

Quickstart- SenseCap M2 Installation and Provisioning



Doc. Version 1.1
Date: 30.04.2024
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Location: Berlin
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Step 1: Collect your Gateway EUID

Step 2 : Register your Gateway on your Cloud software (examples with TTN/TTI)

Step 3: Configure your Gateway



The same gateway registration applies to The Things Industries (TTI) and The Things Network (TTN) cloud application .



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WWW.SATEVIS-SYSTEMS.COM



Connect your Lorawan[®] Gateway to the Internet



Get access to the Luci configuration webpage

Your password is available on the backside of your SenseCAP M2.



For more information about how to get access to your SenseCAP M2 gateway please read Seeed Studio user guide:

<https://files.seeedstudio.com/products/SenseCAP%20M2/Quick%20Start%20for%20SenseCAP%20M2%20Multi-Platform%20Gateway%20&%20Sensors.pdf>



Satevis® sensors are not working on SenseCAP portal.



Get access to the Luci configuration webpage

After getting access to your Luci WebPage , you can enter your password

The screenshot shows a web browser window with the URL `192.168.178.35/cgi-bin/luci/`. The page title is "SenseCAP". The main content area is titled "Authorization Required" and contains the text "Please enter your username and password." Below this, there are two input fields: "Username" with the value "admin" and "Password" which is empty. At the bottom right of the form are two buttons: "Login" (blue) and "Reset" (red). At the very bottom of the page, it says "Powered by LuCI / OpenWrt 21.02.0 r1-20220615 r16279-5cc0535800".

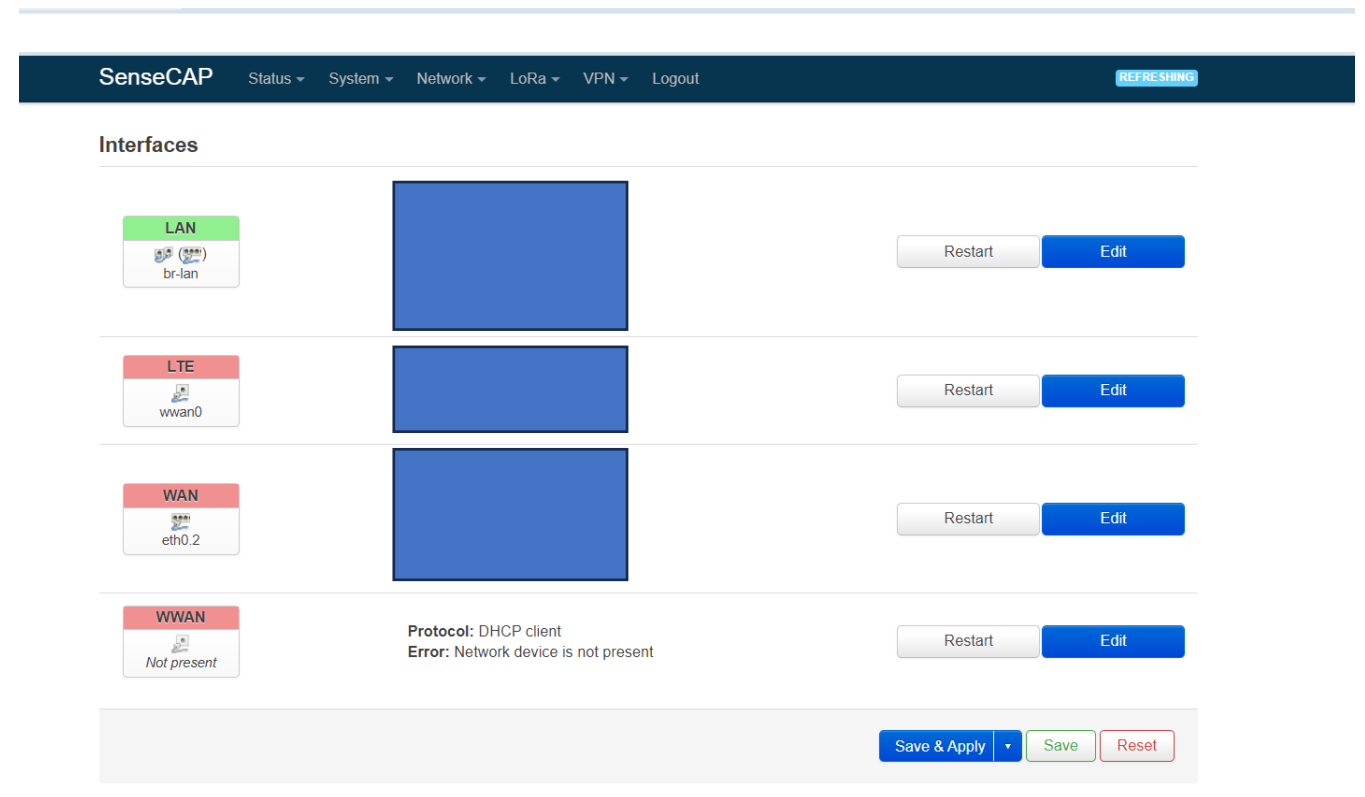
For better Internet connectivity, we advice you to connect your SenseCAP M2 gateway to your LAN/WIFI and 4G (optional) network.



Multiple connections

We suggest to enable multiple internet connections (LAN,. WLAN, 4G) to optimize network connectivity.

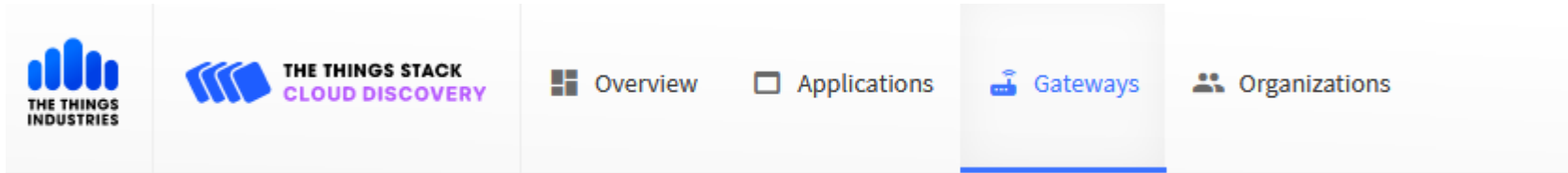
Go To Network => Interfaces to Discover the different Internet connections activated





Register your Gateway on The Things Industries

1. From your TTN/TTI Console Page, click on Gateways Tab



2. Click on 'Register gateway'



3. Start Registering your Gateway with EUI (displayed on the backside of your gateway)



Register gateway

Register your gateway to enable data traffic between nearby end devices and the network. Learn more in our guide on [Adding Gateways](#).

Gateway EUI ⓘ

To continue, please confirm the Gateway EUI so we can determine onboarding options

You can add other frequency plan related to your Region

Gateway name ?

My new gateway

Frequency plan ? *

Asia 920-923 MHz

Select a frequency plan...

+ Add frequency plan

Note: most gateways use a single frequency plan. Some 16 and 64 channel gateways however allow setting multiple

Require authenticated connection ?

Register gateway

Register your gateway to enable data traffic between nearby end devices and the network. Learn more in our guide on [Adding Gateways](#).

Gateway EUI ?

Reset

Gateway ID ? *

Gateway name ?

My new gateway

Frequency plan ? *

Asia 920-923 MHz

Select a frequency plan...

Remove


- Asia 915-928 MHz (AS923 Group 1) with only default channels and dwell time disabled
- Asia 915-928 MHz (AS923 Group 1) with only default channels and dwell time enabled
- Asia 923-925 MHz
- Asia 923-925 MHz with LBT
- Asia 920-923 MHz (used by TTN Australia)
- Asia 923-925 MHz (used by TTN Australia - secondary channels)
- Singapore 920-923 MHz



For more flexibility, we suggest to choose all Frequency Plan

More Information about Frequency Plan:
<https://www.thethingsindustries.com/docs/reference/frequency-plans/>

Gateways > SenseCAP-915MHZ-USA

 **SenseCAP-915MHZ-USA**
ID: eui-2cf7f1115310019d

↑ 16 ↓ 1 • Last activity 28 seconds ago

General information

Gateway ID	<input type="text" value="eui-2cf7f1115310019d"/>
Gateway EUI	<input type="text" value="2C F7 F1 11 53 10 01 9D"/>
Gateway description	None
Created at	Apr 16, 2024 13:43:10
Last updated at	May 16, 2024 18:39:13
Gateway Server address	<input type="text" value="eu1.cloud.thethings.network"/>

LoRaWAN information


Frequency plan	US_902_928_FSB_2, US_902_928_FSB_1, US_902_928_FSB_3, US_902_928_FSB_4, US_902_928_FSB_5, US_902_928_FSB_6, US_902_928_FSB_7, US_902_928_FSB_8
Global configuration	<input type="button" value="Download global_conf.json"/>



Adding New Frequency Plans after your Gateway Registration

If you need to add new Frequency Plan after your Gateway registration:


1. Click on General Settings (Left-Bottom side of your LoraWAN® Gateway profile)
2. Click on Expand button on the same line than LoraWAN® options (displayed at the end of your page configuration)

 SenseCAP-915MHZ-USA


 Overview

 Live data

 Location

 Collaborators

 API keys

 General settings

LoRaWAN options

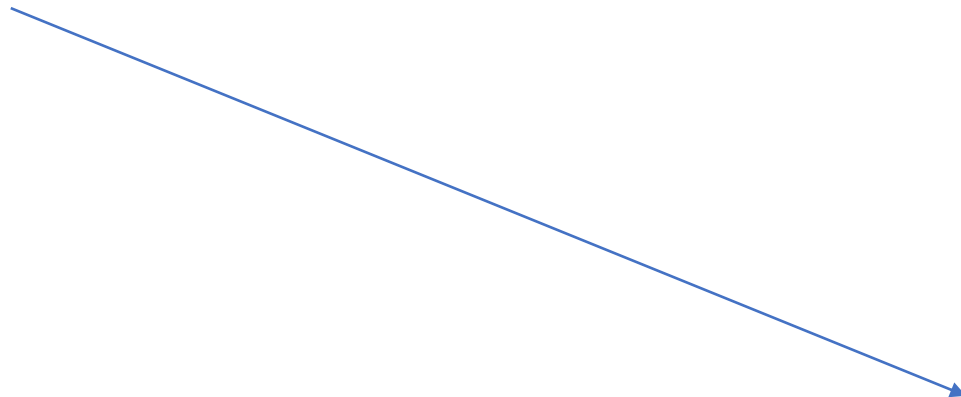
LoRaWAN network-layer settings

Expand



If you need to add new Frequency Plan after your Gateway Registration:

1. Click on Add frequency plan and select new frequency plan from your scroll-list



LoRaWAN options

LoRaWAN network-layer settings

Frequency plan [?] *

United States 902-928 MHz, FSB 2 (used by TTN)	v	
United States 902-928 MHz, FSB 1	v	Remove
United States 902-928 MHz, FSB 3	v	Remove
United States 902-928 MHz, FSB 4	v	Remove
United States 902-928 MHz, FSB 5	v	Remove
United States 902-928 MHz, FSB 6	v	Remove
United States 902-928 MHz, FSB 7	v	Remove
United States 902-928 MHz, FSB 8	v	Remove

Note: most gateways use a single frequency plan. Some 16 and 64 channel gateways however allow setting m

Schedule downlink late [?]

Enabled



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 *Configure your LoraWan[®] Gateway*



MultiWAN Interfaces

Name	Metric
wan	1
wwan	2

MultiWAN Status

Interface: wan
Status: Online
Uptime: 1h 14m 53s

Interface: wwan
Status: Online
Uptime: 1h 14m 27s



Connecting your Gateway to your WIFI network

SenseCAP

Status ▾

System ▾

Network ▾

LoRa ▾

VPN ▾

Logout

PAUSED

Wireless

radio0

MediaTek MT76x8 802.11bgn

Channel: 1 (2.412 GHz) | Bitrate: 144.4 Mbit/s

Restart

Scan

-46 dBm

SSID: Mode: Client

BSSID: 2C:F7:F1:1E:C4:A7 | Encryption: WPA2 PSK (CCMP)

Disable

Edit

Associated Stations

Network	MAC address	Host	Signal / Noise	RX Rate / TX Rate
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Collecting data...

Save & Apply ▾

Save

Reset

Connecting your Gateway to your WIFI network

You can check on Status if your Lorawan® gateway is connected to Internet

SenseCAP Status System Network LoRa VPN Logout REFRESHING

Internet Connection



LoRa Packets



Your Gateway must be configured with Packet Forwarder

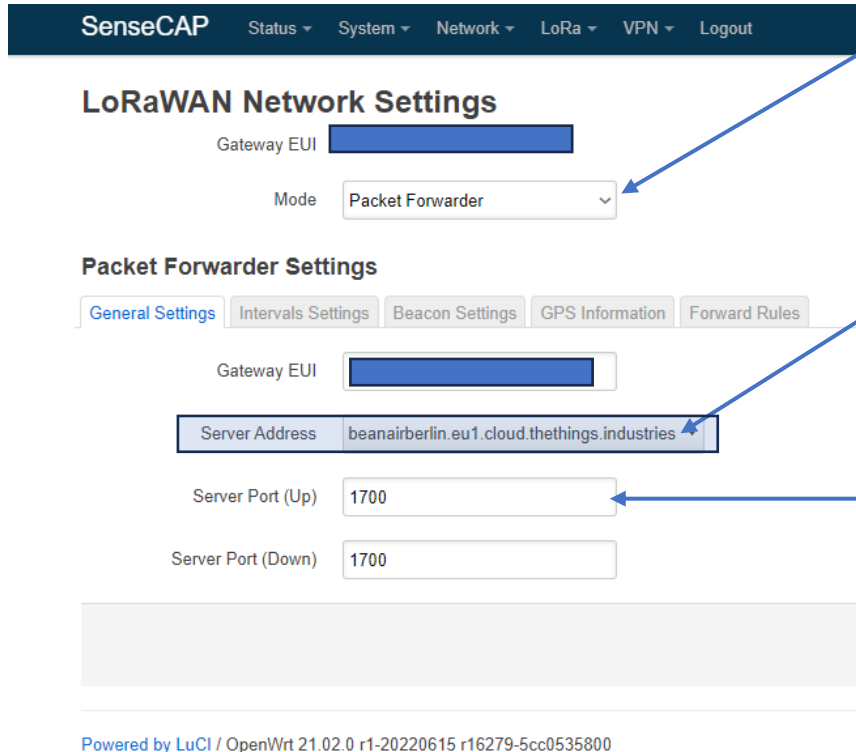
Make sure enter the right server Address

If you work with TTN,

You will find your Server Address on the Gateway

Profile you have created

TTN use Server port 1700 for both Uplink/downlink



The screenshot shows the SenseCAP web interface for LoRaWAN Network Settings. At the top is a navigation bar with 'SenseCAP' and menu items: Status, System, Network, LoRa, VPN, and Logout. Below this is the 'LoRaWAN Network Settings' section, which includes a 'Gateway EUI' text field and a 'Mode' dropdown menu currently set to 'Packet Forwarder'. Below that is the 'Packet Forwarder Settings' section with tabs for 'General Settings', 'Intervals Settings', 'Beacon Settings', 'GPS Information', and 'Forward Rules'. The 'General Settings' tab is active, showing a 'Gateway EUI' text field, a 'Server Address' text field containing 'beanairberlin.eu1.cloud.thethings.industries', a 'Server Port (Up)' text field with '1700', and a 'Server Port (Down)' text field with '1700'. At the bottom of the page, it says 'Powered by LuCI / OpenWrt 21.02.0 r1-20220615 r16279-5cc0535800'.

Example of Gateway Server Address with The Things Industries (private network).



**Gateway server Address is always the same on TTN:
For Europe:
eu1.cloud.thethings.network**

If you are using The Things Industries or another LNS , the Gateway Server address y will be different.

Your Gateway Server Address on Things Industries

• Disconnected ⓘ

General information

Gateway ID

Gateway EUI

Gateway description None

Created at Apr 17, 2024 19:26:40

Last updated at Apr 17, 2024 19:26:40

Gateway Server address

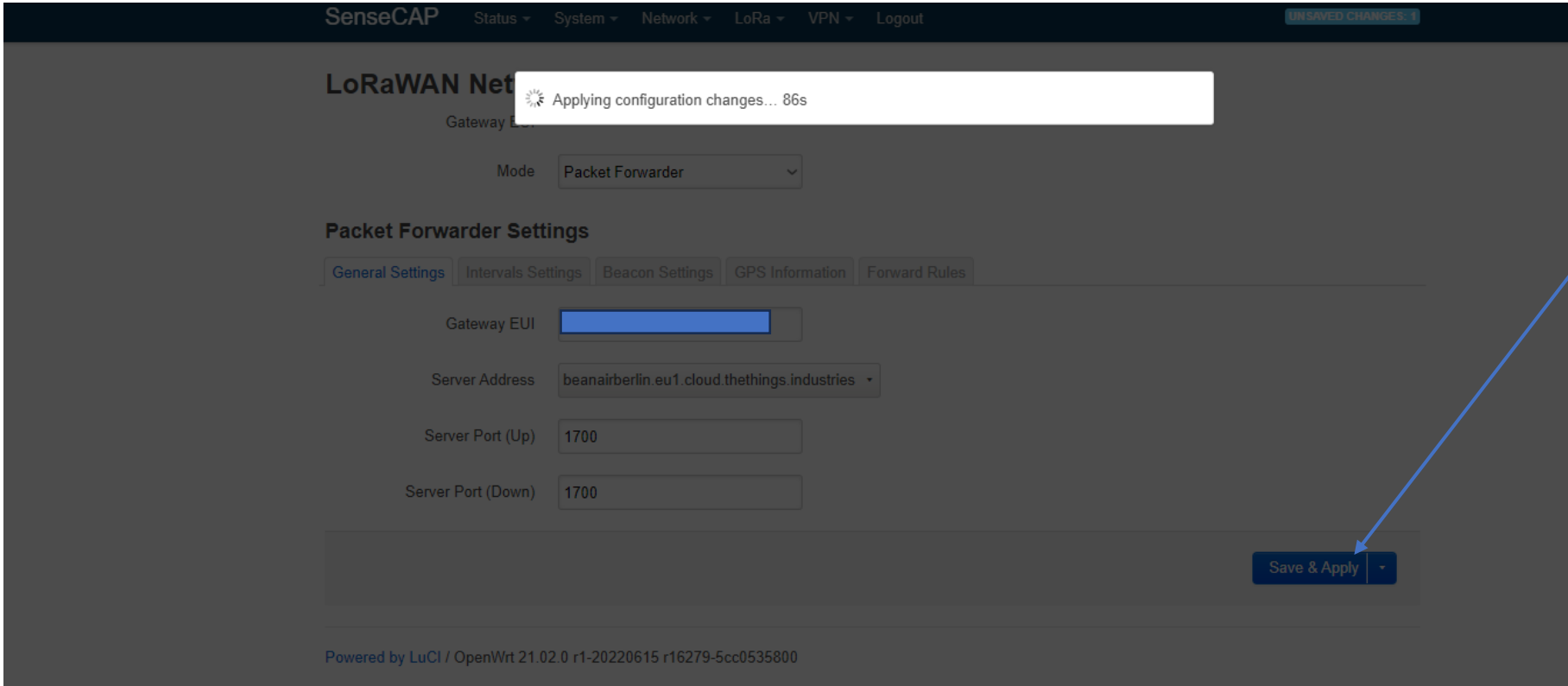
LoRaWAN information

Frequency plan AU_915_928_FSB_2 , AU_915_928_FSB_1 , AU_915_928_FSB_3 , AU_915_928_FSB_4 , AU_915_928_FSB_5 , AU_915_928_FSB_6 , AU_915_928_FSB_7 , AU_915_928_FSB_8

Global configuration [Download global_conf.json](#)

• Live d

Location



SenseCAP Status System Network LoRa VPN Logout **UNSAVED CHANGES**

LoRaWAN Network

Applying configuration changes... 86s

Gateway EUI

Mode: Packet Forwarder

Packet Forwarder Settings

General Settings Intervals Settings Beacon Settings GPS Information Forward Rules

Gateway EUI

Server Address: beanairberlin.eu1.cloud.thethings.industries

Server Port (Up): 1700

Server Port (Down): 1700

Save & Apply

Powered by LuCI / OpenWrt 21.02.0 r1-20220615 r16279-5cc0535800

Click on Save & Apply



Frequency Plan

Depending on your Region, Frequency Plan should be configured correctly.

The screenshot shows the SenseCAP web interface. At the top, there is a dark blue navigation bar with the 'SenseCAP' logo and several menu items: 'Status', 'System', 'Network', 'LoRa', 'VPN', and 'Logout'. Below this, the 'LoRaWAN Network Settings' page is displayed. On the left, there are two input fields: 'Gateway EUI' (which is currently empty) and 'Mode' (which is a dropdown menu set to 'Packet Forwarder'). On the right, the 'LoRa' menu is open, showing three options: 'LoRa Network', 'Channel Plan' (which is highlighted in a darker blue), and 'LoRa Log'. A blue arrow points from the text on the right towards the 'Channel Plan' option in the menu.

You will find this configuration on Lora => Channel Plan



Frequency Plan

Select the Frequency Plan : **Example USA – FSB3**
Click on **Save and Apply**

Channel Plan

Region US902-928 ▾

Frequency plan FSB3, channel 16 ~ channel 23, ▾
FSB1, channel 0 ~ channel 7, channel 64
FSB2, channel 8 ~ channel 15, channel 65
FSB3, channel 16 ~ channel 23, channel 66
FSB4, channel 24 ~ channel 31, channel 67
FSB5, channel 32 ~ channel 39, channel 68
FSB6, channel 40 ~ channel 47, channel 69
FSB7, channel 48 ~ channel 55, channel 70
FSB8, channel 56 ~ channel 63, channel 71

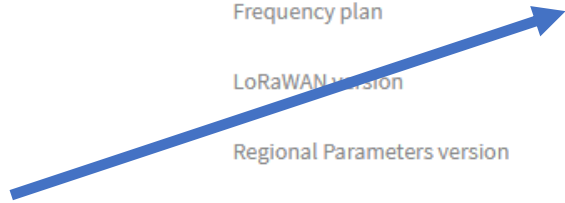
Save & Apply ▾



Frequency Plan



When registering your Satevis® device on TTN, make sure the Frequency Plan is matching your Gateway Frequency Plan. If the Frequency plan is different, uplinks/downlinks will be rejected.



Overview | Live data | Messaging | Location | Payload formatters | General settings

General information

End device ID	[Redacted]	[Copy]
Frequency plan	United States 902-928 MHz, FSB 3	[Copy]
LoRaWAN version	LoRaWAN Specification 1.0.2	[Copy]
Regional Parameters version	RP001 Regional Parameters 1.0.2 revision B	[Copy]
Created at	May 16, 2024 16:59:32	

Activation information

AppEUI	[Redacted]	[Copy]
DevEUI	[Redacted]	[Copy]
AppKey	[Copy] [Eye]

Session information

Session start	May 16, 2024 17:55:08	
Device address	27 FD 61 6E	[Copy]

Live data

- 19:27:25
- 19:26:51
- 19:26:50
- 19:26:50
- 19:26:31
- 19:26:30

Location