Low-cost LoRa gateway: web admin interface

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

Contents

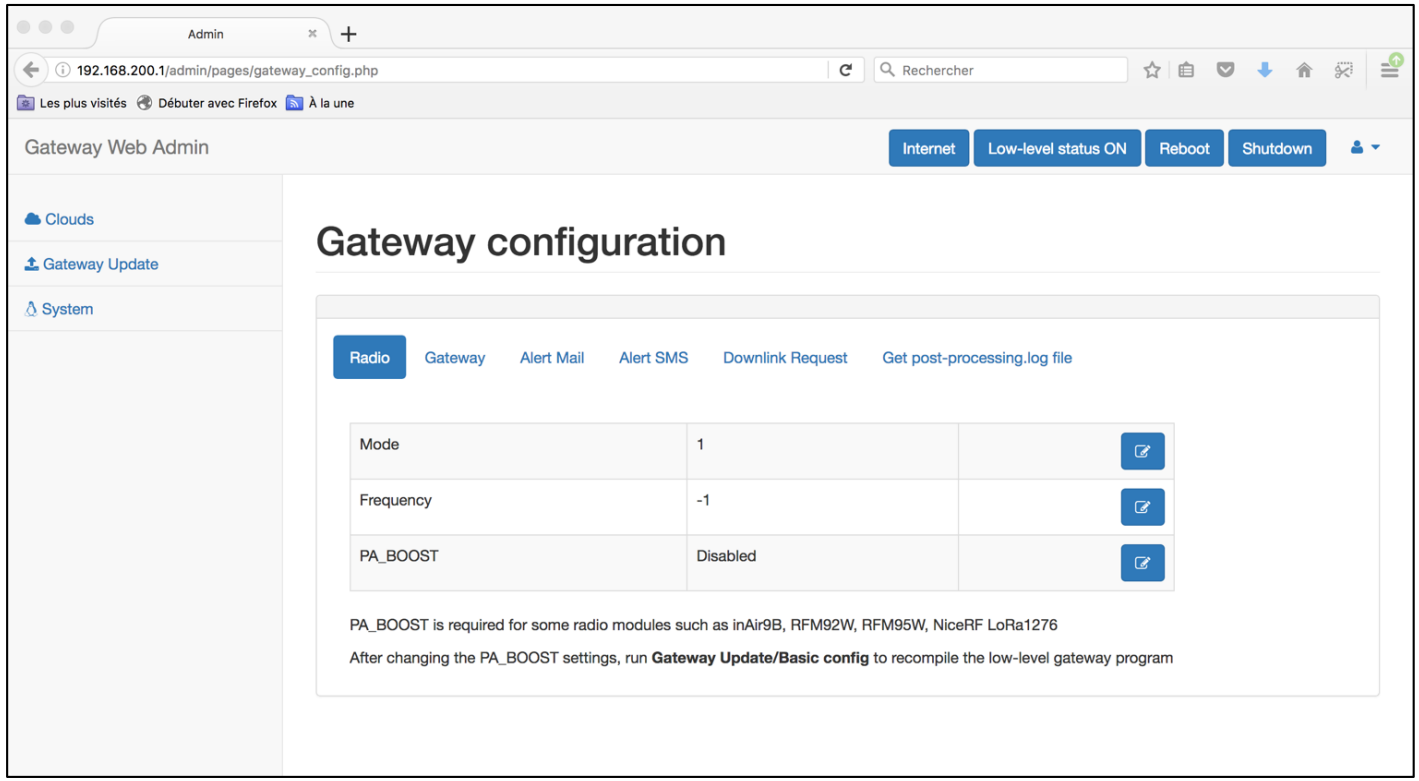
- This tutorial presents the web admin interface which is an add-on to the low-cost gateway
- Please read first the "Low-cost LoRa gateway: a step-by-step tutorial" to understand the gateway configuration
- Note that the SD card image has everything needed, including the web admin interface installed, 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

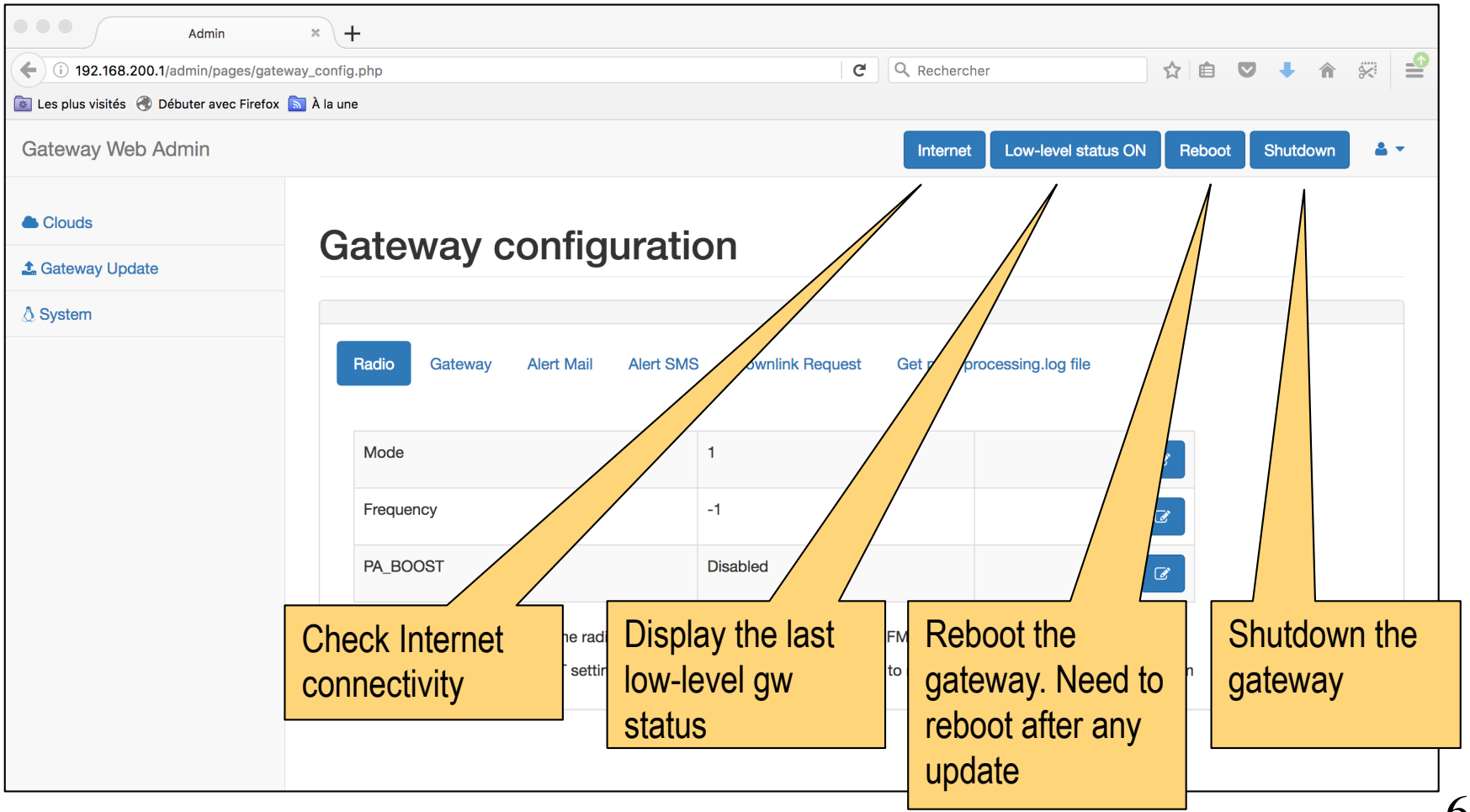


Web admin features

- 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

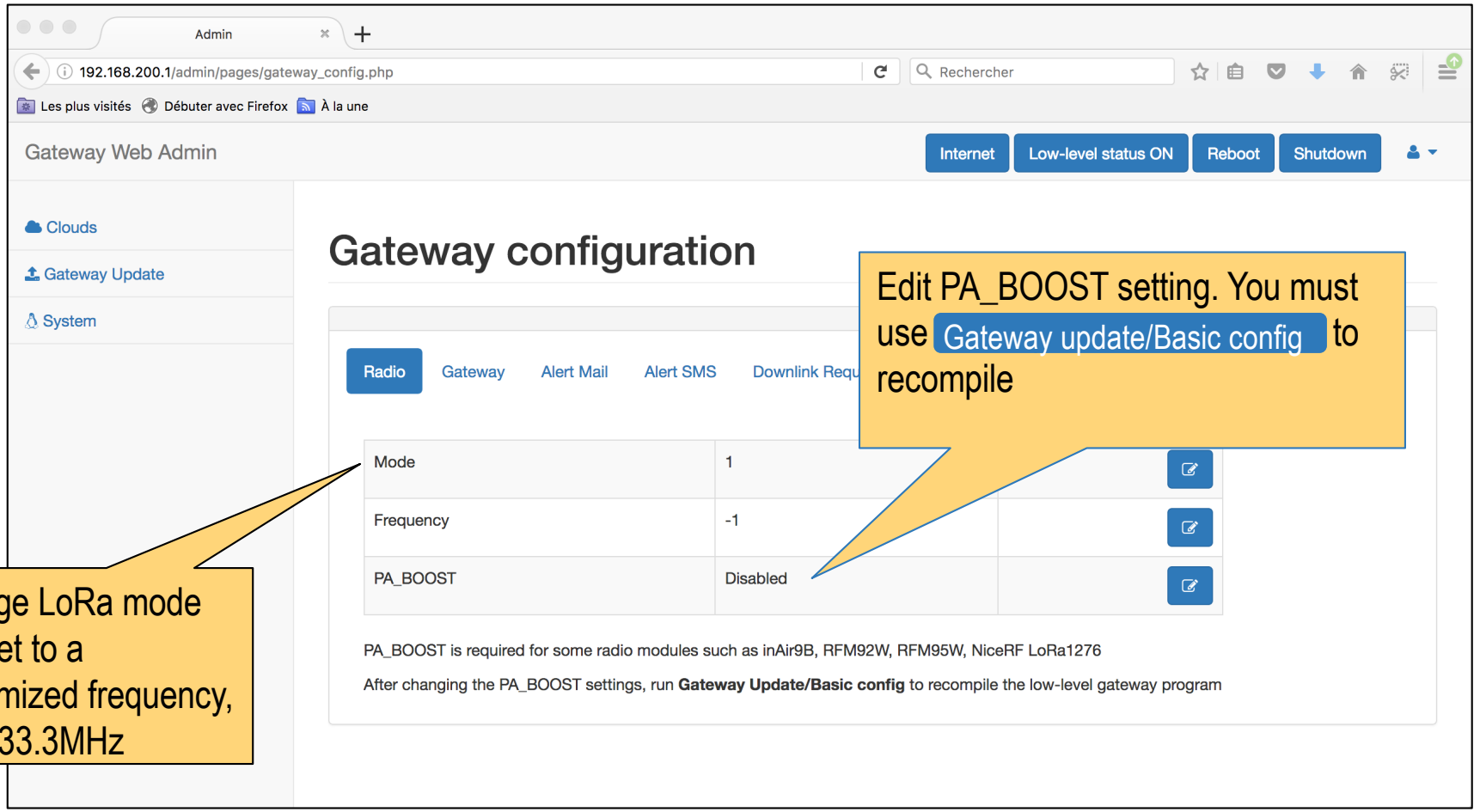
GATEWAY MAIN PAGE

- Gateway main page (configuration page)



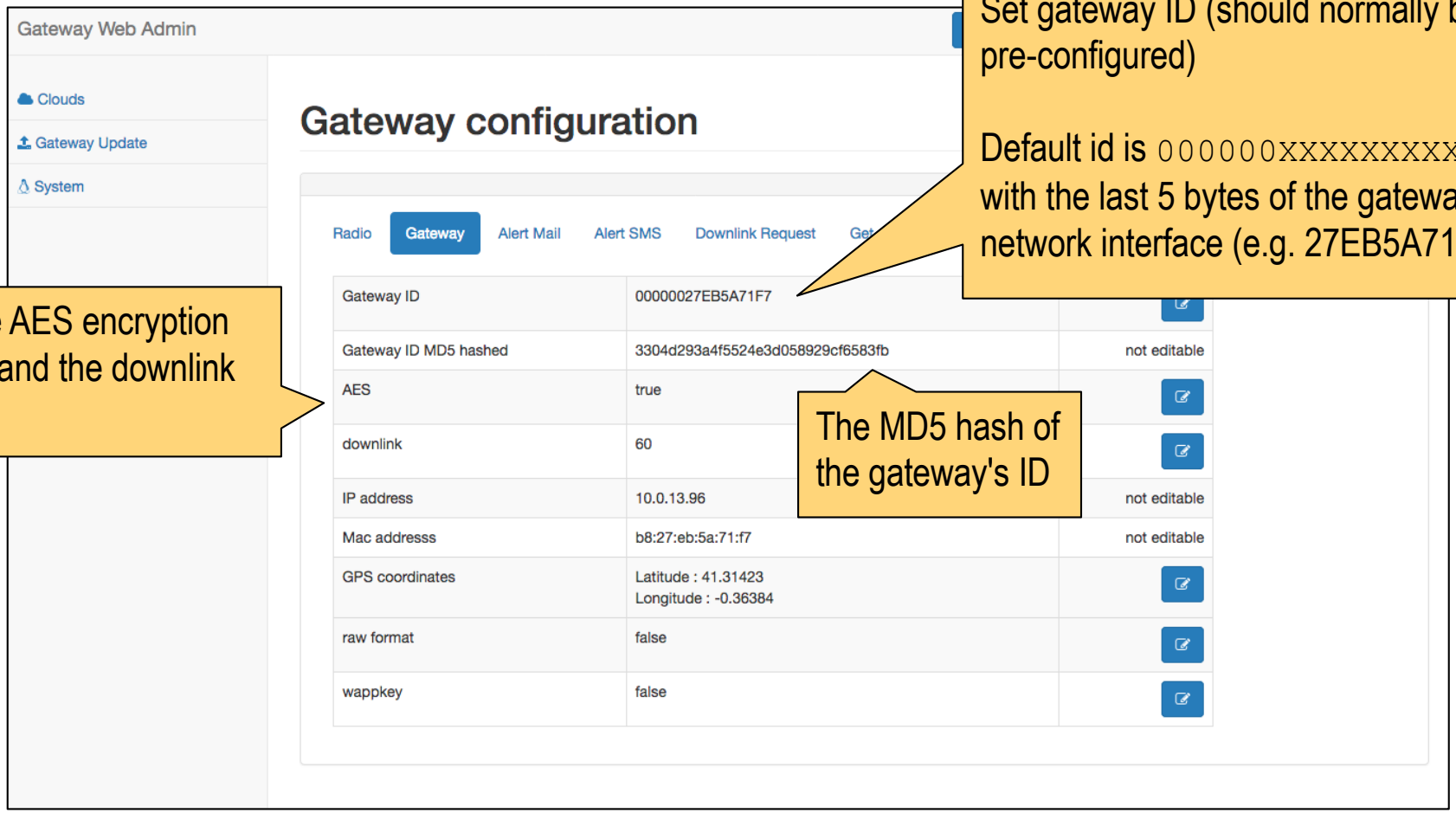
Main Gateway Configuration (1)

- Gateway radio configuration section



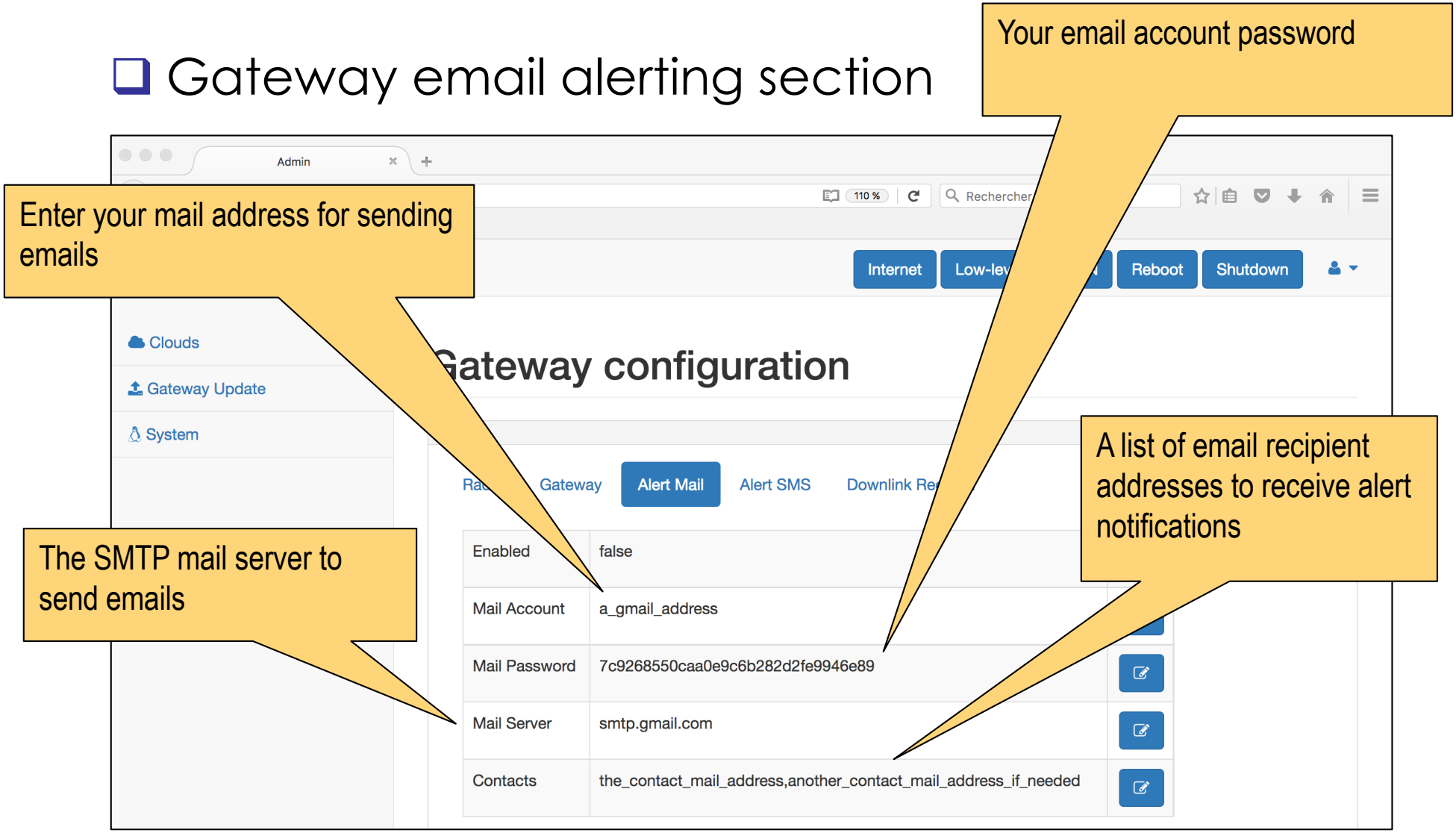
Main Gateway Configuration (2)

- Gateway configuration section



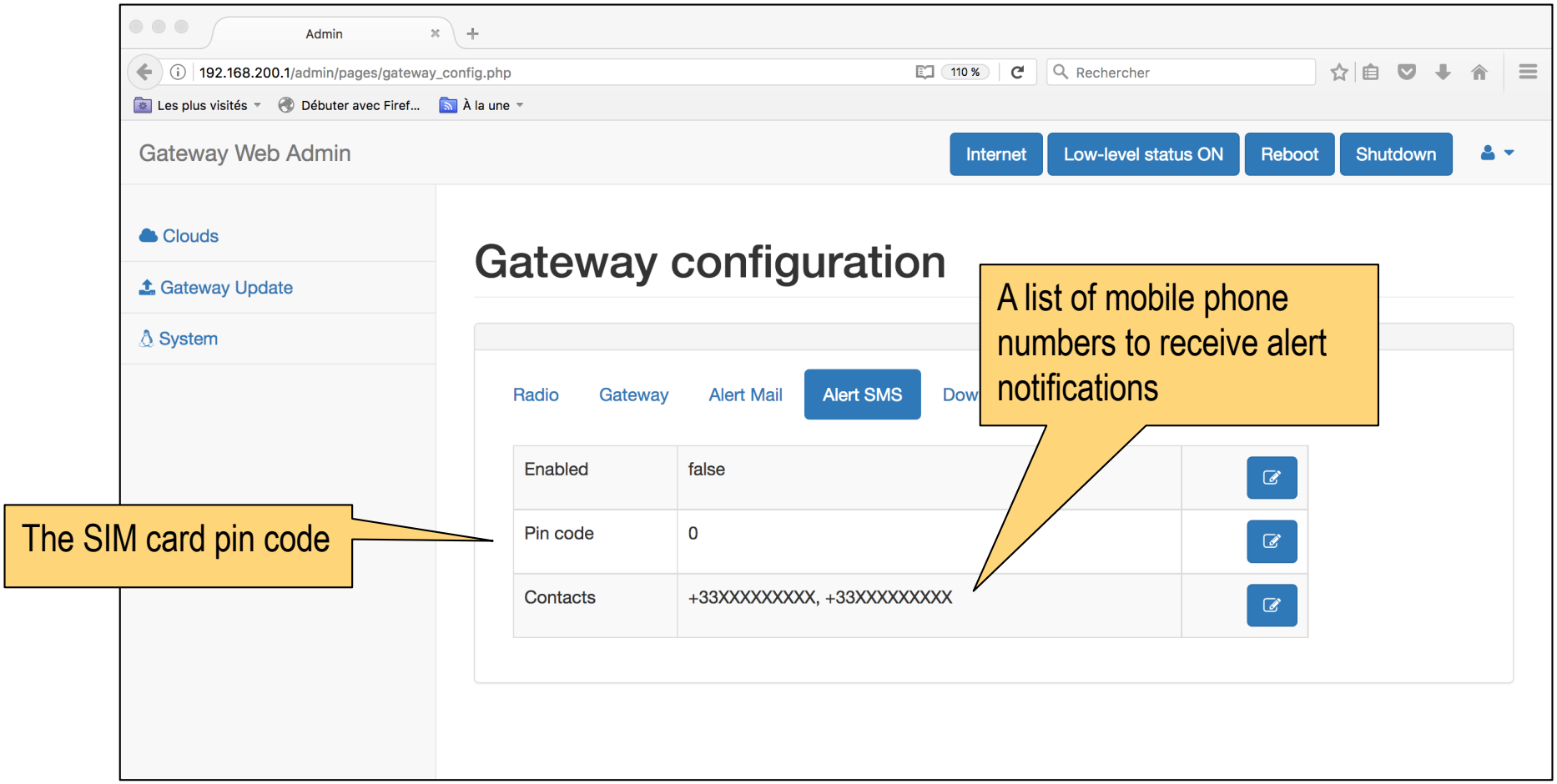
Main Gateway Configuration (3)

- Gateway email alerting section



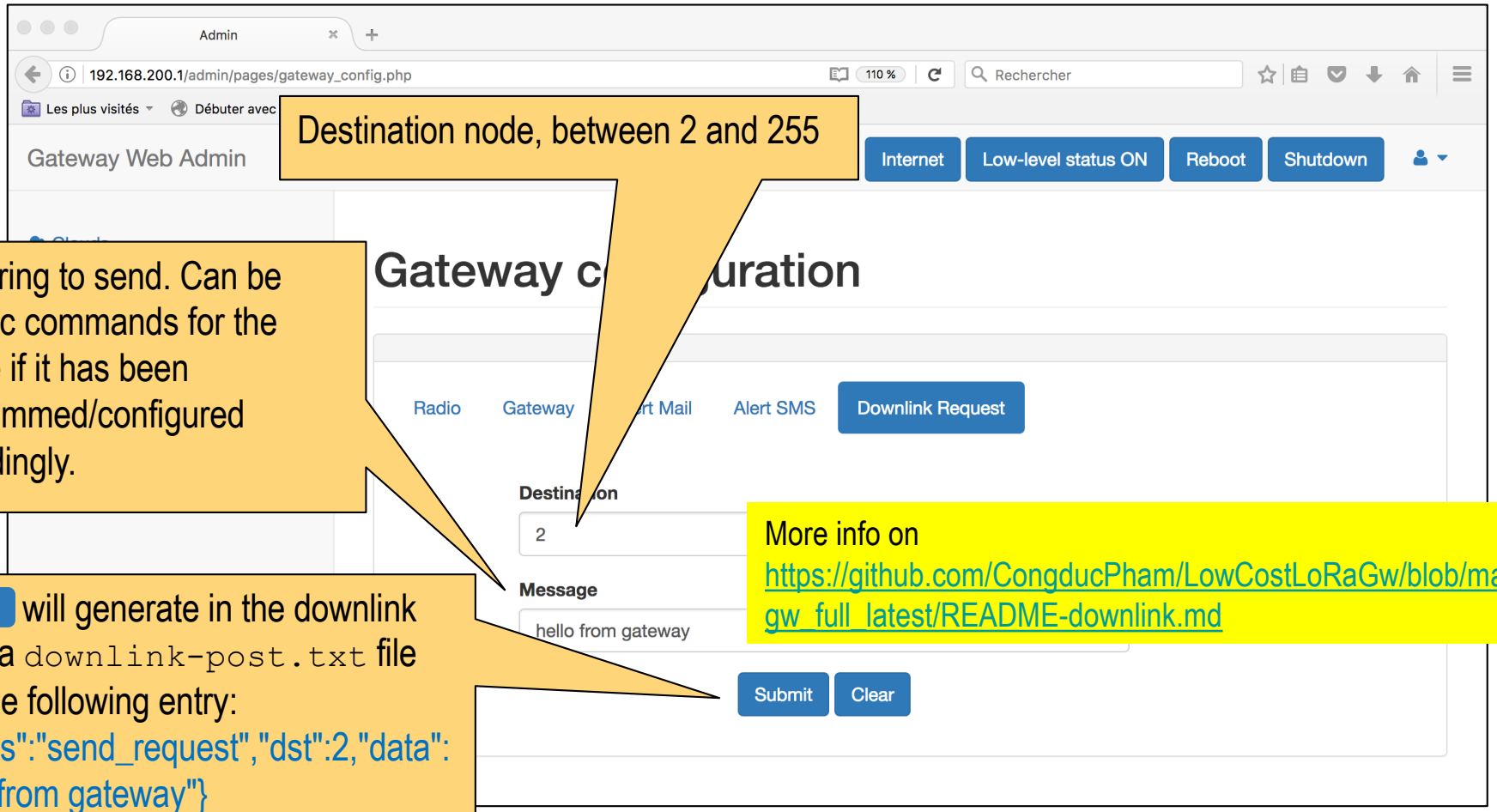
Main Gateway Configuration (4)

- Gateway SMS alerting section



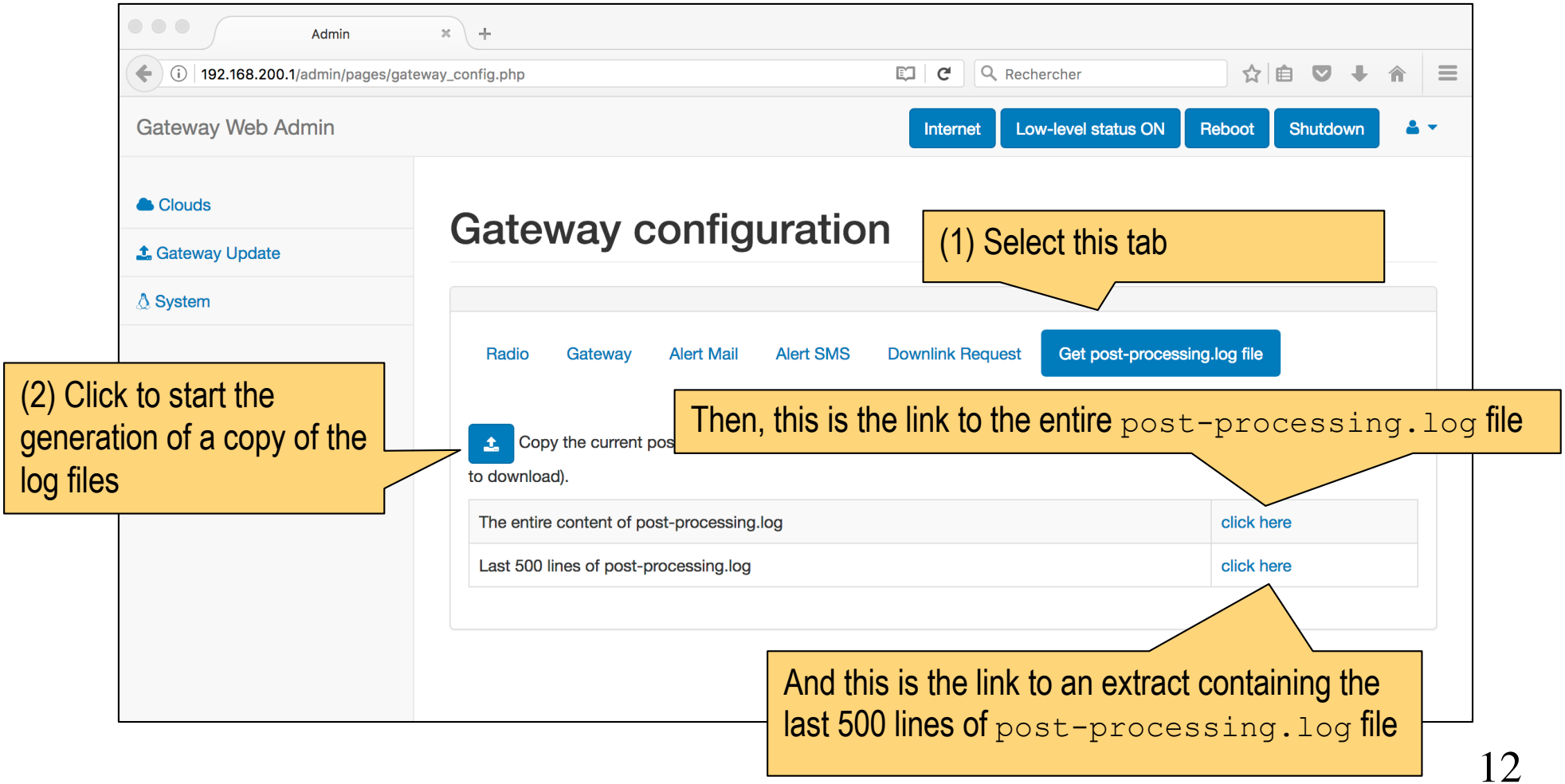
Main Gateway Configuration (5)

- Gateway generating downlink messages



Main Gateway Configuration (6)

- Gateway log files section



GET GATEWAY LOG FILES

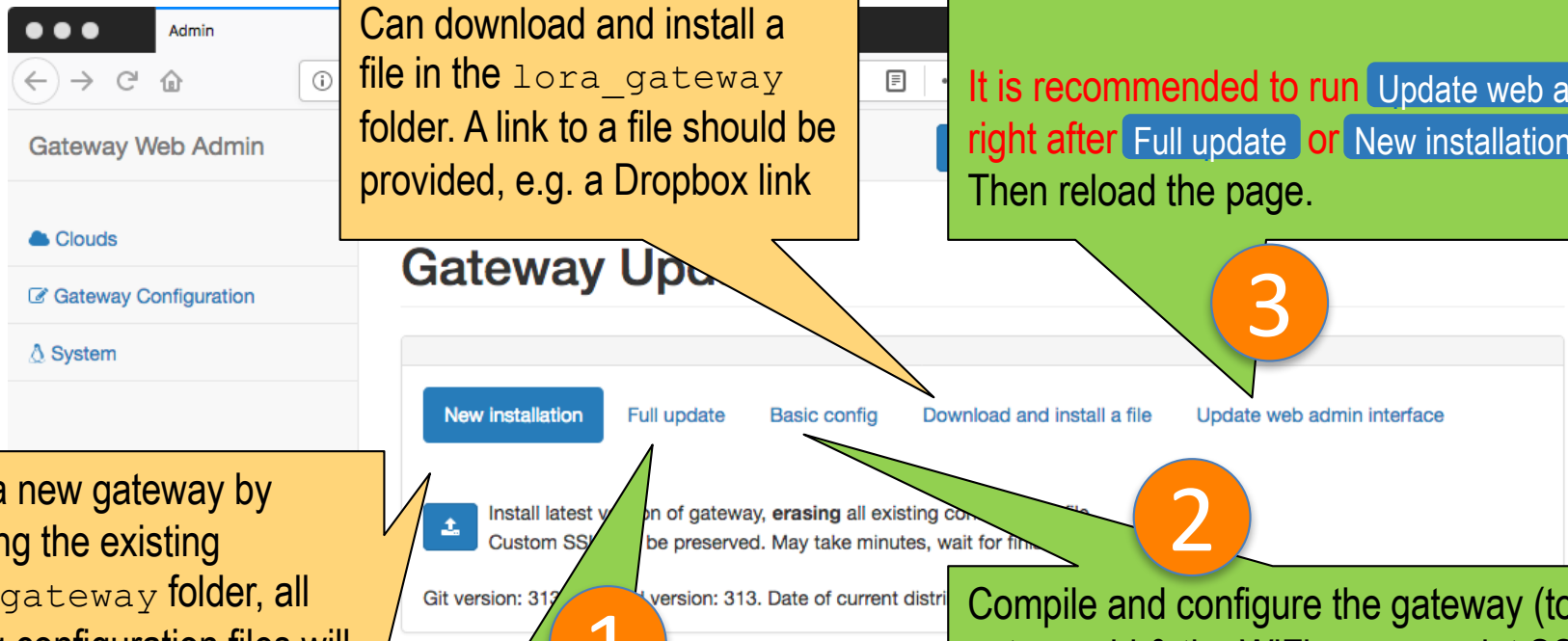
- The "Get post-processing.log file" option is a convenient way for an end-user to obtain the log file that can be sent (mail) to an experienced user for analysis or debug purposes.
- The entire post-processing/log file can be obtained, or
- Only the last 500 lines
- The last feature can be used by an end-user to see whether data have been recently received from end-devices or not

Gateway update

- The gateway must be updated to the latest version.
- Internet access for the gateway is necessary
- The update procedure can easily be done with the web admin interface, connect to the gateway WiFi first
- The update steps are
  1. Full Update
  2. Basic Config
  3. Update Web Interface

GATEWAY UPDATE PAGE

❑ 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 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 or New installation
Then reload the page.

3

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

If you install a new gateway with our SD card image, you can use this option.

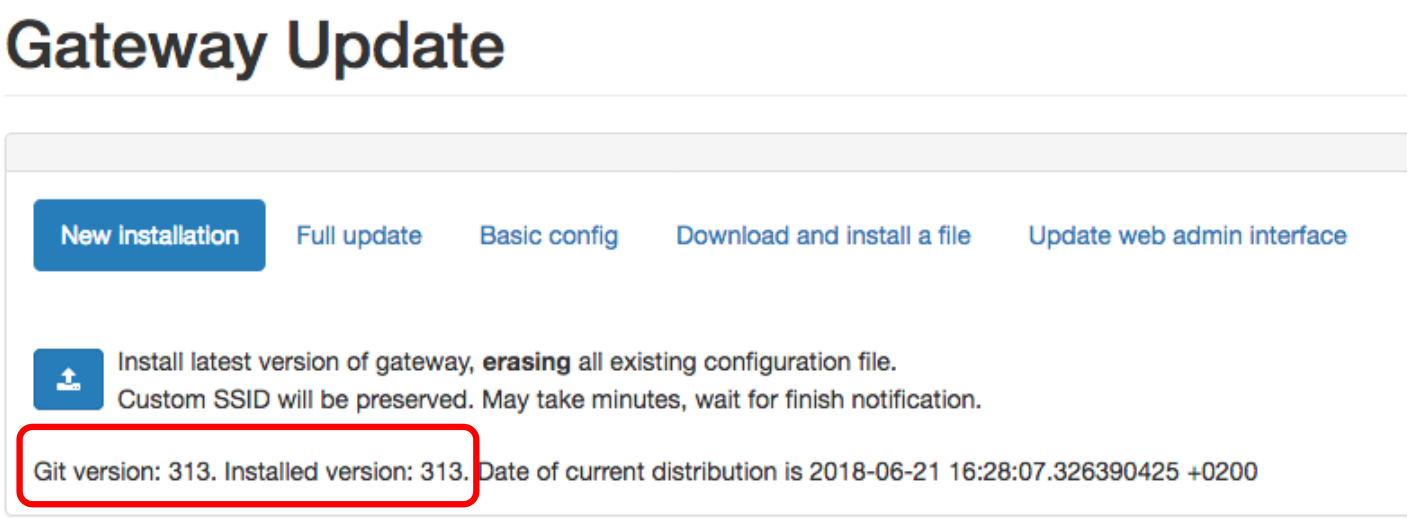
1

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

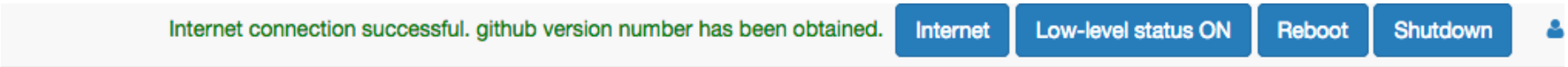
2

Compile and configure the gateway (to set the gateway id & the WiFi access point SSID). 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 or New installation

Software version number

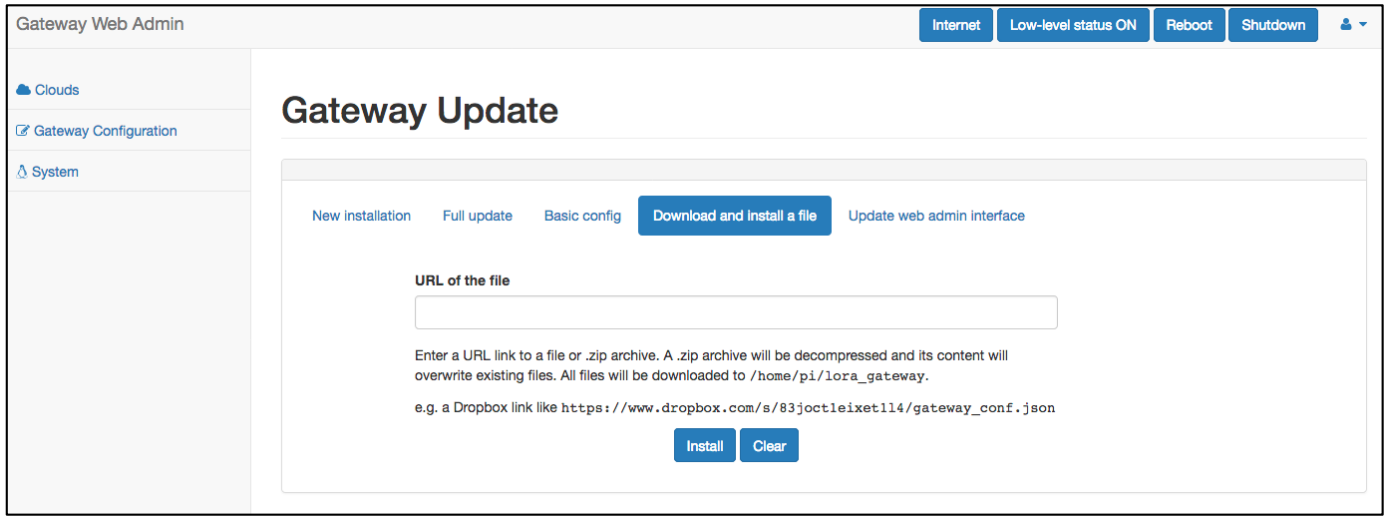


- The software version number on github and the installed version number are displayed
- Click on Internet to obtain the latest software version number on github



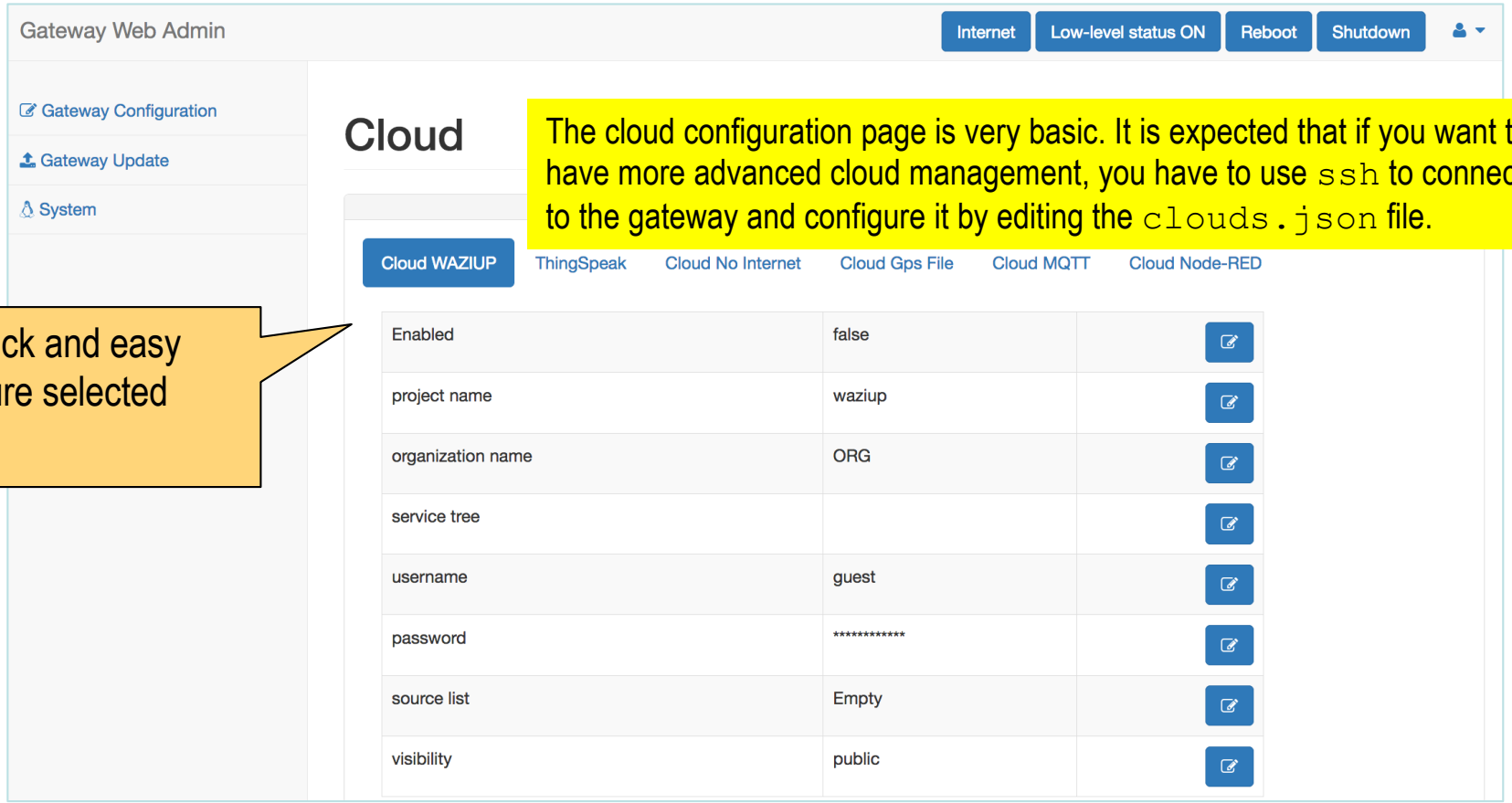
DOWNLOAD & INSTALL A FILE

- 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



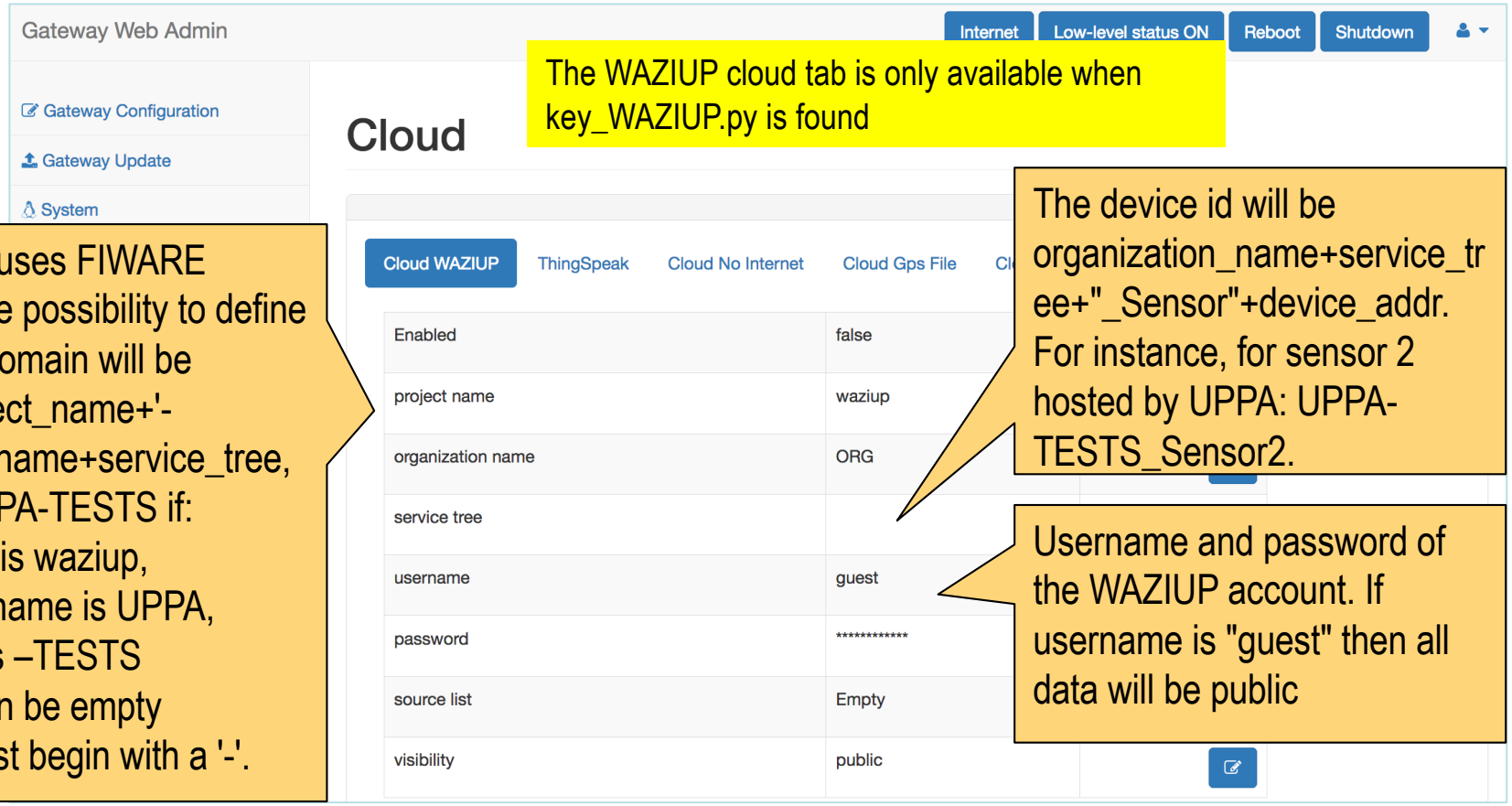
GATEWAY CLOUD PAGES

- Gateway cloud configuration section



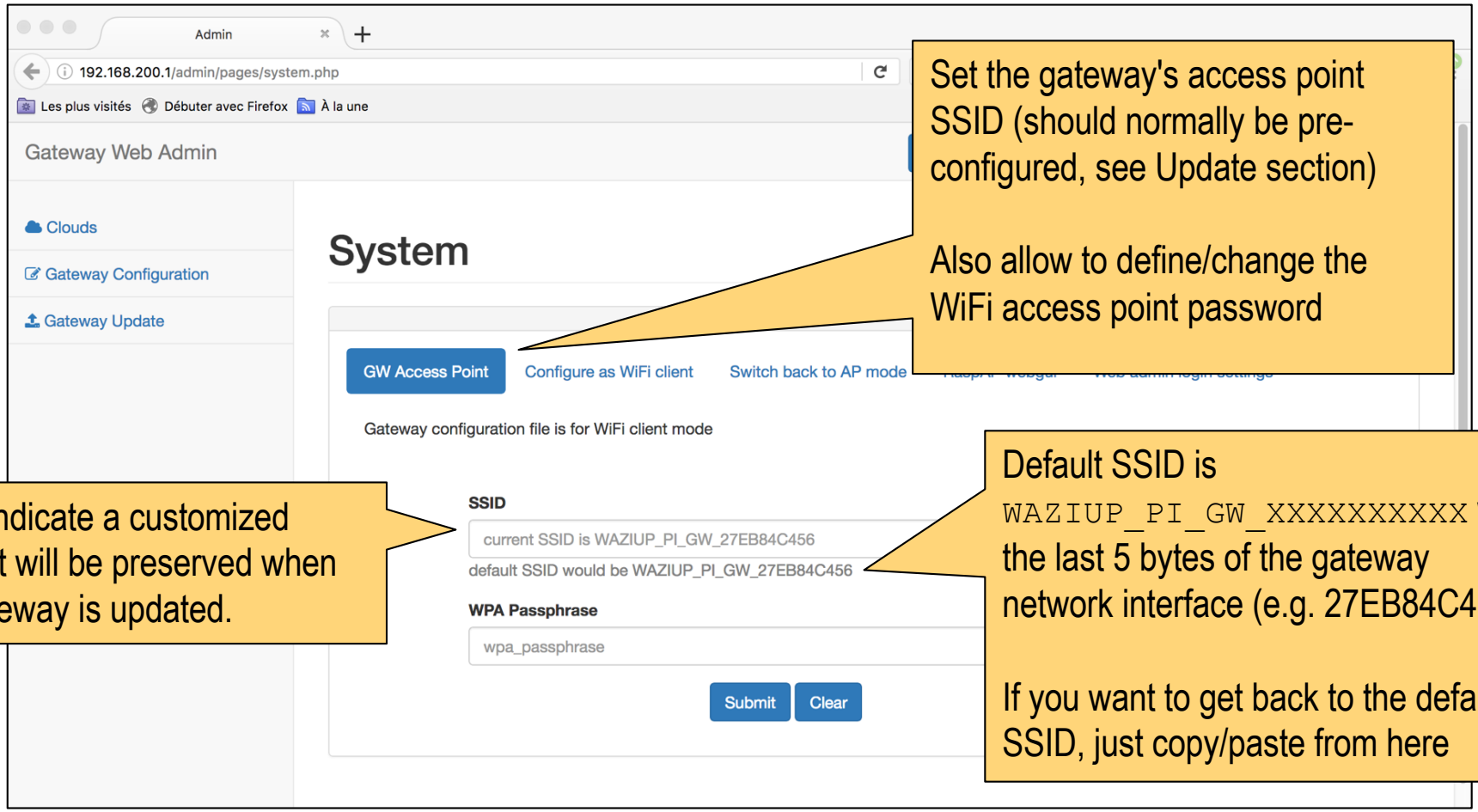
GATEWAY WAZIUP CLOUD

Configuring WAZIUP cloud



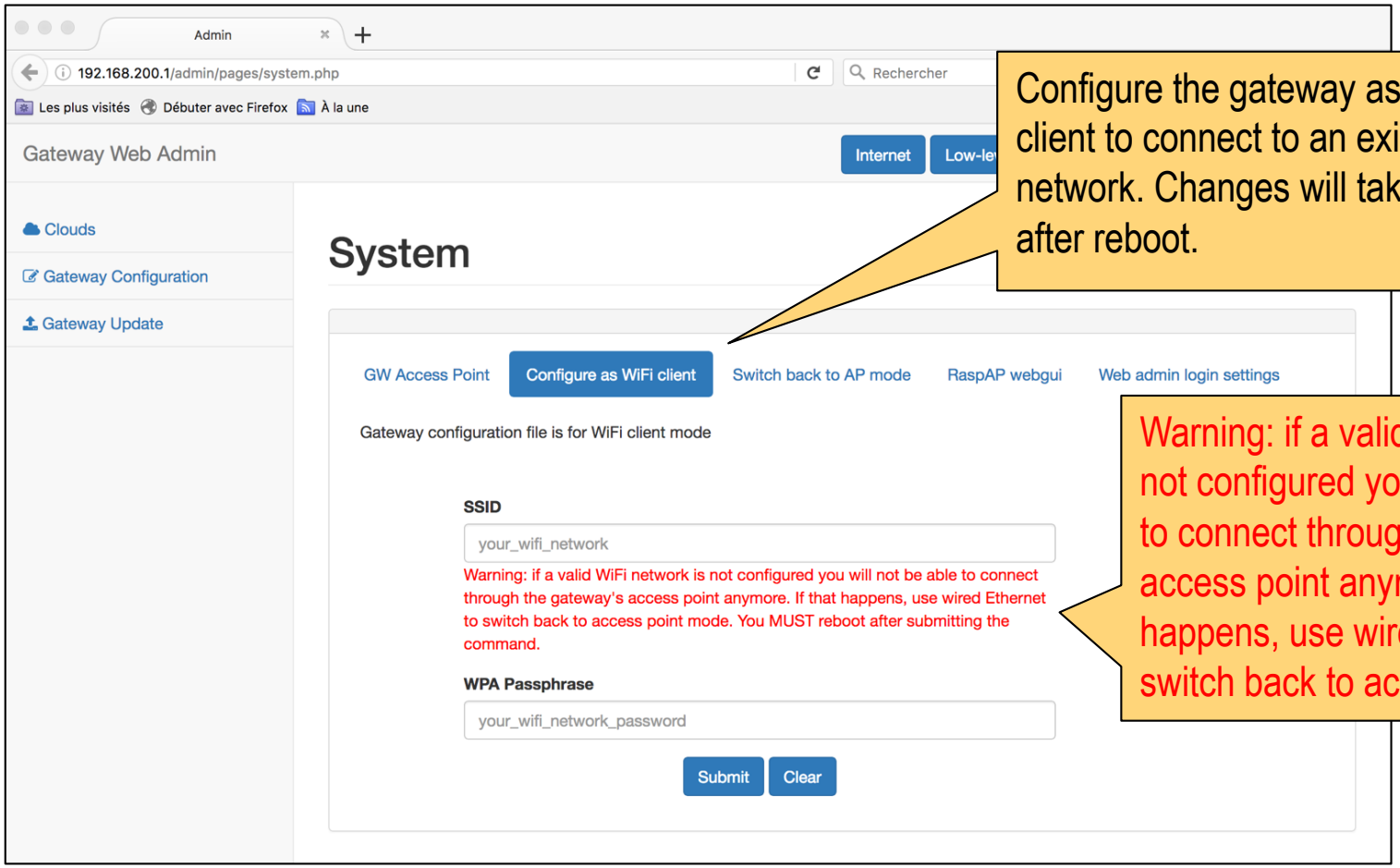
Gateway system configuration (1)

- Gateway WiFi access point



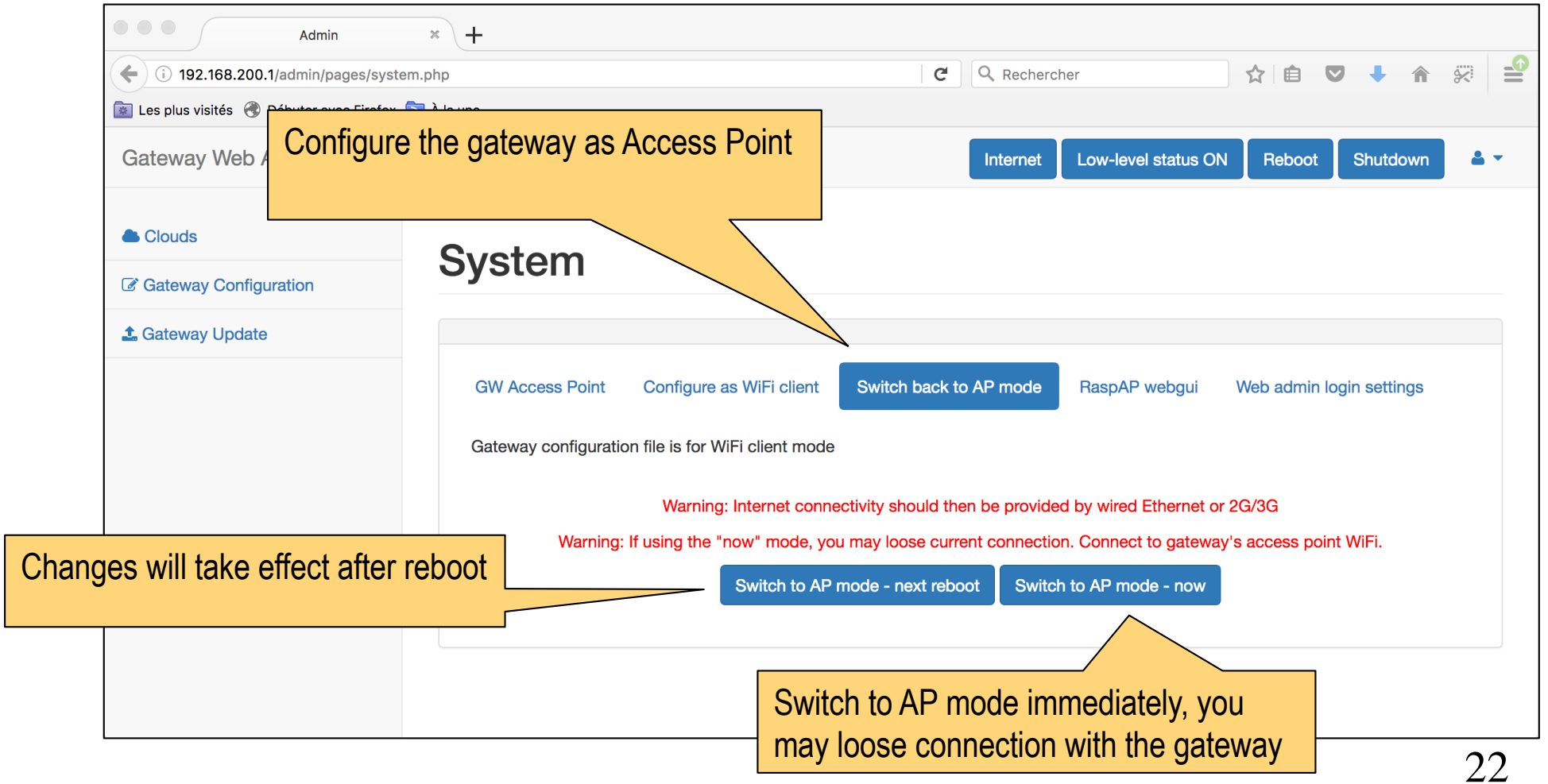
Gateway system configuration (2)

- Configure as WiFi client



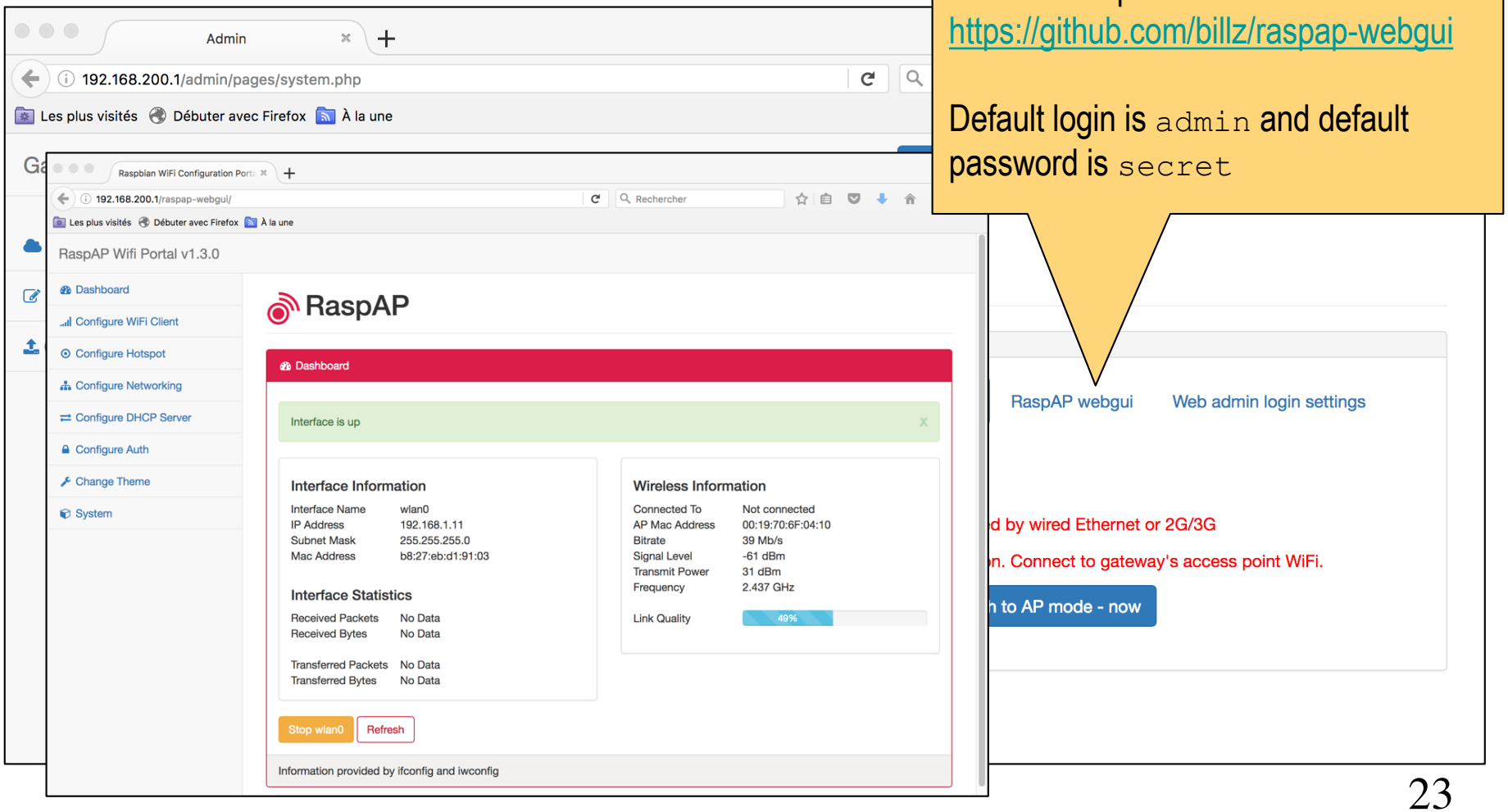
Gateway system configuration (3)

- Configure as WiFi Access Point



Gateway system configuration (4)

- Run the RaspAP module

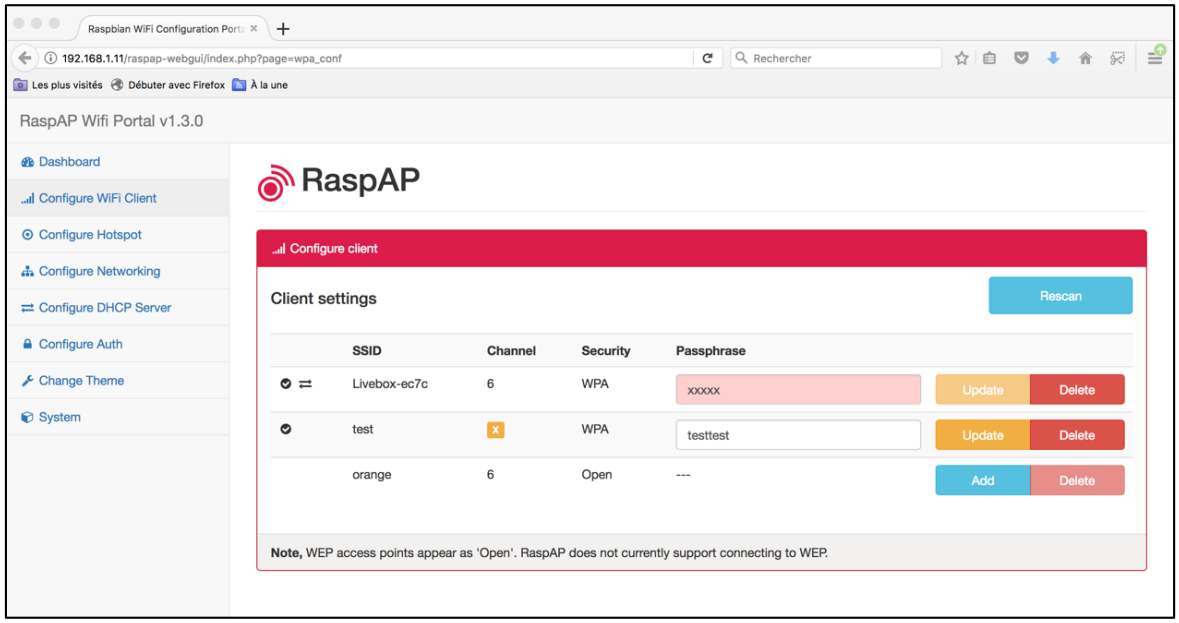


Run the RaspAP web module from https://github.com/billz/raspap-webgui

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

Gateway system configuration (6)

- Configure auth for web admin interface