

M-SERV server configuration

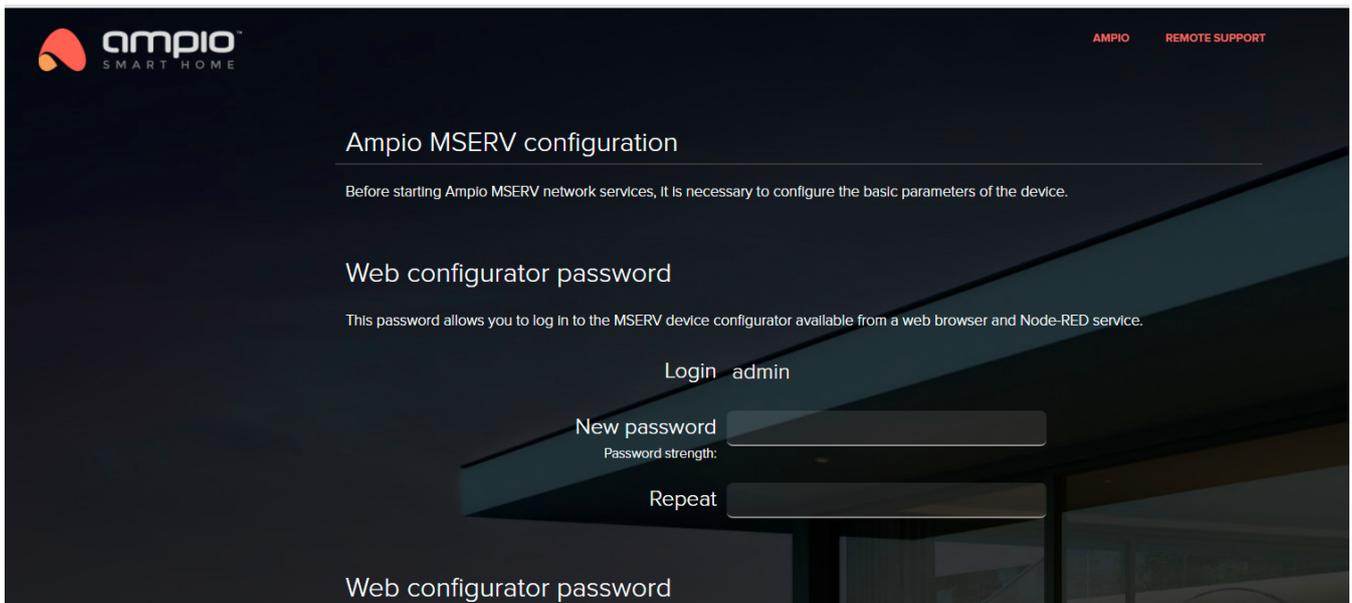
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From April 2023, servers are manufactured in two versions, which will be called *Green* and *Blue* for the purpose of this document. Configuration of the *Green* version for server images with a version smaller than 400 is different from the *Blue* version.

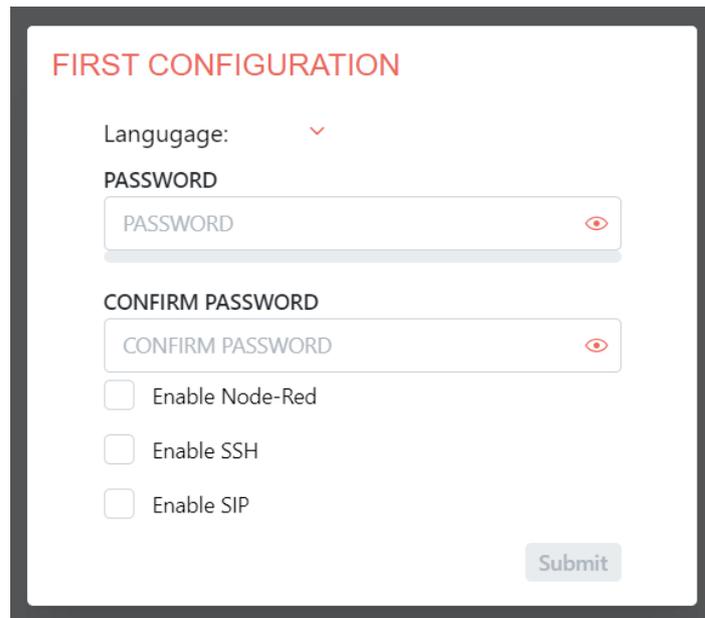
First configuration

First launch of M-SERV can take about 5 minutes due to time-consuming generation of encryption keys.

A prerequisite to getting access to the server and the Smart Home Manager application is setting up passwords by entering the server address in your web browser. The address can be found on the server's screen. The figure below presents a first configuration screen for the *Green* version.



If, however, the initial configuration screen looks like figure below, it means that you have a *Blue* version of the server and must provide the password twice, as well as choose whether or not you want the *Node-RED* tool, or *SSH* and *SIP* connections activated at first launch.



FIRST CONFIGURATION

Language: ▼

PASSWORD

PASSWORD 👁

CONFIRM PASSWORD

CONFIRM PASSWORD 👁

Enable Node-Red

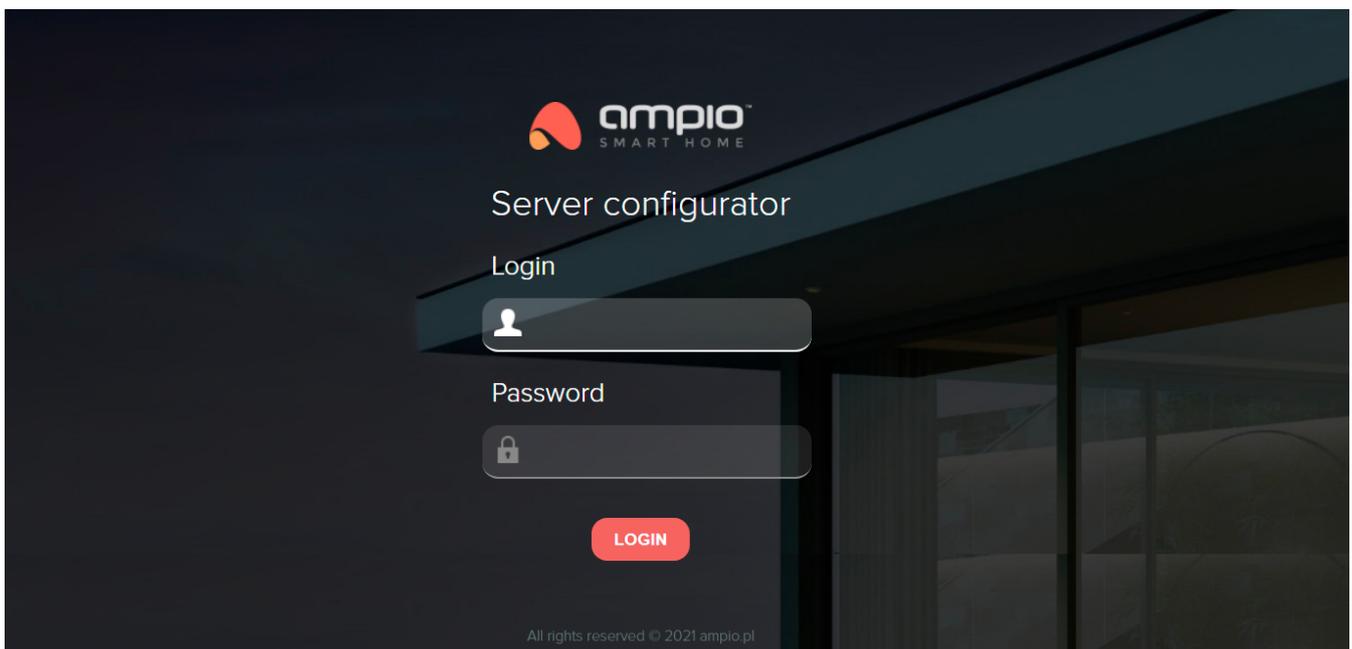
Enable SSH

Enable SIP

Submit

The *Green* version for server images smaller than 400

After filling in all the fields and clicking Save, changes will be sent to the server. Then, once the server is rebooted, entering the server's address in the browser will take you to the login screen where you log in with the password set up in the previous step.

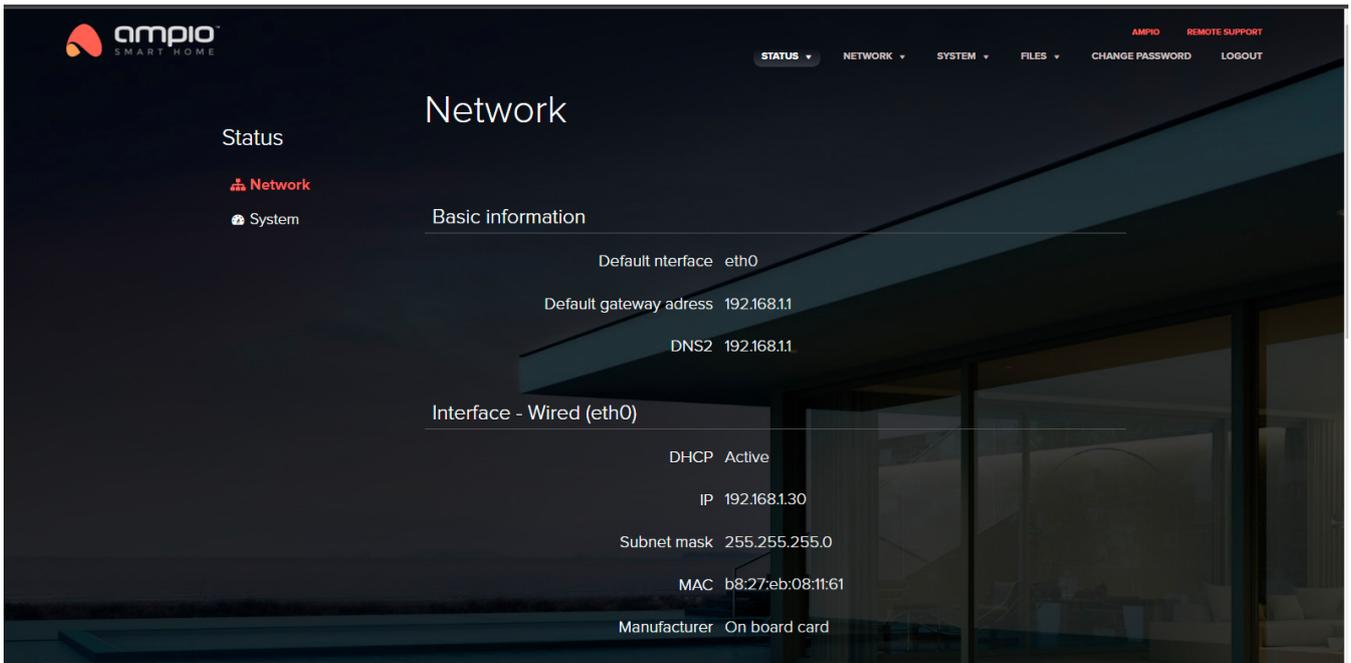


The previously set password will also be the password to Node-RED for an admin user.

Description of subsites

Status -- network

Here you can find information about the server, such as Default gate, DNS1 and DNS2. You will also be able to see whether DHCP is active, or not. Other information that can be checked here are: server's IP address, its MAC and VPN address.

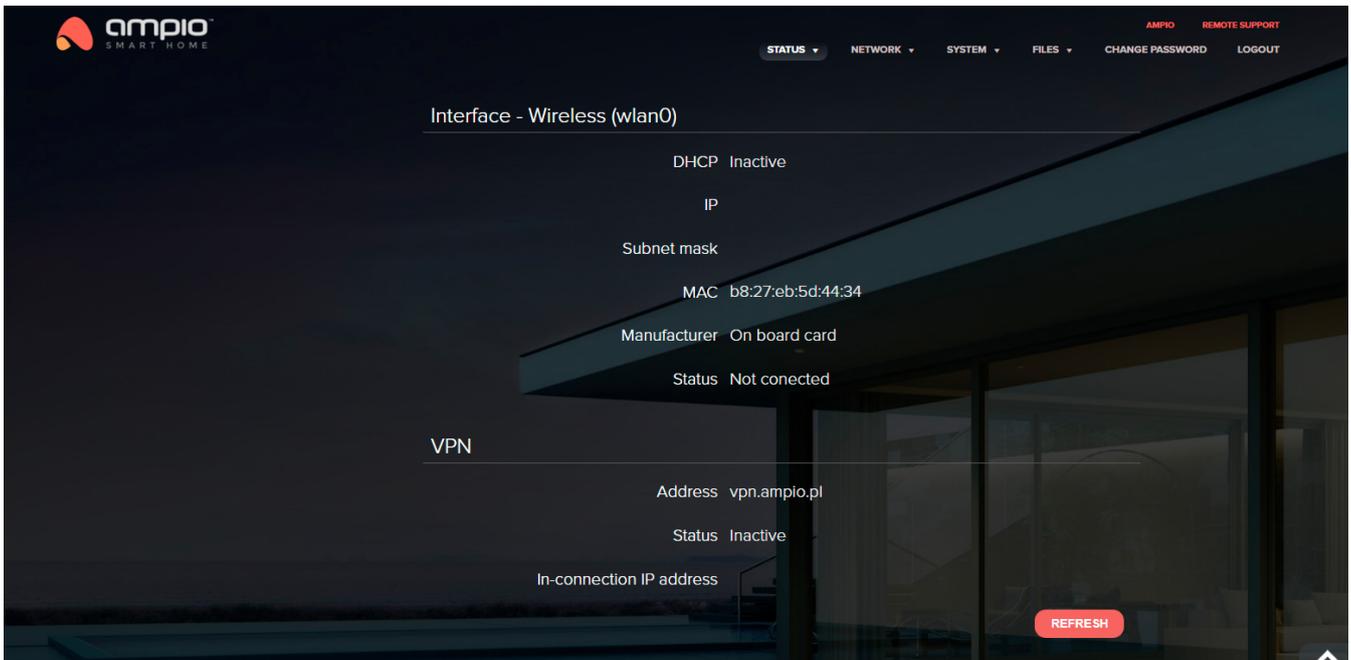


The screenshot shows the 'Network' configuration page in the Ampio Smart Home interface. The page has a dark theme with a background image of a modern interior. The navigation menu at the top includes 'STATUS', 'NETWORK', 'SYSTEM', 'FILES', 'CHANGE PASSWORD', and 'LOGOUT'. On the left, there is a 'Status' sidebar with 'Network' and 'System' options. The main content area is titled 'Network' and contains a 'Basic information' section with the following details:

- Default interface: eth0
- Default gateway address: 192.168.1.1
- DNS2: 192.168.1.1

Below this is the 'Interface - Wired (eth0)' section with the following details:

- DHCP: Active
- IP: 192.168.1.30
- Subnet mask: 255.255.255.0
- MAC: b8:27:eb:08:11:61
- Manufacturer: On board card



The screenshot shows the 'Network' configuration page in the Ampio Smart Home interface, specifically the 'Interface - Wireless (wlan0)' section. The page has a dark theme with a background image of a modern interior. The navigation menu at the top includes 'STATUS', 'NETWORK', 'SYSTEM', 'FILES', 'CHANGE PASSWORD', and 'LOGOUT'. On the left, there is a 'Status' sidebar with 'Network' and 'System' options. The main content area is titled 'Network' and contains the following sections:

- Interface - Wireless (wlan0)**
 - DHCP: Inactive
 - IP:
 - Subnet mask:
 - MAC: b8:27:eb:5d:44:34
 - Manufacturer: On board card
 - Status: Not connected
- VPN**
 - Address: vpn.ampio.pl
 - Status: Inactive
 - In-connection IP address:

A 'REFRESH' button is visible at the bottom right of the page.

Status -- system

The tab provides information about the system.

System

Diagnostic overview

- Factory MAC address 0000B378
- Ethernet interface MAC address b8:27:eb:08:1f:61
- System operation mode Normal
- Data carrier mode Safe
- System uptime 32 minutes, 57 seconds
- Internet time synchronization Synchronization is correct
- System time 2021-09-29 11:47:58
- Memory state free 573888 kB out of 946392 kB
- Memory consumption 12%
- CPU load 0.63%
- Space occupancy folder RW 48%

Waiting for ampio.pl...

System

Space occupancy folder RW 48%

- Node-RED Operational, version: 1.2.9
- Node-RED ampio plugin version Operational, version: 0.4.5
- MQTT broker Operational, version: 2.0.11 (v5.0/v3.1/v3.1)
- Ampio MQTT bridge Operational, version: 4.15.0
- Ampio server status Operational, version: 2.508 2021-03-16 00:00:37
- AmpioCloud status Unavailable last check 2021-09-29 11:19:55
- AmpioCloud info Data unavailable
- System engine SmartHome-R10_LASH_stable, v10.166, d 2021-07-12
- HTTP engine version 2.4.38, 73.29
- The configuration engine version 1.325 - 2021-04-30
- Kernel version 5.10.17-v7+
- CPU ARMv7 Processor rev 4 (v7l), Version: a02082

Waiting for ampio.pl... [REFRESH](#)

Explanation of diagnostic data:

Factory MAC address server's MAC address in the CAN network

Ethernet interface MAC address physical address of the network interface controller

System operation mode indicates whether the system is working correctly, or not

Data carrier mode indicates whether the system operates in a safe mode (read-only), or in a read-and-write mode. By default, the system should operate in a safe mode.

System uptime indicates the duration of time that the system has been working since the last launch.

Internet time synchronisation indicates if the system downloads the current date and time correctly from the Internet

System time shows the current time on the server

Memory state indicates the current memory usage on the server

Memory consumption indicates the current RAM memory usage

CPU load indicates the current processor load in the server

Space occupancy folder RW indicates the current storage usage in a non-volatile folder (RW)

Node-RED indicates the current version of Node-RED installed

Node-RED Ampio plugin version indicates the current version of installed Ampio Node-RED plug-in

MQTT broker indicates the current version of installed MQTT broker

Ampio MQTT bridge indicates the current version of installed MQTT bridge software

Ampio server status indicates the current operating status of the Ampio application server

AmpioCloud status indicates the connection status between the server and Ampio Cloud, which is indispensable to control the house from outside the local network's range

AmpioCloud Info indicates the current status of the Ampio Cloud service

System engine indicates the current version of the main system engine

HTTP engine version indicates the current version of the http server

The configuration engine version indicates the current version of the system configuration engine

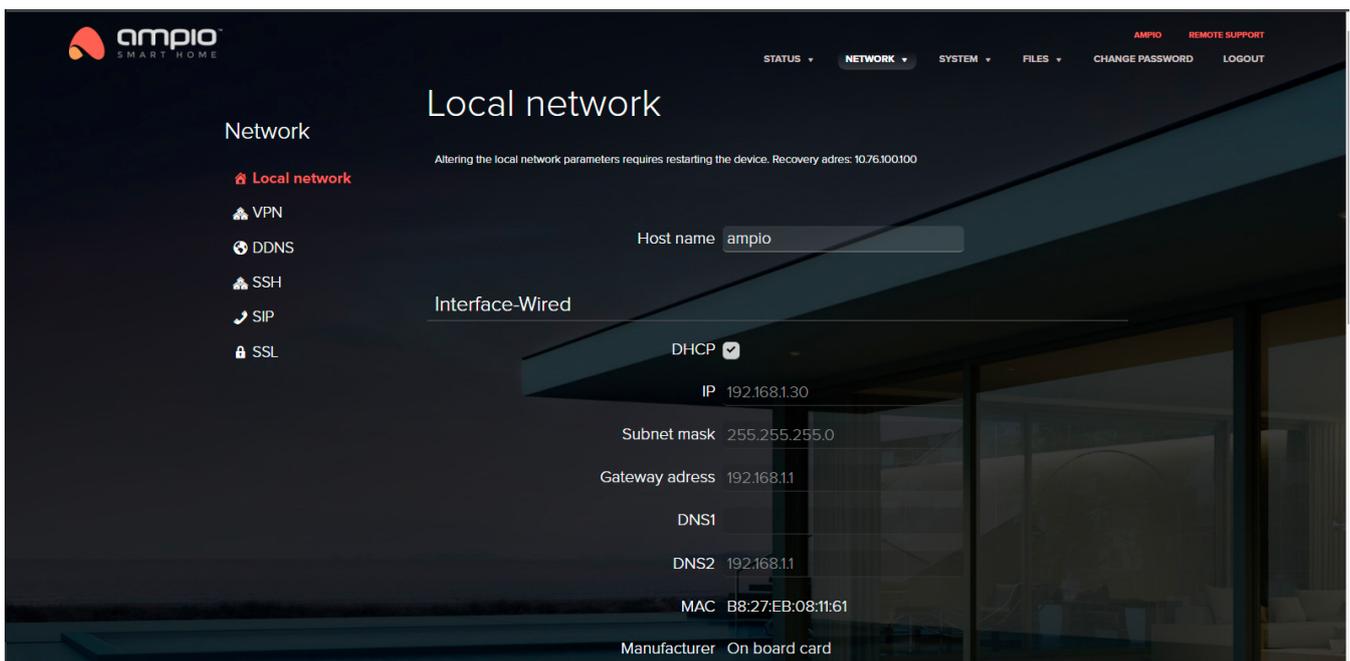
Kernel version indicates the current version of the Linux system's kernel

CPU displays information about the M-SERV-3s processor

Network

Local network

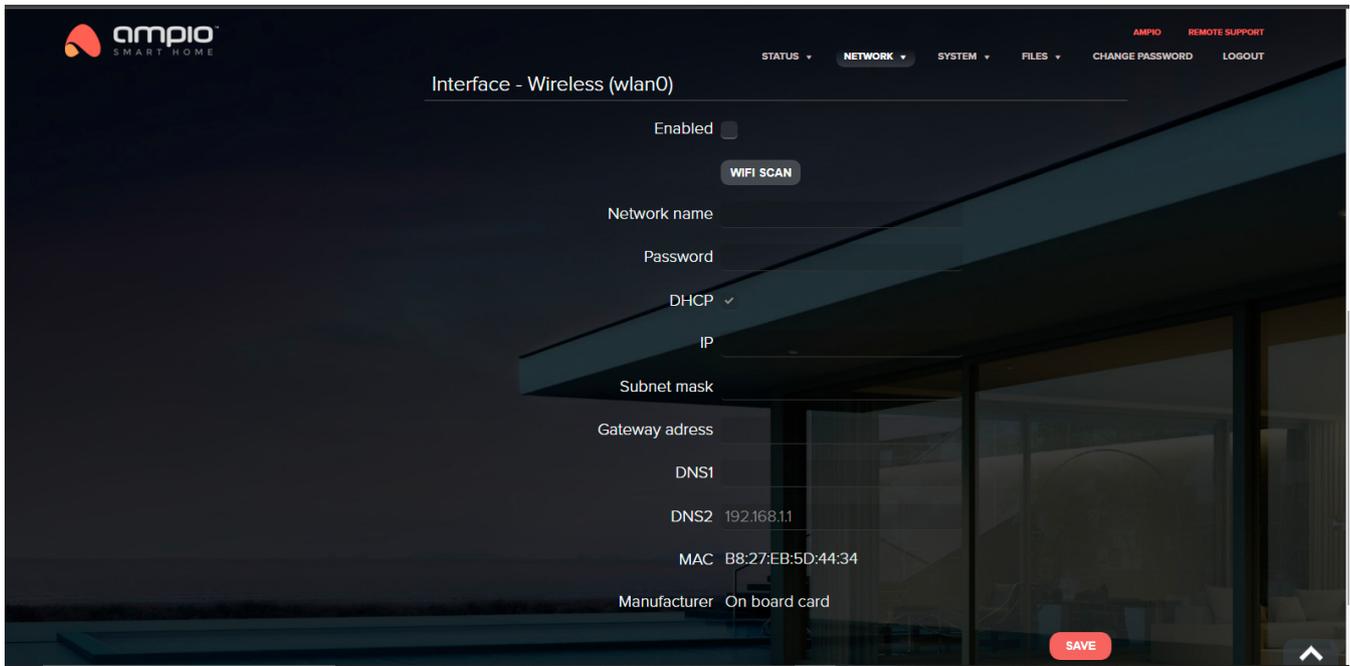
It makes it possible to manage the local network. The host name can be changed, but requires a system reboot. The host address enables accessing the server by entering the following in the browser: <http://hostname.local>



DHCP is selected by default. If you untick it, you will be able to change the IP address, IPv4 subnet mask, gateway and DNS servers' addresses. By default, the settings are automatically downloaded from the router via DHCP.

Changing the above-listed parameters will change the server's IP address. Make sure that the settings that you enter are correct. If your settings are incorrect, the server connectivity may be lost.

We can also set the parameters of the local network.

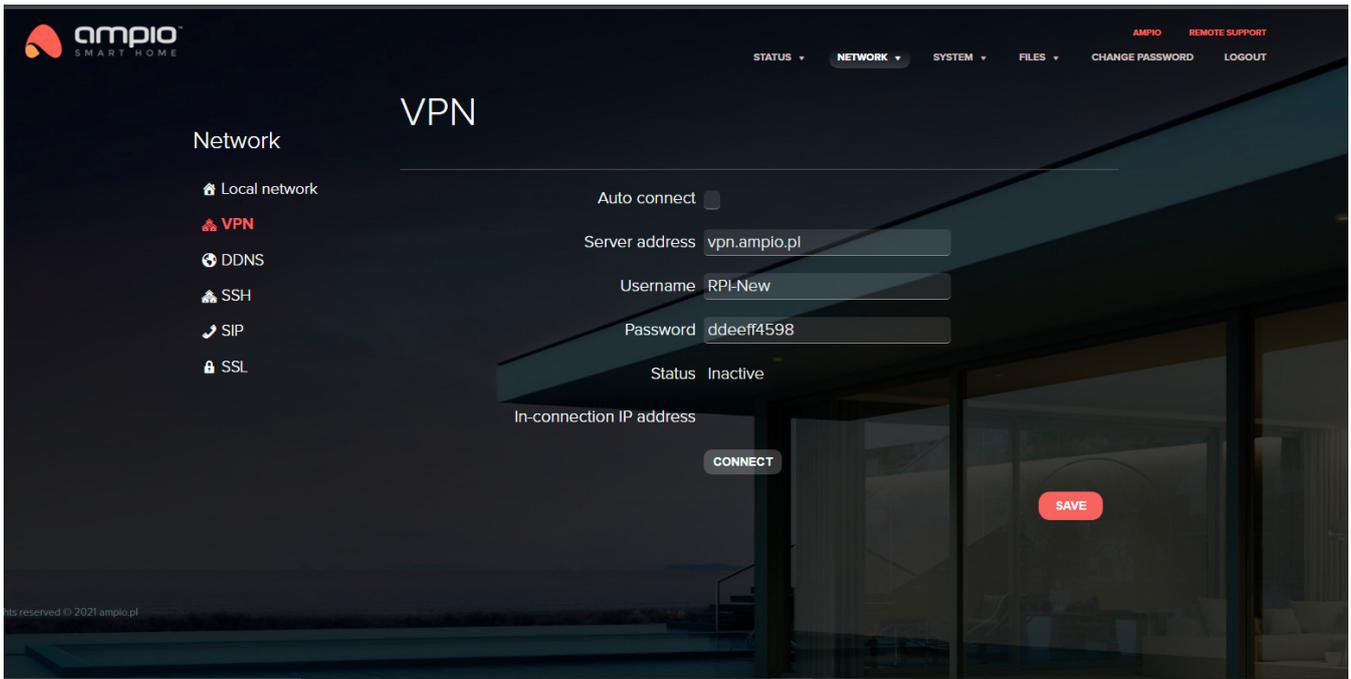


We always recommend using a wired network, if possible. Wireless networks might prove problematic due to obstructing walls and distribution board's layout.

In order to do that, tick the box next to "Enable" and save the settings. At this point M-SERV's power supply might reboot. After saving the settings and clicking the "WiFi scan" button, select a network from the list, enter its password and save. M-SERV will make a connection with the network – it takes about 1-3 minutes.

VPN

The tab allows you to change the VPN server address, user name and password. You can also find the VPN status here and its IP. You can deselect automatic connection, or connect by clicking on the "Connect" button.

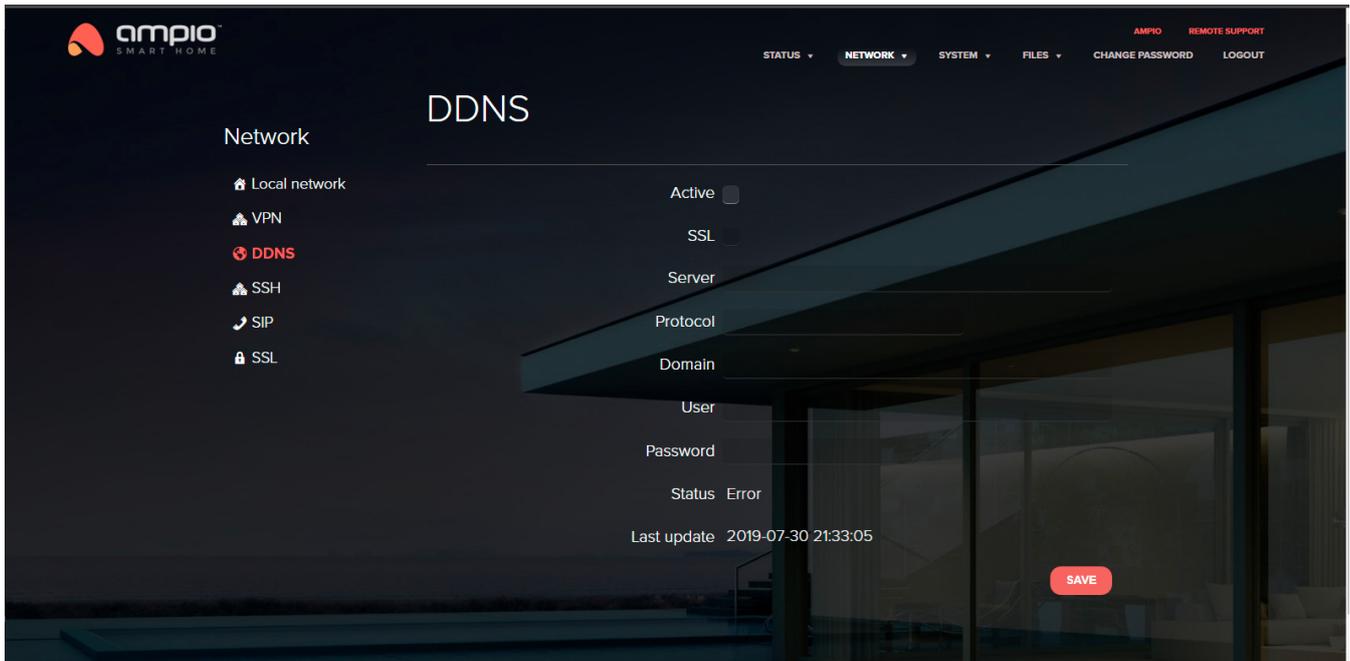


DDNS

If you want to access your local network from any place in the world not with the use of a fixed IP address, but with dynamically obtained public address from the DHCP server (what Neostrada is also doing), you must use the DDNS (Dynamic Domain Name System) service. The service will not work if your ISP does not offer a public IP address. M-SERV can send your current IP address to the DDNS server in order to update it.

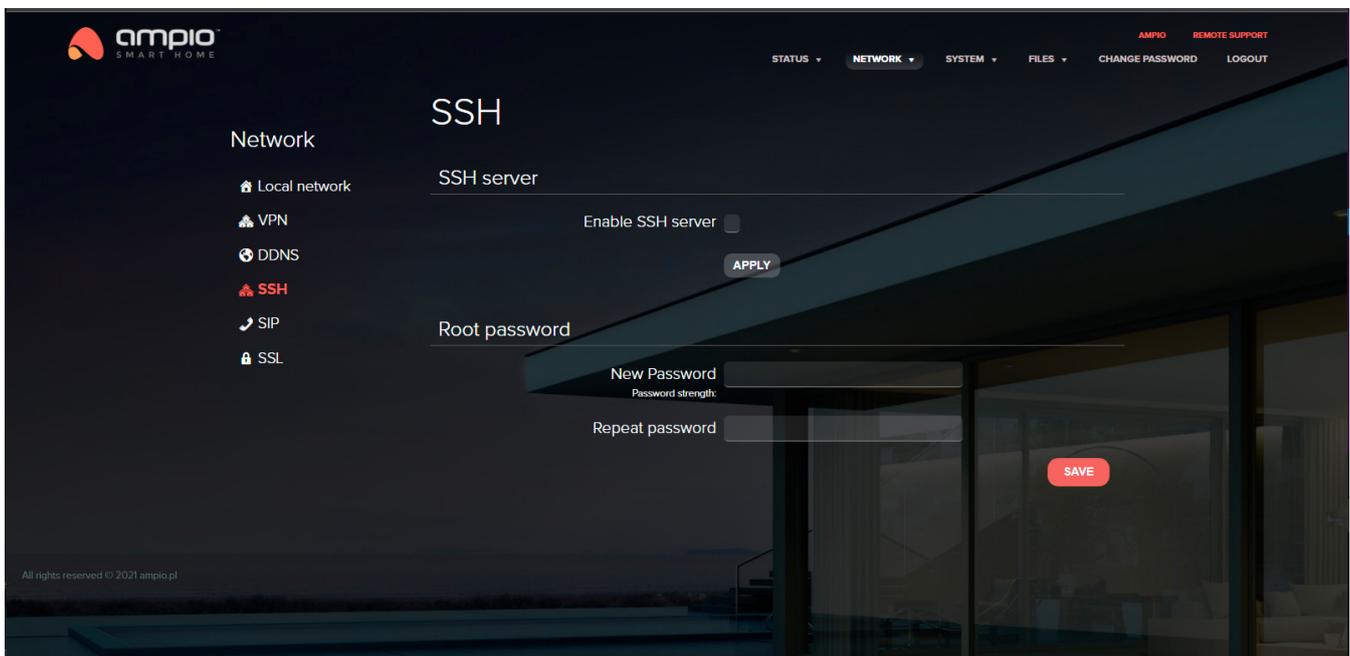
Supported protocols:

- dnspark protocol
- dslreports
- dyndns1
- dyndns2
- easydns
- namecheap
- zoneedit1
- Changeip
- googledomains
- duckdns
- nsupdate



SSH

By default, the SSH server is inactive. In order to make connections via the SSH server (access to Linux), select “Enable SSH server” and apply changes. Then create a root user password (it should contain at least 8 characters).



SSH is accessible on port 2222.

SIP

This is a tab used to create a connection with an intercom. By default this server is inactive. It is possible to modify the TCP port and to activate or deactivate video or guests support. Here, you will enter the SIP service provider’s details. You can also add, edit and remove users.

SIP

Network

- Local network
- VPN
- DDNS
- SSH
- SIP**
- SSL

SIP server setting

Active

TCP port 5060

Video support

Allow guest

SIP provider

User LOGIN

From user LOGIN

Password HASLO

SIP Host HOST

TCP port 5060

Qualify

SAVE

SIP provider

SIP Host HOST

TCP port 5060

Qualify

SAVE

Users

User:	Delete	Edit
201		
202		
203		
204		
205		

ADD USER

SSL

The HTTPS server is active by default. The tab provides information about the current certificate and allows you to generate a self-signed certificate and to upload your own certificate. SSL/TLS configuration is meant for advanced installers.

ampio
SMART HOME

STATUS NETWORK SYSTEM FILES CHANGE PASSWORD LOGOUT

SSL

Network

- Local network
- VPN
- DDNS
- SSH
- SIP
- SSL**

Server

enable HTTPS server

enable MQTT TLS server

APPLY

Current certificate

Issuer O = Ampio MSERV, CN = ampio.local

Subject O = Ampio MSERV, CN = ampio.local

Certificate expiration date Jul 10 12:48:31 2031 GMT

Delete certificates and keys EXECUTE

This operation is irreversible!
After deleting the files, the HTTPS server will be turned off.

ampio
SMART HOME

STATUS NETWORK SYSTEM FILES CHANGE PASSWORD LOGOUT

Delete certificates and keys EXECUTE

This operation is irreversible!
After deleting the files, the HTTPS server will be turned off.

Download certificates and public key DOWNLOAD

SSL/TLS configuration

SSL/TLS certificates with RSA keypairs are accepted.

Certificate chain SELECT FILE

Private key SELECT FILE

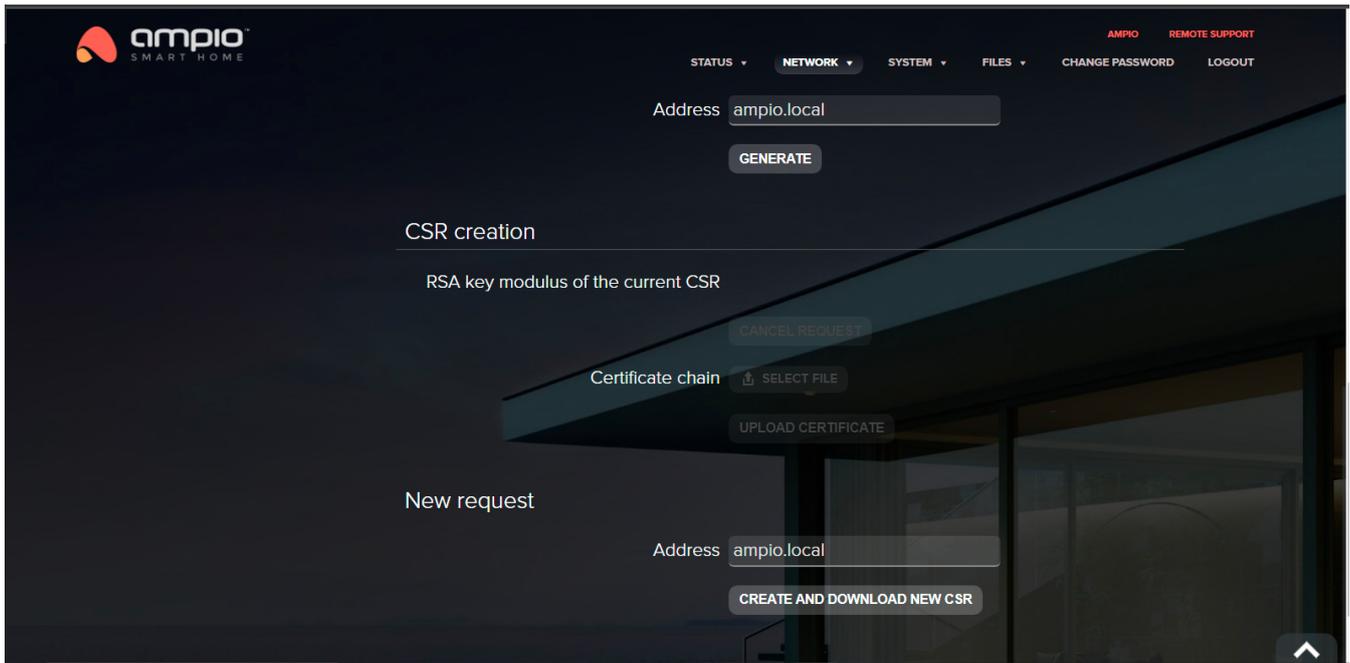
UPLOAD

Self-signed certificate

Certificate validity in days 365

Address ampio.local

GENERATE

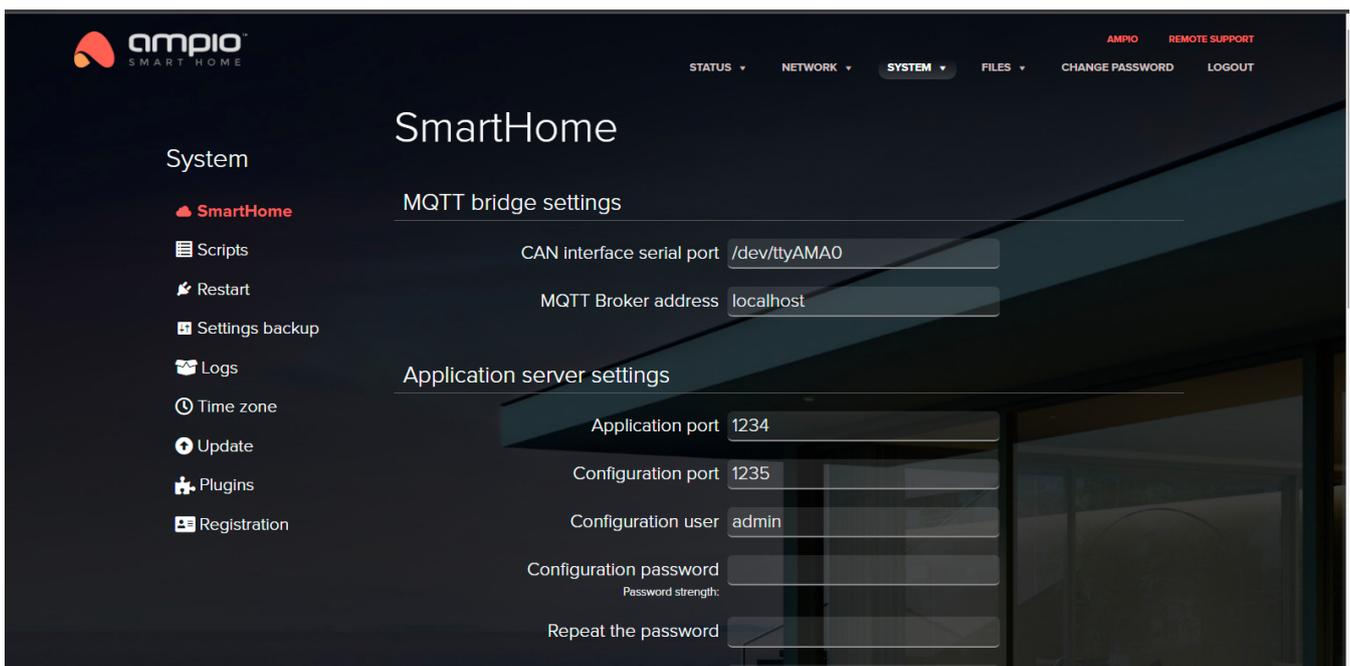


System

Smart Home

In this tab you can edit the MQTT bridge and app server settings. It is important to set up the geographical latitude and longitude in order for the mobile app to correctly read the sunset and sun rise times for different scenes.

The current geographical location can also be set by clicking on the "Get" button next to the description "Get location from browser". This will allow the local services of your browser to download your current location. It requires, however, an HTTPS connection with the server (prefix `https://` before the server's address in a browser).



Repeat the password

MQTT Broker address

Location of the state database

Location of the log database

Debugger

Geographical location

Latitude

Longitude

Get location from browser (requires HTTPS)

AmpioCloud

Geographical location

Latitude

Longitude

Get location from browser (requires HTTPS)

AmpioCloud

AmpioCloud server

AmpioCloud TCP port

AmpioCloud active

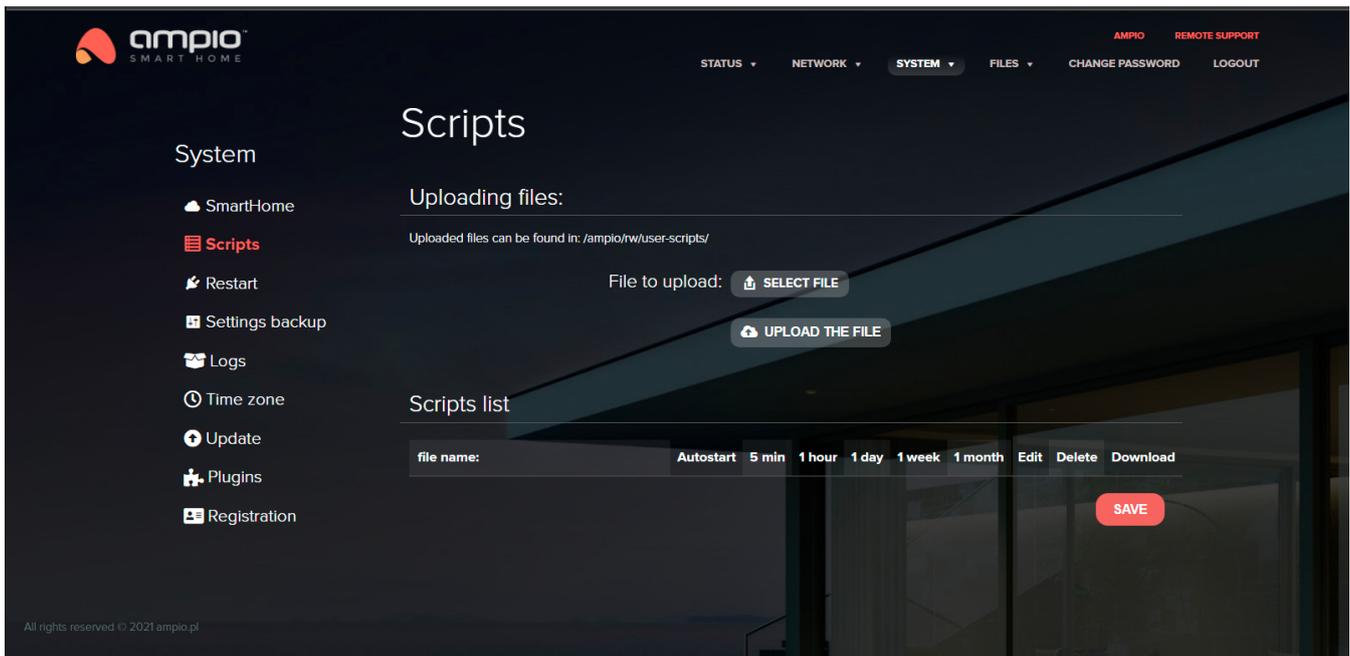
HTTPS connection with the server will prompt a message about an unverified certificate. It is normal in case of devices in local networks – you should select the option “Trust” in the browser. **Never trust unverified certificates outside of your local network (internet portals, banks, etc.)**

You can also change the location of where the status and log databases are being saved. By default, the information is retained in the volatile memory, which is deleted with each device reboot. After inserting a UDB mass storage into the M-SERV port, you can select it as a data carrier for the databases. The data will then be retained in non-volatile memory of the device.

Scripts

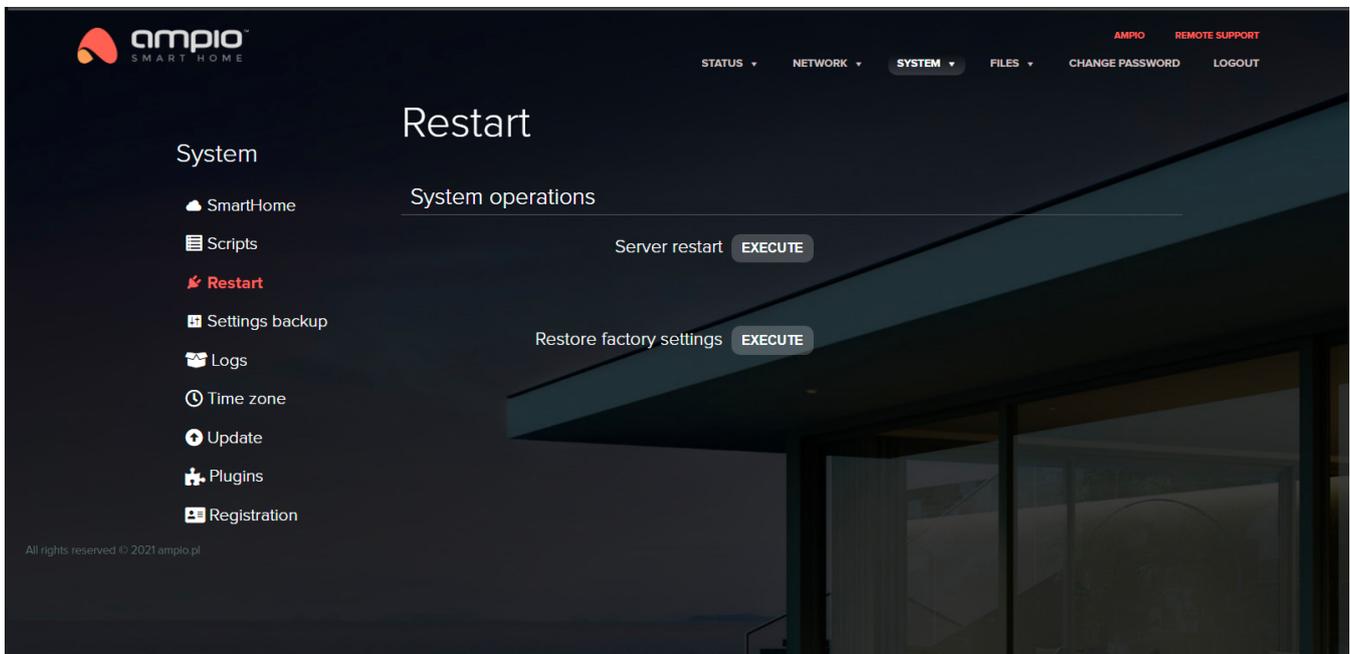
You can upload, edit and download script files here and set up a scheduled autostart (start every 5 min, 1 hour, 1 day, week, month), as well as autostart on every system startup.

At the top of the page there is a path where scripts are saved: /ampio/rw/user-scripts



Restart and factory settings

The restart function allows one to perform a server restart with the use of one button. The procedure takes about 2-3 minutes.

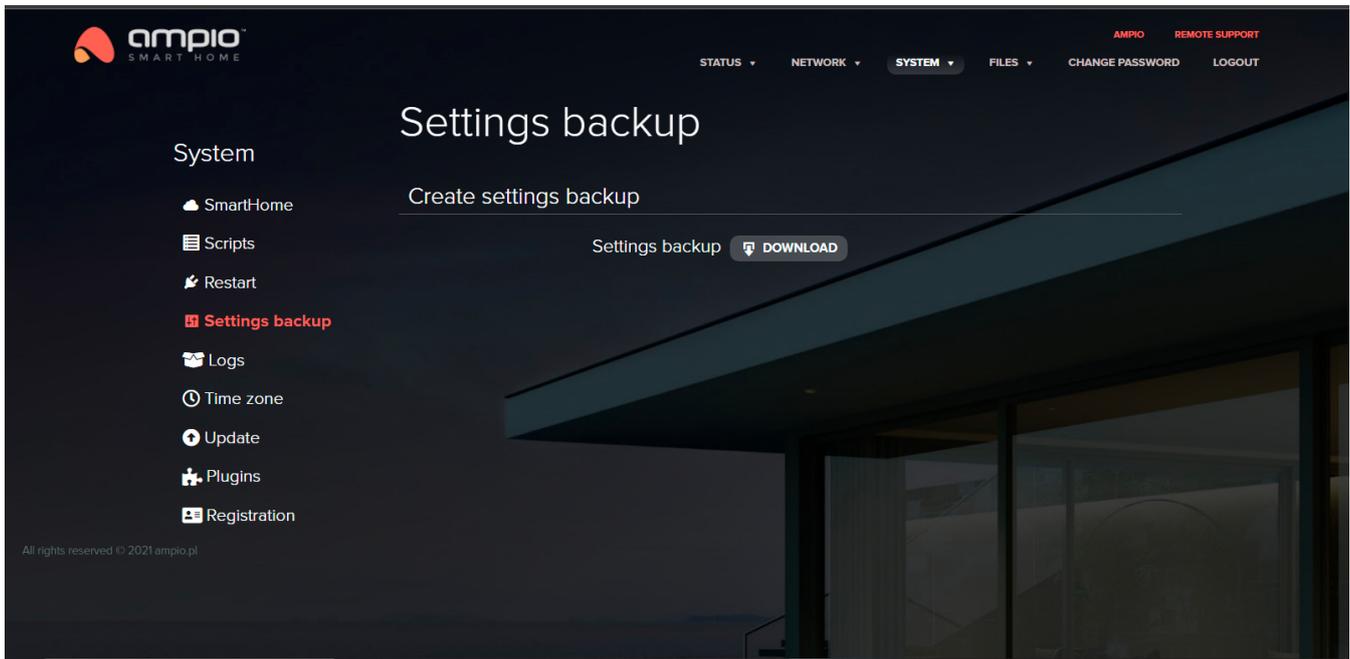


The button “Restore factory settings” allows you to clear all server settings and its memory.

Restoring factory settings cannot be undone!

Settings backup

Enables downloading a copy of settings in the .zip format.

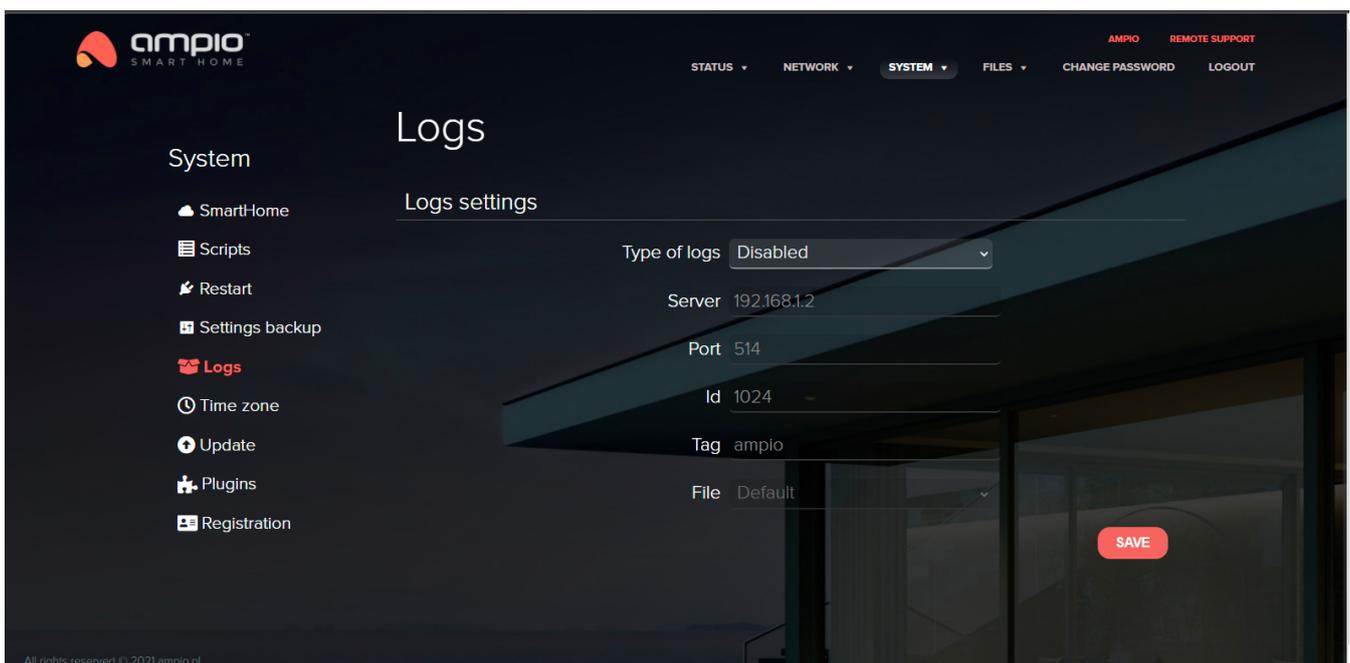


Logs

This section allows you to choose whether the history will be saved as Syslog, or in a file. It is important to remember that after rebooting the server, the Syslog logs history will be lost. In order not to lose access to it, also after rebooting, select the type of logs File, place a memory carrier in a port and select it in the field File.

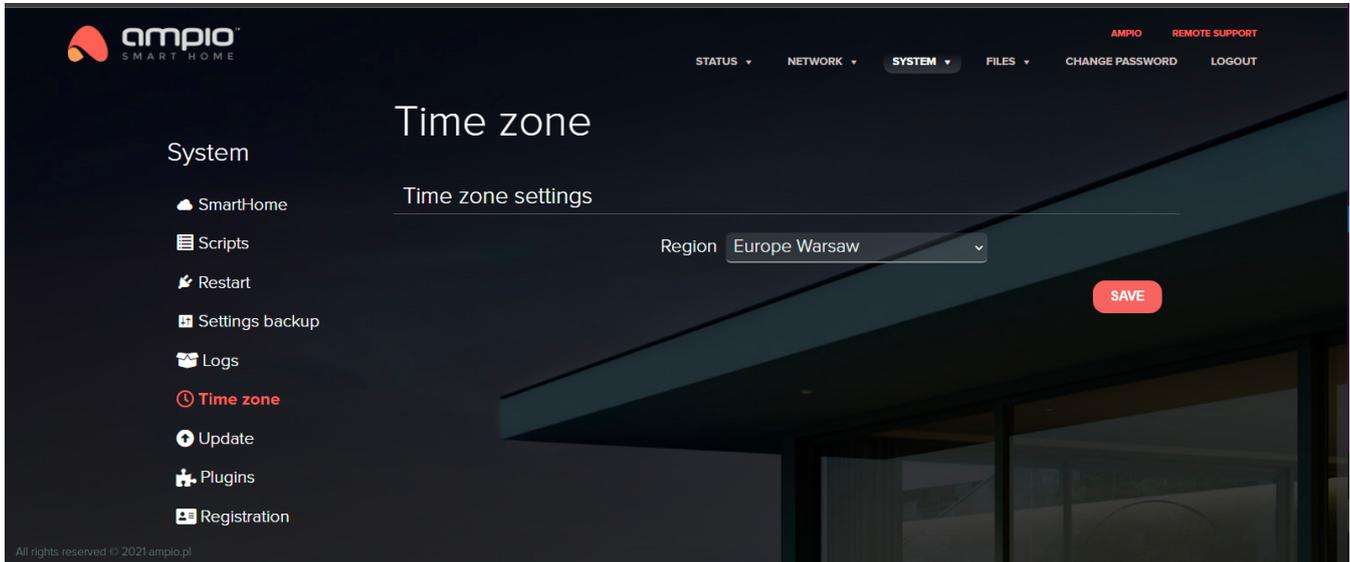
It should be borne in mind that an external memory flash drive must be formatted in the FAT32 system. After inserting the flash drive into the port, a server reboot must be performed.

You can also choose to save logs on an external syslog server (e.g. NAS servers). You need to enter the syslog server's IP address in the logs settings, as shown below.



Time zone

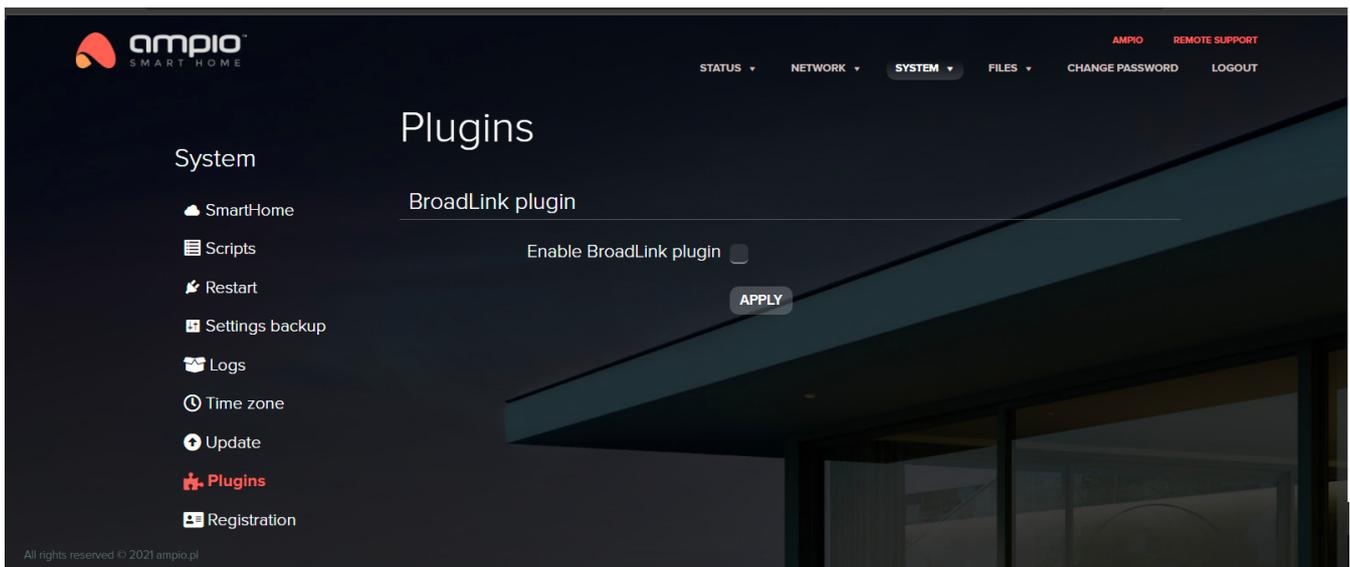
This section allows you to set up a time zone for the server in order to display the correct time on e.g. M-DOT touch panels. The current time from M-SERV is also broadcasted to the CAN network, which enables synchronisation of time in M-RTs and touch panels. This makes setting up the time zone correctly crucial.



Setting up a time zone is important to ensure current time in the CAN network.

Plugins

This section allows you to switch the BroadLink plugin on and off in order to manage the BroadLink IR sensor used to control infra-red devices.



Disable this plugin if you do not use a BroadLink device.

Registration

Registering a server enables issuing a warranty card. Registering your smart installation is a prerequisite to safeguarding a 5-year warranty for the devices present in the installation.

The screenshot shows the Ampio Smart Home web interface. The top navigation bar includes the Ampio logo, a menu with STATUS, NETWORK, SYSTEM (selected), FILES, CHANGE PASSWORD, and LOGOUT, and links for AMPIO and REMOTE SUPPORT. On the left, a System menu lists options: SmartHome, Scripts, Restart, Settings backup, Logs, Time zone, Update, Plugins, and Registration (highlighted in red). The main content area is titled "Registration" and contains the following information:

- Date of installation:
- Registration status: data not available, no connection
- Cloud registration status: unregistered

Below this is a "Privacy policy" section with the text: "Electronic services- I agree to the processing of my personal data by Ampio Sp z oo. I have read and accept the privacy policy and regulations - available at <http://ampio.pl>, in which I have been informed that I have the right to access their data, the possibility of correcting them, requesting the cessation of their processing. Lack of consent will prevent you from using the full functionality of the Ampio SmartHome system." At the bottom of this section is a checkbox labeled "Yes, I agree." which is currently unchecked.

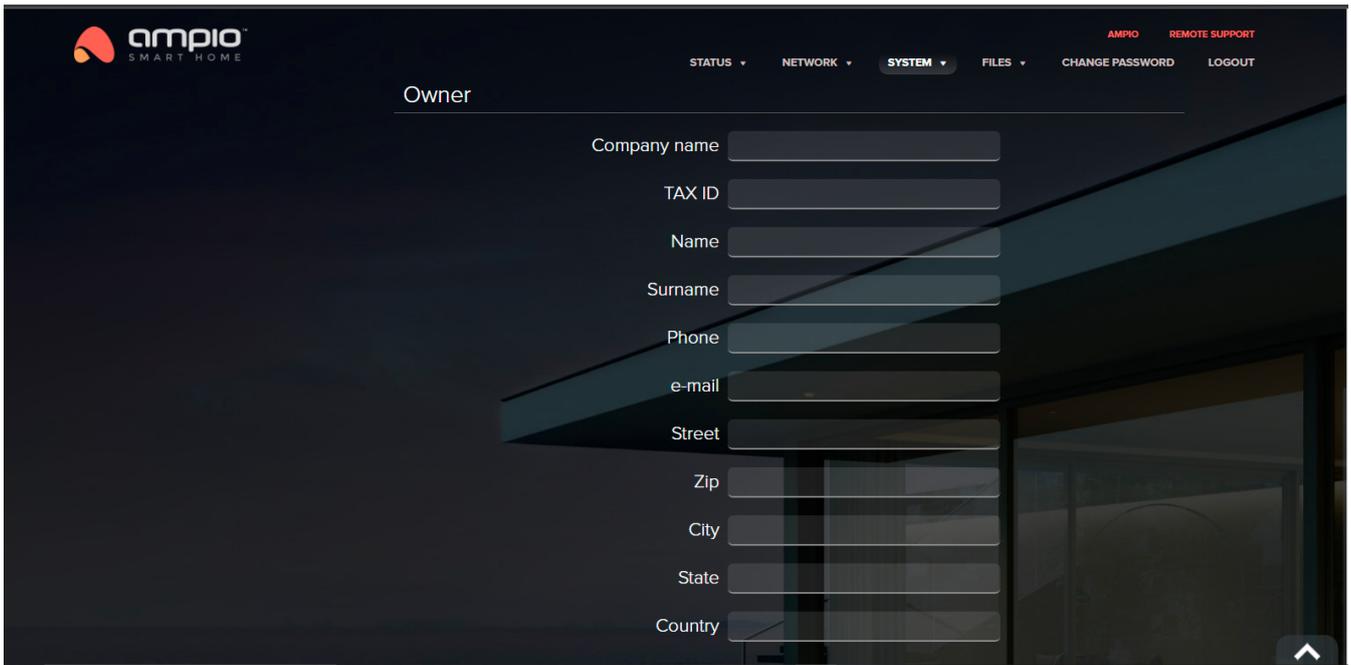
The screenshot shows the Ampio Smart Home web interface with the "Privacy policy" page selected. The top navigation bar and left menu are identical to the previous screenshot. The main content area is titled "Privacy policy" and contains the following text:

Electronic services- I agree to the processing of my personal data by Ampio Sp z oo. I have read and accept the privacy policy and regulations - available at <http://ampio.pl>, in which I have been informed that I have the right to access their data, the possibility of correcting them, requesting the cessation of their processing. Lack of consent will prevent you from using the full functionality of the Ampio SmartHome system.

Below this is a checkbox labeled "Yes, I agree." which is currently unchecked.

Further down, there is a "Warranty" section with the text: "Warranty - I agree to the processing of my personal data by Ampio Sp z oo. I have read and accept the privacy policy and regulations - available at <http://ampio.pl>, in which I have been informed that I am entitled to I have the right to access my data, the possibility of correcting it, requesting the cessation of processing. Consent is necessary to implement the warranty on Ampio devices. Lack of consent results in the limitation of the duration of the guarantee to that which is regulated by law." At the bottom of this section is a checkbox labeled "Yes, I agree." which is currently unchecked.

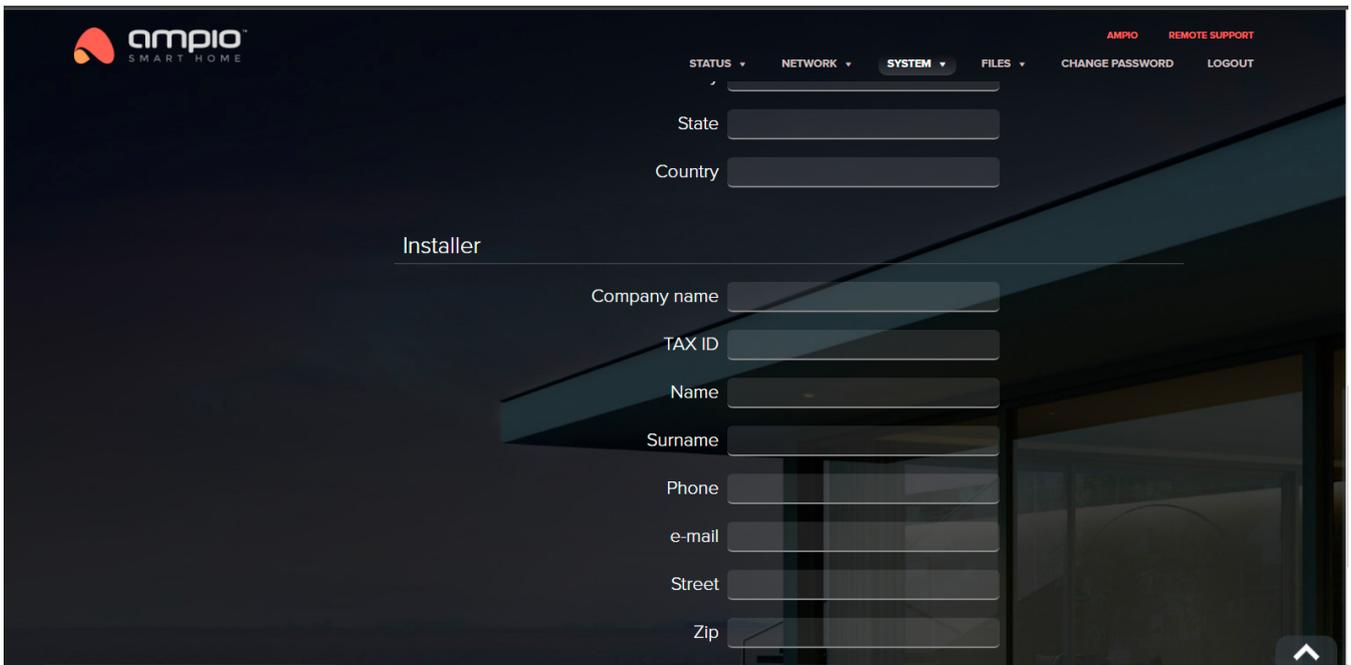
At the very bottom of the page, there is a "Correspondence" section with the text: "Correspondence - I agree to be contacted via e-mail or in electronic form by Ampio sp.z o.o. in order to send a warranty card." At the bottom of this section is a checkbox labeled "Yes, I agree." which is currently unchecked.



The screenshot shows the 'Owner' registration form in the Ampio Smart Home web interface. The page has a dark theme with a navigation menu at the top. The 'SYSTEM' menu item is active. The form fields are as follows:

- Company name
- TAX ID
- Name
- Surname
- Phone
- e-mail
- Street
- Zip
- City
- State
- Country

At the bottom right of the form area, there is an upward-pointing arrow icon.



The screenshot shows the 'Installer' registration form in the Ampio Smart Home web interface. The page has a dark theme with a navigation menu at the top. The 'SYSTEM' menu item is active. The form fields are as follows:

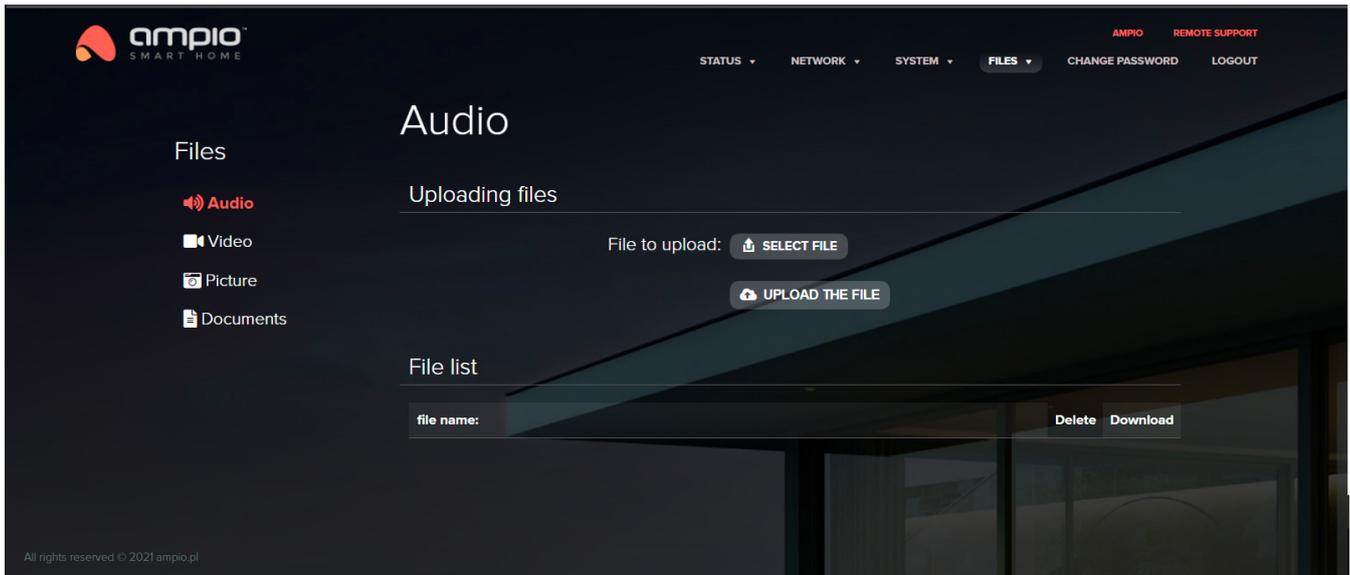
- Company name
- TAX ID
- Name
- Surname
- Phone
- e-mail
- Street
- Zip

At the bottom right of the form area, there is an upward-pointing arrow icon.

Register your server in order to receive a 5-year warranty for Ampio devices.

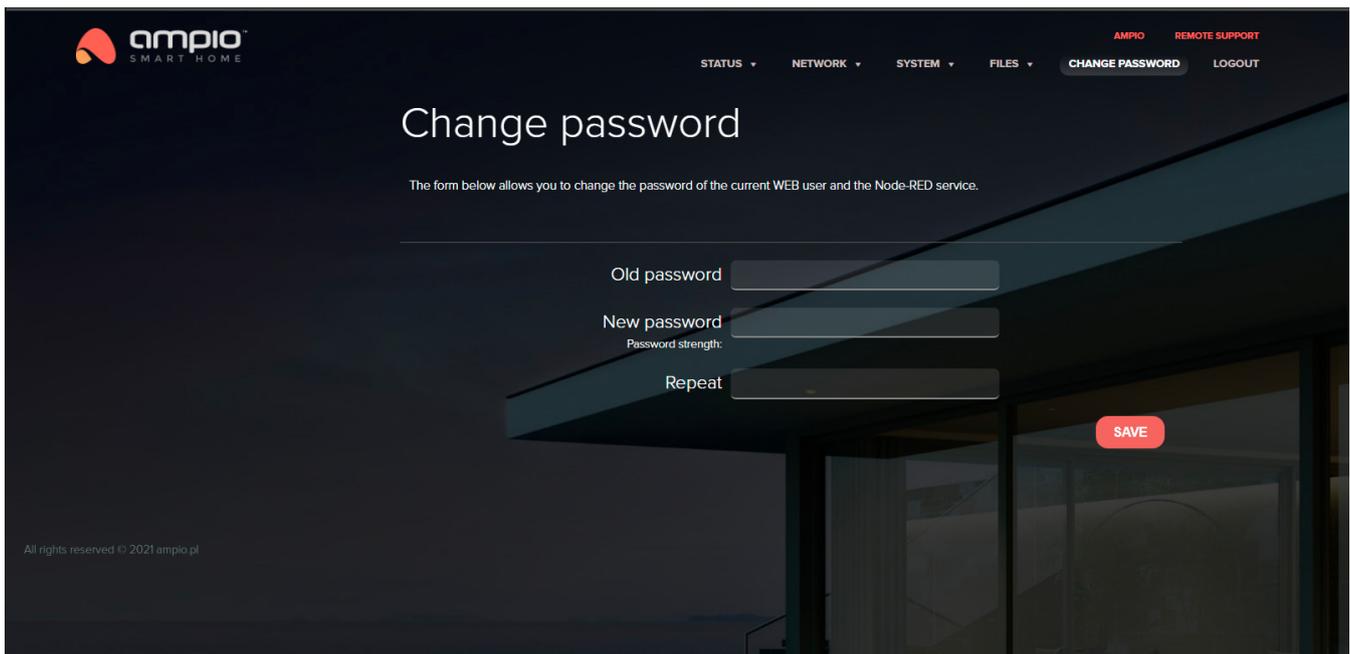
Files

In this section you can upload audio and video files, pictures and documents that will then be available on the 8090 port via the HTTP protocol.



Password change

A form to reset your password is also available. It is the password used both for the WEB panel and the Node-RED platform for the admin user.



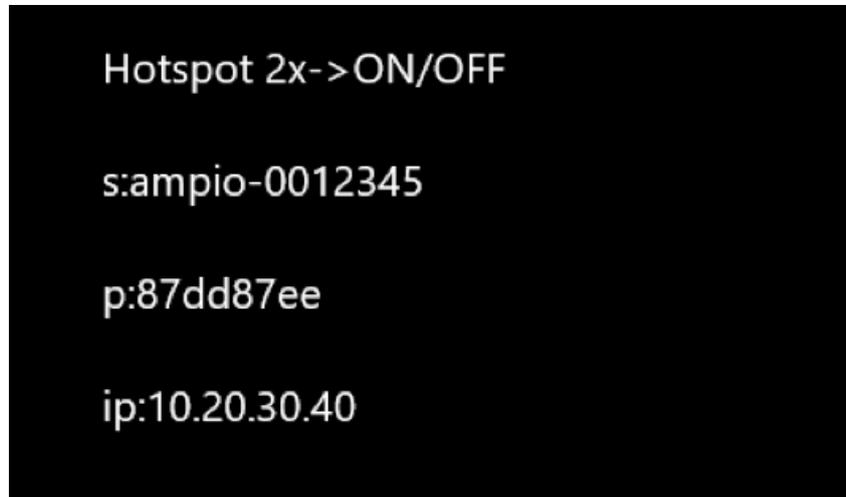
Remember and keep your password safe. Do not set up an easy password. The entered password will also be used to log into the Node-RED password as an admin user.

The *Blue* version and *Green* version for images from 400 up

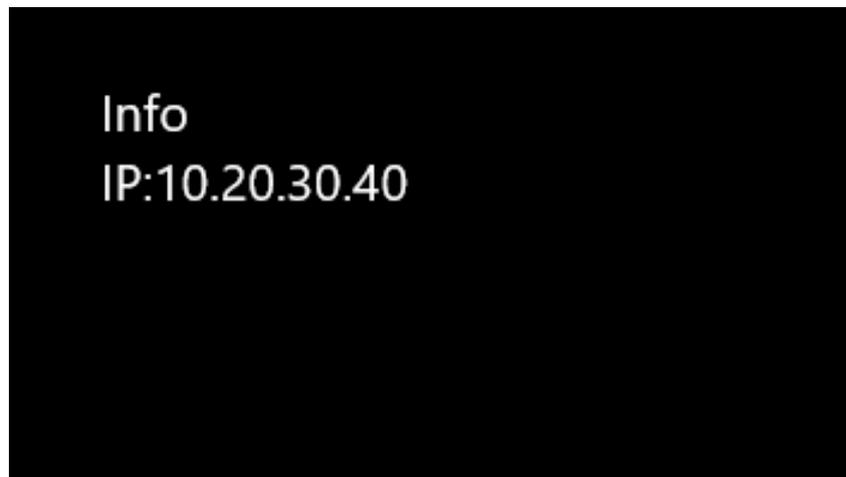
After updating the software to its latest version, it is possible to activate and deactivate a hotspot on M-SERV family modules.

Hotspot configuration

At the first launch of an M-SERV family module, after a little bit less than a minute from the module's powering up, *hotspot* details will be displayed to facilitate configuration. A connection can be established with any available device, using the data displayed on the screen. A network name can be found under **s**, and a password under **p**. For example:

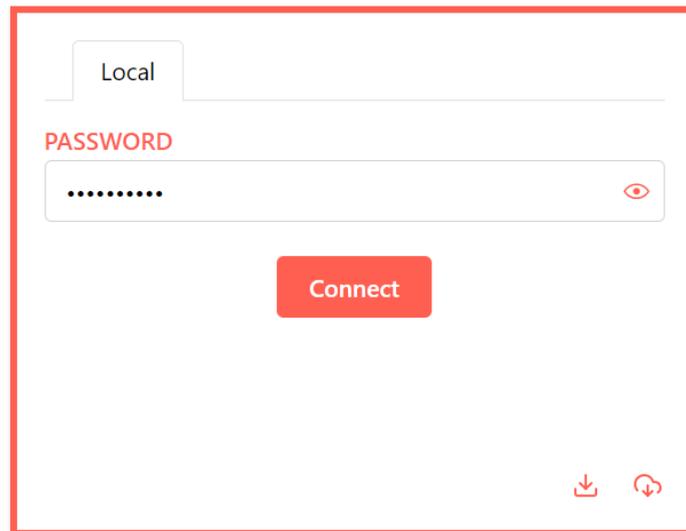


Double-clicking on the round button on the server's cover switches the *hotspot* function on or off. A single click allows you to move between subsequent screens. The next screen provides *Info* about the server, namely, its IP address.



Browser configuration

In order to change the server's IP settings, enter its IP address into your web browser, provide a password and click *Connect*.



Then, navigate to the *SETTINGS* tab and start by downloading the newest available server version. On the left side menu, click on *SYSTEM* and select *Update system*.



IP address settings

Settings of IP addressing can be changed in the *NETWORK* tab. By default, *DHCP* is active, but it can be deactivated in this tab and network settings can be entered manually here.

USERS

SIP

NETWORK

SYSTEM

RESOURCES

ICONS

PARAMETERS

PREFERENCES

INTEGRATIONS

BACKUPS

LOGS

CAN

API

NETWORK

Interfaces
SETTINGS

eth0 - E4:5F:01:91:DE:D3
wlan0 - E2:53:EA:11:13:9D

DHCP address

IP address

192.168.76.175

Netmask

255.255.254.0

Gateway

192.168.77.1

DNS1

8.8.8.8

DNS2

Enter DNS2

Save network settings

WiFi

SIP connection settings

Configuration of the SIP protocol is available in the *SIP* tab. That is where an external SIP operator can be configured, or a user can be added, edited, or deleted.

USERS

SIP

NETWORK

SYSTEM

RESOURCES

ICONS

PARAMETERS

PREFERENCES

INTEGRATIONS

BACKUPS

LOGS

CAN

API

SIP

General

Enable SIP

SIP provider

Host

HOST

Login

LOGIN

Password

..... 👁

Port SIP

5060

List of SIP users

LOGIN	PASSWORD	DELETE
201	... 👁	🗑
202	... 👁	🗑
203	... 👁	🗑
204	... 👁	🗑
205	... 👁	🗑