

Advantech AE Technical Share Document

Date	2019/11/28	SR#	1-3775490501
Category	<input type="checkbox"/> FAQ <input checked="" type="checkbox"/> SOP	Related OS	N/A
Abstract	How to connect WISE-4610 with WISE-6610?		
Keyword	WISE, LoRaWAN		
Related Product	WISE-4610 series, WISE-6610		

■ Problem Description:

This document shows that how to connect WISE-4610 with WISE-6610, and receive data result.



Figure 1. Topology of this scenario.

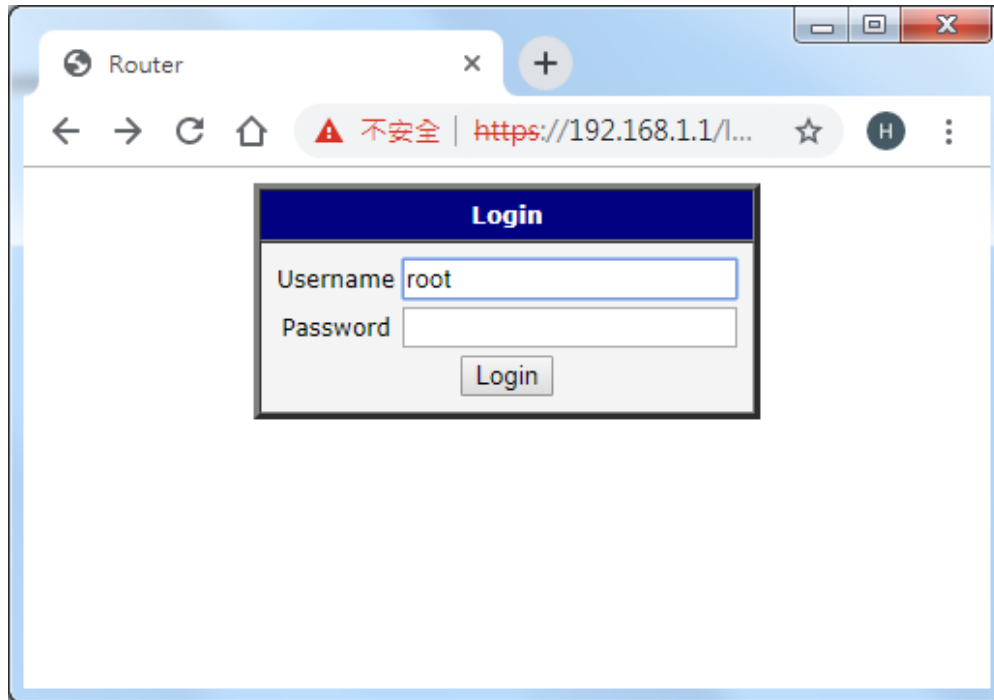
■ Brief Solution - Step by Step:

Step 1. Enter the WISE-6610 gateway.

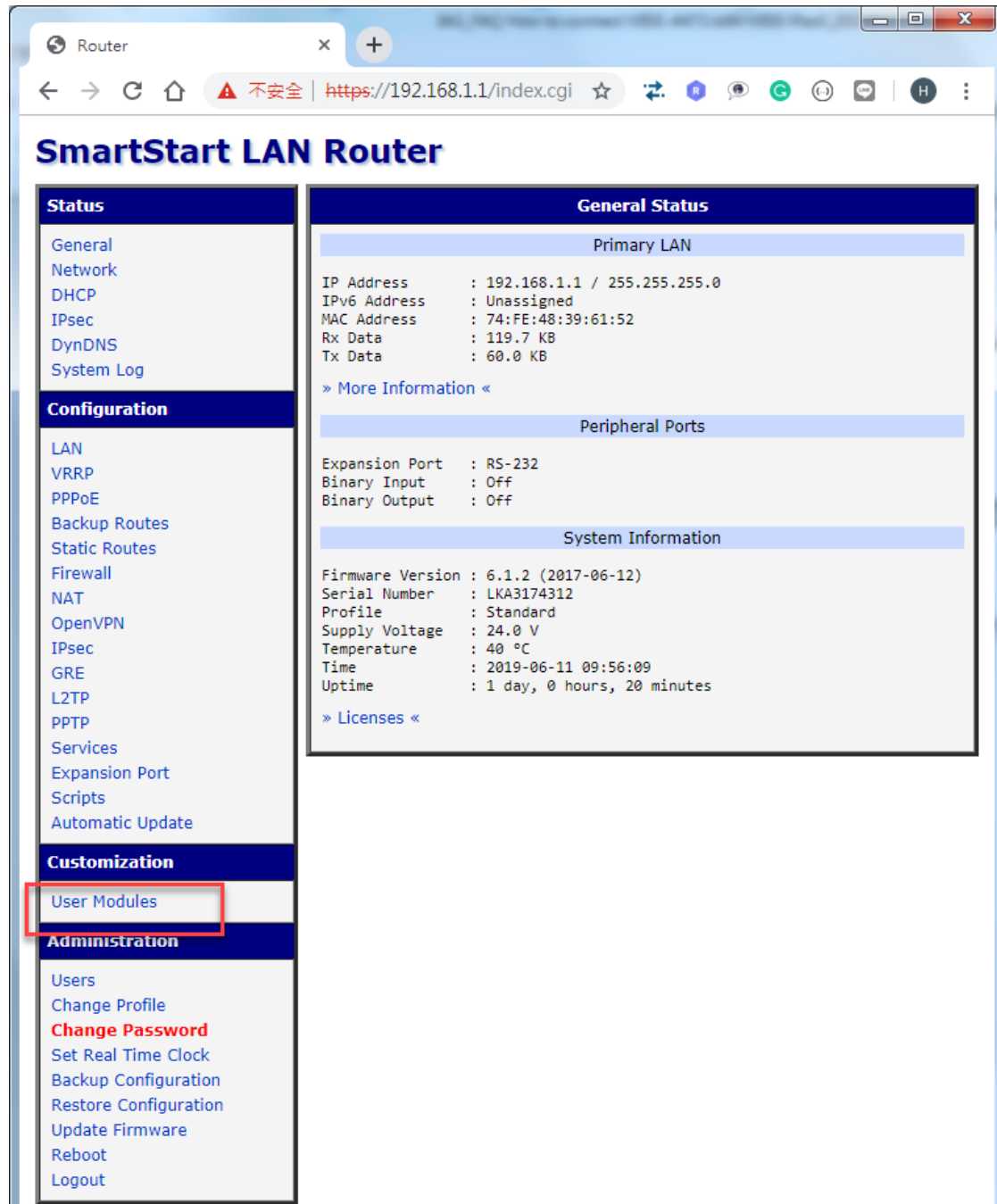
Default IP:192.168.1.1

Account: root

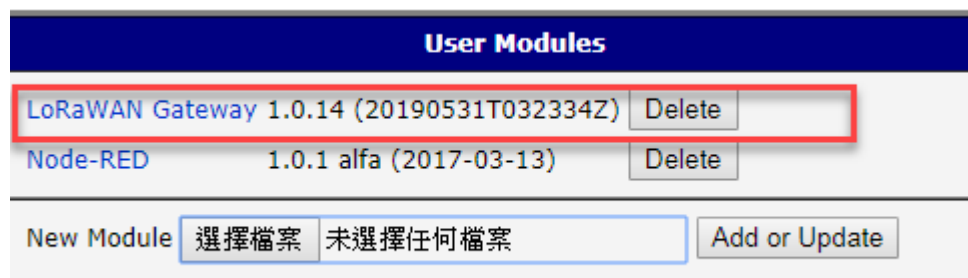
Password: root



Step 2. Go to “user mode”.



Step 3. If you need to upgrade the “LoRaWAN Gateway” function, DELETE first, then upload new file.



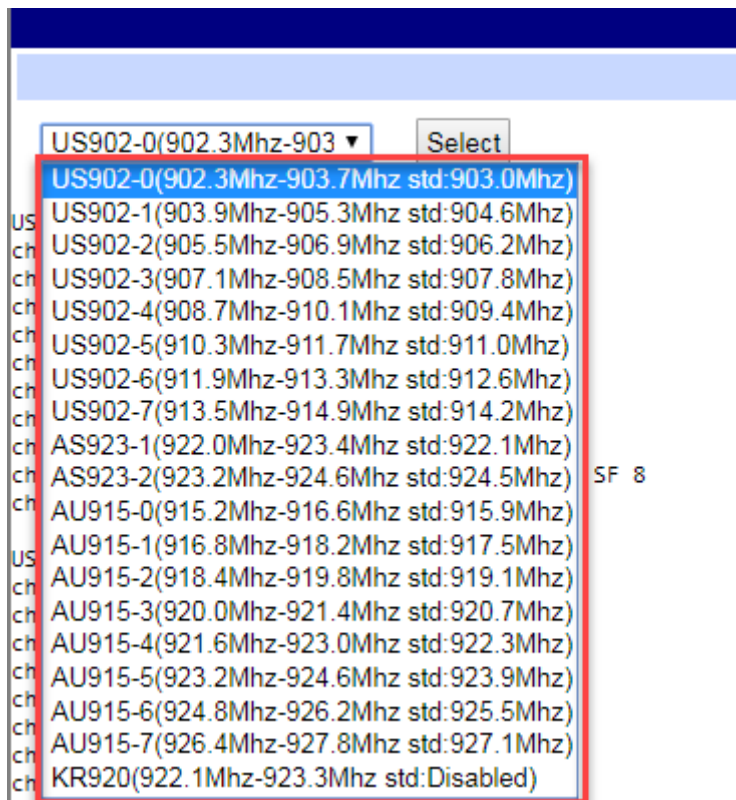
Step 4. Click “LoRaWAN Gateway” to enter the setting page.

Make sure all of these parameters are matching with the “RF module” setting on WISE-4610-Sxxx.

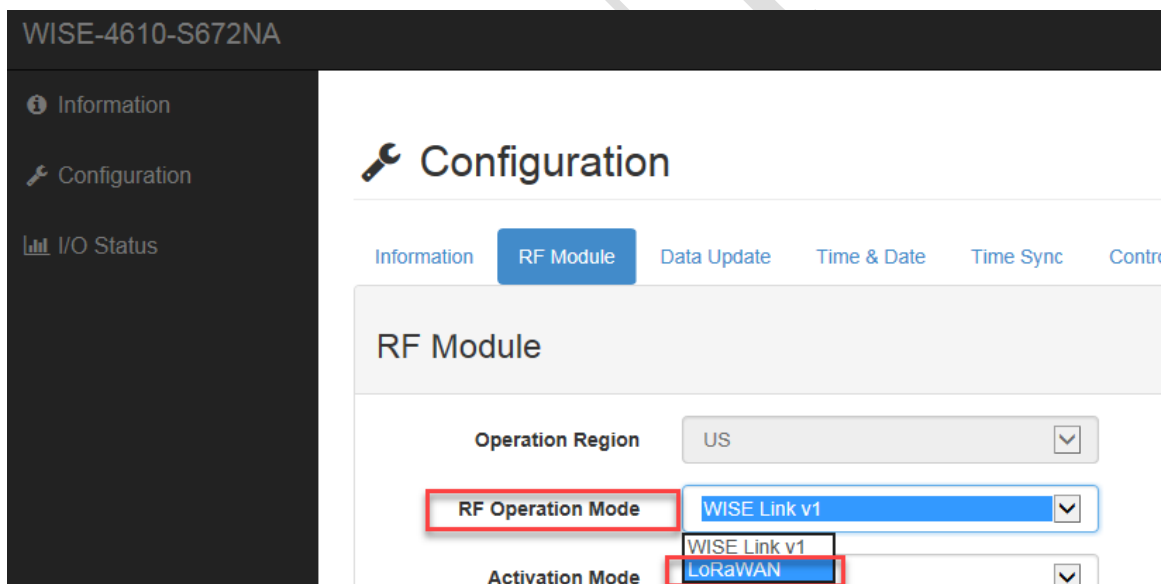
LoRaWAN Gateway Settings					
LoRaWAN Radio Setting					
Model Name	WISE-6610-N100-A				
Radio Enable	On				
Radio 0 Main Frequency(KHz)	902700				
Radio 1 Main Frequency(KHz)	903400				
Channel 00	Enable	Radio Select	Offset(KHz)		
Channel 01	On	Radio 0	-400		
Channel 02	On	Radio 0	-200		
Channel 03	On	Radio 0	0		
Channel 04	On	Radio 1	200		
Channel 05	On	Radio 1	-300		
Channel 06	On	Radio 1	-100		
Channel 07	On	Radio 1	100		
Channel STD	Enable	Radio Select	Bandwidth	SF	Offset(KHz)
Channel FSK	On	Radio 0	500KHz	8	300
	Enable	Radio Select	Bandwidth	Datarate (bps)	Offset(KHz)
	Off	Radio 0	125KHz	50000	0
<input type="button" value="Quick Setup"/> Quick setting LoRaWAN Radio.					
LoRaWAN Gateway Setting					
LoRaWAN Gateway Identifier	AA555A0000000000				
Network server	IP address	Upstream Port	Downstream Port		
Backup server	127.0.0.1	1680	1680		
Backup Enable	Off				
Backup Database Interval	5				
<input type="button" value="Save"/>					

Or click on “quick setup” for default setting.

Channel STD	On	Radio
Channel FSK	Off	Radio
<input type="button" value="Quick Setup"/> Quick setting LoRaWAN Radio.		
LoRaWAN Gateway Identifier	AA555A0000000000	



Step 5. Select “LoRaWAN” for RF operation mode setting on WISE-4610.



Step 6. A new tab will pop-up after click on “network server” > “enable” > “network server (http)”.

Account: root

Password: root

Navigation

Router

[LoRaWAN Radio](#)
[Network Server](#)
[Settings](#)
[Network Server\(http\)](#)
[Network Server\(https\)](#)
[Upload Database](#)
[Download Database](#)
[Factory Reset Database](#)
[MQTT](#)
[Application Server](#)
[Licenses](#)
[Return to Router](#)

LoRaWAN Network Server Enable

On

Enable LoRaWAN network server.

LoRaWAN Server Listen Port

1680

The LoRa network server listen port number (1 - 65535).

LoRaWAN Network Server HTTP Port

8080

The LoRaWAN network server HTTP port number (1 - 65535).

LoRaWAN Network Server HTTPS Port

8443

The LoRaWAN network server HTTPS port number (1 - 65535).

LoRaWAN Web Username

root

The user name for the LoRaWAN network server.

LoRaWAN Web Password

root

The password for the LoRaWAN network server.

Auto ADR Count

50

The count used to Auto ADR function.

LoRaWAN Network Server HTTPS Enable

Off

Enable HTTPS service.

Save

Server Admin

+

不安全 | 192.168.1.1:8080/admin#/dashboard

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G

(-)

登入

http://192.168.1.1:8080

你與這個網站之間的連線不是私人連線

使用者名稱

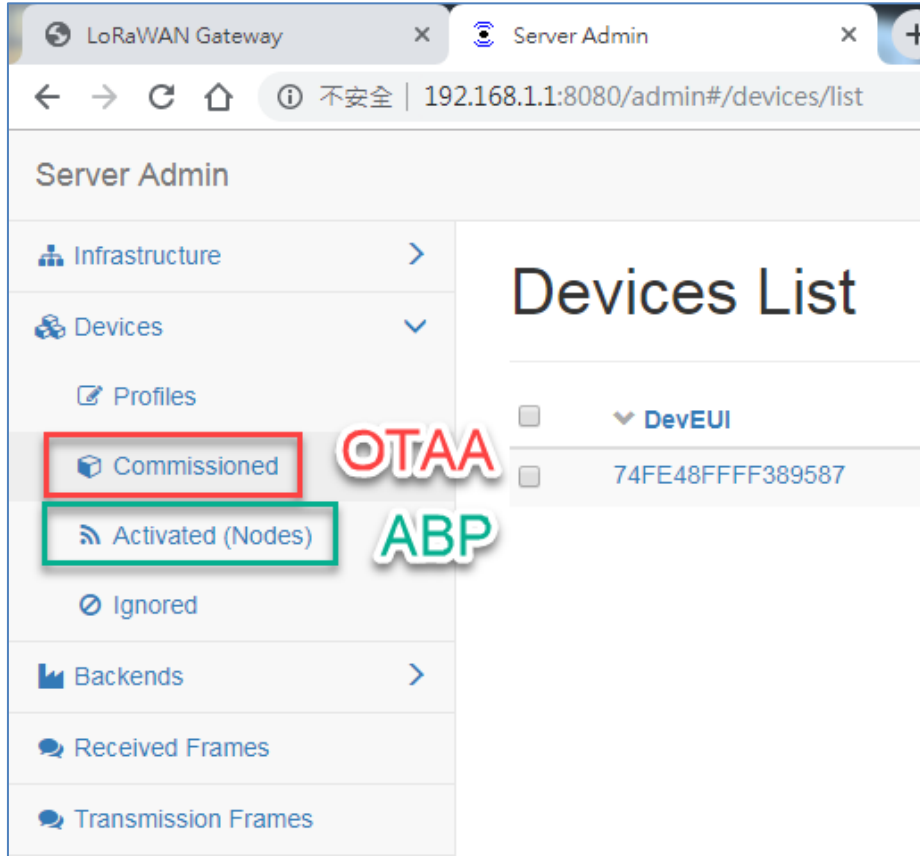
密碼

登入

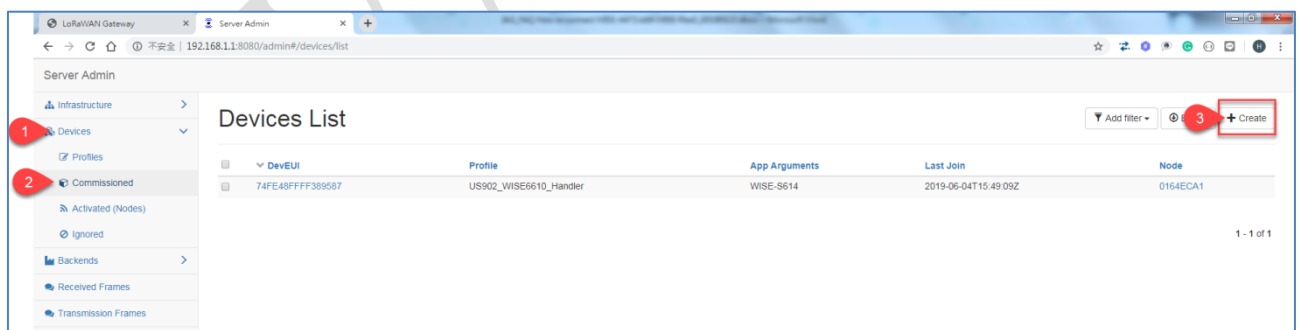
取消

Step 7. Create an end node device.

- If select “**commissioned**”, which means the node will use **OTAA** mode for connecting with a gateway.
- If select “**active nodes**”, which means the node will use **ABP** mode for connecting with a gateway.

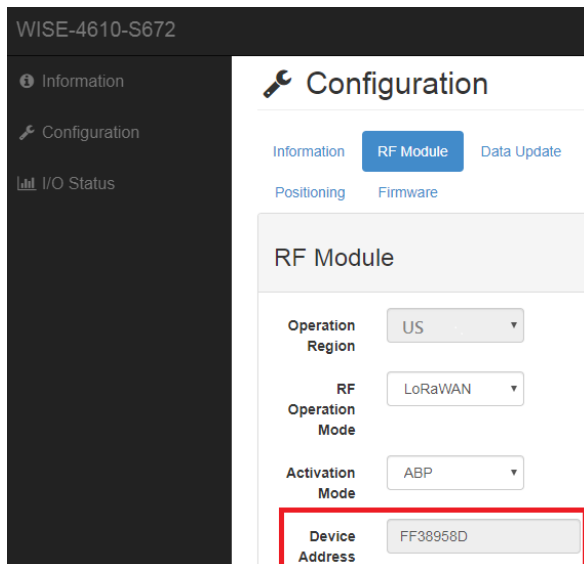


Click on “create” in devices.



1. DevAddr: the device address of an end node.

- Copy-paste from WISE-4610 “RF module” tab.



WISE-4610-S672

Information Configuration I/O Status

Configuration

Information RF Module Data Update

Positioning Firmware

RF Module

Operation Region: US

RF Operation Mode: LoRaWAN

Activation Mode: ABP

Device Address: FF38958D

2. Profile: select the model name of the WISE-6610 which used for Network Server role.
 - In this demo, a US version is used to connect with WISE-4610NA version.



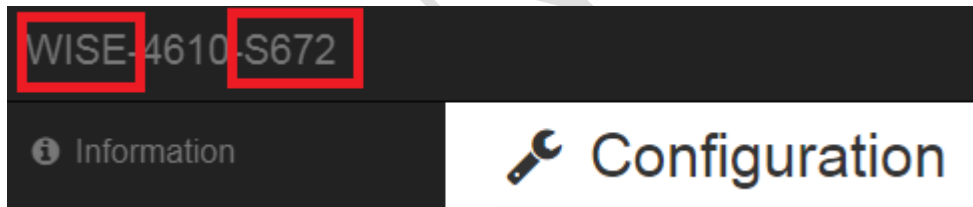
Navigation

Router

LoRaWAN Radio

Model Name: WISE-6610-N100-A

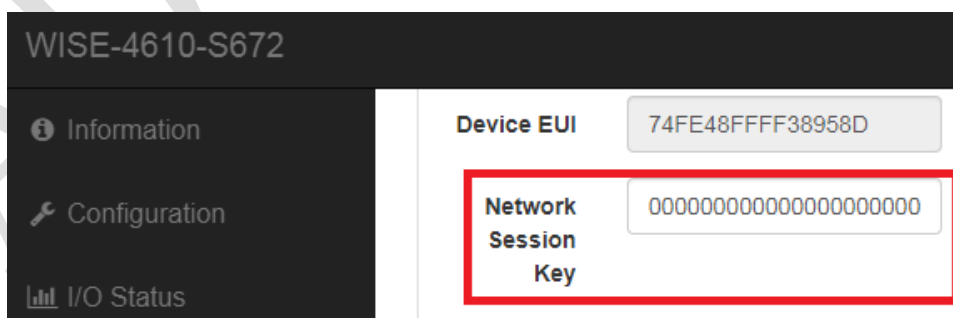
3. App Arguments: the I/O board of the end node.
 - In this demo, a WISE-S672 is used to connect with WISE-4610.



WISE-4610-S672

Information Configuration

4. NwkSKey: the network service key address of an end node.
 - Copy-paste from WISE-4610 "RF module" tab.



WISE-4610-S672

Information Configuration I/O Status

Device EUI: 74FE48FFFF38958D

Network Session Key: 000000000000000000000000

5. AppSKey: the application service key of an end node.
 - Copy-paste from WISE-4610 "RF module" tab.

WISE-4610-S672

Information

Configuration

I/O Status

Application Information

Application Session Key

00000000000000000000000000000000

6. Click on “save” to finish the setting.

Server Admin

Infrastructure

Gateways

Networks

Multicast Channels

Events

Devices

Profiles

Commissioned

Activated (Nodes)

Ignored

Backends

Received Frames

Transmission Frames

Create new node

General

1 DevAddr *

2 Profile *

3 App Arguments

4 NwkSKey *

5 AppSKey *

FCnt Up

FCnt Down *

6 Submit

Step 8. Create a “network server” gateway. Copy-paste the MAC address from “LoRaWAN radio” > “LoRaWAN Gateway Identifier”.

Server Admin

Infrastructure

1 Gateways

Networks

Multicast Channels

Gateways List

2 + Create

MAC

Group

Description

IP Address

Dwell [%]

Last Alive

Status

Create new gateway

General

1 **MAC ***

Group

TX Chain *

Antenna Gain (dBi)

Description

Location *

Altitude

2

Navigation

Router

- LoRaWAN Radio**
- Packet Forward
- LoRaWAN Status
- Network Server
- MQTT
- Application Server
- Licenses
- Return to Router

Model Name

Radio Enable

Radio 0 Main Frequency(KHz)

Radio 1 Main Frequency(KHz)

Channel 00

Channel 01

Channel 02

Channel 03

Channel 04

Channel 05

Channel 06

Channel 07

Channel STD

Channel FSK

Quick setting LoRaWAN Radio.

LoRaWAN Gateway Identifier

Network server

Backup server

Backup Enable

Backup Database Interval

Results:

1. Click “application server” > “status”. Here shows the end nodes if packets are received by gateway from an end node.

Navigation

Router

[LoRaWAN Radio](#)

[Network Server](#)

[MQTT](#)

[Application Server](#)

[Settings](#)

[Status](#)

[Modbus Mapping Table](#)

[Payload Engine](#)

[Licenses](#)

[Return to Router](#)

LoRaWAN Gateway Settings

Application Server Status

MQTT Status : Connected
Node number : 2

Advantech LoRaWAN Node

Index	DevAddr	Description	Model	Received	Fcnt	Rssi	Action
1	0164ECA1		WISE4610-614	2019-06-04T15:52:58Z	44	-28	Delete Detail
2	FF389587		WISE4610-614	2019-06-04T16:15:20Z	205	-31	Delete Detail

Refresh Clear log

the nodes which successfully send data to GW.

- Received frames page shows the received results. The “FCnt” shows the frame sequence. If this sequence is in-continuously, means some of the packets were lost, did not received.

LoRaWAN Gateway x Server Admin x +

192.168.1.1:8080/admin#/rxframes/list

Server Admin

- Infrastructure
- Devices
- Backends
- Received Frames
- Transmission Frames

Received Frames

Received	Application	DevAddr	MAC	U/L RSSI	U/L SNR	FCnt	Confirm
2019-06-11T11:32:06Z	WISE6610_Handler	FF19D12F	AA555A0000000000	-69	9	211	✓
2019-06-11T11:32:04Z	WISE6610_Handler	FF19D12F	AA555A0000000000	-67	6.5	210	✓
2019-06-11T11:31:53Z	WISE6610_Handler	FF19D12F	AA555A0000000000	-65	5.2	209	✓
2019-06-11T11:30:38Z	WISE6610_Handler	FF19D12F	AA555A0000000000	-71	7.2	204	✓
2019-06-11T11:29:40Z	WISE6610_Handler	FF19D12F	AA555A0000000000	-71	8.8	200	✓