

# LOW-COST LORA GATEWAY: WEB ADMIN INTERFACE



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# CONTENTS

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- ❑ 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
- ❑ Let's get started...

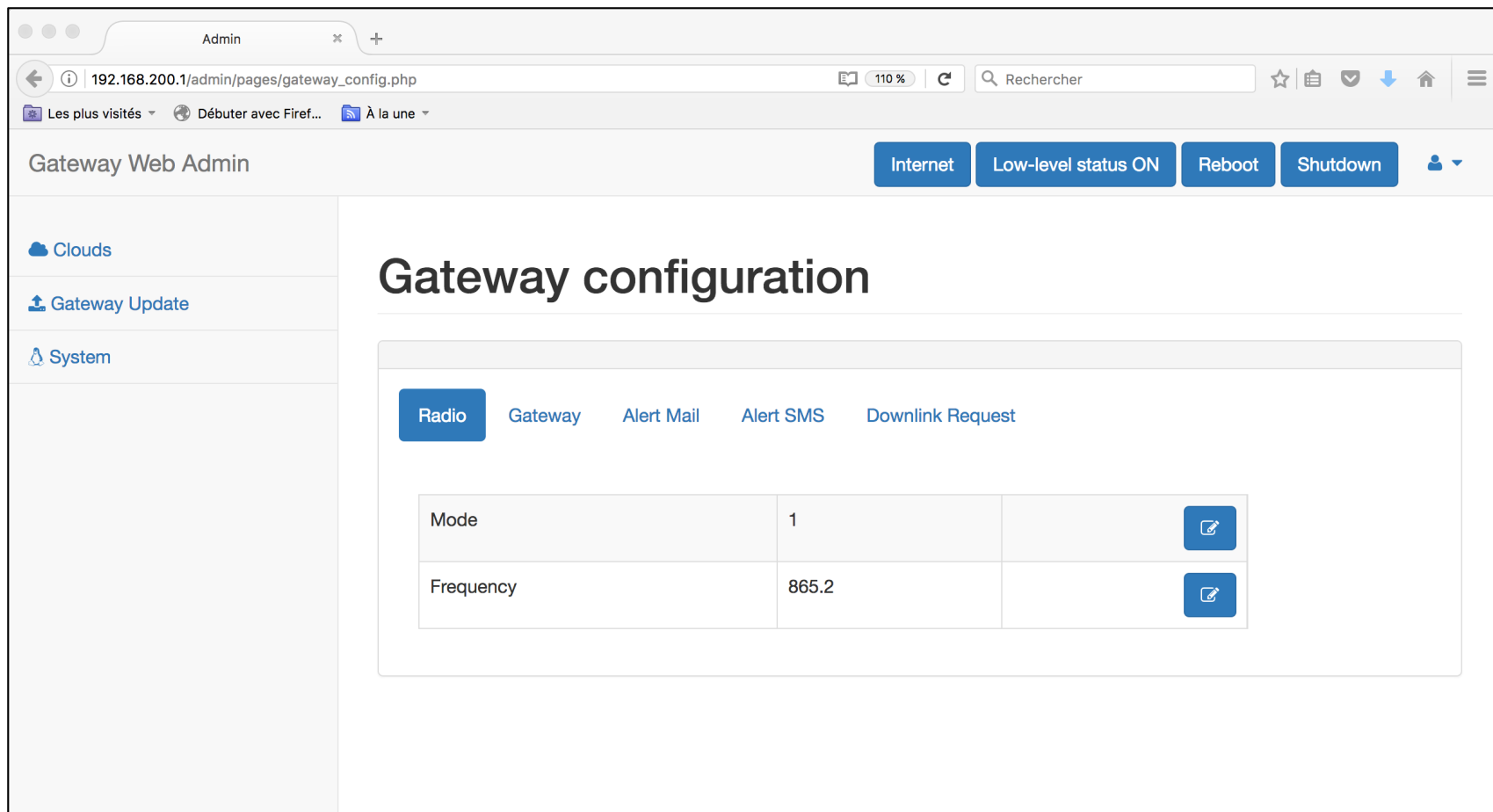
# GATEWAY WEB ADMIN INTERFACE (1)

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- ❑ 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`
- ❑ Refer to the web admin interface tutorial for more information

# GATEWAY WEB ADMIN INTERFACE (2)

□ <http://192.168.200.1/admin>



The screenshot shows a web browser window with the address bar displaying `192.168.200.1/admin/pages/gateway_config.php`. The page title is "Gateway Web Admin". On the right side of the header, there are buttons for "Internet", "Low-level status ON", "Reboot", and "Shutdown", along with a user profile icon. The left sidebar contains links for "Clouds", "Gateway Update", and "System". The main content area is titled "Gateway configuration" and features a tabbed interface with "Radio" selected. Below the tabs is a table with configuration details:

Radio		
Mode	1	
Frequency	865.2	

# WEB ADMIN FEATURES

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- ☐ Currently, you can use the web admin to:
  - ☐ 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)
  - ☐ Update your gateway with the latest github version and perform the basic configuration procedure
  - ☐ Upgrade your gateway by preserving your configuration files
  - ☐ 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
    - See slide 41

# GATEWAY MAIN PAGE

## □ Gateway main page

The screenshot shows the 'Gateway Web Admin' interface. The main navigation bar includes buttons for 'Internet', 'Low-level status ON', 'Reboot', and 'Shutdown'. The 'Gateway configuration' section is visible, with a table showing configuration details. Four blue callout boxes with arrows point to the navigation buttons, explaining their functions:

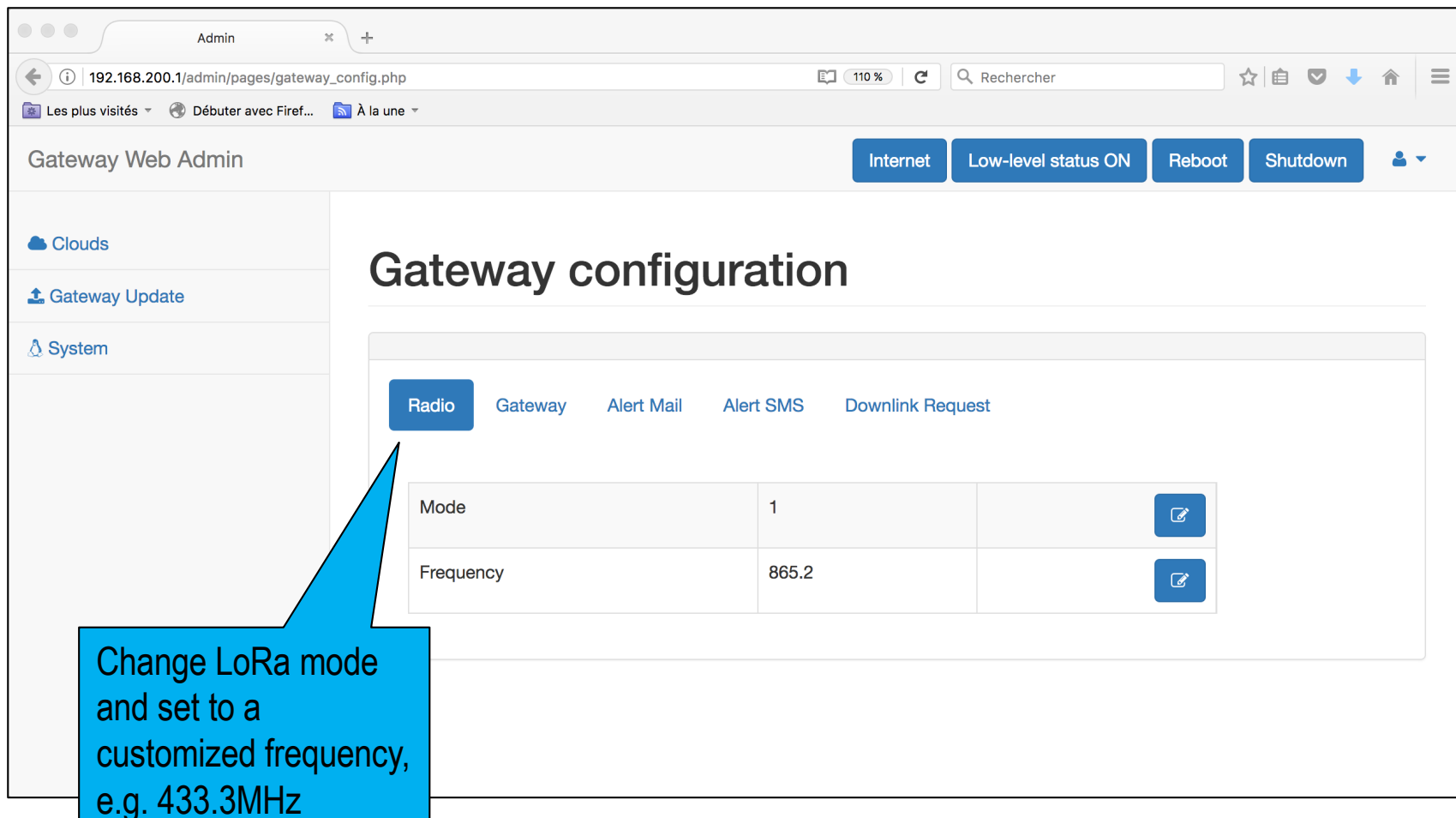
- Check Internet connectivity** (points to 'Internet')
- Display the last low-level gw status** (points to 'Low-level status ON')
- Reboot the gateway. Need to reboot after any update** (points to 'Reboot')
- Shutdown the gateway** (points to 'Shutdown')

The 'Gateway configuration' table shows the following data:

Mode	Frequency
1	865

# GATEWAY CONFIGURATION (1)

## □ Gateway radio configuration section



The screenshot shows the 'Gateway Web Admin' interface. The main heading is 'Gateway configuration'. Below it, there are tabs for 'Radio', 'Gateway', 'Alert Mail', 'Alert SMS', and 'Downlink Request'. The 'Radio' tab is selected. It contains a table with two rows: 'Mode' and 'Frequency'. The 'Mode' row has a value of '1' and an edit icon. The 'Frequency' row has a value of '865.2' and an edit icon. A blue callout box points to the 'Radio' tab with the text: 'Change LoRa mode and set to a customized frequency, e.g. 433.3MHz'.



Gateway Web Admin

Internet Low-level status ON Reboot Shutdown

Clouds Gateway Update System

### Gateway configuration

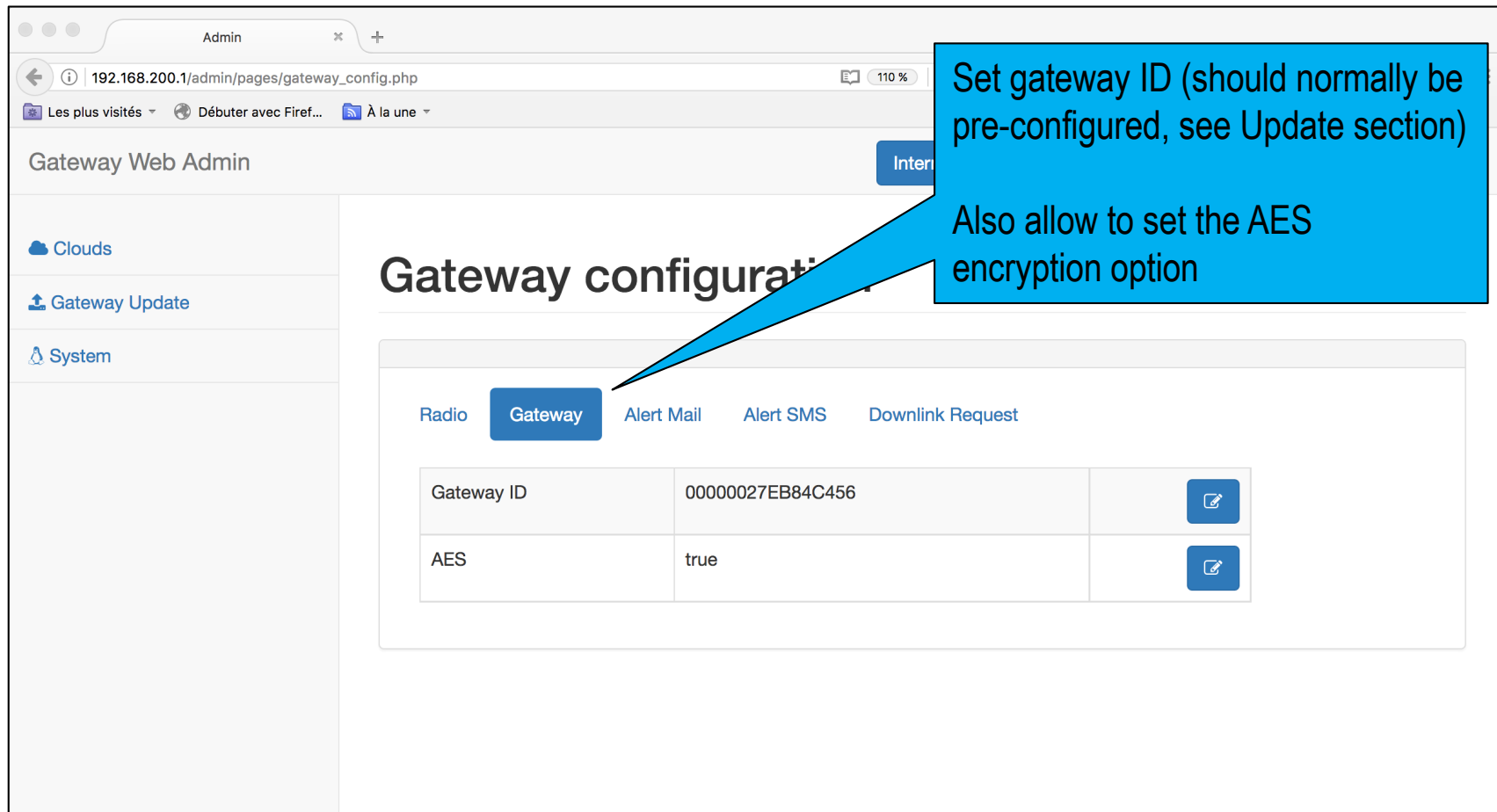
Radio Gateway Alert Mail Alert SMS Downlink Request

Mode	1	
Frequency	865.2	

Change LoRa mode and set to a customized frequency, e.g. 433.3MHz

# GATEWAY CONFIGURATION (2)

## □ Gateway configuration section



Admin

192.168.200.1/admin/pages/gateway\_config.php

Gateway Web Admin



Clouds

Gateway Update

System

### Gateway configuration

Radio Gateway Alert Mail Alert SMS Downlink Request

Gateway ID	00000027EB84C456	
AES	true	

Set gateway ID (should normally be pre-configured, see Update section)

Also allow to set the AES encryption option



# GATEWAY CONFIGURATION (3)

## □ 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

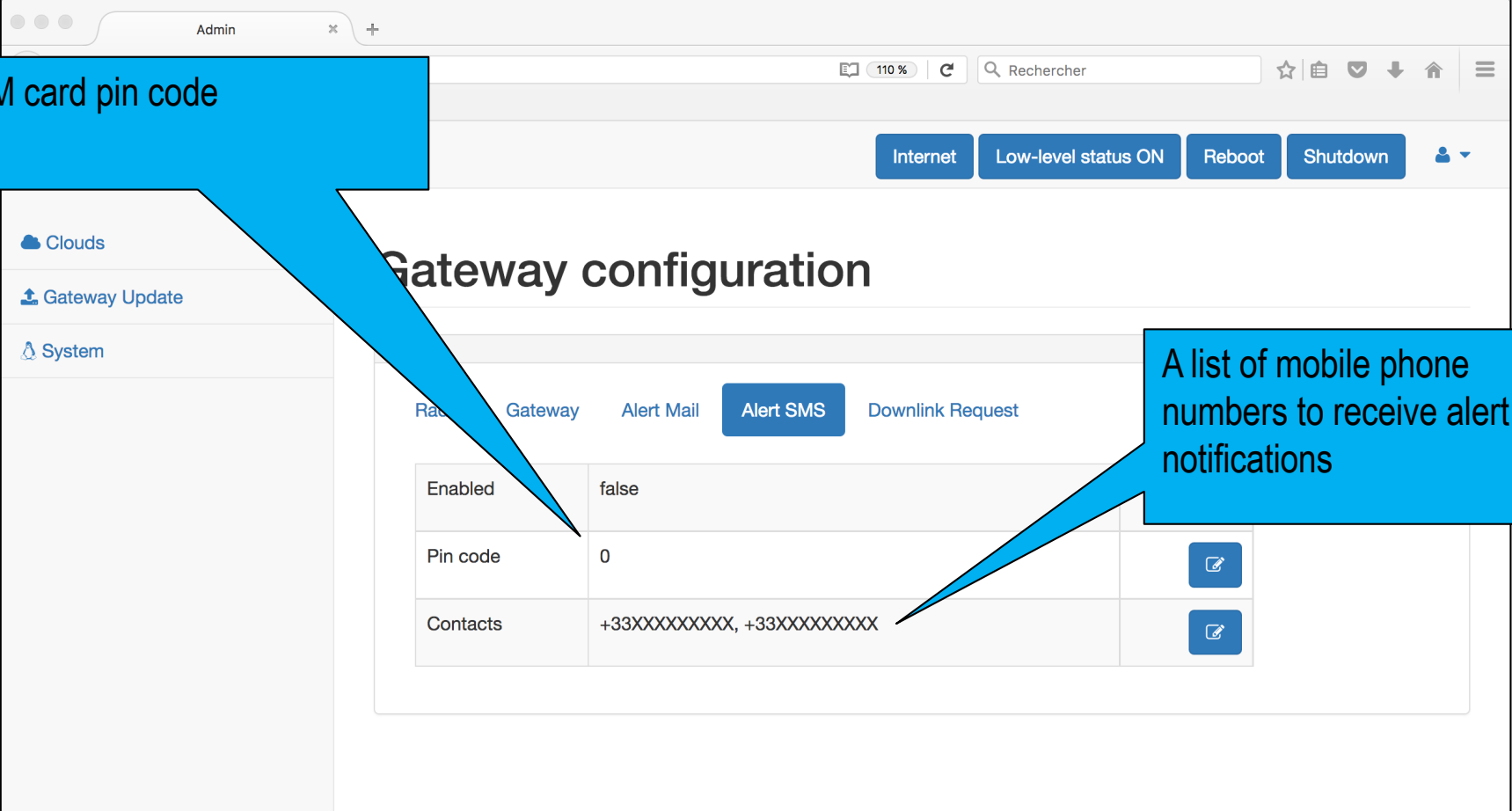
The screenshot shows a web browser window with the title 'Admin'. The main heading is 'Gateway configuration'. Below the heading, there are tabs for 'Gateway', 'Alert Mail', 'Alert SMS', and 'Downlink Re'. The 'Alert Mail' tab is selected. The configuration table has the following fields:

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



Each row in the table has a small edit icon (pencil) to its right.

# GATEWAY CONFIGURATION (4)

## □ Gateway SMS alerting section



The screenshot shows a web browser window with the title 'Admin'. The main content area is titled 'Gateway configuration'. On the left, there is a sidebar with links for 'Clouds', 'Gateway Update', and 'System'. The main content area has a top navigation bar with buttons for 'Internet', 'Low-level status ON', 'Reboot', and 'Shutdown'. Below this, there is a section titled 'Gateway configuration' with a sub-section 'Alert SMS'. The 'Alert SMS' section contains a table with the following data:

Parameter	Value	Action
Enabled	false	
Pin code	0	
Contacts	+33XXXXXXXXX, +33XXXXXXXXX	

Two blue callout boxes provide additional information:

- A blue callout box points to the 'Pin code' field with the text: 'The SIM card pin code'.
- A blue callout box points to the 'Contacts' field with the text: 'A list of mobile phone numbers to receive alert notifications'.

# GATEWAY CONFIGURATION (5)

## □ Gateway generating downlink messages

Admin 192.168.200.1/admin/pages/gateway\_config.php

Gateway Web Admin

Internet Low-level status ON Reboot Shutdown

### Gateway configuration

Radio Gateway Alert Mail Alert SMS Downlink Request

Destination: 2

Message: hello from gateway

Submit Clear

Destination node, between 2 and 255

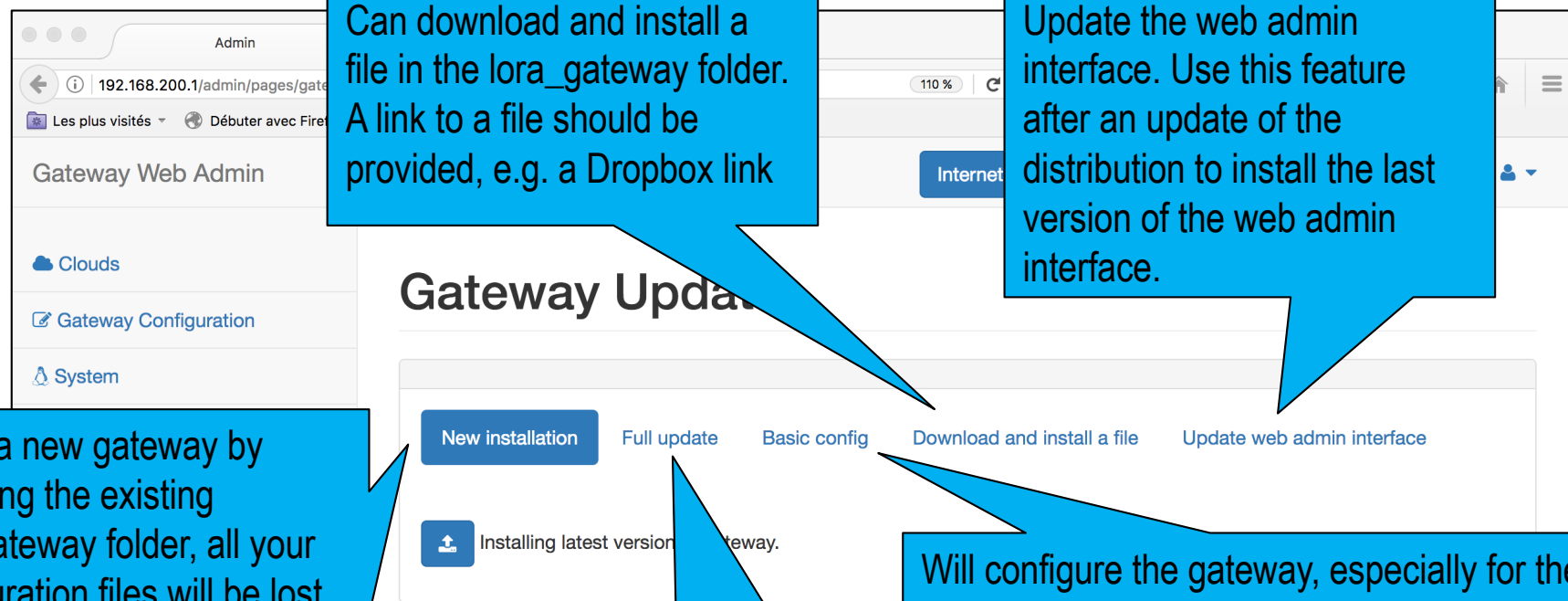
The string to send. Can be specific commands for the device if it has been programmed/configured accordingly.

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](https://github.com/CongducPham/LowCostLoRaGw/blob/master/gw_full_latest/README-downlink.md)

# 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. Use this feature after an update of the distribution to install the last version of the web admin interface.

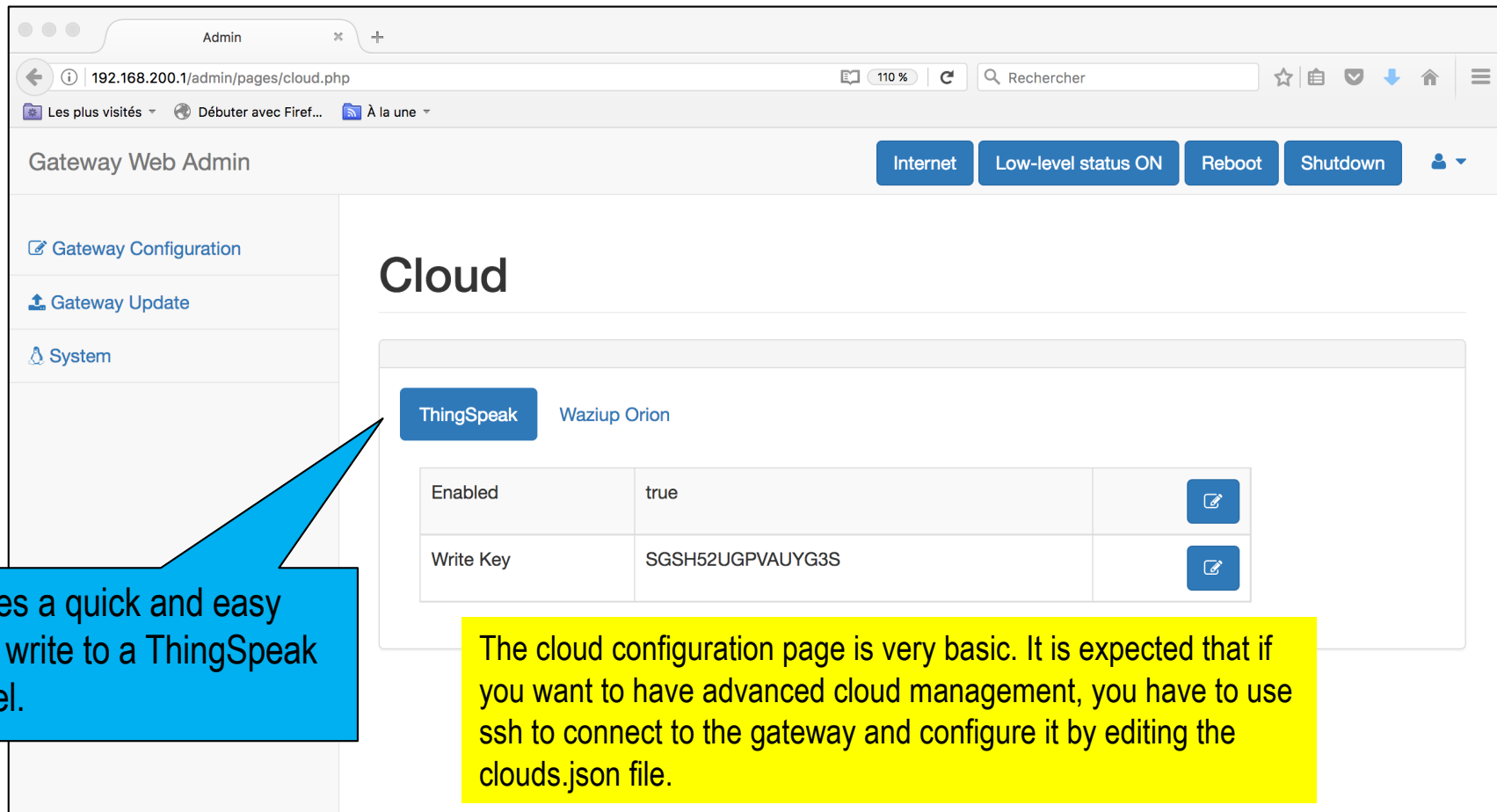
Install a new gateway by removing the existing lora\_gateway folder, all your configuration files will be lost.

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 configure the gateway, especially for the **gateway id** & the **WiFi SSID** derived from the last 5 bytes of the eth MAC address. This is required if you install a new gateway using the provided SD card image.

## □ Gateway cloud configuration section



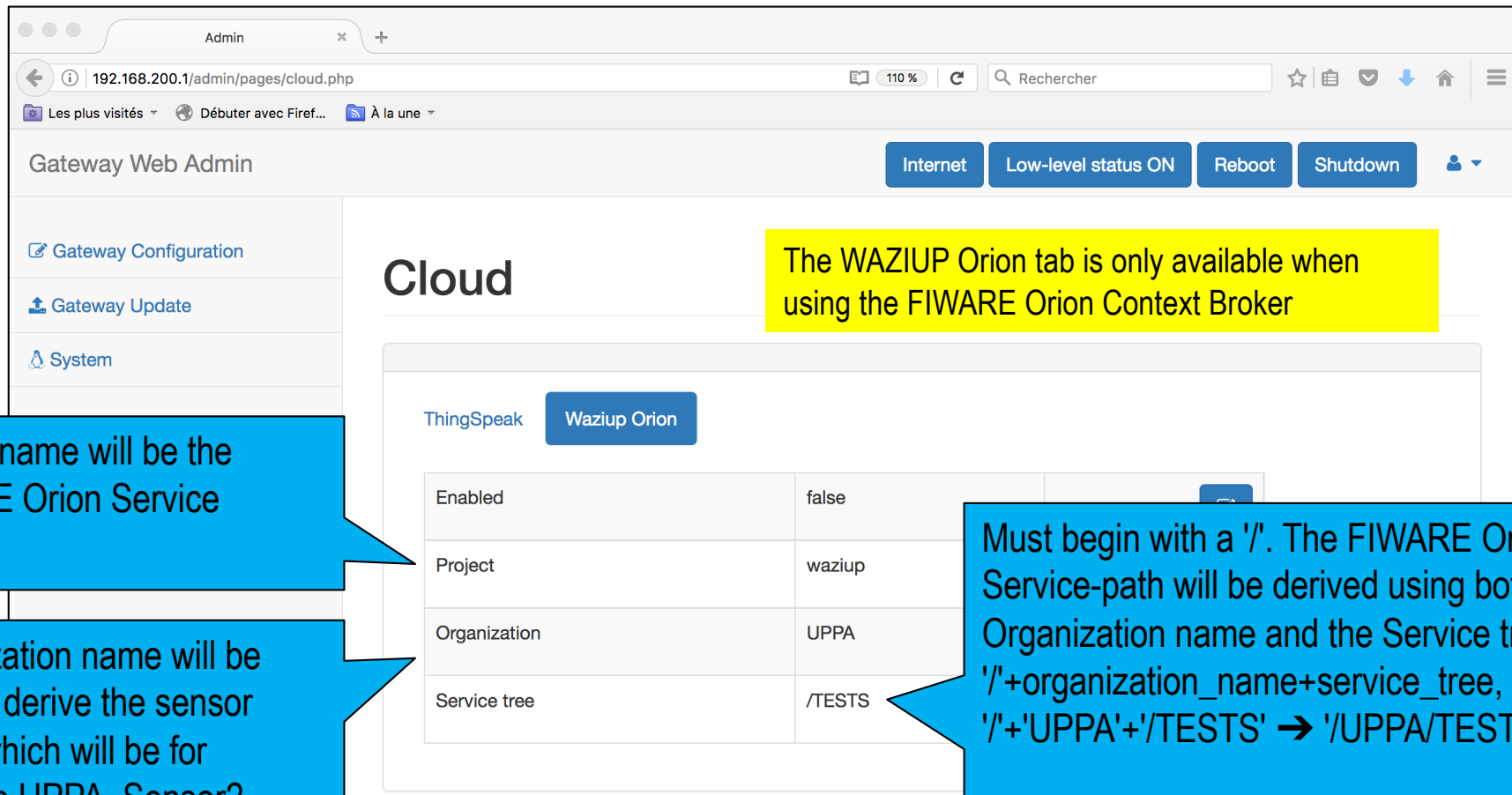
The screenshot shows the 'Gateway Web Admin' interface. The left sidebar contains links for 'Gateway Configuration', 'Gateway Update', and 'System'. The main content area is titled 'Cloud' and features a 'ThingSpeak' button and a 'Waziup Orion' button. Below these, there is a table with configuration details:

Enabled	true	
Write Key	SGSH52UGPVAUYG3S	

A blue callout box points to the 'ThingSpeak' button with the text: 'Provides a quick and easy way to write to a ThingSpeak channel.'

A yellow callout box contains the text: '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



The screenshot shows the 'Gateway Web Admin' interface. The left sidebar contains 'Gateway Configuration', 'Gateway Update', and 'System'. The main content area is titled 'Cloud' and has a yellow callout: 'The WAZIUP Orion tab is only available when using the FIWARE Orion Context Broker'. Below this, there are tabs for 'ThingSpeak' and 'Waziup Orion'. The 'Waziup Orion' tab is active, showing a table with configuration details:

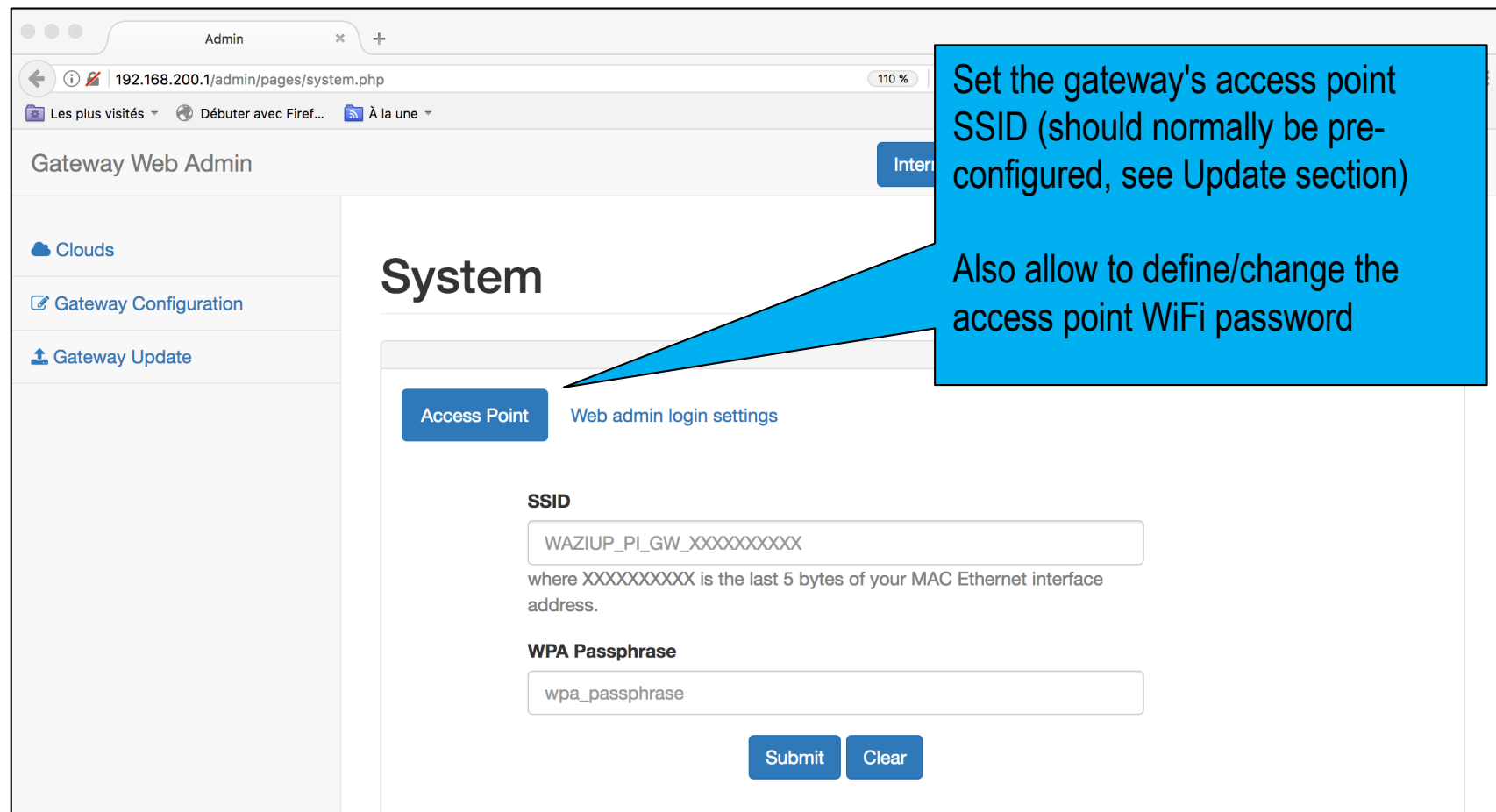
Enabled	false
Project	waziup
Organization	UPPA
Service tree	/TESTS

Three blue callout boxes provide additional context:

- 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'

# GATEWAY SYSTEM CONFIGURATION (1)

## □ Gateway WiFi access point



Admin

192.168.200.1/admin/pages/system.php

Gateway Web Admin

Clouds

Gateway Configuration

Gateway Update

### System

Access Point Web admin login settings

**SSID**

WAZIUP\_PI\_GW\_XXXXXXXXXX

where XXXXXXXXXX is the last 5 bytes of your MAC Ethernet interface address.

**WPA Passphrase**

wpa\_passphrase

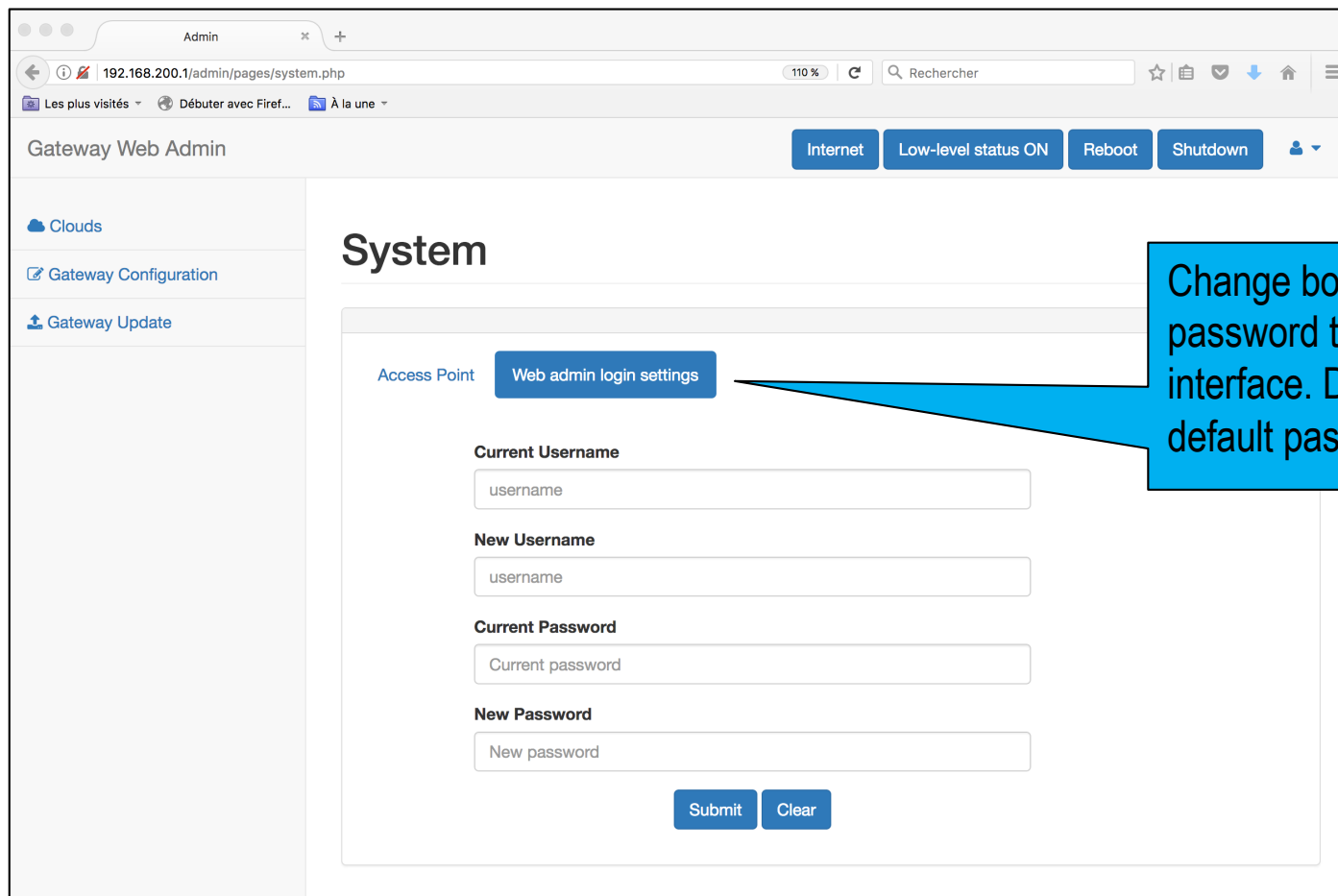
Submit Clear

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

Also allow to define/change the access point WiFi password

# GATEWAY SYSTEM CONFIGURATION (2)

## □ Gateway web admin interface



The screenshot shows a web browser window with the address bar displaying `192.168.200.1/admin/pages/system.php`. The page title is "Gateway Web Admin". On the right side of the header, there are buttons for "Internet", "Low-level status ON", "Reboot", and "Shutdown", along with a user icon. The left sidebar contains links for "Clouds", "Gateway Configuration", and "Gateway Update". The main content area is titled "System" and features a tabbed interface with "Access Point" and "Web admin login settings". The "Web admin login settings" tab is active, showing four input fields: "Current Username" (with placeholder "username"), "New Username" (with placeholder "username"), "Current Password" (with placeholder "Current password"), and "New Password" (with placeholder "New password"). At the bottom of the form are "Submit" and "Clear" buttons.

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