2020

ARKIV™

Table of Content

Established in 2005, Inaxsys is a unified security solutions builder capable of supporting any organization's security requirements - from access control to intelligent video management software to IP and HDCVI cameras and much more. In a highly fragmented industry, we have grown to become more than just a supplier. Time being our clients' most precious asset, we've adapted our methods and business structure to provide them with the best and simplest experience
to ensure the protection of people, information and assets. Directly from us, our clients can:

- Purchase from an extensive range of security products and software;

- Request custom-made products and solutions

- Get immediate support from our technical experts

- Book a training session to get additional knowledge

Inaxsys has been consistently growing for the past 15 years. In an industry dominated by a few global players, we've been able to achieve recognition by making our customers our number one priority. Technology changes and evolves. We believe that developing and supplying the latest technologies is vital to simply stay in business. It's a no-brainer. What really sets us apart is the expertise of our team and their dedication to go beyond what's expected.

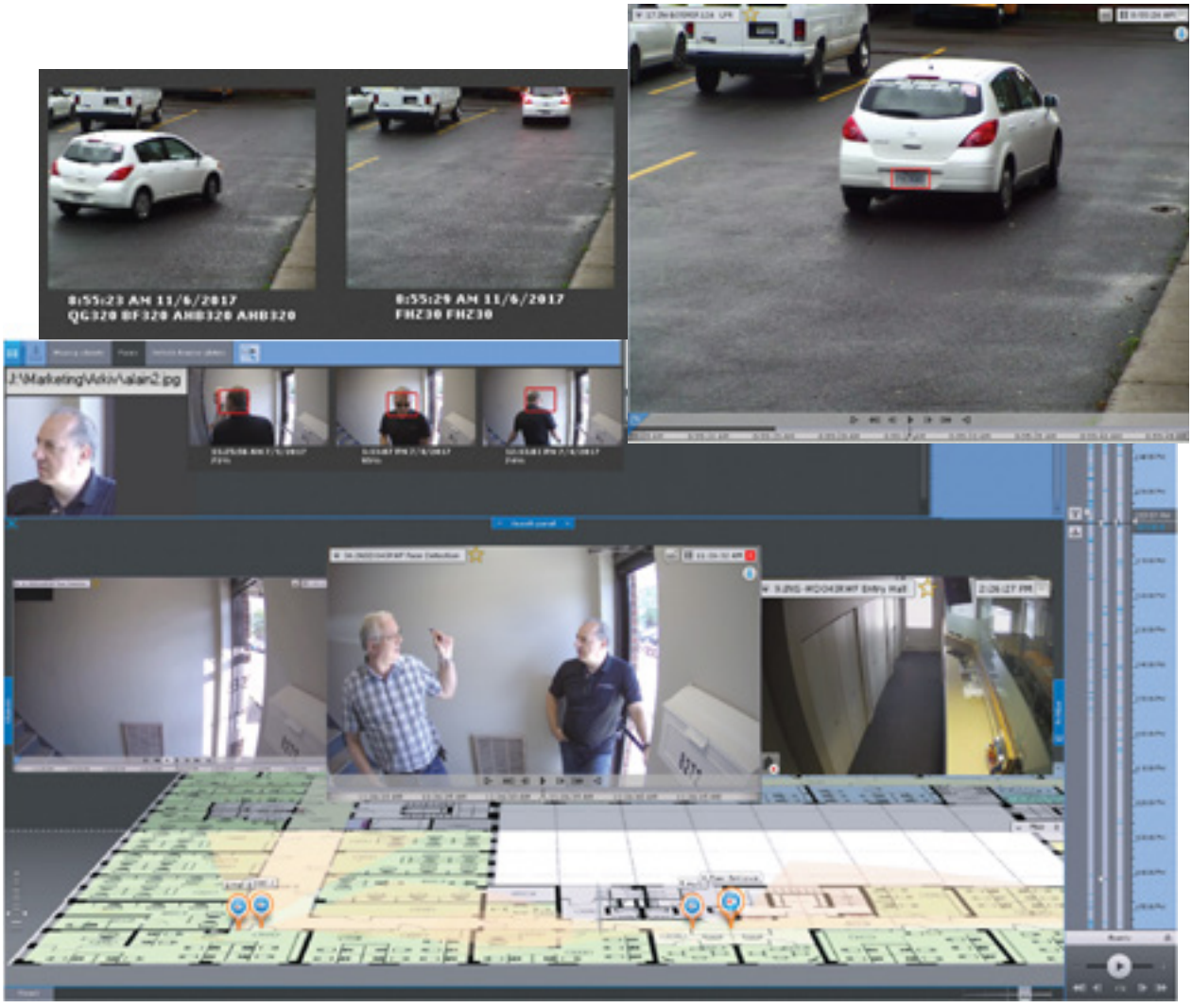
Our people is our true pride and the reason why we've been succeeding for so long.

Face and License Plate Search

To search for a person, the user uploads a picture and the system compares the face on the picture with the face descriptions stored in the database. The search results shows all the scenes with people who look similar to the face on the picture.

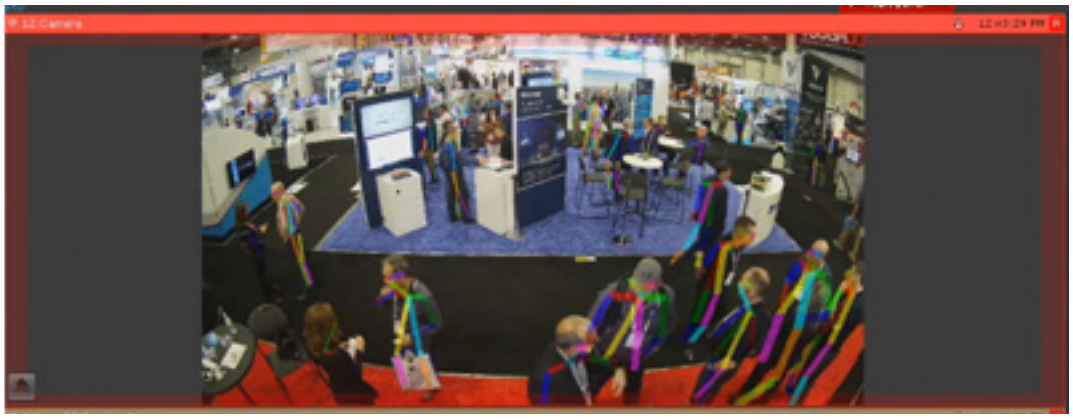
License Plate Recognition

Recognized license plate numbers are saved to a database.
The algorithm involves advanced heuristic methods (such as substitution of similar looking letters/numbers) to identify as many potential matches as possible.



Active Shooter & Behavioral Analytics

Arkiv's active shooter feature detects any potential armed individual in real-time. When a raised firearm is detected, an alarm is triggered which alerts on-site security. Behavioral analytics can easily recognize any unsafe situation. It will detect distinct humans poses like someone with arms raised or someone crouching next to an ATM.

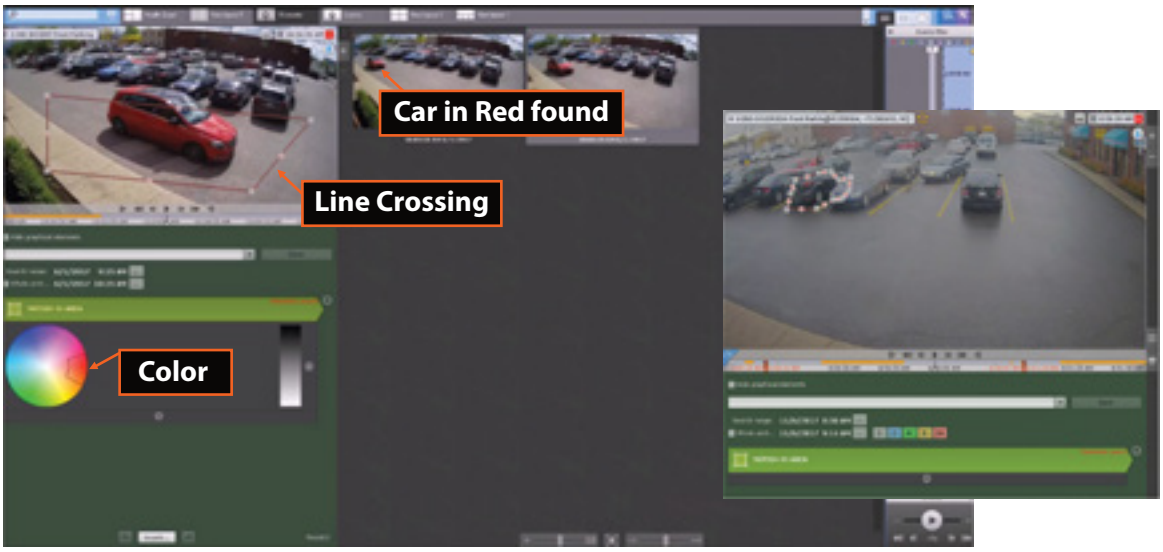


Fire and Smoke Detection Tool

With the Intelligent fire and smoke video detection tool, you'll be safe at all time. Operating in areas where any type of sensors are ineffective, Arkiv will help provide an early detection of fires. With this feature, you will see a significative reduction of damages and risks.

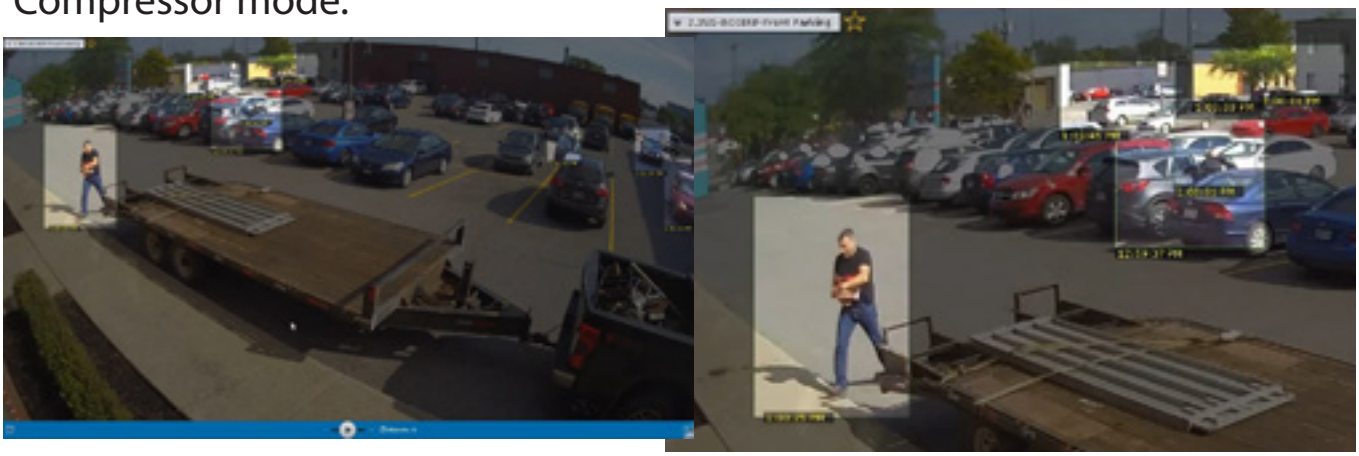
Post-Analytics

Post-Analytics can analyze live videos and also generate a stream of metadata with a short description of moving objects found in the video. It will also record along with the video stream. To find a specific event you have to search your archive using different features such as line crossing, motion in the area, the color or the size of an object and more. The results will appear after a few seconds in a thumbnail. It is possible to save your research on any camera.



Timelapse Compressor

Timelapse Compressor Tool can capture any object in movement at different times. It will display in a condensed visual synopsis all the activity recorded by your camera. Scrolling through multiple hours of footage is a thing of the past! This tool will make your research easier and faster. It is also possible to use *Face and License Plate Search* and *Post-Analytics* while in Timelapse Compressor mode.

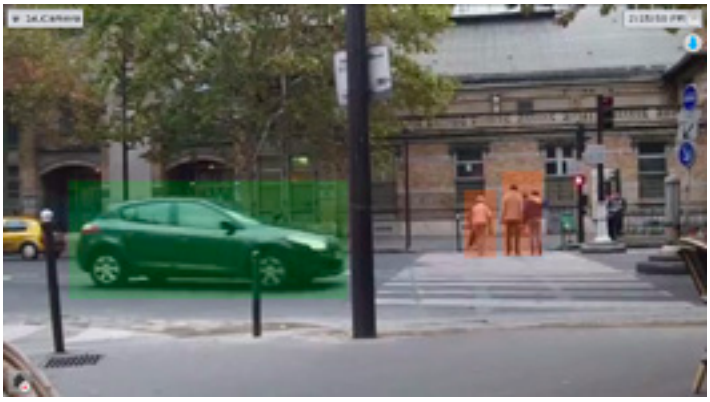


Tracking and Counting Specific Object Types

When applied to the Object Tracker, the neural network accurately detects specific types of moving objects, i.e. humans or vehicles. This technology can filter out false alarms in busy scenes where multiple moving objects might interfere with the results. You can apply any conventional video analytics (loitering, line crossing, object appearance and disappearance, etc.) to the detected objects.

The Neural Counter counts moving or static objects of a specific type within the scene, i.e. cars in a parking lot, people on the sales floor, wares moving on a conveyor belt, etc. This is a valuable tool for non-security-related solutions.

Neural networks can meet the needs of a particular facility by learning from video material obtained onsite.



Increase your AI performance by up to 8.3 times!

OpenVINO™ is a toolkit for computer vision applications which extends workloads across Intel® hardware (including accelerators) and maximizes performance. Intel® Distribution of OpenVINO™ toolkit is applied for neural network inference in Inaxsys AI analytics tools. Arkiv supports the latest Intel® Vision Accelerator Design products with Intel® Movidius™ VPU and Intel® Arria® 10 FPGA:

- Neural Compute Stick 2
- Mustang-V100-MX8
- Mustang-F100-A10

Inaxsys benchmarked neural network inference performance using OpenVINO™ toolkit on an Intel® Xeon® E5-2630 v3.
The score is 8.3 up!

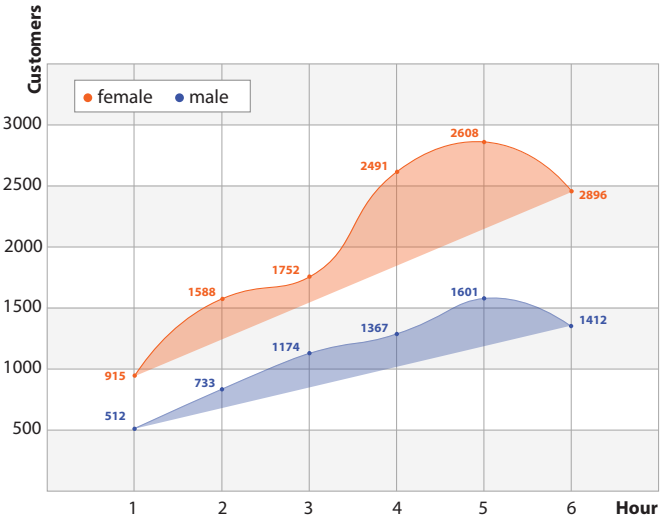
Offline Analytics

Import any video footage and analyze it with forensic search. The following functions can be applied to imported videos:

- Post-Analytics
- Timelapse Compressor
- Facial Search
- License Plate Search

Heat Map

A heat map is a graphic representation of visitor activity (visitor numbers/ time spent) in different store areas. The heat map can be generated from tracking data for all objects or objects specified with forensic search criteria.



POS Supervision

Arkiv receives data from cash registers and links it to its video feed. The receipt text is superimposed on the video or displayed in a separate panel. This offers a full picture of what's happening at the checkout. You can use the data from the receipt to retrieve POS transaction videos from the recorded footage.

Visitor Counter

Using the visitor counter tool will help you keep track of every individual entering or exiting your secured area. This tool is great to estimate your sales rate and also for market research.

Queue Management

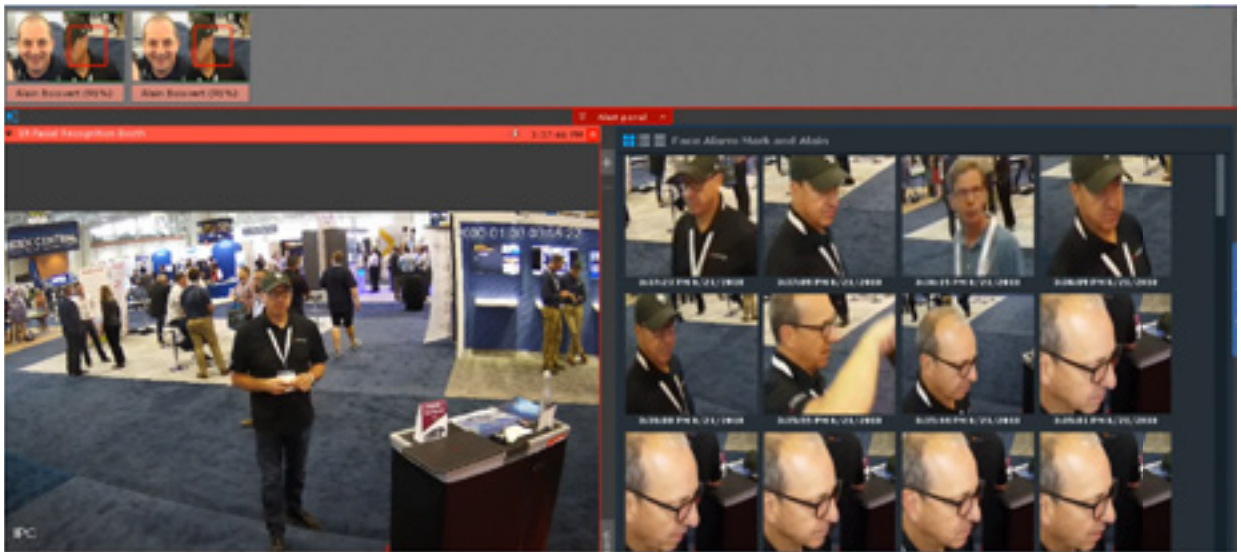
Queue management detects the number of people in queueing areas. Knowing actual customer count helps manage your human ressources to improve the customer experience.

Age and Gender Estimation

The facial recognition tool can estimate the age or gender of visitors. Any saved data can be used as marketing tools, to make analysis, and much more.

Facial Recognition

Configure an automatic scenario by uploading a picture in the database. You will now receive an alert everytime Arkiv recognizes the person on the picture. This is ideal to indicate the arrival of shoplifters or even a VIP customer.



Online Comprehensive Reports

Using POS transaction data, visitor counting, age and gender estimation tool and queue management, you can build your own custom reports. You can obtain reports from any of your stores using the web interface when you are connected to Internet.

Target & Follow Standard

Target & Follow Standard makes surveillance easier by predicting the camera in front of which an object will appear after it leaves the field of view of another camera. For this feature to work, all cameras must be linked to a site map: the position of the cameras and their field of view are specified on the map. The operator selects a moving object to track. If the object leaves the FoV of one camera, Arkiv calculates its trajectory and determines the camera in front of which the object will appear next. The "potential destination" camera is highlighted in the current layout. Target & Follow Standard also works in recorded video: when an object is selected, it immediately switches to the camera footage where it should appear, and the playback starts from that moment.

System Update

Silent servers update

It is possible to update all the servers in silent mode. You need to select the appropriate distribution in the .zip archive or specify a web link. This approach makes updating a system very easy.

Automatic client update

When your Arkiv client connects to the server with a newer version of the Arkiv VMS, you will be prompted to update your client software. Once you received the confirmation, the update process will start automatically.

Frame Merging

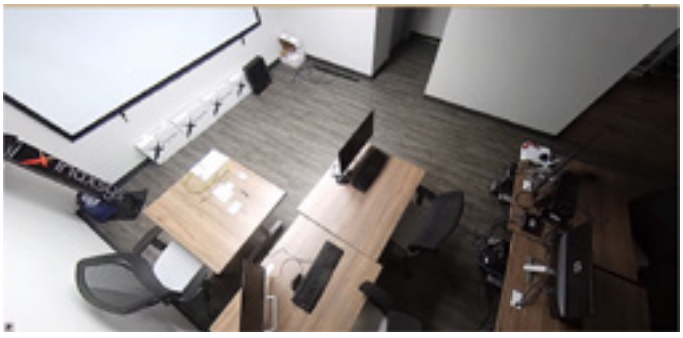
The Frame Merging tool offers different possibilities.

You can:

- Export panoramic videos to standard .avi or .mkv files;
- In the dialogue board, you can select and zoom into any part of the panoramic image;
- With up to 3 camera feeds you can create a panoramic view;

Image Dewarping

Image correction (dewarping) is performed on the GPU of the client workstation without any additional burden on the CPU. Several normal, dewarped images with different aspect ratios are displayed on the client screen. Arkiv supports standard fisheye-lens cameras as well as Immervision panomorph lenses.



Video Footage Management

Support for edge storage

View and sync videos on SD cards

Arkiv supports on-camera (edge) storage. On-camera storage is automatically detected by Arkiv when a camera with edge storage is added to the system configuration. You can display videos that are recorded on the SD card in Arkiv. You can set up continuous replication of videos, audio recordings, and metadata from edge storage.

Archive replication via Interoperability Driver

Centralized storage for vehicle-based NVRs

Video footage can be synced between independent Arkiv systems via the Interoperability Driver. Replication starts automatically when the source server is connected to the destination server. This can be used to centralize video storage of Arkiv-based NVRs installed on vehicles.

Export functions

Enhanced export features for recorded video

- Instant export of still frames and videos from Live Video or Archive mode.
- Export to password-protected .zip file.
- Simultaneous export of recorded video from multiple cameras.
- Manage the size of exported video files: if the file size exceeds the value specified, the video is split into several files.
- Pruning (frame dropping) of exported video.
- Privacy masking: before exporting, select areas to block with solid color in the exported video sequence or image.
- Export of image zones (including dewarped fisheye frames).
- Export of user comments to recorded video

Macros

Arkiv supports flexible configuration of complex system response to any specified set of events. The user can create a macro that automatically performs an unlimited number of actions in the system using IF…THEN logic. Macros allow programming reactions to particular events at system and device level.

Video Wall Management

Manage effectively your video walls and layouts at large distributed sites

- Send any available layout to an Arkiv workstation within the system.
- Draw operator's attention to an event captured by one of the cameras in the layout.
- Show an event to all operators by sending the relevant layout to a video wall.
- Designate any Arkiv workstation with sufficient monitors as a video wall.
- Manage it from any remote client connected to any server within the Arkiv domain.

Interactive 3D Map

Interactive 3D map superimposes camera locations on a site map and displays camera views in the same window. You can instantly pinpoint where a selected camera is located. Cameras in the current layout are color-coded by their status. In Immersion mode, a semi-transparent video is superimposed on the map. This makes it easy to see where an object is located and where it is going.

Autozoom

When an object appears in your field of view, the autozoom feature will automatically enlarge the area of the scene and will follow the object as it moves. This tool works for fixed cameras and also for fisheye cameras.

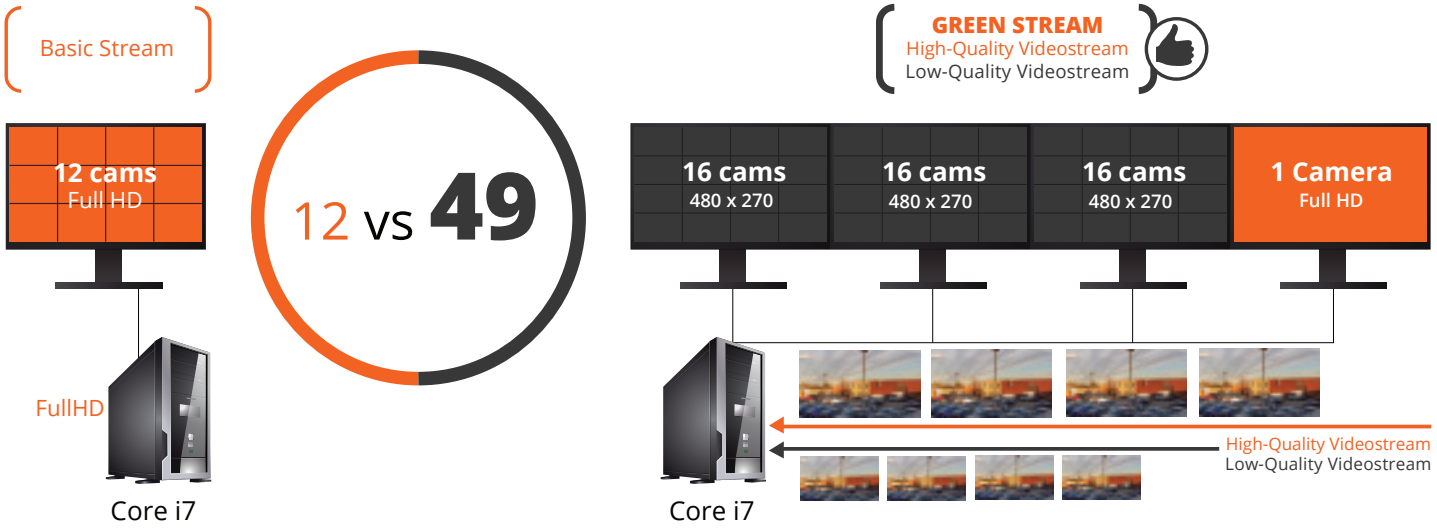
Automatically follows a moving object in a scene

Cross-System Client

Cross-System Client empowers operators or administrators to connect from a single client workstation to multiple surveillance servers on different domains that are not part of the same system. All settings and cameras associated with these servers are consolidated in a single convenient view. This feature may come in handy for retail chains and gas station networks. Now the customer does not have to create a complex distributed configuration that combines all the servers in a single Arkiv domain.

Green Stream

GreenStream feature automatically chooses a video stream from a camera to the server, and then to the client, depending on the resolution at which the video is currently displayed to the client.



Web Client

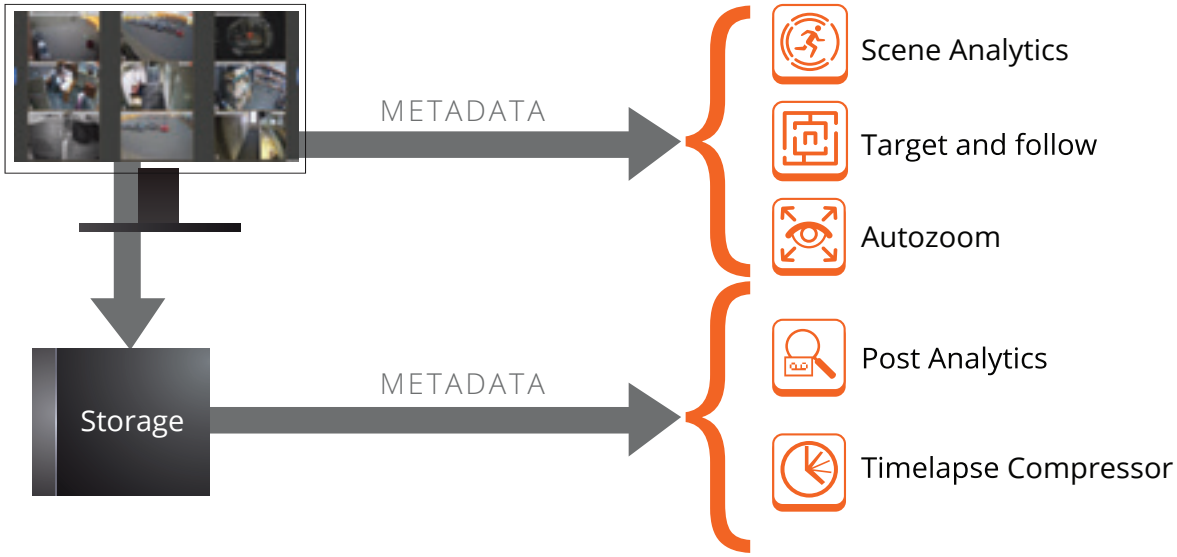
The web client can connect over the HTTPS protocol. The client supports H.264, H.265 and MJPEG compression and can also support desktop client's layouts and multi-streaming cameras. There are multiple things you can do by using the web client.

It is possible to :

- apply digital zoom
- view live and recorded videos with sound
- use bookmarks
- view motion heat map
- view alarm events
- view camera and video archive statistics
- export still frames and videos
- control PTZ cameras
- search recorded video by faces, plate numbers, events, criteria (Post-Analytics), and time intervals (TimeSlice)

Metadata from IP Devices

Metadata is used for real-time video analysis or forensic search. Metadata is generated on cameras themselves, which eliminates the need to decompress videos on the server. The CPU burden on the video server is significantly reduced, which allows the server to handle more video streams.



Situation analysis detection tools — a bunch of detection tools used to analyze movements in a camera's field of view. This includes abandoned object and line crossing detection.

Post Analytics — generate metadata at the moment of recording for fast, precise analysis. To find an event of interest, just enter the necessary criteria: motion in zones, crossing of a line, size, color, direction, speed of object motion, and more. Thumbnails of relevant video are shown in seconds.

Timelapse Compressor — get quick visual summaries of all moving objects in a scene. A short video clip shows all VMD events with true-to-life speed of objects. Click an object of inte-rest to jump to the relevant source video.

Autozoom — easily monitor moving objects with automatic digital zoom. Autozoom shows close-in video for parts of the FoV that contain a moving object and follows it as it moves, just as a movie camera does when doing a close-up shot.

Target & Follow — lock on to and track moving objects, simultaneously getting the "big picture" of everything happening at a protected site while obtaining detailed imagery of the objects moving around it *(more information on page 14)*.

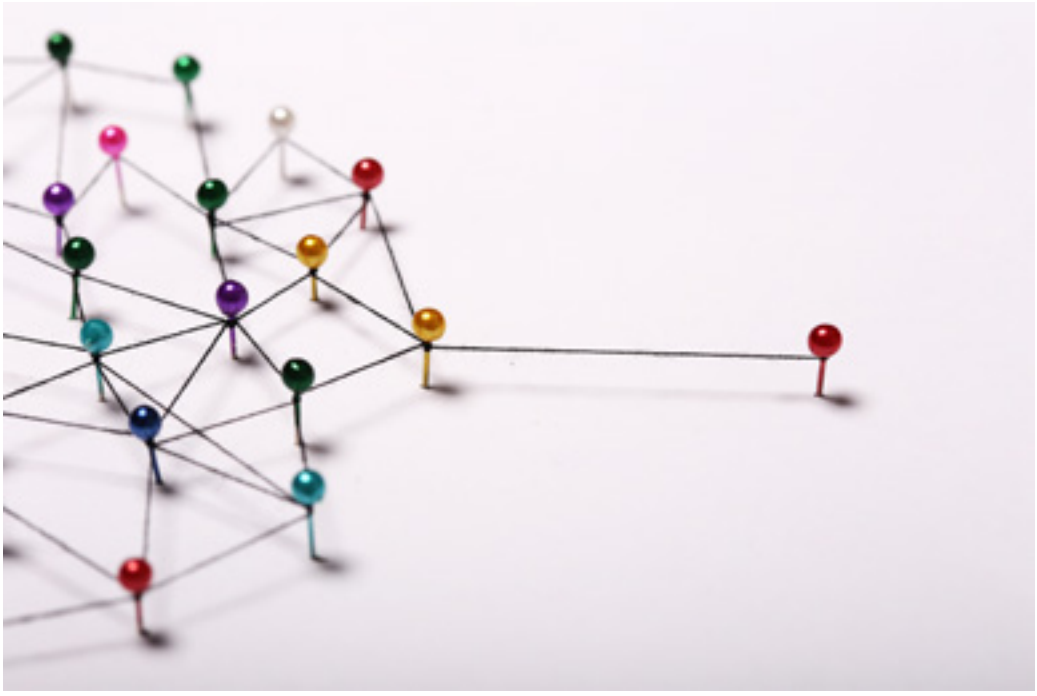
External Event Support

Inaxsys is all about giving a unified solution and Arkiv is no exception.

Connect to external devices and systems: access control devices, security control panels, third-party software, and more.

With Arkiv you can:

- search events by a character string
- save them into its database
- accept external events
- show events as captions on top of video
- cross-reference events with recorded video
- display event data in real time in a separate panel



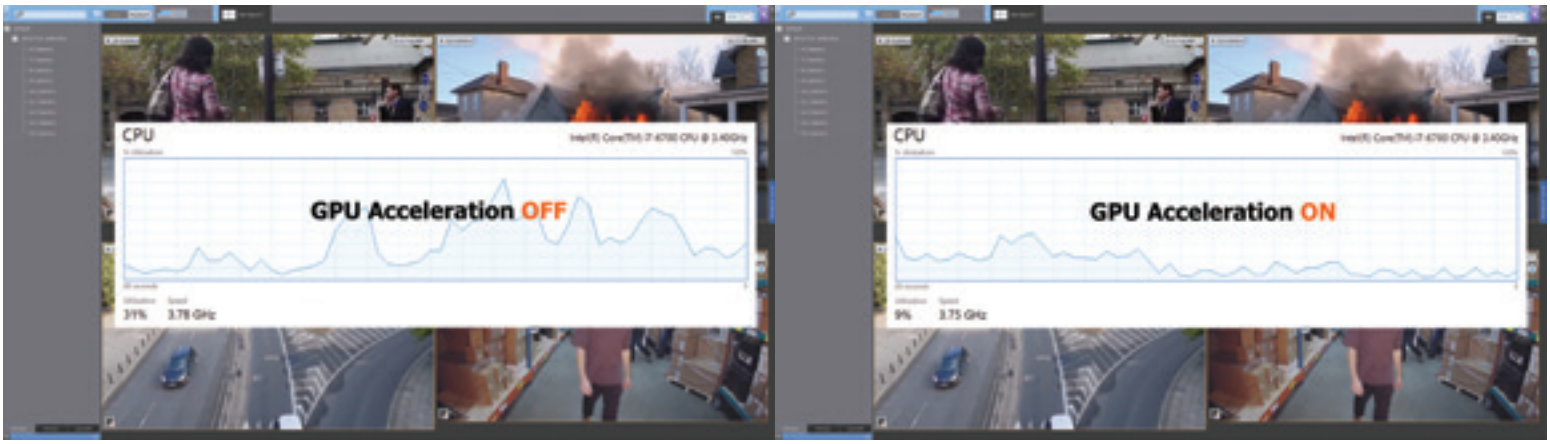
UDP and Multicasting

Arkiv has multiple tools to help you reduce your bandwidth consumption and to make your security systems more efficient. By using a server to remote your computer via UDP, you will be able to stream live videos. The multicasting feature will free your network capacity and will optimize resource usage.

Hardware Accelerated Video Decoding

GPU Acceleration provides faster results and reduces video footprint on the server CPU performance. With the Arkiv GPU Acceleration you will:

- Dramatically improve decoding times
- Be able to connect more cameras to a single server
- View more video channels on the client computer
- Allow servers to handle more concurrent video streams at higher resolution



Failover

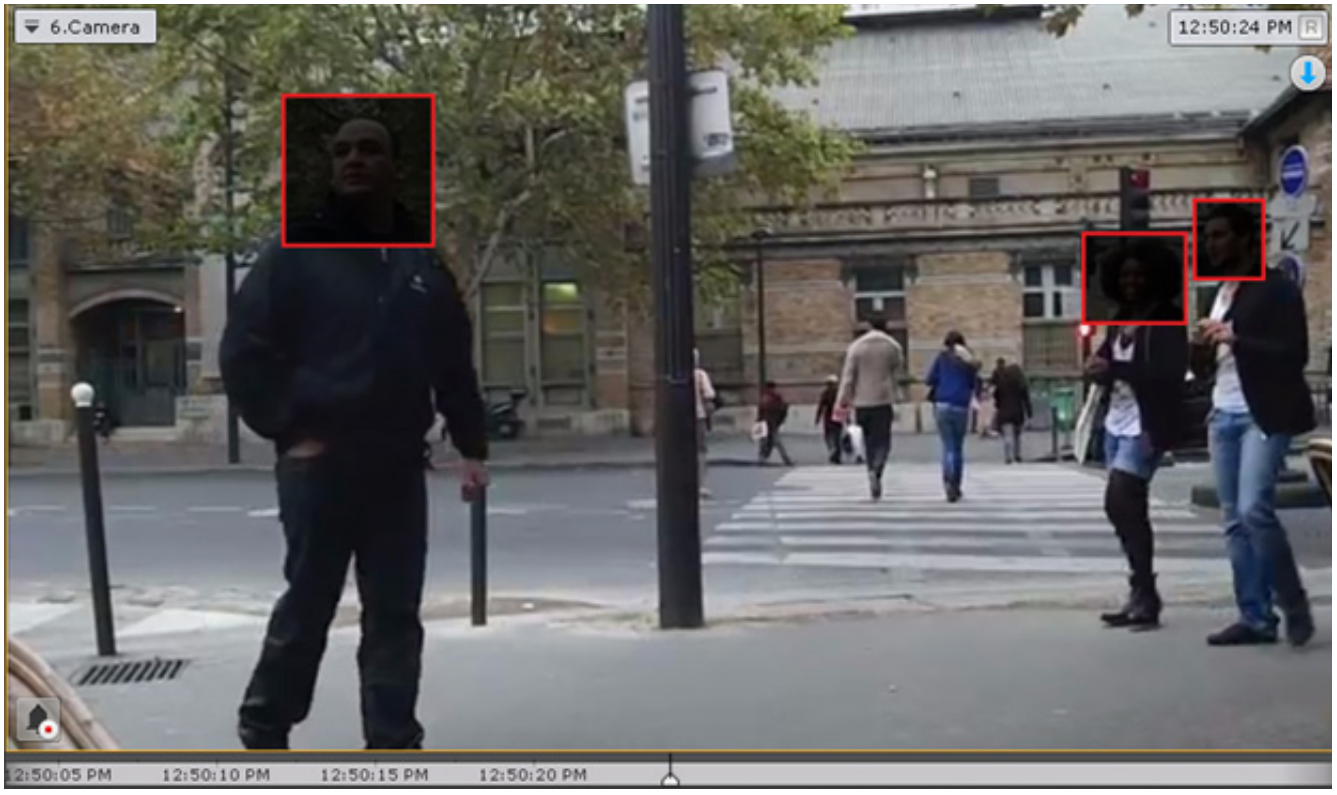
Failover quickly switches to a standby server when communication with the primary server is lost. The standby server automatically takes over all functions from the offline or malfunctioning server. Live video streaming and recording resume immediately. You can suspend any server in the cluster with no system downtime, e.g. for maintenance.

LDAP Authentication

This feature makes it possible to eliminate redundant user administration tasks for the sysadmins in large companies. Operators can log into a surveillance system by entering their domain credentials. The sysadmin connects LDAP directory to Arkiv and selects which users to add. He can also associate VMS access rights with corporate directory groups. When a user profile is deleted on the LDAP server, it can be automatically deleted in Arkiv.

Privacy Settings

This tool is essential for compliance with GDPR (The EU General Data Protection Regulation). You can mask any static or moving objects in recorded video from those in specified user roles. You can also hide faces using the face detection tool. The objects or faces will be blocked with solid color while viewing and searching the archive, aswell as on exported videos.



Security Policy

Configure the user security policy:

- set a minimum of characters for the password
- store user password history
- set a password renewal date
- set the required password criteria
- prevent multiple simultaneous sessions
- block the user and specify the ban time/number of failed login attempts.

Each user event includes the user's IP address. When accessing the server, the MAC address of the computer is registered in the system event log. The Export Start event includes the user name. You can whitelist users to the server access by setting a range of permissible IP addresses. Users can also access the server with administrator confirmation.

Arkiv NET - Cloud Service

ArkivNET is a free cloud service that connects to your Arkiv surveillance servers via Internet. SSL encryption ensures secure data transmission.

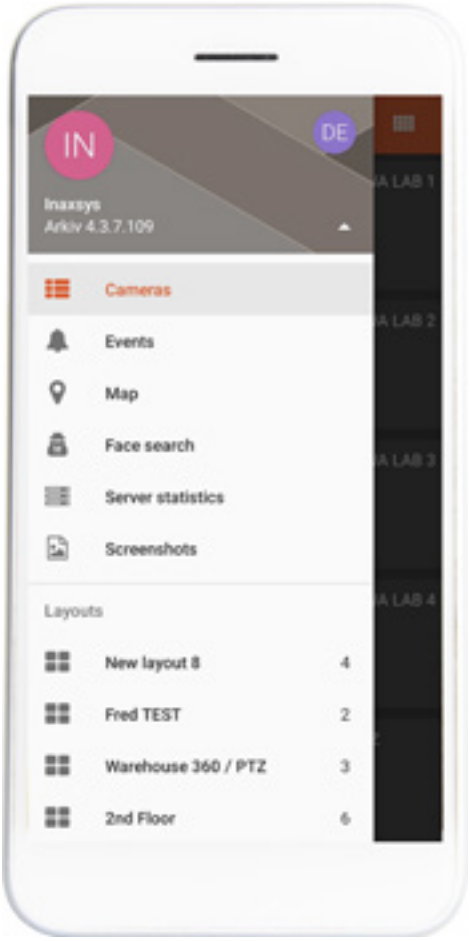
You can:

- use all Web Client's features for live and recorded videos.
- create users and roles for your Arkiv VMS.
- receive email notifications on events of pre-defined types. Event videos/ still frames are saved to the cloud and can be viewed by clicking the link in the notification message.
- send push notifications on certain events to mobile clients.
- store and activate Arkiv license files.

Mobile Client

Our apps give multiple possibilities - you can:

- use maps
- use digital zoom
- control PTZ cameras
- run macros
- work with fisheye cameras
- receive push notifications
- view live and recorded video



Video Management Software

Number of servers in the distributed system	Unlimited
Number of servers which simultaneously transmit video images to a client	Unlimited
Number of camera views displayed simultaneously on a clients screen	Unlimited
Number of video input channels per server	Unlimited
Number of simultaneously processed signals from microphones	Unlimited
Number of audio output channels (speakers, headphones, etc.)	See your Sound Card specs
Number of PTZ devices used	Unlimited
Number of event sources (POS devices)	Unlimited
Number of objects simultaneously tracked by the Object tracker	Up to 25
Number of license plate recognition channels	Determined by the license; there is no upper limit
Number of face recognition channels	Determined by the license; there is no upper limit
IP device support	More than 9900 models of IP devices supported including more than 3000 models of network devices integrated using proprietary protocol and 6900 ONVIF compliant devices, and this list is constantly growing. You can add support for new devices to the system by updating the Drivers Pack software module. Reinstallation of the entire system is not required for this.
Support for analog cameras	Through Stretch and Yuan Cards
CPU support	32-bit (x86), 64-bit (x64)
Video compression algorithms	MJPEG, MPEG-2, MPEG-4, MxPEG, H.264, H.265, Motion Wavelet, Hik264 (only for x86)
Available video image resolutions	Resolutions supported by the video cameras
Support of embedded video camera video analytics	Yes
Support of touch-sensitive monitors	Yes
Core Functions	Automated device discovery. Pre-event video recording. Simultaneous recording to archive and real-time surveillance. Capability to use different streams from a camera for recording and display. Capability to choose the write location and recording parameters for various cameras and for various events that initiate recording. Synchronous playback of video footage recorded by several cameras. Playback with fast- or slow-motion in forward or reverse. Audio and video analytics. Archive navigation through events recognized by video analytics or tagged by operators. Event-driven response scenarios: recording, alarm generation, activation of relays and starting PTZ camera through user defined presets, notification by SMS, e-mail or through camera speaker output. Continuous or alarm recording (including initiated by an operator). Multi-level user rights. Support for widescreen displays and cameras, and touch screen displays.
Special Features	Cloud service for remote monitoring and situational awareness. Deep learning video analytics (fire and smoke detection, human and vehicle detection). Multiple criteria forensic search of recorded video. Face and license plate search. Motion events summary. GreenStream bandwidth optimization technology. Support for Intel Quick Sync hardware video decoding. UDP and multicast video streaming. Motion detection recording by default. Bulk configuration of cameras. Support for LDAP authentication. SolidStore a proprietary highly-efficient file system for video storage. Micromodule-based and decentralized architecture for unprecedented reliability. Failover service.
OS	Windows 7 SP1 (x86, x64), Windows 8 (x86, x64), Windows Server 2012 (x64), Windows Server 2012 R2 (x64), Windows Server 2016 (x64), Windows 10 (x86, x64), Windows 10 IoT (x86, x64), Windows Server 2019 (x64), Windows Server IoT 2019 (x64), Debian 9 (x64), Debian 10 (x64), Ubuntu 18 (x64), Ubuntu 19 (x64), Ubuntu 20 (x64)

Telephone: +1 (514) 648-6648
Toll Free: 1-888-648-6648
Fax Number: 1+ (514) 667-0745
Email: sales@inaxsys.com
Website: www.inaxsys.com

Support: 1-888-648-6648
Email: support@inaxsys.com