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Developer of Uniqueness

iBMS Logic Server

Product Manual

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1. Content of The Document

This document contains Interra's ITR800–1000 coded iBMS Logic Server device's electronic and all essential feature information for programming this product. In each subtitle is explained the characteristics of the device are. Modifications of the product and special change requests are only allowed in coordination with product management.

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2. Product Description

Interra ITR800–1000 iBMS Logic Server, is your most straightforward way to program complex logic in KNX/EIB, Modbus, BACnet, and networks. It will enable you to efficiently customize building automation processes, quickly delivering unlimited flexibility benefits to end users in a cost-effective way

ibMS Logic Server product can be attached to the ETS database file, and the model used in the project is selected on the same file hence it is aimed to program the devices in a flexible structure, and a simple system that is not complex is presented to the implementers.

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2.1. Technical Information

The following table shows the technical information of the Interra iNode Logic Server.

Product Code	ITR800–1000
Power Supply	24 V DC Power Supply Terminal Connector / PoE
Power Consumption	1.3 W
LED Indicators	1 x CPU Load, 1 x Activity
Temperature Range	Operation (– 20°C …70 °C) Storage (– 35°C …100 °C)
Maximum Air Humidity	< 90 RH
Colour	Gray
Dimensions	170 x 65 x 90 mm (W x H x D)
Configuration	Via Web Interface

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2.2. Dimensions

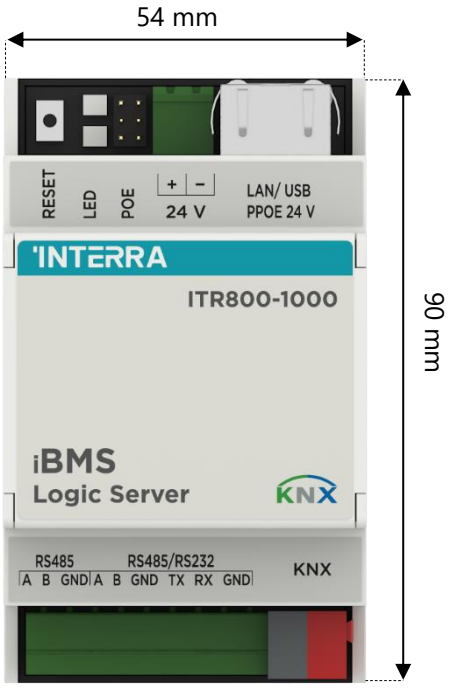


Fig. 3: Dimensions of the iBMS Logic Server

• All values given in the device dimensions are millimetres.

2.3. Mounting

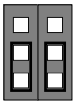
- Mounting the device on DIN rail.
- Connect the KNX bus cable.
- Connect 24V power supply to the device (either through separate 24V screw terminals or through Passive 24V DC Power-Over-Ethernet).
- Connect Ethernet/LAN cable coming from the PC.

Powering

Interra iBMS Logic Server supports two powering modes:

- Regular powering over screw terminals (Jumpers up or down)

- Passive PoE powering over 24 V DC (Jumpers down)



- When using active PoE 48V, jumpers have to be UP or the product will be damaged!

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Please note that there are two PoE types of PoE switches/adapters – passive and active (802.3af). In passive mode 4 Ethernet cable wires are used for data and 4 are used for power. In active PoE mode data and power goes together.

Reset Device

You can either reboot the device by pressing RESET button or reset the configuration to factory defaults:

- Press and hold for < 10 sec - reboot the device.
- Press and hold for > 10 sec - reset networking with IP to factory default.
- Press and hold for > 10 sec and again press and hold for > 10 sec - full reset of configuration to factory defaults.

2.4. Functional Descriptions

The prominent features of the iNode Logic Servers are the followings:

- Interra iBMS Logic Server is an embedded platform with an integrated Ethernet, USB, KNX/TP and RS485/RS-232 serial interfaces.
- Interra iBMS Logic Server can be used as a cross-standard gateway (Modbus, BACnet/IP), logic engine, visualization platform, KNX/IP Router.
- Interra iBMS Logic Server can be integrated with various cloud/web services and 3rd party devices. Scripts (logic engine) allows iBMS Logic Server to simultaneously act as a thermostat, security panel, lighting controller, etc.
- Interra iBMS Logic Server supports iOS Siri and Google Voice control via native apps available in App Store and Google Play.
- iBMS application store and external app development possibility allow to extend device functionality and adjust to a specific market segment.

Default IP Configuration

Login Name	admin
Password	admin
IP Address	192.168.0.10
Network Mask	255.255.255.0

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3. Graphical User Interface

After a successful login the main page appears:

Fig. 1: Main Page

- LogicMachine - objects and object logs, scripts, schedulers, trends, visualization editor, user access, alerts and error logs
- System config - network, KNX and other built-in service configuration, package management and firmware upgrade, general system status
- Visualization - main graphical visualization (plan view)
- Touch - graphical visualization for touch devices
- Schedulers - user-defined schedulers
- Trend logs - chart view for time-series data
- Mosaic app - graphical visualization application

The main screen of the interface is a list of installed applications. It is possible to change the application order, hide selected applications. Each user can customize the background, light/dark theme and interface language. The admin user can install and update applications.

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3.1. Customizing The Background / Language

Click Customize to change the interface language, color theme and the background image.

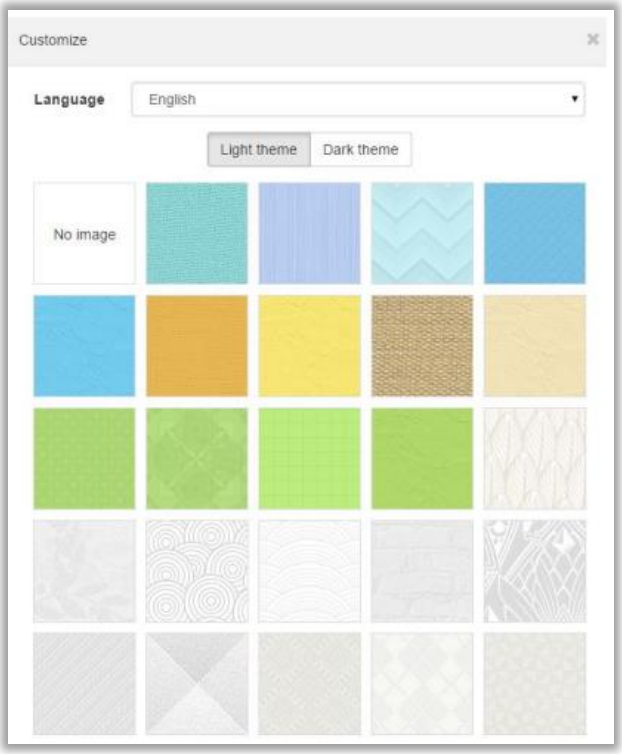

Fig. 2: Customizing The Background

The interface language can be chosen by clicking the Language drop-down menu.

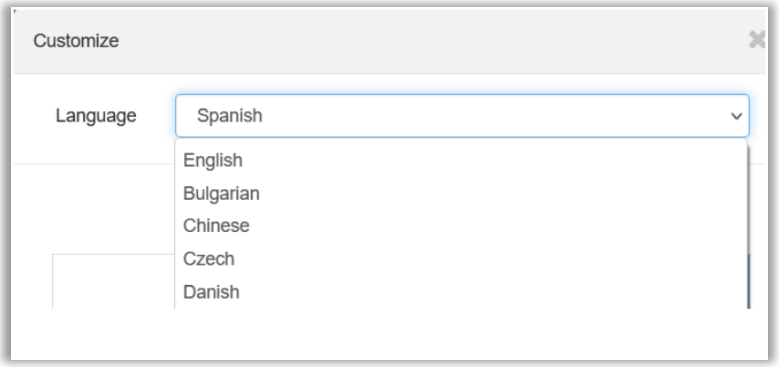

Fig. 3: Customizing The Language

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The background image is applied automatically when chosen.

Fig. 4: Background Example

3.2. Search Function

Click Search to open the search box to find applications containing the given search phrase.

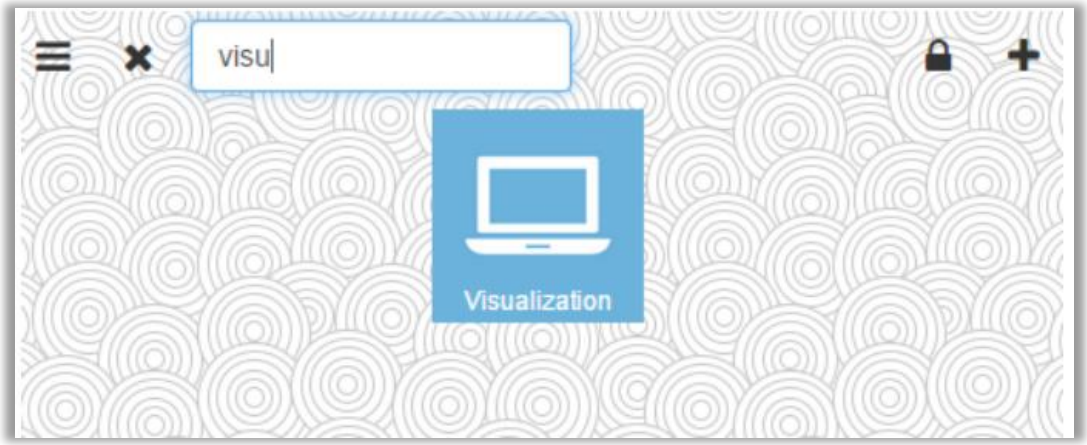

Fig. 5: Search Box

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3.3. Unlock The Application List

Click Unlock to change the application order via drag & drop.

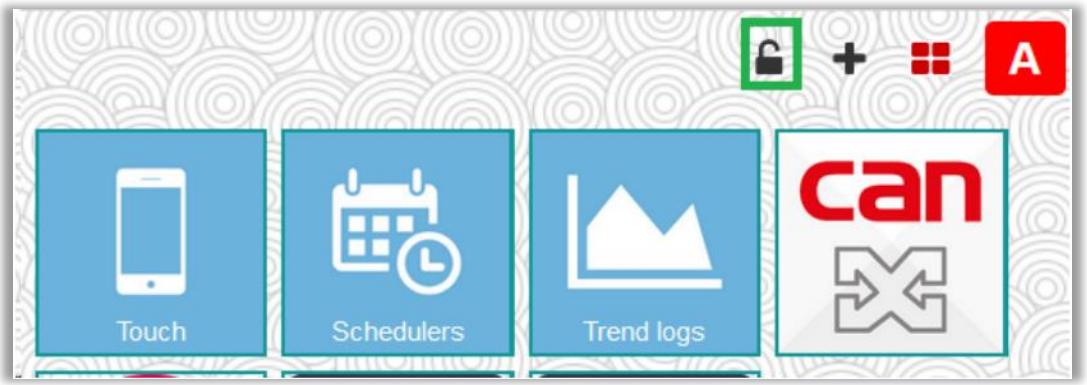

Fig. 6: Unlock The Application List

To hide certain applications for users click Grid and then click Visibility .

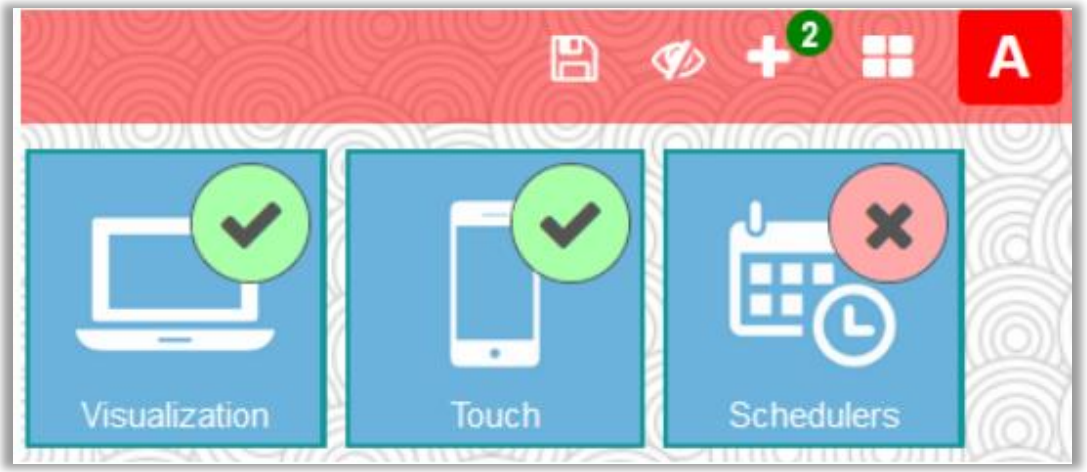

Fig. 7: Hide Certain Application List

After selecting which apps will be visible to users click Save .

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3.4. Admin Mode

3.4.1. Admin Mode Settings

Click Grid then Customize and click Change admin password.

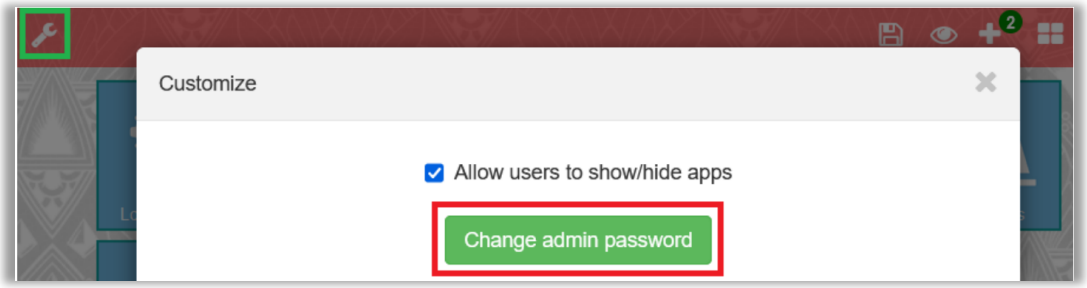

Fig. 8: Customize Password Window

Allow users to show/hide apps enables/disables the possibility for non-admin users to to show or hide apps themselves.

3.4.2. Change Default Page View For Users

While in admin mode it is possible to change the default view for all users - the background image, hide/unhide/sort apps the same way as described in 3.3. Once the all the necessary changes have been made click Save .

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3.4.3. Add or Remove Applications

Click Plus to enter the application administration page. If an error message appears, provide valid DNS settings as described in *System Configuration → Network → Interfaces.*

The list of available applications is displayed.

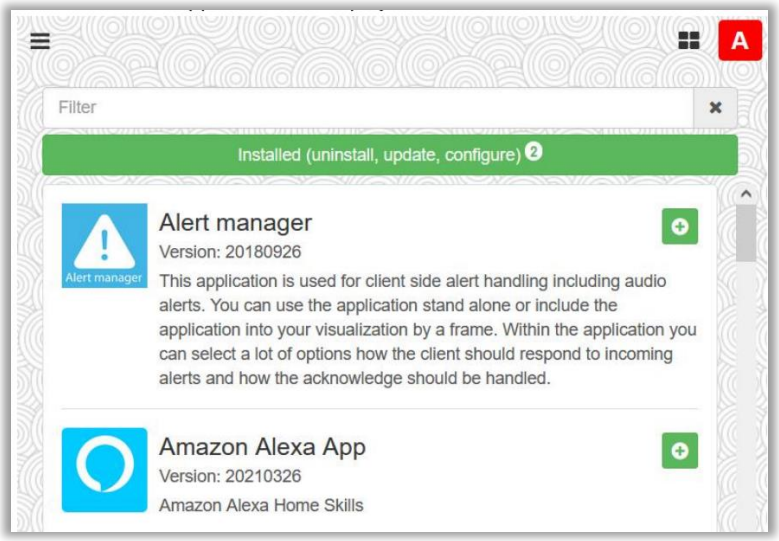

Fig. 9: Customize Password Window

Click Install to install a given application into iBMS Logic Server.

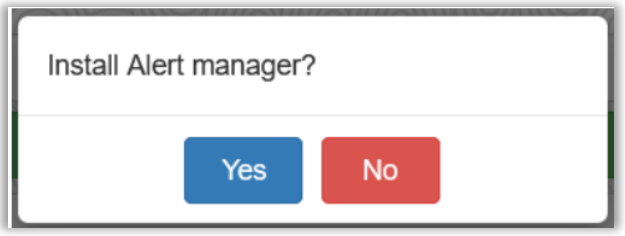

Fig. 10: Install Alert Manager Window

Click Installed to view a list of currently installed applications on iBMS.

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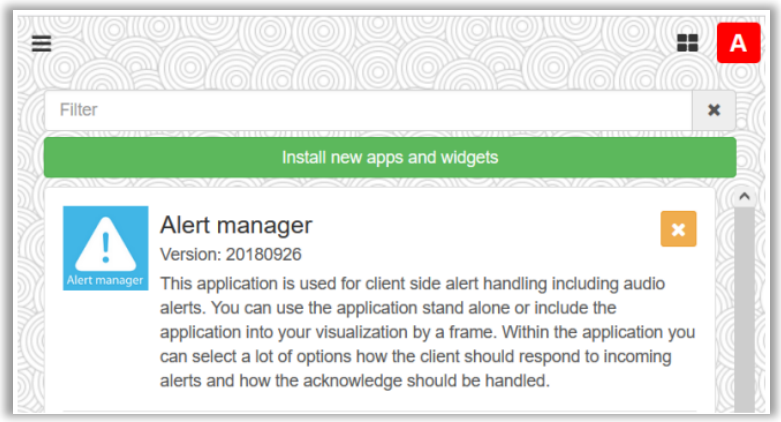

Fig. 11: Install New Apps and Widgets Window

Applications can be installed manually by providing an appropriate application package file.

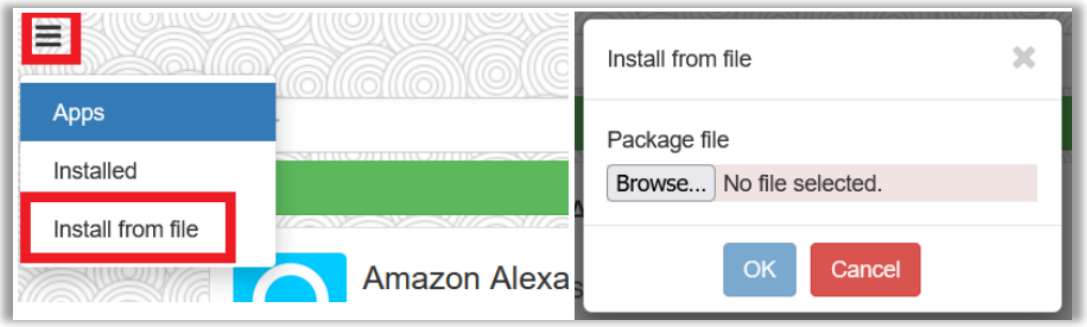

Fig. 12: Install From File Window

Click Update to install a newer version of a selected application.

Click Grid to return to the main page.

3.4.4. Exit Admin Mode

Click to exit perform logout.

3.5. Application Development

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4. iBMS Logic Server Configuration

This is the main page of the iBMS Logic Server configuration and management. It consists of the following tabs:

- Objects - object management
- Object logs - object logs
- Scripting - scripting repository management
- Schedulers - user scheduler managements
- Trend logs - time/series value log managements
- Scenes - scenes for object control
- Vis. structure - visualization structure definition
- Visualization - visualization editör
- Vis. graphics - icon, background, font management
- Utilities - utilities including import from ETS, reset, backup, restore
- User access - user management and access logs
- Modbus - Modbus mapper
- Alerts - user and system alert messages
- Logs - script logs
- Error log - script and system error messages

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4.1. Objects

Objects can be added to this list in several ways:

- Manually by clicking Add new object
- New group addresses seen on the bus are added automatically (if Bus sniffer enabled in Utilities → General configuration)
- Importing KNXPROJ or ESF file (in Utilities)

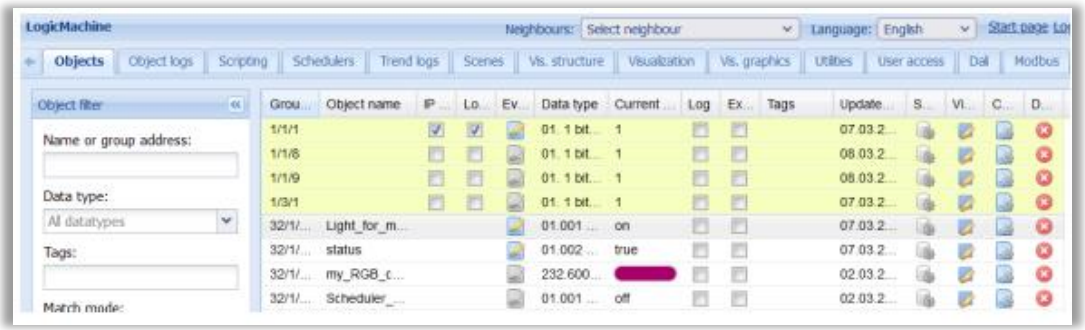

Fig. 13: Objects Window

4.1.1. Object Parameters

Click the object name or group address to edit object parameters.

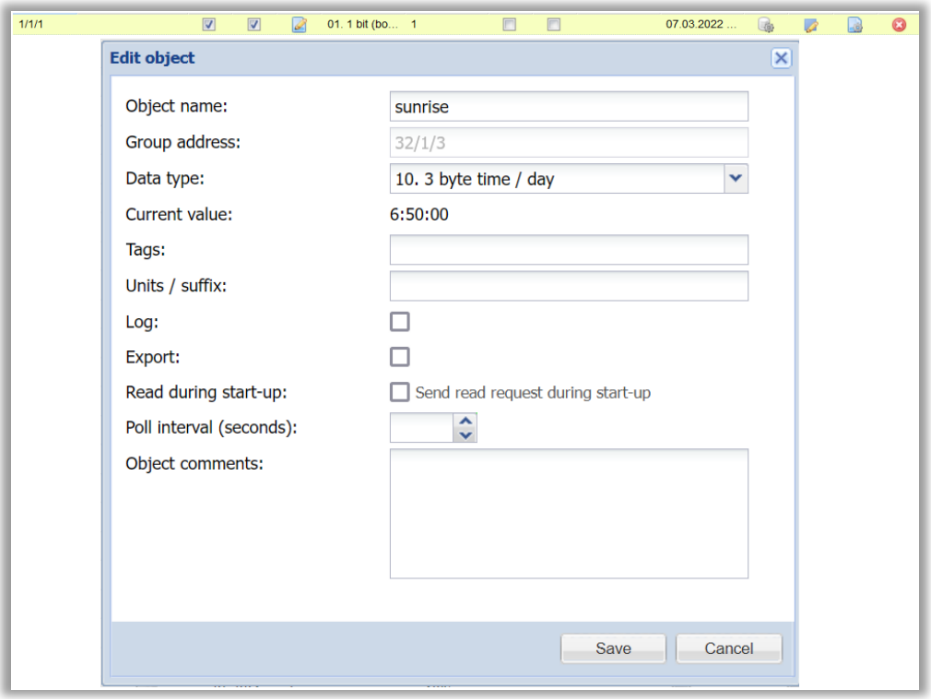

Fig. 14: Edit Object Window

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- Object name - name of the object
- Group address - group address of the object (cannot be changed once object is created)
- Data type - KNX data type of the object Note: in some cases objects added via bus sniffer or ESF import might have incorrect data type
- Current value - current value of the object
- Tags - allows grouping several objects via common tags which then can be used in scripting
- Units / suffix - text value that appears after the object value. Some data types have units by default (%, °C etc.)
- Log - enable logging for this object. Logs will appear in the Objects logs tab
- Export - this will allow object access from BACnet/IP (if enabled). Can also be used to limit objects that can be accessed via Remote services (configurable)
- Read during start-up - send a read request to this object when the system starts.
- Poll interval (seconds) - periodically send read requests to this KNX object
- Object comments - used comments about this object

The object list can be sorted by one of the following parameters - Name, Group address, Data type, Current value, Tags, Comments.

4.1.2. Object visualization parameters

Click in the object list to set specific visualization parameters for the selected object.

Note! Some properties like background color are only visible in the Visualization viewer but not in the editor.

4.1.2.1. 1 Bit

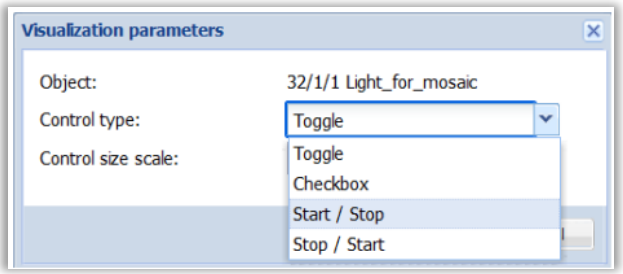

Fig. 15: Visualization Parameters – 1 Bit Window

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- Control type - control element appearance (Touch Visualization or in Show control mode)

  ○ Toggle

  ○ Checkbox

  ○ Start / Stop - send 1/true on press, 0/false on release

  ○ Stop / Start - send 0/false on press, 1/true release

- Control size scale - size of the control element (only in Show control mode)

4.1.2.2. 4 Bit (3 Bit Controlled)

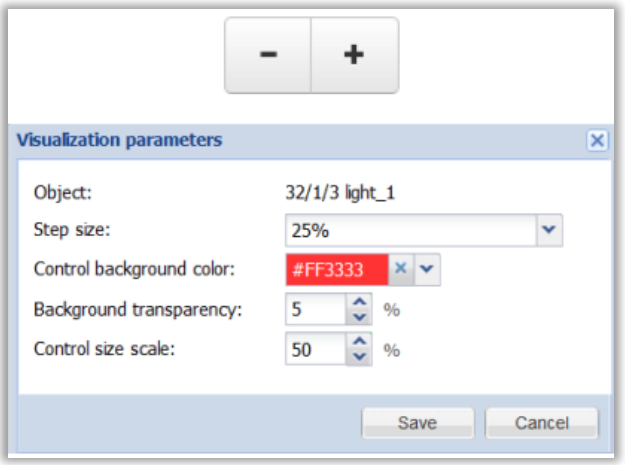

Fig. 16: Visualization Parameters – 4 Bit Window

- Step size - step size for the value change, pressing +/- sends up/down command with the defined step size respectively, releasing sends stop
- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control elements

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4.1.2.3. Numerical Data Types (Integer and Floating Point)

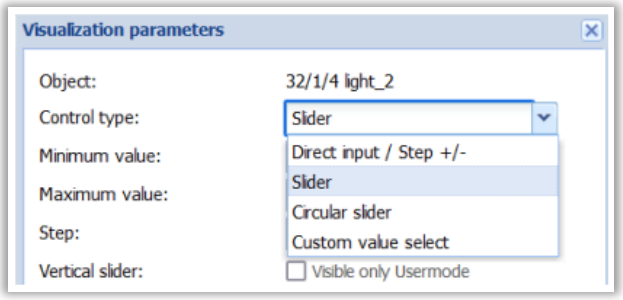

Fig. 17: Visualization Parameters – Numerical Data Types Window

4.1.2.4. Direct Input / Step +/-

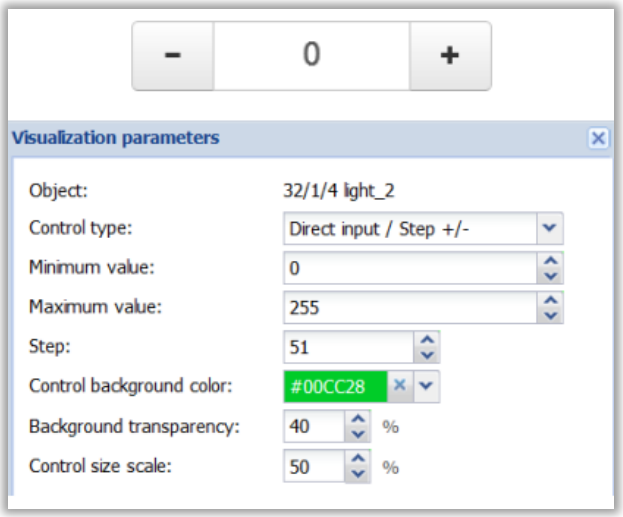

Fig. 18: Visualization Parameters – Direct Input / Step +/- Window

- Minimum value - minimum allowed value
- Maximum value - maximum allowed value
- Step - step size for each +/- button press
- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control element

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4.1.2.5. Slider

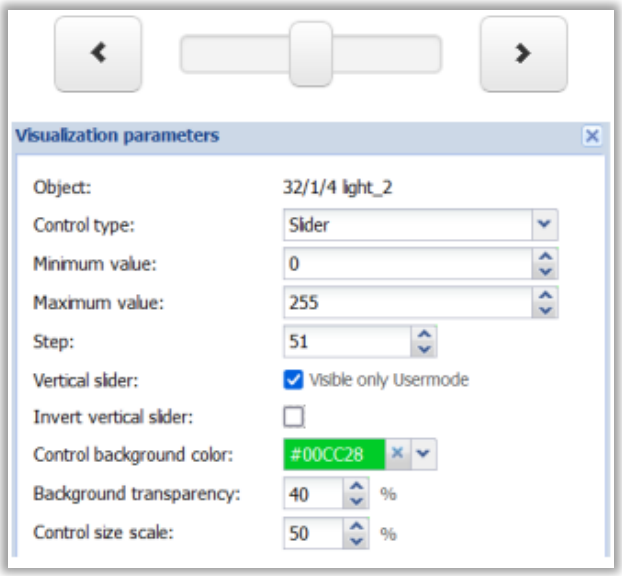

Fig. 19: Visualization Parameters – Slider Window

- Minimum value - minimum allowed value
- Maximum value - maximum allowed value
- Step - step size for each < and > button press, when dragging or clicking the slider the final value will be adjusted to the closest value matching the step size
- Vertical slider - change the slider orientation to vertical (not available in Touch mode)
- Invert vertical slider - top becomes the minimum value, bottom becomes the maximum
- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control element

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4.1.2.6. Circular Slider

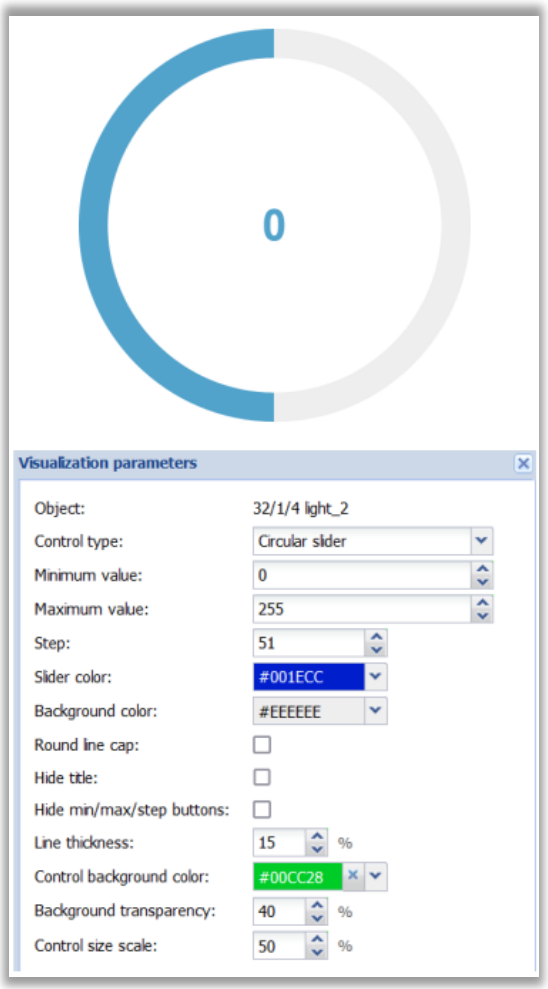

Fig. 20: Visualization Parameters – Circular Slider Window

- Minimum value - minimum allowed value
- Maximum value - maximum allowed value
- Step - step size for each < and > button press, when dragging or clicking the slider the final value will be adjusted to the closest value matching the step size
- Slider color - color of the active part of the slider's line
- Background color - color of the inactive part of the slider's line
- Round line cap - use round line cap for the slider's line
- Hide title - whether to hide the title (object name)
- Hide min/max/step buttons - whether to hide up/down buttons
- Line thickness - thickness of the slider line
- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control element

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4.1.2.7. Custom Value Select

Select from a list of custom values. Values can be defined in Vis. Parameters

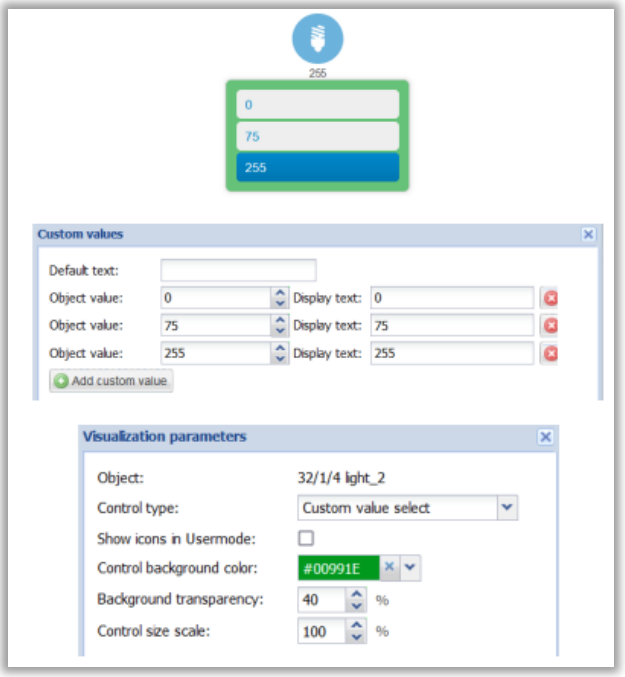

Fig. 21: Visualization Parameters – Custom Value Select Window

- Show icons in Usermode - use icons instead of textual values, icons can be defined in the Visualization editor (Additional icons)
- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control element

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4.1.2.8. RGB

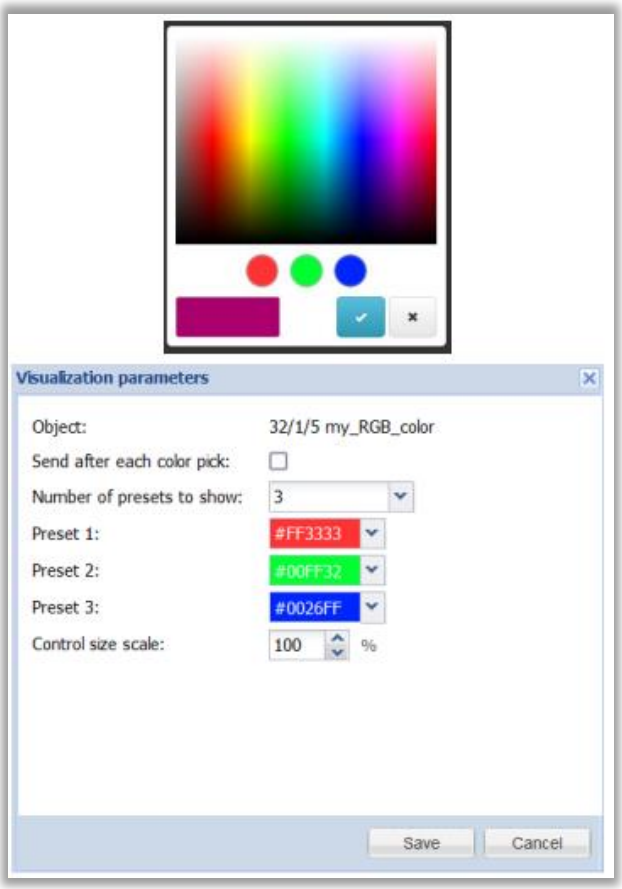

Fig. 22: Visualization Parameters – RGB Window

- Send after each color pick - specifies whether to send the new value after each coplar pick or only when Ok ☑ is clicked
- Number of presets to show - the number of predefined presets to show
- Preset - preset color
- Control size scale - size of the control element

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4.1.2.9. RGBW

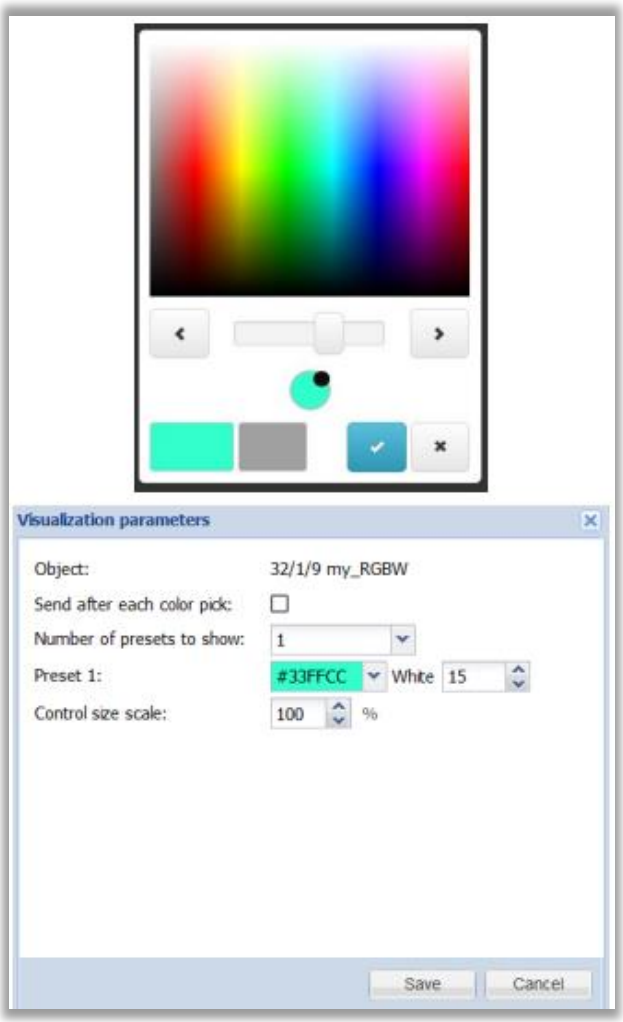

Fig. 23: Visualization Parameters – RGBW Window

- Send after each color pick - specifies whether to send the new value after each color pick or only when Ok ☑ is clicked
- Number of presets to show - the number of predefined presets to show
- Preset - preset color and white % value
- Control size scale - size of the control element

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4.1.2.10. DALI Brightness and Color Temperature

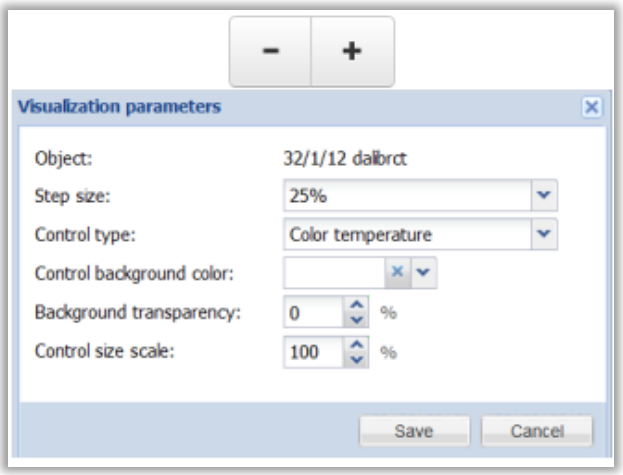

Fig. 24: Visualization Parameters – DALI Brightness and Color Temperature Window

- Step size - step size for the value change, pressing +/- sends up/down command with the defined step size respectively, releasing sends stop
- Control type - selects which property to control - either brightness or color temperature
- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control element

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4.1.2.11. Combined On/Off (Read-Only)

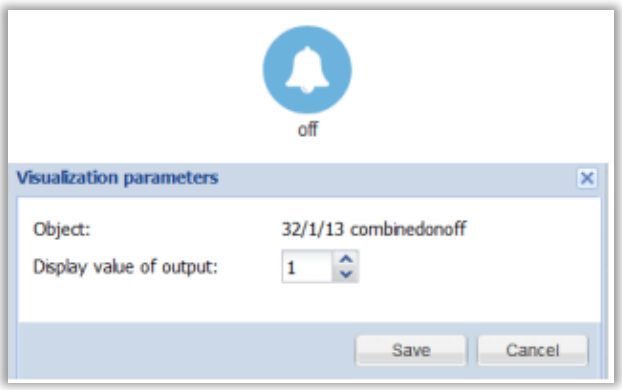

Fig. 25: Visualization Parameters – Combined On/Off Window

- Display value of output - selects which object number (1..16) is used for value display

4.1.2.12. Text (ASCII Character, 14 Byte String, 250 Byte String)

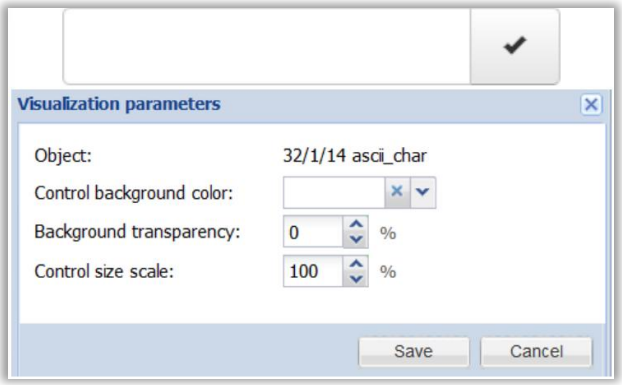

Fig. 26: Visualization Parameters – Text Window

- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control element

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4.1.2.13. Time / Day

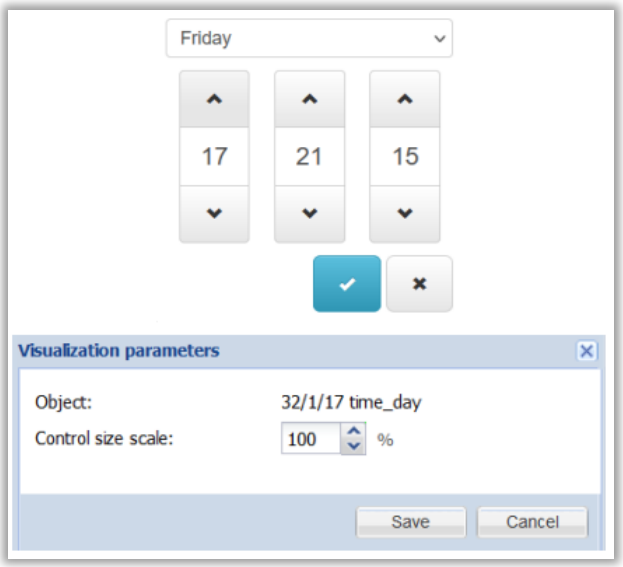

Fig. 27: Visualization Parameters – Time / Day Window

- Control size scale - size of the control element

4.1.2.14. Date

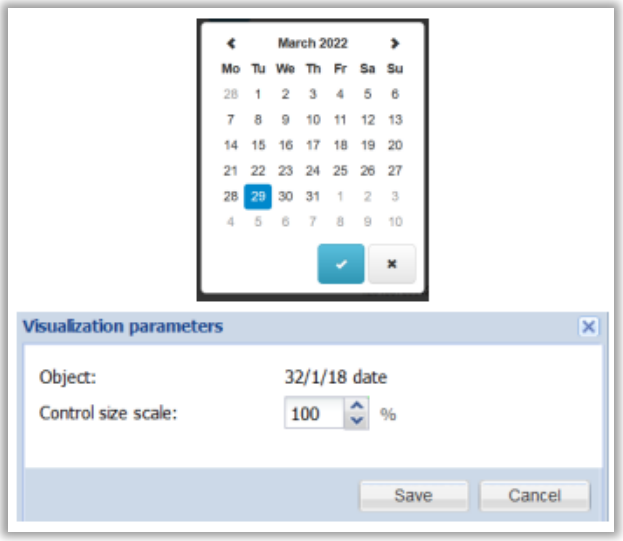

Fig. 28: Visualization Parameters – Date Window

- Control size scale - size of the control element

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4.1.2.15. 1 Byte Enumeration

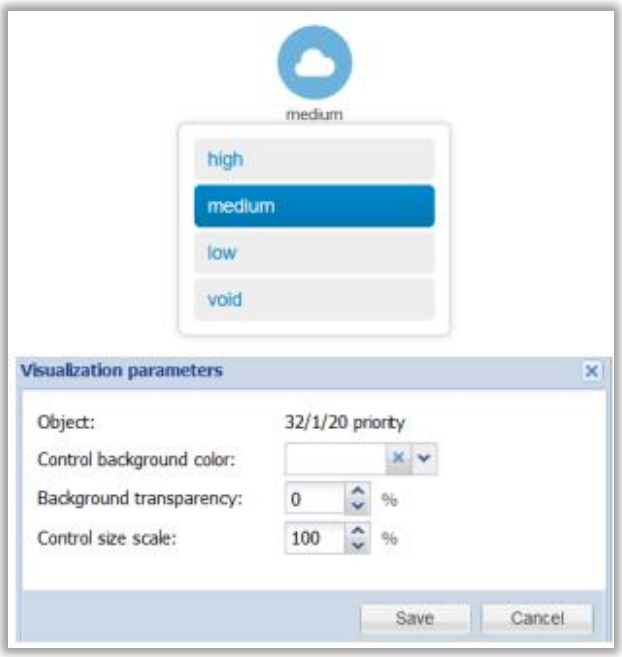

Fig. 29: Visualization Parameters – 1 Byte Enumeration Window

- Control background color - custom background color for this control element
- Background transparency - custom background transparency
- Control size scale - size of the control element

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4.1.3. Change The Object Value

Click to change the object value. Control elements depend on the object data type and visualization parameters.

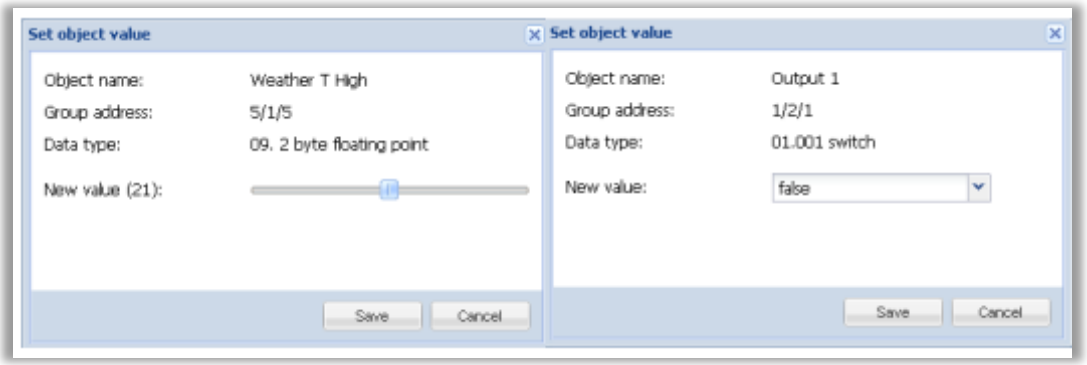

Fig. 30: Set Object Value Window

4.1.4. Custom Values

Click to map textual values to certain numerical object values. When the Default text is set it will be shown when no matching object value has been found. Otherwise raw object value is displayed.
Custom values are available only for Boolean and integer data types. For Boolean data type use 0 for off/false and 1 for on/true.

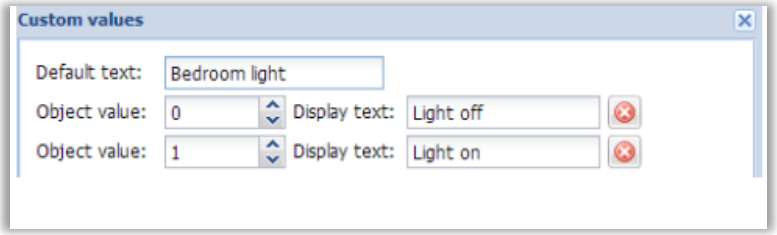

Fig. 31: Custom Values Window

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4.1.5. Object Control Bar

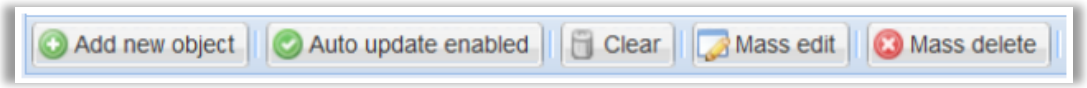

Fig. 32: Object Control Bar

- Add new object - manually add new object to the list

Fig. 33: Create Object Window

Virtual objects cannot appear on KNX/TP and KNX/IP, but can be accessed via BACnet and Remote services. Use virtual objects for values that are internal to the LM.

- Auto update enabled - whether the object list is updated automatically or not when object values are changed
- Clear - clear the list of group addresses
- Mass edit - edit certain parameters of multiple objects at once:
  - Object properties
  - Visualization parameters
  - Custom values

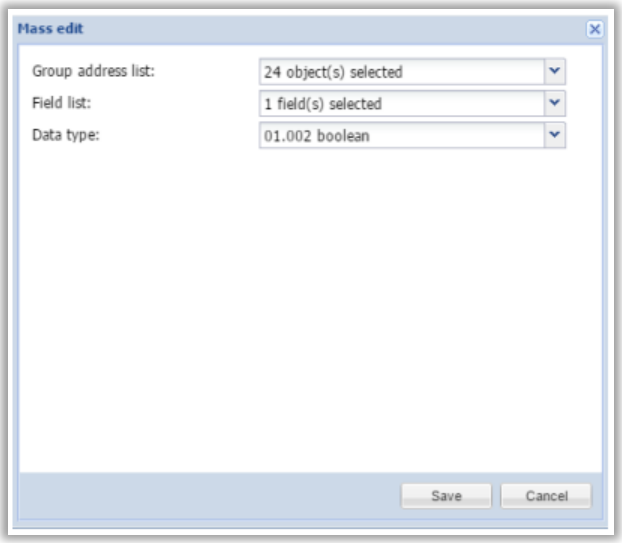

Fig. 34: Mass Edit Window

- Mass delete - delete all objects that either have no name set, no data type set or all objects matching the current filter

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4.1.6. Object Filter

Object list can be filtered by name/group address, data type and tags.

Wildcard(for example 1/1/*) can be used for filtering multiple groups addresses.

Several filters can be specified, separated by comma.

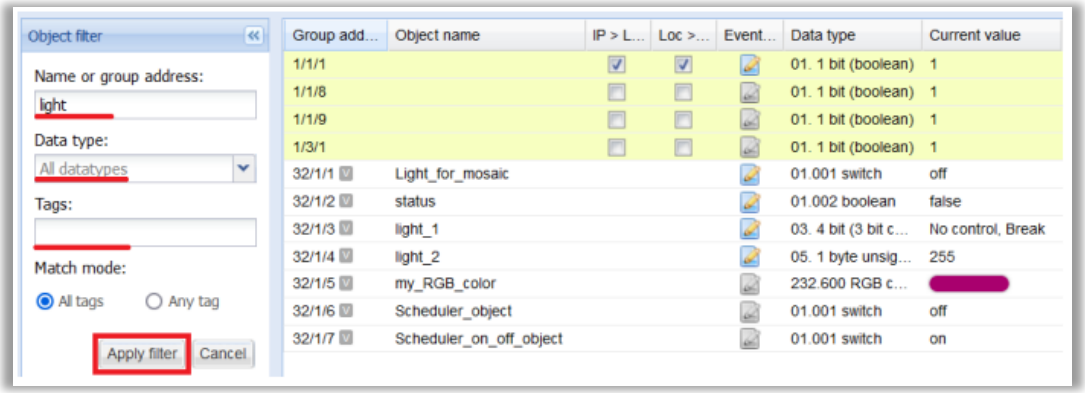

Fig. 35: Object Filter Window

Match mode:

All tags - represents AND function when all tags must match

Any tag - represents OR function when at least one of tags must match

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4.2. Object Logs

Telegrams from objects that have the Log property enabled are available in the Object logs tab.

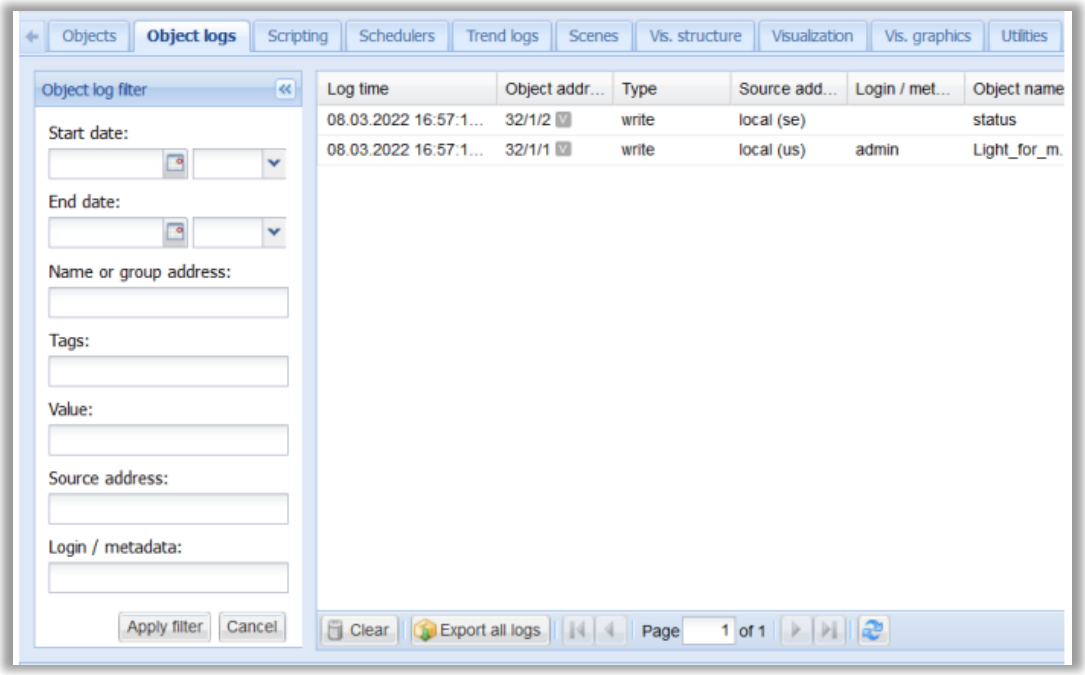

Fig. 36: Object Logs Window

Logs can be filtered by the following criteria:

- Start date - start date and time
- End date - end date and time
- Name or group address - specific name or group address of the object (* wildcard allowed)
- Tags - object tags
- Value - object value
- Source address - source address when the telegram comes from KNX/TP or KNX/IP, local otherwise
  Login / metadata - additional telegram information. For example: login and IP address if the value has been changed by a local or a cloud user

Click Clear to remove all object logs.

Object log size can be changed in Logic Server → Utilities → General Configuration.

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4.3. Scripting

The Lua programming language is used for scripting (LuaJIT, compatible with Lua 5.1). Most of the Lua language aspects are covered in the first edition of "Programming in Lua" which is freely available at www.lua.org/pil/

Note! the latest Lua reference manual for LogicMachine can be found at

openrb.com/docs/lua.htm

Scripts types:

- Event-based - executed when a group event occurs (read/write/response)
- Resident - function executed in an infinite loop with a defined sleep time between each iteration
- Scheduled - executed at a defined time and date
- User libraries - custom function libraries that are used in other scripts
- Common functions - common functions that are used by other scripts
- Start-up (init) script - executed when the system starts

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4.3.1. Adding a New Script

Click Add new script at the bottom of the Event-based, Resident or Scheduled

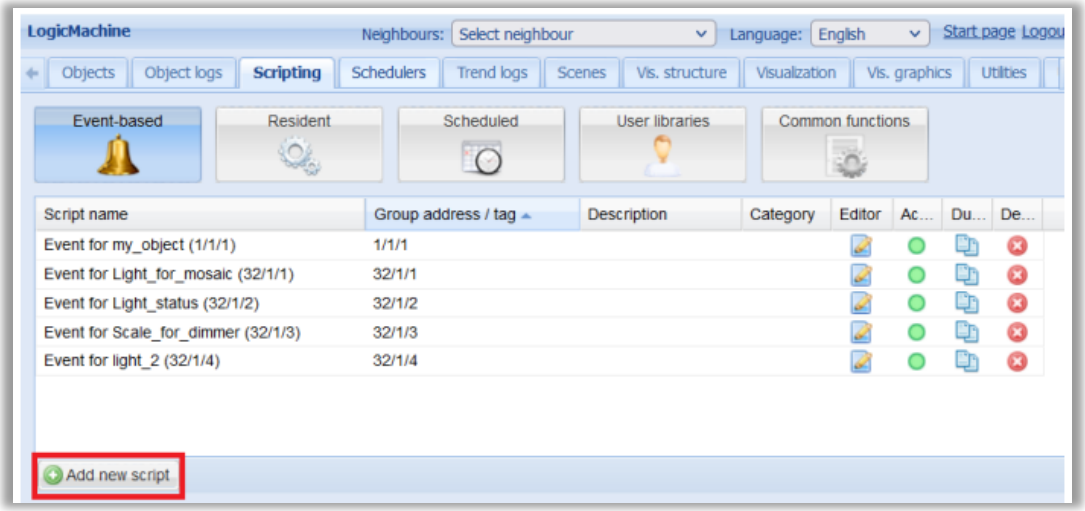

Fig. 37: Adding a New Script Window

4.3.1.1. Event-Based

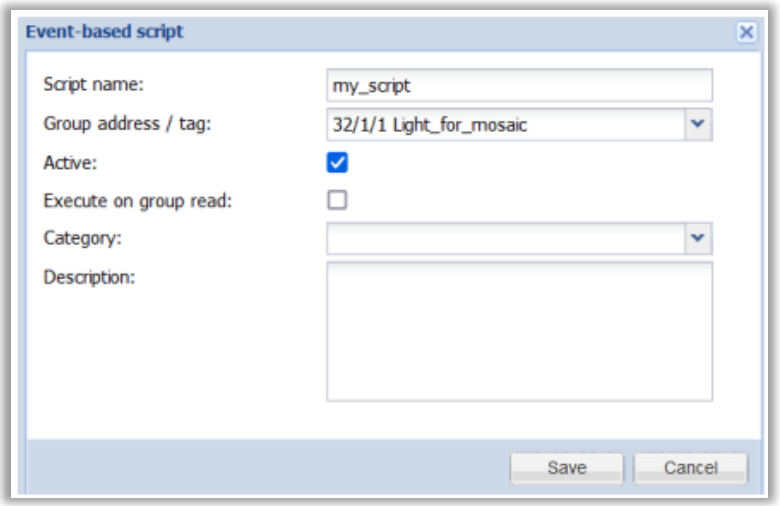

Fig. 38: Event-Based Script Window

- Script name - name of the script
- Group address / Tag - specific group address or a tag name which triggers the script
- Active - whether the script is active (green circle) or disabled (red circle)
- Execute on group read - whether the script is executed when a group read telegram is received. By default scripts are triggered by group write/response telegrams
- Category - new or existing category for the script. This allows filtering scripts by category, it is also shown in the Tools → Print script listings page
- Description - description of the scriptEvent-based scripting can be used to implement custom logic for group address or tag events. User-defined function is executed when a “group write/response” or group

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read" (if enabled) event occurs for a given group address. Event information is stored in the global event variable. Variable contents:

- dstraw (integer) - raw destination group address
- srcraw (integer) - raw source individual address
- dst (string) - decoded destination group address (for example: 1/1/4)
- src (string) - decoded source individual address (for example: 1.1.2)
- type (string) - type of the event, either 'groupwrite', 'groupread', 'groupresponse'
- dataraw (string) - event data as a binary string
- datahex (string) - event data as a hex-encoded string

To get the event value use the following command: value = event.getvalue()

4.3.1.2. Resident

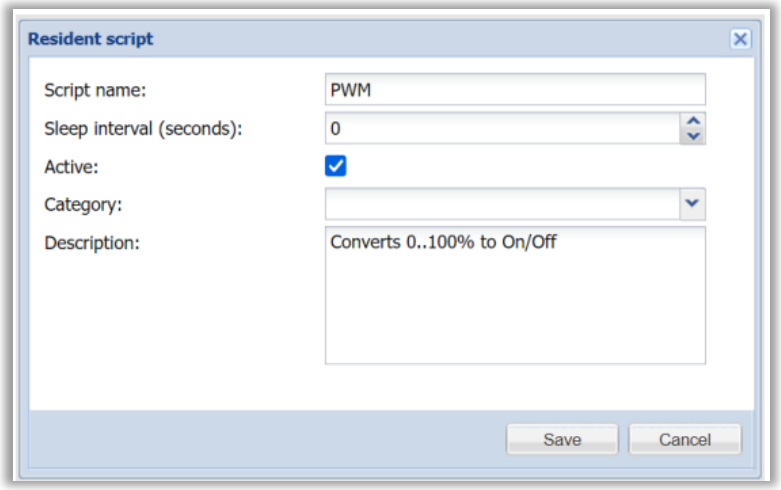

Fig. 39: Resident Script Window

- Script name - name of the script
- Sleep interval (seconds) - delay between each script execution
- Active - whether the script is active (green circle) or disabled (red circle)
- Category - new or existing category for the script. This allows filtering scripts by category, it is also shown in the Tools → Print script listings page
- Description - description of the script

Note! Even though resident scripts are executed in parallel they should not have internal infinite loops or it will not be possible to reload scripts after editing

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4.3.1.3. Scheduled

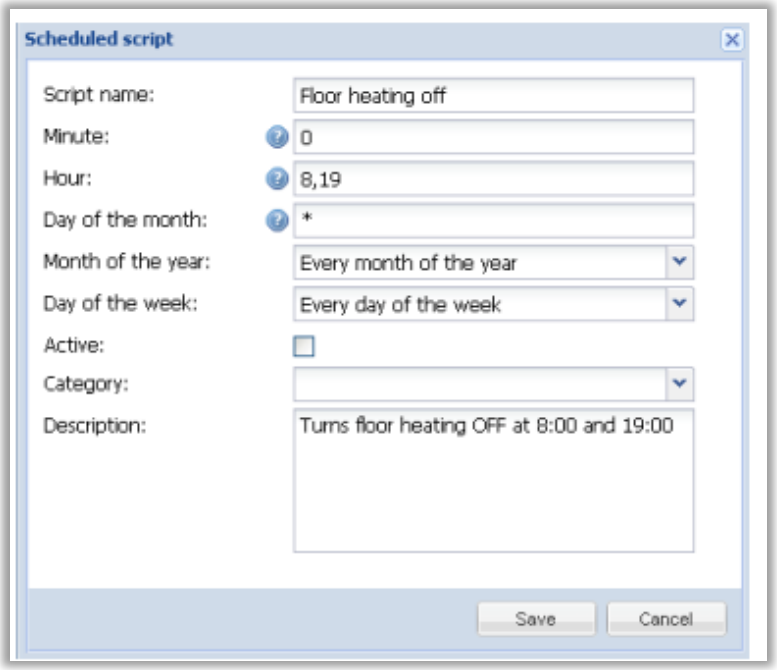

Fig. 40: Scheduled Script Window

- Script name - the name of the script
- Minute, Hour, Day of the month, Month of the year, Day of the week - specifies when the script is executed
- Active - whether the script is active (green circle) or disabled (red circle)
- Category - new or existing category for the script. This allows filtering scripts by category, it is also own in the Tools → Print script listings page
- Description - description of the script

Schedul scripts are executed when the system date/time matches the specified script start date/time. Scheduled script is run only once for each matching date/time.

Scheduled scripts use standard cron format for date/time parameters. Valid values are:

* — execute script every minute, hour or day.

*/N — execute script every N minutes, hours or days. N is an integer, script is executed when the current value divided by N gives 0 in modulo.

For example, script with hour parameter set to */8 will be executed when hour is 0, 8 and 16.

N — execute script exactly at Nth minute, hour or day.

N-K — execute script when minute, hour or day in the N-K range (inclusive).

N,K — it is possible to specify several N and N-K type parameters separated by A comma. For example, script with minute parameter set to 15,50-52 will get executed when minute is 15, 50, 51 and 52

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4.3.2. List of Scripts

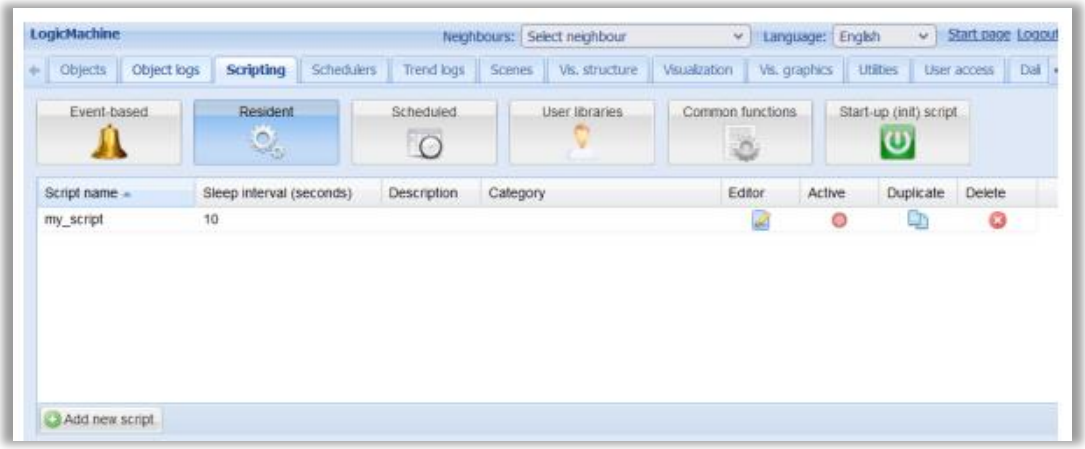

Fig. 41: List of Script Window

Available actions:

- Editor - open scripting editor interface
- Active - activate (green) or deactivate (red) the selected script
- Duplicate - duplicate the selected script
- Delete - delete the selected script

4.3.3. Script Editor

Click to open the editor.

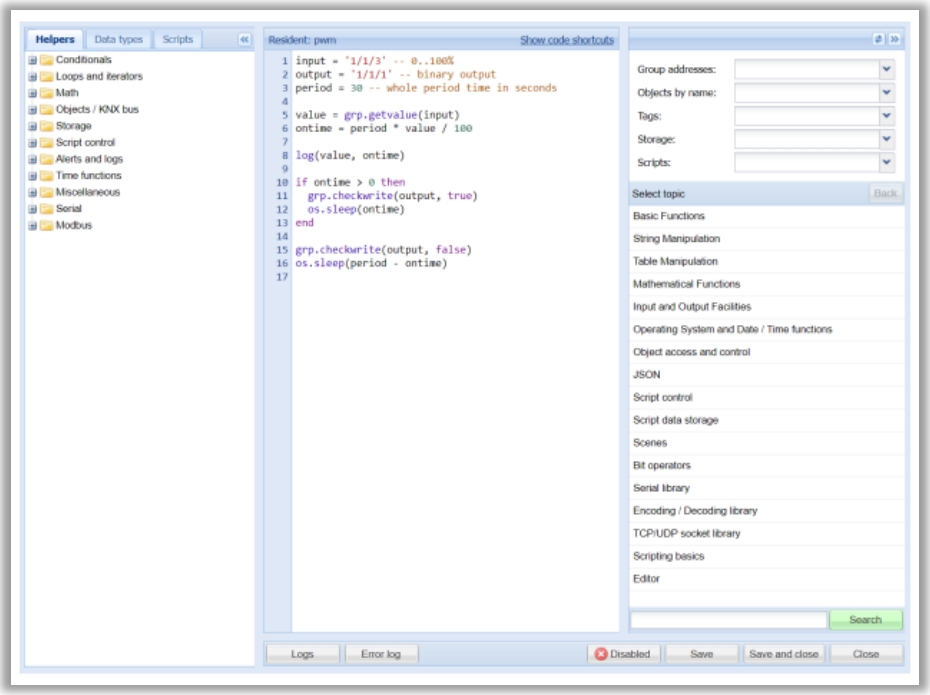

Fig. 42: Script Editor Window

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4.3.3.1. Left Sidebar

- Helpers - predefined code snippets categorized by the use case, click an entry to insert it into the script
- Data types - list of available data type constants, click an entry to insert it into the script
- Scripts - list of all scripts for quick switching

4.3.3.2. Right Sidebar

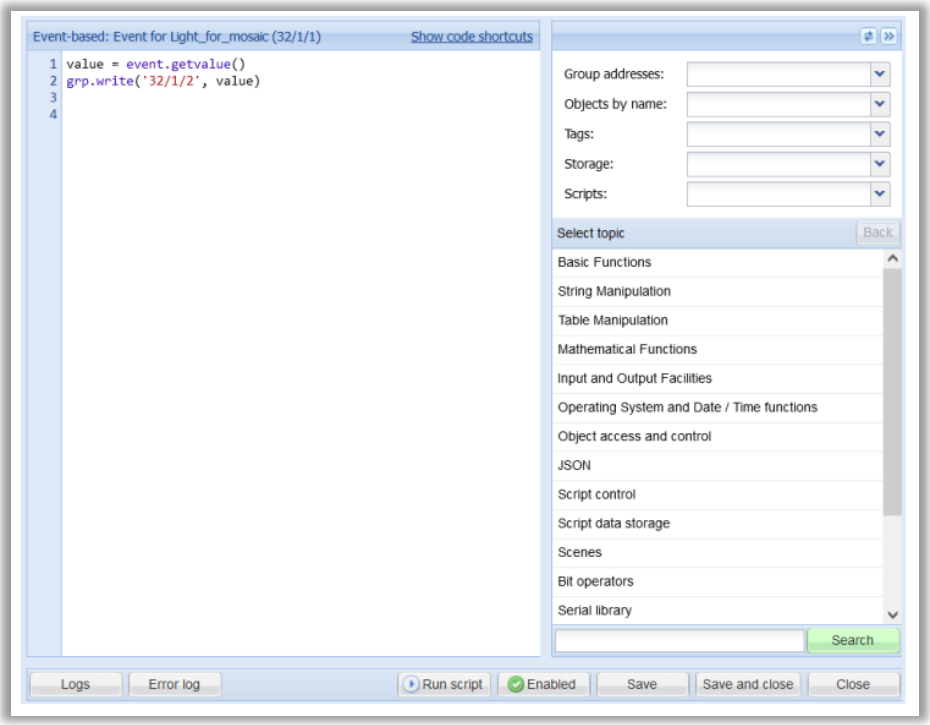

Fig. 43: Right Sidebar Window

- Group addresses, Objects by name, Tags, Storage, Scripts - drop-down lists of all relevant values, click an entry to insert it into the script
- Built-in help - Lua function documentation, click plus to insert a code snippet into the script

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4.3.3.3. Bottom Toolbar

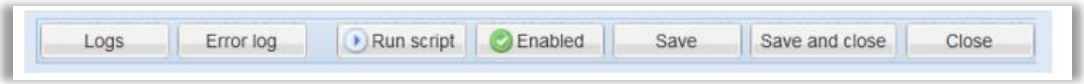

Fig. 44: Bottom Toolbar Window

- Logs - display a floating window containing Error logs
- Error logs - display a floating window containing Error logs
- Run script - execute the script (not available for resident and libraries)
- Enabled/Disabled - toggle script status
- Save - save the script and continue editing
- Save and close - save the script and close the editor window
- Close - close the editor window without saving the script

4.3.4. User Libraries

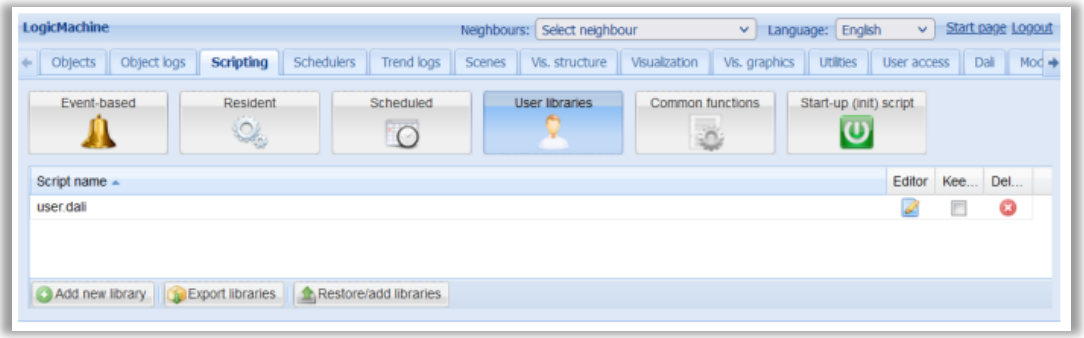

Fig. 45: User Libraries Window

User libraries contain custom functions that are used in other scripts.

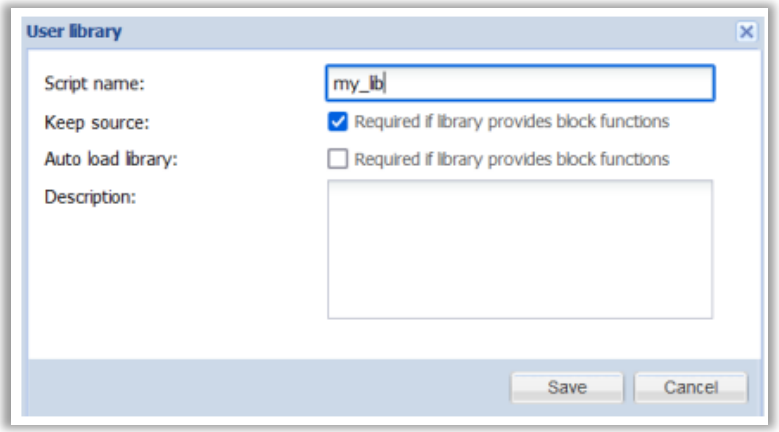

Fig. 46: User Libraries Edit Window

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- Script name - unique library name
- Keep source - library is converted to a binary form that cannot be edited when this option is disabled. Make sure to keep a backup of the source code when disabling this option
- Auto load library - automatically load this library in all scripts
- Description - description of the library

User libraries are manually included in other scripts by calling require('user.library_name') unless Auto load library is enabled.

4.3.5. Common Functions

Common functions is a library that is automatically included in all other scripts. Functions like sunrise/sunset, email are included by default.

Fig. 47: Common Function

4.3.6. Start-up (init) Script

Init script is run once each time the system starts.

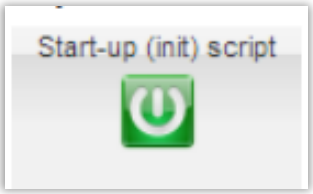

Fig. 48: Start-up (init) Script

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4.3.7. Tools

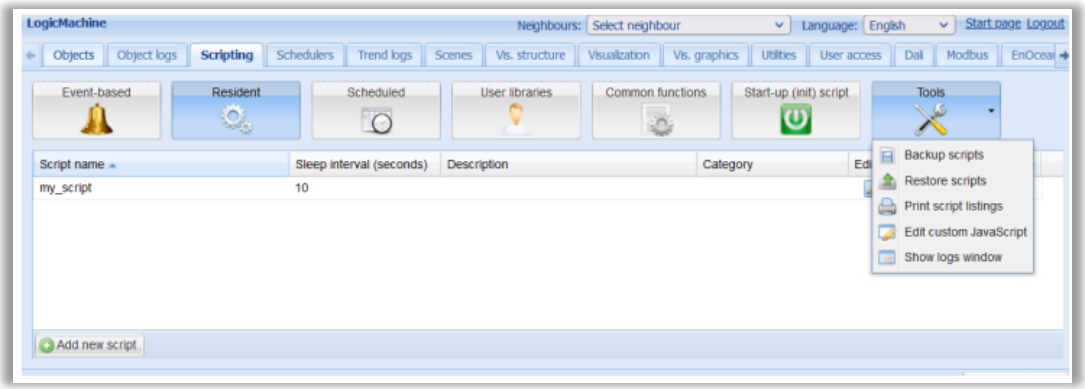

Fig. 49: Tools Window

- Backup scripts - backup all scripts in *.gz file, Common function and Start-up script can be included in the backup if needed
- Restore scripts - restore scripts from a backup

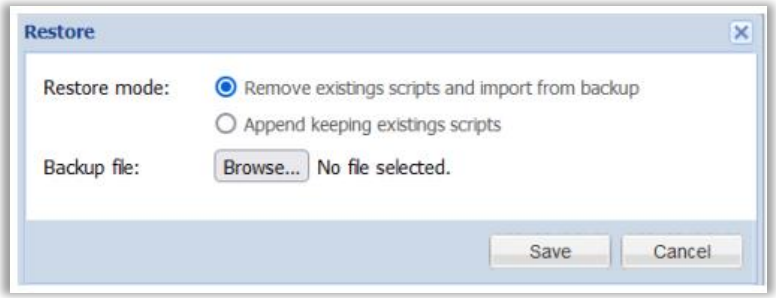

Fig. 50: Restore Window

- Print script listing - shows all scripts in a single page ordered by Category

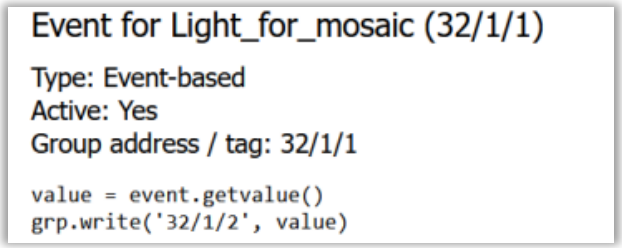

Fig. 51: Print Script Listing

- Edit custom JavaScript - allows adding certain actions for the user visualization, schedulers and trends that are not possible by the built-in functionality.
- Show logs window - show script logs in a separate floating window

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4.4. Schedulers

Schedulers are used to specify events based on date/time when an object should be set to a predefined value. Correct date, time and timezone must be set in Utilities. Location coordinates can be provided to make sunrise and sunset event time more accurate. It is recommended to enable time synchronization (NTP).

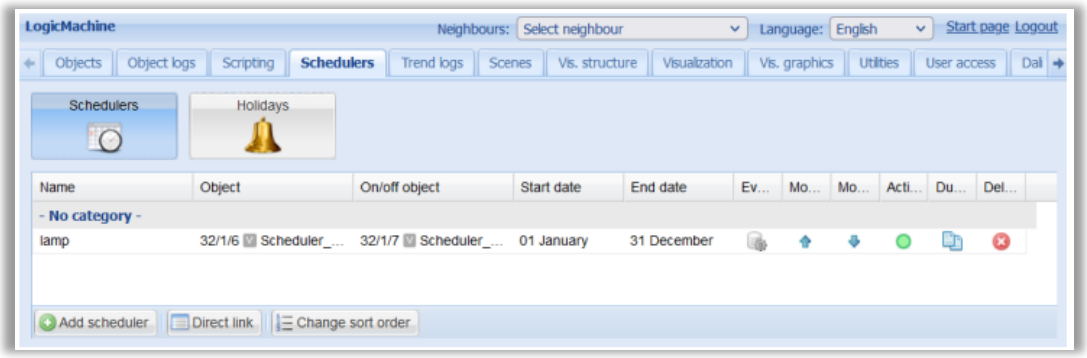

Fig. 52: Schedulers Section Window

4.4.1. Add Scheduler (Admin Interface)

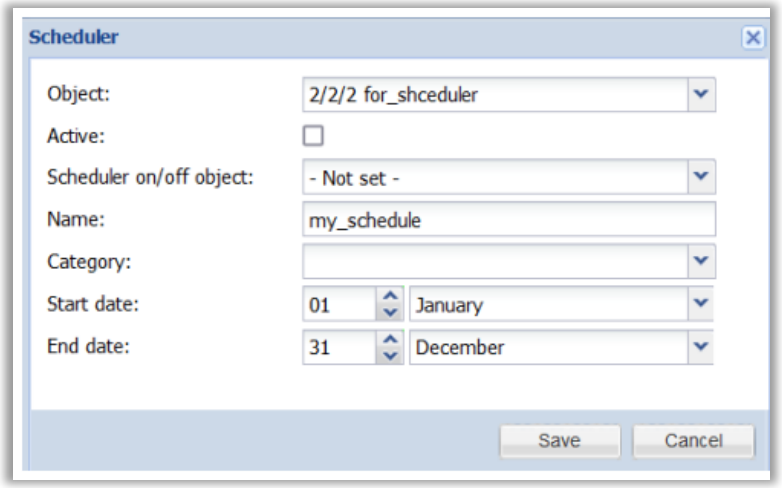

Fig. 53: Add Scheduler – Admin Interface Window

- Object - the object group address which will be controlled by scheduler
- Active - whether the scheduler is active or not
- Scheduler on/off object - object that can be used to enable/disable this scheduler
- Name - name of the scheduler
- Category - category of the scheduler
- Start date - start date of the scheduler
- End date - end date of the scheduler

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4.4.2. Scheduler Events (Admin Interface)

Events can be added both in the admin and the end user interfaces.

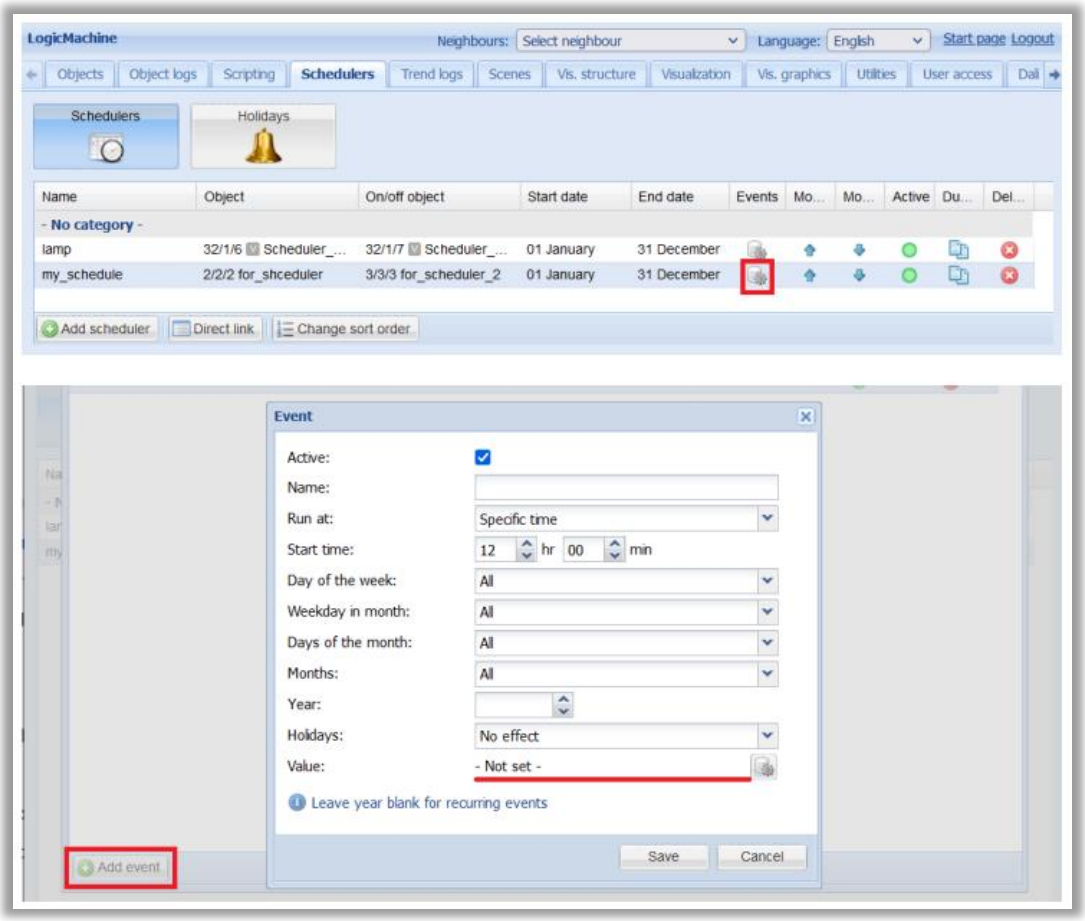

Fig. 54: Scheduler Events – Admin Interface Window

- Active - whether the event is active or not
- Name - name of the event
- Run at - specific time, sunrise, sunset
- Start time - start time for the event
- Days of the week - days of the week when the event will be triggered
- Weekday in month - weekdays of the month when the event will be triggered
- Days of the month - days of the month when the event will be triggered
- Months - months of the year when the event will be triggered
- Year - year when the event will be triggered
- Holidays - “do not run on holidays” or “run only on holidays”
- Value - value to send to the group address when the event is triggered

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4.4.3. Scheduler Holidays (Admin Interface)

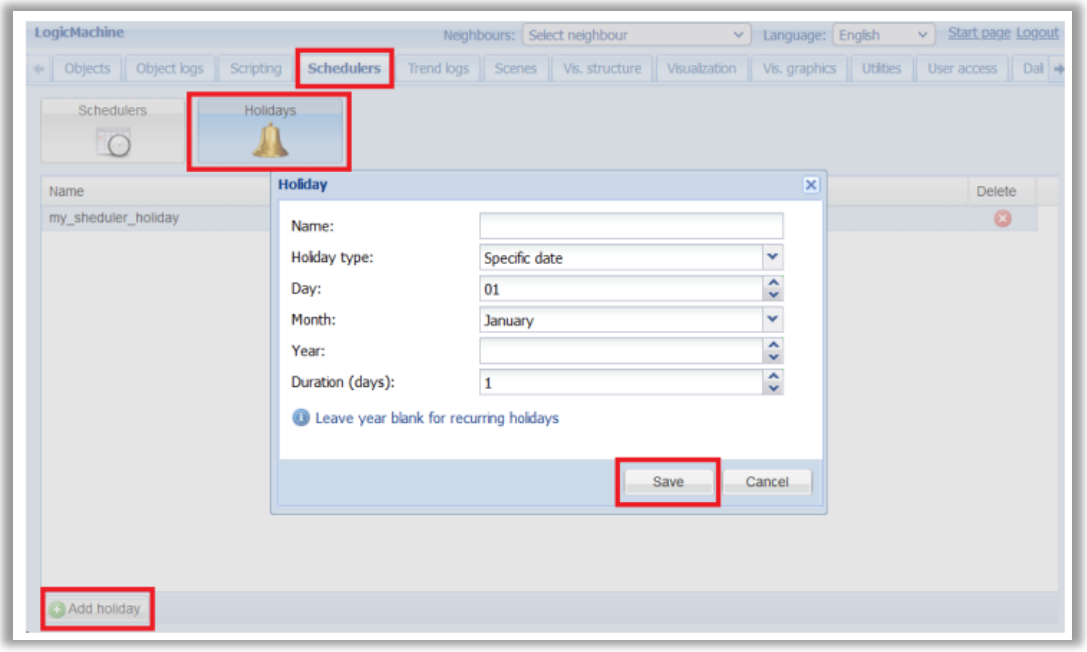

Fig. 55: Scheduler Holidays – Admin Interface Window

- Name - holiday name
- Holiday type - either Specific date or Day of the week
- Specific date:
    - Day - day of the month value
- Day of the week:
    - Day of the week - specific day of the week (e.g. 2nd Monday)
- Month - holiday month value
- Year - holiday year value, leave blank when a holiday recurs every year
- Duration (days) - holiday length in days

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4.4.4. Direct Link (Admin Interface)

To get a direct link to a specific scheduler click the Direct link button. This link can be used to include scheduled in the Visualization via the Frame element.

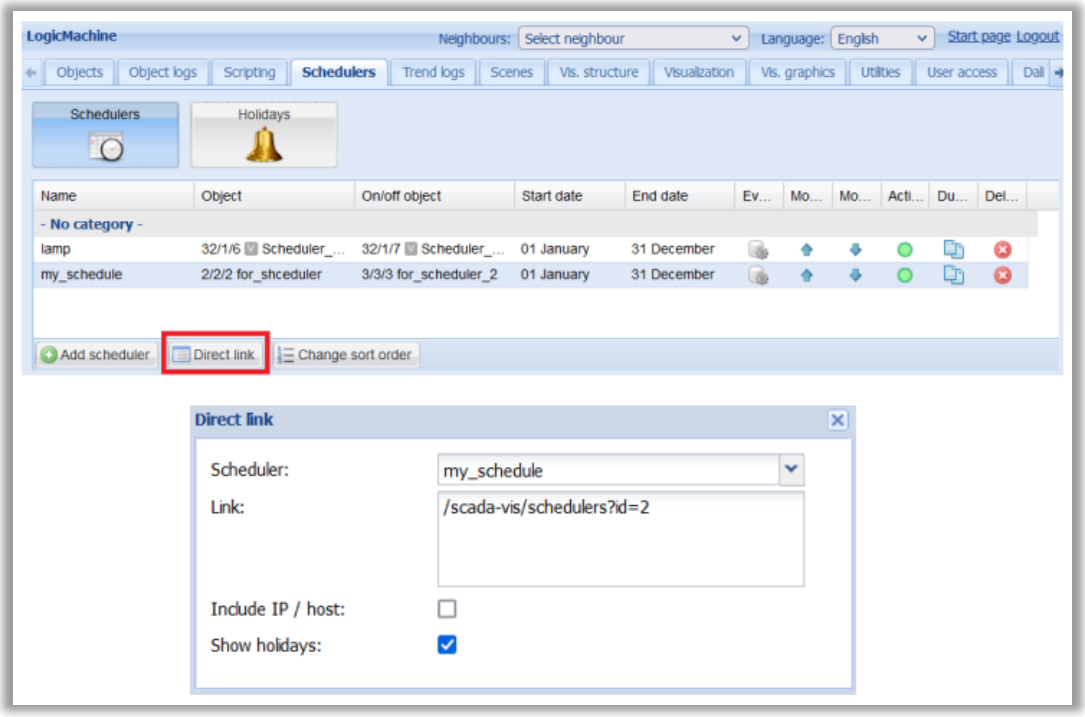

Fig. 56: Direct Link - Admin Interface Window

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4.4.5. Scheduler Events (User Interface)

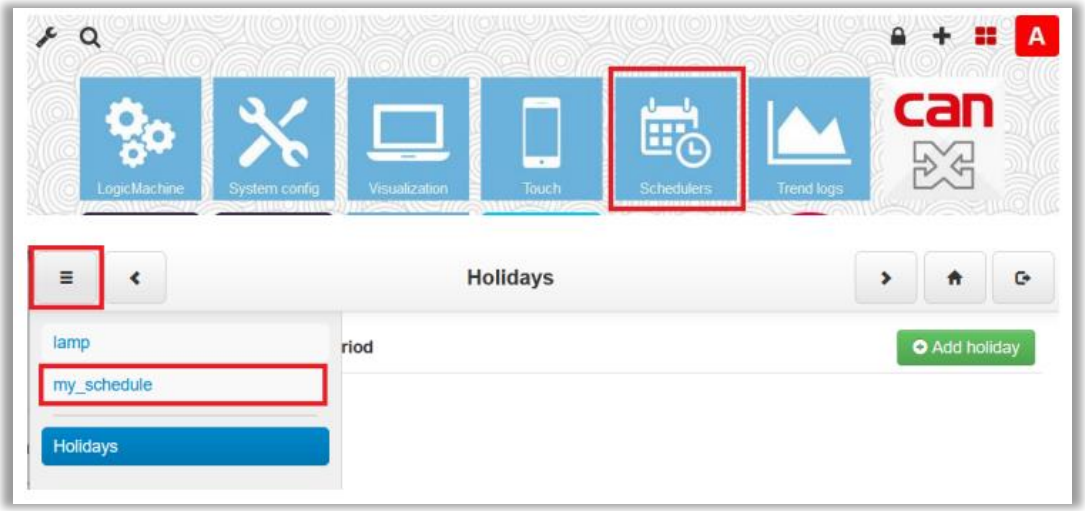

Fig. 57: Scheduler Events - User Interface Window

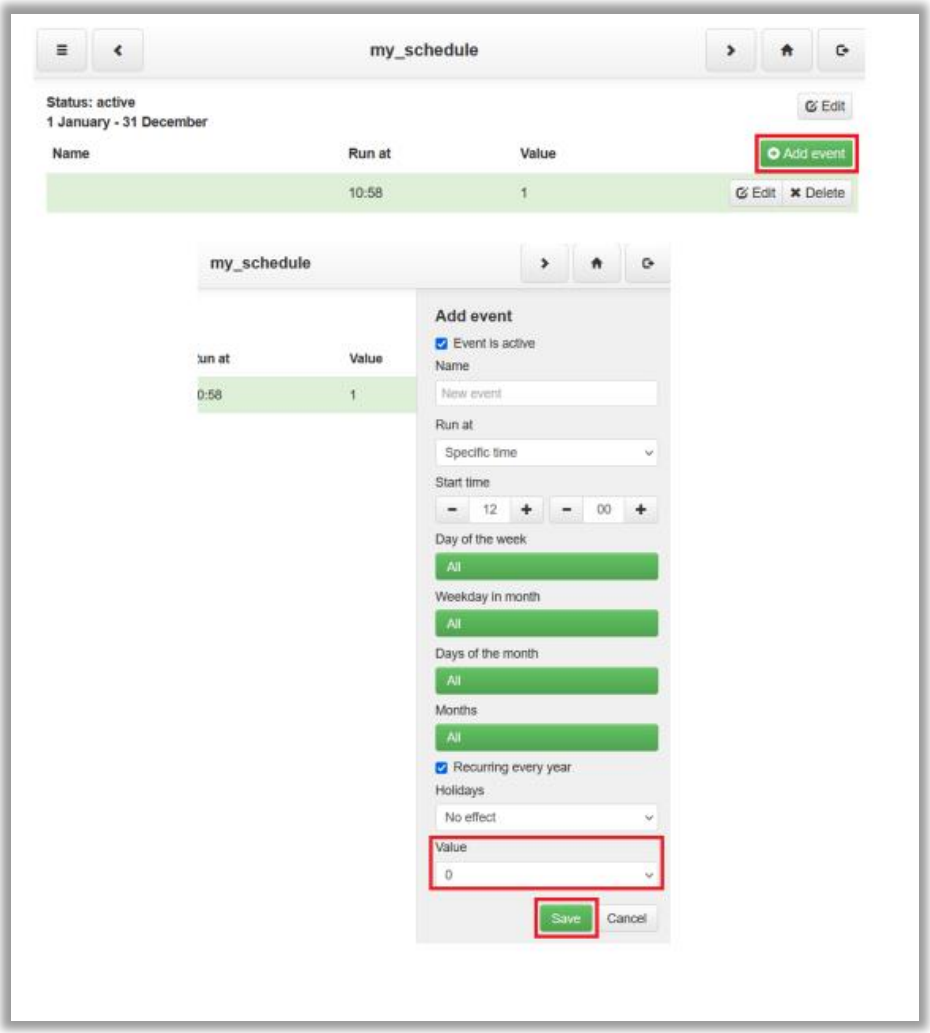

Fig. 58: Scheduler Add Events - User Interface Window

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4.4.6. Scheduler Holidays (User Interface)

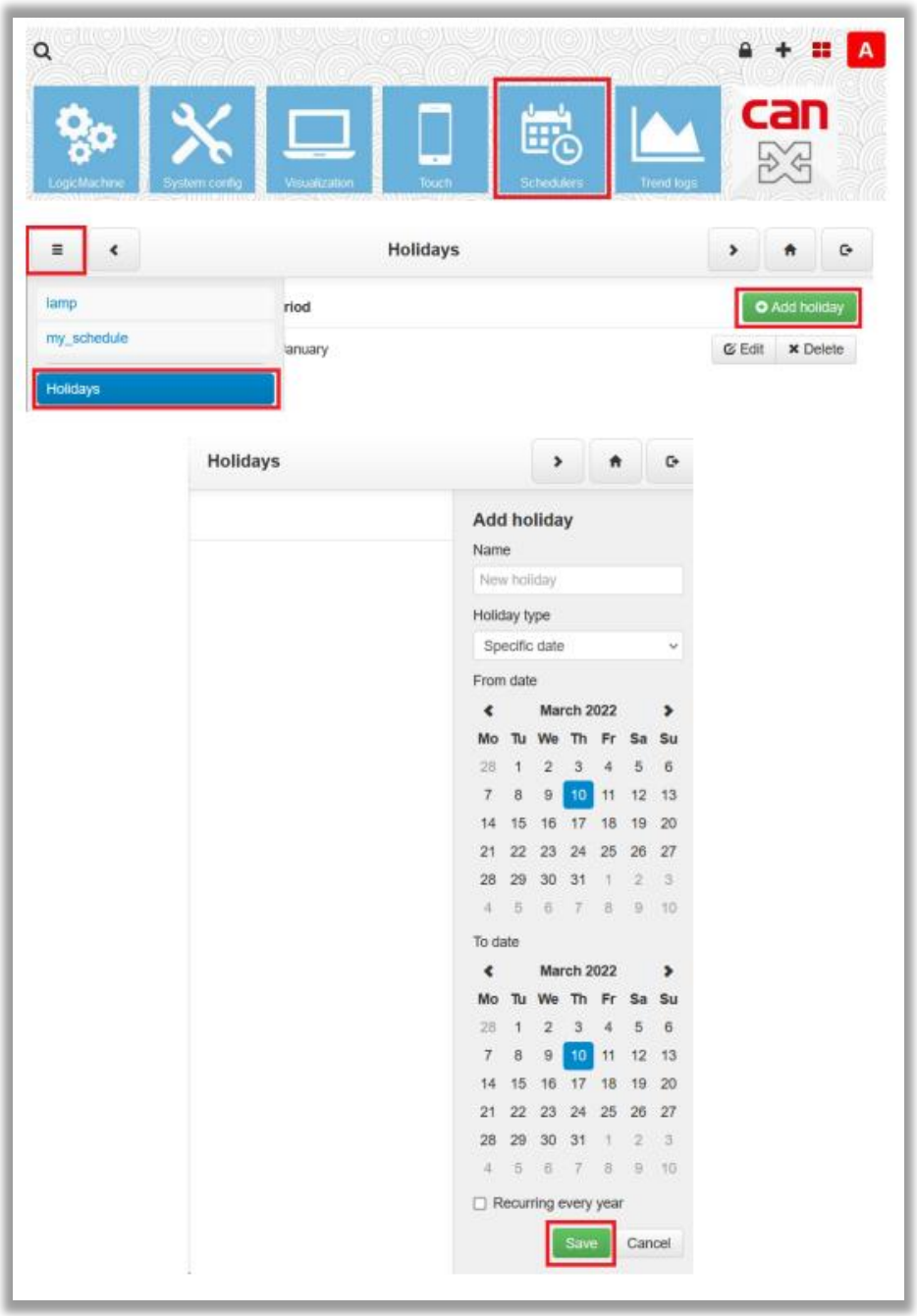

Fig. 59: Scheduler Add Holiday - User Interface Window

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4.5. Trend Logs

Trend logs store object data for a certain period of time with a predefined interval between each value.

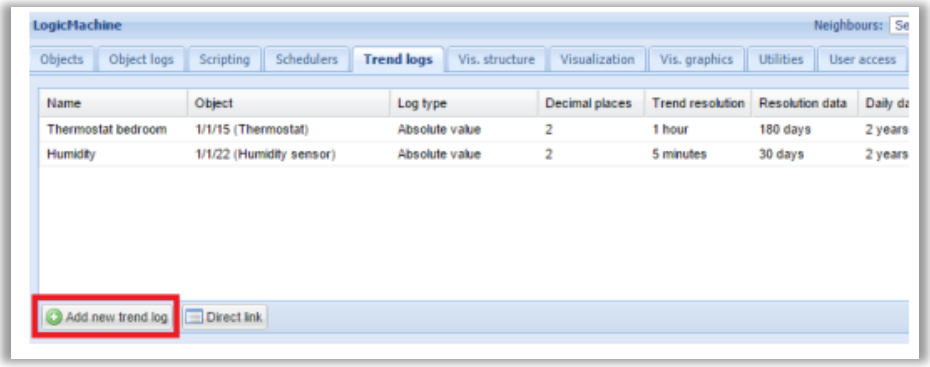

Fig. 60: Trend Logs Window

4.5.1. Add New Trend Log (Admin Interface)

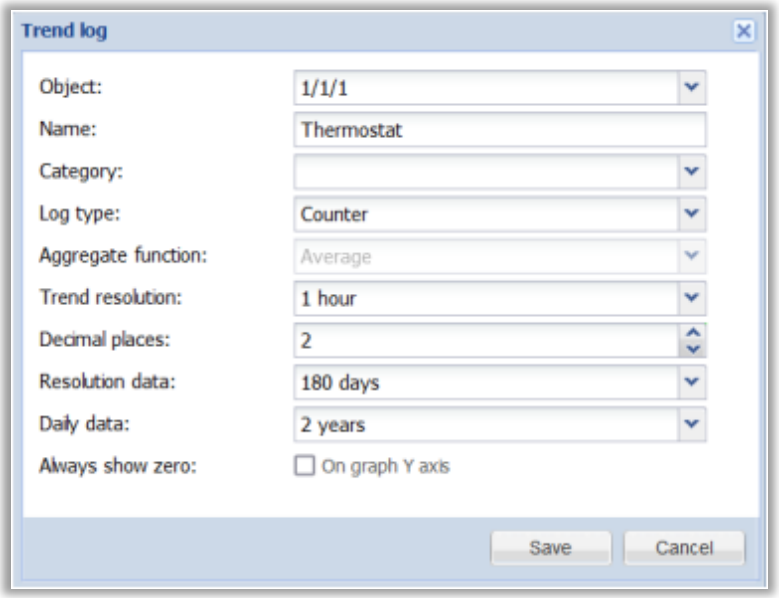

Fig. 61: Add New Trend Log – Admin Interface Window

- Object - object which value is used as trend data source
- Name - name of the trend
- Category - category of the trend
- Log type [Counter, Counter with negative delta, Absolute value] - type of the log. Counter type is used for metering data which is always growing (electricity, water, gas), Absolute value is used for temperature, humidity sensor data. Counter with negative delta is used for metering data that can change both ways (solar installations connected to the grid).
- Aggregate function [Average, Minimum, Maximum, Last value] - function which aggregates trend data into lower resolution, only available for the Absolute value type.
- Trend resolutions [5 min .. 1 hour] - how often the trend value is stored
- Decimal places - decimal places for the object value
- Resolution data - time period for which the data at the defined resolution is kept
- Daily data - time period for which the daily data is kept
- Always show zero - whether to always show zero on the graph Y axis

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4.5.2. Direct Link (Admin Interface)

To get a direct link to a specific trend log click Direct link.

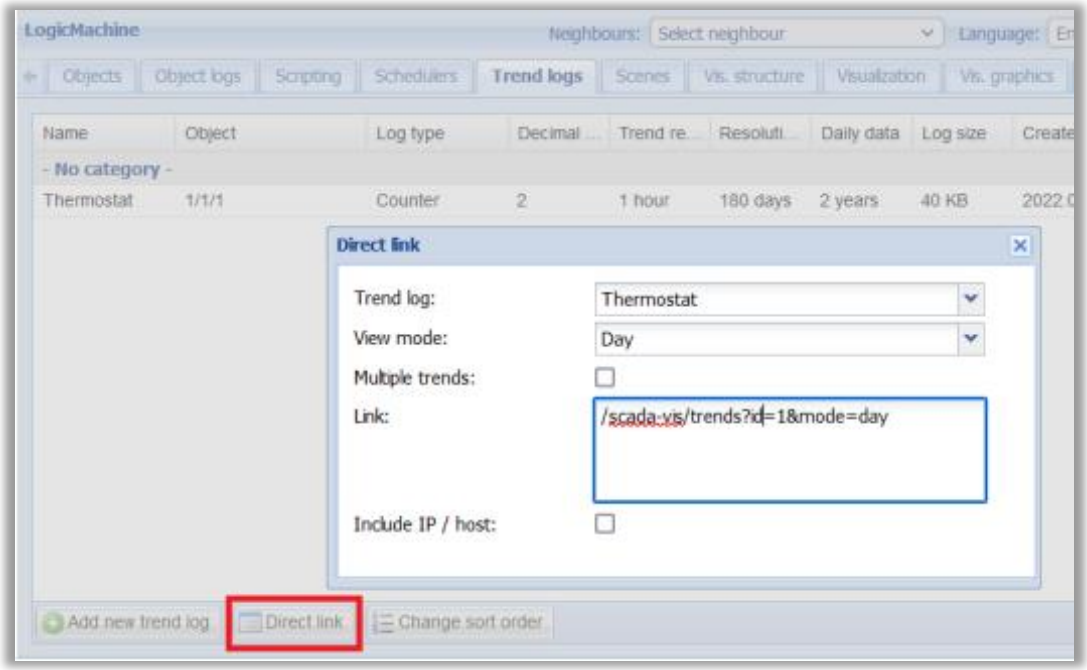

Fig. 62: Direct Link – Admin Interface Window

4.5.3. Trend Log Functions for Scripts

https://openrb.com/docs/trends-new.htm

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4.5.4. Trend Log Example (User Interface)

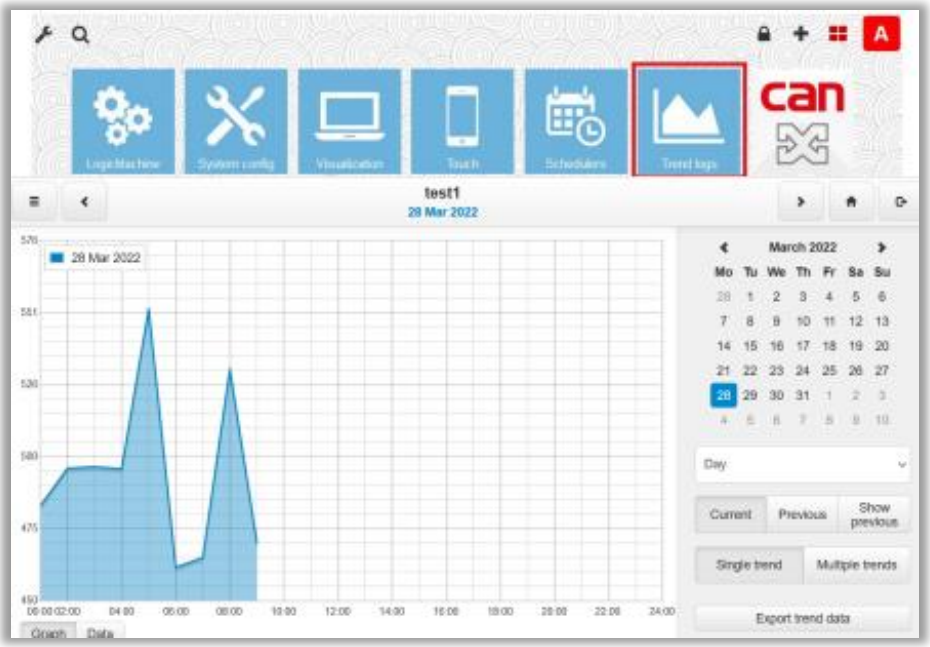

Fig. 63: Trend Log Example – User Interface Window

Click Menu ≡ to select which trend log to view. In Multiple trends view click each trend to toggle its display.

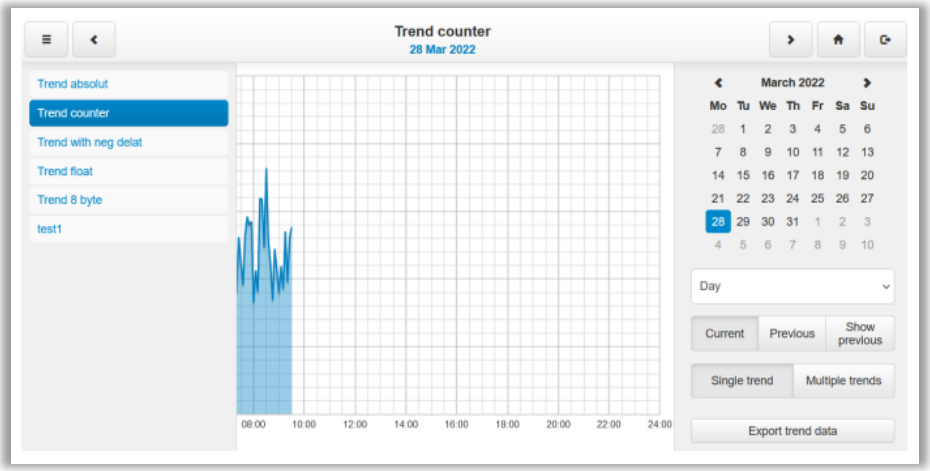

Fig. 64: Trend Counter Window

- Day/Week/Month/Year - change between different view
- Current - select the date for the current data
- Previous - select the date for the previous data
- Show previous - toggle previous data display, current and previous data can be shown together for comparison
- Single trend / Multiple trends - toggle between single and multiple trend log display
- Export trend data - export selected trend data into a CSV file

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Fig. 65: Multiple Trends Window

Click Data to view trend data in a table view.

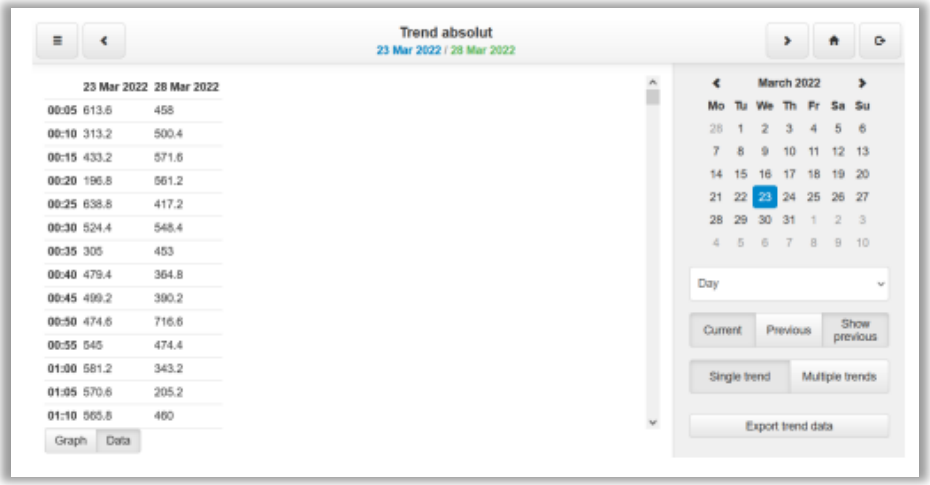

Fig. 66: Trend Absolut Window

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4.6. Scenes

4.6.1. Add a Scene

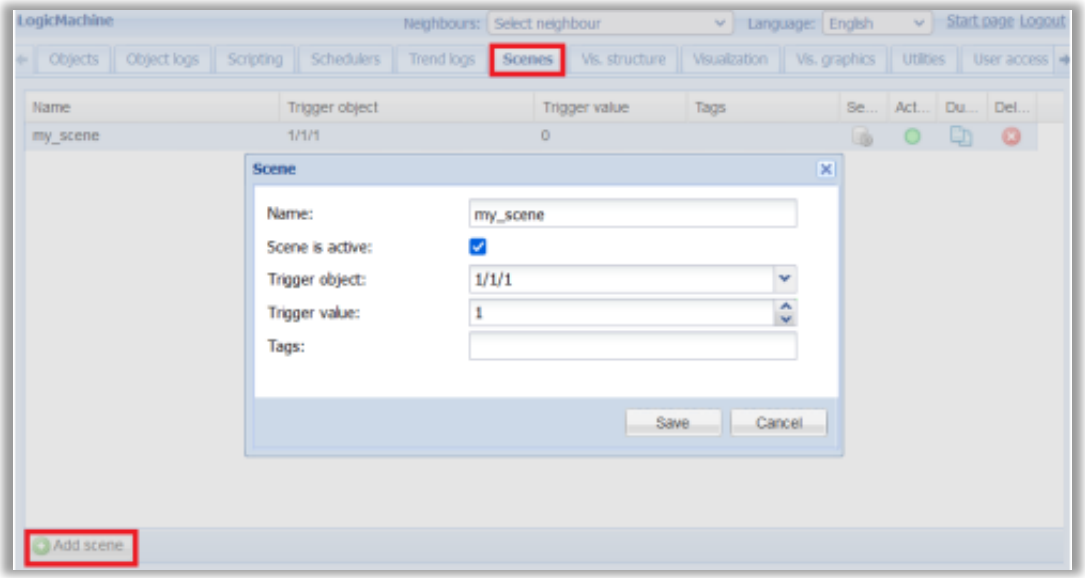

Fig. 67: Add a Scene Window

- Name - name for the scene
- Scene is active - whether the scene is active
- Trigger object - object that triggers the scene
- Trigger value - object value that triggers the scene
- Tags - tags of the scene, can be used in scripts to run multiple scenes

4.6.2. Add Objects to The Scene Sequence

Click Sequence to add objects that will be controlled by the scene

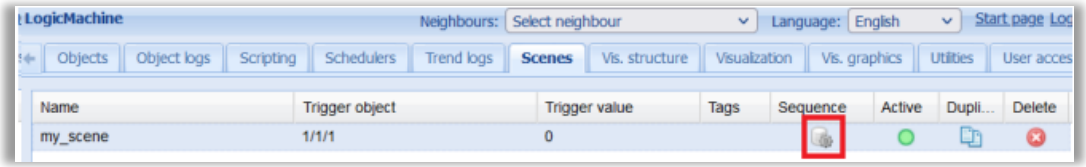

Fig. 68: Add Objects to The Scene Sequence Window

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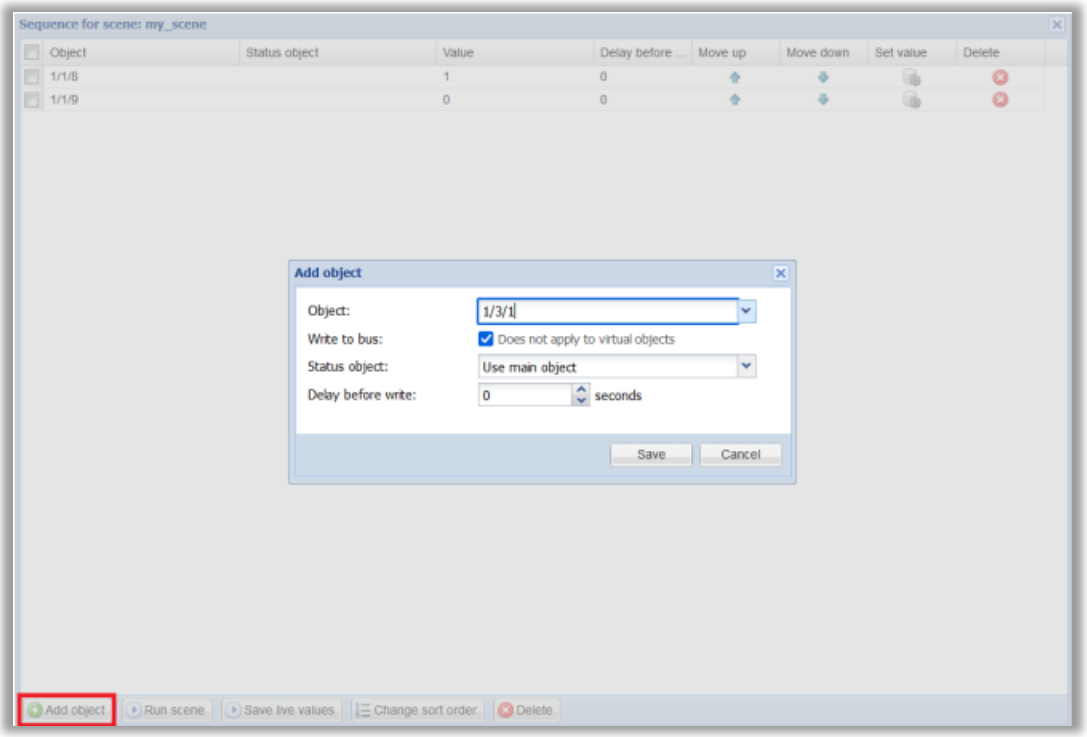

Fig. 69: Add Objects Window

- Object - sequence object
- Write to bus - where the write will be sent to KNX/TP bus
- Status object - optional object that can be used to get the value when saving live values
- Delay before write - delay in seconds before the object value is written

4.6.3. Scene Sequence Toolbar

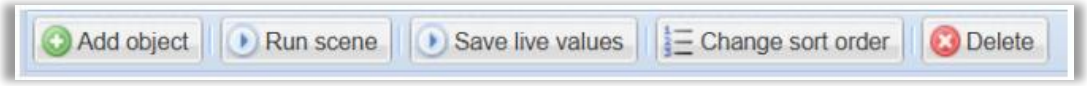

Fig. 70: Scene Sequence Toolbar Window

- Run scene - execute this scene
- Save live values - use current object value as sequence values
- Change sort order - change sequence object order via drag&drop
- Delete - delete selected objects from the sequence

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4.7. Visualization Structure

4.7.1. Levels/Plans

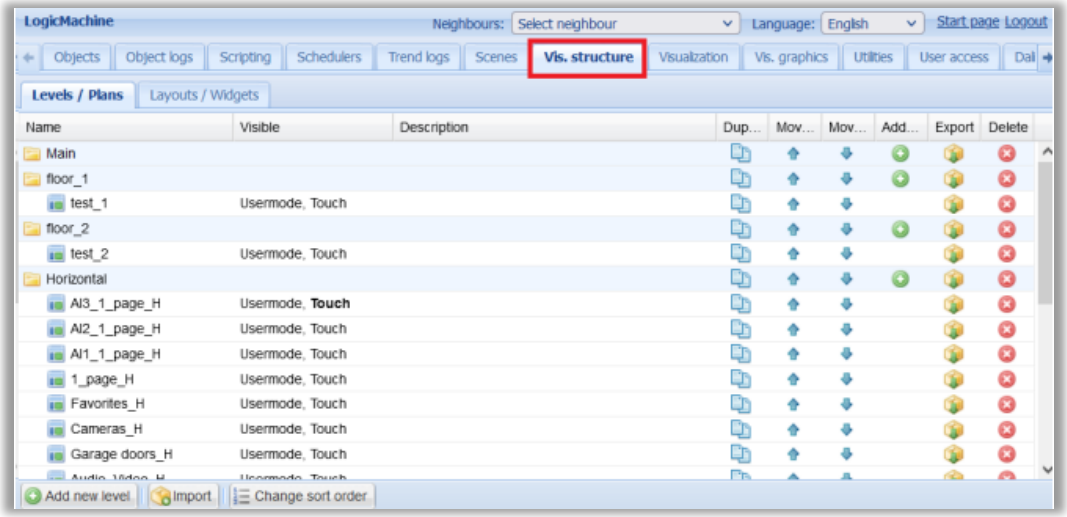

Fig. 71: Levels/Plans Window

Controls:

- Duplicate - create a copy of the level/plan structure
- Up/Down - move the level/plan up/down in the list (alternatively use Change sort order to re-order the structure via drag&drop)
- Add - add a secondary level or a plan
- Export - create a backup containing the selected structure that can be imported into another Logic Server
- Delete - delete the selected plan/level including any secondary levels and plans

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4.7.1.1. Add New Level

The Main level is added by default. Each top level can have several secondary levels. Each level can have several plans.

Click Add new level to add a new level. It is possible to protect this level and all secondary levels/plans by adding a PIN code.

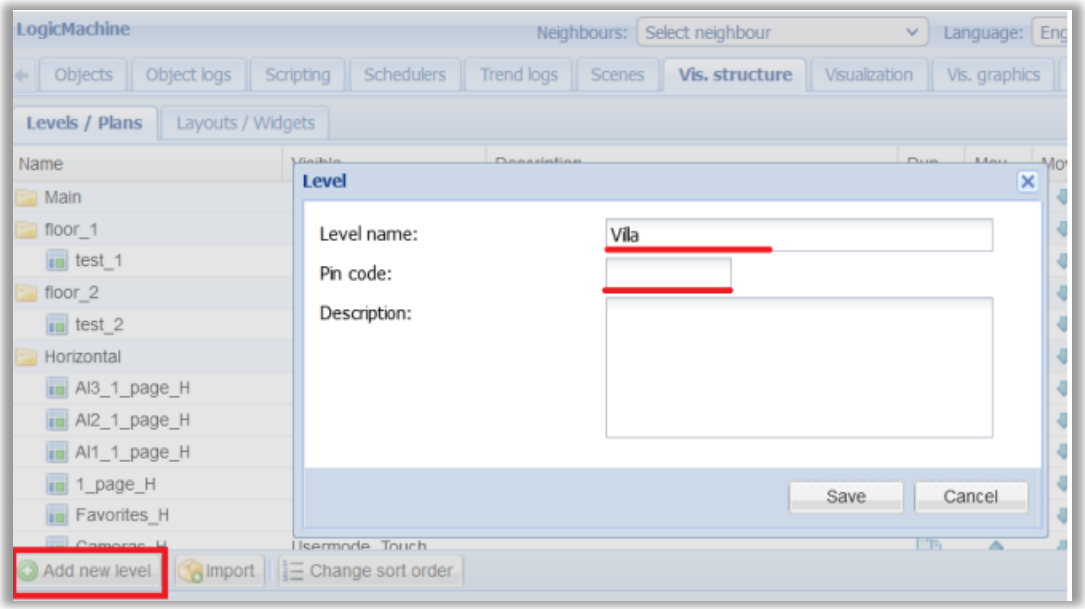

Fig. 72: Add New Level Window

Click Add to perform one of the following actions:

- Add second level - add a secondary sublevel to this level
- Add plan - add a plan to this level
- Import - import levels/plans from a backup file

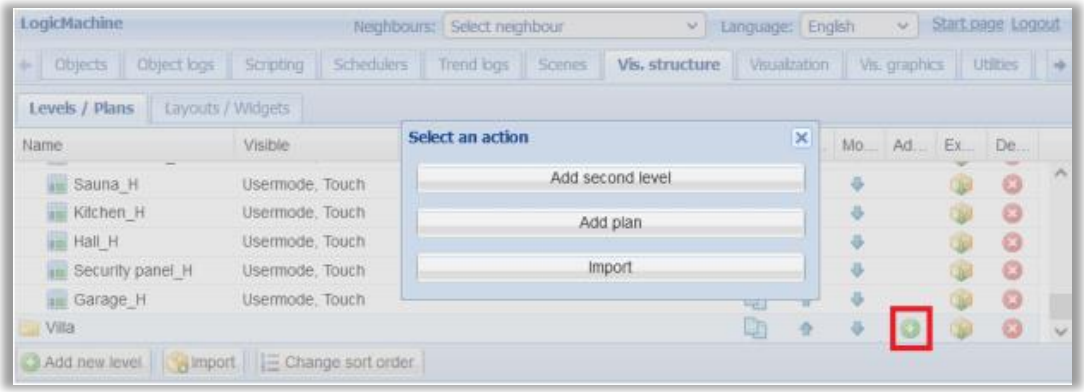

Fig. 73: Select an Action Window

Select Import to import levels and plans from a file (it can be exported from another Logic Server). Object links between visualization elements and group addresses can either be cleared or kept.

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4.7.1.2. Add New Plan

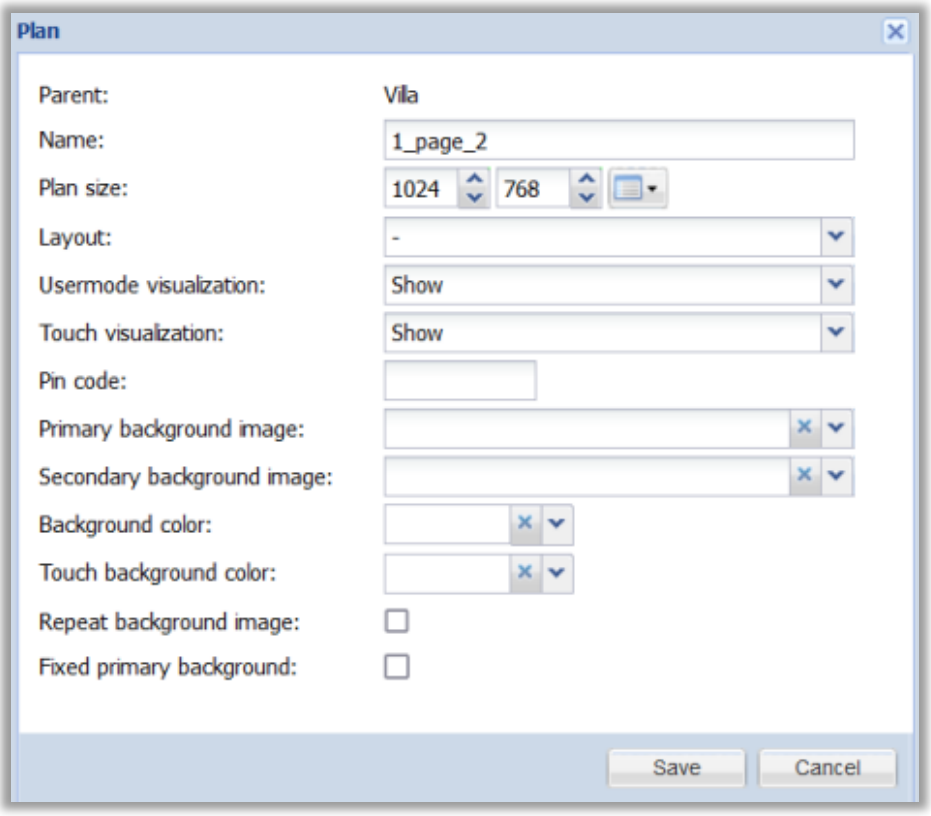

Fig. 74: Add New Plan Window

- Parent - name of parent level
- Name - name for the plan
- Plan size - plan size in pixels
- Layout - layout for this specific plan. Layout is a plan that is displayed under the current plan
- Usermode visualization [Show, Show and make default, Hide] - plan visibility in the Usermode visualization
- Touch visualization [Show, Show and make default, Hide] - plan visibility in the Touch visualization
- PIN code - protect plan access via PIN code
- Primary background image - primary background image from Vis.graphics → Images/Backgrounds
- Secondary background image - secondary background image from Vis.graphics → Images/Backgrounds
- Background color - background color for the Usermode visualization
- Touch background color - background color for the Touch visualization
- Repeat background image - background image display mode, should be enabled for tiled background images
- Fixed primary background - whether to fix the background image when scrolling

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4.7.2. Layouts / Widgets

4.7.2.1. Add New Layout

Layouts are plans that can be displayed under visualization plans to provide common controls, menus etc. Layouts cannot be used in the Touch visualization.

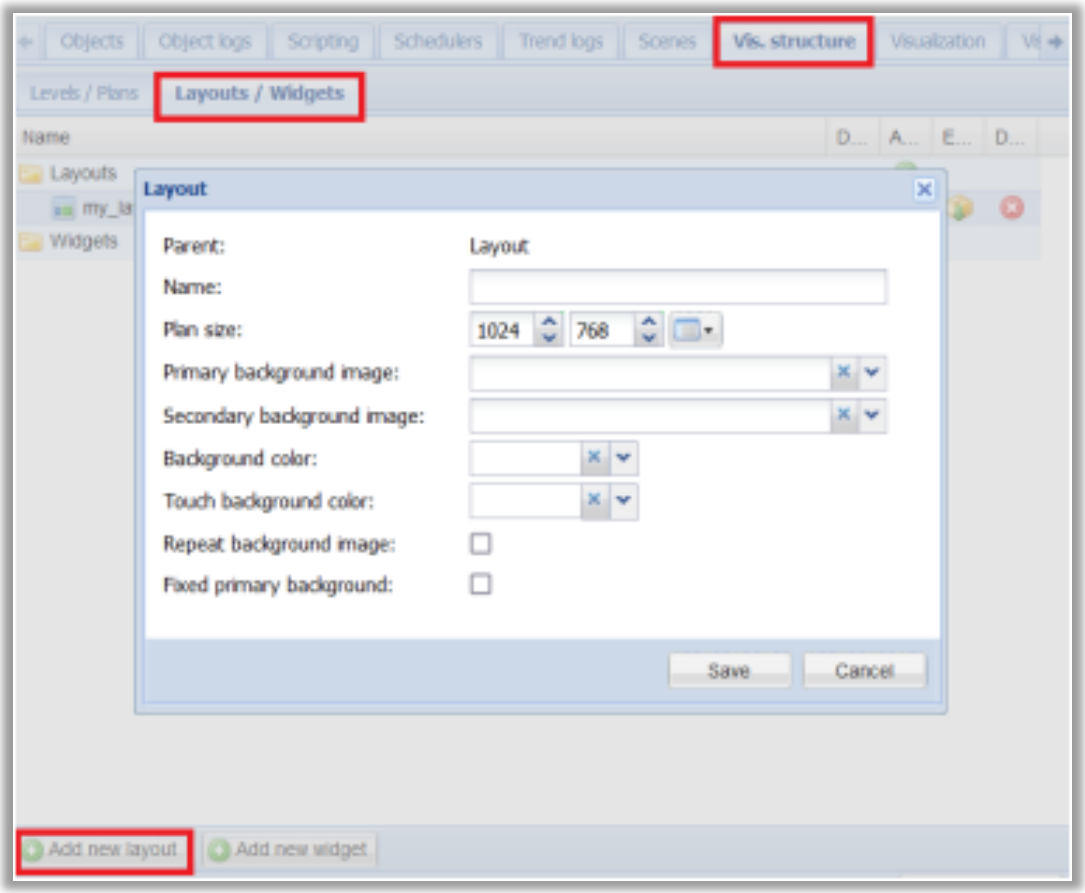

Fig. 75: Add New Layout Window

- Name - layout name
- Plan size - layout size in pixels
- Primary background image - primary background image from Vis.graphics → Images/Backgrounds
- Secondary background image - secondary background image from Vis.graphics → Images/Backgrounds
- Background color - background color for the Usermode visualization
- Touch background color - background color for the Touch visualization
- Repeat background image - background image display mode, should be enabled for tiled background images
- Fixed primary background - whether to fix the background image when scrolling

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4.7.2.2. Add New Widget

Widgets are plans that are shown in a pop-over window on top of the visualization plan. Only one widget can be visible at a time.

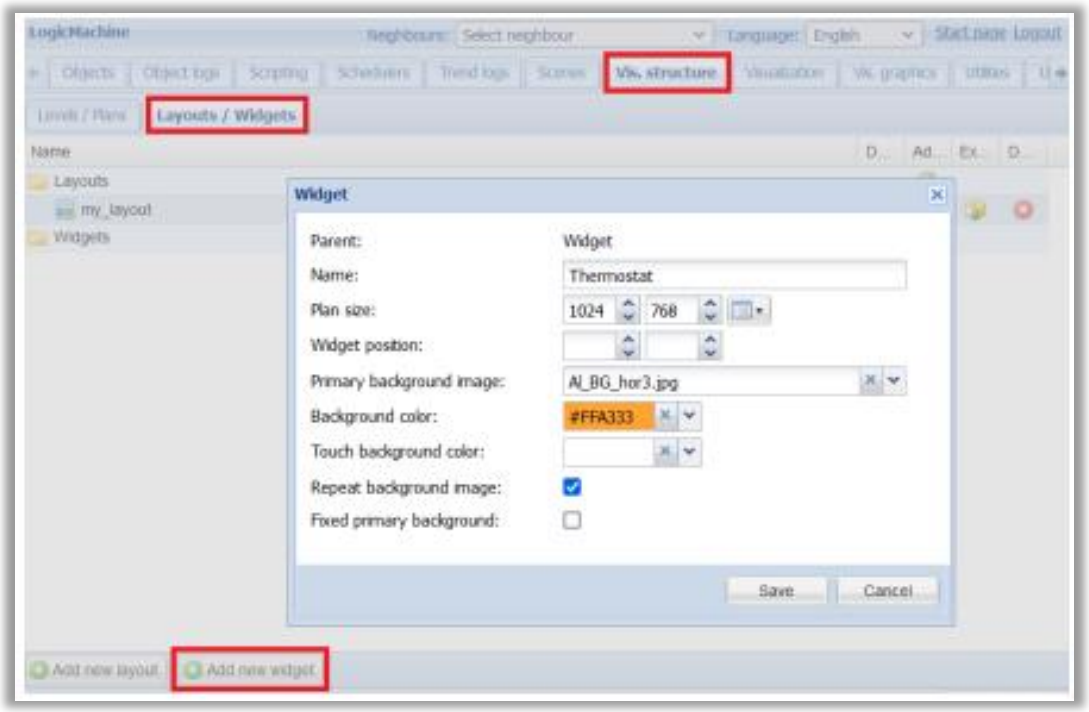

Fig. 76: Add New Widget Window

- Name - widget name
- Plan size - widget size in pixels
- Widget position - fixed widget position in pixels relative to the top left corner of the plan. Leave empty to automatically position the widget relative to the element that it is linked to
- Primary background image - primary background image from
  Vis.graphics → Images/Backgrounds
- Background color - background color for the Usermode visualization
- Touch background color - background color for the Touch visualization
- Repeat background image - background image display mode, should be enabled for tiled background images
- Fixed primary background - whether to fix the background image when scrolling

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4.8. Visualization

Both left and right sidebars can be minimized by pressing on icon.

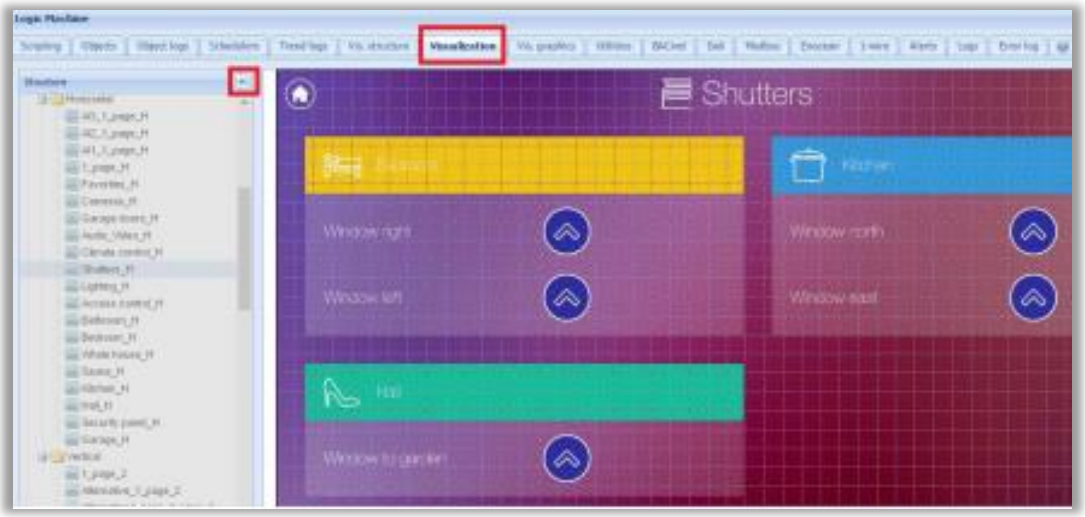

Fig. 77: Visualization Window

4.8.1. Plan Editor

Plan editor is located on the right side of the visualization map. Click Unlock current plan for editing button to add/edit visualization elements. Click Save and reload plan to save all changes made to the current plan.

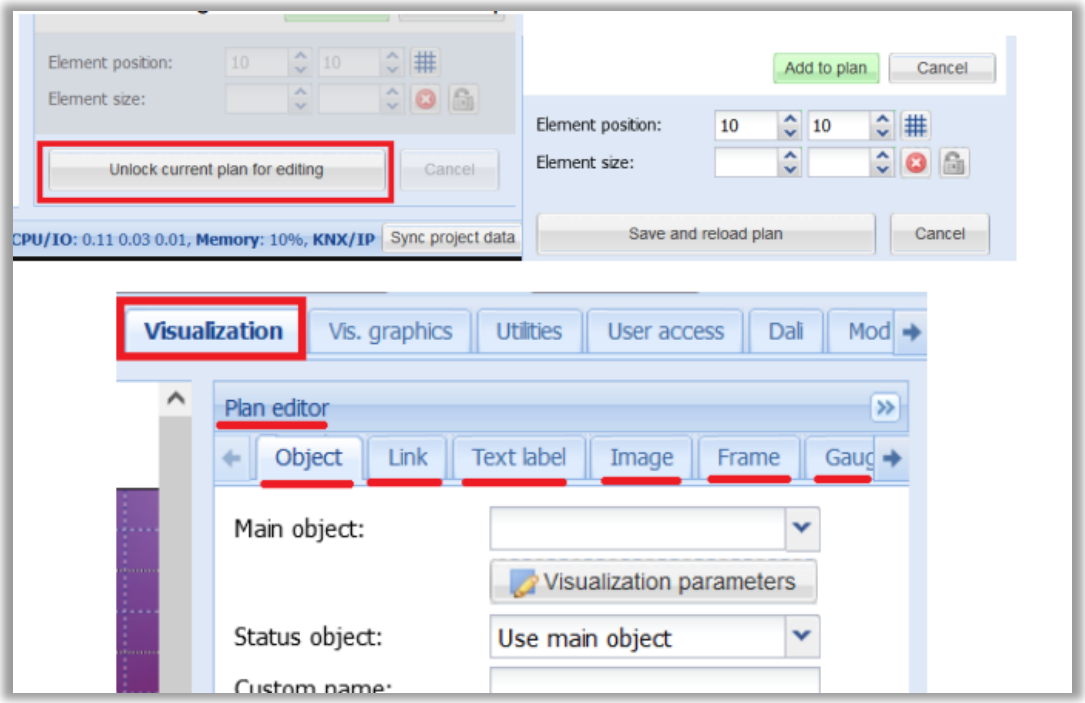

Fig. 78: Plan Editor Window

- Object - object controls, either as an icon/value or inline control element
- Link - link to a different plan, internal or external resource

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- Text Label - text label
- Image - image
- Frame - inline frame for displaying internal or external resources
- Gauge - metering gauge
- Camera - IP web camera integration
- Graph - real time graph for displaying object logs

A selected element can be deleted, moved to a predefined position, duplicated and copied.

Fig. 79: Plan Editor Bar Window

Element position and size can be set directly. Click Grid to toggle snap to grid functionality when dragging the element. Click Lock to keep the aspect ratio when resizing width or height.

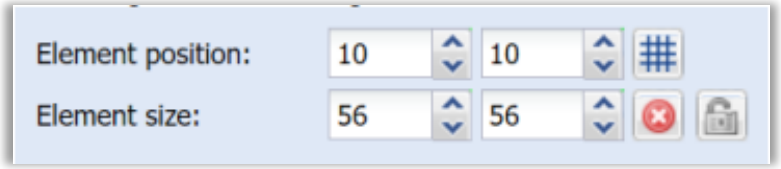

Fig. 80: Element Position Set Window

4.8.2. Object

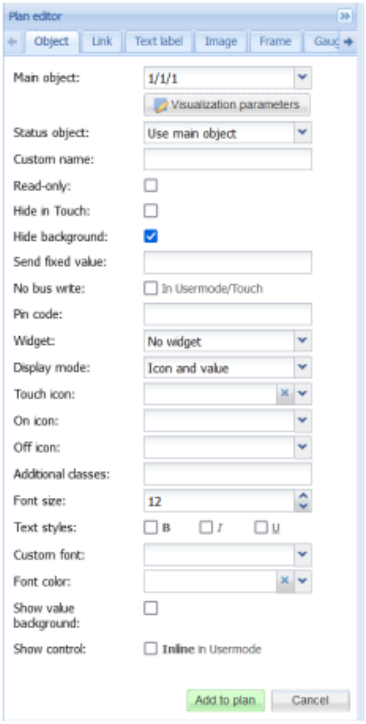

Fig. 81: Object Window

- Main object - object that is used for control and status when status object is empty
- Status object - object that is used for the current value display
- Custom name - custom object name, also used in Touch visualization
- Read-only - object control is not allowed when enabled

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- Hide in touch - do not display this object in the Touch visualization
- Hide background - do not display the default object icon background
- Send fixed value - sends a predefined value when not empty, otherwise a toggle is performed for Boolean data type or a control element is shown
- No bus write - do not send the value to KNX/TP bus
- PIN code - protect writing to this object via PIN code
- Widget - if specified, shows an attached widget when the object is clicked instead of sending a value or showing a control element
- Display mode [icon and value, icon, value] - object display mode
- Default icon - default object icon (except for Boolean data type)
- On/Off icon - icons for on/off state of Boolean objects
- Touch icon - icon for the Touch visualization
- Additional classes - addition CSS classes for the element
- Show control - show inline control instead of icon in the Usermode visualization, not available for all object types

Visualization parameters can be changed for each element separately (Local parameters). When not set the mapped object parameters are used.

Additional icons can be added for numerical objects. Each icon can be mapped to a certain value range. These icons can also be used in the Custom value select display mode.

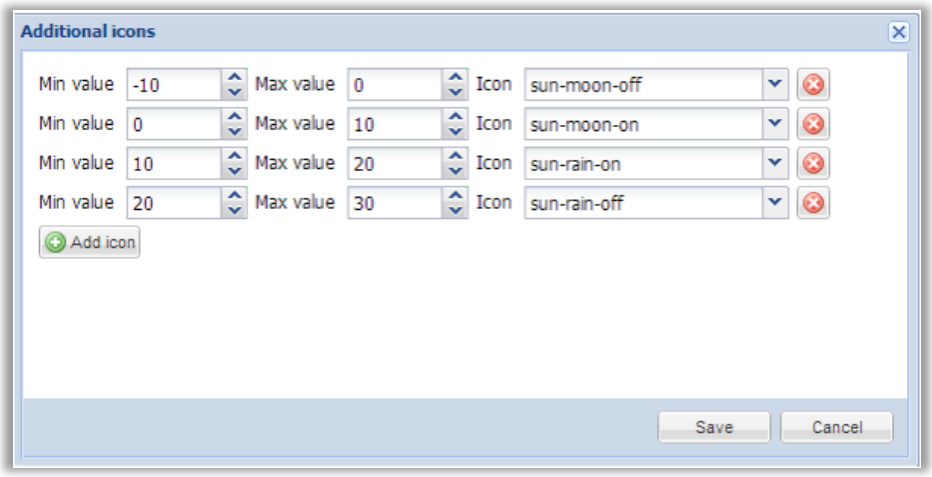

Fig. 82: Additional Icons Window

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4.8.3. Link

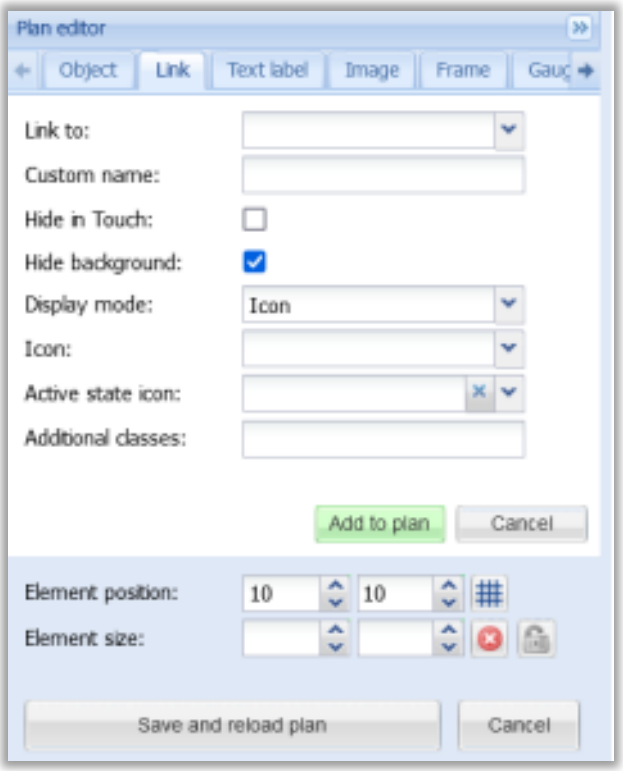

Fig. 83: Plan Editor – Link Window

- Link to - linked to another plan, Schedulers/Trends, etc. or an External Link (it should start with http:// or https://)
- Custom name - custom link name
- Hide in touch - do not display this link in the Touch visualization
- Hide background - do not display the default link background
- Display mode [Icon; Value] - link display mode
- Icon - default link icon
- Active state icon - icon that is displayed when the link points to the current plan. Can be used in Layouts to create a plan menu
- Additional classes - additional CSS classes for the element

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4.8.4. Text Label

Text labels are only visible in the Usermode visualization.

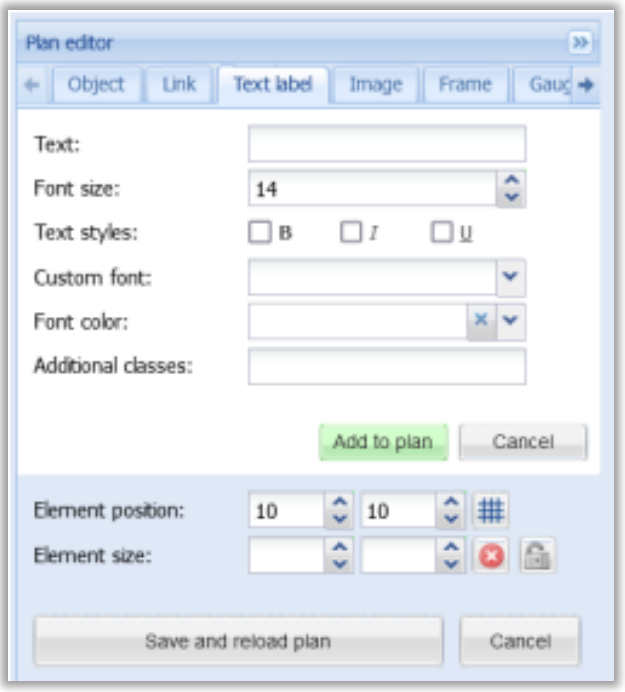

Fig. 84: Plan Editor – Text Label Window

- Text - label text
- Font size - label font size
- Text style - old, italic, underscore
- Custom font - font name
- Font color - label font color
- Additional classes - additional CSS classes for the element

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4.8.5. Image

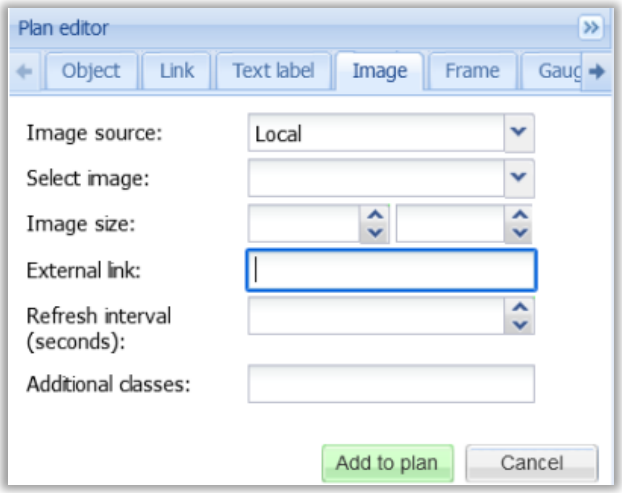

Fig. 85: Plan Editor – Image Window

- Image source [Local, Remote] - image source type
- Source url / Select image - image source URL (external) or select an existing local image
- Image size - image width and height in pixels
- External link - optional external URL which is open when the image is clicked
- Refresh interval (seconds) - reload the image once in X seconds, can be used to display a snapshot from a camera
- Additional classes - additional CSS classes for the element

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4.8.6. Frame

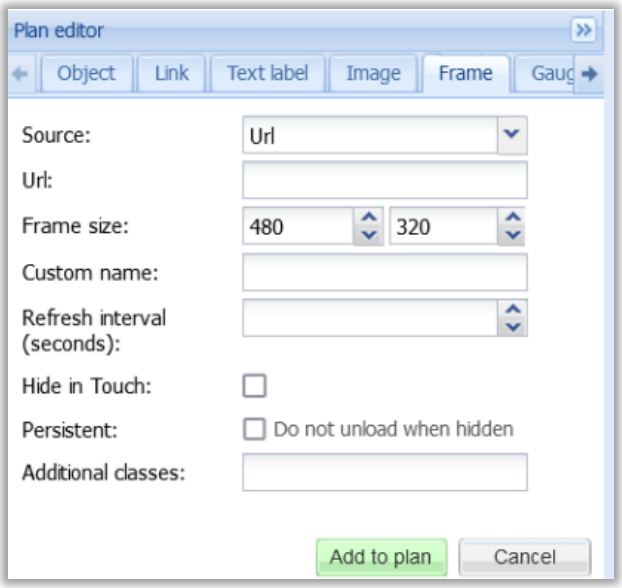

Fig. 86: Plan Editor – Frame Window

- Source [Url, Schedulers, Trend logs] - frame source
- Url - source URL
- Frame size - frame width and height in pixels
- Custom name - custom frame name
- Refresh interval (seconds) - reload the frame once in X seconds
- Hide in Touch - do not display this frame in the Touch visualization
- Persistent (Do not unload when hidden) - do not unload then frame when it is not visible anymore
- Additional classes - additional CSS classes for the element

Note! Some websites do not allow their content to be placed into an inline frame. In this case the frame will be empty.

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4.8.7. Gauge

Gauge allows visualizing and changing object value in the gauge.

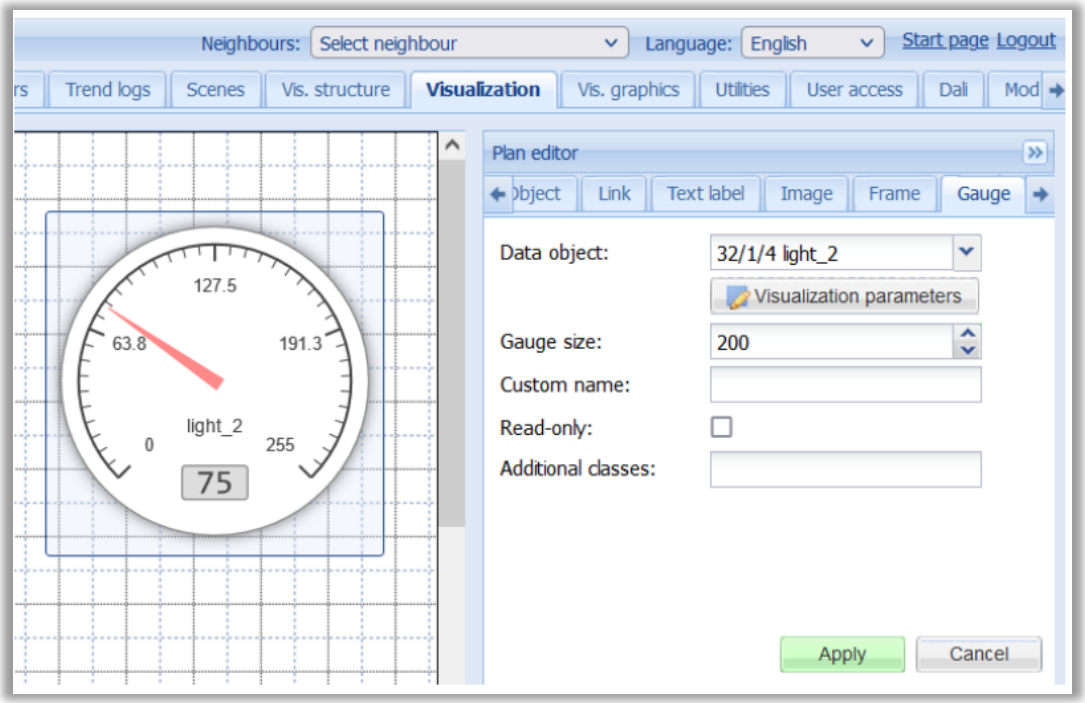

Fig. 87: Plan Editor – Gauge Window

- Data object - group address
- Gauge size - gauge size (width/height) in pixels
- Custom name - custom gauge name
- Read only - does not show a control element when gauge is clicked if enabled
- Additional classes - additional CSS classes for the element

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4.8.8. Camera

Shows a window with an IP camera stream when the icon is clicked. Note that RTSP streams are not supported.

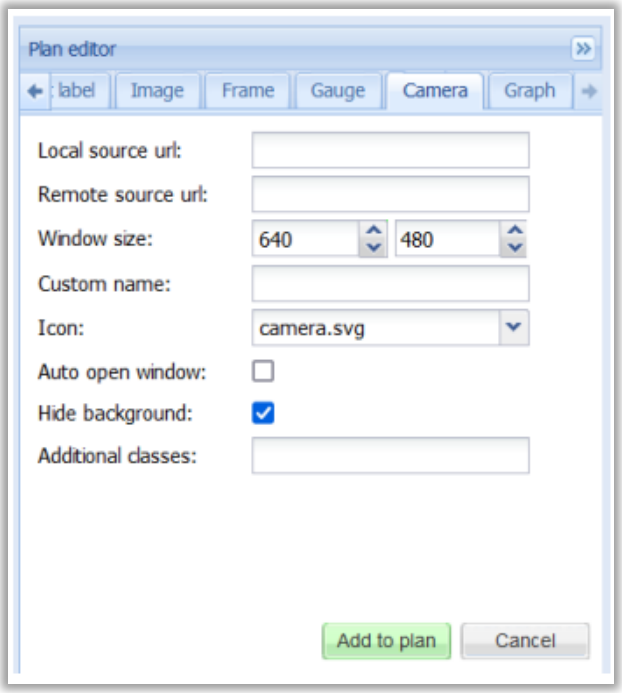

Fig. 88: Plan Editor – Camera Window

- Local source url - source address of the video stream
- Remote source url - remote source address of the video stream when accessing Logic Server outside of the local network
- Window size - camera window size in pixels
- Custom name - custom camera name (window title)
- Icon - camera element icon
- Auto open window - automatically open the camera window when the camera's plan is shown
- Hide background - do not display the default camera icon background
- Additional classes - additional CSS classes for the element

Note! Due to browser security policies it's not possible to pass credentials in the URL using the the following format: http://USER:PASSWORD@IP

Certain cameras allow passing credentials in a different way. Consult the camera's manual for more information.

Note! Only cameras that support HTTP MJPEG streaming in the web browser can be visualized

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4.8.9. Graph

The graph element displays object logs for a certain object. Make sure that the Log option is enabled for the object that is displayed.

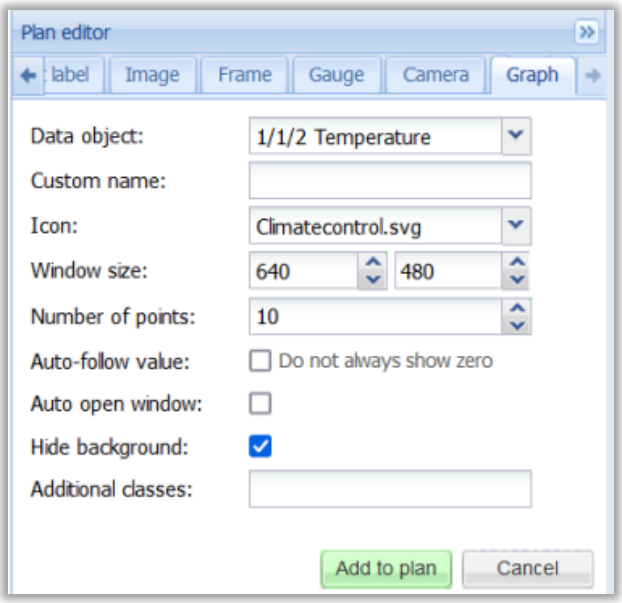

Fig. 89: Plan Editor – Graph Window

- Data object - source data object
- Custom name - custom graph name (window title)
- Icon - graph element icon
- Window size - graph window size in pixels
- Number of points - number of data points to display in the graph
- Auto-follow value - does not always show zero on the Y axis when enabled
- Auto open window - automatically open the graph window when the graph's plan is shown
- Hide background - do not display the default graph icon background
- Additional classes - additional CSS classes for the element

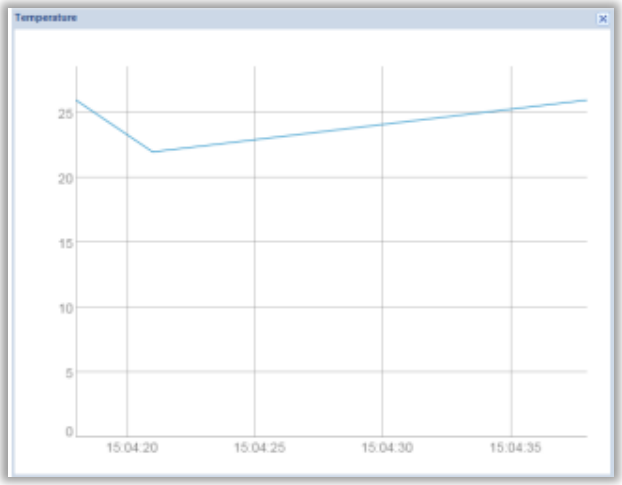

Fig. 90: Plan Editor – Temperature Graph Window

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4.8.10. Touch Visualization

Touch visualization is designed for touchscreen devices (iPhone/iPad/Android). By default all objects from the main visualization are visible here. Hide in touch option allows hiding certain objects from this view.

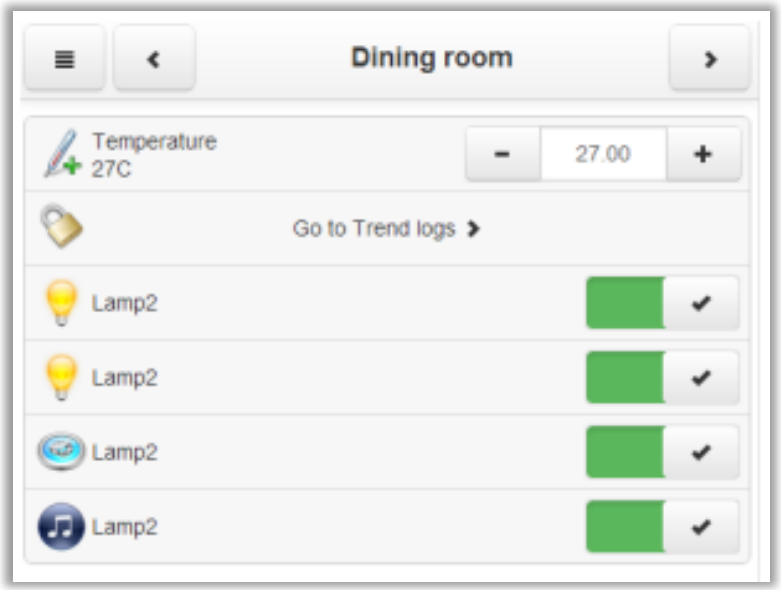

Fig. 91: Plan Editor – Touch Visualization Window

4.8.11. Left Sidebar Bottom Toolbar

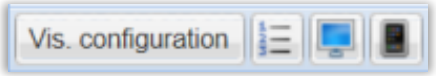

Fig. 92: Plan Editor – Left Sidebar Bottom Toolbar Window

- Vis. configuration - open visualization configuration from Utilities
- Change Touch object order - change object order for Touch visualization via drag&drop
- Usermode view - open current plan in Usermode visualization
- Touch view - open current plan in Touch visualization

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4.9. Visualization graphics

4.9.1. Icons, Images / Backgrounds

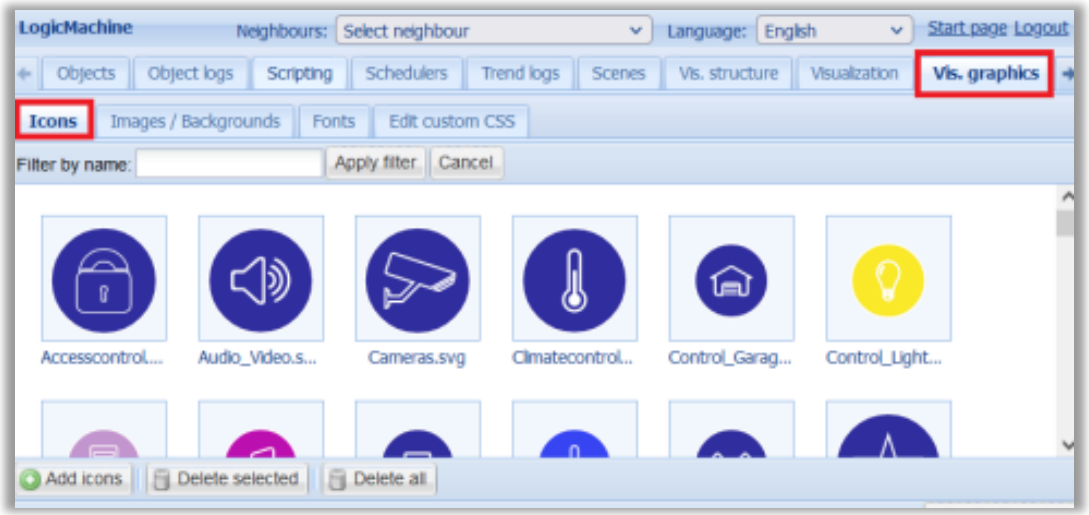

Fig. 93: Vis. Graphics – Icons, Images / Backgrounds Window

It is possible to filter graphical elements by name.

Multiple elements can be deleted at once. Click each element to select it.
A preview for large graphical elements is shown when hovering the mouse cursor over.

Click Add icons (Add images) to add new graphics elements. It is possible to upload a single element or a ZIP-archive containing multiple elements.

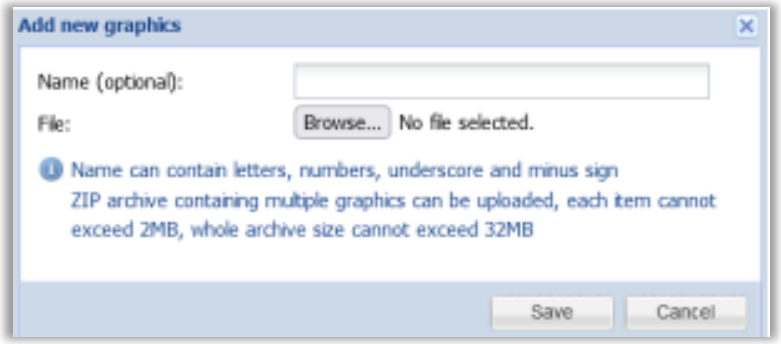

Fig. 94: Vis. Graphics – Add New Graphics Window

- Name (optional) - the name of the graphic element
- File - element fil

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4.9.2. Fonts

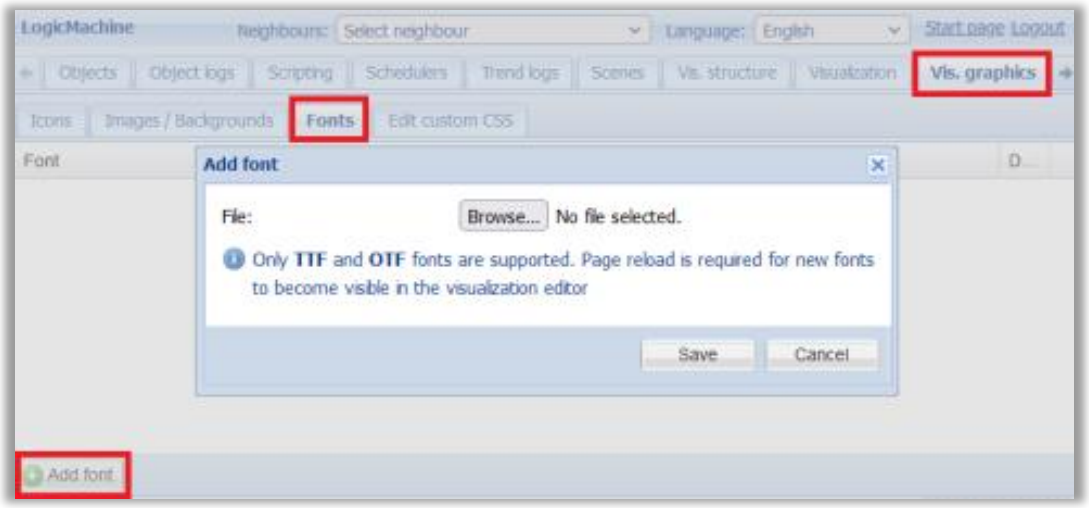

Fig. 95: Vis. Graphics – Fonts Window

Custom fonts can be added for visualization use. TTF and OTF formats are supported.

4.9.3. Custom CSS

Custom CSS allows customizing Usermode and Touch visualizations, Trends and Schedulers by providing custom CSS rules. Additional classes for visualization elements can be used to customize a specific element or a group of elements

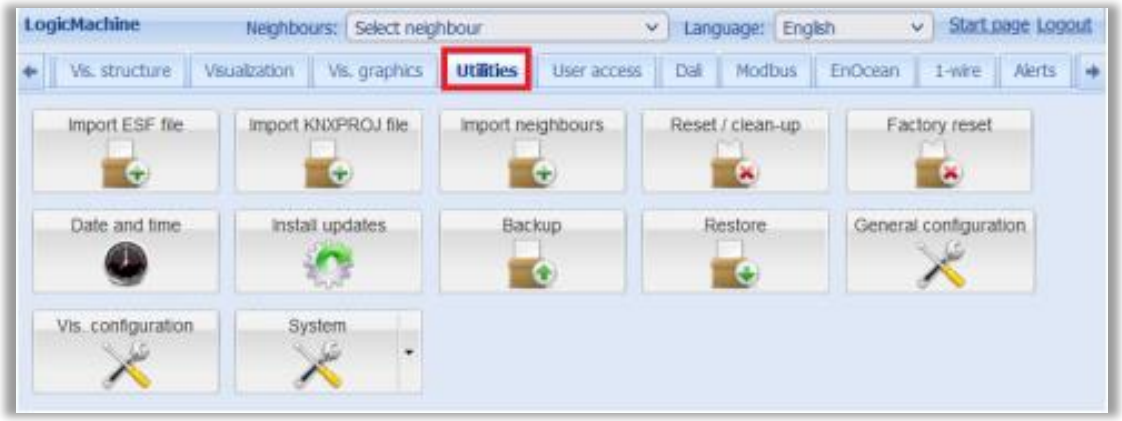

Fig. 96: Vis. Graphics – Custom CSS Window

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4.10. Utilities

4.10.1. Import ESF File

Where possible KNXPROJ files should be imported instead. ESF does not provide full data type description of objects meaning that some data types will have to be corrected manually.

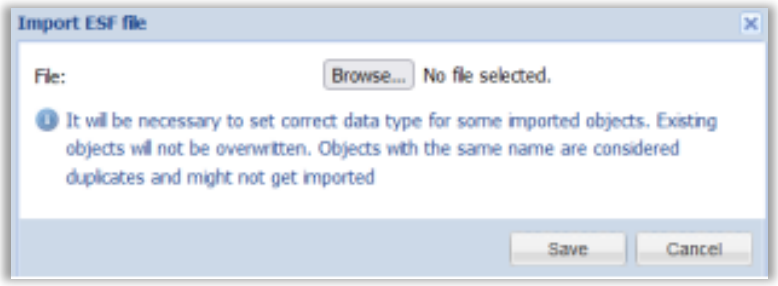

Fig. 97: Utilities – Import ESF File Window

4.10.2. Import KNXPROJ File

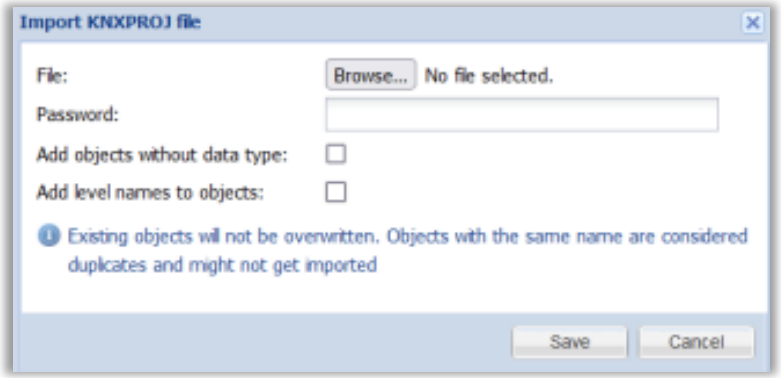

Fig. 98: Utilities – Import KNXPROJ File Window

- Password - ETS project password (optional)
- Add objects without data type - whether to import objects that do not a have a data type assigned
- Add level names to objects - when enabled the object name is formatted as Main group name - Middle group name - Group address name

4.10.3. Import Neighbours

Import objects from another LogicMachine on the network. Remote services must be enabled on the neighbour device.

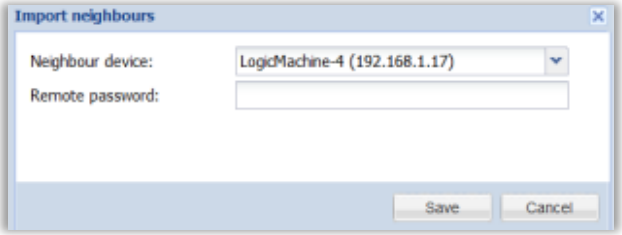

Fig. 99: Utilities – Import Neighbours Window

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4.10.4. Reset / Clean-up

Use Reset / clean-up to delete certain system

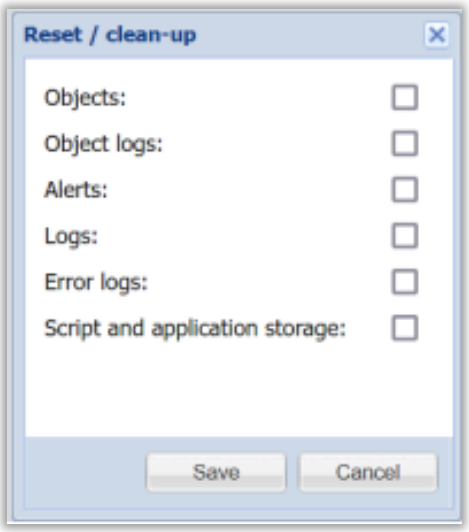

Fig. 100: Utilities – Reset / Clean-up Window

Warning: clearing script and application storage will delete configuration for installed applications.

4.10.5. Factory Reset

Delete current configuration and return to factory defaults. Does not affect System configuration settings.

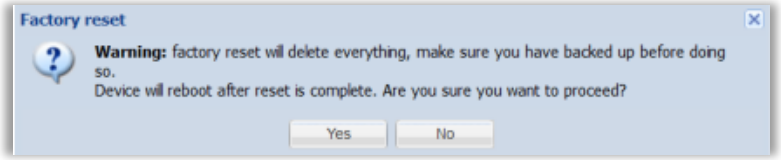

Fig. 101: Utilities – Factory Reset Window

4.10.6. Date and Time

For better precision of Scheduler sunrise/sunset functionality it is recommended to provide exact coordinates of the Latitude/Longitude.

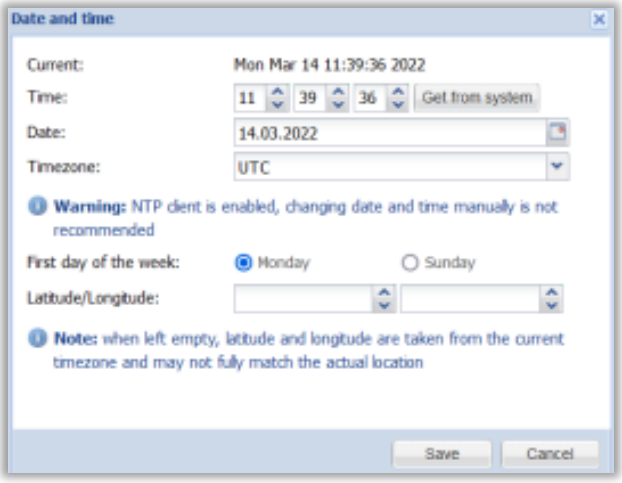

Fig. 102: Utilities – Date and Time Window

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4.10.7. Install Updates

Updates are provided via *.lmup package files. Depending on an update an automatic system reboot might be performed after installation.

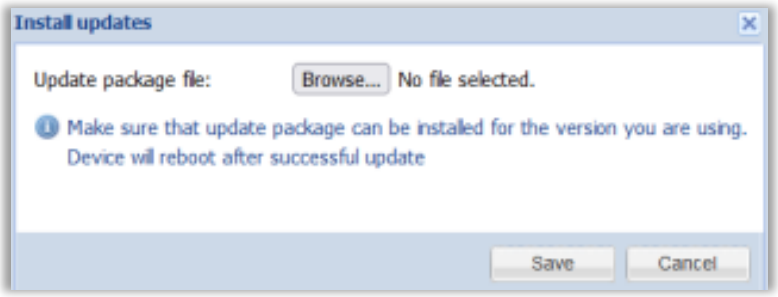

Fig. 103: Utilities – Install Updates Window

4.10.8. Backup

Perform project backup as a single archive.

4.10.9. Restore

Restore project from a backup. The current project configuration will be overwritten.

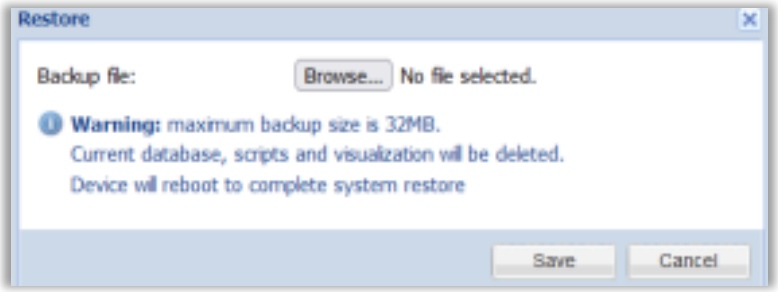

Fig. 104: Utilities – Restore Window

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4.10.10. General Configuration

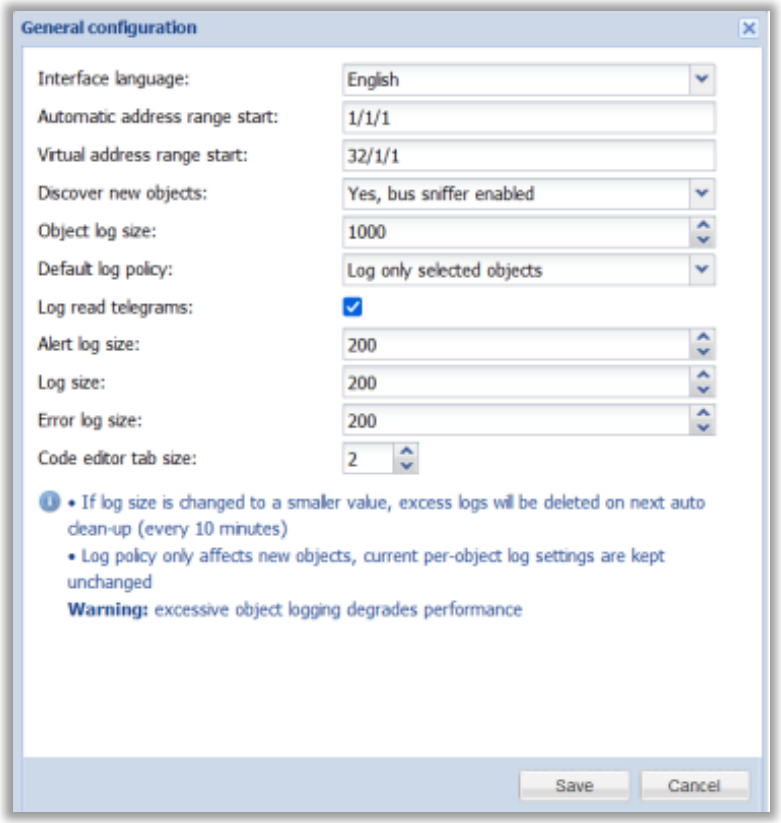

Fig. 105: Utilities – General Configuration Window

- Interface language - interface language
- Automatic address range start - starting group address for standard objects
- Virtual address range start - starting group address for virtual objects
- Discover new objects - whether to enable KNX bus sniffer to automatically add newly discovered objects
- Object log size - maximum number of entries for Object logs
- Default log policy - whether to enable the Log property automatically for newly discovered objects
- Log read telegrams - whether to log read telegrams, otherwise only write and response telegrams are logged
- Alert log size - maximum number of entries for Alerts
- Log size - maximum number of entries for Logs
- Error log size - maximum number of entries for Error logs
- Code editor tab size - number of spaces to insert when pressing Tab in the scripting editor

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4.10.11. Visualization Configuration

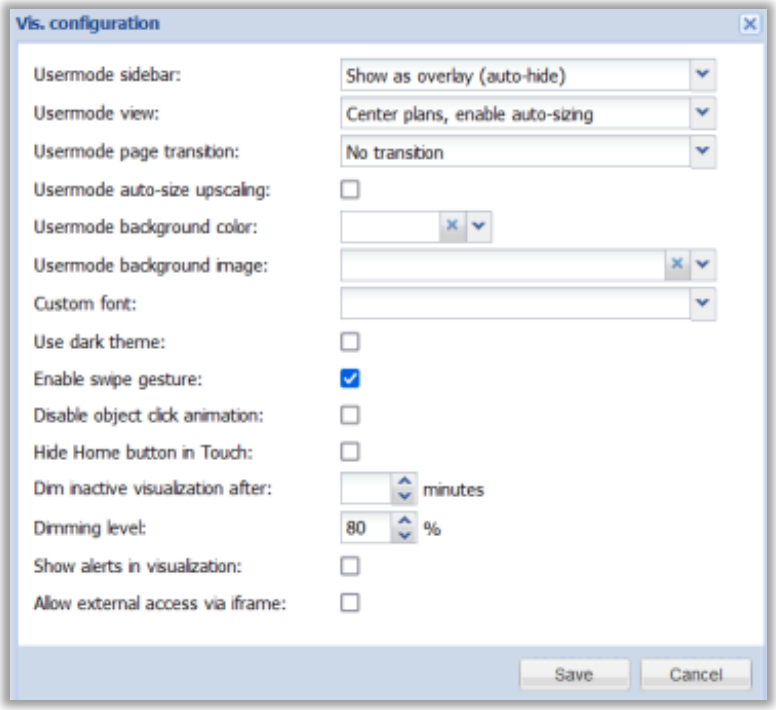

Fig. 106: Utilities – Vis. Configuration Window

- Usermode sidebar - sidebar navigation menu mode for Usermode visualization:
  - Show docked - sidebar is always visible on the left side next to the plan
  - Show as overlay (auto-hide) - sidebar can be toggled by the end user, it is shown over the plan
  - Hide (full-screen mode) - sidebar is hidden
- Usermode view - plan display mode:
  - Align plans to top left - plans are shown as is aligned to top left screen corner
  - Center plans - plans are centered both vertically and horizontally, content is cropped from sides if it does not fit inside the scree
  - Center plans, enable auto-sizing - plans are centered both vertically and , downscaled automatically to fully fit inside the screen
  - Center horizontally, auto-size width - plans are centered horizontally and can be scrolled vertically when the plan height is larger than screen height
- Usermode page transition - apply selected animation when changing plans
- Usermode auto-size upscaling - when auto-sizing is enabled the plan is only downscaled by default, enabled this option to allow upscaling as well
- Usermode background color - default background color for Usermode visualization
- Usermode background image - default background image for Usermode visualization
- Custom font - default visualization font
- Use dark theme - whether to use dark theme for Usermode, Touch, Schedulers and Trends
- Enable swipe gesture - allows changing between plans by performing a horizontal swipe gesture
- Disable object click animation - disable object click animation for visualization
- Dim inactive visualization after - show a dark overlay after a defined number of minutes
- Dimming level - overlay opacity in %
- Show alerts in visualization - show alert message when alert() is called from a script
- Allow external access via iframe - allow Usermode, Touch, Schedulers and Trends to be included in an iframe element

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4.10.12. System

Quick access to certain System configuration settings.

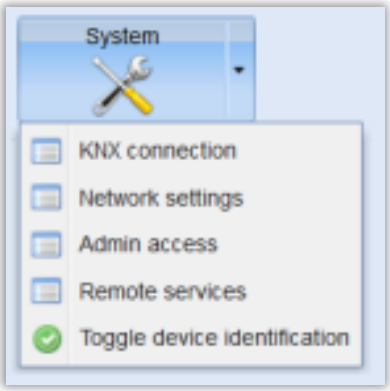

Fig. 107: Utilities – System Window

When Toggle device identification is clicked, LED2 starts blinking red and green. Click it again to stop this process.

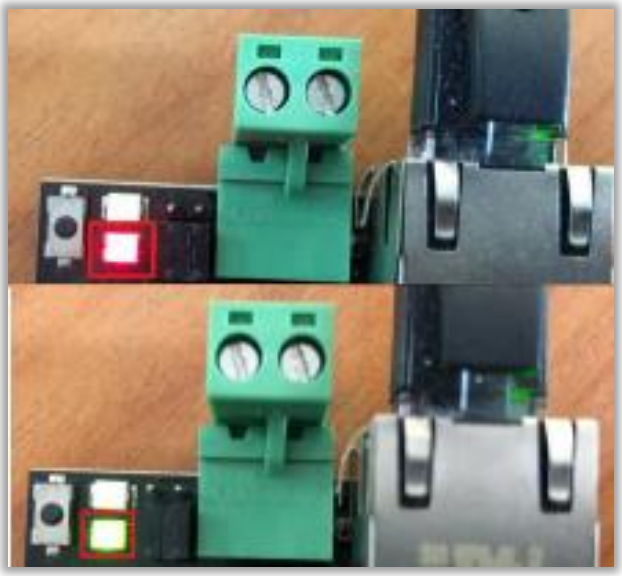

Fig. 108: Utilities – LED2 Blinking Window

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4.11. User Access

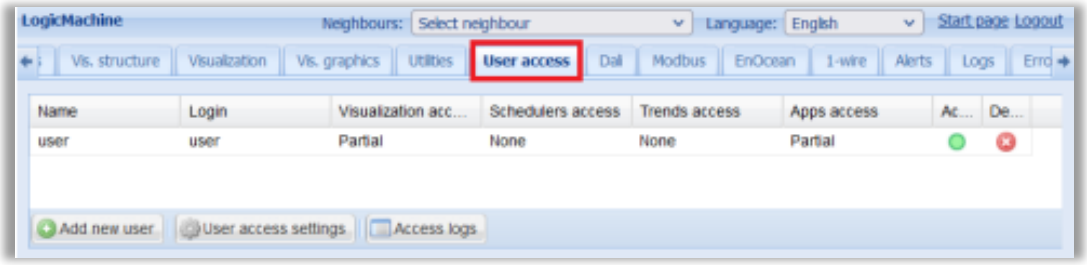

Fig. 109: User Access Window

4.11.1. User Access Settings

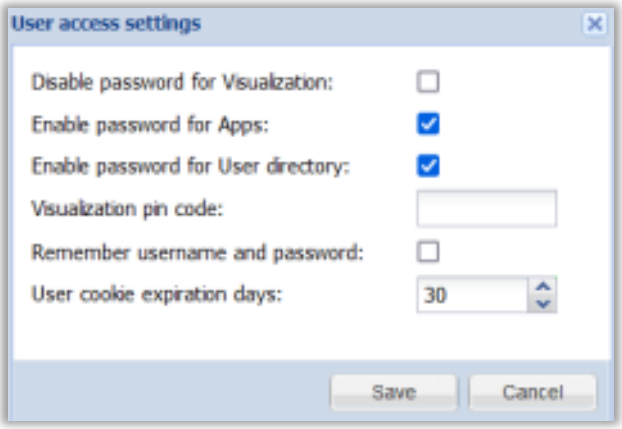

Fig. 110: User Access – Settings Window

- Disable password for Visualization - disable password access for the visualization
- Enable password for Apps - enable password for the main application page
- Enable password for User directory - enable password access for the userdirectory
- Visualization pin code - global pin code for the visualization
- Remember username and password - whether to save credentials on the client device. Does not apply to the admin user. Credentials become invalid if client IP address changes
- User cookie expiration days - how many days the saved credentials are stored

4.11.2. User directory

HTTP server-side scripts (.lp) files can be placed into the user directory to provide additional functionality. FTP server must be enabled to upload files to this directory.

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4.11.3. Adding Users

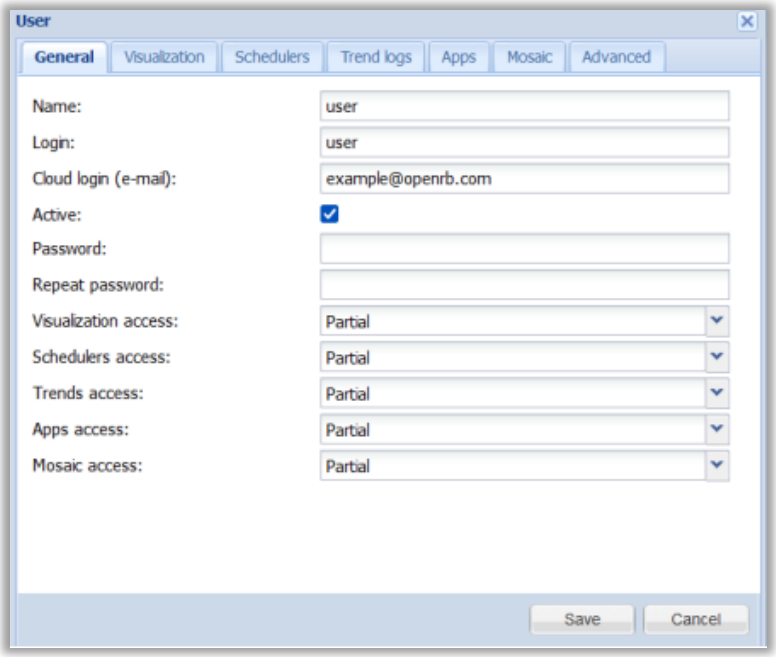

Fig. 111: User Access – Add Users Window

- Name - name of the user
- Login - user login name
- Cloud login (e-mail) - login for cloud (e-mail address)
- Active - whether the user is active or not. Inactive users can't access the system
- Password - user password
- Visualization access [None, Partial, Full] - Visualization access rights
- Schedulers access [None, Partial, Full] - Schedulers access rights
- Trends access [None, Partial, Full] - Trends access rights
- Apps access [None, Partial, Full] - Apps access rights
- Mosaic access [None, Partial, Full] - Mosaic access rights

- Access rights:
  - None - no access
  - Partial - access to specific elements is defined in a relevant tab
  - Full - full unrestricted access

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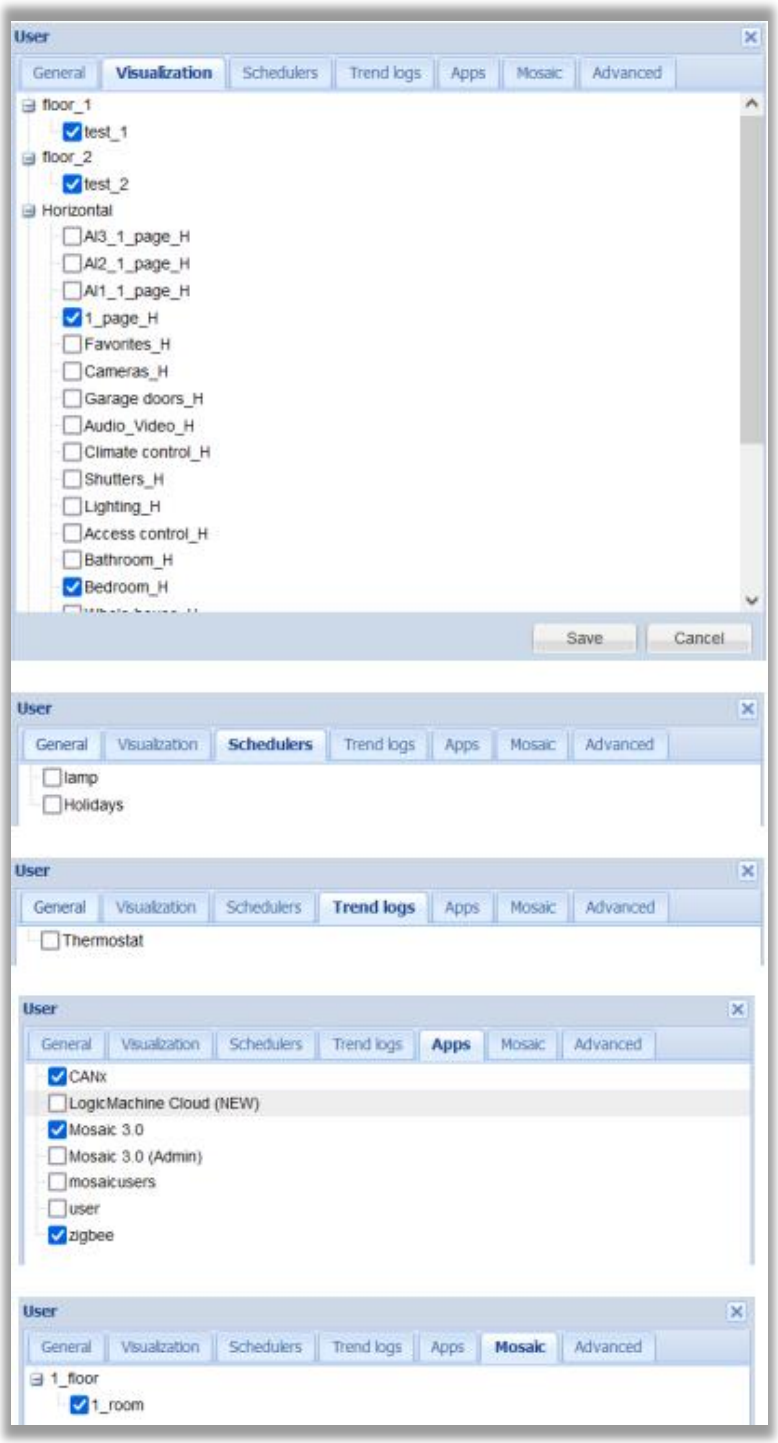

Fig. 112: User Access – Tabs Window

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Advanced tab allows specifying group address access filter for each user. This feature is recommended for improved security especially when a single LogicMachine is shared by multiple independent clients.

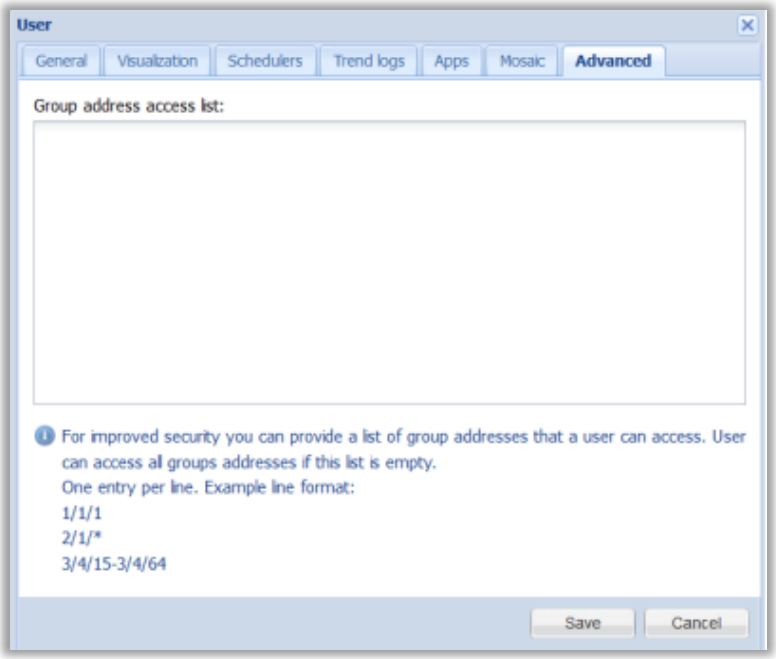

Fig. 112: User Access – Advanced Tab Window

4.11.4. Access Logs

Access logs contain information on successful and unsuccessful login attempts into the system. Login, IP address and access time is provided for all entries.

Fig. 113: User Access – Access Logs Window

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4.13. Modbus Master (RTU/TCP)

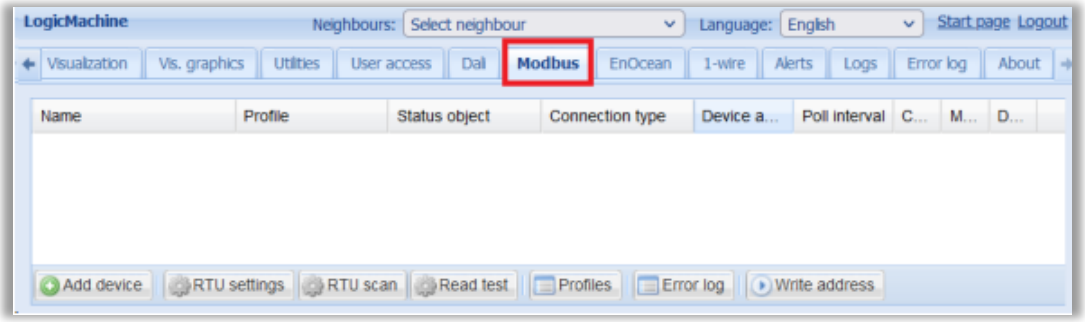

Fig. 114: Modbus Master Window

4.13.1. Modbus Devices Profile

Each Modbus device requires a JSON profile which specifies the list of available Modbus points and their respective data formats.

Click Profiles and then click Add profile to upload a new profile.

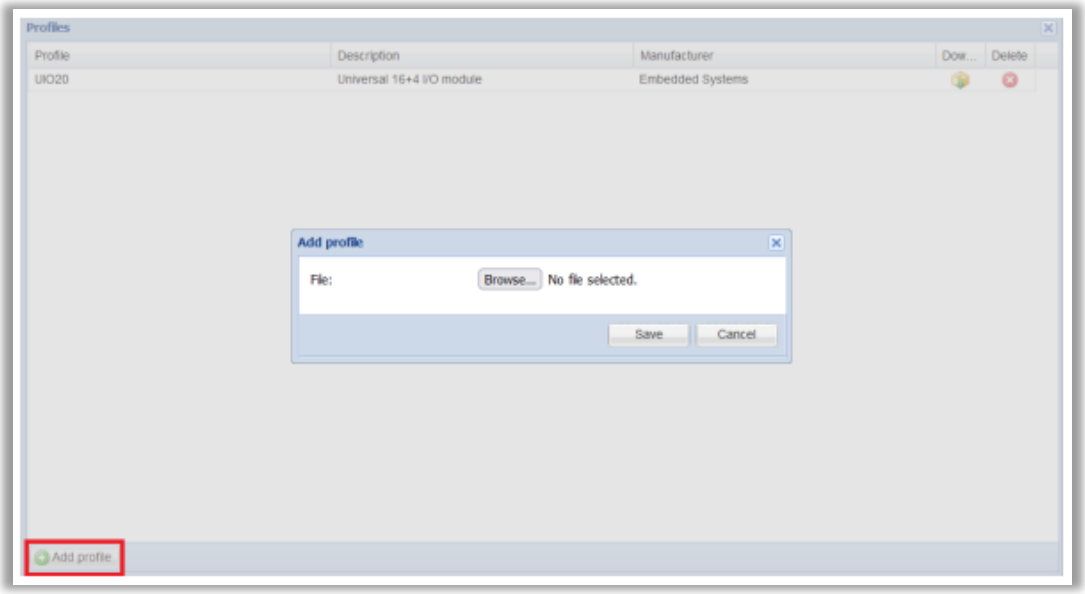

Fig. 115: Modbus Devices Profile Window

Note! Device entry must be created from scratch when a new or updated profile is added.

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4.13.2. RTU settings

Up to three different RTU connections can be defined.

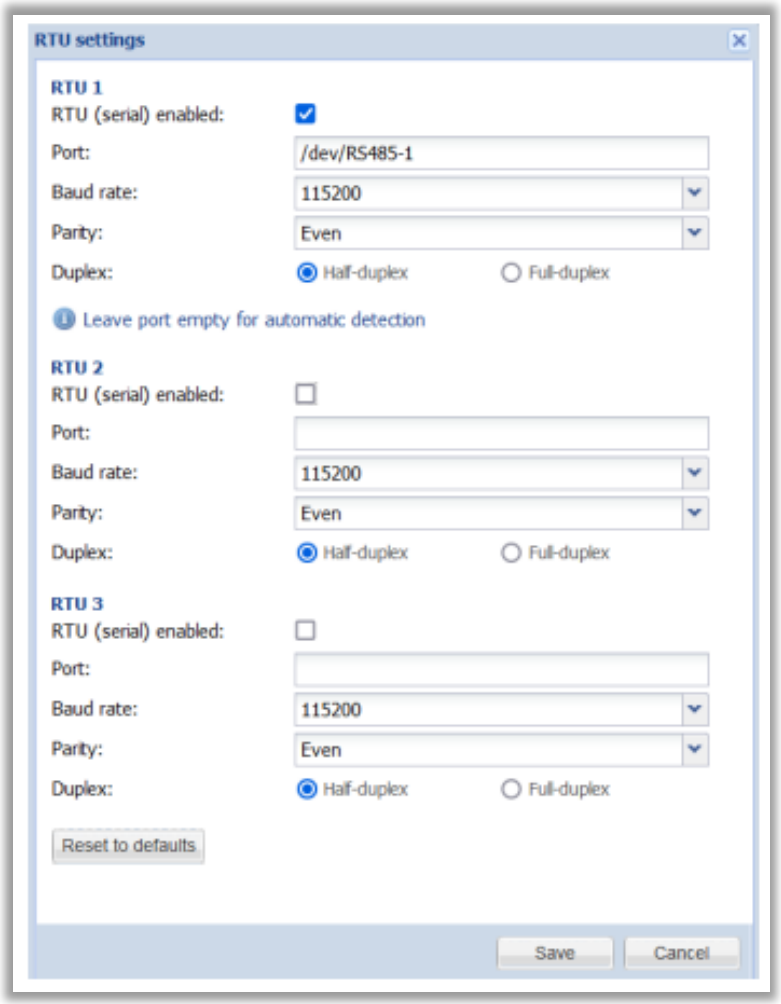

Fig. 116: RTU Settings Window

- RTU (serial) enabled - whether to enable this connection
- Port (/dev/RS485-1; /dev/RS485-2) - serial port name or leave blank for automatic detection
- Baud rate (1200..500000) - serial baud rate.
- Parity (None 1 stop bit; Odd; Even; None 2 stop bits) - parity/stop bits
- Duplex - either use half or full duplex communication

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4.13.3. Read Test

Click Read test to read values from a Modbus RTU/TCP device.

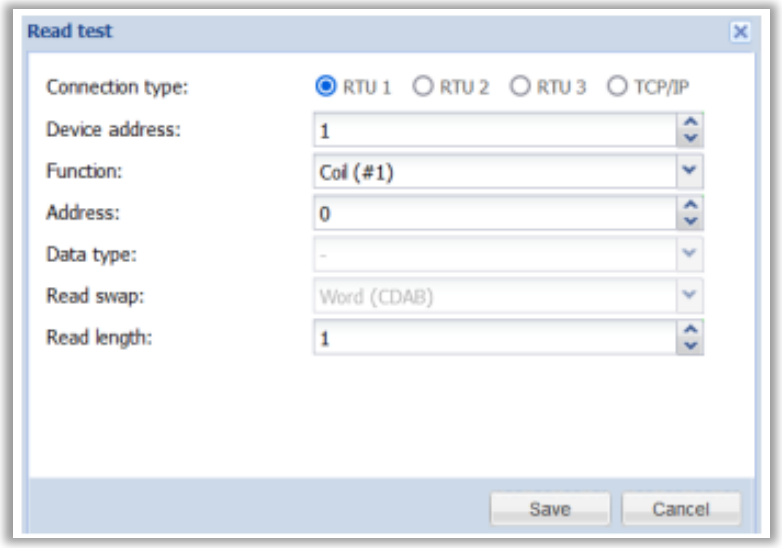

Fig. 117: Read Test Window

- Connection type - either RTU 1, RTU 2, RTU 3 or TCP/IP
- Device address - Modbus device address
- Function (Coil, Discrete input, Holding register, Input register) - Modbus function
- Address - starting data address
- Data type - data type, only available for registers
- Read swap (None (ABCD); Word (CDAB), Byte (BADC), Byte and word (DCBA)) - sets word/byte order
- Read length - number of registers/coil to read, disabled when a predefined data type is selected

4.13.4. RTU Scan

Click RTU Scan to scan one of RTU ports for new devices in a selected address range. Only devices that are not already present and have a valid profile will be added. Operation will finish once the whole range has been scanned or 30 seconds have elapsed.

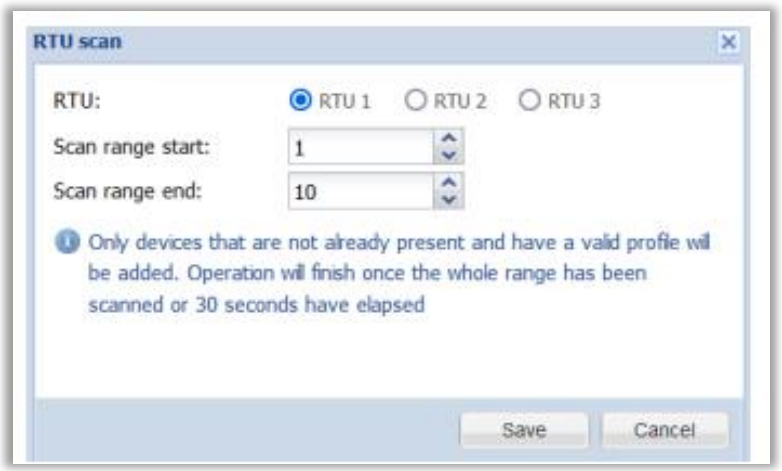

Fig. 118: RTU Scan Window

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4.13.5. Adding Modbus Device

Click Add device to add a new Modbus device with a predefined profile.

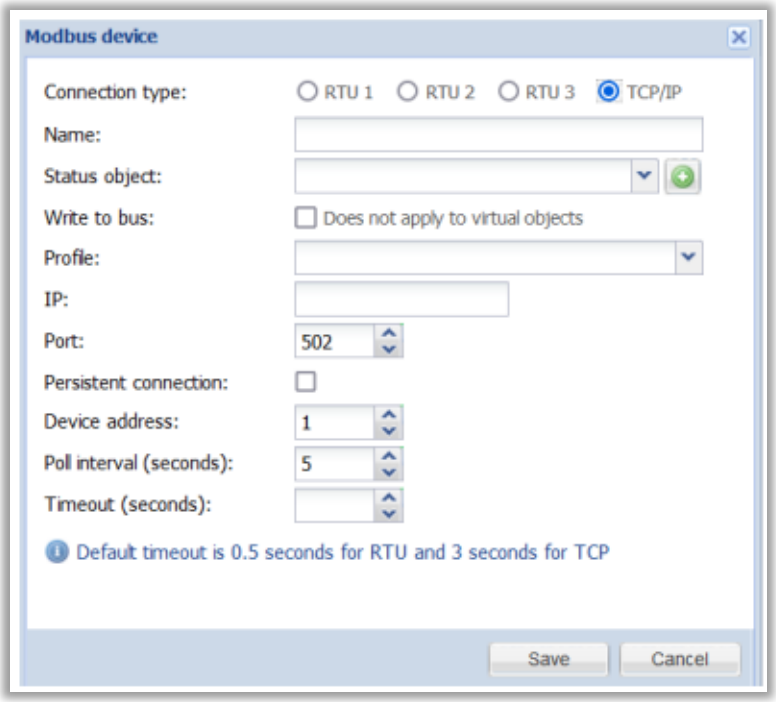

Fig. 119: Add Modbus Device Window

- Connection type - either one of RTU ports or a TCP/IP connection
- Name - device name
- Status object - status object of Modbus device (online/offline)
- Write to bus - whether to write status to KNX/TP
- Profile - device profile
- TCP/IP properties:
- IP - IP address of the Modbus device
- Port - communication port of the Modbus device
- Persistent connection - when enabled the connection is not closed after each read cycle
- Device address - slave ID of the Modbus device
- Poll interval (seconds) - number of seconds between each read cycle
- Timeout (seconds) - time to wait for a reply from the device

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4.13.6. Object Mapping

Clicking the icon to map Modbus data points to objects.

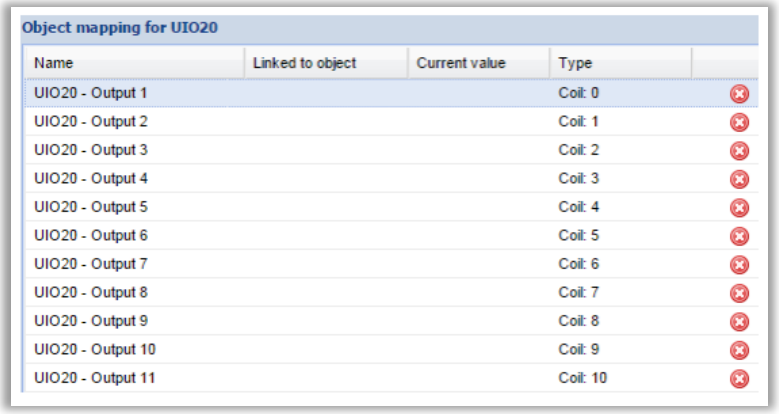

Fig. 120: Object Mapping Window

Click on a specific object to perform mapping and configuration.

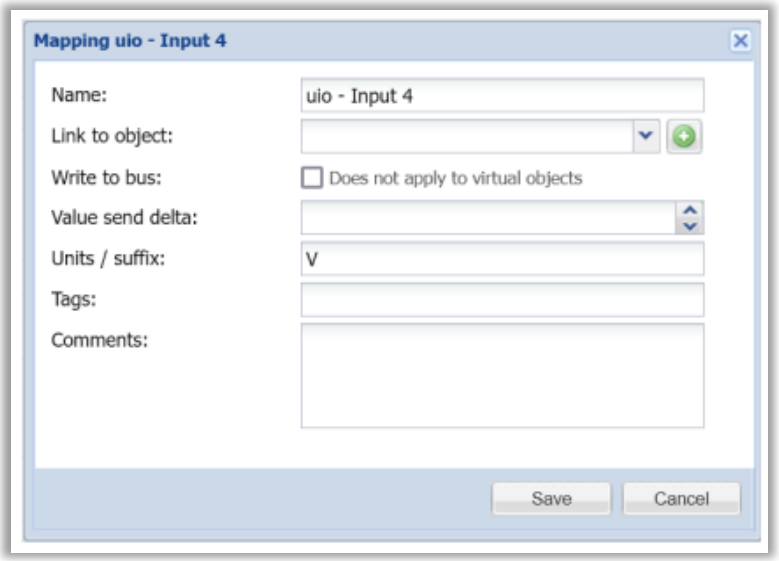

Fig. 121: Object Mapping Uio Window

- Name - mapping entry name
- Link to object - link this value to a new or existing object
- Write to bus - whether to write object value to KNX/TP bus
- Value send delta - (only applies to registers) value is sent when the difference between the current and previously sent values is larger than the defined delta. Leave blank to always send the new value
- Units / suffix - (only applies to registers) object units
- Tags - object tags
- Comments - entry comments

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4.14. Alerts

Contains a list of alert messages from scripts (alert() function), KNX connection status messages and system start messages.

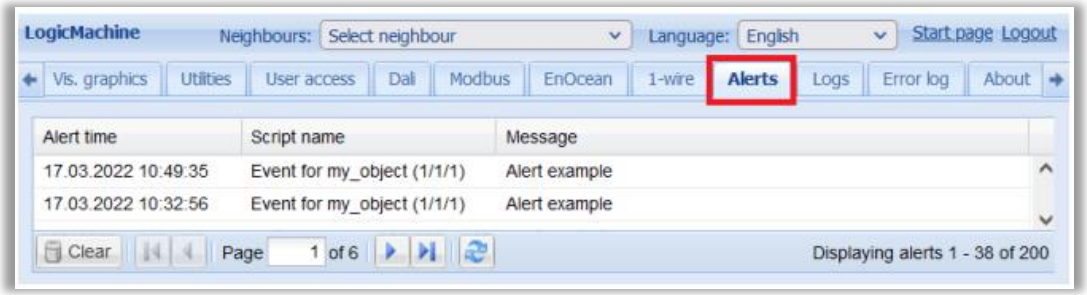

Fig. 122: Alerts Window

4.15. Logs

Contains a list of log messages from scripts (log() function).

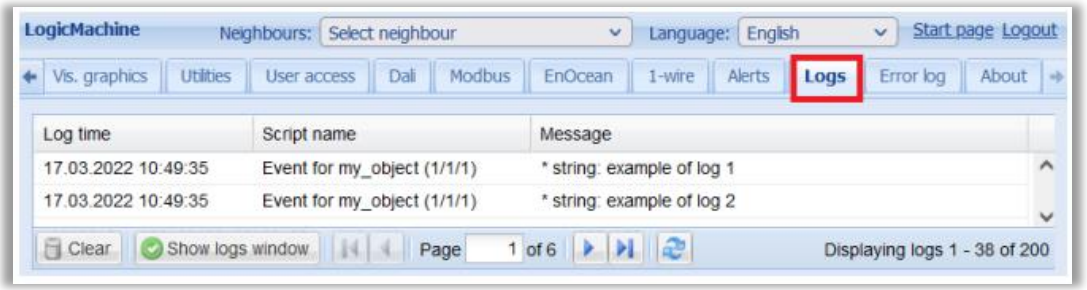

Fig. 123: Logs Window

Click an entry to show a window with full log text in a readable format.

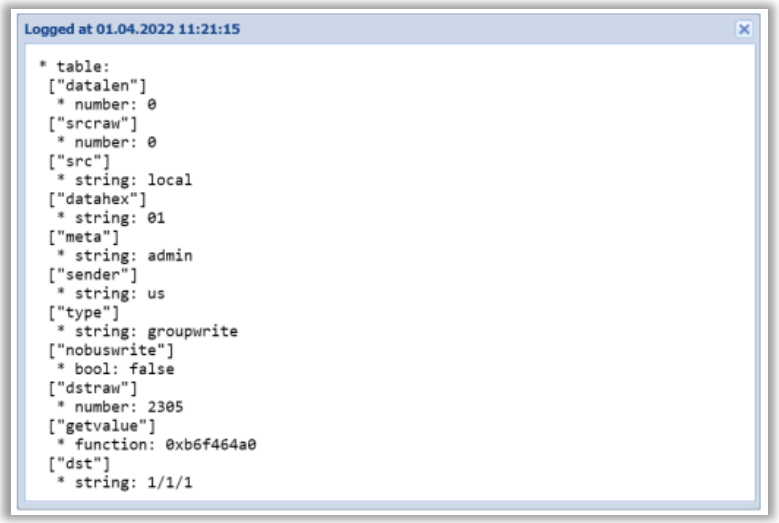

Fig. 124: Log List Window

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4.16. Error Log

Error messages from scripts and applications are displayed in the Error log tab.

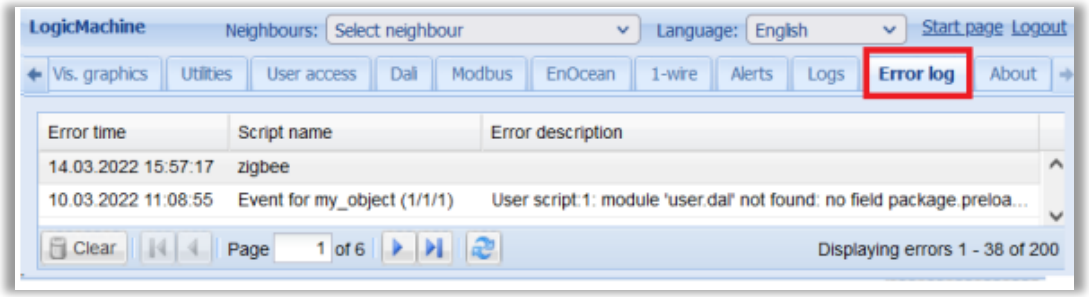

Fig. 125: Error Log Window

Click an entry to show a window with full error log text.

4.17. User Interface Status Information

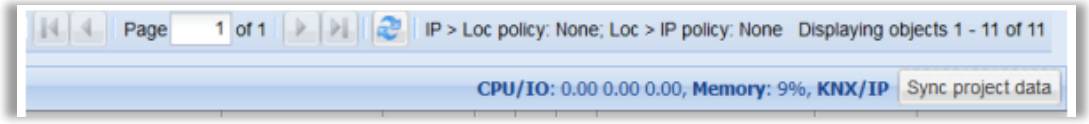

Fig. 126: User Interface Status Information Window

- CPU/IO - Load average. The load average represents the average system load over a period of time. It conventionally appears in the form of three numbers which represent the system load during the last one-, five-, and fifteen-minute periods. The lower a number the better.

Note! Inspect your running tasks if the load exceeds a level of 0.70!

More on UNIX style load calculation can be found here:
http://en.wikipedia.org/wiki/Load_(computing)#Unix-style_load_calculation

- Memory - RAM usage in %
- KNX/IP / KNX/TP - type of the KNX bus connection. Current connection status is provided for KNX/TP mode
- Sync project data - save all project data to the internal storage. The project is synchronised automatically every 30 minutes, or when Reboot or Shutdown commands are executed
- KNX/TP load graph - shows average KNX bus load, click the graph to open full KNX/TP statistics

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5. System Configuration

System configuration allows changing system parameters, configure services, upgrade firmware and check system status.

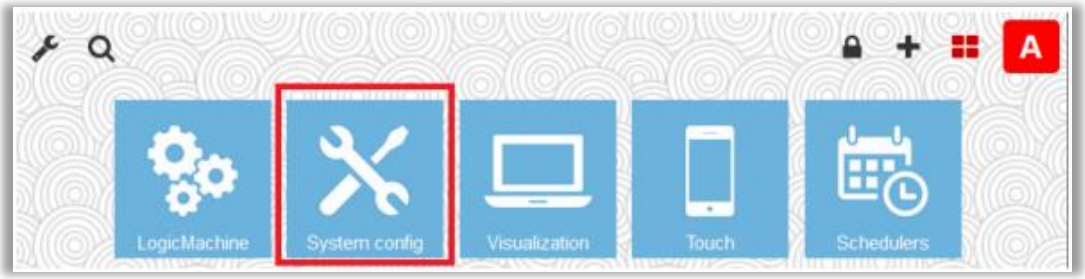

Fig. 127: System Configuration Window

5.1. System

5.1.1. Hostname

Hostname can be changed in System → Hostname. This name is displayed in the browser title, it is also added to the backup file names. It appears when searching for the device using LogicMachine applications.

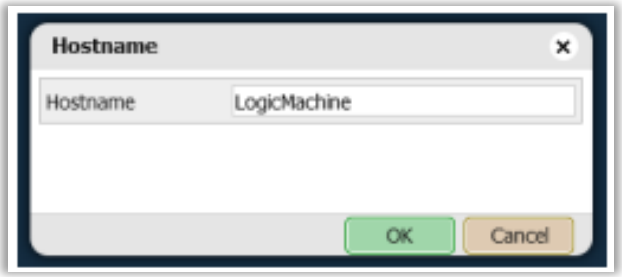

Fig. 128: Hostname Window

5.1.2. Packages

Displays a list of currently installed packages. Click to add new packages.

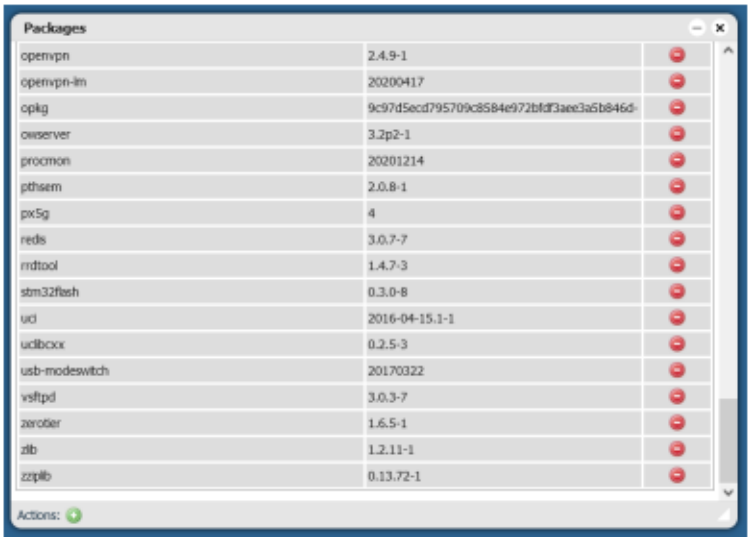

Fig. 129: Packages Window

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5.1.3. Admin Access

Allows changing the admin user password.

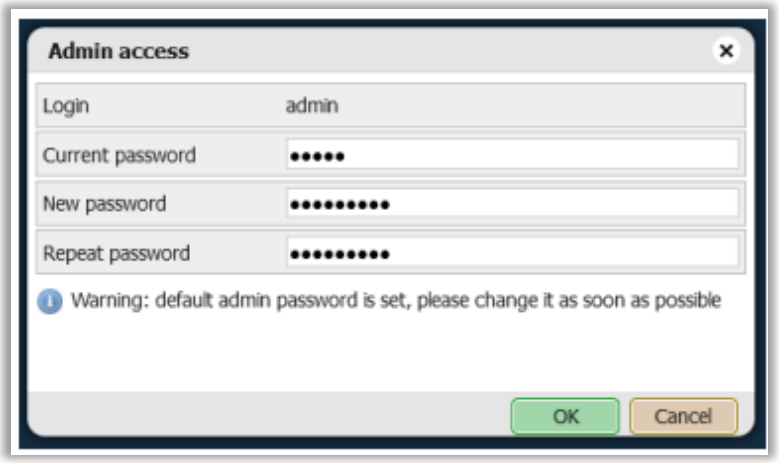

Fig. 130: Admin Access Window

5.1.4. Upgrade Firmware

Used to perform a full system upgrade (both OS and Logic Server parts).

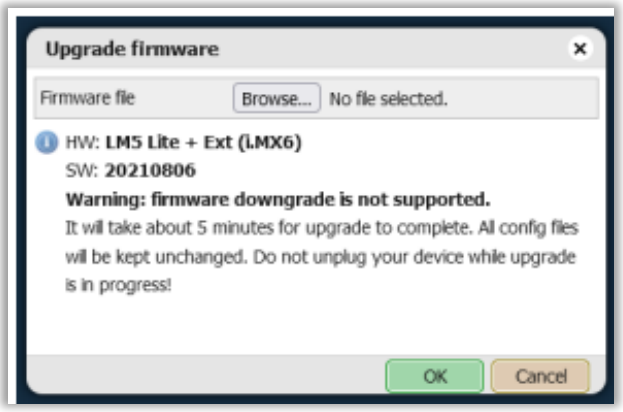

Fig. 131: Upgrade Firmware Window

Note! It is recommended to perform a project backup in LogicMachine → Utilities → Backup before upgrading the firmware.

Make sure that the new firmware matches the hardware model that is being used.

5.1.5. Backup Configuration

System configuration backup contains all Logic Server service configuration files (including password) and the KNX filtering table.

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5.1.6. Restore Configuration

Allows restoring a system configuration backup. Note that this might change the device IP address.

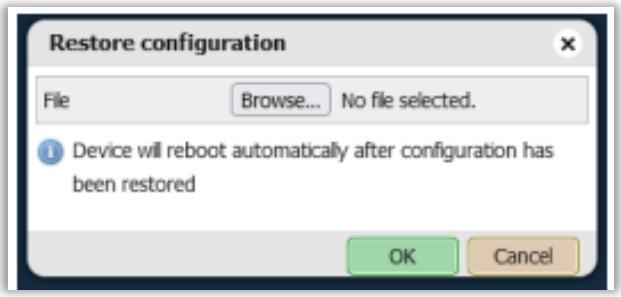

Fig. 132: Restore Configuration Window

5.1.7. Reboot

Performs project save to disk and reboots the system.

5.1.8. Shutdown

Performs project save to disk and shuts down the system. Power can be safely removed once LED1 stops blinking and LED2 turns off. To prevent accidental shutdowns the system will be restarted automatically after several minutes.

5.2. Network

5.2.1. Interfaces

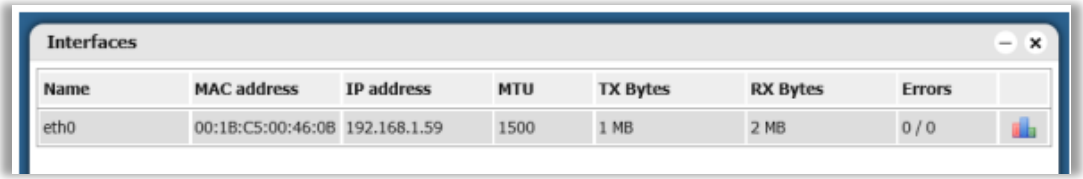

Fig. 133: Interfaces Window

Click the interface name to change parameters.

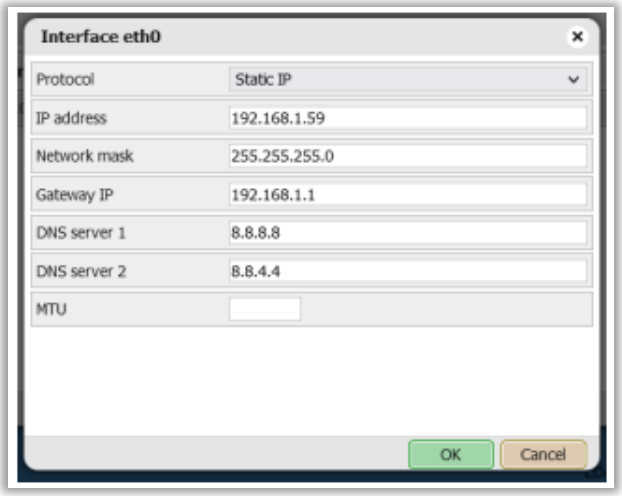

Fig. 134: Interface eth() Window

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- Protocol:
- Static IP - static IP address
- DHCP - use DHCP protocol to get IP configuration automatically
- IP address - static IP address
- Network mask - network mask. (255.255.255.0 by default)
- Gateway IP - gateway IP address
- DNS server - DNS server IP address
- MTU - maximum transmission unit, the largest size of the packet which could be passed in the communication protocol (1500 by default)

Click to view a real-time graph of the interface traffic flow

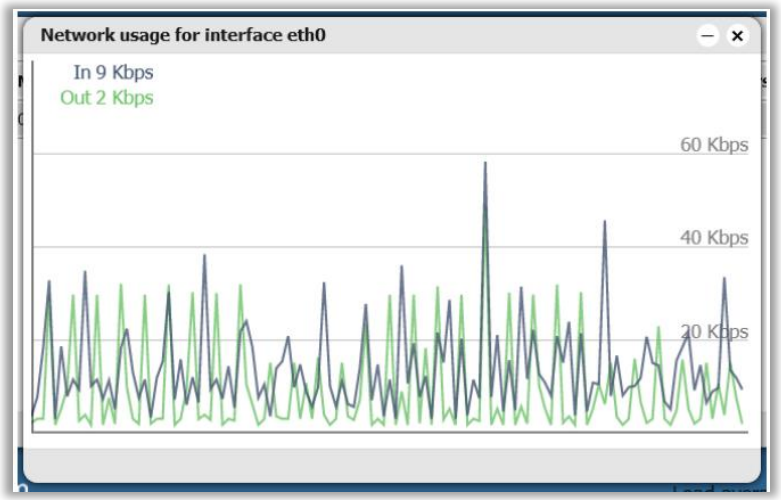
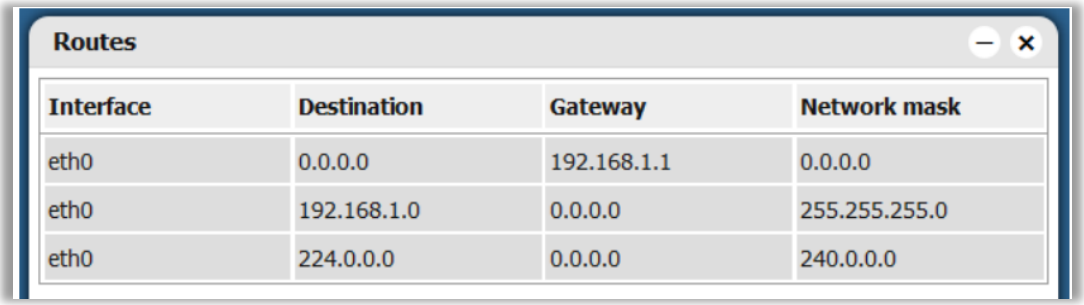


Fig. 135: Network Usage for Interface eth() Window

5.2.2. Routes

Displays a list of current network routes.



Interface	Destination	Gateway	Network mask
eth0	0.0.0.0	192.168.1.1	0.0.0.0
eth0	192.168.1.0	0.0.0.0	255.255.255.0
eth0	224.0.0.0	0.0.0.0	240.0.0.0

Fig. 136: Routes Window

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5.2.3. ARP Table

Displays a list of known IP and MAC addresses.

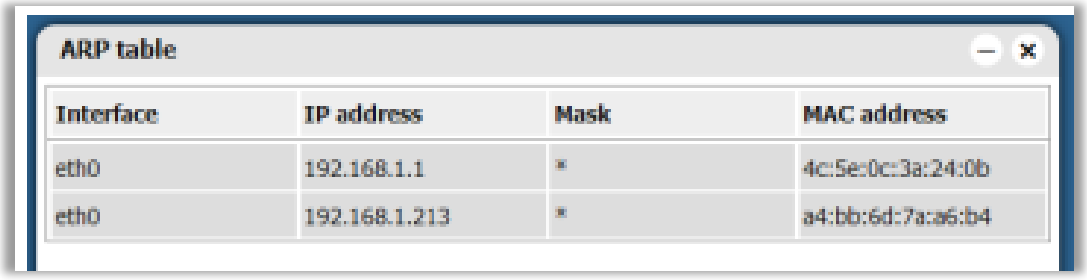

Fig. 137: ARP TableWindow

5.2.4. KNX Connection

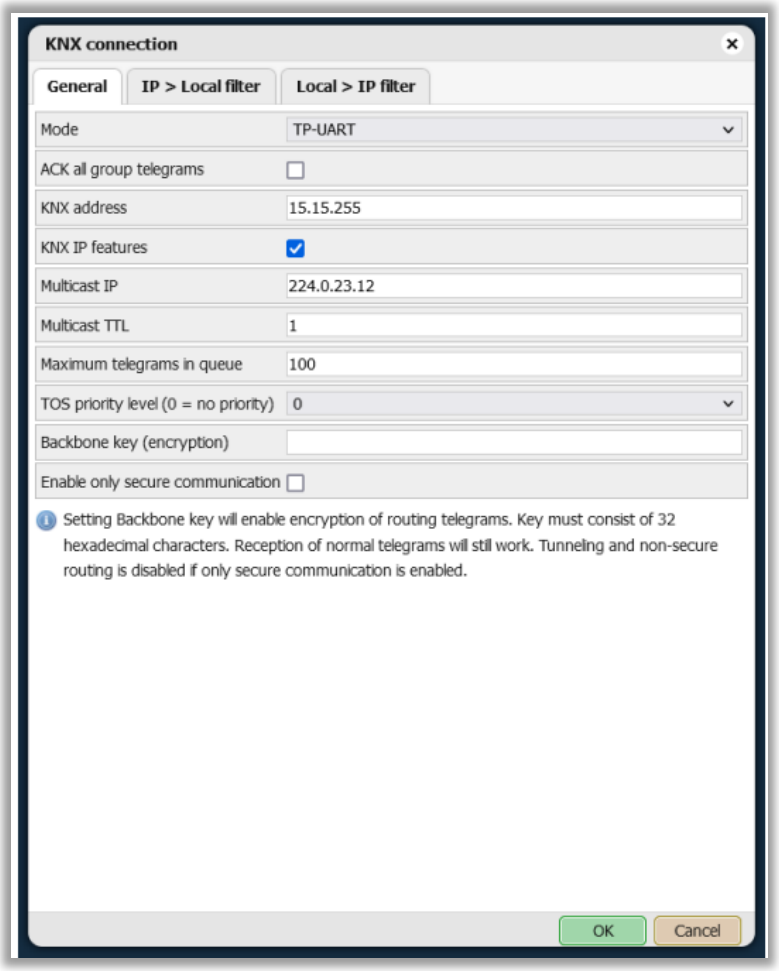

Fig. 138: KNX Conneciton - General Window

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5.2.4.1. General Tab

- Mode - KNX connection mode:
    - TP-UART - KNX/TP bus connection over a built-in TP-UART interface.
    - KNX/IP communication is still possible with this mode when KNX IP features are enabled
- IP Routing - KNX/IP Routing multicast mode with unacknowledged data Exchange
- IP Tunneling - KNX/IP Tunneling connection to an external router.
- Router IP address must be specified in this mode, router port can be added using IP:PORT format. This is a unicast mode with acknowledged data exchange
- IP Tunneling (NAT mode) - same as IP Tunneling but allows connecting to a router outside of the LM subnetwork.
- ACK all group telegrams - acknowledge reception of all group telegrams received via KNX/TP
- KNX address - physical KNX address of the device
- KNX IP features - enable KNX/IP Routing and Tunneling connections
- Multicast IP - multicast IP address for KNX/IP Routing
- Multicast TTL - Time-To-Live for multicast telegram (maximum number of hops)
- Maximum telegrams in queue - maximum number of telegrams that can be queued
- TOS priority level (0 = no priority) - Type-Of-Service priority for KNX/IP telegrams, requires a router/switch with TOS support
- Backbone key (encryption) - backbone key for secured telegrams for KNX/IP Routing
- Enable only secure communication - disables KNX/IP Tunneling and nonsecure KNX/IP Routing, only encrypted KNX/IP Routing is supported in this mode

5.2.4.2. IP > Local Filter

Filtering table for incoming telegrams from KNX/IP.

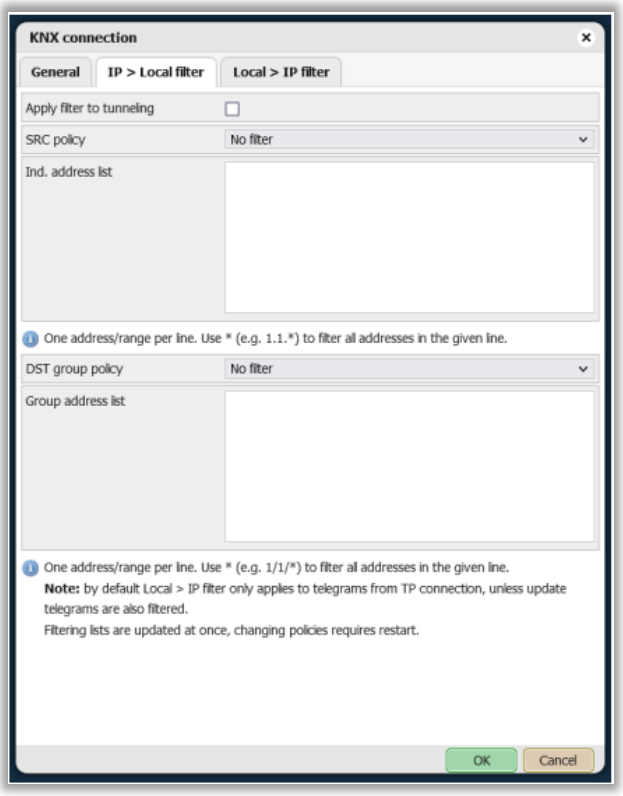

Fig. 139: IP > Local Filter Window

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- Apply filter to tunneling - whether to apply filter policy to telegrams in tunneling mode. If ETS is used it is recommended to turn this feature off
- SRC policy [No filter / Accept selected individual addresses / Drop selected individual addresses] - policy for source individual addresses
- Ind. address list - list of individual addresses. One address/range per line. Use * (e.g. 1.1.*) to filter all addresses in the given line
- DST group policy [No filter / Accept selected group addresses / Drop selected group addresses] - policy for destination group addresses
- Group address list - list of group addresses. One address/range per line.

Use * (e.g. 1/1/*) to filter all addresses in the given line

It is also possible to set filtering per-object in Logic Server→ Objects tab:

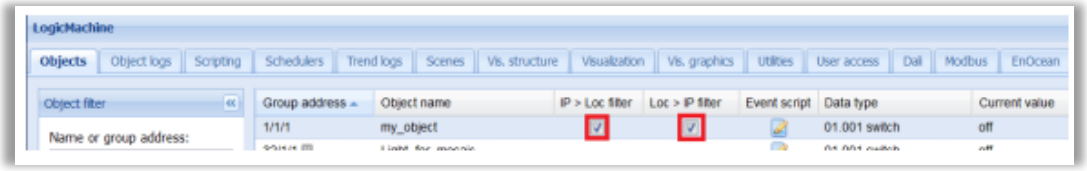

Fig. 140: Objects Tab Window

5.2.4.3. Local > IP Filter

Filtering table for outgoing telegrams to KNX/IP.

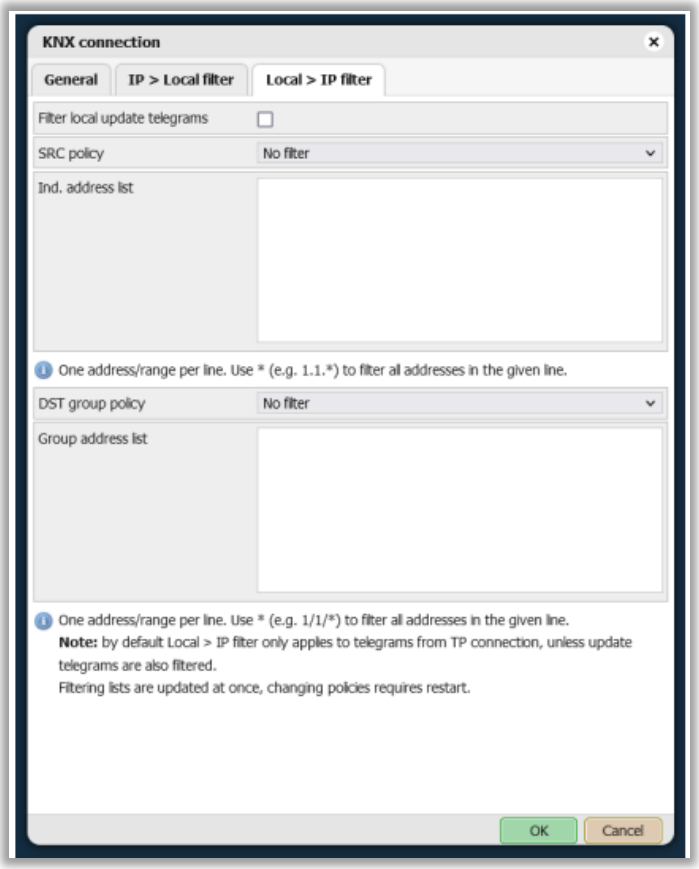

Fig. 141: Local > IP Filter Window

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- Filter local update telegrams - whether to apply filter rules to update telegrams (called by grp.update() or when Write to bus is disabled)
- SRC policy [No filter / Accept selected individual addresses / Drop selected İndividual addresses] - policy for source individual addresses
- Ind. address list - list of individual addresses. One address/range per line. Use * (e.g. 1.1.*) to filter all addresses in the given line
- DST group policy [No filter / Accept selected group addresses / Drop selected group addresses] - policy for destination group addresses
- Group address list - list of group addresses. One address/range per line.
  Use * (e.g. 1/1/*) to filter all addresses in the given line

5.2.5. KNX Statistics

Displays KNX/TP and KNX/IP statistics, including TP bus load, number of TP repeat telegrams and a number of sent and received KNX/TP and KNX/IP telegrams

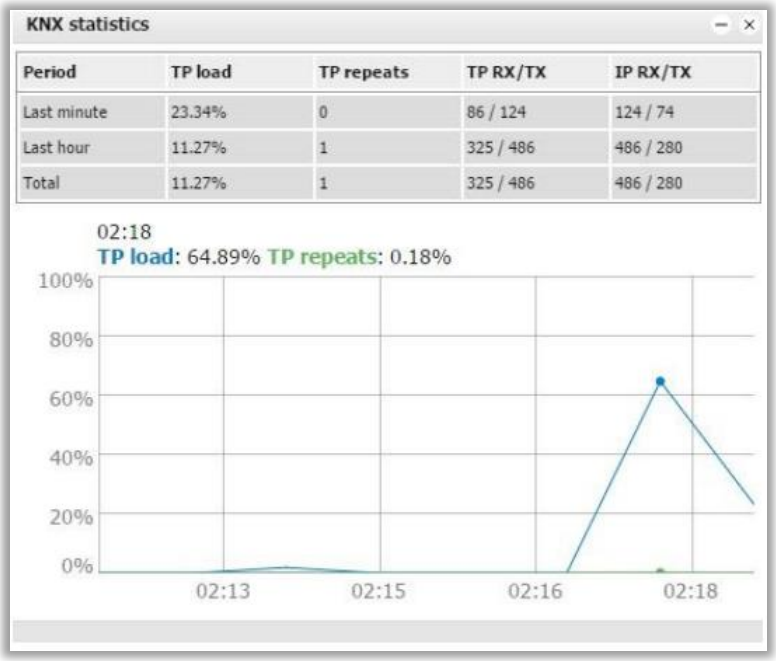

Fig. 142: KNX Statics Window

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5.2.6. BACnet Server Settings

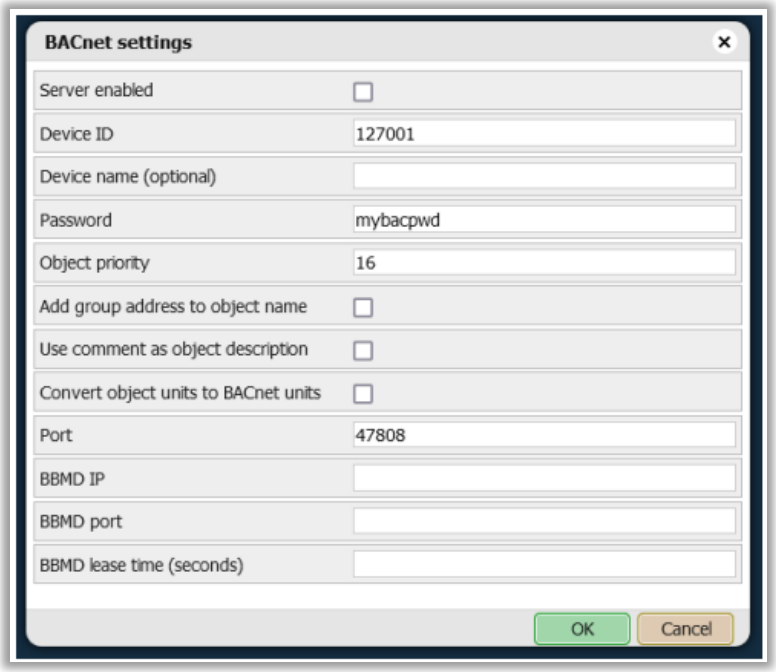

Fig. 143: BACnet Server Settings Window

- Server enabled - whether the BACnet server is enabled
- Device ID - BACnet device ID
- Password - device password
- Object priority - priority array position for values that are written from any other source than BACnet
- Add group address to object name - append group address (X/Y/Z) to object names
- Use comment as object description - use object comment field value as BACnet object description
- Convert object units to BACnet units - whether to convert textual object units to BACnet units automatically
- Port - server port number
- BBMD IP - BACnet router IP. When a router IP and port are set, Logic Server will act as a foreign device and will attempt to register with a BACnet router
- BBMD port - BACnet router port. When router IP and port are set, Logic Server will act as a foreign device and will attempt to register with a BACnet router
- BBMD lease time (seconds) - registration resend interval

Only binary and numeric objects with Export enabled can be accessed via BACnet.

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5.2.7. BACnet Objects

Displays a list of exported BACnet objects. It is possible to download a CSV report containing all objects.

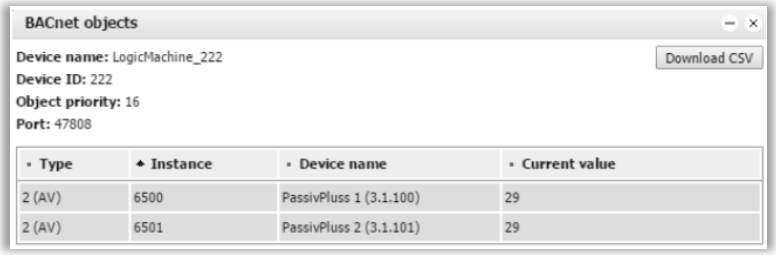

Fig. 144: BACnet Objects Window

5.2.8. BACnet COV Settings

Change Of Value (COV) delta can be set for each numeric object. The maximum number of COV subscriptions can be increased up to 4096.

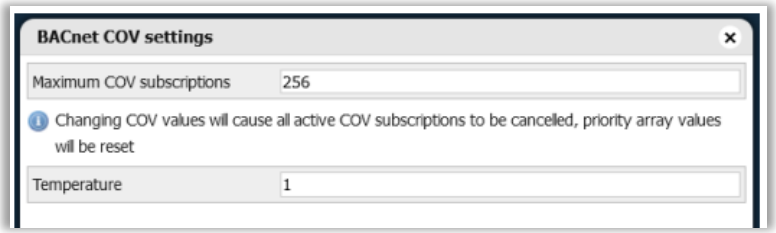

Fig. 145: BACnet COV Settings Window

5.3. Services

5.3.1. NTP Client/Serve

Network Time Protocol (NTP) service synchronizes LM date and time with external servers. Up to four NTP servers can be specified. LM can also act as an NTP server for other devices on the same network.

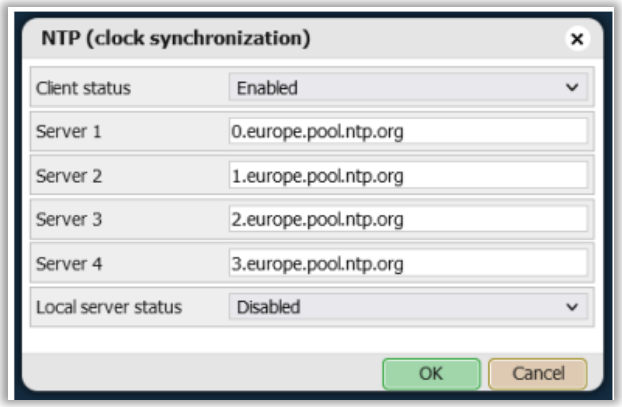

Fig. 146: NTP (Clock Synchronization) Window

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5.3.2. HTTP Server

Allows adding an additional HTTP and HTTPS port. Unsecure HTTP can be disabled. Up to four CORS client IP addresses can be provided to allow certain applications to make external requests to the Logic Server via HTTP(s).

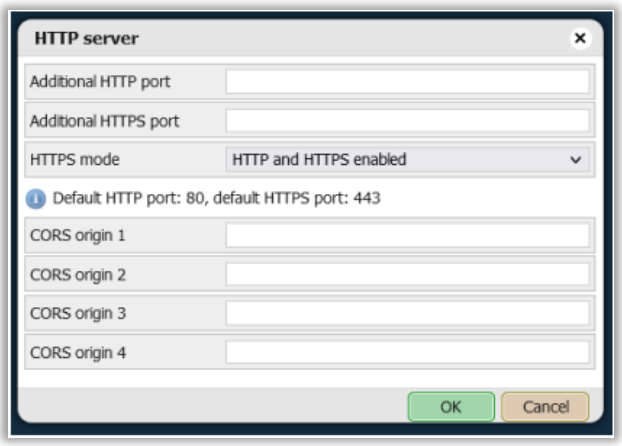

Fig. 147: HTTP Server Window

5.3.3. HTTP SSL Certificate

Allows setting a custom private key and certificate. It is also possible to generate a new self-signed key/certificate pair.

Fig. 148: HTTP SSL Certificate Window

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5.3.4. FTP Server

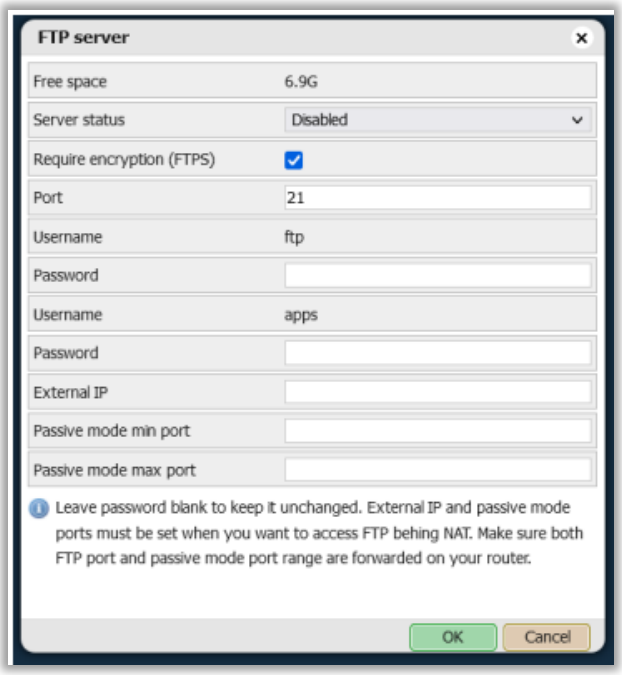

Fig. 148: FTP Server Window

- Server status - whether the FTP server is enabled
- Require encryption (FTPS) - whether to force FTP encryption
- Port - FTP server port
- Password - password for the ftp and apps users
- Passive mode min port, Passive mode max port - port range for external clients to use in passive mode

5.3.5. Remote Services

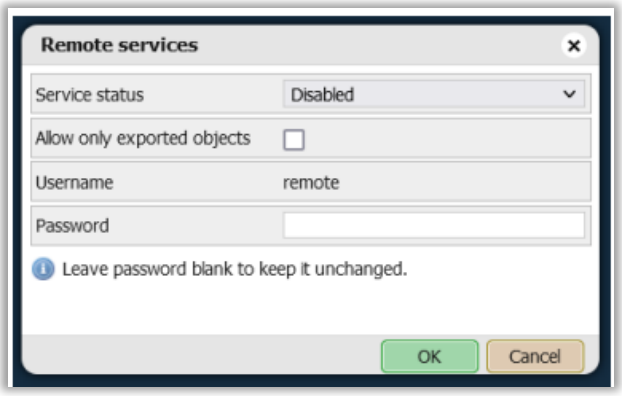

Fig. 149: Remote Services Window

- Service status - whether the remote services are enabled
- Allow only exported objects - if enabled then only objects with Export mark can be access via remote services
- Password - password for the remote user

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5.3.6. Remote Diagnostics

Should only be enabled for remote support provided by Embedded Systems.

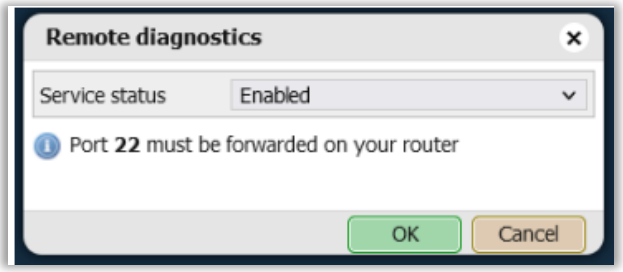

Fig. 150: Remote Diagnostics Window

5.3.7. OpenVPN Client

OpenVPN can be used for secure external access to your LogicMachine. An external OpenVPN server is required.

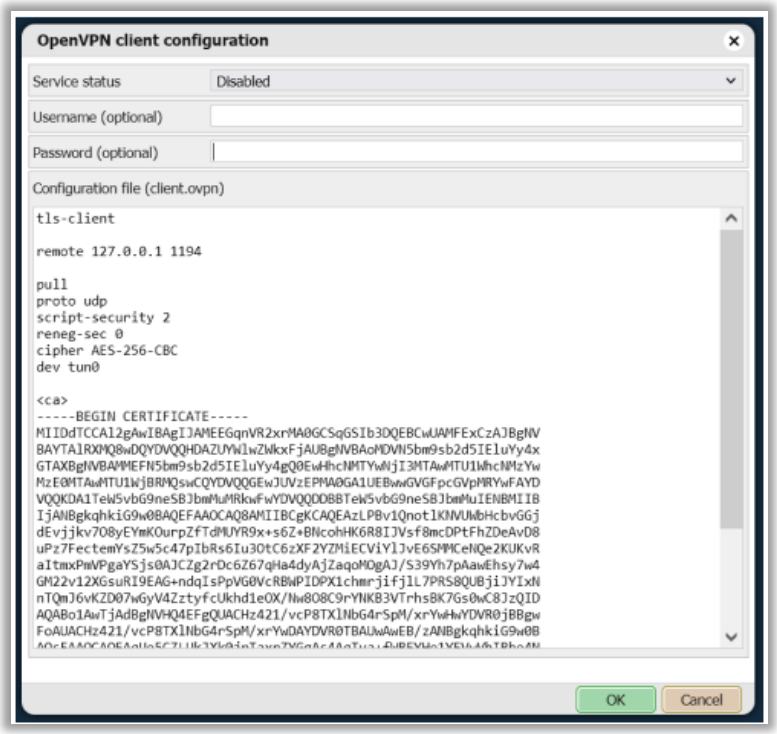

Fig. 151: OpenVPN Client Window

- Service status - whether OpenVPN client is enabled
- Username / Password - optional credentials
- Configuration file - contents of client.ovpn configuration file

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5.3.8. OpenVPN Status

Displays the OpenVPN client connection logs.

Fig. 152: OpenVPN Status Window

5.3.9. ZeroTier

ZeroTier is a technology for secure external access to your Logic Server.

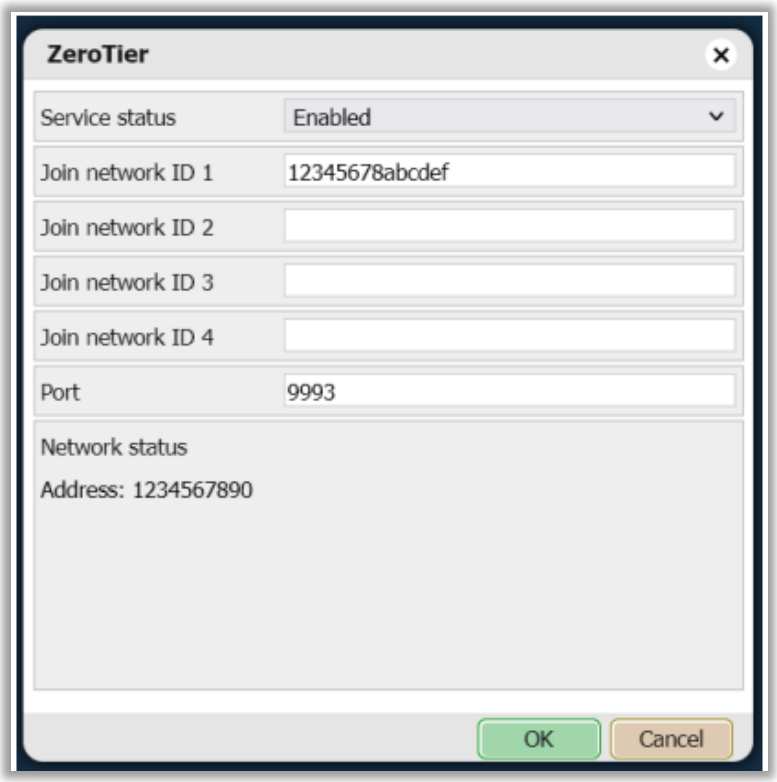

Fig. 153: ZeroTier Window

- Service status - whether ZeroTier is enabled
- Join network ID 1..4 - network IDs to join
- Port - UDP port to use
- Network status - LogicMachine ZeroTier address and a list of statuses for each configured network

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5.4. Status

5.4.1. System Status

Displays general system information including CPU usage, Memory, Partitions and Serial port list.

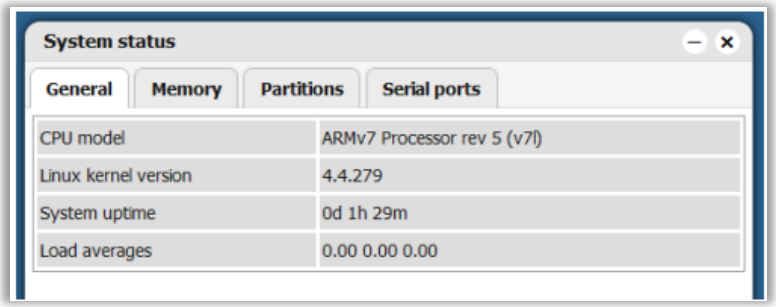

Fig. 154: System Status Window

5.4.2. Network Utilities

Ping and Traceroute utilities are available. Both IP addresses and DNS names are accepted.

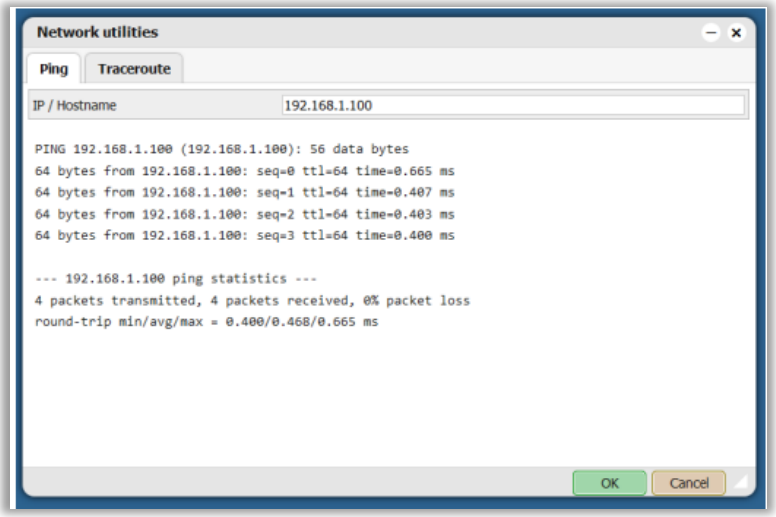

Fig. 155: Network Utilities Window

5.4.3. System Log

Displays the operating system log.

Fig. 156: System Log Window

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5.4.4. Running Processes

Displays currently running system processes.

Stopping certain processes can make the system inoperable until a reboot is performed.

Fig. 156: Running Processes Window

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CONTACT INFORMATION

THE INTERRA WEBSITE

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- Information about our products and projects.
- Overview of Interra company and values.
- Product Support: Datasheets, product manuals, application descriptions, latest software releases, ETS databases and archived software.

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