



Quick start Guide

PSIM 1.0.0-1.0.1 (english)

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7 Quick Start Guide. Introduction

On this page:

- [Document purpose](#)
- [Purpose of the Axxon PSIM software package](#)

7.1 Document purpose

The [Quick start Guide](#) is intended to be used as a guide for installing and starting the *Axxon PSIM* software package as well as for configuring and using its main functions.

For details on how to install and configure *Axxon PSIM*, refer to [Administrator's Guide](#). For details on how to configure and use its basic and additional features, refer to [Operator's Guide](#).

7.2 Purpose of the Axxon PSIM software package

Axxon PSIM software is designed to build industrial scalable and adjustable integrated security systems based on video surveillance and audio monitoring digital systems.

The *Axxon PSIM* system offers the following functionality:

1. Integration of digital video surveillance and audio monitoring systems with the existing data systems, various security equipment, third-party software, using integrated open interfaces of the data exchange.
2. Compatibility with diverse security devices and data systems, in particular, with the fire and security alarm and access control systems, video surveillance cameras, data analysis systems and video analytics systems for objects (events) tracking and recognition.
3. Single-source registration and processing of events, generation of notifications and system responses based on adjustable algorithms.
4. Unlimited capabilities for system scaling and customizing, reallocation of resources due to changes in the quantity or quality of monitoring tasks at protected facilities.

8 Before you start the Axxon PSIM software

Preparations for start-up of the *Axxon PSIM* software package consist of installing the hardware and software components of the software package.

The requirements for computers onto which the *Axxon PSIM* software package will be installed are as follows:

1. Select the processor in accordance with the computer configuration using the on-line calculator: <https://sale.axxonsoft.com/calc/calculator.jsf>. Documentation on the calculator is available here: [Documentation](#).
2. RAM—at least 2 GB.
3. HDD space available for *Axxon PSIM* installation—10 GB for installation of *Axxon PSIM* software + 20 GB for installation of MS SQL Server.
4. HDD space available for storing video footage—as per requirements to the video archive capacity (for Server and Remote Administrator Workstations).
5. Video card:
 - a. Discrete: NVIDIA GeForce GT520 1 GB RAM or with higher performance.
 - b. On-board: Intel HD Graphics 530 or with higher performance.
6. Windows Server 2008 R2 SP1, Windows 7 SP1, Windows Storage Server 2008 R2 SP1, Windows Small Business Server 2011 SP1, Windows Home Server 2011 SP1, Windows Server 2012, Windows 8, Windows 8.1, Windows Server 2012 R2, Windows Storage Server 2012 R2, Windows 10, Windows Server 2016 or Windows Server 2019, Windows 10 IoT Enterprise, Windows 11.

Installation of the *Axxon PSIM* software package includes the following stages:

1. connect the video capture cards to the Servers;
2. connect the video cameras and microphones to the video capture cards;
3. connect pan/tilt/zoom (PTZ) devices to the Servers;
4. install the *Axxon PSIM* software package to the Servers, Remote Administrator Workstations and Clients.

The first stage of the *Axxon PSIM* software package installation involves installing equipment for digitizing video and audio signals on the PC. The *Axxon PSIM* installation kit includes one or several video capture cards (depending on the type of license) intended to digitize video and audio signals. To install the video capture cards, perform the following steps:

1. Cut off power to the computer onto which the video capture card will be installed.
2. Remove the case cover from the system unit.
3. Install the video capture card into a free PCI (PCI Express) slot.



4. Restore the case cover back onto the system unit.

The video capture card is now installed.

The second stage of installation involves connecting video cameras and microphones to the video capture cards. The connections are made using the provided interface cables with numbered BNC connectors (to connect video

cameras) and RCA connectors (to connect microphones). Connect the microphones and video cameras to the video capture card as follows:

1. Connect the interface cables to the appropriate connectors on the video capture card.



2. Connect the video cameras to any of the 16 (8, 4) BNC connectors of the interface cable in the numerical order.



3. Connect the microphones to any of the RCA connectors of the interface cable with numbers in the range of 1 to 8.

Video cameras and microphones are now connected to the video capture cards.

If necessary, the third stage of installation involves connecting available PTZ devices. PTZ devices are connected to the Server via serial (COM) ports (RS-232 interface). Since PTZ devices typically use an RS-422 or RS-485 interface, they must be connected using special RS-422/485 to RS-232 converters.

Before connecting the PTZ devices, refer to the appropriate documentation in order to become familiar with the pin-out schemes of the PTZ devices and of the utilized converters.

The fourth and final stage of *Axxon PSIM* installation involves installing the software provided in the installation kit. You must have Windows OS administrator rights to proceed with installation.

You can install the *Axxon PSIM* software package in one of the following configurations:

1. **Server**—the full-featured *Axxon PSIM* software kernel (the psim.exe software module). The video surveillance system based on *Axxon PSIM* software uses Servers to receive and process video signals from analog and IP surveillance cameras.
2. **Remote Administrator Workstation (RAW)**—the full-featured *Axxon PSIM* software kernel (the psim.exe software module). The video surveillance system based on *Axxon PSIM* software uses Remote Administrator Workstations for remote administering of *Axxon PSIM* software installed on Servers and other Remote Administrator Workstations of the distributed video surveillance system, as well as the specialized platforms: videogate, remote archive server, remote web server, etc.

3. **Client**—the software kernel with limited functionality intended for an operator workstation (the `psim_host.exe` software module). Client provides remote video surveillance and audio monitoring, i.e. acts as a Client.

Install the software as follows:

1. Power up the PC and load the operating system.
2. Unpack the installation kit downloaded from the official website.
3. Start the *Axxon PSIM* software installation.
4. Install the required configuration of *Axxon PSIM* (Server/Client/RAW) by following the setup prompts.

**Note**

During the installation the software of other producers (required for *Axxon PSIM* and video capture card driver operation) will be installed.

Axxon PSIM is now installed.

9 Starting and shutting down the Axxon PSIM software

On this page:

- [Software startup](#)
- [Confirmation by supervisor](#)
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- [Two-factor authentication](#)
- [Shutting down](#)

9.1 Software startup

Before you start *Axxon PSIM*, make sure that the communication environment, used video cameras, microphones and other devices are ready for operation.

Note

If the path to the `psim.sec` key file was not specified during the installation, it is necessary to put `psim.sec` into the *Axxon PSIM* software root directory. If the key file is missing, *Axxon PSIM* will operate in demo mode.

The *Axxon PSIM* system can be started in the following ways:

1. Automatically. The software starts automatically, immediately after the operating system is loaded.
2. Manually. *Axxon PSIM* can be launched from the **Start** menu: **Start** → **Axxon PSIM**. To launch the Server configuration, click the **Axxon PSIM** menu item, and for the Client configuration click **Client Workstation**.

The startup window will be displayed.



Note

If there is no license key and *Axxon PSIM* is started in demo mode, then the **Demonstration mode** message is displayed in the startup window.

If user rights restrictions were implemented during software configuration, then a password will be requested from a user during the software startup. Enter the password and click the **Registration** button.

Note

The number of password entry attempts is limited. If the password is entered incorrectly three times, the next login attempt can be made after 60 seconds.

If Windows authentication is used for authorization, login and password input is not necessary. To start the *Axxon PSIM* software just click the **Registration** button. **Login** and **Password** fields should be left blank in this case.

Note

There are three types of user rights in *Axxon PSIM*: for administration, control, and monitoring.

9.2 Confirmation by supervisor

Confirmation by supervisor is required during the user login if the four-eyes rule authorization is configured in the system. After clicking the **Registration** button, you will be prompted to enter the login and password of the supervisor. After entering the supervisor password click the **Registration** button again.



9.3 Password change at login

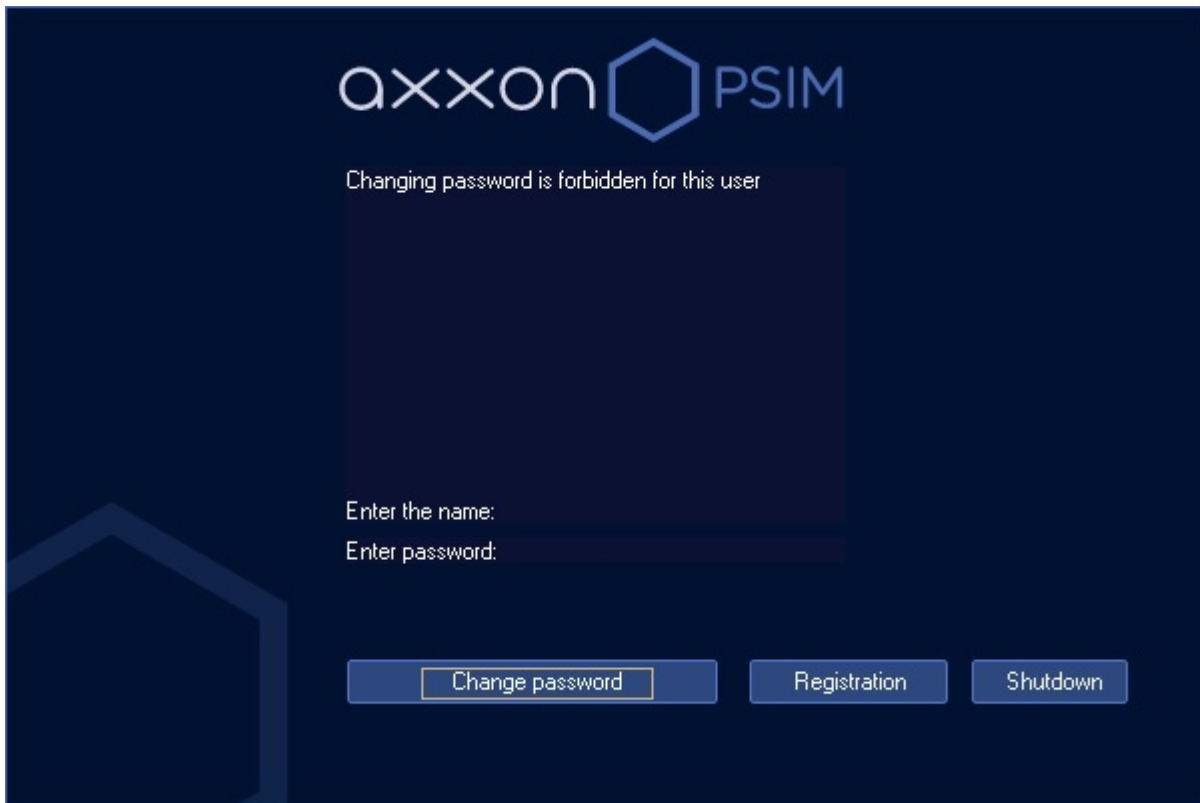
You may need to change your password if *Axxon PSIM* is configured accordingly. This can happen the first time the user logs in, or when the current password expires. In this case after clicking the **Registration** button you will be prompted to enter and confirm a new password.

The password can be changed by user request if *Axxon PSIM* is configured accordingly. In this case click the **Change password** button and then enter and confirm a new password.



Note

If the user is prohibited from changing the password on demand, a corresponding message will be displayed in the dialog box.

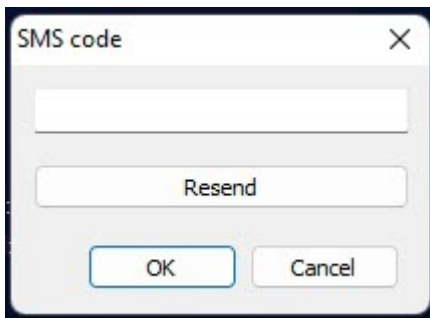
**Attention!**

The new password must not match the previous one.

After you start the *Axxon PSIM* software and enter the new password, click the **Registration** button.

9.4 Two-factor authentication


The two-factor authentication function can be configured in *Axxon PSIM*, which requires login confirmation by SMS code—see [Configuring two-factor authentication](#). In this case, after entering the login and password and clicking on the **Register** button, a short message with the code will be sent to the user's phone number. Enter this code in the **SMS code** box that opens, and then click the **OK** button.




If the message with the code does not get delivered, you can click the **Resend** button to send the code again but not sooner than in 10 seconds after the previous resend.

9.5 Shutting down

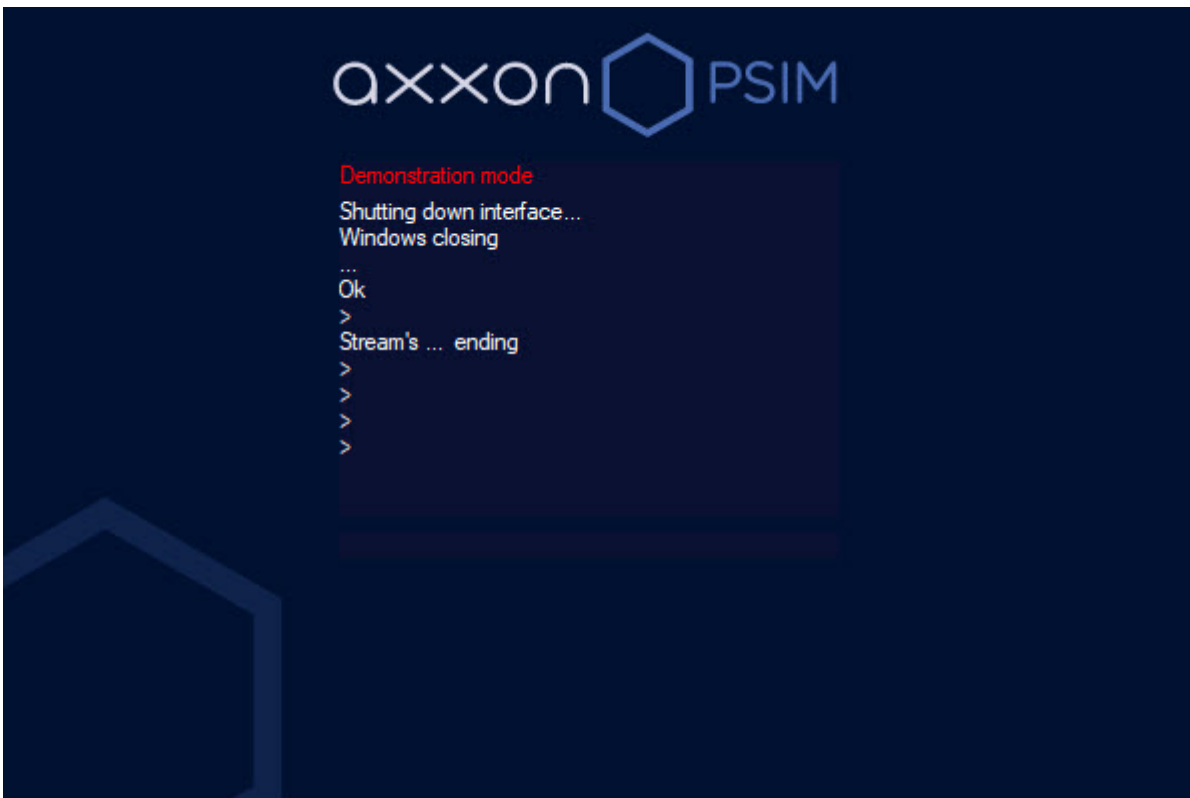
Shut down the *Axxon PSIM* software as follows:

1. Point the mouse to the upper right corner of the screen and the *Axxon PSIM* Quick Access Toolbar (QAT) will appear.
2. Click the  button in the QAT.
3. Select the **Shutdown** menu item.

Note

The **Shutdown** menu item is also available in the menu that appears when left-clicking the  icon in the Windows system tray, or by holding the F8 hotkey.

Software shutdown will begin, and a password may be required if *Axxon PSIM* is configured accordingly. Enter the password and click the **Shutdown** button.



Note

When shutting down *Axxon PSIM* in Client configuration in any way other than described above, particularly when restarting the computer without shutting down *Axxon PSIM*, the interface parameters may not be saved. For example, the information about saved layouts on the Video Surveillance Monitor may be lost.

Note

Axxon PSIM can be configured in a way that prohibits shutdown. In this case, the **Shutdown** menu item will not be displayed.

10 Configuring the Axxon PSIM software package

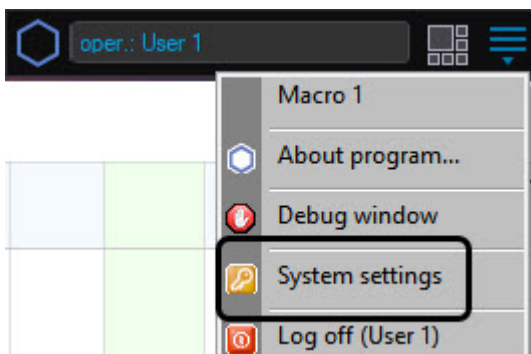
Depending on the customer requirements to the *Axxon PSIM* based security system, you should configure the *Axxon PSIM* software objects that represent the following security system components:

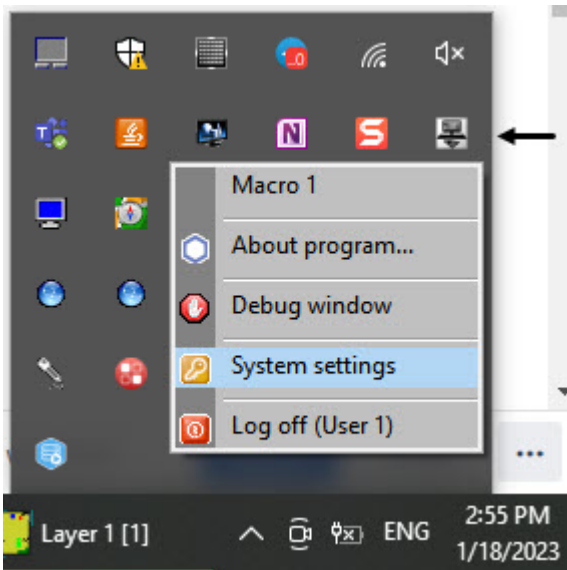
1. video subsystem;
2. PTZ subsystem (a system for managing pan/tilt/zoom devices and cameras' lenses);
3. audio subsystem;
4. automated video analytics subsystem;
5. sensor/relay subsystem;
6. notification subsystem (over various communication channels);
7. data back-up subsystem;
8. video/audio network data exchange subsystem;
9. user rights management subsystem;
10. software performance monitoring subsystem;
11. automated control subsystem;
12. user interfaces subsystem.

Note

The set of available *Axxon PSIM* system objects is defined in the `psim.sec` key file.

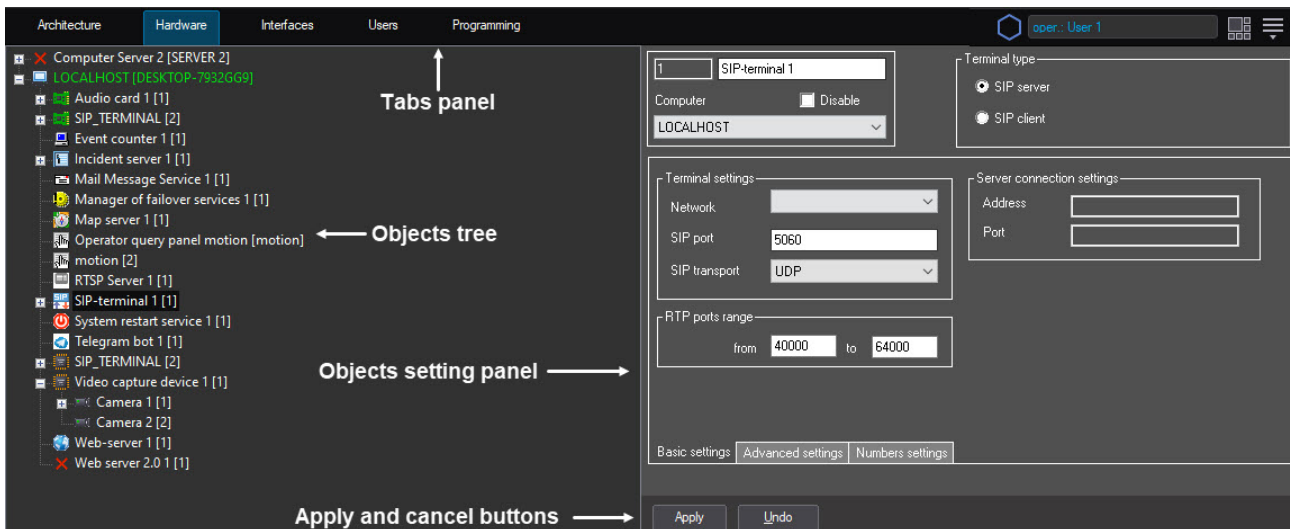
You can configure the *Axxon PSIM* software objects in the **System Settings** dialog box, which is opened using the Quick Access Toolbar, from the Windows notification area (system tray) or by briefly pressing the hot key F8.





The **System Settings** dialog window contains:

1. tabs panel;
2. objects tree (absent in the **Architecture** tab);
3. object settings panel tree (absent in the **Architecture** tab);
4. the **Apply** and **Cancel** buttons.



You typically configure objects as follows: create or select the object required for configuration in the object tree, set parameter values on the object settings panel, save changes using the **Apply** button. The [Quick start Guide](#) offers a list of objects and a brief description of their functionality. For details on configuring objects, see [Administrator's Guide](#).

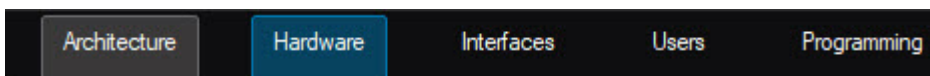
10.1 The System settings dialog box

On the page:

- The tabs panel
- The Objects tree
- The Object settings panel
- The Apply and Undo buttons

10.1.1 The tabs panel

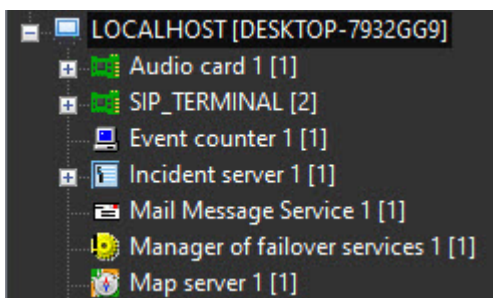
You can use the tabs panel to switch between different objects settings groups:



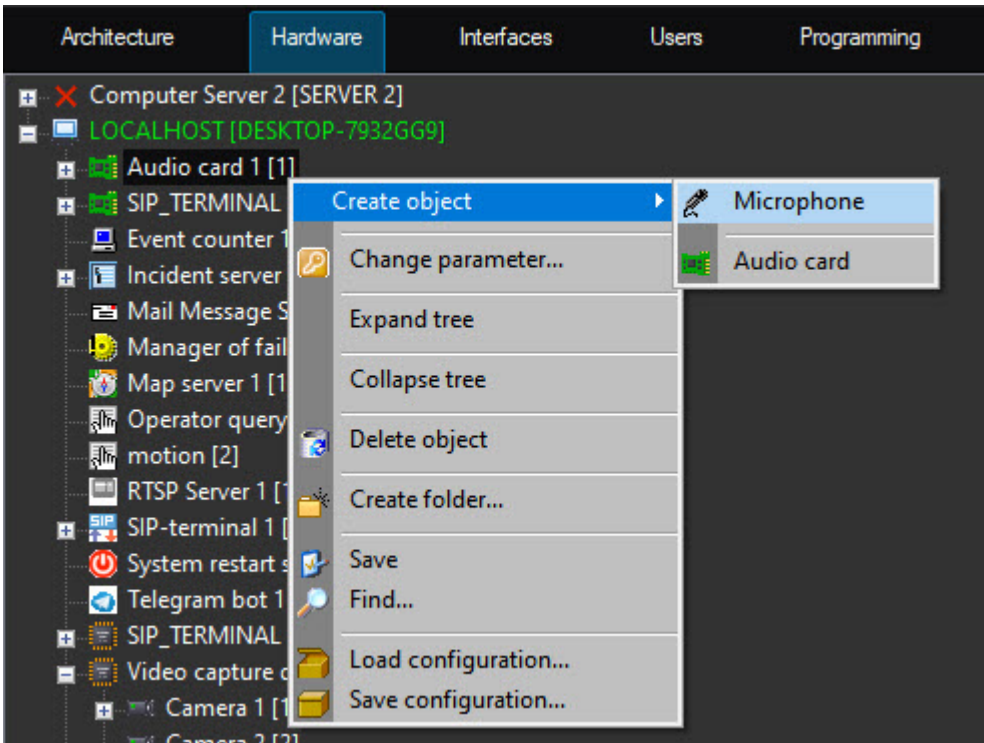
1. The **Architecture** tab is used to describe the system structure, the network settings of the computer communication and the parameters of the event transfer between the computers in a distributed system.
2. The **Hardware** tab is used to connect and configure the hardware and the software modules. This tab is also used to connect and configure the custom components of the operator's GUI, such as the **Operator query panel** and the **Alarm notification window**.
3. The **Interfaces** tab is used to create and configure the virtual screens and the operator's GUI components—video surveillance monitors on the virtual screens, audio players and control panels of various devices and modules.
4. The **Users** tab is used to create user accounts (registration) in the digital video surveillance and audio monitoring system, control users access rights to the system resources and assign passwords to users.
5. The **Programming** tab is used to create macros, programs and scripts, as well as to schedule *Axxon PSIM* operation and divide the protected area.

10.1.2 The Objects tree

The objects tree is arranged as a multi-level list of the embedded objects.



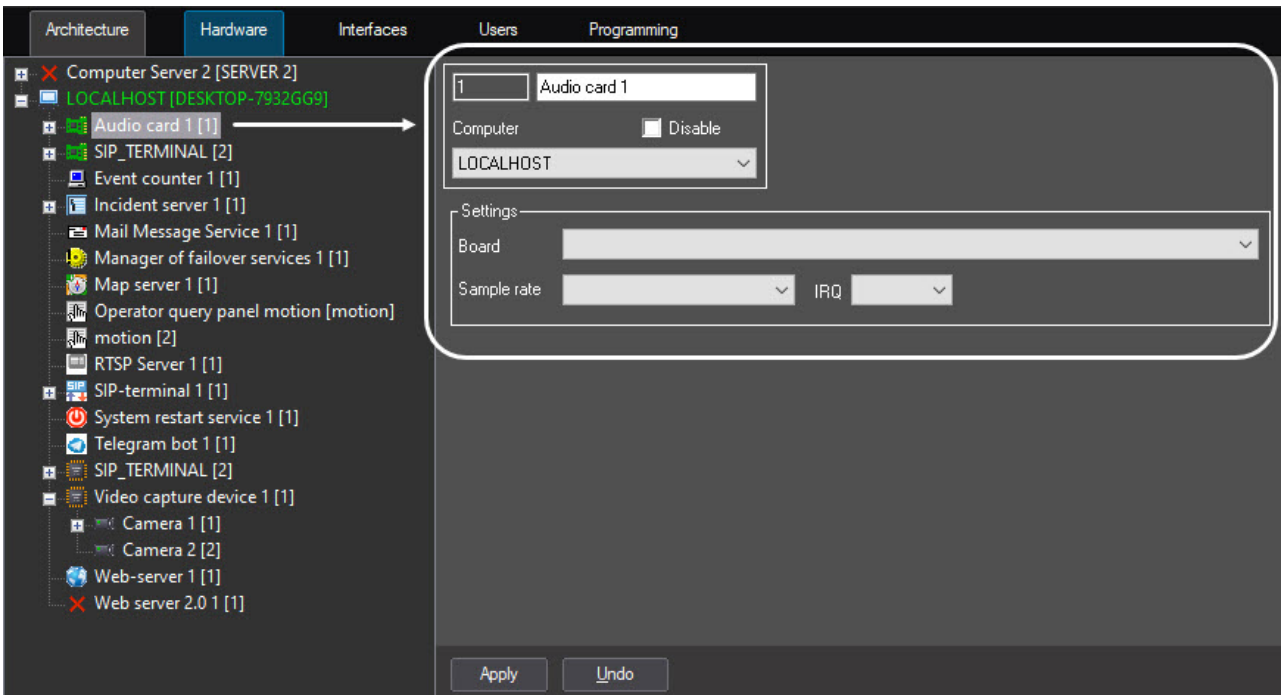
The structure of objects is hierarchical, the lower-order (child) object in the hierarchy can be created only on the basis of the higher-order (parent) object.



You can expand the objects tree and all its groups (branches) or collapse them to hide the irrelevant objects.

10.1.3 The Object settings panel

The Object settings panel is used to activate and configure the object selected in the objects tree.



Depending on the type of the selected object, the settings panel displays the necessary interface elements to enter the parameters values.

10.1.4 The Apply and Undo buttons

The **Apply** button is used to save the given object identification and setting parameters. The **Undo** button is used to return to the previous object identification and setting parameters.



Note

The parameters entered and confirmed with the **Apply** button cannot be cancelled with the **Undo** button.

10.2 Main system objects

The main objects of the system that require preliminary configuration for the correct operation of the *Axxon PSIM* software package include the following:

The objects in the **Hardware** tab:

1. **Computer** is a unique image of each computer running the *Axxon PSIM* software. This is a parent object for all the hardware objects which provide the settings for the hardware plugged into that computer.
2. **Video Capture Device** provides the settings for connected video capture cards or IP video processing devices.
3. **Camera** allows you to configure and control video cameras.
4. **Audio Card** provides for configuration of connected sound cards.
5. **Microphone** is intended for configuration of audio input devices.
6. **Sensor** allows you to configure sensors.
7. **Relay** allows you to configure relays.
8. **Telemetry Controller** is used for configuring the PTZ ports.
9. **PTZ device** enables you to configure how a camera and its pan/tilt/zoom drive interact.

The objects in the **Interfaces** tab:

1. **Display** is used for configuring how the selected interface objects are displayed.
2. **Monitor** allows you to configure how video is displayed in camera windows (tiles) and set up camera controls.
3. **Audio player** enables you to configure microphones and play back audio.
4. **Map** allows you to configure and control security devices represented by system objects plotted on the map of the secured facility/territory.
5. **Event viewer** is configured to display the events log.

The objects in the **Users** tab:

1. **User permissions** allow you to manage access rights for system objects.

The objects in the **Programming** tab:

1. **Area** is intended for dividing the protected facility/territory into areas of interest.
2. **Region** is intended for dividing the areas of protected facility/territory into regions of interest.

10.3 Additional system objects

Additional objects of the system include the following.

The objects under the **Hardware** tab:

1. **Videogate** channels video from video servers to remote workstations.
2. **Web-Server** enables you to configure monitoring video streams transmitted with the TCP/IP protocol in the Internet browser window.
3. **Backup archive** enables you to configure archive file backup to local and network disks and USB drives.
4. **Control panel** is used for configuring analog PTZ devices.
5. **Detection zone** allows you to configure detection tools that provide automatic video image analysis to recognize events occurring within the observed scene.
6. **Captioner** allows you to configure how the content of receipts (i.e. captions) is superimposed over a video image.
7. **SNMP service** allows you to configure the SNMP-notifications for operator.
8. **Operator query panel** allows you to model user dialog windows with any static or dynamic content.
9. **Alarm Message Window** allows you to configure the interface window used to inform operator of registered alarms and system events.
10. **Voice notification service** is used to configure audio notification of alarm events registered by the system.
11. **Voice Message Service** is used to configure voice messages transmitted over telephone lines.
12. **Short Message Service** allows you to configure SMS messages delivery to cell phones of the system users.
13. **Mail Message Service** allows you to configure email messages delivery to the system users.
14. **System restart service** enables you to configure rebooting *Axxon PSIM* modules if they are not responding.
15. **Keyboard** allows you to configure the special keyboard for on-the-fly control of basic *Axxon PSIM* object functions.
16. **Event counter** allows you to configure which events within a specified time span will be counted.
17. **Data replication service** allows you to configure replication of archive from servers using the removable media.
18. **PS-RTP Server** allows you to configure interaction between third-party software and *Axxon PSIM* via GB28181 protocol.
19. **RTSP Server** allows you to configure sending both live video and *Axxon PSIM* archive over RTSP protocol.
20. **Web server 2.0** allows you to configure video surveillance using mobile clients.
21. **Edge storage** allows you to configure access to the archive in onboard storage of IP device.
22. **Backup audio archive** allows you to configure backing up the archive recorded with audio.
23. **Sound notification** allows you to configure voice notification.
24. **IIDK interface** allows you to configure control over elements in the third-party software.
25. **Failover** is used to switch to standby servers upon the failure of the previously active servers.
26. **Failover manager** allows you to configure the maximum number of failovers.
27. **Audio playback card** allows you to configure the connected audio card with the audio output.
28. **Loud speaker** allows you to configure audio playback.
29. **LDAP service** is used to import users from LDAP address book to *Axxon PSIM* database.
30. **VMDA metadata storage** is used to configure storing motion trajectories of objects in the field of view of a camera.

The objects under the **Interfaces** tab:

1. **Panel of Backup archive** is used for configuring the interface object for backing-up your data.
2. **External window** is created on the basis of the **Display** object to configure the windows of external applications.
3. **Telemetry control panel** allows you to configure PTZ controls, focusing and zooming controls for selected video cameras.
4. **Captions search** is used to configure queries for the captions database.
5. **HTML interface** is used for configuring the interface object that allows displaying web pages.
6. **Live sound switch** is used for configuring the interface object that allows directing audio signal coming from any sound source (microphone) to any sound detector (loudspeaker) for playback.
7. **Configuration check** is used for running the configuration check utility.
8. **Operator protocol** is used for configuring the interface object for processing events coming from security system objects and searching in the event log.

9. **Scene** is used for configuring the interface object for panoramic video displaying.

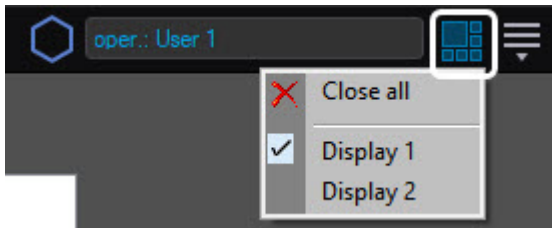
The objects under the **Programming** tab:

1. **Macro** is used for setting up interactions of the objects that do not have the functionality to perform the required tasks.
2. **Program** allows you to set up scenarios if the **Macro** object does not offer the functionality to perform the required tasks. It is implemented using a programming language embedded in *Axxon PSIM*.
3. **Script** allows you to set up scripts if the **Macro** object does not have the functionality to perform the required tasks. It is basically a code written in JScript.
4. **Time Zone** is one of the *Axxon PSIM* scheduling tools used to set up time-frames.
5. **Timer** is the other *Axxon PSIM* scheduling tool used to set up time-instances.
6. **Macro event** is used for configuring the event generation when some interrelated events happen.
7. **Objects link** is used for linking objects with cameras.

11 Operating the Axxon PSIM software package

The *Axxon PSIM* interface objects (hereinafter called windows) are intended for displaying information processed by the system objects. Axxon PSIM windows are grouped together for display through the **Screen** objects. All windows grouped together under a particular **Screen** object, are displayed simultaneously.

To switch between Screens, use the **Windows/Interfaces** button on the system’s QAT. You can hide all the active displayed Screens using the **Close all** command.



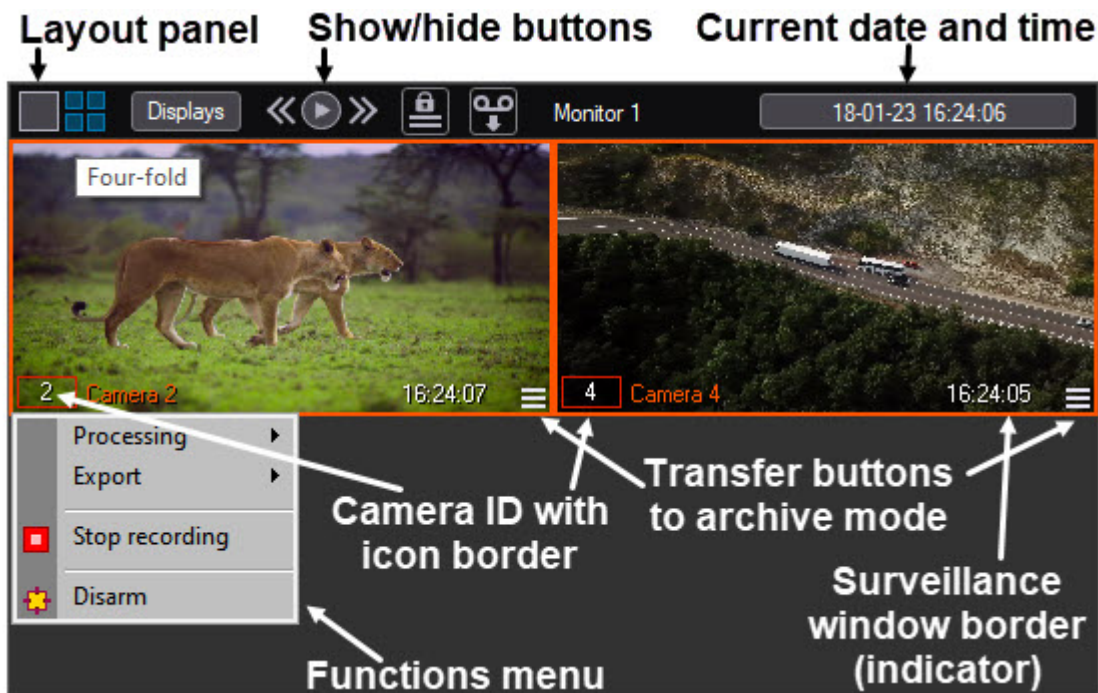
This guide briefly describes the operation of the following *Axxon PSIM* windows:

1. Monitor;
2. Audio Player;
3. Map;
4. Telemetry Panel;
5. Event Viewer.

Operation of the specified interface objects (windows) is described in detail in [Operator's Guide](#).

11.1 Video monitor

The **Video surveillance monitor** window enables you to display and manage the **Surveillance windows** (camera windows/tiles) that show video from video cameras connected to the Server.



The **Video surveillance monitor** enables you to:

1. display video from cameras;
2. manage video surveillance modes;
3. graphic process video feeds from cameras;
4. control recording of video sequences from cameras;
5. work with archives;
6. display information about the status of video cameras.

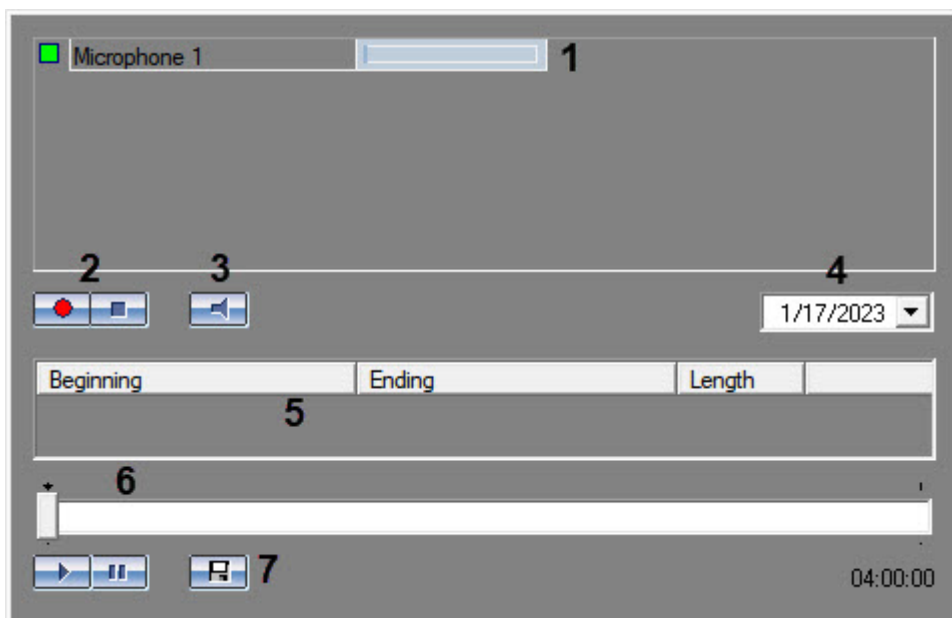
11.2 Audio Player

The Audio Player window is used to operate the audio monitoring subsystem, that provides audio monitoring and recording for protected facilities.

Note

To operate **Audio Player** you should plug in headphones or speakers.

Audio Player interface:



where

- 1—microphone status indicator;
- 2—audio recording buttons;
- 3—microphone monitoring buttons;
- 4—date field for reviewing audio records;
- 5—list of audio records;
- 6—audio playback control panel;
- 7—export audio record to file.

The Audio Player functionality enables you to:

1. listen to audio on viewed camera;
2. record event audio;

3. playback audio recordings on alarm events;
4. save event audio as a standard Windows .wav file.

11.3 The Map

The **Map** window is used to monitor and control various devices throughout the surveillance system (cameras, microphones, sensors, relays), and to run macros.




The Map enables you to:

1. create an interactive multilevel hierarchical **Map** object (graphical chart) of a protected facility;
2. monitor the status of all security devices on the **Map**;
3. draw virtual lines to divide the protected facility into regions and areas;
4. switch automatically to the alarm layer and follow up on recursive alert links through map layers;
5. control actuating devices by clicking them on the **Map**;
6. run macros.

How you structure your **Map** depends on the protected facility structure/floor plan. You can configure the shape of a **Map** while configuring the *Axxon PSIM* system.

Security system devices on the map are represented by their icons. The status of each device is displayed, and you can access its functions menu by right clicking on the device icon on the map.

The Map may have multiple Layers. To toggle the layers click on the layer link icon .

11.4 Telemetry control panel

The **Telemetry control panel** is used to control PTZ (pan/tilt/zoom) devices connected to the system (for example, a PTZ device of a video camera).



The **Telemetry control panel** enables you to:

1. control the PTZ device of the video camera;
2. control the lens zoom (enlargement of the image) of the video camera;
3. adjust the focus of the camera lens;
4. select and set custom PTZ settings.

11.5 Event Viewer

The Event Viewer is designed to display data on events registered by the system (with data filtering by event type option).

Event viewer 1 [~8]					
<input type="checkbox"/> Show filters Clear					
Source	Event	Region	Add. info	Card	Date and time
Camera 2	Harddisk rec				1/18/2023 10:45:56 PM
Camera 2	Alarm				1/18/2023 10:45:56 PM
Camera 2	Alarm end				1/18/2023 10:46:27 PM
Camera 2	Record on disk st...				1/18/2023 10:46:27 PM
Camera 2	Harddisk rec				1/18/2023 10:46:33 PM
Camera 2	Alarm				1/18/2023 10:46:33 PM

The Event Viewer enables you to:

1. display a list of events of specified types;
2. display source, event name, region, date and time of the event, additional information on event;
3. create and print reports on events;
4. jump to the event source's location on the **Map**;

5. view event camera footage in the **Event Viewer** tile.

12 Conclusion

More detailed information on the *Axxon PSIM* software package is presented in the following documents:

1. [Administrator's Guide](#);
2. [Operator's Guide](#);
3. [Programming Guide](#);
4. [Programming Guide \(JScript\)](#);
5. [Installing and configuring security system components guide](#).

If you encounter difficulties or problems while using *Axxon PSIM*, you are welcome to contact us. However, before addressing us, we kindly ask you to prepare the answers to the following questions:

1. What exactly is the problem?
2. When did the problem appear and what happened before that?
3. What causes the problem?

Please note that the more detailed and precise information you give us, the faster our experts will resolve your problem.

We are striving to improve the quality of our products, and hence welcome any proposals and suggestions how to improve our software and documentation.