



Intellect

Apollo SDK v.2 Integration Module Settings
Guide

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List of Terms used in the ApolloSDK v.2 Integration Module Settings Guide

Server - a computer configured as an *Intellect* Software System **Server**.

Access control system (ACS) – a system of hardware and software designed to monitor and control access.

Controller - an electronic device designed to monitor and control access points.

Access point – a place where access is controlled.

AIM Interface Module – an interface module for connecting readers or keypads to an AAN controller.

AIO alarm panel – a microprocessor-based alarm panel that monitors the state of alarm inputs and manages relay outputs.

Alarm input – an input to switch alarm sensors (magnetic-contact, impact-contact) or the output circuits of IR sensors and alarm panels.

Readers – electronic devices designed for entering a memorized code using a keypad or reading encoded data from system keys (identifiers).

Access card – a physical access key accepted by a reader.

Access time – the time allotted to pass through an access point. When the allotted time has passed the access point locks automatically.

Impulse – a signal used to close a relay.

Time schedule - a set of any number of time intervals during a day (24 hours) defined for several days (1 to 366), and the time intervals during specific dates. Time schedule defines a schedule of access to the secured object.

ApolloSDK v.2 Integration Module Settings Guide. Introduction

On the page:

- [Purpose of the document](#)
- [General information about the ApolloSDK v.2 integration module](#)

Purpose of the document

This *ApolloSDK v.2 Module Settings Guide* is a reference manual designed for *ApolloSDK v.2* Module configuration technicians and operators. This module functions as part of the *ACFA Intellect* Software System.

This Guide presents the following materials:

1. General information about the *ApolloSDK v.2* integration module;
2. Configuration of the *ApolloSDK v.2* integration module;
3. Working with the *ApolloSDK v.2* integration module.

General information about the *ApolloSDK v.2* integration module

The *ApolloSDK v.2* integration module is part of the *ACFA Intellect* Software System. It is designed to configure and control *ApolloSDK v.2* hardware.

The *ApolloSDK v.2* integration module allows working with *ApolloSDK v.2* system built using *AAN* central controllers and without them.

The following hardware is integrated with the *ACFA Intellect* Software System:

1. *AAN* central controllers (an *ACS* component);
2. *AIM* interface modules (an *ACS* component);
3. *AIO* alarm panels (an *SFA* component).



Note.

It is possible to work with *AIO* alarm panels only using the *AAN* central controller.

AAN central controllers are connected via COM-port or Ethernet-connection.

Connection via COM-port can be established in case of using one interface module without *AAN* central controller. Ethernet-connection with converter is used in case of several *AIM* interface modules.



Note.

Detailed information about the *ApolloSDK v.2* system can be found in the official documentation (manufacturer *AAM Systems*).



Attention!

The *ApolloSDK v.2* software must be installed on the Server for the *ApolloSDK v.2* integration module to operate.

Before configuring the *ApolloSDK v.2* integration module, the following actions must be performed:

1. Install the required hardware on the site.
2. Install the *ApolloSDK v.2* software on the Server (is located in the <Directory of the *Intellect* software installation>\Modules\ApolloSDK).
3. Copy the license.bin file (<Directory of the *Intellect* software installation>\Modules\ApolloSDK\ApolloSDK v.2.1 (01.15.2015) Installer\License) to directory of the *ApolloSDK* software installation.

Supported hardware and licensing of the Apollo SDK v.2 integration module

Manufacturer	AAM Systems Office address: Kraznokazarmennaya str., 13-402 Moscow Post address: Kraznokazarmennaya str., 14 Moscow, 111250 Tel: +7 (495) 924-2227 Fax: +7 (495) 362-7262 E-mail: aam@aamsystems.ru www.aamsystems.ru
Integration type	SDK
Equipment connection	RS-232, IP

Supported equipment

Equipment	Function	Features
AAN-100	Network controller	Central processor - MC68311 CPU 32 bit Memory - to 8 Mb Real time clock - yes PC connection interfaces: RS232 - 1 or Ethernet - 1 Interfaces for connection with interface modules, security and relay panels: RS485 - 4 or Ethernet - 4
AAN-32S	Network controller	Central processor - MC68311 CPU 32 bit Memory - to 2 Mb Real time clock - yes PC connection interfaces: RS232 - 1 Interfaces for connection with interface modules, security and relay panels: RS485 - 1 or Ethernet - 1

AAN-32N	Network controller	Central processor - MC68311 CPU 32 bit Memory - to 2 Mb Real time clock - yes PC connection interfaces: Ethernet - 1 Interfaces for connection with interface modules, security and relay panels: RS485 - 1 or Ethernet - 1
AIM-2SL	Access controller	Central processor - M68HC11 CPU Memory: Work storage RAM:128kB EEPROM:512 k Real time clock - yes Connection interfaces: Wiegand readers - 2 Interfaces for connection with interface modules, security and relay panels: RS485 - 1 or Ethernet - 1
AIM-4SL	Access controller	Central processor - M68HC11 CPU Memory: Work storage RAM:128kB EEPROM:512 k Real time clock - yes Connection interfaces: Wiegand readers - 4 Interfaces for connection with interface modules, security and relay panels: RS485 - 1 or Ethernet - 1
AIO-168	Security panel	Security loops – 16 Relay outputs - 8 Interfaces of connection to central controller: RS485 – 1 or Ethernet – 1
ASA-72	Status panel	Is taken out of production

Protection

There are four positions in the price-list for one module:

Integration with Apollo (one server)
Integration with Apollo (one reader)
Integration with Apollo AIO-168
Integration with Apollo (one ASA-72)

Integration with Apollo (one server) – is an electronic guardant key protected Apollo SDK v.2 from the manufacturer site and storing serial keys of all devices. There is at least one key for system.

If hardware is connected to several servers with Intellect core then additional purchase of electronic protect keys is required for each second and next servers (Integration with Apollo (one reader)). Own configuration for each electronic key – in accordance with settings in the object tree of the *Intellect* software.

It is required to present all serial numbers of hardware at the time of module order.

Protection doesn't depend on number of connected senior panels (AAN-100 and/or AAN-32). Protection depends only from number of connected terminals (readers, sensor/relay, ASA-72). It requires with specifics of module sublicensing in

company-manufacturer of module.

Apollo SDK v.2 software module works with AIM-*SL controllers directly. Also there is possibility to work with several AIM-*SL controllers using network controller ENI-110.

Configuration of the ApolloSDK v.2 integration module

Configuration procedure for the ApolloSDK v.2 integration module

The *ApolloSDK v.2* integration module with *AAN* controller is configured as follows:

1. Configure the connection of *AAN* controller.
2. Configure an *AAN* controller.
3. Configure connection port of *AIM* and *AIO* interface modules.
4. Configure *AIM* and *AIO* modules.
5. Configure readers of *AIM* module.
6. Configure executive devices of *AIO* module.
7. Configure displaying of access cards.

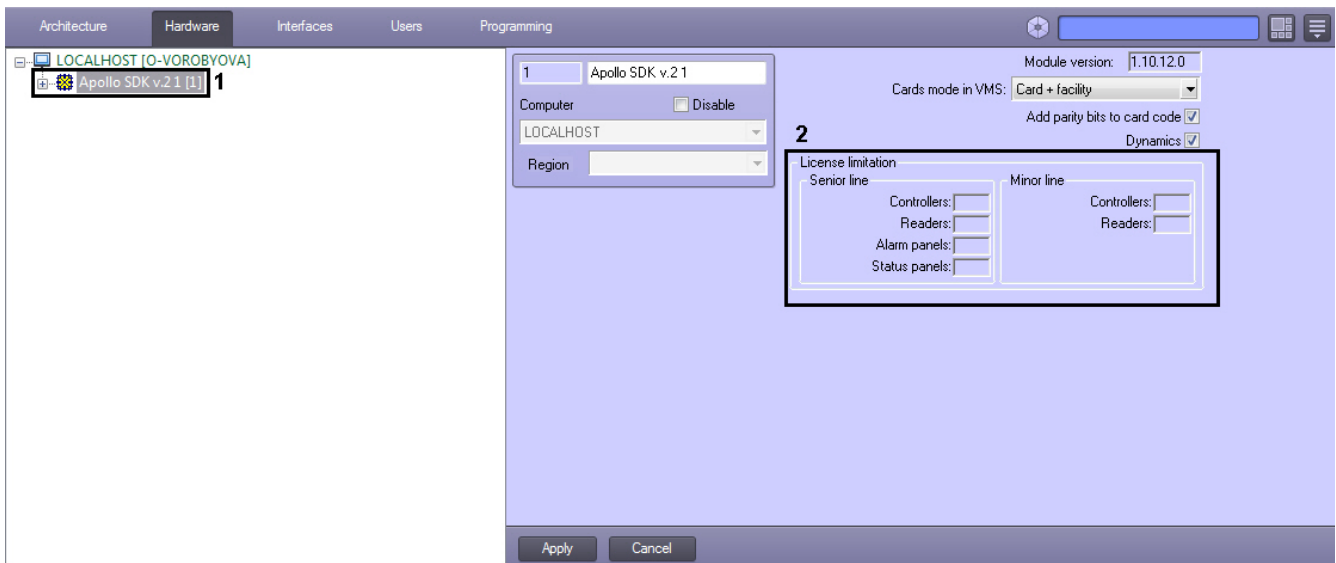
The *ApolloSDK v.2* integration module without *AAN* controller is configured as follows:

1. Configure connection of *AIM* interface modules.
2. Configure *AIM* modules.
3. Configure readers of *AIM* modules.
4. Configure displaying of access cards.

It's required to send configuration to hardware if system configuration was changed.

Activation of the ApolloSDK v.2 integration module

To activate the *ApolloSDK v.2* integration module create the **Apollo SDK v.2** object on the basis of the **Computer** object (1).

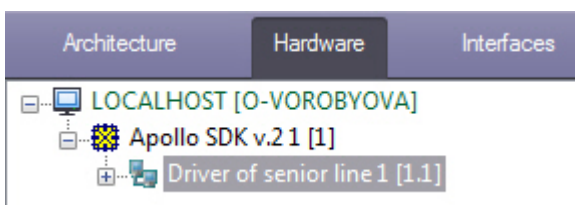


License limitation for number of devices is specified on the settings panel of the **Apollo SDK v.2** object (2).

Configure system with AAN central controller

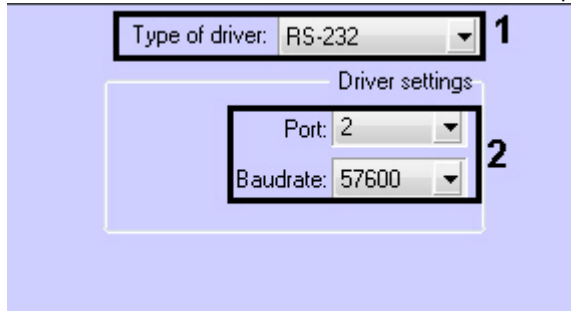
Configure connection of AAN controller

Connection of the *AAN* controller is configured on the settings panel of the **Driver of senior line** object created on the basis of the **Apollo SDK v.2** object.

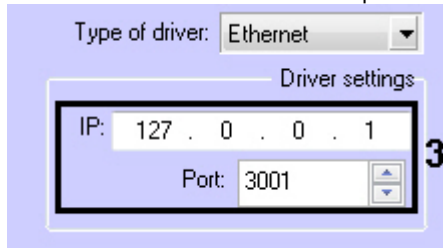


To connect the AAN controller, do the following:

1. Select the interface of controller connection – COM-port or Ethernet (1).



2. Select the port number and its baudrate if controller is connected via COM-port (2).
3. Enter IP-address and connection port if controller is connected via Ethernet (3).

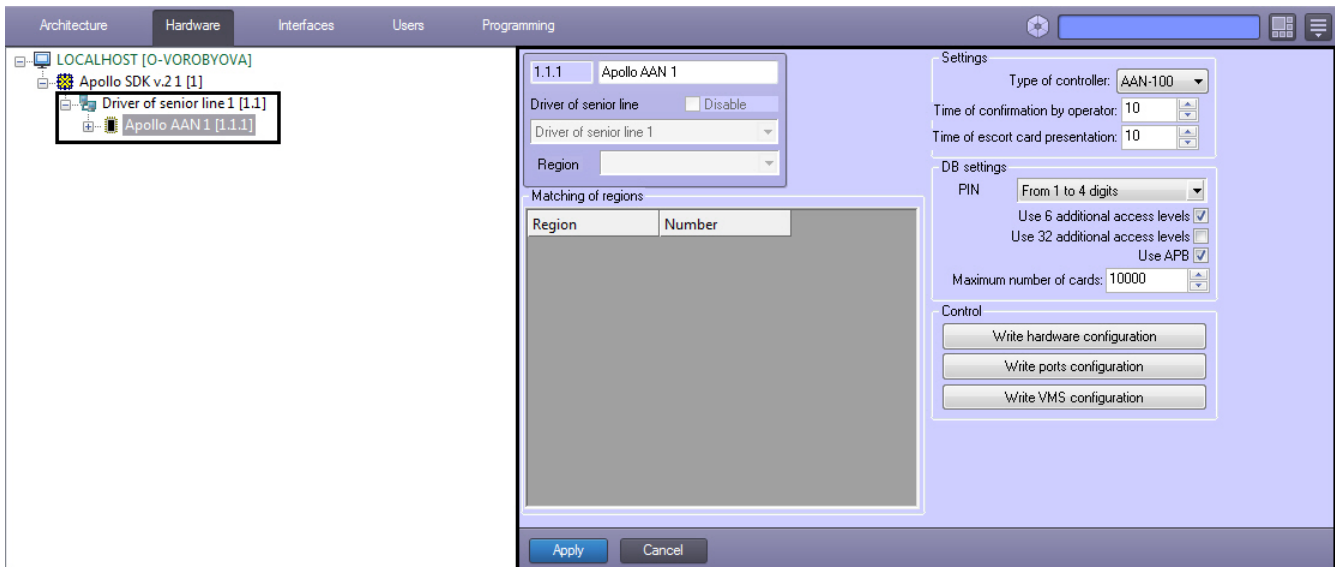


4. Click the **Apply** button.

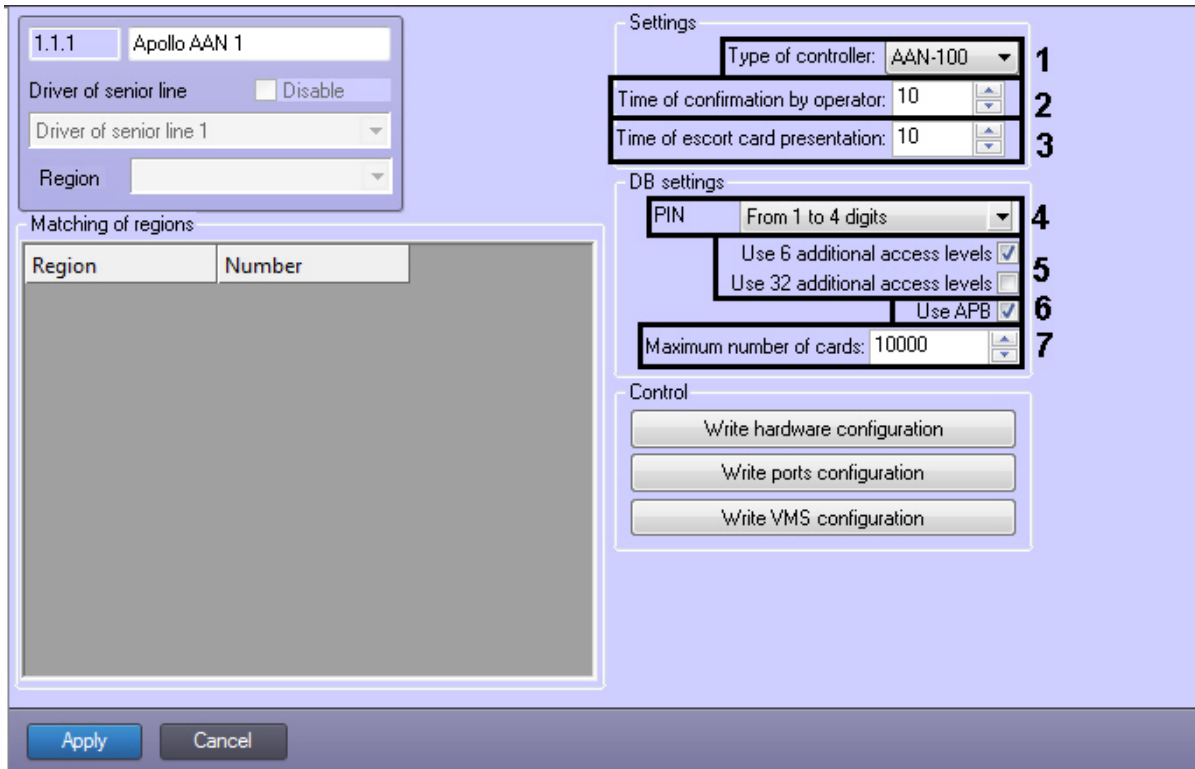
AAN controller is now connected.

Configure AAN controller

The AAN controller is configured on the settings panel of the **Apollo AAN** object created on the basis of the **Driver of senior line** object.



The AAN controller is configured as follows:



1. From the **Type of controller:** drop-down list select the type of AAN controller (AAN-32 or AAN-100) depending on the type of hardware being used (1).
2. In the **Time of confirmation by operator:** field enter the time period in seconds for operator to make a decision to grant or deny access (2).
3. In the **Time of escort card presentation:** field enter the time period in seconds between the presentation of the first and second access cards which, if exceeded, will result in access not being granted (3).
4. From the **PIN** drop-down list select the length of PIN-code being used. Select the **Do not use** value if it's not required to use PIN-code (4).
5. Set the corresponding checkboxes if it's required to use additional 6 or 32 access levels (5).



Attention!

Maximum number of users storing in controller memory decreases while using additional access levels.

6. To configure antipassback set the **Use APB** checkbox (6). To configure global antipassback regardless of number of AAN controllers, do the following:
 - a. Create regions in the *Intellect* software package.
 - b. Assign regions to readers.
 - c. Match number of region in the AAN controller to each region in the *Intellect* software.
7. In the **Maximum number of cards:** field enter the maximum number of access cards that will be stored in the controller's memory (7).



Note.

The maximum number of access cards that can be stored in the controller's memory depends on the number of memory cards installed in it.

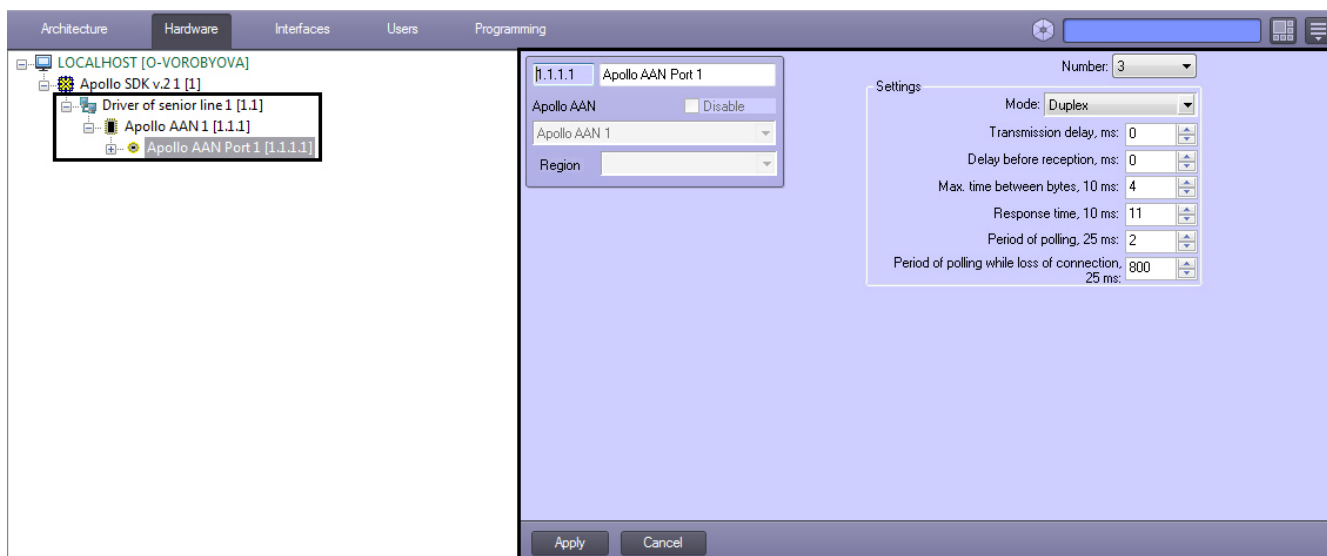
8. Click the **Apply** button.

The AAN controller is now configured.

Configure connection ports of AIM and AIO interface modules

AIM and AIO modules are connected to the AAN controller via 4 ports (RS-485 or Ethernet).

Port is configured on the settings panel of the **Apollo AAN Port** object created on the basis of the **Apollo AAN** object.

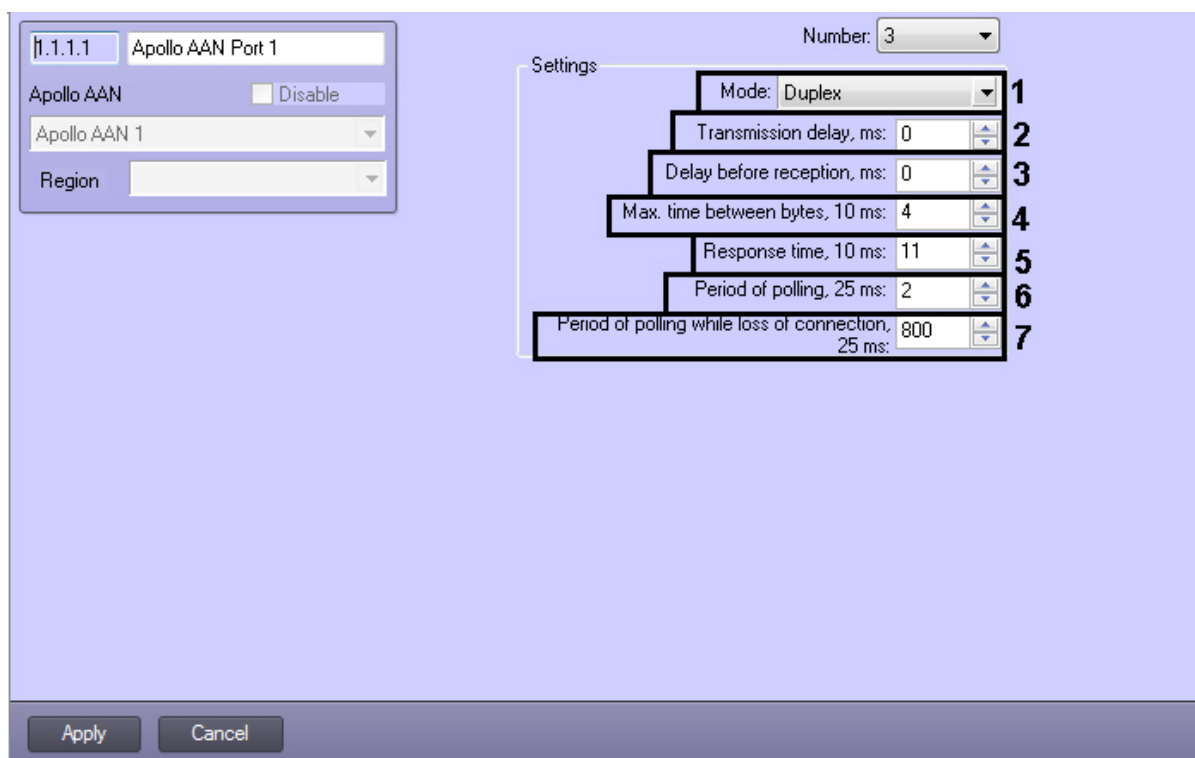


To configure port of the AAN controller, do the following:



Attention!

It is not recommended to change default port parameters.



1. From the **Mode**: drop-down list select mode of data exchange: duplex or half duplex **(1)**. Duplex mode receives and sends data simultaneously. Receiving and sending data in half duplex mode are performed in interval.
2. Specify delay of data exchange via port in milliseconds **(2)**.
3. Specify delay before data reception via port in milliseconds **(3)**.
4. Specify maximum time of waiting for next byte in milliseconds **(4)**.



Note.

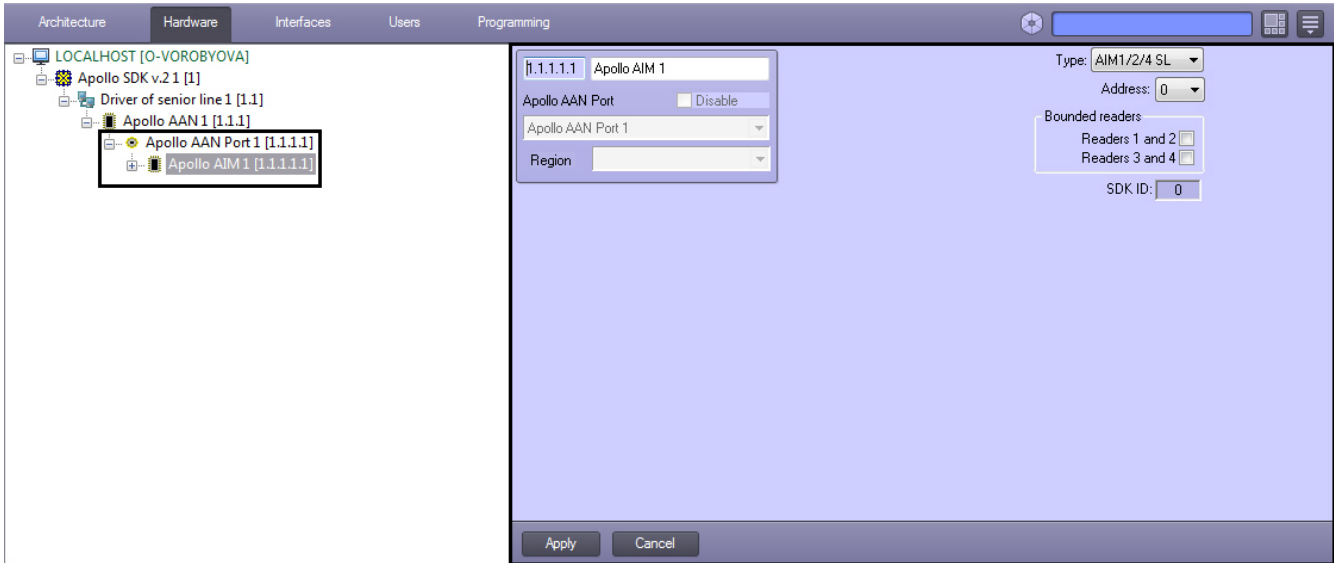
Names of this and next parameter contain multiplicity of value which is to be specified. So, if it's required to specify value of the Max. time between bytes, 10ms equal to 4, then maximum time of waiting for the next byte will be 40 ms.

5. Specify maximum time of response from devices connected via this port **(5)** considering the specified multiplicity. If device does not response during the specified time, connection with it will be lost.
6. Specify period of polling connected devices with established connection with them in milliseconds, considering the specified multiplicity **(6)**.
7. Specify period of polling connected devices without connection with them in milliseconds, considering the specified multiplicity **(7)**.
8. Click the **Apply** button.

Port of the AAN controller is now configured.

Configure the AIM interface module

The AIM interface module is configured on the settings panel of the **Apollo AIM** object created on the basis of the **Apollo AAN Port** object.



To configure the AIM interface module, do the following:



1. Select the type of the AIM module from the corresponding list (1).
2. From the **Address:** drop-down list select address of module in internal network (2).
3. Set the corresponding checkboxes if bounded readers are in use (3).
Bounded readers are used from both sides of door. Single readers are used from one side of door, access from another side is performed by button.



Note.

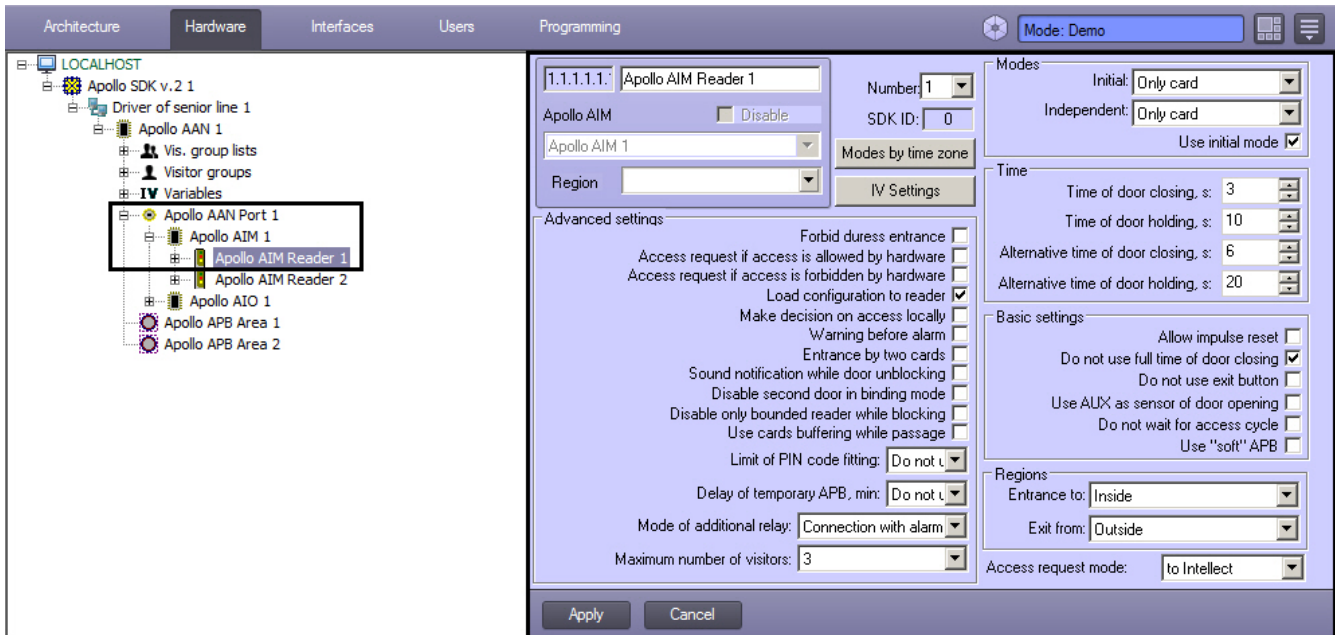
The **SDK ID** (4) field is filled in automatically while object creating and it contains different values for objects of the same type. It's not recommended to create objects by template (see [The Save function](#)) for correct working of module because of equal **SDK ID** values.

4. Click the **Apply** button.

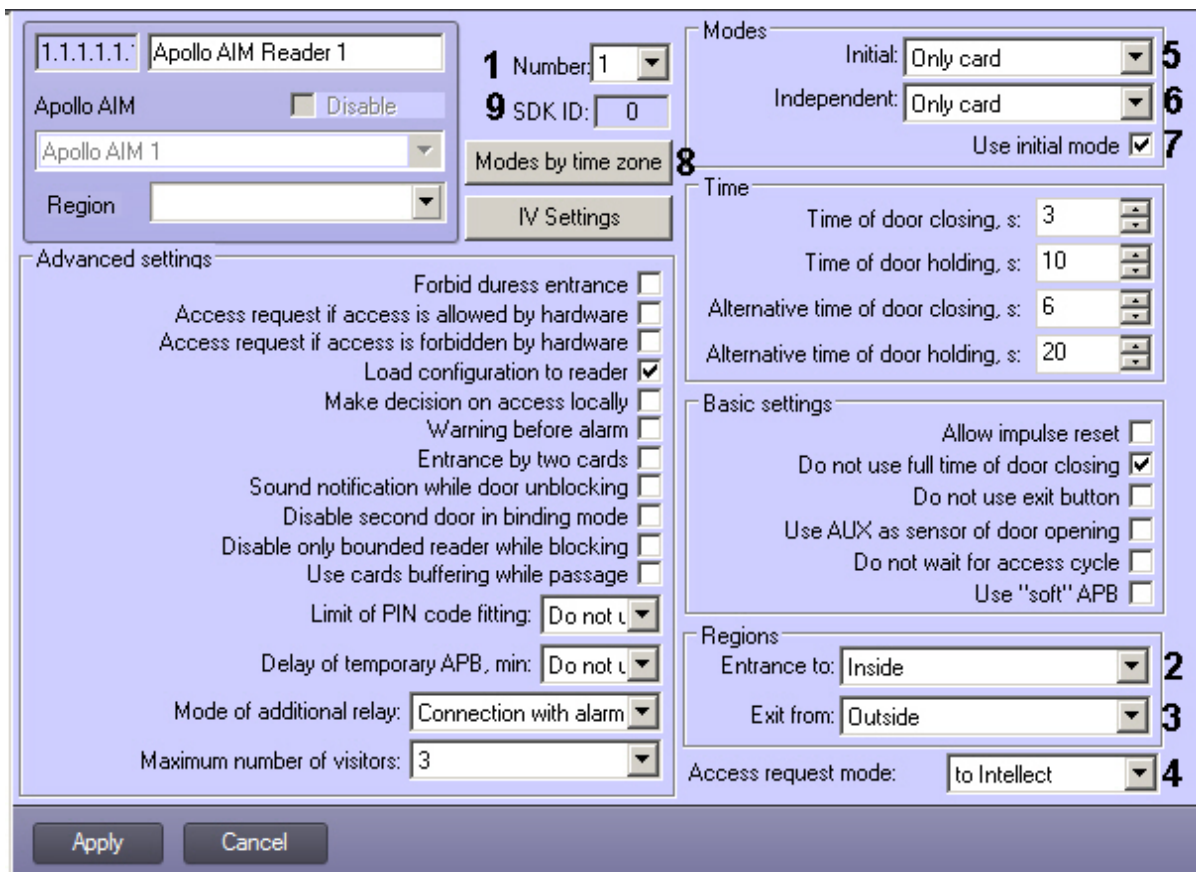
The AIM interface module is now configured.

Configure AIM readers

AIM reader is configured on the settings panel of the **Apollo AIM reader** object created on the basis of the **Apollo AIM** object.



To configure AIM module, do the following:



1. From the **Number:** drop-down list select the reader address (1).
2. From the **Entrance to:** drop-down list select the **Region** object corresponding to the area on the side of exit through this reader (2).
3. From the **Exit from:** drop-down list select the **Region** object corresponding to the area on the side of entrance through this reader (3).
4. From the **Access request:** drop-down list select responsible part for decision of access: the *Intellect* Server (automatic decision based on user access level and its card) or operator (4).

Note. For processing request by operator it's required to create the *Event Manager* interface object and configure it for the Operator request (Access granted) event. For detailed information about this object and its functionality see the [Event Manager Module Settings and Operation Guide](#).

5. Configure operation modes of reader:

- a. From the **Initial:** drop-down list select the mode of reader operation while connection establishing (5).

Operation mode	Description
Closed	Access is closed for all
Card only	Access granted by access card
PIN or card	Access granted by access card or PIN code
Card and PIN	Access granted by access card and PIN code
Opened	Access is opened for all
Facility code	Access is granted by facility code

- b. From the **Independent:** drop-down list select the mode of reader operation while losing of connection (6).
 c. Set the **Use initial code** checkbox if it's required to switch to initial mode after writing of configuration (7).
 d. Click the **Modes by time zones** button and configure changing of reader operation mode depending on time zone (8). Two operation modes are selected for each time zone: at the start of time zone and after end of time zone.



Note.

The **SDK ID (9)** field is filled in automatically while object creating and it contains different values for objects of the same type. It's not recommended to create objects by template (see [The Save function](#)) for correct working of module because of equal **SDK ID** values.

6. Specify other parameters of reader.

Parameter	Parameter setting method	Description
Time of door closing, s	Enter the value in the field	Time of opening in seconds
Time of door holding, s	Enter the value in the field	Time period in seconds during which door is to be closed. Otherwise, the Do or holding message will be triggered
Alternative time of door closing, s	Enter the value in the field	Alternative time of opening in seconds. It is in use by special command (from card, using macro or script)
Alternative time of door holding, s	Enter the value in the field	Alternative time period in seconds during which door is to be closed. Otherwise, the Door holding message will be triggered. It is in use by special command (from card, using macro or script)
Allow impulse reset	Set the checkbox	Yes – impulse reset enabled
Do not use full time of door closing	Set the checkbox	Yes – lock after door closing
Do not use exit button	Set the checkbox	Yes – disable exit button
Use AUX as sensor of door opening	Set the checkbox	Yes – use additional <i>AUX</i> sensor of <i>AIM</i> module as sensor for door opening
Do not wait for access cycle	Set the checkbox	Yes – passage is performed after making an access decision No – passage is performed after triggering a sensor of door opening
Forbid duress entrance	Set the checkbox	Yes – door is locked while entering "duress" PIN-code No – door is opened and alarm message is triggered while entering "duress" PIN-code
Access request if access is allowed by hardware	Set the checkbox	Yes – send access request to operator if <i>AIM</i> or <i>AAN</i> allow access
Access request if access is forbidden by hardware	Set the checkbox	Yes – send access request to operator if <i>AIM</i> or <i>AAN</i> forbid access

Load configuration to reader	Set the checkbox	Yes – duplicate users and their access levels to the memory of <i>AIM</i> module while writing of configuration to the <i>AAN</i> controller
Make decision on access locally	Set the checkbox	Yes – the <i>AIM</i> module makes an access decision without the <i>AAN</i> central controller
Warning before alarm	Set the checkbox	Yes – trigger warning before alarm
Entrance by two cards	Set the checkbox	Yes – passage through the reader is performed by two cards
Sound notification while door unblocking	Set the checkbox	Yes – sound signal of reader while unblocking the door
Disable second door in binding mode	Set the checkbox	Yes – block the reader working for exit from secured areas
Disable only bounded reader while blocking	Set the checkbox	Yes – only bounded reader are blocked while locking signal No – all readers are blocked
Use "soft" APB	Set the checkbox	Yes – antipassback is available, but the corresponding mistake will be specified in message
Use cards buffering while passage	Set the checkbox	Yes – write access cards to the <i>AIM</i> while passage
Limit of PIN code fitting	Select the value from the list	Lock is blocked while exceeding of invalid PIN-code entrances
Delay of temporary APB, min	Select the value from the list	Time interval in minutes during which antipassback is forbidden
Mode of additional relay	Select the value from the list	Connection with alarms – additional relay is triggered while alarm Manual control – additional relay is activated manually
IV Settings	Click the button	See Associating AIM reader commands with terms.

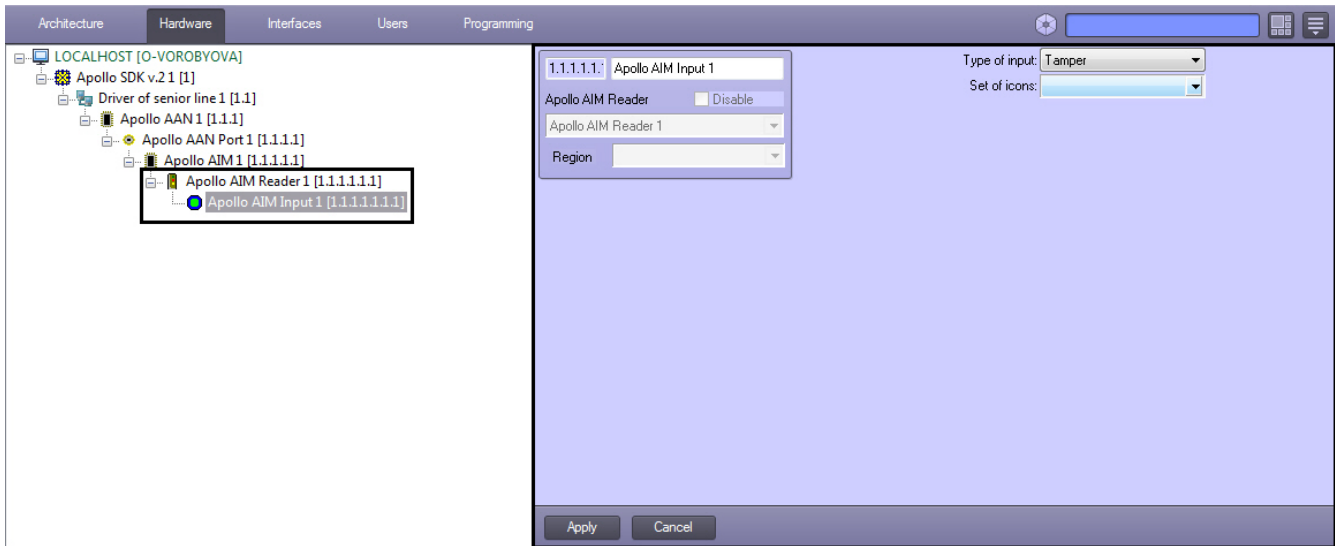
7. Click the **Apply** button.

The *AIM* reader is now configured.

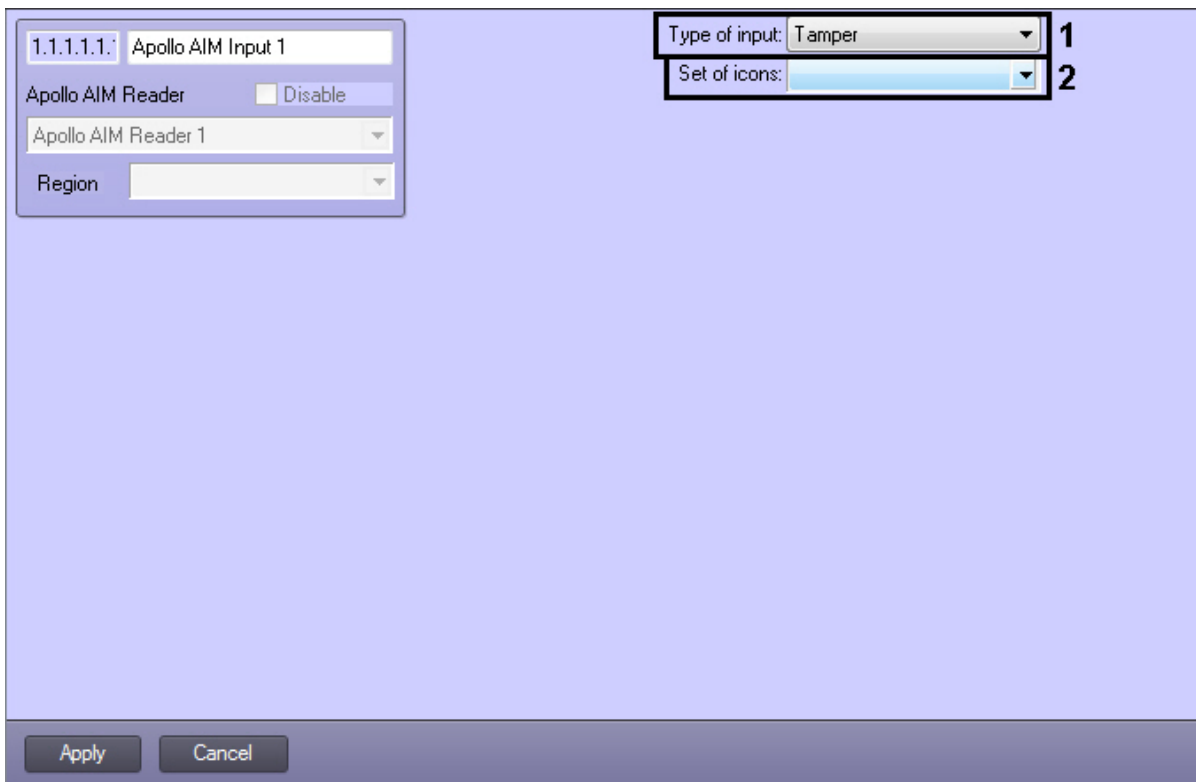
Configure virtual input of AIM reader

It's possible to create and configure virtual inputs of *AIM* readers. Virtual inputs track the defined states of reader and trigger messages on which different reactions can be configured using scripts and macros.

Virtual input of *AIM* reader is configured on the settings panel of the **Apollo AIM Input** object created on the basis of the **Apollo AIM Reader** object.



Virtual inputs are configured as follows:

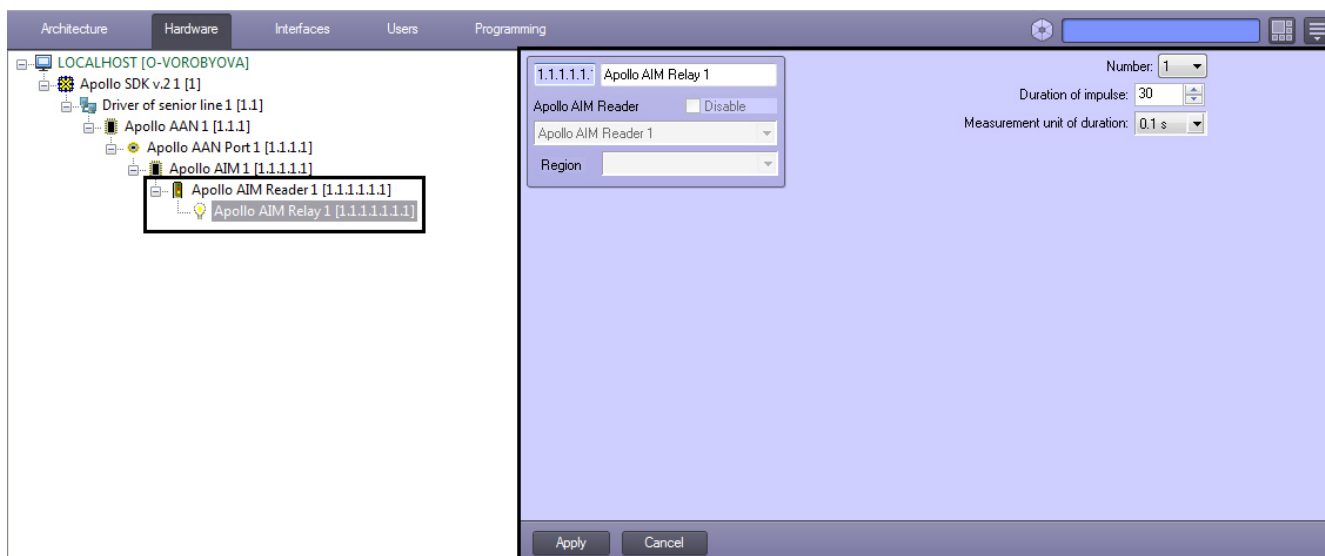


1. Select the type of virtual input.
2. Select the set of icons for virtual input on the map.
3. Click the **Apply** button.

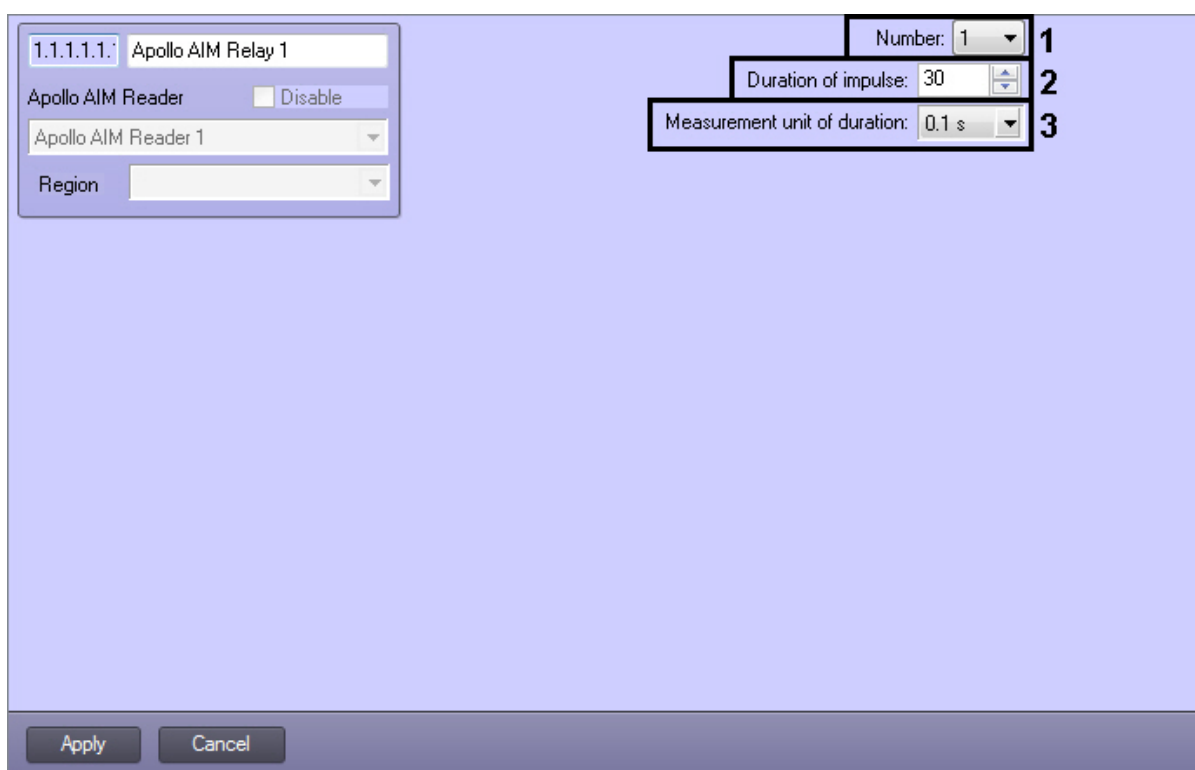
Virtual input of *AIM* reader is now configured.

Configure relay of AIM reader

Relay of *AIM* reader is configured on the settings panel if the **Apollo AIM Relay** object created on the basis of the **Apollo AIM Reader** object.



Relays are configured as follows:

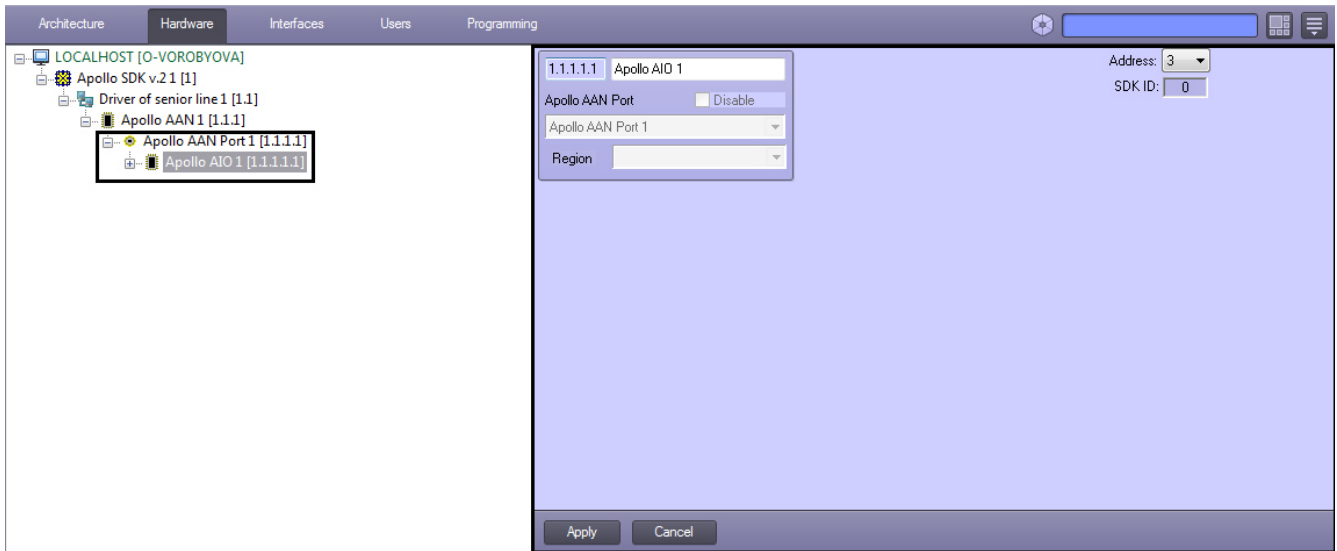


1. From the **Number** drop-down list select the relay address (1).
2. Specify duration of relay impulse:
From the **Measurement unit of duration** drop-down list select the measurement unit of relay impulse (3).
In the **Duration of impulse** field set the value in selected units defining the impulse duration (2).
3. Click the **Apply** button.

Relay of *AIM* reader is now configured.

Configure the AIO interface module

The *AIO* interface module is configured on the settings panel of the **Apollo AIO** object created on the basis of the **Apollo AAN Port** object.



To configure the *AIO* interface module, do the following:



1. From the **Address** drop-down list select address of module in internal network (**1**).

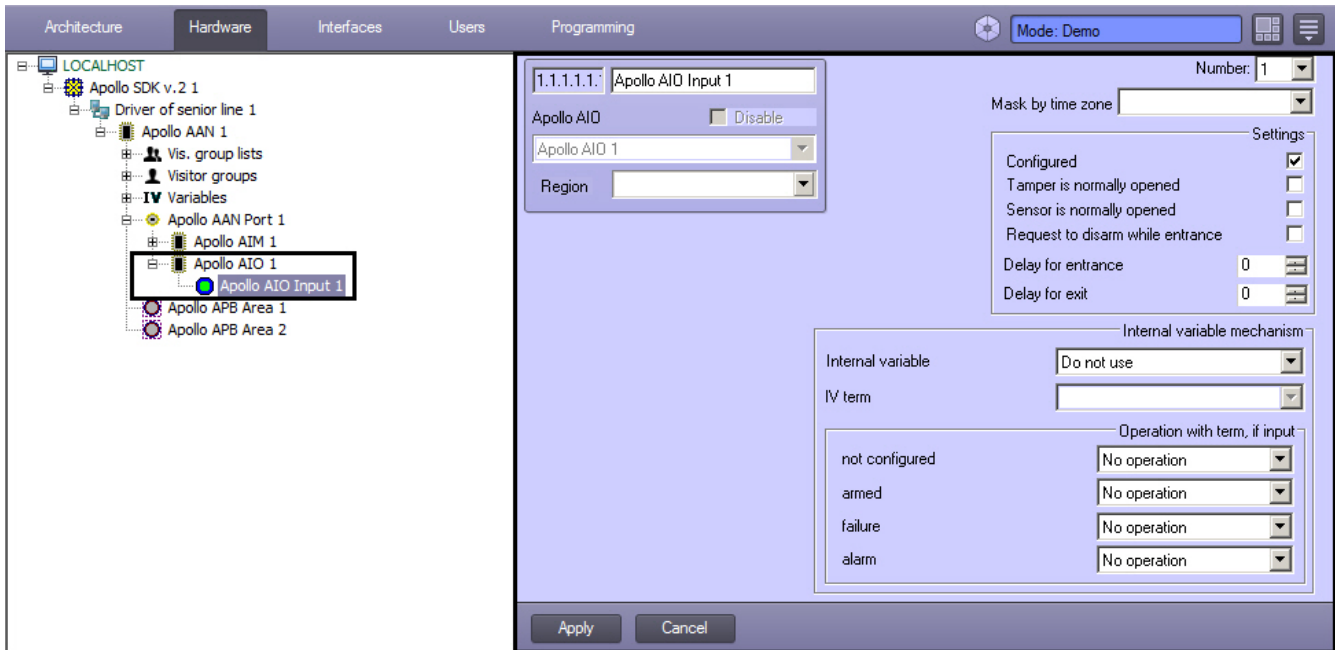
Note. The **SDK ID** (**2**) field is filled in automatically while object creating and it contains different values for objects of the same type. It's not recommended to create objects by template (see [The Save function](#)) for correct working of module because of equal **SDK ID** values.

2. Click the **Apply** button.

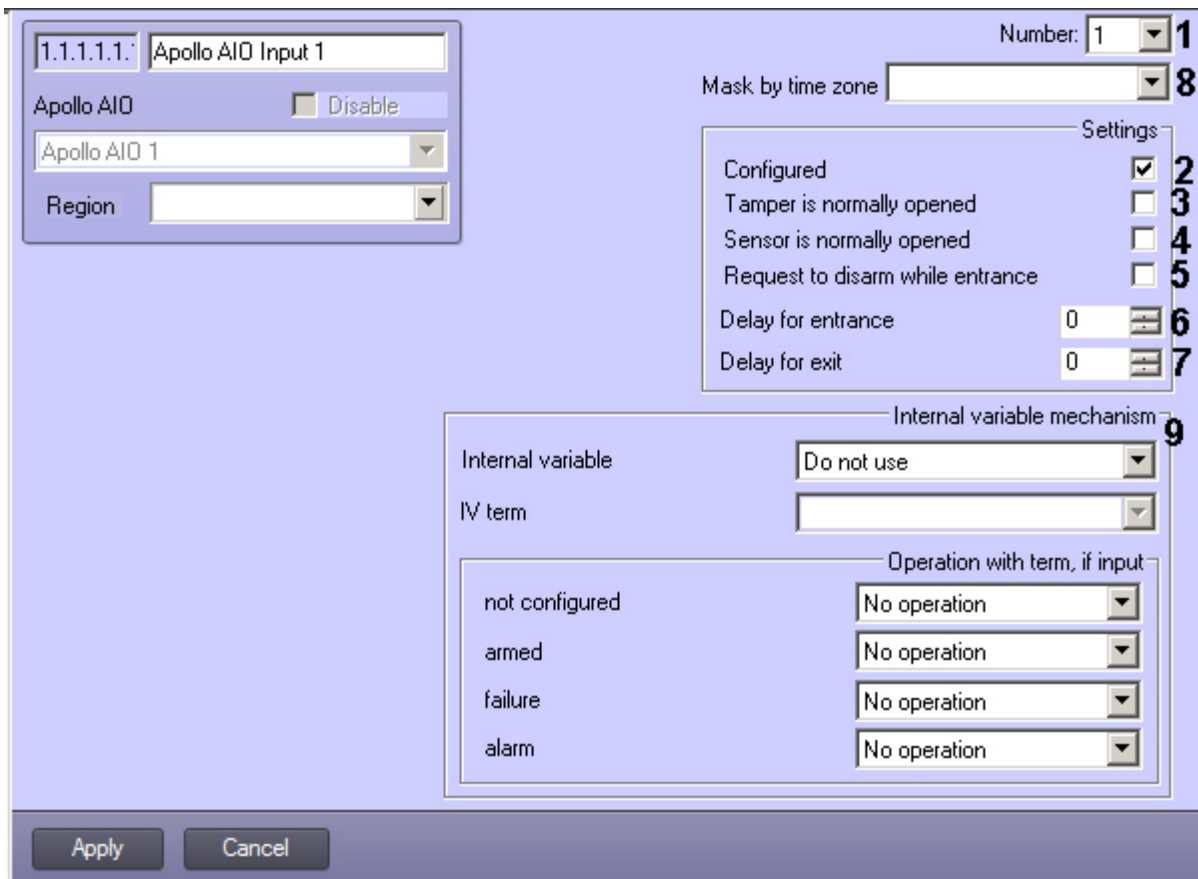
The *AIO* interface module is now configured.

Configure AIO inputs

The *AIO* input is configured on the settings panel of the **Apollo AIO Input** object which is created on the basis of the **Apollo AIO** object.



The AIO input is configured as follows:

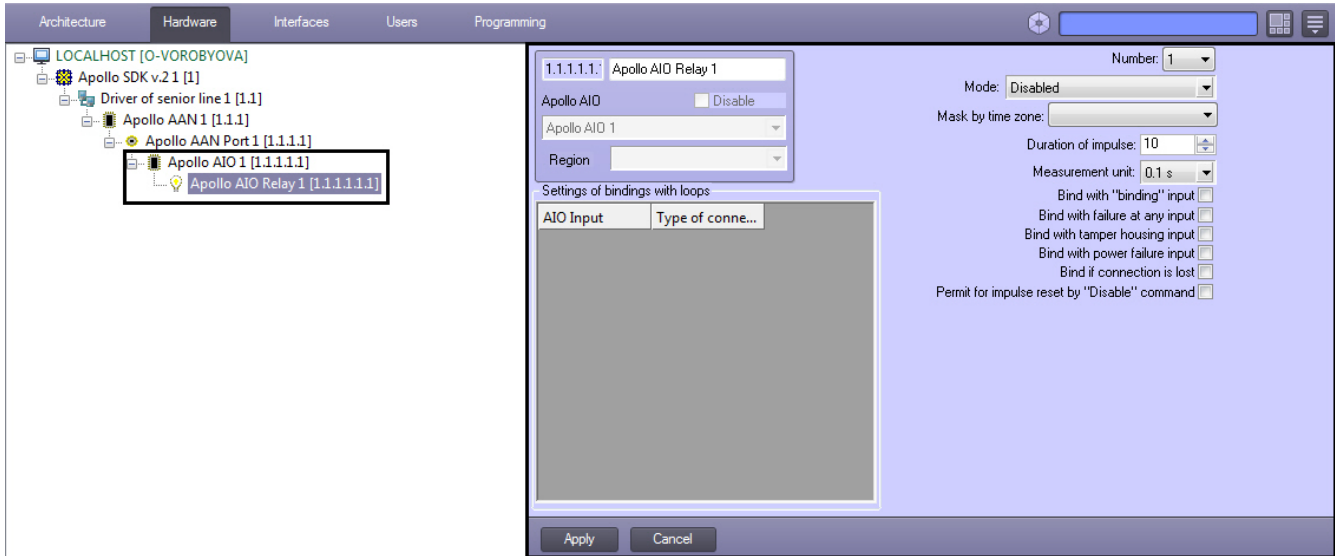


1. Select the input address from the **Number** drop-down list (1).
2. Set the **Configured** checkbox if the input is in working state (2).
3. Set the **Tamper is normally opened** checkbox if it's required to receive alarm events while breaking or opening the sensor housing (3).
4. Set the **Sensor is normally opened** checkbox if it's required that input is to be in normal state (not alarm) while opened contacts (4).
5. To require disarming of input set the corresponding checkbox (5).
6. In the **Delay for entrance** field enter the value in seconds defining time for input disarming (6).
7. In the **Delay for exit** field enter the value in seconds defining time period during which the object can exit after the input arming (7).
8. From the **Mask by time zone** drop-down list select the time zone during which events won't be generated for the input (8).
9. If necessary, assign the input with a term of an internal variable (9, see [Associating AIO input with a term](#)).
10. Click the **Apply** button.

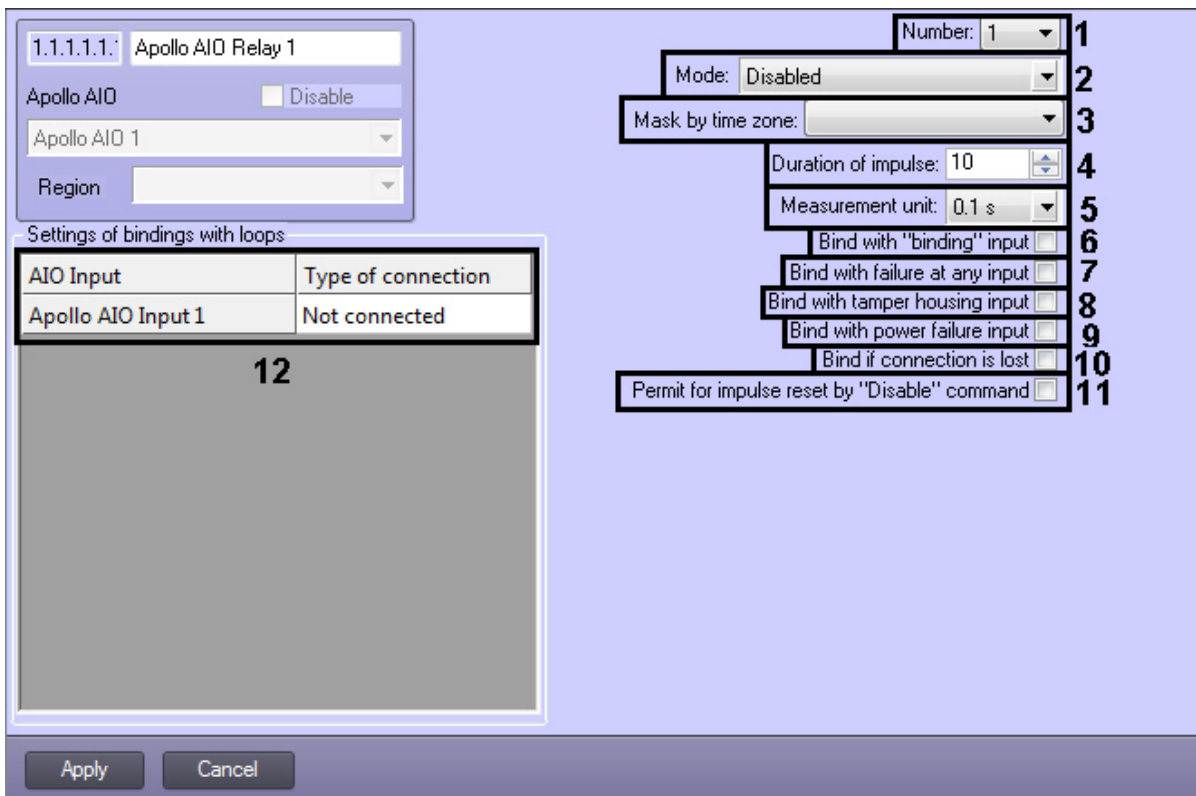
The AIO input is now configured.

Configure the AIO relay

The AIO relay is configured on the settings panel of the **Apollo AIO Relay** object created on the basis of the **Apollo AIO** object.



The AIO relay is configured as follows:



1. From the **Number:** drop-down list select the number of relay (1).
2. From the **Mode:** drop-down list select the mode of relay working (2).

Mode of relay working	Description
Disabled	Relay opened
Enabled	Relay closed
Connected with inputs locally	State of relay depends on state of loops and inputs

3. From the **Mask by time zone:** drop-down list select the time zone during which events won't be generated for the relay (3).
4. Specify duration of relay impulse:

- a. From the **Measurement unit**: drop-down list select the measurement unit of relay impulse (5).
- b. In the **Duration of impulse** field set the value in selected units defining the impulse duration (4).
5. Set the **Bind with "binding" input** checkbox if it's required that relay reacts to the **Binding** state of input (6).
6. Set the **Bind with failure at any input** checkbox if it's required that relay reacts to failure of any input (7).
7. Set the **Bind with tamper housing input** checkbox if it's required that relay reacts to state of security panel state (8).
8. Set the **Bind with power failure input** checkbox if it's required that relay reacts to state of security panel power (9).
9. Set the **Bind if connection is lost** checkbox if it's required that relay reacts to loss of connection (10).
10. If it's required to enable possibility of impulse reset while changing the operation mode to **Disabled**, set the **Permit for impulse reset by "Disable" command** checkbox (11).
11. Configure interaction of relay and inputs (12). In the **Type of connection** column select state of input at which relay will be closed.

State	Description
Not connected	Relay is always opened at any state of input
Alarm and tamper	Relay is triggered in one of the following ways: a. Alarm message from input was received. b. Message from tamper was received.
Alarm/masked and tamper	Relay is triggered in one of the following ways: a. Alarm message from input was received. b. Alarm message from disarmed input was received. c. Message from tamper was received.
Alarm/masked, tamper and failure	Relay is triggered in one of the following ways: a. Alarm message from input was received. b. Alarm message from disarmed input was received. c. Message from tamper was received. d. Message about failure was received.

12. Click the **Apply** button.

The AIO relay is now configured.

Configuring visitor groups and group lists

The *ApolloSDK v.2* module allows configuring visitor groups and visitor group lists. These mechanisms are intended to deny access through Apollo readers for visitors without escort.

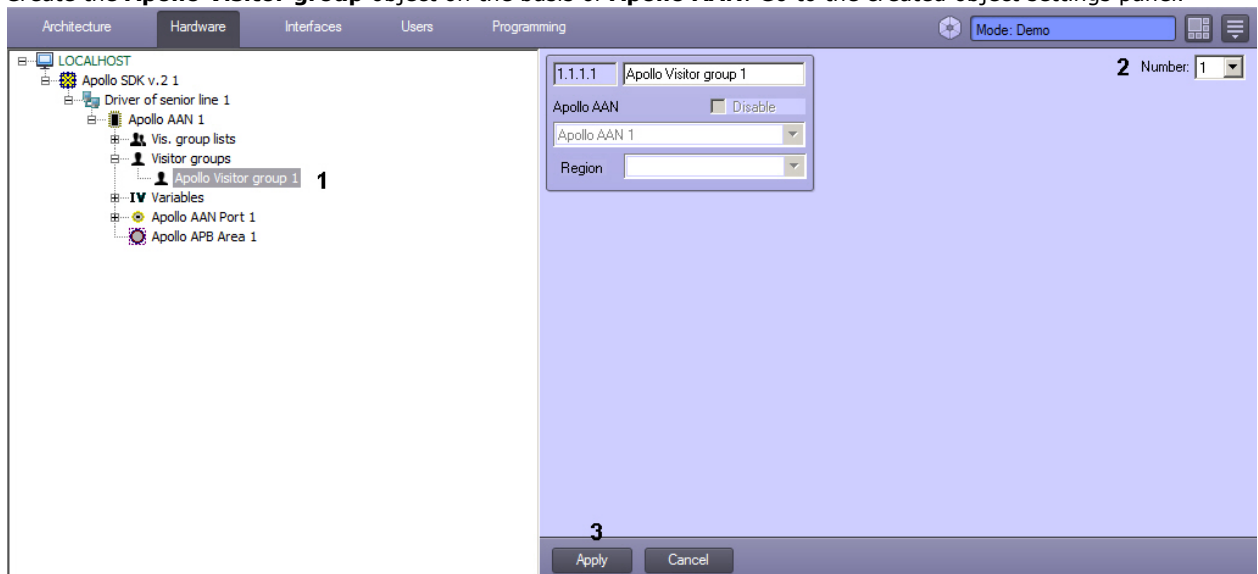
Configuration of visitor groups and visitor group lists is performed on the settings panel of corresponding objects created based on the **Apollo AAN** object on the **Hardware** tab of the **System settings** dialog box (see [Configuring visitor groups](#) and [Configuring visitor group lists](#)).

The enrollment of visitors to the group and assigning escorts for group lists is carried out using the *Access Manager* module (see [Additional user settings for the Apollo SDK v.2 system](#)).

Configuring visitor groups

Visitor groups are configured as follows:

1. Create the **Apollo Visitor group** object on the basis of **Apollo AAN**. Go to the created object settings panel.

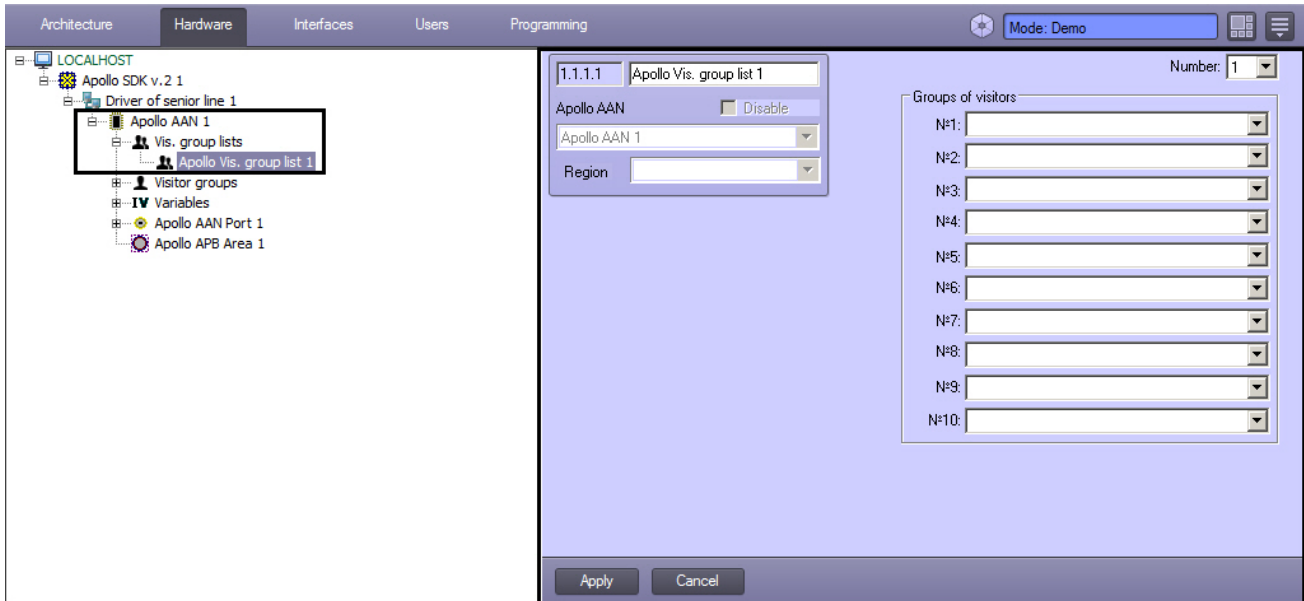


2. In the **Number** drop-down list select the visitor group number in the controller (2).
3. Click **Apply** (3).

Configuring visitor groups is completed.

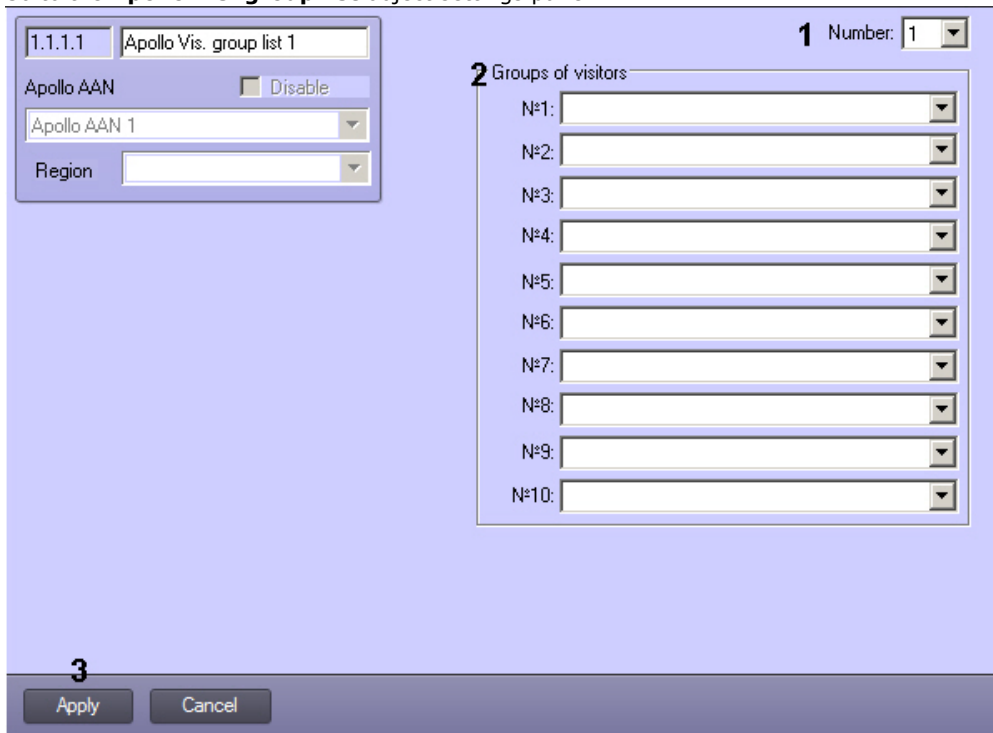
Configuring visitor group lists

Configuring visitor group lists is performed on the **Apollo Vis. group list** object settings panel. This object is created on the basis of **Apollo AAN** on the **Hardware** tab of the **System settings** dialog box.



Visitor group lists are configured as follows:

1. Go to the **Apollo Vis. group list** object settings panel.



2. In the **Number** drop-down list select the visitor group list number in the controller (1).
3. In the drop-down lists in the **Groups of visitors No.1–10** group select **Apollo Visitor group** objects corresponding to groups that are to be included in this group list (2).
4. Click **Apply** (3).

Configuring visitor groups is completed.

Configuring APB Area

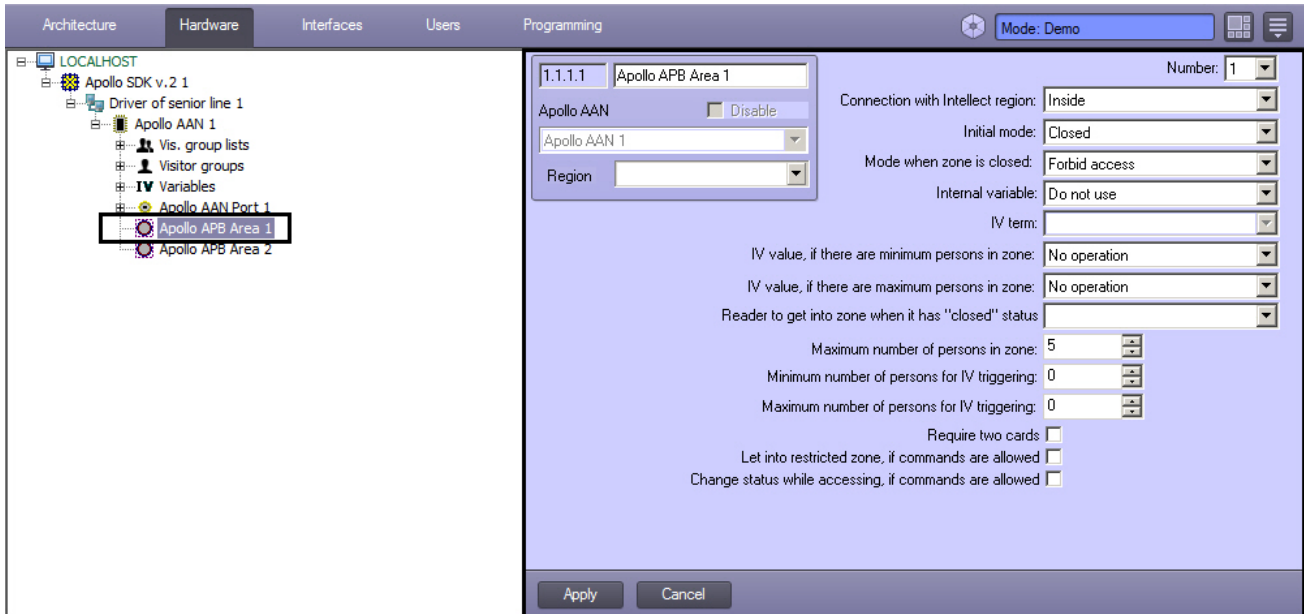
The APB Areas allow controlling the number of users in the area and denying access when maximal visitors number is reached.



Important!

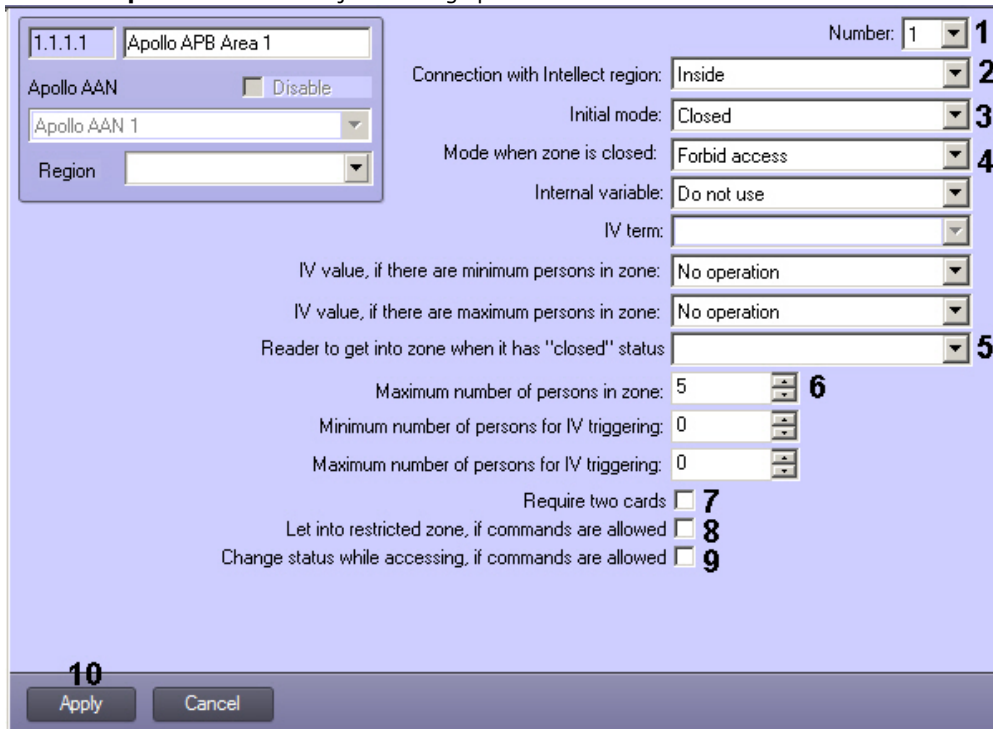
At least two APB Areas corresponding to entrance and exit areas of the AIM controller are to be configured in the system (see also [Configure AIM readers](#)). If just one APB area is configured, the system will lock it when it is filled and it will be impossible to reset the counter. See also [Example of APB Areas configuration](#).

The APB Area is configured on the **Apollo APB Area** object settings panel, that is created on the basis of the **Apollo AAN** object on the **Hardware** tab of the **System settings** dialog box.



APB area is configured as follows:

1. Go to the **Apollo APB Area** object settings panel.



2. In the **Number** drop-down list select the APB area number in the controller (1).
3. In the **Connection with Intellect region** drop-down list select the **Region** object corresponding to this APB Area (2). This Region object is to be set as entrance or exit region of an Apollo AIM reader (see also [Configure AIM readers](#)).
4. In the **Initial mode** drop-down list select the initial state of the APB area that will be set when writing configuration to controller: **Closed** or **Opened** (3).
5. In the **Mode when zone is closed** drop-down list select access rule for closed APB area, i.e. when maximum number of users in it is exceeded (4).
6. In the **Reader to get into zone when it has "closed" status** drop-down list select corresponding AIM reader (5).
7. Specify maximum number of people in the area (6).
8. If two cards are required to enter the zone set the corresponding checkbox (7).
9. If users are to be allowed to enter the closed zone if commands are enabled, set the corresponding checkbox (8).
10. If zone status is to be changed at access if commands are enabled, set the corresponding checkbox (9).
11. Click **Apply** (10).
12. To save the changes to the controller, write configuration to hardware.

Important!

User counter in zone is reset when configuration is written.

Example of APB Areas configuration

At least 2 APB areas are to be configured in the system corresponding to entrance and exit regions of a reader. The first APB zone is intended to control people count, and limits are set in it for number of users in region. The second APB area does not necessarily have limitations on user number but entrance to this zone reduces number of users in the first zone according to readers configuration.

Create 2 regions in *ACFA Intellect*: Inside and Outside. These regions are set as entrance or exit areas for readers 1 and 2:

The image displays two screenshots of the ACFA Intellect configuration interface for APB areas. The top screenshot is for 'Apollo AIM Reader 1' (Number 1) and the bottom screenshot is for 'Apollo AIM Reader 2' (Number 2). Both screenshots show various settings for modes, time, advanced settings, and basic settings. The 'Regions' section in both screenshots is highlighted with a black box, showing 'Entrance to' and 'Exit from' settings.

Reader 1 Configuration:

- Reader ID: 1.1.1.1.1; Name: Apollo AIM Reader 1
- Number: 1
- SDK ID: 0
- Modes: Initial: Only card, Independent: Only card, Use initial mode: checked
- Time: Time of door closing: 3s, Time of door holding: 10s, Alternative time of door closing: 6s, Alternative time of door holding: 20s
- Basic settings: Allow impulse reset: unchecked, Do not use full time of door closing: checked, Do not use exit button: unchecked, Use AUX as sensor of door opening: unchecked, Do not wait for access cycle: unchecked, Use "soft" APB: unchecked
- Regions: Entrance to: Inside, Exit from: Outside
- Access request mode: to Intellect

Reader 2 Configuration:

- Reader ID: 1.1.1.1.1; Name: Apollo AIM Reader 2
- Number: 2
- SDK ID: 1
- Modes: Initial: Only card, Independent: Only card, Use initial mode: checked
- Time: Time of door closing: 3s, Time of door holding: 10s, Alternative time of door closing: 6s, Alternative time of door holding: 20s
- Basic settings: Allow impulse reset: unchecked, Do not use full time of door closing: checked, Do not use exit button: unchecked, Use AUX as sensor of door opening: unchecked, Do not wait for access cycle: unchecked, Use "soft" APB: unchecked
- Regions: Entrance to: Outside, Exit from: Inside
- Access request mode: to Intellect

The APB Zone 1 is associated with the Inside region and has limited user count of 5. The APB Zone 2 is associated with the Outside region and has no limitations on user count.

1.1.1.1 Apollo APB Area 1 Number: 1

Apollo AAN Disable

Apollo AAN 1

Region

Connection with Intellect region: Inside

Initial mode: Closed

Mode when zone is closed: Forbid access

Internal variable: Do not use

IV term:

IV value, if there are minimum persons in zone: No operation

IV value, if there are maximum persons in zone: No operation

Reader to get into zone when it has "closed" status

Maximum number of persons in zone: 5

Minimum number of persons for IV triggering: 0

Maximum number of persons for IV triggering: 0

Require two cards

Let into restricted zone, if commands are allowed

Change status while accessing, if commands are allowed

Apply Cancel

1.1.1.2 Apollo APB Area 2 Number: 2

Apollo AAN Disable

Apollo AAN 1

Region

Connection with Intellect region: Outside

Initial mode: Closed

Mode when zone is closed: Forbid access

Internal variable: Do not use

IV term:

IV value, if there are minimum persons in zone: No operation

IV value, if there are maximum persons in zone: No operation

Reader to get into zone when it has "closed" status

Maximum number of persons in zone: 0

Minimum number of persons for IV triggering: 0

Maximum number of persons for IV triggering: 0

Require two cards

Let into restricted zone, if commands are allowed

Change status while accessing, if commands are allowed

Apply Cancel

When 5 persons has entered the APB Area 1 through Reader 1, the area is locked and it is impossible to enter in it. But if 1 person leaves APB Area 1 through Reader 2 (i.e. enters APB Area 2), then APB Area 1 unlocks as so as the number of persons in it becomes 4.

So, not more than 5 persons in zone is maintained.

Note.
There can be more than 2 readers for entrance and exit APB area.

Configuring internal variables in ApolloSDK v.2

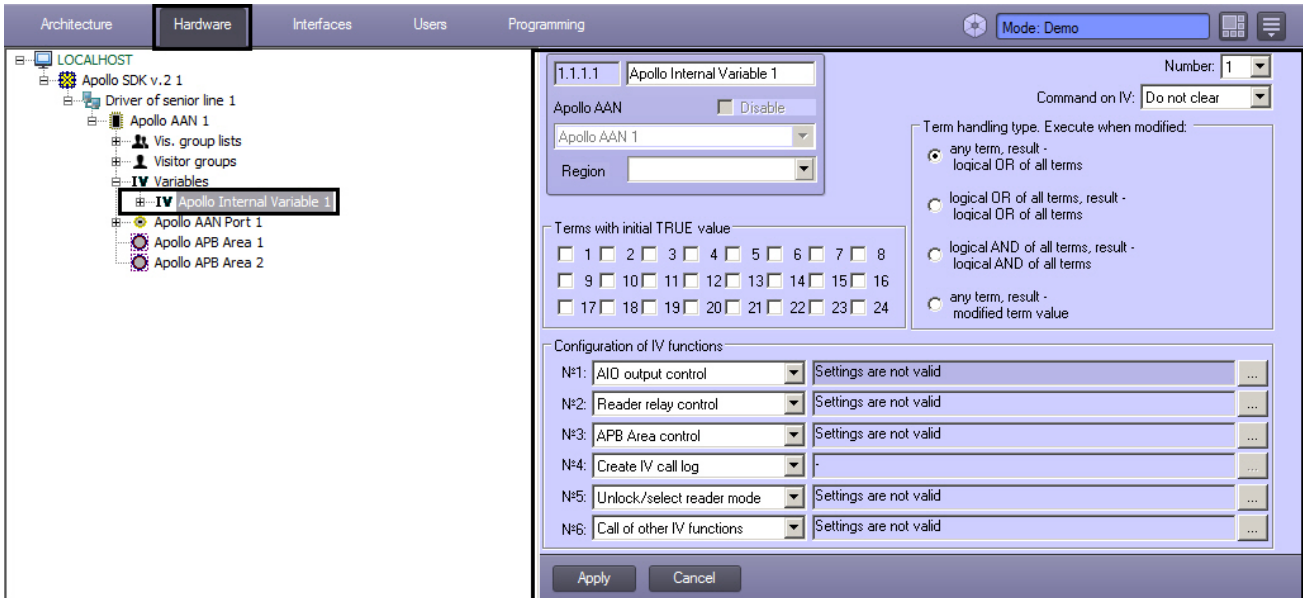
General description of the internal variables mechanism

The internal variables in *ApolloSDK v.2* allow configuring complex internal associations and reactions in the Apollo equipment. Internal variables can include up to 24 terms – logical elements the value of which affects the execution of a command specified by an internal variable (one variable can contain up to 6 commands). The terms are changed by corresponding devices. In particular, you can configure the connection of terms with the states of the following devices: the AIM reader, the AIO input, the APB area. The association of an object with a term of the internal variable is configured in the settings panel of the corresponding object.

**Note.**

In addition to automatic execution of internal variable functions, it is possible to manually launch them from the Map – see [Control the Apollo internal variable](#).

Configuration of actions performed when corresponding combination of terms is achieved is carried out on the **Apollo Internal Variable** object settings panel which is created on the basis of the **Apollo AAN** object on the **Hardware** tab of the **System settings** dialog box.

**Important!**

Since this mechanism is hardware-based, after setting up the relevant objects, send the configuration to Apollo hardware – see [Write configuration to hardware](#).

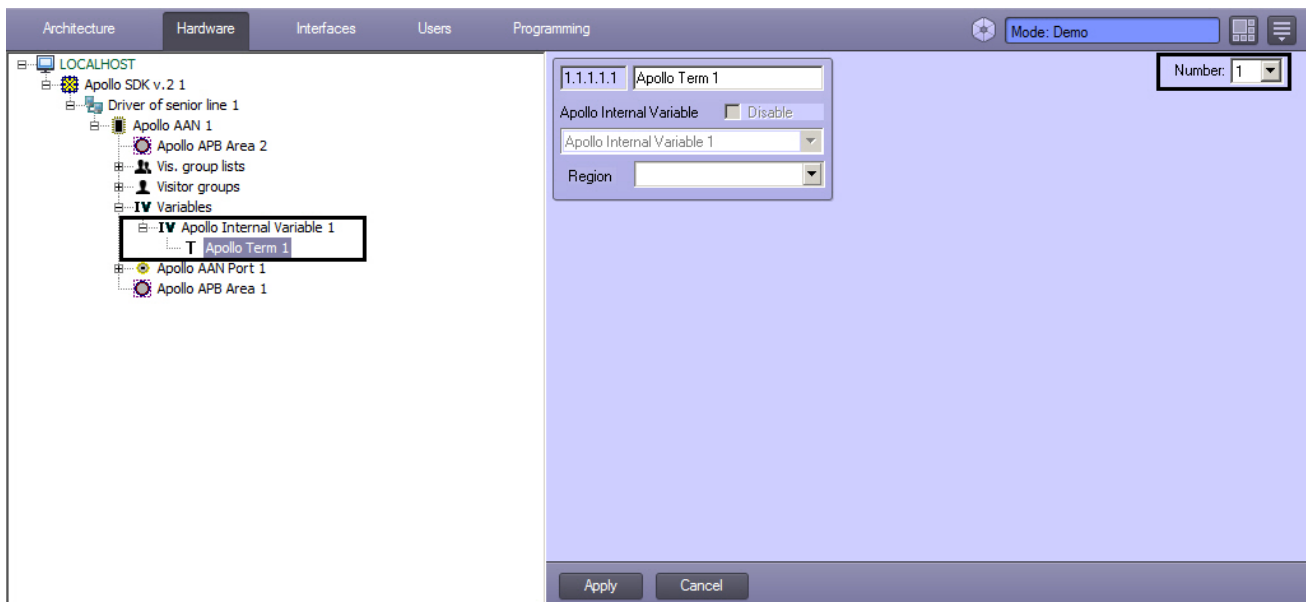
The configuration of Apollo internal variables is done in the following order:

1. [Configuring internal variables objects in ApolloSDK v.2](#)
2. [Associating objects with terms](#)

Configuring internal variables objects in ApolloSDK v.2

Creating and configuring terms

Apollo Term objects are created on the basis of the corresponding **Apollo Internal Variable** object on the **Hardware** tab of the **System settings** dialog box.



To setup a term, select its number in the corresponding drop-down list.

After all required terms are created, write configuration to hardware.

General settings of internal variable

The general parameters of the internal variable are set in the following order:

1. Go to the **Apollo Internal Variable** object settings panel.

2. In the **Number** drop-down list select the internal variable number in the controller (1).
3. In the Command on IV drop-down list select command for internal variable: **Clear** or **Do not clear** (2).
4. Click **Apply** (3).
5. To save the changes to the controller, write configuration to hardware.

The general parameters of the internal variable are set.

Setting initial values of terms

The values of all the 24 terms in the internal variable must be initialized no matter how many terms will be used in this internal variable. By default, when you create an **Apollo Internal Variable** object, the value of all terms is set to FALSE. Initial values can subsequently be changed in accordance with the rules set for the corresponding Apollo equipment.

The initial values of the terms are set as follows:

1. Go to the **Apollo Internal Variable** object settings panel.

2. Check the boxes next to the numbers of those terms that should be set to TRUE (1) when writing the internal variable to the controller.
3. Click **Apply** (2).
4. To save the changes to the controller, [write configuration to hardware](#).

Setting initial values of terms is completed.

Configuring logical condition for terms processing

Configuration of the logical condition for terms processing is carried out in the following order:

1. Go to the **Apollo Internal Variable** object settings panel.

2. Set the **Term handling type. Execute when modified** switch to one of the positions described in the table below (1).

Switch position	Description
any term, result – logical OR of all terms	Actions specified in the internal variable will be executed when any term is changed, provided that the logical OR of all terms is TRUE.
logical OR of all terms, result – logical OR of all terms	Actions specified in the internal variable are performed if at least one term is TRUE.
logical AND of all terms, result – logical AND of all terms	Actions specified in the internal variable are performed if all terms are TRUE.
any term, result – modified term value	The actions specified in the internal variable will be performed when any term is changed.

3. Click **Apply** (2).
4. To save the changes to the controller, [write configuration to hardware](#).

Configuring logical condition for terms processing is completed.

Configuring internal variable functions (actions)

The functions of the internal variable determine the actions to be taken when the corresponding logical condition is fulfilled. Up to 6 IV functions can be set, while an IV function can start other IV function.

The IV functions are configured as follows:

1. Go to the **Apollo Internal Variable** object settings panel.

2. Select the required function in the corresponding drop-down list (1, see table).
3. Click ... and configure the function parameters (2, see table).

Function	Description	Parameters
AIO output control	Switch relay on AIO security panel	Security panel Panel relay
Reader relay control	Switch relay of a reader connected to an AIM controller	AIM controller Reader Relay
APB Area control	Change APB area state	APB Area
Create IV call log	Logging a message about fulfillment of conditions of the internal variable	-
Unlock/select reader mode	Setting operation mode of a reader connected to an AIM controller	AIM controller Reader type Mode
Call of other IV functions	Performing functions of another internal variable, regardless of the meaning of its terms	Variable

4. Click **Apply** (3).
5. To save the changes to the controller, [Write configuration to hardware](#).

Configuring IV functions is completed.

Associating objects with terms

Associating AIO input with a term

Associating AIO input with a term is performed as follows:

1. Go to the **Apollo AIO Input** object settings panel.

2. In the **Internal variable** drop-down list select the required **Apollo Internal Variable** object (1).
3. In the **IV Term** drop-down list select the **Apollo Term** object corresponding to a term to be controlled by the state of this **Apollo AIO Input** object (2).
4. From the drop-down lists in the **Operation with term, if input** group select which values the term should have if the AIO input is not configured, armed, in a fault state or in an alarm (3). The following operations are available:

Operation	Description
No operation	The value of the corresponding term does not change
Clear term	The term is set to FALSE
Set term	The term is set to TRUE
Send impulse	The value of the term changes to the opposite for a short preset period

5. Click **Apply** (4).
6. To save the changes to the controller, [write configuration to hardware](#).

Associating AIO input with a term is completed.

Associating APB area with a term

Configuring the association of APB areas with terms of internal variables is not mandatory.

Configure the association of APB areas with terms of internal variables is carried out as follows:

1. Go to the **Apollo APB Area** object settings panel.

2. In the **Internal variable** drop-down list select the **Apollo Internal Variable** object corresponding to the required internal variable (1).
3. In the **IV term** drop-down list select the required **Apollo Term** object (2).
4. In the **IV value if there are minimum persons in zone** drop-down list select an operation to be performed on term when the condition is fulfilled (3, see the table).
5. In the **IV value if there are maximum persons in zone** drop-down list select an operation to be performed on term when the condition is fulfilled (4, see the table).

Operation	Description
No operation	The value of the corresponding term does not change
Clear term	The term is set to FALSE
Set term	The term is set to TRUE
Send impulse	The value of the term changes to the opposite for a short preset period

6. Set the required value in the **Minimum number of persons for IV triggering** field (5).
7. Set the required value in the **Maximum number of persons for IV triggering** field (6).
8. Click **Apply** (7).
9. To save the changes to the controller, [write configuration to hardware](#).

Configure the association of APB areas with terms of internal variables is completed.

Associating AIM reader commands with terms

Associating AIM reader commands with terms allows changing term value on corresponding command from reader.



Important!

Most of the reader commands are only supported for AP-500 reader. The usual reader with a keyboard support PIN+10 and PIN+20 commands (2 and 3 commands, correspondingly).

To enter a command using AP-500 reader, present a card, then press Cmd, enter a command number and press <Enter>. The even command sets corresponding term to TRUE, the odd command sets it to FALSE.

Correspondingly, when PIN+10 is entered, the term associated with 2 and 3 commands will be set to TRUE, when PIN+20 is entered, it will be set to FALSE.

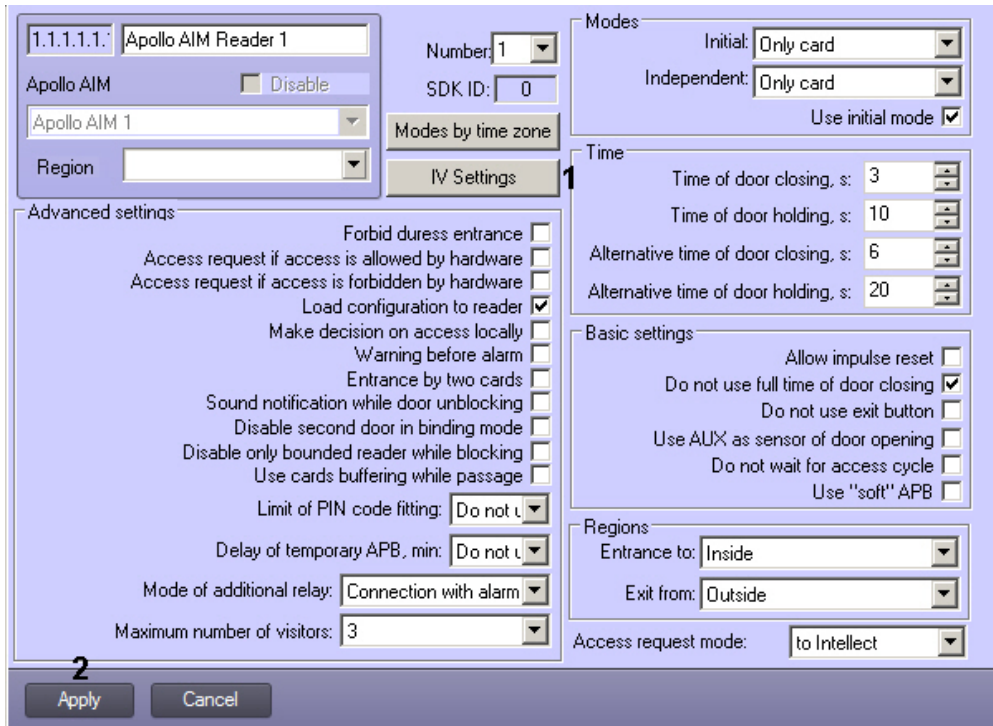


Note.

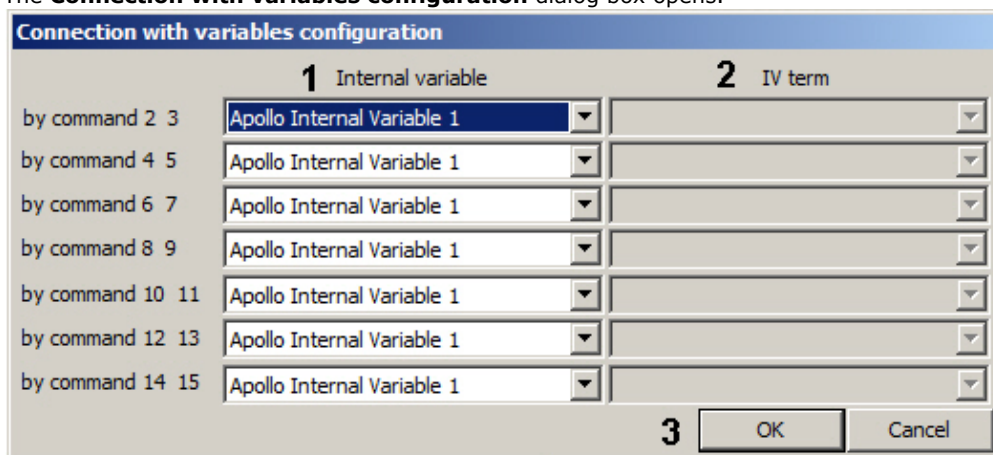
PIN+10 and PIN+20 means that 10 or 20 is added to the PIN number, correspondingly. For example, if a user has PIN-code 8080, then PIN+10 = 8090. The user will have to enter 8090 to set corresponding term to TRUE.

Assigning AIM reader commands with terms is performed as follows:

1. Go to the **Apollo AIM Reader** object settings panel.



2. Click **Configure IV** (1).
3. The **Connection with variables configuration** dialog box opens.



4. In the drop-down list in the **Internal variable** column, select the **Apollo Internal Variable** object corresponding to the variable whose term the command from the reader should change (1).
5. In the **Internal variable** drop-down list select the **Apollo Internal Variable** object corresponding to the required internal variable (2).
6. Click **OK** (3).
7. Click **Apply** (2).
8. To save the changes to the controller, write configuration to hardware.

Assigning AIM reader commands with terms is completed.

Configure system without AAN central controller

To configure the system without central controller, do the following:

1. Create the **Driver of minor line** object and specify parameters of the *AIM* modules connection (see the [Configure connection of AAN controller](#) section).
2. Create the **Apollo AIM SC** object on the basis of the **Driver of minor line** object and configure the AIM interface module (see the [Configure AAN controller](#) and [Configure the AIM interface module](#) sections).
3. Create the **Apollo AIM SC Reader** objects and objects of virtual inputs and relay (see the [Configure AIM readers](#) section).

Configuring of all devices in this method is equal to configuring devices in system with central controller apart from the following points:

1. Disabling of readers is available. To do this, select the **Activate** checkbox and click the **Apply** button.
2. Virtual inputs can be masked permanently and by time zone. Virtual input can't be in alarm state while masking.

Write configuration to hardware

For system with central controller configuration is writing to the *AAN* controller, for system without central controller – to the *AIM* module.

To write configuration to hardware select the **Apollo AAN** or **Apollo AIM SC** object depending on schema of security system.

To write configuration to hardware click the **Write hardware configuration** button.

To write configuration of connection ports (only for the system with central controller) for the *AIM* and *AIO* modules click the **Write ports configuration** button.

To write users, their cards and access levels to hardware click the Write VMS configuration button. To write these data to hardware automatically set the **Dynamics** checkbox on the settings panel of the **Apollo SDK v.2** object and click the **Apply** button.

Configure supporting of access card formats

In the ACFA Intellect software package it is possible to configure supportings of formats of required access cards.

For this, open the *FormatsCard.xml* file located in the *<Directory of the Intellect software installation>\Modules* and specify corresponding parameters of format for access card is to be added:

- *BitsOnCard* – number of bits on card;
- *BitsForEven* – number of bits for even check;
- *BitsForOdd* – number of bits for odd check;
- *NumBitsInFC* – number of bits in facility code;
- *IndexFCBegin* – index of facility code's begin;
- *NumBitsInCardNumber* – number of bits in card number;
- *IndexCardNumberBegin* – index of card number's begin.

Example of configuring the **Wiegand26** and **Wiegand38** card formats supporting is follows:

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <FormatsCard>
3   <Formats>
4     <Format>
5       <W_BitsOnCard>26</W_BitsOnCard>
6       <W_BitsForEven>0</W_BitsForEven>
7       <W_BitsForOdd>0</W_BitsForOdd>
8       <W_NumBitsInFC>0</W_NumBitsInFC>
9       <W_IndexFCBegin>0</W_IndexFCBegin>
10      <W_NumBitsInCardNumber>26</W_NumBitsInCardNumber>
11      <W_IndexCardNumberBegin>0</W_IndexCardNumberBegin>
12    </Format>
13    <Format>
14      <W_BitsOnCard>38</W_BitsOnCard>
15      <W_BitsForEven>19</W_BitsForEven>
16      <W_BitsForOdd>19</W_BitsForOdd>
17      <W_NumBitsInFC>0</W_NumBitsInFC>
18      <W_IndexFCBegin>0</W_IndexFCBegin>
19      <W_NumBitsInCardNumber>36</W_NumBitsInCardNumber>
20      <W_IndexCardNumberBegin>1</W_IndexCardNumberBegin>
21    </Format>
22  </Formats>
23 </FormatsCard>
```



Note.

Wiegand 26 and **Wiegand 38** card formats are supported on default.



Attention!

Maximum number of card formats are to be added is 6. If more than 6 card formats have been added, the first six formats will be supported and other formats will be ignored.

Working with the ApolloSDK v.2 integration module

General information about working with the ApolloSDK v.2 integration module

The following interface objects are used to work with the *ApolloSDK v.2* integration module:

1. **Map;**
2. **Event Log;**
3. **Visitor Management System;**
4. **Photo Identification.**

Information about configuring these interface objects is presented in the following *Intellect Software System* documents: *Administrator's Guide*, *Visitor Management System Module Settings and Operation Guide*, and *Photo ID User Guide*.

How to work with interface objects is described in detail in *Intellect Software System: Operator's Guide*.

Additional user settings in Apollo SDK v.2

The Apollo SDK v.2 integration module provides the ability to specify individual additional user settings in the Access Manager window (for more information about this module, see the *Access Manager Module Settings and Operation Guide*).

Additional user parameters are configured as follows:


1. Go to user editing (see *Going to user editing*).

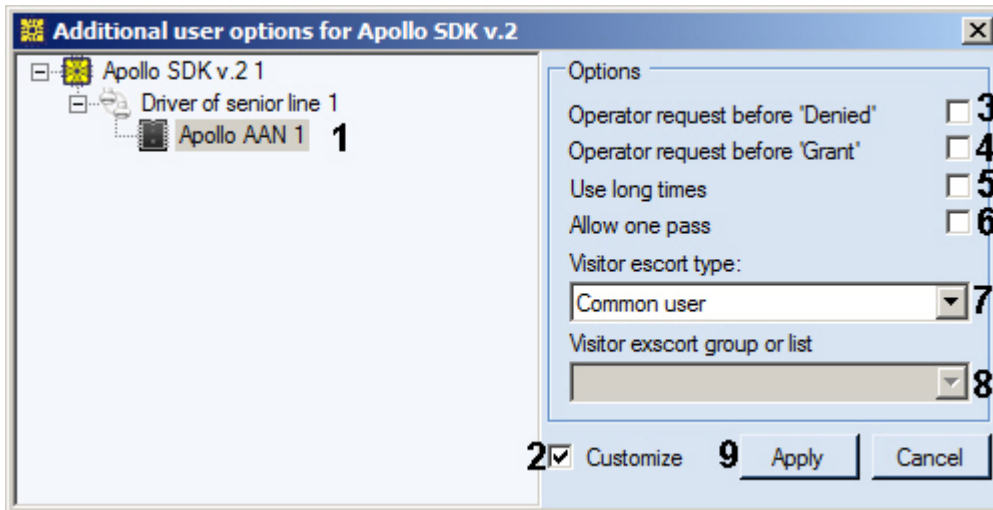
User card	Access level	Comment
	"Never"	Inherited

0. Full name	
Name	
Patronymic	
Surname	Smith
1. Personal data	
Access level assigned by	
Additional information	
Antipassback	No
Birth place	
Card expiry date	Not specified
Card issued by	
Commencement of card	Пт, 06 окт 2017 13:21:59
Date of card issue	Пт, 06 окт 2017 13:21:59
Date of firing	Not specified
Date of hiring:	Пт, 06 окт 2017 13:21:59
E-mail address	
External ID	
Number of card loss	0
Office phone	
Passport number	
Personnel number	

Others	
Apollo SDK v.2 extention	Unconfigured

Save Cancel

2. Click the  button in the **Apollo SDK v.2 extension** field. The **Additional user options for Apollo SDK v.2** dialog box opens.



3. Select the AAN controller in the tree (1). Set the **Customize** checkbox (2).
4. If operator request should be send before user access denial, set the (3) checkbox. If operator request should be send before user access granting, set the (4) checkbox.
5. If prolonged time interval for lock opening for this user is required, set the **Use long times** checkbox (5).
6. If user is allowed to pass first, set the **Allow one pass** checkbox (6). Set the visitor escort type (7):

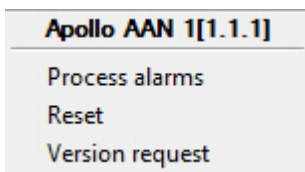
Escort type	Comment
Common user	A user who can access through the Apollo readers in accordance with assigned access levels.
Visitor	A visitor who can access through the Apollo readers in accordance with assigned access levels without escort.
Escorter	A user who have to escort a group of visitors assigned to a corresponding group of visitors.
Escorted	A visitor who can access through the Apollo readers in accordance with assigned access levels but must access together with an escorter. Events about the passage of visitors with escort come to the system after the passage of their escort.

7. In the **Visitor escort group or list** drop-down list, select the group of visitors to which the user belongs, or the list of groups of visitors for which he is an escort (8, see also [Configuring visitor groups and group lists](#)).
8. Click **Apply** (9).

Setting up advanced user options in *Apollo SDK v.2* is complete.

Control the AAN controller

Control the AAN controller is carried out in the **Map** interface window using the corresponding object's menu.



Description of the **Apollo AAN** object's menu commands is given in the table.

Command	Function
Process alarms	Processes alarm states
Reset	Reset of controller
Version request	Request for version of controller

Control the AIM SC controller

Control the AIM SC controller is carried out in the **Map** interface window using the corresponding object's menu.

Apollo AIM SC 1[1.1.1]
Process alarms
Reset
Version request

Description of the **Apollo AIM SC** object's menu commands is given in the table.

Command	Function
Process alarms	Processes alarm states
Reset	Reset of controller
Version request	Request for version of controller

Control the AIM interface module's readers

The *ApolloSDK v.2* integration module's readers are managed in the interactive **Map** window using the **Reader** object's menu.

Apollo AIM SC Reader 1[1.1.1.1.1]
Process alarms
Access granted
Set mode
Access denied

Description of the **Reader** object's menu commands is given in the table.

Command	Function
Process alarms	Processes alarm states
Access granted	Grants access
Set mode	Selects the working mode of reader
Access denied	Denies access

Control relay of the AIM security panel

Control relay of the *AIM* security panel is carried out in the **Map** interface window using the corresponding object's menu.

Apollo AIM SC Relay 1[1.1.1.1.1]
Set mode

To select the working mode of relay select the **Set mode** command in the **Apollo AIM Relay** object.

Control the Apollo internal variable

It is possible to run functions of an internal variable and set term values from the Map.

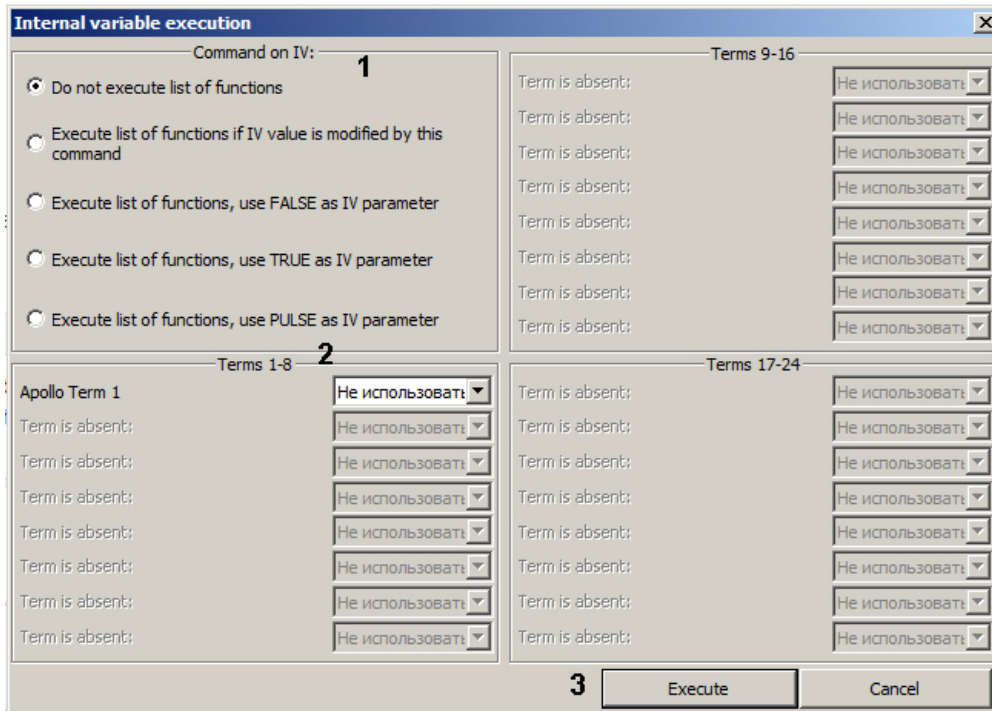
Note. See [Configuring internal variables in ApolloSDK v.2](#) for more details on internal variables.

Functions of the internal variable are launched from the Map in the following way:

1. In the **Apollo Internal Variable** object menu select **Execute**.

Apollo Internal Variable 1[1.1.1.1]
Execute

2. The **Internal variable execution** dialog box opens.



3. Set the switch to the position corresponding to the action to be performed (1). If you only want to set the term values without performing the IV functions, set the switch to the **Do not execute list of functions** position.
4. From the drop-down lists corresponding to the terms, select the values are to be set to the terms of the internal variable (2).



Note.

Only drop-down lists corresponding to terms created in the *ACFA Intellect* hardware tree are enabled (see [Creating and configuring terms](#)).
 If terms of an internal variable (addresses or count) were changed after *ACFA Intellect* was started, these changes will not be displayed in this dialog box even if configuration was send to the controller. Restart *ACFA Intellect* to use changed terms.

5. Click **Execute** (3).