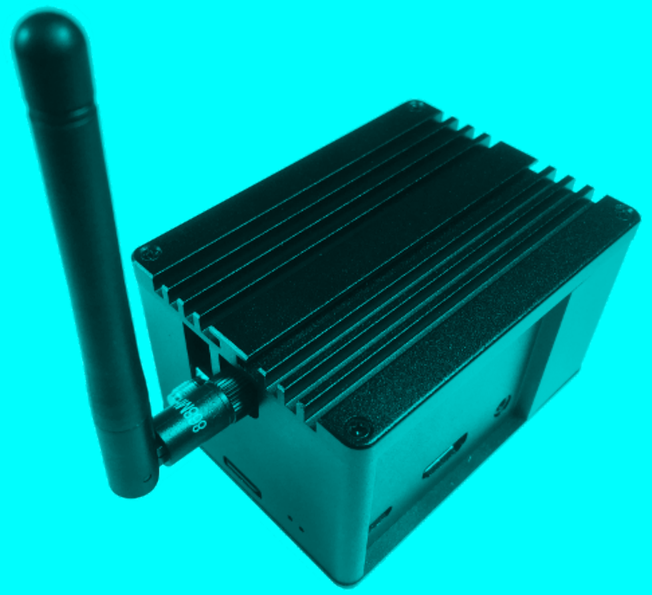
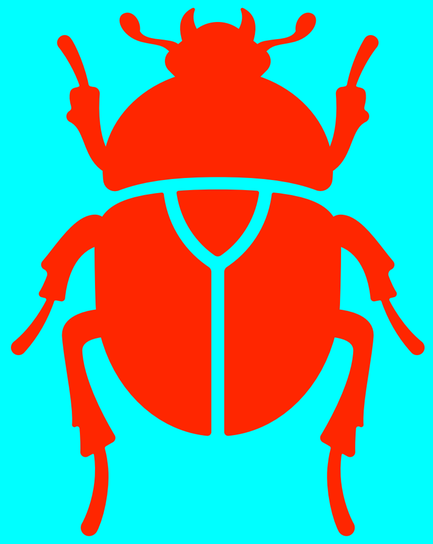
LORA / LORAWAN TUTORIAL 28.2

Enable Debug Logging Semtech LoRa Gateway & Semtech UDP Packet Forwarder





INTRO

- In this short tutorial I will show you how to enable debug logging in the Semtech LoRa gateway and Semtech UDP packet forwarder.

SEMTECH LORA GATEWAY & UDP PACKET FORWARDER

- In this tutorial the following Semtech LoRa gateway and Semtech UDP packet forwarder are used:

  - Semtech LoRa Gateway (V5.0.1)
    https://github.com/Lora-net/lora_gateway
    `/opt/ttn-gateway/lora_gateway` *

  - Semtech UDP Packet Forwarder (V4.0.1)
    https://github.com/Lora-net/packet_forwarder
    `/opt/ttn-gateway/packet_forwarder` *

*) For example in the RAK831 Pilot Gateway

ENABLE DEBUG LOGGING

- Stop the ttn-gateway service:
  `sudo service ttn-gateway stop`

- The LoRa library contains a file (RAK831 Pilot Gateway):
  `/opt/ttn-gateway/lora_gateway/libloragw/library.cfg`
  where you can enable the debug logging for several modules.
  To enable debug logging, change the value from 0 to 1.

```
DEBUG_AUX= 0
DEBUG_SPI= 0
DEBUG_REG= 0
DEBUG_HAL= 0
DEBUG_LBT= 1
DEBUG_GPS= 0
```

ENABLE DEBUG LOGGING

- DEBUG_AUX
  HAL auxiliary functions.

- DEBUG_SPI
  Functions to address the LoRa concentrator registers through an SPI interface.

- DEBUG_REG
  - Functions used to handle FPGA register access for LoRa concentrator.
  - Functions used to handle LoRa concentrator radios.
  - Functions used to handle a single LoRa concentrator.

- DEBUG_HAL
  LoRa concentrator Hardware Abstraction Layer.

ENABLE DEBUG LOGGING

- DEBUG_LBT
  Functions used to handle the Listen Before Talk feature.

- DEBUG_GPS
  Functions to manage a Global Navigation Satellite System (GNSS) module, typically GPS, for accurate time-stamping of packets and synchronisation of gateways.

ENABLE DEBUG LOGGING

- After the library.cfg file is modified enter the following commands in this order:

  - First, build the Semtech LoRa library:

    ```
    cd /opt/ttn-gateway/lora_gateway
    sudo make clean all
    ```

  - Build the Semtech UDP Packet Forwarder:

    ```
    cd /opt/ttn-gateway/packet_forwarder
    sudo make clean all
    ```

ENABLE DEBUG LOGGING

- Start the ttn-gateway service:
  `sudo service ttn-gateway start`

- After you're done with debugging don't forget to set the values back to 0 in the library.cfg file otherwise the /var/syslog file will increase in size very fast.