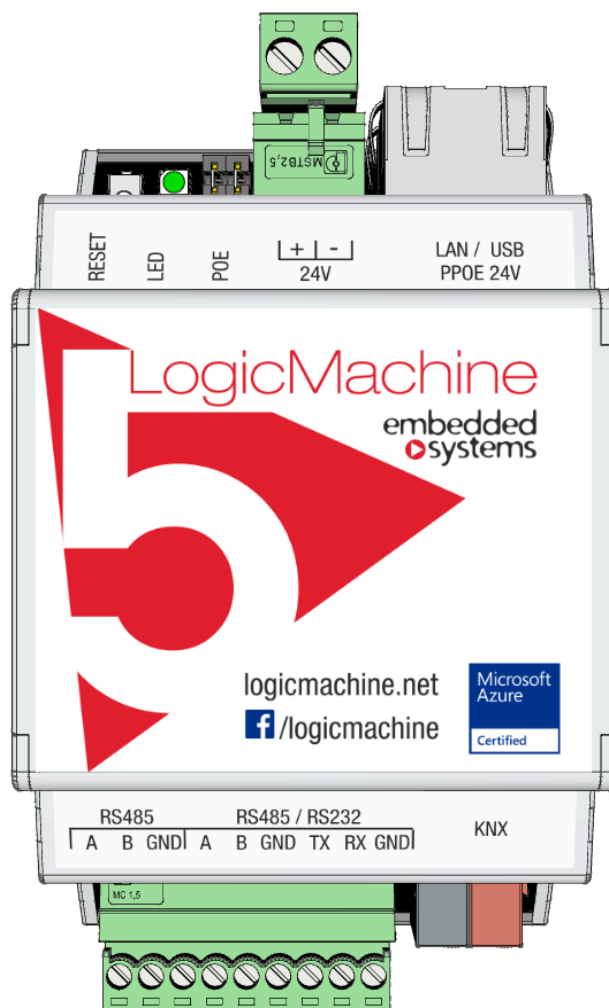


LogicMachine5 Lite

Product Manual



December, 2025

Applicable firmware version: 2025.12

Technical support:
support@openrb.com
forum.logicmachine.net

Copyright

Copyright © 2025 Embedded Systems SIA. All Rights Reserved.

Notice

Embedded Systems SIA reserves the right to modify the information contained herein as necessary. Embedded Systems SIA assumes no responsibility for any errors which may appear in this document. Information in this document is provided solely to enable system and software implementers to use LogicMachine products.

Trademarks

LogicMachine is a trademark of Embedded Systems SIA. All other names and trademarks are the property of their respective owners and are hereby acknowledged.

Introduction

LogicMachine (LM) is the easiest way to implement complex logic in KNX, Modbus, BACnet, ZigBee, EnOcean and other networks. LM enables efficient building automation process customization, providing virtually unlimited flexibility to the end users in a cost-effective way.

LM5 is an embedded platform with an integrated Ethernet, USB, KNX/TP and RS-485/RS-232 serial interfaces. LM can be used as a cross-standard gateway (Modbus, BACnet/IP), logic engine, visualization platform, KNX/IP Router. It can be integrated with various cloud/web services and 3rd party devices. Scripts (logic engine) allows LM to simultaneously act as a thermostat, security panel, lighting controller, etc. Additional applications can be installed to further extend the device functionality.

Technical support

Any faulty devices should be returned to Embedded Systems.

For any other technical questions use our forum at forum.logicmachine.net

Firmware updates are available at openrb.com/firmwares/



Caution Security advice

Risk of damage to property and personal injury due to wrong installation.

Electrical installation can only be ensured if the person can prove knowledge in the following areas:

- Installation of networks
- Mounting electric cables
- Installation of KNX networks

These skills are possessed by certified specialists who are trained in electrical installation technology. If these requirements are not met, you are personally liable for any damage to property or personal injury.

Electrical connection

The devices are constructed for the operation of protective low voltage (SELV). Grounding of devices is not needed. When switching the power supply on or off, power surges must be avoided.

Table of contents

1. Security recommendations	7
2. Quick startup guide	8
2.1. Connection	8
2.2. Default network and access configuration	8
2.3. Discover LogicMachine IP address	8
2.4. Firmware upgrade and update installation	8
3. Graphical user interface	9
3.1. Customizing the background / Language	10
3.2. Search function	11
3.3. Unlock the application list	11
3.4. Admin mode	12
3.4.1. Admin mode settings	12
3.4.2. Change default page view for users	12
3.4.3. Add or remove applications	13
3.4.4. Exit admin mode	14
3.5. Application development	15
4. LogicMachine configuration	16
4.1. Objects	17
4.1.1. Object parameters	17
4.1.2. Change the object value	18
4.1.3. Custom values	19
4.1.4. Object control bar	19
4.1.5. Object filter	20
4.2. Object logs	21
4.3. Scripting	22
4.3.1. Adding a new script	22
4.3.1.1. Event-based	23
4.3.1.2. Resident	24
4.3.1.3. Scheduled	25
4.3.2. List of scripts	26
4.3.3. Script editor	26
4.3.3.1. Left sidebar	27
4.3.3.2. Right sidebar	27
4.3.3.3. Bottom toolbar	28
4.3.4. User libraries	28
4.3.5. Common functions	29
4.3.6. Start-up (init) script	29
4.3.7. Tools	29
4.4. Schedulers	31
4.4.1. Add scheduler (admin interface)	31
4.4.2. Scheduler events (admin interface)	32
4.4.3. Scheduler holidays (admin interface)	33
4.4.4. Direct link (admin interface)	34

4.4.5. Scheduler events (user interface)	34
4.4.6. Scheduler holidays (user interface)	36
4.5. Trend logs	37
4.5.1. Add new trend log (admin interface)	37
4.5.2. Direct link (admin interface)	38
4.5.3. Trend log functions for scripts	38
4.5.4. Trend log example (user interface)	39
4.6. Scenes	41
4.6.1. Add a scene	41
4.6.2. Add objects to the scene sequence	41
4.6.3. Scene sequence toolbar	42
4.7. Visualization structure	43
4.8. Visualization	43
4.9. Visualization graphics	43
4.10. Utilities	44
4.10.1. Import ESF file	44
4.10.2. Import KNXPROJ file	45
4.10.3. Import neighbours	45
4.10.4. Reset / clean-up	46
4.10.5. Factory reset	46
4.10.6. Date and time	46
4.10.7. Install updates	47
4.10.8. Backup	47
4.10.9. Restore	48
4.10.10. General configuration	48
4.10.11. Visualization configuration	49
4.10.12. System	50
4.11. User access	50
4.11.1. User access settings	51
4.11.2. User directory	51
4.11.3. Adding users	52
4.11.4. Access logs	54
4.12. Modbus master (RTU/TCP)	54
4.12.1. Modbus devices profile	55
4.12.2. RTU settings	56
4.12.3. Read test	57
4.12.4. RTU Scan	57
4.12.5. Adding Modbus device	58
4.12.6. Object mapping	59
4.13. Alerts	61
4.14. Logs	61
4.15. Error log	62
4.16. User Interface status information	62
5. System configuration	63
5.1. System	63

5.1.1. Hostname	63
5.1.2. Packages	63
5.1.3. Admin access	64
5.1.4. Upgrade firmware	64
5.1.5. Backup configuration	65
5.1.6. Restore configuration	65
5.1.7. Reboot	66
5.1.8. Shutdown	66
5.2. Network	66
5.2.1. Interfaces	66
5.2.2. Routes	67
5.2.3. ARP table	68
5.2.4. KNX connection	68
5.2.4.1. General tab	68
5.2.4.2. IP > Local filter	70
5.2.4.2. Local > IP filter	71
5.2.5. KNX statistics	72
5.2.6. BACnet server settings	73
5.2.7. BACnet objects	74
5.2.8. BACnet COV settings	74
5.3. Services	75
5.3.1. NTP client/server	75
5.3.2. HTTP server	75
5.3.3. SSL certificate	76
5.3.4. FTP server	76
5.3.5. Remote services	76
5.3.6. Remote diagnostics	77
5.3.7. OpenVPN client	77
5.3.8. OpenVPN status	78
5.3.9. ZeroTier	78
5.3.10. 802.1X EAP-TLS	79
5.3.11. WireGuard	79
5.4. Status	80
5.4.1. System status	80
5.4.2. Network utilities	80
5.4.3. System log	81
5.4.4. Running processes	81
6. Other examples	83

1. Security recommendations

It is recommended to install LM on a secure network without public access. Where possible separate network segments either physically, by using VLANs or firewalls.

If communication between several LMs is required in one building - provide a KNX Backbone key and set the "Enable only secure communication" option.

Disable KNX/IP features after the project has been fully commissioned if KNX/IP Routing is not needed.

LM cloud can be used for remote control. For remote commissioning and diagnostics either ZeroTier or OpenVPN should be used. Do not use port forwarding.

Use HTTPS instead of HTTP where possible. Install the *SSL certificate* application from the LM app store to obtain a valid certificate for your LM. Using HTTP over ZeroTier or OpenVPN is allowed as the tunneling connection is already encrypted.

Perform LM project backups periodically and store them in a safe place.

In case you find cyber security incidents or vulnerabilities, please contact us through this page: logicmachine.net/contact-us

Embedded Systems SIA cannot be held responsible for performance problems and incompatibilities caused by applications, services or devices from third-party providers. Failure to follow these instructions can result in equipment damage.

2. Quick startup guide

2.1. Connection

- Mount the device on the DIN rail
- Connect the KNX/TP bus cable
- Connect 24V power supply to the device (red pole to 24V+, grey pole to GND)
- Connect LM to the local network using an Ethernet cable

2.2. Default network and access configuration

Login name	admin
Password	admin
IP address	192.168.0.10
Network mask	255.255.255.0

Make sure that your PC is on the same sub-network as LM or the connection will not be possible.

The device can be accessed by opening a web browser (Chrome, Firefox, Safari are supported) and entering IP of the device <http://IP>

Secure access to the device is available via <https://IP>

LM comes with a self-signed certificate for which the browser will display a warning. Install the *SSL certificate* application from the LM app store to obtain a valid certificate for your LM or accept the warning.

2.3. Discover LogicMachine IP address

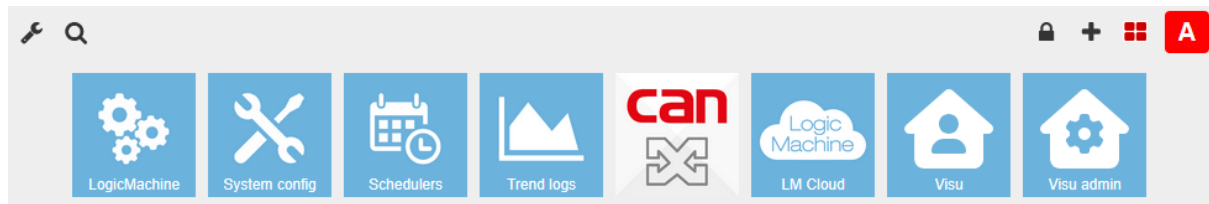
LM has a built-in mDNS/zeroconf support. *LM Home* application for Android and iOS can be used to discover LM devices on the network.

2.4. Firmware upgrade and update installation

See [System → Upgrade firmware](#) and [Utilities → Install updates](#).

3. Graphical user interface


After a successful login the main page appears:

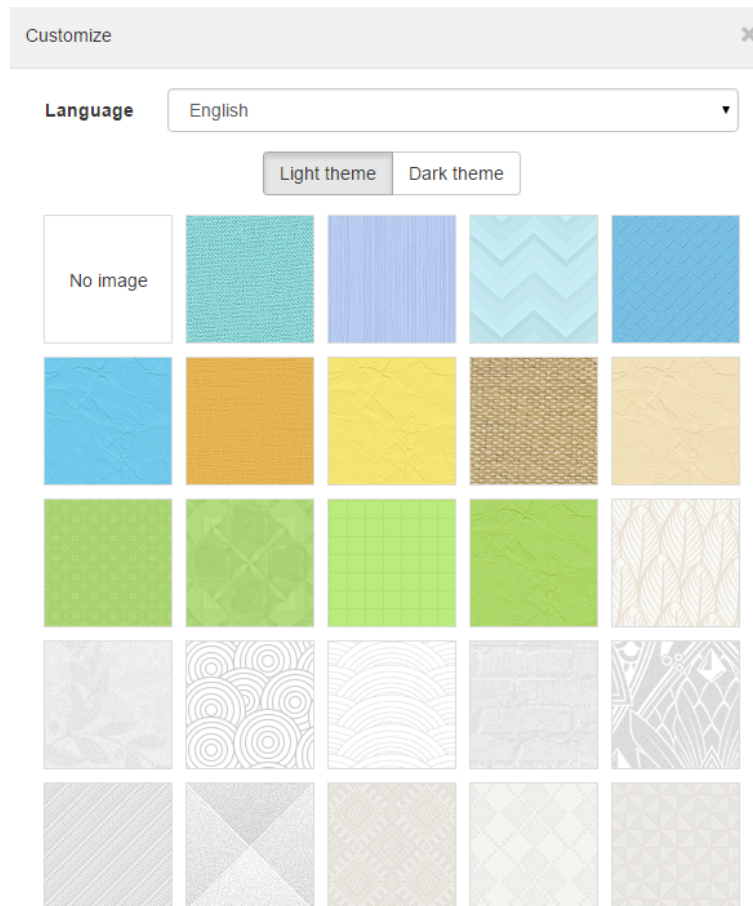


- *LogicMachine* - objects and object logs, scripts, schedulers, trends, visualization editor, user access, alerts and error logs
- *System config* - network, KNX and other built-in service configuration, package management and firmware upgrade, general system status
- *Visu* - graphical visualization (user mode)
- *Visu admin* - graphical visualization (editor mode)
- *Schedulers* - user-defined schedulers
- *Trend logs* - chart view for time-series data

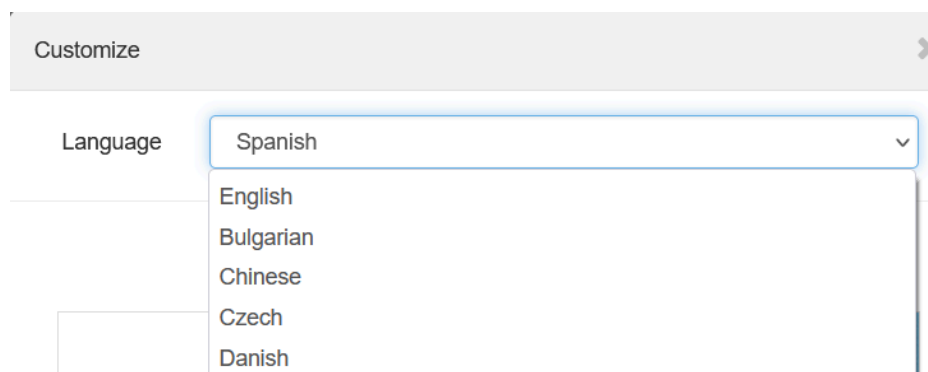
The main screen of the interface is a list of installed applications. It is possible to change the application order, hide selected applications. Each user can customize the background, light/dark theme and interface language. The admin user can install and update applications.

3.1. Customizing the background / Language

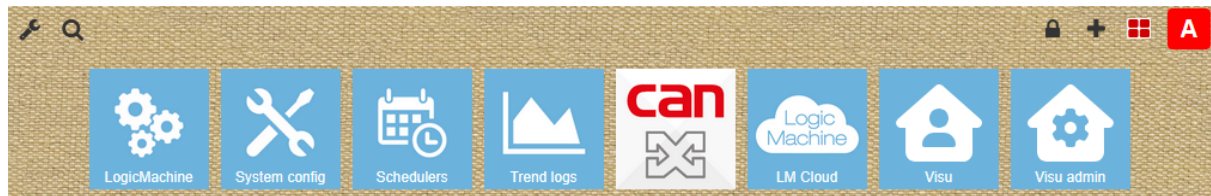
Click *Customize*  to change the interface language, color theme and the background image.




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

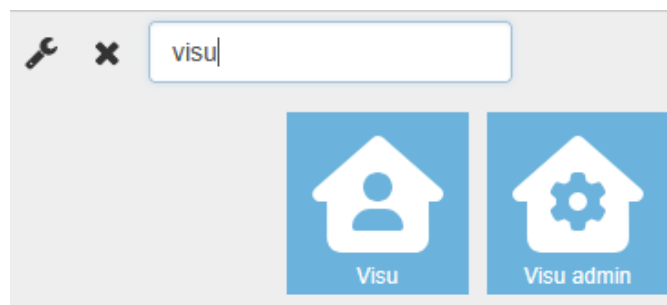


The background image is applied automatically when chosen.




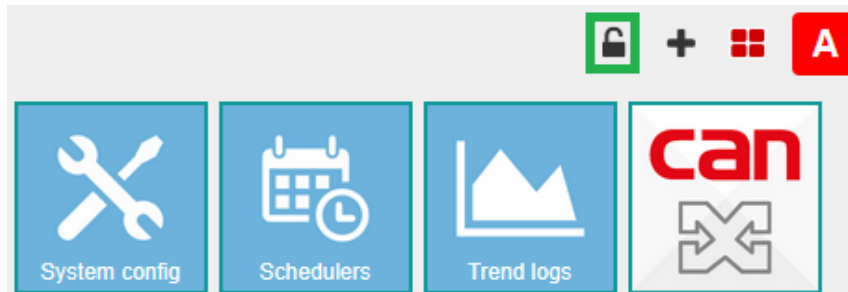
3.2. Search function

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

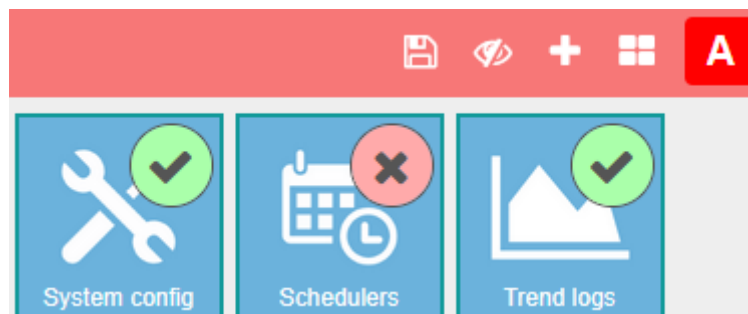



3.3. Unlock the application list

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



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

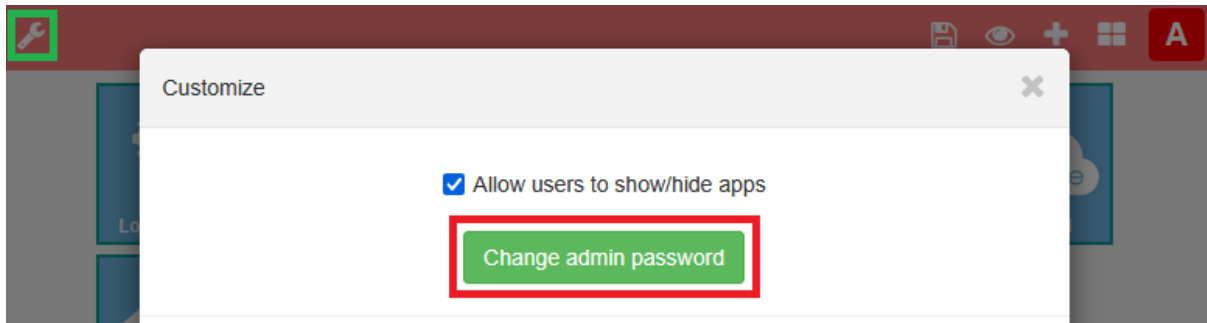


After selecting which apps will be visible to users click **Save** .

3.4. Admin mode


3.4.1. Admin mode settings

Click *Grid*  then *Customize*  and click *Change admin password*.




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

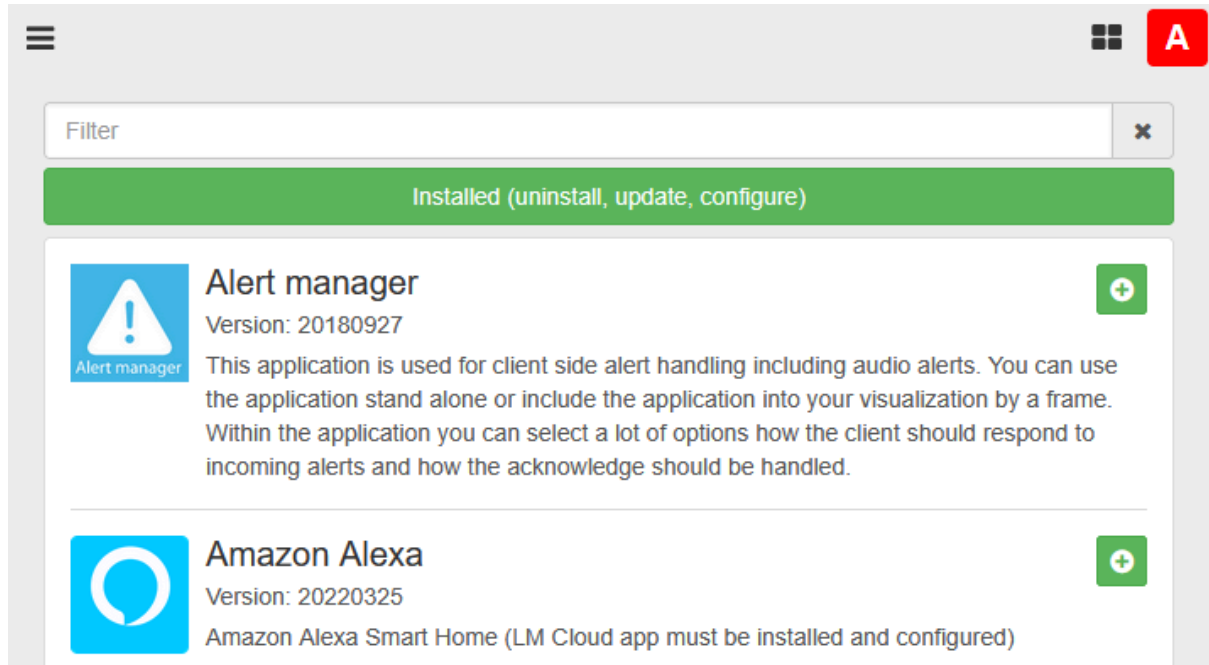
3.4.2. Change default page view for users


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* .

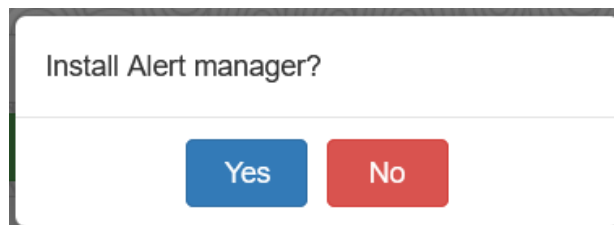
3.4.3. Add or remove applications

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

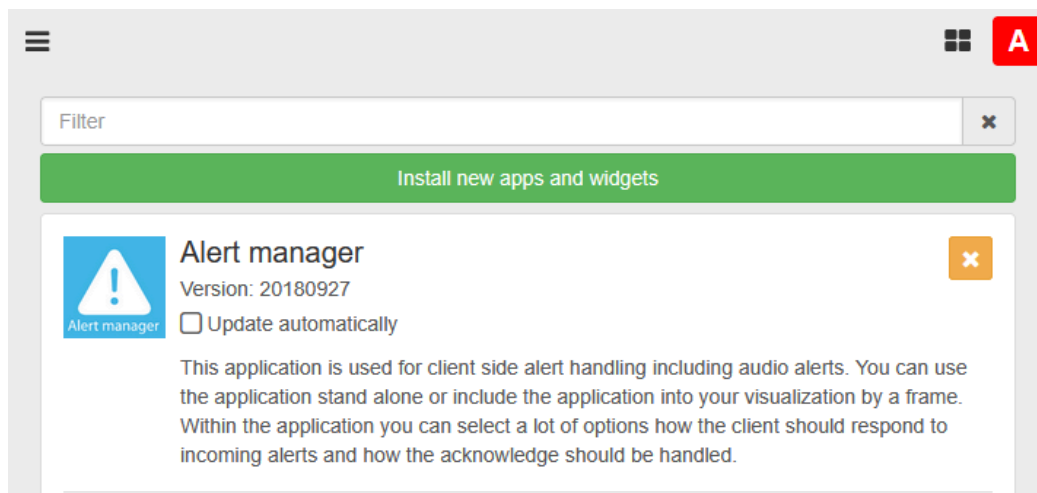
The list of available applications is displayed.



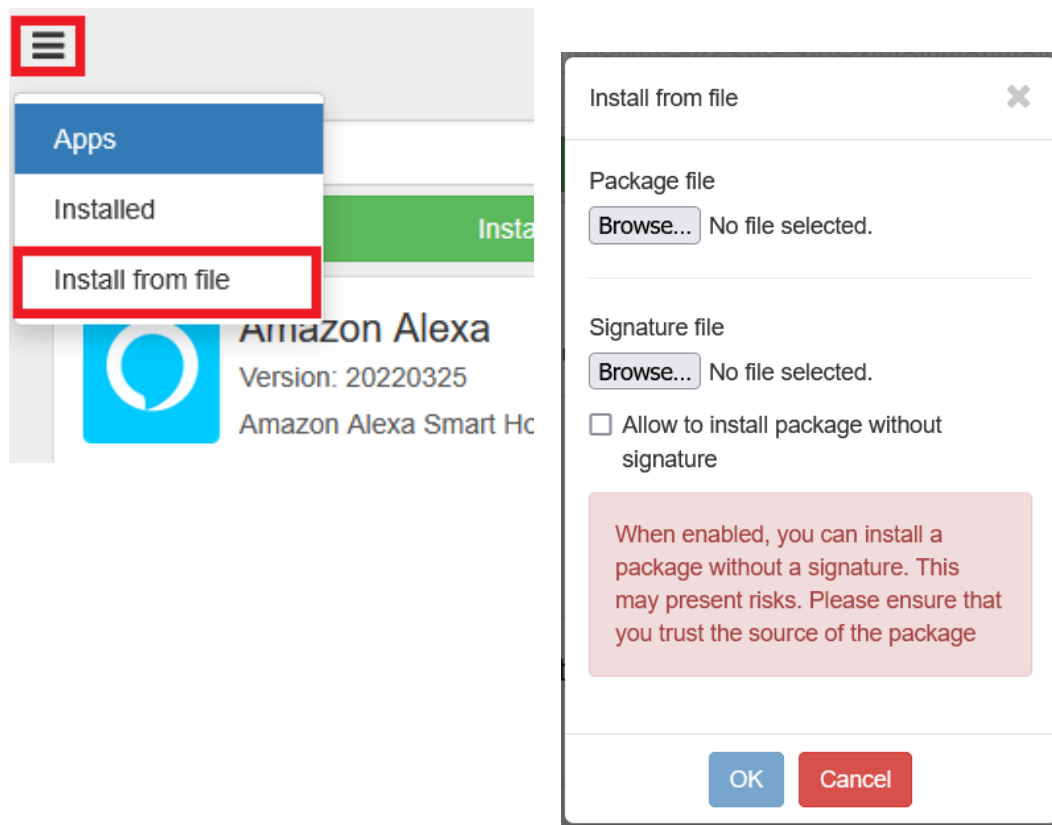
Click *Install*  to install a given application into LM.



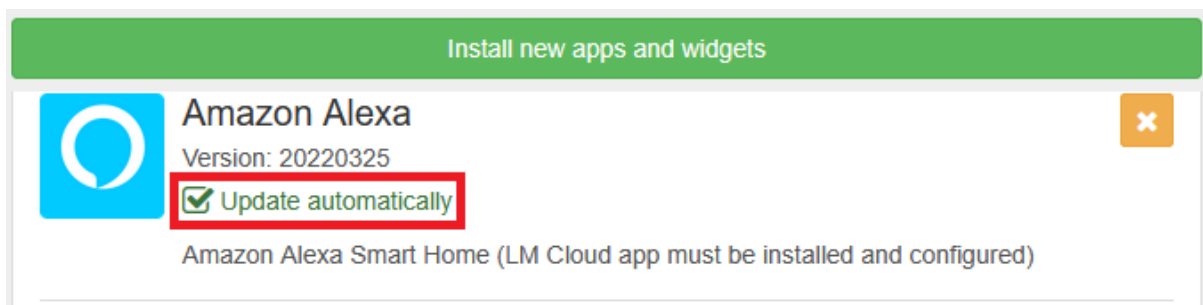
Click *Installed* to view a list of currently installed applications on LM.



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



Mark option “Update automatically” for automatic updates of the selected application.



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 logout.

3.5. Application development

Visit our forum: forum.logicmachine.net

4. LogicMachine configuration

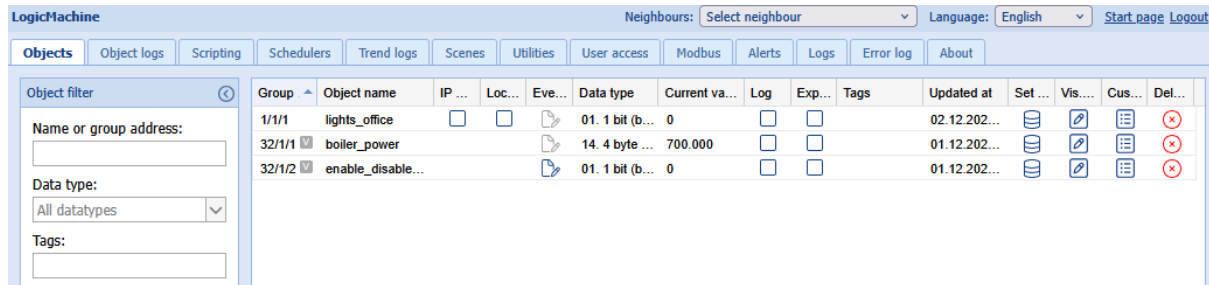
This is the main page of the LogicMachine configuration and management. It consists of the following tabs:

- [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
- [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

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 in [Utilities](#)

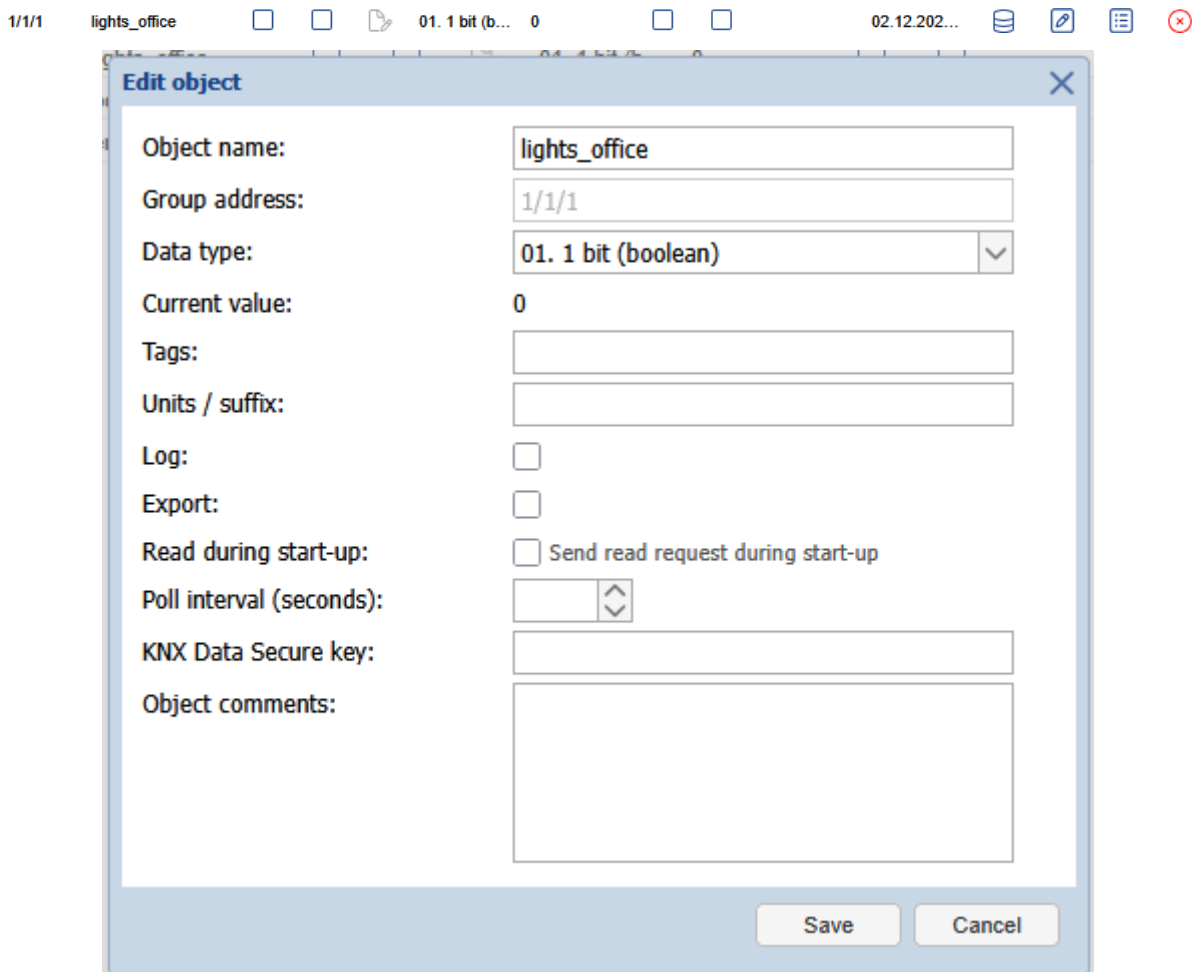


The screenshot shows the 'Objects' tab in the LogicMachine interface. It features a table with columns: Group, Object name, IP, Loc, Eve, Data type, Current va..., Log, Exp..., Tags, Updated at, Set, Vis, Cus, and Del. Three objects are listed: 'lights_office' (Group 1/1/1, Data type 01. 1 bit (b...), Current value 0, Updated 02.12.202...), 'boiler_power' (Group 32/1/1, Data type 14. 4 byte ..., Current value 700.000, Updated 01.12.202...), and 'enable_disable...' (Group 32/1/2, Data type 01. 1 bit (b..., Current value 0, Updated 01.12.202...). Each row has icons for editing, deleting, and other actions.

Group	Object name	IP	Loc	Eve	Data type	Current va...	Log	Exp...	Tags	Updated at	Set	Vis...	Cus...	Del...
1/1/1	lights_office				01. 1 bit (b...	0				02.12.202...				
32/1/1	boiler_power				14. 4 byte ...	700.000				01.12.202...				
32/1/2	enable_disable...				01. 1 bit (b...	0				01.12.202...				

4.1.1. Object parameters

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



The screenshot shows the 'Edit object' dialog box for the 'lights_office' object. The dialog contains the following fields and options:


- Object name: lights_office
- Group address: 1/1/1
- Data type: 01. 1 bit (boolean)
- Current value: 0
- Tags: (empty text box)
- Units / suffix: (empty text box)
- Log: ☐
- Export: ☐
- Read during start-up: ☐ Send read request during start-up
- Poll interval (seconds): (empty text box with up/down arrows)
- KNX Data Secure key: (empty text box)
- Object comments: (empty text area)

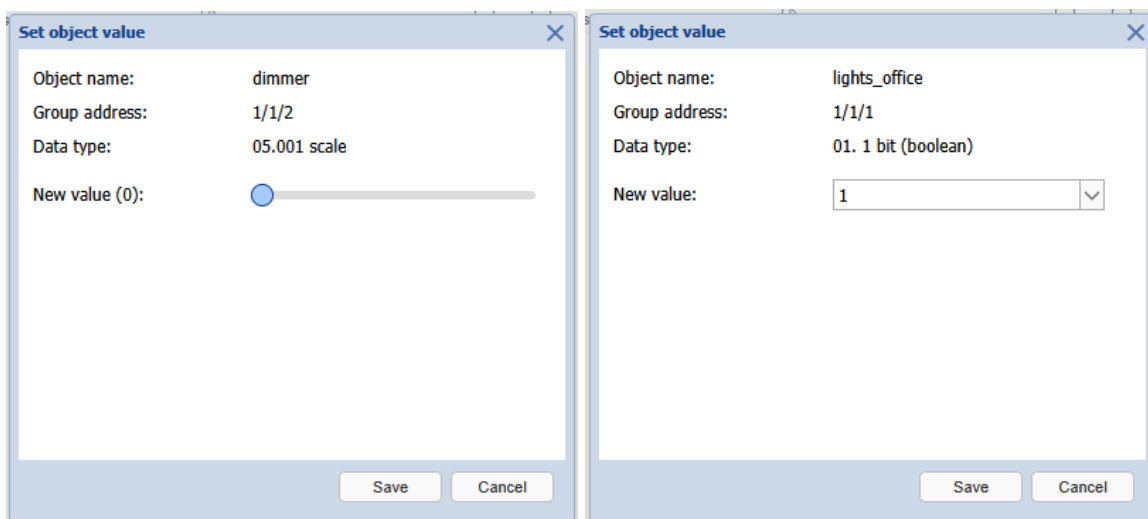
At the bottom of the dialog are 'Save' and 'Cancel' buttons.

- *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
- *KNX Data Secure key* - KNX Secure key of the object for KNX communication encryption (32 hexadecimal characters)
- *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. Change the object value

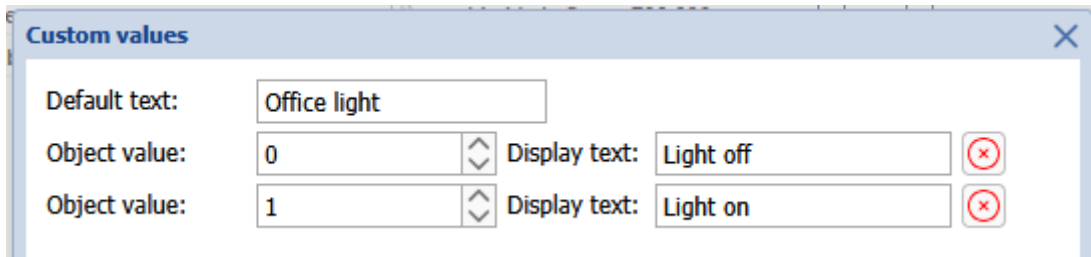
Click  to change the object value. Control elements depend on the object data type and visualization parameters.



4.1.3. Custom values

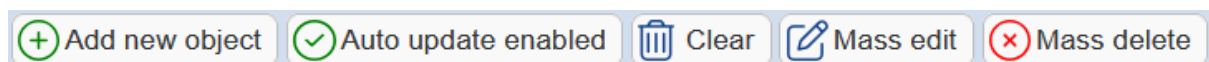
Click  to map textual values to certain numerical object values. When the *Default* text is set it will be shown when no matching object value has been found. Otherwise raw object value is displayed.

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*.

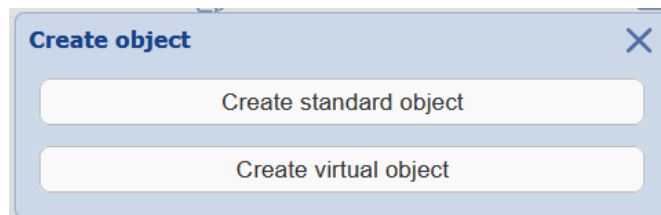


The 'Custom values' dialog box has a title bar with a close button. It contains three rows of input fields. The first row is for the 'Default text' with the value 'Office light'. The second row is for 'Object value' with '0' and 'Display text' with 'Light off'. The third row is for 'Object value' with '1' and 'Display text' with 'Light on'. Each 'Display text' field has a red 'X' icon to its right.

4.1.4. Object control bar



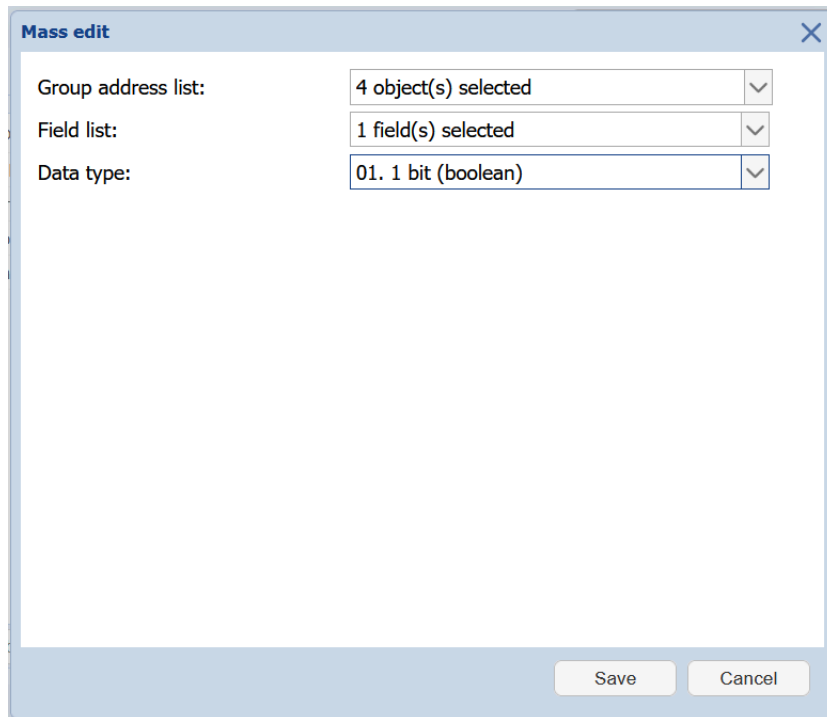
- *Add new object* - manually add new object to the list



The 'Create object' dialog box has a title bar with a close button. It contains two buttons: 'Create standard object' and 'Create virtual object'.

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



Mass edit

Group address list: 4 object(s) selected

Field list: 1 field(s) selected

Data type: 01. 1 bit (boolean)

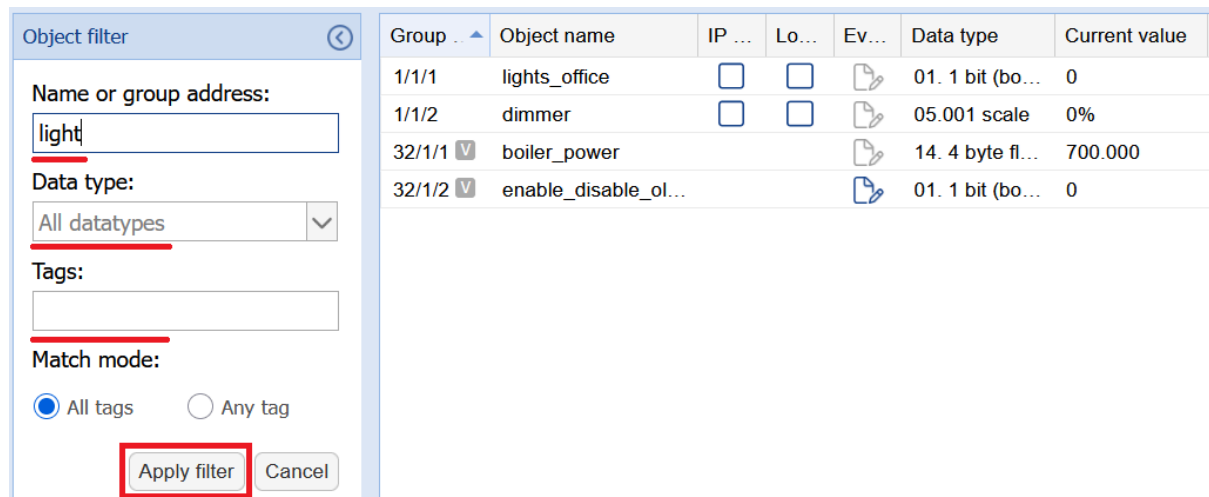
Save Cancel

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

4.1.5. 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.



Object filter

Name or group address: light

Data type: All datatypes

Tags:

Match mode: ☒ All tags ☐ Any tag

Apply filter Cancel

Group	Object name	IP ...	Lo...	Ev...	Data type	Current value
1/1/1	lights_office	<input type="checkbox"/>	<input type="checkbox"/>		01. 1 bit (bo...	0
1/1/2	dimmer	<input type="checkbox"/>	<input type="checkbox"/>		05.001 scale	0%
32/1/1 <input checked="" type="checkbox"/>	boiler_power				14. 4 byte fl...	700.000
32/1/2 <input checked="" type="checkbox"/>	enable_disable_ol...				01. 1 bit (bo...	0

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

4.2. Object logs

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

The screenshot shows the 'Object logs' tab in a software interface. On the left is the 'Object log filter' panel with fields for Start date, End date, Name or group address, Tags, Value, Source address, and Login / metadata. On the right is a table of log entries. At the bottom are buttons for 'Clear', 'Export all logs', and a pagination control showing 'Page 1 of 1'.

Log time	Object address	Type	Source address	Login / metadata	Object name
02.12.2025 13:10:31.113	1/1/2	write	local (User interfac...	admin:192.168.1.155	dimmer
02.12.2025 13:10:26.784	1/1/1	write	local (User interfac...	admin:192.168.1.155	lights_office
01.12.2025 15:10:09.809	32/1/1	write	local (User interfac...	admin:192.168.1.155	boiler_power

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 [LogicMachine → Utilities → General Configuration](#)

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/

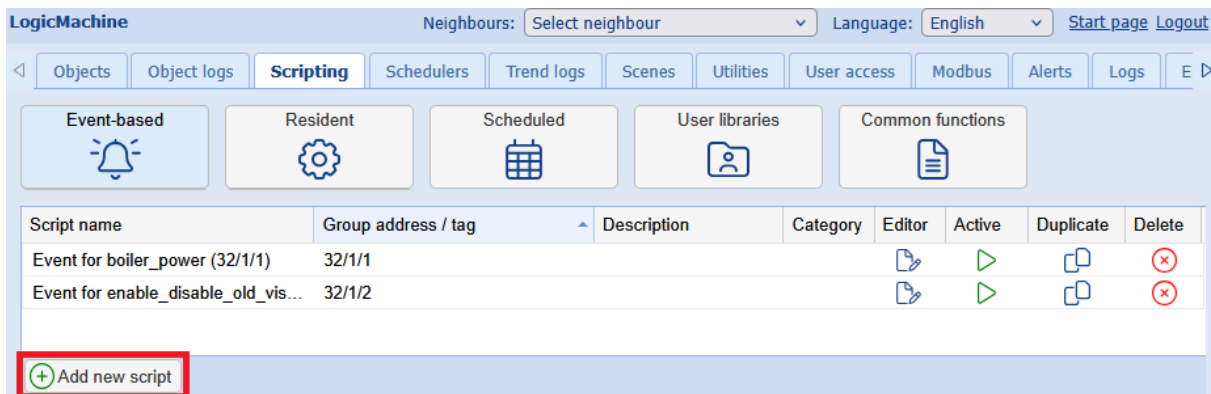
Note! the latest Lua reference manual for LogicMachine can be found at kb.logicmachine.net/libraries/lua/

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

4.3.1. Adding a new script

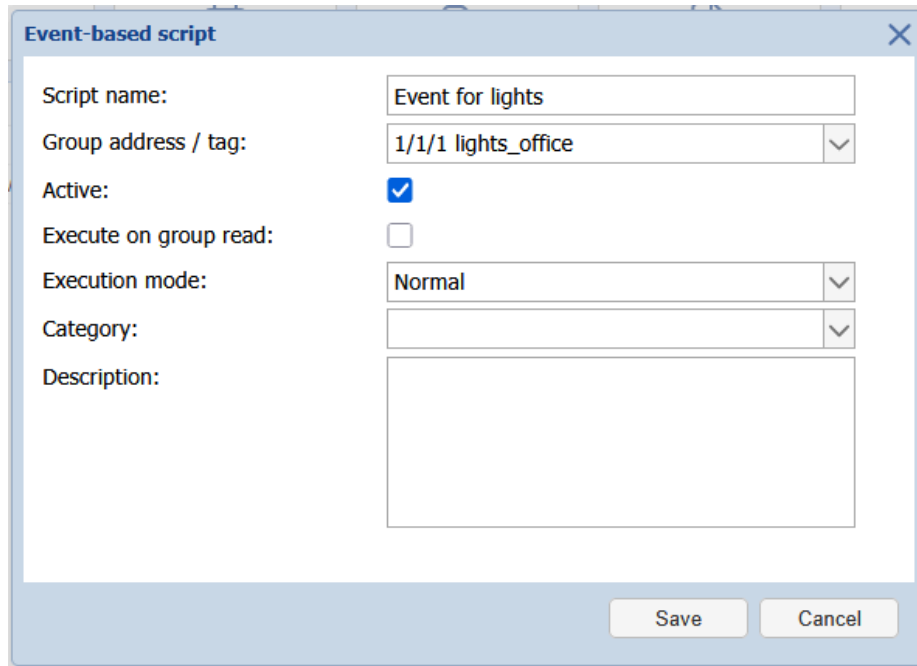
Click *Add new script* at the bottom of the *Event-based*, *Resident* or *Scheduled*



The screenshot shows the LogicMachine web interface. At the top, there are navigation tabs: Objects, Object logs, Scripting (selected), Schedulers, Trend logs, Scenes, Utilities, User access, Modbus, Alerts, Logs, and a dropdown menu. Below the tabs, there are five buttons: Event-based (selected), Resident, Scheduled, User libraries, and Common functions. Below these buttons is a table with columns: Script name, Group address / tag, Description, Category, Editor, Active, Duplicate, and Delete. The table contains two rows of data. At the bottom of the interface, there is a button labeled '+ Add new script' which is highlighted with a red box.

Script name	Group address / tag	Description	Category	Editor	Active	Duplicate	Delete
Event for boiler_power (32/1/1)	32/1/1						
Event for enable_disable_old_vis...	32/1/2						

4.3.1.1. Event-based



- *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
- *Execution mode* - there are three possibilities of event script execution behaviours:
 - *Normal* - if the event is triggered multiple times in quick succession, then script will execute for each event trigger
 - *First instance only* - a new script instance is not executed if a script instance is already running when a new event is triggered
 - *Last instance only* - an existing script instance is stopped if it is running and a new script instance is executed when a new event is triggered
- *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

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

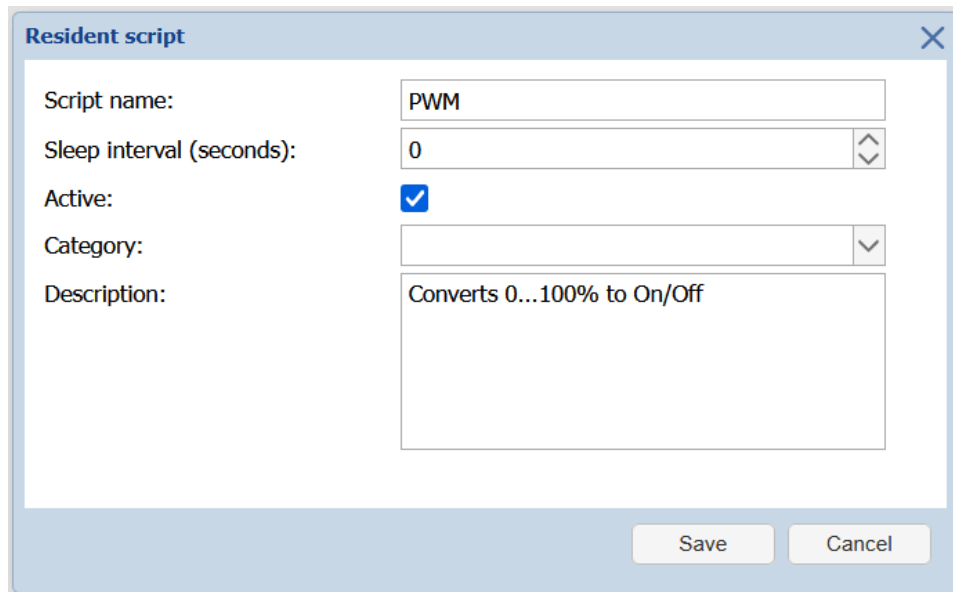
- *dstraw* (integer) - raw destination group address
- *srcraw* (integer) - raw source individual address

- *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



The image shows a 'Resident script' dialog box with the following fields and controls:

- Script name:** A text input field containing 'PWM'.
- Sleep interval (seconds):** A numeric input field containing '0' with up and down arrow buttons.
- Active:** A checkbox that is checked (indicated by a blue square).
- Category:** A dropdown menu with a downward arrow.
- Description:** A text area containing the text 'Converts 0...100% to On/Off'.

At the bottom right of the dialog are two buttons: 'Save' and 'Cancel'.

- *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.

4.3.1.3. Scheduled

Scheduled script

Script name: Floor heating off

Minute: ? 0

Hour: ? 8,19

Day of the month: ? *

Month of the year: Every month of the year

Day of the week: Every day of the week

Active: ☒

Category:

Description: Turns floor heating OFF at 8:00 and 19:00

Save Cancel

- *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 shown in the *Tools* → *Print* script listings page
- *Description* - description of the script

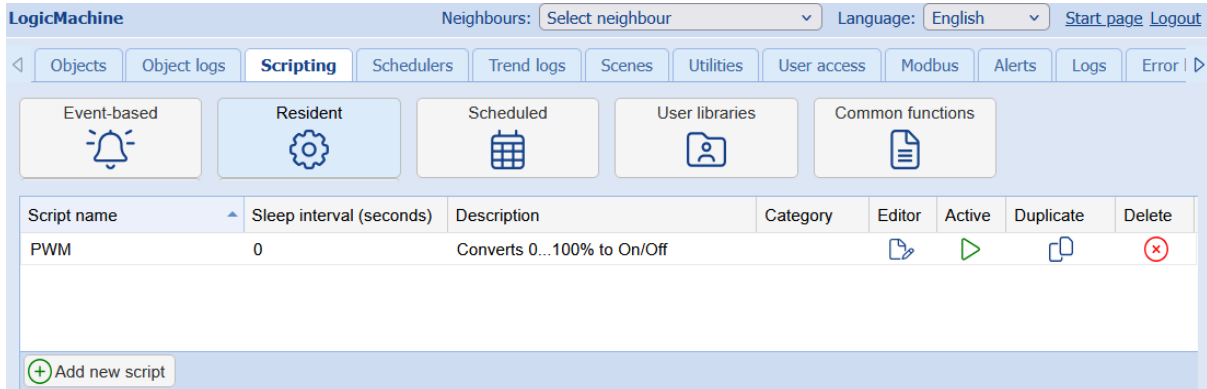
Scheduled scripts are executed when the system date/time matches the specified script start date/time. Scheduled script is run only once for each matching date/time.

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


4.3.2. List of scripts

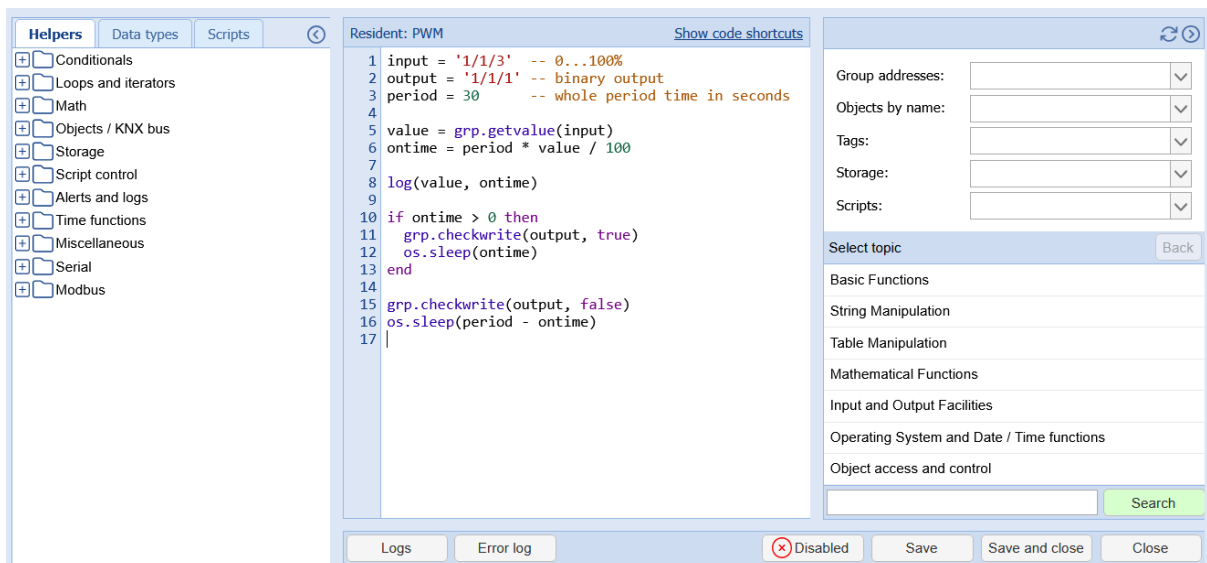


Available actions:

- *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

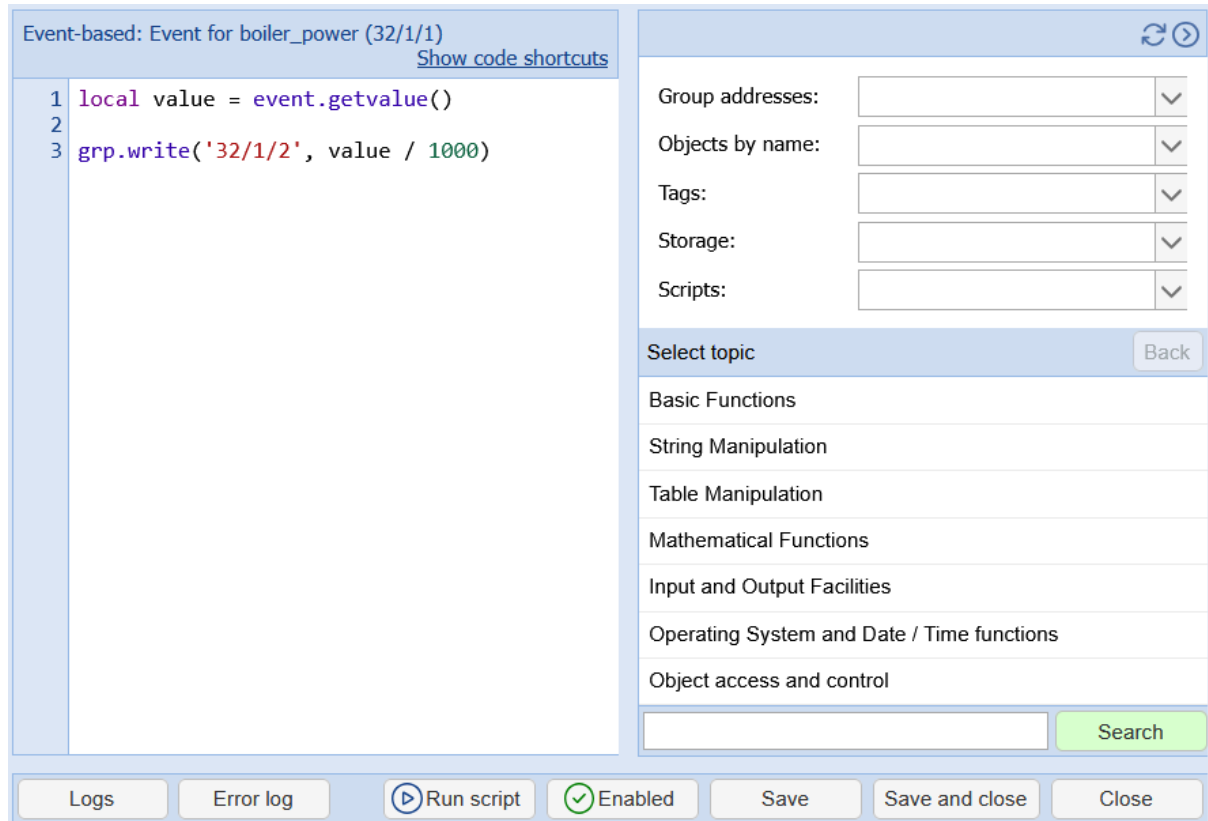
Click  to open the editor.



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



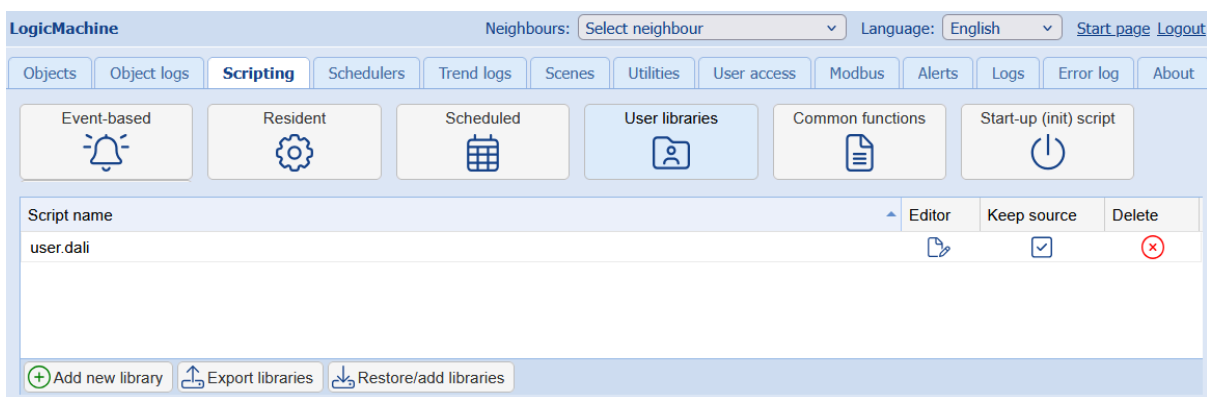
- *Group addresses, Objects by name, Tags, Storage, Scripts* - drop-down lists of all relevant values, click an entry to insert it into the script
- *Built-in help* - Lua function documentation, click plus to insert a code snippet into the script

4.3.3.3. Bottom toolbar

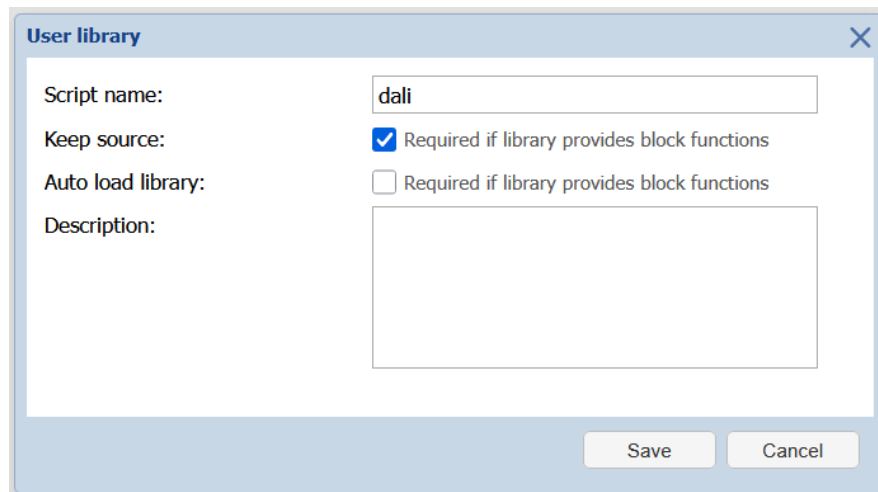


- *Logs* - display a floating window containing Error logs
- *Error logs* - display a floating window containing Error logs
- *Run script* - execute the script (not available for resident and libraries)
- *Enabled/Disabled* - toggle script status
- *Save* - save the script and continue editing
- *Save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

4.3.4. User libraries



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

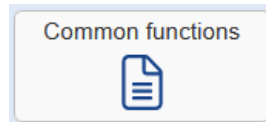


- *Script name* - unique library name
- *Keep source* - library is converted to a binary form that cannot be edited when this option is disabled. Make sure to keep a backup of the source code when disabling this option
- *Auto load library* - automatically load this library in all scripts
- *Description*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

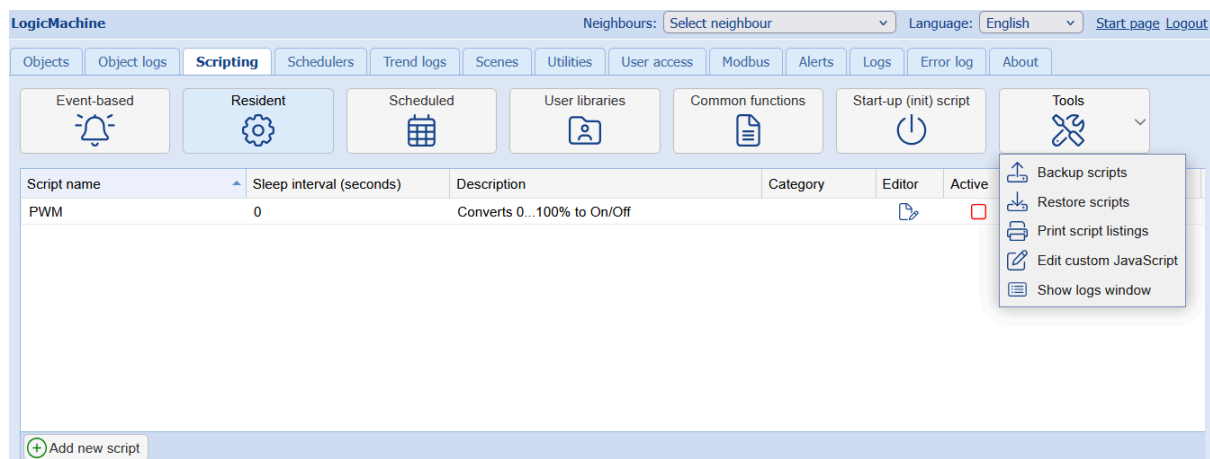


4.3.6. Start-up (init) script

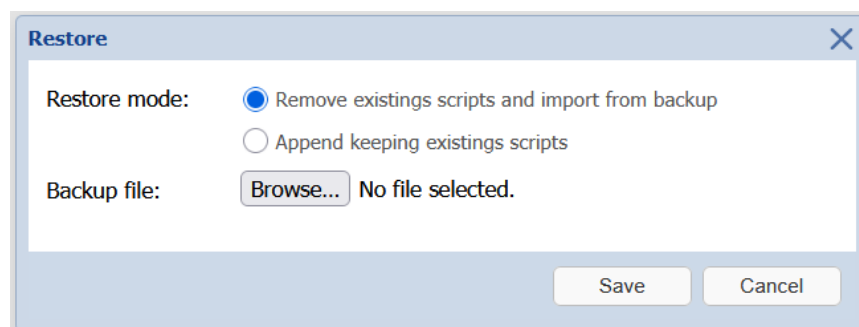
Init script is run once each time the system starts.



4.3.7. Tools



- *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



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

Event for Light_for_mosaic (32/1/1)

Type: Event-based

Active: Yes

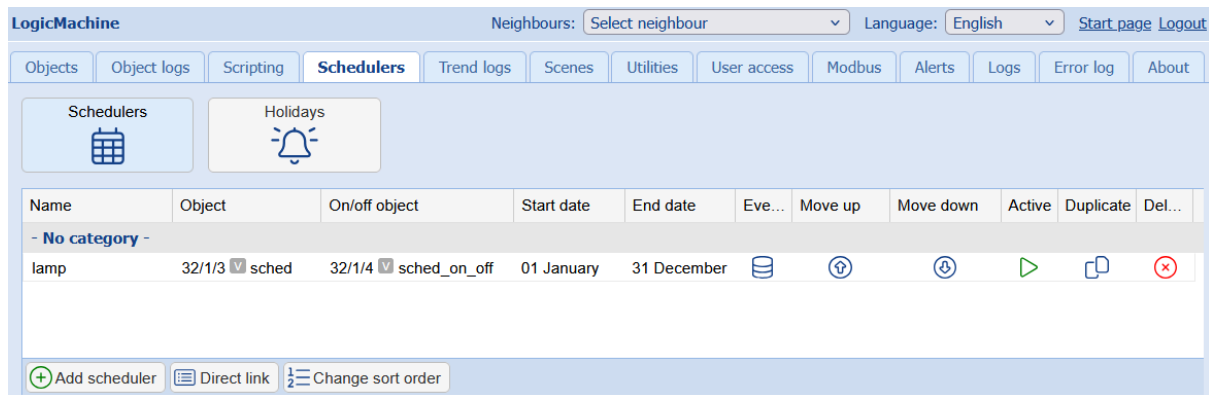
Group address / tag: 32/1/1

```
value = event.getvalue()  
grp.write('32/1/2', value)
```

- *Edit custom JavaScript* - allows adding certain actions for the user Visualization (deprecated), schedulers and trends that are not possible by the built-in functionality. See examples at forum.logicmachine.net/showthread.php?tid=275
- *Show logs window* - show script logs in a separate floating window

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).



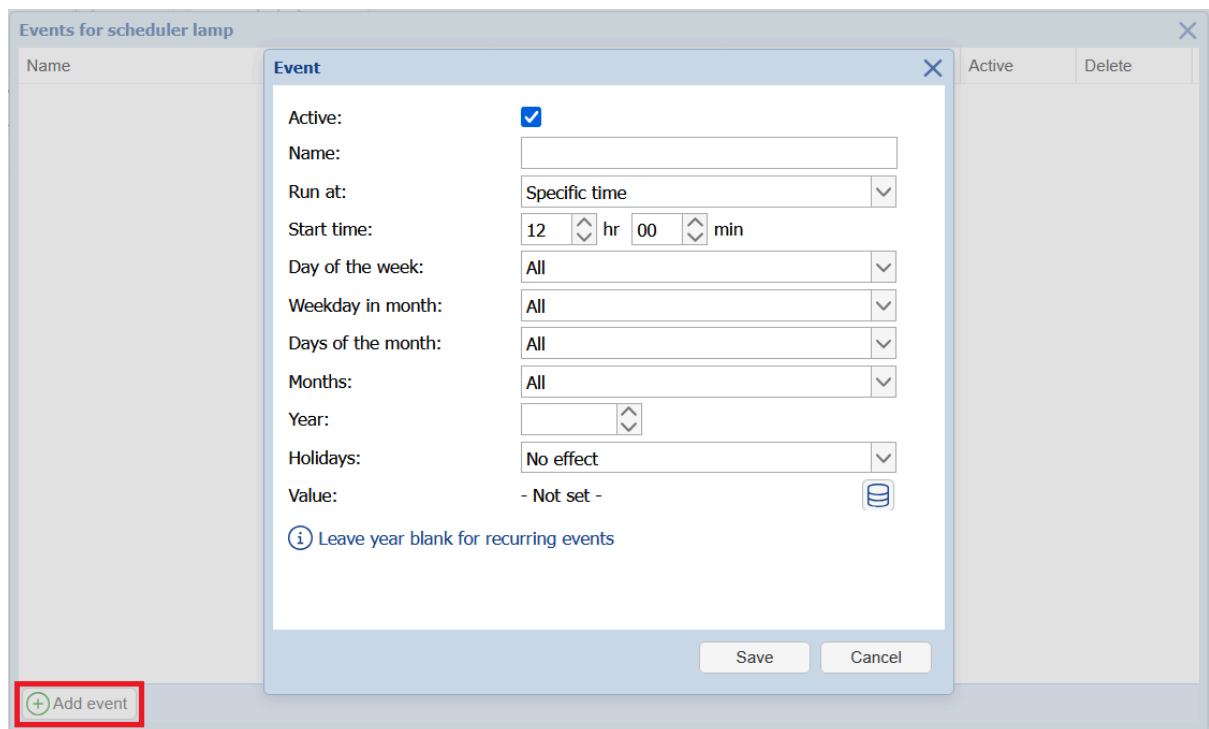
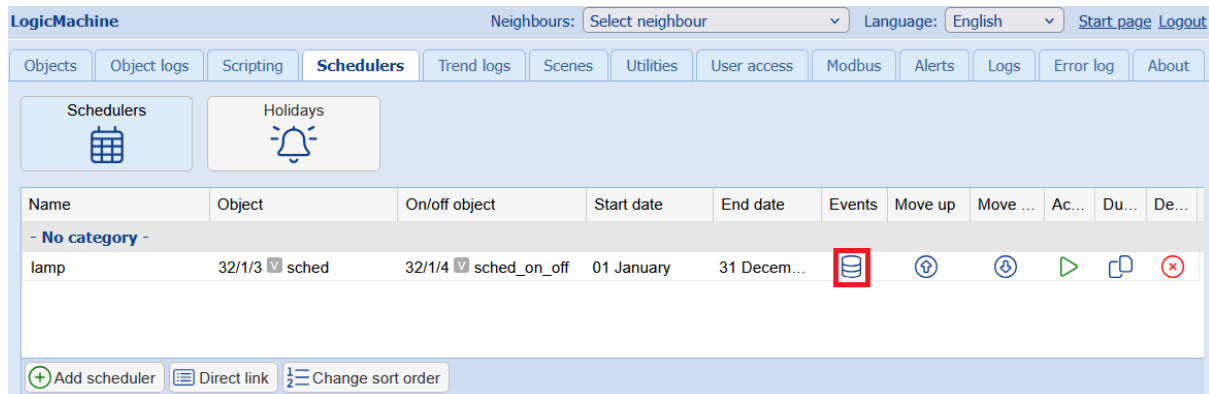
4.4.1. Add scheduler (admin interface)

The screenshot shows a 'Scheduler' dialog box with a close button (X) in the top right corner. It contains the following fields: 'Object:' with a dropdown menu showing '32/1/3 sched'; 'Active:' with a checked checkbox; 'Scheduler on/off object:' with a dropdown menu showing '32/1/4 sched_on_off'; 'Name:' with a text input field containing 'lamp'; 'Category:' with a dropdown menu; 'Start date:' with a date picker showing '01' and 'January'; and 'End date:' with a date picker showing '31' and 'December'. At the bottom right are 'Save' and 'Cancel' buttons.

- *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

4.4.2. Scheduler events (admin interface)

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



- *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

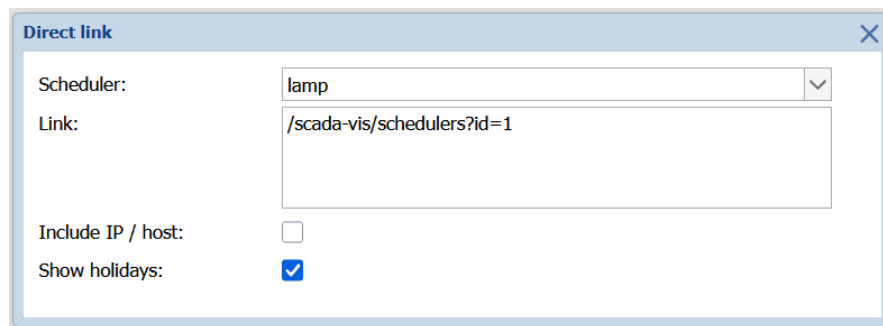
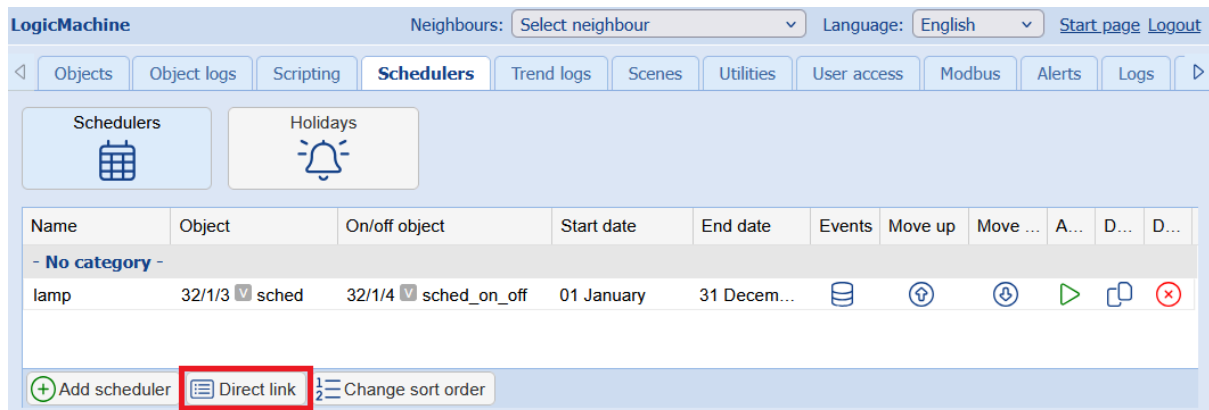
4.4.3. Scheduler holidays (admin interface)

The screenshot displays the LogicMachine admin interface. At the top, there's a navigation bar with 'LogicMachine' on the left, 'Neighbours: Select neighbour' in the center, and 'Language: English' on the right. Below this is a menu bar with tabs: Objects, Object logs, Scripting, Schedulers, Trend logs, Scenes, Utilities, User access, Modbus, Alerts, Logs, Error log, and About. The 'Schedulers' tab is active, and within it, the 'Holidays' sub-tab is selected. A 'Holiday' dialog box is open in the center, with fields for Name, Category, Holiday type (set to 'Specific date'), Day (set to '01'), Month (set to 'January'), Year, and Duration (days) (set to '1'). A note at the bottom of the dialog says 'Leave year blank for recurring holidays'. The background shows a table with columns for Name and Delete, and a '+ Add holiday' button at the bottom left.

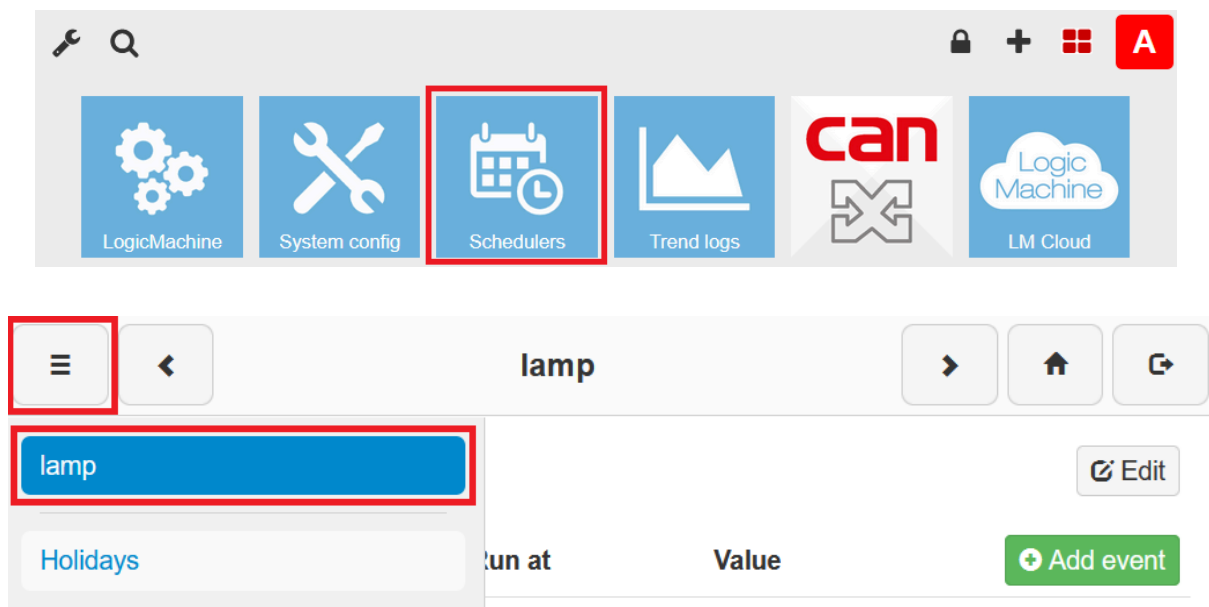
- **Name** - holiday name
- **Holiday type** - either *Specific date* or *Day of the week*
 - *Specific date*:
 - *Day* - day of the month value
 - *Day of the week*:
 - *Day of the week* - specific day of the week (e.g. 2nd Monday)
- **Month** - holiday month value
- **Year** - holiday year value, leave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

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 *Visu* via the *Frame* widget.



4.4.5. Scheduler events (user interface)



≡

<

lamp

>

🏠

↺

Status: active

1 January - 31 December

Edit

Name	Run at	Value	
turn_off_lights	12:00	0	<div>Add event</div> <div>Edit Delete</div>

lamp

>

🏠

↺

Run at

Value

12:00

0

Add event

☒ Event is active

Name

New event

Run at

Specific time

Start time

-

12

+

-

00

+

Day of the week

All

Weekday in month

All

Days of the month

All

Months

All

☒ Recurring every year

Holidays

No effect

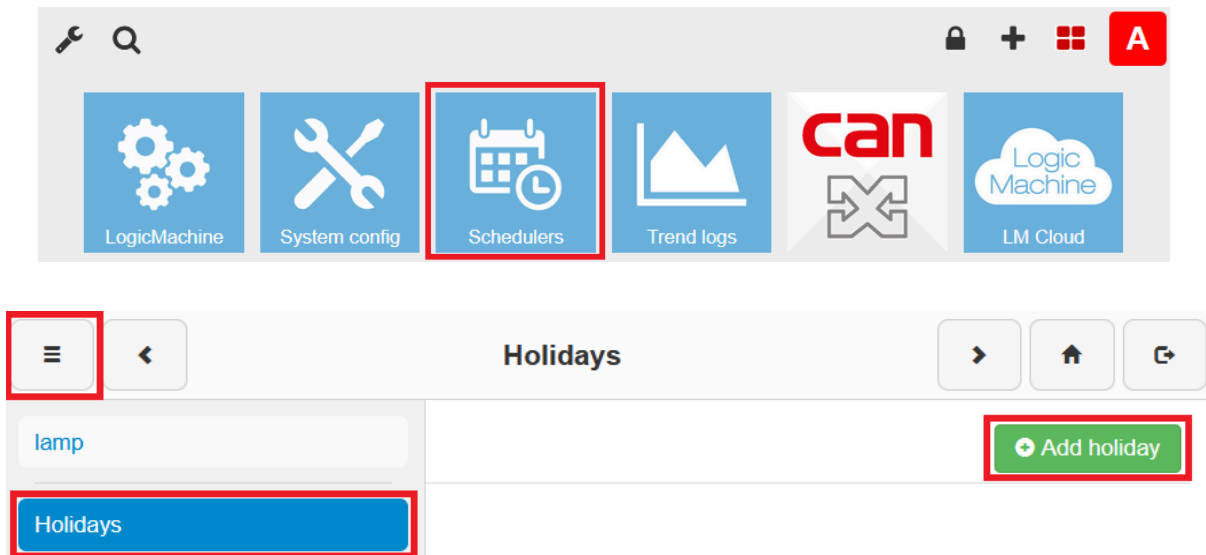
Value

1

Save

Cancel

4.4.6. Scheduler holidays (user interface)



Holidays

Period

Add holiday

Name
New holiday

Category

Holiday type
Specific date

From date
December 2025

Mo	Tu	We	Th	Fr	Sa	Su
24	25	26	27	28	29	30
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

To date
December 2025

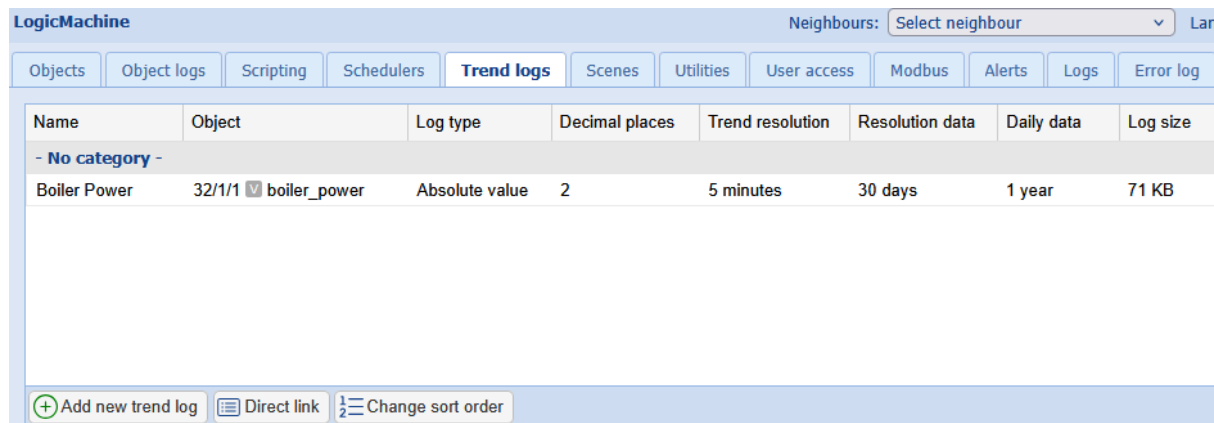
Mo	Tu	We	Th	Fr	Sa	Su
24	25	26	27	28	29	30
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

☐ Recurring every year

Save Cancel

4.5. Trend logs

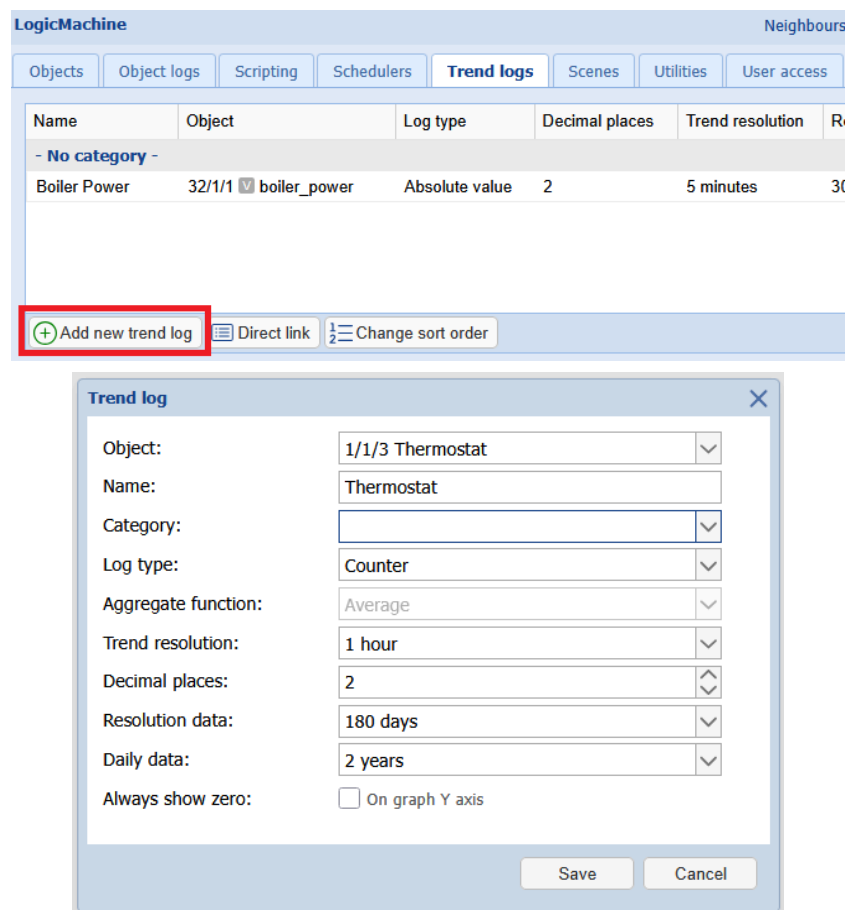
Trend logs store object data for a certain period of time with a predefined interval between each value.



Name	Object	Log type	Decimal places	Trend resolution	Resolution data	Daily data	Log size
- No category -							
Boiler Power	32/1/1 <input checked="" type="checkbox"/> boiler_power	Absolute value	2	5 minutes	30 days	1 year	71 KB

[+ Add new trend log](#) [Direct link](#) [Change sort order](#)

4.5.1. Add new trend log (admin interface)



LogicMachine Neighbours

Objects Object logs Scripting Schedulers **Trend logs** Scenes Utilities User access

Name	Object	Log type	Decimal places	Trend resolution	Resolution data	Daily data	Log size
- No category -							
Boiler Power	32/1/1 <input checked="" type="checkbox"/> boiler_power	Absolute value	2	5 minutes	30 days	1 year	71 KB

[+ Add new trend log](#) [Direct link](#) [Change sort order](#)

Trend log

Object: 1/1/3 Thermostat

Name: Thermostat

Category:

Log type: Counter

Aggregate function: Average

Trend resolution: 1 hour

Decimal places: 2

Resolution data: 180 days

Daily data: 2 years

Always show zero: ☐ On graph Y axis

Save Cancel

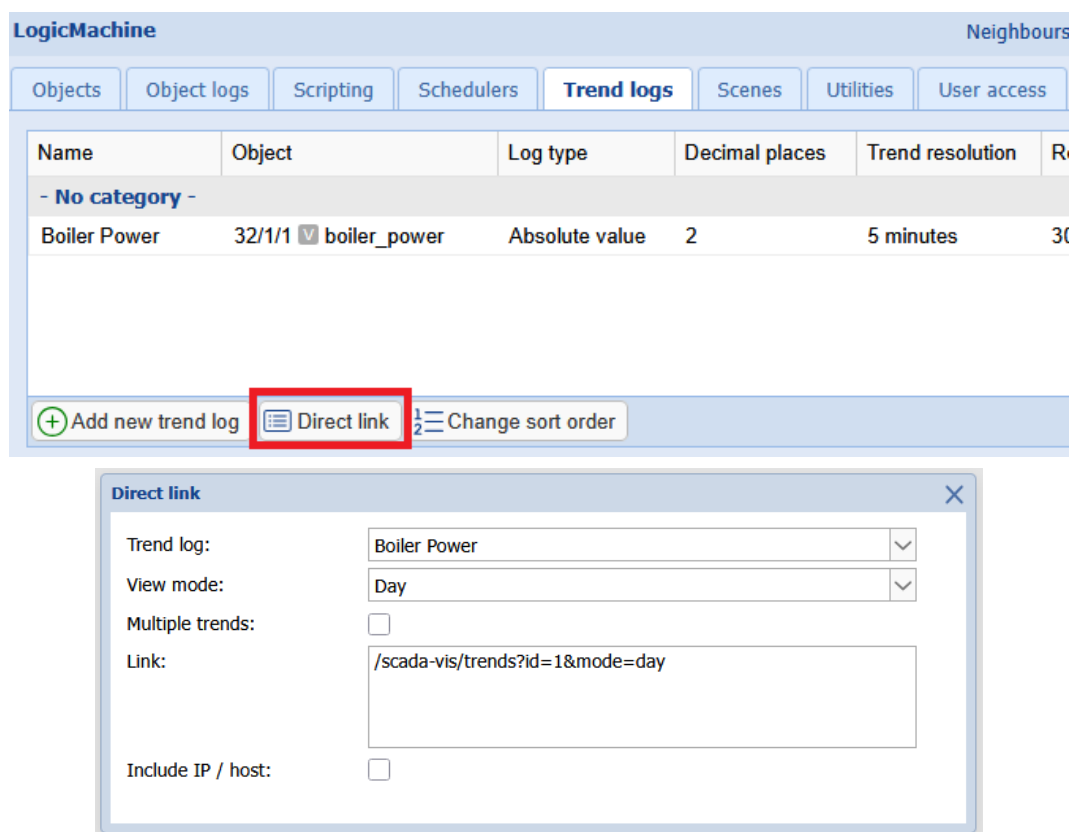
- *Object* - object which value is used as trend data source
- *Name* - name of the trend
- *Category* - category of the trend
- *Log type* [Counter, Counter with negative delta, Absolute value] - type of the log. Counter type is used for metering data which is always growing (electricity,

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

4.5.2. Direct link (admin interface)

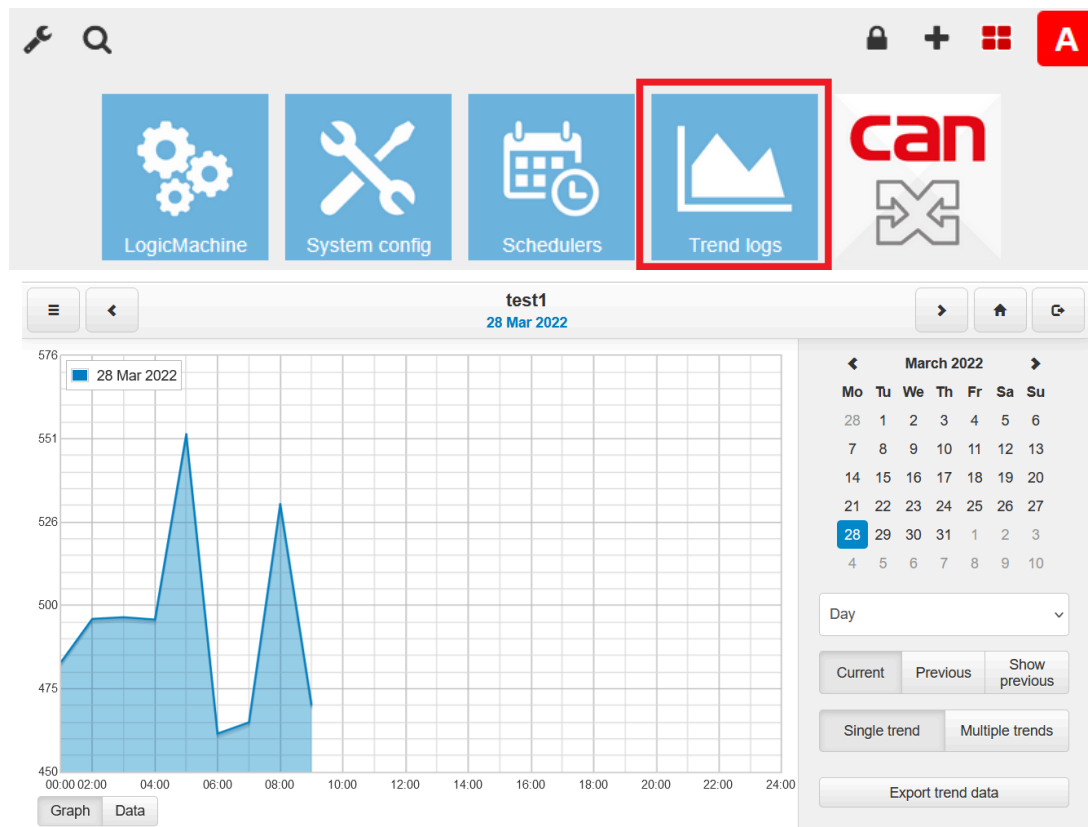
To get a direct link to a specific trend log click *Direct link*.




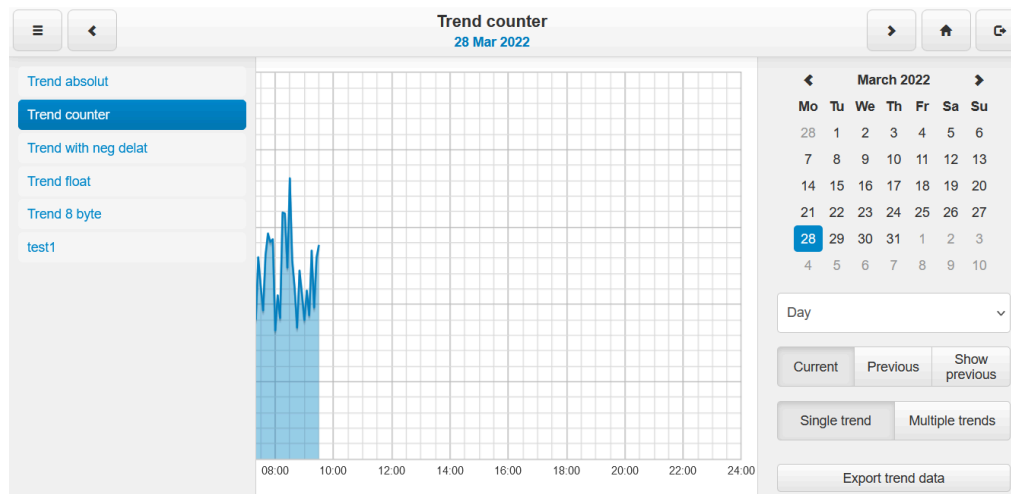
4.5.3. Trend log functions for scripts

kb.logicmachine.net/libraries/trends/

4.5.4. Trend log example (user interface)

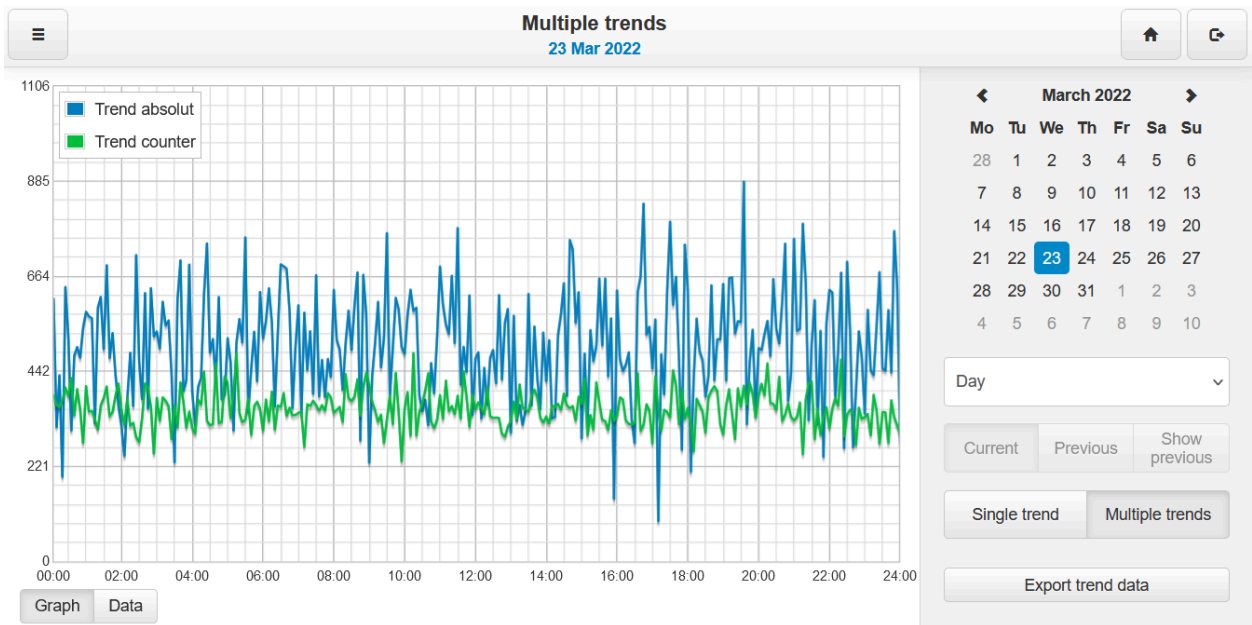


Click *Menu*  to select which trend log to view. In *Multiple trends* view click each trend to toggle its display.



- *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



Click *Data* to view trend data in a table view.

Trend absolut
23 Mar 2022 / 28 Mar 2022

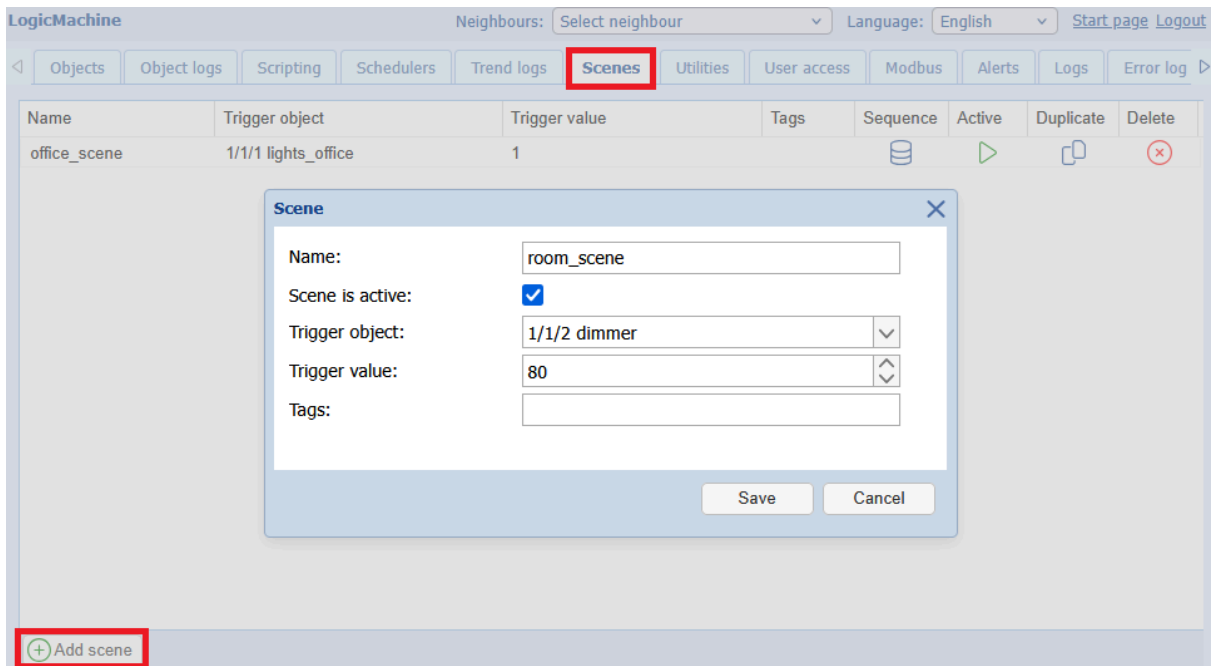
Time	Value 1	Value 2
00:05	613.6	458
00:10	313.2	500.4
00:15	433.2	571.6
00:20	196.8	561.2
00:25	638.8	417.2
00:30	524.4	548.4
00:35	305	453
00:40	479.4	364.8
00:45	499.2	390.2
00:50	474.6	716.6
00:55	545	474.4
01:00	581.2	343.2
01:05	570.6	205.2
01:10	565.8	460

Right sidebar controls (identical to the graph view):

- Calendar: March 2022 (23 is selected)
- Day: [Dropdown]
- Buttons: Current, Previous, Show previous
- Toggles: Single trend, Multiple trends
- Export trend data


4.6. Scenes

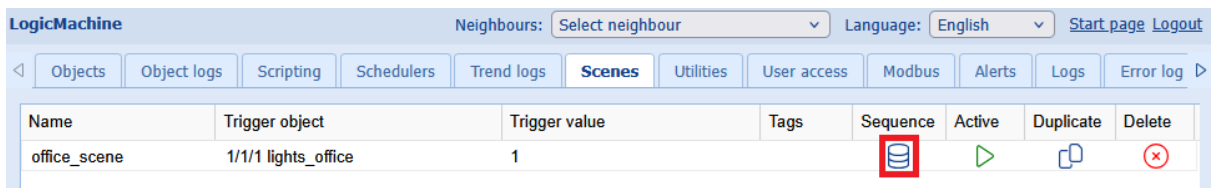
4.6.1. Add a scene

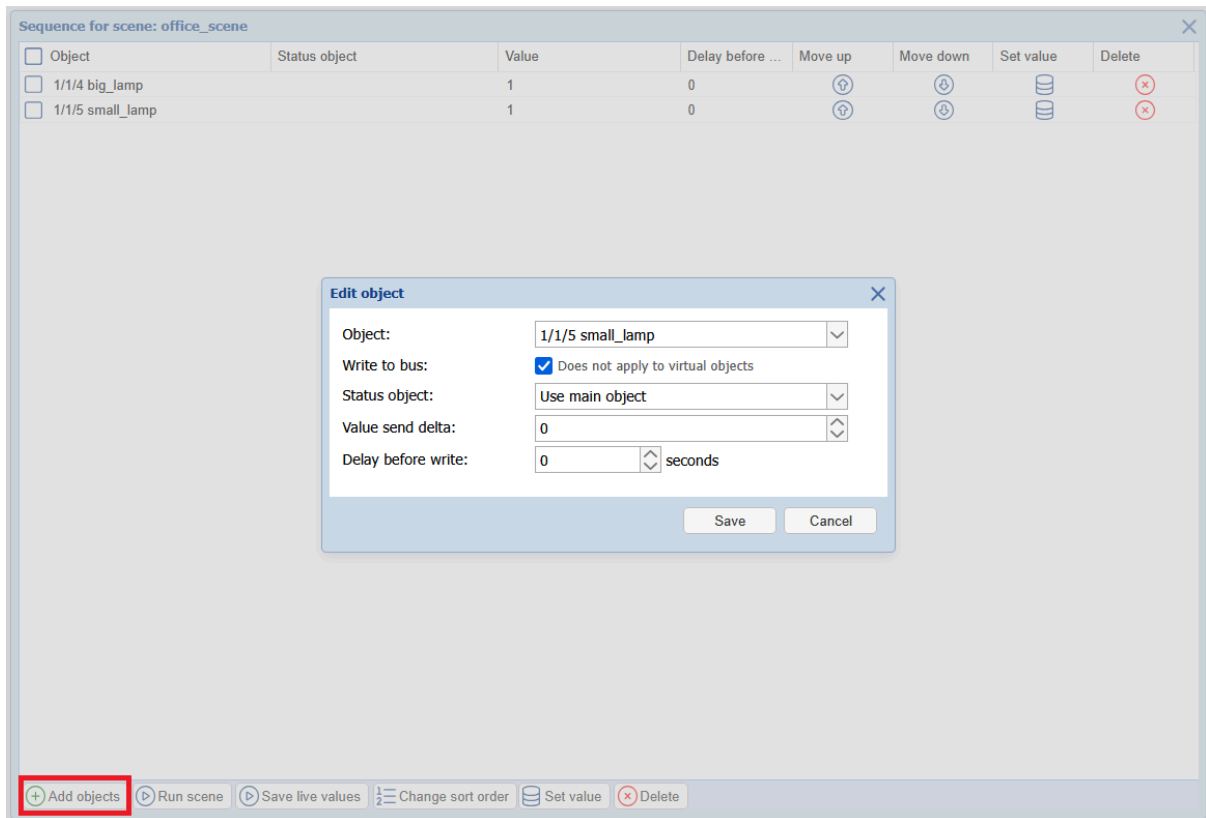


- *Name* - name for the scene
- *Scene is active* - whether the scene is active
- *Trigger object* - object that triggers the scene
- *Trigger value* - object value that triggers the scene
- *Tags* - tags of the scene, can be used in scripts to run multiple scenes

4.6.2. Add objects to the scene sequence

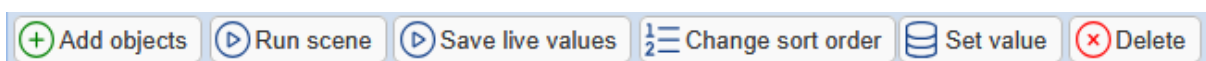
Click *Sequence*  to add objects that will be controlled by the scene





- *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
- *Value send delta* - a new value is only sent if the absolute difference between it and the last updated value is greater than this delta
- *Delay before write* - delay in seconds before the object value is written

4.6.3. Scene sequence toolbar



- *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
- *Set value* - set value for a selected objects
- *Delete* - delete selected objects from the sequence

4.7. Visualization structure

See 2024 manuals

4.8. Visualization

See 2024 manuals

4.9. Visualization graphics

See 2024 manuals

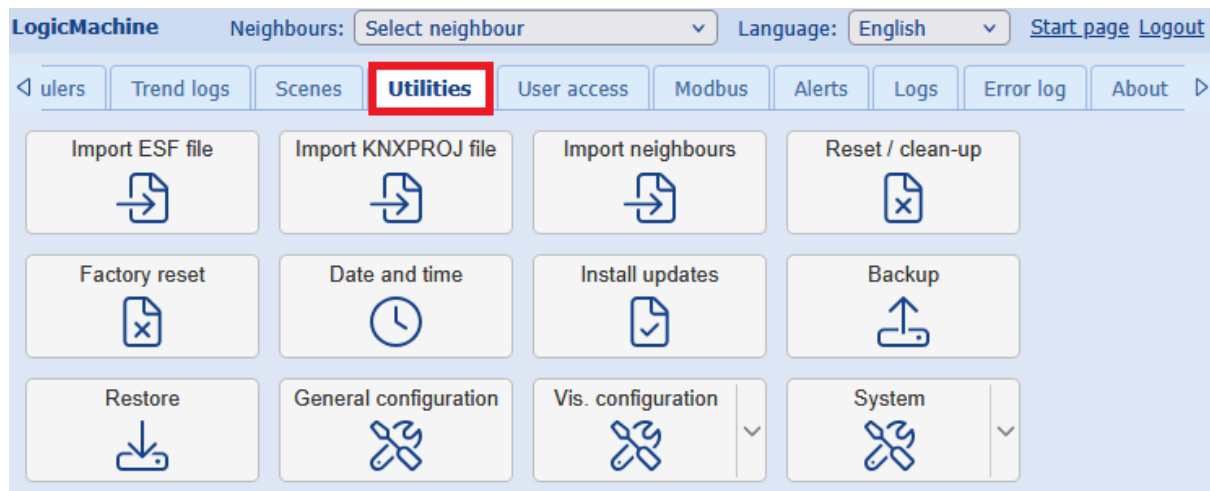
To **enable** *Visualization structure / Visualization / Visualization graphics* following script should be executed once:

```
require('uci')
uci.delete('genohm-scada.core.visdisabled=0')
uci.commit('genohm-scada.core')
```

To **disable** *Visualization structure / Visualization / Visualization graphics* following script should be executed once:

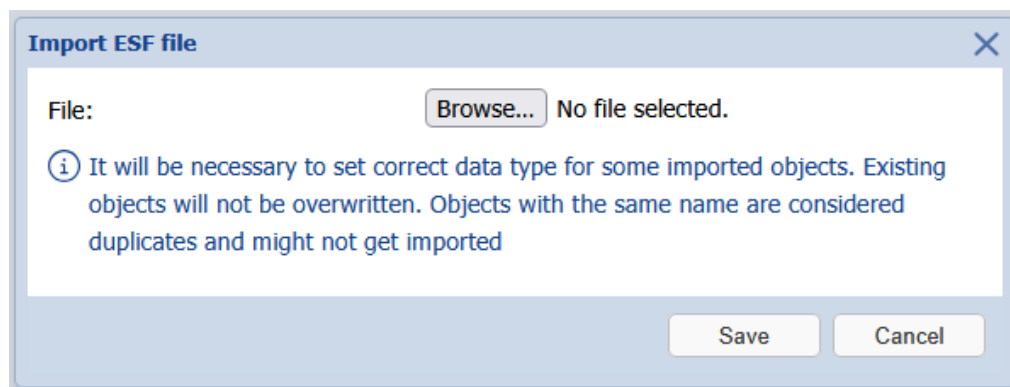
```
require('uci')
uci.set('genohm-scada.core.visdisabled=1')
uci.commit('genohm-scada.core')
```

4.10. Utilities

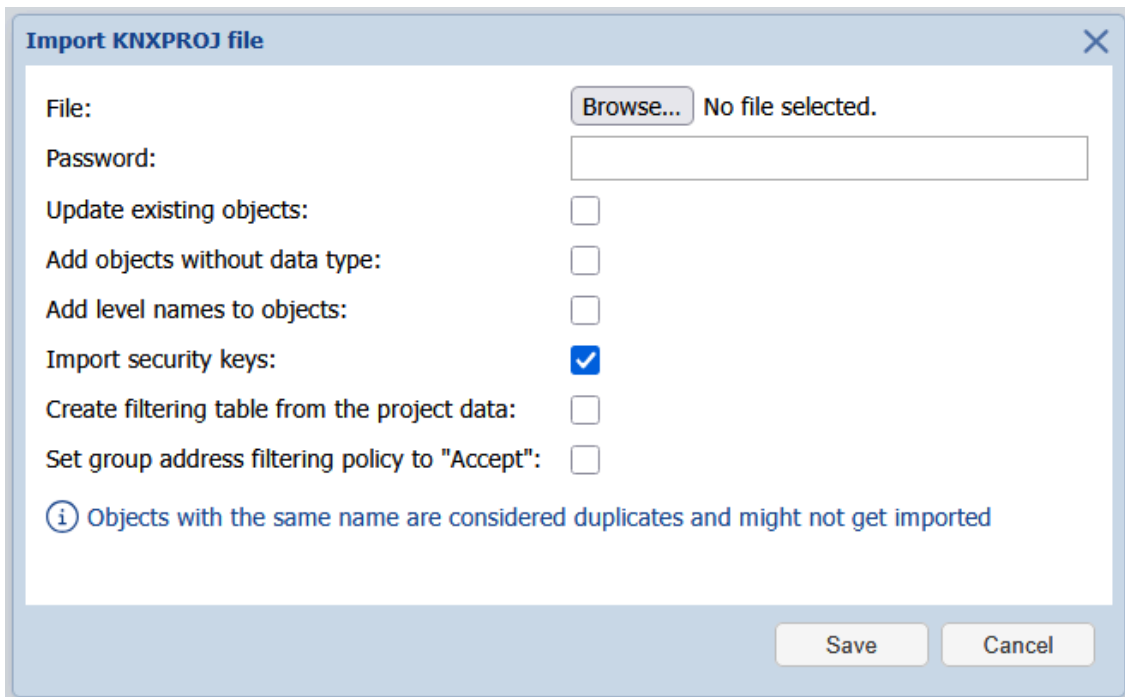


4.10.1. Import ESF file

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.



4.10.2. Import KNXPROJ file



The dialog box titled "Import KNXPROJ file" contains the following fields and options:

- File:** A text field with a "Browse..." button and the text "No file selected."
- Password:** A text field.
- Update existing objects:** A checkbox.
- Add objects without data type:** A checkbox.
- Add level names to objects:** A checkbox.
- Import security keys:** A checked checkbox.
- Create filtering table from the project data:** A checkbox.
- Set group address filtering policy to "Accept":** A checkbox.

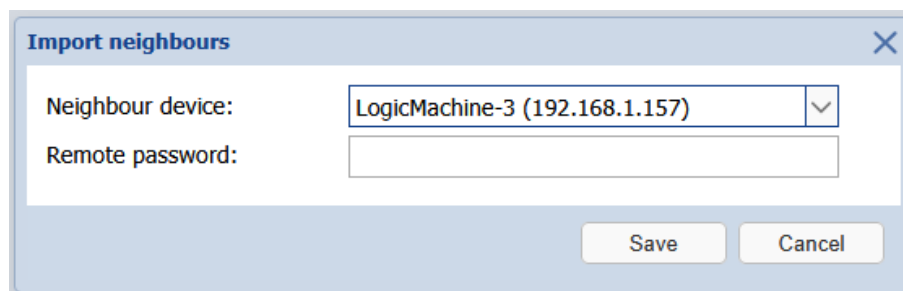
Below the checkboxes, there is an information icon and the text: "Objects with the same name are considered duplicates and might not get imported".

At the bottom right, there are "Save" and "Cancel" buttons.

- *Password* - ETS project password (optional)
- *Update existing objects* - updates existing objects
- *Add objects without data type* - whether to import objects that do not 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*
- *Import security keys* - for KNX secure communication
- *Create filtering table from the project data* - creates a filtering table to control which group address telegrams are allowed to pass
- *Set group address filtering policy to "Accept"* - telegrams with group addresses not included in the filtering table may be blocked, depending on the filtering configuration

4.10.3. Import neighbours

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



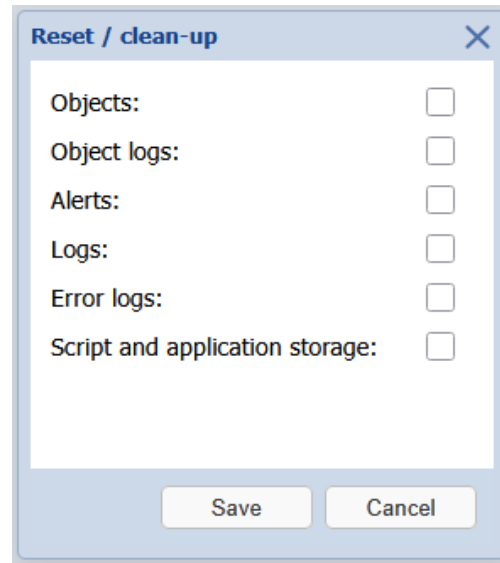
The dialog box titled "Import neighbours" contains the following fields:

- Neighbour device:** A dropdown menu showing "LogicMachine-3 (192.168.1.157)".
- Remote password:** A text field.

At the bottom right, there are "Save" and "Cancel" buttons.

4.10.4. Reset / clean-up

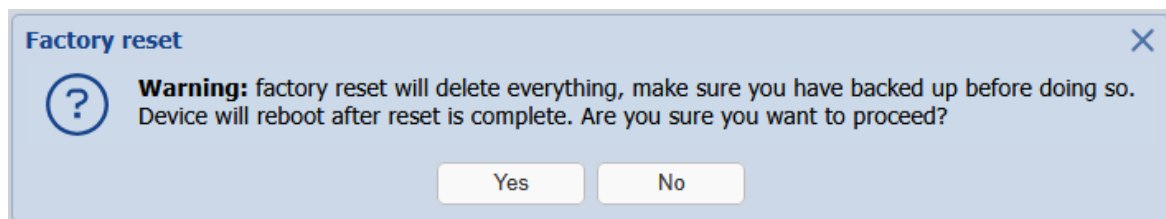
Use *Reset / clean-up* to delete certain system



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

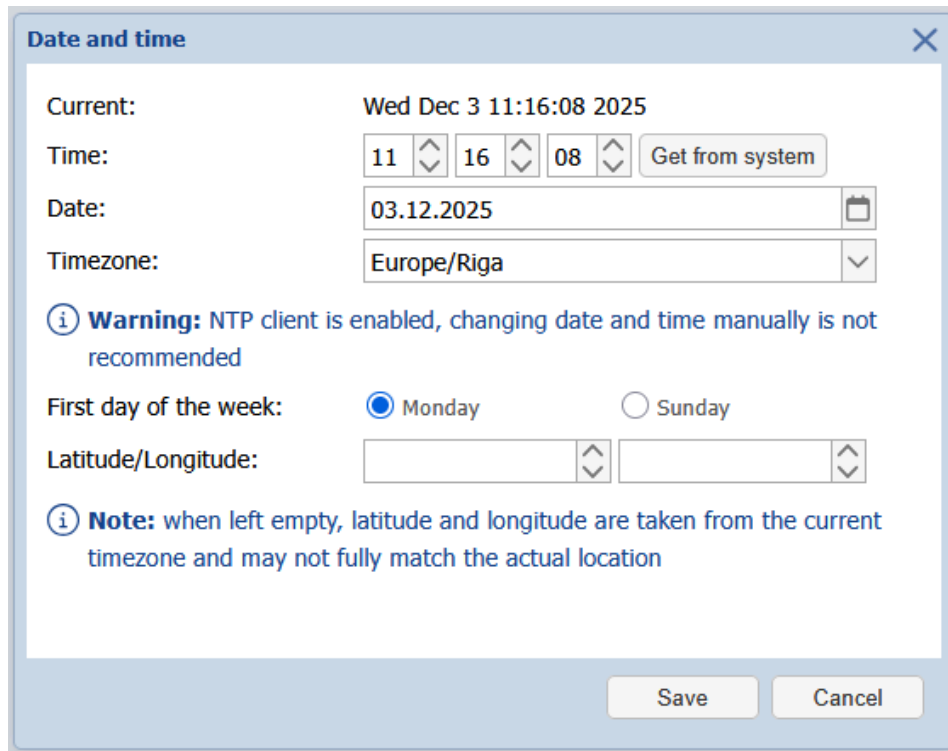
4.10.5. Factory reset

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



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.



Date and time

Current: Wed Dec 3 11:16:08 2025

Time: 11 16 08

Date: 03.12.2025

Timezone: Europe/Riga

Warning: NTP client is enabled, changing date and time manually is not recommended

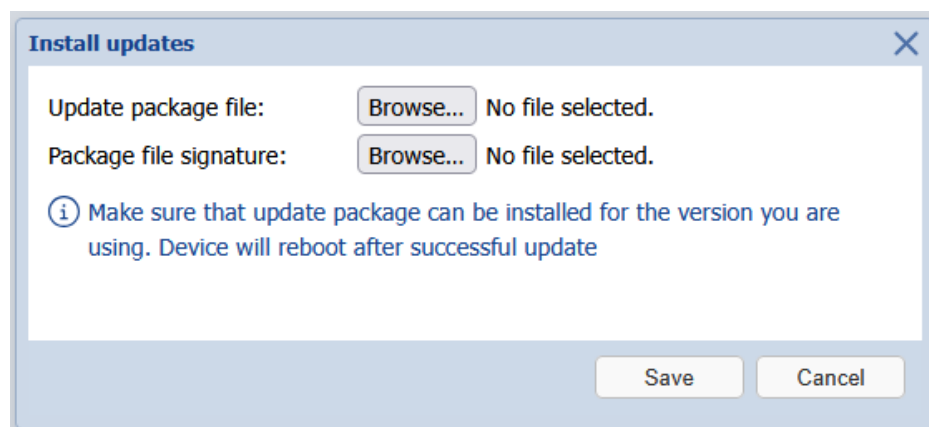
First day of the week: ☒ Monday ☐ Sunday

Latitude/Longitude:

Note: when left empty, latitude and longitude are taken from the current timezone and may not fully match the actual location

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.



Install updates

Update package file: No file selected.

Package file signature: No file selected.

Make sure that update package can be installed for the version you are using. Device will reboot after successful update

4.10.8. Backup

Perform project backup as a single archive.



Backup

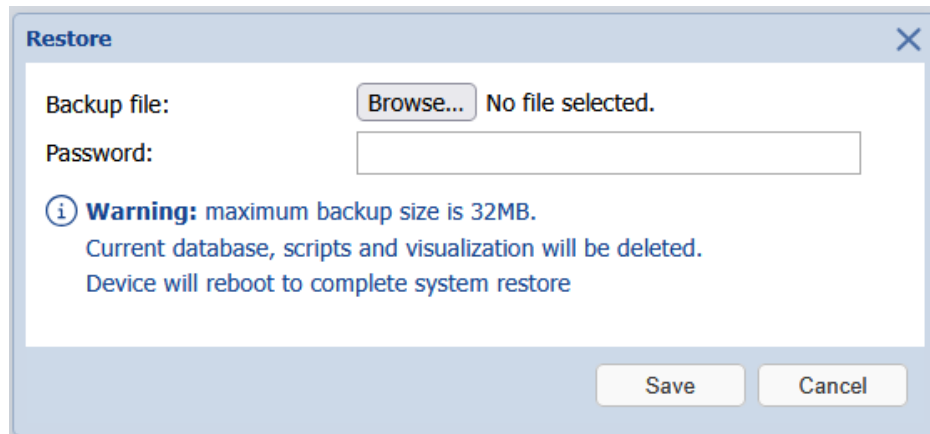
Password (optional):

Repeat password:

An optional password for the backup can be added.

4.10.9. Restore

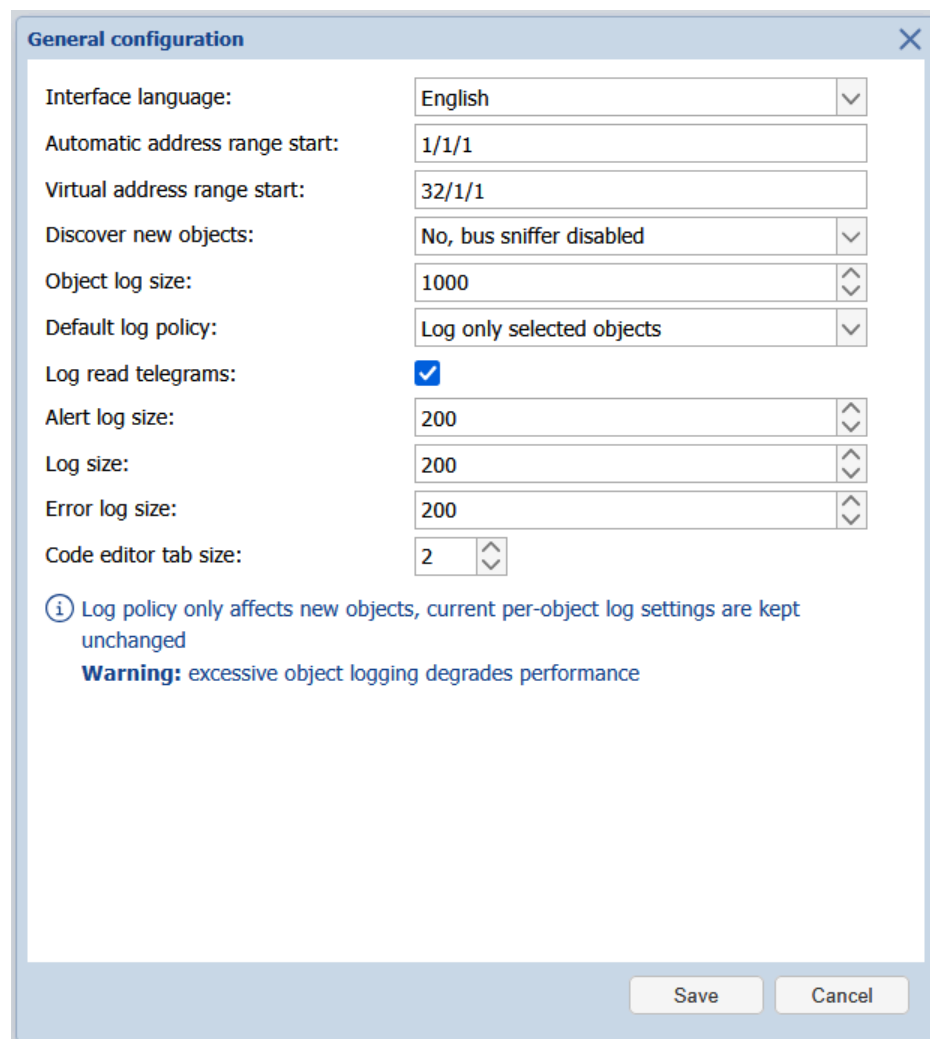
Restore project from a backup. The current project configuration will be overwritten.



The 'Restore' dialog box has a title bar with a close button. It contains a 'Backup file:' label, a 'Browse...' button, and the text 'No file selected.'. Below this is a 'Password:' label and an empty text field. A warning icon (i) is followed by the text: 'Warning: maximum backup size is 32MB. Current database, scripts and visualization will be deleted. Device will reboot to complete system restore'. At the bottom right are 'Save' and 'Cancel' buttons.

If your backup is protected with a password, then you need to fill the *Password* field.

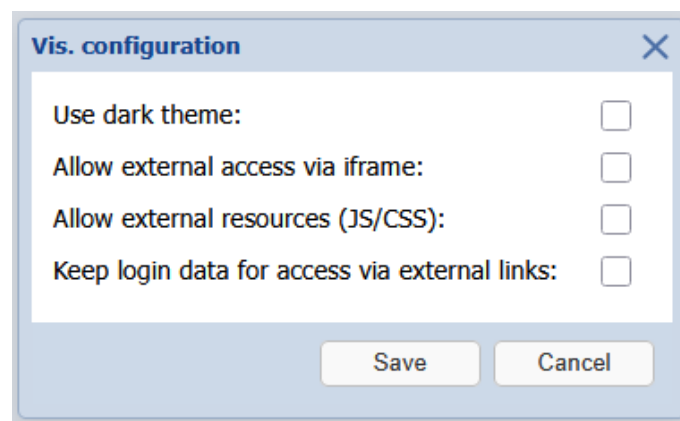
4.10.10. General configuration



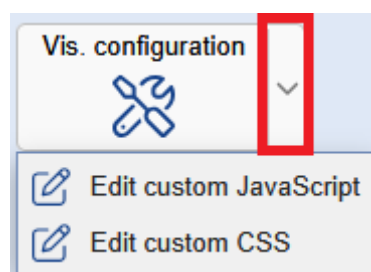
The 'General configuration' dialog box has a title bar with a close button. It contains several settings: 'Interface language:' with a dropdown menu showing 'English'; 'Automatic address range start:' with a text field '1/1/1'; 'Virtual address range start:' with a text field '32/1/1'; 'Discover new objects:' with a dropdown menu showing 'No, bus sniffer disabled'; 'Object log size:' with a text field '1000'; 'Default log policy:' with a dropdown menu showing 'Log only selected objects'; 'Log read telegrams:' with a checked checkbox; 'Alert log size:' with a text field '200'; 'Log size:' with a text field '200'; 'Error log size:' with a text field '200'; and 'Code editor tab size:' with a text field '2' and up/down arrow buttons. A warning icon (i) is followed by the text: 'Log policy only affects new objects, current per-object log settings are kept unchanged' and 'Warning: excessive object logging degrades performance'. At the bottom right are 'Save' and 'Cancel' buttons.

- *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

4.10.11. Visualization configuration



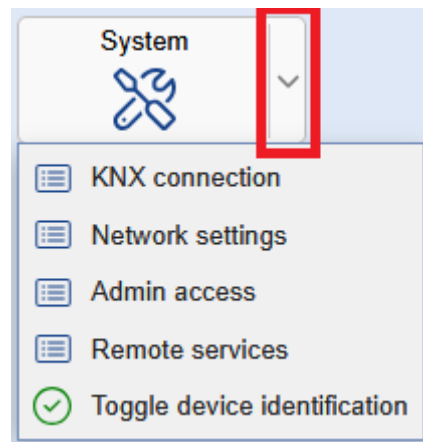
- *Use dark theme* - dark theme for Visu
- *Allow external access via iframe* - allow the pages of one LogicMachine to be embedded into the Visu of another LogicMachine
- *Allow external resources (JS/CSS)* - external resources (JS/CSS) for Visu
- *Keep login data for access via external links* - allows saving of login credentials when LM is accessed via an external link (for example from Visualization on another LM)



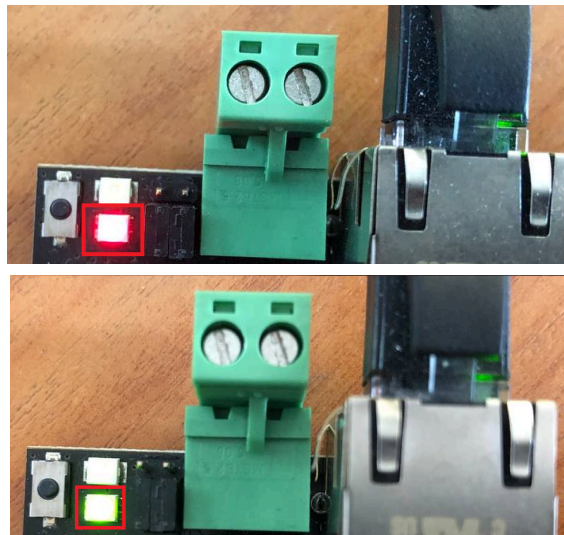
- *Edit custom JavaScript* - custom JavaScript for Visu
- *Edit custom CSS* - custom CSS for Visu

4.10.12. System

Quick access to certain *System configuration* settings.



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



4.11. User access

LogicMachine

Neighbours:

Select neighbour

Language:

English

[Start page](#)

[Logout](#)

logs

Scripting

Schedulers

Trend logs

Scenes

Utilities

User access

Modbus

Alerts

Logs

Error log

About

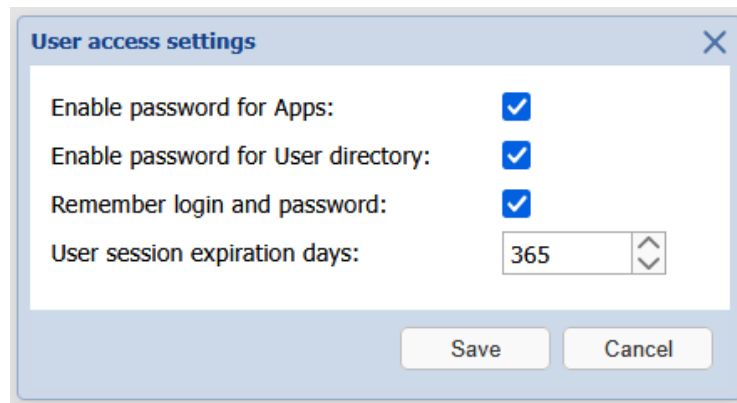
Name	Login	Visu access	Schedulers access	Trends access	Apps access	Active	Duplicate	Delete
user	user	Full	Full	Full	Full			

Add new user

User access settings

Access logs

4.11.1. User access settings



- *Enable password for Apps* - enable password for the main application page
- *Enable password for User directory* - enable password access for the user directory
- *Remember login 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 session 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. Visit our forum for examples: forum.logicmachine.net

4.11.3. Adding users

The screenshot shows a 'User' configuration window with the following fields and values:

Field	Value
Name:	user
Login:	user
Cloud login (e-mail):	
Active:	<input checked="" type="checkbox"/>
Password:	
Repeat password:	
Visu access:	Partial
Schedulers access:	Partial
Trends access:	Partial
Apps access:	Partial
Mosaic access:	Partial
Homepage:	Default homepage

- *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
- *Visu access* [None, Partial, Full] - Visu 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
- *Homepage* - default page that is shown after a user is logged in; it can be the *Default homepage*, *Visu*, *Visu (admin)*, *Schedulers*, *Trend logs* or any of the installed applications

Access rights:

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

User [X]

General **Visu** Schedulers Trend logs Apps Mosaic Advanced

- ☒ Home
 - ☒ Kitchen
 - ☒ Office
 - ☐ Bedroom

Save Cancel

User [X]

General Visu **Schedulers** Trend logs Apps Mosaic Advanced

- ☒ lamp
- ☐ Holidays

User [X]

General Visu Schedulers **Trend logs** Apps Mosaic Advanced

- ☒ Boiler Power

User [X]

General Visu Schedulers Trend logs **Apps** Mosaic Advanced

- ☒ CANx
- ☐ LogicMachine Cloud
- ☒ Mosaic 3.0
- ☐ Mosaic 3.0 (Admin)
- ☒ Visu
- ☐ Visu (Admin)

User [X]

General Visu Schedulers Trend logs Apps **Mosaic** Advanced

- ☐ First floor
 - ☒ Kitchen
 - ☐ Bedroom

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.

User

General

Visu

Schedulers

Trend logs

Apps

Mosaic

Advanced

Group address access list:

i

For improved security you can provide a list of group addresses that a user can access.
User can access all groups addresses if this list is empty.
One entry per line. Example line format:
1/1/1
2/1/*
3/4/15-3/4/64

Save

Cancel

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.

Access logs

Login	Name	IP address	Accessed at
admin		192.168.1.155	03.12.2025 10:44:48
admin		192.168.1.155	03.12.2025 10:36:55
admin		192.168.1.155	03.12.2025 10:20:28

4.12. Modbus master (RTU/TCP)

LogicMachine

Neighbours:

Select neighbour

 Language:

English

Start page

Logout

Object logs

Scripting

Schedulers

Trend logs

Scenes

Utilities

User access

Modbus

Alerts

Logs

Error log

About

Name	Profile	Status object	Connection type	Device address	Poll interval	Config	Mapping	Delete

+

Add device

⚙

RTU settings

⚙

RTU scan

⚙

Read test

📄

Profiles

📄

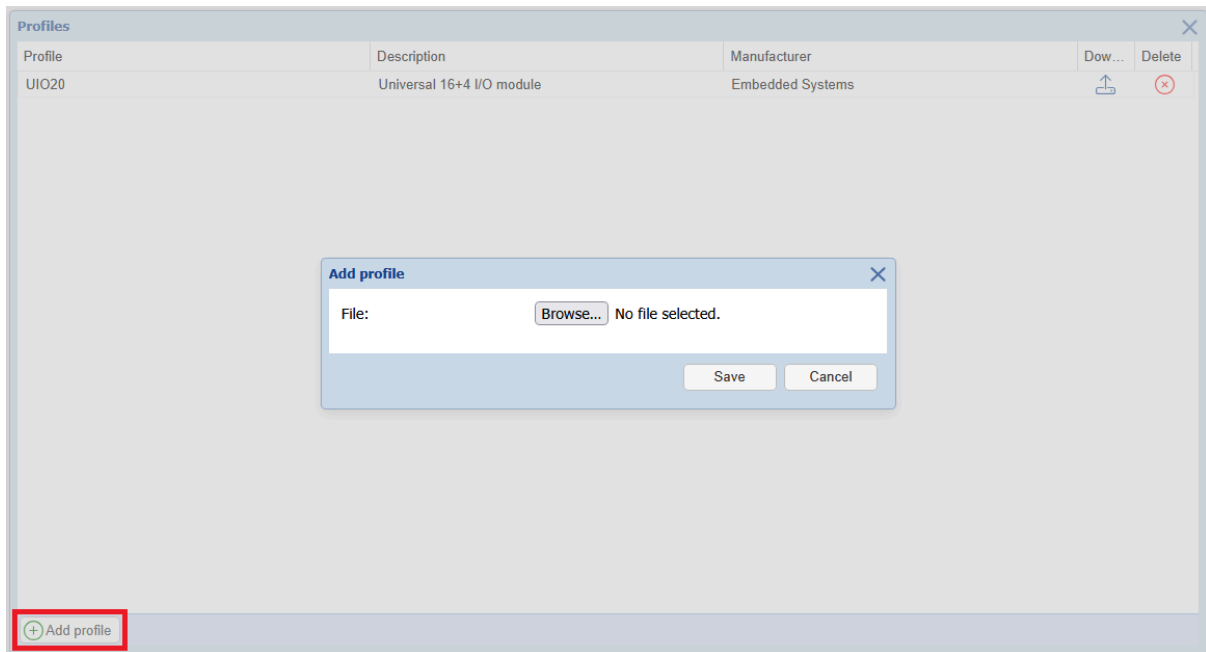
Error log

4.12.1. Modbus devices profile

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

Profile format description: kb.logicmachine.net/misc/modbus-profile/

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



Note! Device entry must be created from scratch when an updated profile is added.

4.12.2. RTU settings

Up to three different RTU connections can be defined.

The screenshot shows a dialog box titled "RTU settings" with a close button (X) in the top right corner. It contains three sections for configuring RTU connections: RTU 1, RTU 2, and RTU 3. Each section has a "RTU (serial) enabled:" checkbox, a "Port:" text field, a "Baud rate:" dropdown menu, a "Parity:" dropdown menu, and a "Duplex:" section with radio buttons for "Half-duplex" and "Full-duplex".

RTU 1

RTU (serial) enabled: ☒

Port:

Baud rate:

Parity:

Duplex: ☒ Half-duplex ☐ Full-duplex

(i) Leave port empty for automatic detection

RTU 2

RTU (serial) enabled: ☐

Port:

Baud rate:

Parity:

Duplex: ☒ Half-duplex ☐ Full-duplex

RTU 3

RTU (serial) enabled: ☐

Port:

Baud rate:

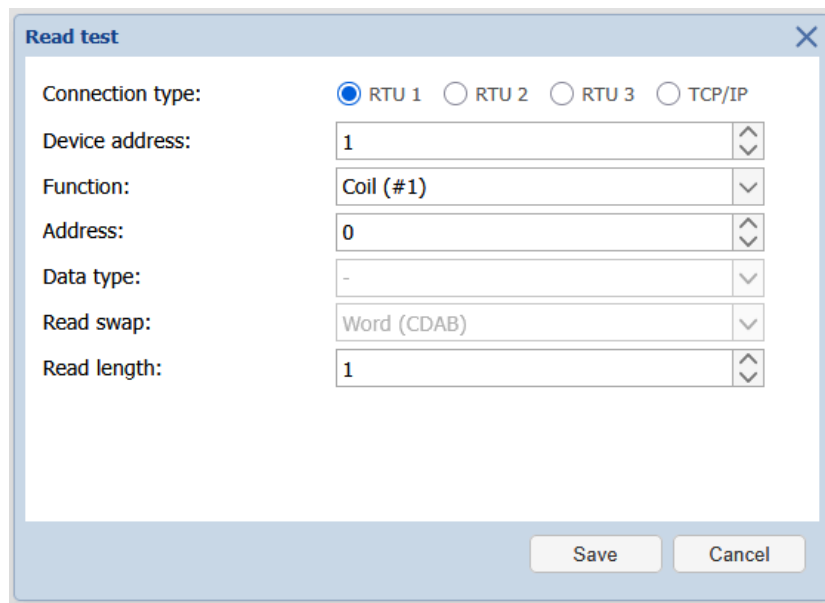
Parity:

Duplex: ☒ Half-duplex ☐ Full-duplex

- *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

4.12.3. Read test

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



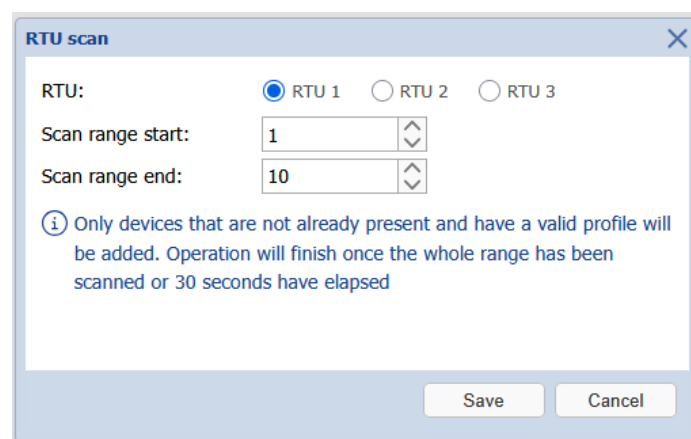
The 'Read test' dialog box contains the following fields and controls:

- Connection type:** Radio buttons for RTU 1 (selected), RTU 2, RTU 3, and TCP/IP.
- Device address:** A numeric input field with the value 1.
- Function:** A dropdown menu with 'Coil (#1)' selected.
- Address:** A numeric input field with the value 0.
- Data type:** A dropdown menu with '-' selected.
- Read swap:** A dropdown menu with 'Word (CDAB)' selected.
- Read length:** A numeric input field with the value 1.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom right.

- *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 (BADCB), Byte and word (DCBA))* - sets word/byte order
- *Read length* - number of registers/coil to read, disabled when a predefined data type is selected

4.12.4. 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.

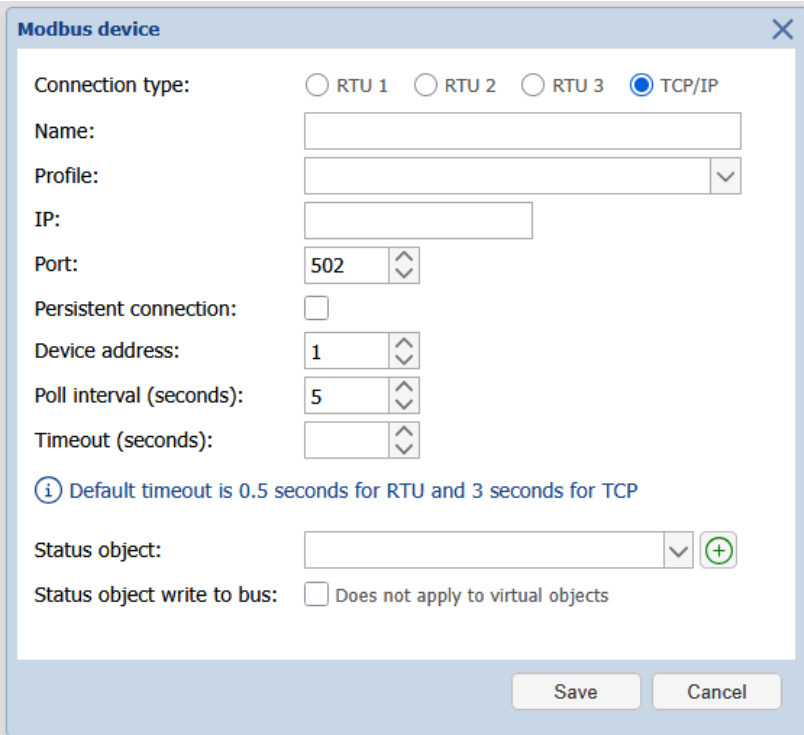


The 'RTU scan' dialog box contains the following fields and controls:

- RTU:** Radio buttons for RTU 1 (selected), RTU 2, and RTU 3.
- Scan range start:** A numeric input field with the value 1.
- Scan range end:** A numeric input field with the value 10.
- Information:** A blue information icon followed by the text: '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'.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom right.

4.12.5. Adding Modbus device

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



The screenshot shows a 'Modbus device' configuration window. It has a title bar with a close button. Inside, there are several fields and options: 'Connection type' with radio buttons for RTU 1, RTU 2, RTU 3, and TCP/IP (selected); 'Name' with a text input; 'Profile' with a dropdown menu; 'IP' with a text input; 'Port' with a spinner box set to 502; 'Persistent connection' with a checkbox; 'Device address' with a spinner box set to 1; 'Poll interval (seconds)' with a spinner box set to 5; 'Timeout (seconds)' with a spinner box; an information icon and text stating 'Default timeout is 0.5 seconds for RTU and 3 seconds for TCP'; 'Status object' with a dropdown menu and a green plus icon; and 'Status object write to bus' with a checkbox and the text 'Does not apply to virtual objects'. At the bottom right are 'Save' and 'Cancel' buttons.

- *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:
 - o IP - IP address of the Modbus device
 - o Port - communication port of the Modbus device
 - o *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

4.12.6. Object mapping

Clicking the  icon to map Modbus data points to objects.

Object mapping for UIO20				
<input type="checkbox"/> Name	Linked to object	Current value	Type	Del
<input type="checkbox"/> UIO20 - Output 1	47/1/1 <input type="checkbox"/> UIO20 - O...	0	Coil: 0	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 2	47/1/2 <input type="checkbox"/> UIO20 - O...	0	Coil: 1	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> UIO20 - Output 3			Coil: 2	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> UIO20 - Output 4			Coil: 3	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 5			Coil: 4	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 6			Coil: 5	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 7			Coil: 6	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 8			Coil: 7	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 9			Coil: 8	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 10			Coil: 9	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 11			Coil: 10	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 12			Coil: 11	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 13			Coil: 12	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 14			Coil: 13	<input checked="" type="checkbox"/>
<input type="checkbox"/> UIO20 - Output 15			Coil: 14	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Map selected items to objects				

You can mass map the objects, by selecting the required data points and clicking

☒ Map selected items to objects

Select the starting group address. The data points will be mapped to objects using the same sequence as in the mapping table.

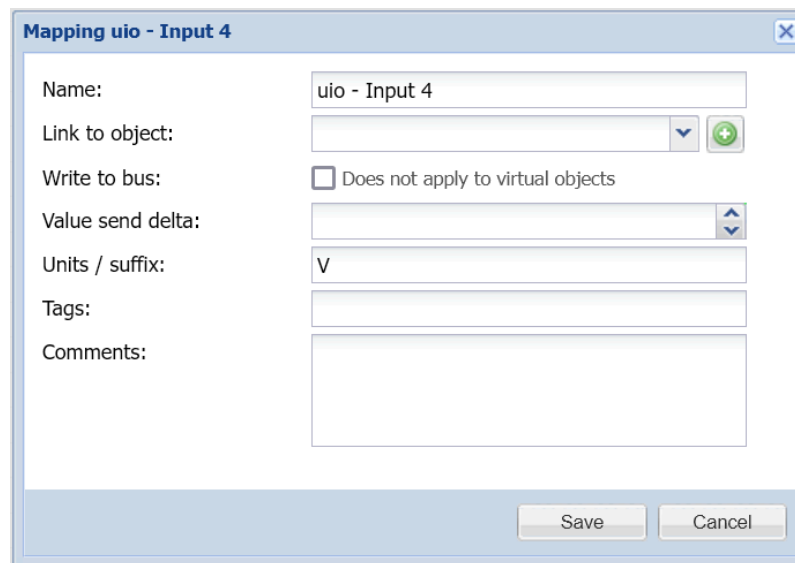
Map selected items to objects

Starting group address

32/1/5

OKCancel

Click on a specific object to perform mapping and configuration.



The image shows a dialog box titled "Mapping uio - Input 4". It contains several fields for configuration:

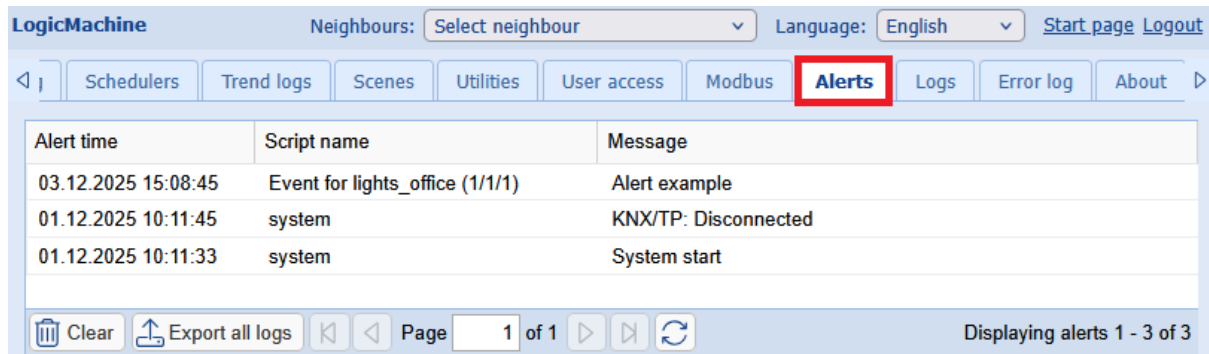
- Name:** A text field containing "uio - Input 4".
- Link to object:** A dropdown menu with a green plus icon to the right.
- Write to bus:** A checkbox labeled "Does not apply to virtual objects".
- Value send delta:** A text field with up and down arrow buttons on the right.
- Units / suffix:** A text field containing "V".
- Tags:** A text field.
- Comments:** A large text area.

At the bottom right, there are "Save" and "Cancel" buttons.

- *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

4.13. Alerts

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

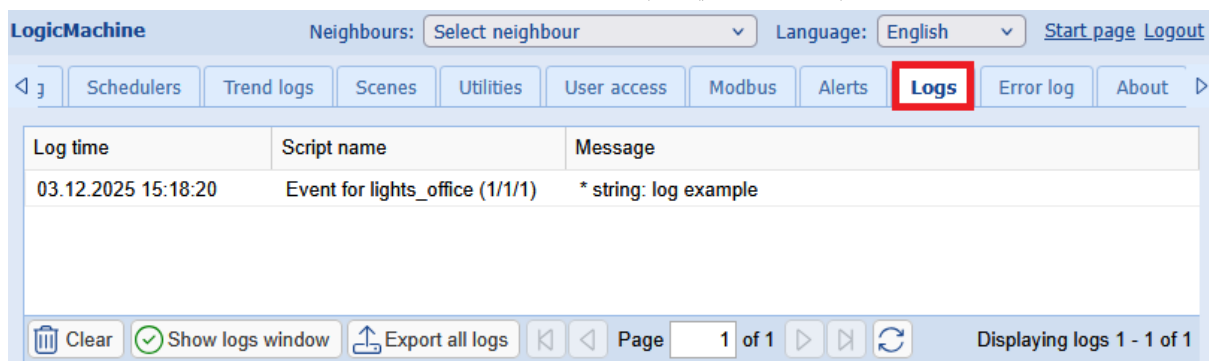


Alert time	Script name	Message
03.12.2025 15:08:45	Event for lights_office (1/1/1)	Alert example
01.12.2025 10:11:45	system	KNX/TP: Disconnected
01.12.2025 10:11:33	system	System start

Clear Export all logs Page 1 of 1 Displaying alerts 1 - 3 of 3

4.14. Logs

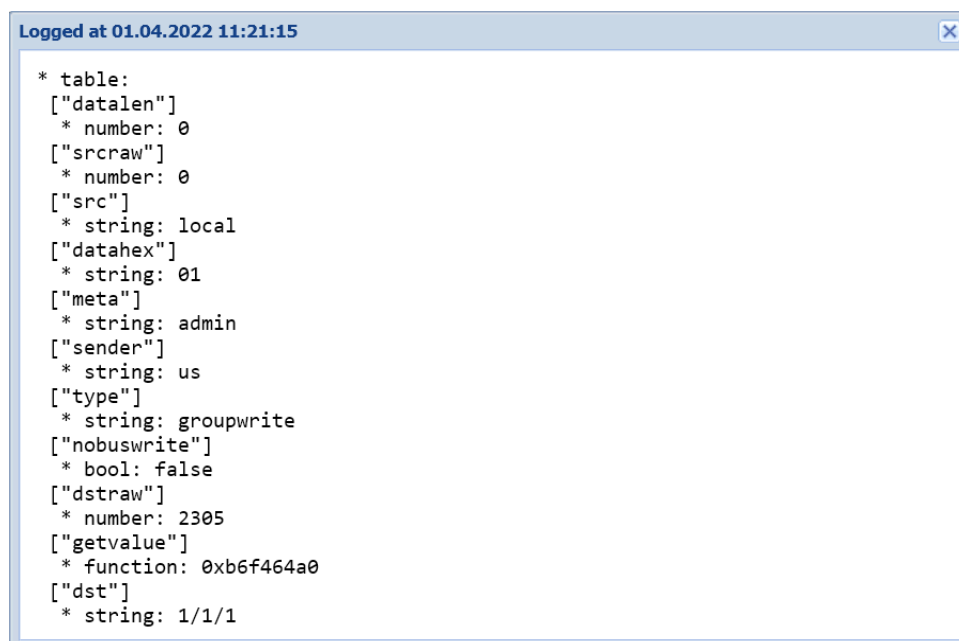
Contains a list of log messages from scripts (*log()* function).



Log time	Script name	Message
03.12.2025 15:18:20	Event for lights_office (1/1/1)	* string: log example

Clear Show logs window Export all logs Page 1 of 1 Displaying logs 1 - 1 of 1

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

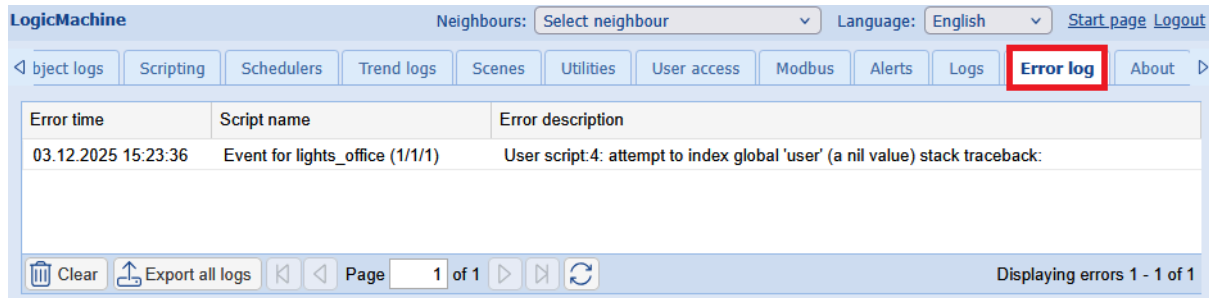


```
Logged at 01.04.2022 11:21:15

* table:
  ["datalen"]
  * number: 0
  ["srcraw"]
  * number: 0
  ["src"]
  * string: local
  ["datahex"]
  * string: 01
  ["meta"]
  * string: admin
  ["sender"]
  * string: us
  ["type"]
  * string: groupwrite
  ["nobuswrite"]
  * bool: false
  ["dstraw"]
  * number: 2305
  ["getvalue"]
  * function: 0xb6f464a0
  ["dst"]
  * string: 1/1/1
```

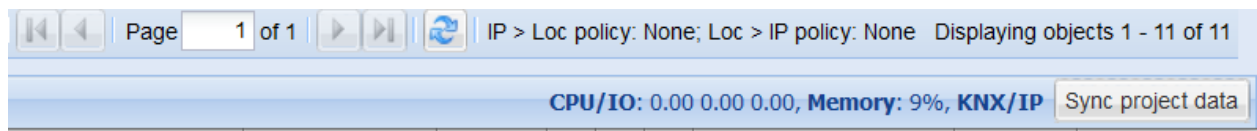
4.15. Error log

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



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

4.16. User Interface status information



- *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!

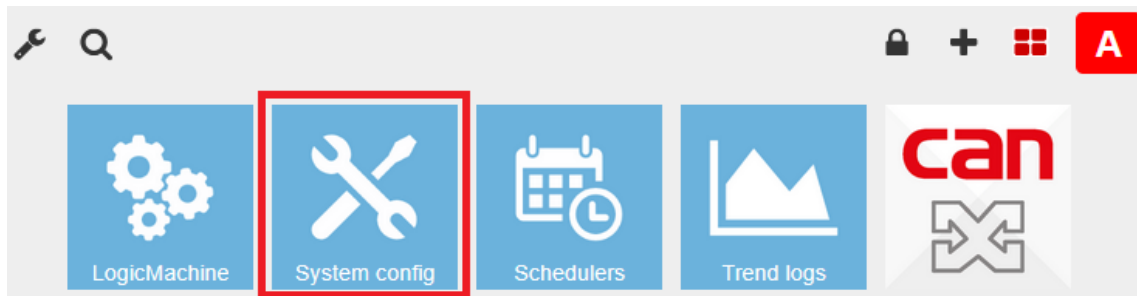
More on UNIX style load calculation can be found here:

[http://en.wikipedia.org/wiki/Load_\(computing\)#Unix-style_load_calculation](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

5. System configuration

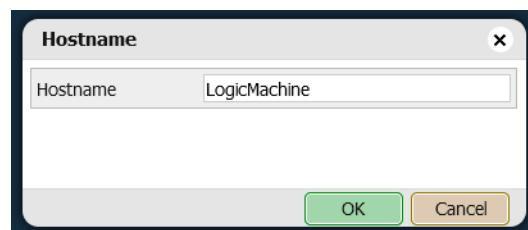
System configuration allows changing system parameters, configure services, upgrade firmware and check system status.



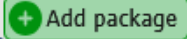
5.1. System

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.



5.1.2. Packages

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

Packages		
^ Package name	• Version	
avahi-browse	0.8-9	×
avahi-compat-libdns_sd	0.8-9	×
avahi-dbus-daemon	0.8-9	×
bacnet-r22	20250707	×
base-files	20240924	×
busybox	1.36.1-3	×
dbus	1.15.8-1	×
dot1x	20231124	×
dropbear	2025.88-1	×
e2fsprogs	1.47.2-1	×
eibd	20250213	×
flashsys2	202500807	×
genohm-scada	20251120	×
genohm-scada-modbus	20250925	×
gpiod	20210928	×
hotplug2	1.0-4	×
+ Add package		

5.1.3. Admin access

Allows changing the *admin* user password.

Admin access

Loginadmin

Current password

New password

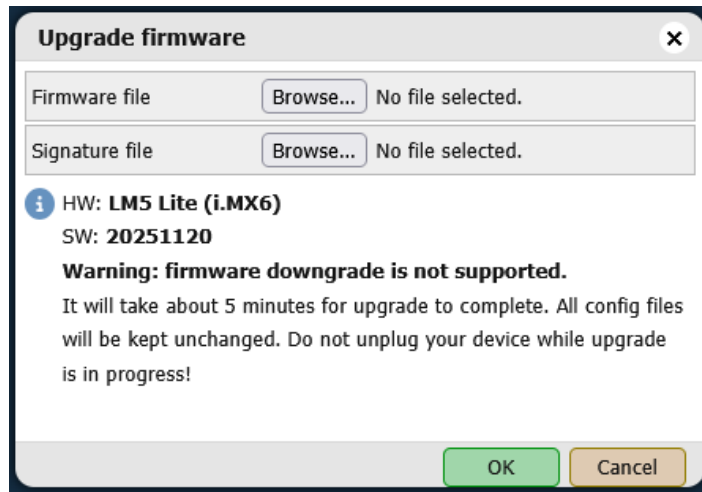
Repeat password

OK

Cancel

5.1.4. Upgrade firmware

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

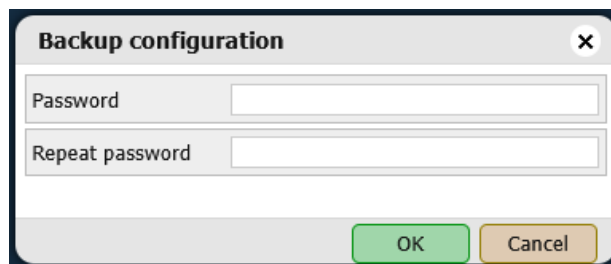


Note! It is recommended to perform a project backup in *LogicMachine* → *Utilities* → *Backup* before upgrading the firmware.

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

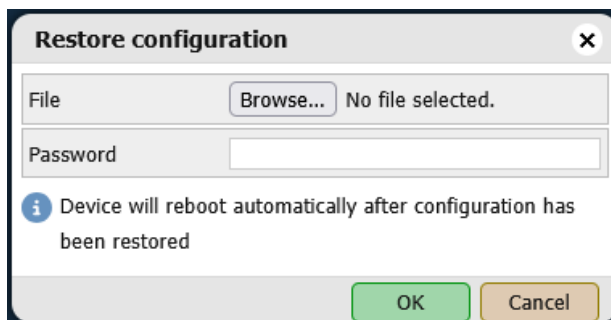
5.1.5. Backup configuration

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



5.1.6. Restore configuration

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



5.1.7. Reboot

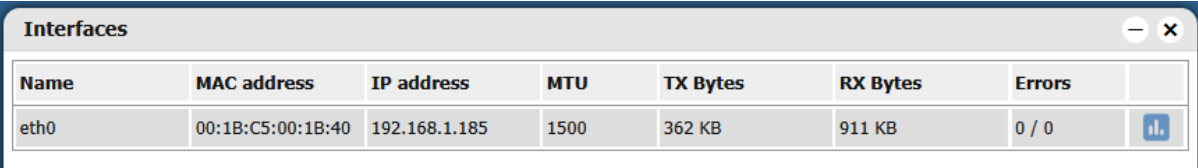
Performs project save to disk and reboots the system.

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.

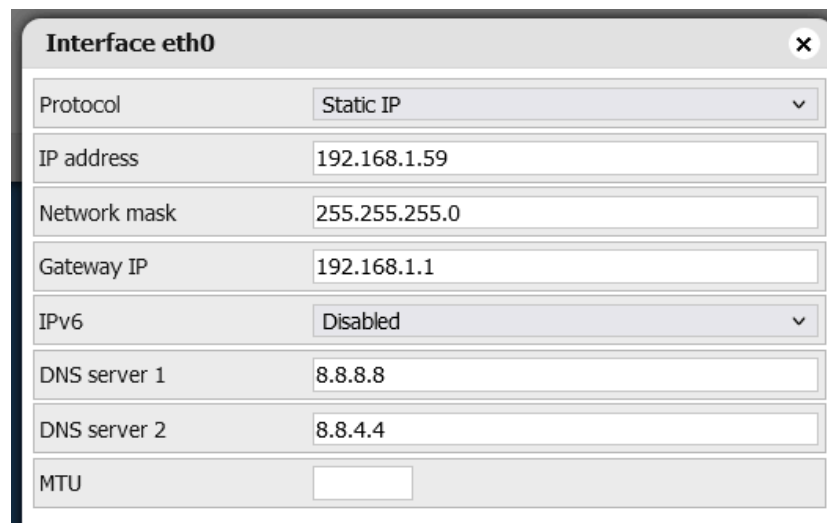
5.2. Network

5.2.1. Interfaces



Name	MAC address	IP address	MTU	TX Bytes	RX Bytes	Errors	
eth0	00:1B:C5:00:1B:40	192.168.1.185	1500	362 KB	911 KB	0 / 0	

Click the interface name to change parameters.



Interface eth0

Protocol: Static IP

IP address: 192.168.1.59

Network mask: 255.255.255.0

Gateway IP: 192.168.1.1

IPv6: Disabled

DNS server 1: 8.8.8.8

DNS server 2: 8.8.4.4

MTU:

- *Protocol*:
 - o *Static IP* - static IP address
 - o *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
- *IPv6* - enable or disable IPv6
- *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)
- Use DHCP NTP servers - accept NTP server addresses from the DHCP server (only in DHCP mode)

Interface eth0

Protocol

DHCP

Current IP

192.168.1.59

Use DHCP NTP servers

☒

IPv6

Enabled

IPv6 address/prefix

IPv6 gateway

Duplicate IP messages

1

DNS server 1

8.8.8.8

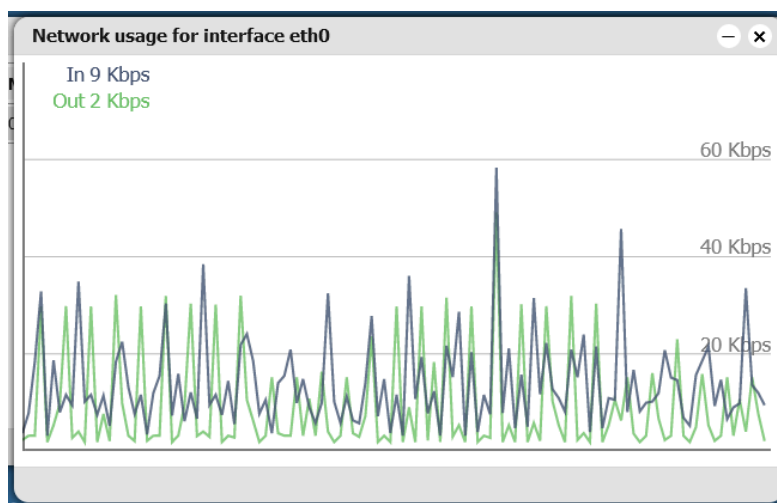
DNS server 2

8.8.4.4

MTU

- IPv6 address/prefix - static IPv6 address and subnet prefix
- IPv6 gateway - gateway IPv6 address
- Duplicate IP messages - how many times the system checks for duplicate addresses before determining if the IPv6 address is unique

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



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

5.2.3. ARP table

Displays a list of known IP and MAC addresses.

ARP table		
• Interface	^ IP address	• MAC address
eth0	192.168.1.1	78:9a:18:23:bc:47
eth0	192.168.1.155	34:60:f9:10:a5:49

5.2.4. KNX connection

KNX connection

GeneralIP > Local filterLocal > IP filter

ModeTP-UART

ACK all group telegrams

KNX address15.15.255

Enable IP Routing

Pass ind. telegrams via IP Routing

Accept IP Tunneling connections

Multicast IP224.0.23.12

Multicast TTL1

Maximum telegrams in queue100

TOS priority level (0 = no priority)0

Backbone key (encryption)

Enable only secure communication

Setting the Backbone key will enable the encryption of routing telegrams. The Key must consist of 32 hexadecimal characters. Reception of normal telegrams will still work. If "only secure communication" is enabled then Tunneling and non-secure Routing will be disabled.

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
- *Enable IP Routing* - turns on routing of KNX group telegrams over IP
- *Pass ind. telegrams via IP Routing* - allows individual device-specific telegrams to be routed over IP; Only telegrams belonging to the same line are accepted (e.g. if LM address is 1.0.255 then only telegrams from the 1.0.x address range are accepted)
- *Accept IP Tunneling connection* - enables external clients to connect to the KNX bus via IP using tunneling
- *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 non-secure 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..

The screenshot shows the 'KNX connection' dialog box with the 'IP > Local filter' tab selected. The dialog has three tabs: 'General', 'IP > Local filter', and 'Local > IP filter'. The 'IP > Local filter' tab contains the following elements:

- 'Apply filter to tunneling': A checkbox that is currently unchecked.
- 'SRC policy': A dropdown menu set to 'No filter'.
- 'Ind. address list': A large empty text area for listing individual addresses.
- Information icon and text: 'One address/range per line. Use * (e.g. 1.1.*) to filter all addresses in the given line.'
- 'DST group policy': A dropdown menu set to 'No filter'.
- 'Group address list': A large empty text area for listing group addresses.
- Information icon and text: 'One address/range per line. Use * (e.g. 1/1/*) to filter all addresses in the given line.'
- Note:** by default Local > IP filter only applies to telegrams from TP connection, unless update telegrams are also filtered.
- Text: Filtering lists are updated at once, changing policies requires restart.
- 'OK' and 'Cancel' buttons at the bottom right.

- *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 *LogicMachine* → *Objects* tab:

LogicMachine Neighbours: Select neighbour Lang

[Objects](#)
[Object logs](#)
[Scripting](#)
[Schedulers](#)
[Trend logs](#)
[Scenes](#)
[Utilities](#)
[User access](#)
[Modbus](#)
[Alerts](#)
[Logs](#)
[Error log](#)

Object filter ⏮

Group address	Object name	IP > Loc filter	Loc > IP filter	Event script	Data type	Current value
1/1/1	lights_office	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		01. 1 bit (...)	0

Name or group address:

5.2.4.2. Local > IP filter

Filtering table for outgoing telegrams to KNX/IP.

KNX connection ✕

[General](#)
[IP > Local filter](#)
[Local > IP filter](#)

Filter local update telegrams ☐

SRC policy No filter ▼

Ind. address list

One address/range per line. Use * (e.g. 1.1.*) to filter all addresses in the given line.

DST group policy No filter ▼

Group address list

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

Note: by default Local > IP filter only applies to telegrams from TP connection, unless update telegrams are also filtered.
Filtering lists are updated at once, changing policies requires restart.

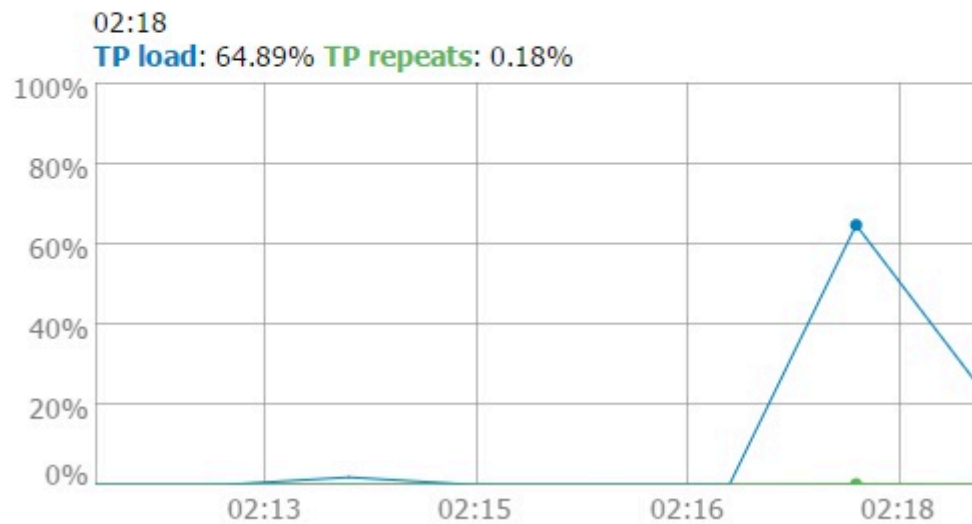
OK
Cancel

- *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 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

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.

KNX statistics				
Period	TP load	TP repeats	TP RX/TX	IP RX/TX
Last minute	23.34%	0	86 / 124	124 / 74
Last hour	11.27%	1	325 / 486	486 / 280
Total	11.27%	1	325 / 486	486 / 280



5.2.6. BACnet server settings

The screenshot shows a 'BACnet settings' dialog box with the following fields and values:

Field	Value
Server enabled	<input type="checkbox"/>
Device ID	127001
Device name (optional)	
Password	mybacpwd
Object priority	16
Add group address to object name	<input type="checkbox"/>
Use comment as object description	<input type="checkbox"/>
Convert object units to BACnet units	<input type="checkbox"/>
Port	47808
BBMD IP	
BBMD port	
BBMD lease time (seconds)	

- *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, LogicMachine 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, LogicMachine 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.

5.2.7. BACnet objects

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

BACnet objects

Device name: LogicMachine_222
Device ID: 222
Object priority: 16
Port: 47808

Download CSV

Type	Instance	Device name	Current value
2 (AV)	6500	PassivPluss 1 (3.1.100)	29
2 (AV)	6501	PassivPluss 2 (3.1.101)	29

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.

BACnet COV settings

Maximum COV subscriptions256

?

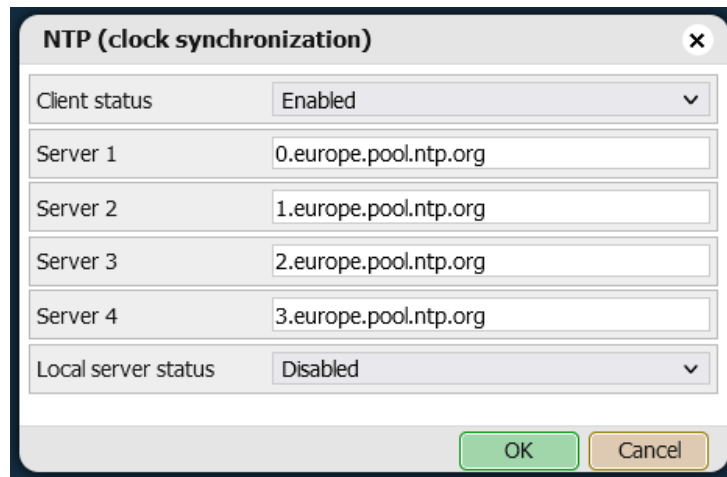
Changing COV values will cause all active COV subscriptions to be cancelled, priority array values will be reset

Temperature1

5.3. Services

5.3.1. NTP client/server

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.



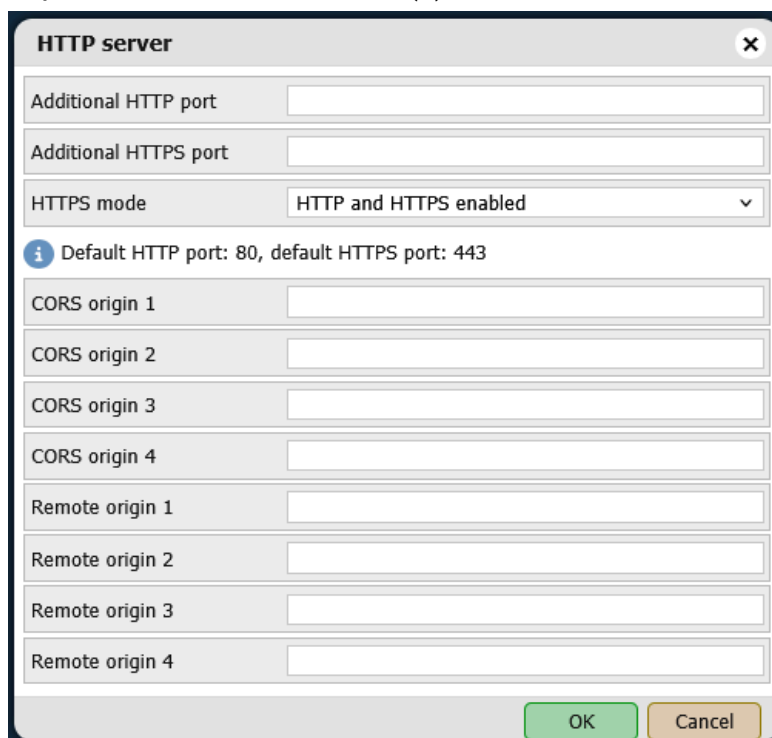
The 'NTP (clock synchronization)' dialog box contains the following fields:

- Client status: Enabled (dropdown menu)
- Server 1: 0.europe.pool.ntp.org (text input)
- Server 2: 1.europe.pool.ntp.org (text input)
- Server 3: 2.europe.pool.ntp.org (text input)
- Server 4: 3.europe.pool.ntp.org (text input)
- Local server status: Disabled (dropdown menu)

Buttons: OK, Cancel

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 LM via HTTP(s).



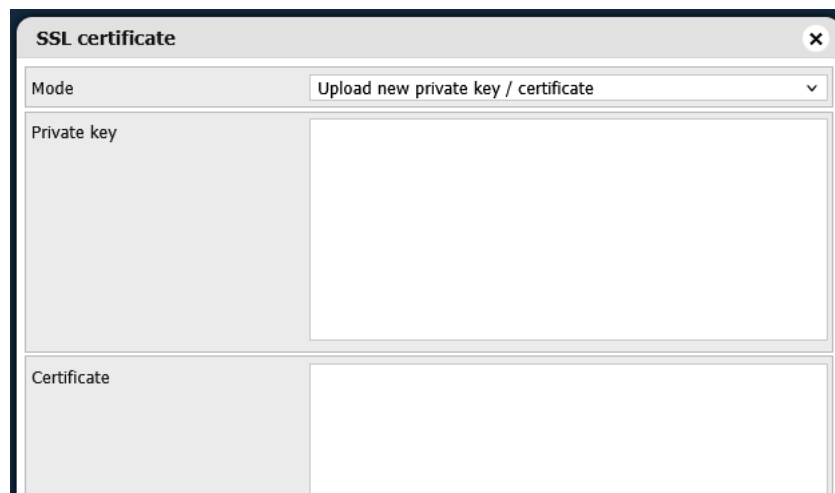
The 'HTTP server' dialog box contains the following fields:

- Additional HTTP port: (text input)
- Additional HTTPS port: (text input)
- HTTPS mode: HTTP and HTTPS enabled (dropdown menu)
- Information icon: Default HTTP port: 80, default HTTPS port: 443
- CORS origin 1: (text input)
- CORS origin 2: (text input)
- CORS origin 3: (text input)
- CORS origin 4: (text input)
- Remote origin 1: (text input)
- Remote origin 2: (text input)
- Remote origin 3: (text input)
- Remote origin 4: (text input)

Buttons: OK, Cancel

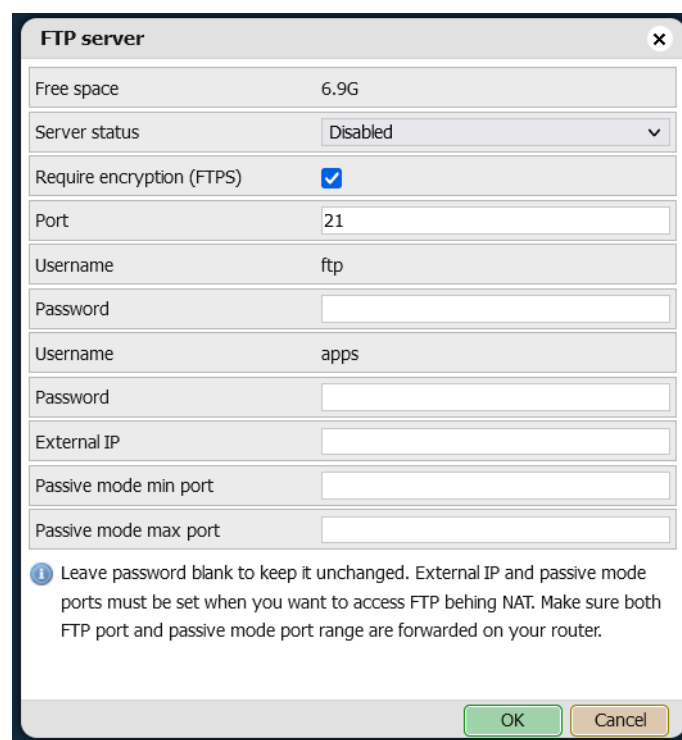
5.3.3. SSL certificate

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



The screenshot shows a window titled "SSL certificate" with a close button (X) in the top right corner. Inside the window, there is a "Mode" dropdown menu currently set to "Upload new private key / certificate". Below this, there are two large text input areas: "Private key" and "Certificate".

5.3.4. FTP server



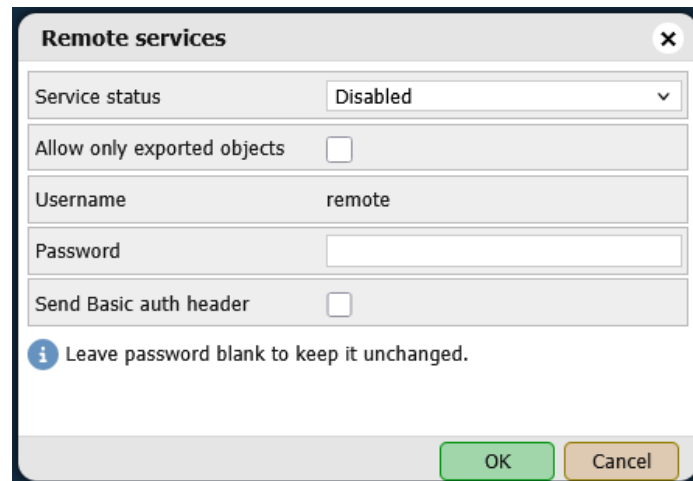
The screenshot shows a window titled "FTP server" with a close button (X) in the top right corner. The window contains several configuration fields:

- Free space: 6.9G
- Server status: Disabled (dropdown menu)
- Require encryption (FTPS): ☒
- Port: 21
- Username: ftp
- Password: (empty text field)
- Username: apps
- Password: (empty text field)
- External IP: (empty text field)
- Passive mode min port: (empty text field)
- Passive mode max port: (empty text field)

Below the fields, there is an information icon (i) and a message: "Leave password blank to keep it unchanged. External IP and passive mode ports must be set when you want to access FTP behind NAT. Make sure both FTP port and passive mode port range are forwarded on your router." At the bottom right, there are "OK" and "Cancel" buttons.

- *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



The 'Remote services' dialog box contains the following fields and controls:

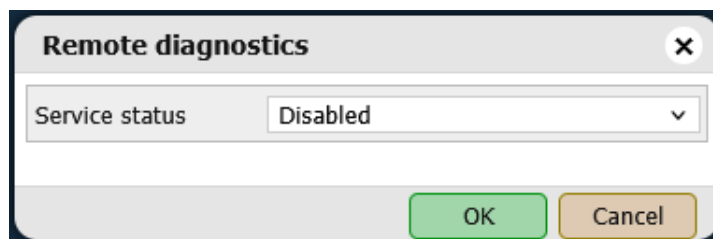
- Service status:** A dropdown menu currently set to 'Disabled'.
- Allow only exported objects:** An unchecked checkbox.
- Username:** A text field containing the value 'remote'.
- Password:** An empty text field.
- Send Basic auth header:** An unchecked checkbox.
- Information:** A blue circular icon with an 'i' followed by the text 'Leave password blank to keep it unchanged.'
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

- *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

Request parameters and examples: kb.logicmachine.net/misc/remote/

5.3.6. Remote diagnostics

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

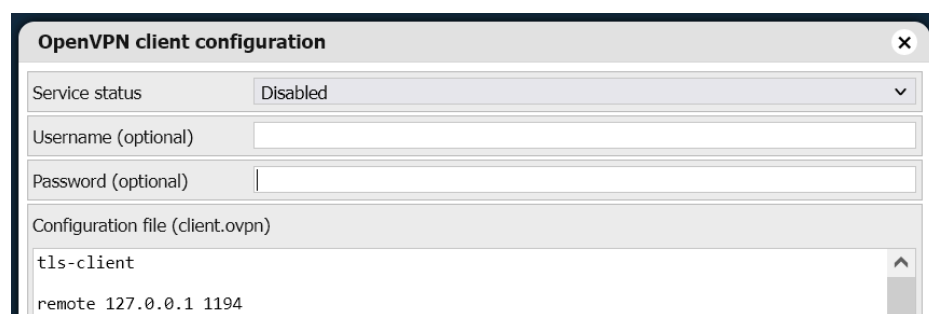


The 'Remote diagnostics' dialog box contains the following fields and controls:

- Service status:** A dropdown menu currently set to 'Disabled'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

5.3.7. OpenVPN client

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



The 'OpenVPN client configuration' dialog box contains the following fields and controls:

- Service status:** A dropdown menu currently set to 'Disabled'.
- Username (optional):** An empty text field.
- Password (optional):** An empty text field.
- Configuration file (client.ovpn):** A text area containing the following content:

```
tls-client
remote 127.0.0.1 1194
```
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

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

5.3.8. OpenVPN status

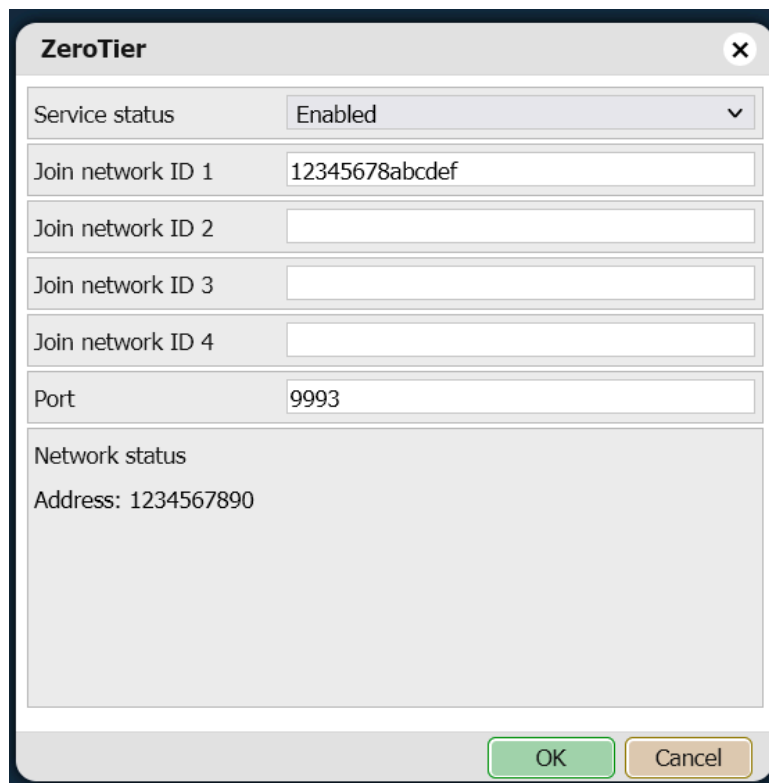
Displays the OpenVPN client connection logs.



5.3.9. ZeroTier

ZeroTier is a technology for secure external access to your LogicMachine.

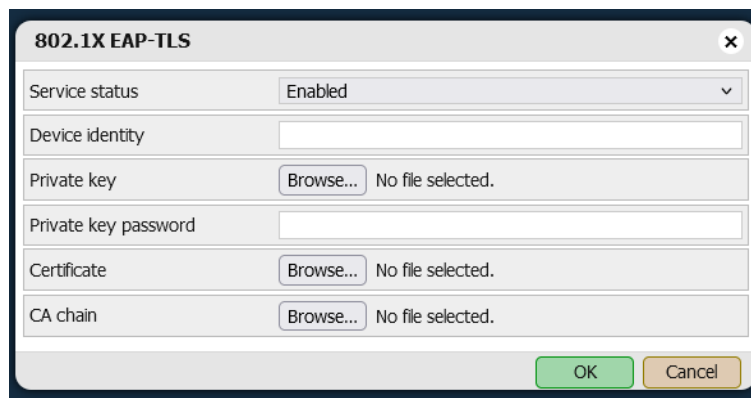
ZeroTier set-up example: kb.logicmachine.net/misc/zerotier/



- *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

5.3.10. 802.1X EAP-TLS

802.1x EAP-TLS provides certificate-based authentication for secure network access.



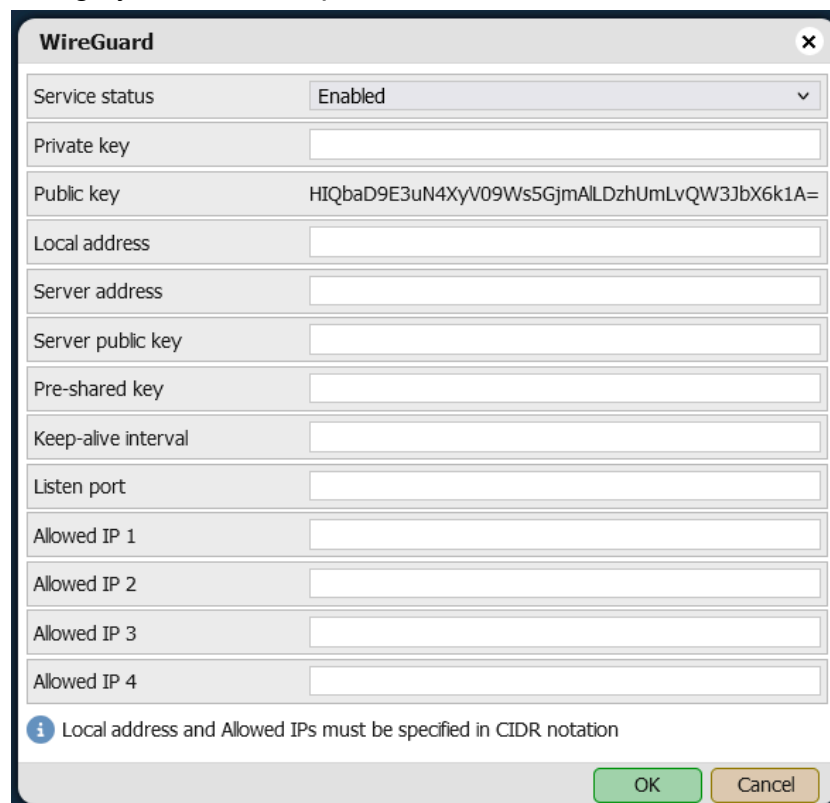
The dialog box titled "802.1X EAP-TLS" contains the following fields and controls:

- Service status:** A dropdown menu currently set to "Enabled".
- Device identity:** A text input field.
- Private key:** A text input field with a "Browse..." button and the text "No file selected."
- Private key password:** A text input field.
- Certificate:** A text input field with a "Browse..." button and the text "No file selected."
- CA chain:** A text input field with a "Browse..." button and the text "No file selected."
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

- *Service status* - enable/disable service
- *Device identity* - identifier that the client presents during the authentication
- *Private key* - client private key in PEM format
- *Private key password* - optional password to protect the *Private key*
- *Certificate* - client certificate key in PEM format
- *CA chain* - certificate authority (CA) certificate chain in PEM format

5.3.11. WireGuard

WireGuard is a highly secure VPN protocol.



The dialog box titled "WireGuard" contains the following fields and controls:

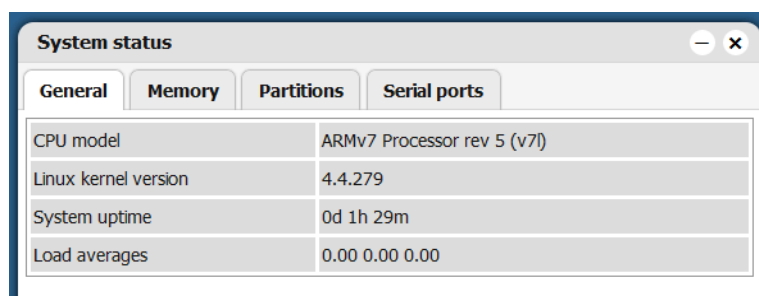
- Service status:** A dropdown menu currently set to "Enabled".
- Private key:** A text input field.
- Public key:** A text input field containing the value "HIQbaD9E3uN4XyV09Ws5GjmAlLDzhUmLvQW3JbX6k1A=".
- Local address:** A text input field.
- Server address:** A text input field.
- Server public key:** A text input field.
- Pre-shared key:** A text input field.
- Keep-alive interval:** A text input field.
- Listen port:** A text input field.
- Allowed IP 1:** A text input field.
- Allowed IP 2:** A text input field.
- Allowed IP 3:** A text input field.
- Allowed IP 4:** A text input field.
- Information:** A blue information icon followed by the text "Local address and Allowed IPs must be specified in CIDR notation".
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

- *Service status* - enable/disable service
- *Private key* - private key for authentication and encryption
- *Public key* - public key, shared with peers for secure communication
- *Local address* - internal IP address inside the VPN network in CIDR notation
- *Server address* - public IP of the WireGuard server in host:port format
- *Server public key* - server's public key used for encryption data sent to the server
- *Pre-shared key* - optional additional layer of encryption between the client and server
- *Keep-alive interval* - frequency at which keep-alive packets are sent to maintain the connection
- *Listen port* - the UDP port number where WireGuard listens for incoming VPN traffic
- *Allowed IP* - single IP address or an IP address range in CIDR notation with which the client should be able to communicate

5.4. Status

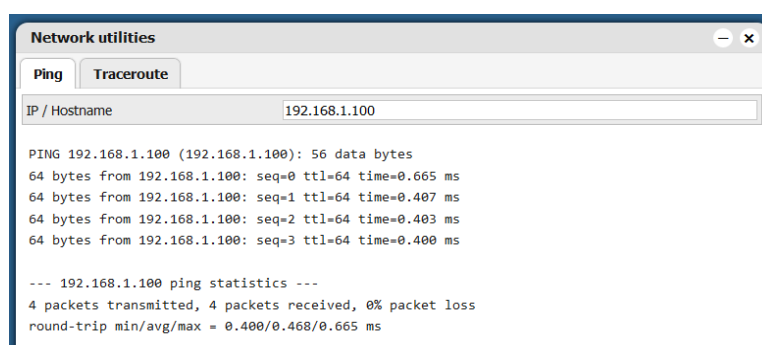
5.4.1. System status

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



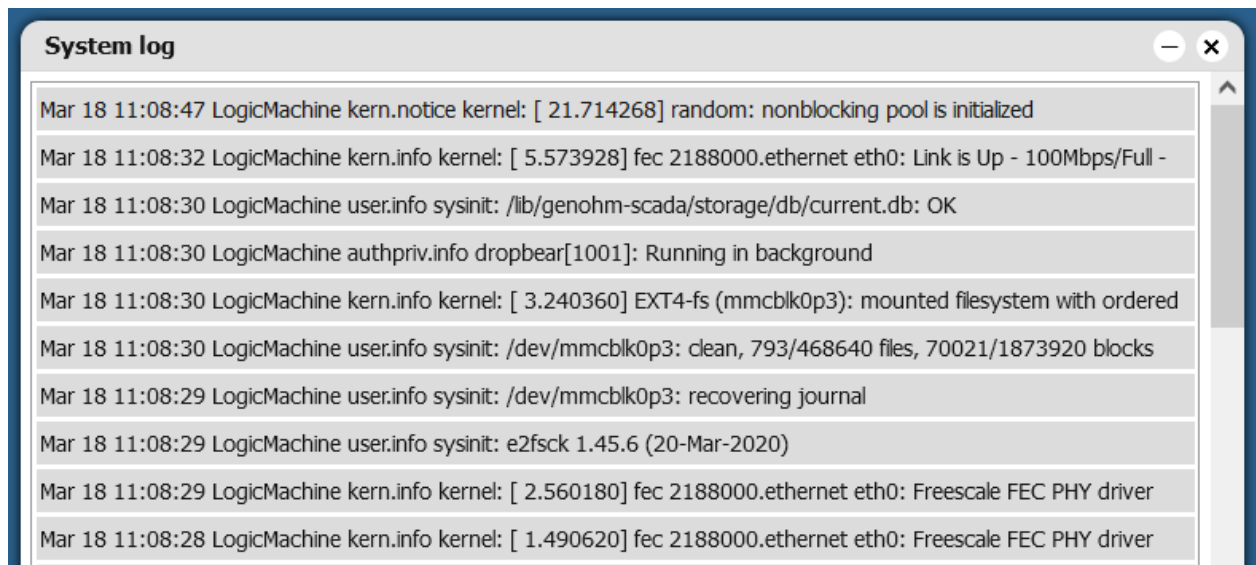
5.4.2. Network utilities

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



5.4.3. System log

Displays the operating system log. Log entry data/time is in UTC format.



5.4.4. Running processes

Displays currently running system processes.

Only script processes can be stopped.

Running processes		
PID	Command	
709	/sbin/syslogd -C16	
711	/sbin/klogd	
713	/sbin/hotplug2 --override --persistent --set-rules-file /etc/hotplug2.rules --set-coldplug-cmd /sbin/	
873	/sbin/watchdog -t 5 /dev/watchdog	

Running processes			— ×
974	/usr/sbin/ntpd -n -p 0.europe.pool.ntp.org -p 1.europe.pool.ntp.org -p 2.europe.pool.ntp.org -p		
983	/usr/sbin/redis-server /etc/redis.conf		
1050	lua /lib/genohm-scada/core/groupmonitor.lua		
1061	lua /lib/genohm-scada/core/scenes.lua		
1062	lua /lib/genohm-scada/core/ipmon.lua		
1064	/usr/bin/eibd -e 15.15.255 -q 100 -L 1 -Q 0 -T -f eth0 -D -S224.0.23.12 -F n,n,n,n,0,0		
1068	lua /lib/genohm-scada/plugins/modbus/daemon.lua 0		
1079	lua /lib/apps/daemon.lua canx /home/apps/store/daemon/canx/daemon.lua		
1081	lua /lib/apps/daemon.lua lmcloud /home/apps/store/daemon/lmcloud/daemon.lua		
1092	lua /data/apps/store/daemon/canx/mqtt-bridge.lua		
1094	lua /data/apps/store/daemon/canx/mqtt-cloud.lua		
1101	nginx: master process nginx -c /tmp/nginx.conf		
1102	nginx: worker process		
1109	/usr/sbin/crond -l 20 -c /etc/crontabs		
1115	/usr/bin/dbus-daemon --system		
1132	avahi-daemon: running [LogicMachine-6.local]		
2091	{resident 5} lua /lib/genohm-scada/core/scripting-resident.lua 5		×

6. Other examples

Various examples, 3rd party protocol integration and other useful applications can be found in our knowledge base and forums:

kb.logicmachine.net

forum.logicmachine.net