

# Package ‘RAdwords’

June 11, 2018

**Type** Package

**Title** Loading Google Adwords Data into R

**Description** Aims at loading Google Adwords data into R. Adwords is an online advertising service that enables advertisers to display advertising copy to web users (see <<https://developers.google.com/adwords/>> for more information). Therefore the package implements three main features. First, the package provides an authentication process for R with the Google Adwords API (see <<https://developers.google.com/adwords/api/>> for more information) via OAUTH2. Second, the package offers an interface to apply the Adwords query language in R and query the Adwords API with ad-hoc reports. Third, the received data are transformed into suitable data formats for further data processing and data analysis.

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**Imports** RCurl, rjson

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**URL** <https://github.com/jburkhardt/RAdwords>,  
<https://developers.google.com/adwords>,  
<https://developers.google.com/adwords/api/>

**BugReports** <https://github.com/jburkhardt/RAdwords/issues>

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**R topics documented:**

|                         |   |
|-------------------------|---|
| changeNames . . . . .   | 2 |
| doAuth . . . . .        | 2 |
| getAuth . . . . .       | 3 |
| getData . . . . .       | 3 |
| loadToken . . . . .     | 4 |
| metrics . . . . .       | 5 |
| RAdwords . . . . .      | 5 |
| refreshToken . . . . .  | 6 |
| reports . . . . .       | 7 |
| statement . . . . .     | 7 |
| transformData . . . . . | 8 |

|              |           |
|--------------|-----------|
| <b>Index</b> | <b>10</b> |
|--------------|-----------|

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|             |   |
|-------------|---|
| changeNames | <i>Change Names of Attributes/variables</i> |
|-------------|---|

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**Description**

Converts the default display names into nicer or more practical names.

**Usage**

```
changeNames(data)
```

**Arguments**

|      |                       |
|------|-----------------------|
| data | Transformed dataframe |
|------|-----------------------|

**Value**

New column names of dataframe.

---

|        |  |
|--------|--|
| doAuth | <i>Invoke the Authentication Process with Google</i> |
|--------|--|

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**Description**

This function starts the authentication process with Google. Note that this functions needs user interaction.

**Usage**

```
doAuth(save = T)
```

**Arguments**

save                    logical denotes whether authentication information should be saved on disk. Defaults to TRUE.

**See Also**

[getAuth](#), [loadToken](#)

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|         |                                |
|---------|--------------------------------|
| getAuth | <i>Authentication of R app</i> |
|---------|--------------------------------|

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**Description**

getAuth authenticates the R app at the Google authentication server using OAUTH2 and receives the client token. Usually you need not to run getAuth() explicitly since the whole authentication process is managed by [doAuth](#).

**Usage**

```
getAuth()
```

**Value**

Client token from Google authentication server. Dataframe with the credential information which is cached in working space and optionally saved as RData file in current working directory.

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|         |                         |
|---------|-------------------------|
| getData | <i>Get Adwords Data</i> |
|---------|-------------------------|

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**Description**

getData posts the Adwords Query Language (awql) Statement which is generated with [statement](#). The data are retrieved from the Adwords API as a dataframe.

**Usage**

```
getData(clientCustomerId, google_auth, statement, apiVersion = "201806",  
        transformation = TRUE, changeNames = TRUE,  
        includeZeroImpressions = FALSE, verbose = FALSE)
```

**Arguments**

|                        |  |
|------------------------|--|
| clientCustomerId       | Adwords Account Id   |
| google_auth            | list of authentication   |
| statement              | awql statement generated with <a href="#">statement</a> .  |
| apiVersion             | supports 201806, 201802, 201710 defaults to 201806.  |
| transformation         | If TRUE, data will be transformed with <a href="#">transformData</a> into suitable R dataframe. Else, the data are returned in raw format. |
| changeNames            | If TRUE, the display names of the transformed data are converted into more nicer/practical names. Requires transformation = TRUE           |
| includeZeroImpressions | If TRUE zero impressions will be included. Defaults to FALSE.  |
| verbose                | Defaults to FALSE. If TRUE, the curl connection output will be printed.  |

**Value**

Dataframe with the Adwords Data.

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|           |                                 |
|-----------|---------------------------------|
| loadToken | <i>Loading the Access Token</i> |
|-----------|---------------------------------|

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**Description**

loadToken loads the access token using credentials provided by [getAuth](#). Execution of function is possible only once per authentication process. Usually you need not to run loadToken() explicitly since the whole authentication process is managed by [doAuth](#).

**Usage**

```
loadToken(credlist)
```

**Arguments**

|          |                     |
|----------|---------------------|
| credlist | list of credentials |
|----------|---------------------|

**Value**

Access token with corresponding time stamp.

---

metrics

*Get Metrics/Attributes of specified Report*

---

### Description

metrics provides an overview of all available metrics/attributes for a specified report type.

### Usage

```
metrics(report = "ACCOUNT_PERFORMANCE_REPORT", apiVersion = "201806")
```

### Arguments

|            |  |
|------------|--|
| report     | Report type  |
| apiVersion | Supports 201806, 201802, 201710. Defaults to 201806. |

### Value

List of available metrics/attributes.

---

RAdwords

*Loading Google Adwords Data into R*

---

### Description

The aim of **RAdwords** is loading Google Adwords data into R. Therefore the package implements three main features.

First, the package provides an **authentication process** for **R** with the **Adwords API** via OAUTH2. Second, the package offers an interface to apply the **Adwords query language** in R and **query the Adwords API** with **ad-hoc reports**.

Third, the received **data are transformed into suitable data format** for further data processing and data analysis.

### Details

#### Requirements:

In order to access the Adwords API you have to set up a **Google API project** for native apps. The Google API project provides a **Client Id** and **Client Secret** which is necessary for the authentication. Moreover you need to have a **Adwords MCC** (My Client Center) with an **Adwords developer token**.

#### Authentication:

**doAuth** manages the complete authentication process. Meaning **doAuth** authenticates the R app for the first time, loads the access token or refreshes the access token if expired. Hence, you only run **doAuth()** to authenticate whether it is your initial R Session or a later instance.

What's happening in details?

Once the API projects for native application is set up, `getAuth` is able to authenticate the R app with the credentials (Client Id, Client Secret) from the Google API project. The Google authentication server returns a client token, which later is used by `loadToken` to receive the access token. If the access token is expired after one hour, it can be updated with `refreshToken`. The access token in combination with the Adwords developer token enables a connection with the Adwords API.

#### Create Statement:

`statement` creates the Adwords Query Language Statement.

#### Receiving Data:

`getData` queries the data from the Adwords API and transforms the data into an R dataframe.

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#### Examples

```
## Not run:
Authentication:
google_auth <- doAuth()
Create Statement:
body <- statement(select = c('Clicks', 'AveragePosition', 'Cost', 'Ctr'),
                  report = "ACCOUNT_PERFORMANCE_REPORT",
                  start = "2018-01-01",
                  end = "2018-01-10")
Query Adwords API and load data as dataframe:
data <- getData(clientCustomerId = 'xxx-xxx-xxxx', #use Adwords Account Id (MCC Id will not work)
               google_auth = google_auth,
               statement = body)
Get available report types:
reports()
Get available metrics/attributes of specific report type:
metrics(report = 'ACCOUNT_PERFORMANCE_REPORT')

## End(Not run)
```

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refreshToken

*Refresh Access Token*

---

#### Description

`refreshToken` returns a new valid access token. The access token deprecates after one hour and has to be updated with the refresh token. Usually you need not to run `refreshToken()` explicitly since the whole authentication process is managed by `doAuth`.

**Usage**

```
refreshToken(google_auth)
```

**Arguments**

google\_auth      list of credentials and access token

**Value**

New access token with corresponding time stamp.

---

|         |                                       |
|---------|---------------------------------------|
| reports | <i>Show available Adwords Reports</i> |
|---------|---------------------------------------|

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**Description**

reports provides an overview of all available Adwords report types. The report type is specified in [statement](#).

**Usage**

```
reports(apiVersion = "201806")
```

**Arguments**

apiVersion      Supports 201806, 201802 and 201710. Defaults to 201806.

**Value**

Available report types.

---

|           |   |
|-----------|---|
| statement | <i>Build Adwords Query Language Statement</i> |
|-----------|---|

---

**Description**

Generates and builds the Adwords Query Language Statement for querying the Adwords API.

**Usage**

```
statement(select = c("AccountDescriptiveName", "AccountId", "Impressions",
  "Clicks", "Cost", "Date"), report = "ACCOUNT_PERFORMANCE_REPORT", where,
  start = "2018-01-01", end = "2018-01-10", compress = FALSE)
```

**Arguments**

|          |   |
|----------|---|
| select   | Attributes  |
| report   | Report type   |
| where    | Condition list, e.g. "CampaignName STARTS_WITH 'A' AND Clicks > 100", multiple conditions can be only combined with AND Operators: =   !=   >   >=   <   <=   IN   NOT_IN   STARTS_WITH   STARTS_WITH_IGNORE_CASE   CONTAINS   CONTAINS_IGNORE_CASE   DOES_NOT_CONTAIN   DOES_NOT_CONTAIN_IGNORE_CASE |
| start    | Beginning of date range. Format: 2018-01-01   |
| end      | End of date range. Format: 2018-01-10   |
| compress | TRUE / FALSE, Gzipped data download if TRUE   |

**Value**

The statement necessary for the `getData` function.

**Examples**

```
body <- statement(select=c('CampaignName','Clicks','Cost','Ctr'),
  report="CAMPAIGN_PERFORMANCE_REPORT",
  where="CampaignName STARTS_WITH 'A' AND Clicks > 100",
  start="2018-01-20",
  end="2018-01-21")
body <- statement(select=c('Criteria','Clicks','Cost','Ctr'),
  report="KEYWORDS_PERFORMANCE_REPORT",
  where="Clicks > 100",
  start="2018-01-20",
  end="2018-01-21")
body <- statement(select=c('Clicks','AveragePosition','Cost','Ctr','ClickConversionRate'),
  report="ACCOUNT_PERFORMANCE_REPORT",
  start="2018-01-20",
  end="2018-01-21")
```

---

transformData

*Transform data into R dataframe*


---

**Description**

Transforms the csv data file received from the Adwords API into a dataframe. Moreover the variables are converted into suitable formats. The function is used inside `getData` and parameters are set automatically.

**Usage**

```
transformData(data, report = reportType, apiVersion = "201806")
```



**Arguments**

|            |  |
|------------|--|
| data       | Raw csv data from Adwords API.   |
| report     | Report type.   |
| apiVersion | set automatically by <a href="#">getData</a> . Supported are 201806, 201802, 201710. Defaults to 201806. |

**Value**

Dataframe with the Adwords Data.

# Index

- \*Topic **\textasciitildeAdwords API**
  - RAdwords, [5](#)
- \*Topic **\textasciitildeAdwords Report**
  - RAdwords, [5](#)
- \*Topic **\textasciitildeAdwords**
  - RAdwords, [5](#)
- \*Topic **\textasciitildeGoogle Adwords API**
  - RAdwords, [5](#)
- \*Topic **\textasciitildeGoogle Adwords Report**
  - RAdwords, [5](#)
- \*Topic **\textasciitildeGoogle Adwords**
  - RAdwords, [5](#)
  
- [changeNames](#), [2](#)
- [clientCustomerId \(getData\)](#), [3](#)
  
- [doAuth](#), [2](#), [3–6](#)
  
- [getAuth](#), [3](#), [3](#), [4](#), [6](#)
- [getData](#), [3](#), [6](#), [8](#), [9](#)
  
- [loadToken](#), [3](#), [4](#), [6](#)
  
- [metrics](#), [5](#)
  
- [RAdwords](#), [5](#)
- [refreshToken](#), [6](#), [6](#)
- [reports](#), [7](#)
  
- [statement](#), [3](#), [4](#), [6](#), [7](#), [7](#)
  
- [transformation \(getData\)](#), [3](#)
- [transformData](#), [4](#), [8](#)