MASTER SERVER

AT-5D-MS-MS-01

Integrator Manual

v1.0

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1 INITIAL CLOUD SETUP

Prerequisites

1. **Power supply**

   Master Server requires a 5VDC@1A DIN rail power outlet for its own supply. Not included.

2. **Network**

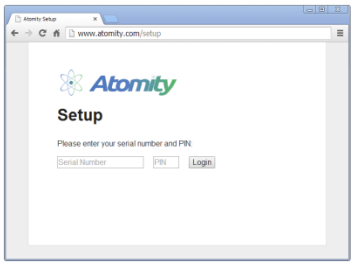
   Master Server needs access to the internet for syncing the configuration stored in our cloud server during *Initial Setup*.

3. **Master Server**

   Locate the unique serial number and PIN included in the package content.

Cloud Setup

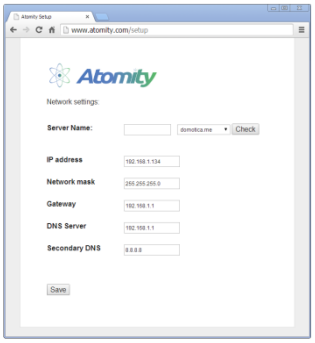
1. Connect the device to a router with internet connection using an ethernet cable and power it on.
2. Go to www.atomity.com/setup and register/log into Atomity Cloud server.
3. A list of all your previously configured devices will appear. Press "*Register new device*" button.
4. Identify your Master Server: Enter its serial number and PIN and click "*Login*" button.



5. Choose a server name to identify it. Enter the name and press "Check" to verify it is not in use. Click "Save" button.

> Please take into account it is not possible to undo this action lately

6. Change network parameters if necessary.



Master Server includes:
- An static IP. Default: 192.168.1.145
- A DHCP assigned IP: it acts as a backup in case you forget

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7. Add users: You can create up to 5 different users. At least one of them must be “Admin”.

Differences between existing types of users:

Type	Access to...	Visible recipes...
Admin	All pages	All
Owner	All pages except *Devices*	Only non-“System recipes”
User	All pages except *Devices* and *Configuration*	Only non-“System recipes”

At this point, our Cloud Server will update your Master Server. Once the update process has finished a message will be shown. Otherwise, please refer to Annexes - Troubleshooting section.

NOTE: iOS and Android devices register process is made *per User* via Master Server app. Please go to *Visualization* section for more information about it.

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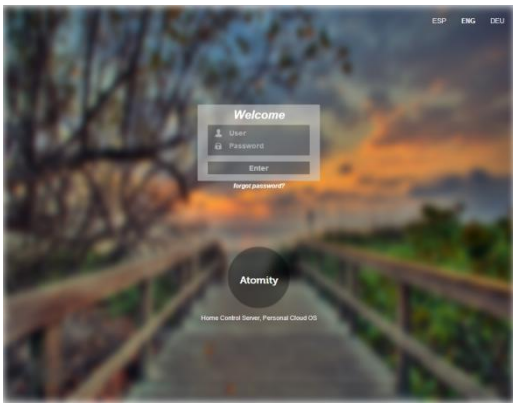
2 FIRST SYSTEM ACCESS

1. Open your favorite web browser (Chrome, Firefox...) and go to its local IP (default http://192.168.1.145). The *Welcome page* will be shown:



2. Log in using any of the previously created users.

3. After entering button you will be redirected to *Settings* menu.

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3 BASIC CONFIGURATION

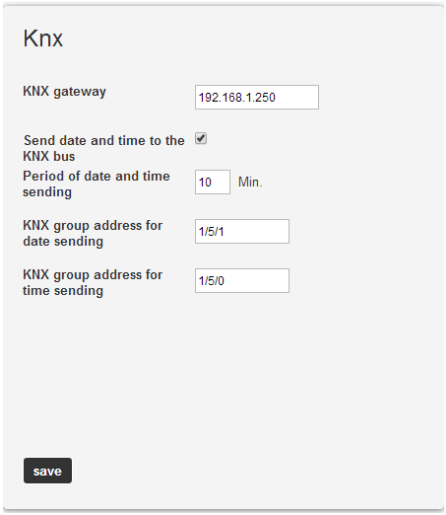
Please go to *Settings* » **Configuration**

Basic configuration requires adjusting the following parameters:

1. **Latitude and longitude** of building localization

   These values can be obtained in the web page http://itouchmap.com/latlong.html

2. **KNX NET/IP gateway address**. The Master Server will connect to KNX system using this device.



The rest of parameters (language, currency, etc.) will not affect to its functionality.

NOTE: In case of changing network parameters, the system will require a reset (*Settings* » **Reset**) to ensure its correct application

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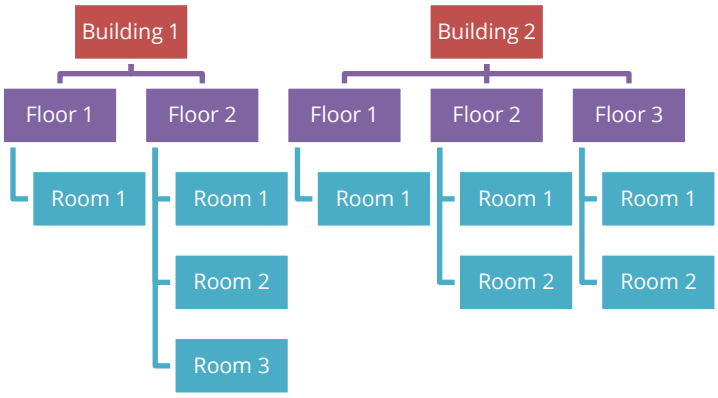
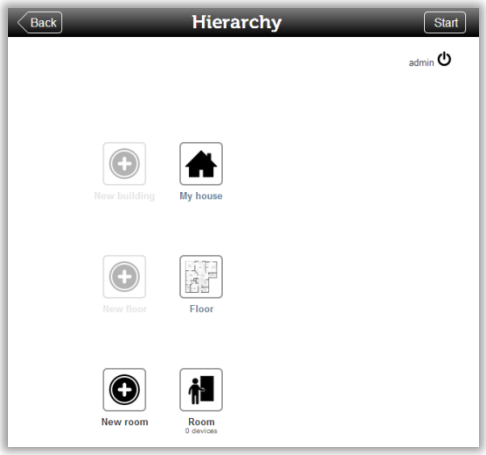
5 BUILDING HIERARCHY DEFINITION

Go to *Settings* » **Hierarchy** for defining the installation physical structure, consisting in a certain number of *Buildings*, *Floors* and *Rooms*.



Factory default includes a basic hierarchy structure containing one Building, one Floor and one Room:



This structure can be customized using these different actions:

- **Adding new zones**

  Definition of zones of the building can be performed using *New building, floor and room* buttons.

- **Modifying and removing existing zones**

  Please hold the button of the desired zone. Two new buttons will appear:

  X: remove zone
  E: edit zone

Once the whole building structure is complete you can begin to define different zone *Devices*.

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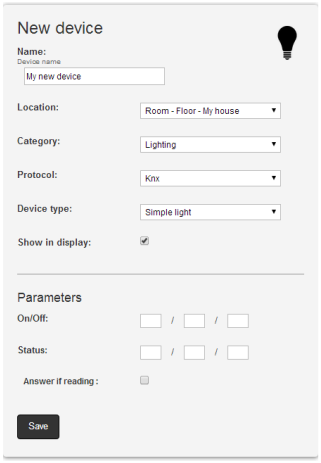
6 WORKING WITH DEVICES

Please follow the next steps to define building devices:

1. Go to *Settings* » **Devices**, section "New device"



2. Give the new device an unambiguous *Name*
3. Choose an icon
4. Indicate which will be its *Location* in the installation, according to the previously defined hierarchy
5. Select the *Category* which best matches device *class*:

Lighting	HVAC	Generic controls	Energy
Blinds	Safety	Weather	Multimedia

6. Define its *Protocol*:

KNX	Sonos	Philips Hue

7. Define if this particular device should be shown in the display or not
8. Indicate the *Type* of device, depending of both selected *Category* and *Protocol*. Examples:

KNX

Sonos

Philips Hue

9. Store the declared *Device* by pressing *Save* button

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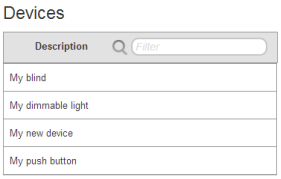
Existing devices declaration can be accomplished by repeating previous steps. A list of all created devices can be found in *Devices* section:

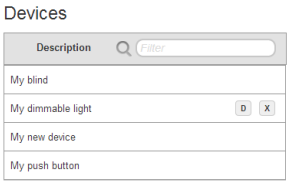


Modifying, copying or removing an already created device

In case of pressing over an already existing *Device*:

1. *New Device* section will show its actual parameters, permitting to edit them.
2. Furthermore, two additional buttons will appear to perform the following actions:

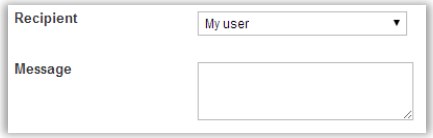
   - Remove the selected device (X)
   - Duplicate it (D)



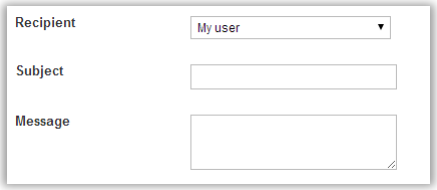
Virtual devices

In addition to declared devices, the Master Server provides some special devices based on *Users* configuration:

1. ***Push notification*** *device*, for sending customized notifications to any iPhone/iPad declared in *Users* section.



2. ***Email*** *device*, for sending users an email with the desired text.



This particular device can be utilized for sending *Zennio Energy Meter* device stored values using one of the following pointers:

Energy (kWh)	<<@@EnerT@@>>
Cost (€)	<<@@CosteT@@>>
Total emisions (ppm)	<<@@CO2T@@>>
Power (W)	<<@@PotI@@>>

These two special devices can be found in Scenes, Recipes and Calendars » Categories » Communications.

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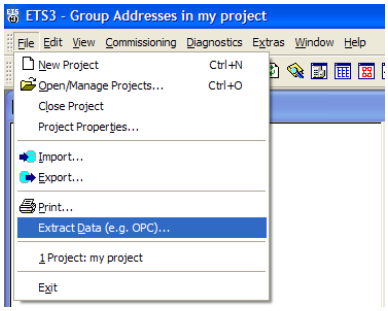
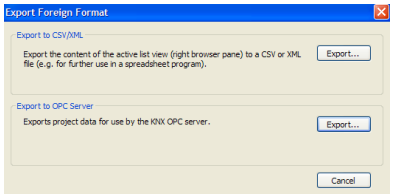
Importing KNX Devices from an ETS database

Master Server helps you in the task of defining new devices by allowing you to import all your project group addresses. It can be accomplished as follows:

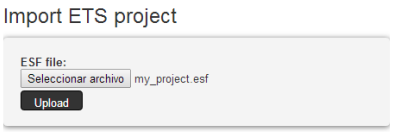
1. Open your ETS project
2. Go to File » Extract Data



3. Go to *Export to OPC Server* section and click *Export* button



4. Give it a name and save it as an .esf file (i.e. my_project.esf)
5. Go to *Settings* » **Devices**, section "Import ETS project" and select the *.esf file



6. Click the *Upload* button. ETS group addresses will appear in "Imported ETS" section once the process has finished:

Imported ETS

Address	Description	Size
0/0/1	Group address 1	1 bit
0/0/2	Group address 2	1 byte
0/0/3	Group address 3	1 bit
0/0/4	Group address 4	1 byte
0/0/5	Group address 5	1 bit

7. At this point, it is possible to drag and drop any of the imported group addresses to *Parameter* section.

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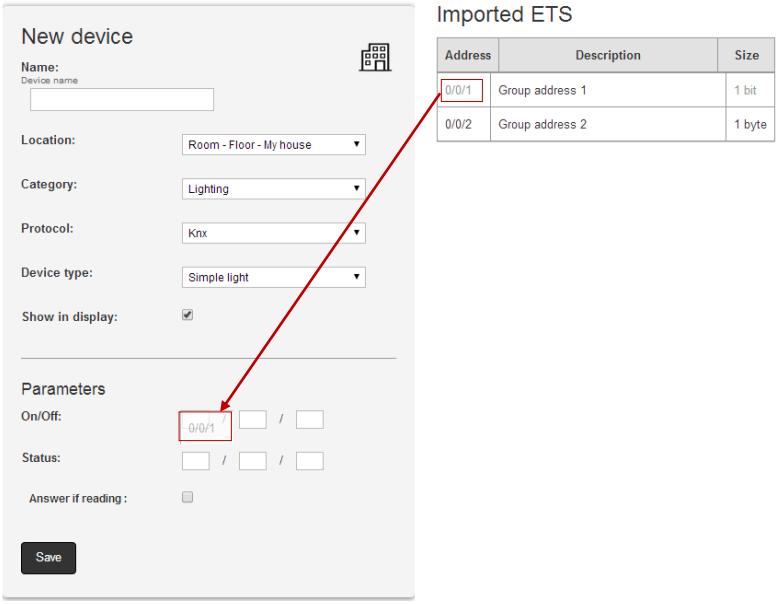
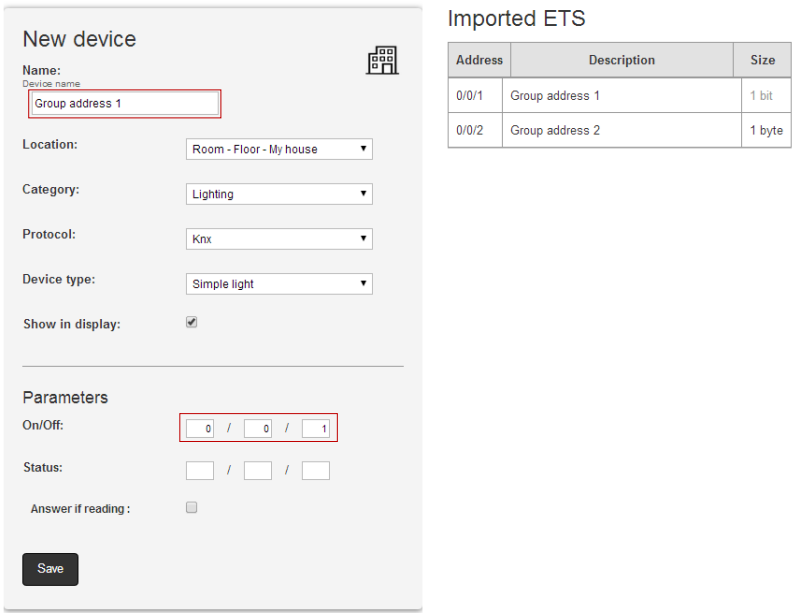


As a result, both *Group address* and *Description* will be copied to *Parameter* and *Name* fields:



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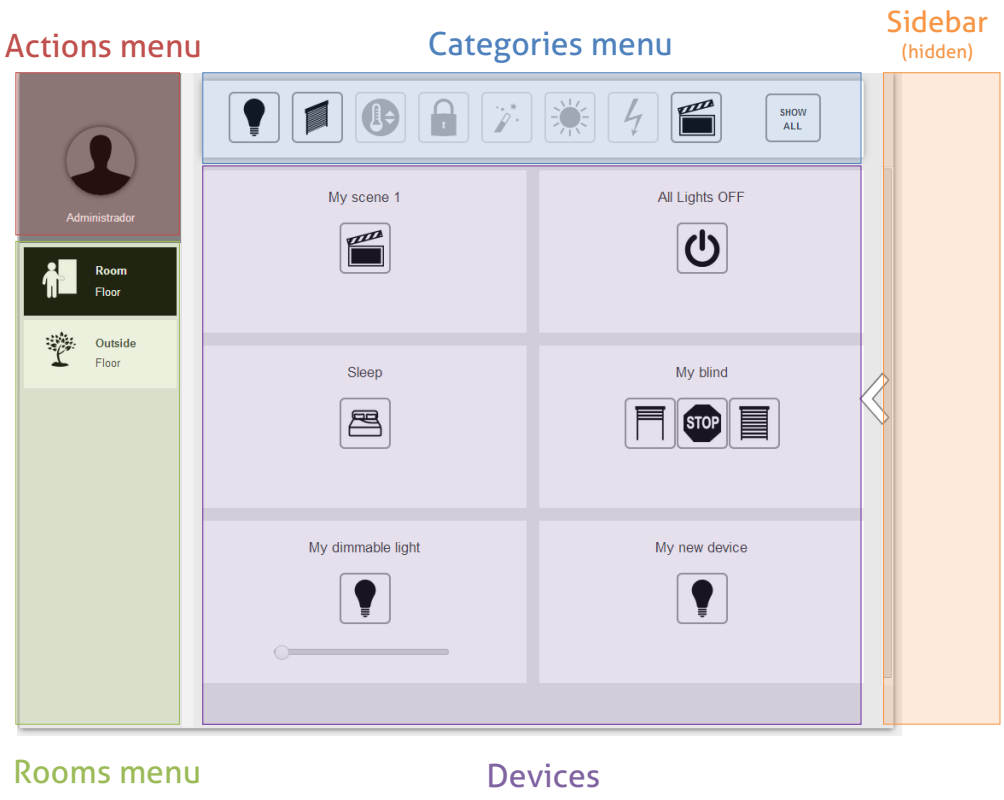
7 THE VISUALIZATION

The visualization is one of the main system features, as it permits users to:

1. Examine and modify the state of various constituent building elements
2. Display actual values of measured variables (wind speed, humidity, room temperature, etc.)

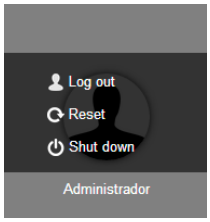
Its structure can be divided in 5 sections:



Actions menu

Tap over it to show basic actions menu:

- User Log out
- Reset/Shut down the Master Server



Rooms menu

It consists in a list of all the created rooms when defining the building *hierarchy*.

In case of pressing over any of them, selected room devices will be displayed.

Categories menu

Filter menu (lighting, blinds, scenes, etc.), to help in building control by displaying only selected category devices.

The filter can be globally controlled by pressing "Hide/Show all" button.

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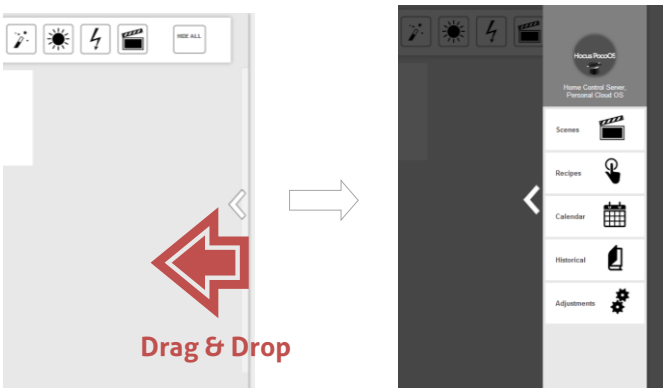
Main section of the page. It displays all the existing devices, depending on:

1. Selected room
2. Filtered categories

Sidebar

Initially hidden menu which contains a link to Scenes, Recipes, Calendars, Historical and Settings pages.

To display it, please perform a “right-to-left drag and drop” movement over the right side arrow.



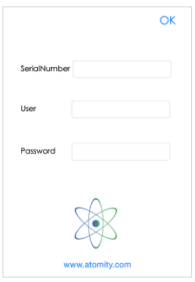
The iPad app: Master Server

Master Server app is a free iPad application which allows users to access directly to the visualization, without requiring remembering its IP address.

You can install and configure it as follows:

1. Go to the App Store and search for “Master Server”
2. Install and open it

3. Configuration page will be shown:



Please enter required data and press “OK”. The device will be linked to User and all the parameters stored in our Cloud server will be automatically downloaded.

In case any of the data is wrong please shake your device to return to Configuration page.

> Please take into account remote access requires port 80 to be opened

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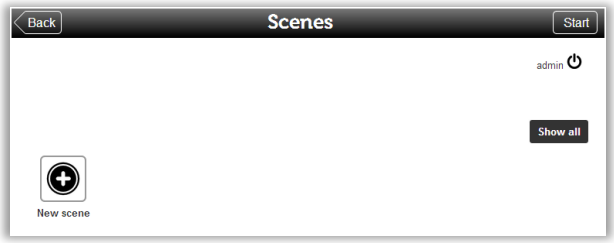
8 SCENES CREATION

Scene: List of actions to be performed jointly. Example *"Not at home"*: Blinds down; Climate off; Lights off

A new scene can be created following these steps:

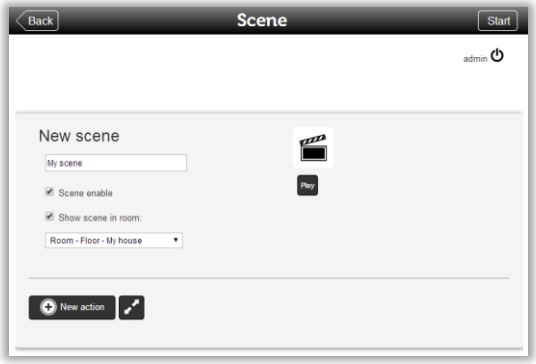
1. Go to *Visualization* » *Sidebar* » **Scenes**



2. Press "New scene" button

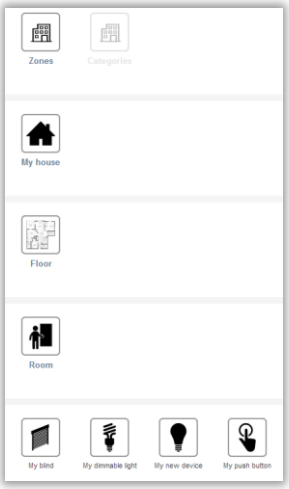
3. Configure the new scene basic parameters:

   - Name
   - Icon
   - Room allocation (if necessary, for displaying it in the visualization)

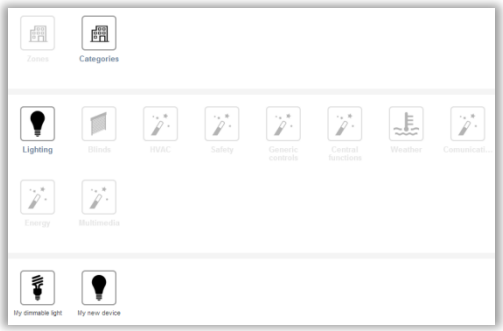


4. Press "New action" button to select a particular building *Device* and its desired state. This selection can be done by *Zones* or *Categories*, showing in each case a list of all existing devices:

Zones



Categories



A delay can be configured for each new added action.

5. Press "Save" button

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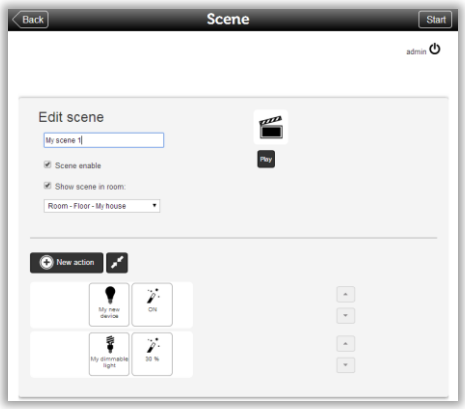
It is possible to create a list of actions to be performed repeating previous steps:



Rearranging the list of actions

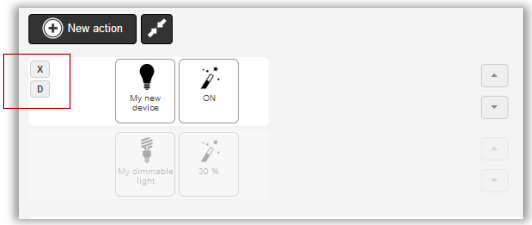
This action can be accomplished by clicking over the up/down arrows existing at the right of each listed device.

Modifying, copying or removing an already associated action of a scene

In case of pressing over any "already added to scene" *Device*:

1. Both actual configured state and associated delay will appear to permit its modification.
2. Two additional buttons will become visible to perform one of the following actions:

    - X: Remove the selected action from the scene
    - D: Duplicate it

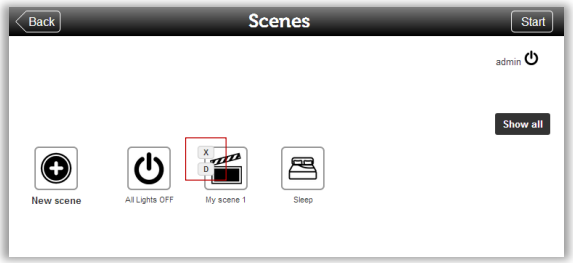


Copying and deleting an already created scene

This action can be performed this way:

1. Go to *Visualization* » *Sidebar* » **Scenes**
2. Hold the scene button. Two new buttons will become visible:

    - X: Remove the selected scene
    - D: Duplicate it



Playing an scene externally using a URL

Please go to the API reference to know how to do this action.

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9 BASIC LOGICAL FUNCTIONS: RECIPES

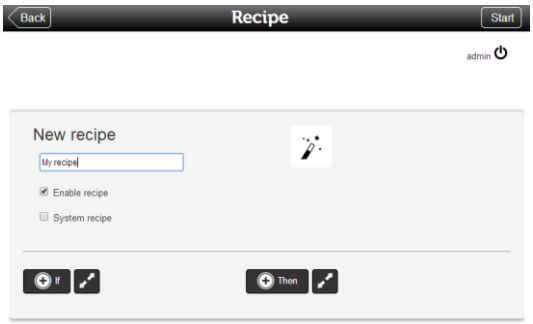
Steps:

1. Go to *Visualization* » *Sidebar* » **Recipes**

2. Press “New recipe” button

3. Configure the new recipe basic parameters:

   - Name
   - Icon
   - System recipe (depending on whether you want it to be visible or not for Owner/User users)



4. Press “If” button to select:

   - a particular building *Device*; This selection can be done by *Zones* or *Categories*, showing in each case a list of all existing devices
   - the condition that must be met in order the action to be performed

5. Press “Then” button to select a particular buiding *Device* and its desired state. This selection can be done by *Zones*, *Categories*, *Calendars or Scenes*.

   A delay can be configured for each new added action.

6. Press “Save” button.

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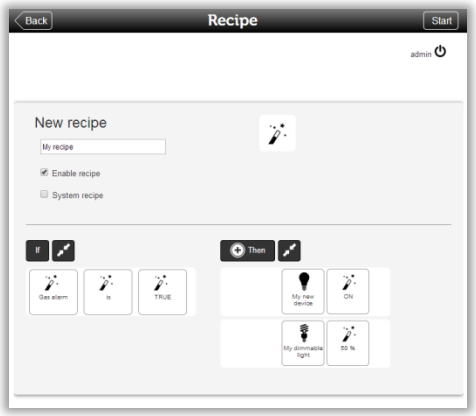


Rearranging the list of actions

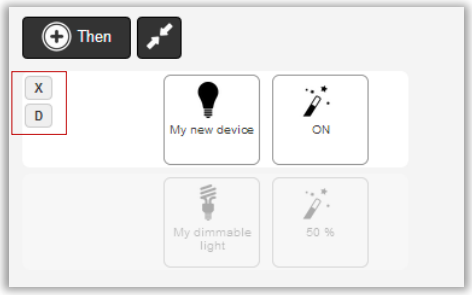
This action can be accomplished by clicking over the up/down arrows existing at the right of each listed device.

Modifying, copying or removing an already associated action of a recipe

In case of pressing over any "already added to recipe" *Device*:

1. Both actual configured state and associated delay will appear to permit its modification.
2. Two additional buttons will become visible to perform one of the following actions:

    - X: Remove the selected action from the recipe
    - D: Duplicate it



Copying and deleting an already created recipe

This action can be performed this way:

1. Go to *Visualization* » *Sidebar* » **Recipes**
2. Hold the recipe button. A new button will become visible:

    - X: Remove the selected recipe

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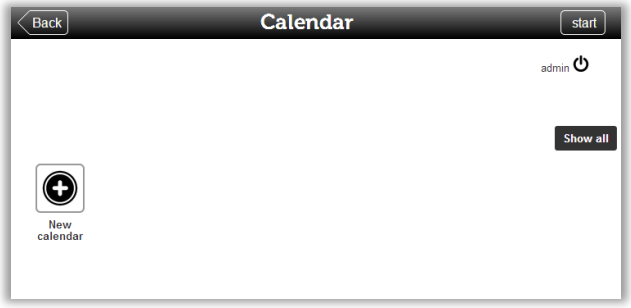
10 PROGRAMMED ACTIONS DEFINITION: CALENDARS

Steps:

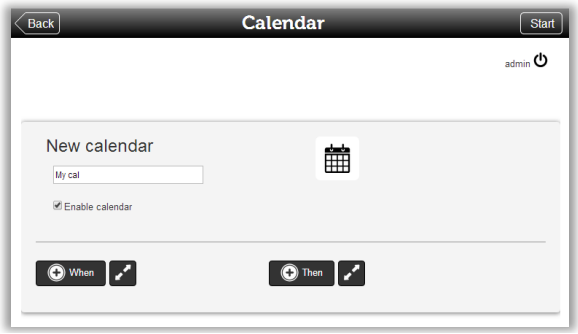
1. Go to *Visualization » Sidebar »* **Calendars**



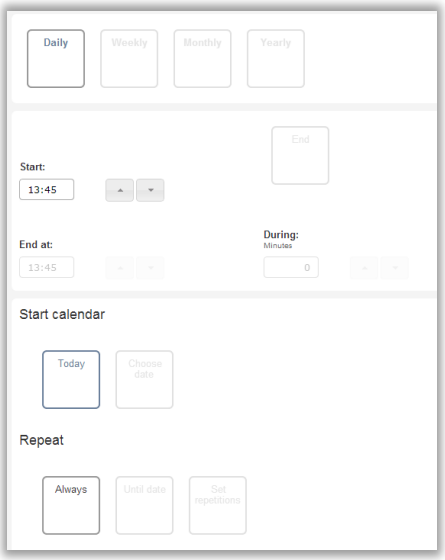
2. Press “New calendar” button

3. Configure the new calendar parameters:

   - Name
   - Icon



4. Press “When” button to select new calendar periodicty. Example:



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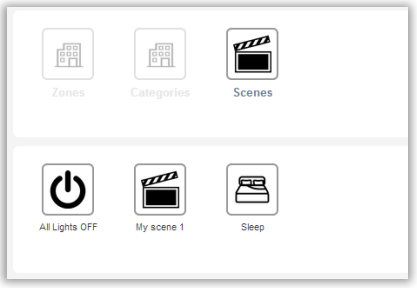
Summary of options:

When	Value	OR	Type of value
Daily	Start		hour
	End	*At*	*hour*
		During	*minutes*
	Calendar start	Today	
		Date	date
	Repeat	Always	
		Until date	date
Weekly	Frequency	Day of the week	M-S (1 or more days)
	Start		hour
	End	*At*	*hour*
		During	*minutes*
	Calendar start	Today	
		Date	date
	Repeat	Always	
		Until date	date
Monthly	Frequency	Day of month	1-31 (1 or more days)
			First, Second, etc. Day, Working day, Non-working day M-S
	Start		hour
	End	*At*	*hour*
		During	*minutes*
	Calendar start	Today	
		Date	date
	Repeat	Always	
		Until date	date
Yearly	Frequency	Month + Day	J-D + 1-31 (1 or more months & days)
	Start		hour
	End	*At*	*hour*
		During	*minutes*
	Calendar start	Today	
		Date	date
	Repeat	Always	
		Until date	date

5. Press “Then” button to select a particular building *Device* and define its desired state, at the beginning or/and the end of calendar. This selection can be done by *Zones*, *Categories or Scenes*.



A different delay can be configured for each new added action.

6. Press “Save” button.

Not enabled calendars will exist but not launch.

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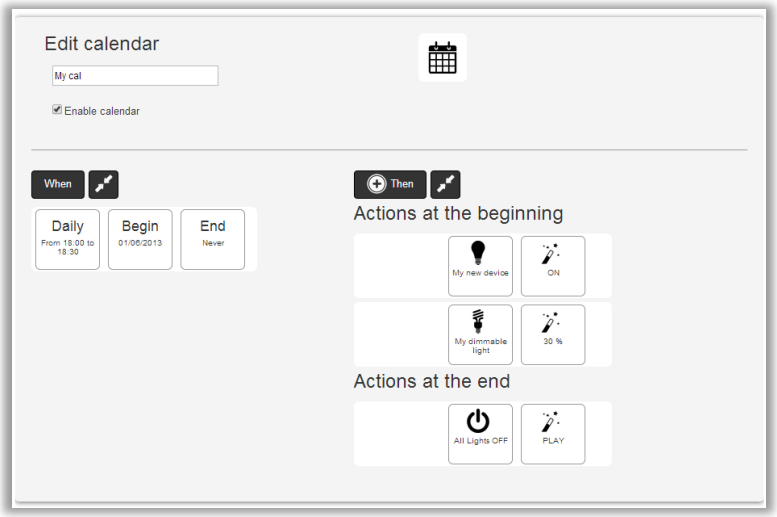
It is possible to create a list of actions to be performed (at the beginning or at the end) repeating previous steps:



Rearranging the list of actions

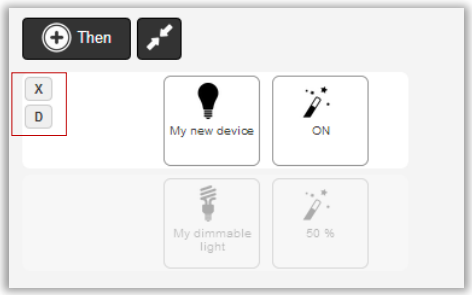
This action can be accomplished by clicking over the up/down arrows existing at the right of each listed device.

Modifying, copying or removing an already associated action of a calendar

In case of pressing over any "already added to calendar" *Device*:

1. Both actual configured state and associated delay will appear to permit its modification.
2. Two additional buttons will become visible to perform one of the following actions:

   - X: Remove the selected action from the recipe
   - D: Duplicate it



Copying and deleting an already created calendar

This action can be performed this way:

1. Go to *Visualization* » *Sidebar* » **Calendars**
2. Hold the calendar button. A new button will become visible:

   - X: Remove the selected calendar

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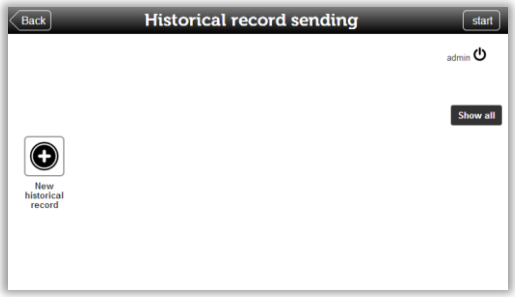
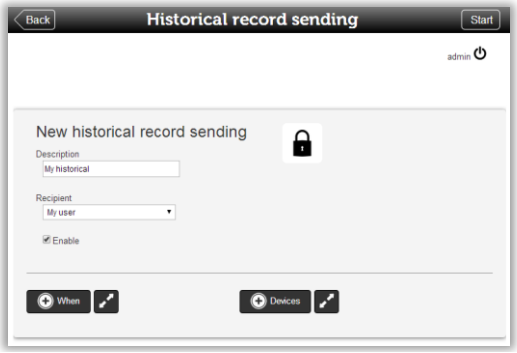
11 THE MASTER SERVER WORKING AS A DATALOGGER: HISTORICAL

Steps:

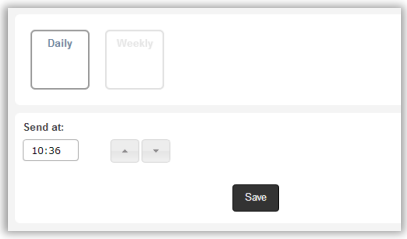
1. Go to *Visualization* » *Sidebar* » **Historical**



2. Press “New historical record” button
3. Configure new historical basic parameters:
   - Description
   - Icon
   - Recipent, the user who will receive the historical



4. Press “When” button to select new historical periodicty. Example:



Summary of options:

When	Value		Type of value
Daily	Send at		hour
Weekly	Frequency	Day of the week	M-S
	Send at		hour

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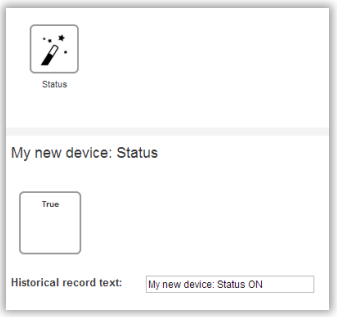
5. Press “Devices” button to select:

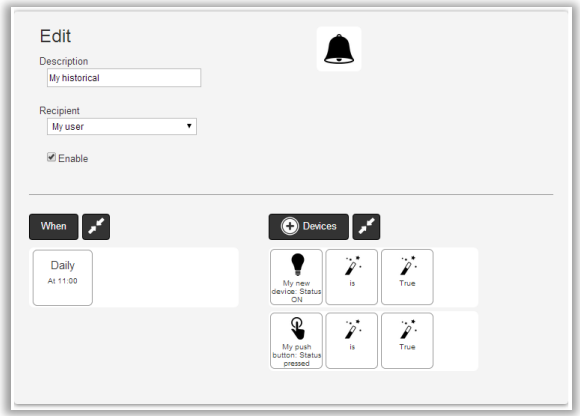
- a particular device of the building; This selection can be done by *Zones* or *Categories*.
- the status that must be met;
- a text to define



6. Press “Save” button to store the changes.

Not enabled historical will record devices status but will not send emails.

It is possible to create a list of devices (and its status) to be recorded:



In this example, the Master Server will log “My new device” and “My push button” changes and will send a daily report at 11:00 to “My user” associated email address:

```
From: Mail server
At: 2013-05-03 11:00:00
Subject - Historical: My historical

        Sending frequency: Daily at 11:00 h

        My new device: Status ON         Value for alarm:       1
                Event 1, Date: 2013-05-02 11:53:10, reading: 1
                Event 2, Date: 2013-05-02 17:00:00, reading: 1

        My push button: Status pressed   Value for alarm:       1
                There has been no readings during the period.
```

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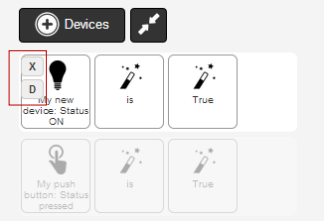
Modifying, copying or removing an already associated device of a historical

In case of pressing over any "already added to historical" *Device*:

1. Both actual configured status and text will appear to permit its modification.
2. Two additional buttons will become visible to perform one of the following actions:

    - X: Remove the selected action from the historical
    - D: Duplicate it

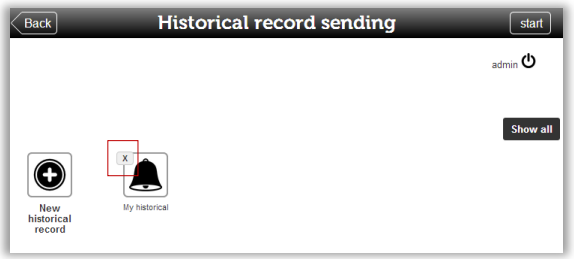


Copying and deleting an already created historical

This action can be performed this way:

1. Go to *Visualization* » *Sidebar* » **Historical**
2. Hold the calendar button. A new button will become visible:

    - X: Remove the selected historical



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12 CREATING A PROJECT BACKUP

It is highly recommended to make a copy of the entire programming so you can restore it in the future.

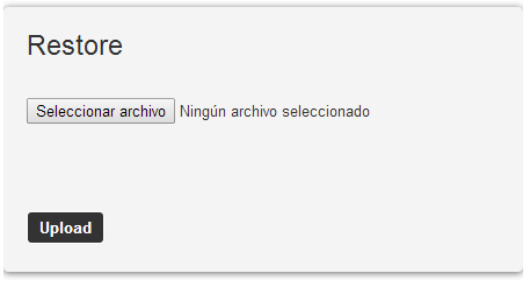
This action can be performed following these steps:

1. Go to *Settings* » **Backup,** section "*Make copy*"

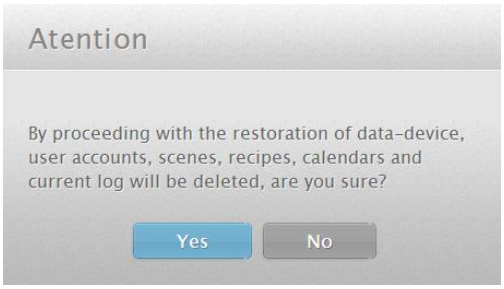
2. Give it a name and click *Download* button
3. A *Name.hpb* file will be created with the entire configuration. Save it in a safe location

Restoration process can be done easily:

1. Go to *Settings* » **Backup,** section "*Restore*"



2. Select the file (*Name.hpb*) which contains the previous configuration
3. Click *Upload* button. A message will be shown asking for your confirmation before proceeding



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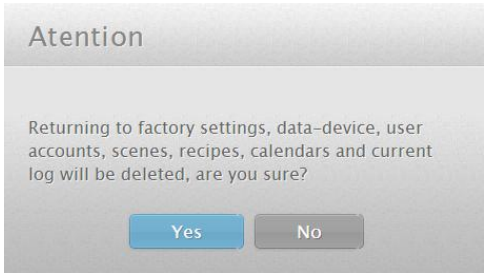

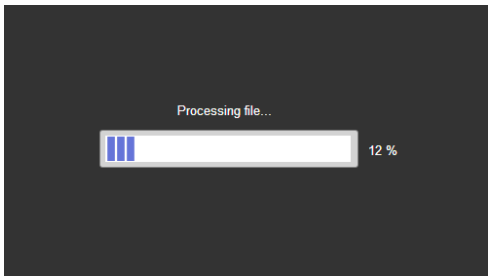

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v0.1

Scenes

External Call to a Scene

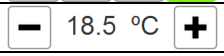
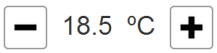
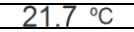
http://master_server_IP/ordenesJSON.php?idEscena=**X**

Scene ID can be obtained following these steps:

1. Go to *Scenes*
2. Select the particular scene you want to be called
3. The ID is shown at the end of the URL (i.e.: http://192.168.1.145/escenas4.php?id=**3**)

Device types

KNX

Category	ID	Type	Visualization	Parameters	R	EIS	Format	Values
Lighting	K11	Simple light		ON/OFF		1	1 bit	[0,1]
				Status	x	1	1 bit	[0,1]
	K12	Dimmable light		ON/OFF		1	1 bit	[0,1]
				Value		6	1 byte	[0...100]
				Value status	x	6	1 byte	[0...100]
	K13	RGB light		Red value		6	1 byte	[0...255]
				Green value		6	1 byte	[0...255]
				Blue value		6	1 byte	[0...255]
				Status red	x	6	1 byte	[0...255]
				Status green	x	6	1 byte	[0...255]
				Status blue	x	6	1 byte	[0...255]
Blinds	K21	Simple blind		Stop object		7	1 bit	[0,1]
				Movement object		7	1 bit	[0,1]
	K22	Adjustable blind		Stop object		7	1 bit	[0,1]
				Movement object		7	1 bit	[0,1]
				Position		6	1 byte	[0...100]
				Status	x	6	1 byte	[0...100]
	K23	Special blind		Open slats		7	1 bit	[0,1]
				Close slats		7	1 bit	[0,1]
				Stop		7	1 bit	[0,1]
				Slats position object	x	6	1 byte	[0...100]
				Position object	x	6	1 byte	[0...100]
HVAC	K31	ON/OFF control		ON/OFF		1	1 bit	[0,1]
				Status	x	1	1 bit	[0,1]
				Invert logic		-	-	
	K32	KNX thermostat control		KNX mode selection		6	1 byte	[0...255]
				Status	x	6	1 byte	[0...255]
	K33	Temperature control		Setpoint input		5	2 bytes	[-273...670760]
				Setpoint output	x	5	2 bytes	[-273...670760]
	K34	Jung thermostat temperature control		Setpoint modification input		6	2 bytes	[0...255]
				Setpoint temperature	x	5	2 bytes	[-273...670760]
				Re-send setpoint modifcation input	x	6	1 byte	[0...255]
	K35	Temperature		Temperature value	x	5	2 bytes	[-273...670760]
Safety	K41	Technical alarm		Alarm status	x	1	1 bit	[0,1]
				Text if no alarm				
				Text if alarm				
Generic controls	K51	Control (1 bit)		ON/OFF		1	1 bit	[0,1]
				Status	x	1	1 bit	[0,1]
	K52	Generic control (0-100%)		Value (0-100%)		6	1 byte	[0...100]
	K53	Generic control (0-255)		Value (0-255)		6	1 byte	[0...255]
	K54	1 bit control (without status)		ON/OFF		1	1 bit	[0,1]

Weather	K61	Temperature	21.7 ºC	Temperature value	x	5	2 bytes	[-273…670760]
	K62	Wind		Wind speed	x	5	2 bytes	[-670760…670760]
	K63	Brightness	35491.84 KLux	Brightness value	x	5	2 bytes	[-670760…670760]
	K64	Rain	NO	It rains	x	1	1 bit	[0,1]
	K65	Twilight sensor		Twilight	x	5	2 bytes	
	K66	Humidity		Humidity value	x	10	2 bytes	[0…65535]
Energy	K71	Zennio three-phase energy meter	Total energy 6 KWh Total cost 0.71 € Total emissions 2.85 CO2 Instantaneous power 1.85 KW	Total energy	x	11	4 bytes	[0…4294967295]
				Total emissions	x	5	2 bytes	
				Partial reset		1	1 bit	[0,1]
				Energy Reading request		1	1 bit	[0,1]
				Instantaneous power	x	5	2 bytes	[-670760…670760]

R = In case "Answer if reading" checkbox is checked, Master Server will send to the bus the last stored value

Philips Hue

Categoría	ID	Tipo	Visualización	Parámetros
Lighting	H11	Philips Hue Light	-	ID
	H12	Philips Hue Group	-	ID

SONOS

Categoría	ID	Tipo	Visualización	Parámetros
Multimedia	S81	SONOS Component	-	IP