

## WHAT IS AN EMONCMS FEED IN REDIS ?

### A HASH OF METADATA

| Key       | Fields   | Values     |
|-----------|----------|------------|
| feed:(id) | id       | 1601125200 |
|           | engine   | g          |
|           | name     |            |
|           | datatype | φ          |
|           | userid   | 1          |
|           | public   |            |
|           | tag      |            |

AN ENTRY IN THE  
user: feeds : (userid) key

which is a  
sorted set  
gathering all  
the feed ids  
belonging to  
the user

start\_time & interval are mandatory for PHPFINA but for  
a feed already sorted as a timeserie, they are not

USER 1 LOGGED IN ⇒ feed / list.json



⇒ feed / data.json ? id = 1601125200



## HOW DOES THE ENGINE RETRIEVE THE DATA ?

### PHPFINA

$$\text{time} = \text{start} + i * \text{interval}$$

$$\text{pos} = \frac{\text{time} - \text{meta}[\text{start\_time}]}{\text{meta}[\text{interval}]}$$

⇒ data[time] can be found in the dat file  
at position pos

⇒ UNPACK

### PHPTIME SERIES

$$\text{start} = 0$$

$$\text{end} = \text{File size} / 9 \quad (\text{each value is 9 bytes})$$

For i = 0 to 30

$$\text{mid} = \text{start} + \frac{\text{end} - \text{start}}{19} * 9$$

if time == time[mid] return mid

if end - start == 9 return mid - 9

if time > time[mid] start = mid else end = mid

⇒ data[time] can be found in the dat file  
at position mid

⇒ UNPACK

## REDIS BUFFER

ONLY USED FOR DISK-WRITING PURPOSES

WHY NOT USING IT TO RENDER SMALL SIZE  
SAMPLES, SUCH AS METEO FORECASTS ?

| Numpy Array |       |
|-------------|-------|
| time        | Value |
|             |       |
|             |       |
|             |       |
|             |       |

⇒ Flattened  
+ converted  
to binary string  
(python tobytes() method  
from the numpy package)

⇒ feed:(id):buffer

⇒ A PYTHON SERVICE FOR  
SERVICE RUNNER ?

READING THE REDIS BUFFER WHEN  
IT IS SUCH A BINARY KEY

A SIMPLE PROCESS

1) A REDIS GET → \$result

2) UNPACK → \$tab = unpack('dx', \$result, 8)

⇒ \$tab[0] = time stamp  
\$tab[1] = value

DONE !