

RAINUS

Gateway-G2000

USER's MANUAL

Version 1.3

2018

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1 G2000 INTRODUCTION

G2000 communicates with ESLs through IEEE802.15.4 RF transceivers and interfaces with ESL server.

2 G2000 PRODUCT RELEASE & PREPARING TO INSTALL

2-1 G2000 PRODUCT RELEASE

- ▶ Package of the product.



- ▶ 4 Dipole antennas are coupled to the G2000 Reverse-SMA connectors.

(Caution : Antenna can be damaged if excessive force is applied. when the Reverse-SMA connector is coupled to the antenna if the antenna can cause damage , if left for a

long time at a low temperature after coupling takes damage to the antenna fixing portion.)



2-2 G2000 POWER SUPPLY & CHECK OPERATION

- ▶ Insert the RJ45 (PoE) Connector on the G2000 PoE Connector.



► Check the LED

● RED : DC 5V power is applied.

● GREEN : Operation MCU

● BLUE : Operation Ethernet



3 HOME

It shows the progress of recent work.

Rainus Infortab Admin

Home Store Status Task Setting P/G Upgrade CM Tool Account Setting

Task Progress

Latest Task Progress

Task Id : 1463542672	100 Complete
Task Id : 1463538171	100 Complete
Task Id : 1463533671	100 Complete
Task Id : 1463532903	100 Complete
Task Id : 1463529171	100 Complete

4 STORE

Displays a list of registered stores.

The output information is as follows.

- Store code
- Number of installed Gateways
- Number of installed Tags(InforTab)

Click the icon of Configure item to go to setting page.

Rainus Infortab Admin

Home Store Status Task Setting P/G Upgrade CM Tool Account Setting

Store

Store Code Store Code

Store Code	Registered GWs	Registered Tags	Updated	Config
store-1	1	1233	2016-05-18 12:37:52	

5 GATEWAY STATUS

Displays the status information of the Gateway.

The output information is as follows.

- Gateway MAC address
- Store code
- Number of registered Tags
- Operation mode
- IP address
- Version information
- Status information

Click the icon of Configure item to go to setting page.

Rainus Infortab Admin

Home Store Status Gateway Tag Task Setting P/G Upgrade CM Tool Account Setting

Gateway Status

Store Code: ALL Gateway MAC: Gateway MAC Search

Gateway MAC	Store Code	Registered Tags	OP Mode	Note	IP	Version	Status	Updated	Config
70.2C.1F.03.1A.21	store-1	1235	norm	Note something	localhost:8080	0.8.0	ok	2016-05-18 15:45:44	

6 TAG STATUS

Displays the status information of the Tags

The output information is as follows.

- Tags MAC address
- Store code
- Connected Gateway IP address
- The last work done
- Work result
- Battery
- Received signal strength
- Version information

Rainus Infortab Admin

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Tag Status

File Import De-assign

	Tag MAC [Ⓢ]	Store Code	Gateway IP	Operation	Result	Battery	RSSI	Version	Updated
	~ [] x	~ [] x	~ [] x	== [All] ▾ x	== [All] ▾ x	>= [] x	>= [] x	>= [] x	>= [] x
1	702C1FFFE031B34	store-1	localhost:8080	UPDATE	ok	30	-77	26	2016-05-18 16:53:55
2	702C1FFFE031B41	store-1	localhost:8080	UPDATE	ok	30	-72	26	2016-05-18 16:53:55
3	702C1FFFE031B46	store-1	localhost:8080	UPDATE	ok	30	-67	26	2016-05-18 16:53:55
4	702C1FFFE031B4C	store-1	localhost:8080	UPDATE	ok	30	-68	26	2016-05-18 16:53:55
5	702C1FFFE031B52	store-1	localhost:8080	UPDATE	ok	30	-68	26	2016-05-18 16:59:54
6	702C1FFFE031B54	store-1	localhost:8080	UPDATE	ok	30	-70	26	2016-05-18 16:51:55
7	702C1FFFE031B55	store-1	localhost:8080	UPDATE	ok	30	-80	26	2016-05-18 16:53:55
8	702C1FFFE031B57	store-1	localhost:8080	UPDATE	ok	30	-81	26	2016-05-18 16:59:54
9	702C1FFFE031B58	store-1	localhost:8080	UPDATE	ok	30	-68	26	2016-05-18 16:51:55
10	702C1FFFE031B5A	store-1	localhost:8080	UPDATE	ok	30	-74	26	2016-05-18 16:53:55

7 TASK

Show progress of work.

You can click the icon of the detail item to see the details of the operation.

Rainus Infortab Admin

- Home
- Store
- Status
- Task**
- Setting
- P/G Upgrade
- CM Tool
- Account Setting

Task

2016-05-18 00:00 = 2016-05-18 23:59

Task Id	Store Code	Operation	Progress(%)	Start Time	End Time	Detail
1463557562	'store-1'	UPDATE	<div style="width: 99%; background-color: orange;">99%</div>	2016-05-18 16:46:02	In progress	Detail
1463542672	'store-1'	UPDATE	<div style="width: 100%; background-color: green;">100%</div>	2016-05-18 12:37:52	2016-05-18 13:19:54	Detail
1463538171	'store-1'	UPDATE	<div style="width: 100%; background-color: green;">100%</div>	2016-05-18 11:22:52	2016-05-18 11:41:54	Detail
1463533671	'store-1'	UPDATE	<div style="width: 100%; background-color: green;">100%</div>	2016-05-18 10:07:51	2016-05-18 10:29:54	Detail
1463532903	'store-1'	UPDATE	<div style="width: 100%; background-color: green;">100%</div>	2016-05-18 09:55:03	2016-05-18 10:07:51	Detail
1463529171	'store-1'	UPDATE	<div style="width: 100%; background-color: green;">100%</div>	2016-05-18 08:52:51	2016-05-18 09:51:54	Detail

Here are the details of the work.

Task Detail

	Tag MAC	Layout	Pr Code	Pr Info	Result	Date
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	[All]	<input type="text"/>
1	78E980FFFE002D33	2p13_offerta	213B_NEW	Test #1,9.99,180g,/Lt 22,17,8057741681946,MANZI,Bio,10%,3,59,€,NOVI Riccio in Fibre Fonte di Proteine,www.biobottega.it,Sopri una gustosa ricetta,	ok	2016-05-18 16:51:55
2	78E980FFFE002FEC	2p13_offerta	213B_NEW	Test #1,9.99,180g,/Lt 22,17,8057741681946,MANZI,Bio,10%,3,59,€,NOVI Riccio in Fibre Fonte di Proteine,www.biobottega.it,Sopri una gustosa ricetta,	ok	2016-05-18 16:51:55
3	78E980FFFE001EF6	1p54_offerta	154B_NEW	Test #1,9.99,180g,/Lt 22,17,8057741681946,MANZI,Bio,10%,3,59,€,NOVI Riccio in Fibre Fonte di Proteine,www.biobottega.it,Sopri una gustosa ricetta,	ok	2016-05-18 16:51:55
4	78E980FFFE0021DA	2p13_offerta	213B_NEW	Test #1,9.99,180g,/Lt 22,17,8057741681946,MANZI,Bio,10%,3,59,€,NOVI Riccio in Fibre Fonte di Proteine,www.biobottega.it,Sopri una gustosa ricetta,	ok	2016-05-18 16:51:55
5	78E980FFFE002784	2p13_offerta	213B_NEW	Test #1,9.99,180g,/Lt 22,17,8057741681946,MANZI,Bio,10%,3,59,€,NOVI Riccio in Fibre Fonte di Proteine,www.biobottega.it,Sopri una gustosa ricetta,	ok	2016-05-18 16:51:55
6	78E980FFFE003001	2p13_offerta	213B_NEW	Test #1,9.99,180g,/Lt 22,17,8057741681946,MANZI,Bio,10%,3,59,€,NOVI Riccio in Fibre Fonte di Proteine,www.biobottega.it,Sopri una gustosa ricetta,	ok	2016-05-18 16:51:55

8 SERVER CONFIG

Modify server configuration information.

The input information is as follows.

- Server network information
- Retail Server IP address and Port
- NMS Server IP address and Port
- Data retention period
- Tag refresh cycle
- NTP server synchronization cycle
- Gateway status reporting cycle

Rainus Infortab Admin

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Store Config
Gateway Config
PIG Upgrade
CM Tool
Account Setting

Server Config

ESL Server IP	<input type="text" value="192.168.220.223"/>
ESL Server Port	<input type="text" value="80"/>
Default Gateway IP	<input type="text" value="192.168.220.1"/>
Netmask	<input type="text" value="255.255.255.0"/>
DNS IP	<input type="text" value="203.248.252.2"/>
Retail Server IP	<input type="text" value="127.0.0.1"/>
Retail Server Port	<input type="text" value="10009"/>
NMS Server IP	<input type="text" value="192.168.220.27"/>
NMS Server Port	<input type="text" value="5000"/>
History Retention (days)	<input type="text" value="7"/> DB retention period in days
Tag Display Refresh (days)	<input type="text" value="7"/> Tag display auto-refresh interval in days
Time Server Poll Interval (seconds)	<input type="text" value="30"/> Time server polling interval in seconds
G/W Status Check Interval (seconds)	<input type="text" value="600"/> Gateway Status checking interval in seconds

9 STORE CONFIG

Displays a list of registered store settings information.

Click the icon of the config item to go to the settings page.

Rainus Infortab Admin

Home Store Status Task Setting Server Config **Store Config** Gateway Config P/G Upgrade CM Tool Account Setting

Store Config

Store Code

Store Code	Store Name	Total Duration	Event Duration	CP Duration	Time Server IP	Time Server Port	Pan Id	Updated	
store-1	강남점	120000	2000	25000	192.168.220.240	123	257	2016-05-09 17:22:32	

The following is the screen to modify store information.

- Store name
- NTP server information

Rainus Infortab Admin

Home Store Status Task Setting Server Config **Store Config** Gateway Config P/G Upgrade CM Tool Account Setting

Store Config

Store Config Update

Store Code

Store Name

Total Duration (milliseconds) Tag wake-up interval in ms

Event Duration (milliseconds) Event frame TX duration in ms

CP Duration (milliseconds) Tag Contention Period in ms

Time Server IP

Time Server Port

Pan Id Pan ID(0-65534), should use one value for all gateways in a store

10 GATEWAY CONFIG

Show list of registered store information.

Click the icon of the config item to go to the settings page.

The screenshot shows the 'Gateway Config' page in the Rainius Infortab Admin interface. A table lists the configuration for a gateway. The table has columns for Gateway MAC, Store Code, GW Index, Gateway IP, Netmask, Default GW, DNS IP, ESL Server IP, ESL Server Port, Data Channel, Event Channel, Radio Power, Op Mode, Note, Channel Mask, Radio Baud, GMP Version, GRM Version, and Updated. A search bar is located at the top right of the table.

Gateway MAC	Store Code	GW Index	Gateway IP	Netmask	Default GW	DNS IP	ESL Server IP	ESL Server Port	Data Channel	Event Channel	Radio Power	Op Mode	Note	Channel Mask	Radio Baud	GMP Version	GRM Version	Updated	
70:2C:1F:03:1A:21	store-1	1	localhost:8080	255.255.255.0	192.168.220.1	203.248.252.2	localhost	80	15	12	100	norm	Note something	18	250	0.8.0	2	2016-05-09 19:31:11	🔗

The following is the gateway configuration information modification screen.

The screenshot shows the 'Gateway Config Update' form in the Rainius Infortab Admin interface. The form contains various input fields for configuring a gateway, including text boxes, dropdown menus, and a note field. A 'Submit' button and a 'Reset' button are located at the bottom of the form.

Gateway Config Update

Gateway MAC: 70:2C:1F:03:1A:21

Store Code: store-1

GW Index: 1 (must be a unique value in a store)

IP Address: localhost:8080 (Gateway IPv4 address)

Netmask: 255.255.255.0

Default GW: 192.168.220.1 (Default GW IPv4 address)

DNS IP: 203.248.252.2

ESL Server IP: localhost (ESL Server IPv4 address)

ESL Server Port: 80

Data Channel: 15 (IEEE 802.15.4 channel(11-26))

Event Channel: 12 (channel(11-26), should use one value for all gateways in a store)

Radio Power: 100 (Radio power in percentage(1-100))

OP Mode: norm (Use "Normal Operation")

Channel Mask: 18 (Calculated by system on data channel change)

Radio Baud: 250 (Gateway Ethernet MAC)

GMP Version: 0.8.0 (Gateway Main Processor Version)

GRM Version: 2 (Gateway Radio Module F/W Version)

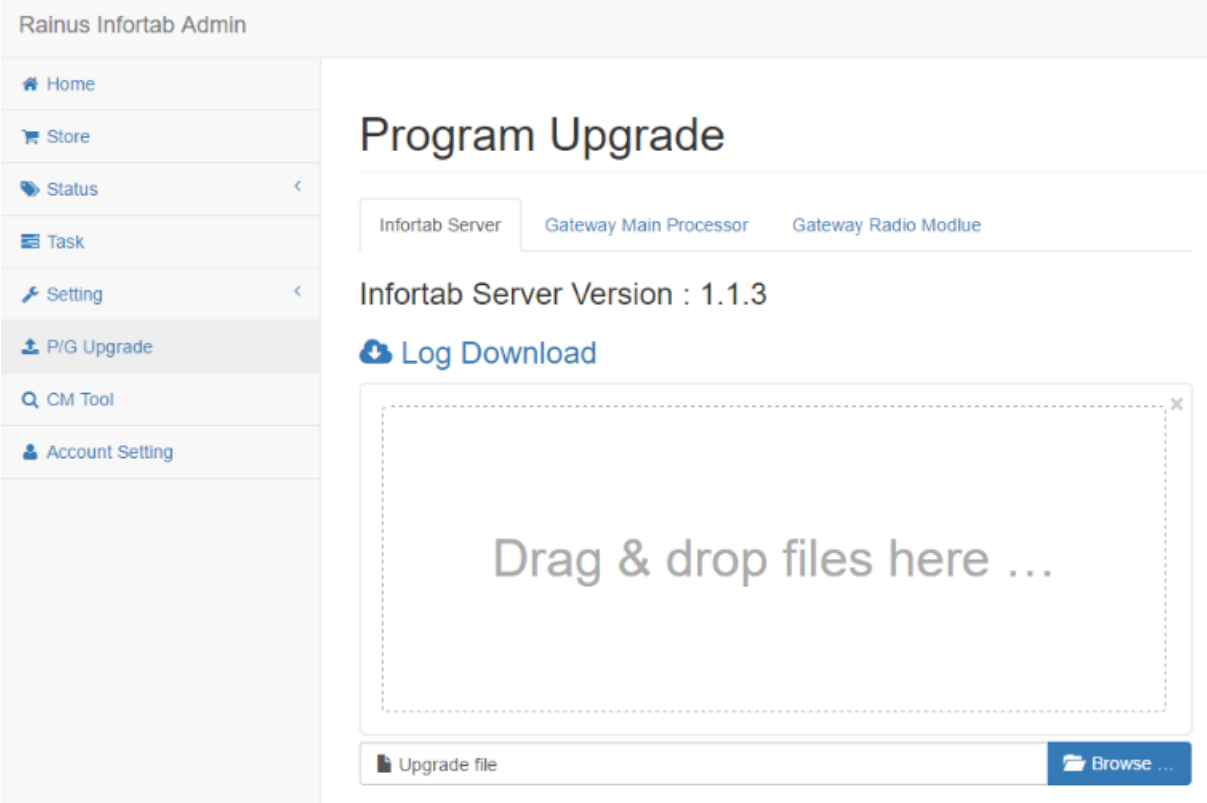
Note: Note something

Submit Reset

11P/G UPGRADE

If the version of the server and the gateway program are changed, the upgrade can be performed by uploading the corresponding file.

Here is the program upgrade screen on the server.



The following is the gateway main processor program upgrade screen.

The screenshot shows the Rainus Infortab Admin interface. On the left is a sidebar menu with options: Home, Store, Status, Task, Setting, P/G Upgrade (highlighted), CM Tool, and Account Setting. The main content area is titled "Program Upgrade" and has three tabs: "Infortab Server", "Gateway Main Processor" (selected), and "Gateway Radio Modlue". Below the tabs, it displays "GMP Version : None" and "Uploaded date : 2016-05-18 17:12:14". A large dashed box contains the text "Drag & drop files here ...". At the bottom, there is an "Upgrade file" label and a blue "Browse ..." button.

The following is the program upgrade screen of the gateway wireless module.

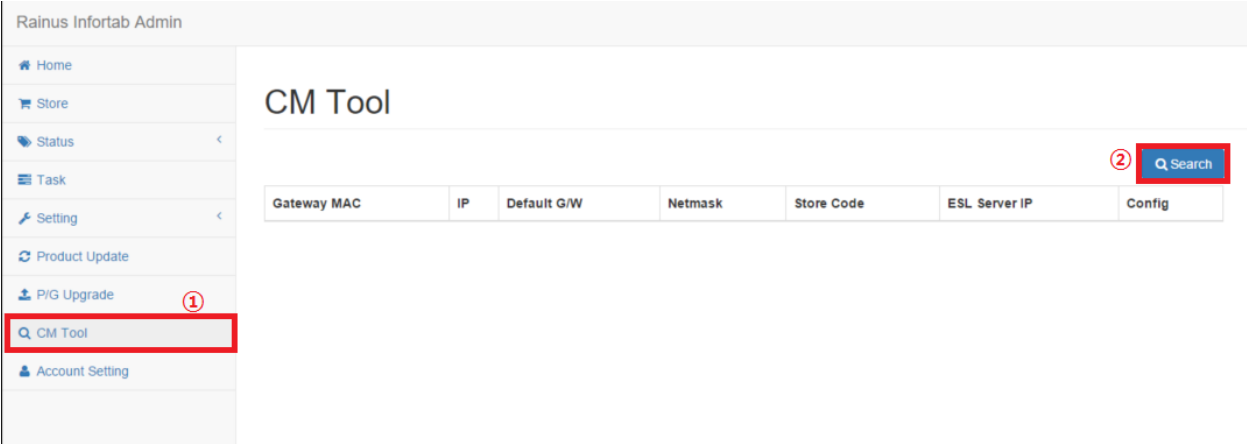
The screenshot shows the Rainus Infortab Admin interface. On the left is a sidebar menu with options: Home, Store, Status, Task, Setting, P/G Upgrade (highlighted), CM Tool, and Account Setting. The main content area is titled "Program Upgrade" and has three tabs: "Infortab Server", "Gateway Main Processor", and "Gateway Radio Modlue" (selected). Below the tabs, it displays "GRM Version : None" and "Uploaded date : 2016-05-18 17:12:14". A large dashed box contains the text "Drag & drop files here ...". At the bottom, there is an "Upgrade file" label and a blue "Browse ..." button.

12 CONFIGURATION TOOL

Search the gateway installed in the store and change the network-related configuration information.

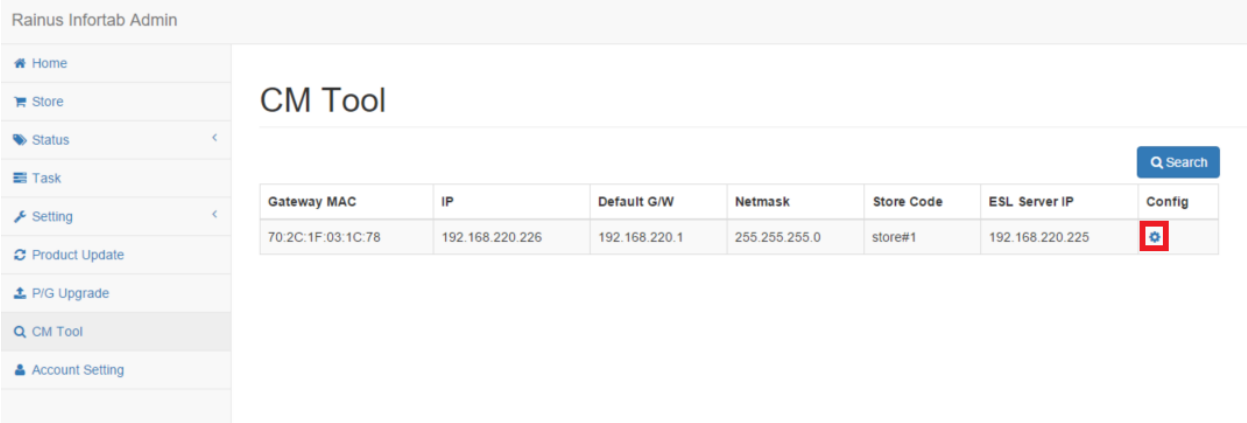
Place the gateway on the same network as the server.

Select the CM Tool menu on the left side and click the Search button on the right side.



When the screen for the gateway is complete, the results are output as a list.

Click the settings icon on the right.



Enter the setup information and click the Submit button.

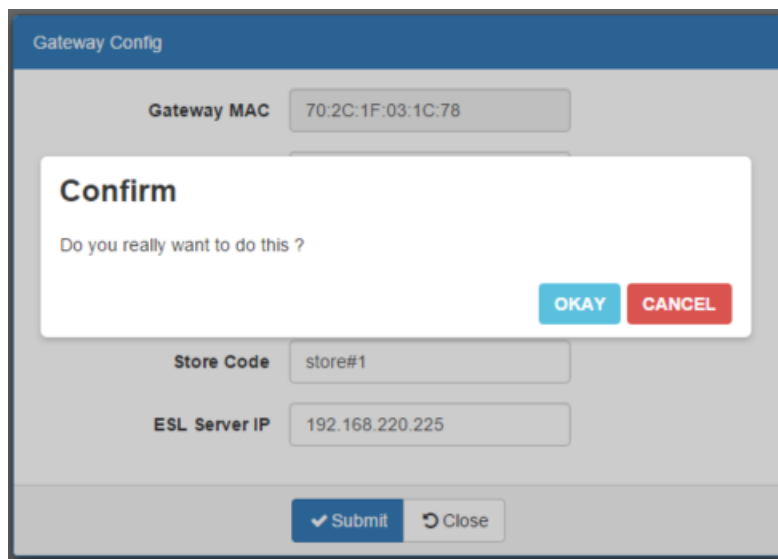


The screenshot shows a 'Gateway Config' form with the following fields and values:

Field	Value
Gateway MAC	70:2C:1F:03:1C:78
IP	192.168.220.226
Default G/W	192.168.220.1
Netmask	255.255.255.0
Store Code	store#1
ESL Server IP	192.168.220.225

At the bottom of the form, there are two buttons: a blue 'Submit' button with a checkmark icon and a grey 'Close' button with a circular arrow icon.

Click the Okay button.



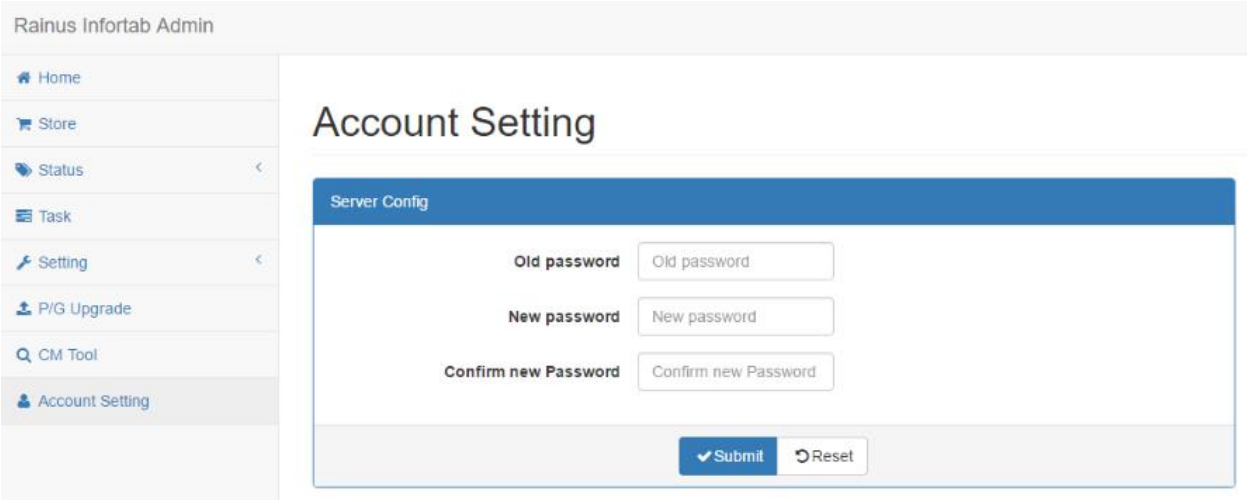
The screenshot shows the same 'Gateway Config' form as above, but with a 'Confirm' dialog box overlaid in the center. The dialog box contains the text 'Do you really want to do this?' and two buttons: a blue 'OKAY' button and a red 'CANCEL' button. The background form fields are dimmed.

At the bottom of the form, there are two buttons: a blue 'Submit' button with a checkmark icon and a grey 'Close' button with a circular arrow icon.

13 ACCOUNT SETTING

Change account information.

- 1. Enter the previous password.
- 2. Enter a new password.
- 3. Re-enter the new password.
- 4. Click the Submit button.



WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

CAUTION

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.

This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.

A minimum separation distance of 20cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.