

MxIOI

by Clint Hays





- Pre-sales support, tech support, product management, and R&D
- 10+ years in Low-Volt integration across various verticals
- Certified on ABP systems and many competitors
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- ABP was founded in 2001 as an IP technology value-added distributor in Dallas.
- Three verticals of product lines: Infrastructure, Communications, and Security
- We provide support for pre-sale design, zero-touch provisioning, post-sale tech support, training, and customer awareness events.
- We operate from Canada to South America and into the U.K.

ABP Mx101 Course Intro

- 8 hours with two breaks and a lunch period
- Designed to bring cameras online, record, and export video thru MXMC
 - Web UI, SD card, NAS, and software
- Explain differences between MOBOTIX and ONVIF systems
 - More ability, more control, more information
- Touch on à la carte ordering structure
 - Body, sensor, mount, and cables
- Discuss the lack of backdoors and importance of documentation
 - No password backdoor, can brick the device, useful documentation for the installer
- Reasons to continue MOBOTIX training

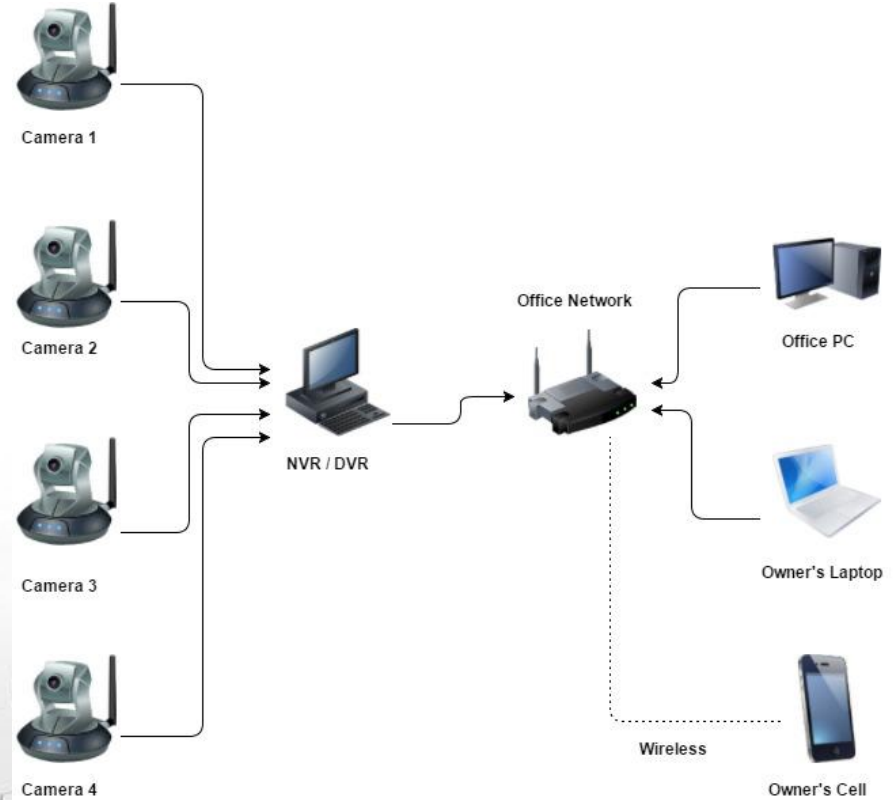




- Mobotix is a German manufacturer of decentralized IP cameras and software.
- The North American office is located in Manhattan.
- Mobotix created their own video code, MxPEG, around 2000 to decrease bandwidth and improve frame by frame capture.
- Mobotix launched the M6 series cameras to support open standards in 2017

Standard CCTV Systems

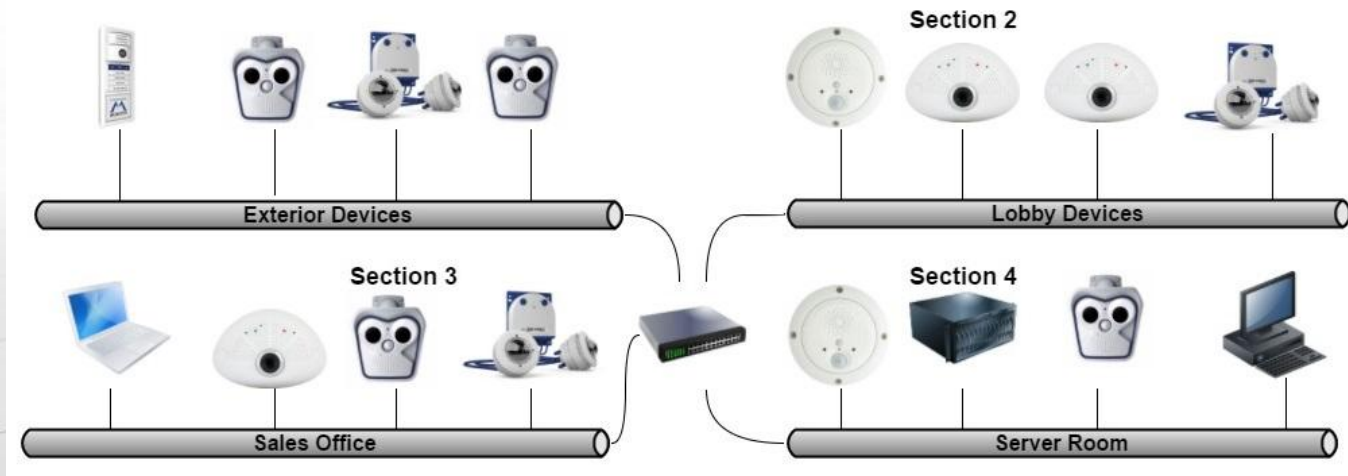
- NVR Centric
- Storage is in the NVR
- All video is streamed from the NVR - creates a bottleneck
- If the NVR dies, the entire system is dies.
- Cameras are fairly dumb
- Heavy bandwidth between devices



Key Topics and Differences with MOBOTIX

- MOBOTIX is an intelligent system, not a dumb camera
- Same sensors and board, different form factors
- Decentralized and independent

123 Soap Company Office Cameras





London Olympics, 2012



Vatican Apostolic Library, Vatican City

Utility plants, harbors, airports, museums, stadiums, schools, hospitals, homes, and many more

Princess Elisabeth Station
Usteinen, Antarctica

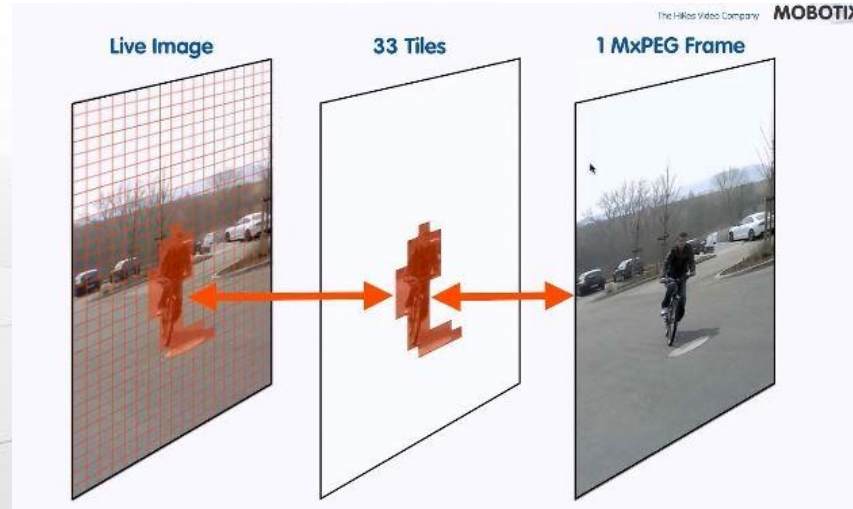
2016-05-21 GMT 08:59:53



Princess Elisabeth Station, Antarctica - M24, 2009

MxPEG vs H.264 Video

- A video codec is the language in which video streams are structured and organized through compression.
- Mobotix engineered MxPEG in 2000
- MxPEG features lip-synced audio
- Bandwidth and storage friendly, on average of 5mb or less per camera stream.



Form Factors - Single or Dual Sensors

- No Day/Night Sensor
 - No cut filter moving back and forth
 - No Re-focusing
- Color and B&W Configuration
 - Color for day time
 - B&W for low lux situation
- Different Field-of-Views
 - Point in two directions
 - ONE wide angle and one tight shot
 - License Plate sensor and wide angle
- Panoramic 180° Views
- Thermal Sensors and Optical Overlay
- Environmental Sensors with Optical



Form Factors - Indoor, Outdoor, or Vandal Housings

- Outdoor Housings
 - IP65 or IP66
 - Most have audio
 - PIR, Temp. sensors
- Indoor Housings
 - No environmental ratings
 - Must purchase an audio model
 - MxBus is an add-on board
- Vandal Housings
 - Bullet Proof
 - IP65, IK10++
 - Built to Order



Field of View - Angles, distance, and focal length



[MOBOTIX Planning Tool for Optics](#)

What's in a Camera?

<u>Body</u>	<u>Sensor or Lens</u>	<u>Mount</u>	<u>Accessories</u>
1- MX-D15Di-Sec	1- Mx-O-SDA-S-6D079 1- Mx-O-SDA-S-6D119	1- MX-D15-OPT-WHMH-Set	1- MX-Overvoltage-Protection -Box-RJ45
1- MX-D15Di-Sec	2- B041	1- MX-WH-Dome	1- Mx-O-SDA-P-6D6D
1- MX-M15D-SEC	1- Mx-O-SMA-S-6D041 1- Mx-O-SMA-S-6L079	1-MX-MH-SecureFlex-ESW S	1- MX-OPT-RS1-EXT
1- MX-c25-D016-AUD			

1 - D15, 45° day / 31° day lens, corner mount, surge protection box	2 - D15, panoramic color, wall-mount
3 - M15, 90° day / 45° LPF, pole-mount, RS-232 box	4 - C25, color fisheye, with audio

Break time

15 minutes

(Please copy the jumpdrive files to your laptops)

Camera Programming and Web UI

- User - admin
- Password - meinsm
- Camera default IP is unique
- Default IP sticker is on the camera
- Browser agnostic, IE for audio
- Operating system agnostic
- Independent camera programming



First Boot Wizard - Key Notes

- Passwords!! If you forget the passwords the camera **MUST** be shipped to Germany and it will cost hundreds of dollars and take weeks to reset.
- Time Zone must be set correctly within the entire project. NTP service is a must have device.
- Camera name can be changed at any time, but the default is the IP address.
- The camera can have two IP addresses. One as the default and one for the local network (192.168.x.x).

Wizard Setup - Key Notes

Quick Installation Factory Reset	Quick Installation Security	Quick Installation Public Access Settings
<p>In order to obtain a valid configuration, it is recommended to reset the camera configuration to its factory defaults.</p> <ul style="list-style-type: none"><input checked="" type="radio"/> Dismiss current configuration and continue with factory defaults. Note: the settings for users and their passwords will not be changed.<input type="radio"/> Modify the current configuration.	<p>Access to the camera is managed using a <i>user name</i> and <i>password</i>. The factory-preset administrator of the camera has the name admin and the password meinsm.</p> <p>For reasons of security it is strongly recommended to change the default password of the administrative account!</p> <ul style="list-style-type: none"><input checked="" type="radio"/> Do not change the settings for admin user and password.<input type="radio"/> Set a new password for the admin user: Password: <input type="text"/> Retype Password: <input type="text"/> <p>Make sure you write down the password and store it in a safe place!</p> <p>Note: If the administrator password is no longer available, you will have to send the camera back to MOBOTIX for a factory reset!</p>	<p>Per factory default, the camera allows public access without authentication. Access to live images, stored events as well as image and event settings is thus possible without any restrictions. It is highly recommended to deny public access in high-security environments.</p> <ul style="list-style-type: none"><input type="radio"/> Deny public access.<input checked="" type="radio"/> Allow public access.
<p>Close Reset Page < ></p>	<p>Close Reset Page < ></p>	<p>Close Reset Page < ></p>

Wizard Setup - Key Notes (continued)

Quick Installation Country Settings

Select the timezone that is applicable to the location of the camera.

Timezone:

Current camera time: 2017-05-02 17:40:30 CEST

Hint: you can set the camera time in **Admin Menu > Time and Date**.

Quick Installation Audio Settings

The camera has a built-in microphone and speaker. MxControlCenter can transmit the audio channel from a computer to the camera and back using a TCP/IP connection. If you press the camera's R key, the camera will announce its network data over the speaker.

Activate the following devices:

Microphone
 Speaker

Note: if you need to permanently deactivate the microphone, open **Admin Menu > Speaker and Microphone**, click on **More**, and then on the **disable** link.

Quick Installation Store Configuration

Users and Passwords
Users and passwords will not be changed Public access is enabled.
Ethernet (LAN) On
IP address 10.17.235.28 Network Mask 255.0.0.0
Routing not configured

If you are satisfied with this configuration, press **Store Configuration**. Otherwise, go back to the corresponding page and change the configuration.

Lunch time

45 minutes

Camera Adjustments - Key Notes

General Image: Size, Image Quality, Frame-Rate, Display Mode

Exposure: Exposure Time, Frequency of Power Supply

JPEG: Video Codec, JPEG Quality

Text & Display: OSD “**Camera IP: ~N ^IR Exposure Time ^Er FPS ^hj Firmware \$(ID.SWV)**”

Symbols > Scroll Chart > AS

Event Control - Key Notes

- General Event Settings - Arming = Enabled
- Event Overview - This is where triggers are defined and enabled, “Video Motion, Activity Sensor, PIR”
- Action Group Overview - This is where triggers are combined with actions to create macros
- Recording - This is where you configure the recording parameters such as motion triggered recording

Storage Location and Settings

- The microSD card is the default recording location
- There is no hardware limit to the microSD card size
- Must remove the storage target before swapping microSD cards
- microSD cards must be formatted before the camera can target the card
- microSD cards can be formatted inside the camera
- There is no external bandwidth used if the camera is targeting the microSD card and there are no viewing connections to the camera
- Video playback will be faster when stored on a NAS compared to the microSD card



Did you know?

ABP offers pre-formatted microSD cards for your MOBOTIX cameras?

Add it to your next order!

Setting up Storage

- SD Card by default, change to NAS (Case sensitive)
- Primary target “SMB/CIFS” File Server
- File Server IP - 10.0.0.254
- Directory/Share - data
- User Name - admin
- Password - meinsm
- File server test should now be usable
- Always set a storage limit to prevent storage hogging

The screenshot shows the 'Storage on External File Server / Flash Device' configuration page for a MOBOTIX c25 camera. The interface is organized into several sections:

- Format Storage Medium:** A dropdown menu is set to 'USB Stick / Flash SSD' with a 'Format...' button. A note states: 'Select the medium to be formatted and click the button to start formatting. Note: The active Storage Target must be deactivated and the Camera restarted to format it.'
- Storage Target:** The 'Primary Target' is set to 'SMB/CIFS File Server', which is designated as the 'Recording Destination'.
- File Server Options:**
 - File Server IP:** 10.0.0.254. Note: 'IP address of server. Note: The server needs to be reachable via the network.'
 - Directory/Share:** data. Note: 'Directory/Share on the server to be mounted by the camera. Hint: When using CIFS, you can enter the share directly (e.g. \$data or data). When using NFS, you need to enter the path to the share (e.g. /path/to/data). Note: The server has to grant mounting rights to the camera.'
 - User Name:** MOBOTIX. Note: 'User name of the camera account on Windows.'
 - Password:** masked with dots. Note: 'Password of the camera account on Windows.'
 - File Server Test:** 'Start Test' button. Status: 'File Server is usable'. Note: 'Test the file server connection with the settings shown.'
- Storage Options:**
 - MxAnalytics Storage:** Disabled. Note: 'Activate data storage for MxAnalytics.'
 - Event Logging:** Enabled. Note: 'Activate event logging.'
- Storage Limits:**
 - Time to Keep:** 14 Days, 0 Hours, 0 Minutes. An 'Unlimited' checkbox is present. Note: 'Maximum time to keep alarm images and sequences before removing. For MxFFS storages, even the retrieval on unchanged storages is limited to the recording time plus this duration.'
 - Storage Size:** 4TB Limit is checked. Note: 'Maximum size in gigabytes used to store alarm images and sequences.'

At the bottom, there are buttons for 'Set', 'Factory', 'Restore', 'Close', and 'More'.

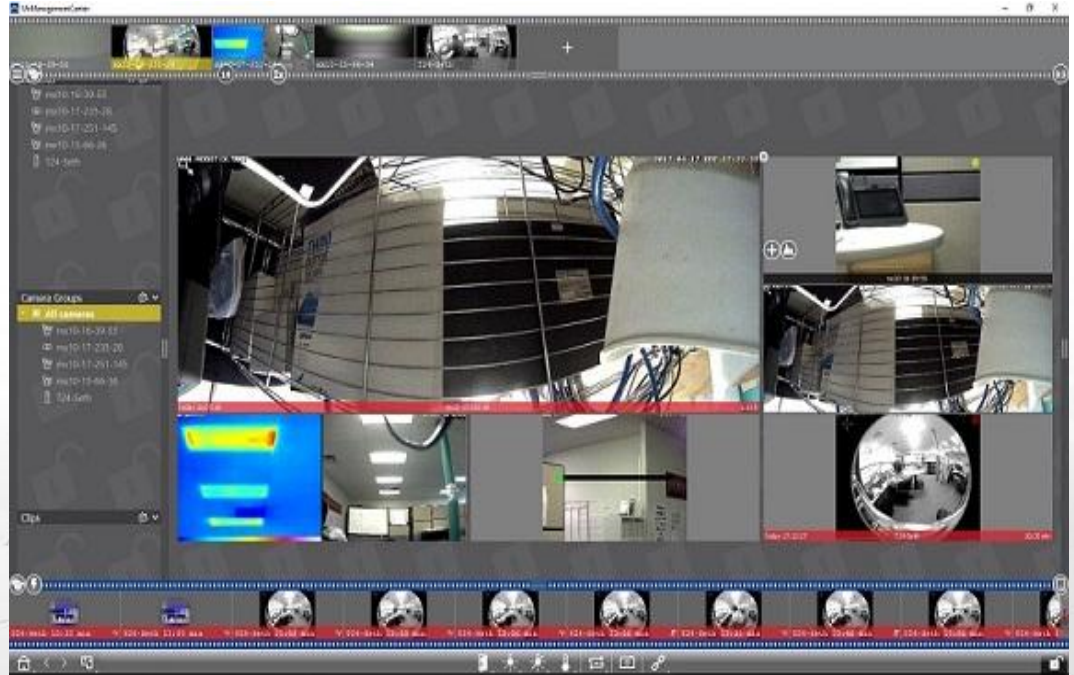
Break time

15 minutes

(Please copy the jumpdrive files to your laptops)

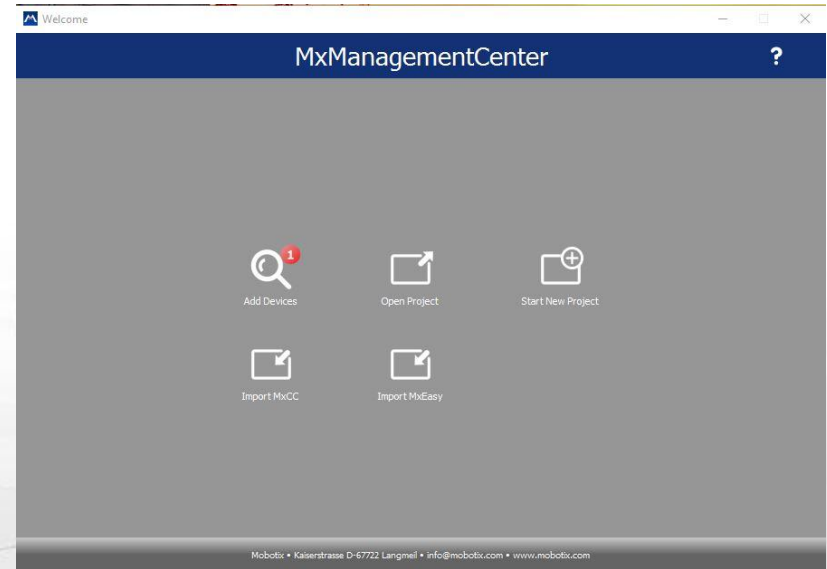
MxManagement Center

- Free software download
- Unlimited amount of cameras
- Full function-set
 - Two-way audio
 - Input & output
 - De-warping
- Can use maps or floorplans



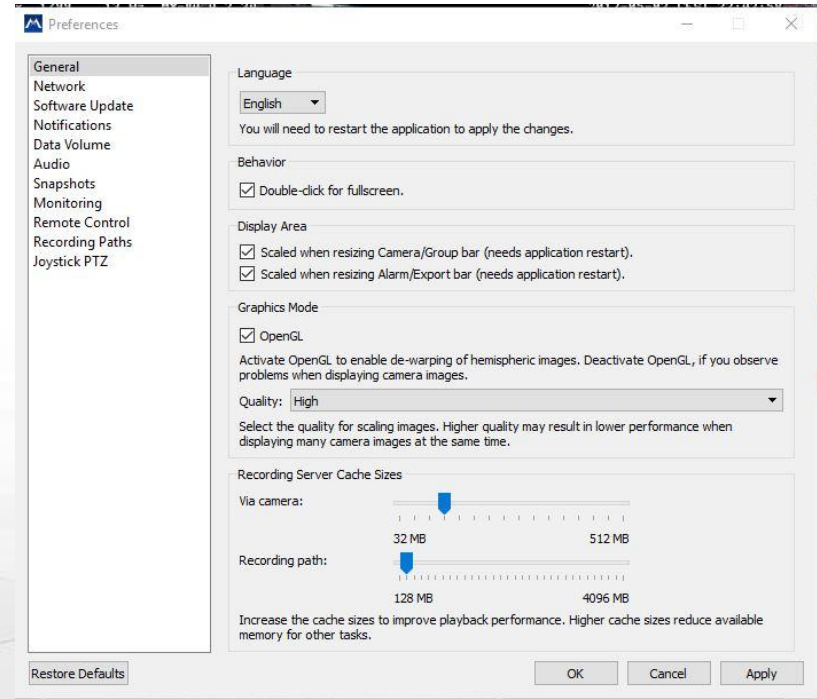
Welcome Screen

- To open the welcome screen:
 - CTRL + SHIFT + 1
 - Hit Alt to open the menu bar
- Cameras can be added manually
- Program saves when closed



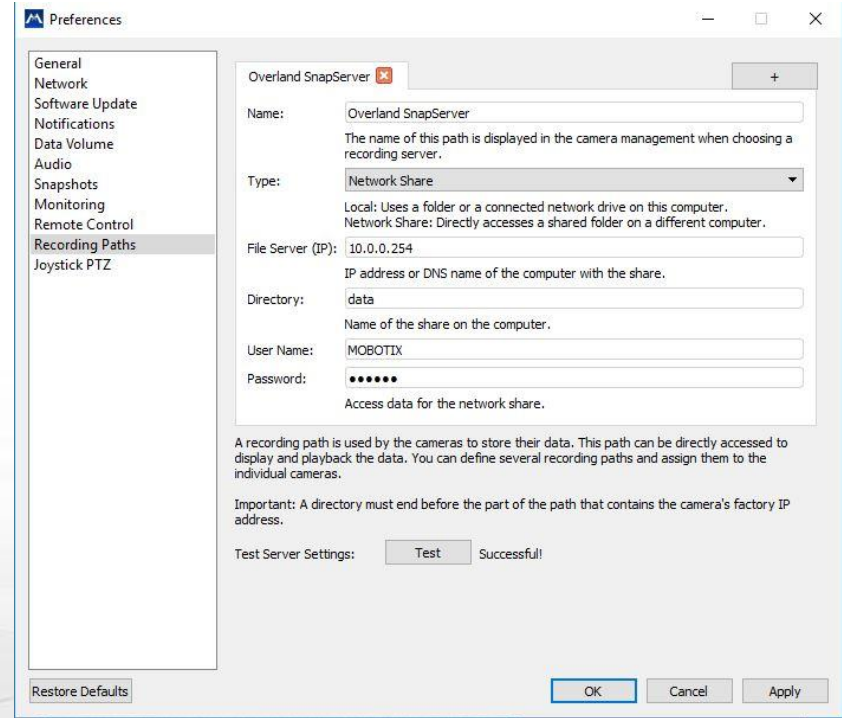
First Time Setup - Preferences Menu & UI

- To show the Menu Bar, hit Alt
- General > Display Area > Check both boxes to scale
- General > Graphics Mode > Check OpenGL if using Windows.
- CTRL + SHIFT + 1 for the welcome screen
- Locked/Unlocked symbol allows adjustment
- Click and Drag divider bars to expand
- Divider bar icons slide to change affect
- Right clicking opens menus



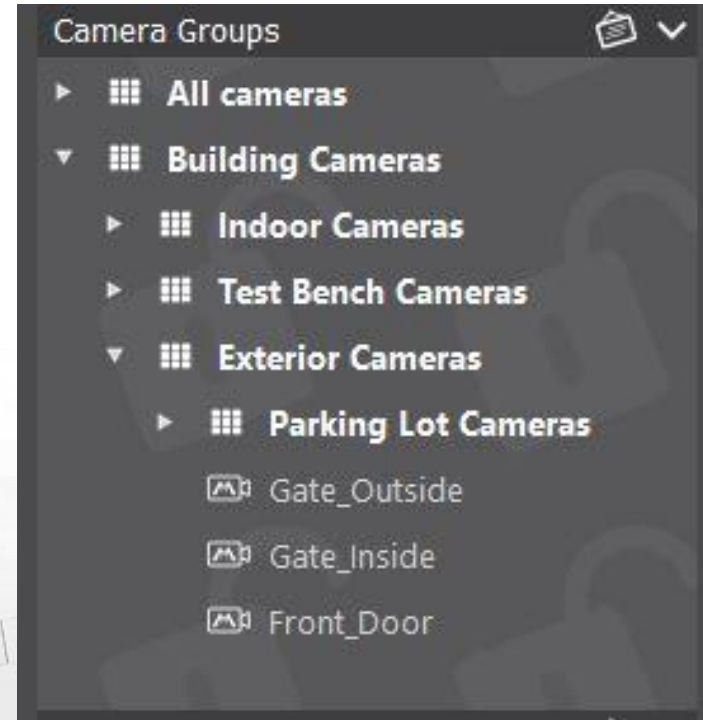
MxMC Recording Paths

- Defining recording paths will speed up video playback
- Multiple paths may be configured
- Paths are assigned to each camera



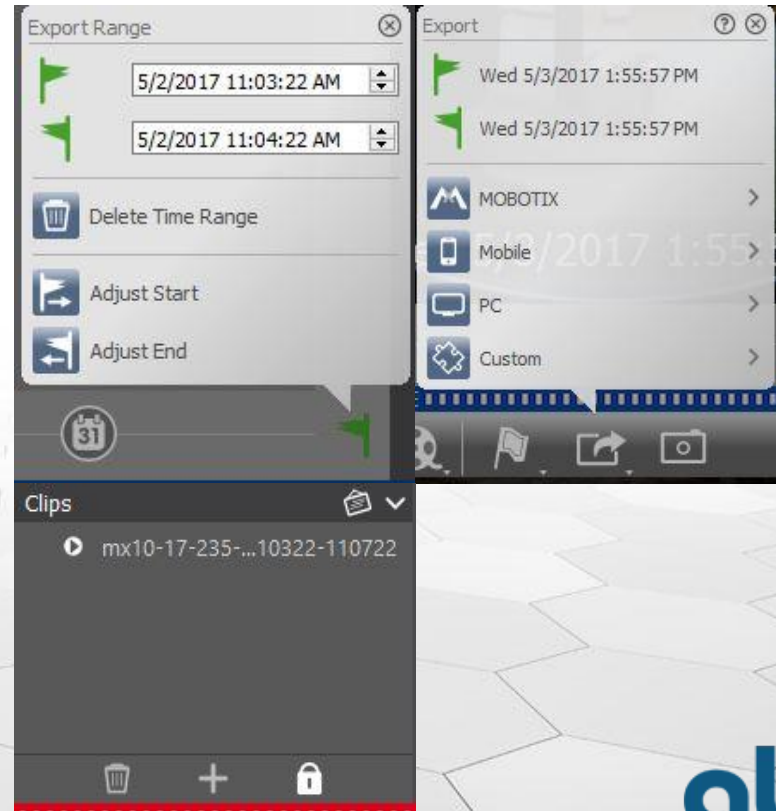
Creating Groups and Layouts

- Cameras can belong to any number of groups
- Groups can be layered
- Drag the camera to the trashcan to remove it from a group
- Layouts can be made per group
- Layouts are adjusted using the slider icons



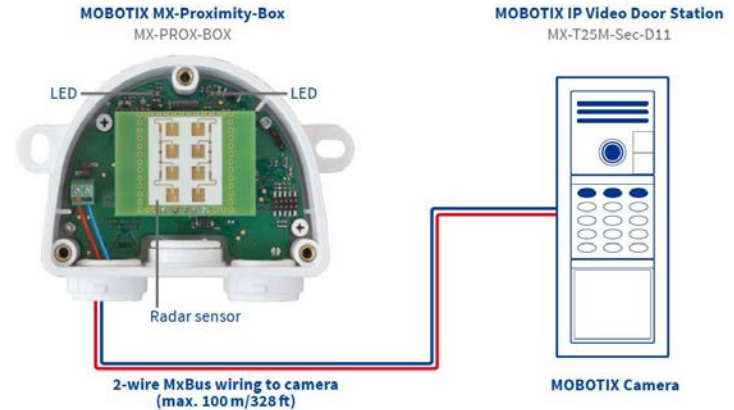
Video Playback and Recording

- Can search by events or time to find the clips needed
- Export through MxPeg or AVI
- Can Export at native or adjust video settings
- MxPeg will require a plug in to play, MxMC, or VLC player
- MxPEG files will be much smaller



Beyond Just a Camera

- MxBus: 2-Wire powered data connection
- Input/Output connections, RS-232
- GPS, NTP, LIDAR add-ons
- T25 Door Station and Access Control
- MxMultisense environmental
- IP Notify, Messaging, Master/Slave
- 2-Way Audio
- Home automation



What Can ABP Provide?

- Pre-sales engineering
 - Typically at no cost
 - On-site surveys
 - Registered project discounts
- Equipment provisioning, network equipment/cameras/NAS/communications
- Post-sales support and technical support plans
- On-going training and new product awareness campaigns

