User guide: **realKNX installation**

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Versions:

v1.0 : First version (08/05/17)
v1.1 : First version (04/04/17)
v1.2 : Google Home + new remote Connect (30/08/17)
v1.3 : Added bookmarks (libreoffice) (11/10/17)
v1.3.1 : Added Google Home + remoteConnect fix bug (07/12/17)
v1.3.3 : Added realKNX Air (07/12/17)
v1.4: Added realKNX O-two and Snips (20/03/2019)
V4.2: New functionalities for home automation and hotels (25/06/19)
v4.5: New gateways: JUNG SVS, Gira X1, Standard KNX Gateway, Tradfri Gateway. New server: ARAGON Base (01/10/20)

A. Visualisation server

A.1. proServ

I. Presentation

The ProServ interface is an interface that allows:

- Complete configuration of the graphical user interface for iPhone, iPad and Android devices through ETS.
- Access to the KNX bus with KNXnet / IP (programming with ETS, for example)
- Control the KNX bus with our free apps "iKnix" and "iKnix HD" from Apple Store and Google Play. **New "iKnix 2" app for iOS iPhone and iPad**

II. Connection

ProServ needs a power supply of:

- External power supply 12-24V AC or 12-30V DC (800Mw)
- Power over the network cable (PoE)

In addition, ProServ must be connected to your Wifi router and the KNX bus.

III. Physical address

- Open ETS4 (ETS5 and ETS3f is also possible, however, the dialogs are somewhat different)
- Go to "Settings", "Communication" and you will find the device in "Connections" discovered
- Select the device and press "select"
- Click on "Local Settings" to assign a physical address for the interface this is necessary to program the bus with ProServ. The first two digits must correspond to the TP line of your installation.

IV. ETS database

You can find the database directly on our website:

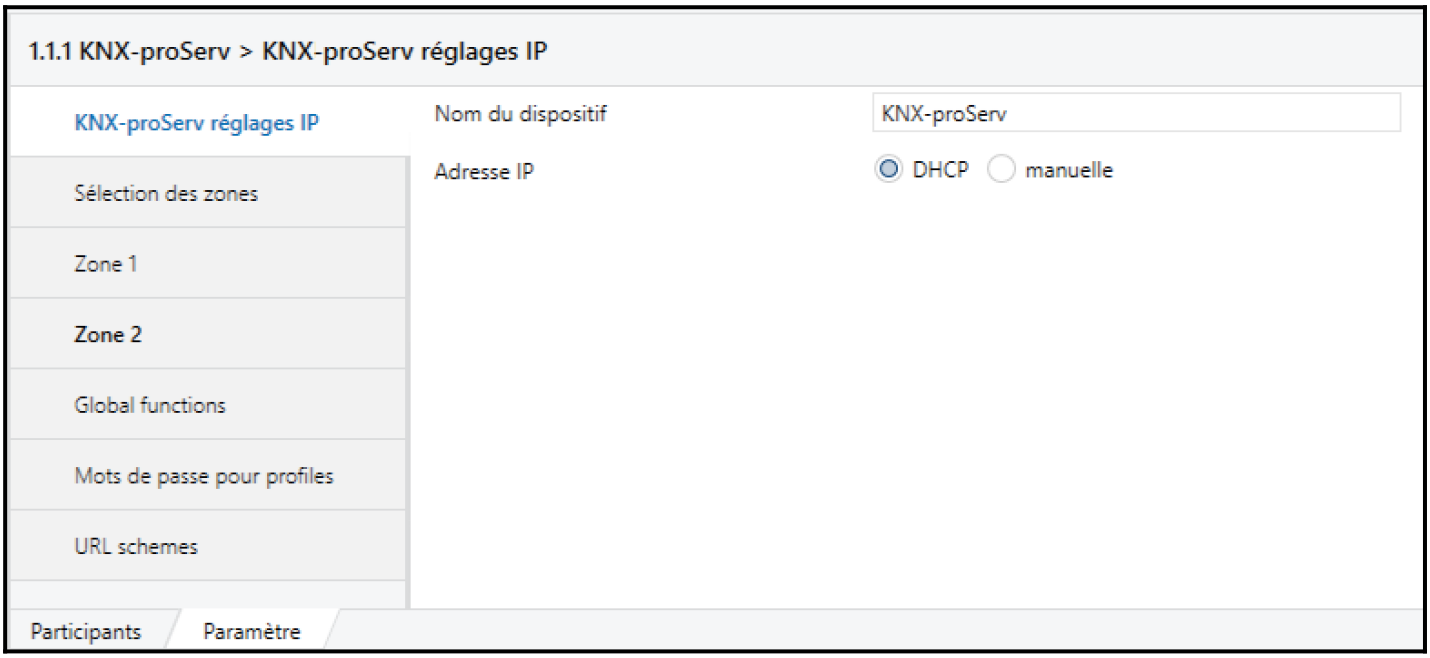
https://proknx.com/fr/downloads-fr/

V. Application ETS

a. KNX-proServ setting IP

- Name of device → You must mark the name of your installation (ex : My Home X)

- IP Adress → You have the choice of putting your proServ in DHCP or fixed IP address



proServ must be added to your local area network (LAN) and must preferably be configured with a static IP address, especially if you are going to use the realKNX Server.

b. Selection of zones

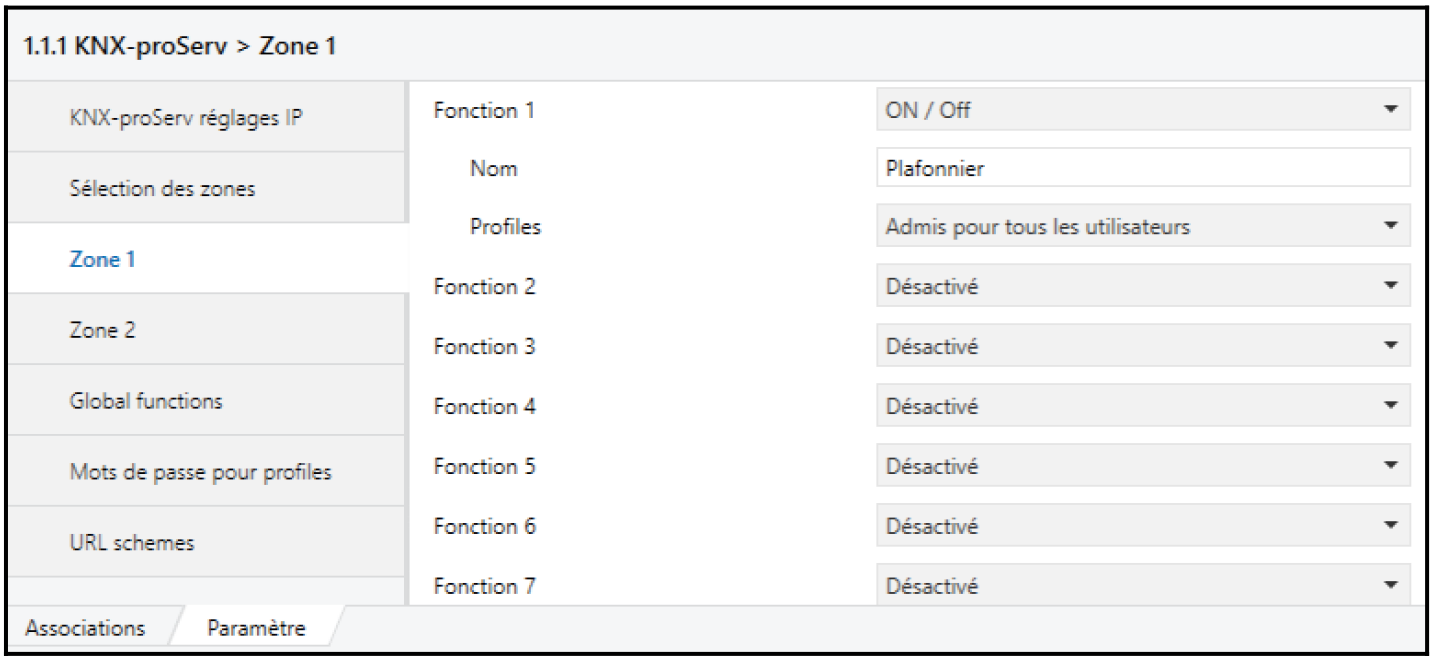
Up to 18 zones can be added.

It is from this submenu that you will begin to configure the architecture of the installation. In fact, you must enter the name of your rooms.

<u>Example :</u>
Living Room
Bedroom
Dining Room
Office
Kitchen
Garden
Hall

Avoid using abbreviations for names as this will not work with the voice recognition applications!

c. Zone X



It is now necessary to enter the names of the functions that are in the selected area.

Function X → You can choose the type of function by clicking on the drop-down menu

Name → You must write a description for this function

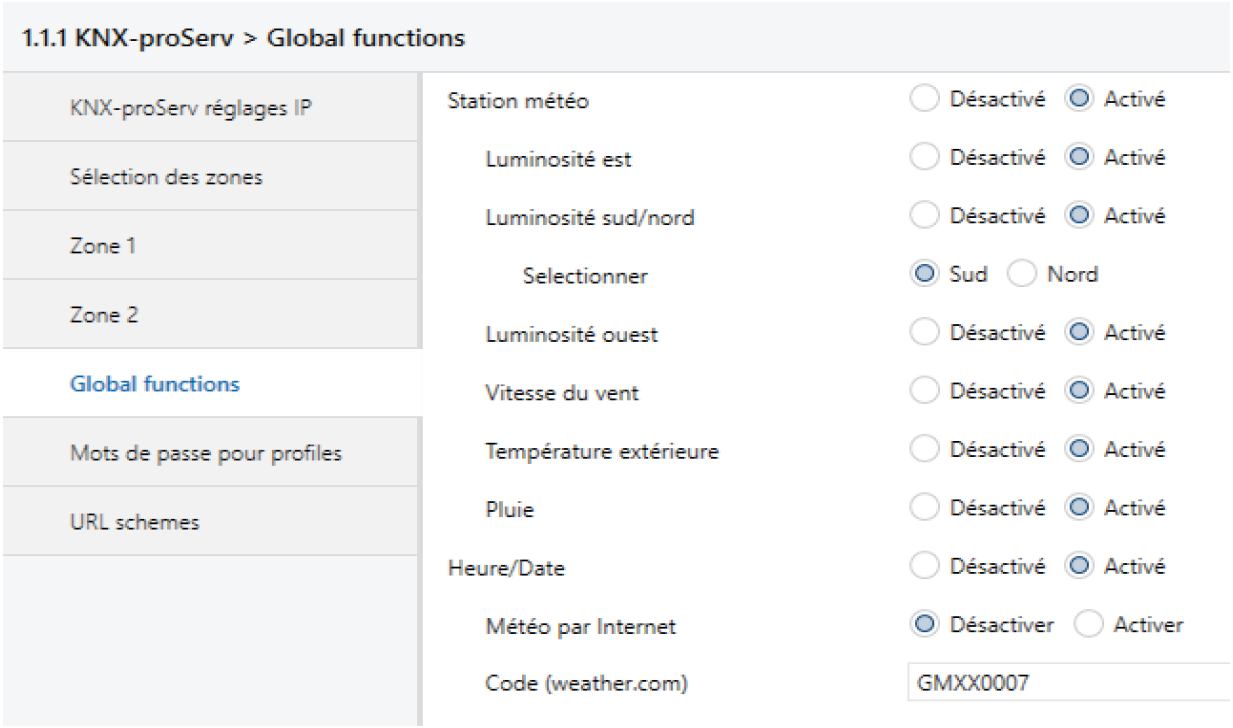
Exemple :
Ceiling
Wall lamp
Spots
LED
Speaker
Thermostat

Profiles → This allows you to block this function to other users. (See "Profiles")

Avoid using abbreviations for names as this will not work with the voice recognition applications!

d. Global Functions

Weather station→ This menu allows you to integrate a weather station into your proServ. You can select the functions that your weather station can measure.



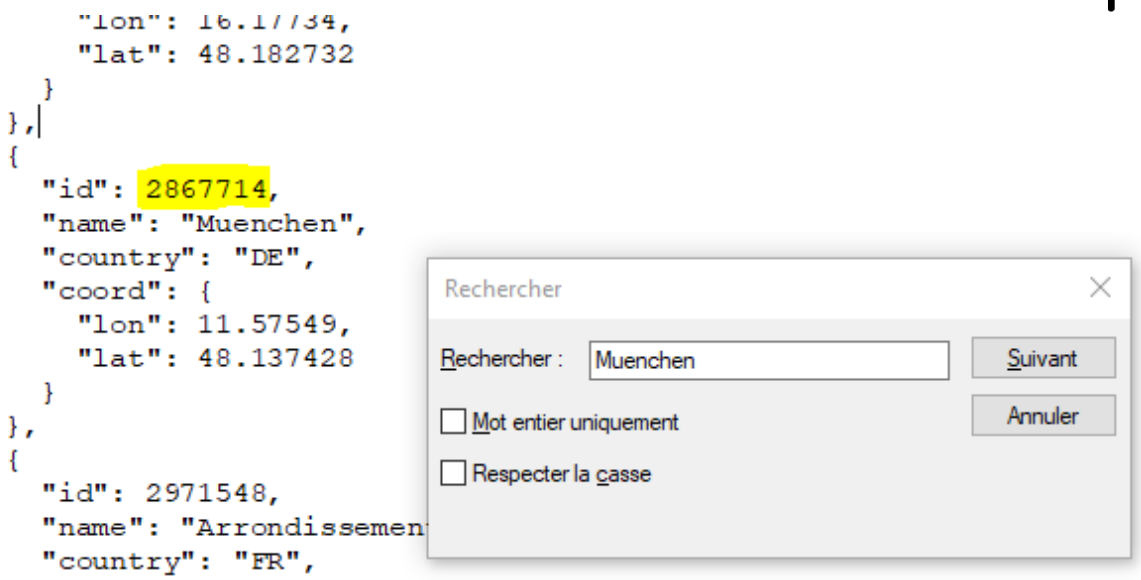
Additionally, functions can be activated, which

- send the current time to the bus as soon as the iKnix or iKnix2 app is called up
- enables the weather forecast for the next few days

For this, an ID must be entered, to define the place of residence of the installation. Please download the following file:

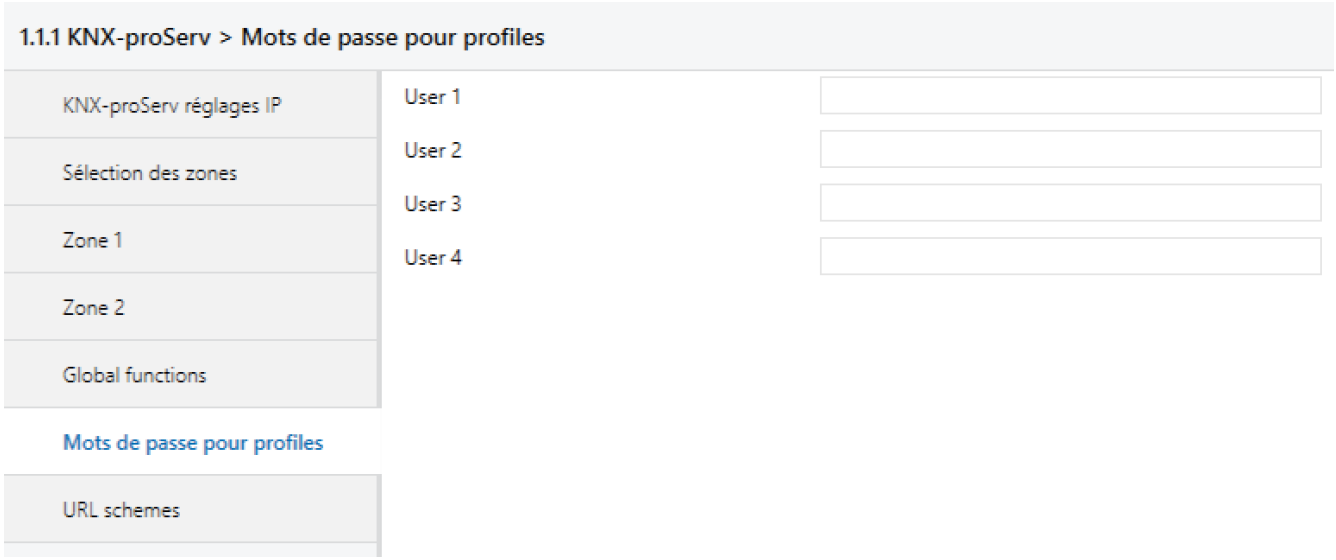
https://proknx.com/download/openweathermap/city.list.json

The file can be opened with a text editor. The location of the installation can then be searched.

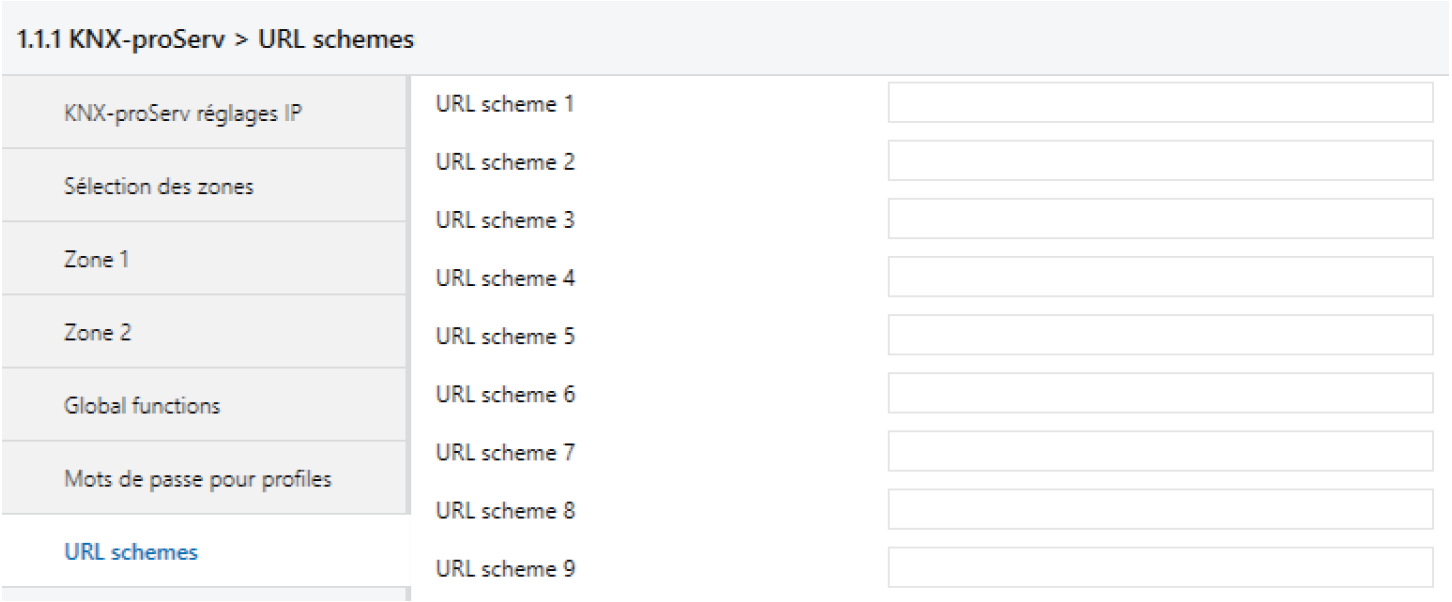


Please enter the „id“ in the field of Code (weather.com)

e. Passwords for Profiles



In case you have integrated profiles with certain functions in the zones, it is here that you will enter the passwords for each profile. For example, a profile can be a configuration for children, guests and homeowners.



f. URL Schemes

Schema URLs allow you to enter additional commands for other applications such as Sonos.

VI. Sonos system (with realKNX Server)

a. Presentation

The realKNX allows the user to do some basic SONOS functions via the KNX bus. All parameters that are required for communication between SONOS systems and the KNX bus can be determined via the ETS database of the KNX-proServ controller.

Up to five SONOS zones can be managed via the KNX bus. Grouped zones are also recognized and monitored by KNX participants at the same time. To this end, the following functions are available:

➔Commands

- Play /Pause
- Increase the volume (+)
- Lower the volume (-)
- Volume as a value (0 to 100%)
- MUTE disabled / enabled
- Next

- Previous
- Radio station selection (1-byte coded value)
- Next radio station
- Previous radio station

➔States

- Station radio (as 14-byte character string)
- Title (as 14-byte character string)
- Artist (as 14-byte character string)
- Album (as 14-byte character string)
- Volume (0 to 100%, 1 byte)

b. Zones Sonos

The SONOS system must be installed correctly before the realKNX Server connection configuration. It is possible to create more or fewer zones than the five zones controlled by realKNX/proServ. If more zones are installed, select five:

- Must be controlled by KNX
- Are frequently or constantly grouped together

However, the following combination counts as a SONOS zone:

- Play:1, Play:3 or Play:5 individual
- Speaker stereo Play:1, Play:3, Play:5 (Only the left speaker counts here!)
- A ZP90 or ZP120
- A Playbar
- A Playbar with combined speakers or ZPs (only the Playbar counts here)

A subwoofer or a bridge does not need to be counted.

To identify the SONOS zones, the zone serial numbers must be identified. To do this, start a SONOS controller (App iOS, Android or PC) and note the serial number of the devices to be counted in the settings *"About my SONOS system":* Example "Serial number: B8-E9-37-38-0D-2C: GB"
The string required later for the configuration becomes: "RINCON_B8E937380D2C01400"
Replace the red letters / numbers combination!

c. Radio Station

Five different radio stations can be started directly by KNX commands. The stations must first be set by a SONOS controller (iOS, Android or PC). Search and select the station you want by "Radio". In the dialog that follows, add "Info & Options" and "Add to my radio stations". The transmitters thus searched are then available directly under "Radio" -> "My radio stations".

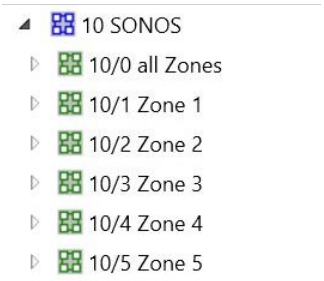
d. Configuration KNX

For configuration, a KNX-proServ controller is required. This can be provided by manufacturer iKnix or BleuCommAzur (the name of the manufacturer is printed on the side of the module)
Download the group addresses for ETS4 / 5 on the following link:

https://proknx.com/web/fr/realknx/sonos/sonos-group-adresses.csv.zip

Import these group addresses into your ETS project. **Caution: The level of 10 / x / x group addresses must be free.** If this were not the case, the existing 10 / x / x level should be moved to another level. This can be done by simply transferring the main level 10 to another free level. Then the devices that have communicated at this level must be reprogrammed (program only the application program, physical address can be maintained).

The structure of group addresses like this will be imported:



The following settings must be made in the proServ parameters (The URL scheme index can be freely chosen):

URL scheme 1 :

#SONOSX#<Adresse IP realknx Server>#<Identification zone1>#<Identification zone2>#<Identification zone3**>#<Identification zone4>#<Identification zone5**

Enter the <realKNX Server IP address>. Enter the <identification zone> as described in the SONOS zones section. Up to five RINCON channels can be entered. If the number of zones is smaller, one reduces accordingly.

URL scheme 2 :

#RADIO#<Name radio Station1>#< Name radio Station2>#< Name radio Station3>#< Name radio Station4>#< Name radio Station5>

The <Name radio Station x> must be entered literally (as described in the Radio stations section). Up to five radio transmitters can be input. If the number of transmitters is smaller, the number of transmitters is reduced accordingly.

URL scheme 3:

[#ALTIP#<IP Adress of proServ>]

The alternative IP address <IP address of proServ> is optional and is only necessary if the communication after the parameterization is not to be carried out by the proServ. In most cases, you may leave it empty.

e. Communication Sonos / proserv / realKNX Server

Communication with the KNX bus is via the KNXnet / IP "tunnel". The KNX-proServ allows communication via up to five tunnels. To enable SONOS communication and ETS programming at the same time, please press the KNX-proServ programming button until the LED flashes.

10/0/0	This address starts and stops all zones, independently of grouping. (ON or OFF)
10/0/1	ON (1Bit) will ungroup all zones
10/0/2	ON (1Bit) will group zone 2 and 1
10/0/3	ON (1Bit) will group zone 3 and 1
10/0/4	ON (1Bit) will group zone 4 and 1
10/0/5	ON (1Bit) will group zone 5 and 1
10/0/6	ON (1Bit) will group zone 3 and 2
10/0/7	ON (1Bit) will group zone 4 and 2
10/0/8	ON (1Bit) will group zone 5 and 2
10/0/9	ON (1Bit) will group zone 4 and 3
10/0/10	ON (1Bit) will group zone 5 and 3
10/0/11	ON (1Bit) will group zone 5 and 4
10/0/12	ON (1Bit) will group zone 3 and 2 and 1
10/0/13	ON (1Bit) will group zone 4 and 3 and 2 and 1
10/0/14	ON (1Bit) will group zone 5 and 4 and 3 and 2 and 1
10/x/1	Start for zone x with ON, stop for zone x with OFF. If the zone is grouped with one or more zones, they will also be started or stopped.
10/x/2	Status of zone x (On or Off)
10/x/3	Volume adjustment of zone x of a value encoded on 1 byte (value range 0 to 100) even if the zone x is grouped with another zone, the volume is adjusted only from this zone.
10/x/4	Confirmation of current volume as a value
10/x/5	relative adjustment of volume: ON button, higher, OFF button, lower. To continue adjusting the volume, the button must be pressed several times. The ON button also starts up the zone.
10/x/6	Turn off the sound in zone x with « ON », normal operating with « OFF ».

	The ON/OFF control also allows the sound to be muted in a group zone, without turning it off in the other zones.
10/x/7	Confirmation of Mute
10/x/8	Info about the actual master
10/x/9	Title as a string of characters of 14 bytes for playlists, extra info for radio programmes
10/x/10	Artiste as a string of characters of 14 bytes for playlists, radio channel for radio programmes
10/x/11	Album as a string of characters of 14 bytes for playlists, radio channel for radio programmes
10/x/12	Next title for playlists when the ON button is used
10/x/13	Previous title for playlists when the ON button is used
10/x/17	Relative selection of radio channel: using the ON button, next channel, using the OFF button, previous channel. When a playlist has been selected, it is interrupted by the radio programme.
10/1/18	Absolute selection of radio channel (1 byte): using values 1 to 5 gives the direct selection of a programmed radio station. Using 0, the zone is turned off. If a playlist was active, it is interrupted by the radio programme. The group address also allows the insertion of the radio station in a scène.
10/x/19	Indication of the current radio station (not in the case of a group zone)

A.2. JUNG Smart Visu Server

I. Requirements

1. Please set up the SVS according to the manufacturer's instructions
2. The following SVS functions are currently supported for offline voice commands:

- Switch/Dimmer
  - Switch
  - On/off (is not processed as "light", i.e. is not considered for global commands such as "switch off the light in the room)
  - Dimmer
  - Dimmer/switch
- Motor
  - Roller/Shutter/Awning
  - Venetian Blind (Slider + Button)
- Heating
  - Base Setpoint
- Scene
  - Activate scene
- Value/State
  - Display 2Byte float
  - Display 2Byte lux
  - Display 4Byte float
  - Display 4Byte unsigned integer
  - Display 4Byte signed integer
- Value transmitter
  - Send 1Byte (0-100%)

3. Make sure that voice control has been activated in the respective function

II. Changes in the configuration

After changing the configuration of the Smart Visu Server, press the SVS icon on the web interface and then press "Save". Then go to the Snips icon and select "Restart Snips" to train newly added words again.

A.3. GIRA X1

I. Presentation

1. Please set up the X1 according to the manufacturer's instructions
2. The following X1 functions are currently supported for offline voice commands:

- Switch/Dimmer
  - Switch
  - On/off (is not processed as "light", i.e. is not considered for global commands such as "switch off the light in the room)
  - Dimmer
  - Dimmer/switch
- Motor
  - Roller/Shutter/Awning
  - Venetian Blind (Slider + Button)
- Heating
  - Base Setpoint
- Scene
  - Activate scene
- Value/State
  - Display 2Byte float
  - Display 2Byte lux
  - Display 4Byte float
  - Display 4Byte unsigned integer
  - Display 4Byte signed integer
- Value transmitter
  - Send 1Byte (0-100%)

II. Changes in the configuration

When first set up the device enter and save the IP address of the device, then enter the password, you will find it on the X1 under “GPA, initial device password”.
Then after each change in the configuration of the X1, press the X1 icon on the web interface and press "Save". Finally, go to the Snips icon and select "Restart Snips" to train newly added words again.

A.4 Generic Gateway

I. Presentation

This function allows our systems to be compatible with any KNX Gateway.

The difference with the two servers above is that this solution requires an additional manual configuration with an easy graphical tool.

This type of configuration has the great advantage of being extremely inexpensive, not only for series applications. In many cases, private users already have an inexpensive KNX/IP gateway, which can then be used not only for the programming of the installation but also for the communication with our offline voice assistant. Only ARAGON Base is needed, and already can be spoken with the installation.

A.5 Ikea Tradfri Gateway

I. Set-up your IKEA Tradfri

Make sure you have set up your IKEA Tradfri gateway and devices. To use Tradfri with PRATGLAD, a Tradfri Gateway is mandatory. Please follow the instruction from IKEA or the alternative in the left menu. To set up the IKEA Tradfri for PRATGLAD you will need to enter the security code in the UI, you will find the code under the Tradfri Gateway.

Note: in order to be able to control your devices by voice, you must assign proper room and device names. Do this from the IKEA Home Smart app on your phone or tablet.

B. realKNX Server

I. realKNX Air

a. Presentation

The realKNX server extends the proServ with additional functionality. The realKNX server retrieves the configuration data from the proServ. The proServ is assumed to be configured from ETS via the proServ database.
Therefore, realKNX configures itself based on the configuration data of ETS.

It is important to know that after each download of the proServ, you will need to restart the realKNX server. The changes in proServ changes will only be applied after a restart of realKNX server.

b. Connection

- realKNX Server must be connected to the 24VDC network with the supplied cable.
- It must also be connected to the LAN port via an Ethernet cable

c. Snips configuration with Snips

Attention: Only connect realKNX Air in the network after a configured visualization server. After about 2 minutes of startup, realKNX Air can be searched in the network using a browser: http://find.proknx.com. The web interface is reached with port 3000

- Press the visualization server icon and enter the IP address of the visualization server. The address is entered automatically when the device is started up for the first time.
- Press the Snips Icon and then select the "Restart Snips" button to inject the words that have been read in (takes about 1 minute)
- Only if additional Satellites are used in other rooms: At 3b Step 4, "select adapter" you'll find the IP address of the Satellite(s). The selected device should also be assigned to a room. If several satellites are connected, you may trigger a message in the respective device to identify it.

Changes in the configuration

After changing the configuration of the visualization server click on its icon and press "Save". Then click on the Snips Icon and select "Restart Snips" to inject new words.

II. realKNX O-two

a. Presentation

For the realKNX O-two everything that has been said above is true. The difference is been made by how the product presents itself. Instead of having one speaker/microphone and a server separated, it is built in the same block. This product is supposed to be embedded in the wall or in the ceiling. It is ideal for hotel and conference rooms.

b. Connection

Careful:

- Unlike the realKNX Air, the realKNX O-two must be connected to a **5VDC** power cord
- It must also be connected to the LAN for the installation, later with it will be possible to connect it via Wifi.

c. Snips Configuration for Snips

Attention: Only connect realKNX O-two in the network after a configured visualization server. After about 2 minutes of startup, realKNX O-two can be searched in the network using a browser: http://find.proknx.com. The web interface is reached with port 3000

- Press the visualization server icon and enter the IP address of the visualization server. The address is entered automatically when the device is started up for the first time.
- Press the Snips Icon and then select the "Restart Snips" button to inject the words that have been read in (takes about 1 minute)
- Only if additional Satellites are used in other rooms: At 3b Step 4, "select adapter" you'll find the IP address of the Satellite(s). The selected device should also be assigned to a room. If several satellites are connected, you may trigger a message in the respective device to identify it.

Changes in the configuration

After changing the configuration of the visualization server click on its icon and press "Save". Then click on the Snips Icon and select "Restart Snips" to inject new words.

III. Aragon

a. Presentation

What said for the realKNX Air is also true. Aragon can be embedded just as the realKNX O-two, but this time its size is reduced, it fits into a flush mounted box. It is compatible with most of the switch fronts in 55x55mm, which makes it design adjustable to your switches. Aragon is composed of two microphones, one speaker and a server.

b. Connection

The device is connected to a CAT5, CAT6 or CAT7 using screw terminals. The color code of the labels corresponds to the following:

T568B

Terminal 9 (X) is not used. The supply is via PoE (power consumption max.10W)

c. Snips configuration for Snips

Attention: Only connect Aragon Base in the network after a configured visualization server. After about 2 minutes of startup, Aragon Base can be searched in the network using a browser: http://find.proknx.com. The web interface is reached with port 3000

- Press the visualization server icon and enter the IP address of the visualization server. The address is entered automatically when the device is started up for the first time.
- Press the Snips Icon and then select the "Restart Snips" button to inject the words that have been read in (takes about 1 minute)
- Only if additional Satellites are used in other rooms: At 3b Step 4, "select adapter" you'll find the IP address of the Satellite(s). The selected device should also be assigned to a room. If several satellites are connected, you may trigger a message in the respective device to identify it.

Changes in the configuration

After changing the configuration of the visualization server click on its icon and press "Save". Then click on the Snips Icon and select "Restart Snips" to inject new words.

C. Detailed functional description realKNX Server

I. IP Address

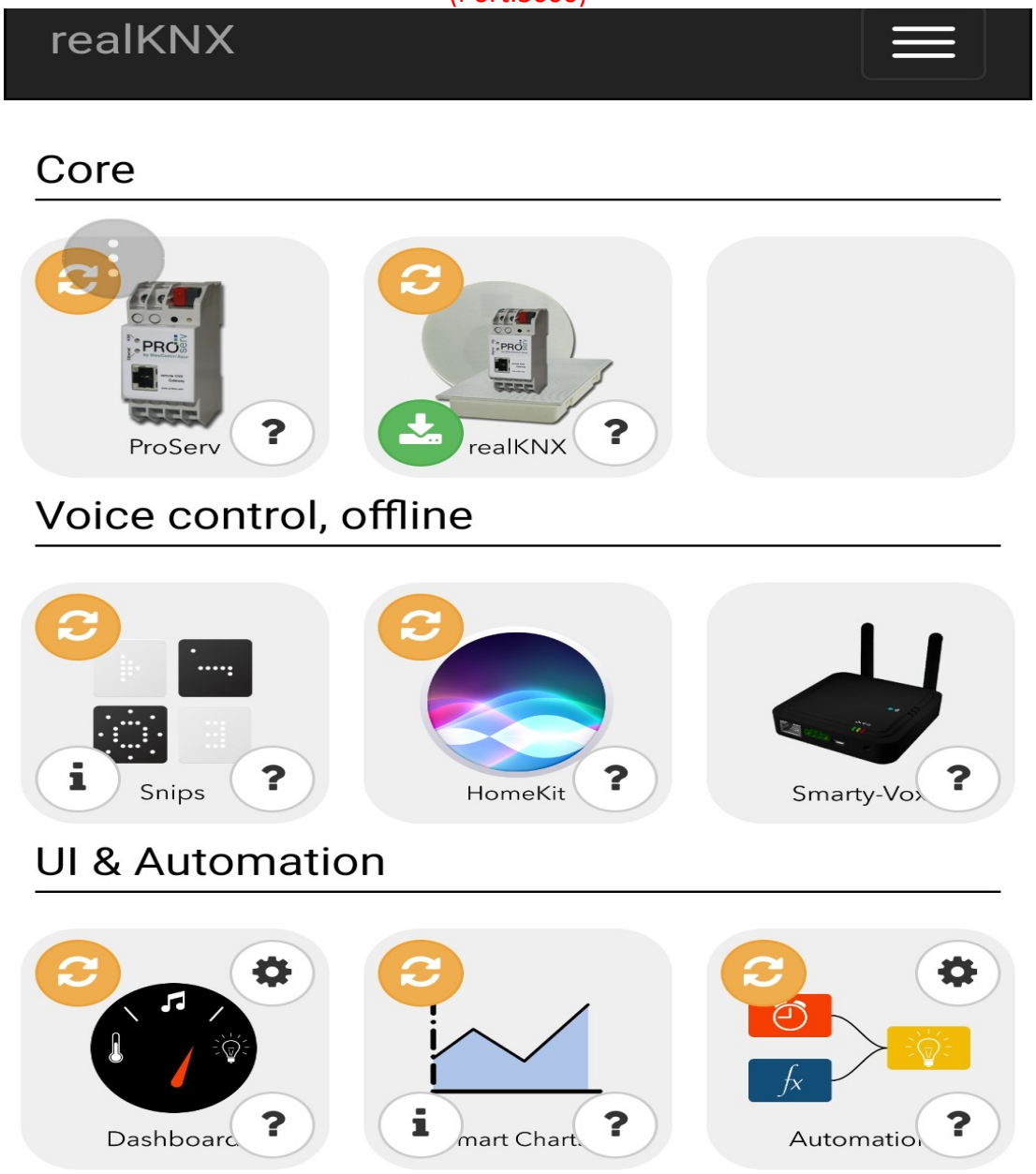
The device is shipped in DHCP mode.
Use the address http://find.proknx.xyz to find the realKNX in the local network

The configuration page for the realKNX (Home Page) is available port 3000
Webmin (system configuration) is available port 10000
The logins for the Webmin are mentioned on the side of the product. (pi/…….)

II. Home Page

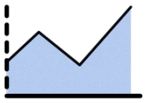
realKNX Designer is the landing and configuration page of the realKNX Server

To access it, you need to connect to the following address: http://find.proknx.xyz (Port:3000)

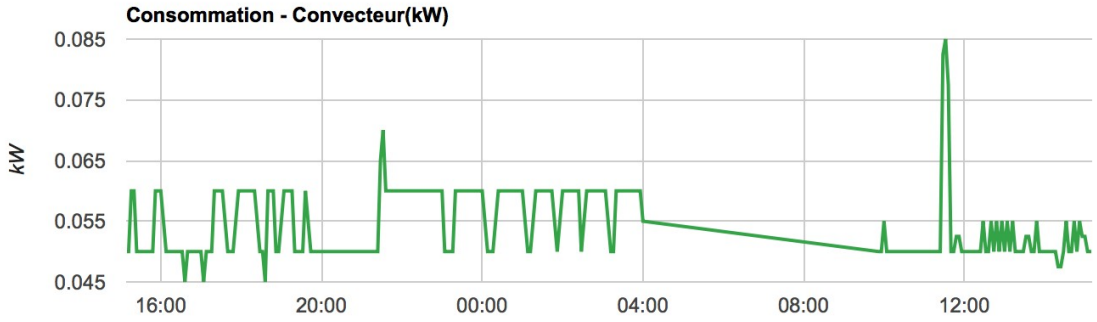


III. proServ Tools

a. Smart Charts



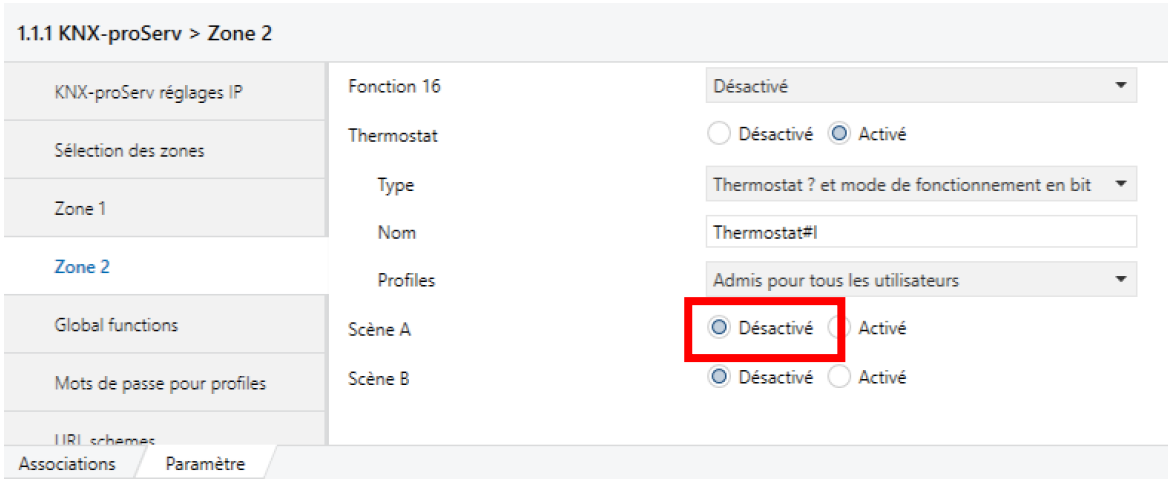
The LogView tool is used to present recorded (logged) value in a graphical user interface. The logging of data is automatic and is configured in proServ with ETS.



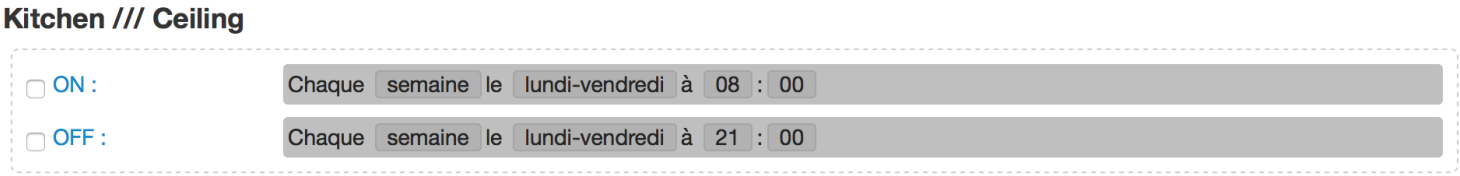
The recording of value series is supported for the proServ functions "State", "Control" and "Thermostat". When a weather station is activated, the meteorological data are also recorded (without the input of control characters).
To allow the recording of values of a proServ function, simply add a "#l" in the proServ function designation. This control character is not displayed in the visualization.

After a download of the proServ, it is necessary to restart the real KNX Server !

Example:



b. Scheduler



With the Scheduler tool, you can automate your KNX installation. For instance, you can switch lights, turn on a pump and/or change the comfort modes automatically at a time of a day, week, or month.

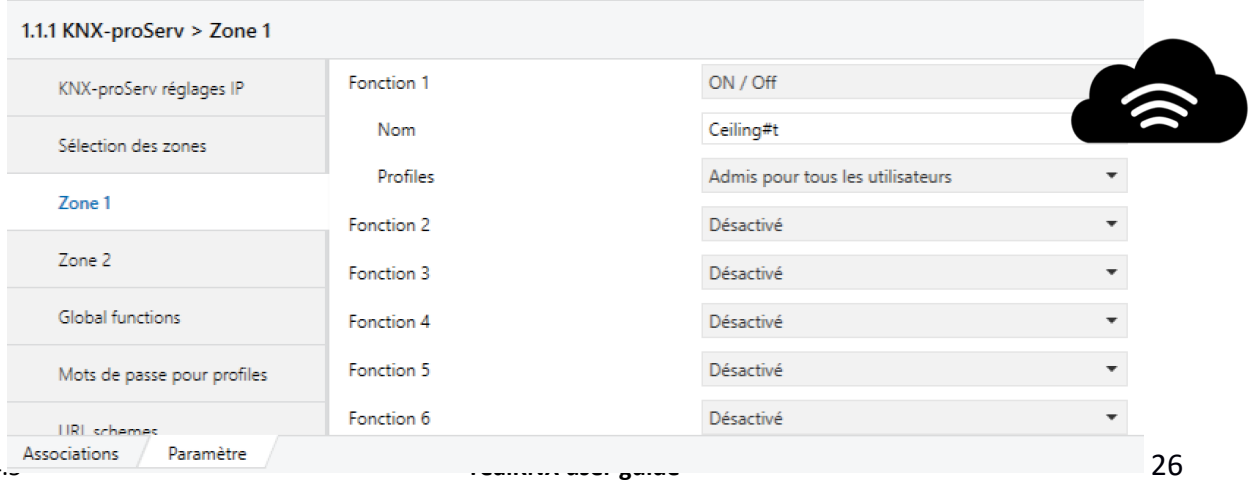
Scheduling is available for the following proServ functions:

- Switching
- Variation of light intensity
- RGB separate objects
- RGB Combined / Switching Objects
- RGB combined / variation
- AUX - switching
- AUX - 8 bits without index
- All functions of Venetian blinds
- Room temperature controller, switching in an operating mode:
  - ➜ Bit operating mode *(switching between comfort and eco)*
  - ➜ Mode of operation in byte *(switching between comfort and night, however only if the comfort or night mode is selected beforehand so that in standby or frost protection the comfort / night switching program is deactivated automatically).*

To activate a proServ function from the scheduler, add #t to the proServ function title. The #t control characters are not displayed in the visualization.

After a download of the proServ, it is necessary to restart the real KNX Server !!!

Example:



IV. remoteConnect (Only with proServ)

Remote Connect is a built-in feature for realKNX Servers that allows you to easily connect to your realKNX when you are not connected to the home Wi-Fi. Indeed, it will not be necessary for you to open redirect ports or create a VPN connection. Necessary for Google HOME and Alexa.

a. Required configuration

- proServ connected and programmed by ETS
- realKNX Server logged in for more than 5 minutes
- Internet connection

b. Mise en service

1. Send us an email to get your credentials at the following address: remoteconnect@proknx.com

→ End User mail: .....
→ End user password: ..... *(8 characters, Shift, Lowercase + Numbers)*

2. If you wish to change your password, please click on "Forget my password", then you will receive an email to proceed with the change.

c. remoteConnectID

The login URL is created automatically. Please click on this link and connect with login credentials.

d. Function of remoteConnect

- Google Home
- Alexa
- Dashboard
- iKnix2
- Charts
- Augmented Reality
- Reboot system

V. HomeKit (Only with proServ and realKNX Air)

Use the voice command via Siri® to control your KNX devices. The realKNX server is a bridge between the KNX network and the iPhone and iPad devices. The latter allow for voice control, powerful automation, including geolocation and a variety of traditional applications.

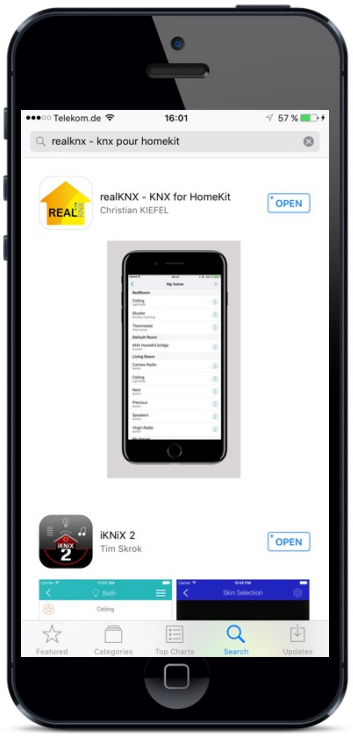
a. Prerequisites

- proServ connected and programmed by ETS
- realKNX Server logged in for more than 5 minutes
- iPhone or iPad for the end user (with these Apple IDs)
- Internet connection

b. Application realKNX

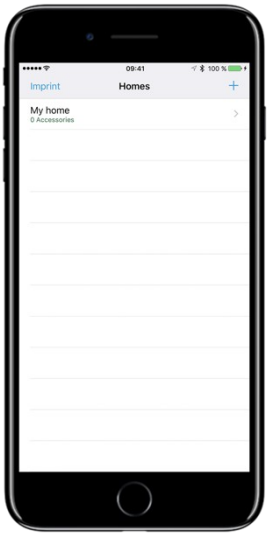
For a commissioning, please download the application "realKNX - KNX for HomeKit" from the Apple Store.

Disponible sur App Store



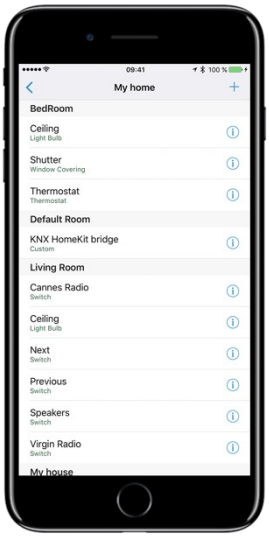
c. Commissioning

Please bring the end-users phone.



Step 1: Open the realKNX application and create a house by pressing the "+" at the top right.

Step 2: Select your home and click on the "+" at the top right to add an accessory. Subsequently, you will have to type the matching code.



Step 3: Configuration complete! All proServ functions are now integrated into our application. As a result, voice commands with Siri are now possible

d. Voice commands with Siri

Control of lighting

- General:
  - Turn lights on / off
  - Turn the lights on in {ZONE}
  - Are the lights switched on?

- Individual circuit ON/OFF:
  - Turn ON / OFF the {FUNCTION} in {ZONE}
  - Is the {FUNCTION} on in {ZONE}?

- Individual circuit diming:
  - Set the {FUNCTION} in {ZONE} to 50%
  - Set the {FUNCTION} in {ZONE} to 75%

Control of motors

- General House:
  - Open/Close shutters everywhere

- Individual circuit:
  - Opens / closes the pane in the {ZONE}
  - Raise / lower the shutter by 10% in {ZONE}
  - Set the pane in the {ZONE} to 20%
  - What is the position of the pane in {ZONE}?

Control of thermostats

- General House:
  - Set heating/cooling/thermostat
  - Turn off heating/air conditioning/thermostat

- Thermostat individual:
  - Set heating/cooling/thermostat in {ZONE} to 21°C
  - Increase/decrease heating/cooling/thermostat in the {ZONE} by 3°C
  - What is the temperature in {ZONE}?

Commande Divers

- Opens/closes the gate **(Aux-Toggle)**
- Active {SCENES} in {ZONE} **(Aux-1byte)**

e. Remote control and automation

By adding an Apple Tv (4th generation), configured with the same Apple account as the one of the pairing, and which is in the same network as the realKNX Server, you will automatically have a remote connection.

This same Apple Tv will also allow you to do automations like:

- Geolocation
- Programmable clocks
- Logic according to state

f. Share control of your home

You can invite others to control your accessories if they use iOS 10 and are connected to iCloud. To share control of your accessories, you must either be at home or have an Apple TV set up in your home.

To invite others:

- Open the Home app and tap the Home tab.
- Touch in the upper left corner.
- Touch Invite.
- Enter the Apple ID that the person uses for iCloud.
- Touch Invite.

The recipient receives a notification in the House app on his device.

To accept an invitation:

- Open House and tap
- Click on Setting Homes
- Touch Accept and then Done

g. Solutions

➢ I cannot find the accessory "KNX HomeKit Bridge" when I want to do a match:

1. Verify that you are on the same Ethernet network as the realKNX Server
2. Verify that the IP address of the proServ is correct: http://<IP_address_realKNX_server>:8081/proserv/settings.html
3. Restart realKNX Server
4. After 5 minutes, open *[AdresseIP-realKNXServer]:***3000**/#homekit then select "Reset KNX HomeKit Bridge Server"

➢ Unable to pair with "KNX HomeKit Bridge":

1. Restart realKNX Server
2. Remove the home from the "Home" application
3. After 5 minutes, open *[AdresseIP-realKNXServer]:***3000**/#homekit then select "Reset KNX HomeKit Bridge Server"
4. Create new home then try again the pairing

➢ I cannot find the "Reset KNX HomeKit Bridge Server" button:

1. Please send us an e-mail to the following address: support@proknx.com

➢ I don't want to display a feature on HomeKit:

1. Please add a **"#h"** in the name of the proServ functions that should not be displayed.
2. Restart the realKNX Server after downloading the proServ

➢ The application "House" is very long, what to do?

1. We recommend that you use our "iKnix2" application for a standard button control. On the other hand, the application "Eve" is very good too.

h. Various information

- You must have iOS 10-11 on your Apple devices.
- HomeKit Bridge has a limit of 99 functions. If you have more functions, please delete it with an #h in proServ.

- Do not use special characters or abbreviations for a better speech recognition.

VI. Amazon Echo (Only with proServ and realKNX Air)

Use the voice command via Alexa® to control your KNX devices. The realKNX Server acts as a bridge between a KNX network and the Amazon Echo. These allow voice control on a continuously connected box in your home.

a. Prerequisites

- proServ connected and programmed by ETS
- realKNX Server logged in for more than 5 minutes
- Amazon Echo, or Echo Dot
- Internet connection

b. Application ALEXA

For a commissioning, please download the application "Amazon Alexa" on the Apple Store then follow the indications on the screen

c. Commissioning

After completing the installation of your Amazon Echo on the same network as your realKNX Server, you can start your system:

1. Indeed, please say: "Alexa, discover devices"!

2. 30 seconds later, Alexa is supposed to give you the numbers of equipment that are in the network.

If you have multiple Amazon Echo with the same Amazon account in your installation, you do not need to re-commission.

d. Voice commands with Alexa

Control of lighting

- General: (For general orders, you must create a group in Smart Home, see here)
  - Alexa, lights up {ZONE}
  - Alexa, light switches lounge {ZONE}

- Individual circuit ON/OFF:
  - Alexa, turn on the {FUNCTION} in {ZONE}
  - Alexa, turn off the {FUNCTION} in {ZONE}

- Individual circuit Diming:
  - Alexa, Set {FUNCTION} in {ZONE} to 50%
  - Alexa, Set {FUNCTION} in {ZONE} to 75%

Control of engines

- General:
  - Open the {ZONE} pane,
  - Close shutter {ZONE}

- Individual circuit:
  - Open the shutter in {ZONE}
  - Close the shutter in {ZONE}
  - Set the pane in the {ZONE} to 20%

e. Function Group

Alexa does include general functions. That's why we must create groups. To do this, please follow these steps:

1. Log in with your credentials to your Amazon Alexa account. (or Apple app)
2. Getting to Smart Home
3. Click "Create Group"
4. Select the channels of a {ZONE}
5. Give the name "light {ZONE}"
6. Save it at the bottom of the page

Repeat this for each part to allow a general control of the parts.

f. Solutions

➢ Alexa cannot find any equipment (step 1):

1. Make sure that Alexa is connected to the same Ethernet network as realKNX Server
2. Verify that the IP address of the proServ is correct:
3. Restart the realKNX Server
4. After 5 minutes, open and select "Reset KNX Alexa Bridge"
5. Redo an equipment discovery with Alexa once the reset completed!

➢ Alexa cannot find any equipment (step 2):

1. Open
2. Go to "Bridge Control"
3. Verify that the UPNP IP address matches the one of the realKNX Server!
4. If it is not, replace it and save it by clicking on the green button!
5. Re-discovering equipment with Alexa
6. Please email us at the following address if it still does not work: support@proknx.com

VII. Google Home (Only with proServ and realKNX Air)

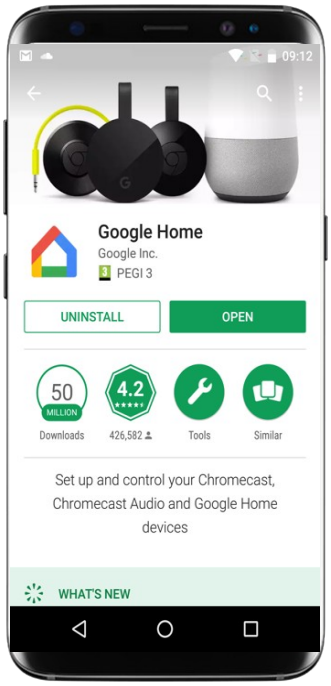
Use the Google Home® voice command to control your KNX devices.
The realKNX Server acts as a bridge between a KNX network and Google Home. This allows voice control from a connected speaker or from your smartphone with the Google Wizard.

a. Prerequisits

- proServ connected and programmed by ETS
- realKNX Server logged in for more than 5 minutes
- remoteConnect
- Internet connection

b. Application Google Home

For a commissioning, please download the application "Google Home" on the Apple Store/Google Play then follow the indications on the screen



c. Commissioning

1. *Follow Google Home instructions for commissioning*

2. Go to the Google Home app and then go to the menu, then click on the "**Home Control**" submenu.

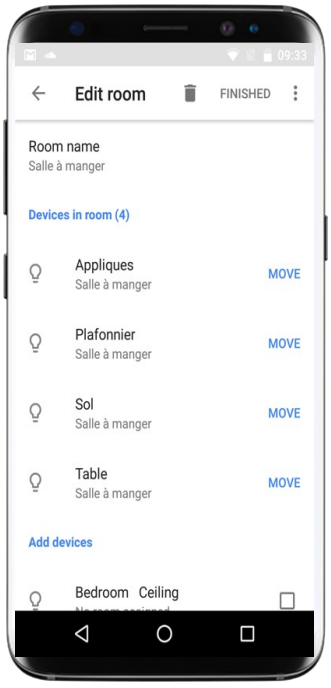
3. You can now return to the application and press the blue + button

4. Select realKNX, press "Pair" and use your ID for remoteConnect

5. Once the pairing is completed, you will have to assign the accessories to the corresponding parts.

ROOM

Create your room
Select the accessory
Click on « Finished »



d. Voice commands with Google Home

Control of lighting

- General
  - Ok Google, lights up {ZONE}
  - Ok Google, light switches lounge {ZONE}

- Individual circuit ON/OFF:
  - Ok Google, turn on {FUNCTION} in {ZONE}
  - Ok Google, turn off {FUNCTION} in {ZONE}

- Individual circuit Diming:
  - Ok Google, Set {FUNCTION} in {ZONE} to 50%
  - Ok Google, Set {FUNCTION} in {ZONE} to 75%

Control of thermostats

- Thermostat individual:
  - Set the temperature in {ZONE} to 21°C
  - Increase/decrease thermostat in the {ZONE} to 3°C
  - What is the temperature in {ZONE}?

e. Solutions

- Google cannot find any equipment (step 1):

1. Make sure that Google is connected to the same Ethernet network as realKNX Server
2. Verify that the IP address of the proServ is correct in realKNX Server:

*htpp://[AdresseIP-realKNXServer]:***8081**/proserv/settings.html

3. Restart the realKNX Server

- Google can not find any equipment (step 2):

4. Make sure that Google is connected to the same Ethernet network as realKNX Server

VIII. Snips (Air)

The integration of the KNX function and the structure of the house with Snips allows offline voice control without any internet connection. The privacy is guaranteed, what you say stays in the room. And at the same time the vocabulary isn't limited: you can choose the room and function names. To operate the system no need of a smartphone or a tablet. It's ideal for hotels, conference rooms and boats.

a. Meaning of "offline":

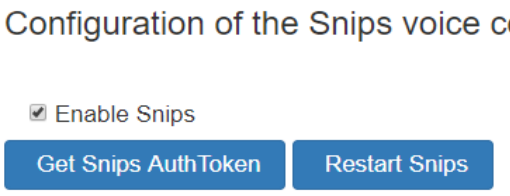
Snips is Open Source. So, we can guarantee that nothing you will say will leave the room and finish on the web.
Offline also means, no automatic updates which could modify functions of the installation. A configurated system is autonomous over year. The functions of the system cannot be modified by a third-party software.

The connection to internet is nevertheless recommend once for the installation of the system. To update the software, the voice assistant and the language evaluation.
The internet also allows the optional using of powerful Text to Speech machines. The offline TTS has only one voice and which is very robotic. The choice of the TTS is possible in the following installation.

b. Activation of Snips

When Snips is delivered it's already activated.

Should Snips have been disabled once, it is possible to reactivate it by selecting the check mark, this requests the Snips Authoken (license). Further configurations are enabled on clicking on "Show/hide advanced settings".



c. Snips Core

Snips Core is a program. By clicking on the link, you download it.

d. Snips Assistant

The Snips Assistant is a configuration which allows the Core to interpret the spoken words. The Assistant decides if it is a command, a function name or room name. He is available in English, German and French.
The assistant is regularly updated. We recommend installing it again when you install the system.
It is also possible to change the language. Therefore, choose between the three available languages (French, german and English) and select “Click here to install Snips Assistant”. After a few moments the page will reload, and the new language will be installed on the devices. Once this task finished please make sure to also update the voice in the step “5. Snips Voice & sound feedback”. In order to do that please follow the instructions in part “g. Text to speech” of this notice.

- Important note: If words/commands/rooms are not understood correctly we will help you and add them to the system. Please wright us an e-mail with whatever you want to add to support@proknx.com

e. Speaker/microphone unit

We offer various loudspeaker and microphone units which can be operated together (also mixed):

Jabra Satellite
Using our available Air Satellite, Jabra Speak can be operated via Ethernet (cable or WiFi). The Jabra can also be connected directly via USB to one of the two USB ports of the realKNX Air Server.

- When Jabra Speak is connected via the USB cable, system messages are also played through the speaker.
- When using the Satellite, the speaker/microphone unit can be assigned to a room. This allows commands to be spoken in a simplified way without having to specify the name of the room in which the unit is used.

The Satellite must be commissioned as described under "Snips" on the realKNX Server Homepage.

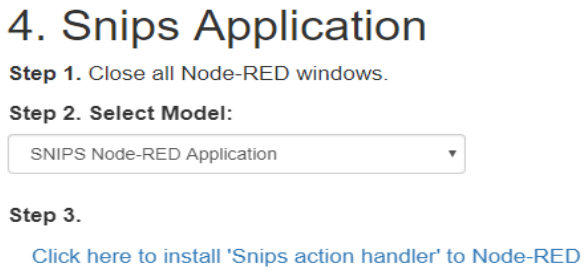
Aragon Satellite
The Aragon Satellite is for the switch box and can only be supplied via an Ethernet PoE cable.

- When using the Aragon Satellite, the speaker/microphone unit can be assigned to a room. In this way, commands can be spoken in a simplified manner without having to name the room name in which the unit is operated.

The set up of the satellite must be carried out according to the description under "Snips" on the realKNX Server Homepage.

f. Snips application

The Snips application is the Node-RED flow, who translates the commands understood by the Assistant in order to drive the KNX installation over the proServ.
If you want to use Snips the application must be installed. For the installation all the open Node-RED windows must be closed.
Please don't change anything in the flow.



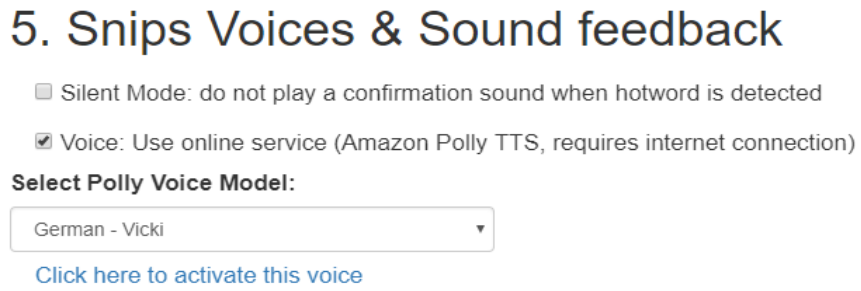
g. Text to Speech

As already mentioned above, the offered TTS engine is "Polly", which is available for free on the internet. So, the answers given by the Jabra sounds more natural.

- Even by using the online TTS nothing you said will end up in the internet. The engine only gets the text output, which is then spoken via the loudspeaker. If this is not desired, it is possible to deselect Polly.

If you have changed the assistant language, please follow these steps.

- Select the voice model you prefer (in the same language than the assistant)
- Select "Click here to activate this voice" after a few seconds the voice will be updated and the system ready to use



h. Troubleshoot

Over this link it is possible to see the words and sentences understood by snips on your computer or smartphone.

6. Troubleshoot

Snips Web Admin:

Click here to Open Snips Watch

i. Commissioning

1. Configurate the proServ on the local network
2. Configurate the realKNX Server as explained above, restart and on over 2 minutes

j. What do Snips understand?

Operation of lights

- ➢ In general:
  - Turn on/off the lights (if you have a Satellite only the lights in the defined room are operated)
  - Turn on/off the lights in the {ROOM}
  - Turn on/off the lights everywhere
  - Is the light turned on/off?

- ➢ Operate single lights
  - Turn on/off the {FUNCTION} in the {ROOM}
  - Is the {FUNCTION} turned on/off in the {ROOM}?

- ➢ Operate the dimming function
  - Set the luminosity of the {FUNCTION} in the {ROOM} on 50%
  - Make it brighter in the {ROOM}

Shutter operation

- ➢ In general:
  - Open/close the shutters everywhere

- ➢ Operation of single shutter
  - Open/close all the shutters in the {ROOM}
  - Open the shutter in {ROOM} to 20%
  - How are the shutters in the {ROOM}?

Operation of the heating

- ➢ In general:
  - Set the temperature to 24° in the whole house

➢ Operation of single heaters

- Set the thermostat of the {ROOM} to 21°
- Raise/lower the temperature in the {ROOM} of 3°
- What is the temperature in the {ROOM}?

Scenes

- Activate {SCENE} in the {ROOM}

Careful: For voice control only, the commands of the document are available
https://proknx.com/realknx/download/pdf/Function_realKNX.pdf

IX. Snips Chatbot

a. Presentation

The ST Chatbot is a bot designed to interact with a Telegram chat application. The Chatbot enables **secure remote control of home devices from anywhere** by using a Telegram chat application (see video below).

The ST Chatbot is a 'robot' that runs on the home server. The Chatbot is implemented in the Snips Application Node-RED flow. Your Chatbot is private and it serves your Telegram chat application. The Telegram chat application is available for iOS/Android/WP & Web & Mac/PC/Linux.

Usage: simply type and send the commands that you normally use with Snips. Don't say or type the hotword. You must always specify the room. E.g. 'Turn on the light in the Bedroom', 'What's the status of the lights in the Kitchen?' and 'Close the shutters in the Living room' are all valid commands.

Prerequisites:

- Snips must be installed and configured, see the Snips page.
- If you have the 'Telegram command app for realKNX' installed, or any other Telegram Node-RED nodes, it might not work as expected.

b. Configuration of Telegram Chat application

1. Install and configure a Telegram Chat Application
2. Follow the steps Creating a new bot . Save the name and token, you'll need them soon. The token is a string along the lines of `110201543:AAHdqTcvCH1vGWJxfSeofSAs0K5PALDsaw`, it is required to authorize the bot and send requests to the Bot API.

c. Configuration of Telegram Chatbot

1. Open Node-RED and select 'Menu | Configuration nodes'. Find and open the 'telegram bot' node, enter the 'Bot-Name' and 'Token' from previous step.
2. Save the flow, the **ST Chatbot** is now ready to use.

d. Use the Telegram Chat application

1. Open the Telegram Chat Application on your mobile or laptop, select your bot
2. Select the 'Start' button (or type /start)
3. Type or use Speach-To-Text to enter a command.

X. Dashboard

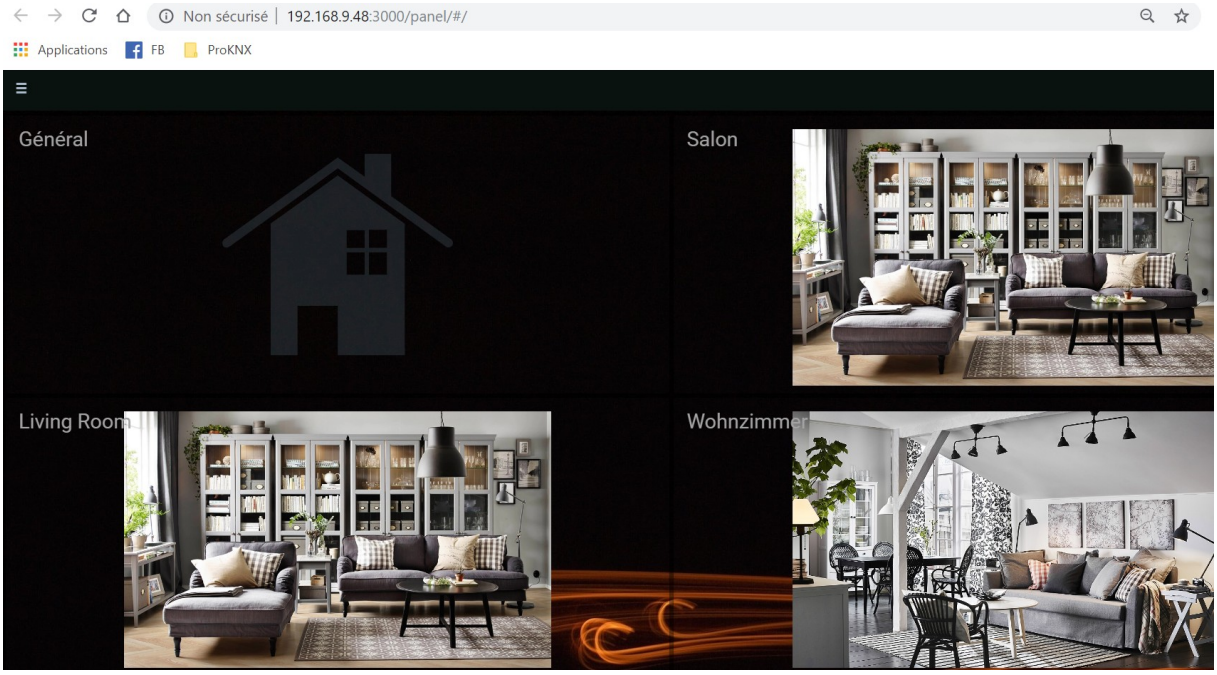
The Dashboard is a supervisor that works with a web browser. Indeed, it will allow you to order your home from your computer. No configuration is required even if you can customize the buttons.

a. Prerequisites

- proServ connected and programmed by ETS
- realKNX Server logged in for more than 5 minutes
- Computer with Chrome, Firefox ou Safari

b. IP Address

Please login to this address: *[AdresseIP-realKNXServer]***:3000**/panel

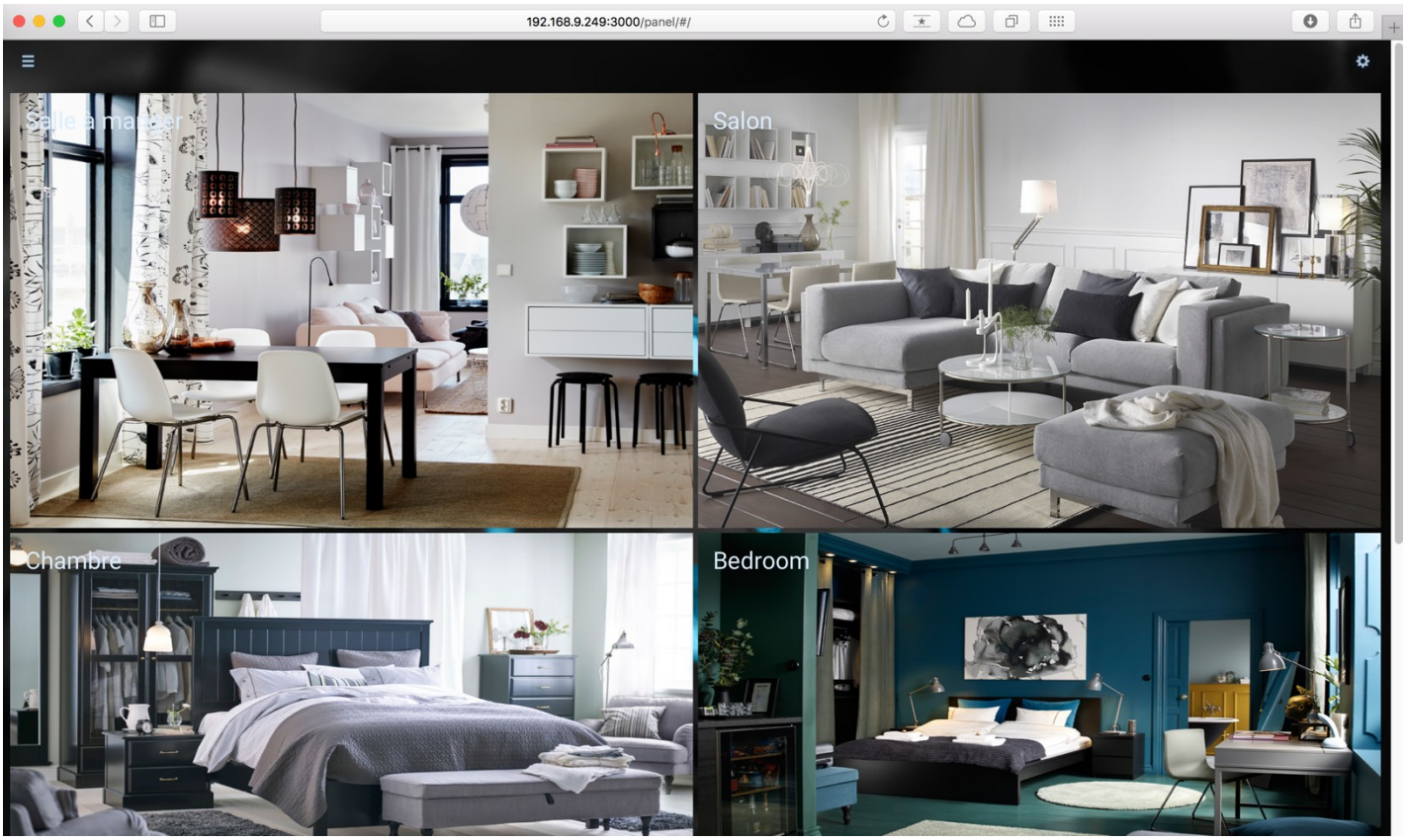


c. Button Size

Depending on your display, you can choose the size of your buttons. Indeed, it is likely that the buttons are too big for a small screen. To change the size of the buttons, please follow these steps:

1. Click on the top left.
2. Below the date, open the settings
3. You can now choose between Large and Small

d. Customizing room images



For the realKNX Air server and the realKNX O-two it is possible to customize the background of your rooms that you see in the general menu of the dashboard.

Log into the webmin of the realKNX server (port: 10000).
The credentials are: User: pi Pw: (is printed on the side of the realKNX server)
Now do the following:

1. In WebMin goto Others -> File Manager
2. Open / Opt / realknx / public
3. Load photos into this directory
4. In the dashboard overview (e.g. 192.168.1.10:3000/panel/#/), select 'Edit Dashboard' using the gear on the top right

5. Select 'Dashboard settings' using the gear in the room
6. Select the image for 'Background Image URL' in the list
7. Press Save.
8. Press the red 'Edit dashboards' at the top right

e. Customizing the Background Image

A unique background image may be selected. It has to be placed in the same folder as mentioned before and can be modified in this way:

1. Click on the top left
2. Open the settings (left bottom cogwheel)
3. In **« Background Image »** on the right, select the corresponding link of the jpg file that you want to have displayed

f. Choice of Appearance Theme

There are 4 types of appearances. This allows you to customize your Dashboard. Here is the procedure for easily changing themes:

1. Click on the top left
2. Below the date, open the settings
3. And in **"Theme"** on the right, please choose between:
    - Default
    - Material
    - Material Dark
    - Pale Blue
    - Translucent

g. Name of the Dashboard

It is necessary to rename your Dashboard

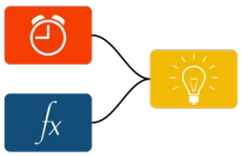
1. Click on the top left
2. Below the date, open the settings
3. In **« Panel name »**, on the top right part, please enter the name of your installation.

h. Editing the proSev and resetting the Dashboard

When a change is made in the proServ, realKNX Server must be restarted. In addition, you must reset the dashboard to retrieve the changes. Attention, you will lose the whole of the old configuration!!!!

1. Click on the top left
2. Below the date, open the settings
3. On the right side, press **« Reset Large and Small »**

XI. Automation



Automation

We use the Node-Red graphical programming language which will allow automation and logic functions for the KNX. This programming language is very simple. Our realKNX node retrieves all proServ information and therefore does not require any additional programming except for the proServ performed by ETS.

a. Prerequisites

- realKNX Server logged in for more than 5 minutes
- proServ connected and programmed by ETS
- Internet connection

b. Node realKNX

The realKNX node is installed by default in Node-RED when realKNX is delivered.

c. Connection to Node-RED

Please click on "Automation" on the Home Page
Default login realKNX Air: pi/<pw on sticker>
Default login realKNX O-two: respeaker/<pw on sticker>
Default login Aragon Base: root/<pw on sticker>

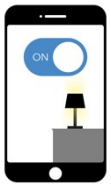
d. Example

In the Node-red menu, you can click on "ProKNX Librairy" to obtain configuration examples (or else https://proknx.com/automation-with-node-red/ .You can copy the source code and import it into Node-Red. You only need to change some settings.

e. Customizing the nodes

Node-Red is an open source tool, there are thousands of nodes to communicate very easily with other protocols or other principally.
To do this, please go to the menu Node-Red (Hamburger top right ..) and click "Manage Palette". From there, you have access to all the nodes that are currently installed but by clicking on "Install" you can perform a search like "Google Maps". It's up to you to discover your limits ...

XII. Augmented Reality (Only with proServ with Air and O-two)



Augmented Reality

The augmented reality will allow to launch actions on the KNX from your KNX camera.

a. configuration

- realKNX Server logged in for more than 5 minutes
- proServ connected and programmed by ETS
- Internet connection

b. Complete notice

Please open this pdf file where you will find the complete documentation:

http://www.proknx.com/web/fr/realknx/augmented_reality/doc.zip

XIII. Changes, new features and upgrade instructions

This update is not mandatory, it is only useful if you are interested in the new features!

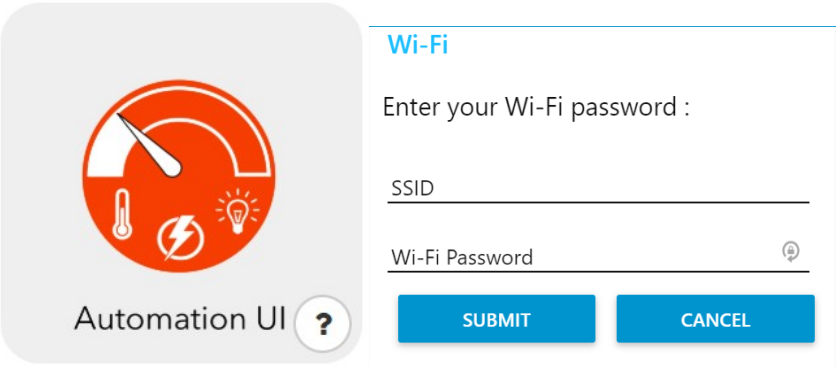
a. Changes & new features

Functions for the private home automation

Examples	Examples	Actions
Hey Snips, what's the name and the password of the Wi-Fi?	Hey Snips, is there Wi-Fi here?	Gives you the name and the passwort of the Wi-Fi so that you can write it down. *
Hey Snips, be quiet for 30 minutes	Hey Snips, talk to me again	Active/deactivate the microphone.
Hey Snips, activate the confirmation sound	Hey, turn off the confirmation sound	Activate/deactivate the confirmation sound when the assistant hears the Hotword.
Hey Snips, I can't hear you	Hey Snips, you speak to loud	Raise/lower the volume
Hey Snips, what's the actual date and the time?	Hey Snips, what time is it?	Snips gives you the current date and time
Hey Snips, wake me up in 10 minutes Hey Snips, set an alarm at 7 am tomorrow	Hey Snips, deactivate the alarm	You can activate/deactivate an alarm with an absolute or a relative value. **

Further information:

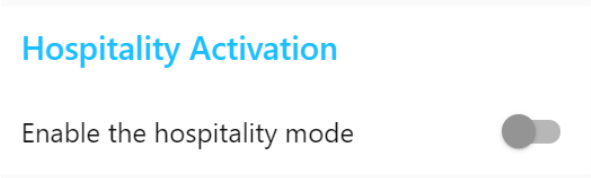
* To configure the Wi-Fi function, you need to fill out the Wi-Fi form with the name and the password on our realKNX user interface under "Automation UI"



** When the alarm rings you must deactivate it otherwise it will snooze for 5 minutes and these 3 times.

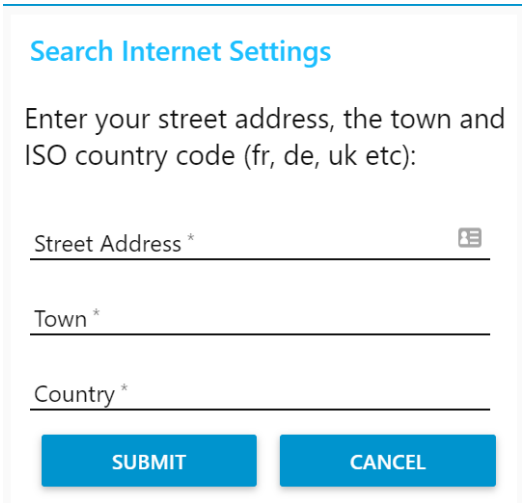
Functions for hospitality

These functionalities are only available in the Hospitality mode and the access is restricted to professional uses. To activate it you need an authentication token.
Then on the realKNX graphical interface under Automation UI you will find a switch to turn on/off the Hospitality mode.



Examples	Examples	Actions
Hey Snips, activate do not disturb me	Hey Snips, turn off the mode do not disturb me	Turn on/off an LED interface at the door.
Hey Snips, ask Google, what's the weather in Lyon tomorrow	Hey Snips, tell me, a restaurant nearby	Is doing a web research on the Google browser. *

Further information:
* In order to assure that the internet search will be done correctly, you need to enter your address in the form on the realKNX graphical interface under Automation UI.



b. Upgrade instructions

Prerequisites:

- KNX-proServ is configured
- realKNX Air v9.x
- KNX devices are visible and fully functional in the Dashboard
- Snips is Enabled and Snips Auth token is installed.

You must be very careful, if you switch off or plug out the server during the update it will probably break permanently the system.

1. **Upgrade realKNX, HomeKit and other systems files:**

- This step is only needed if you have custom commands: In Node-RED, make a backup copy of your Node-RED application code (Node-RED | Hamburger | Export Clipboard | All flows)
- In Webmin, select favorites (**Star** icon, bottom left),
    1. select Custom Commands,
    2. Select Stop Node-red
- In Webmin | Others | FileMan edit etc/apt/source.lst.d/proknx.list, set to
    - *deb [trusted=yes]* https://s3.eu-central-1.amazonaws.com/repo91.proknx.xyz *stable main*
- In Webmin, open command line **>_** icon, bottom left and run these commands
    - *curl -sL* https://deb.nodesource.com/setup_10.x | *bash -*
    - *apt-get install -y nodejs*
    - *node -v*
        - should return v10.16.3

    1. Open Webmin and upgrade WebMin and packages (optional, recommended)
    2. Open Webmin and select 'System | Software Packages'.
    3. Under 'Upgrade All Packages', check 'Normal upgrade'.
    4. Select 'Upgrade Now'
    5. The upgrade can be quite long (10-20 min) depending on network connection, number of updates, please be patient and do not interrupt (or you may break the system)
    6. When you see the blue Return to module index button at the bottom, you're ready to continue.
    7. Open realKNX | About, it should now show version 4.2.7 (you may have to wait a short while if realKNX is starting up)

2. **Upgrade Snips** *Optional, only needed if you use Snips!*
    1. **Update Snips core**.
        1. Open realKNX | Snips | Advanced

2. The upgrade can be quite long (10 min) depending on network connection, please be patient and do not interrupt (or you may break the Snips installation)
3. The online voice feedback is most likely weird (angry bee), it will be fixed in a later step
4. You should now see "Core version: 0.63.2"

2. **Update Snips assistant, Step 2**. Select assistant language and update. This step is mandatory when core is updated.
3. **Update Snips application, Step 4.** This step is mandatory when core is updated.
4. **Update Snips Voice, Step 5.** Mandatory, must be done even if new voice is selected!
5. **Only for the O-two: Open Webmin** and select 'Other | Command Shell. Run the command sudo /opt/realknx/snips/pulseaudio.sh
6. **Restart Snips** either from Main menu orange Snips button or from Snips dialog

- Reboot the system (realKNX Main | realKNX orange button)
- After restart, reset Node-RED password (realKNX Main | Automation, cog wheel)
- This step is not mandatory, only necessary if you want to clean the memory: In Webmin, open command line **>_** icon, bottom left and run these commands
    1. *sudo apt autoremove*
    2. *sudo apt autoclean*
    3. *sudo apt clean*

Troubleshooting Snips / O-two

- Open Webmin and check the **CPU activity**, avoid doing troubleshooting unless the CPU load is steady < 50%
- general issues: Set the room name and Save it (even if it was already set)
- **spoken feedback is weird** (lesser-than-speak-auto-breathe etc etc) reinstall a new voice and/or delete all files in /tmp/tts folder from Webmin | File Manager
- **Only for the O-two: spoken feedback is weird** (angry bee) repeat step 5 and 6 (pulseaudio.sh + restart)
- **microphone** seems to be dead / Hey Snips is not waking up the O-two: Set Sensitivity to a new value and select Save.

Known limits:

When you use realKNX Air with online assistant (Google Home, Alexa or siri) when you update, the device will no longer be found by the server. It is still possible to use the online wizards with this new update, just hide the "floating 2-byte states" in ETS with the "#h".

XIV. Appendix

a. HashTags (#) and how they are used

Many configuration options are possible via additional textual information in the proServ product database. These are entered in the corresponding text fields of different parameters via so-called hashtags. The hashtags are appended to the text and are not displayed in the visualization. Unless stated otherwise, after the first hash sign #, further abbreviations can follow without reentering the #.

Field/Menu	HashTag	Description	Result
Device name/ KNX proServ IP settings	#x#y	Use multiple proServ in one installation. This proServ is the x of y in total. In addition, proServ fixed IP addresses have to be assigned in the same order as defined here.	iOS app iKnix2: The user interface shows one large installation that is defined by several proServ.
Name / Zone x	#c	Repeats the transmission of the command in short intervals as long as the key is pressed	iOS and Android Apps: command "AUX 8bit unsigned"
Name / Zone x	#f	The button is shown as activated as long as the assigned group address has the same value than the value of the requested function	iOS and Android Apps: command: „AUX 1bit ON“, „AUX 1bit OFF“, „AUX 1byte unsigned“
Name / Zone x	#h	Function is not read in the realKNX server	realKNX Server
Name / Zone x	#k	Function is not used for HomeKit. The limit of 100 functions for HomeKit can be reduced to the essential functions	Function is used for all applications of the realKNX server, except HomeKit
Name / Zone x	#l	Function (data point) is released in the realKNX server for data recording	Data point is released in the realKNX server for display in SmartCharts, LogView and proServ Expert (HabMin)
Name / Zone x	#m	When activated, an e-mail is sent via the realKNX server	State 1bit high activ, State 1bit low activ
Name / Zone x	#t	Function is released in the realKNX server for the scheduler	Details under Scheduler

b. Special entries in the URL schemes

The URL schemes allow you to define a link to a specific application or browser page, which is called via a key of the UI (function "AUX-URL scheme"). In addition, the following configurations in text format are also possible.

Text in einem URL scheme	Auswirkung
#SONOSX#<IP_Adress_realKNX_Server> #<Identification_SONOS_Zone1> #<Identification…	Detailed information in the Sonos description
#RADIO#<Name_Radiosender1> #<Name_Radiosender2>#<….	Detailed information in the Sonos description
#ALTIP#<IP_Adresse_proServ>	Detailed information in the Sonos description
#ALTIP#<public_IP_Adresse_der_Instal-lation>[#publicport] z.B. #ALTIP#myknxinst.dyndns.org#12345	Access of the iKnix apps from outside of the LAN. The public IP can be a fixed public IP address or a DynDNS address of the installation. In the internet router the TCP-Port forwarding of publicport must be set to 12004 from proServ. If the apps don't find a proServ in the local network, this address is called up. When used, all "passwords for profiles" should be set.
#EXTIP#<remoteConnect ID>	By using the realKNX Server and activating remoteConnect the iKnix apps find the proServ outside of the LAN even without fixed public IP address or port forwarding.
realknx://<IP_Adresse_realKNX_Server>:3000	In the iKnix2 app the zone „realKNX"is added. When selected, the smartphone camera will be launched, and the detection will be activated via augmented reality.
realknx://<IP_Adresse_realKNX_Server>:3000	By choosing „AUX-URL scheme"a „View" of the realKNX Server webpage is opened. (only iKnix2)
proservx:// <IP_Adresse_realKNX_Server>:8081/ proserv/scheduler.html	By choosing „AUX-URL scheme"a „View" of the Scheduler webpage is opened. (only iKnix2)
proservx:// <IP_Adresse_realKNX_Server>:8081/ openhab.app?sitemap=proserv-classic	By choosing „AUX-URL scheme"a „View" of the grapical webpage „LogView" is opened. (only iKnix2)
realknx://<IP_Adresse_realKNX_Server>:3000/ index.html#logview	By choosing „AUX-URL scheme"a „View" of the grapical webpage

	„SmartCharts“ is opened. (only iKnix2)
background://<IP_Adresse_http_server _hintergrundbild>#0.25 Working example: background://www.proknx.com/old/downloads/temp/iknix2_skyline#0.25	Background image for iKnix2 App, the name of the image .png (iPhone) and HD.png (iPad) are automatically chosen. If no image is found nothing is displayed. The factor behind the # defines the transparence.