

Package ‘Rthingsboard’

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Type Package

Title 'ThingsBoard' API

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Description

The goal of 'Rthingsboard' is to provide interaction with the API of 'ThingsBoard' (<<https://thingsboard.io/>>), an open-source IoT platform for device management, data collection, processing and visualization.

License AGPL-3

Encoding UTF-8

Imports httr, logger, methods, dplyr

Suggests badger, ggplot2, testthat

RoxygenNote 7.1.2

URL <https://ddorch.github.io/Rthingsboard/>,
<https://github.com/DDorch/Rthingsboard#readme>

BugReports <https://github.com/DDorch/Rthingsboard/issues>

NeedsCompilation no

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| | |
|-----------------|---|
| Date2EpochMilli | <i>Convert a date into an epoch in milliseconds</i> |
|-----------------|---|

Description

This function allows to convert epoch timestamp in seconds to an epoch in milliseconds

Usage

```
Date2EpochMilli(ts)

## S3 method for class 'POSIXt'
Date2EpochMilli(ts)

## S3 method for class 'numeric'
Date2EpochMilli(ts)
```

Arguments

ts a [numeric](#) representing an epoch in seconds or a [POSIXt](#) date

Value

a [character](#) of the epoch in milliseconds

Examples

```
Date2EpochMilli(as.numeric(Sys.time()))
```

| | |
|-----------------|---|
| EpochMilli2Date | <i>Convert an epoch in milliseconds into a date</i> |
|-----------------|---|

Description

Convert an epoch in milliseconds into a date

Usage

```
EpochMilli2Date(x, timezone = "GMT")
```

Arguments

x A **character** or a **numeric** representing an epoch in milliseconds
timezone A **character** with the time zone used for the conversion

Value

A **POSIXct**, the date corresponding to the epoch

Examples

```
epoch <- Date2EpochMilli(as.numeric(Sys.time()))  
EpochMilli2Date(epoch)
```

ThingsboardApi-class *Thingboard API Class*

Description

Thingboard API Class

Fields

url **character** URL of the 'ThingsBoard' IoT platform.
publicId **character** the public ID of the device
token **character** the current token
tokenTimeOut A **numeric** contains the time out of a token in seconds (default 300)
tokenExpiration A **numeric** with the Epoch of the expiration date time of current token

See Also

The ThingsboardApi class methods :

- [ThingsboardApi_checkToken](#) for checking and refreshing the token
- [ThingsboardApi_getToken](#) for getting authorisation token from Thingsboard server for a specific device
- [ThingsboardApi_getKeys](#) for fetching data keys of an entity
- [ThingsboardApi_getValues](#) and [ThingsboardApi_getTelemetry](#) for fetching telemetry of an entity

Examples

```
thingsboard_api = tryCatch(  
  {  
    ThingsboardApi(url="http://scada.g-eau.fr",  
                   publicId="299cedc0-f3e9-11e8-9dbf-cbc1e37c11e3")  
  },  
  error = function(e) {  
    message("An error occurred:\n", e)  
    return(FALSE)  
  }  
)
```

ThingsboardApi_checkToken

Check if the token is timeouted and refresh it if necessary

Description

This method is automatically call by each other methods of the class [ThingsboardApi](#). So, except for debugging purpose, it's not useful to call directly.

Value

NULL

ThingsboardApi_getKeys

Fetch data keys for an entity

Description

Fetch data keys for an entity

Arguments

entityId [character](#) entity ID
entityType [character](#) (default "DEVICE")

Details

The description of this operation in API documentation is here: <https://thingsboard.io/docs/user-guide/telemetry/#get-telemetry-keys>

Value

A vector of [character](#) with the keys available for the requested device.

ThingsboardApi_getTelemetry
Fetch telemetry

Description

Fetch telemetry data of an entity.

It uses the following API: <https://thingsboard.io/docs/user-guide/telemetry/#get-telemetry-values>

The method `getValues` has a strong limitation as the 'ThingsBoard' API only send the 100 last values of each key. The method `getTelemetry` overcomes this limitation by automatically by calling `getValues` in a loop.

Arguments

| | |
|-------------------------|---|
| <code>entityId</code> | A character with the entity ID given (See https://thingsboard.io/docs/user-guide/entity-views/) |
| <code>keys</code> | Vector of character with the list of keys from which getting the telemetry values |
| <code>entityType</code> | A character (default "DEVICE") |
| <code>startTs</code> | A numeric or a POSIXct representing respectively the epoch or the date of the start of data extraction period |
| <code>endTs</code> | A numeric or a POSIXct representing respectively the epoch or the date of the end of data extraction period |

Value

A [data.frame](#) with one row per data and 3 columns:

- `key`: a [character](#) with the key
- `ts`: a [POSIXct](#) with the timestamp of the data
- `value`: a [numeric](#) with the value of the data

ThingsboardApi_getToken
Get authorisation token from thingsboard server for a specific device

Description

This method is automatically called by `ThingsboardApi_checkToken`, and so by any other methods of the class `ThingsboardApi` as needed. Except for debugging purpose, it's not useful to call directly.

Arguments

`timeOut` [numeric](#) number of second before token timeout (default field `tokenTimeOut`)

Value

A [list](#) with keys 'token' and 'refreshToken'

ThingsboardApi_getValues

Fetch telemetry

Description

See [ThingsboardApi_getTelemetry](#).

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