

How to access the section to define the CODEC in ChirpStack.

November 2022

1 Go to device profiles



Figure 1: ChirpStack dashboard

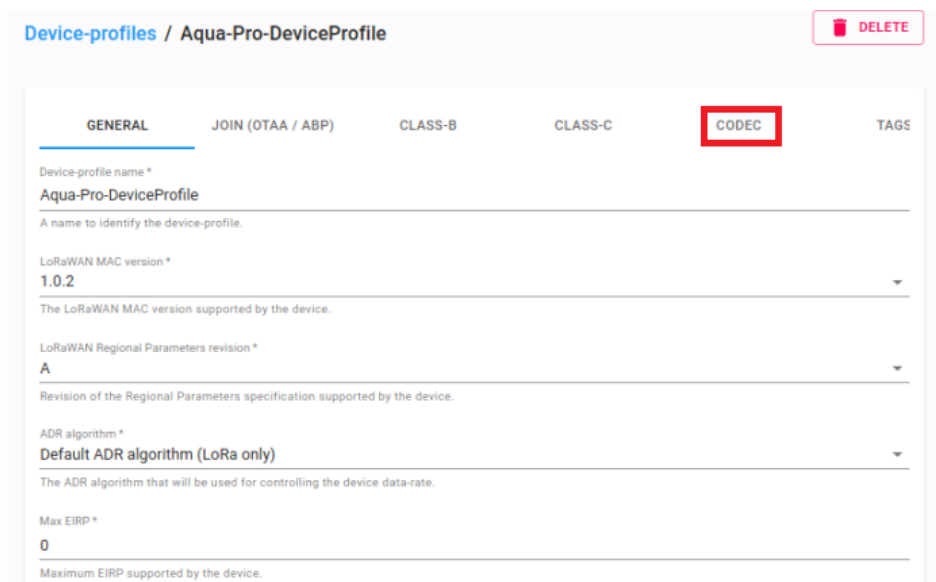
2 Select the device profile to configure

The screenshot shows the 'Device-profiles' tab in ChirpStack. It features a table with two columns: 'Name' and 'Network Server'. A single row is present in the table, with 'Aqua-Pro-DeviceProfile' in the 'Name' column and 'Aq-Pro-NEtServer' in the 'Network Server' column. The 'Name' cell is highlighted with a red rectangular box. Above the table is a '+ CREATE' button. Below the table, there is a pagination control showing 'Rows per page: 10' and '1-1 of 1'.

Name	Network Server
Aqua-Pro-DeviceProfile	Aq-Pro-NEtServer

Figure 2: Device profiles tab

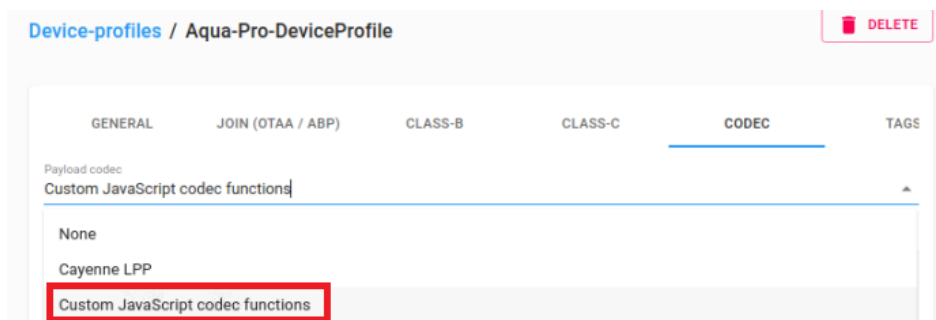
3 Select the codec tab



The screenshot shows the 'Aqua-Pro-DeviceProfile' settings page. The 'CODEC' tab is selected and highlighted with a red box. The page has a header with 'Device-profiles / Aqua-Pro-DeviceProfile' and a 'DELETE' button. The tabs are 'GENERAL', 'JOIN (OTAA / ABP)', 'CLASS-B', 'CLASS-C', 'CODEC', and 'TAGS'. The 'GENERAL' tab is active, showing fields for 'Device-profile name *' (Aqua-Pro-DeviceProfile), 'LoRaWAN MAC version *' (1.0.2), 'LoRaWAN Regional Parameters revision *' (A), 'ADR algorithm *' (Default ADR algorithm (LoRa only)), and 'Max EIRP *' (0). Each field has a description below it.

Figure 3: Device profile settings

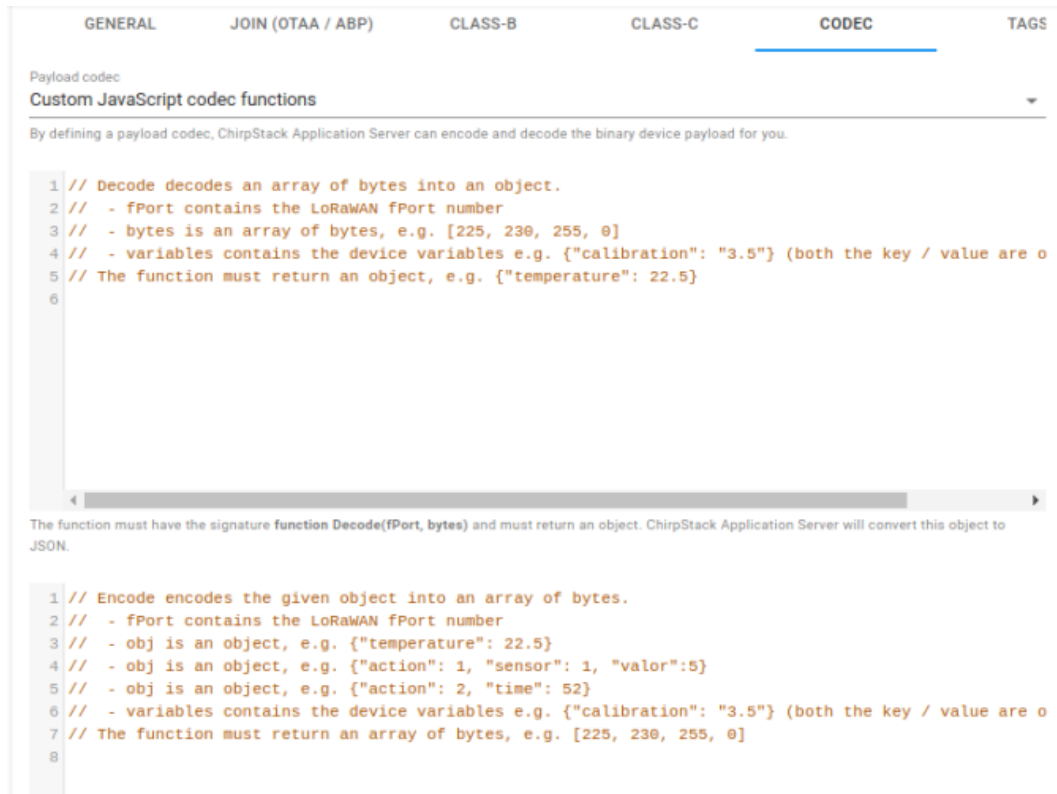
4 In the dropdown menu select the Custom JavaScript codec functions option



The screenshot shows the 'Aqua-Pro-DeviceProfile' settings page, specifically the 'CODEC' tab. The 'Payload codec' dropdown menu is open, showing three options: 'None', 'Cayenne LPP', and 'Custom JavaScript codec functions'. The 'Custom JavaScript codec functions' option is highlighted with a red box. The page header and tabs are the same as in Figure 3.

Figure 4: CODEC tab

5 Enter the code to decode and encode the information.



The screenshot shows the ChirpStack web interface with the 'CODEC' tab selected. The 'Payload codec' dropdown is set to 'Custom JavaScript codec functions'. Below this, a text box contains the following JavaScript code:

```
1 // Decode decodes an array of bytes into an object.
2 // - fPort contains the LoRaWAN fPort number
3 // - bytes is an array of bytes, e.g. [225, 230, 255, 0]
4 // - variables contains the device variables e.g. {"calibration": "3.5"} (both the key / value are o
5 // The function must return an object, e.g. {"temperature": 22.5}
6
```

Below the code box, a note states: 'The function must have the signature `function Decode(fPort, bytes)` and must return an object. ChirpStack Application Server will convert this object to JSON.'

Below the note, another code box contains the following JavaScript code:

```
1 // Encode encodes the given object into an array of bytes.
2 // - fPort contains the LoRaWAN fPort number
3 // - obj is an object, e.g. {"temperature": 22.5}
4 // - obj is an object, e.g. {"action": 1, "sensor": 1, "valor":5}
5 // - obj is an object, e.g. {"action": 2, "time": 52}
6 // - variables contains the device variables e.g. {"calibration": "3.5"} (both the key / value are o
7 // The function must return an array of bytes, e.g. [225, 230, 255, 0]
8
```

Figure 5: Section for programming the encode and decode functions in ChirpStack.