

# Technical Specifications

## Compatibility

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### Supported IP cameras

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- ONVIF compatible cameras
- RTSP compatible cameras

### Supported video encoders

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- ONVIF compatible encoders

### Supported analog capture boards

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- XECAP-400EF LP
- XECAP-800EF

### Supported compression formats

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- H.264, H.264+, Axis Zipstream, MPEG4, MJPEG

### PTZ cameras

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- ONVIF supported cameras
- RS485 support (Pelco P, Pelco D, Panasonic, American Dynamics)
- Presets
- Patrol functions
- Control PTZ cameras with mouse, keyboard or joystick

### IP camera search

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- UPnP, ONVIF

### Audio recording and playback

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- Recording from ONVIF and RTSP supported devices
- Recording from computer's line-in
- Play locally from computer's line-out
- Play over network with speaker-enabled devices (Axis and Dahua)

### Digital I/O

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- ONVIF devices
- Modbus (e. g. MOXA I/O devices with network interface)
- Xecap 400EF/800EF capture board's I/O unit

### Mobile use

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- Android and iOS

### 360° cameras

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- Virtual 360° view and dewarping
- Multiple views from single camera
- Mouse control on view
- Support for ImmerVision panomorph optics

### Joysticks

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- USB HID joystick, controller and button support (Windows and Linux)
- AXIS T8311/8312, controller and button support (separate driver, Windows)

### Operating systems

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- Microsoft Windows 7 (32 & 64 bit), 10 (32 & 64 bit), Server 2012, Server 2012 R2, Server 2016
- Linux CentOS 6, 7 (64 bit)
- macOS High Sierra, Mojave (64 bit)

## System Requirements

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### Server

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Operating system	Microsoft Windows 7 (32 & 64 bit), 10 (32 & 64 bit), Server 2012, Server 2012 R2, Server 2016, Linux CentOS 6, 7 (64 bit), macOS High Sierra, Mojave (64 bit)
Processor	Intel Celeron, Core i3, i5, i7 or Intel Xeon, multi processor support
RAM	4 GB or more
Disk space for software	1 GB
Disk space for recordings	Depending on camera count, bitrate, frame rate and desired length of recordings

### Client

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Operating system	Microsoft Windows 7 (32 & 64 bit), 10 (32 & 64 bit), Server 2012, Server 2012 R2, Linux CentOS 6, 7 (64 bit), macOS High Sierra, Mojave (64 bit)
Processor	Intel Celeron, Core i3, i5 or i7
RAM	4 GB or more
Disk space for software	1 GB
Disk space for recordings	-
Display driver	Intel or Nvidia, 256 MB RAM or more

## Application

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### Client

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- Remote viewing of recordings and real-time image from servers
- Use for control room computers
- Use for control room video walls
- Server settings management on a web interface

### Server

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- Saves video from cameras on the local hard drive or NAS
- Operates as a link between other components in the system
- Operates either as a service or a graphic interface

### Mobile app

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- Can be used on a smartphone or a tablet
- Remote viewing of recordings and real-time image from servers
- Use of controllable cameras (PTZ)
- Area search from recordings

## Client use

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- Uses a TCP/IP connection that can be encrypted
- Can be connected to multiple Ksenos servers simultaneously
- Recordings from multiple servers can be synchronized
- Customized buttons enable the management of different functions

## Server use

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- Can be connected to multiple Ksenos servers and clients simultaneously
- Real-time image and recording transfer online either in full quality or transcoded to a smaller stream
- Notification events/alarms and buttons are forwarded directly from the server to the user
- Can work as a service without GUI

## Mobile use

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- Available for iOS and Android devices
- Real-time and recorded image viewing from Ksenos server
- PTZ camera control
- Area search functionality
- Easy-to-use timeline interface
- Application can be downloaded from Apple App Store and Google Play

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## Window

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- Add multiple
- Separate timelines in each window
- Multiple tabs in each window
- Keyboard shortcuts
- Fullscreen mode

## Tabs

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- Add multiple to one window
- The size of the window changes the layout
- Rename
- Multiply
- Arrange by dragging
- Add camera images from multiple recorders
- Add widgets
- Arrange camera images and widgets freely inside a tab
- Automatic switching with adjustable delay
- Set order and delay of tab switching for each tab
- Can be switched with rules
- Import and export as files
- Share with other users
- Force tab to show for other users by pinning it with admin account
- Indicator for shared and pinned tabs
- Close
- Bring back from 'Closed tabs' menu
- Tabs that do not fit in the window can be opened from 'All tabs' menu
- Show and hide tab bar with keyboard shortcuts
- Keyboard shortcuts

## Timeline

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- Display recordings of cameras as bars
- Display audio recordings as separate bars
- View synchronized recordings from multiple cameras
- Synchronize timelines from multiple windows
- Zoom with mouse scroll wheel
- Drag to move
- Jump to specific time and day
- Show which days have recordings in calendar
- Show week numbers in calendar
- Show how far the playhead is in the recordings
- Add bookmarks
- List bookmarks
- Move between bookmarks
- Name bookmarks
- Play / Pause
- Play backwards / Pause
- Fast forward (click more than once to multiply speed)
- Rewind (click more than once to multiply speed)
- Frame by frame
- Jump to live feed
- Double click to move
- Make selection(s)
- Clear selection(s)
- Create backup or video clip from selected time period(s)
- Create multiplexed video clip from selected time period(s)
- Show / hide timeline
- Keyboard shortcuts

## Camera image

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- Open multiple
- Filter cameras by server, group or if they are connected locally
- Alphabetic listing of filtered cameras
- Close individual cameras
- Close multiple cameras with filter
- Resize with snapping to grid. Grid size can be adjusted.
- Fit to screen for multiple camera images
- Rotate camera image clockwise and counter clockwise
- Stretch to fit selected aspect ratio
- Align inside selected grid cells
- Flip image horizontally or vertically
- Clone
- Right-click to open the Radial Menu
- Enable fisheye dewarping
- Enable Panomorph dewarping
- Show info (camera source, stream type, frames received, frames recorded, frame size, average size, bitrate, frames per second)
- Show recording indicator
- Show camera name
- Show camera and site number
- Show PTZ icon
- Color tag camera name
- Adjustable title bar size
- Dynamic title bar size
- Left-click to enable peek mode, enlarge camera image and show recordings only from selected camera
- Open in fullscreen
- Save image in JPG or PNG with desired resolution
- Save a video clip in MP4 with desired resolution
- Cut between multiple cameras on the fly when recording a video clip
- Save a multiplexed video clip from all cameras in the tab
- Isolate one or multiple cameras to the timeline and view their recordings while others are kept live
- Search motion on selected cameras only
- Search motion on selected areas on selected cameras only
- Control gates or other external devices with rule-customized buttons that can be chosen to the radial menu
- Control PTZ cameras by dragging cursor over camera image
- Show / hide PTZ crosshair with speedometer
- Zoom PTZ cameras with mouse scroll wheel
- Digital zoom with mouse scroll wheel (hold Ctrl when zooming PTZ cameras)
- Select and save PTZ presets
- Select and save PTZ patrols
- Blink camera on map
- Listen to camera
- Speak to camera
- Control with rules
- Highlight camera image on PTZ selection
- Show border around PTZ selected camera image
- Blink camera image with rules
- Blink camera image on map

## Users

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- Username and password protection
- Multiple users
- Log in automatically
- Log out automatically after inactivity
- Dual authorization
- Limit duration of visible recordings for one user login
- Admin user
- Set passwords
- Permission groups
- Set permission group as default group for new users

## Permissions

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- View live image
- View recordings
- Access settings
- Access gallery
- Remote access to this recorder
- Access to RTSP server
- View system errors
- View user logs
- Acknowledge system errors
- Hardware addition/removal
- Hardware adjustment
- Access rules
- Access user control
- Access group control
- Access storage control
- Take snapshot
- Create video clip
- Quit program
- Control camera presets
- Control PTZ cameras
- Import backups
- Edit tabs
- Import / Export tabs
- Access to selected cameras

## Rules

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- Control recorder functionality and external devices, and send information on different events
- Add multiple
- Duplicate
- Set name
- Multiple conditions in one rule
- Multiple actions in one rule
- All conditions are met
- Some of the conditions are met
- Release action

### Conditions

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- Schedule
- Digital input e.g. Modbus
- Another rule
- Loss of video signal
- Wait for another rule
- Motion detection
- Timer pulse
- Setting
- Connection lost
- Recording error
- Button pressed
- Message received
- Counter value

### Actions

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- Control digital output
- Switch analog video output
- Call PTZ preset
- Internal command
- Notification/Alarm
- Change setting
- Send HTTP URL request
- Place bookmark
- Send email
- Push camera to camera changer
- Write to serial port
- Change tab
- Blink device on map
- Blink camera image
- Increment counter
- Set counter value

## Widgets

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### Buttons

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- Trigger rules with multiple conditions and actions
- Add multiple
- Drag to arrange
- Responsive layout
- Buttons in server can be used in clients
- Set name, icon and color
- Set to be toggleable
- Control external I/O devices
- Control program functions

### Camera changer

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- Open camera image from a list of local and remote cameras
- Switch between cameras with backward and forward buttons
- Change camera by site and camera number
- Change camera with keyboard or joystic numeric keypad
- Change camera with a rule
- Same functions as in a regular camera image
- Open multiple
- A window can have multiple virtual window widgets
- Set automatic switching of camera images with delay and order

### Notifications

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- Generate from rules
- Thumbnail camera image from event
- Set color for different events
- Link to corresponding camera
- Open camera image from time of the event
- List multiple
- Clear from list
- Clear all
- Show time of the event
- Show name of the camera
- Show information of event

### Map

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- Set JPG or PNG image as a background
- Invert image colors
- Change opacity of background
- Set name
- Group maps
- Breadcrumb navigation
- Place cameras
- Monitor I/O input states
- Create shortcuts between maps
- Set sizes of items
- Dynamic sizing of items
- Show or hide labels of items
- Set position of labels on individual items
- Change map to one containing the camera item when blinking camera on map
- Enlarge cameras to Peek by clicking camera items
- Drag items into place
- Change color and icon of items
- Rename items
- Remove items
- Inherit camera name color to map
- Remove
- Remove all
- Export and import
- Adjust to any size on the grid
- Change maps while in edit mode
- Zoom with mouse scroll wheel
- Drag to move



## Alarm log

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- Alarm can be triggered by digital I/O, connection status, video signal loss, motion detection and more
- Assigning text to alarms
- Assign cameras to specific events
- Filter by time period
- View event by clicking on it
- Dell server alarms (iDRAC)

## Backup

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- Save full-quality backup of selected event
- Backups can be viewed without a license
- Set start and end points freely
- Use search tools
- Use timeline
- Create snapshots and video clips

## Storage space

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- Set multiple hard drives
- Limit recording time by a date
- Shows the date of the oldest recording
- Shows storage errors
- Provides solutions to errors

## Built-in motion detection

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- Functions with all types of cameras regardless of manufacturer
- Sensitivity and noise reduction are adjustable
- Saves the location of motion in the image
- Set areas where motion detection is disabled
- Set separate motion detection areas with different sensitivity
- Recording can be triggered using a camera's own motion detection through ONVIF

## Automatic Number Plate Recognition

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- Schedules can be created in the system to restrict vehicle access based on weekdays and time of day
- Each vehicle entered into the system is given a specific access level. Access levels are used to determine which gates will be opened for the vehicle.
- Access levels include restrictions based on time, gate and number of openings
- Access levels can be vehicle-specific or shared
- List of plate recognitions
- Click on plate recognition to show image recording of the event
- Filter search results