Package ‘neo2R’

March 28, 2020

Type Package
Title Neo4j to R
Version 2.1.0
Author Patrice Godard
Maintainer Patrice Godard <patrice.godard@gmail.com>
Description The aim of the neo2R is to provide simple and low level connectors for querying neo4j graph databases (<https://neo4j.com/>).
The objects returned by the query functions are either lists or data.frames with very few post-processing.
It allows fast processing of queries returning many records.
And it let the user handle post-processing according to the data model and his needs.

URL https://github.com/patzaw/neo2r
BugReports https://github.com/patzaw/neo2r/issues
Depends R (>= 3.6)
Imports base64enc, jsonlite, RCurl, utils
SystemRequirements neo4j (==3 OR ==4) <https://neo4j.com/>
License GPL-3
Encoding UTF-8
LazyData true
RoxygenNote 7.0.2
NeedsCompilation no
Repository CRAN

Date/Publication 2020-03-28 06:10:02 UTC

R topics documented:
cypher ................................................................. 2
graphRequest ...................................................... 3
cypher

Run a cypher query

Description
Run a cypher query

Usage

cypher(
  graph,
  query,
  parameters = NULL,
  result = c("row", "graph"),
  arraysAsStrings = TRUE,
  eltSep = " || "
)

Arguments

- graph: the neo4j connection
- query: the cypher query
- parameters: parameters for the cypher query.
- result: the way to return results. "row" will return a data frame and "graph" will return a list of nodes, a list of relationships and a list of paths (vectors of relationships identifiers).
- arraysAsStrings
  if result="row" and arraysAsStrings is TRUE (default) array from neo4j are converted to strings and array elements are separated by eltSep.
- eltSep
  if result="row" and arraysAsStrings is TRUE (default) array from neo4j are converted to strings and array elements are separated by eltSep.

Value

the "result" of the query (invisible). See the "result" param.

See Also

multicypher(), startGraph(), prepCql(), readCql() and graphRequest()
Examples

```r
## Not run:
# 2 identical queries
result <- cypher(
  graph=graph,
  query='match (n {value:$value}) return n',
  parameters=list(value="100"),
  result="graph"
)
result <- cypher(
  graph=graph,
  query='match (n {value:"100"}) return n',
  result="graph"
)
## End(Not run)
```

---

**graphRequest**  
*Run a curl request on a neo4j graph*

### Description

Run a curl request on a neo4j graph

### Usage

```r
graphRequest(graph, endpoint, customrequest = c("POST", "GET"), postText)
```

### Arguments

- `graph`  
  the neo4j connection

- `endpoint`  
  the endpoint for the request. To list all the available endpoints: `graphRequest(graph, endpoint="", customrequest=c("POST", "GET"), postText)`

- `customrequest`  
  the type of request: "POST" (default) or "GET"

- `postText`  
  the request body

### Value

a list with the "header" and the "result" of the request (invisible)

### See Also

[startGraph()] and [cypher()]
**import_from_df**

*Imports a data.frame in the neo4j graph database*

**Description**

This function only works with localhost Neo4j instances.

**Usage**

```r
import_from_df(graph, cql, toImport, periodicCommit = 10000, ...)
```

**Arguments**

- `graph`: the neo4j connection
- `cql`: the CQL query to be applied on each row of toImport. Use the 'row' prefix to refer to the data.frame column.
- `toImport`: the data.frame to be imported as "row". Use "row.FIELD" in the cql query to refer to one FIELD of the toImport data.frame
- `periodicCommit`: use periodic commit when loading the data (default: 10000).
- `...`: further parameters for `cypher()`

**See Also**

`cypher()`

---

**multicypher**

*Run a multiple cypher queriers*

**Description**

Run a multiple cypher queriers

**Usage**

```r
multicypher(
  graph,
  queries,
  parameters = NULL,
  result = c("row", "graph"),
  arraysAsString = TRUE,
  eltSep = " || "
)
```
Arguments

- **graph**: the neo4j connection
- **queries**: queries to submit. It can be either a character vector for which each element corresponds to a cypher query. Or it can be a list of lists with the following slots:
  - **query** (mandatory): A single character corresponding to the cypher query.
  - **parameters** (optional): A set of parameters specific for this query. If not provided, the `parameters` parameter of the function is used (see below).
  - **result** (optional): The specific way to return the results of this query. If not provided, the `result` parameter of the function is used (see below).
- **parameters**: default parameters for the cypher queries.
- **result**: default way to return results. "row" will return a data frame and "graph" will return a list of nodes, a list of relationships and a list of paths (vectors of relationships identifiers).
- **arraysAsStrings**: if result="row" and arraysAsStrings is TRUE (default) array from neo4j are converted to strings and array elements are separated by eltSep.
- **eltSep**: if result="row" and arraysAsStrings is TRUE (default) array from neo4j are converted to strings and array elementes are separated by eltSep.

Value

a list of "result" of the queries (invisible). See the "result" param.

See Also

cypher(), startGraph(), prepCql(), readCql() and graphRequest()

Examples

```r
## Not run:
result <- multicypher(
  graph,
  queries=list(
    q1="match (n) return n.value limit 5",
    q2=list(
      query="match (f {value:$val})-[r]->(t) return f, r, t limit 5",
      result="graph",
      parameters=list(val=100)
    )
  )
)

## End(Not run)
```
prepCql  
*Prepares a CQL query from a character vector*

Description
Prepares a CQL query from a character vector

Usage
prepCql(...)

Arguments
... character vectors with CQL commands

Value
a well formatted CQL query

See Also
cypher() and readCql()

Examples
prepCql(c(
    "MATCH (n)",
    "RETURN n"
))

readCql  
*Parse a CQL file and returned the prepared queries*

Description
Parse a CQL file and returned the prepared queries

Usage
readCql(file)

Arguments
file the name of the file to be parsed
**startGraph**

**Value**

a character vector of well formatted CQL queries

**See Also**

cypher() and prepCql()

---

**startGraph**

Prepare connection to neo4j database

**Description**

Prepare connection to neo4j database

**Usage**

```r
startGraph(url, database = NA, username = NA, password = NA, importPath = NA)
```

**Arguments**

- `url`: the DB url
- `database`: the name of the database. If NA (default) it will use "data" with versions 3.. of Neo4j and "neo4j" with versions 4..
- `username`: the neo4j user name (default: NA; works only if authentication has been disabled in neo4j by setting NEO4J.AUTH=none)
- `password`: the neo4j user password (default: NA; works only if authentication has been disabled in neo4j by setting NEO4J.AUTH=none)
- `importPath`: path to the import directory (default: NA => no import directory). Import only works with local neo4j instance.

**Value**

a connection to the graph DB: a list with the url and necessary headers
Index

cypher, 2
  cypher(), 3–7

graphRequest, 3
  graphRequest(), 2, 5

import_from_df, 4

multicypher, 4
  multicypher(), 2

prepCql, 6
  prepCql(), 2, 5, 7

readCql, 6
  readCql(), 2, 5, 6

startGraph, 7
  startGraph(), 2, 3, 5