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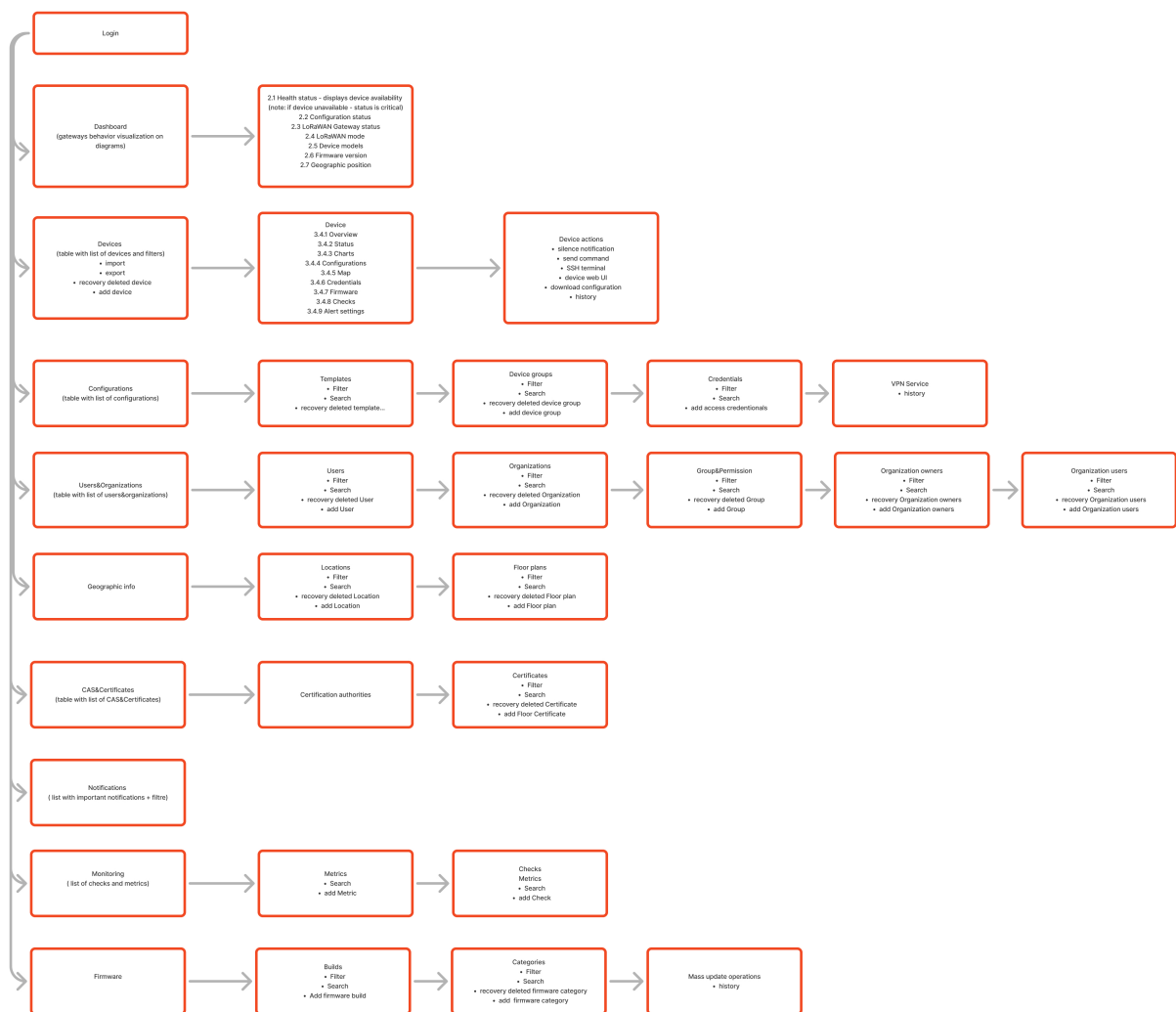


# JOOBY MMS

## Product intro

JOOBY MMS - (monitoring and management system) is an innovative product for controlling and monitoring **Jooby Gateways**.

## Product tree



## User flow

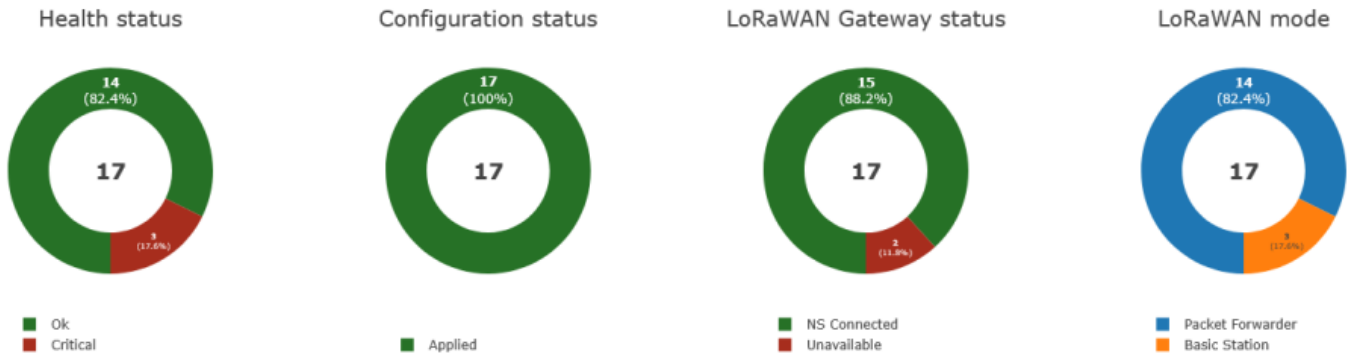
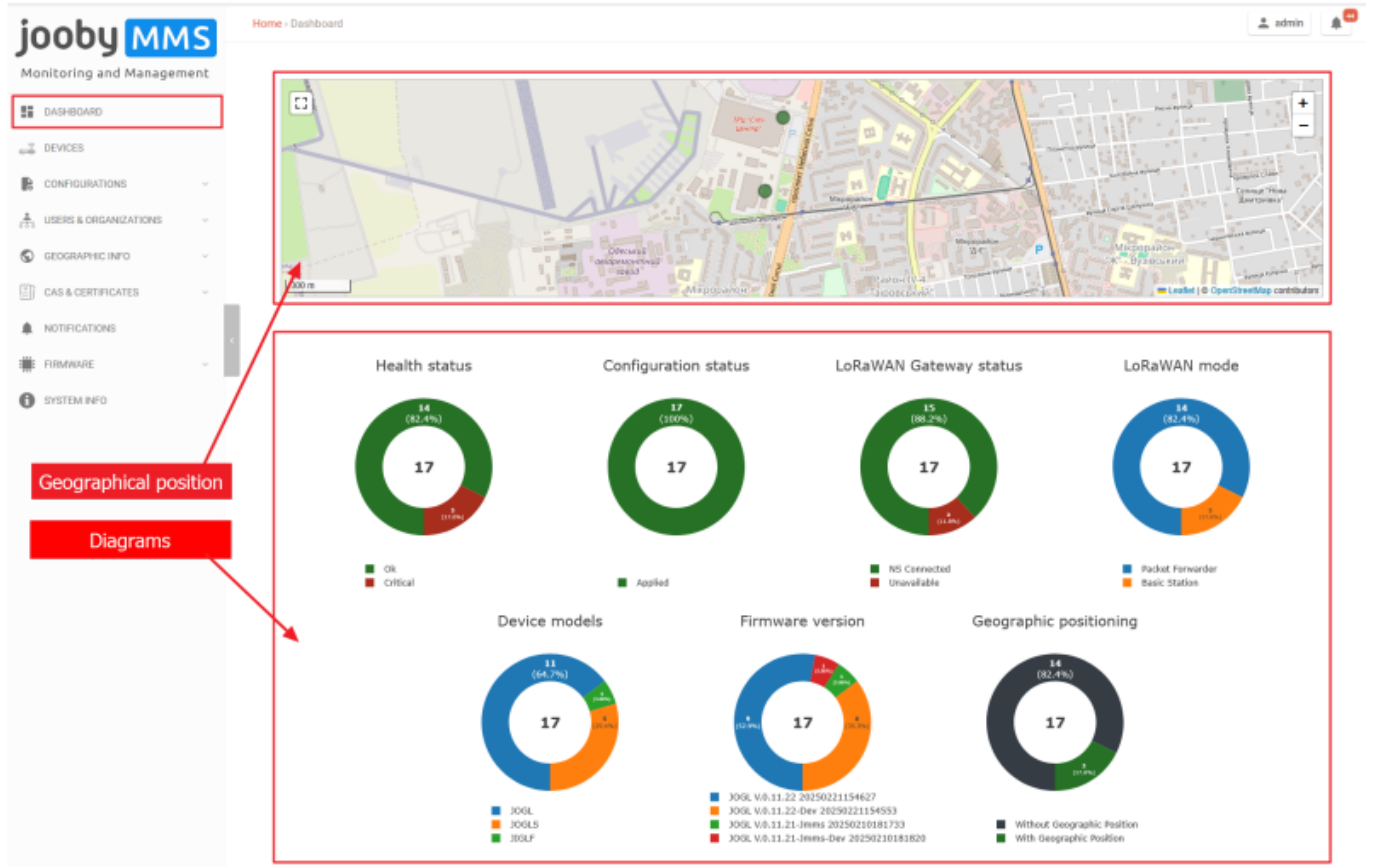
# 1. Login form



The screenshot shows the login interface for 'jooby MMS Monitoring and Management'. At the top, the logo 'jooby MMS' is displayed with 'MMS' in a blue box, followed by the text 'Monitoring and Management'. Below this is a breadcrumb trail 'Home > Log in'. The main form area contains two input fields: 'Email, phone number or username:' and 'Password:'. A link for 'Forgot Password?' is located below the password field. A dark 'Log in' button is positioned at the bottom center of the form.

# 2. Dashboard

Gateways behavior visualization on diagrams

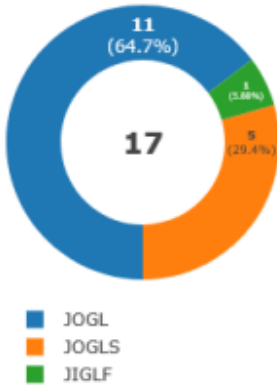


- **Health status** - displays device availability (note: if device unavailable - status is critical)
- **Configuration status** - displays the status of installing a new configuration on the device
- **LoRaWAN Gateway status**
- **LoRaWAN mode** (Packet forwarder or basic station)

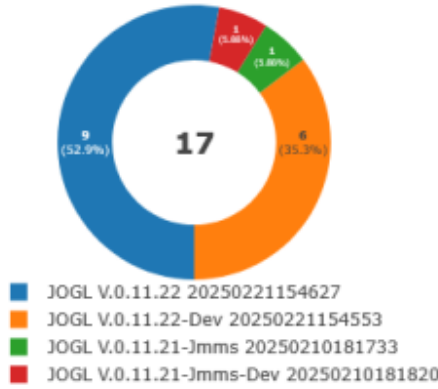


Off → All modules in admin p. is off. Unavailable → not exist anyone module with 'on' state and 'available'. NS Connected → if exists any module in state 'on' + available + ns connected NS Disconnected → If not exists anyone module in (state 'on' + available + ns connected)

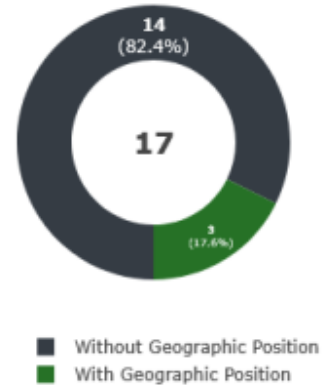
### Device models



### Firmware version



### Geographic positioning



- **Device models**
- **Firmware version**
- **Geographic position** - displays devices with assigned geolocation and marking them on a map



All diagram sections are clickable, the user could click and the system will redirect him to the corresponding tab

## 3. Devices

The screenshot shows the 'Devices' page in the Jooby MMS interface. The sidebar on the left contains navigation options: DASHBOARD, DEVICES, CONFIGURATIONS, USERS & ORGANIZATIONS, CAS & CERTIFICATES, FIRMWARE, and SYSTEM INFO. The main content area has a 'Filter' section with dropdown menus for 'By organization', 'By group', 'By model', 'By configuration status', 'By created', and 'By LoRa network server status'. Below the filters is a search bar and a table of devices. The table has columns for NAME, ORGANIZATION, GROUP, MODEL, SERIAL NUMBER, FIRMWARE VERSION, HEALTH STATUS, CONFIG STATUS, CONFIG CHECKSUM, MODIFIED, and CREATED. A red box highlights the filter section, and another red box highlights the table. Red arrows point from the sidebar labels 'Filter' and 'List of devices' to their respective elements in the interface.

NAME	ORGANIZATION	GROUP	MODEL	SERIAL NUMBER	FIRMWARE VERSION	HEALTH STATUS	CONFIG STATUS	CONFIG CHECKSUM	MODIFIED	CREATED
jogl-881ec1	Support	-	JIGLF	122024N000056	JOGL v.0.11.22 20250221154627	CRITICAL	applied	7ba5a76d680026f40814ea630f8d1263	25 Feb 2025, 1:07 p.m.	25 Feb 2025, 1:07 p.m.
jogl-3f40ee	Support	Long_test	JOGL	122016N000397	JOGL v.0.11.22-dev 20250221154553	OK	applied	0124dd16d03fb5382bf5cde36ec1f5fd	24 Feb 2025, 8:57 a.m.	19 Feb 2025, 2:18 p.m.
jogl-3f40f1	Support	Long_test	JOGL	122016N000400	JOGL v.0.11.22-dev 20250221154553	OK	applied	0124dd16d03fb5382bf5cde36ec1f5fd	24 Feb 2025, 9:03 a.m.	19 Feb 2025, 2 p.m.
jogl-3f40f3	Support	Long_test	JOGL	122016N000402	JOGL v.0.11.22-dev 20250221154553	OK	applied	0124dd16d03fb5382bf5cde36ec1f5fd	24 Feb 2025, 9:10 a.m.	20 Feb 2025, 7:40 a.m.
jogl-3f40f5	Support	Dia_test	JOGL	122016N000404	JOGL v.0.11.21-jmms-dev 20250210181820	CRITICAL	applied	df8323f9bb238d01c4d5b4b33c542d7c	14 Feb 2025, 2:47 a.m.	13 Feb 2025, 4:03 p.m.

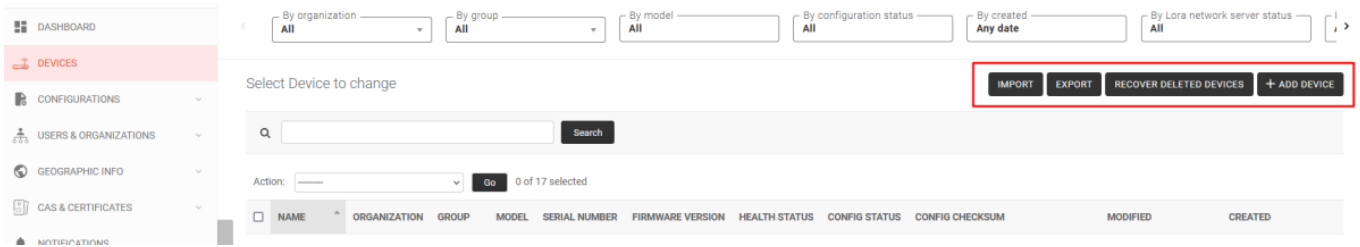
- **Filter** (by organization, by group, by model, by configuration status, by date created, by LoRaWAN network server status, by mode, by geo position)
- **List of devices**



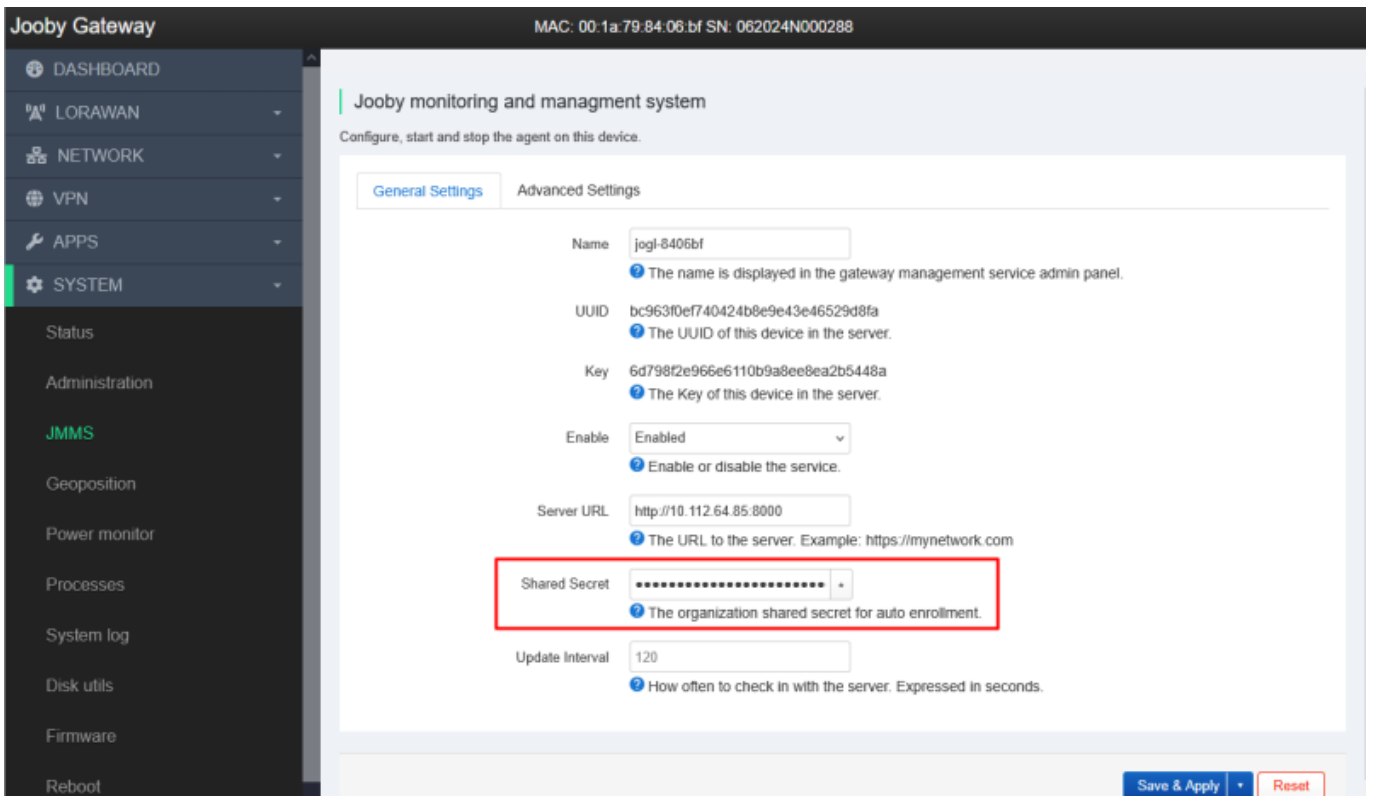
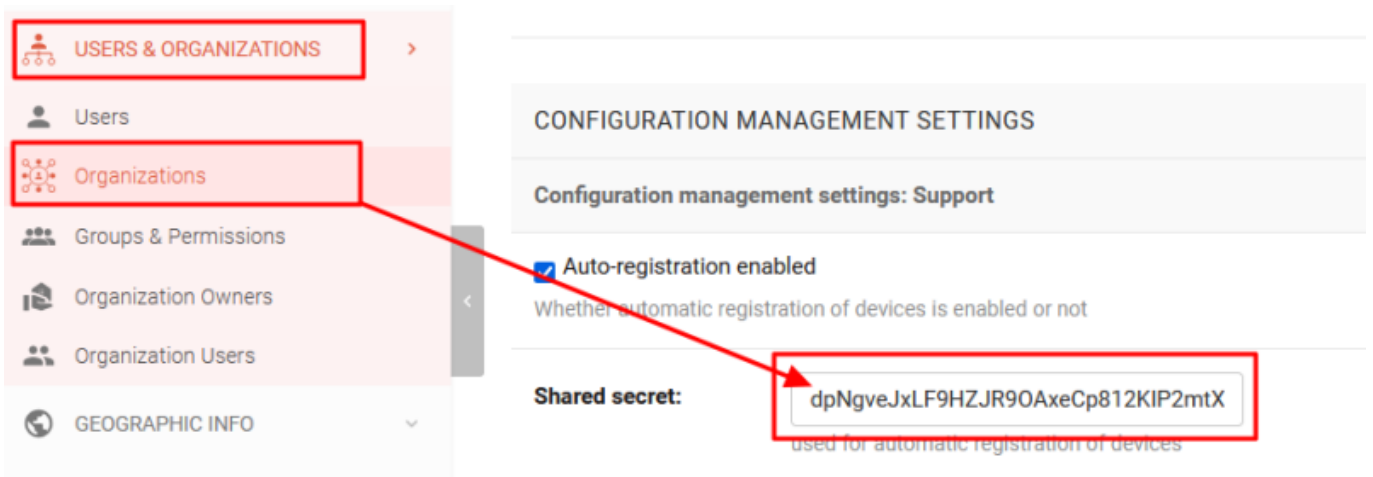
Config checksum is to understand whether the devices have the same configurations according to the selected templates or personal device config

### 3.1 Device adding

- via service panel



- via shared secret (copy the secret key and add it to devise settings in the admin panel)



 After the device receives URL and token it automatically displays at the device table

## 3.2 Device menu

- The user could click on any device and go into the device menu

### Overview

- display all settings and configs that the device received from the admin panel and the device health check



Home > Network Configuration > Devices > jogl-3f40ee

admin 92

Change Device (jogl-3f40ee) SILENCE NOTIFICATIONS SEND COMMAND SSH TERMINAL DEVICE WEBUI DOWNLOAD CONFIGURATION HISTORY

Preview configuration Save and continue editing SAVE

Overview Status Charts Logs Configuration Map Credentials Firmware Recent Firmware Upgrades Checks Alert Settings

**Name:** jogl-3f40ee

**Organization:** Support + + + + + +

**Mac address:** 00:1A:79:3F:40:EE  
primary mac address

**UUID:** e26ed6de-daba-4493-a38a-72cf962329ec

**Key:** dc57ea1e141cdb4802bb39add55399a5  
unique device key

**Group:** Long\_test x + + + + + +

**Health status:** **OK**  
 "unknown" means the device has been recently added;  
 "ok" means the device is operating normally;  
 "problem" means the device is having issues but it's still reachable;  
 "critical" means the device is not reachable or in critical conditions;

**Last ip:** 10.110.11.215  
indicates the IP address logged from the last request coming from the device

**Management ip:** 10.110.11.215 +  
IP address used by the system to reach the device when performing any type of push operation or active check. The value of this field is generally sent by the device and hence does not need to be changed, but can be changed or cleared manually if needed.

**Model:** JOGL  
device model and manufacturer

**Serial number:** 122016N000397

**Firmware version:** JOGL v.0.11.23-dev 20250225174923

**Hardware version:** C001E4W1L2G12A22110

**Notes:**   
internal notes

**Created:** 19 Feb 2025, 2:18 p.m.

**Modified:** 27 Feb 2025, 3:35 p.m.

 In this tab, the user can also add the device to some group

### Status

- the state of the metrics that the device gives (CPU, RAM status, Storage, Interface status,

## Neighbors)

Overview Status Charts Logs Configuration Map Credentials Firmware Recent Firmware Upgrades Checks Alert Settings

Local time: 4 Mar 2025, 12:06 p.m.

Uptime: 4 days, 18 hours and 31 minutes

### CPU

Load average: 0.92, 0.79, 0.78

Cores: 1

### RAM STATUS

Total: 442.2 MB

Free: 29.8 MB

Available: 362.6 MB

Buffered: 17.9 MB

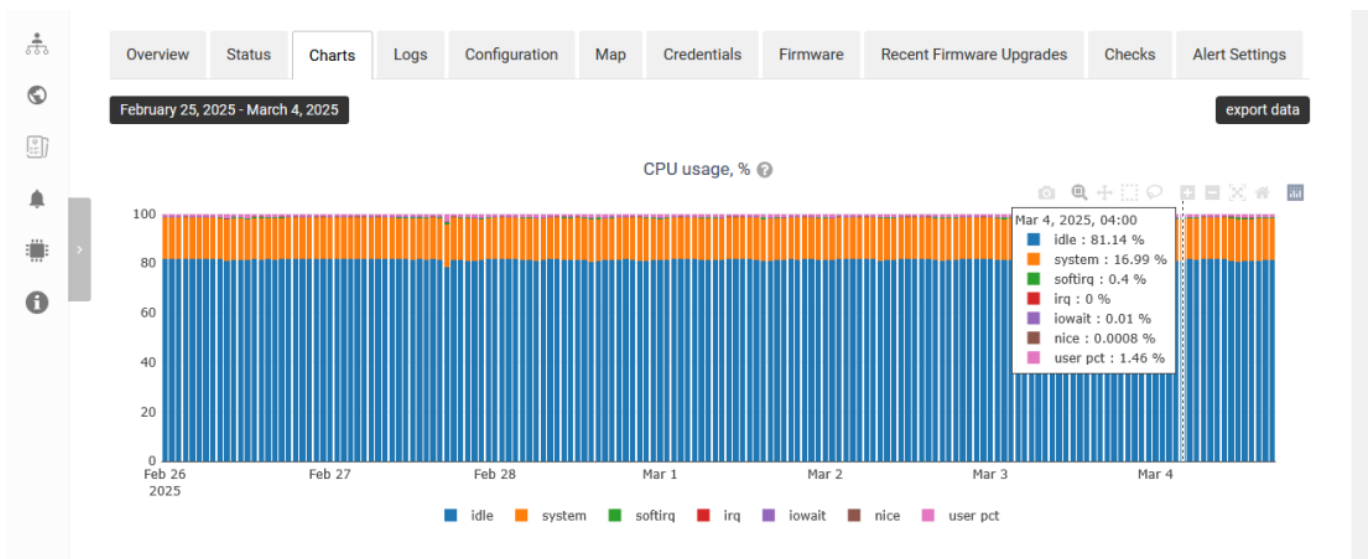
Shared: 9.2 MB

### STORAGE

FILESYSTEM	USED SPACE	AVAILABLE SPACE	TOTAL SPACE	PERCENT USED	MOUNTED ON
/dev/root	204.6 MB	467.4 MB	709.6 MB	31%	/

## Charts

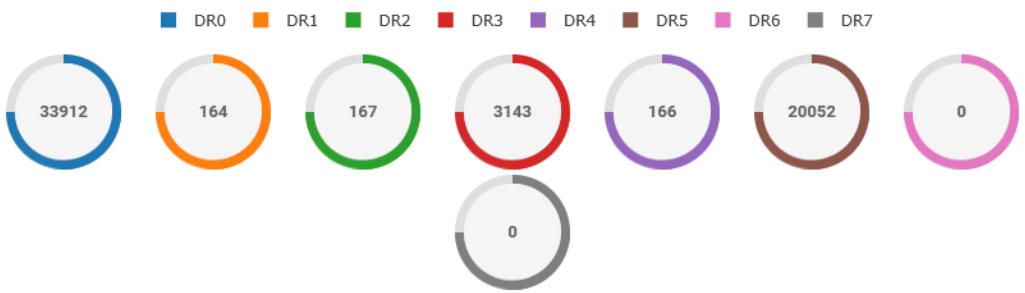
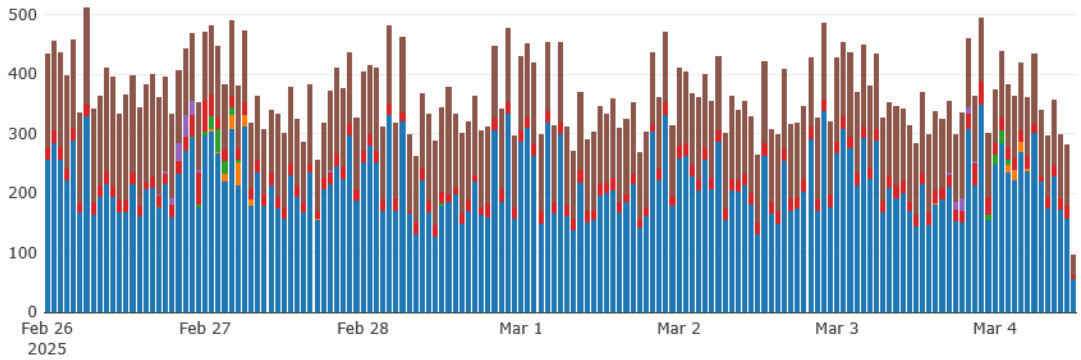
- with device statistics and monitoring (CPU usage, LoRowan uplink packages, LoRowan uplink\downlink air times, SNR, RSSI, Ping success rate, packet losts, round trip time, traffic wlan, memory usage, disk usage)



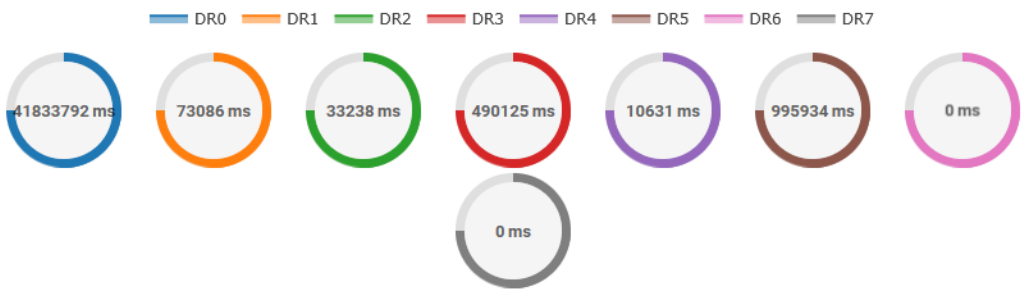
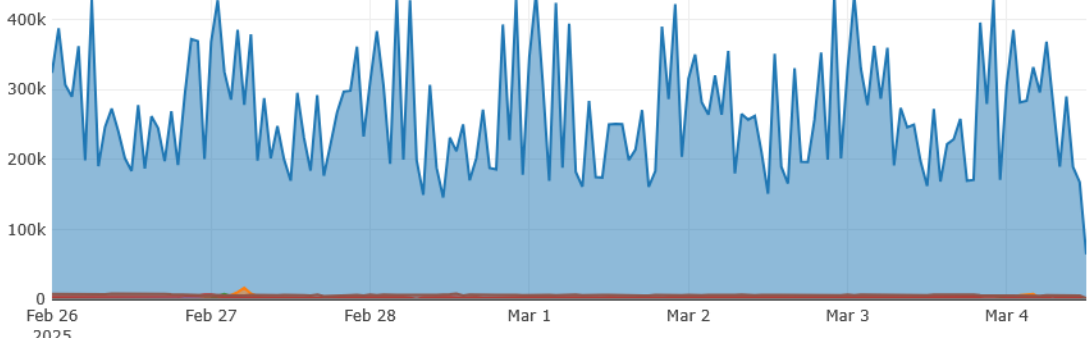
[More screenshots of Device-Charts](#)

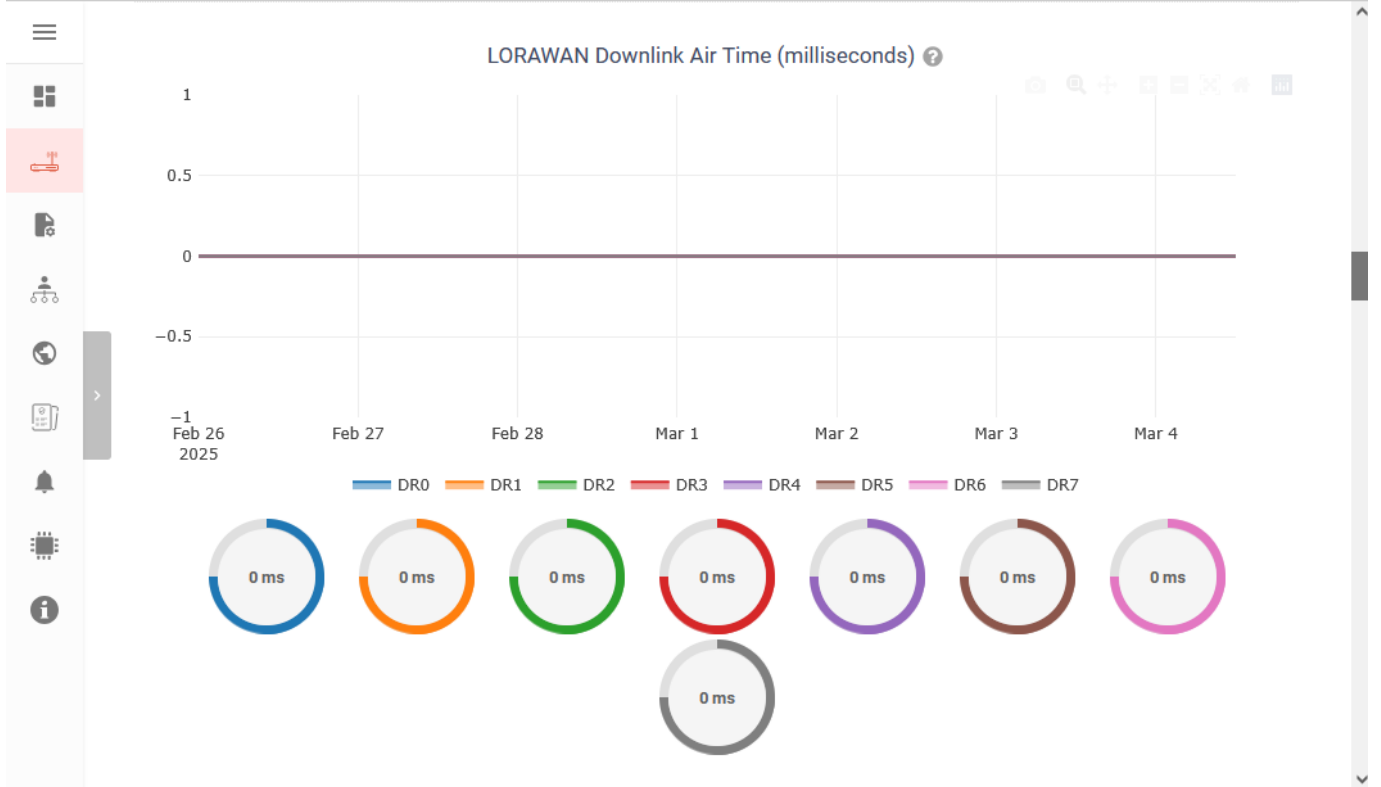
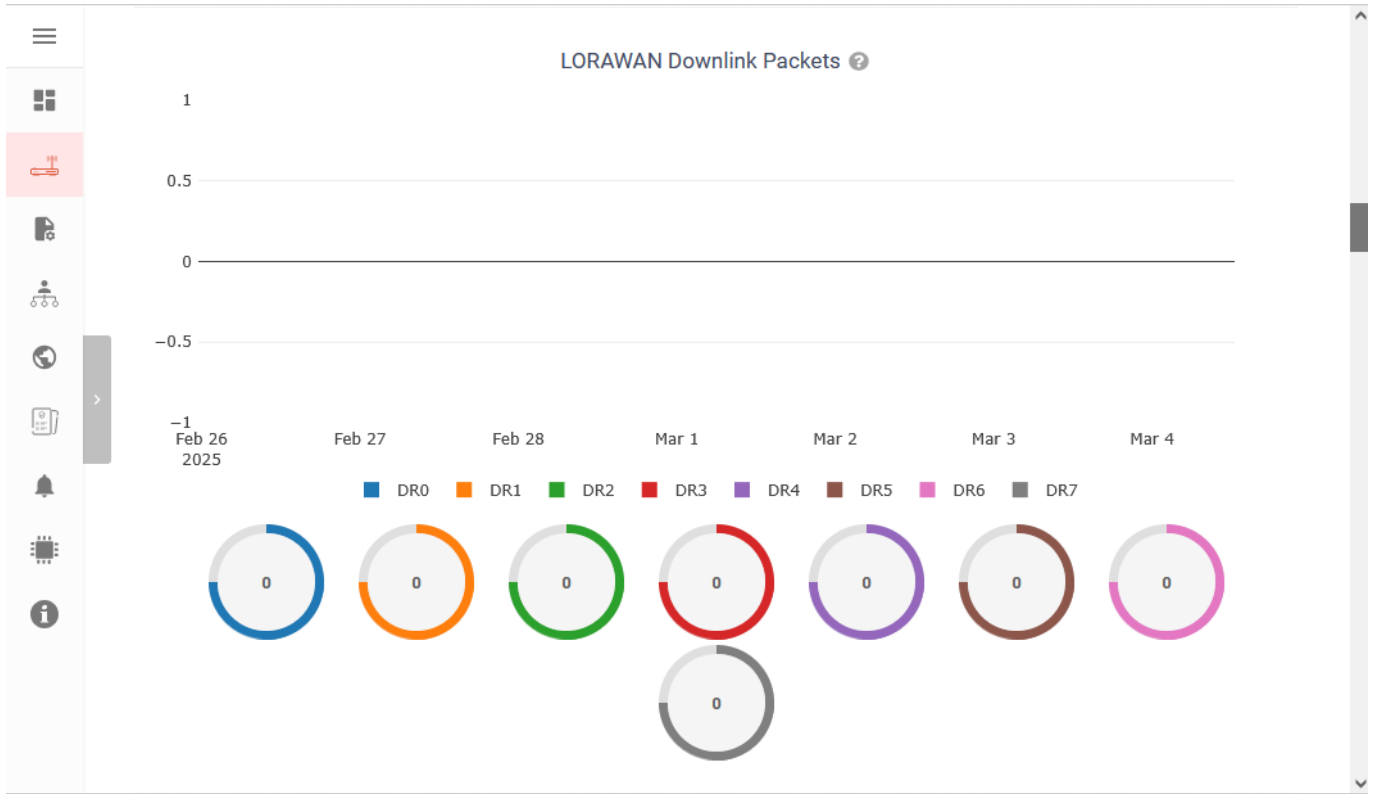


### LORAWAN Uplink Packets ?



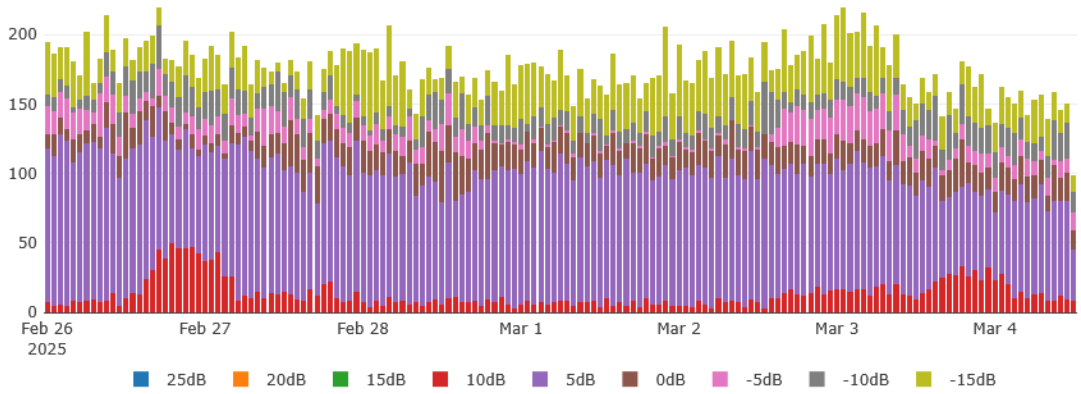
### LORAWAN Uplink Air Time (milliseconds) ?



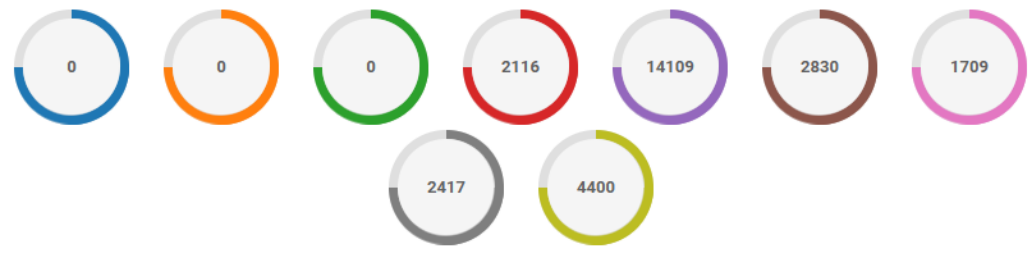




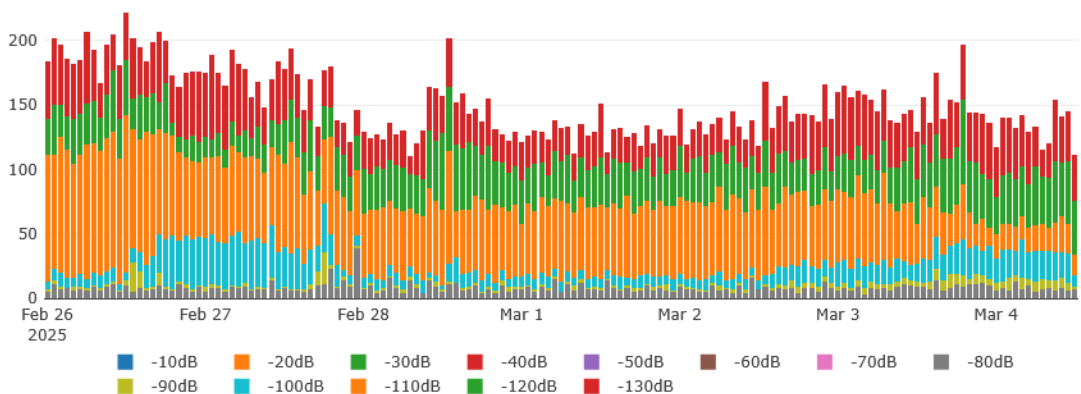
### LORAWAN SNR



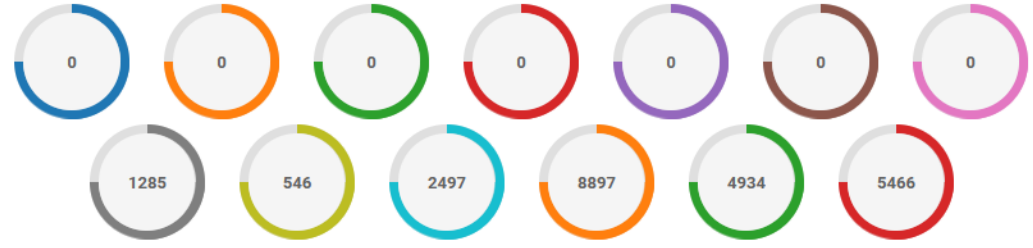
■ 25dB ■ 20dB ■ 15dB ■ 10dB ■ 5dB ■ 0dB ■ -5dB ■ -10dB ■ -15dB



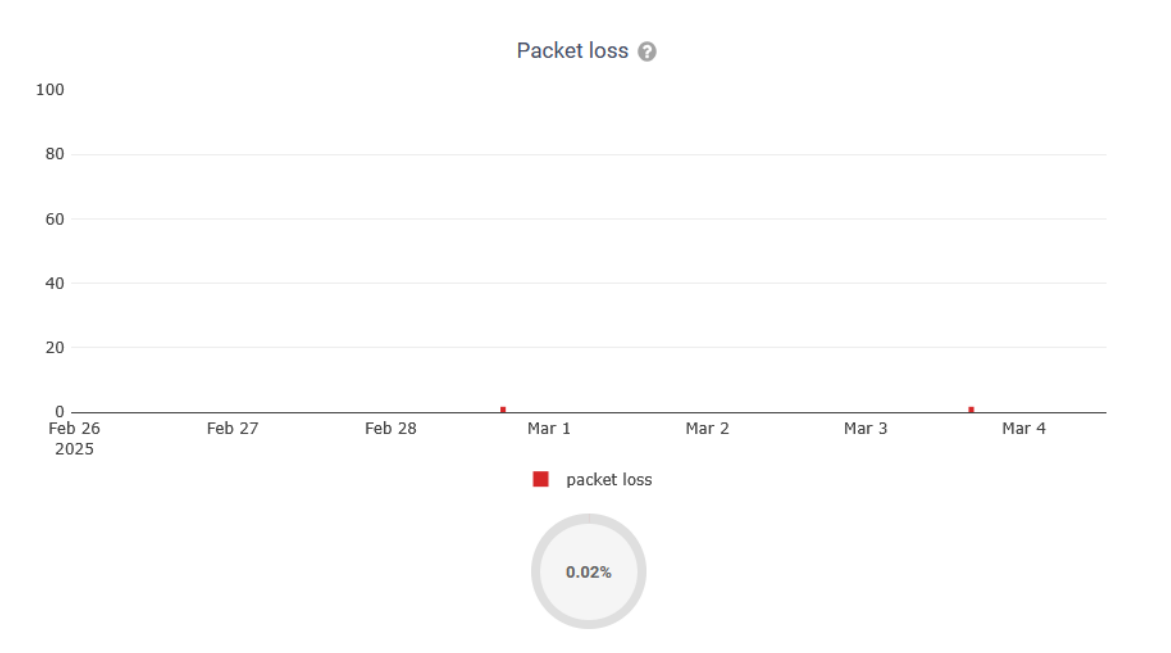
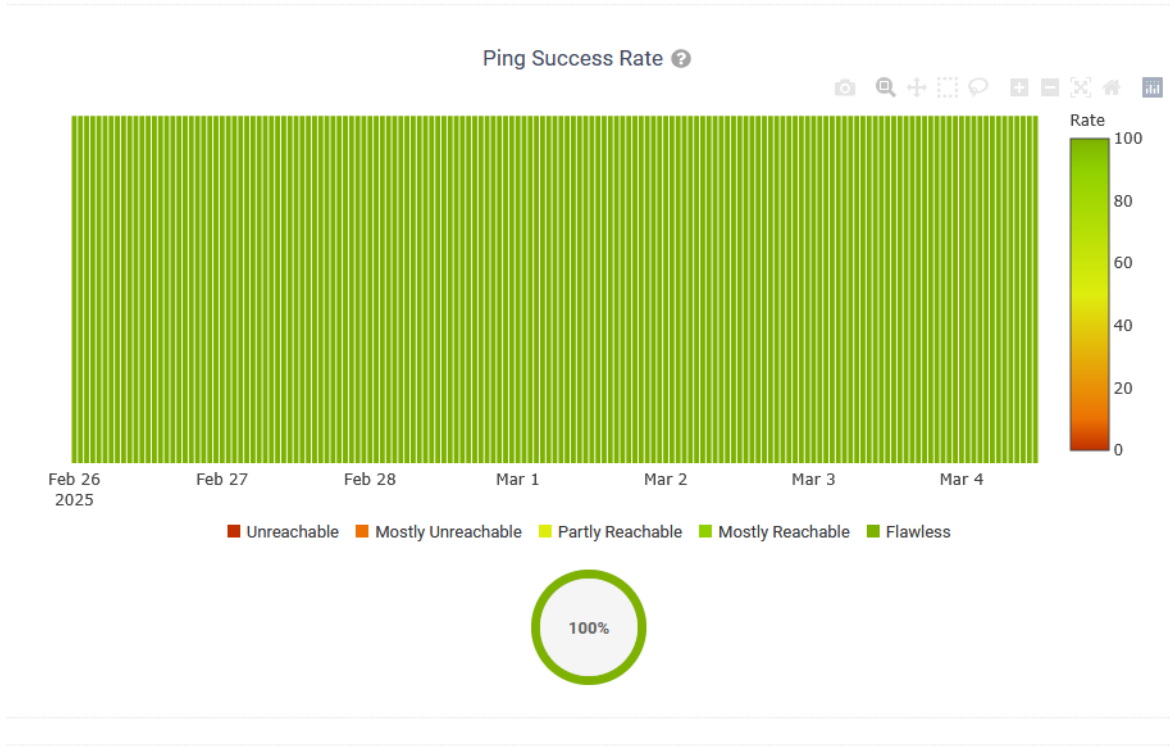
### LORAWAN RSSI

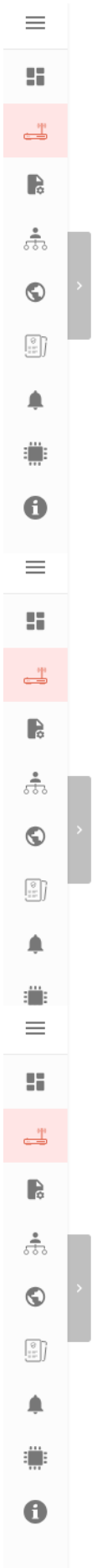


■ -10dB ■ -20dB ■ -30dB ■ -40dB ■ -50dB ■ -60dB ■ -70dB ■ -80dB  
■ -90dB ■ -100dB ■ -110dB ■ -120dB ■ -130dB

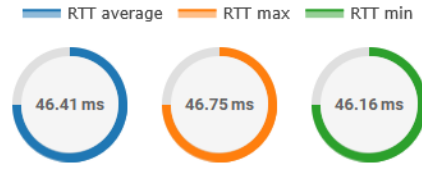
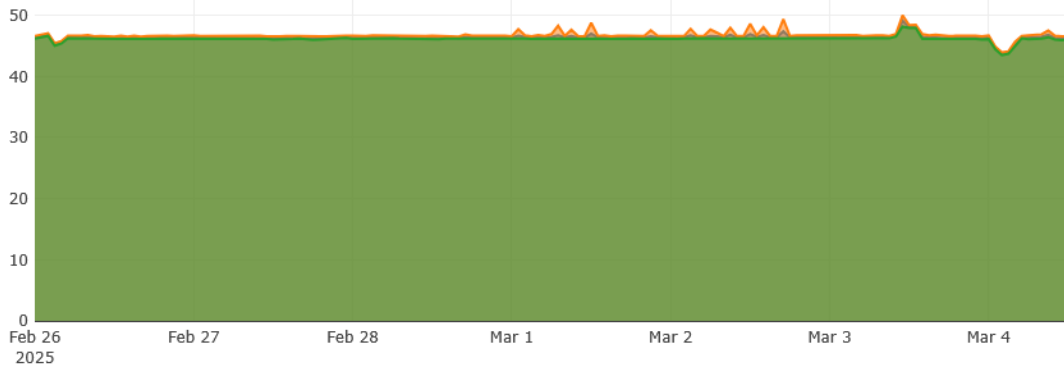


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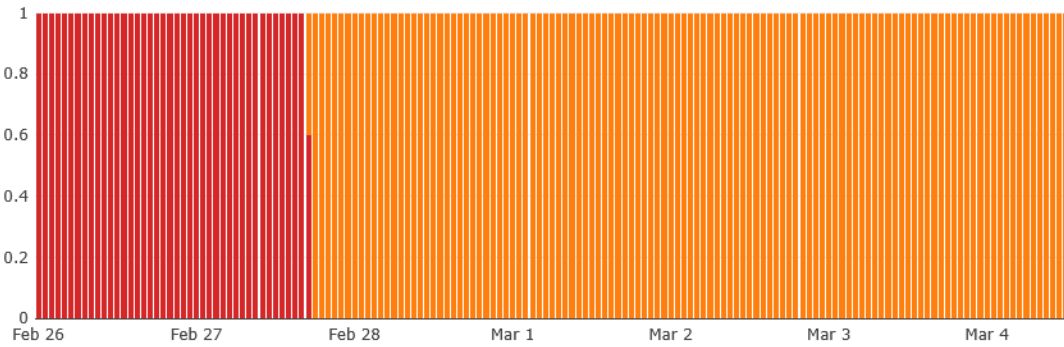




### Round Trip Time ?

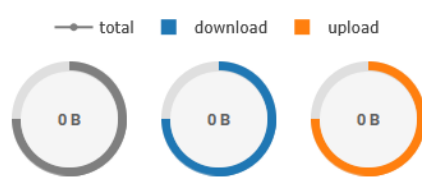


### Modem status ?



■ disable ■ fail ■ no sim ■ ok

### Traffic: wlan1 ?






## Logs

- Ability to view logs from devices (SSH, Firewall, Device manager, Kernel, Packet forwarder, Basic station, Modem manager, Network manager, NTPD, PPPD, SystemD)






### Configurations

- One of the most important features - user can add/delete any configuration

 add the template as a separate menu, user can create his configuration template for future use in a group of devices or a separate device

**Name:**

---

**Organization:**    

---

**Type:**    
 template type, determines which features are available

---

**Tags:**    
 A comma-separated list of template tags, may be used to ease auto configuration with specific settings (eg: 4G, mesh, WDS, VPN, ecc.)

---

**Enabled by default**   
 whether new configurations will have this template enabled by default

---

**Required**   
 if checked, will force the assignment of this template to all the devices of the organization (if no organization is selected, it will be required for every device in the system)

---

**Configuration:**

Configuration menu

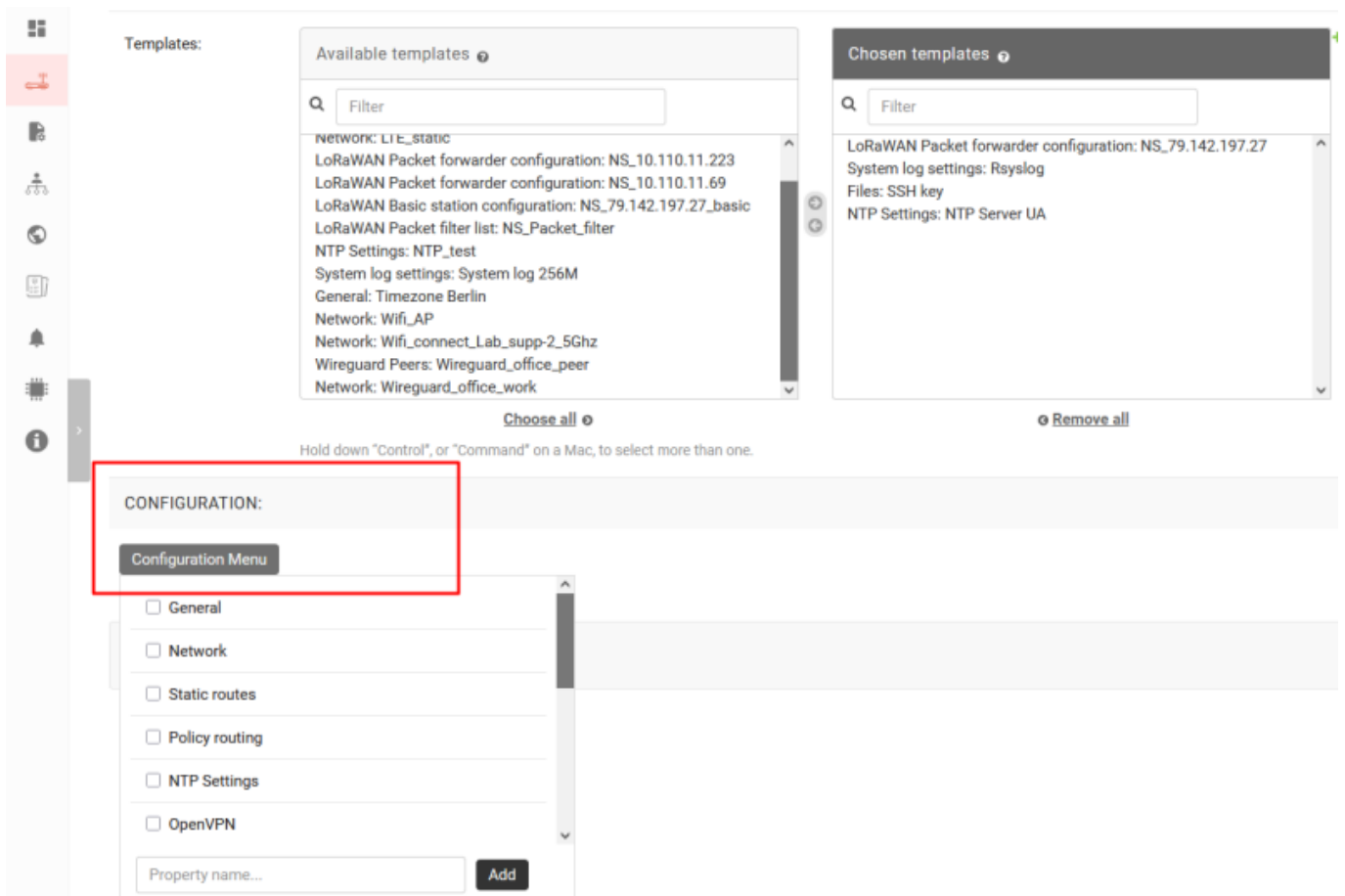
---

**Created:** 17 Mar 2025, 1:33 p.m.

---

**Modified:** 17 Mar 2025, 1:26 p.m.

- After the user chooses a new template the program checks it and apply to the device or device group. Also user could choose already existing configurations from a list



The screenshot shows a web interface for managing templates. On the left is a sidebar with navigation icons. The main area is titled 'Templates:' and is split into two columns: 'Available templates' and 'Chosen templates'. Both columns have a search filter. The 'Available templates' list includes items like 'NETWORK: L1E\_STATIC', 'LoRaWAN Packet forwarder configuration: NS\_10.110.11.223', 'LoRaWAN Packet forwarder configuration: NS\_10.110.11.69', 'LoRaWAN Basic station configuration: NS\_79.142.197.27\_basic', 'LoRaWAN Packet filter list: NS\_Packet\_filter', 'NTP Settings: NTP\_test', 'System log settings: System log 256M', 'General: Timezone Berlin', 'Network: Wifi\_AP', 'Network: Wifi\_connect\_Lab\_supp-2\_5Ghz', 'Wireguard Peers: Wireguard\_office\_peer', and 'Network: Wireguard\_office\_work'. Below this list is a 'Choose all' button and a note: 'Hold down "Control", or "Command" on a Mac, to select more than one.' The 'Chosen templates' column contains 'LoRaWAN Packet forwarder configuration: NS\_79.142.197.27', 'System log settings: Rsyslog', 'Files: SSH key', and 'NTP Settings: NTP Server UA', with a 'Remove all' button below. Below the template lists is a 'CONFIGURATION:' section with a 'Configuration Menu' button. A dropdown menu is open, showing a list of checkboxes for 'General', 'Network', 'Static routes', 'Policy routing', 'NTP Settings', and 'OpenVPN'. At the bottom of this menu is a 'Property name...' input field and an 'Add' button.

## Map

- The user can choose an existing map of devices or create his own and mark the device's location

Overview Status Charts Logs Configuration **Map** Credentials Firmware Recent Firmware Upgrades Checks Alert Settings

Map: DeviceLocation object (ff865fcd-c86b-4b97-8474-0e92ec605fb3) Delete

**Location:**

**Type:**    
indoor locations can have floorplans associated to them

**Is mobile?**   
is this location a moving object?

**Location name:**    
A descriptive name of the location (building name, company name, etc.)

**Address:**

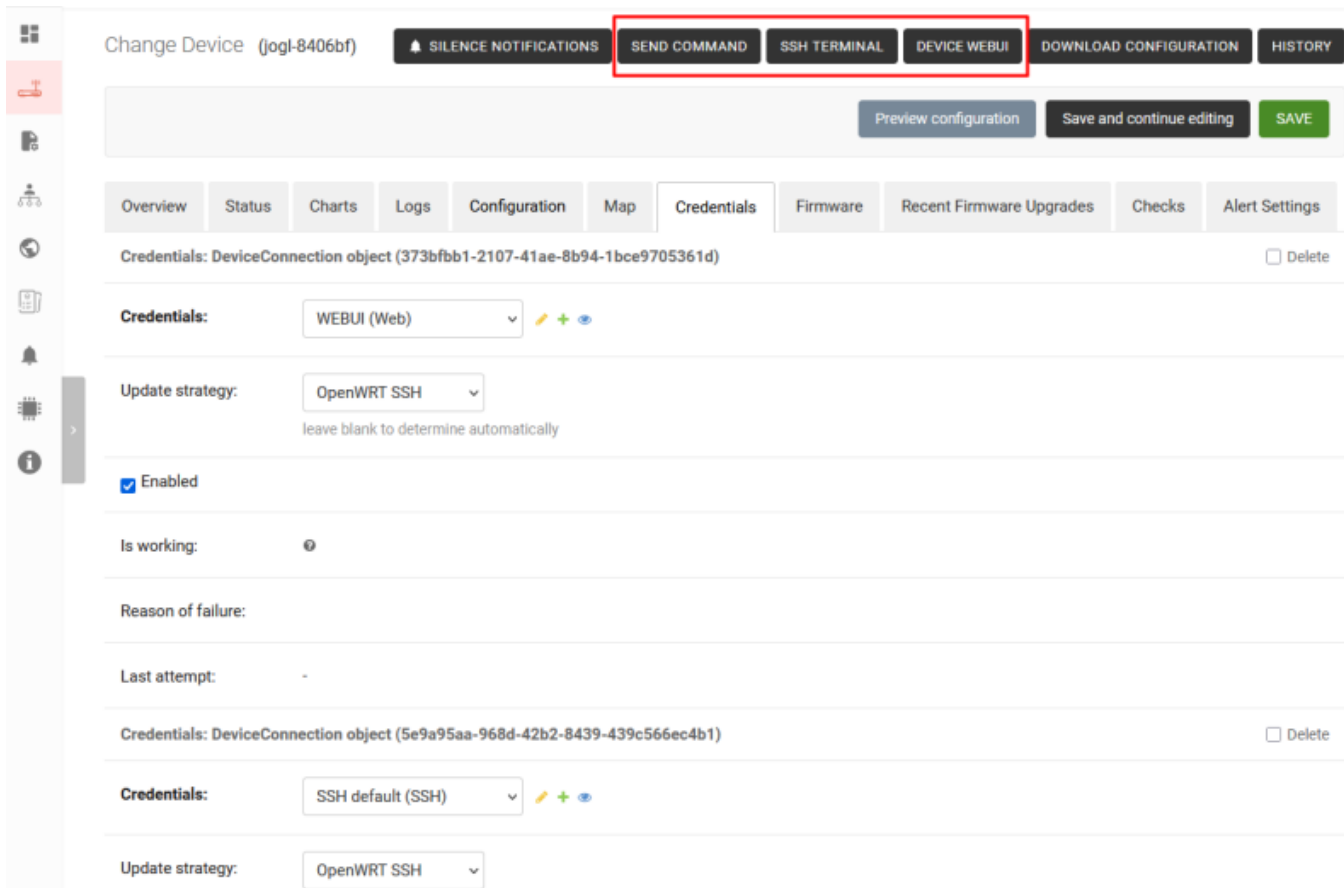
**Geometry:**

**INDOOR COORDINATES**

Floorplan selection:

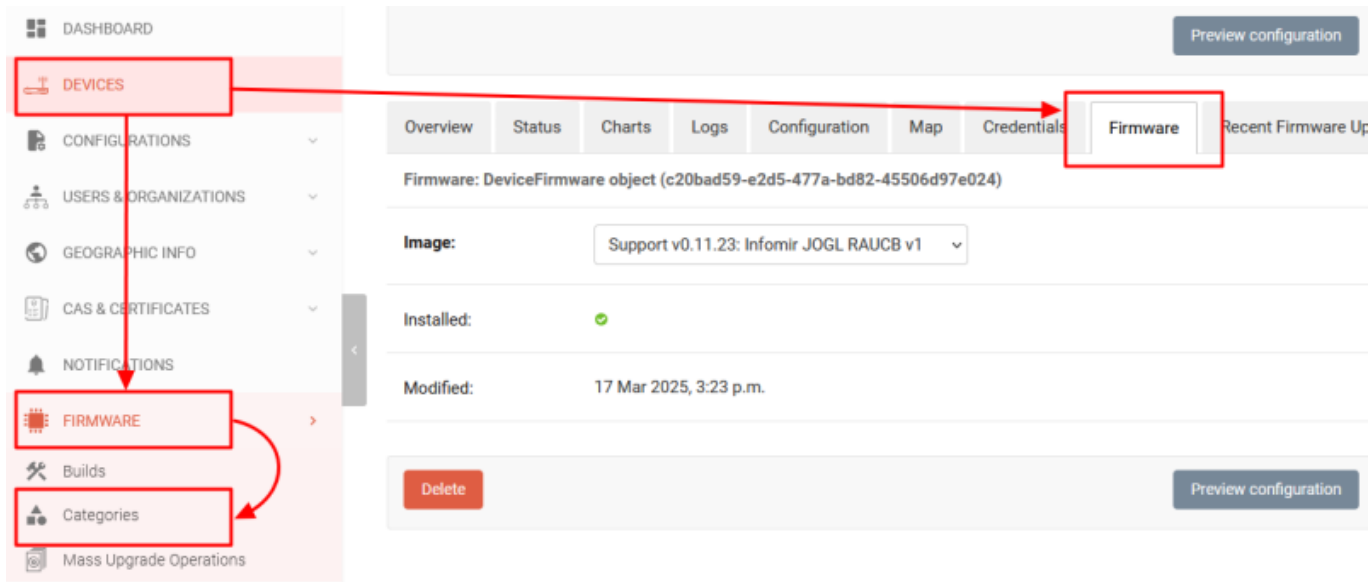
## Credentials

- After adding the credentials the user can connect to device via SSH, web UI admin or send command reboot/change password (without authorization)



### Firmware

- The user can download new firmware and update the device group or separate the device



- Add the new firmware Category

Select Firmware Category to change

RECOVER DELETED FIRMWARE CATEGORIES + ADD FIRMWARE CATEGORY

Search

Action: 0 of 4 selected

<input type="checkbox"/>	NAME	ORGANIZATION	CREATED	MODIFIED
<input type="checkbox"/>	Support_LTE	Support_LTE	3 Feb 2025, 2:05 p.m.	3 Feb 2025, 2:05 p.m.
<input type="checkbox"/>	Support	Support	3 Feb 2025, 2:05 p.m.	3 Feb 2025, 2:05 p.m.
<input type="checkbox"/>	Dev_LTE	Support_LTE	20 Feb 2025, 9:06 a.m.	20 Feb 2025, 9:06 a.m.
<input type="checkbox"/>	Dev	Support	20 Feb 2025, 9 a.m.	20 Feb 2025, 9:07 a.m.

4 Firmware Categories

- Use tab Builds for add new or edit existing firmware build

Select Firmware Build to change

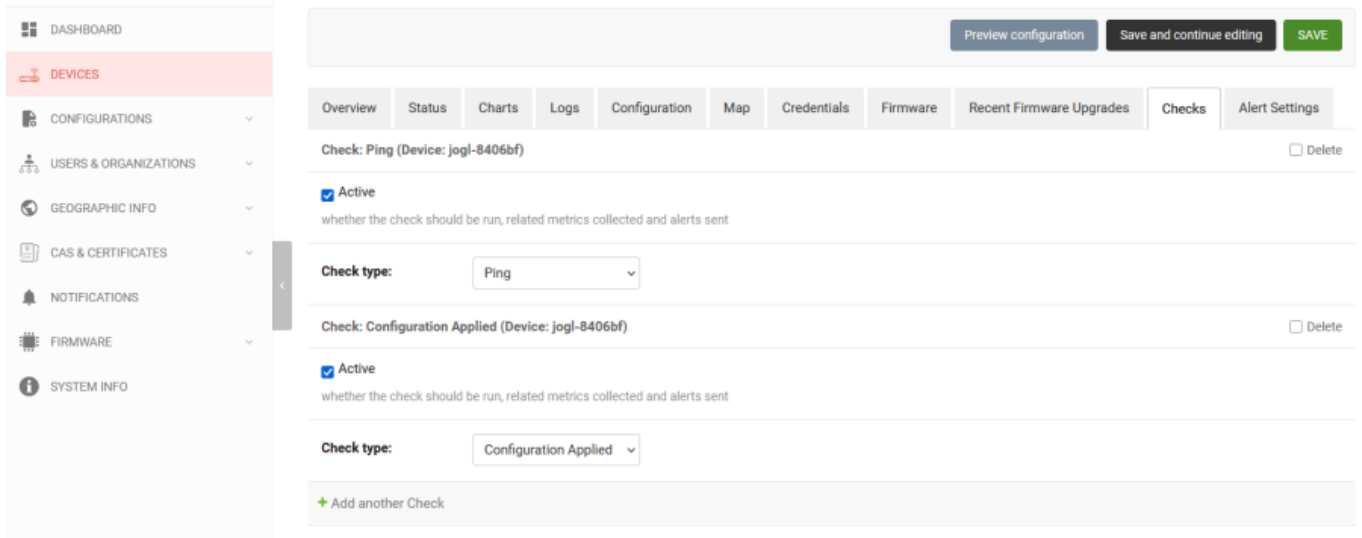
+ ADD FIRMWARE BUILD

Search

Action: 0 of 16 selected

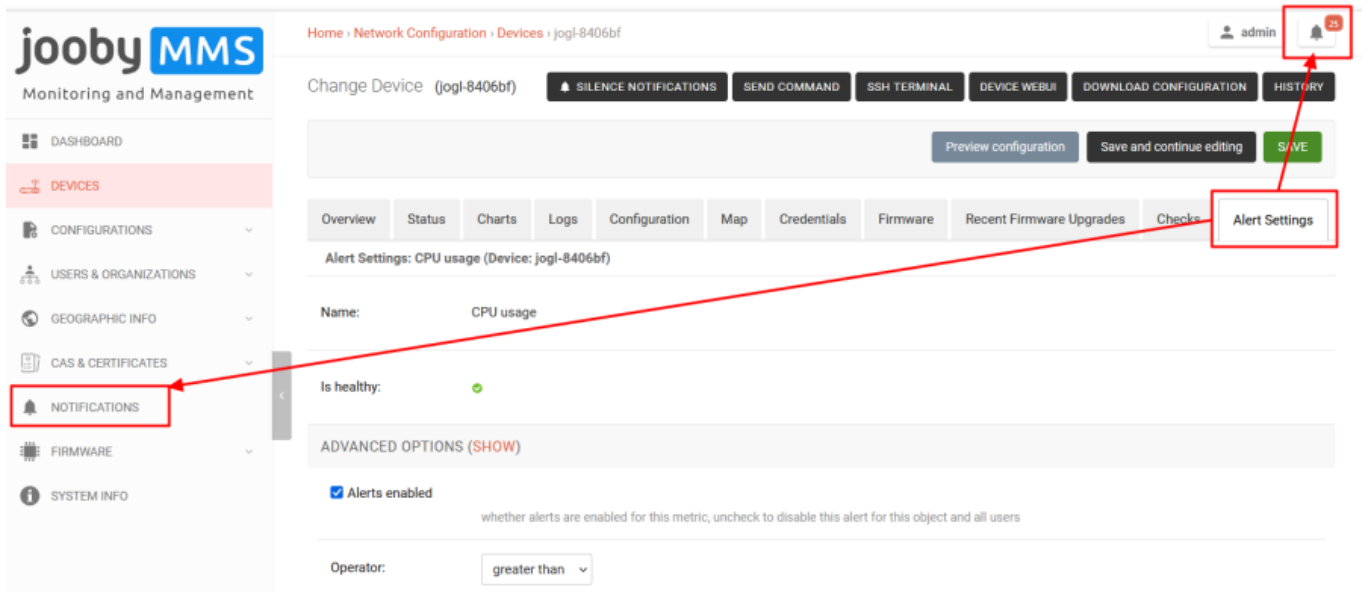
<input type="checkbox"/>	FIRMWARE BUILD	ORGANIZATION	FIRMWARE CATEGORY	CREATED	MODIFIED
<input type="checkbox"/>	Dev_LTE v0.12.1	Support_LTE	Dev_LTE	14 Mar 2025, 10:11 a.m.	14 Mar 2025, 10:11 a.m.
<input type="checkbox"/>	Dev v0.12.1	Support	Dev	14 Mar 2025, 10:03 a.m.	14 Mar 2025, 10:06 a.m.
<input type="checkbox"/>	Support_LTE v0.12.1	Support_LTE	Support_LTE	14 Mar 2025, 9:57 a.m.	14 Mar 2025, 10:06 a.m.
<input type="checkbox"/>	Support v0.12.1	Support	Support	14 Mar 2025, 9:50 a.m.	14 Mar 2025, 10:07 a.m.
<input type="checkbox"/>	Dev v0.11.23	Support	Dev	27 Feb 2025, 2:08 p.m.	27 Feb 2025, 2:08 p.m.
<input type="checkbox"/>	Dev_LTE v0.11.23	Support_LTE	Dev_LTE	27 Feb 2025, 1:55 p.m.	27 Feb 2025, 1:55 p.m.
<input type="checkbox"/>	Support v0.11.23	Support	Support	27 Feb 2025, 8:08 a.m.	27 Feb 2025, 8:08 a.m.

## Checks - monitoring



## Alert Settings

- The user could set alerts that will notify the ser about unexpected behavior (for example CPU or memory usage)



## 4 Configurations

### 4.1 Templates

- for group device configuration update ===

Select template to change

RECOVER DELETED TEMPLATES + ADD TEMPLATE

Search

Action: [dropdown] Go 0 of 17 selected

<input type="checkbox"/>	NAME	ORGANIZATION	CONFIGURATION TYPE	ENABLED BY DEFAULT	REQUIRED	CREATED	MODIFIED
<input type="checkbox"/>	Eth_static_lab	Support	Network	<span style="color: red;">○</span>	<span style="color: red;">○</span>	21 Feb 2025, 8:08 a.m.	21 Feb 2025, 9:13 a.m.
<input type="checkbox"/>	LTE_static	-	Network	<span style="color: red;">○</span>	<span style="color: red;">○</span>	21 Feb 2025, 9:02 a.m.	21 Feb 2025, 9:02 a.m.
<input type="checkbox"/>	NS_10.110.11.223	Support	LoRaWAN Packet forwarder configuration	<span style="color: red;">○</span>	<span style="color: red;">○</span>	3 Feb 2025, 4:04 p.m.	3 Feb 2025, 4:04 p.m.
<input type="checkbox"/>	NS_10.110.11.69	Support	LoRaWAN Packet forwarder configuration	<span style="color: red;">○</span>	<span style="color: red;">○</span>	19 Feb 2025, 12:49 p.m.	19 Feb 2025, 12:49 p.m.
<input type="checkbox"/>	NS_79.142.197.27	-	LoRaWAN Packet forwarder configuration	<span style="color: red;">○</span>	<span style="color: red;">○</span>	3 Feb 2025, 3:56 p.m.	20 Feb 2025, 2:50 p.m.
<input type="checkbox"/>	NS_79.142.197.27_basic	-	LoRaWAN Basic station configuration	<span style="color: red;">○</span>	<span style="color: red;">○</span>	3 Feb 2025, 3:58 p.m.	20 Feb 2025, 2:50 p.m.

## 4.2 Device groups

- users could group devices via semantic feature. Choose and apply some already made or own templates for them

Search

Action: [dropdown] Go 0 of 6 selected

<input type="checkbox"/>	NAME	ORGANIZATION	CREATED	MODIFIED
<input type="checkbox"/>	LOG-ON	Support	18 Feb 2025, 8:15 p.m.	18 Feb 2025, 8:25 p.m.
<input type="checkbox"/>	Test_LTE	Support_LTE	3 Feb 2025, 1:49 p.m.	4 Feb 2025, 4:43 p.m.
<input type="checkbox"/>	Group_1	Support	3 Feb 2025, 1:49 p.m.	4 Feb 2025, 4:44 p.m.
<input type="checkbox"/>	Long_test	Support	19 Feb 2025, 12:27 p.m.	19 Feb 2025, 12:55 p.m.
<input type="checkbox"/>	Dia_test	Support	3 Feb 2025, 5 p.m.	4 Feb 2025, 4:44 p.m.
<input type="checkbox"/>	Group_2	Support	3 Feb 2025, 1:49 p.m.	4 Feb 2025, 4:44 p.m.

6 Device Groups

## 4.3 Access Credentials

\* remote access from JOOBY JMMS via SSH and WEB UI

Select Access credentials to change + ADD ACCESS CREDENTIALS

Action:   0 of 6 selected

<input type="checkbox"/>	NAME	ORGANIZATION	CONNECTION TYPE	AUTO ADD	CREATED	MODIFIED
<input type="checkbox"/>	WEBUI-LTE	Support_LTE	Web	<input checked="" type="checkbox"/>	3 Feb 2025, 1:52 p.m.	3 Feb 2025, 1:52 p.m.
<input type="checkbox"/>	Web default	-	Web	<input checked="" type="checkbox"/>	3 Feb 2025, 1:33 p.m.	3 Feb 2025, 1:33 p.m.
<input type="checkbox"/>	SSH_connect	Support	SSH	<input checked="" type="checkbox"/>	3 Feb 2025, 1:50 p.m.	3 Feb 2025, 1:50 p.m.
<input type="checkbox"/>	WEBUI	Support	Web	<input checked="" type="checkbox"/>	3 Feb 2025, 1:50 p.m.	3 Feb 2025, 1:50 p.m.
<input type="checkbox"/>	SSH_connect_LTE	Support_LTE	SSH	<input checked="" type="checkbox"/>	3 Feb 2025, 1:51 p.m.	3 Feb 2025, 1:51 p.m.
<input type="checkbox"/>	SSH default	-	SSH	<input checked="" type="checkbox"/>	3 Feb 2025, 1:33 p.m.	3 Feb 2025, 1:33 p.m.

6 Access credentials

## 5. Users & Organizations

- Managing users, access rights, assignment to groups
- **Groups&Permission** - managing groups, access rights

Monitoring and Management APPLY FILTERS

Filter

By organization:  By staff status:  By superuser status:  By active:  By groups:

Select user to change RECOVER DELETED USERS + ADD USER

Action:   0 of 4 selected

<input type="checkbox"/>	USERNAME	EMAIL ADDRESS	ACTIVE	STAFF STATUS	SUPERUSER STATUS	DATE JOINED	LAST LOGIN
<input type="checkbox"/>	ftest	lab_test@infomir.com	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5 Feb 2025, 10:02 a.m.	6 Feb 2025, 2:52 p.m.
<input type="checkbox"/>	iptv	lab-test@test.com	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5 Feb 2025, 10:01 a.m.	21 Mar 2025, 1:58 p.m.
<input type="checkbox"/>	Infomir	infomir.lab.test@gmail.com	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5 Feb 2025, 9:58 a.m.	6 Feb 2025, 2:51 p.m.
<input type="checkbox"/>	admin	vasily.krati@gmail.com	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3 Feb 2025, 1:33 p.m.	19 Mar 2025, 1:38 p.m.

4 users

## 6. Geographic info

- List with locations on the map (dashboard). Users could mark devices on the map

## 7. CAS & Certificates

- Users could add\import certificates for working with VPN



Monitoring and Management

- DASHBOARD
- DEVICES
- CONFIGURATIONS
- USERS & ORGANIZATIONS
- GEOGRAPHIC INFO
- CAS & CERTIFICATES**
- Certification Authorities
- Certificates
- NOTIFICATIONS

Filter

By organization: All | By revoked: All | By key length: All | By digest algorithm: All | By created: Any date

APPLY FILTERS

Select certificate to change

RECOVER DELETED CERTIFICATES | + ADD CERTIFICATE

Search

Action: [ ] Go 0 of 1 selected

NAME	ORGANIZATION	CA	KEY LENGTH	DIGEST ALGORITHM	VALIDITY END	REVOKED	CREATED	MODIFIED
Support	Support	Support	2048	SHA256	14 Mar 2026, 3:10 p.m.	<span style="color: red;">●</span>	14 Mar 2025, 3:10 p.m.	14 Mar 2025, 3:10 p.m.

Action: [ ] Go 0 of 1 selected

1 certificate

## 8. Notifications

- List with important notifications

jooby MMS Monitoring and Management

Home > Notifications > Notifications

admin 35

Filter

By level: All

Select Notification to view

TIMESTAMP	MESSAGE	LEVEL
20 Mar 2025, 12:18 p.m.	The device jogl-840579 is not reachable.	warning
20 Mar 2025, 12:18 p.m.	The device jogl-840579 is not reachable.	warning
20 Mar 2025, 12:18 p.m.	The device jogl-840579 is not reachable.	warning
20 Mar 2025, 12:18 p.m.	The device jogl-840579 is not reachable.	warning
19 Mar 2025, 4:02 p.m.	The device jogls-3f410c is reachable again.	info
19 Mar 2025, 4:02 p.m.	The device lools-3f410c is reachable again.	info

## 9. Monitoring

- list of checks and metrics

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Permanent link: <https://wiki.jooby.eu/playground/jooby-mms>

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