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
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**EpochMilli2Date**

**Date2EpochMilli**

Convert a date into an epoch in milliseconds

**Description**

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

**Usage**

```
Date2EpochMilli(ts)
```

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

```r
## 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**

Convert an epoch in milliseconds into a date

**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
ThingsboardApi-class

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

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**

Check if the token is timeouted and refresh it if necessary

**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](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 for an entity. See ThingsboardApi_getValues for the arguments.

See: [https://thingsboard.io/docs/user-guide/telemetry/#get-telemetry-values](https://thingsboard.io/docs/user-guide/telemetry/#get-telemetry-values)

**Arguments**

... Parameters passed through method ThingsboardApi_getValues

endTs 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

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ThingsboardApi_getToken

*Get authorisation token from thingsboard server for a specific device*

**Description**

Get authorisation token from thingsboard server for a specific device

**Arguments**

timeOut numeric number of second before token timeout (default field tokenTimeOut)

**Value**

A list with keys 'token' and 'refreshToken'
ThingsboardApi_getValues

Fetch values from an entity

Description

See: [https://thingsboard.io/docs/user-guide/telemetry/#get-telemetry-values](https://thingsboard.io/docs/user-guide/telemetry/#get-telemetry-values)

This method has a strong limitation as the 'ThingsBoard' API only send the 100 last values of each key. Use the method getTelemetry to override this limitation.

Arguments

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