Package ‘Rduinoiot’

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**create_auth_token**

Create Auth Token for Arduino IoT Cloud API

**Description**

Obtain an authorization token using your personal client_id and client_secret.

Official documentation: API Summary

**Usage**

```r
create_auth_token(
  client_id = Sys.getenv("ARDUINO_API_CLIENT_ID"),
  client_secret = Sys.getenv("ARDUINO_API_CLIENT_SECRET"),
  store_token = "option",
  return_token = FALSE,
  silent = FALSE,
  ...
)
```

**Arguments**

- **client_id** Your client id (default is the environmental variable ARDUINO_API_CLIENT_ID)
- **client_secret** Your client secret (default is the environmental variable ARDUINO_API_CLIENT_SECRET)
- **store_token** Where your token is stored. If option it will be saved into the .Rprofile (not cross-session), if envir it will be saved as an environmental variable.
- **return_token** If TRUE returns the token value as output of the function.
- **silent** Whether to hide or show API method success messages (default FALSE)
- **...** Additional parameters needed for the body of the POST request:
  - **token_url** (default: https://api2.arduino.cc/iot/v1/clients/token/)
  - **grant_type** (default: client_credentials)
  - **audience** (default: https://api2.arduino.cc/iot/)
  - **content_type** (default: application/x-www-form-urlencoded)

**Value**

A token valid for Arduino IoT Cloud API. It can retrievable by `getOption('ARDUINO_API_TOKEN')` (if store_content = "option") or by `Sys.getenv('ARDUINO_API_TOKEN')` (if store_token = "envir")
Examples

```r
## Not run:
# Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
# Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')

create_auth_token()

## End(Not run)
```

---

### devices

#### Devices API methods

**Description**

List and show devices, events, properties associated to the user

Official documentation:

- `devicesV2List`
- `thingsV2Show`
- `devicesV2GetEvents`

**Usage**

```r
devices_list(
    serial = NULL,
    tags = NULL,
    store_token = "option",
    token = NULL,
    silent = FALSE
)

devices_show(device_id, store_token = "option", token = NULL, silent = FALSE)

devices_get_events(
    device_id,
    limit = NULL,
    start = NULL,
    store_token = "option",
    token = NULL,
    silent = FALSE
)

devices_get_properties(
    device_id,
    show_deleted = FALSE,
    store_token = "option",
```
token = NULL,
silent = FALSE
)

Arguments

serial serial number of the device you may want to filter from the list (not device_id)
tags tags you may want to filter from the list
store_token Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session)
token A valid token created with create_auth_token or manually. If not NULL it has higher priority then store_token
silent Whether to hide or show API method success messages (default FALSE)
device_id The id of the device (The arn of the associated device)
limit The number of events to select
start A Posixct or Date object. Time at which to start selecting events
show_deleted If TRUE, shows the soft deleted properties. Default to FALSE

Value

A tibble showing extensive information about devices (and related things) associated to the user

Examples

## Not run:
library(dplyr)
Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')

create_auth_token()

### check properties list ###
d_list = devices_list()
device_id = d_list %>% slice(1) %>% pull(id)
devices_show(device_id = device_id)

### get device events ###
devices_get_events(device_id = device_id)

### get device properties ###
devices_get_properties(device_id = device_id)

## End(Not run)
devices_properties  Properties (of devices) API methods

Description
List properties associated to a given device

Usage

```r
devices_properties_list(
  device_id,
  show_deleted = FALSE,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

Arguments

- **device_id**  The id of the device
- **show_deleted**  If TRUE, shows the soft deleted properties. Default to FALSE
- **store_token**  Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session)
- **token**  A valid token created with create_auth_token or manually. It not NULL it has higher priority then store_token
- **silent**  Whether to hide or show API method success messages (default FALSE)

Details
Official documentation: devicesV2GetProperties

Value
A tibble showing the information about properties for given device.

Examples

```r
## Not run:
library(dplyr)
Sys.setenv(ARDUINO_API_CLIENT_ID = "INSERT CLIENT_ID HERE")
Sys.setenv(ARDUINO_API_CLIENT_SECRET = "INSERT CLIENT_SECRET HERE")
create_auth_token()

device_id = "fa7ee291-8dc8-4713-92c7-9027969e4aa1"
```
### check properties list ###
devices_properties_list(device_id = device_id)

## End(Not run)

---

devices_properties_timeseries

_Data start Properties (of devices) API methods_

**Description**

_[Experimental]_

Get device properties values in a range of time (note: this API method is bugged and waiting to be fixed by Arduino team. Here for completeness and future developments but would not suggest using it)

Official documentation: devicesV2Timeseries

**Usage**

```r
devices_properties_timeseries(
  device_id,
  property_id,
  start = NULL,
  limit = NULL,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

**Arguments**

- **device_id**: The id of the device
- **property_id**: The id of the property
- **start**: A Posixct or Date object. The time at which to start selecting properties.
- **limit**: The number of properties to select
- **store_token**: Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session).
- **token**: A valid token created with create_auth_token or manually. It not NULL it has higher priority then store_token
- **silent**: Whether to hide or show API method success messages (default FALSE)

**Value**

A tibble showing of time and value for property of given device
### Examples

```r
## Not run:
Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')
create_auth_token()

device_id = "fa7ee291-8dc8-4713-92c7-9027969e4aa1"
property_id = "d1134fe1-6519-49f1-afd8-7fe9e891e778"

devices_properties_timeseries(device_id = device_id, property_id = property_id,
start = "2022-08-20", limit = 10)

## End(Not run)
```

---

### devices_tags

**Tags (of devices) API methods**

#### Description

Upsert (create/update), List and Delete tags associated to a given device

Official documentation:

- `devicesV2TagsUpsert`
- `devicesV2TagsList`
- `devicesV2TagsDelete`

#### Usage

```r
devices_tags_upsert(
  device_id,
  key,
  value,
  store_token = "option",
  token = NULL,
  silent = FALSE
)

devices_tags_list(
  device_id,
  store_token = "option",
  token = NULL,
  silent = FALSE
)

devices_tags_delete(
  device_id,
  key,
```

store_token = "option",
token = NULL,
silent = FALSE
)

Arguments

device_id   The id of the device
key        The key of the tag (no spaces allowed)
value      The value of the tag (no spaces allowed)
store_token Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session).
token      A valid token created with create_auth_token or manually. It not NULL it has higher priority then store_token.
silent     Whether to hide or show API method success messages (default FALSE)

Value

A tibble showing information about chosen tag or list of tags for given device

Examples

### Not run:
Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')
create_auth_token()

device_id = "fa7ee291-8dc8-4713-92c7-9027969e4aa1"
### create/modify tag ###
devices_tags_upsert(device_id = device_id, key = "1", value = "test")

### check tags list ###
devices_tags_list(device_id = device_id)

### delete tag ###
devices_tags_delete(device_id = device_id, key = "1")

## End(Not run)

series_batch Batch queries API methods
series_batch

Description

[Experimental]

Returns the batch of time-series data or last data point for a property of given thing (note: this API method is bugged and waiting to be fixed by Arduino team. Here for completeness and future developments but would not suggest using it)

Official documentation:

- seriesV2BatchQuery
- seriesV2BatchQueryRaw
- seriesV2BatchQueryRawLastValue

Usage

```r
series_batch_query(
  from,
  to,
  interval = NULL,
  Q,
  SeriesLimit = NULL,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

```r
series_batch_query_raw(
  from,
  to,
  interval = NULL,
  Q,
  SeriesLimit = NULL,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

```r
series_batch_last_value(
  thing_id,
  property_id,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

Arguments

- from A Posixct or Date object. Get data with a timestamp >= to this value
- to A Posixct or Date object. Get data with a timestamp < to this value
### Things API methods

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interval</td>
<td>(numeric) Resolutions in seconds (seems not to affect results)</td>
</tr>
<tr>
<td>Q</td>
<td>The query. (Not clear what this means but allows to chose among properties by filling in, for instance, property.fbf34284-91f0-42be-bbf6-dd46cfb3f1e0)</td>
</tr>
<tr>
<td>SeriesLimit</td>
<td>Maximum number of values (seems not to affect results)</td>
</tr>
<tr>
<td>store_token</td>
<td>Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session)</td>
</tr>
<tr>
<td>token</td>
<td>A valid token created with create_auth_token or manually. It not NULL it has higher priority then store_token</td>
</tr>
<tr>
<td>silent</td>
<td>Whether to hide or show API method success messages (default FALSE)</td>
</tr>
<tr>
<td>thing_id</td>
<td>The id of the thing</td>
</tr>
<tr>
<td>property_id</td>
<td>The id of the property</td>
</tr>
</tbody>
</table>

#### Value

A tibble showing of time and value for properties

#### Examples

```r
## Not run:
Sys.setenv(ARDUINO_API_CLIENT_ID = "INSERT CLIENT_ID HERE")
Sys.setenv(ARDUINO_API_CLIENT_SECRET = "INSERT CLIENT_SECRET HERE")
create_auth_token()

### series_batch_query ###
series_batch_query(from = "2022-08-15", to = "2022-08-22", Q = "property.fbf34284-91f0-42be-bbf6-dd46cfb3f1e0")

### series_batch_query_raw ###
series_batch_query_raw(from = "2022-08-15", to = "2022-08-22", Q = "property.fbf34284-91f0-42be-bbf6-dd46cfb3f1e0")

### series_batch_last_value ###
things = "b6822400-2f35-4d93-b3e7-be919bdc5eba"
property_id = "fbf34284-91f0-42be-bbf6-dd46cfb3f1e0"
series_batch_last_value(thing_id = things_id, property_id = property_id)
```

## End(Not run)
Description
Create, Update, List, Show and Delete properties associated to a given thing

Official documentation:
- thingsV2Create
- thingsV2Update
- thingsV2List
- thingsV2Show
- thingsV2Delete

Usage

```python
things_create(
    device_id = NULL,
    thing_id = NULL,
    name = NULL,
    properties = NULL,
    timezone = NULL,
    force = FALSE,
    store_token = "option",
    token = NULL,
    silent = FALSE
)
```

```python
things_update(
    device_id = NULL,
    thing_id = NULL,
    name = NULL,
    properties = NULL,
    timezone = NULL,
    force = FALSE,
    store_token = "option",
    token = NULL,
    silent = FALSE
)
```

```python
things_list(
    device_id = NULL,
    thing_id = NULL,
    show_deleted = FALSE,
    show_properties = FALSE,
    tags = NULL,
    store_token = "option",
    token = NULL,
    silent = FALSE
)
```
things_show(
    thing_id,
    show_deleted = FALSE,
    store_token = "option",
    token = NULL,
    silent = FALSE
)

things_delete(
    thing_id,
    force = FALSE,
    store_token = "option",
    token = NULL,
    silent = FALSE
)

Arguments

device_id The id of the device (The arn of the associated device)
thing_id The id of the thing
name The friendly name of the thing
properties A tibble with the following columns (see things_properties_create)
  • name (required) The friendly name of the property
  • permission (required) The permission of the property (READ_ONLY or READ_WRITE allowed)
  • type (required) The type of the property (see details for exhaustive list of values)
  • update_strategy (required) The update strategy for the property value (ON_CHANGE or TIMED allowed)
  • max_value (optional, numeric) Maximum value of this property
  • min_value (optional, numeric) Minimum value of this property
  • persist (optional, logic) If TRUE, data will persist into a timeseries database
  • tag (optional, numeric) The integer id of the property
  • update_parameter (optional, numeric) The update frequency in seconds, or the amount of the property has to change in order to trigger an update
  • variable_name (character) The sketch variable name of the property
timezone A time zone name. Check get_timezone for a list of valid names. (default: America/New_York)
force (logical) If TRUE, detach device from the other thing, and attach to this thing. In case of deletion, if TRUE, hard delete the thing. Default to FALSE
store_token Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session)
token A valid token created with create_auth_token or manually. It not NULL it has higher priority then store_token.
silent
  Whether to hide or show API method success messages (default FALSE)
show_deleted
  (logical) If TRUE, shows the soft deleted things. Default to FALSE
show_properties
  (logical) If TRUE, returns things with their properties, and last values. Default to FALSE
tags
  tags you may want to filter from the list

Value
  A tibble showing information about chosen thing or list of thing for current user

Examples

```r
## Not run:
library(dplyr)

# Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
# Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')
create_auth_token()

### create thing ###
things_create(name = "test")

### check things list ###
t_list = things_list(silent = TRUE)
thing_id = t_list %>% filter(name == "test") %>% pull(id)
things_show(thing_id = thing_id)

### update thing ###
properties = tibble(name = c("test1", "test2"),
  permission = rep("READ_ONLY", 2), type = rep("FLOAT", 2),
  update_strategy = rep("ON_CHANGE", 2), update_parameter = rep(10, 2))
things_update(thing_id = thing_id, name = "test_update", properties = properties)

### delete thing ###
things_delete(thing_id = thing_id)

## End(Not run)
```

---

**things_properties**

*Properties (of things) API methods*

**Description**

Create, Update, List, Show and Delete properties associated to a given thing

Official documentation:
- propertiesV2Create
- propertiesV2Update
- propertiesV2List
- propertiesV2Show
- propertiesV2Delete

Usage

things_properties_create(
    thing_id,
    name,
    permission,
    type,
    update_strategy,
    ...
    store_token = "option",
    token = NULL,
    silent = FALSE
)

tings_properties_update(
    thing_id,
    property_id,
    name,
    permission,
    type,
    update_strategy,
    ...
    store_token = "option",
    token = NULL,
    silent = FALSE
)

tings_properties_list(
    thing_id,
    show_deleted = FALSE,
    store_token = "option",
    token = NULL,
    silent = FALSE
)

tings_properties_show(
    thing_id,
    property_id,
    store_token = "option",
    token = NULL,
    silent = FALSE
)
things_properties_delete(
    thing_id,
    property_id,
    store_token = "option",
    token = NULL,
    silent = FALSE
)

Arguments

thing_id The id of the thing
name The friendly name of the property
permission The permission of the property (READ_ONLY or READ_WRITE allowed)
type The type of the property (see details for exhaustive list of values)
update_strategy The update strategy for the property value (ON_CHANGE or TIMED allowed)

... Optional parameters for things_properties_create:
  • max_value (numeric) Maximum value of this property
  • min_value (numeric) Minimum value of this property
  • persist (logic) If TRUE, data will persist into a timeseries database
  • tag (numeric) The integer id of the property
  • update_parameter (numeric) The update frequency in seconds, or the amount of the property has to change in order to trigger an update
  • variable_name (character) The sketch variable name of the property

store_token Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session)
token A valid token created with create_auth_token or manually. It not NULL it has higher priority then store_token.
silent Whether to hide or show API method success messages (default FALSE)
property_id The id of the property
show_deleted If TRUE, shows the soft deleted properties. Default to FALSE

Value

A tibble showing information about chosen property or list of properties for given thing

Examples

## Not run:
library(dplyr)

Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')
create_auth_token()
things_properties_timeseries

Data from Properties (of things) API methods

Description

[Stable]

Get numerical property’s historic data binned on a specified time interval (note: the total number of data points should NOT be greater than 1000 otherwise the result will be truncated)

Official documentation: propertiesV2Timeseries

Usage

things_properties_timeseries(
    thing_id,
    property_id,
    from = NULL,
    to = NULL,
    interval = NULL,
    desc = NULL,
    store_token = "option",
    token = NULL,
    silent = FALSE
)
Arguments

- **thing_id**: The id of the thing
- **property_id**: The id of the property
- **from**: A Posixct or Date object. Get data with a timestamp >= to this value (default: 2 weeks ago, min: 1842-01-01, max: 2242-01-01)
- **to**: A Posixct or Date object. Get data with a timestamp < to this value (default: now, min: 1842-01-01, max: 2242-01-01)
- **interval**: (numeric) Binning interval in seconds (default: the smallest possible value compatibly with the limit of 1000 data points in the response)
- **desc**: (logic) Whether data ordering (by time) should be descending. Default TO FALSE
- **store_token**: Where your token is stored. If option it will be retrieved from the .Rprofile (not cross-session and default), if envir it will be retrieved from environmental variables list (cross-session)
- **token**: A valid token created with create_auth_token or manually. It not NULL it has higher priority then store_token
- **silent**: Whether to hide or show API method success messages (default FALSE)

Value

A tibble showing of time and value for property of given device

Examples

```r
## Not run:
# Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
# Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')
create_auth_token()

thing_id = "b6822400-2f35-4d93-b3e7-be919bdc5eba"
property_id = "d1134fe1-6519-49f1-afd8-7fe9e891e778"

things_properties_timeseries(thing_id = thing_id, property_id = property_id,
  desc = FALSE, interval = 60, from = "2022-08-20")

## End(Not run)
```
things_tags

Description

Upsert (create/update), List and Delete tags associated to a given thing

Official documentation:

- thingsV2TagsUpsert
- thingsV2TagsList
- thingsV2TagsDelete

Usage

```r
things_tags_upsert(
  thing_id,
  key,
  value,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

```r
things_tags_list(  
  thing_id,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

```r
things_tags_delete(  
  thing_id,
  key,
  store_token = "option",
  token = NULL,
  silent = FALSE
)
```

Arguments

- `thing_id`: The id of the thing
- `key`: The key of the tag (no spaces allowed)
- `value`: The value of the tag (no spaces allowed)
- `store_token`: Where your token is stored. If `option` it will be retrieved from the .Rprofile (not cross-session and default), if `envir` it will be retrieved from environmental variables list (cross-session)
- `token`: A valid token created with create_auth_token or manually. It not NULL it has higher priority then `store_token`
- `silent`: Whether to hide or show API method success messages (default FALSE)
things_tags

Value

A tibble showing information about chosen tag or list of tags for given thing

Examples

```r
## Not run:
Sys.setenv(ARDUINO_API_CLIENT_ID = 'INSERT CLIENT_ID HERE')
Sys.setenv(ARDUINO_API_CLIENT_SECRET = 'INSERT CLIENT_SECRET HERE')
create_auth_token()

thing_id = "b6822400-2f35-4d93-b3e7-be919bdc5eba"

### create/modify tag ###
things_tags_upsert(thing_id = thing_id, key = "1", value = "test")

### check tags list ###
things_tags_list(thing_id = thing_id)

### delete tag ###
things_tags_delete(thing_id = thing_id, key = "1")

## End(Not run)
```
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