Low-cost LoRa gateway: web admin interface

Prof. Congduc Pham
http://www.univ-pau.fr/~cpham
Université de Pau, France

CONTENTS

- ❑ This tutorial presents the web admin interface which is an add-on to the low-cost gateway

- ❑ Please read first the "Low-cost LoRa gateway: a step-by-step tutorial" to understand the gateway configuration

- ❑ Note that the SD card image has everything needed, including the web admin interface installed, so you may skip the installation procedure

- ❑ Let's get started…

GATEWAY WEB ADMIN INTERFACE (1)

❑ A gateway web admin interface has been added to the latest version

❑ To install the web admin interface, check if you have the `gw_web_admin` folder in your `lora_gateway` folder

❑ If you don't, then update to the latest version

❑ Then, go into `gw_web_admin` and run the `install.sh` script

  ❑ `cd gw_web_admin`
  ❑ `sudo ./install.sh`

Gateway web admin interface (2)

❑ http://192.168.200.1/admin
   ❑ Login: admin
   ❑ Password: loragateway
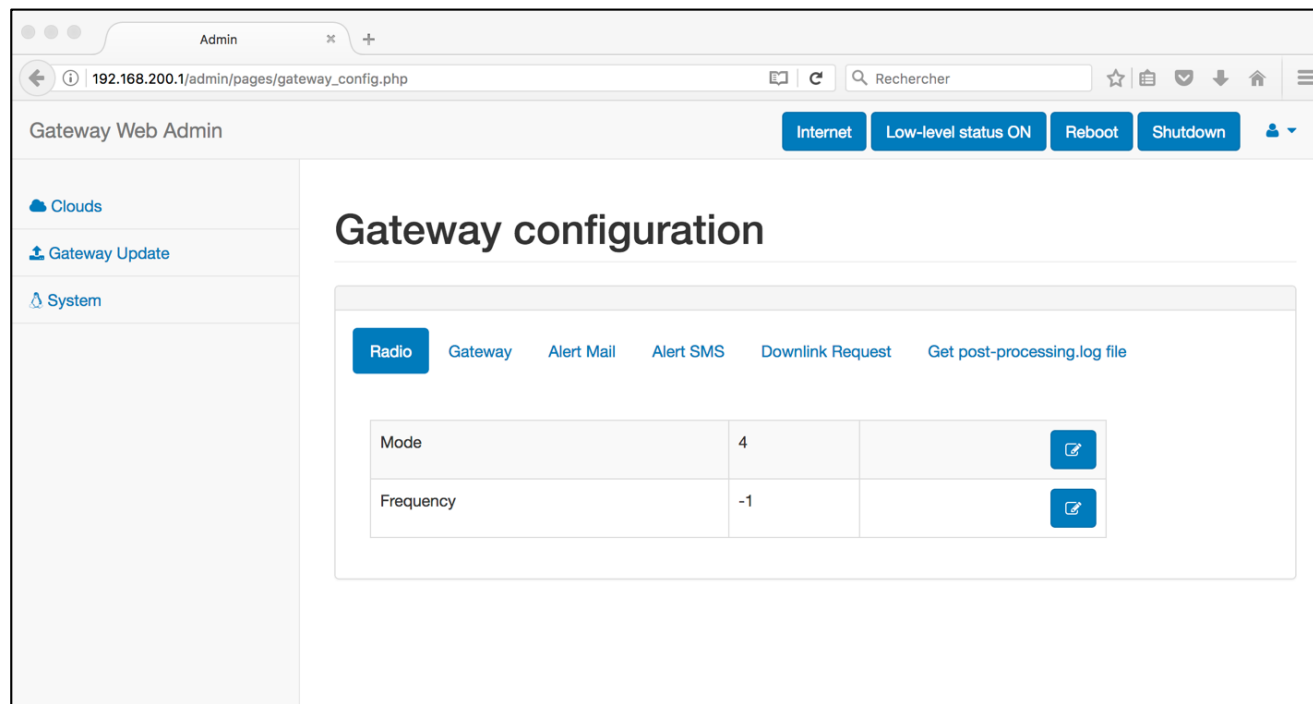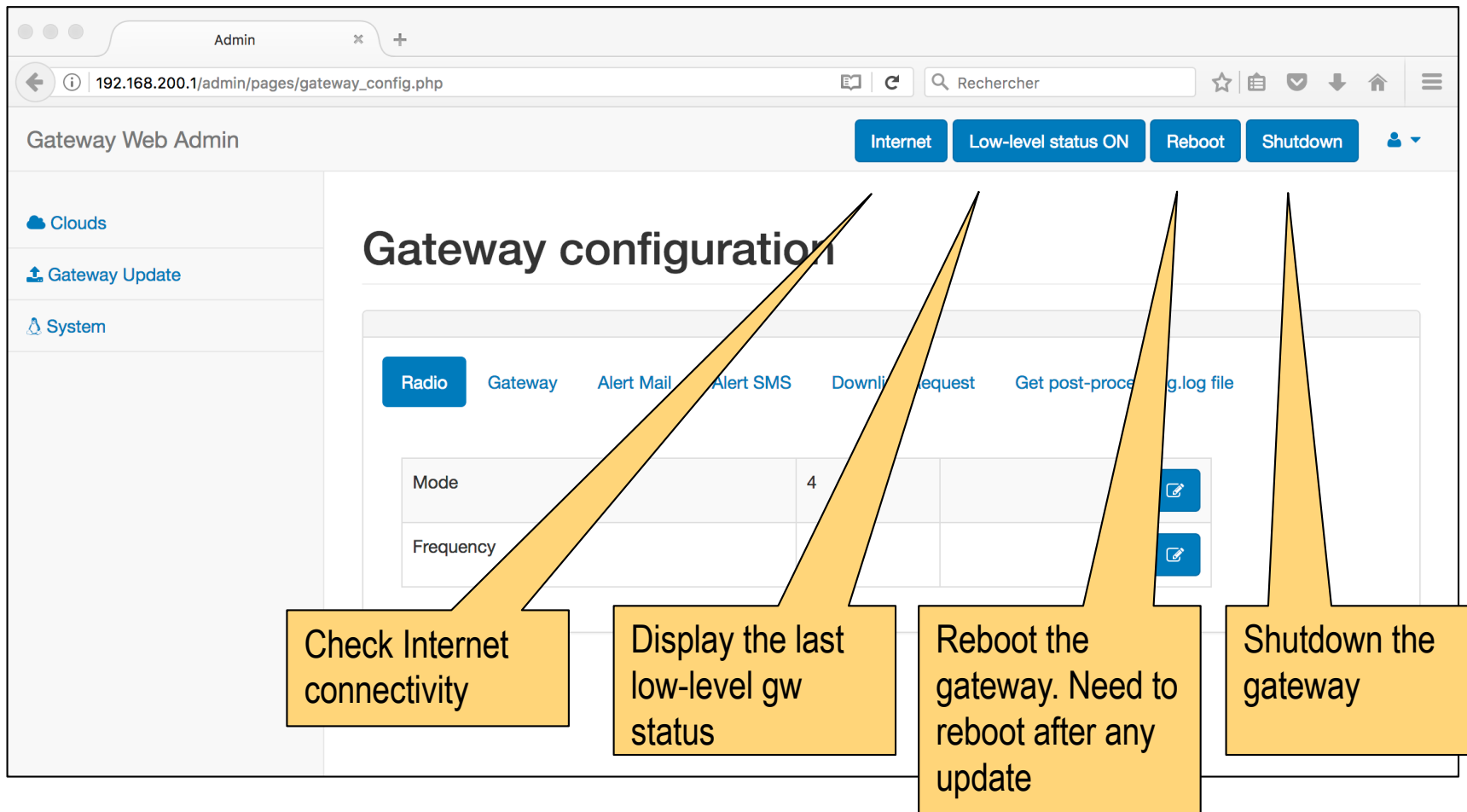
Web admin features

- Currently, you can use the web admin to:
  - Update your gateway with the latest github version and perform the basic configuration procedure. You can preserve your configuration files
  - Configure the gateway as WiFi client to connect to a WiFi network
  - Test Internet connectivity
  - Easily reboot and shutdown your gateway
    - Be carefull, if you shut down the gateway, you need to physically access the gateway to power it it on again
  - Change LoRa mode and frequency
  - Set your gateway id and configure alerting system (mail, SMS)
  - Change the WiFi SSID and password
  - Enable/Disable local AES decryption
  - Enable/Disable ThingSpeak and WAZIUP Orion cloud
  - For ThingSpeak, you can specify a new write key
  - For WAZIUP Orion, you can specify the project name, the organization name and the service tree
    - Fiware-service=project_name
    - sensor_name=organization_name+"_Sensor"
    - Fiware-servicePath='/'+organization_name+service_tree

Gateway main page

□ Gateway main page (configuration page)

❑ Gateway radio configuration section
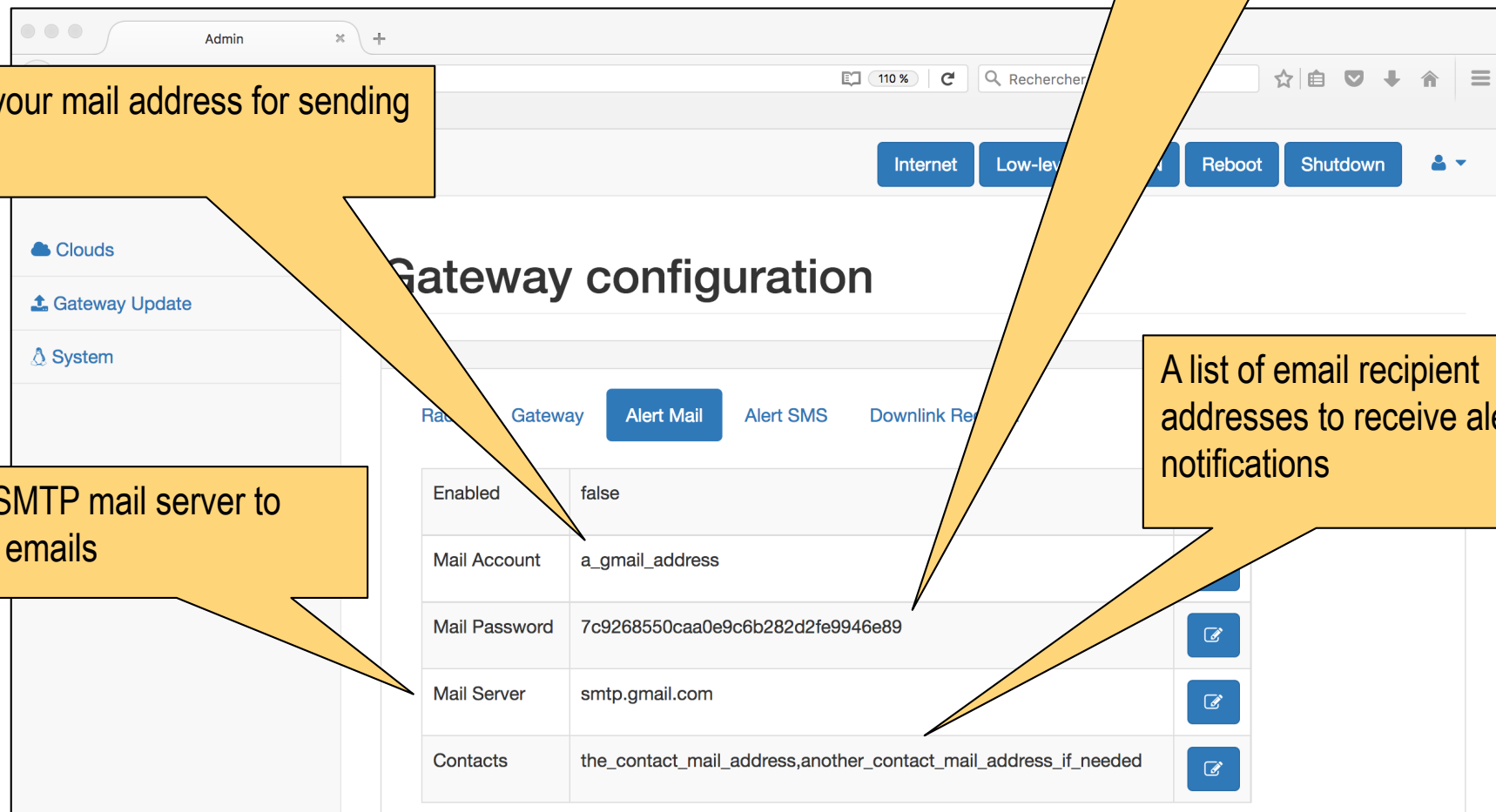

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❑ Gateway configuration section

❑ Gateway email alerting section

Your email account password

Enter your mail address for sending emails

The SMTP mail server to send emails

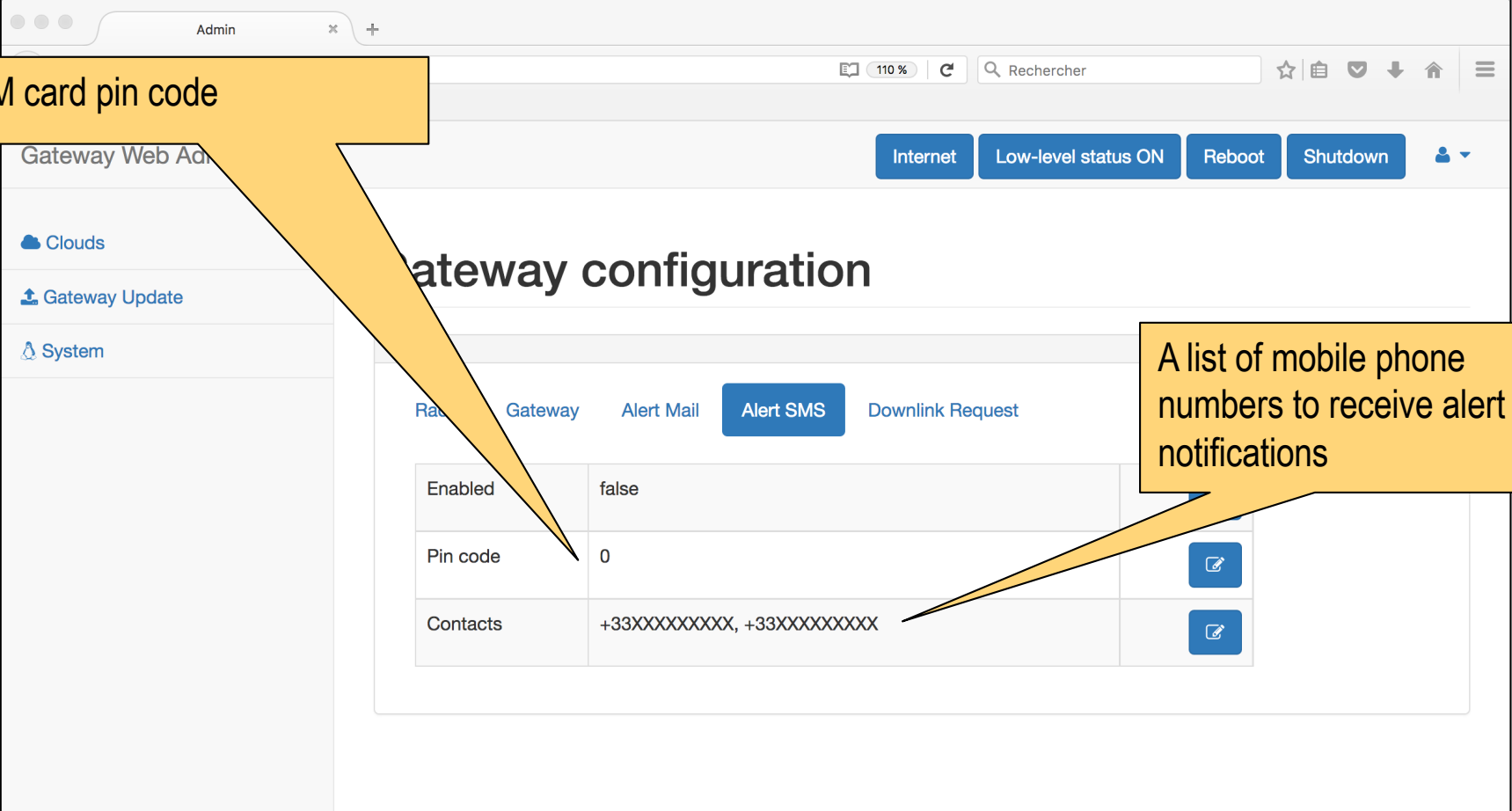A list of email recipient addresses to receive alert notifications

Admin

110 %   Rechercher

Internet   Low-lev   Reboot   Shutdown

☁ Clouds
⬆ Gateway Update
△ System

Gateway configuration

Ra…   Gateway   **Alert Mail**   Alert SMS   Downlink Re…

Enabled	false
Mail Account	a_gmail_address
Mail Password	7c9268550caa0e9c6b282d2fe9946e89
Mail Server	smtp.gmail.com
Contacts	the_contact_mail_address,another_contact_mail_address_if_needed

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□ Gateway SMS alerting section

The SIM card pin code

A list of mobile phone numbers to receive alert notifications

Gateway Web Ad

- Clouds
- Gateway Update
- System

Internet | Low-level status ON | Reboot | Shutdown

ateway configuration

Ra... Gateway Alert Mail **Alert SMS** Downlink Request

Enabled	false
Pin code	0
Contacts	+33XXXXXXXXX, +33XXXXXXXXX

Main gateway configuration (5)

□ Gateway generating downlink messages

Destination node, between 2 and 255

The string to send. Can be specific commands for the device if it has been programmed/configured accordingly.

That will generate in the downlink folder a downlink-post.txt file with the following entry:
{"status":"send_request","dst":2,"data":"hello from gateway"}

More info on
https://github.com/CongducPham/LowCostLoRaGw/blob/master/gw_full_latest/README-downlink.md

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❑ Gateway log files section

To start the generation of a copy of the log files

Then, link to the entire post-processing.log file

Then, link to an extract containing the last 500 lines of post-processing.log file

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❑ The "Get post-processing.log file" option is a convenient way for an end-user to obtain the log file that can be sent (mail) to an experienced user for analysis or debug purposes.

❑ The entire post-processing/log file can be obtained, or

❑ Only the last 500 lines

❑ The last feature can be used by an end-user to see whether data have been recently received from end-devices or not

❏ Gateway update section
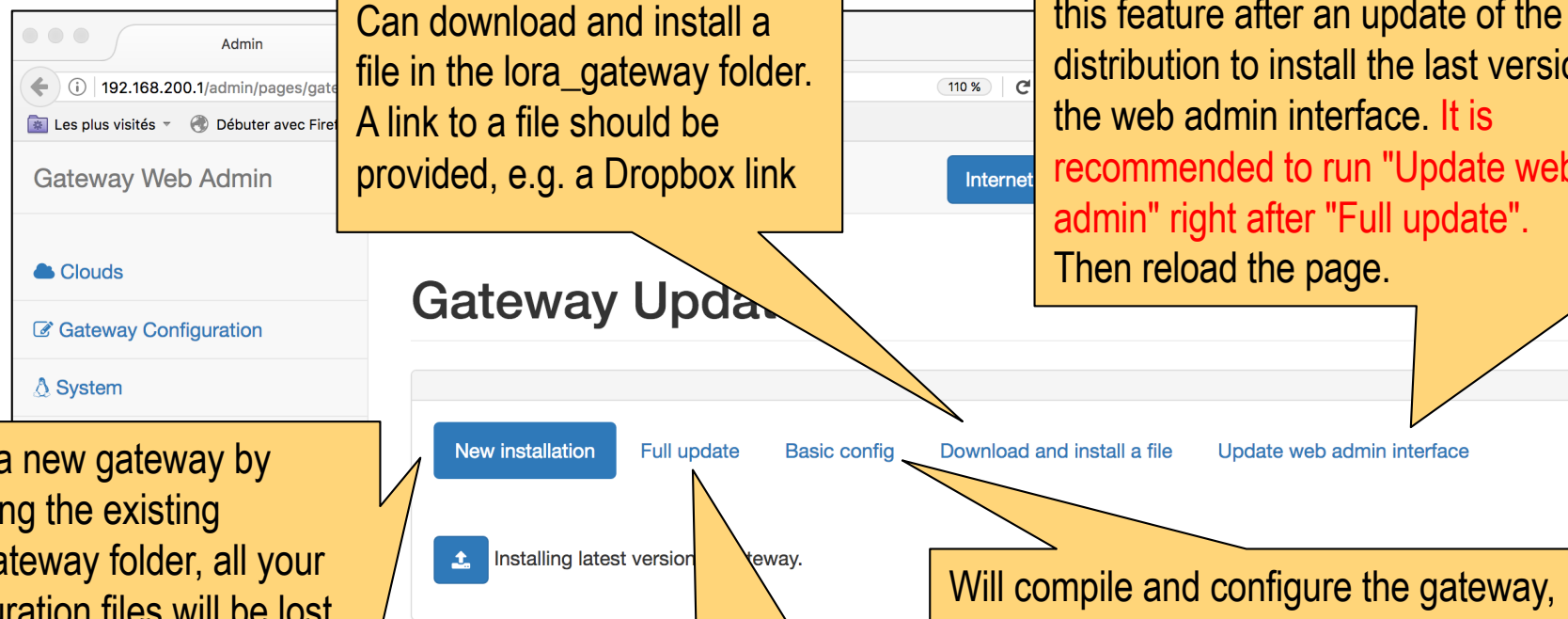
Can download and install a file in the lora_gateway folder. A link to a file should be provided, e.g. a Dropbox link

Update the web admin interface. Use this feature after an update of the distribution to install the last version of the web admin interface. It is recommended to run "Update web admin" right after "Full update". Then reload the page.

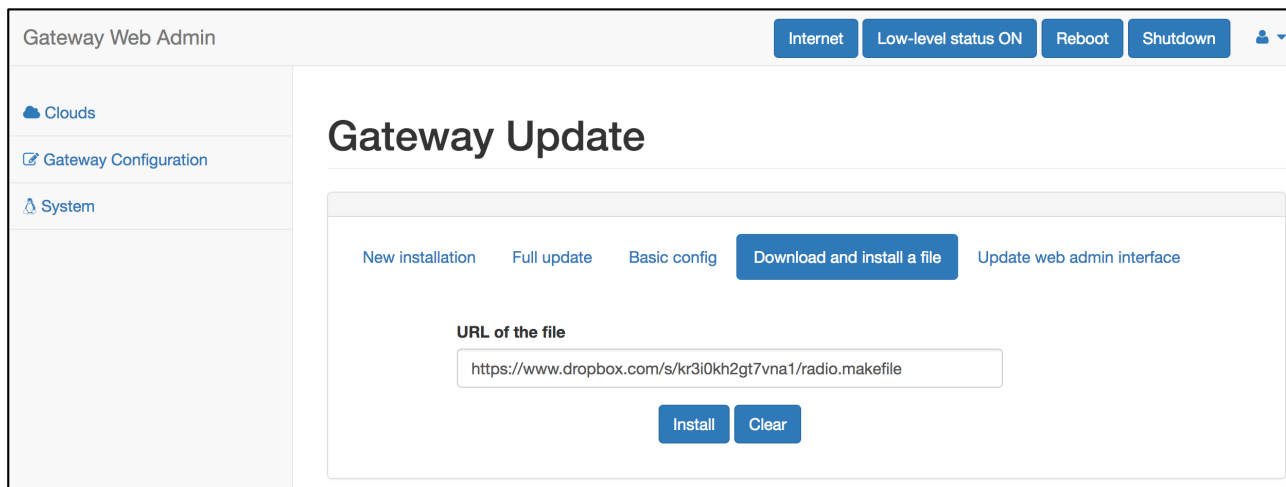Install a new gateway by removing the existing lora_gateway folder, all your configuration files will be lost.

This may be needed after a major upgrade of the distribution if you start from a very old SD card image.

Update with latest version on github, all your configuration files will be kept. This is the recommended option.

Will compile and configure the gateway, especially for the gateway id & the WiFi access point SSID derived from the last 5 bytes of the eth MAC address. This is also required if you install a new gateway using the provided SD card image. It is recommended to run "Basic config" right after "Full update".

DOWNLOAD & INSTALL A FILE

❑ The "Download and install a file" option is a convenient way to install a configuration file

  ❑ For instance, a customized radio.makefile file can be edited by an experienced user, then put on Dropbox and the link provided to an end-user (mail, SMS,…)

  ❑ After installation, the end-user can use "Basic config" to recompile the gateway program and then reboot

❑ Gateway cloud configuration section

Provides a quick and easy way to write to a ThingSpeak channel.

The cloud configuration page is very basic. It is expected that if you want to have advanced cloud management, you have to use ssh to connect to the gateway and configure it by editing the clouds.json file.

❑ Configuring WAZIUP Orion cloud

Gateway Web Admin

Internet | Low-level status ON | Reboot | Shutdown

- 📝 Gateway Configuration
- ⬆ Gateway Update
- ⚙ System

Cloud

The WAZIUP Orion tab is only available when using the FIWARE Orion Context Broker

ThingSpeak | **Waziup Orion**

Enabled	false
Project	waziup
Organization	UPPA
Service tree	/TESTS
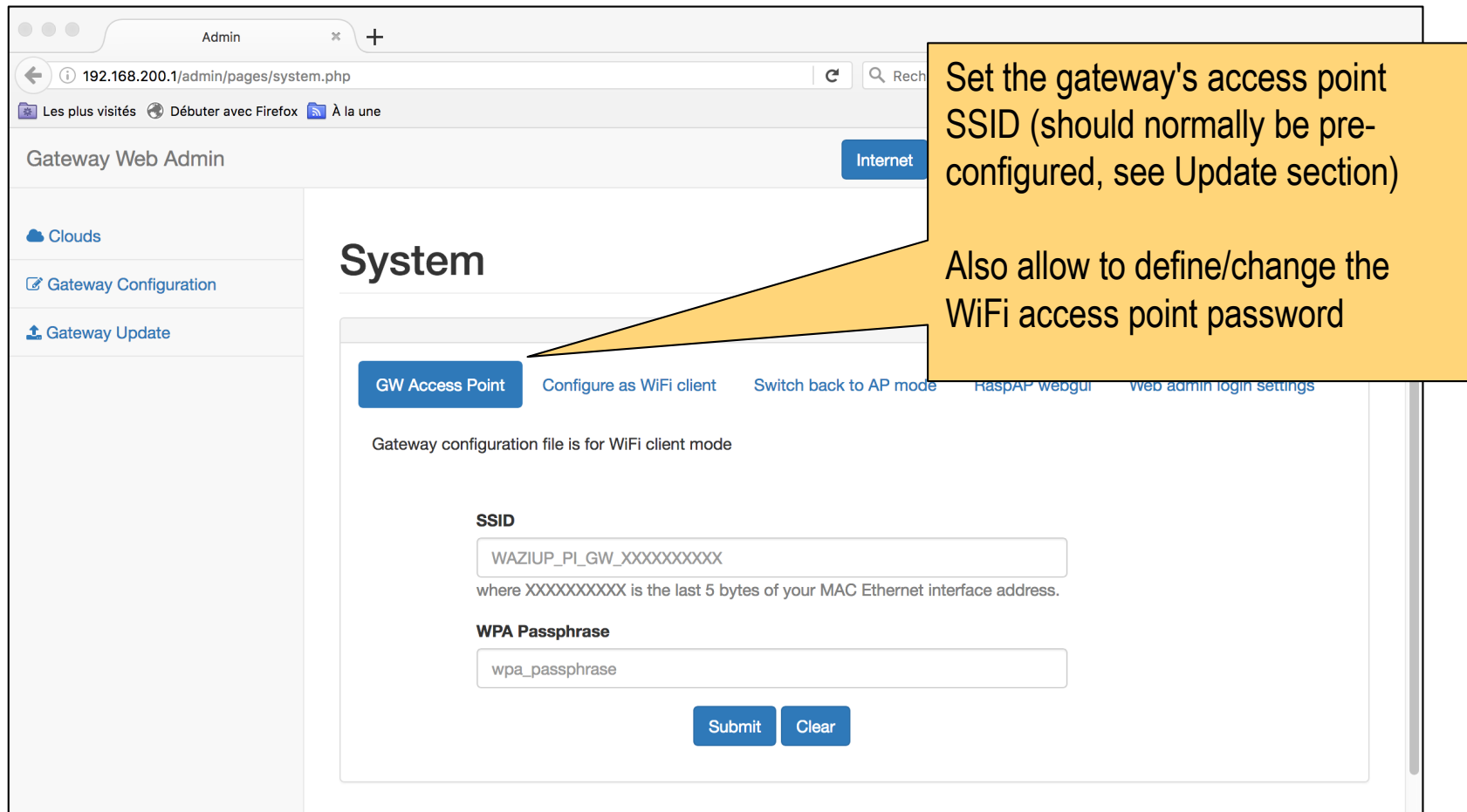
Project name will be the FIWARE Orion Service

Organization name will be used to derive the sensor name which will be for instance UPPA_Sensor2

Must begin with a '/'. The FIWARE Orion Service-path will be derived using both the Organization name and the Service tree: '/'+organization_name+service_tree, giving '/'+'UPPA'+'/TESTS' ➔ '/UPPA/TESTS'

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❑ Gateway WiFi access point

Set the gateway's access point SSID (should normally be pre-configured, see Update section)

Also allow to define/change the WiFi access point password

❑ Configure as WiFi client
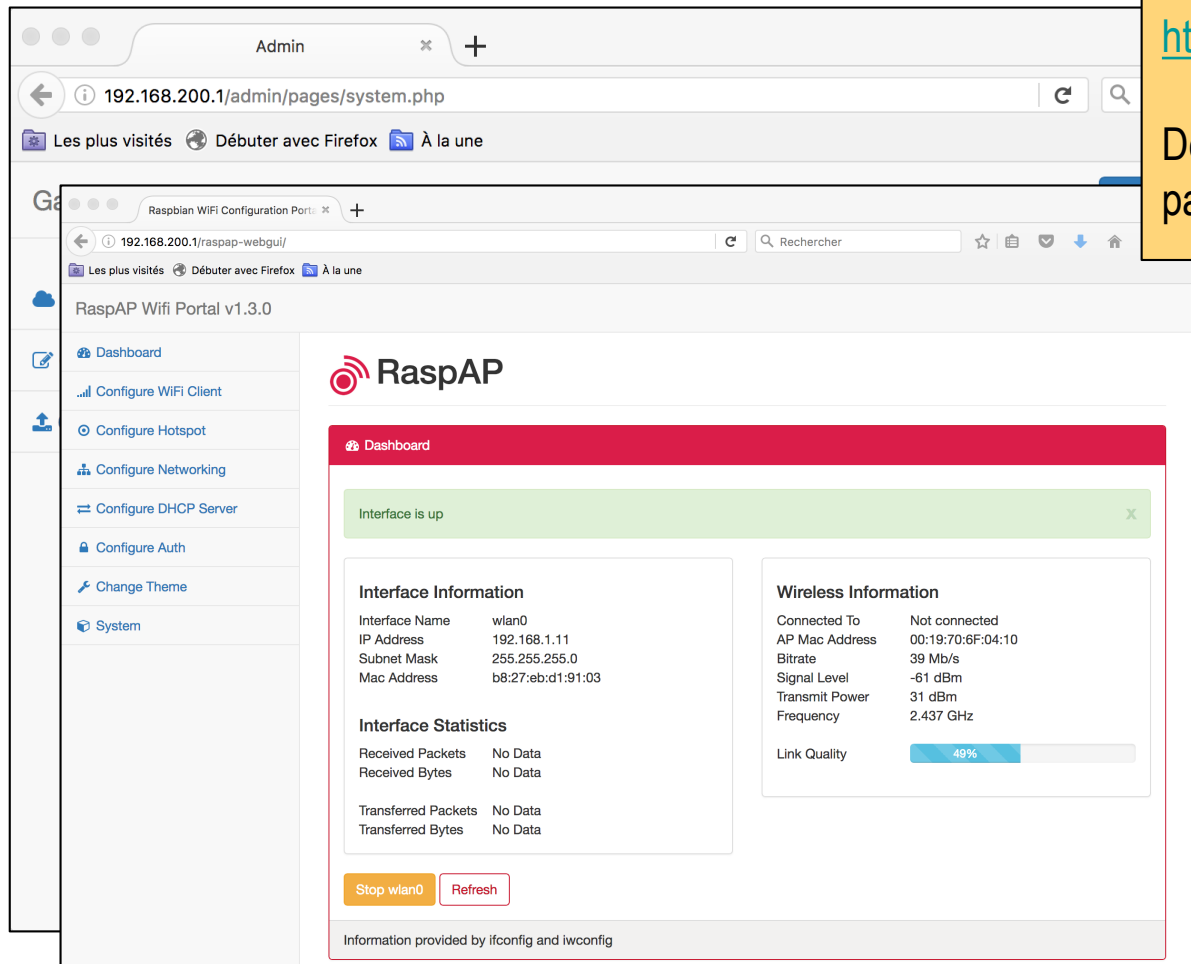
Configure the gateway as WiFi client to connect to an existing WiFi network. Changes will take effect after reboot.

Warning: if a valid WiFi network is not configured you will not be able to connect through the gateway's access point anymore. If that happens, use wired Ethernet to switch back to access point mode.

GATEWAY SYSTEM CONFIGURATION (3)

❑ Configure as WiFi Access Point

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GATEWAY SYSTEM CONFIGURATION (4)

❏ Run the RaspAP module

Run the RaspAP web module from
https://github.com/billz/raspap-webgui

Default login is admin and default password is secret
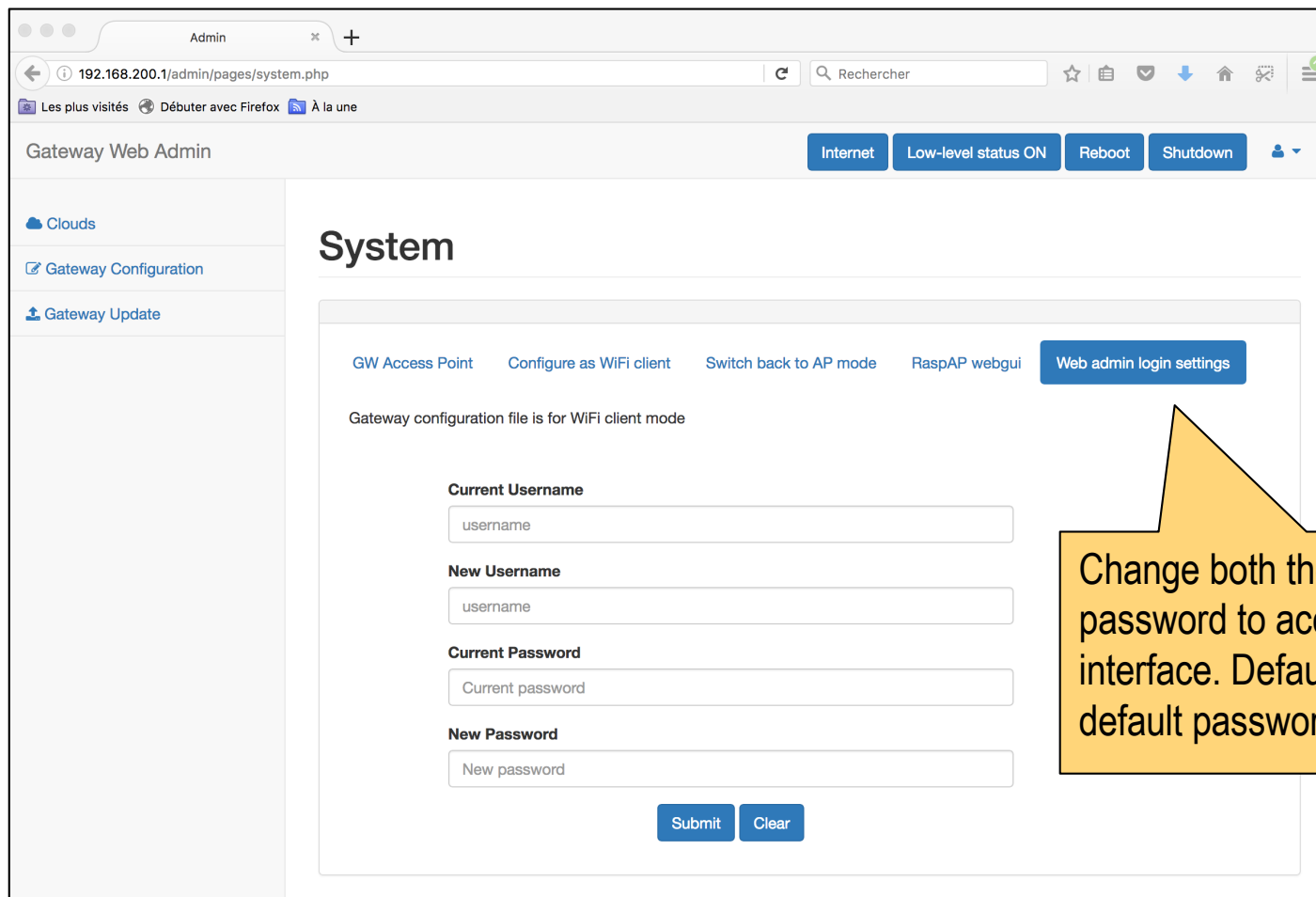
Gateway system configuration (5)

❑ RaspAP can configure some networking functions. It can be useful for dynamically select WiFi networks
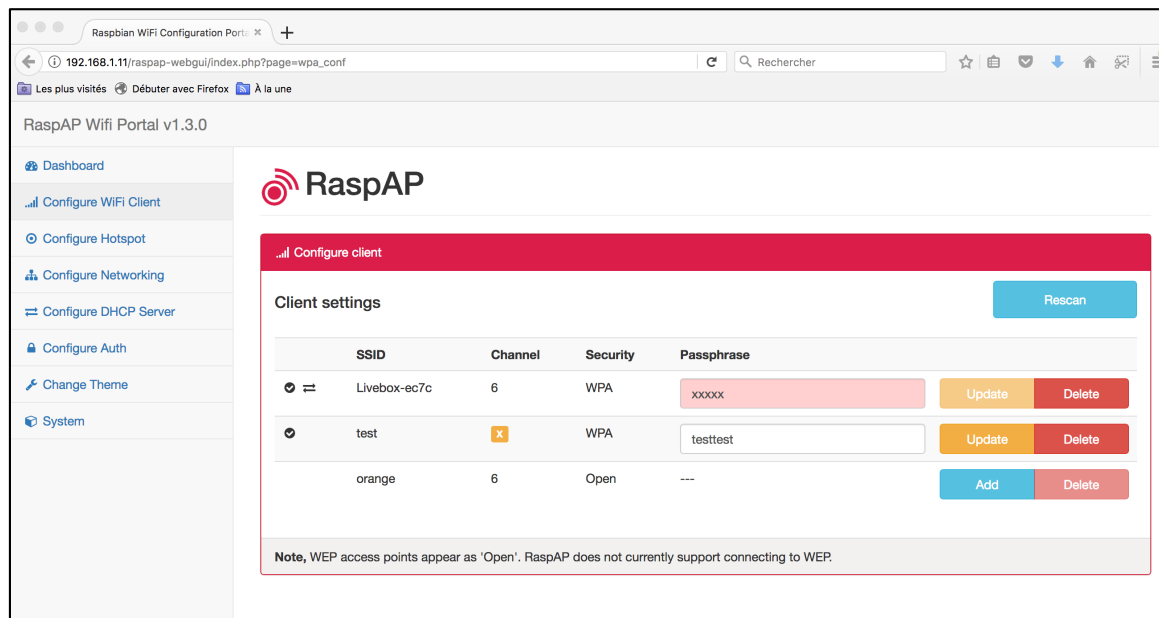
❑ However, it is recommended to use our web admin interface to control WiFi client <-> Access Mode feature

❑ Configure auth for web admin interface

Change both the login and password to access the web admin interface. Default login is admin and default password is loragateway

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