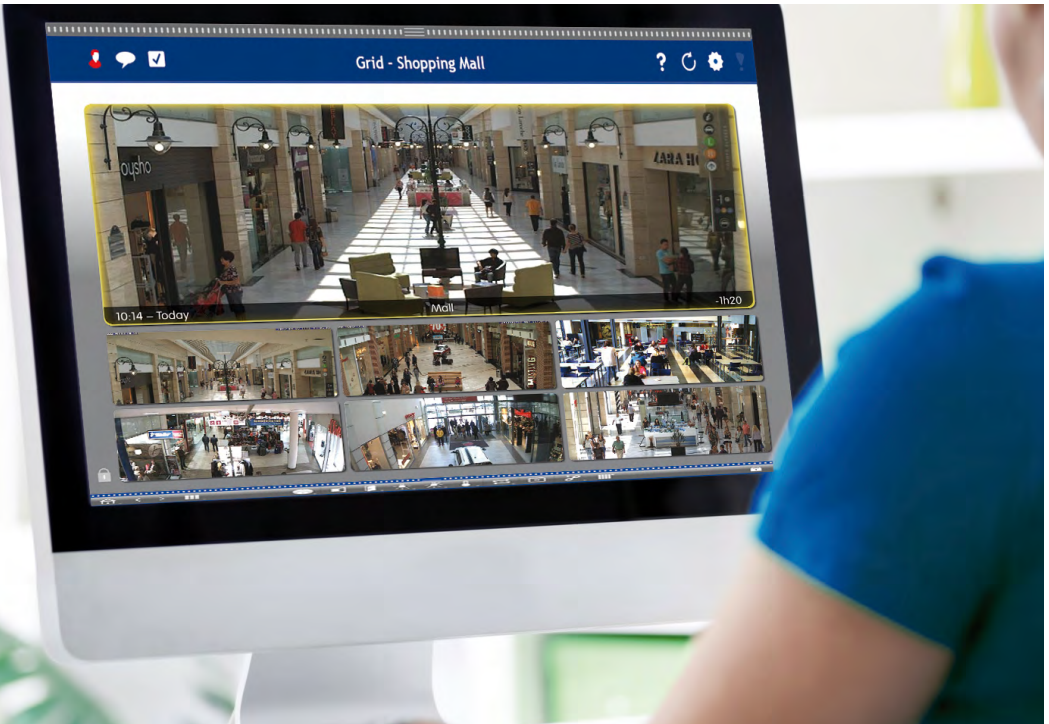


Tutorial

MxManagementCenter



V1.8-001_EN_07/2018



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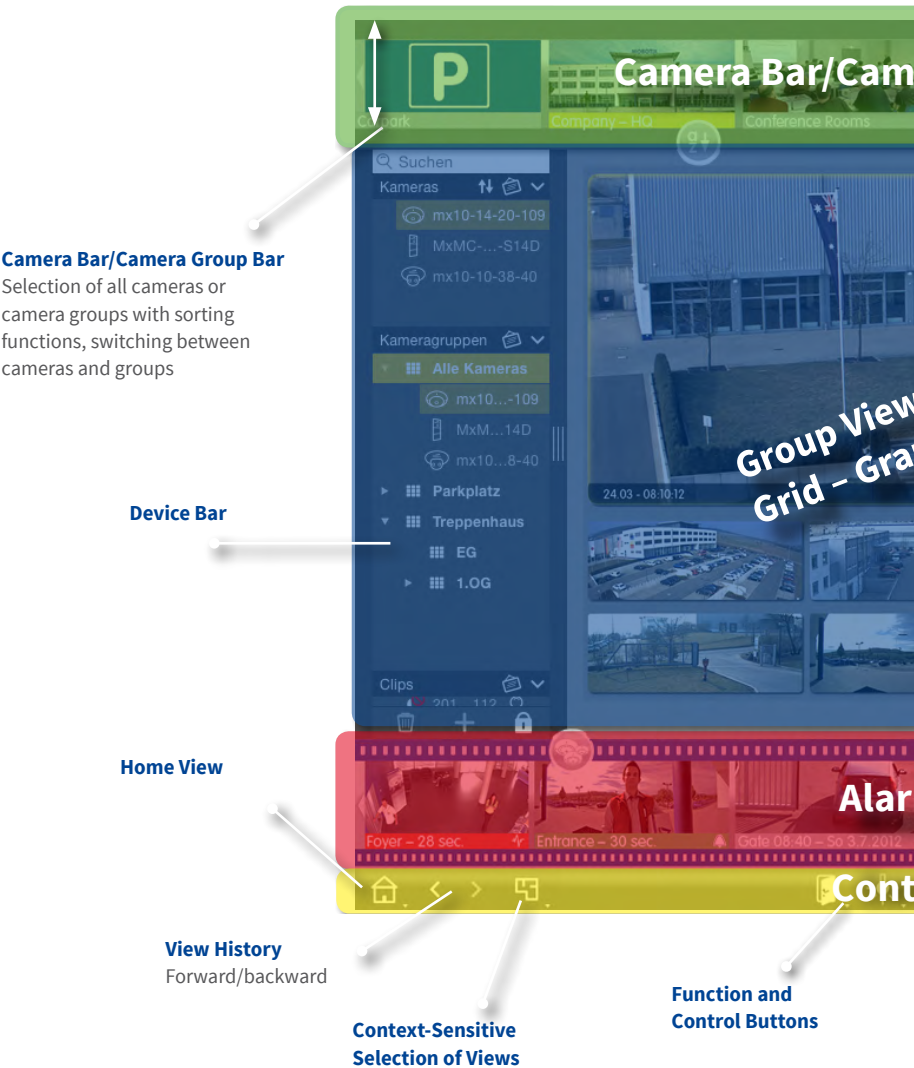
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1 Basics

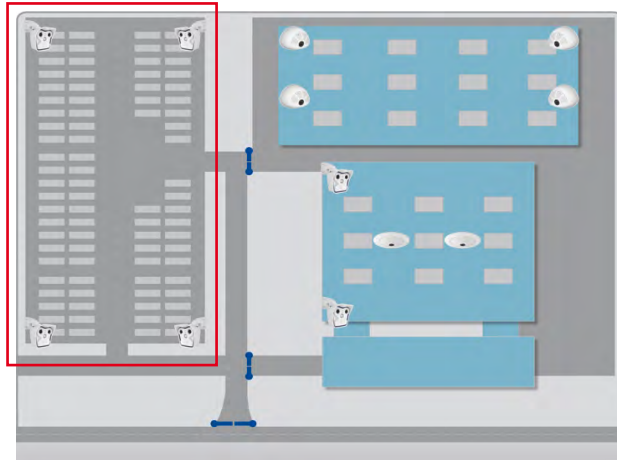
1.1 General Structure of the Views



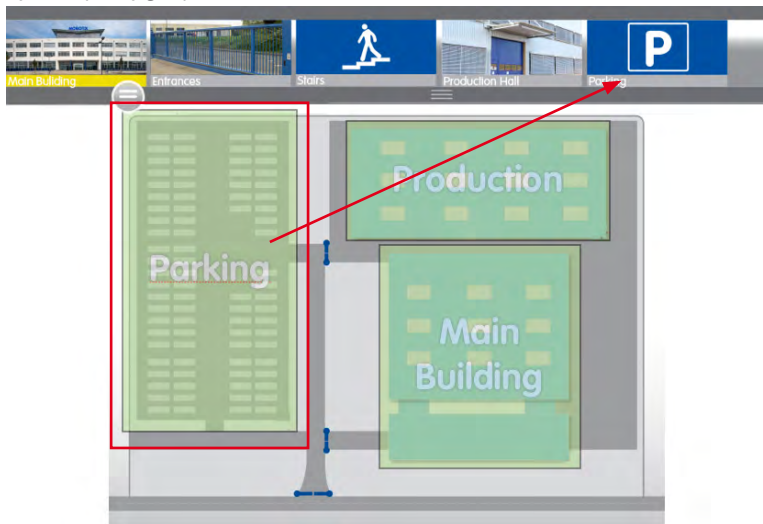


1.2 Camera Groups

A surveillance area is divided into different areas, which contain the cameras.



The cameras of these areas are combined into group views. They always provide an overview that allows you to quickly grasp the current situation.



This simplifies navigation and – in case of an alarm, you are quicker to access the relevant cameras.

The easily customized Graphic, Grid and Info views are available for displaying the camera groups:

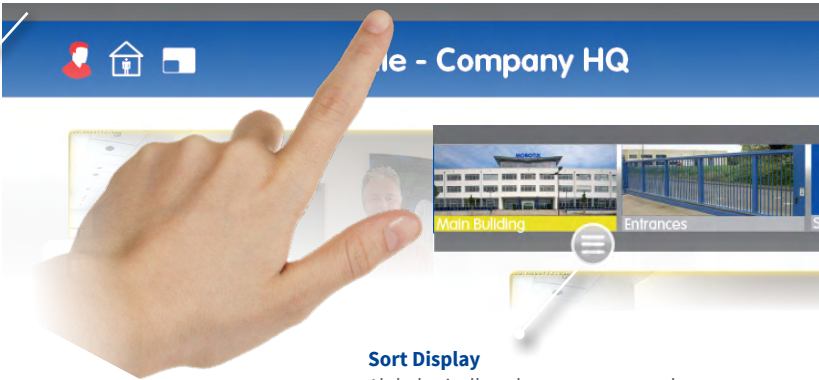


1.3 Camera Group Bar and Camera Bar

Quick selection of camera groups or individual cameras and fast switching between views.

Show Bars

Click/tap on the frame border to open the group bar or the camera bar



Sort Display

Alphabetically or by custom sort order

Switch from Group Bar to Camera Bar

Click/tap on the upper frame border

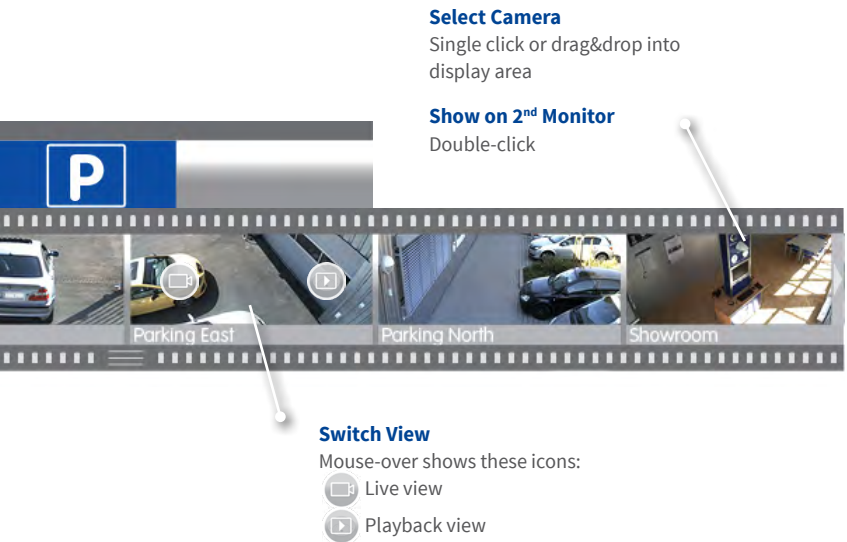
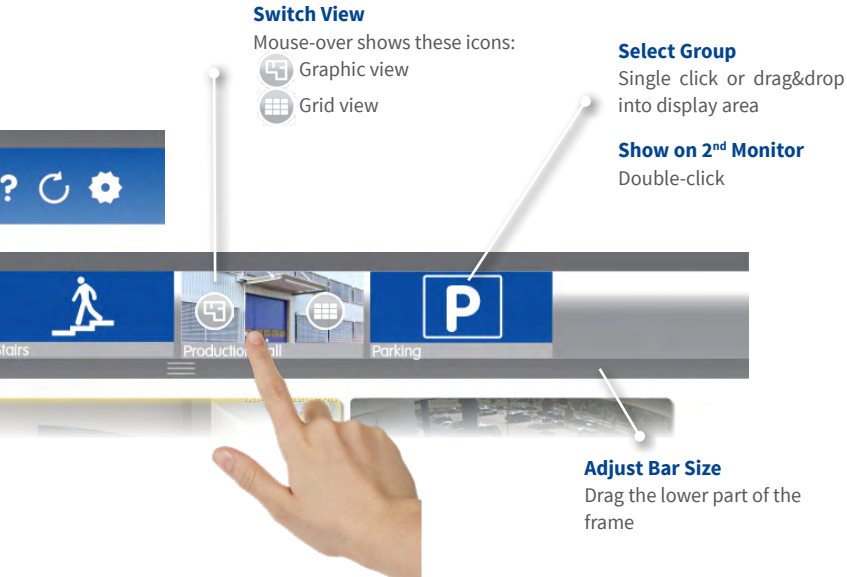


Sort Display

Alphabetically, by IP address or custom sort order

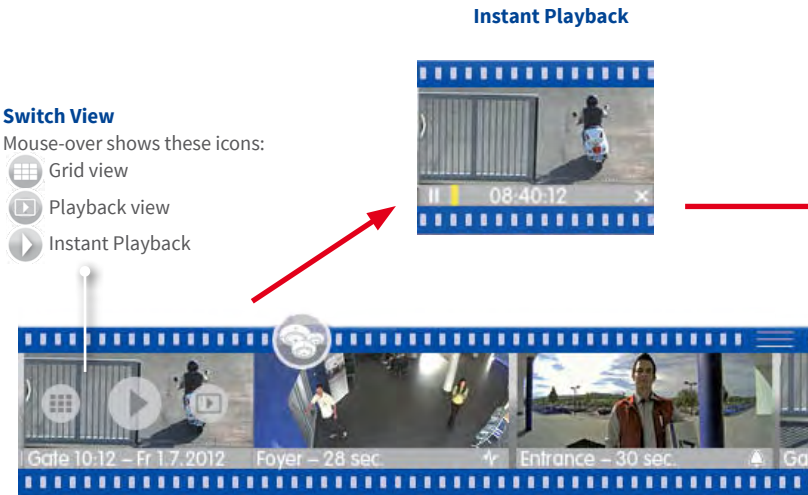
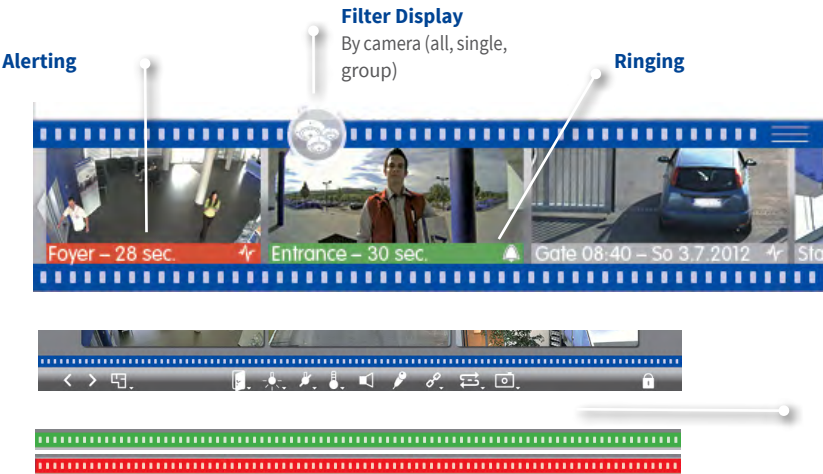
Camera Images

Camera images are reference images, which are created when adding the cameras. This allows identifying the cameras independent of the current illumination of the area



1.4 Alarm Bar

Indicates if events lead to an alarm or if visitors rang the doorbell – regardless of whether or not the bar is hidden at the moment.



Alarm Bar

Filter Display

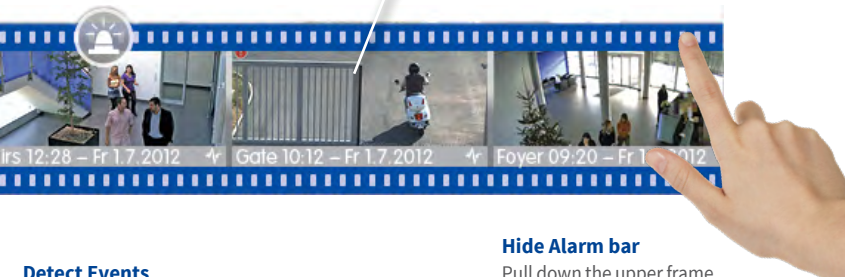
By event type

Show Alarm Image Maximized in Window

Single click

Show Live Image on 2nd Monitor

Double-click



Detect Events

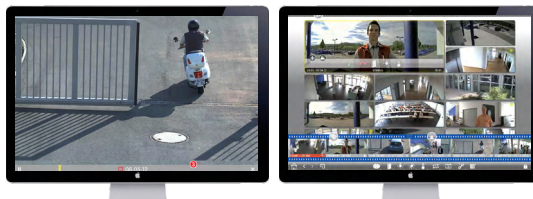
New alarms are displayed even if the bar is hidden: Bar turns red (alarm) or green (ringing)

Hide Alarm bar

Pull down the upper frame border

Show on 2nd Monitor

Double-click opens Instant Playback on 2nd monitor

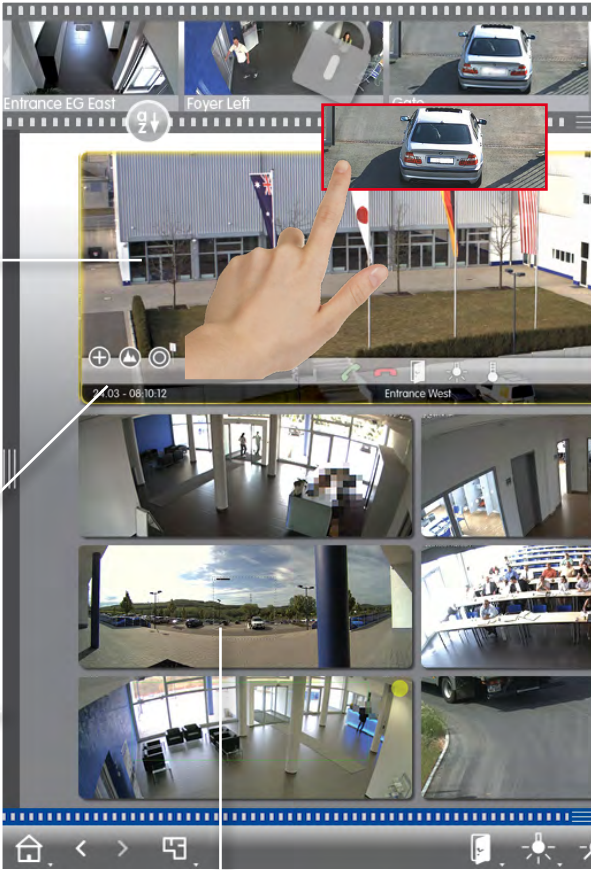


1.5 Grid View

Focus Window
Drag&drop cameras from the grid or the camera bar into the focus window.

Switching and Control Functions
For camera in focus window

Device Bar



Show Maximized Within Window

Single click on a camera image

Show on 2nd Monitor

Double-click

Camera/Group Bar

Alarm Info Bar

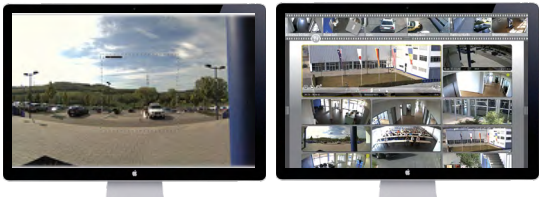
Mouse-over displays bar, shows the last 25 alarm images (when moving the mouse pointer over the bar)

Histogram

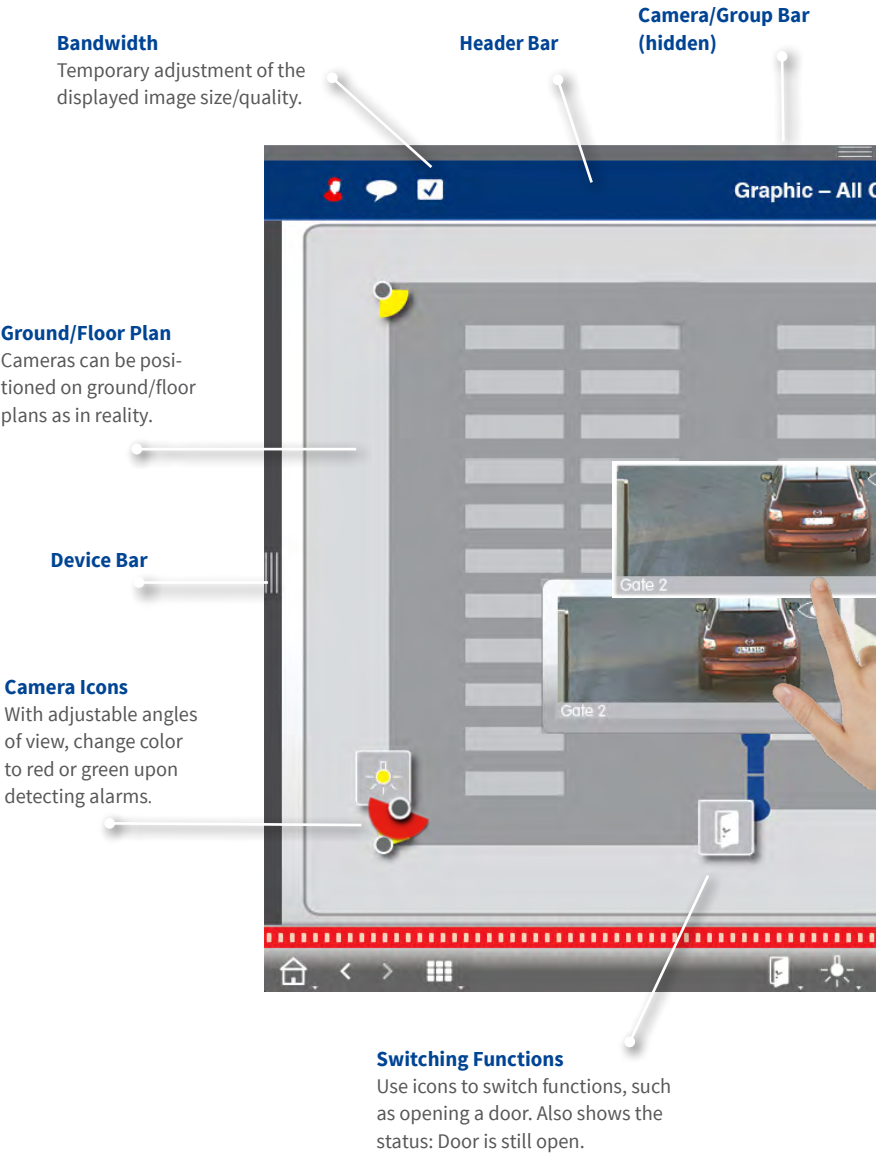
Live Images

of the cameras in this group

Alarm Bar (Hidden)



1.6 Graphic View

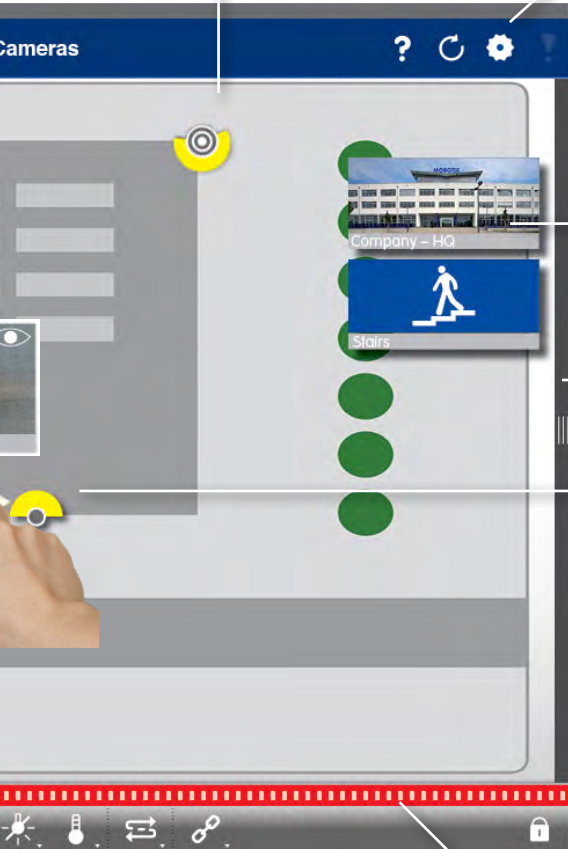


Multiple Cameras

Represents several cameras on one spot, e.g., on a pole.

Environments/Projects

Set up several environments for accessing the cameras from separate locations with different bandwidths and allows saving/loading projects.



Camera Groups

Click/tap on icon to open the corresponding Graphic view.

Histogram

Temporarily Show Live Image

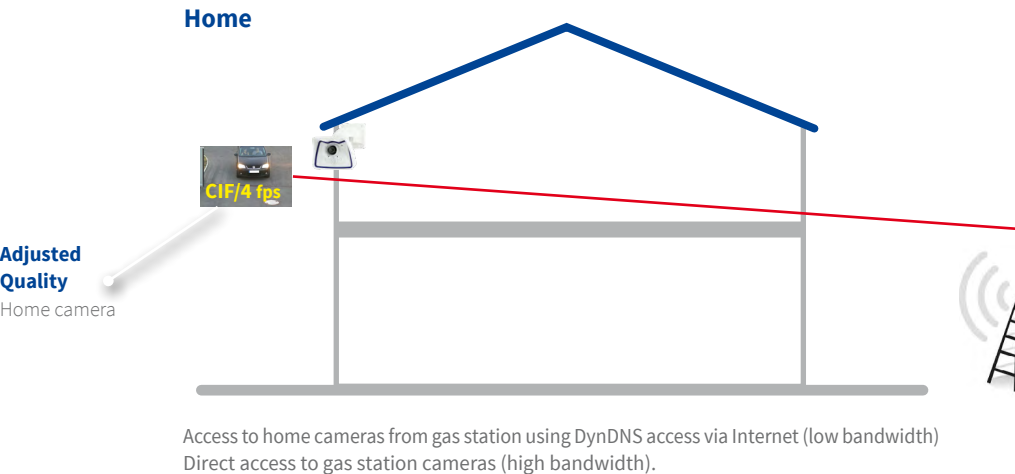
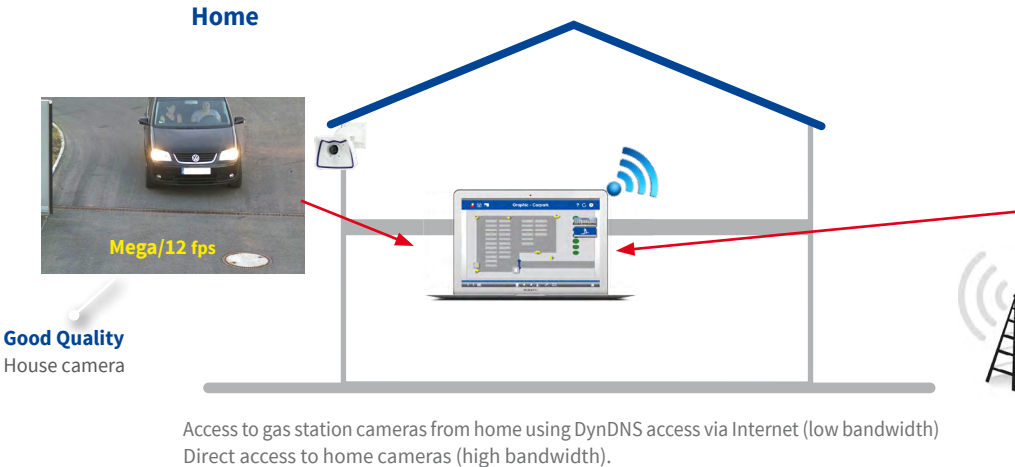
By mouse-over, drag&drop onto plan to make image stick temporarily.

Alarm Bar (Hidden)

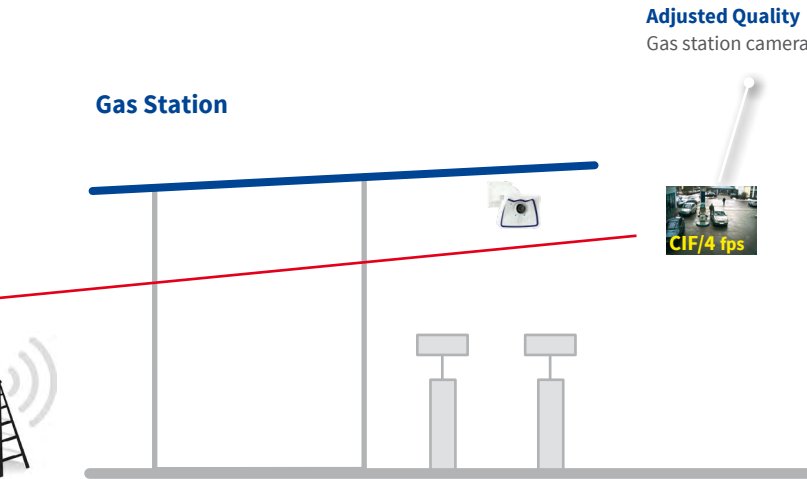
Red indicates: A camera has detected an alarm.

1.7 Working With Different Network Environments

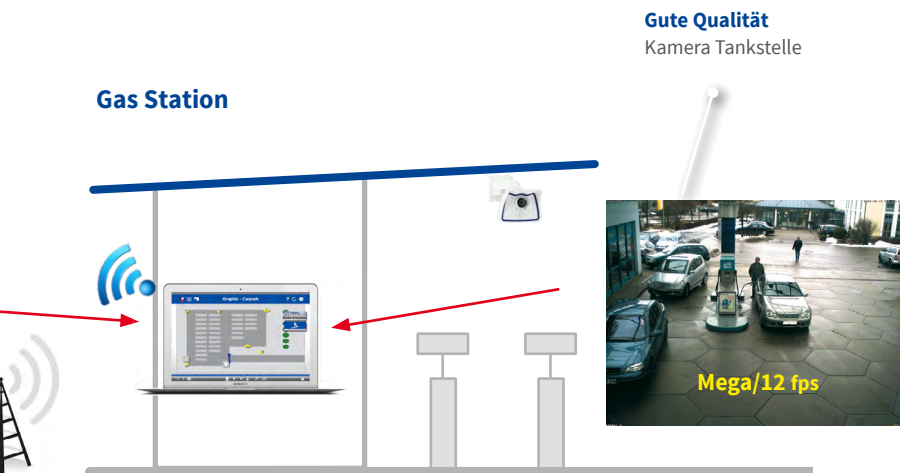
Automatic adjustment of image size, image quality and frame rate depending on selected environment. This is done by the camera, independent of the Live view. The same applies to stored images, which have been reduced in size by the camera before transmission.



Gas Station



Gas Station



1.8 Licensing

Industry-specific solutions and special functions, such as the integration of cash point systems are subject to licensing.

Licenses

MxManagementCenter

Licenses

Product	Expiration	Quantity
MxMC Core	Permanent	Unlimited
MxMC POS Cash Register	Permanent	-

< Activate License

Via Activation ID

Please enter your Activation IDs and

Activate

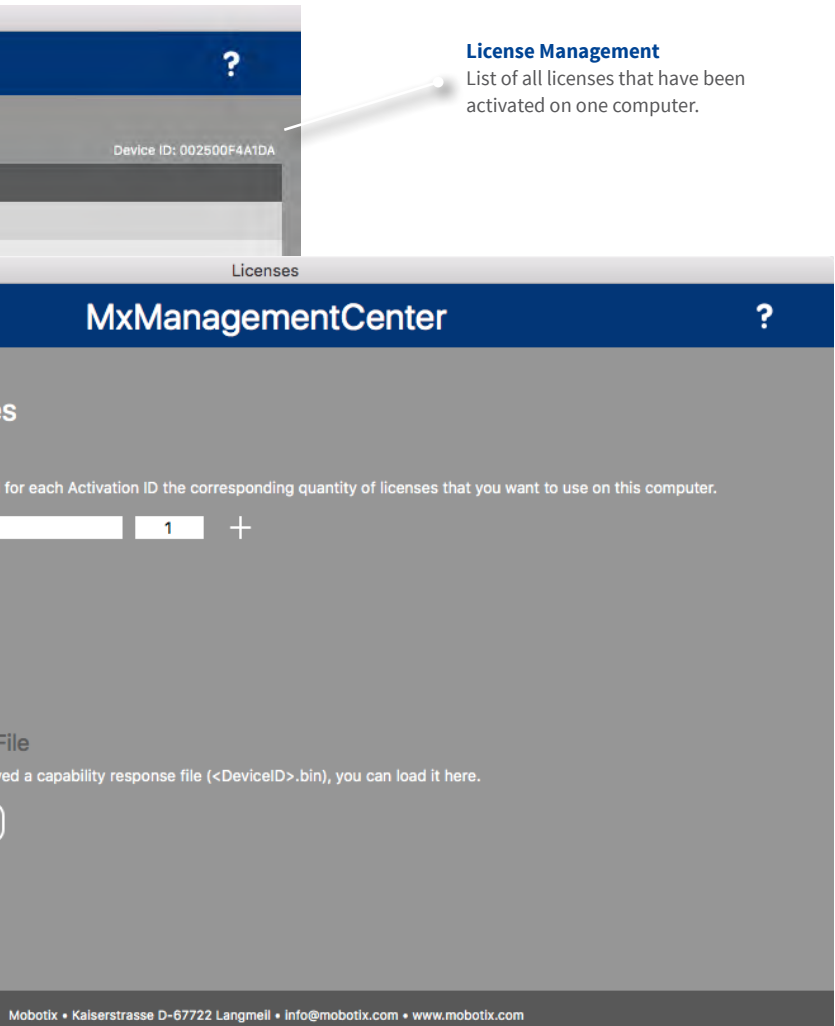
Via Capability Response File

If you have already created or received a response file

Load Capability Response File...

Activate Licenses

Enter a valid activation ID and specify the number of licenses to be installed on this computer.



2 Highlights

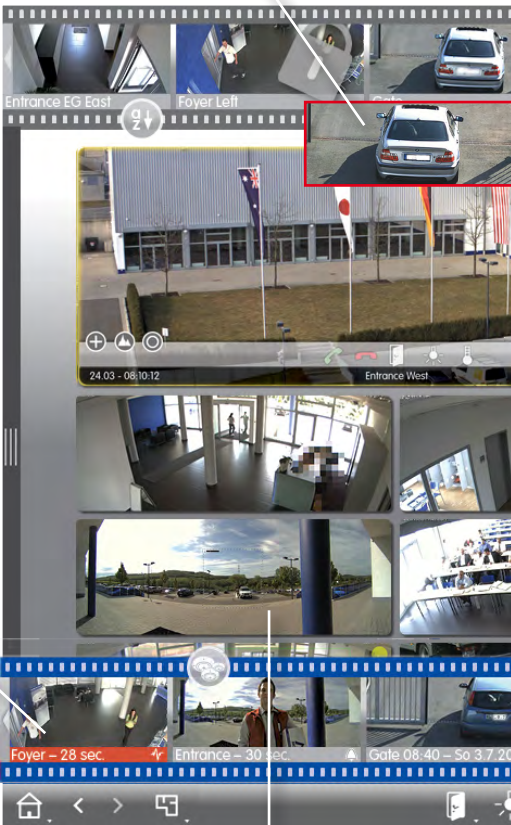
2.1 Unique Usability Concept

Instant Selection

Drag&drop from camera bar.



Show maximized
within window
Single click



Show fullscreen

Double-click

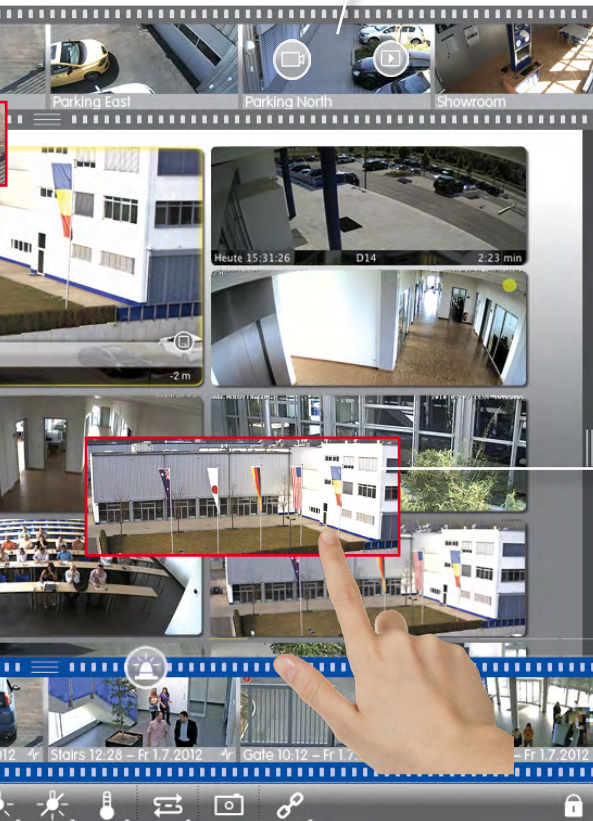
If additional monitor is attached:

Show on 2nd monitor

Double-click

Switch View

View selection using mouse-over icons in the camera bar.



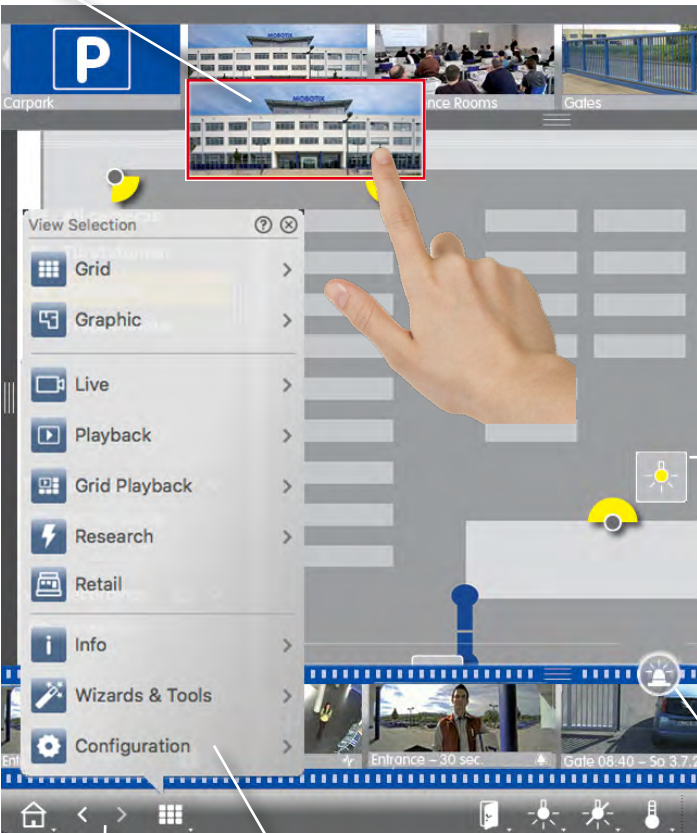
Instant Selection

Drag&drop from tiles into focus window.



Instant Selection

Drag&drop from group bar.



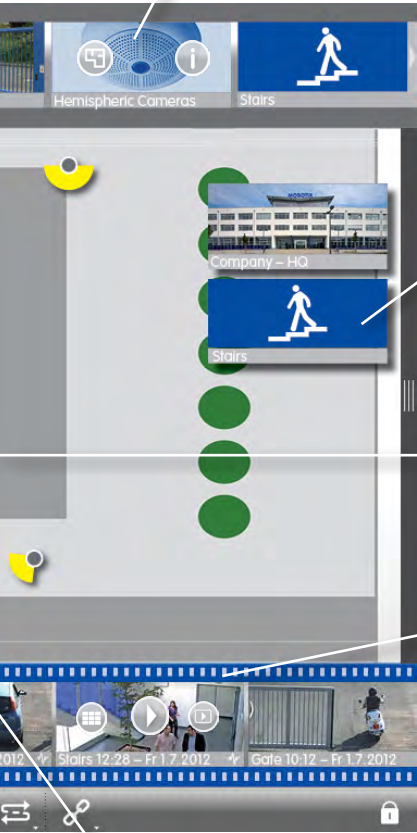
Home View

Browse
Through the view history.

Navigate
Select view or camera using navigation button.

Switch View

Select view using mouse-over icons in group bar.



Open Other Group

By clicking in Grid view.

Switching Functions

Use switch icons to control functions.

Switch View

Select view using mouse-over icons in Alarm bar.

Icons in All Views For Adjusting And Selecting

Settings:



Zooming, sorting and filtering:



Image settings and volume:



Device Bar

Quick Search

By cameras and groups

Simple Renaming

Of cameras and groups by overtyping the name.

MxThinClient Integration

Clips & Recordings

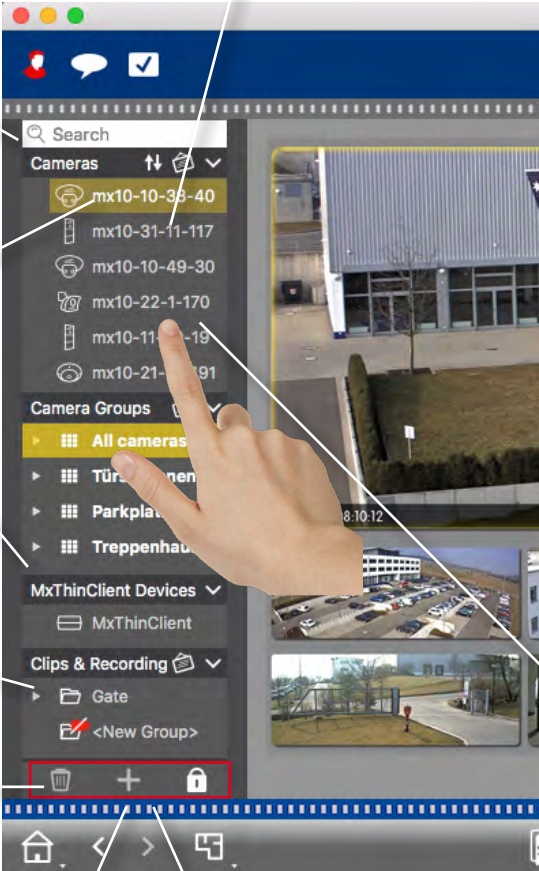
Direct access to recordings without adding the camera to MxMC.

Managing Cameras and Groups

-  Edit
-  Delete

Clearly Structured Display

Of all cameras and groups in list mode.



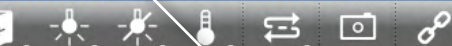
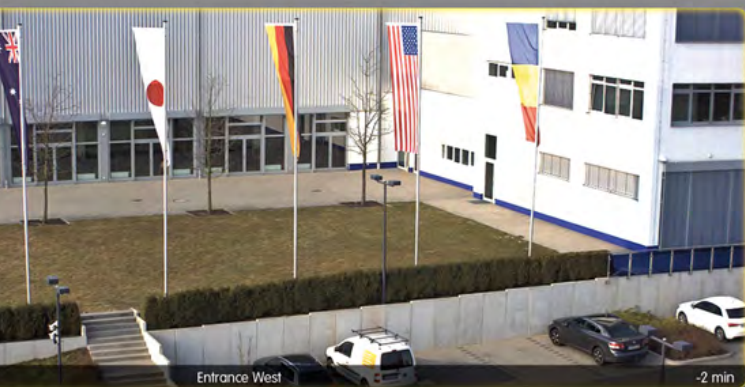
Adding Cameras

Manually or by using Bonjour

Create Groups

MxManagementCenter

Grid – Parking

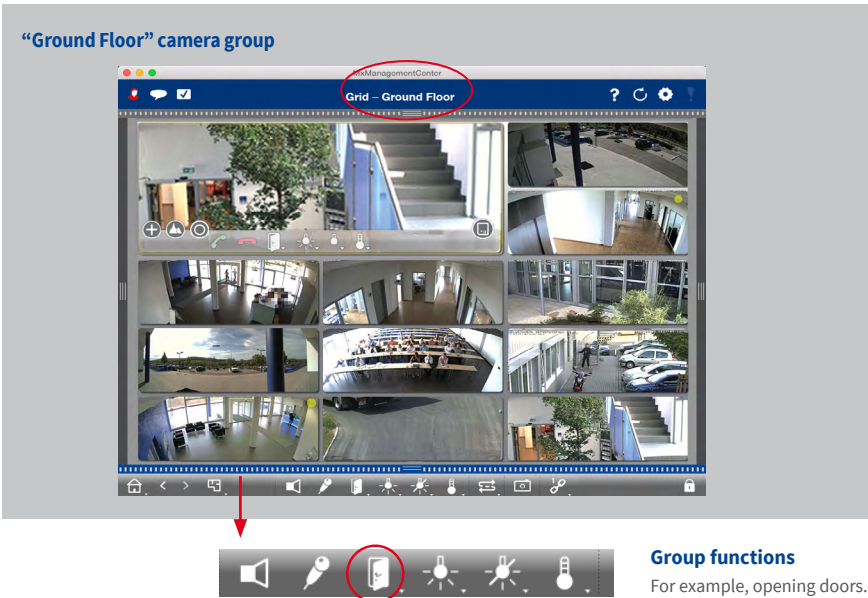


Easy Sorting

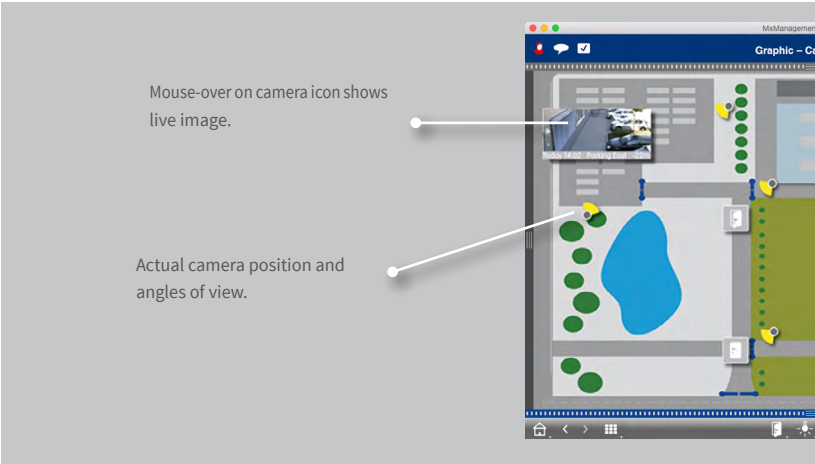
Drag&drop from within the list.

2.2 Camera Groups

Grid View For Grouping According to Several Criteria: By location, by function, ...



Graphic view for positioning as in reality: perfect overview



“Parking Lot” camera group



2.3 Staying Informed Everywhere and in All Views

Alarm Bar

Alarm

Ring

Show New Alarms
Red upon alarm trigger, green upon ringing.

Alarm Info Bar

Ring

Alarm

Show New Alarms
Bar beneath live image turns red or green if the camera detects an alarm.
Move the storage card slider to the left to see the last alarm image.

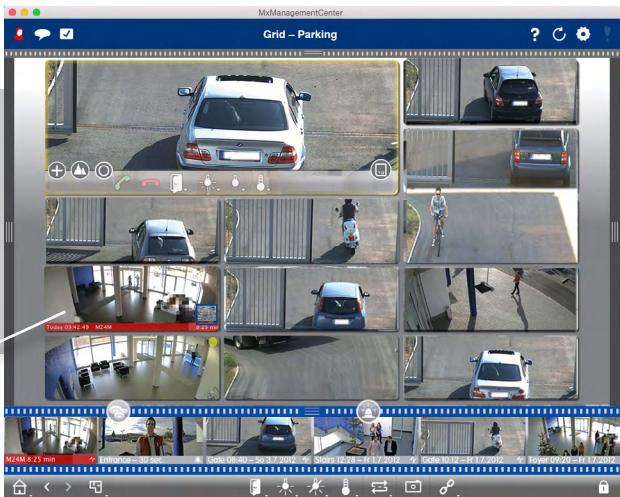
30



Chronological Ordering of Alarm Images

Filter Display

- By camera
- By group
- By event type



2.4 Convenient Search and Analysis in Player Means Fast Results

Fast and Simple Operation

High-speed playback with up to 60x the regular speed

Search for time/date

Camera selection
By drag&drop

Select playback mode

Quick positioning on desired date/time

Normal Playback

- Entire Recordings
- Event Recording

Image Playback

- Event Images
- Pre-Event Images
- Marked Images

Timelapse Playback

- 1 Day
- 1 Hour
- 10 Minutes
- 1 Minute

Play

Precise positioning
Search 30 seconds forward/backward from time of current image (only when accessing recordings directly on a file server).

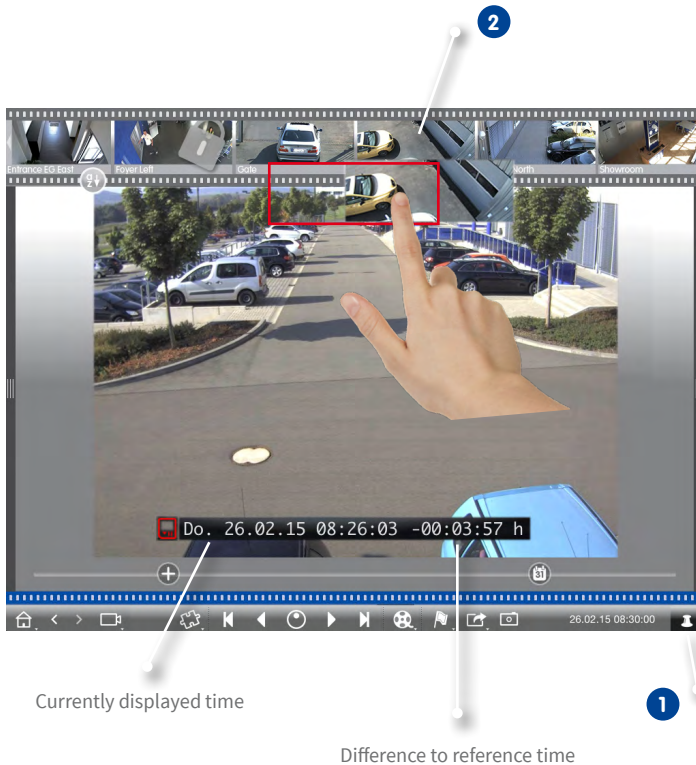
Play

Up to 60 times playback speed

One image forward/backward

Research Multiple Cameras for a Specific Point in Time

One of the parking lot cameras has detected an event at 8.30 pm. What did the other cameras record at that time?

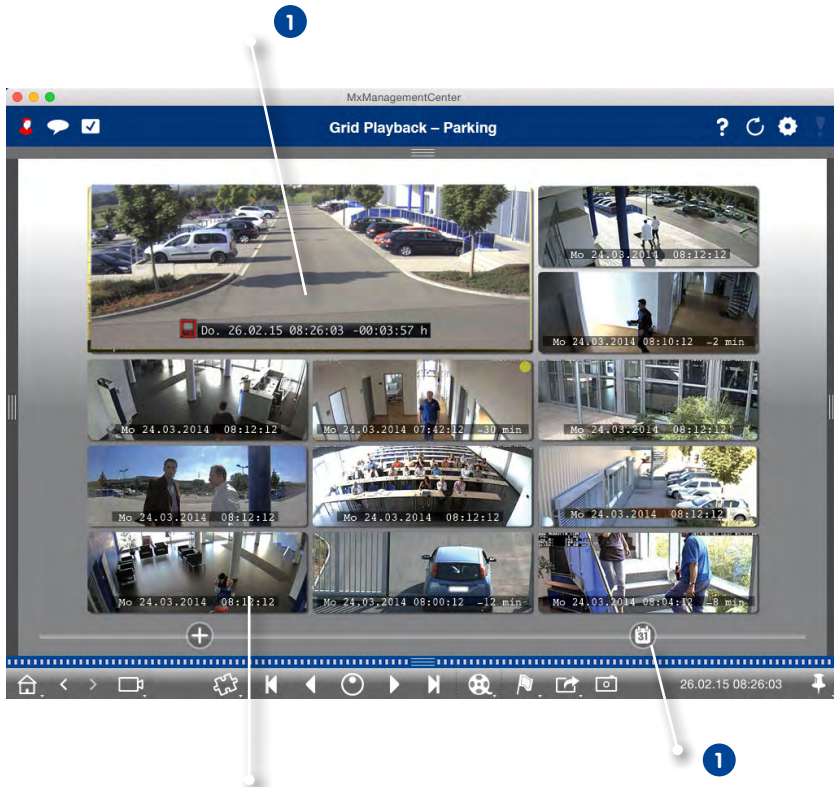


- 1 Click on pin button to set the reference time.
- 2 Drag&drop cameras from camera bar one by one to position them on the reference time.

2.5 Grid Playback – Investigating Entire Camera Groups

Browse the Recordings of Entire Camera Groups Synchronized By Time

- 1 Use the timestamp in the focus window or the calendar slider to set the time.



All cameras jump to the event image that is closest to the specified point in time. The timestamp beneath each camera image shows the time and date of the image. The difference to the reference time is shown at the right.

2.6 Access to Stored Images – Easily Customized

Depending on the requirements, you can configure each network environment to access the recordings via the camera or directly on the file server.

1 Remote player: Access via camera

In local network or remotely

Advantage: Camera can adjust the image size, frame rate and image quality of the video stream to the available bandwidth



2 Player: Direct access on stored images

In local network

Advantage: Faster, since it does not put any load on the camera.

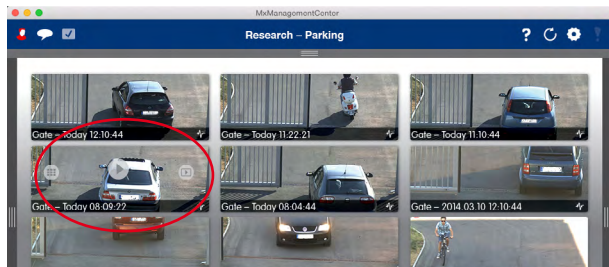
2.7 Instant-Player – Research from Anywhere

Instant playback of event recordings for fast results – in the Alarm bar or the Research, Grid or Graphic views.

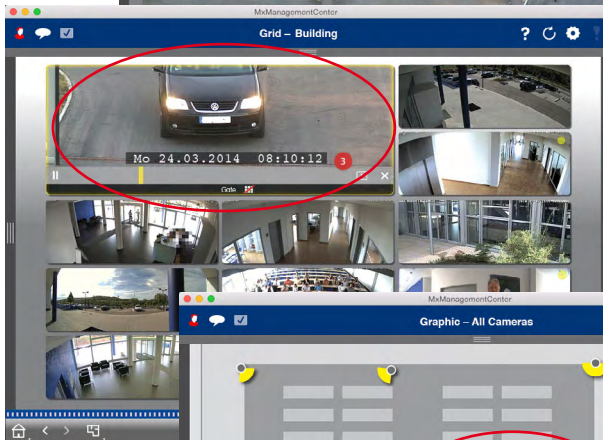
Alarm Bar



Research View



Grid View

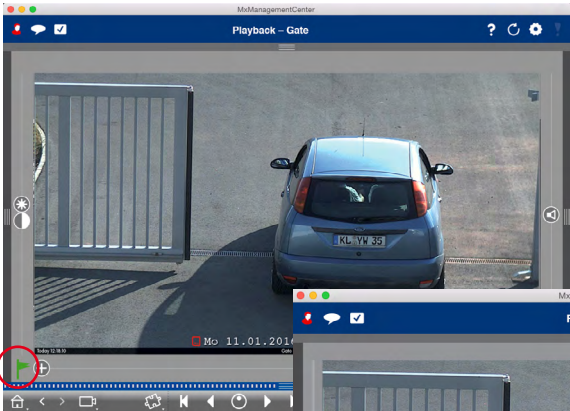


Graphic View



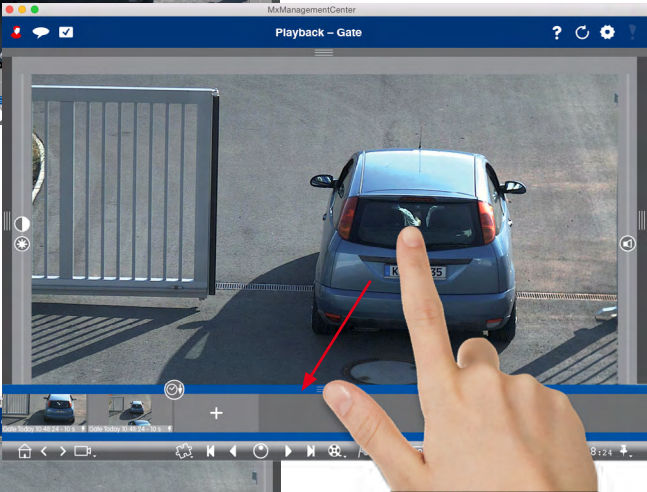
2.8 Export List – Flexible Export of Video Clips

Export of the entire video to get an overview or export of an image section into various formats (mxg, avi, etc.). The new export feature supports the flexible export into different video sizes and image rates independent of the original format, it also supports virtual PTZ views as well as the transformation of a 360-degree full image into a surround view, a panorama view or a customized view.

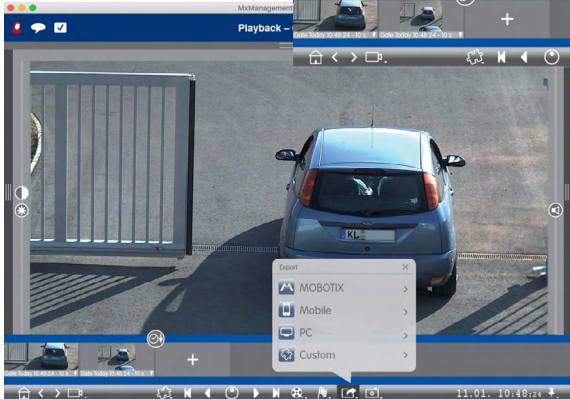


Mark recording for export.

Drag&drop the clips into the Export bar one by one. Alarm bar automatically switches to the Export bar. Use drag&drop to change the clip sequence.

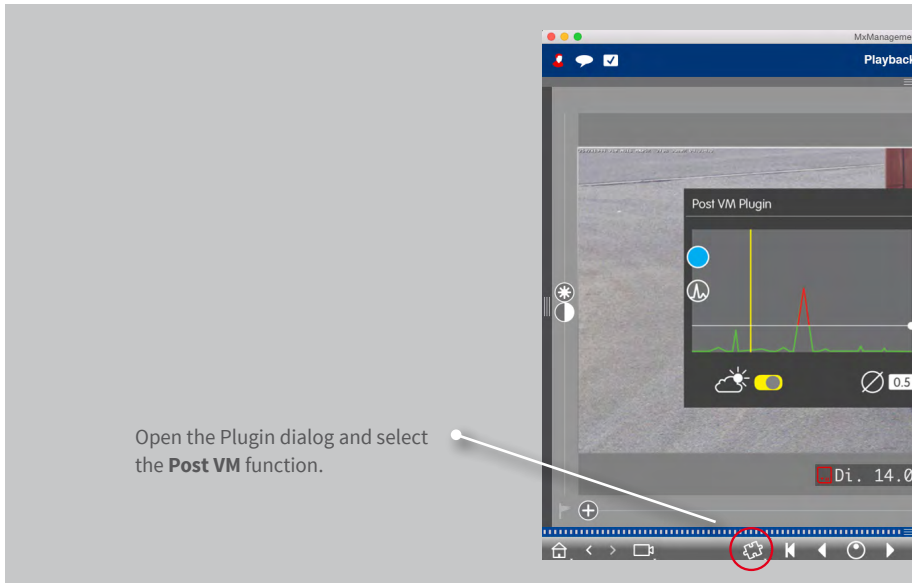


Click on Export and set the export parameters.

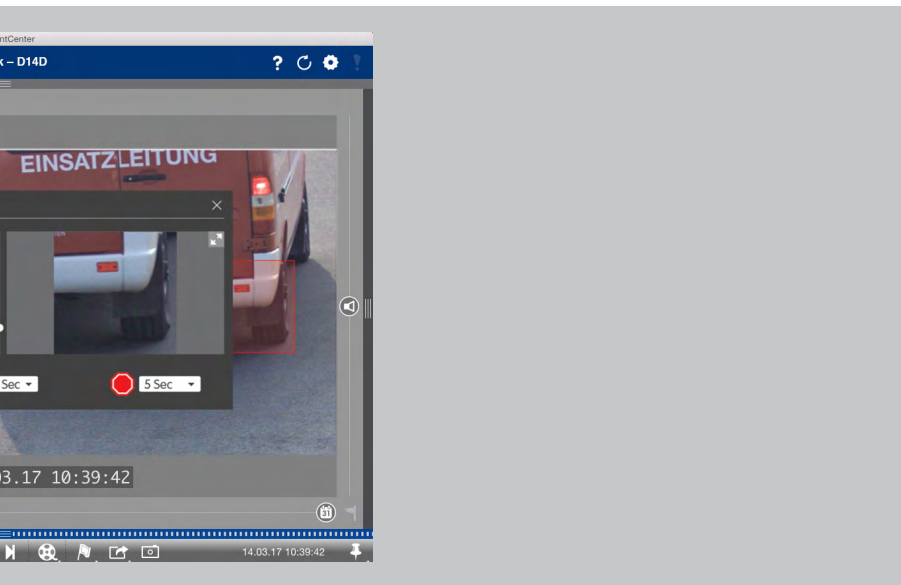


2.9 Playback Analysis: Automatic Post Video Motion Analysis

The automatic Post VM analysis provides a high-speed search mechanism with time-lapse feature to find



special motion events in all recordings.



2.11 Retail System – POS Terminals With Integrated Video Surveillance

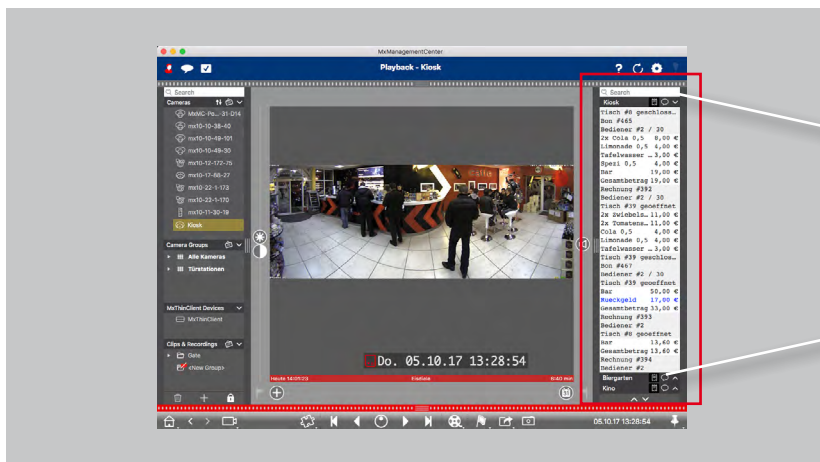
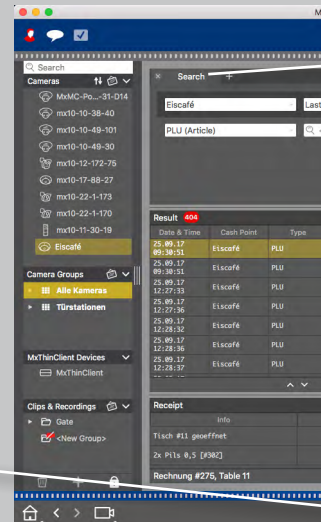
With the Retail system, all cash transactions can be linked to the video recording of transactions. Such a PC

Detailed Search and Analysis in the Retail View

Display of the search results in:

- **Lists:** for detailed display of POS data
- **Tiles:** for immediate display of event pre-views for each transaction.

Selection of display in list or
tile form
here: in a list



Retail System – POS Terminals With Integrated Video Surveillance

POS system with integrated video surveillance makes it easier to locate and check suspicious activities.

The screenshot displays the 'Retail' section of the 'ManagementCenter' software. On the left, there's a sidebar with filters for 'week' and 'Article name'. The main area is divided into three panes: a table of search results, a video feed, and a detailed transaction view. The table lists items like '2x Pils 0,5', 'Ale 0,5', '2x Cola 0,5', 'Pils 0,5', 'Gmelichter', 'Sonne', 'mit Popcorn', and 'mit Oliven'. The video feed shows a store interior. The detailed view on the right lists transactions for 'Eiscafé', including items like 'Bon #465', 'Bediener #2 / 30', '2x Cola 0,5', 'Limonade 0,5', 'Tafelwasser', 'Spezi 0,5', 'Bar', and 'Rechnung #392'.

Defining and saving search queries with multiple search criteria

With **list view**: Search results are displayed in a table in which the individual transactions are entered with detailed information.

With **list view**: Clicking on a transaction line also opens the receipt data and a preview of the selected transaction.

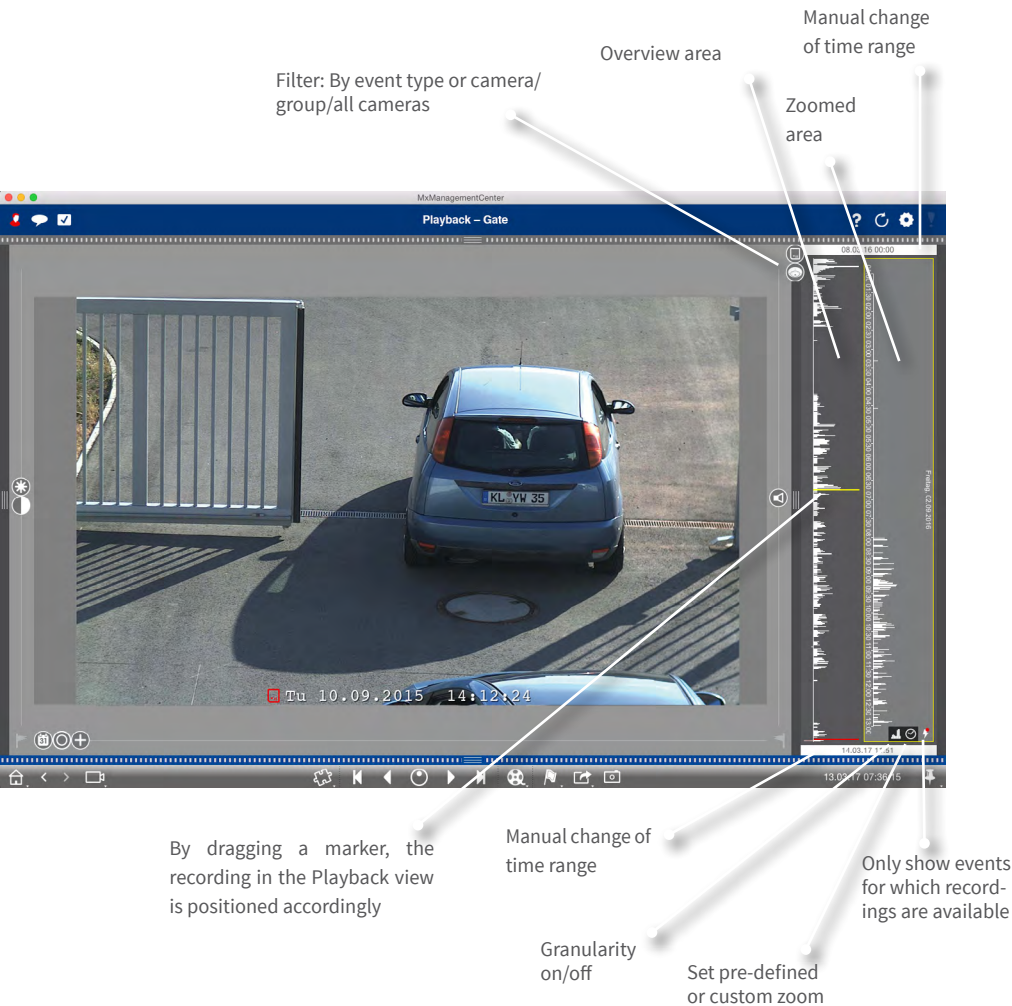
Quick Overview of the Last Transactions in the Retail Bar

The entries for each POS camera can be filtered by keywords.

Transactions that only show administrative events, e. g., the login of a cashier, can be turned on or off.

2.12 Histogram With MxEventStatistics

The Histogram bar is a fast and graphic method to find irregularities and the corresponding information. This perfect tool provides the fastest overview using the camera's internal database, without the need of an additional computer.



2.13 Action Log (User Log)

MxMC can log any action, such as starting playback or export actions, activating the sound, etc. This means that you can log all user actions and thus deliver the entire chain of events for legal purposes.

Entries can be sorted by time, user or actions, for example.

Search function

Time	User	Category	Action	Details
08.03.16 14:44	Admin (Admin)	Export	Export	dfl-10-9-49-25-Tower will be exported from 2016-03-08 14:43:24 to 2016-03-08 14:44:24
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to view "Wiedergabe"
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to camera "dfl-10-9-49-25-Tower"
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to group "Indoor"
08.03.16 14:44	Admin (Admin)	Access	Anmelden	Login successful for Admin (Admin).
08.03.16 14:44	Admin (Admin)	Access	Logout	Logging out Admin (Admin).
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to view "Wiedergabe"
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to camera "dfl-10-9-49-25-Tower"
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to camera "dfl-10-18-72-120-M28"
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to camera "dfl-10-18-72-120-M28"

2.14 Image Adjustment

Hemispheric cameras generate 360° images. In order to get naturally-looking images, MxMC can correct these images. This applies to both live images and recorded images.



Full Image



Normal



Panorama

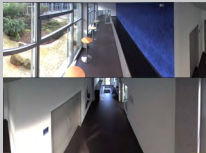




Surround



Double Panorama



Panorama/Focus



2.15 Panorama Correction and Auto Flip

Panorama Correction



Not corrected

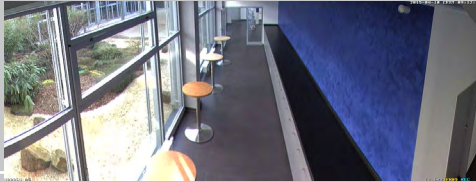


Auto-Flip: Automatic Monitoring Aid for Dome Cameras

Always shows correct images even if persons or objects move directly under the camera.

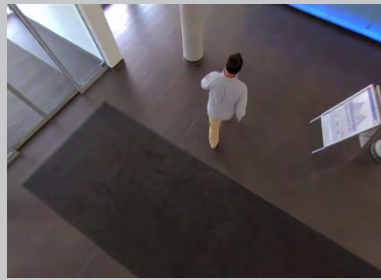






Corrected

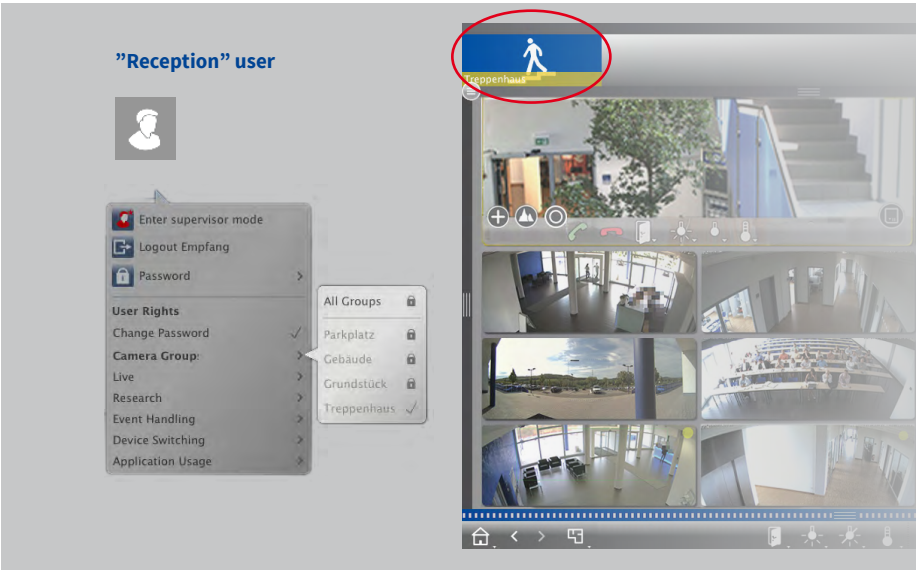
Move Panorama slider to Correction position and use the mouse wheel to create the most naturally-looking image.



Automatic flipping of the camera image

2.16 User Management

Individual Rights Management



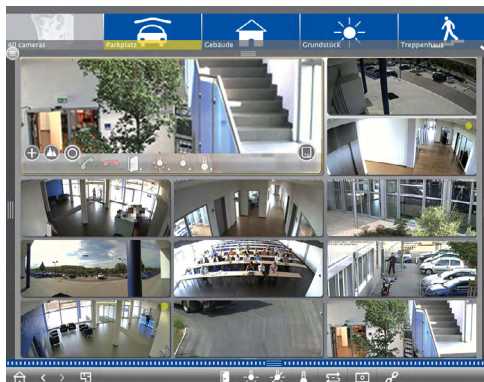
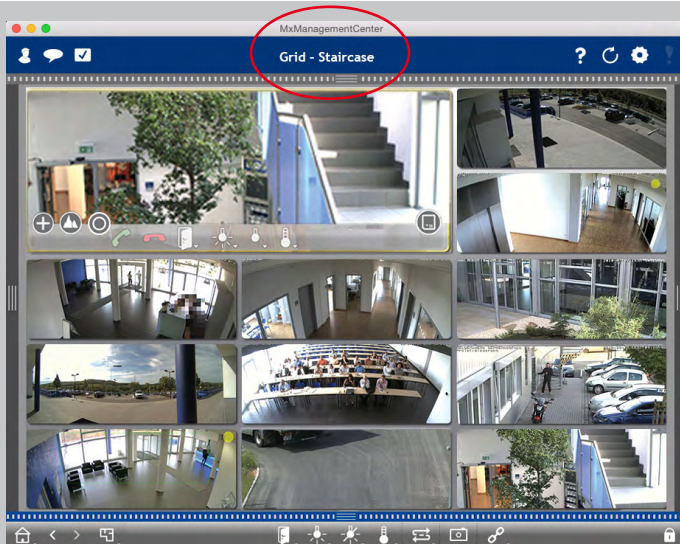
Only the “Staircase” camera group has been unlocked for the “Reception” user.

Temporarily Unlock Functions

“Reception” user

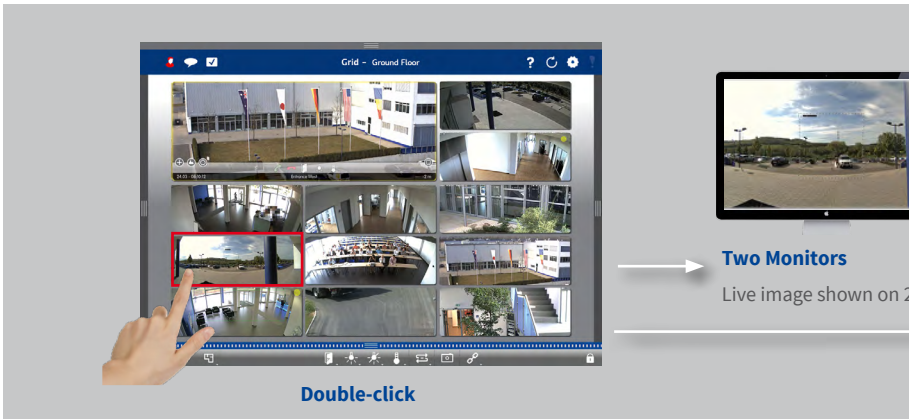


Use Supervisor PIN to unlock other camera groups.



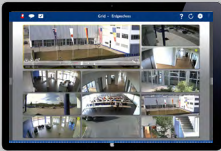
User can temporarily access all camera groups.

2.17 Multi-Monitor Capability

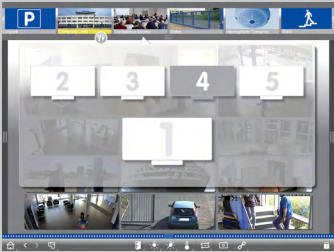


Multi-Monitor System Without Any Costs for Additional Software





2nd monitor.



Several Monitors/Monitor Wall
Monitors are recognized automatically and can be selected and arranged as needed.

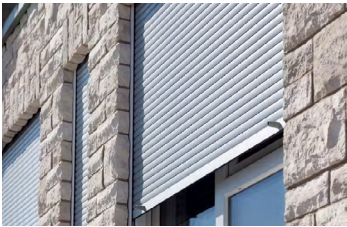


2.18 Hyperlink Support

Execution of pre-defined functions, such as display of weather station website or home automation control using HTTP requests or MxMessageSystem.



Show weather station website



Open/close blinds.

2.19 ONVIF Support

Coming soon

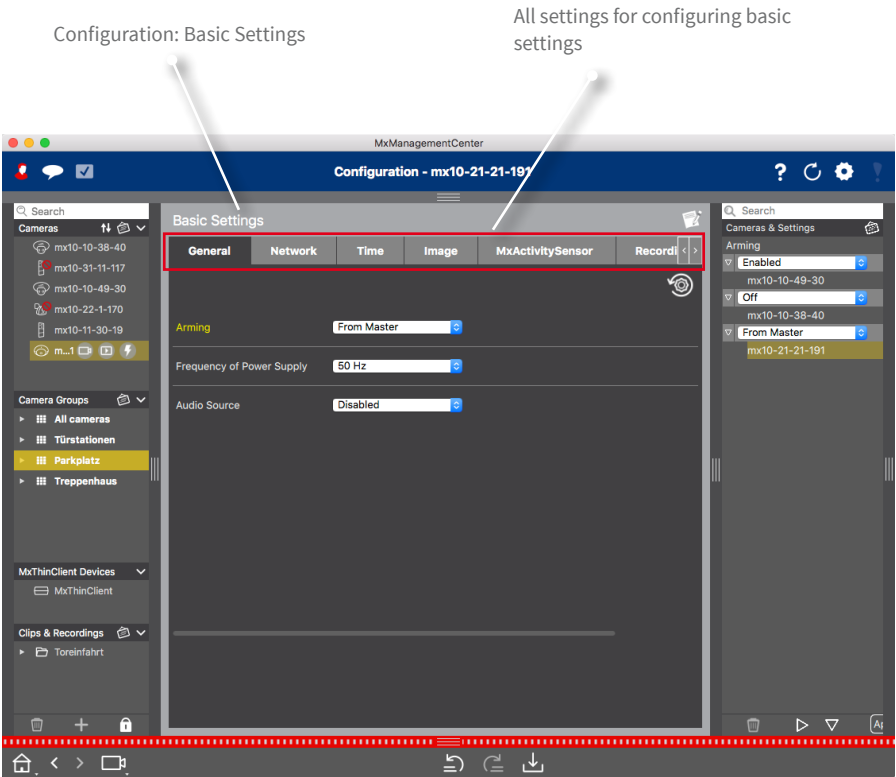
MOBOTIX is ONVIF member since December 2014. MxManagementCenter allows integrating and using ONVIF-compatible video sources.



2.20 Intelligent Configuration Management

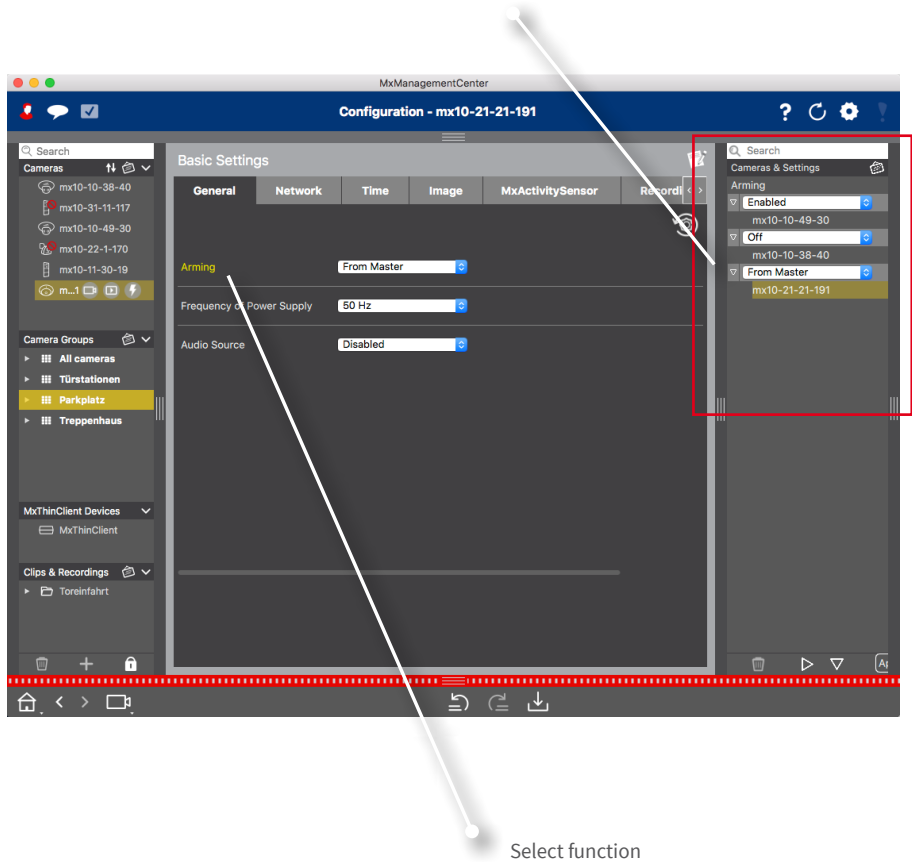
Simple management of the system configuration using the intelligent configuration and sort bar.

All Relevant Settings for the Selected Function in One Spot

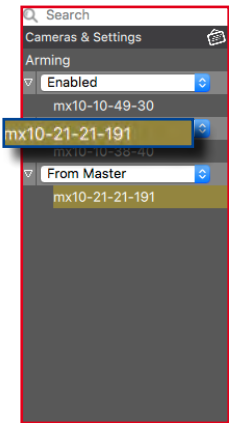
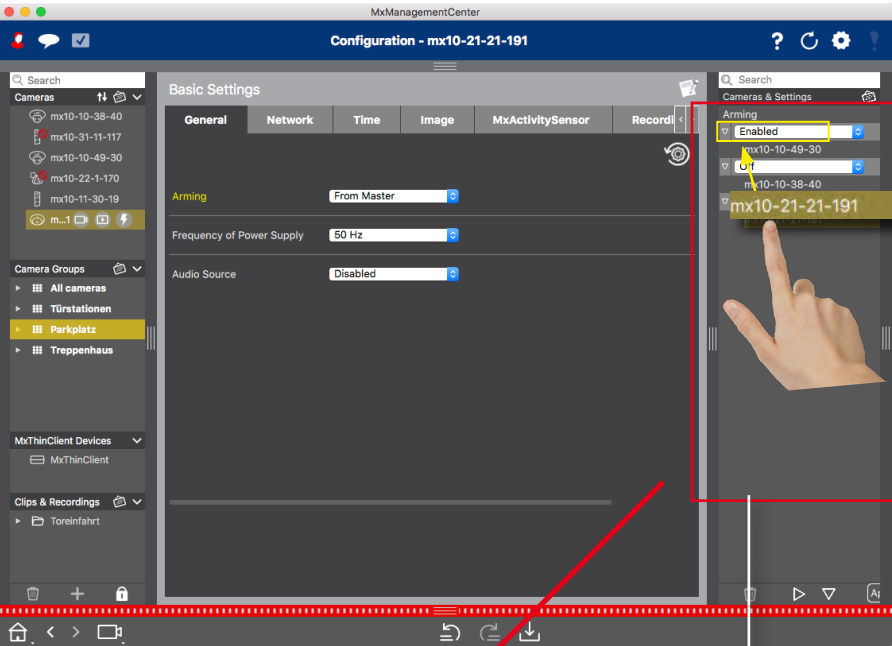


All Settings of the System/the Group at One Glance

Display of all settings of one or more cameras for the selected function and intelligent sorting by profiles.



Simple Configuration Changes of One or More Cameras Using Drag&Drop



Adjust arming of one camera by dragging it to a different setting.

3 Details

3.1 System Requirements

Mac OS X:

Mac OS X 10.9 or higher, processor with at least 2 GHz, min. 2 GB RAM, graphics adapter with OpenGL V2.1 support.

Windows:

Windows 8 or higher, processor with at least 2 GHz, min. 2 GB RAM, graphics adapter with OpenGL V2.1 support.

Integrated MOBOTIX video sources:

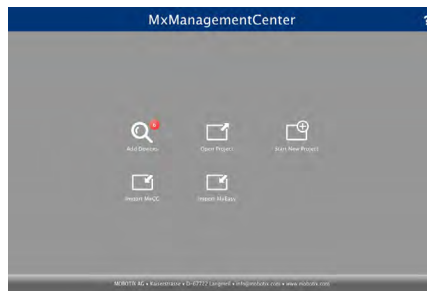
Camera software release 4.3.2.77 or higher.

For more information on system requirements and other important information on the available MxMC releases, please read the corresponding release notes on www.mobotix.com > **Support** > **Software Downloads**.

3.2 Initial Operation of MxManagementCenter

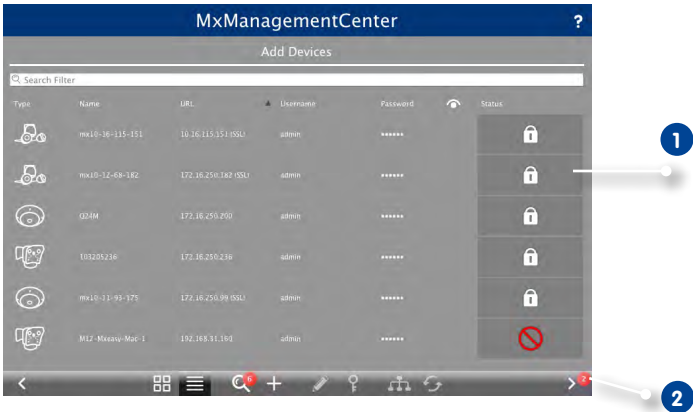
3.2.1 Adding Cameras

Adding Cameras When Starting MxMC for the First Time



When starting MxMC for the first time, the configuration wizard opens and automatically starts searching for MOBOTIX cameras. The number of found cameras is shown next to the **Add** button . This number is updated automatically if the number of MOBOTIX cameras on the network has changed (i.e., by connecting new/disconnecting existing cameras).

1. Click on **Add Devices** . The cameras are displayed either in a list or as tiles. Use the **List**  and **Tile**  buttons to change the display mode.



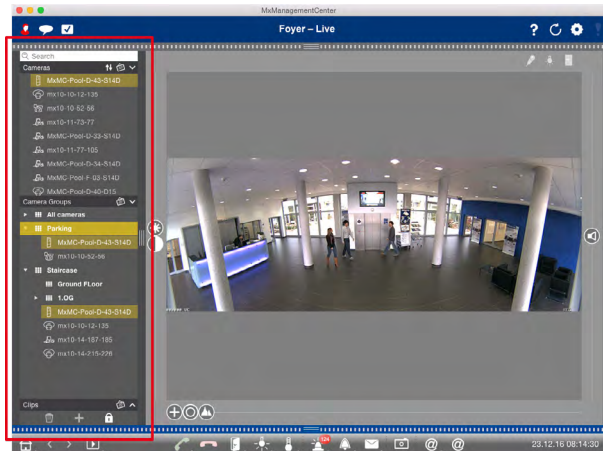
Possible camera statuses: **1**

-  : Camera cannot be reached
 -  : Camera not in the same network as the computer
 -  : Camera software is not up-to-date
 -  : Camera is password-protected
2. Select camera (use **CMD-click** on a Mac or **CTRL-click** on Windows to select several cameras):
-  : If the camera is password-protected, click on **Edit User and Password**  and enter the user name and password.
 -  : If the camera is in an invalid network, click on **Edit Network Settings**  and select automatic IP address assignment or enter a fixed IP address.
3. The number of selected cameras is shown near the **Next** button **2**. Move to the next page and click on **Finish** .

Hint:

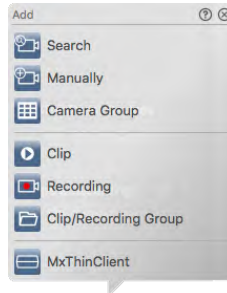
You can also open the configuration wizard from the menu later on.

Adding Cameras to a Running System



Open the **device bar**. The device bar is available in all views on the left side of the program window.

1. Activate the edit mode by clicking on  and then on  at the bottom of the device bar. The **Add** dialog opens.



a) Adding cameras in the local network:

All cameras and door stations in the local network are detected automatically.

1. Click on . The Installation Wizard opens and lists all cameras that were found on the local network.
2. Select the camera you want to add (use **CMD-click** on a Mac or **CTRL-click** on Windows to select several cameras).
3. Specify a user name and a password. Click on  to do so. When multiple cameras have been selected, all of these cameras will get this user name and password.

4. Click on  and then on **Finish**. All new cameras are shown in the device bar in the **Camera** section and you can already see the live images of the cameras.
5. You should now complete the data for the individual cameras. Open the **Camera Configuration** dialog for this purpose. To open the dialog, you can either right-click onto individual cameras or you click on the  icon, which is shown if you position the mouse pointer over the camera name. The **Camera Configuration** Dialog opens. Complete the camera access data and the network data. Set up the alarm notification as described in *section 3.2.5, «Setting Alarm Filters and Alarm Notifications»*.
6. Close the dialog once you have completely filled in the data in the **Camera Configuration** dialog. Then deactivate the edit mode of the device bar by clicking on .

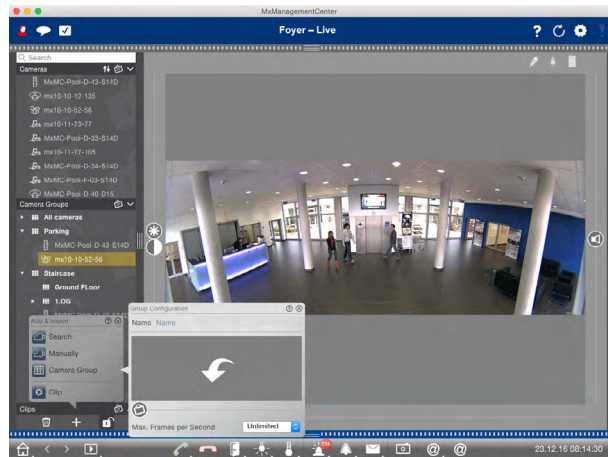
b) Adding cameras manually:

Cameras outside of the local network (e.g., on the Internet) need to be added manually.

1. Click on . The **Camera Configuration** dialog opens.
2. Enter the camera access data:
 - *Name*: Enter a descriptive camera name.
 - *URL*: IP address of the camera.
 - *Remote URL*: To access the camera from outside of the local network, you can enter the corresponding external address of the camera (such as a DynDNS name). Make sure that you also activate the **Remote** option.
 - *User name, password*: Enter the user name and password of the camera.
3. Complete the network data and set up alarm notification as described in *section 3.2.5, «Setting Alarm Filters and Alarm Notifications»*.
4. Close the dialog once you have completely filled in the data in the **Camera Configuration** dialog. Then deactivate the edit mode of the device bar by clicking on .

3.2.2 Creating Camera Groups

You can combine individual cameras into camera groups. For example, you can combine all cameras situated on the same floor in one group. This allows checking on entire surveillance areas at one glance and – in case of an alarm, you are quicker to access the relevant cameras.



1. Activate the edit mode by clicking on  and then on  at the bottom of the device bar. Then click on . The **Group Configuration** dialog opens.
2. Enter a group name and – if desired – add an image or an icon that will be used to represent the group in the group bar later on. To do so, click on the gray field and select one of the pre-defined icons. If you want to use one of your own images, click on **Custom**.
3. You can add an information page to a camera group in order to show special instructions for this camera group, for example. Move the  slider to the right until you reach the position . Click on the arrow in the gray field and select the file you want to use.
4. Max. frames per second: If a very large number of cameras is displayed in the Grid view, the performance may decline. To avoid this, you can limit the frame rate of the live images within the grid frames. Note that this limit does not apply to the camera displayed in the focus window. Select the desired frame rate.
5. Close the dialog once you have completely filled in the data in the **Group Configuration** dialog. Then deactivate the edit mode of the device bar by clicking on .

Adding Cameras to a Camera Group

After you have added cameras and created camera groups, you now need to assign cameras to the proper groups.

- 1. Activate the edit mode by clicking on  at the bottom of the device bar.
- 2. Drag the desired camera from the **Cameras** section to the desired group in the **Camera Group** section.
Note: If you have assigned a camera to one group, you can copy this assignment to other groups by dragging the assignment from the first group to other groups.
- 3. Once you have assigned the cameras to the desired groups, you can deactivate the edit mode by clicking on .

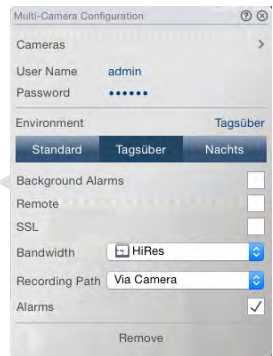
3.2.3 Changing the Data of Many Cameras

The **Multi-Camera Configuration** dialog allows changing authentication data used by MxMC and the environment settings of many cameras in one step.

Activate the edit mode by clicking on  at the bottom of the device bar. Select the desired cameras (**SHIFT-click** or Mac: **CMD-click**, Windows: **CTRL-click**). Right-click on one of the selected cameras.

Status Display

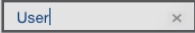
When opening the dialog, the application shows the current settings of the cameras. If one option has several different settings, the field is labeled with “Multiple Values“.



Field type	Current status
admin [Multiple Values]	All cameras have the user name admin. The cameras have different user names.
☒ ☐ ☐	This settings has been activated for all cameras. This settings has been deactivated for all cameras. The cameras have different settings.
HiRes [Multiple Values]	“HiRes“ has been set as bandwidth setting for all cameras. The cameras have different values.

Changing the Settings

As opposed to the configuration of only one camera, you can revert the changes that have not been stored. Depending on the field type, you can use different methods.

Field type	Explanation
	If you change the text field of a setting, such as User Name, a small cross appears on the right-hand side. Click on the cross to reset the entry to its original value.
	When closing the dialog, the previous setting will be restored.
	If you select Multiple Values in a selection box, closing the dialog will restore the previous setting.

Notes on the Settings

Although the fields and settings in this dialog are identical to the **Camera Configuration** dialog, there are a couple of special hints that will help to properly edit the contents of the fields described in the following:

- Recording Path:**
Local Path: The **Local Path** option can be selected for all cameras. Note that you will need to enter the paths **individually for each camera** in the **Camera Configuration** dialog (see *section 3.2.9, „Setting Alarm Filters and Alarm Notifications“*).
<Defined Recording Path>: If you select a previously defined recording path (see *section 3.2.9, „Setting Alarm Filters and Alarm Notifications“*), MxMC automatically searches the device directory for each camera. The search has been completed if the progress bar is replaced by **OK**. If you close the dialog beforehand, you will have to enter the device directory for each camera in the **Camera Configuration** dialog.
- Alarms:**
The Alarms option activates or deactivates the alarm notification for all cameras. Note that you will have to set the alarm settings for the event types individually for each camera. Use the **Camera Configuration** dialog to do this (see *section 3.2.9, „Setting Alarm Filters and Alarm Notifications“*).

3.2.4 Adding Clips and Recordings

Adding Clips

You can use MxMC to play back exported MxPEG clips.

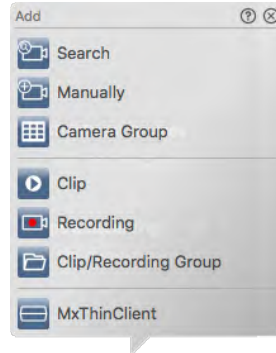
1. Activate the edit mode by clicking on  and then on  at the bottom of the device bar. Click on . The **Load Clips** dialog opens.
2. Select the desired MXG file and click on **Open**. The clip appears in the device bar in the **Clips & Recordings** section.

The icon  indicates that a clip file cannot be located anymore.

Adding Recordings

You can directly access recordings that are saved on a file server, even if the respective camera is not integrated in MxMC.

1. Activate the edit mode by clicking on  at the bottom of the device bar. To import a recordings folder click on  and then on .
2. Select the desired folder and click on **Open**. The sequences appear in the Device bar in the **Clips & Recordings** section.



3.2.5 Creating Groups for Clips und Recordings

Clips and recordings can be compiled into groups and subgroups to better organize the clips and recordings.

1. Activate the edit mode by clicking on  and then on  at the bottom of the device bar. Click on  to create a group. A new group will be added. By default, this group will be called "New Group."
2. Click on the selected new entry and enter the desired name.
3. Drag and drop the desired clips and recordings onto the group.

The icon  indicates that there are no clips or recordings in the group.

3.2.6 Adding a MxThinClient Device and Activating Live Images

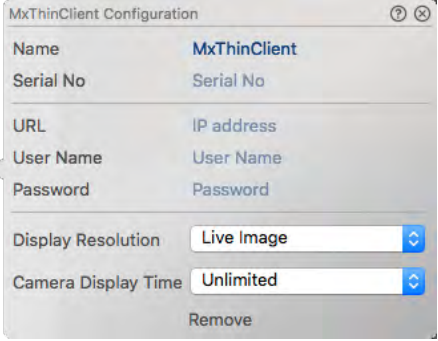
You can now also integrate one or more MxThinClient devices in MxMC. For example, you can add an additional display unit (monitor or TV) by double-clicking on the camera live images of P3 and Mx6 cameras from MxMC.

Adding an MxThinClient Device

1. The MxMessageSystem needs to be activated in the settings and you need to make sure that the **Broadcast port** and **Password** fields contain the same settings as you configured in the MxThinClient because the camera live images are switched on with MxMessageSystem (Mac: **MxManagementCenter > Settings > MxMessageSystem**; Windows: **File > Settings > MxMessageSystem**).
2. You also need to make sure that the MxThinClient and the computer running MxMC are synchronized via the same time server.
3. Click on  to add a MxThinClient. The **MxThinClient Configuration** dialog box opens. Complete the following entries:

- **Name**

The name for the MxThinClient that is shown in the Device bar. You can freely select the name and it does not have to be unique.



- **Serial Number**

The serial number is the factory-defined IP address that is printed on the housing of the MxThinClient. Remember that you need to enter the number correctly because it represents the address at which the MxThinClient is accessed in the MxMessageSystem.

- **URL (optional setting)**

The IP address or DNS domain name at which the MxThinClient can be accessed.

- **User Name and Password** (optional setting)

The access data on the MxThinClient that you entered when installing the MxThinClient.

- **Display Resolution**

Here you can select the resolution that the camera's live image uses when data is sent to the display unit. If the display unit does not support the desired format, the MxThinClient displays the message **Resolution not supported** on the monitor.

- **Camera Display Time**

You can select how long the armed camera's live image is displayed before the MxThinClient continues with displaying the normal sequence of configured image sources.

If you select **Unlimited** for the display length, the camera's live image is displayed until the MxThinClient receives a new command, such as when an event is triggered when it receives MxMessages from other cameras/devices in the network.

If you want to stop the display of the camera's live image before the set display length elapses, click on the  icon. It appears when you move the mouse pointer over the name of the MxThinClient in the Device bar.

4. Close the dialog box once you have completely filled in the data in the **MxThinClient Configuration** dialog box. Then deactivate the edit mode of the device bar by clicking on .

Activating Camera Live Images

There are two options for activating a camera live image on an additional display unit:

- **Double-click:** Double-click on the desired camera live image.

The images are displayed directly on the display unit connected to the MxThinClient if there are not any other monitors connected to the MxMC computer and the MxMC is only connected to one MxThinClient.

If there are more than one monitors connected to the MxMC computer or several MxThinClients connected with MxMC, you are prompted to select the desired display unit for displaying the images.

- **By drag and drop:** Drag and drop the desired camera live image from the Camera bar or from the Device bar onto the desired MxThinClient in the Device bar.

Notes:

The **MxThinClient** section is only visible in the Device bar if a MxThinClient has been integrated.

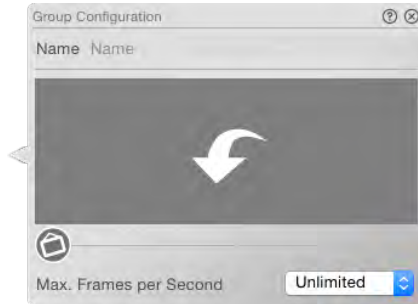
You need to possess administrator rights to add, manage or delete a MxThinClient.

3.2.7 Setting Up Group Views

Using a Ground/Floor Plan for the Graphic View

You can position the cameras of a group on a ground or floor plan when using the Graphic view.

1. Activate the edit mode by clicking on  and then on  at the bottom of the device bar. Then click on . The **Group Configuration** dialog opens.

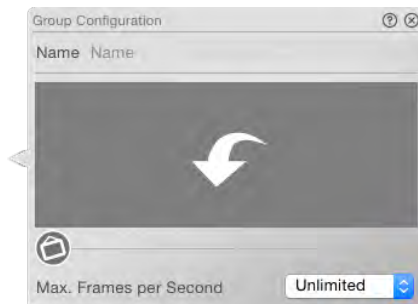


2. Move the slider  to the right until you reach the  position.
3. Click on the arrow and select the file with the ground or floor plan.

Adding Information for a Camera Group

You can add an information page to a camera group in order to show special instructions for this camera group, for example.

1. Activate the edit mode by clicking on  and then on  at the bottom of the device bar. Then click on . The **Group Configuration** dialog opens.



2. Move the slider  to the right until you reach the  position.
3. Click on the arrow and select the file you want to use.

Assigning Group Functions

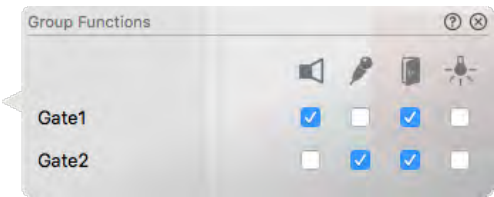
In the Grid, Graphic and Info views, you can use group functions to make an announcement, switch the light or open the door for one camera of the currently selected group.



The two functions **Switch Light** and **Open Door** can be assigned to **multiple** cameras. This allows you to switch multiple lights or open multiple doors at once with a single click.

To assign group functions, proceed as follows:

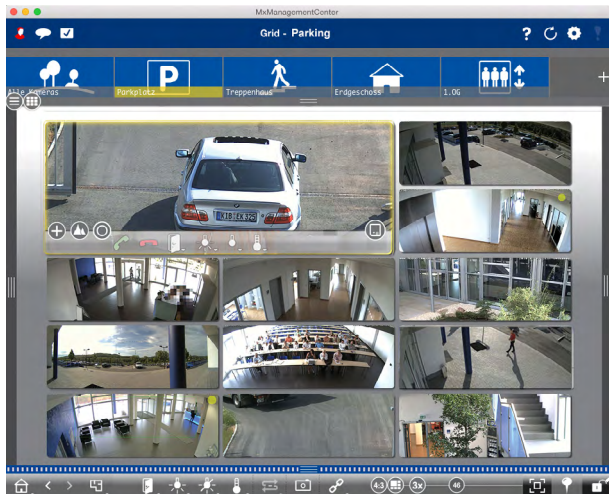
- 1. Activate the edit mode by clicking on  at the bottom of the device bar.
- 2. Move the mouse pointer over the group name. Three icons appear. Click on . The **Group Configuration** dialog opens.



- 3. Assign the desired functions to the cameras by activating the corresponding checkboxes.
- 4. Once you have defined all group functions, you can deactivate the edit mode by clicking on .

Setting Additional Options for the Grid View

You can adjust the layout you defined when creating the camera groups directly in the Grid view later on.



Activate the **Edit mode** 1. Several sliders appear in the control bar.

- By default, the **auto grid mode**  is used in the grid layout. In auto grid mode, MxMC always tries to distribute the available space as good as possible according to the specified grid parameters, such as the aspect ratio of the tiles (4:3, 16:9, 8:3), the size of the focus window and the number of cameras. When you change the window size, the grid layout adjusts automatically. The following sliders are available to adjust the grid layout:

16:9: Format of the camera images and the focus window (4:3, 16:9, 8:3)

2x: Size of the focus window (1x, 2x, ..., 8x the size of the camera images)

16: Maximum number of cameras

To prevent the automatic layout adjustment, freeze the grid's current layout by clicking on .

- In **manual mode** , you set the size of the individual tiles and their position based on the selected format of the camera images (4:3, 16:9, 8:3). In contrast to auto grid mode, the layout is not adjusted automatically in manual mode. To switch from auto grid mode to manual mode, move the slider  to the right until you reach the position . The following sliders are available in manual mode:

16:9: Format of the camera images and the focus window (4:3, 16:9, 8:3)

16: Maximum number of cameras

Move the sliders to the desired settings. To move a tile to a different position, move the mouse pointer over the tile. Click on  and drag the tile onto the desired position. For better orientation, a blue frame indicates the target position.

To set the size of a tile based on the selected format, move the mouse pointer over the border of the tile until a double arrow is shown. Drag the tile to the desired size.

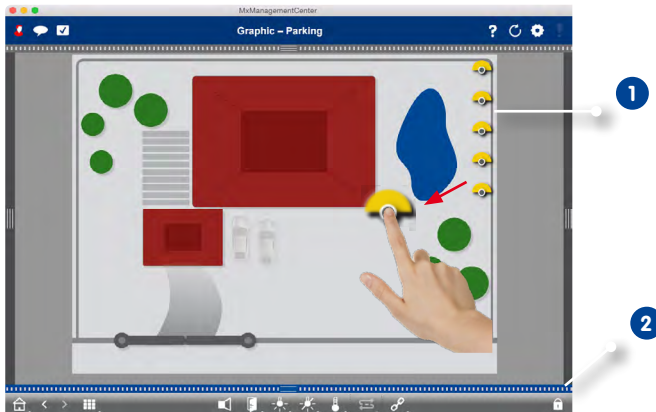
- : Use this button to switch the focus window of the current group on or off.

To close the **Edit mode**, click on .

Setting Additional Options for the Graphic View

Positioning Cameras on the Plan

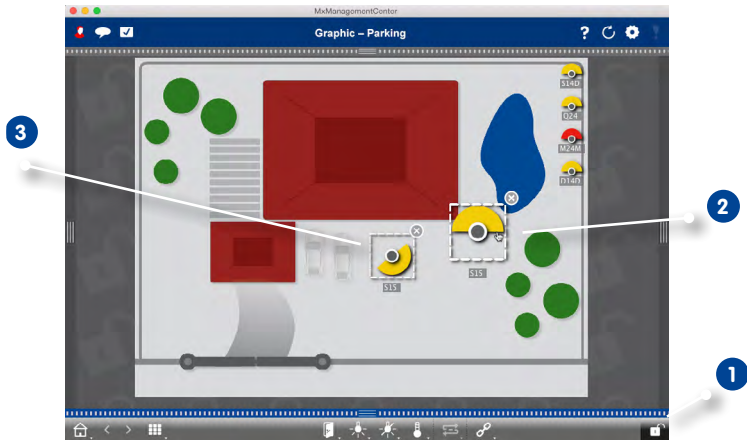
When opening the Graphic view of a camera group for the first time, all cameras of the group are shown as an icon **1** at the right-hand border. To place the icons at their positions according to the floor plan used in the Graphic view, do the following:



1. Activate the **Edit mode** **2**. Move the mouse pointer over the icon. Click on  and drag the icon onto the desired position.
2. Deactivate the **Edit mode** to save the settings.

Editing Camera Icons

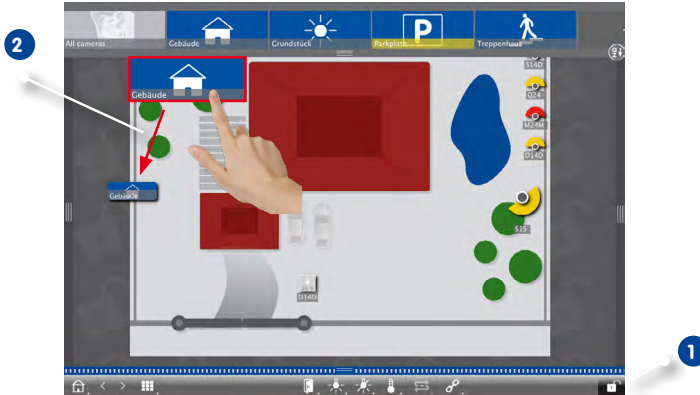
You can change the icon size and rotate the icons to reflect the cameras' viewing direction and angle of view..



1. Activate the **Edit mode** **1** and click on a camera icon. Rotate the icon's view direction indicator by dragging it with the mouse to its desired angle **2**.
2. To change the icon size, drag the corners of the icon's bounding box as desired **3**.
3. To change the angle of view, click on the camera icon and rotate the mouse wheel until the desired angle has been reached.
4. Deactivate the **Edit mode** to save the settings.

Positioning Other Camera Groups on the Floor Plan

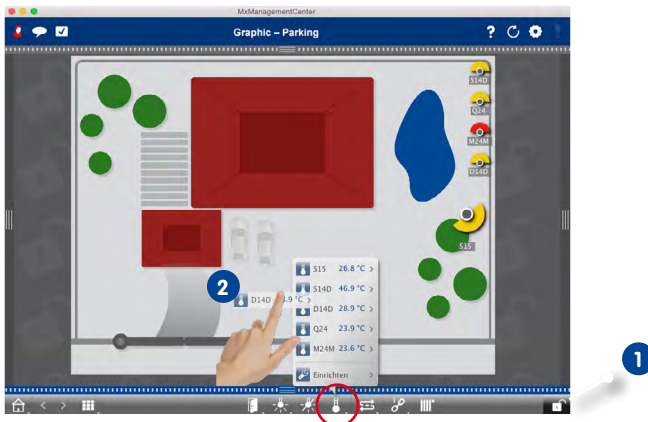
You can position shortcut icons to additional camera groups on the floor plan of a camera group. This camera group icon turns red or green (ringing), if one of the group's cameras detects an alarm. Click on the group icon to open the Grid view of the camera group.



1. Activate the **Edit mode** **1** and drag the desired camera groups from the group bar onto the floor plan **2**.
2. Deactivate the **Edit mode** to save the settings.

Positioning Controls on the Plan

If a camera is, for example, connected to a door, simply drag the corresponding control icon onto the ground or floor plan and click on the icon to control the feature. This is helpful if you want to control the door switching features of a camera close to its position on the plan, for example.



1. Activate the **Edit mode** ①.
2. Right-click on the desired control function and drag the icon onto the ground/floor plan ②.
3. Deactivate the **Edit mode** to save the settings.

3.2.8 Adding and Managing Users

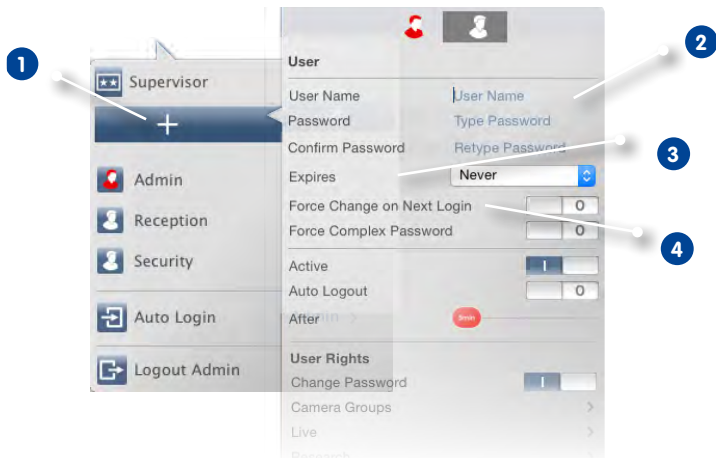
If you want to set up users with different rights for MxManagementCenter, you need to add these users first. For this purpose, the application differentiates between the “administrator” and “user” roles. While the administrator has all rights, you can assign the rights for users depending on the functions they need.

In order to add a user, you need administrator rights.

1. Click on the **User management** icon in the header bar.



2. Click on **Add** ①.
3. Enter the user name and a password ② and confirm the password.
4. Use the **Expires** option ③, if you want the user to change the password at regular intervals.



- If the user is to change the original password upon the next login, select the **Force Change on Next Login** option **4**.

Note: Activating this option automatically grants the user the „Change Password“ right, even if it was disabled before.

The screenshot shows the 'User Configuration' dialog box. It has a 'User' section and a 'User Rights' section. In the 'User' section, the 'User Name' is 'User1'. The 'Password' field is highlighted with a red border, indicated by callout 2. The 'Confirm Password' field is 'Retype Password'. The 'Expires' dropdown is set to 'Never'. The 'Force Change on Next Login' checkbox is checked, indicated by callout 4. The 'Force Complex Password' checkbox is also checked, indicated by callout 1. The 'Active' checkbox is checked, indicated by callout 3. The 'Auto Logout' checkbox is unchecked. The 'After' field is set to '30' minutes. In the 'User Rights' section, the 'Change Password' checkbox is checked, indicated by callout 4. The 'Camera Groups', 'Live', and 'Research' sections are collapsed.

- The **Force Complex Password** option **1** ensures that users can only set secure passwords. A secure password has at least eight characters, consists of lowercase and uppercase letters, at least one special character, one digit and one character. Furthermore, it cannot be one of the last thirteen passwords used on this user account. If you are trying to set a password that does not meet the criteria, a red frame around the text field will appear **2**.
- Use the **Active** option to enable the new user immediately or later on. At the same time, you can set after how many minutes of inactivity this user will be logged out automatically **3**.
- By default, a new user has the rights to execute all functions. Deactivate the rights that should not be available to this user in the **User Rights** section. **4**.

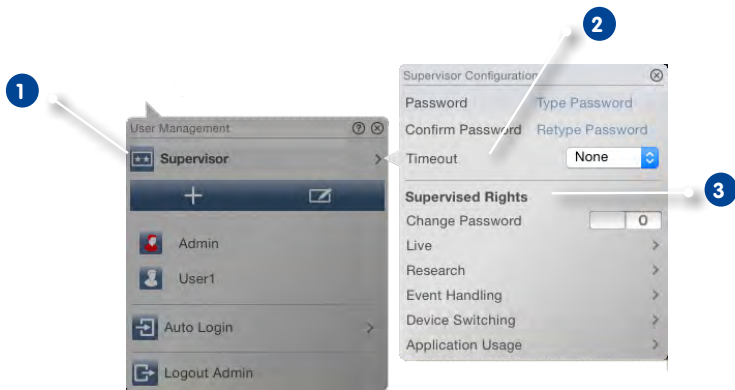
Assigning Supervisor Passwords to Functions

Certain situations may require users to execute functions for which they usually do not have the rights. These functions can be made available temporarily using a supervisor password.

1. Click on **Supervisor** and enter a password **1**.
2. In addition, you can specify after how many minutes of inactivity this user will be logged out automatically (**Timeout 2**).

Note: While a recording is being played back in Playback view or in Grid Playback, MxMC does not automatically terminate the supervisor mode after the specified period of time.

3. Select the functions that can be accessed in supervisor mode **3**.



Changing the Rights

Click on the user whose settings you want to edit. Then configure the rights by setting the appropriate switches in the **User Rights** section.

Deactivating Users

If – for security reasons – you want to prevent a particular user from logging in, you can deactivate that user. This prevents the user from logging in. To do this, select the user and deactivate the **Active** option.

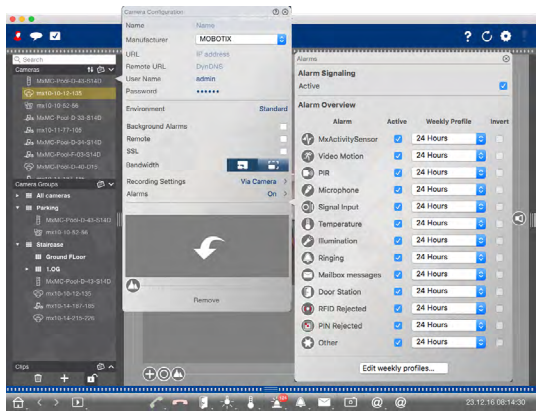
Deleting Users

Click on  and then on  next to the user you want to remove.

3.2.9 Setting Alarm Filters and Alarm Notifications

Setting Alarm Filters

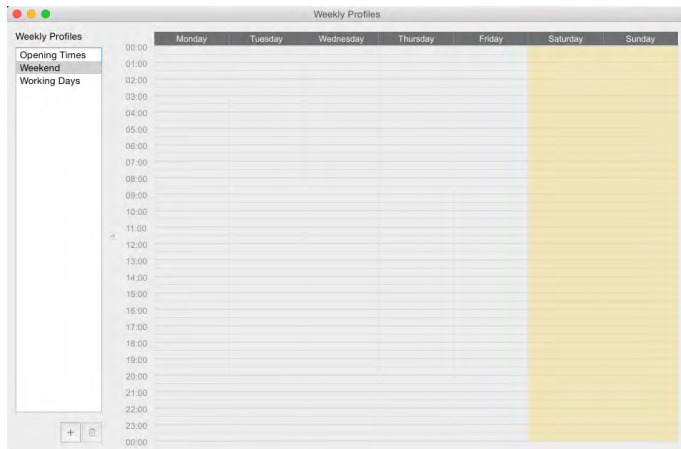
Events that lead to an alarm will change the background color of the alarm or the alarm info bars to red. Use the **Camera Configuration** dialog to specify the event types on the cameras that should trigger an alarm.



1. To open the dialog, activate the edit mode by clicking on  at the bottom of the device bar. Then, you can either right-click onto individual cameras or you click on the , which is shown if you position the mouse pointer over the camera name.
2. Click on **Alarms** to adjust the settings. The **Alarm Events** dialog opens.
3. Select the event types that should create an alarm.

You can select a weekly profile for every event type that should trigger an alarm. As long as no other weekly profile has been selected, the setting is valid from Monday 00:00 to Sunday 24:00.

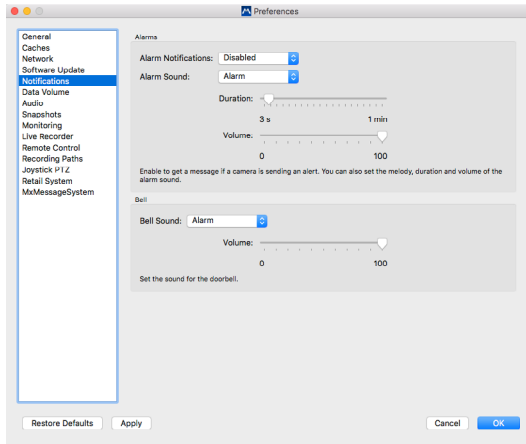
1. To create new weekly profiles, click on . The **Weekly Profiles** dialog opens. Several predefined profiles are available, such as the **Weekend** profile (Saturday 00:00 to Sunday 24:00).



2. To add a profile, click on . Enter a description. Highlight the desired active times in the table. You can resize an active time block by clicking on the time block and then moving the borders accordingly. It is also possible to move a block. Click on the block to select it, then drag the block to the new position. To delete a time block, click on .
3. The description of an existing profile can be changed. Right-click on the description and overwrite it.
4. To select a weekly profile, click on the **Weekly Profile** dropdown list next to the event type and select the desired profile.
5. To easily invert the settings of the weekly profile, simply click on the calendar icon. For example, if you have created a profile with opening hours and would like to activate the alarms for the closing times, simply activate **Invert** and the profile is used in inverted fashion.

Setting Alarm Notifications

In addition to the event notifications in the Alarm bar or the Alarm Info bar, you can set up an alarm notification or alarm sound that signals new alarms. To do so, open **MxManagementCenter > Preferences** and click on **Notifications**.



1. Activate the **Alarm Notification** option to get a message when a camera is sending an alert.
2. Select the desired melody from the list.
3. Select the duration and the volume of the alarm sound.
4. If you do **not** want to hear an alarm sound, set the volume to "0".

Active Alarm Message

If a camera detects an event that leads to an alarm, an alarm message pops up if **Notification** has been enabled.

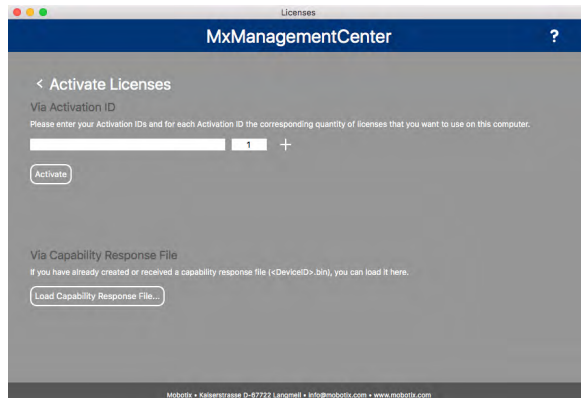
- Click on  to see the live images of the camera (e.g., if the alarm popped up a couple of seconds ago).
- To open the Playback view and to see the recording, click on .
- To close the message, click on .



3.2.10 Licensing

Industry-specific solutions and special functions, such as the integration of cash point systems are subject to licensing.

Activating Licenses



After receiving the Activation IDs, activate them in MxMC. To do this, open the **License management** (menu **Windows > Licenses**) and click on **Activate licenses**.

1. Enter a valid activation ID as well as the number of licenses that will be installed on this computer.
2. Click on  if you want to license an additional product. Enter the corresponding activation ID in the new line and enter the number of desired licenses.
3. Click on  to delete a line.
4. When you are finished entering all activation IDs, click on **Activate**.

- **Activation successful**

If activation was successful, you can return to License management or log out for the changes to be applied.

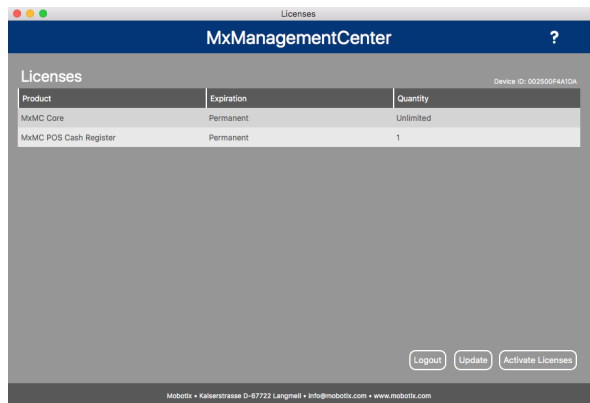
- **Activation failed (no Internet connection)**

MxMC connects to the license server for activation. It needs to establish an internet connection. If there is no internet connection, an error message is displayed in which you can save an offline request file (*.lic).

A partner/installation technician can generate a capability response file (*.bin file) using this file. Once you have received it, open the **Activate licenses** window (menu **Windows > Licenses > Activate Licenses**) and click on **Load Capability Response File**.

If the capability response file was successfully loaded, you can return to License management or log out for the changes to be applied.

License Management



You can view a list of all licenses that have been activated on this computer in License management. Click on **Windows > Licenses** to open the License management.

Name	Explanation
Product	Name of the licensed function.
Expiration	The license is either valid indefinitely or it expires on a specific date, which is listed in this column.
Quantity	Number of licenses that are activated for a product.
Device ID	Unique identifier that is determined by MxMC for the used device. Note the device ID and keep it accessible if you should run into any problems during licensing.

Update

When launching the program, it does not automatically synchronize the licenses on the computer with the license server. For this reason, you need to click on **Update** to reload the licenses from the server.

Note: You need administrator rights to activate or update licenses.

3.3 Configuring and Securing the System

In the Configuration view, you can adjust various basic settings that are generally required to put the cameras into operation. This includes, for example, the graphical configuration of exposure windows and MxActivitySensor detection areas.

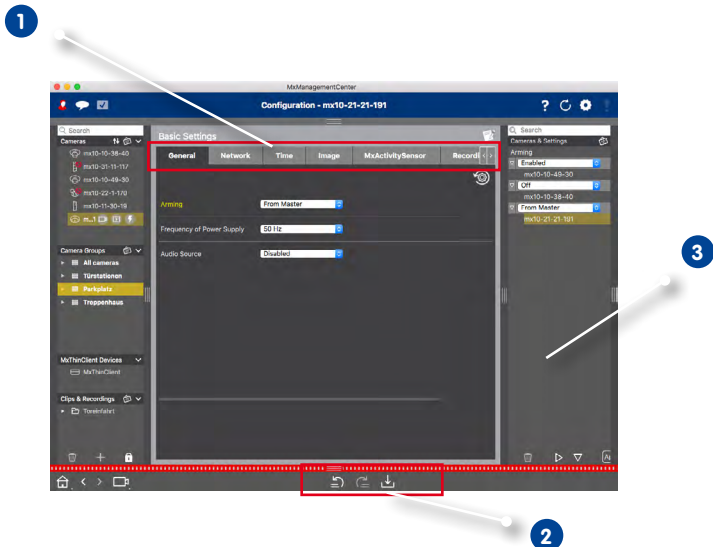
After the basic configuration of the system, you can check its security. The **Wizards & Tools** view offers the **Secure System** wizard for this purpose. This wizard analyses camera security and assesses their status with respect to common best practices. If test criteria are not fulfilled, measures are indicated which are necessary to secure the cameras.

3.3.1 Configuring the System – Basic Settings

Open the Configuration View by right-clicking on the Navigation button. Select **Configuration View**.



In general, the Configuration view offers the possibility to make various basic settings on the cameras. To do this, the view is divided into several tabs **1**. With the control elements at the bottom **2**, changed camera settings of the tabs can then be permanently saved or the parameter values can be reset to the factory settings. The settings in the Configuration view are made for one camera at a time. The Configuration bar on the right **3** offers the possibility to change the settings of several cameras of a group without having to switch the camera or the camera group.



Topics of the Tabs

- General**
The general settings contain settings for operating the cameras, such as arming or frequency of power supply.
- Network**
The network interface settings determine how the camera can communicate with the “outside” world and how the camera can be accessed from outside of the local network. When changing the parameter values, please note that the changed values are not automatically applied, as in the other tabs of the Configuration view. For the changes to take effect, you must click  in the control bar (see also section „Applying Modified Values“).
- Time**
Date and time on the camera can either be set manually, taken over from the computer or synchronized with a time server. When using a time server, synchronization can be performed via a time server on the Internet, a time server service on the local network, or another MOBOTIX camera. In this case, the camera’s time server has to be activated in the Admin menu of the camera’s web interface (**Admin > Camera Administration > Time & Date > Use Camera as Time Server**).
- Image**
In this tab, you can define camera views, image and exposure settings for displaying live camera images and create and edit user-defined exposure windows directly in the live image.
To do this, set the **Exposure Window** option to **Custom** and then click in the live image at the bottom. Use the following actions to create and/or edit exposure windows:

Action	Explanation
Create exposure window	Create a window using the mouse pointer.
Move exposure window	Left-click with the mouse pointer on the exposure window and drag it to the desired position.
Modify exposure window	Place the mouse pointer on one of the white drag points until you see the  icon. Left-click with the mouse and drag the window, making it larger or smaller.
Delete exposure window	Click on  .
Exclude areas from exposure measurement	Drag a window corresponding to the size and position to the area that should be excluded from exposure measurement. Click on the window and keep the mouse button pressed until two icons appear. Click on  to set the window as an exclusion window. The window turns red.

Further information on the individual parameters can also be found in the quick help, which is integrated in MxMC and can be called up by clicking on .

- **Recording**
In this tab the most important recording settings can be made, as for example, the selection of the recording mode or the recording speed.
- **MxActivitySensor**
The MxActivitySensor is a camera-internal video motion detector that can identify the direction of object movements as well as their size while blocking out any undesired interference (such as trees swaying in the wind). By default, a MOBOTIX camera has a predefined MxActivitySensor profile.
You can activate and deactivate this profile in this tab, change the name of the profile, adjust the event dead time, define new and change existing detection areas. Click on a green detection area of the live image. Use the following actions to create and/or edit detection areas:

Action	Explanation
Modify detection area	Place the mouse pointer on one of the white drag points until you see the  icon. Left-click with the mouse and drag the detection area making it larger or smaller.
Move detection area	Place the mouse pointer on the detection area. Then left-click with the mouse to drag the detection area to the desired position.
Rotate detection area	Click on  and use the mouse pointer to rotate the detection area clockwise or counterclockwise.
Change shape of detection area	Switch to polygon mode by clicking on  . You will see white points on the corners. Drag the corner points to the desired position. You can insert new corner points by right-clicking on the white line or within the detection area. Right-click on a dot to delete a corner point. Then click on  .
Delete detection window	Click on  .
Create additional detection window	Draw a new window using the mouse pointer.
Exclude areas from analysis	Drag a window corresponding to the size and position to the area that should be excluded from the analysis. Click on the window and keep the mouse button pressed until two icons appear. Click on  to set the window as an exclusion window. The window turns red.

Controls in the Control Bar

- **Resetting to Factory Settings**

Click  to reset all parameters within the current tab to the factory settings.

- **Undoing or Repeating Changes**

Click  to undo the last change. Click  to redo the last change.

- **Applying Modified Values**

Normally, the changes in the Configuration view take effect when you enter or select a new value. The changes made in the **Network** tab are not automatically applied because it could potentially cause cameras to be unreachable. Instead the **Apply Changes**  icon in the Control bar turns red, indicating that the changes on the network tab have not been applied yet. To apply them, click on .

- **Saving Configurations**

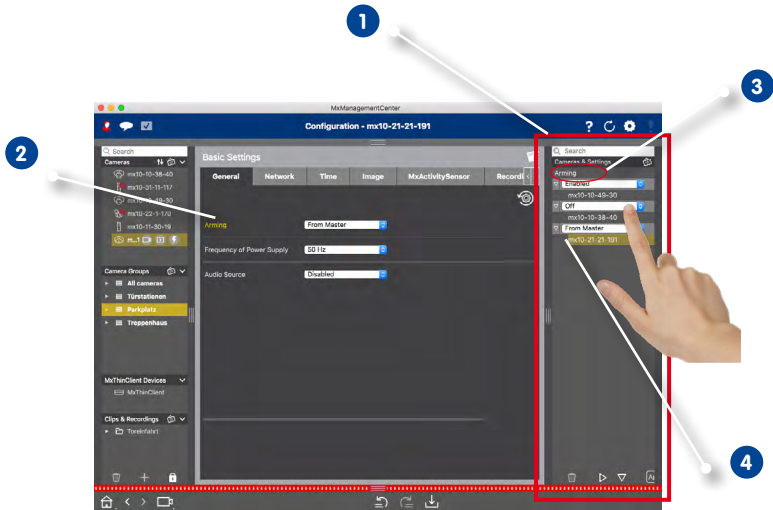
If parameter values are changed, the **Save Configuration**  icon in the Control bar turns red. Changes to the configuration are only stored temporarily. To ensure that the current settings are used after the next restart, the changes must be saved permanently.

1. Click **Save Configuration** . Click **Save** in the confirmation dialog.
2. If you do not want to keep the changes, click **Discard**. This discards the changes and restores the last overall configuration that has been permanently saved.

Changing Parameter Settings for One or More Cameras

You can enter parameters for a camera in the Configuration view. If you want, you can display the parameters available for the other cameras in the group by viewing them in the **Configuration Bar**. You can also change the settings of one or more cameras in the group, without having to switch to a different camera or camera group.

First open the Configuration view and then the Configuration bar on the right side of the view **1**.



Changing Parameter for One Camera

1. Click on the corresponding name of the parameter in the Configuration view **2**. It turns yellow and the Configuration bar shows all values associated with this parameter for this group **3**. The cameras are categorized according to the values of the currently selected parameter value.
2. Highlight the desired camera and drag it onto the parameter value you want to set. The destination area turns yellow.

Changing Parameter for Several Cameras

1. If you want to change the value that is used by more than one camera, click on the parameter selection box **4** and select the desired value.

3.3.2 Securing the System

The **Secure System** feature in the Wizards & Tools view helps administrators to increase the security of their camera systems. It reveals possible points of attack and prevents unauthorized or unencrypted access to cameras.

Open the Wizards & Tools view by right-clicking on the Navigation button. Select **Wizards & Tools**.



Verifying Settings for System Security

1. Select the desired camera or camera group in the Device bar or the Camera/Group bar. Click **Secure System**. The following criteria will be checked:
 - **Usage of the “meinsm” password with standard or ONVIF user accounts on MOBOTIX cameras:** It is easy for cyberattackers to guess the standard “meinsm” password.
 - **Public Access enabled:** A number of different camera functions can be used without password when Public Access is enabled.
 - **HTTP Web Server enabled:** When HTTP is used, user data such as passwords and images will be transmitted via the network in clear text without any encryption.
2. A new dialog will be opened, showing the results of the analysis for each camera in a table. It will also indicate if cameras could not be checked, e.g. due to a connection error.

Status		Explanation
	Not secured	At least one test criterion has been identified as not being secured.
	Software too old	Please check the camera software and update it.
	Connection error	Please check the network connection to the camera and then restart the security check.
	Not supported	This camera does not support this function and cannot be secured using this wizard.
	Secure	The camera is secure; no further action is necessary.

Secure System

1. Click **Continue**. For all cameras having the **Not secured** status, the system now displays which of the three criteria have already been fulfilled. Security criteria that are not yet fulfilled, can be secured directly in the dialog:

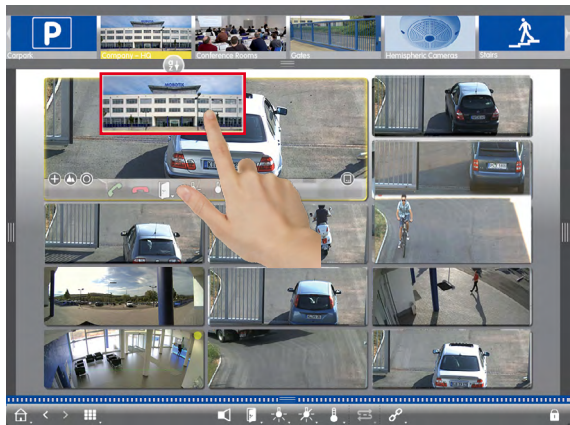
Criterion	Explanation
Password	Changes the password of all user accounts on the cameras that use the standard “meinsm” password. This also include ONVIF users whose passwords have never been changed. • Enter a new password and confirm it. A suitable password has at least eight characters. It can consist of lowercase and uppercase letters, digits and special characters (see  in the dialog box). If you type in a password that does not meet these criteria, a red frame appears around the text field. • The frame turns green once you have entered a valid password. Note that, when the wizard secures the cameras, it automatically changes the password in the MXMC project data accordingly.
SSL Encryption	Disables camera connections via an unencrypted HTTP and configures the cameras to accept HTTPS connections only. The TCP port and the SSL setting will be automatically updated in the MxMC project data, if necessary. The TCP port will not be updated for cameras that are connected via a remote URL. Therefore, when connecting via remote URL, you may need to adapt port forwarding in your router accordingly. Please note that different services, such as network messaging, etc., will no longer work when you disable HTTP.
Public Access	Disables password-free access to the web interface and the APIs of the cameras.

2. Click **OK**. The selected measures to secure the cameras will be performed. The security status for the selected camera or camera group will be analyzed once again and the result for each camera is displayed.

3.4 MxManagementCenter in Day-to-Day Use

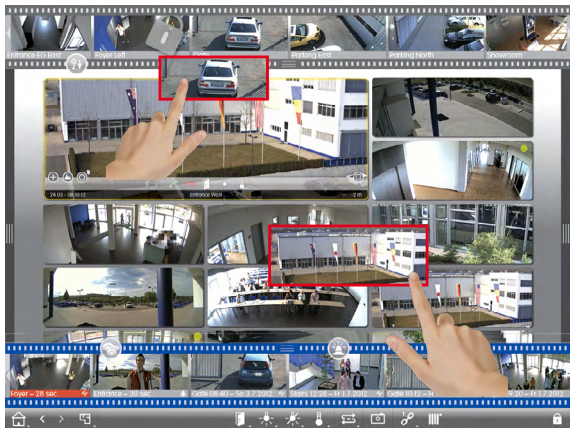
3.4.1 Working With the Grid View

Selecting a Group



- 1. Pull down the group bar.
- 2. Drag&drop a group onto the Grid view. Alternative: Click on the Group icon.

Showing a Different Camera in the Focus Window



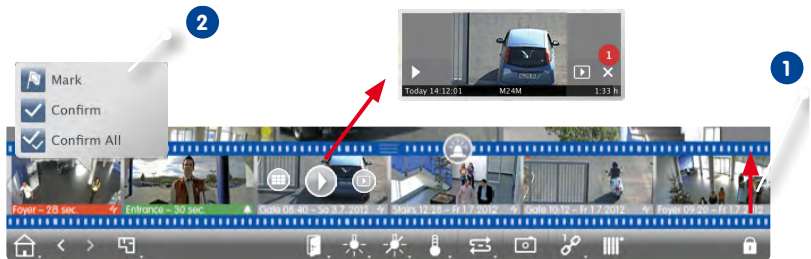
- 1. Drag&drop a camera from the camera bar or drag the live image into the focus window.

Detecting and Editing Events

If a camera triggers an alarm, the Grid view shows this using several methods.

Alarm Bar

The **Alarm bar** contains events that lead to an alarm (red) or if visitors rang the doorbell (green) – regardless of whether or not the bar is hidden at the moment.



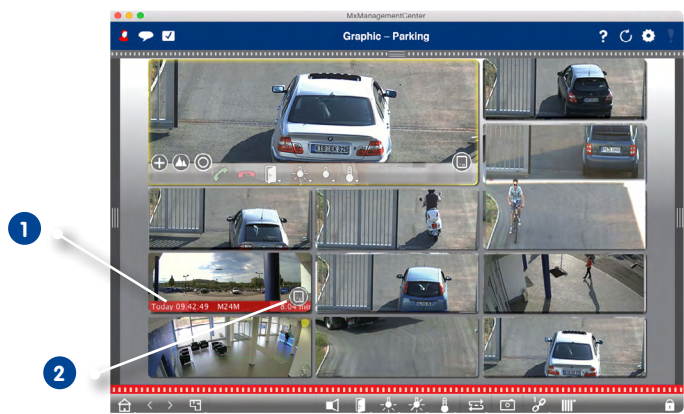
1. Pull up the lower frame border to show the Alarm bar .
2. To acknowledge a new alarm, click on the event image. To acknowledge all alarms at once, right-click the event image and select **Confirm All** . You can also mark events that are important to you , so you can play back only the important events later on.
3. Features of the Alarm bar:
 - View the event recording directly in the Alarm bar using the **Instant Playback**. To do so, move the mouse pointer over the event image. Three icons appear. Click on  to start the playback.
 - Jump to the Playback view. Click on .
 - Open the Grid view assigned to this camera. Click on .

Hint:

Click into the live image or the recording to show this camera maximized within the window.

Alarm Info Bar

New alarms are also displayed in the Alarm Info bar. The bar beneath live image turns red or green if the camera detects an alarm **1**.



Move the SD card slider to the left **2**. This opens the **Instant Playback** with the last event image. Drag the red counter **3** along the bar to show the preceding images; the number in the counter increases. Click on **Playback** **4** to see the recording for the corresponding event image.

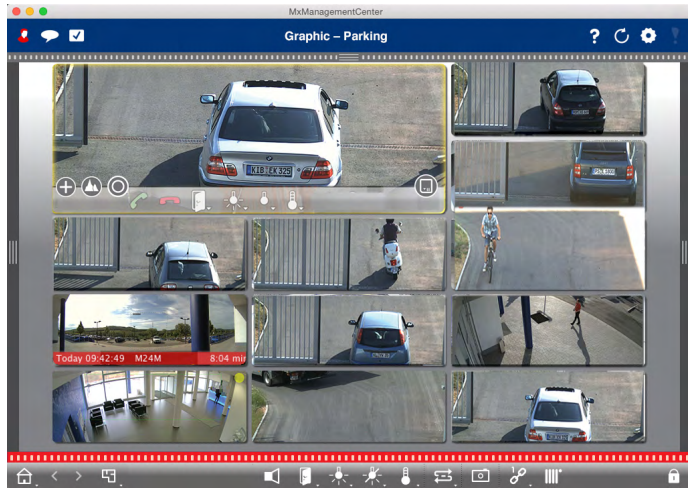


Hint:

Click into the live image or the recording to show this camera maximized within the window.

Controlling the Camera in the Focus Window

Use the controls at the bottom of the window to control the camera that is currently showing in the focus window.



- : Zooming and Moving Image Sections
- : Select pre-defined image sections
- : Correct image distortion
- : Accept and end calls
- : Open door and switch lights
- : Show temperature
- : Show event images

Switching Group Functions

Use the **Group buttons** in the command bar to switch group functions for a camera group (prerequisite: group functions have been assigned in the **Group Functions** dialog, see *section „Assigning Group Functions“*). This means that you can switch the light, open the door or make an announcement for a previously defined camera in this group, regardless of the camera currently displayed. You can also assign the Switch light and Open door functions to several cameras in this group, so that several lights can be switched or several doors opened with one click.

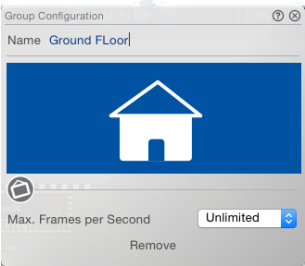
In addition, you can right-click on the group buttons to open the context menu in order to control cameras that are not part of the current group. Before you can this, the cameras have to be set up accordingly, i.e., the cameras need to be connected to door openers/light switches and have to be configured properly.



Limit Frame Rate of Live Images

If a very large number of cameras is displayed in the Grid view, the performance may decline. To avoid this, you can limit the frame rate of the live images. Note that this limit does not apply to the camera displayed in the focus window.

- 1. Pull down the group bar.
- 2. Right-click on the Group icon and select Frame Rate.

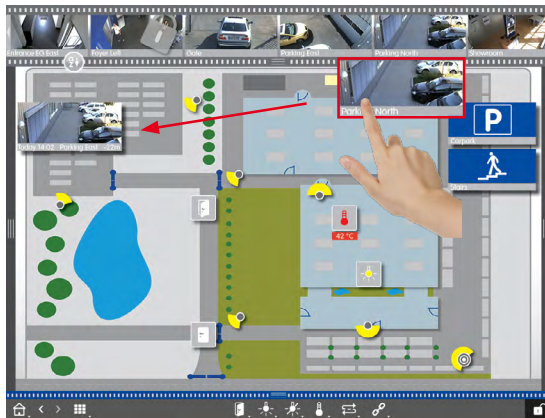


3.4.2 Working With the Graphic View

Placing Individual Camera Live Images on the Ground/Floor Plan

If you also want to monitor individual live images in the graphics view, you can drag these live images from the Camera bar or the Device bar onto the current Graphic view. You can place live images either temporarily or permanently. Temporarily means that these live images will be removed if you open a different view. You can then operate the camera live image - as in the focus window of the grid view - with the switching and control functions at the bottom of the live image, also see section „Controlling the Camera in the Focus Window“.

Note: If the live image was corrected for distortion in the tile afterward, this is also adopted when playing an instant playback for the configured image mode.



Example: Drag&Drop from the Camera bar

Temporary placing:

Drag the desired camera from the Camera bar or the Device bar onto the Graphic view.

Permanent placing:

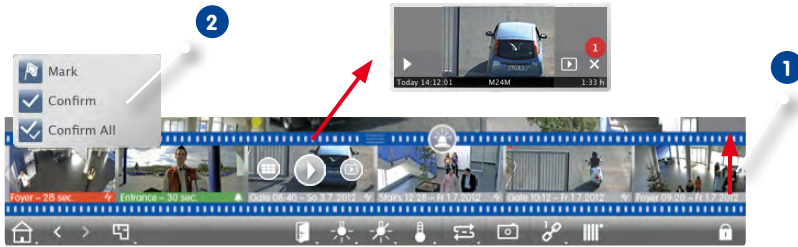
Activate the **Edit mode** 1. Drag the desired camera from the Camera bar or the Device bar onto the Graphic view. To save, close the Edit mode.

Detecting and Editing Alarms

If MxMC detects an event that leads to an alarm, the Graphic view shows this using several methods.

Alarm Bar

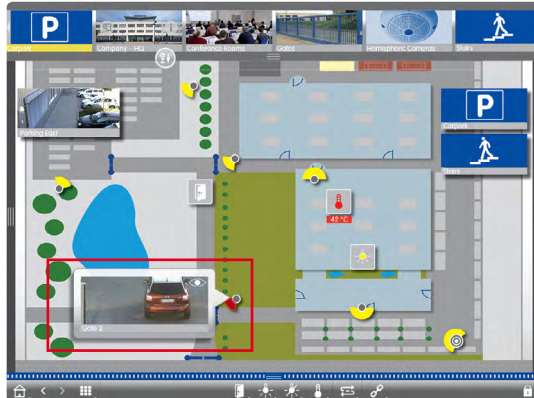
The **Alarm bar** contains events that lead to an alarm (red) or if visitors rang the doorbell (green) – regardless of whether or not the bar is hidden at the moment.



1. Pull up the lower frame border to show the Alarm bar **1**.
2. To acknowledge a new alarm, click on the event image. To acknowledge all alarms at once, right-click the event image and select **Confirm All** **2**. You can also mark events that are important to you , so you can play back only the important events later on.
3. Features of the Alarm bar:
 - View the event recording directly in the Alarm bar using the **Instant Playback**. To do so, move the mouse pointer over the event image. Three icons appear. Click on  to start the playback.
 - Jump to the Playback view. Click on .
 - Open the Grid view assigned to this camera. Click on .

Camera Icons

If a camera detects an event, the camera icon turns red or green (ringing event). You can get a quick glance at the situation observed by the camera by showing a small live image (move mouse pointer



over icon ) or by showing a large live image (click on camera icon). If a second monitor is available, double-clicking on the icon will show the live image on that monitor. From the live image, you can switch directly to the Playback view to check the alarm details.

You can also see the recording for this alarm directly in the **Instant Playback**. To do so, show the



live image and click on the bottom (date and time). The Instant Playback opens **1**. Click on  to start the playback or move the mouse pointer over the image.

Camera Group Icon

If you have positioned additional camera groups on the ground/floor plan, the name bar of the group icon turns red or green, if a camera of that group detects an alarm **1**.

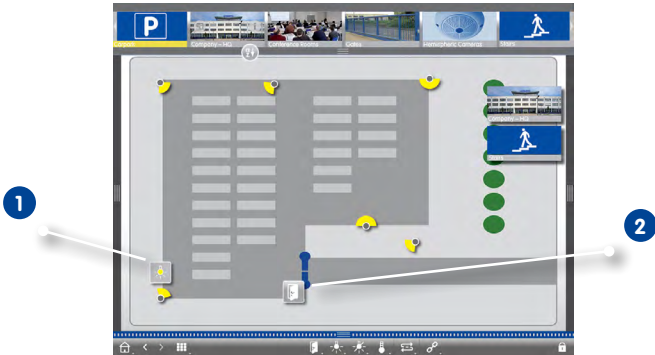


1. Move the mouse over the group icon in order to show the live image **2** from the camera that triggered the event.
2. Click on the bottom of the live image (date and time) to open the Instant Playback. Click on  to start the playback.

Switching Functions

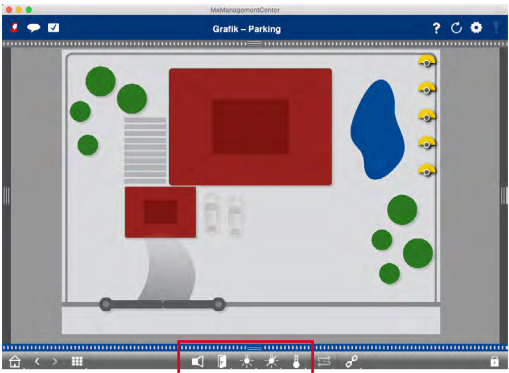
Switching Functions with Control Elements on the Floor Plan

For controls that you pulled onto the ground/floor plan, a simple click will execute the function **1**. At the same time, the icon shows the status of the function. If the door is not closed, for example, the icon shows an open door icon **2**.



Switching Functions Using the Control bar

By using the Control bar in the grid and graphic views you can switch a light, open a door or make an announcement for one group camera and independently of the selected camera. In addition, you can right-click on the group buttons to open the context menu in order to control cameras that are not part of the current group.

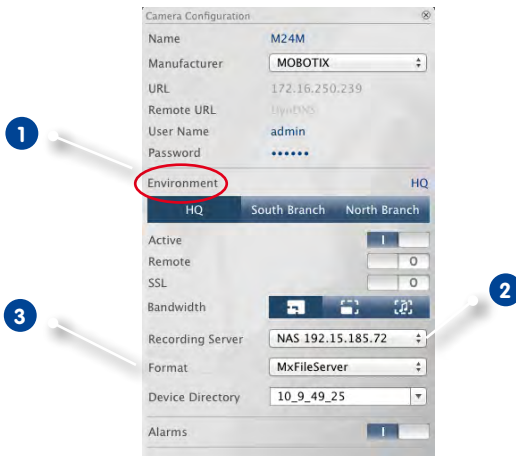


3.5 Searching in MxManagementCenter

3.5.1 Configuring the Access Mode

The program can access the stored images using two methods: Access via the camera or directly on a file server, on which the recordings are stored.

1. In the menu, click on **MxManagementCenter > Preferences** (Mac) or **File > Preferences** (Windows) and select **Recording Path**. Create the recordings paths you want to use for directly accessing the recordings on one or more file servers. For more details, see „3.9 Program Settings“.
2. Activate the edit mode by clicking on  at the bottom of the device bar. Then right-click on the desired camera to open the **Camera Configuration** dialog.
3. Select the desired recording path  for every network environment .
4. Select the format  of the recordings: Use MxFFS, if the recordings have been stored in an MxFFS archive. Use MxFileServer, if the recordings have been stored in the classic MOBOTIX folder/file structure.



Hint:

If you want to add recordings from a hard disk that had been recorded by a camera that is not in the system any more, you can set the recording path to Local Path and enter the recording folder using drag&drop.

3.5.2 Searching and Playing Back in the Research View

To open the Playback view, right-click on the Navigation button. Select **Playback View**.



General Playback View Controls

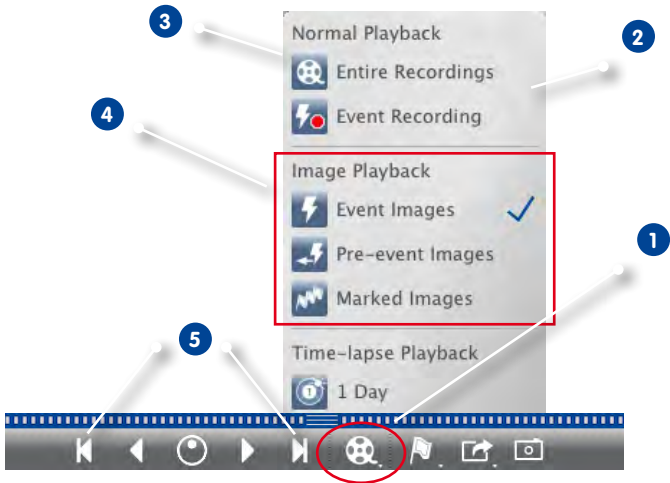
To search and play back recordings, you can activate **Playback mode** 1 or select the date and time and then use the **Previous/Next Image** buttons 2, to browse the recordings or you can start the playback using the **Forward/Backward Playback** buttons 3. The playback mode is initially set to **Event Recording** 2. If you want to play back all recordings, switch to **Entire recordings** 3.

Browsing Recordings for Event Images

You can select the recordings according to these events:

- **Event images:** Only shows event images.
- **Pre-event images:** Shows only the first recorded image for each event.
- **Marked events:** Shows only the images, which had been marked as important before.

1. In the Playback view, select the **Playback mode** by right-clicking the button and selecting the desired mode 4.



2. Browse the recordings using the 4 and 5 buttons. Beginning at the current event image, these buttons show the previous or next event image 5.

Browsing Recordings for a Specific Date and Time

If you have set up continuous recording for certain times and you want to check for events during those times, for example, you can limit the search to these times. You can search for events at a given time, by using time leaps or time-lapse playback.

Searching for a Specific Date and Time



1. Click on the displayed date and time **1** and enter the date and time to search for.
2. The event image jumps to the event in the recordings that is closest to the specified date and time. Click on **Playback** .

or

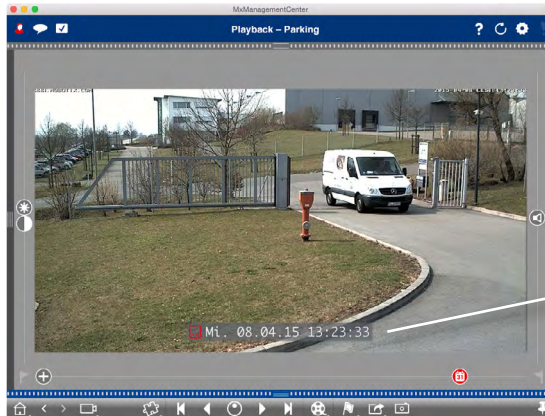
1. Click on the **Calendar** slider **2**. The date and time will be shown above the slider. Move the slider until you reach the date and time that is closest to the point in time you want to examine. The event image jumps to the event in the recordings with the specified date and time. If such a recording is not available, the event image jumps to the event that is closest to the specified point in time (in the direction of searching). In the latter case, the slider turns red and the time difference to the specified point in time is shown above the slider. Click on **Playback** .

Hint: The farther away you move the mouse pointer from the slider, the more precise your setting will be.

Searching Several Cameras for Persons or Objects

Camera A is overlooking the gate and signals an event. The event image in the Alarm bar shows a delivery truck driving through the gate. You want to know if the truck has also passed the area monitored by camera B.

1. Move the mouse pointer over the event image to see three icons. Open the Playback view mode by clicking on .
2. Play back the recording (end of recording **1**).



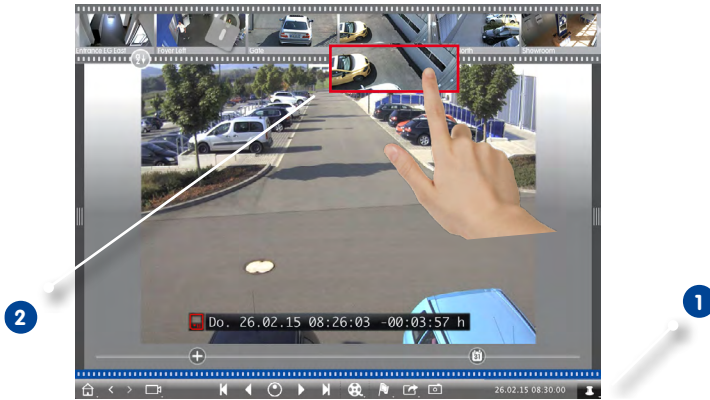
3. Drag&drop camera B from the camera bar into the Playback view.



4. The playback automatically selects the recording that follows the end of camera A's recording **2**. You can repeat this for as many cameras as needed.

Investigate Multiple Cameras for a Specific Point in Time

You want to know if other cameras have recorded something at a specific point in time:

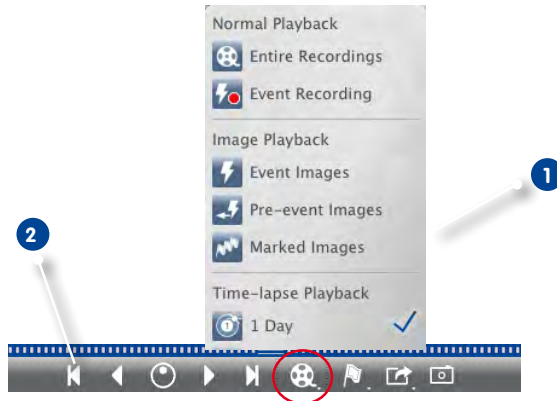


1. Set the reference time using the **Pin** button **1**.
2. Drag&drop the cameras from the camera bar one by one **2**.
3. The application shows the event images of each camera that are closest to the specified point in time.

Limiting the Search Range for an Incident

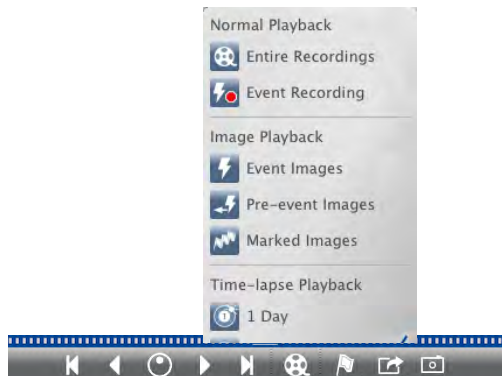
Your camera monitors a parking lot from which a car had been stolen during the day. Follow these steps to locate the event as quickly as possible:

1. Start the **Playback mode** (right-click ) and select an interval (e.g., 1 day) **1**.
2. Keep clicking on **Previous image** **2** until the car is in the image.



3. Select a shorter interval (e.g., 1 hour ) .
4. Keep clicking on **Next image**  until the car is not in the image any more.
5. Keep on using shorter intervals, until you have found the exact point in time of the incident.

Note that you can also use the **Forward/Backward Playback** buttons   to play back using the same time leaps.



Playing Back Recordings



Hint: Precise Positioning by Image

If you want to examine a scene very closely, you can check the recordings one image at a time. To do so, stop the the playback (click on  or ). Now use the two buttons  (forward) and  (backward) to navigate the images one by one.

Hint: Playback Priority

To optimize the camera for fast playback, the **Playback has Priority** option has already been set. You can change this setting in **Setup Menu > General Image Settings > Playback has Priority**.

3.5.3 Searching and Playing Back in the Grid Playback

To show the Grid Playback, right-click on the Navigation button and select **Grid Playback**.



The Grid Playback provides synchronized searching and playback of the recordings of entire camera groups.



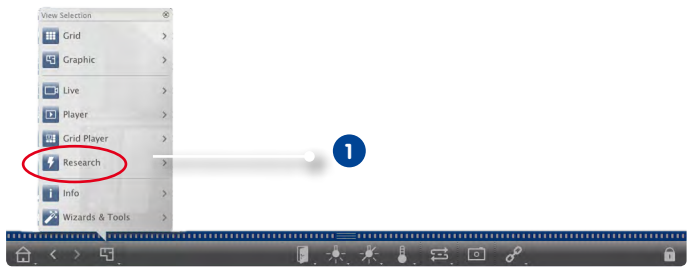
1. Use the timestamp in the focus window **1** or the calendar slider **2** to set the time.
2. Drag&drop the desired camera group from the group bar.
3. All cameras jump to the event image that is closest to the specified point in time. The timestamp beneath each camera image shows the time and date of the image. The difference to the reference time is shown at the right.

Hint:

You can also use the Grid Playback by dragging a group onto the Playback view. The original camera will be shown in the focus window.

3.5.4 Searching and Playing Back in the Research View

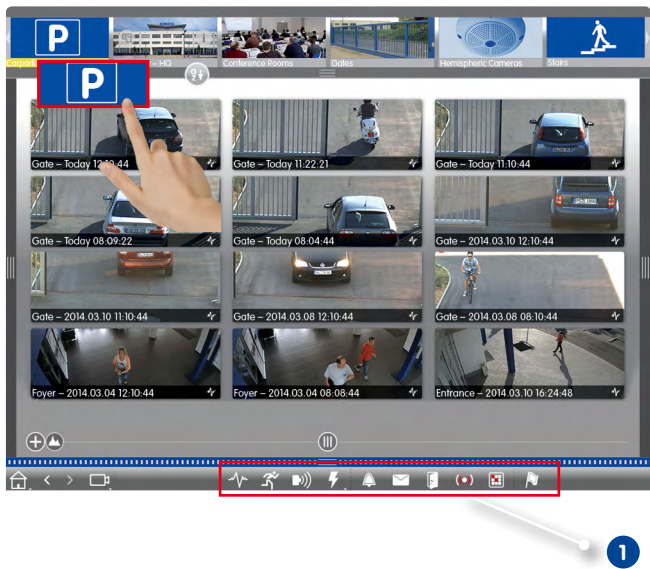
To show the Research view, right-click on the Navigation button and select **Research** 1.



The Research view allows searching all event images of one camera or of the cameras of a group. You can filter the events according to event types.

Showing the Event Images of a Camera/a Camera Group

- Camera:** Drag&drop the desired camera from the camera bar into the display area of the view.
- Camera group:** Drag&drop the icon image of the desired camera group into the display area of the view.



Filtering by Event Types

Initially, the event images of the selected cameras are sorted by time. You can filter the events according to event types **1**. To activate the event types, click on the corresponding buttons:

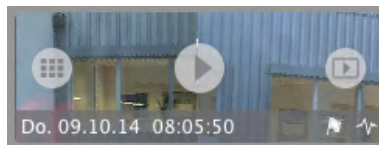
- : MxActivitySensor Events
- : Video Motion Events
- : PIR Events
- : Environment events: Noise, temperature, illumination, signal input
- : Ringing Events
- : Mailbox Messages
- : Door Station Events
- : Invalid RFID card
- : Invalid PIN

Marking Events

When browsing event images, you can right-click on an image and mark it as “important” . The same applies to event images that you have marked as in the Playback view or in the Alarm bar – you can see them in one collection in the Research view.

Playing Back Events

You can see the recording for each event directly in the view. To do so, move the mouse pointer over the event image. Three icons appear.



- Click on  to show the recording.
- Click on  to switch to Playback.

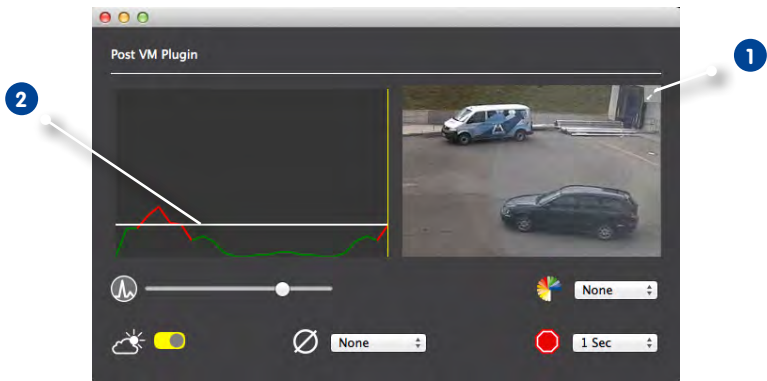
3.5.5 Playback Analysis: Searching With Post Video Motion Detection

Post video motion detection (Post VM) has already been added as a plugin in MxMC. This plugin allows searching recordings for changes in one or more image areas of a camera. This is done with the help of “motion windows”.

To open the Post video motion detection, right-click in the Playback view or in the Grid Playback and select **Post VM Detection**.



Creating Motion Windows



1. Click on  in the image area on the right-hand side of the settings dialog **1**. A new window with a predefined video motion window opens.
2. You can execute the following commands:
 - Modify the size of the video motion window: By moving the sides or the corners of the window.
 - Create additional video motion windows: Draw a new window with the mouse.
 - Duplicate a video motion window: Click on .
 - Delete a video motion window: Click on .
 - Deactivate a video motion window: Click on .
3. To close the editor window, click on  in the top right corner of the window.

Setting the Trigger Conditions

The Post VM windows allows setting different parameters that influence the detection results:

- **Trigger Level:** White bar in diagram  **2**
Controls the trigger threshold of the video motion windows. Move the bar to the bottom to recognize a movement if only a few pixels change from one image to the next. Move the bar to the top to recognize a movement only if many pixels change.
-  **Sensitivity:**
This setting controls how large the change of each pixel in a video motion window must be to count as a movement. Together with a low threshold value, this setting can be used to fine-tune video motion detection.
-  **Correct Changes in Illumination:**
Activate this option to avoid false alarms, if lighting conditions change rapidly (e.g., sun and cloudy sky).
-  **Deadtime:**
This sets the timespan after the last Post VM event, during which pixel changes in a video motion window are ignored.
-  **Median Value:**
Enter a long duration (e.g., 2.0 sec.) to improve the detection of slow movements. **Note:** Setting a value that is too high can lead to smears in the preview window.
-  **Color Filter:**
To limit the motion detection to a specific range or colors, select a color. If this color changes during post video motion detection, the Post VM event will trigger.

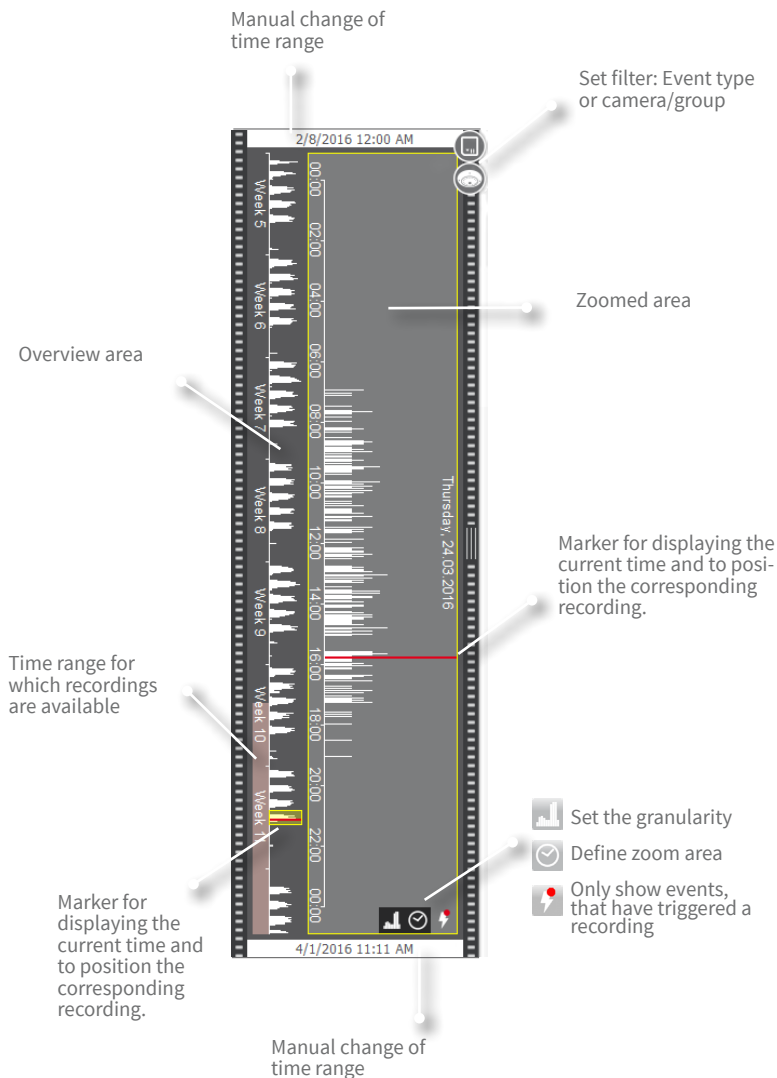
Searching for Changes in Video Motion Windows

Once you have defined the video motion windows and have set the trigger conditions, you can search the recordings for changes in the video motion windows. Use the playback buttons in the command bar and proceed as described in „3.5.2 Searching and Playing Back in the Research View“ and in „3.5.3 Searching and Playing Back in the Grid Playback“.

If MxMC detects a change within one of the video motion windows, the frame of that window turns red and the search stops.

3.5.6 Histogram With MxEventStatistics

The histogram in the Histogram bar illustrates the distribution of the event frequency and thus provides a quick overview of the events of one or more cameras. You can open the histogram in the Playback view and in Grid Playback by clicking on the dark gray frame border. To begin with, the histogram always shows the entire range of the events logged by the camera.



- **Displayed time range:**

The timestamps at the top and the bottom of the histogram show the first and the last of the available events logged by the camera, respectively. You can change this range manually. A small cross at the left of the time range indicates that it has been changed manually. Click on the cross to reset the timestamps to their original values.

- **Filtering:**

You can filter the display by camera, by group or by event type. There two sliders for this purpose: the group/camera slider and the event type slider. To set the filters, move the sliders until you see the desired results.

- **Structure of the histogram:**

- The histogram is split into the overview area and the zoomed area of the selected range in the overview. Depending on the displayed timespan of logged events, the overview area shows hours, weeks or months (as indicated by the unit).
- The pink bar indicates the time range, in which recordings for the logged events exist. **Note:** Recordings may not exist for the entire timespan that is covered by the histogram.
- The yellow scroll bar shows the range that is displayed in the zoomed area. Click on  to set the displayed time range in the zoomed area (e.g., custom, 6 hours or one day).
- To move the time range in the zoomed area, simply move the yellow scroll bar to the time range you want to examine. If you have set the zoomed area to  "Custom", you can modify the displayed time range by dragging the frame of the scroll bar.
- If you want to see only events in the zoomed area that have triggered recordings, click on .

- **Distribution of Frequency:**

The length of the bars indicates the frequency of logged events per time unit. Click on  if you want to see more details on the distribution of frequency for a specific point in time. The display switches to a higher resolution.

If you want to get more detailed information on a specific point in time with a high event frequency, click on the interesting spot in the zoomed area or the overview area. The red position marker jumps to the spot and shows a recording, if available. You can now play the recording in Playback view.

3.5.7 Retail System – POS Terminals With Integrated Video Surveillance

The MOBOTIX Retail system will link all cash point transactions with the video recordings of the associated transactions in MxMC. It enables you to quickly find and review any suspicious activities. The **Retail bar** and the **Retail view** are available for searching and analyzing transactions.

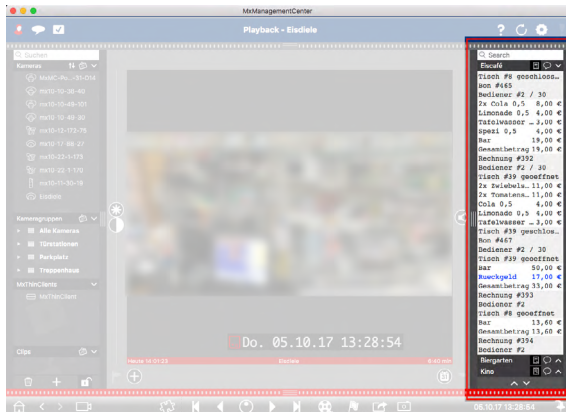
Before using the Retail system, you have to open the Preferences (**MxManagementCenter > Preferences > Retail System**) and add the cash registers and determine the data source. For more information, please see „3.9.1 Setting Options and Selecting Defaults“, Retail System.

Retail Bar

The Retail bar provides a direct overview of the most recent transactions (from the last 24 hours) and for this reason it is convenient to use it for reviews and searches.

1. Opening the Retail Bar

The Retail bar is available in all views. To open the Retail bar, click on the right frame border of the application. The Histogram bar will appear. Click on the frame border again to switch to the Retail bar. You can also open the Retail bar from the menu (**View > Retail bar**).



2. Using the Retail Bar

The Retail bar is automatically updated when the connected cash point transmits new data to the camera. This enables live surveillance of the cash point.

- **Displayed time range:** The Retail bar only contains the data from the last 24 hours. You can search data that is older than 24 hours in the Retail view.
- **Search feature/Filter feature:** You can filter the entries for each cash point's camera by search term. The hits are highlighted in yellow. You can jump to the next/previous search result using the two arrows on the lower edge.
- **Do not show system transactions:** By default, the Retail bar shows all transaction that are stored on the corresponding camera. Some of the transactions show purchases and events that are directly associated with the purchases, such as the "Total sum." Other transactions

show only administrative events, such as when the cashier logs on. Click on  to enable/disable display of system transactions.

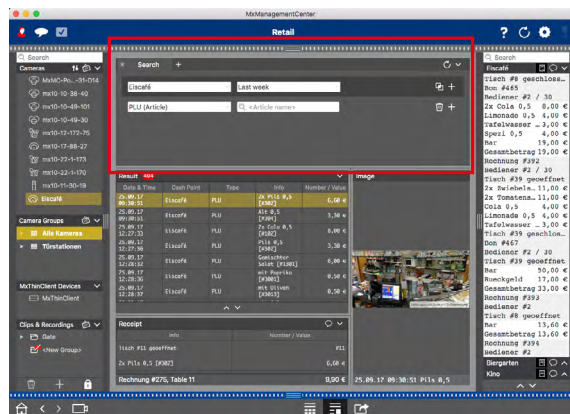
- **Do not group receipts:** Transactions are grouped by receipt number or purchase by default. Individual sales can be grouped if the cash point signals the conclusion of the transactions by creating a receipt number. Counter sales can be grouped by counter if the counter is settled in the cash point system. Click on  to disable display by groups. The data will be reloaded.
- **Playback transactions:** Open the Playback view by double-clicking on a transaction line. The video recording to the transaction will be played back.

Searching Retail Data in the Retail View

You can search and filter data of one or more retail cameras in the Retail view.

1. Defining Search Queries

You can define and store several search queries. Enter a name for each search. The search query will be automatically saved every time the search criteria are changed. This also happens when individual search parameters and terms are changed.



- By default there is one search query already. Click on the tab and enter the desired name.
- Select the desired cash points. You can select more than one or even all cash points for a search query.
- Specify the period of time for the search. You can also enter a period of time that allows you to enter any start and end timestamp, in addition to a series of preset time windows (including “today”).
- You define the search criteria to limit the scope of the search once you have selected the cash points and defined the period of time for the search. Click on  to do so. A new line will be inserted. The individual criteria can be linked using **AND** or **OR**. The logical search operators can only be applied to all search criteria at the same time. Select  to link the search criteria using **AND** and  to link them using **OR**.

Please note that the search criteria are only applied to individual transaction rows, e.g., a search for a total > 100 and < 150. For the time being, it is not possible to apply the search to all transaction rows of a receipt, e. g., the search for a specific item linked to the total amount > 100.

- Click on  to delete a search criterion.
- Click on  to define further search queries, in addition to the most recent search query. Enter a name and repeat steps 1–5.

2. Deleting Search Queries

Click on  to the left of the name for the search query to delete a search query.

3. Reloading Searches

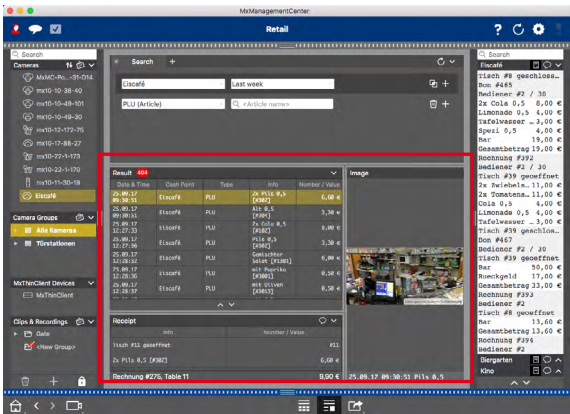
A new search is performed on the retail data on the camera with the filter when the search query is reloaded. The search results are displayed again. Click on  to reload a search query.

4. Displaying Search Results

The search results are displayed with preview images in a list with a detailed display of the cash point data or in tiles, depending on the selected display format from the Command bar (List view  or Tile view .

Search Results in Lists

The search results are displayed in the List view in a table in which the individual transactions are entered with detailed information. Click on a transaction line to view the receipt data and a preview image of the selected transaction.



1. Displaying Search Results

The most recently selected search query is automatically performed when you open the Retail view. Click on the desired tab to perform a previously saved search. The search results are displayed in the table as individual transactions.

2. Displaying Receipt Data

Click on a row in the table to select a transaction. The matching receipt data of the selected transaction is displayed in the **Receipt** section.

- **Do not show system transactions**

The transactions contain events that are directly associated with the purchase, such as the total or subtotal. Some transactions also show administrative events only, such as when the cashier logs on or off. The system transactions can be hidden in the table with the receipt data. To do so, click on  in the Title bar of the **Receipt** section.

3. Showing Preview Images

When you click on the row in the table, you do not only receive a display of the transaction data in the **Receipt** section, but you also receive a preview image that belongs to the camera recording for the transaction in the **Preview Image**.

- **Switch to Live view**

To do so, move the mouse pointer over the preview image. Three icons appear. Click on  to switch to the Live view.

- **Playback recording for the transaction**

You can either directly view the recording for the transaction in the tile of the preview image (Instant Player) or you can switch to the Playback view and view it there. To do so, move the mouse pointer over the preview image. Three icons appear.

- Click on  to activate the Instant player.

Hint: A click into the image after starting the playback opens the recording in full screen mode in the current program window.

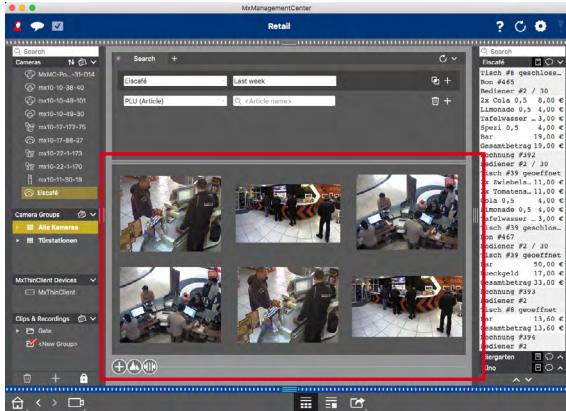
- To see the recording directly in Playback view, click on .

4. Adding Individual Clips for Exporting

The Export bar provides a quick and easy way to create clips on individual retail transaction for subsequent exporting (see *section 3.6.3, „Exporting From the Export Bar“*). To do so, drag the transaction preview image in the **Preview Image** section and drop it on the Export bar. The default clip length is ten seconds on either side of the transaction timestamp, that is, for a total of 20 seconds.

Search Results in Tiles

The individual search results are displayed in the Tile view as preview images. You can either directly view the recording for the transaction in this preview image as an instant playback or you can switch to the camera's Playback view and view it there. In addition, you can switch to this camera's Live view directly from the preview image.



1. Switching to the Live view

To do so, move the mouse pointer over a preview image. Three icons appear. Click on  to switch to the Live view.

2. Preview Image Playback

You can either directly view the recording for the transaction in the tile of the preview image (Instant Player) or you can switch to the Playback view and view it there. To do so, move the mouse pointer over the preview image. Three icons appear.

- Click on  to activate the Instant player.

Hint: A click into the image after starting the playback opens the recording in full screen mode in the current program window.

- To see the recording directly in Playback view, click on .

3. Adding Recordings for Exporting

The Export bar (see section 3.6.3, „Exporting From the Export Bar“) provides a quick and easy way to add clips for exporting. The default clip length is ten seconds on either side of the transaction timestamp, that is, for a total of 20 seconds.

3.6 Exporting Recordings

3.6.1 Saving Snapshots



Snapshot images can be created in the Live and the Playback views for the displayed camera, in the Grid view and Grid Playback for all displayed cameras. Click on the **Snapshot** button in the command bar.

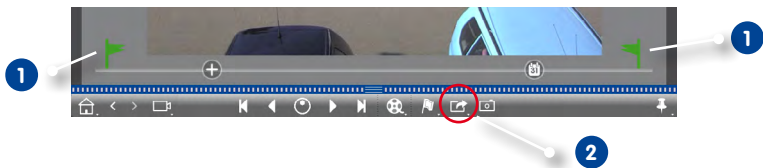
By default, the images are stored on the desktop. Snapshots from the Grid view or the Grid Playback are stored in a folder on the desktop that contains the images of all cameras of the group. To set the target folder and image settings for the snapshot images, open **MxManagementCenter > Preferences > Snapshots** in the menu.

3.6.2 Exporting Recordings

Exporting the Recordings of One Camera

The Playback view allows setting a time range for a recording (event or continuous recording) in order to select it for exporting.

1. Open the Playback view.
2. Drag&drop the desired camera from the camera bar.
3. Find the recording you are interested in.
4. Mark the start of the clip by clicking on the gray flag on the left. Play the recording until you have reached the end of the clip you want to export. Mark the end of the clip by clicking on the gray flag on the right. Both flags are now green **1**.



5. Click on **Export** **2** and select MOBOTIX.
6. Select a target folder in the Export dialog and enter a file name. Click on **Save**. The clip is saved to the file.

Hint: Automatic Import

If you activate the **Automatically import after export** option, the exported clip is automatically added to the camera bar.

Exporting the Recordings of a Camera Group

The Grid Playback allows setting a time range for a recording (event or continuous recording) in order to select it for exporting from several cameras.

1. Open the Grid Playback.
2. Drag&drop the desired camera group from the group bar.
3. Find the recordings you are interested in.
4. Mark the start and the end of the clip as described in **Exporting the Recordings of One Camera**.



5. Instead of exporting all cameras of this group, you can also select one or more cameras for exporting. To do so, click and hold **Export** 3. A circle appears on the camera images in the top left corner. To do so, select the desired cameras by clicking on the corresponding circles 4.
- Note: The recording of the camera shown in the focus window will always be exported.
6. Export the clips as described in **Exporting the Recordings of One Camera**. Instead of in one file, the program creates a folder that contains all exported clips.

Hint: Automatic Import

If you activate the **Automatically import after export** option, the exported clips are automatically added to the group bar..

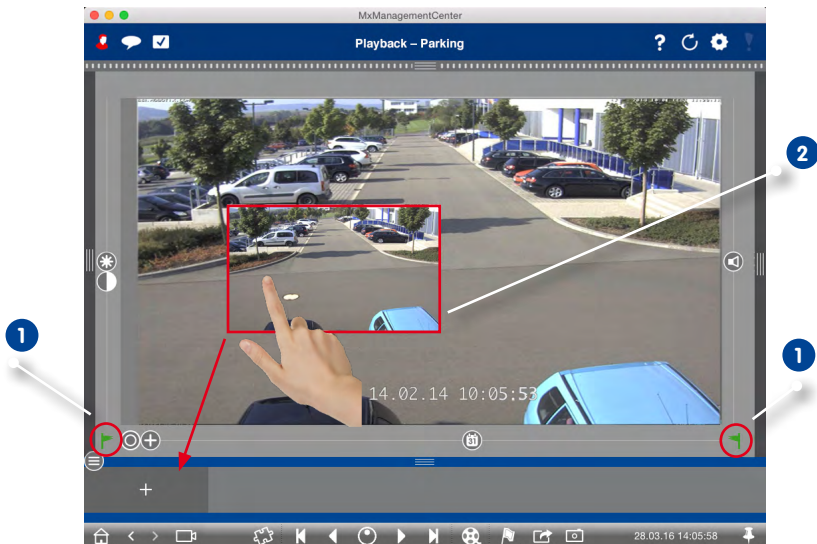
3.6.3 Exporting From the Export Bar

Using drag&drop, the Export bar provides a quick and easy way to create a list of recordings for subsequent exporting. From the bar, you can export recording time ranges as combined clips. You can add the clips in the Playback view, in Grid Playback and in the Research view. Note that the Export bar will not be deleted automatically after exporting, but only when closing the application.

Adding Clips for Exporting

Adding Clips for Exporting in the Playback View

1. Drag&drop the desired camera from the camera bar.
2. Find the recording you are interested in.



3. Mark the start of the time range by clicking on the gray flag on the left. Play the recording until you have reached the end of the clip you want to export. Mark the end of the time range by clicking on the gray flag on the right. Both flags are now green **1**. Of course, you can set the end marker first (gray flag on the right), then play the recording backward and set the start marker (gray flag on the left).
4. Click on the image of the recording and maintain the position until you see a scaled-down image **2**. Drag&drop this image to the Alarm bar (regardless of whether or not it is open). The Alarm bar automatically turns into the Export bar, allowing you to place the image there.
5. Alternative: Activate the Alarm bar. Click on the lower frame border of the open Alarm bar. The Export bar opens. Click on . The selected time range will be copied to the Export bar..

Adding Clips for Exporting in Grid Playback

The Export bar in Grid Playback is the best way to combine sequential time ranges of different cameras. For example, you can use it to follow one person that passed several cameras.

1. Drag&drop the desired camera to the focus window in the grid and find the relevant recording.
2. Mark the start and the end of the clip as described in **Step 3, Adding Clips for Exporting in the Playback View**. The recordings of the other cameras will reposition accordingly.
3. Click on the image of the recording and proceed as described in **Steps 4 and 5, Adding Clips for Exporting in the Playback View**.
4. Drag&drop the camera with the next recording in the sequence of events into the focus window. Mark the start and the end of the clip as described above, then drag&drop the recording into the Export bar.
5. Repeat these steps until you have added all recordings you want to export.

Note that you can also add recording time ranges from several cameras in the Export bar.

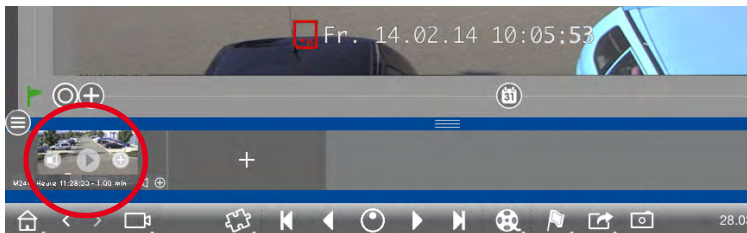
1. Simply drag&drop the desired camera group from the Group bar and find the relevant recording.
2. Mark the start and the end of the time range as described in **Step 3, Adding Clips for Exporting in the Playback View**. The recordings of the other cameras will reposition accordingly.
3. Right-click on **Export** . A circle with a checkmark appears in the top left corner of the recordings. If you do not want to use the recording of a specific camera, deactivate the recording by clicking on the corresponding checkmark.
4. Click on the image of the recording and proceed as described in **Steps 4 and 5, Adding Clips for Exporting in the Playback View**. The selected clips will be copied to the Export list.
5. Repeat these steps until you have added all time ranges you want to export.

Adding Clips for Exporting in the Research View

In the Research view, you can add recorded event sequences to the list. The length of the event sequences is currently 20 seconds.

1. Set filters by camera, by group or by event type as needed.
2. Right-click on **Export** . A circle appears on the camera images in the top left corner. Mark the desired events by clicking on the corresponding circles.
3. Open the Export bar (by clicking on the lower frame border of the open Alarm bar). Click on an event image and maintain the position until you see a scaled-down event image. Drag&drop this image to the Export bar. The clips of all selected event images are added to the Export bar. Alternative: In the Export bar, click on . The clips of all selected event images are added to the Export bar.
4. If needed, you can set new filters and add more event images to the Export bar.

Editing Clips



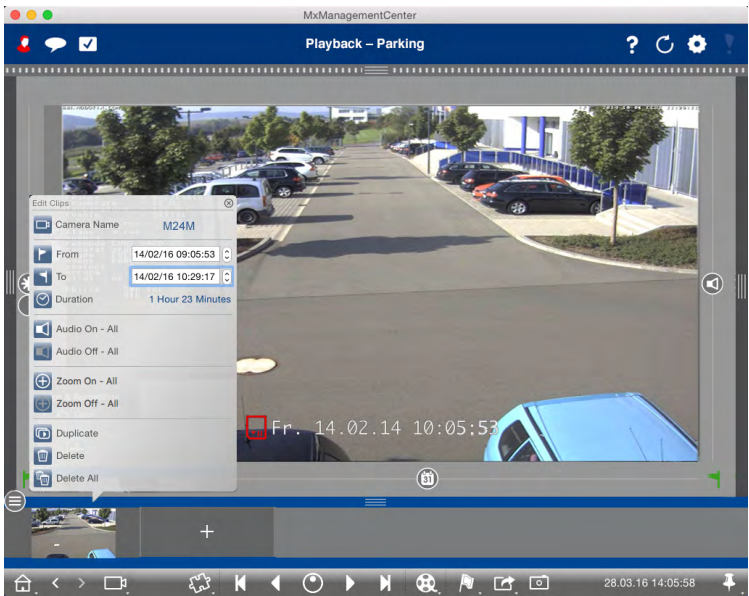
If you have added a recording to the Export bar, for which you had activated distortion correction or zoom features during playback, you can choose to export the clip with or without zoom settings. Likewise, you can export the clip with or without audio. To do so, move the mouse pointer over the recording in the Export bar. Three icons appear:

- : Clip is exported with zoom.
Click on  to export the clip without zoom. The icon is disabled.
- : By default, the clips are exported with audio (provided that audio had been recorded).
To export without audio, click on . The icon is disabled.
- : The clip is played back.
Note that you can review the clips before exporting by playing back individual clips directly in the Export bar. Click on .

Hint: Click on the recorded image to enlarge it.

Exporting Recordings

To delete one or more clips, open the context menu by right-clicking on a clip. The context menu provides information on the clip, such as the recording time range covered by the clip. In addition, you can manually adjust the time range, activate/deactivate audio for all clips or duplicate a clip.



Exporting

Click on **Export** , then select MOBOTIX to export an MXG clip. Select a different profile to create an AVI file. Select a target folder in the Export dialog and enter a file name. In addition, you can choose to automatically add the MXG clips of the Export bar to the Camera bar after exporting. To do so, activate the **Automatically import after export** checkbox.

3.7 Working With Different Network Environments

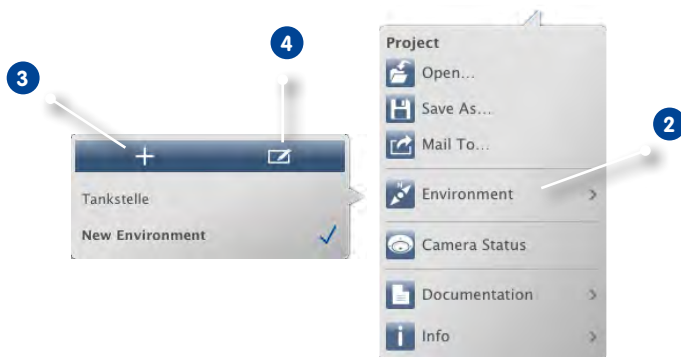
Using MxManagementCenter, you can access cameras from different locations. This usually means that each location requires using different network access data. To avoid having to change the network access data every time, you can set up different network environments with the corresponding network access data.

3.7.1 Creating Environments

Create your environments to begin with. Next, use the **Camera Configuration** dialog to select the cameras for each environment. This is also where you can set the DynDNS access for the cameras (if you did not specify this when adding the cameras).



1. In the header bar, click on **Projects and Environments** **1** and then on **Environment** **2**.

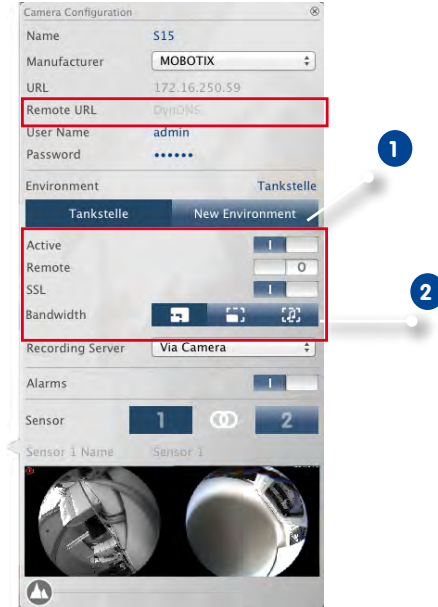


2. Click on **Add** **3**. This adds an environment with the “New environment” default name. You should change the name by clicking on **Edit** **4** and entering a descriptive name.

3.7.2 Changing Network Data and Selecting Environments

After creating the environments, you can select the cameras that will be active for each environment and adjust the network data as needed.

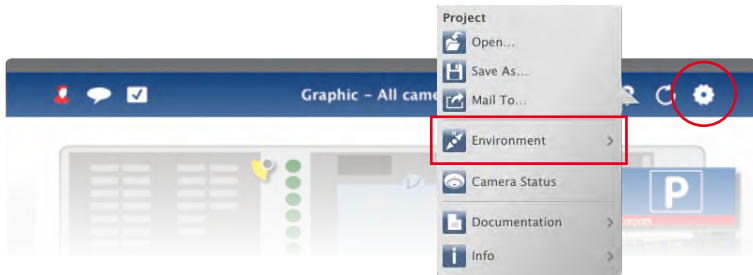
1. Activate the edit mode by clicking on  at the bottom of the device bar. To open the the **Camera Configuration** dialog right-click on the desired camera.



2. Select the environment **1**.
3. Select the bandwidth to use for this environment: **2**
 -  **HiRes:** The images are transferred using the current camera settings.
 -  **LoRes:** The images are provided with the specified frame rate, image size and quality (see "Program settings").

Selecting an Environment

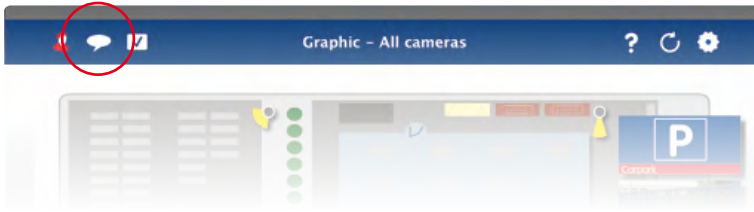
1. In the header bar, click on **Projects and Environments** and then on **Environment**. Select the desired environment.



3.7.3 Temporarily Adjusting the Bandwidth

By assigning a bandwidth to an environment, you can specify how the images are pulled from the cameras given different connection speeds. This basically controls how the images can be displayed for live viewing and event research. Selecting a bandwidth thus also controls the image quality. Note that you can temporarily overwrite the bandwidth setting without actually changing the camera setting.

1. Click on **Bandwidth** in the header bar.



2. Click on the button to switch from one setting to the next.
 -  **HiRes:** The images are transferred using the current camera settings.
 -  **LoRes:** The images are provided with the specified frame rate, image size and quality (see "Program settings").
 - ☒ **Unchanged:** Uses the original setting of the camera.

3.8 Working With Door Stations

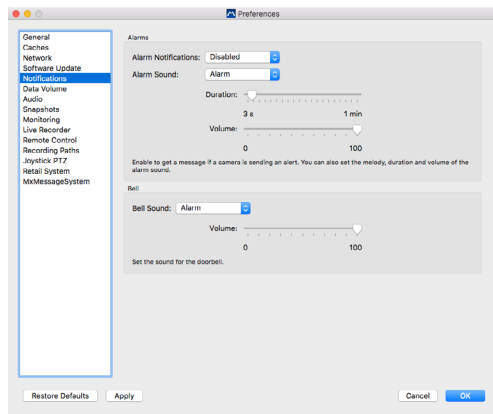
3.8.1 Setting up Door Stations

In general, the door stations are configured when adding them to the system. Note that you can change the bell behavior and the mailbox settings also while the system is up and running. You can do this in the Live view in the bell and the mailbox settings. The settings apply to the currently selected camera.

Bell Settings

Setting the Ring Tone

1. Open **MxManagementCenter > Preferences** and click on **Notifications**.



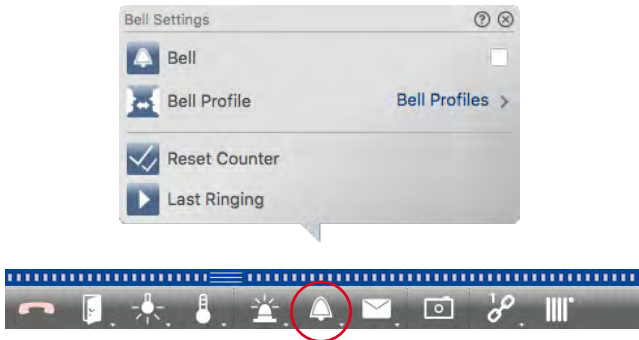
2. Select the desired melody and the volume.

Selecting a Bell Profile

A bell profile basically controls how the program reacts if someone is ringing at the door station. The camera provides several pre-defined bell profiles:

- **No phone ring:** MxMC and all other remote stations will not react, i.e., you will not notice if someone is ringing (neither visually nor by sound).
- **Ringings:** You will be notified about a ringing on the door station. The visitor cannot leave a message.
- **Ring and Mailbox:** You will hear if someone rings the doorbell. If you do not react within a given period of time, the door station plays back an announcement and the visitor can leave a message.
- **Mailbox:** After ringing, the door station immediately plays back an announcement and the visitor can leave a message.
- **Announcement only:** After ringing, the door station immediately plays back an announcement. The visitor cannot leave a message.

1. In the Live view, right-click on the **Bell** icon to open the **Bell Settings** .
2. Click on **Bell Profile** and then click on the desired profile in the list.



Reset Counter

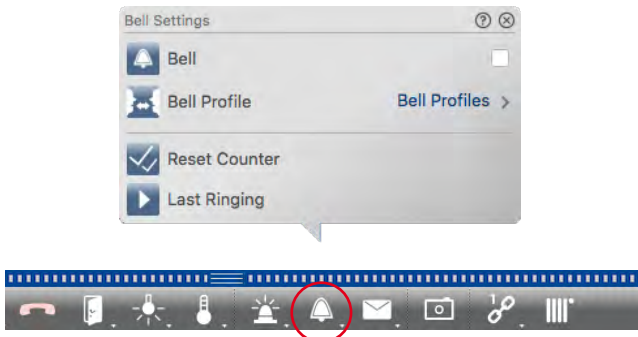
The counter on the bell button in the Live view is incremented upon every ringing of the doorbell  regardless of whether you react to the ringing, or not. Resetting the counter will help in recognizing if you have missed a ringing, you should therefore always reset the counter to Zero. Once you have reset the counter, the menu item will show the date and time the counter has been reset.

1. Click on **Reset Counter**.
2. The counter has been reset and will not be shown next to the **Bell Settings** button.

Deactivating the Doorbell Completely

If you do not want to be disturbed by the doorbell, you can deactivate a specific bell or contact number. This means that the ringing of the doorbell will neither be indicated nor registered at the door or at one of the door stations. It also means that you will not get any information about visitors you missed and visitors will not be able to leave messages.

1. In the Live view, right-click on the **Bell** icon  to open the **Bell settings**.
2. Deactivate the **Bell** checkbox.

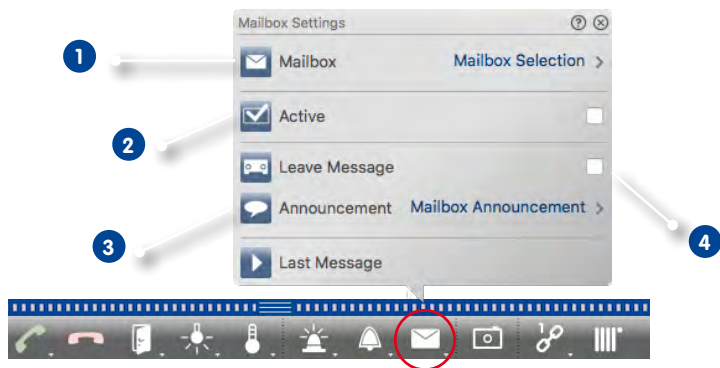


Mailbox Settings

Select Mailbox

Depending on the installed options and the configuration of the door station, you may have several bell buttons or – in case a MOBOTIX keypad module has been installed – several contact numbers. Each of these bells or contact numbers has its own mailbox. The corresponding mailboxes are presented in the list (below the name of the bell).

Note: All settings made in the **Mailbox** function always apply to the selected mailbox. This also means that the new messages counter only applies to this mailbox. To get the messages and recordings of a different mailbox, select that mailbox first.



1. In the Live view, right-click on the **Mailbox** icon to open the **Mailbox settings** .
2. Click on **Mailbox**  to select the desired mailbox from the list.

Proceed by selecting a bell profile for each mailbox. For instructions on how to do this, see “Selecting a Bell Profile”.

Activate the Mailbox and Select a Welcome Message

Activate the mailbox . Select the message that will be played to the visitor .

Enable the Message

If visitors should be allowed to leave a message, activate the **Leave Message** option .

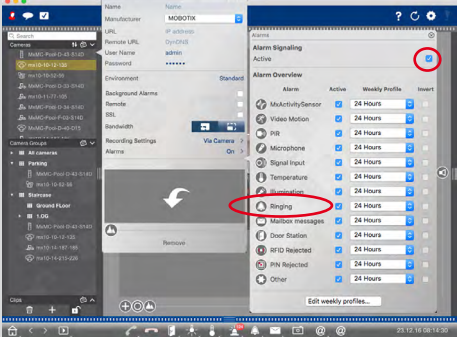
3.8.2 Operating Door Stations

Answering Ringing

There are different ways to indicate that someone has rung the doorbell.

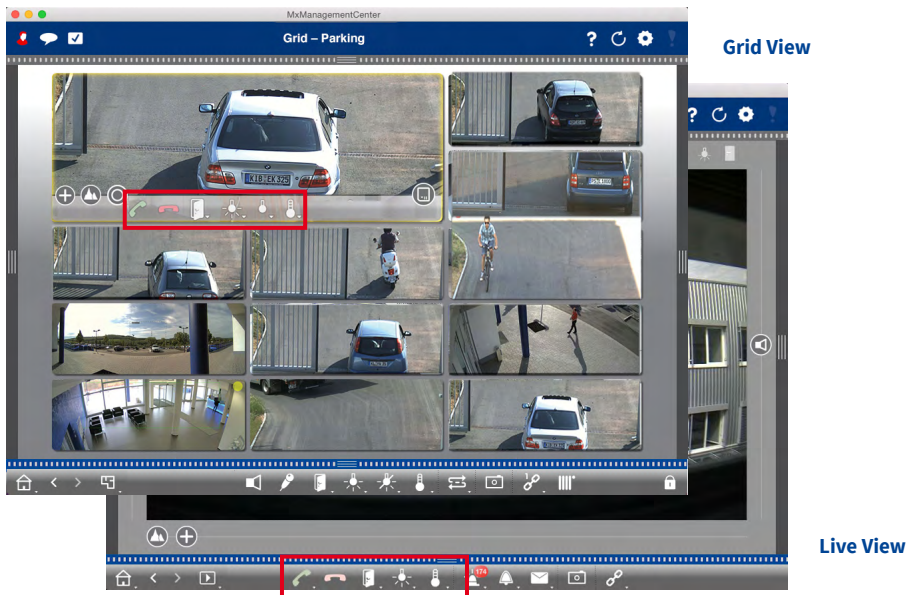
Where?	Explanation
Alarm bar	The Alarm bar turns green.
Alarm info bar	The Alarm info bar turns green in the live images.
Doorbell message	A blue dialog box appears with the live image of the door camera. You can start a conversation and open the door directly.
Counter on the bell icon	The red counter on the bell icon is incremented by one.

The following table describes which signaling options can be combined and where these can be set. Please note that alarm notification must be activated and a bell profile set up in order for the bell notification to work.

Notifications	Setting options
Alarm bar, Alarm info bar, Door bell message, Bell icon counter	For the doorbell to ring at these places, you need to configure the Alarm signaling. - Open the Camera Configuration dialog by right-clicking on the corresponding camera in the Camera bar. Another option is to open the dialog box in the Device bar by clicking  and then right-clicking the corresponding camera. - Click Alarms and activate the Alarm notification and set ringing events to be alarm events by activating the Ringing checkbox. 
	See also section „Setting Alarm Filters and Alarm Notifications“.
Bell icon counter only	Deactivate Ringing in the Alarms dialog box and only the counter on the bell icon will increase by one each time a ringing event occurs. - Open the Camera Configuration dialog by right-clicking on the corresponding camera in the Camera bar. Another option is to open the dialog box in the Device bar by clicking  and then right-clicking the corresponding camera. - Click Alarms and deactivate the Ringing checkbox.
Bell sound off	You can deactivate the bell sound in Notifications (Mac menu MxManagementCenter > Preferences, Windows menu File > Preferences) by setting the volume to „0“.
Completely off	Deactivate the Bell checkbox in the Bell Settings  to switch off the bell completely. See also section „Deactivating the Doorbell Completely“.

Opening the Door/Switching Lights

If the door station has been set up properly, you can use MxManagementCenter to open the door and to switch the lights. Use the buttons in the command bar of the focus window (Grid view) and in the command bar of the Live view.



Playing Back Door Station Events

Playing Doorbell Recordings

If you have missed a visitor, you can use the Alarm bar to see who rang the doorbell and when that happened.

- 1. To do so, move the mouse pointer over the event image. Three icons appear.
- 2. To see the doorbell recording directly in the Alarm bar, click on **Play** .
- 3. To see the doorbell recording directly in Playback view, click on **Playback** .

Accessing the Mailbox Messages

If visitors have left messages during your absence, you will immediately notice the **counter next to the Mailbox button** in the Live view, which is incremented every time someone leaves a message. Once you have played back the message in the Playback view, the message is automatically marked as “seen” and the counter is reduced by one.



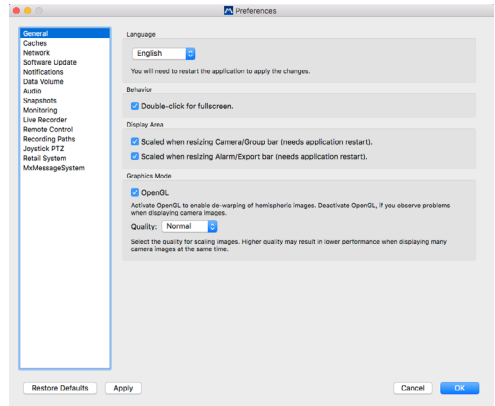
3.9 Program Settings

3.9.1 Setting Options and Selecting Defaults

Open **MxManagementCenter > Preferences** in the menu.

General Settings

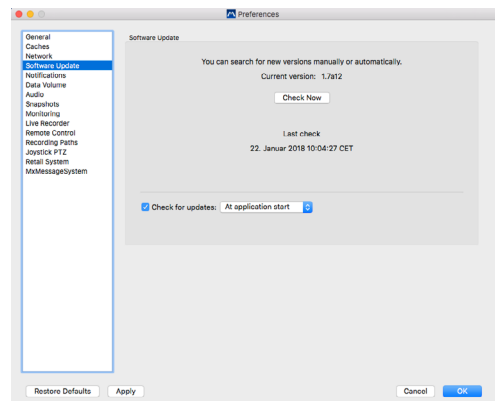
- **Language:** Sets the program language. You may have to restart the software in order to apply your changes.
- **Behavior:** Deactivate this option to prevent that a double-click switches to full-screen image on the main monitor or on other monitors.
- **Graphic Mode:** If you want to correct hemispheric images, make sure that this option has been activated. A prerequisite for using this feature is a graphics adapter with OpenGL V2.1 support, since it performs the actual distortion correction. Deactivate OpenGL if your graphics adapter does not support this mode or if you experience problems when displaying the camera images.
- **Recording Path Cache Sizes:** To improve the playback performance, you can set the internal cache size for playback. This applies to both types of playback – via camera or directly from a file server. Please be aware that the cache size set here will reduce the available RAM for other processes, which in turn can influence the performance of other applications.
- **Display Area:** If you are working with the Camera/Group bars or the Alarm/Export bars, you can change the width of the bars. Use this option to automatically resize the display area in such a case.



Software Update

MxMC can use the update feature to automatically search for new program versions. This function requires an Internet connection. Adjust the update request to suit your needs.

Note that you can also start the search manually. To do so, click on **Search Now**. If a new program version is available, you will see this here.

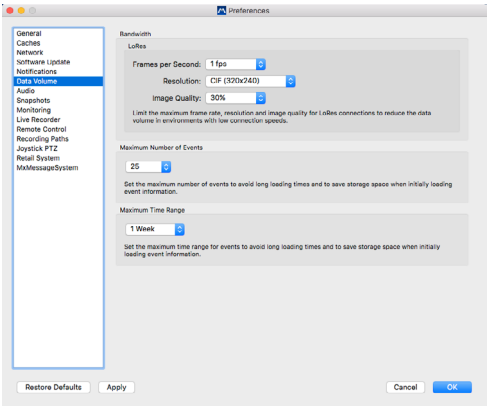


Data Volume

- Bandwidth:** By using environments (see Section 3.4, «Working with Different Environments»), the images can be pulled from the cameras with different size, quality and frame rate. You can limit the bandwidth by adjusting the values for LoRes connections. By using lower values, you can limit the bandwidth required to transfer the data, thus allowing you to adapt the system to the connection speed. Default values for LoRes: 1 fps, CIF, 30%.

Note that these settings are by no means camera settings; you are only limiting the frame rate, image size and quality of the video stream that is transferred to MxMC. If you set a value that is higher than the value set on the camera, the camera value will be used.

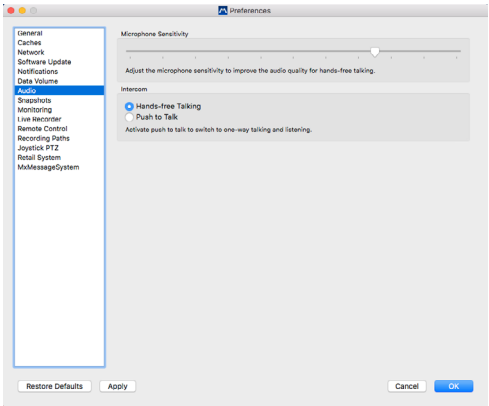
- Maximum Number of Events/Maximum Time Range:** The number of events and the time range are controlling how far into the past MxMC will look for event information after the next launch of the application. The settings apply to the event counter in Live view and the event preview images in the Research view. This avoids long loading times and saves storage space when initially loading the event information. Note that you can load additional images, if required.



Setting the Intercom Mode of Door Stations

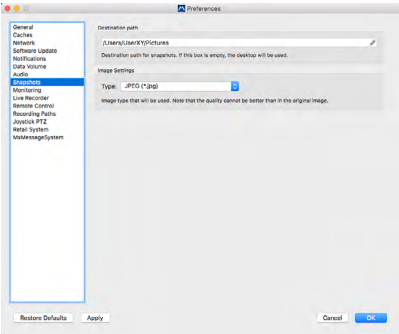
Use the slider to set the sensitivity for transmitting the sound from the camera microphone. The default setting has been optimized for Intercom connections and should only be changed in very noisy or very quiet door station surroundings.

Hands-Free Talking and Push to Talk
The Hands-free Talking option is activated by default. If the surroundings are very noisy or if audio connection problems persist, you should try to use the Push to Talk setting.

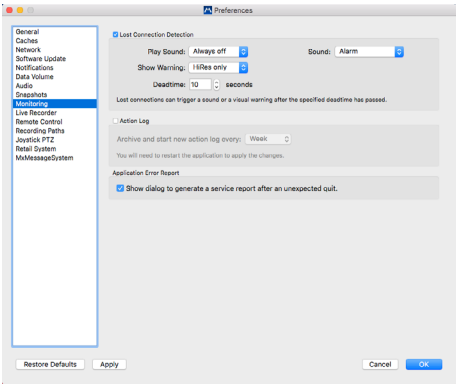


Snapshots

You can save snapshots from live images or from recordings. These settings control the location and the quality of the snapshot images stored by MxMC. If you do not specify a folder, the files will be created on the desktop (see Section 3.6.1, «Saving Snapshots»).



Monitoring

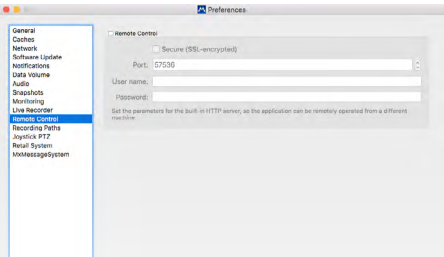


Lost Connections

If the connection to a camera is lost (e.g., due to a network failure or changed camera access data), the application can show a warning. This is where you configure the warning. Activate the **Lost Connection Detection** checkbox and specify how you want MxMC to react if the connection to a camera is lost (warning sound and window).

Remote Control

MxMC can be remote-controlled from other programs using HTTP requests. Activate this feature and set a proper port if you want to use this feature. Click on one of the example links to see a list of executable commands.



Recording Paths

The program can access the stored images using two methods: Access via the camera (remote playback) or directly on a file server, on which the recordings are stored. If you want to directly access the recordings, you can create recordings paths, which can then be assigned to the cameras (**Camera Configuration** dialog). Direct access allows using extremely high playback speeds (up to 60x the regular speed).

Name

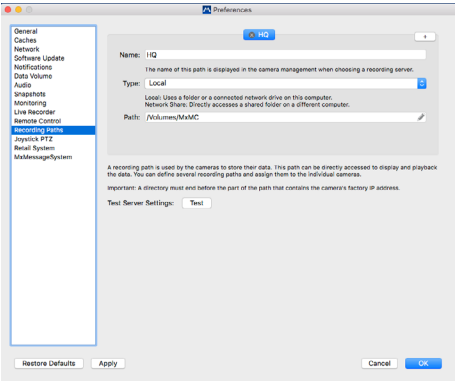
The name of this path will be shown in the camera configuration dialog when selecting a recording path.

Type

Local:

Contains a local folder on this computer or on a connected network drive. You can either enter the folder path manually, drag&drop a folder to the text box or select the folder.

Path: Make sure that the path ends before the folder containing the factory IP address of the camera.



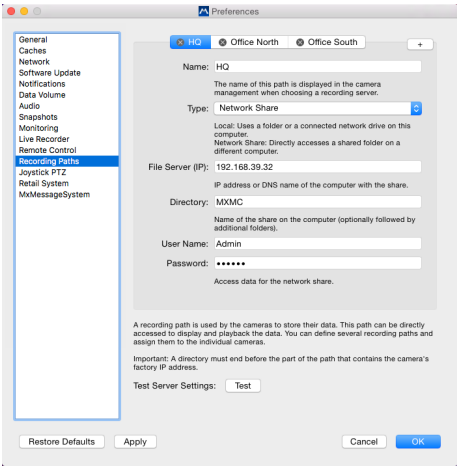
Network Share:

The program directly accesses a shared folder on a different computer. In this case, you need to enter the computer, the folder and the access data.

File Server (IP): IP address or DNS name of the computer with the share.

Directory: Name of the share on the computer (optionally followed by additional folders). Important: Make sure that the path ends **before** the folder containing the factory IP address of the camera.

User Name/Password: Access data for accessing the network share.

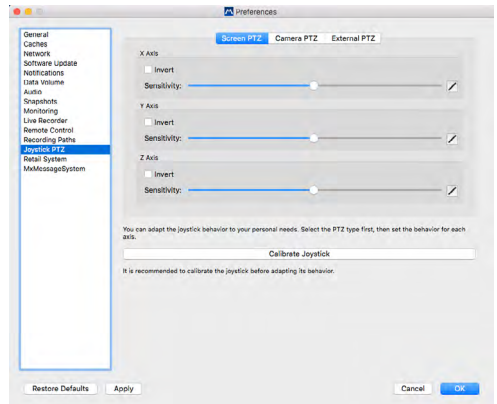


Joystick PTZ

You can adapt the joystick behavior to your personal requirements. Start by setting the PTZ type, then set the behavior for each axis.

PTZ Type

- Screen PTZ: The PTZ actions are taking place in the application. This means that only the visible image section of the current live image is modified. Any zooming does not influence the recordings of the current camera image that may be taking place.
- Camera PTZ: Zooming will be performed on the camera and can also influence the recordings (but only if the camera does not record the full image).
- External PTZ: If you are using the camera of a different manufacturer, you can set its joystick behavior in this dialog.



Axes

- X Axis: Horizontal movement
- Y Axis: Vertical movement
- Z Axis: Zooming

Invert

Use this option to invert the actions by the joystick for that axis.

Sensitivity

If the PTZ actions are reacting too slowly, you can increase the sensitivity. If the reactions are too fast, reduce the sensitivity.

Progression

Click on the  button to change the progression of the joystick movements. The default setting is linear progression.

-  Linear: Default setting
-  Logarithmic: Use this progression if you want to make the joystick less sensitive to small input movements.
-  Exponential: Use this progression if you want to make the joystick more sensitive to large input movements.

Calibrate Joystick

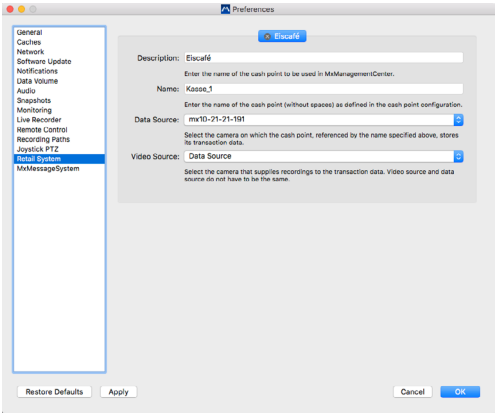
Before adjusting the behavior, it is recommended to calibrate the joystick. This will determine the basic settings of the joystick (behavior and speed).

Retail System

In order to use the Retail system, a special script for MOBOTIX cameras must first be installed and adapted at the Vectron cash register. This script ensures that the cash register can transfer its transaction data to a MOBOTIX camera (Mx6 model with firmware V5.0.2 or higher). The POS integration must be activated on the MOBOTIX camera that is to receive the transaction data and the name of the cash register must be entered.

In the **Preferences** of the MxMC, you then add the cash register and determine its data and video sources.

- **Discription:** Name of the cash register as it is displayed in MxMC.
- **Name:** Cash register name (without spaces) as defined in the POS configuration.
- **Data Source:** Select the camera that receives the messages from the POS system and saves its data.
- **Video Source:** Select the camera that provides the appropriate recordings for the transaction data. This can be the same or a different camera than the data source.



3.9.2 Saving and Loading Program Settings

Saving a “project” will store all program settings of the cameras and the camera groups, including the layouts. If you provide such a project via email, you can choose to include the encrypted access data for each camera (user name and password). If you do not supply the access data, the user name and password will have to be entered manually for each camera.



Saving a Project

1. In the header bar, click on **Projects and network environments** .
2. Click on **Save As**.
3. Activate the **Include access data** checkbox if you want to include the camera access data. Click on **Save**.

Sending Projects

1. In the header bar, click on **Projects and network environments** .
2. Click on **Email To**.
3. Activate the **Include access data** checkbox if you want to include the camera access data. Click on **OK**. The file is automatically attached to a new email. Send the email.

Opening a Project

1. In the header bar, click on **Projects and network environments** .
2. Click on **Open** and select the project file. Decide whether the current project should be saved or not.

3.9.3 Activating/Deactivating the Privacy Mode

You can lock or deactivate specific functions of a camera for a certain period of time. This is easily done by activating the privacy mode. This mode is valid for 24 hours unless you deactivate it before.

- 1. In the Live view, right-click on the **Alarm** icon  to open the **Alarm settings**.
- 2. Click on **Privacy** .



- 3. Activate the features that should be blocked when entering the Privacy mode. Activate the **Privacy** switch .
- 4. Deactivate the **Privacy** switch if want to stop this mode. The privacy settings will be stored and will be reused the next time you are activating this mode.

Note: If the Privacy mode icon  appears in the top right corner of the camera image, this mode has been activated.

3.10 Opening the Action Log

MxMC can log any action, such as starting playback or export actions, activating the sound, etc. This means that you can log all user actions and thus deliver the entire chain of evidence for legal purposes. To open the action log, select **Windows > Action Log** in the menu.

Action Log					
MxManagementCenter Action Log					
Time	User	Category	Action	Details	
08.03.16 14:44	Admin (Admin)	Export	Export	dfr-10-9-49-25-Tower will be exported from 2016-03-08 14:43:24 to 2016-03-08 14:44:24	
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to view "Wiedergabe"	
08.03.16 14:44	Admin (Admin)	Viewing	Switch	Switching to camera "dfr-10-9-49-25-Tower"	
08.03.16 14:43	Admin (Admin)	Viewing	Switch	Switching to group "Indoor"	

4 Appendix

4.1 Key Combinations: Overview

Program commands that are available via menu items can also be carried out by key combinations. This includes commands such as opening specific views or showing/hiding specific bars (device bar, histogram bar, etc.). Usable key combinations for these actions are shown in the various menu items, e.g., the **View** or **Navigate** menu item.

In addition, there are some useful key combinations for functions that are not available via the menu:

Key combinations	Explanation
CMD-Shift-L (Mac) STRG-Shift-L (Windows)	Opens the currently displayed camera in the browser.
CMD-Shift-A (Mac) STRG-Shift-A (Windows)	Opens the Admin menu of the currently displayed camera in the browser.
CMD-Shift-Y (Mac) STRG-Shift-Y (Windows)	Opens the Setup menu of the currently displayed camera in the browser.
CMD-R (Mac) STRG-R (Windows)	Reloads the connections to all cameras that are relevant to the current view.
CMD-ALT-R (Mac) STRG-ALT-R (Windows)	Reloads the connections: • to all cameras that are relevant to the current view and • to all cameras with active Background Alarms.
Shift key (when starting the application)	Pressing the Shift key while starting the application prompts MxMC to show the Live view without displaying any cameras. You can use this key combination to return to a safe state in case there is a recurring problem or instability with the camera while starting the application.
S+C+R keys (when starting the application)	Empties all project data and starts the application from scratch.
Space key	Starts and stops the playback in the Playback view and the Grid Playback.
Plus/minus key	Increases/decreases the playback speed while playing back recordings.



Tutorial

MxManagementCenter

