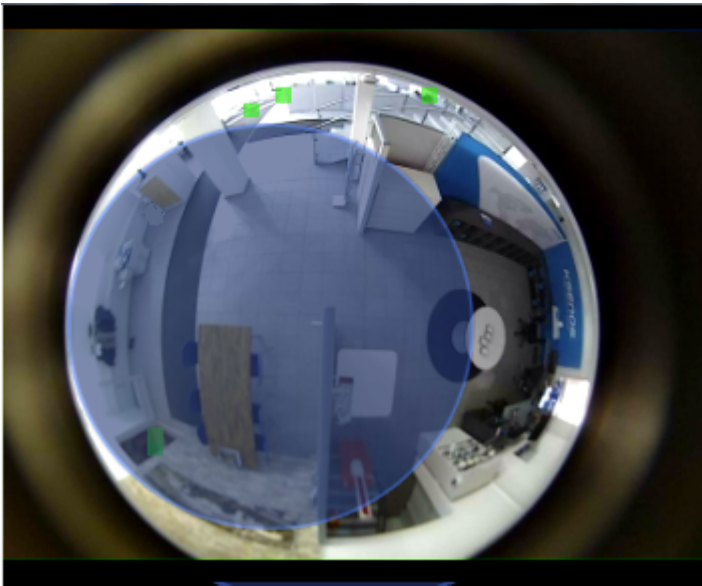


Figure 4.1: Incorrectly cropped fisheye image.

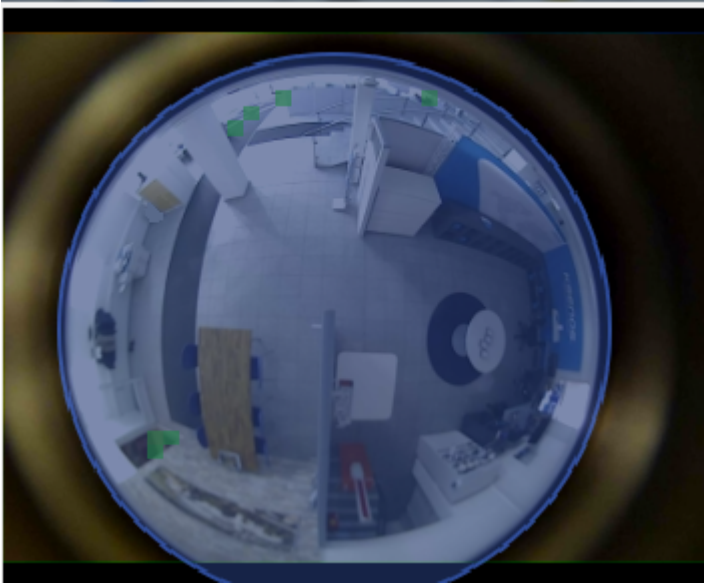


Figure 4.2: Correctly cropped fisheye image.

4.1 Settings

Source camera

From which camera the image is acquired? You should select a camera with a fisheye lense in this setting.

Use the fisheye settings of the source camera

The fisheye viewer uses the fisheye settings of the source camera. If the setting is enabled, the fisheye settings cannot be altered from the viewer.

Fisheye optics

When the setting is enabled, the fisheye image is dewarped. The setting must be enabled to allow cropping the image.

Fisheye radius

The setting is used to select the area with the fisheye image from the image. The selected area needs to be the same size as the fisheye image.

The x coordinate of the fisheye center

The setting is used to move the fisheye cropping horizontally.

The y coordinate of the fisheye center

The setting is used to move the fisheye cropping vertically.

Depth correction (advanced setting)

The setting can be used to fix any stretching and compression remaining on the dewarped image. The stretched or compressed image may be the result of inaccurate cropping. Make sure the cropping is accurate before using the depth correction.

Angle correction (advanced setting)

The setting can be used to fix remaining skewness on the dewarped image. Typically a skewed image is the result of inaccurate cropping. Make sure the cropping is accurate before using the angle correction.

Advanced rendering (advanced setting)

The setting needs to be enabled for the snapshots of the dewarped image to work.

Show fisheye direction image

When the setting is enabled, a small warped fisheye image with the area of the dewarped image drawn on top of it is shown on the camera window.

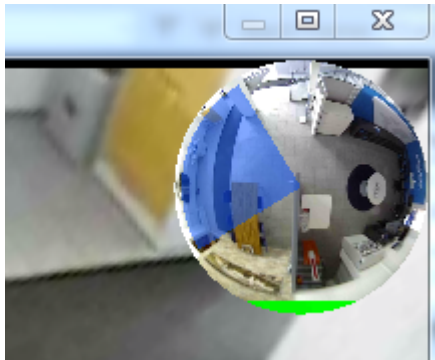


Figure 4.3: The camera window of a fisheye viewer with the direction image enabled.

Chapter 5

Rules

You can automate different functions with rules. A rule consists of conditions, which can be different kinds of input or state information, and action, which is performed once the state of the condition is altered.

The screenshot shows a web interface for configuring a rule titled "Motion detection".

Conditions:

- Condition 1: A lightbulb icon, a dropdown menu set to "Motion detection", the text "in camera", another dropdown menu set to "Front yard", the text ", hold for", a text input field with "30", a small up/down arrow, the text "seconds", and a "Remove" button.
- Condition 2: A lightbulb icon, a dropdown menu set to "Schedule", a green and red grid icon, and a "Remove" button.
- An "Add condition" button is located below the conditions list.

Logic:

Two radio buttons are present: "All conditions are met" (which is selected) and "Some of the conditions are met".

Actions:

The section is titled "Action to perform if the rule is true:". It contains two columns of dropdown menus and a "Remove" button.

- Column 1: "Control a digital output", "XeCap_1", "Output 1", and "On".
- Column 2: A checked "Release action" checkbox, "XeCap_1", "Output 1", and "Off".

Figure 5.1: Rules.

5.1 Rule conditions

Rule condition list can be opened from drop-down menu (Image 5.2).

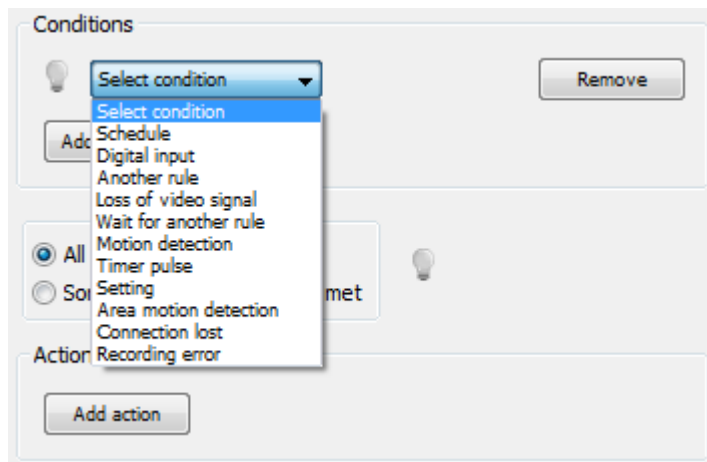


Figure 5.2: Rule conditions.

Conditions are presented in the following:

Name	True if...
Schedule	The present hour in schedule is true.
Digital input	An input of a connected I/O device is active.
Loss of video signal	Selected analog video signal is lost.
Second rule	Another rule is true
Motion detection	Motion detected in selected camera.
Area motion detection	Motion has been detected in the selected area in camera view.
Wait for another rule	Another rule has been true for x seconds
Timer pulse	The on/off timer's present state is on
Rule	Selected rule is true
Connection lost	A connections is lost to a camera.

The state is indicated with the image of a light bulb next to the condition. When the light is on, the state is true.

5.2 Rule operators

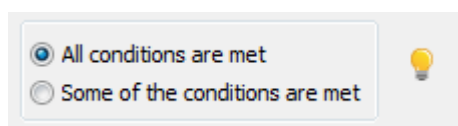


Figure 5.3: Rule operators.

The operator selection (All conditions are met, some of the conditions are met) determines specific occasion when the action is triggered. For example "All conditions are met" requires all conditions to be true simultaneously before the action is triggered. When the light bulb is on next to the operators, the action is to triggered.

5.3 Rule actions

Rule actions can be selected from drop down menu (Image 5.4).

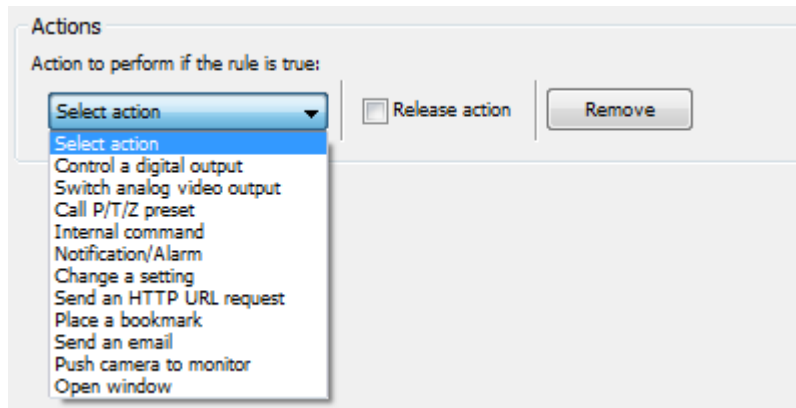


Figure 5.4: Rule actions.

Rule action descriptions are presented in following:

Name:	Description:
Control a digital output	Trigger a digital output of a connected I/O device.
Switch analog video output	Switch the analog output of the analog capture board to show the image of a certain analog camera.
Call P/T/Z preset	Call a preset of a certain P/T/Z camera
Internal command	Perform an internal command (Only for advanced use)
Notification/Alarm	Pop-up notification to event and make an alarm log entry.
Change a setting	Change a certain setting of the program.
Place a bookmark	Place a bookmark in the recordings at the same time of trigger.
Send an HTTP URL request	Control an external web service by requesting an HTTP URL
Send an email	Send email including optional text and possibly kamera images.
Select camera to monitor	Choose specific monitor-windows to show specific camera image.

5.3.1 Example rule 1 - Control digital output on video signal loss

Creating a new rule:

- Click "Rules" and click button "Add..." (Figure 5.5).

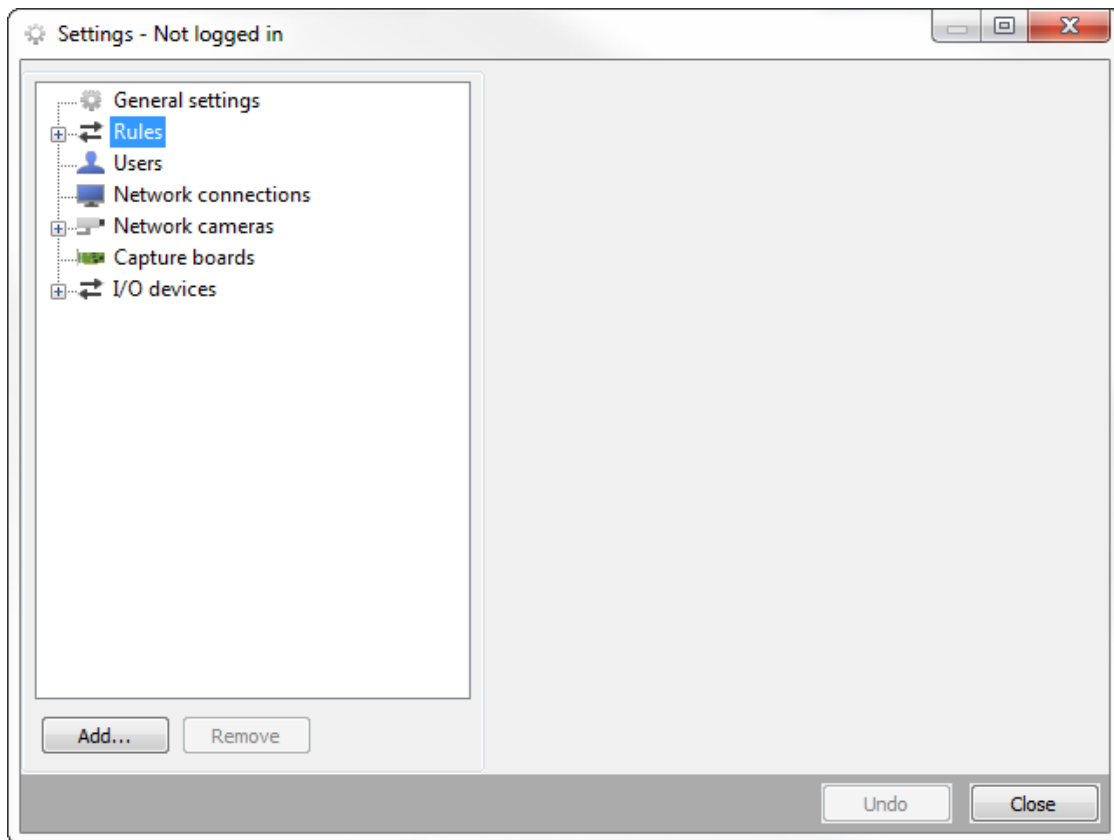


Figure 5.5: Rules.

- Modify the rule (Figure 5.6):
 1. Select a rule to modify.
 2. The rule can be renamed in the text field.

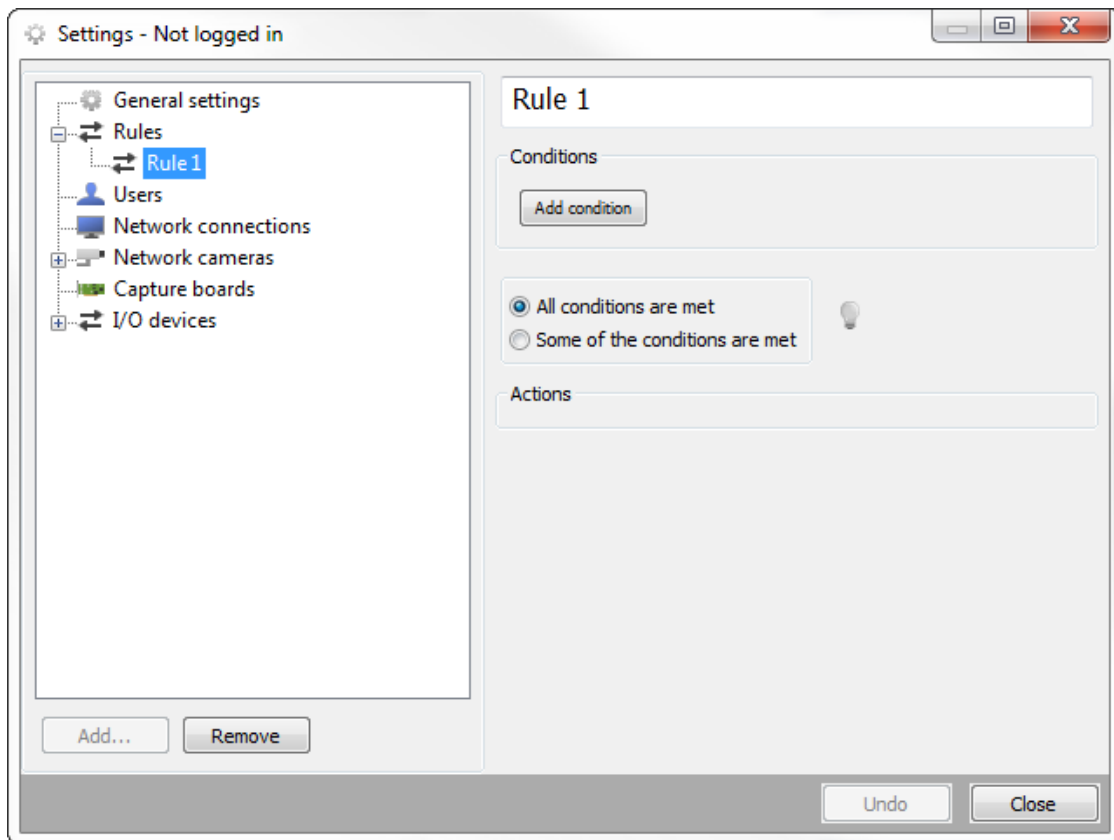


Figure 5.6: Edit rule.

- Add a condition to the rule (Figure 5.7).

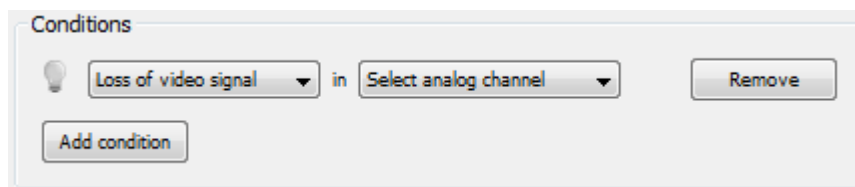


Figure 5.7: Add condition.

1. Click "Add condition".
 2. Choose "Loss of video signal".
 3. Choose analog camera.
- Instead of choosing just one camera, it is possible to choose all the cameras from the device by choosing a capture board "Any channel on a device".

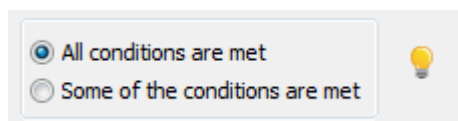


Figure 5.8: Operators.

- Since this rule has only one condition, you can choose either operator (Image 5.8) without affecting the operation of the rule.
- Select an action “Control a digital output” (Figure 5.9). Select a device and desired output. Choose to which state the output is set when the action is triggered.

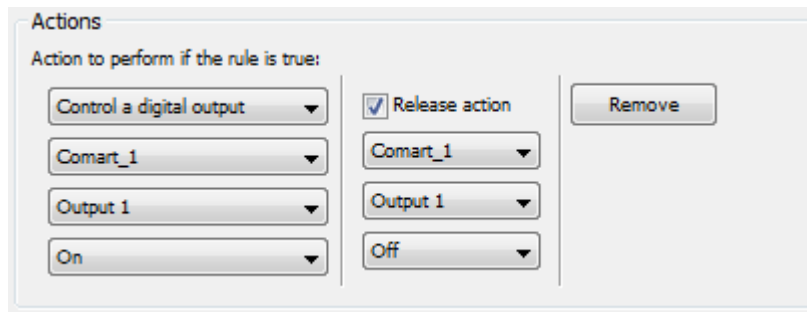


Figure 5.9: Choose actions.

5.3.2 Exemplerule 2 - Scheduled area motion detection notification

Create a new rule:

- Click “Rules” and click “Add” button (Figure 5.10).

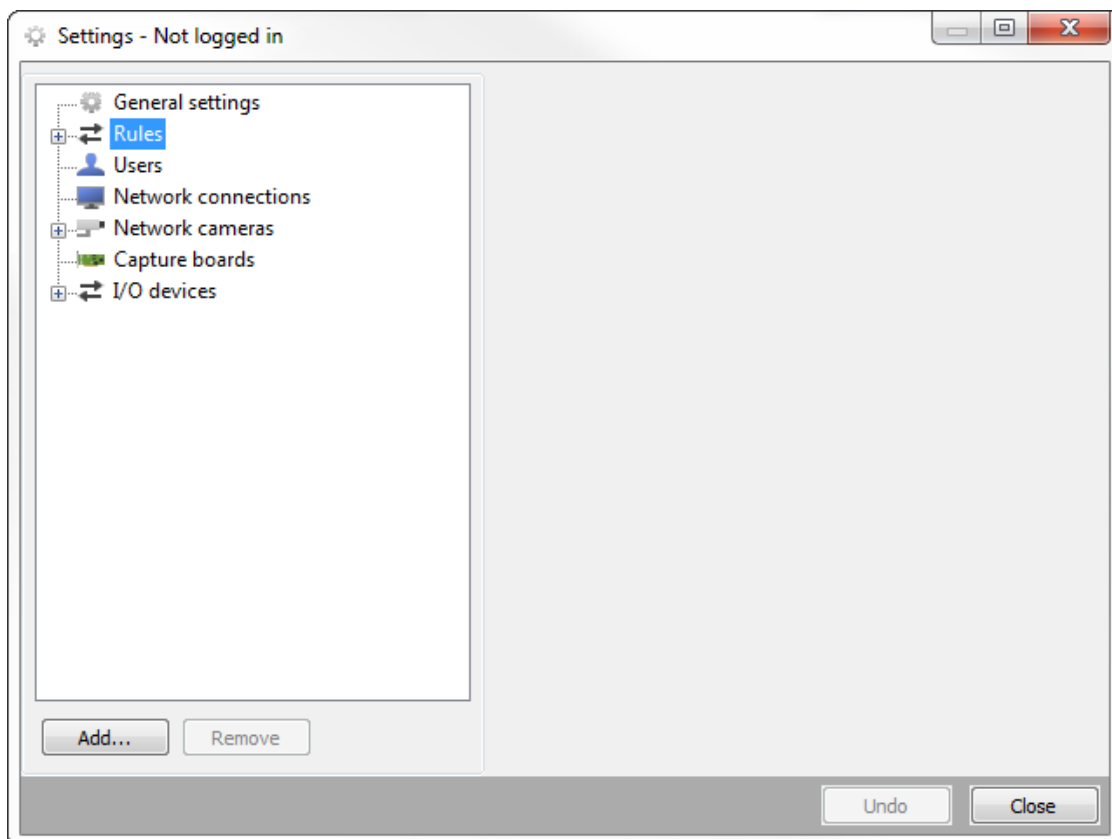


Figure 5.10: Rules.

- Modify the rule (Figure 5.11):

1. Choose the created rule to be modified.
2. The rule can be renamed in the text field.

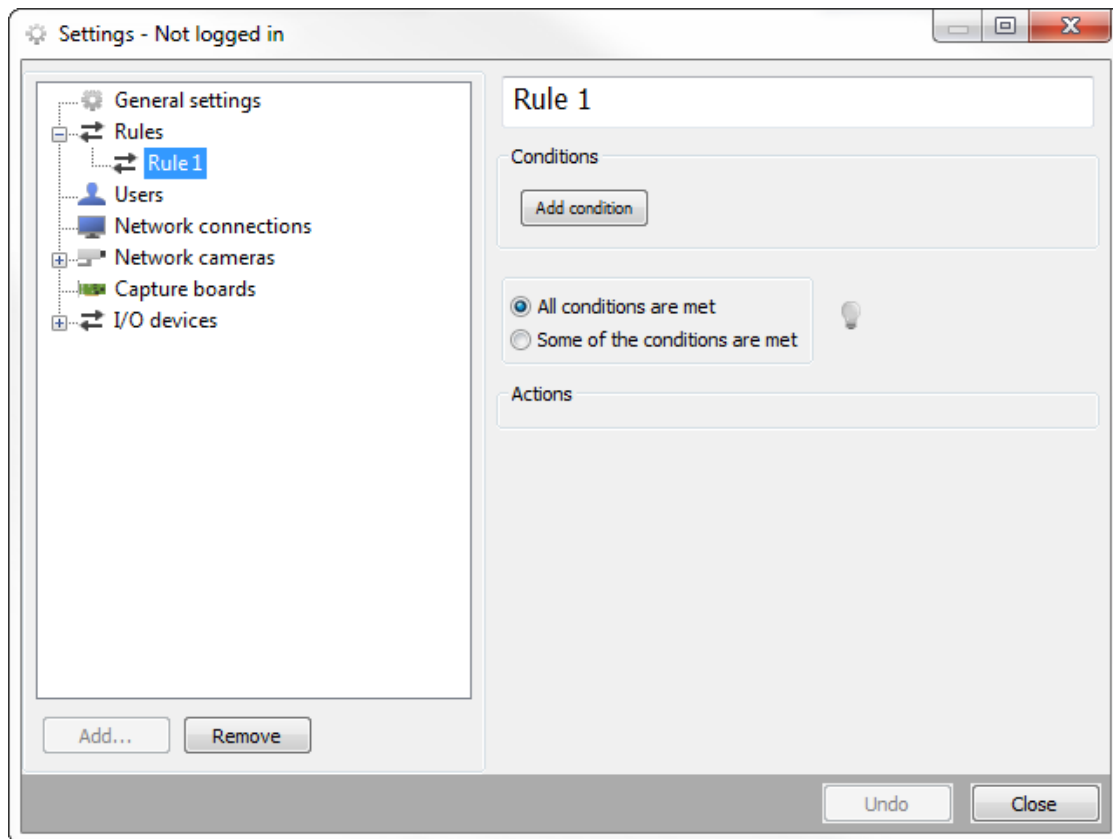


Figure 5.11: Edit rule.

- Adding conditions (Figure 5.12):
 1. Add two conditions by clicking “Add condition” button.
 2. Choose “Schedule” from first drop-down menu.
 3. Choose “Area motion detection” from the second drop-down menu.

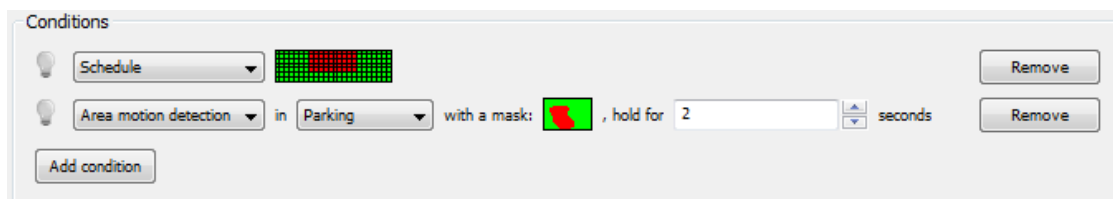


Figure 5.12: Add a Schedule-condition.

- Choose condition “Schedule” and click the green grid next to the drop-down menu - Weekly schedule-window opens up (Figure 5.13).
- Remove the wanted times (for example working hours) and click OK. In this case the rule does not trigger any actions from monday to friday between 0800 and 1600.

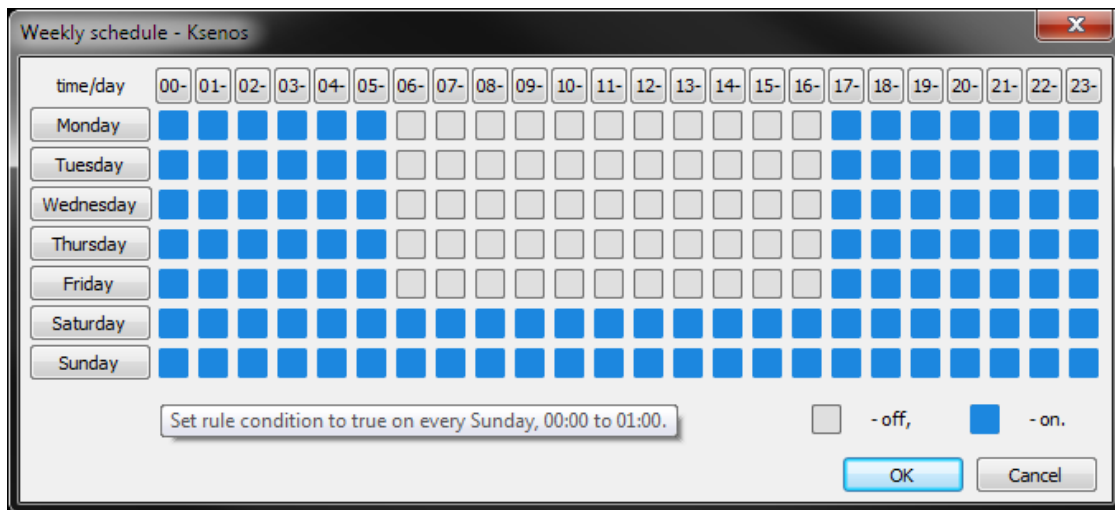


Figure 5.13: Weekly schedule-window

- Open “Select motion area” window by clicking the green square next to “Area motion detection” condition.
- Click and hold left mouse button on the camera image and draw a mask for motion detection. The orange area drawn triggers the action, other parts will be ignored. (Figure 5.14). Click OK to accept.

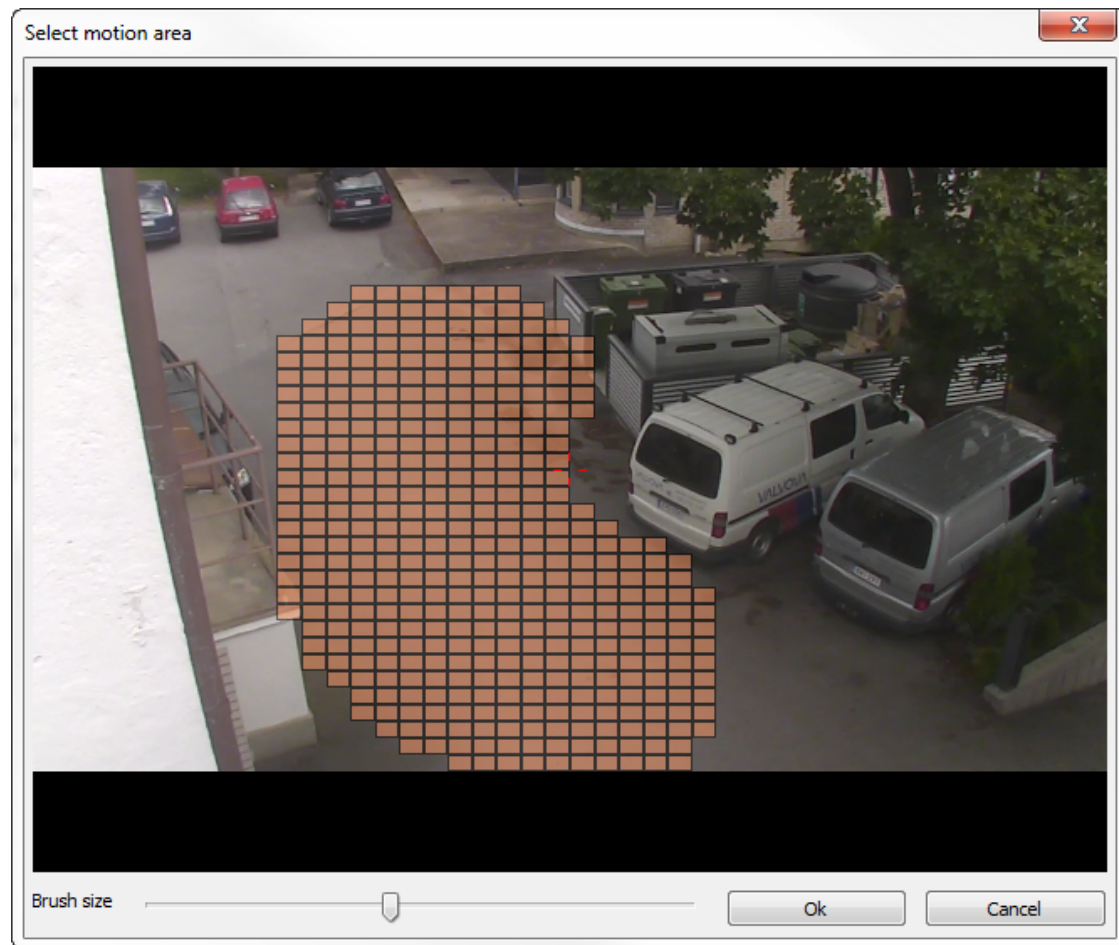


Figure 5.14: Adding the Area motion detection-condition.

- Choose “All conditions are met” from operators (Figure 5.15). In this case the rule requires that the schedule is true when any motion is detected.

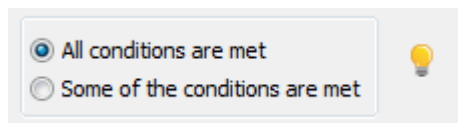


Figure 5.15: Operators.

- Choose “Notification/Alarm” from the drop-down menu (Figure 5.16). Choose a camera for the notification event, camera name will be visible in the alarm log. Choose a background color for the notification and type a text to show in the notification, the text will also be visible in the alarm log.

Figure 5.16: Choose actions.

- When the notification event window is open, all the triggered notifications will be opened in it (Figure 5.17). Notification pop-up as motion is detected on “Frontyard” camera. These notifications also open up over remote connection. Each notification is logged to Alarm log.

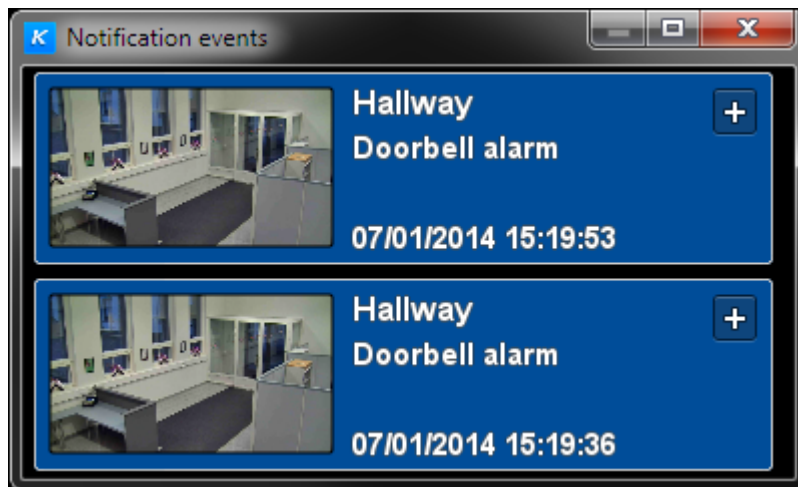


Figure 5.17: Notification event window.

5.3.3 Exemplerule 3 - Wait for another rule and place a bookmark

Create 3 rules:

- Click “Rules” and click “Add...” button three times (Figure 5.18).

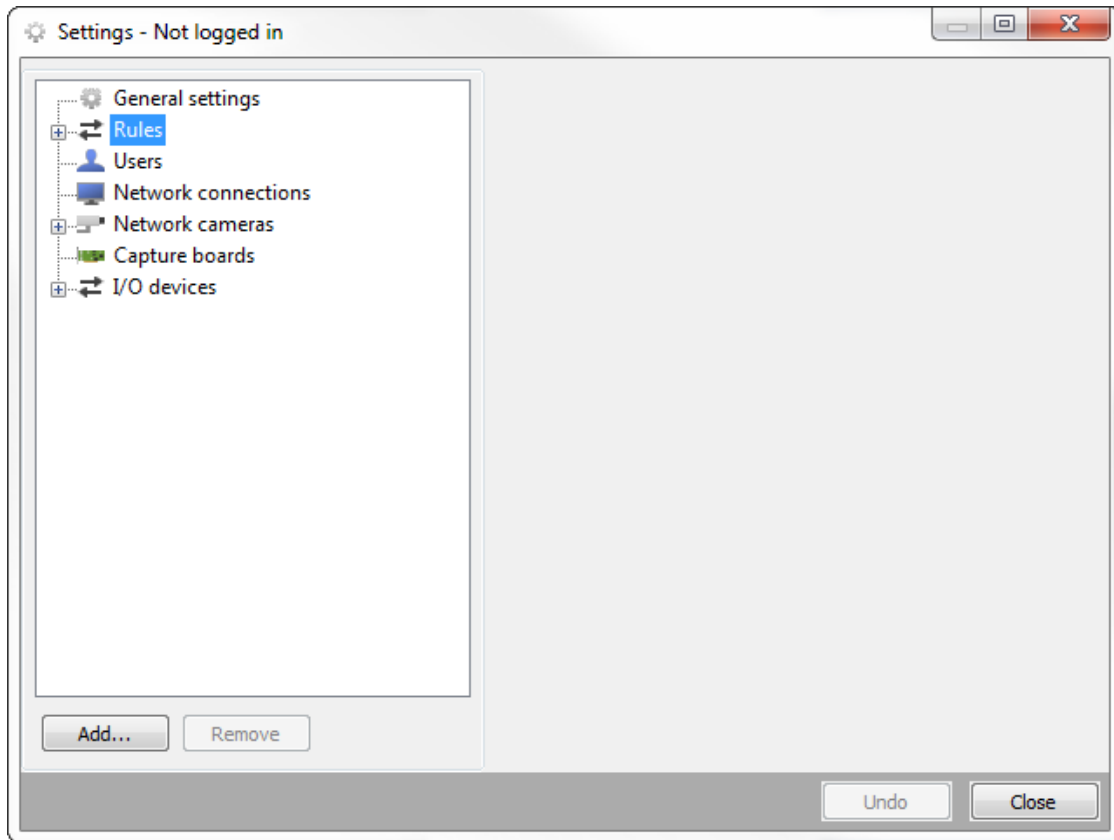


Figure 5.18: Rules.

- See examples 1 and 2 on creating the rules. This rule explains one use for “Wait for another rule” condition. This rule triggers an action if another rule is true.
- Choose first rule (Rule 1), rename it and change the values to match the image 5.19. This rule is used much like condition. It is true outside working hours (Schedule condition) and when I/O-input is triggered but external alarm (Digital input condition).

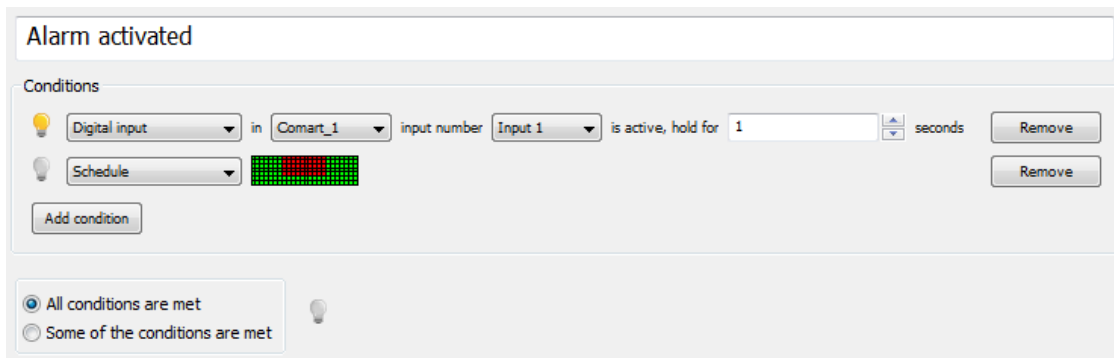


Figure 5.19: Schedule condition.

- Choose another rule (Rule 2) and add motion detection condition to wanted cameras (Figure 5.20). Rename the rule “Motion detection” for later recognition.

Motion detection

Conditions

- Motion detection in camera Testcam, hold for 2 seconds [Remove]
- Motion detection in camera Parking, hold for 2 seconds [Remove]

[Add condition]

☐ All conditions are met
☒ Some of the conditions are met

Actions

[Add action]

Figure 5.20: Motion detection condition.

- Choose the third rule (Rule 3) and add two conditions. “Another rule” for “Alarm set” rule and “Wait for another rule” for “Motion detection” rule (Figure 5.21).
- “Another rule” condition is based on chosen rule status. In this case, when “Alarm set” is true.
- “Wait for another rule” requires that the rule is true or false for defined amount of seconds. In this case it works just like “time threshold” for motion.
- Choose “All conditions are met”. This option requires that alarm is set when the motion is detected.

Wrapper rule

Conditions

- Another rule Alarm activated is True, hold for 0 seconds [Remove]
- Wait for another rule Motion detection is True for 1 seconds [Remove]

[Add condition]

☒ All conditions are met
☐ Some of the conditions are met

Actions

[Add action]

Figure 5.21: Another rule.

- Choose fourth rule (Rule 4) and add one condition and one action.
- Choose “Another rule” and choose “Wrapper rule” and “True” and set hold time to 10 seconds or more, so that rule does not place more than one bookmark for each motion detection event.
- Choose “Place a bookmark” and type in the wanted text (Figure 5.22).

Place a bookmark

Conditions

Another rule Wrapper rule is True , hold for 10 seconds

Add condition

☒ All conditions are met

☐ Some of the conditions are met

Actions

Action to perform if the rule is true:

Place a bookmark

☐ Release action

Remove

Example

Figure 5.22: Place a bookmark.

- This results as a bookmark on the timeline (Figure 5.23). Bookmarks are listed in Bookmarks-window, if “Sijoita kirjanmerkki” rule has been true.





Figure 5.23: Bookmarks on the timeline.

Chapter 6

Troubleshooting

6.1 Ksenos error messages

When an error occurs in the system, the  button appears in the main window, and timeline starts flashing in red. If the problem resolves itself, for example a temporarily lost connection to an IP camera returns, the timeline stops flashing and the button turns into yellow ().

Clicking the alert button opens up a dialog that shows errors that have not been acknowledged. Error can be acknowledged by checking the error and clicking “Acknowledge”, and it will stay acknowledged until it occurs again. When there are no errors to acknowledge in the system, the error button disappears.

These errors are also transferred to remote clients, and should the error be acknowledged from a remote client, it also disappears from the recorder and all other remote clients.

“Database missing! Nothing is being recorded!”

This error message is shown when Ksenos is started without a database. Set the recording space from settings and Ksenos will automatically create a database. (See section 1.1).

“Unable to write to database”

This means there is a problem with the database. Check the permissions and status of the recording hard disks.

“Recordingfile can not be opened”

This error message appears if Ksenos is unable to write to recordings folder. Check read and write permissions. If permissions are correct, check the status of the hard disks.

“Unable to write recordings to a file”

Error tells that writing to file failed. Check hard disk status.

“Filesystem config file is faulty”

Recording system configuration file contents were unexpected. Check setting recording space from section 1.1.

“Error on opening the database”

This error message tells that database is faulty or system cannot write in to the database. If Ksenos is writing to the database when the computer loses power, it can produce a faulty data in database. If Ksenos is unable to fix the error in next restart, it is possible to remove the faulty database and let Ksenos create a new one. Note! This leads to losing all the recordings! In situations where recordings are important, it is possible to generate a new database from the existing recordings. In these situations, contact Ksenos Support by phone or email.

“Recording space is not set! Nothing can be recorded!”

This error is triggered when cameras are connected to the system but no recording space is set. See section 1.1.

“Video signal from camera lost”

This error tells that some camera windows has not received a new picture in a while. This setting can be modified from camera settings with “Video loss timeout” setting. Only cameras that have “Error on video loss” setting enabled can cause this error.

“Compressed image was too big to be saved”

Size of an image received from camera was abnormally large. This probably means that there was an error receiving the image and the size information is incorrect. Image is not recorded so the recording won't get stuck because of this. In case the error happens again, camera status should be checked.

“Connection to server lost”

This error is produced when connection to remote server is lost and the “Error when losing connection” is enabled from remote connection settings. Reasons for this error can be for example shutting down the recorder or unplugging the network cable.

6.2 Network

Usually Ksenos is installed with two networks. One network is for cameras, other for possible remote connections. Problems in these networks can be traced using the “Ping” command. On the network, each device has its own IP address to which connection tests can be made, from either Windows or Linux command line. The command “ping 192.0.2.3” tells if the connection is OK, if Ping shows the time it required to transfer to given IP address and back, a device with this IP address is connected to the network and working.

In a network with multiple recorders two devices can't have the same hostname or IP address. Recorders should also be named individually. For example, names such as “Ksenos1” and “Ksenos2” could be used.

Many of the common network problems are caused by local network configuration. In these situations it is recommended to contact local network administrator.

6.3 Remote access

Local network configuration requires allowing the remote connection ports to be used. Firewall must be set to allow traffic to HTTP server on port 8080 and remote connection to TCP port 9191.

It is recommended to be careful on opening firewall ports when remote connections is configured outside the local area network.

Older driver versions for Intel graphics adapters are known for slow and faulty behavior. When Ksenos is run on a computer with Intel GPU, it is recommended to update the graphics adapter driver to the newest version, available either from the computer manufacturer or Intel.

Chapter 7

Technical specifications

Camera inputs	<ul style="list-style-type: none">- 16 analog @ 400 fps*- 32 analog @ 800 fps*- 32 IP cameras*
Analog image size	<ul style="list-style-type: none">- At most 4CIF (704x576)
Image compression method	<ul style="list-style-type: none">- MPEG-4- MJPEG- H.264
Video clip export	<ul style="list-style-type: none">- AVI (MPEG-4)
Snapshot export	<ul style="list-style-type: none">- JPEG- PNG
Remoteclient protocol	<ul style="list-style-type: none">- TCP/IP- HTTP
PTZ and Dome protocols	<ul style="list-style-type: none">- Pelco-P- Pelco-D- Sony IP- Axis IP
* Depending on the license	