NETFLOW Professional

User Guide

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Revision History

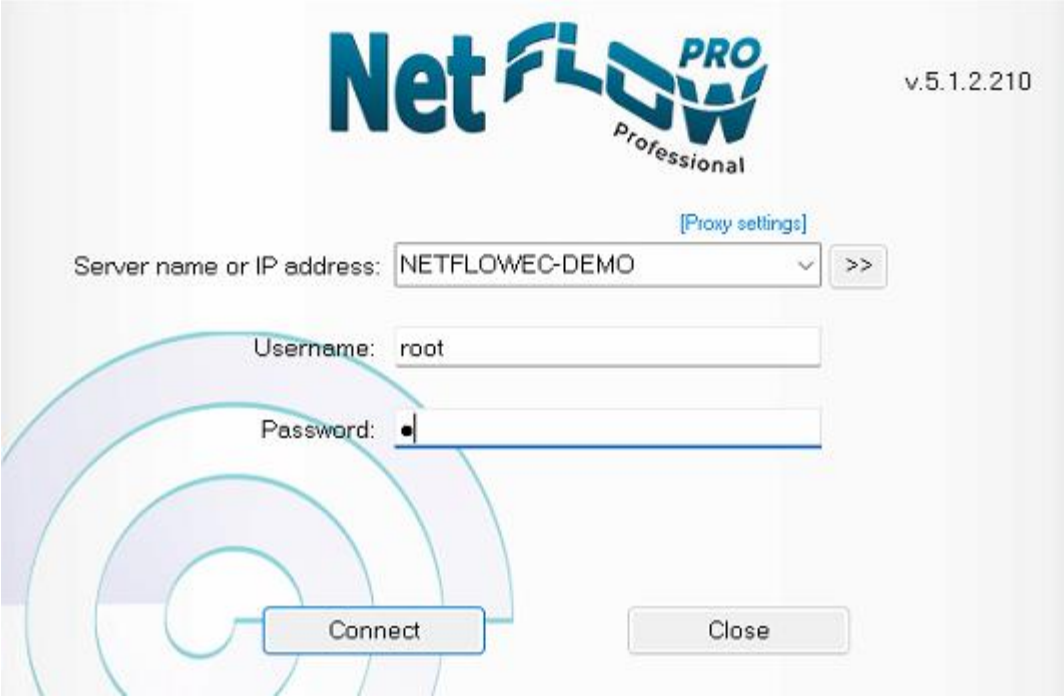
Revision	Date	Author	Description of Changes
1.0	03/01/2024	Peter Punzalan	Manual Created

Chapter 1

1. Logging in to NetFlow

To start working with the software, do the following:

1. Go to **Start** → **All Programs** → **NetFlow** → **NetFlow**. Or click the
2. NetFlow icon on the desktop
   NetFlow will start and an authorization window will open.



3. Enter your username and password and click the **Connect** button.

> **Note**
>
> When logging into the system for the first time, use the username **root**, which has administrator permissions. Enter **root**

If authorization is successful, a video surveillance monitor will be displayed on the screen.

Before closing *NetFlow*, you need to exit the user interfaces. To do this, you need to do one of the following:

1. Click the 

button located on the **Settings** tab.
2. In the Windows OS taskbar, in the context menu of the *NetFlow* icon, select **Close window**.

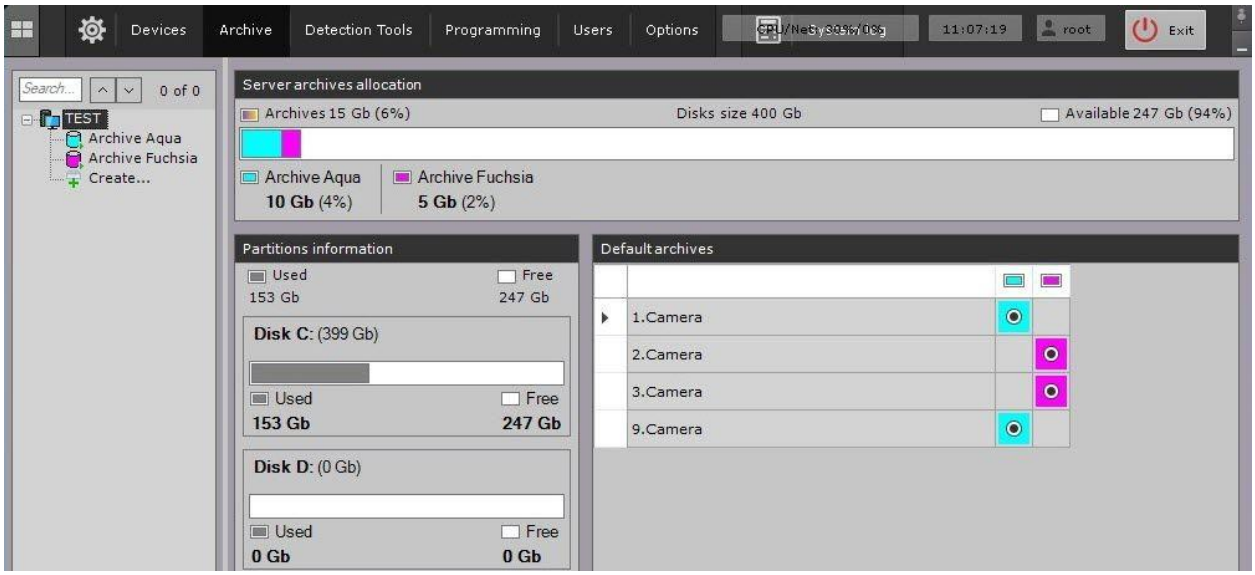
When you perform one of these actions, the authorization window will appear. To close *NetFlow* (completely exit the Client), click the **Close** button.

1.1. Creating Archive

You can create an unlimited number of archives on a single server as long as server or pc supports it. Archive can be placed on the local disks of the PC or on the network disks.

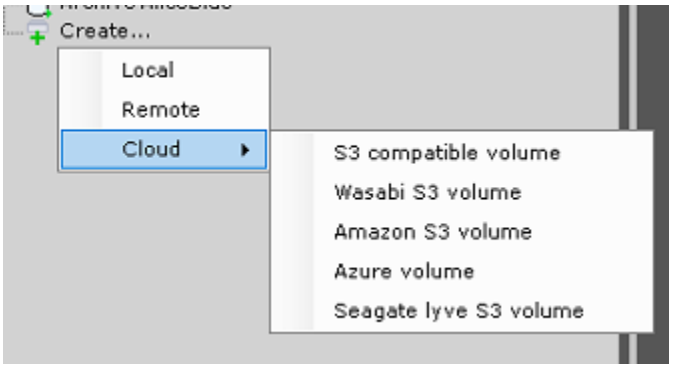
You can save a single archive volume on each local disk; the recommended archive size should be only 80% of the total size available of the disk.

To create an archive, go to the **Archive** tab and click the **Create** link.



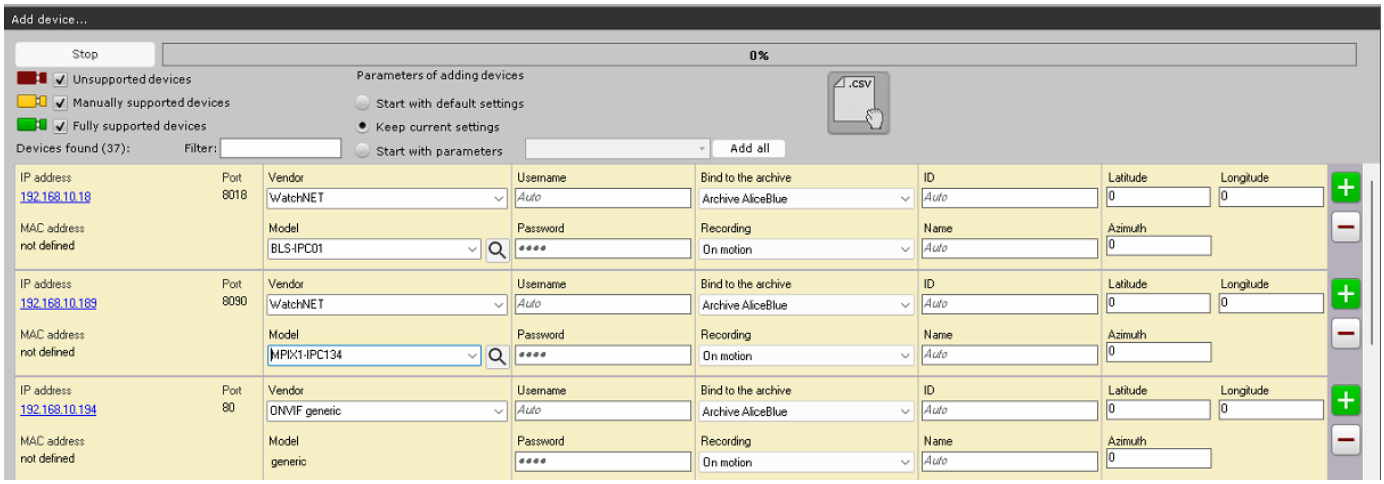
Configure the archive as follows: select the archive type, configure the archive volumes, click the **Apply** button. Configure the cameras recording to the archive as follows: select the cameras, configure the recording settings.

- You can also create an archive from the network or add a NAS (Network Attached Storage) as well as Cloud storage, list below are the supported cloud storage.



1.2. Adding Camera

You can add video cameras and IP servers to the system by using the IP Device Discovery Wizard.



The IP devices are color-coded based on their status.

Color of video camera icon	Description
	Fully supported device
	Manual configuration required
	NetFlow compatibility not guaranteed

When adding a device, you can immediately set several configuration parameters, such as:

1. Firmware version.
2. Username and password.
3. Archive and recording (non-stop or based on a time schedule).
4. Object ID and name.

In addition, three modes are available for adding a device to a configuration: with the default settings, with the current settings or custom settings.

To add one device, click the  button. To add all devices, click the **Add all** button.

If an IP device isn't displayed in the search results (because it is located on another subnet or contact has been temporarily lost), you can add it manually.

To do so, in the neutral-colored area above the search results, select the type of IP device that you wantto add (with or without internal storage), specify an IP address and a port, and select the manufacturer and a model.

1.2.1. Adding Camera using CSV file

Create a CSV file with devices listed as follows:

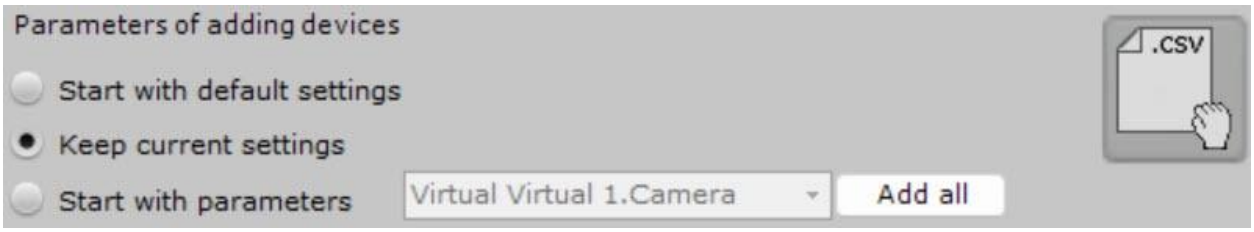
IP address, Port, Vendor, Model, Login, Password, Identifier, Object name, Latitude, Longitude, Azimuth, Archive name, Recording mode

Example:

192.168.1.11,80,ONVIF generic,generic,admin,1234,1,,,,,,On motion

- For each added camera, three parameters are required: IP address, Vendor and Model. The parameters that aren't specified will be automatically set to their default values. Even if no additional parameters are set, you should still include commas.
- All parameters are case-sensitive.
- To separate the integer and fractional parts in coordinates, use a point.
- If there is a comma in the device model name, in order not to violate the logic of the CSV file, it is necessary to add the \ character before the comma in the model's name.

Once the CSV file is created you can drag and drop it on the screen below



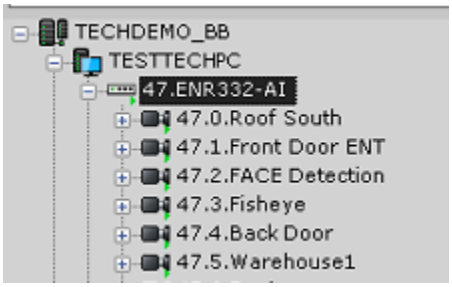
1.3. IP Server or WatchNET Recorder device

The IP Server Object in the NetFlow, an IP Server object relates to:

- video capture card;
- video server:
- control panel;

- DVR;
- Input/output module.

If you configure a video capture card, video server or DVR, each video camera channel corresponds to a Camera object under the IP Server parent object.

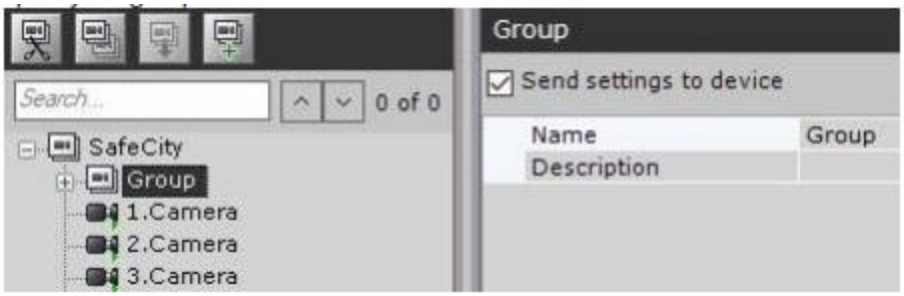


1.4. Creating Group Objects

To create a Group object, complete the following steps:

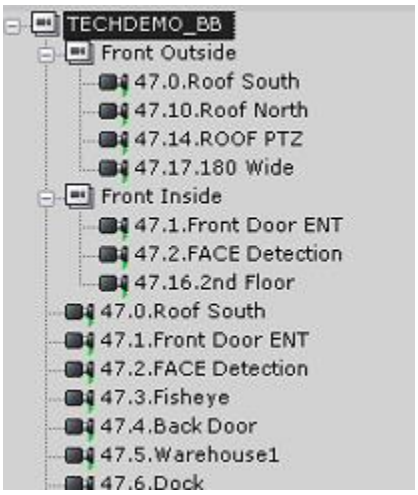
1. Go to the Groups tab.

2. To create a **Group** object, click the  button or select **Add group** in the context menu of the main group.
3. Specify the group name in the Name field.

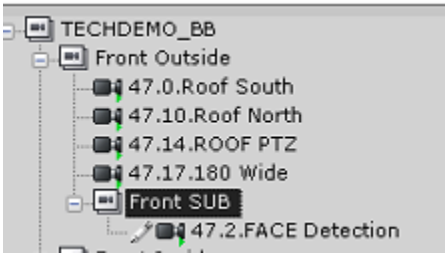


4. Enter a description of the group in the appropriate field. Click the Apply button. The Group object has now been created

To add a camera into the group simply drag and drop the camera from the list below. Should look like this when finish.



You can also create a sub group under a main group by clicking the main group and then click the add group button



1.5. Configuring Detection Tool

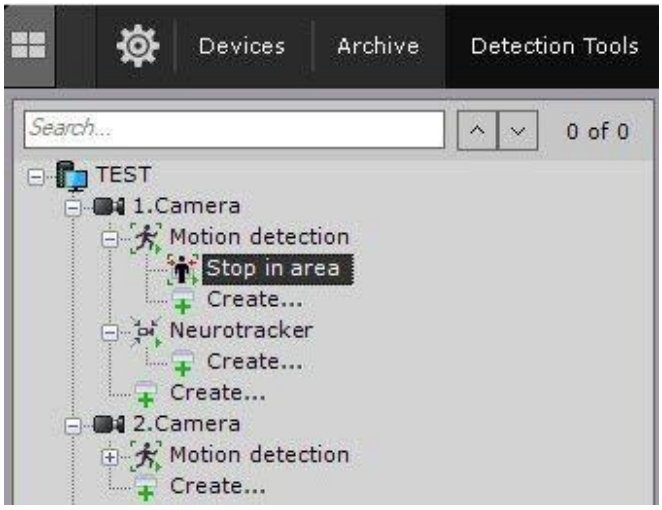
In *NetFlow*, several types of detection tools process incoming data:

1. Scene Analytics detection tools.
2. Face recognition tools.
3. License Plate Recognition.
4. Service detection tools:

a. video detection tools;
b. audio detection tools.

5. Detection tools embedded in a video camera.
6. Trackers
7. Personal protective equipment detection tools
8. Fire Detection and smoke detection

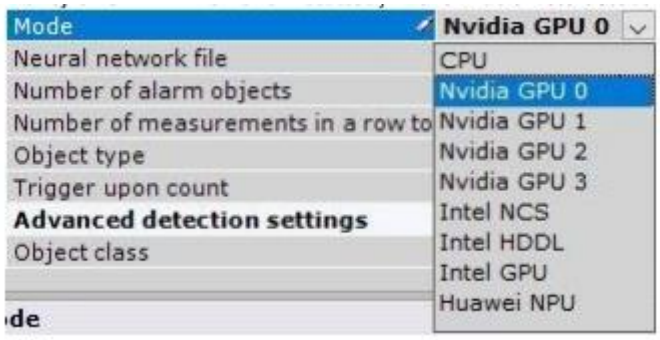
You can configure detection tools in the **Detection Tools** tab.



To create a detection tool, click the **Create** link in the corresponding camera object tree and select the required detection tool.

For the Scene Analytics and the Face Recognition detection tools, first you need to create an **Object tracker** object and a **Facedetection** object. Then you will need to create detection tools on the basis of these objects.

When configuring the detection, in the Mode field, select NVIDIA GPU one by one. If only one NVIDIA GPU is installed, in the Mode field select Nvidia GPU 0.



If more than one NVIDIA GPU is installed, in the **Mode** field select the video card which should be used for detection.

Note: If you select a non-installed Nvidia GPU in the mode field,

detection will not work.

1.6. Programming

Programming is a tool used to configure system responses to certain events. System response may include one or several different actions.

Note: Programming works only within single domain only and cannot include objects from another domain.

1.6.1. Event rules

These macros can run automatically on detecting the specified events or initiated manually by the operator. When triggered, the actions in the macro are executed once.

1.6.2. Automatic rules

Automatic rules are basic macros: particular actions that are performed when a detection tool is triggered. One or multiple automatic rules can be set for each detection tool.

1.6.3. Automatic rules

These macros can run automatically after a set period of time, or at a random time within a set interval. Cycle macros are run on the first Server in the NetFlow Domain (alphabetical order) available at the time of launching the macro. Cycle macros are executed immediately after you save them in the system, unless they have been created outside the time schedule. After completing all actions, the macro is automatically restarted. Additionally, a cycle macro can be launched at a specified time interval, or at a random moment within the specified time interval. In this case, all actions in the macro will be executed once.

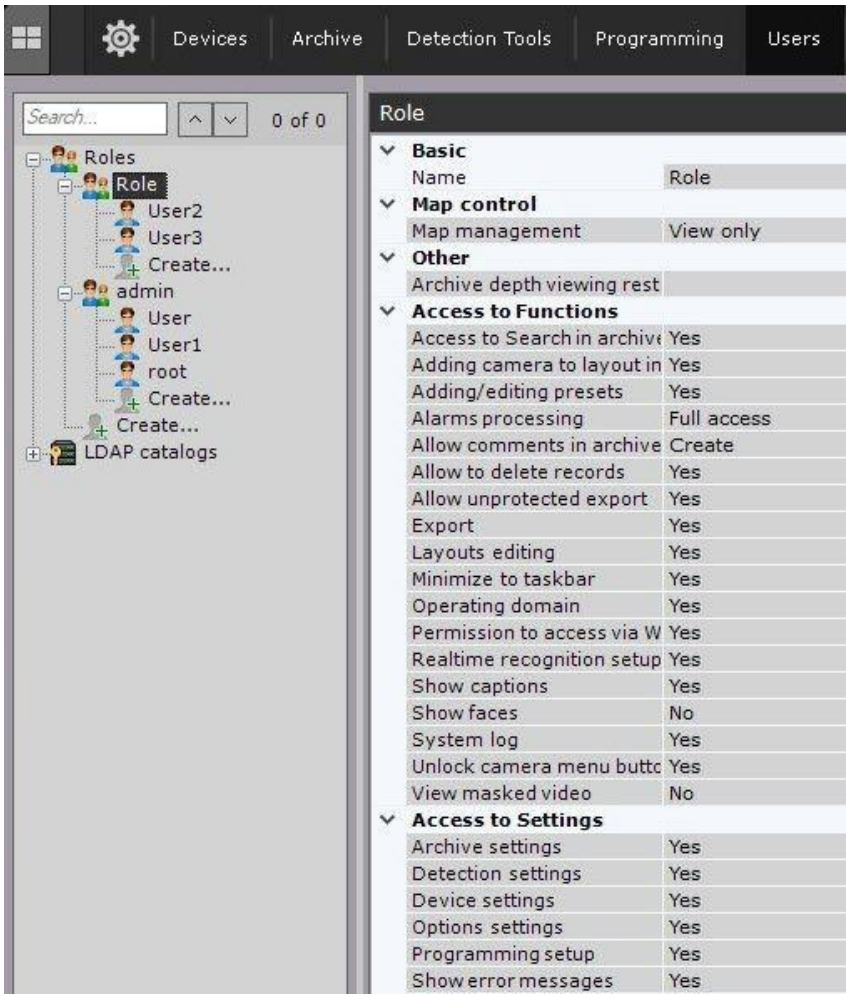
1.7. Configuring Users and their Roles

In *NetFlow*, every user has permissions based on their role.

By default, there is one role registered—**admin** and one user—**root**. The **root**

user belongs to the **admin** role and has permissionsto configure all components of the video surveillance system. To register a user with individual permissions, you need to create anew role with the necessary permissions and a new user account.

Roles and users can be registered and configured on the **Users** tab.



There are two types of users: local (stored in the Server database) and LDAP[5].

Role configuration involves setting access levels for users belonging to this role to various system settings, features andhardware. You can assign a password to a user and select a role that determines user permissions in the system.

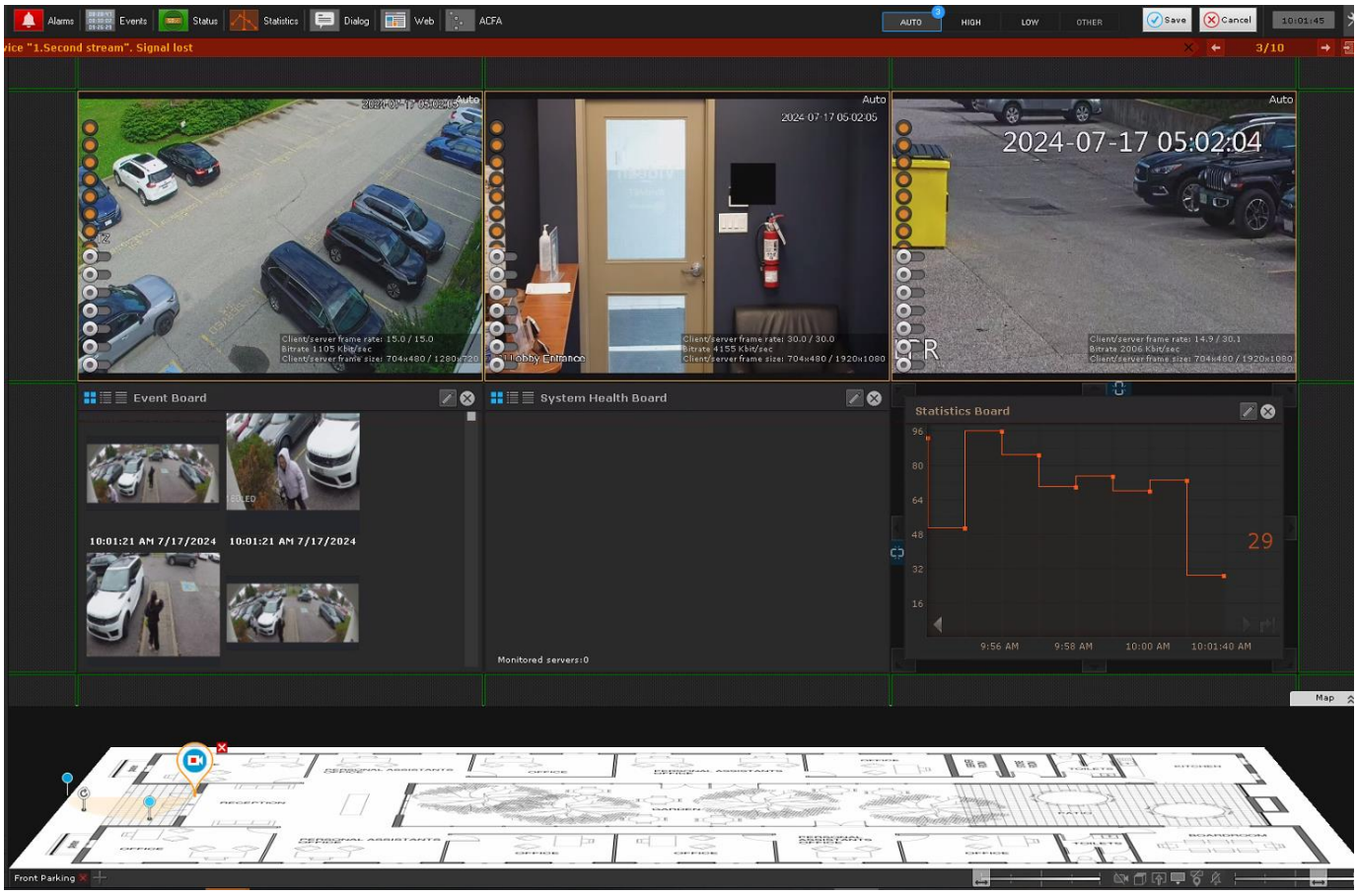
1.8. Creating and Configuring Layouts

You can create and configure custom layouts for any user. Log into the Server under the appropriate username and configure thelayouts for that user. You can

create a new layout on the basis of the standard types of layouts in the layout's menu.

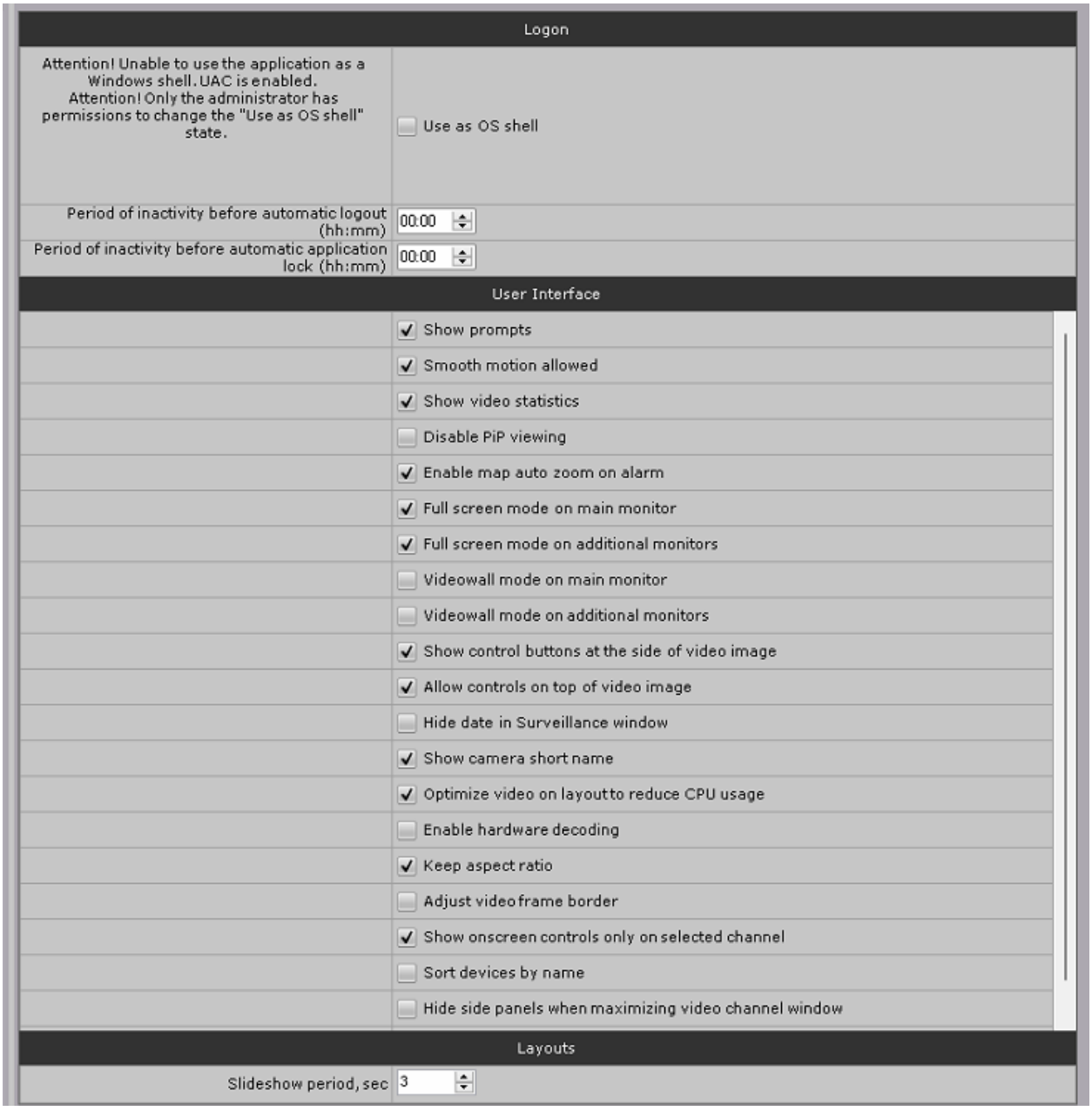
Click the layout menu  beside the Live and playback button.

You can add video cameras and information boards to a layout. You can also attach a map that will be automatically displayed when you switch to this layout.



1.8. Options

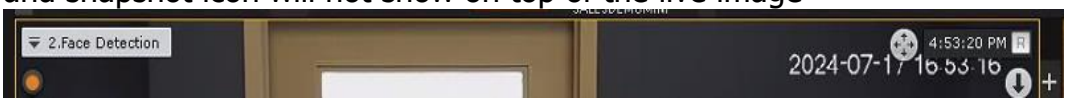
1.8.1. User Interface



- **OS Shell** - used in cases where you need to restrict access to computers running the digital video surveillance system, including preventing the launch of various applications, file copying and deletion, various Windows operations, and other non-standard use of the computers.
- **Show Prompts** - prompts are displayed when the cursor is hovered over a control element. By default, the prompts are enabled
- **Smooth motion allowed** - Smooth motion allows smoothly changing the position of the surveillance windows, as well as smoothly switching between the tabs. By

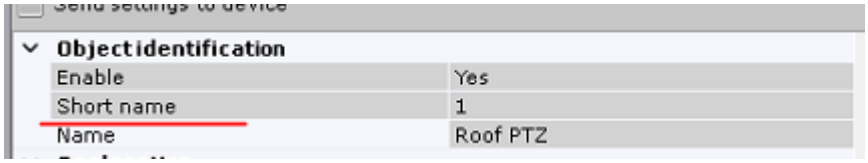
default, smooth motion is enabled.

- **Disable PiP viewing** – check to disable the preview of alarm events in the surveillance/live window
- **Enable map auto zoom on alarm** – to zoom the map automatically and place the icon of the alarm camera at the center of the map.
- **Full screen mode on main monitor –** to set the full screen when the NetFlow software starts, when disabled you can drag the software to different area or another monitor
- **Full scree mode on additional monitors –** to set the full screen of the NetFlow software on another window or monitor
- **Videowall mode on main monitor –** video mode allows the full screen view of the cameras when the software starts
- **Videowall mode on another monitors –** video mode allows to see the full screen of the camera from another monitor
- **Show control buttons at the side of the video image –** when disabled the search and playback button will be displayed on the bottom right of the camera instead of the right side
- **Allow controls on top of video image –** when disable the context menu, zoom and snapshot icon will not show on top of the live image

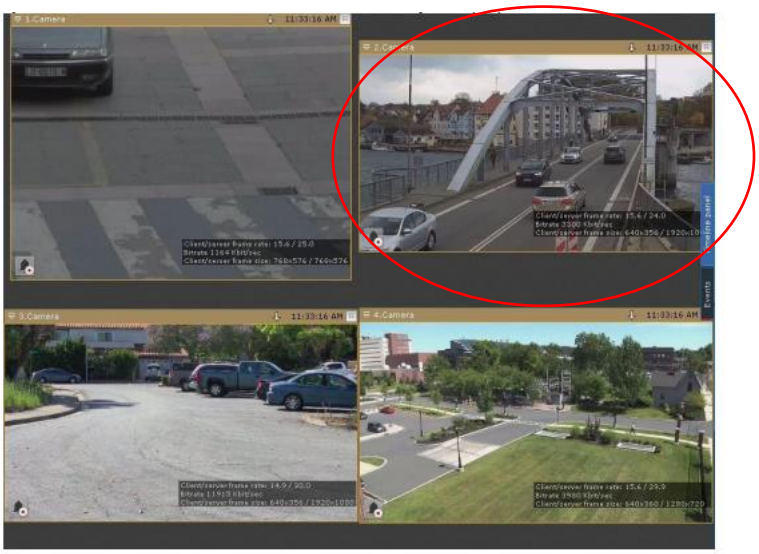


- **Hide date in surveillance window –** To hide the date beside the time on the top right corner 

- **Show camera short name –** Short name is a number identifier for a camera, you can disable it on the live view.



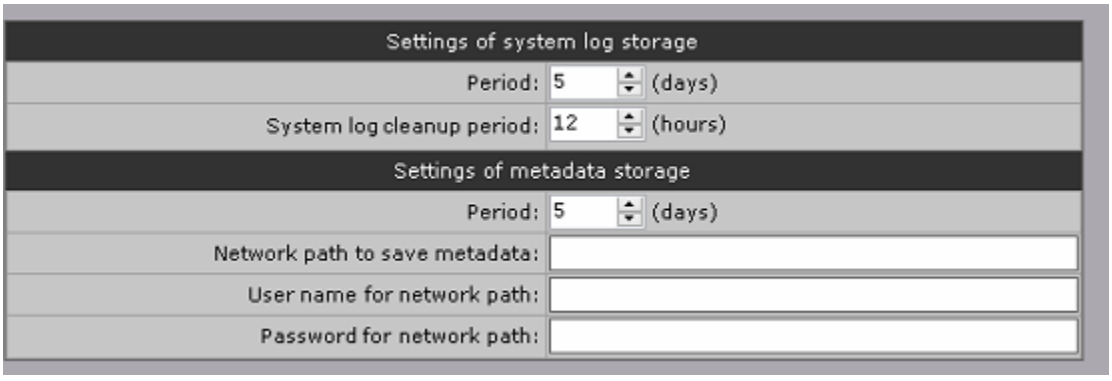
- **Optimize video on layout to reduce CPU usage -** to automatically reduce the number of the displayed pixels in the layout if the screen resolution is lower than the stream resolution from the video camera. This allows reducing the CPU load
- **Enable hardware decoding -** Intel Quick Sync Video is a technology available on some Intel processors, that provides hardware acceleration for video encoding and decoding. This technology provides faster and more energy efficient processing of video content. **Not recommended to use**
- **Keep aspect ratio –** to keep the aspect ratio of the cameras, if you want full screen view of all the camera you can uncheck this to maximize the screen size of the camera.
- **Adjust video frame border -** By default, the size of the surveillance windows on the layout is proportional to the resolution of the video image, enable to make the camera the same size border as the rest of the cameras.



- **Show onscreen controls only on selected channel –** disable to show all the control buttons on all the cameras at the same time.
- **Sort devices by name –** To sort the devices/Ip camera by name
- **Hide side panels when maximizing video channel window –** PTZ, Timeline and event panel will automatically be hidden on single view of the camera.

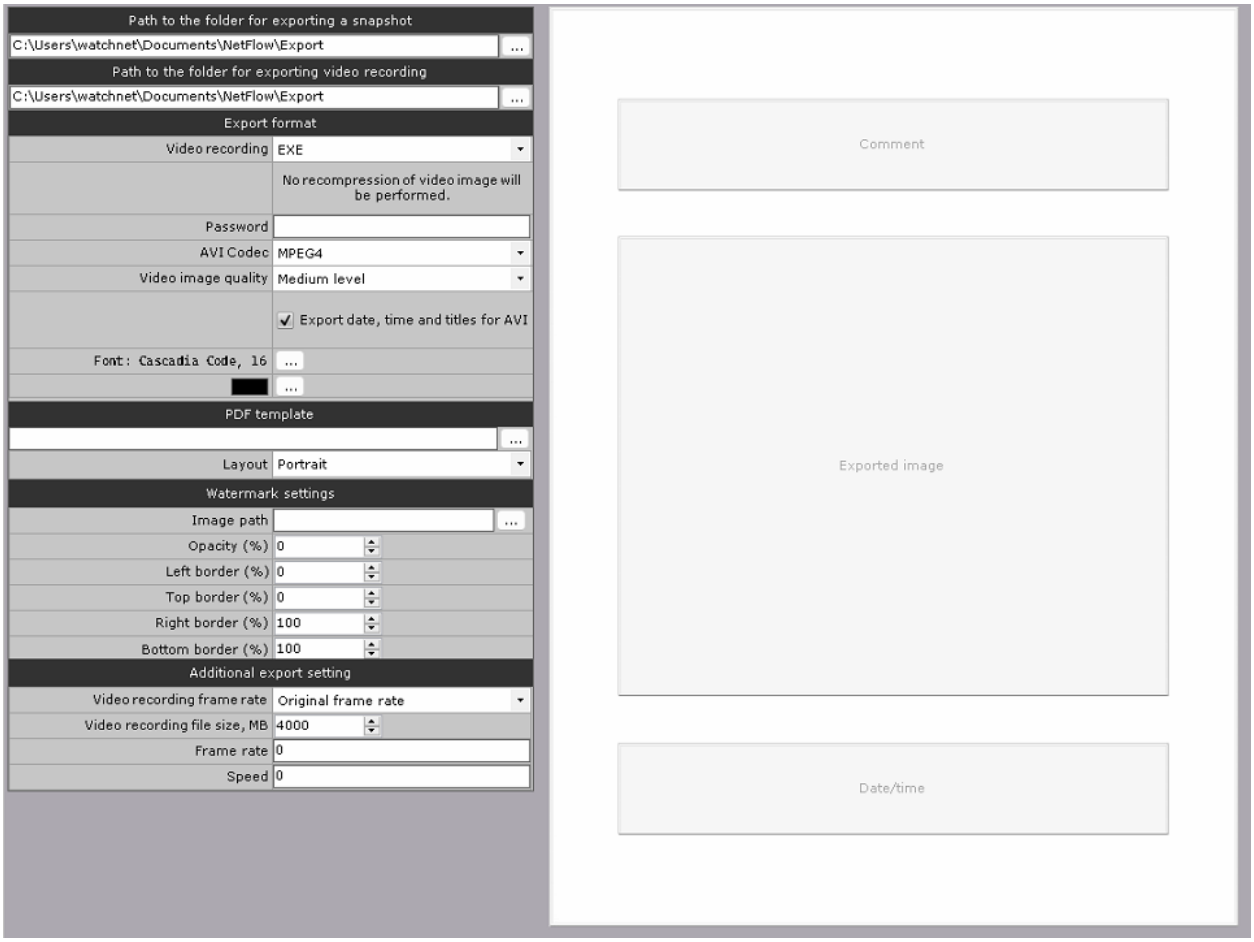
1.8.2. Data Storage

The system log is a log containing system information on events, including system error entries. The system log is stored in a local database for each server. You can set access to the system log for a user group in the Users tab under Settings. When using AI data make sure the period is only set to 5 days so that storage data will not take much space on the drive. It's also recommended to use a separate drive for AI data instead of using the OS drive.



1.1.1. Export

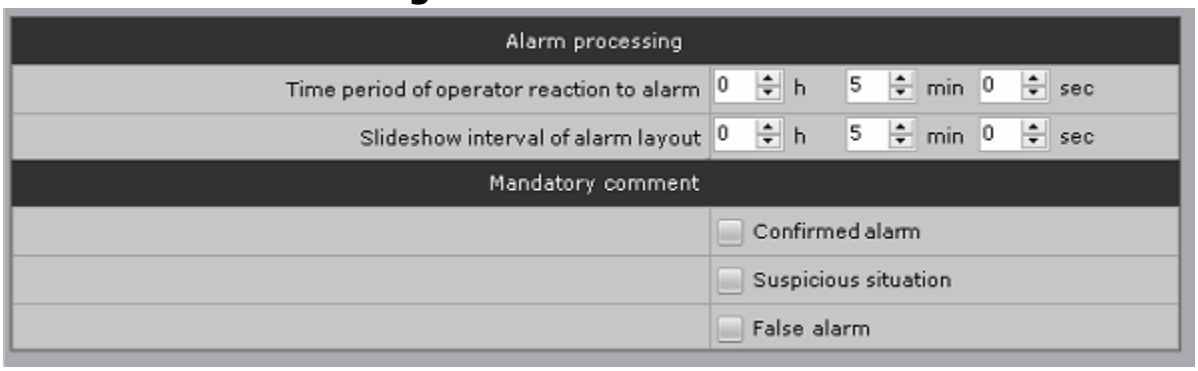
Configuring export includes: setting the default destination folders for exported files; setting the default formats for export of video and snapshots; configuring export of video in AVI format; configuring the template for export of snapshots in PDF format; other export settings.



1.1.2. Import

If you need videos from a different folder on Server to be indexed in addition to already processed footage, you can select only the folder specified in the settings, and its sub-folders

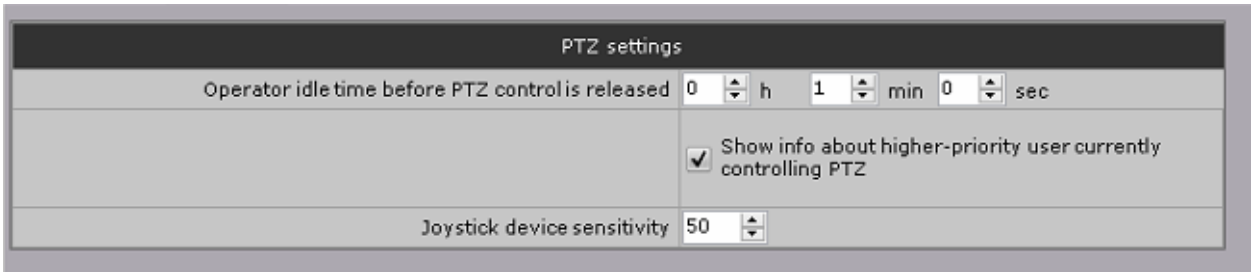
1.1.3. Alarm Processing



- **Time period of operator reaction to alarm** field, enter the time during which the alarm should be taken into processing, otherwise it will be assigned the Skipped status. The minimum value is 2 minutes.
- **Slideshow interval of alarm layout** field is the interval between alarms to show in the layout.

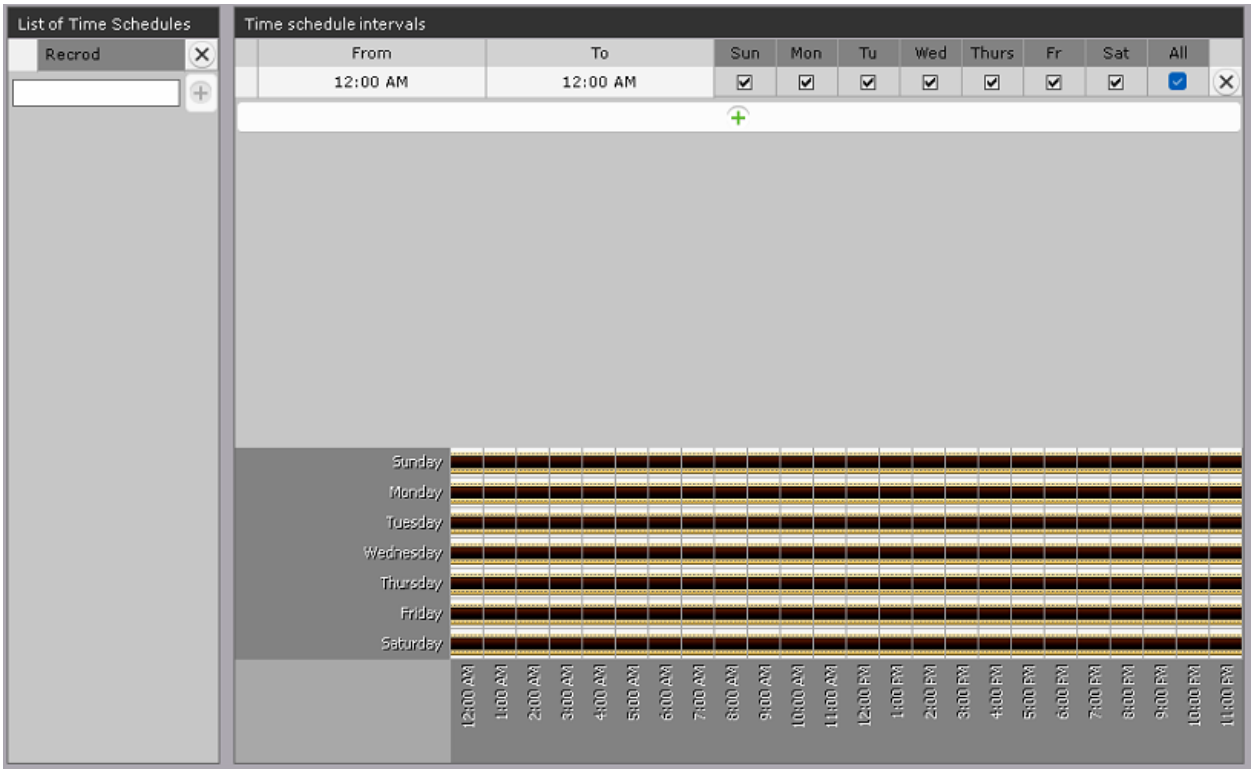
1.1.4. PTZ settings

Set the idle time for the PTZ to be released when not in use.



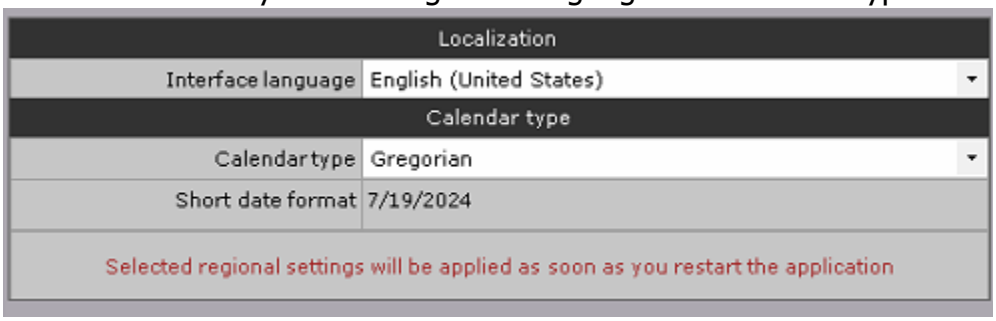
1.1.5. Time Schedules

A schedule consists of all the time intervals for which video streams from video cameras will be recorded to archive.



1.1.6. Regional Settings

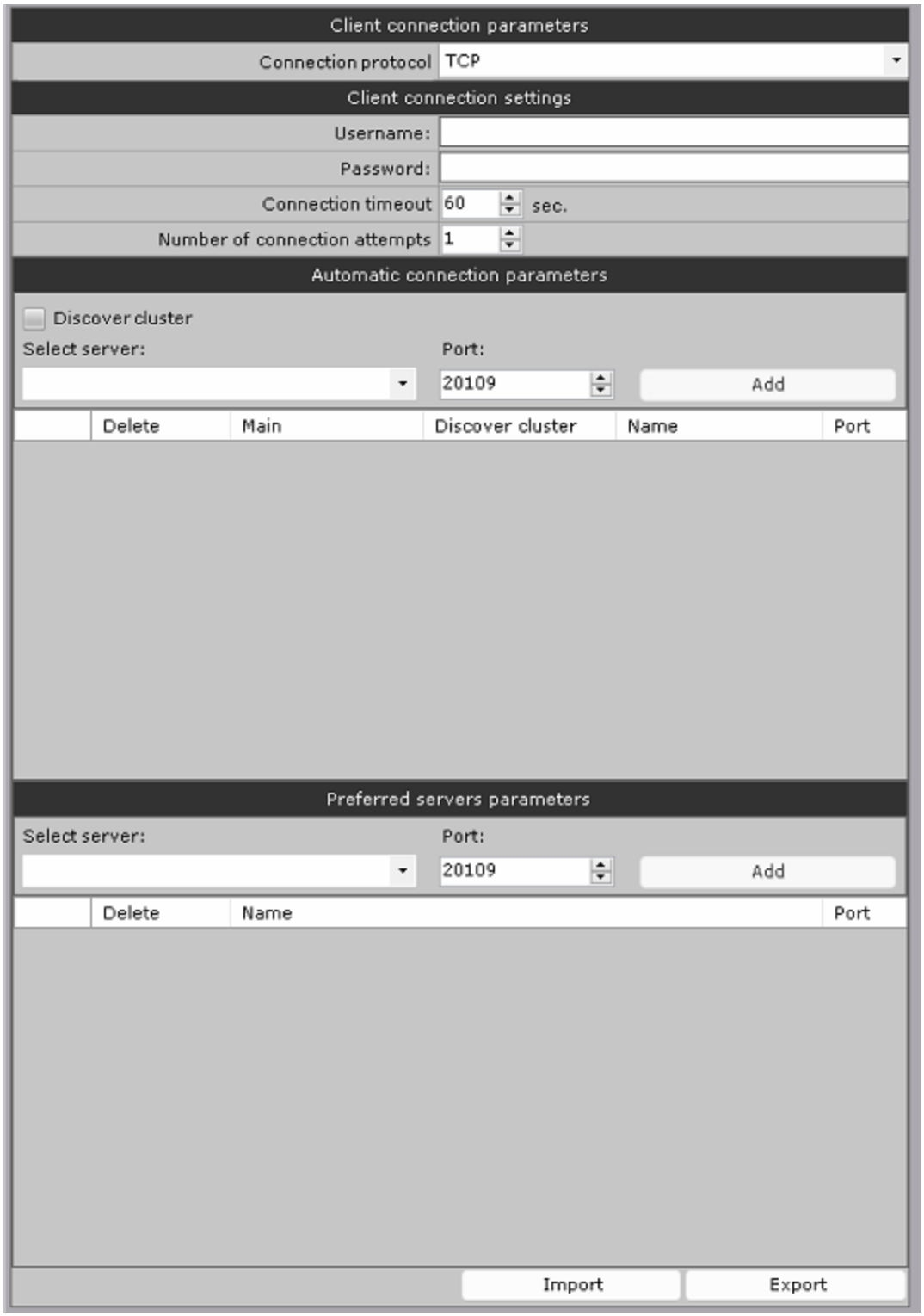
This menu allows you to change the language and calendar type.



1.1.7. Automatic Connections

Configuring automatic connections to a failover system is similar to setting up an automatic connection to a common security server with a few minor changes.

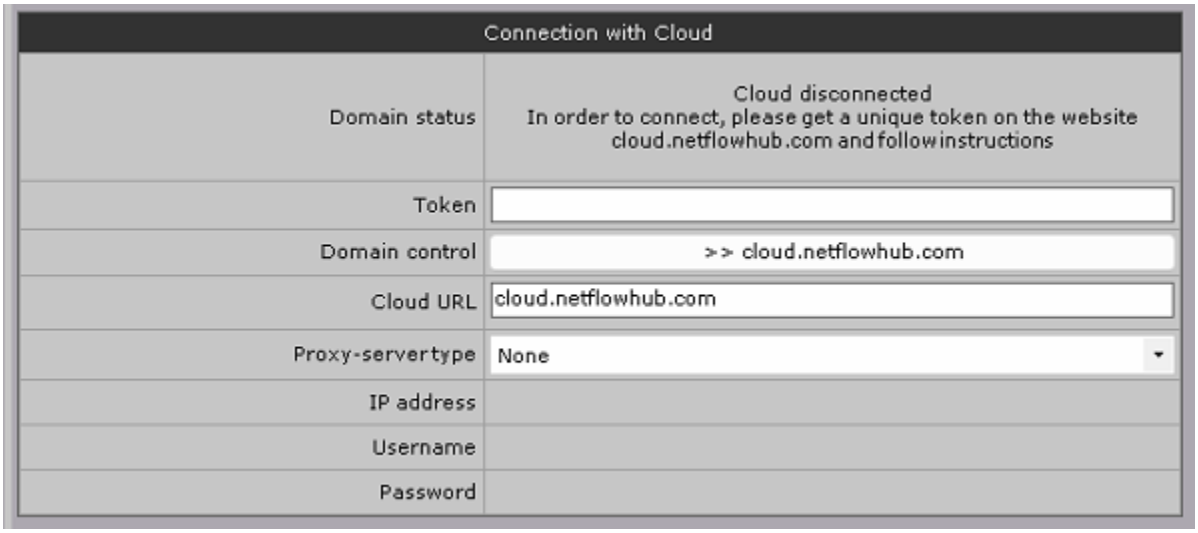
Note: Only applicable if using multi-server from different sites.



1.1.8. Cloud

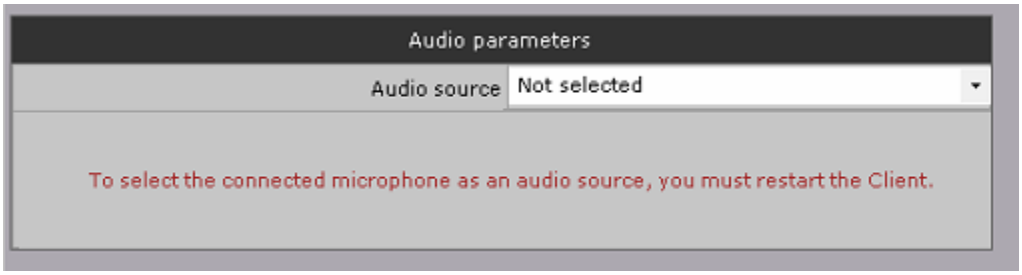
Connection with cloud allows you to connect the NetFlow to WatchNET Cloud platform.

1. To connect to the cloud, you need to create an account first on https://cloud.netflowhub.com/
2. Once account is created click the  beside the user icon and copy the token into the field below and then click Domain control button.



1.1.9. Audio Parameters

To broadcast audio from the Client microphone on a camera speaker, you must configure audio on the Client



1.1.10. Hot Keys

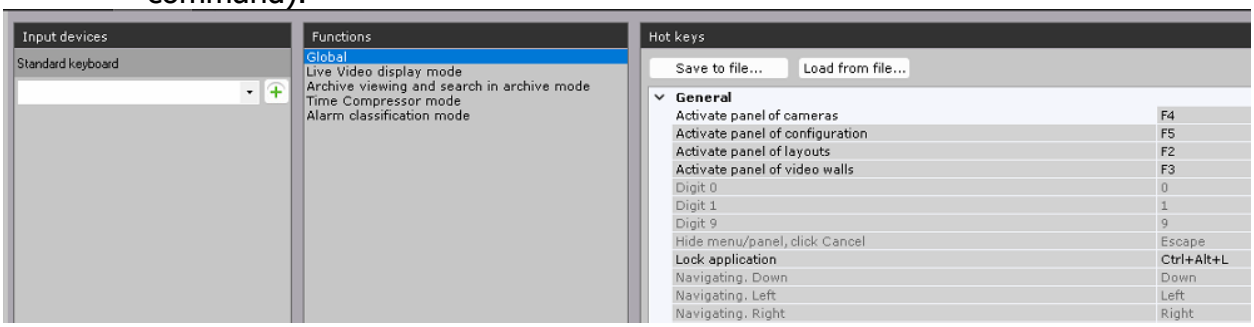
Hot keys for standard keyboards and joysticks can be set to perform certain actions. The operator's work with hotkeys is divided into 6 modes:

1. Global mode, in which a hot key is always available.
2. Live Video mode. Archive viewing and search in archive mode.
3. Time Compressor mode.

4. Alarm Processing mode.
5. Programming – running macros.

When setting hot keys, keep the following rules in mind:

- the same shortcut can be used for different actions in different modes;
- a shortcut in any particular mode can be associated with only one action;
- shortcuts set in Global mode cannot be redefined in other modes;
- hot keys are available only when the Client is active;
- on standard keyboards, alphanumeric keys must be preceded by modifier keys (CTRL, ALT, SHIFT);
- during system configuration (when the Settings tab is open), only one action with hot keys is available: go to layouts (the Activate panel of configuration command).



1.1.11. Security Policy

1. **Set the minimum password length**
2. **Set the number of the most recent passwords** for each user to be stored in history. 0 – do not store password history. If this value is non-zero, the passwords stored in history may not be reused.
3. **Set the password expiration time** interval in days. After the time interval expires, the user will be prompted to set a new password. 0 — the password never expires.

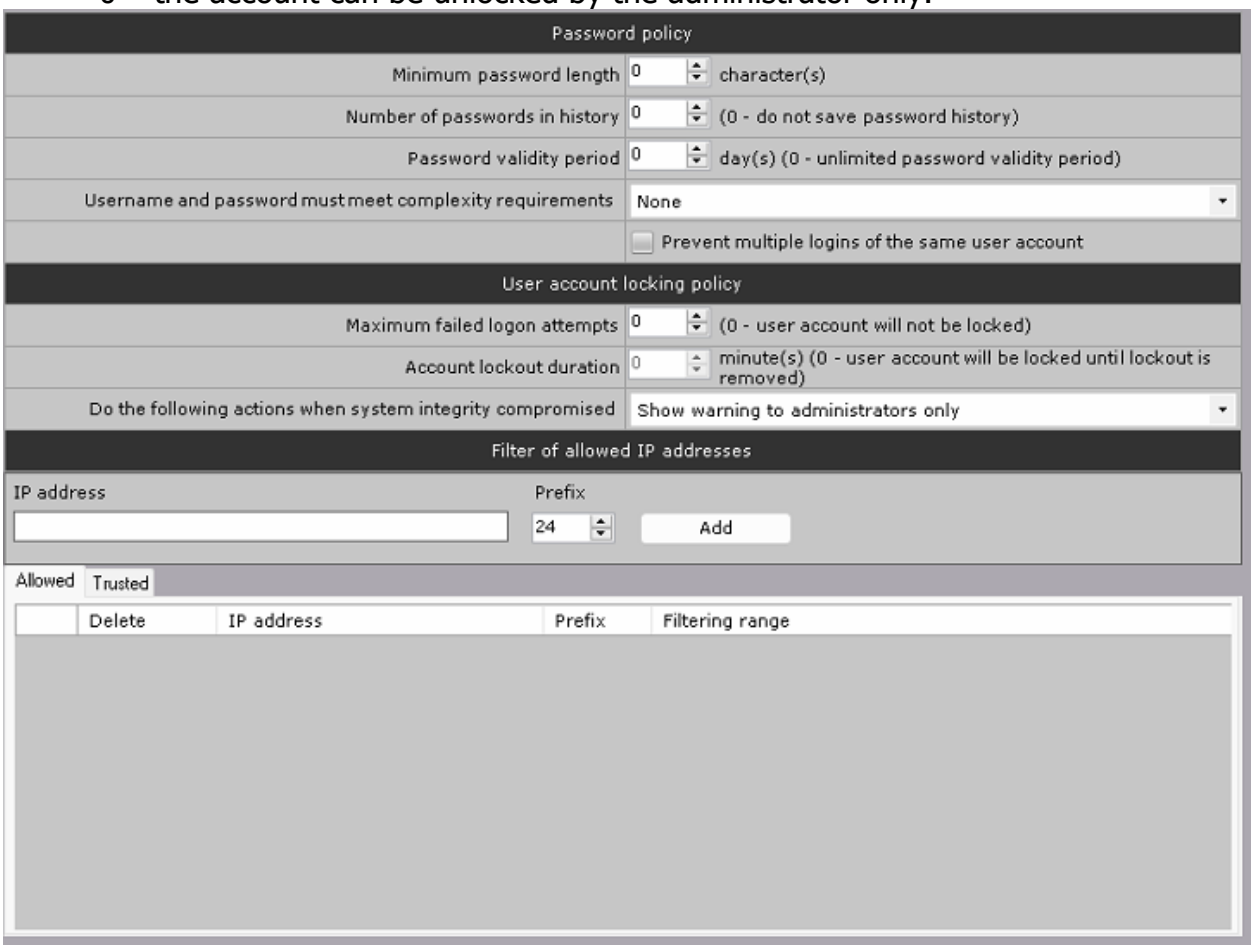
Note: You cannot delete the user through which you logged into the system.

4. **Select the positions to meet complexity requirements**: nothing, password only, user name and password.
   The requirements:

   i) user name:
   (1) should contain no less than 6 characters and at least 2 digits;
   (2) should not include common role names, such as: admin, administrator, admin1, root, super, superuser, supervisor.

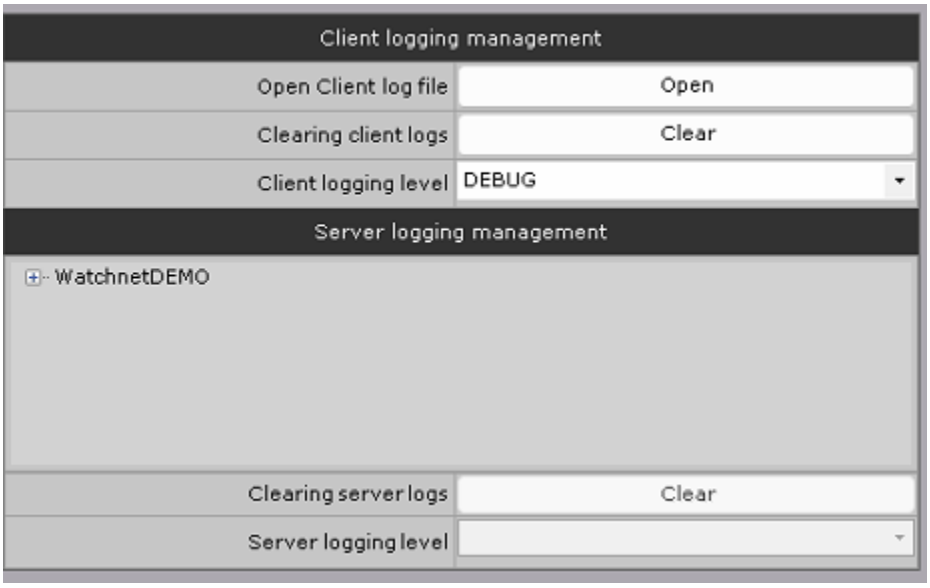
ii) The password has to contain at least 8 characters, which should meet at least 3 requirements listed below:
(1) at least 1 capital letter;
(2) at least 2 lowercase letters;
(3) at least 3 digits;
(4) at least 4 special characters: !\"#$%&'()*+,-./:;<=>?@[\\]^_`{|}~

5. If you need to limit the number of sessions per user to one, set the corresponding checkbox (7). This requirement also applies to web and mobile Clients.
6. Set the number of failed login attempts to lock a user's account (8). 0 – no account locking on incorrect passwords. If this value is non-zero, when a new user is created, they will be given the name user with a random number from 10000 to 99999. The name can be changed in the user settings.
7. Set the duration of user account locking on failed login attempts in minutes (9). 0 – the account can be unlocked by the administrator only.



1.1.12. Logging management

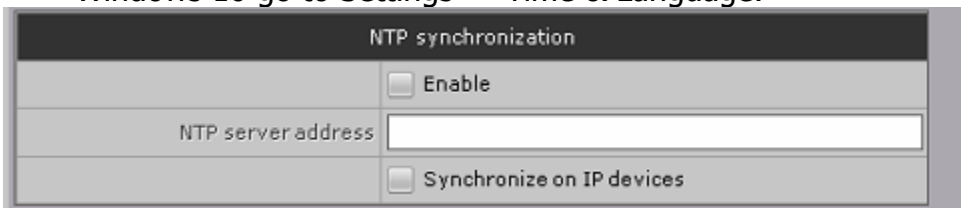
By default, the Server logging level is set in a special utility. You can change the logging level of the Server and restart it for changes to take effect. The next time the Server is started, the logging level will correspond to the new settings in the logging management utility, you can also delete all the server logs by clicking the clear button.



1.1.13. NTP Synchronization

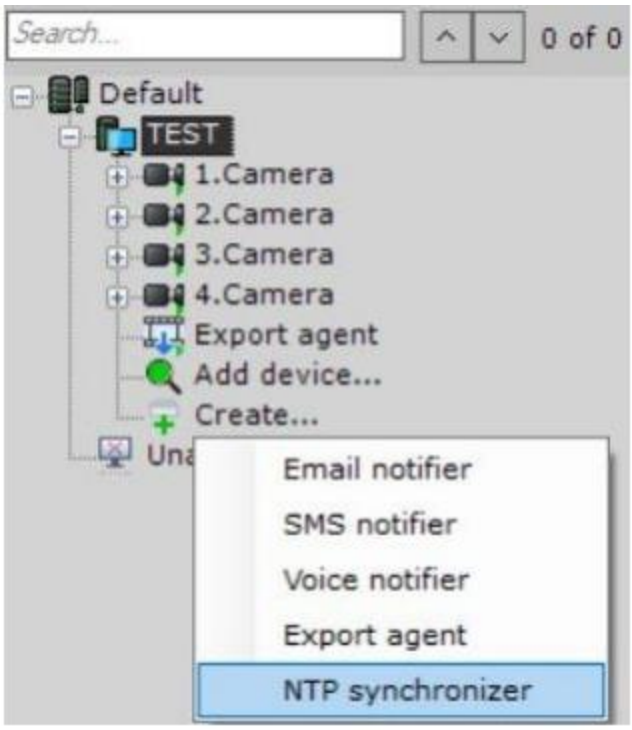
By default, the Server time is synchronized with the OS time. It is possible to synchronize the server time with the NTP Server. For this, the following conditions should be met:

1. NetFlow is installed on Windows OS.
2. In Windows OS, the Set time zone automatically option is enabled. To enable it, in Windows 10 go to Settings → Time & Language.

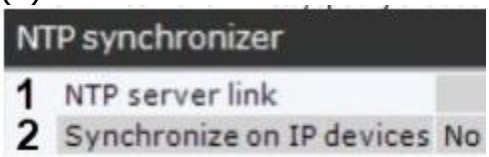


To configure NTP synchronization, do the following:

1. In the list of hardware, click Create and select **NTP synchronizer**.



2. In the **NTP server link field**, specify the address of the required NTP Server (1).



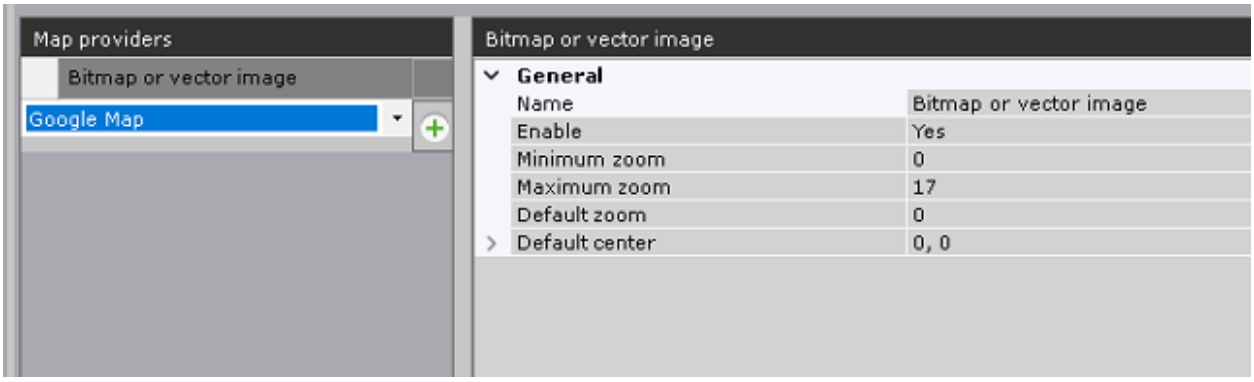
3. In the **Synchronize on IP devices** drop-down list (2), select Yes to enable time synchronization for IP devices connected to the Server.

Note: NTP time synchronization on IP devices works only for devices that support this feature.

4. Click the Apply button. NTP synchronization will be performed automatically once every 24 hours, and when the settings are changed.

1.1.14. Map Provider

To change the map settings



Chapter 2

2. Operating NetFlow

2.1. Working with Alarm Events

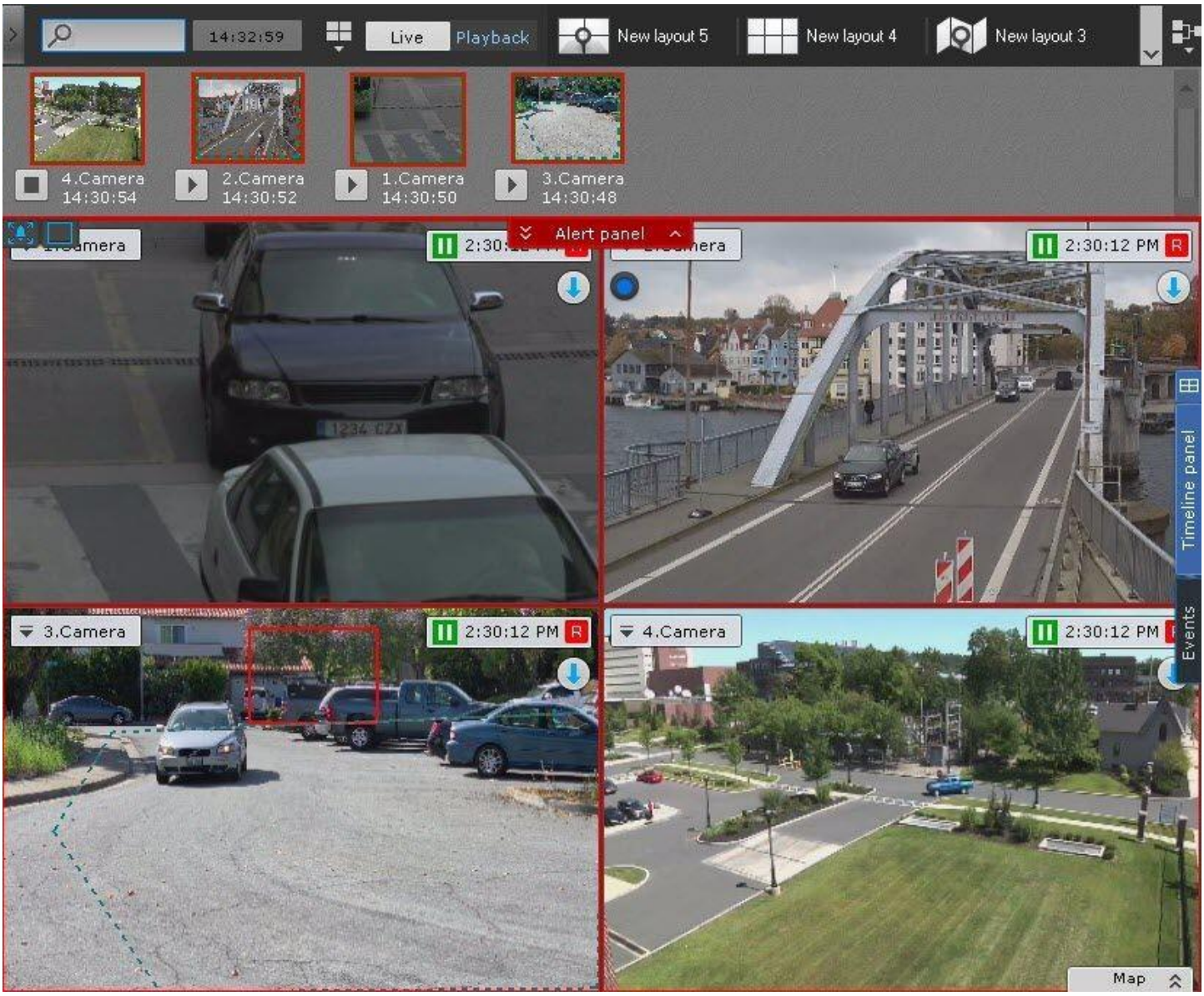
All alarm events are displayed on the **Alert panel**. The **Alert panel** is located at the top of the screen, and you can see it only if there are active alarms in the system. To open the **Alert panel**, click the 

button.

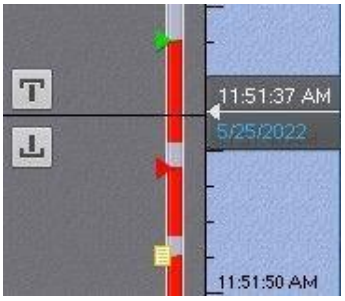
When you select an alarm on the panel, the alarm is assessed. The assessment of the alarm event is made on a three-point color scale:

- red—critical alarm;

- yellow—non-critical alarm;green—false alarm.



When an alarm is assessed (critical, non-critical, false, or missed), a flag is added to the alarm recoding on the timeline. A flag isadded to the point on the timeline when the alarm started.



2.2. Search Event in the Archive

You can work with the archive in two modes: the archive mode and the archive analysis mode. In the archive mode (the **Playback** tab in the surveillance window), you can manually search for the necessary moment in the archive using one of the two timelines.

To navigate in the archive, left-click and drag the pointer to the necessary point in time.

In the archive analysis mode (the **Search** tab), you can search for the necessary moment in the archive by the specified criteria. The following search types are available:

1. Events search.
2. Time search.
3. Titles search.
4. ANPR search.
5. Face search.
6. Forensic search.
7. Comments search.

Moment Quest forensic search allows you to search for video fragments in the archive by the following criteria:

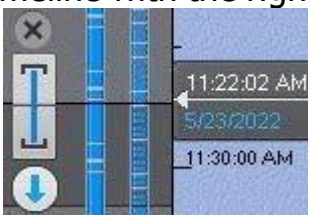
1. Motion in Area.
2. Loitering of an object in a specific area.
3. Simultaneous presence of a large number of objects in a specific area.
4. Line crossing.
5. Motion from one area to another.

NOTE: This will only be available if you have the license for the Analytics

Example even search below is motion in an area, you can drag the box anywhere in the camera to search the motion on specific area.

2.3. Exporting Frames and Videos

You can export in two ways: you can set the export range in the archive or click the button in the surveillance window. You can select the export range on any timeline with the right-click or set it using the buttons.



Frames can be exported to JPG and PDF formats. Video can be exported to AVI, MKV and EXE formats.

Exported frames and videos are digitally watermarked to prove that the exported file wasn't changed.

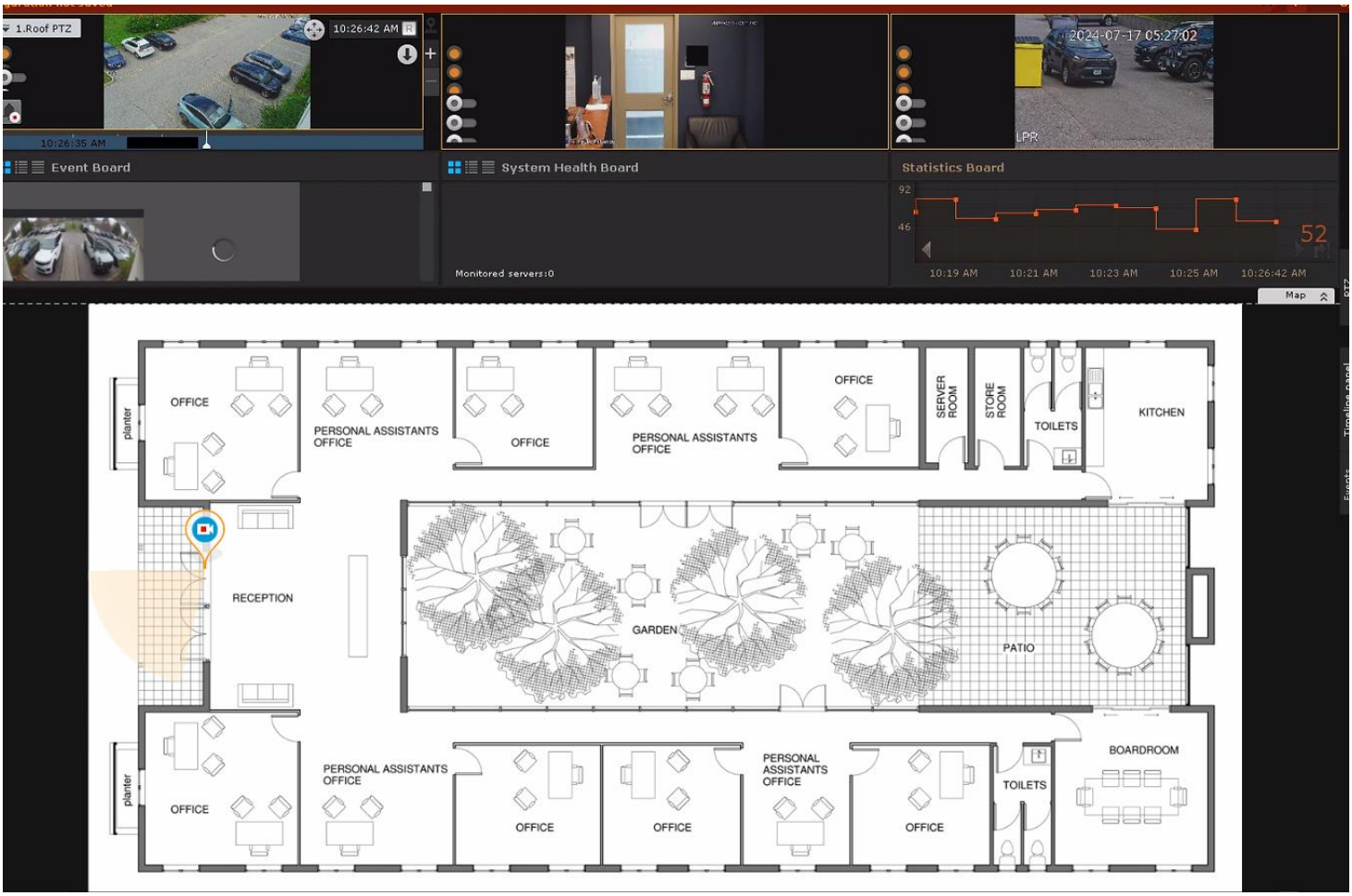
2.4. Working with the Map

The interactive map is used to visualize the location of video cameras on the

territory of the protected facility and to control them.

The interactive map in *NetFlow* represents either an image of the protected facility or geodata from the OpenStreetMap provider.

Note: To work with OpenStreetMap maps in NetFlow you need to purchase an OpenStreetMap license.



2.5. LPR Search in the Archive

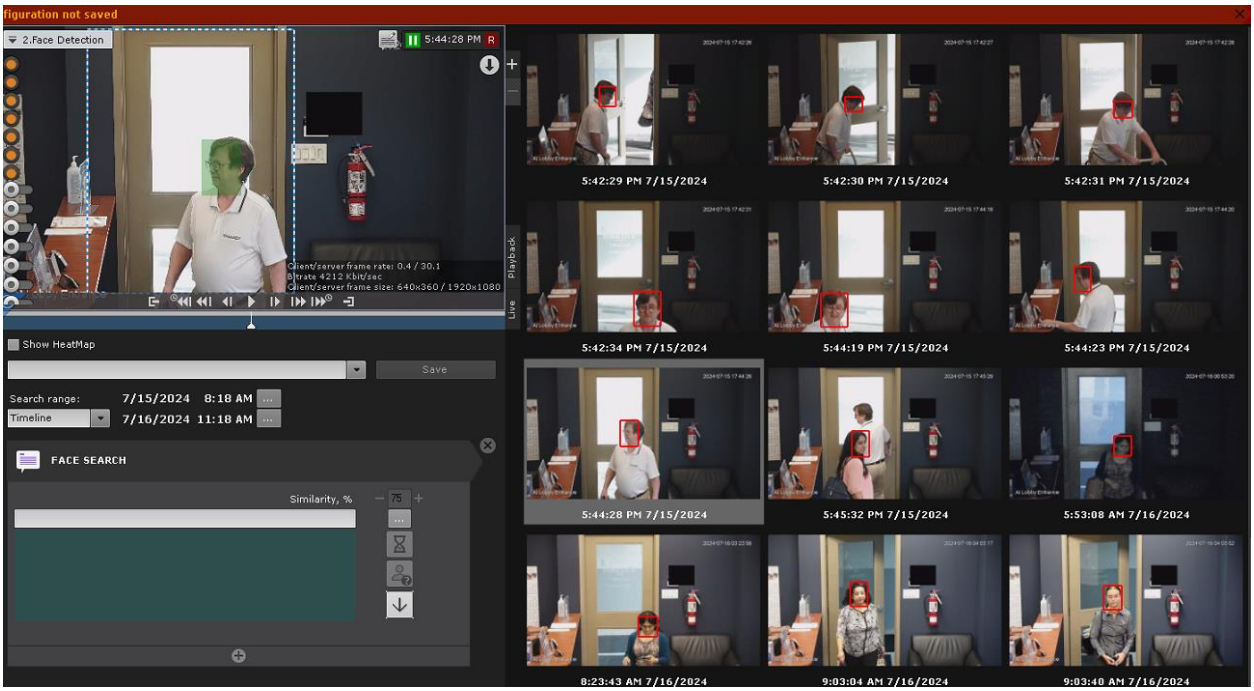
Automatic number plate recognition is performed by a corresponding detection tool. An event is generated during recognition. This event contains the number of the vehicle that gets into the database. These events can be displayed on a layout on the Event Board or Dialog Board.

You can search for the vehicles in the archive of one video camera or in the archive of several video cameras simultaneously.

2.6. Face Recognition and Search in the Archive

Face recognition is performed by a corresponding detection tool. The recognition generates an event that is written to a database.

These events can be displayed on a layout on the Event Board or Dialog Board.

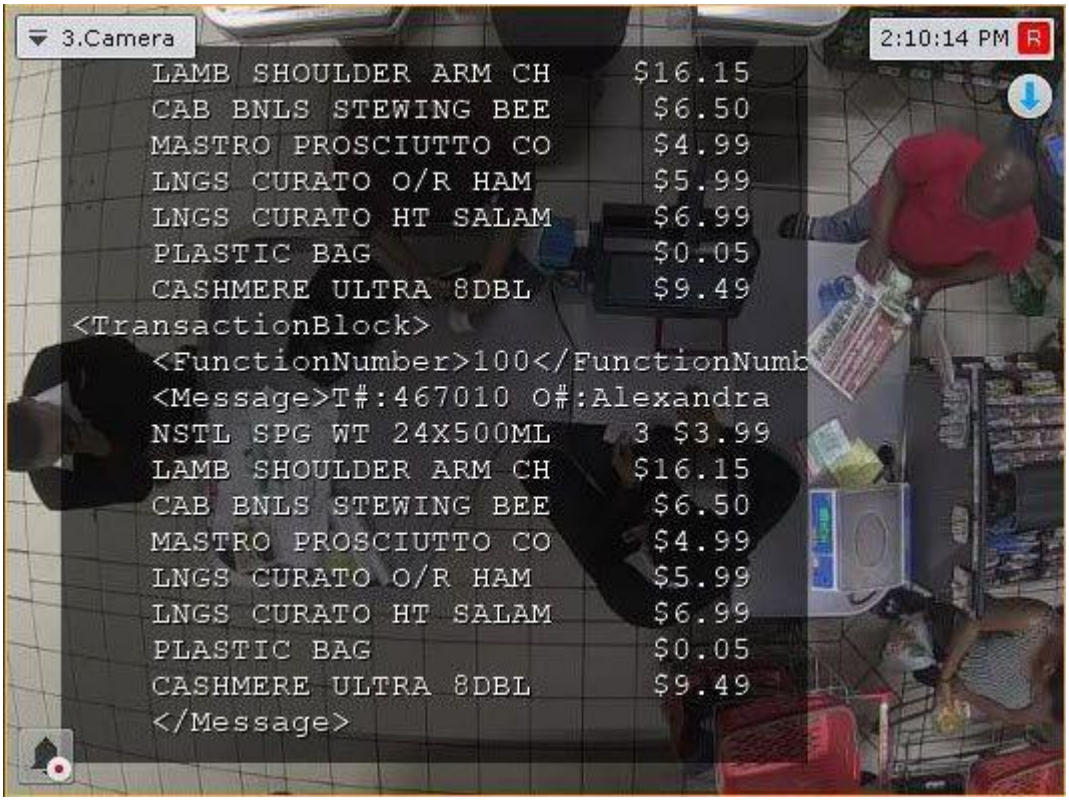


You can search for similar faces in the archive of one video camera or in the archive of several video cameras simultaneously.

2.7. Receiving Data from POS Devices

You can configure *NetFlow* to receive data from POS devices.

Titles are automatically displayed in the surveillance window if you configured the video camera accordingly. Titles from several POS devices can be displayed in the

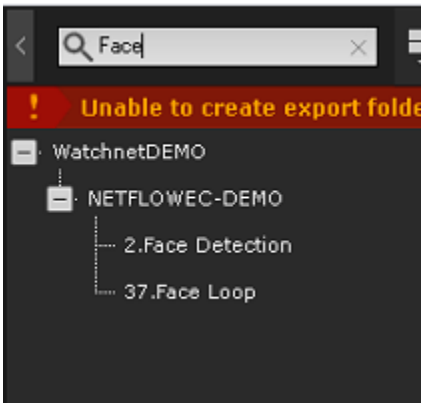


same window.

In the archive analysis mode, the title search allows you to find videos with the titles containing the text from the search query.

2.8. Search camera from the Panel

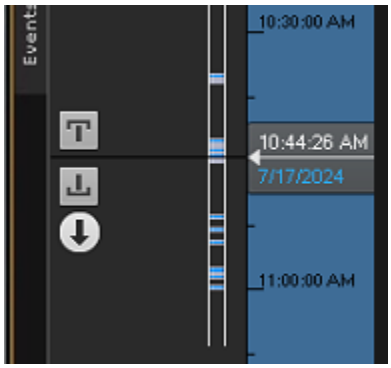
You can search camera from the hardware panel on the left side



2.9. Instant Playback on the live Layout

Instant playback can be done on a specific or multiple cameras when viewing the live layout, simply click the camera you want to search the playback button will show up on the bottom right corner of the camera.

Once you click the event filter panel will show up on the right side. You can drag it to the specific time you want to play.



2.10. PTZ Control

To control the PTZ, click the camera and the PTZ menu on the right side will show up.

2.11. Context Menu

Context menu allows you to customized the view or some other display view for the camera.

- Filling the Cell – To set aspect ratio of the camera to default or fill the screen
- Show OSD text – To show or hide on screen Display text
- Show zoom panel – To show or hide the digital zoom scale icon
- Show tracking – To show or hide the square tracking on an object
- Show mask – To show or hide the grid masking for motion recording
- Enable auto zoom – Auto zoom only works with analytics configured, it zooms in to object tracker scenario
- Disarm – Arm and Disarm the alarm input/output of a camera (only works if the camera has a built-in input and output
- Visualization – To configure the image contrast, sharpness and other image settings
- Select quality – Select main or sub stream on the live layout
- Hide input – Hides the input buttons on the left side of the camera

- Hide output – Hides the output buttons on the left side of the camera
- Clear cell – Closes the camera from the live layout