

# M2M - 2016 - RDSMining

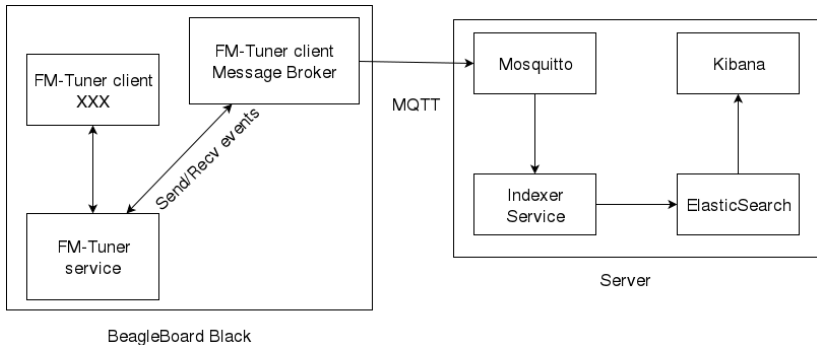
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## RDS protocol

- ▶ Radio Data System: A communication protocol.
- ▶ Transmit data blocks. (148.4375 bytes per second)
- ▶ Transmit data like current music of a radio station.



## FM-Tuner Service

- ▶ A high level si4703 service (C gnu99 program).
- ▶ Working on a single thread (RDS parser + server).
- ▶ Non-blocking I/O.
- ▶ Working with systemd.
- ▶ Send changes/notifications to clients.

## Messages

- ▶ A specific protocol working in TCP:

```
LENGTH TYPE_1 VALUE_1 [TYPE_N VALUE_N...]
```

## FM-Tuner Message Broker

- ▶ A simple broker. (nodeJS program, ES7)
- ▶ Set the channel/volume. (Send message to service)
- ▶ Print service notifications.
- ▶ Send by MQTT the radio text.

## MAPPINGS FOR RADIOS

```
(  
  "radios": { -  
    "properties": { -  
      "name": { -  
        "type": "string"  
      },  
      "data_raw": { -  
        "index": "not_analyzed",  
        "type": "string"  
      },  
      "data": { -  
        "type": "string"  
      },  
      "date": { -  
        "format": "strict_date_optional_time||epoch_millis",  
        "type": "date"  
      }  
    }  
  }  
}
```



Time	_source
April 1st 2016, 05:29:22.000	<code>data: RIRE -&gt; CHEVALLIER LASPALES name: radio_test date: April 1st 2016, 05:29:22.000 data_raw: RIRE -&gt; CHEVALLIER LASPALES _id: 317 _type: radios _index: radios _score:</code>
April 1st 2016, 05:26:54.000	<code>data_raw: RIRE -&gt; BIRDY date: April 1st 2016, 05:26:54.000 data: RIRE -&gt; BIRDY name: radio_test _id: 316 _type: radios _index: radios _score:</code>
April 1st 2016, 05:22:06.000	<code>data: RIRE -&gt; COLUÇHE name: radio_test data_raw: RIRE -&gt; COLUÇHE date: April 1st 2016, 05:22:06.000 _id: 315 _type: radios _index: radios _score:</code>
April 1st 2016, 05:17:57.000	<code>name: radio_test data: RIRE -&gt; ALDE BLACC data_raw: RIRE -&gt; ALDE BLACC date: April 1st 2016, 05:17:57.000 _id: 314 _type: radios _index: radios _score:</code>
April 1st 2016, 05:13:03.000	<code>data: RIRE -&gt; BUN HAY MEAN name: radio_test data_raw: RIRE -&gt; BUN HAY MEAN date: April 1st 2016, 05:13:03.000 _id: 313 _type: radios _index: radios _score:</code>
April 1st 2016, 05:10:20.000	<code>date: April 1st 2016, 05:10:20.000 data_raw: RIRE -&gt; JAMES BROWN name: radio_test data: RIRE -&gt; JAMES BROWN _id: 312 _type: radios _index: radios _score:</code>
April 1st 2016, 05:05:26.000	<code>name: radio_test data: RIRE -&gt; GAD ELMALAH data_raw: RIRE -&gt; GAD ELMALAH date: April 1st 2016, 05:05:26.000 _id: 311 _type: radios _index: radios _score:</code>
April 1st 2016, 05:00:38.000	<code>data_raw: RIRE -&gt; PATRICK TIMSLIT date: April 1st 2016, 05:00:38.000 data: RIRE -&gt; PATRICK TIMSLIT name: radio_test _id: 310 _type: radios _index: radios _score:</code>

- ▶ A complete working protocol on BeagleBone.
- ▶ Can be used with other protocols than MQTT.