

# Package ‘TSpadi’

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**Title** Time Series Database Interface extensions for PADI Time Series Server

**Description** Provides methods for generics in the TSdbi package to connect through a protocol for application database interface (PADI) to a time series database (e.g. Fame).

**SystemRequirements** rpcgen, GNU make

**Depends** R (>= 2.14.0), methods, DBI, TSdbi (>= 2011.11-1), tframe (>= 2011.11-1)

**Suggests** tframePlus (>= 2011.11-1)

**Imports** methods, DBI, TSdbi (>= 2011.11-1)

**Enhances** TSdbi

**BuildVignettes** false

**Collate** padi.R TSdbiMethods.R

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checkPADIServer	<i>PADI Functions</i>
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**Description**

see details

**Usage**

```
checkPADIServer(server=PADIServer(),
                user=Sys.info()[["user"]], timeout=50)
```

**Arguments**

server	string indicating the network name of the server."
user	optional string indicating user ID used by the server to start the process."
timeout	an integer indicating the number of seconds to wait before concluding that the server is not available.

**Details**

The function `load.padi` loads the associated compiled C object code. The function `checkPADIServer` checks if a server is running.

**Value**

depends

**See Also**

[getpadi](#) [putpadi](#)

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getpadi

*Get Data from TSPADI Database Interface*


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**Description**

Get data from a TSPADI database interface.

**Usage**

```

getpadi(series, server=PADIserver(), dbname="",
        start.server=TRUE, server.process=PADIserverProcess(),
        cleanup.script=PADICleanupScript(),
        starty=0,startm=0,startd=1, endy=0,endm=0,endd=1,
        nobs=0,max.obs=2000, transformations=NULL, pad=FALSE,
        user=Sys.info()[["user"]], passwd="",
        stop.on.error=TRUE, use.tframe=FALSE, warn=TRUE, timeout=60,
        names=series)
## Default S3 method:
getpadi(series, server=PADIserver(), dbname="",
        start.server=TRUE, server.process=PADIserverProcess(),
        cleanup.script=PADICleanupScript(),
        starty=0,startm=0,startd=1, endy=0,endm=0,endd=1,
        nobs=0,max.obs=2000, transformations=NULL, pad=FALSE,
        user=Sys.info()[["user"]], passwd="",
        stop.on.error=TRUE, use.tframe=FALSE, warn=TRUE, timeout=60,
        names=series)

```

**Arguments**

series	A character string giving the database identifiers of the series. Alternately, series can be a vector of character strings specifying multiple series.
server	A character string giving the network name of the server which is to be requested to supply the series. If series specifies multiple series and they are not all on the same server then server should be a vector of character strings with elements corresponding to the elements of series.
dbname	A character string giving additional information to the server about the location of the series (eg. the name of a database). If series specifies multiple series and they are not all on the same database then dbname should be a vector of character strings with elements corresponding to the elements of series.
starty	An integer indicating the starting year.
startm	An integer indicating the starting period.
startd	An integer indicating the starting day.
endy	An integer indicating the ending year.
endm	An integer indicating the ending period.

endd	An integer indicating the ending day.
nobs	The number of observations.
max.obs	integer indicating the possible returned data size used to define the size of the buffer to prepare.
transformations	A character string giving transformations to be applied to the series (e.g. "log"). If multiple series are being requested then transformations can be a single string, in which case it is applied to all series, or a vector of character strings, one for each series. If no transformation is to be applied to some series then "" should be used.
pad	If FALSE (default) then all series are truncated to the interection of available time periods (i.e. the latest start date and earliest end date). If TRUE then series are padded with NA so the result starts at the earliest available observation and ends at the last available observation.
start.server	try to start a server if one is not running
server.process	command to execute in an attempt to start a server
cleanup.script	command to execute to terminate a server if one is started
user	user id for access to the database (if necessary)
passwd	password for access to the database (if necessary)
stop.on.error	If TRUE then stop is executed when an error occurs. Otherwise, the error message is returned and the calling program must deal with it.
use.tframe	If use.tframe=FALSE then ts() is used to construct the time series, otherwise the tframe utilities are used. Certain transformations available with DSE require the tframe stucture and an error may result if these transformations are attempted with use.tframe=FALSE.
warn	Print warning messages for some crude frequency conversions (weekly data).
timeout	an integer indicating the number of seconds to wait before concluding that the server is not available.
names	Optional character vector to use for series names (set to identifieres by default).

## Details

The function `getpadi` retrieves data from a (time series) server. The `padi` code is also available (including the PADI server side) at <http://tsdbi.r-forge.r-project.org/>.

(This documentation could use some cleaning up, but first I am really hoping to convert the whole interface to a more modern, non-RPC based, mechanism.)

`start.` and `end` dates or `start` dates and `nobs` can be supplied. If all are set to zero (the default) then all data is retrieved, provided `max.obs` is large enough. If more than one series is to be returned then `series` should be a vector of strings. In this case `dbname` must be a vector of corresponding length or a single string which is applied to all series. All series must have the same frequency. If the number of observations in any single series is larger than `max.obs` then an error will occur and `max.obs` should be set larger. For many data frequencies `startd` and `endd` can be omitted.

If `start.server` is FALSE then there will be no attempt to start a server and the function will stop if a server is not running. If `start.server` is TRUE (the default) then if `server==PADIserver()` (the

default) and a server is not already running, there will be an attempt to start a server using the argument `server.process`. The default is determined by `PADIserverProcess()`

The argument `server.process` is only used if it is necessary to start a server.

If specified, `server` would typically be a single string, though there is some attempt to handle vectors of strings (indicating different servers for each series).

The string `dbname` is passed to the server, but it may or may not be used, depending on the server implementation. If the server is being started then it will run in the Unix `pwd` and local path names should work, BUT in general there is no guarantee that the server is running in the `pwd` and complete path names may be required.

Start and end dates or start dates and `nobs` can be supplied. If all are set to zero (the default) then all data is retrieved, provided `max.obs` is large enough.

If the starting date and ending date and number of observations is set to zero, it will return the whole series. If the starting and ending dates are zero but number of observations is set, the LAST `numobs` observations are returned. If the starting date is sent, ending date is zero and `numobs` is non-zero, the FIRST `numobs` starting from start date are returned.

The size of the data array passed to `C` is the larger of `nobs` and `max.obs`. A `ts` matrix is returned. If more than one series is to be returned then `series` should be a vector of strings. In this case `server` must be a vector of corresponding length or a single string which is applied to all series. All series must have the same frequency and the time window is the intersection of the window for each series (i.e. the latest start and earliest end date). `startd` and `endd` provide for a tag (day).

If the starting date and ending date and number of observations is set to zero, it will return the whole series. If the starting and ending dates are zero but number of observations is set, the LAST `numobs` observations are returned. If the starting date is sent, ending date is zero and `numobs` is non-zero, the FIRST `numobs` starting from start date are returned.

If `transformations` is not null it should be a vector of strings, one for each series (with "" for any series which is not to be transformed), or a single string which is applied to each series. The transformations are applied by `eval(call(transformations[i], .))`.

If `use.tframe=FALSE` then `ts()` is used to construct the time series, otherwise the `tframe` approach is used. (See the `tframe` package.) Certain transformations available with DSE require the `tframe` structure and an error may result if these transformations are attempted with `use.tframe=FALSE`.

If `stop.on.error` is TRUE then `stop` is executed if a data retrieval error occurs. If `stop.on.error` is FALSE then the error message is returned, which means the calling function will need to handle the error.

If `warn` is TRUE then warnings are issued for certain data conversions (weekly data) which may not work in all case. If `warn` is FALSE these warnings are not issued. `timeout` is the period to wait (in seconds) before generating an error.

## Value

A time series matrix with a column for each series.

## See Also

[checkPADIserver](#), [TSget](#), [putpadi](#)

**Examples**

```

if(checkPADIServer("ets")){
  cpi <-getpadi("P100000", server= "ets")# June 1992=100
  cpi <-getpadi("P100000", starty=1988, startm=1, endy=1990, endm=12, server= "ets")
  cpi <-getpadi( "P100000", starty=1988, startm=1, nobs=8, server= "ets")
  data <- getpadi( c("V122491", "V37124", "P100000"), server= "ets" )

  cpi <-getpadi("P100000", server= "ets", use.tframe=TRUE)
  data <- getpadi( c("V122491", "V37124", "P100000"), server= "ets", use.tframe=TRUE)
}

```

---

padi

*padi Methods for TSdbi Generics*


---

**Description**

Get a time series matrix structure from a database

**Usage**

```

padi()
## S4 method for signature 'character, TSpadiConnection'
TSget(
  serIDs, con,
  TSrepresentation=getOption("TSrepresentation"), names=serIDs, ...)
## S4 method for signature 'ANY, character, TSpadiConnection'
TSput(
  x, serIDs=seriesNames(data), con, ...)
## S4 method for signature 'padiDriver, character'
TSconnect(
  drv, dbname, user=NULL, password=NULL, host=NULL, timeout=60, ...)
## S4 method for signature 'character, TSpadiConnection'
TSdates(
  serIDs, con, vintage=NULL, panel=NULL, ... )
## S4 method for signature 'character, TSpadiConnection'
TSdescription(x, con, ... )
## S4 method for signature 'character, TSpadiConnection'
TSdoc(x, con, ... )
## S4 method for signature 'character, TSpadiConnection'
TSlabel(x, con, ... )
## S4 method for signature 'character, TSpadiConnection'
TSsource(x, con, ... )

```

**Arguments**

con                    a database connection object.  
serIDs                 identifiers for series on the database.

vintage	character string indicating vintage of the series on the database (not supported by this database).
panel	character string indicating panel of the series on the database (not supported by this database).
x	time series data(TSput), or identifiers for series on the database (TSdoc and TSdescription).
names	optional character vector to use for series names in the R object.
drv	a database driver object.
dbname	a character string indicating the name of a database.
user	a character string indicating a user id.
password	a character string indicating a password.
host	a character string indicating a padi server computer.
timeout	time in seconds to wait for host to respond.
TSrepresentation	time representation for returned series. (See TSget in package <b>TSdbi</b> .)
...	Arguments passed to getpadi or putpadi.

### Details

These functions interface with a Fame database using the padi protocol. It is usually better to pass host/user/password information using a configuration file rather than as arguments. TSconnect will look for a configuration file .padi.cfg in the user's home directory. If the file is not found, and arguments are not provided, the userid, an empty password, and the local computer name (nodename) will be used. This will result in an error "Could not establish TSpadiConnection to ..." if a padi server is not running on the local host."

The classes padiDriver and TSpadiConnection extend classes DBIDriver and DBIConnection in the DBI package.

TSpout.padi is not working.

### Value

Depends.

### See Also

[TSdates](#), [TSget](#), [TSpout](#)

### Examples

```
m <- padi()
con <- try(TSconnect(m, dbname="ets"))
if(! inherits(con, "try-error")) {
  print(con)
  TSdates(c("B1630", "B1642", "D1"), con)
  z1 <- TSget(c("B1630", "B1642"), con)
  TSmeta(z1)
}
```

---

 PADIservice

*PADI Functions*


---

### Description

see details

### Usage

```

PADIservice()
PADIserviceProcess()
PADICleanupScript()
startPADIservice(server=PADIservice(),
  server.process=PADIserviceProcess(), dbname=NULL)
cleanupPADIservice(process, cleanup.script=PADICleanupScript())
killPADIservice(kill.script="killserver",
  server.process=PADIserviceProcess())

```

### Arguments

server	string or vector of strings indicating the server where the series will be found. Scalar values are expanded to a vector of appropriate length.
dbname	string or vector of strings indicating additional information for the server. Scalar values are expanded to a vector of appropriate length.
server.process	string indicating the name of the process to be used to start a server process.
cleanup.script	string indicating the name of the process to be used to shut down a server process.
process	argument to cleanup.script, not actually the process ID.
kill.script	string indicating the name of the process to be used to kill a server process.

### Details

The function PADIservice returns the name of the default server. This may be set by specifying options(PADIservice="whatever"), or if not specified it will be set to nodename. The function startPADIservice uses a script to start a server. The function cleanupPADIservice uses the information returned by startPADIservice to terminate the server. The function killPADIservice looks for a server and kills it. The default scripts for starting and stopping the server are determined by the functions PADIserviceProcess and PADICleanupScript, which use the Unix environment variables PADI, PADI\_STARTUP and PADI\_CLEANUP. Scripts for starting and stopping the server are only relevant in cases when it is necessary to start or stop a server.

### Value

depends

**See Also**[getpadi putpadi](#)

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**putpadi***PADI Functions*

---

**Description**

see details

**Usage**

```

putpadi(data, server=PADIServer(), dbname="",
        series=seriesNames(data),
        start.server=TRUE, server.process=PADIServerProcess(),
        cleanup.script=PADICleanupScript(),
        user=Sys.info()[["user"]], passwd="",
        stop.on.error=TRUE, warn=TRUE, timeout=60)
## Default S3 method:
putpadi(data, server=PADIServer(), dbname="",
        series=seriesNames(data),
        start.server=TRUE, server.process=PADIServerProcess(),
        cleanup.script=PADICleanupScript(),
        user=Sys.info()[["user"]], passwd="",
        stop.on.error=TRUE, warn=TRUE, timeout=60)

```

**Arguments**

<code>data</code>	a data object to put on the server.
<code>server</code>	string or vector of strings indicating the server where the series will be found. Scalar values are expanded to a vector of appropriate length.
<code>dbname</code>	string or vector of strings indicating additional information for the server. Scalar values are expanded to a vector of appropriate length.
<code>series</code>	vector of strings to use for series identifiers.
<code>start.server</code>	logical indicating if a (local) server should be started.
<code>server.process</code>	string indicating the name to be used to start a server process.
<code>cleanup.script</code>	string indicating the name to be used to shut down a server process.
<code>user</code>	an optional string used by the server to check permission.
<code>passwd</code>	an optional string used by the server to check permission.
<code>stop.on.error</code>	logical indicating if the function should stop if any series produces an error, or continue with other series.
<code>warn</code>	logical indicating if warning messages should be suppressed.
<code>timeout</code>	an integer indicating the number of seconds to wait before concluding that the server is not available.

**Details**

This function is deprecated. See TSput instead.

The function putpadi writes data to a specified databases on a specified server (default local).

If start.server is FALSE then there will be no attempt to start a server and the function will stop if a server is not running. If start.server is TRUE (the default) then if server==PADIserv() (the default) and a server is not already running, there will be an attempt to start a server using the argument server.process. The default is a "local mode" Fame server.

The argument server.process is only used if it is necessary to start a server.

If specified, server would typically be a single string, though there is some attempt to handle vectors of strings (indicating different servers for each series).

dbname should typically be supplied. (but some servers might accept an empty string ("") or ignore any string supplied. If the server is being started then it will run in the Unix pwd and local path names should work, BUT in general there is no guarantee that the server is running in the pwd and complete path names may be required. data can be a vector, matrix, time series or time series matrix. Dates are used when available. If data is a vector or single time series, then server, dbname, and series should have length 1. If data is a matrix or time series matrix with more than one series then server, dbname, and series should be character strings of the same length or, server and dbname can be length 1, in which case the string will be repeated for all series. If they do not exist then an error is indicated. The strings user and passwd are passed to the server, but may or may not be used, depending on the server implementation. If stop.on.error is TRUE (default) the function stops if there is an error writing any series. Otherwise, the result is TRUE or FALSE for each series, indicating success or failure.

**Value**

depends

**See Also**

[checkPADIserv](#) [getpadi](#)

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