Package 'R4CouchDB'

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Type Package

Title Collection of R functions for CouchDB access

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Description The R4CouchDB package provides a collection of functions for basic database and document management operations such as add and delete. Every cdbFunction() gets and emits a list containing the connection set up. A unit test structure using the RUnit package is preliminary prepared. With the cdbIni() function the cdb$serverName is set to "localhost" as a default. This means that localhost should provide a CouchDB. All (former) example sections in the man pages are removed; the unit test structure is intended to cover the example task with more and easier control.

License BSD

LazyLoad yes

Depends R (>= 2.7.0), RCurl, bitops, RJSONIO

R topics documented:

R4CouchDB-package   *Collection of R functions for CouchDB access*

Description

The R4CouchDB package provides a collection of functions for basic database and document management operations such as add and delete.

Details

Package:	R4CouchDB
Type:	Package
Version:	0.1
Date:	2009-08-29
License:	BSD
LazyLoad:	yes

Every `cdbFunction()` gets and emits a list containing the connection set up. Internally this `list()` is called cdb. The result of requests, the CouchDB answers are stored in the `cdb$res`.

The function `cdbIni()` initially provides cdb. However `a <- list(serverName="localhost", port="5984")` is sufficient for calling `cdbGetUuids(a)`.

Since it is not possible to provide a meaningful default `cdb$serverName` all example sections are removed.

The http connection and the json transformations are done with Duncan Temple Langs RCurl and RJSON.

Author(s)

wact.b.prot

Maintainer: thsteinbock@web.de

References

http://www.omegahat.org/RCurl/ http://www.omegahat.org/RJSONIO/ http://couchdb.apache.org/

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cdbAddAttachment   *Add Attachments*

Description

This function adds attachments to a doc

Usage

```
cdbAddAttachment(cdb)
```

Arguments

cdb   The list `cdb` has to contain `cdb$fileName`,`cdb$serverName`, `cdb$DBName` and a `cdb$id`.

Details

The function uses a simple call to `strsplit(fileName, ".")` and takes the last entry of the resulting vector as the `Content-Type` in the `httpheader`.

Value

cdb   The result is stored in `cdb$res`

Author(s)

wact.b.prot thsteinbock@web.de

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cdbAddDoc   *Generates a new document*

Description

This function adds a new document to an already existing database

Usage

```
cdbAddDoc(cdb)
```

Arguments

cdb   The list `cdb` only has to contain a `cdb$dataList` which is not an empty `list()`.

Details

This function is called addDoc (which means add a new document). Therefore the `cdb$id` is requested using `cdbGetUuid()` for every document to add if no `cdb$id` is provided. If a `cdb$id` is provided the function fails when a document with the given id already exists. In this case one should use `cdbUpdateDoc()`.

Value

cdb   The result is stored in `cdb$res`

Author(s)

wact.b.prot thsteinbock@web.de

See Also

`cdbGetDoc()`

`cdbDeleteDoc`	*Deletes a document from a database*

Description

With a given `cdb$id` this function sends a http `"DELETE"` request to the url `.../cdb$id?rev=cdb$rev`.

Usage

```
cdbDeleteDoc(cdb)
```

Arguments

cdb   Beside `cdb$serverName`, `cdb$port` and `cdb$DBName` the `cdb$id` must
                be given. R errors are reported in `cdb$errors`

Value

cdb   The result of the delete request is stored in `cdb$res`(whatever this means).

Author(s)

wact.b.prot thsteinbock@web.de

References

http://couchdb.apache.org/ http://www.omegahat.org/

See Also

```
cdbAddDoc()
```

`cdbGetDoc`	*Get a doc from CouchDB*

Description

With a given `cdb$id` this function requests the document.

Usage

```
cdbGetDoc(cdb)
```

Arguments

cdb   Beside `cdb$serverName`, `cdb$port` and `cdb$DBName` the `cdb$id` must
                be given. R errors are reported
                in cdb$errors

Value

cdb   The result of the request is stored in `cdb$res` after converting the answer
             into a list using `fromJSON()`. If a list entry needed in `cdb` is not provided
             `cdb$error` gives some information.

Author(s)

wact.b.prot thsteinbock@web.de

References

http://couchdb.apache.org/ http://www.omegahat.org/

See Also

`cdbAddDoc()`

`cdbGetUuids`	*Function for id generation*

Description

Function returns a 128bit uuid requested from CouchDB

Arguments

cdb   Only the connection settings `cdb$port` and `cdb$serverName` is needed.

Details

Simple CouchDB API end point to http://serverName:port/_uuids. The number N of ids received
from a CouchDB can be increased by `cdb$queryParam <- paste("count=", N, sep="")`.
For the moment the functions using ids can handle only N=1!

Value

cdb   The result of the request is stored in `cdb$id` after converting the answer into a
             list using `fromJSON()`.

Author(s)

wact.b.prot thsteinbock@web.de

References

http://www.omegahat.org/RCurl/ http://www.omegahat.org/RJSONIO/ http:
//couchdb.apache.org/

See Also

`cdbMakeDB`

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cdbGetView	*Receive view results from CouchDB*

Description

The function provides accesses to CouchDB views.

Usage

```
cdbGetView(cdb)
```

Arguments

cdb   Beside the connection details (`cdb$port`,`cdb$DAName` ...) the `cdb$design`
                and `cdb$view` is needed.

Details

Query params e.g. `"reduce=false"` or `"group_level=1"` can be provided in `cdb$queryParam`

Value

cdb   The result of the request is stored in cdb$res after converting the json answer into
                a list using fromJSON(). If a needed cdb list entry was not provided cdb$error
                says something about the R side

Note

For the moment only one `cdb$queryParam` is possible. In the future maybe Duncans `RJavaScript`
package can be used to generate views without leaving R.

Author(s)

wact.b.prot thsteinbock@web.de

References

<http://www.omegahat.org/RCurl/> <http://www.omegahat.org/RJSONIO/> <http://couchdb.apache.org/> <http://www.omegahat.org/RJavaScript/>

`cdbIni`   *Ini function*

Description

Function returns a list with some default settings

Usage

```
cdbIni()
```

Details

The list: `cdb <- list( serverName = "", port = "5984", curl=getCurlHandle(),`
`DBName="", newDBName="", id="", rev="", dataList=list(), design="",`
`view="", queryParam="", date=toString( Sys.Date()), error="", res=""`
`)` is returned if the packages `library(RCurl)` and `library(RJSONIO)` are successfully
loaded.

Value

`cdb`   see details for the default settings of this function

Author(s)

wact.b.prot thsteinbock@web.de

`cdbListDB`   *Returns all databases*

Description

Gives a list of all databases

Usage

```
cdbListDB(cdb)
```

Arguments

`cdb`   Only the connection settings `cdb$port` and `cdb$serverName` is needed.

Details

Simple CouchDB API end point: http://localhost:5984/_all_dbs

Value

`cdb`   The result of the request is stored in cdb$res after converting the json answer
               into a list using `fromJSON()`.

Author(s)

wact.b.prot thsteinbock@web.de

References

http://www.omegahat.org/RCurl/ http://www.omegahat.org/RJSONIO/ http://couchdb.apache.org/

See Also

cdbMakeDB

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cdbMakeDB   *Creates a new database*

Description

The name of the new database is taken from cdb$newDBName.

Usage

cdbMakeDB(cdb)

Arguments

cdb   The cdb have to provide cdb$serverName, cdb$port and cdb$newDBName

Details

The work is done by getURLContent(). After creating the new database the function makes
the shortcut cdb$DBName <- cdb$newDBName so that further operations happen on the new
created database.

Value

cdb   The CouchDB answer is stored in cdb$res. Any problems on the R side are
                reportet in cdb$error

Note

The convention for database naming should be implemented.

Author(s)

wact.b.prot thsteinbock@web.de

References

http://couchdb.apache.org/

See Also

cdbRemoveDB

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cdbRemoveDB *Function to remove a database.*

Description

Removing a database means sending a http- "DELETE"- request to `http://cdb$serverName:cdb$port/`
`...`

Usage

```
cdbRemoveDB(cdb)
```

Arguments

cdb The `cdb` has to provide `cdb$serverName`, `cdb$port` and `cdb$DBName`

Details

In `cdb` maybe a entry `cdb$delDBName` should be provided for more explicit deleting respectively
more secure removing.

Value

cdb The CouchDB answer is stored in `cdb$res`. Any problems on the R side are
reportet in `cdb$error`

Author(s)

wact.b.prot thsteinbock@web.de

References

http://couchdb.apache.org/

See Also

`cdbMakeDB`

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cdbUpdateDoc *This function updates an existing doc. This essentially means that a
revision, corresponding to the '_id' has to be provided (in what way
ever).*

Description

Updating a doc at couchdb means executing a http "PUT" request. The `cdb` list must contain
the `cdb$serverName`, `cdb$port`, `cdb$DBName`, `cdb$id`. If the `cdb$rev` is not given the
function uses `cdbGetDoc()` to receive the latest revision number.

Usage

```
cdbUpdateDoc(cdb)
```

Arguments

cdb   the cdb connection configuration list must contain the `cdb$serverName`,
                `cdb$port`, `cdb$DBName` and `cdb$id`. The data which updates the data
                stored in the doc is provided in `cdb$dataList`

Details

`getURLContent()` with `customrequest = "PUT"` does the work.

Value

cdb   The result of the request is stored in `cdb$res` after converting the answer by
                means of `fromJSON()`. If a needed `cdb$` list entry is not provided `cdb$error`
                maybe says something about the R side.

Author(s)

wact.b.prot thsteinbock@web.de

References

http://www.omegahat.org/RCurl/ http://www.omegahat.org/RJSONIO/ http:
//couchdb.apache.org/

See Also

```
cdbInit()
```