

Package: pixr (via r-universe)

June 1, 2026

Title Access Brazilian Central Bank 'PIX' Open Data 'API'

Version 0.1.0

Description Provides a 'tidyverse'-style interface to the Brazilian Central Bank ('BCB') 'PIX' Open Data 'API'. Retrieve statistics on 'PIX' keys, transactions by municipality, and monthly transaction summaries. All functions return 'tibbles' and support 'OData' query parameters for filtering, selecting, and ordering data.

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Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.3

Depends R (>= 4.1.0)

Imports htr2 (>= 1.0.0), cli (>= 3.6.0), tibble (>= 3.2.0), dplyr (>= 1.1.0), rlang (>= 1.1.0), purrr (>= 1.0.0)

Suggests testthat (>= 3.0.0), withr, knitr, rmarkdown, ggplot2, scales, forcats, tidyr

VignetteBuilder knitr

Config/testthat/edition 3

URL <https://github.com/StrategicProjects/pixr>

BugReports <https://github.com/StrategicProjects/pixr/issues>

Config/pak/sysreqs libssl-dev

Repository <https://strategicprojects.r-universe.dev>

Date/Publication 2026-01-26 11:59:08 UTC

RemoteUrl <https://github.com/strategicprojects/pixr>

RemoteRef HEAD

RemoteSha e53e2b00c40825bbaf26c441062de77209e16da1

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format_brl	<i>Format Currency Value</i>
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Description

Formats a numeric value as Brazilian Real (BRL) currency.

Usage

```
format_brl(x, prefix = TRUE, decimal_mark = ",", big_mark = ".")
```

Arguments

x	Numeric vector.
prefix	Logical; if TRUE (default), includes "R\$" prefix.
decimal_mark	Character to use as decimal separator.
big_mark	Character to use as thousands separator.

Value

A character vector with formatted currency values.

Examples

```
format_brl(1234567.89)
format_brl(c(1000, 2000, 3000))
```

get_pix_fraud_stats *Get PIX Fraud Statistics (MED)*

Description

Retrieves fraud statistics for PIX transactions reported through the Special Return Mechanism (MED - Mecanismo Especial de Devolução).

Usage

```
get_pix_fraud_stats(
  database,
  filter = NULL,
  columns = NULL,
  top = NULL,
  skip = NULL,
  orderby = NULL,
  verbose = TRUE
)
```

Arguments

database	Character string in "YYYYMM" format specifying which month's data to retrieve. This parameter is required .
filter	OData filter expression as a character string.
columns	Character vector of columns to return. If NULL, returns all columns.
top	Integer; maximum number of records to return.
skip	Integer; number of records to skip (for pagination).
orderby	Character string specifying the column to sort by. Use "Column" for ascending or "Column desc" for descending order.
verbose	Logical; if TRUE (default), prints progress messages.

Details

The MED (Mecanismo Especial de Devolução) is a mechanism created by the Brazilian Central Bank to facilitate the return of funds in cases of fraud or operational errors in PIX transactions.

This endpoint provides statistics on:

- Number of fraud reports (notificações de infração)
- Number of return requests (pedidos de devolução)
- Values involved in fraud cases

Value

A `tibble::tibble` with PIX fraud statistics.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Get fraud statistics for September 2025
fraud <- get_pix_fraud_stats(database = "202509")

# Get top 100 records
fraud <- get_pix_fraud_stats(database = "202509", top = 100)

## End(Not run)
```

`get_pix_fraud_stats_multi`

Get PIX Fraud Statistics for Multiple Months

Description

Retrieves fraud statistics for multiple months and combines them into a single tibble.

Usage

```
get_pix_fraud_stats_multi(databases, ...)
```

Arguments

<code>databases</code>	Character vector of year-months in "YYYYMM" format.
<code>...</code>	Additional arguments passed to <code>get_pix_fraud_stats()</code> .

Value

A `tibble::tibble` with combined fraud statistics.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Get fraud data for Q3 2025
q3_fraud <- get_pix_fraud_stats_multi(
  databases = c("202507", "202508", "202509")
)

## End(Not run)
```

get_pix_keys

Get PIX Keys Stock by Participant

Description

Retrieves the stock of PIX keys registered in the Directory of Transactional Account Identifiers (DICT) at the end of each month, broken down by PIX participant and key type.

Usage

```
get_pix_keys(
    date,
    filter = NULL,
    columns = NULL,
    top = NULL,
    skip = NULL,
    orderby = NULL,
    verbose = TRUE
)
```

Arguments

date	Character string in "YYYY-MM-DD" format specifying the reference date. This parameter is required . The API returns data for the last day of the specified month.
filter	OData filter expression as a character string. Examples: <ul style="list-style-type: none"> • "NaturezaUsuario eq 'PF'" - Filter by user type (PF or PJ) • "TipoChave eq 'CPF'" - Filter by key type • "Nome eq 'BANCO DO BRASIL S.A.'" - Filter by institution name
columns	Character vector of columns to return. If NULL, returns all columns. See "Available Columns" section.
top	Integer; maximum number of records to return.
skip	Integer; number of records to skip (for pagination).
orderby	Character string specifying the column to sort by. Use "Column" for ascending or "Column desc" for descending order.
verbose	Logical; if TRUE (default), prints progress messages.

Details

The BCB PIX API requires a date parameter specifying which date's data to retrieve. The data shows the number of PIX keys registered by each financial institution (participant).

Note: The API returns data for the last day of the month containing the specified date. For example, date = "2025-12-01" returns data for 2025-12-31.

Value

A `tibble::tibble` with PIX keys data.

Available Columns

Data Reference date (last day of month, YYYY-MM-DD format)

ISPB 8-digit code identifying the financial institution

Nome Name of the PIX participant (financial institution)

NaturezaUsuario User type: PF (Individual) or PJ (Legal Entity)

TipoChave Key type: CPF, CNPJ, Celular, e-mail, or Aleatória

qtdChaves Number of registered keys

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Get all PIX keys data for December 2025
keys <- get_pix_keys(date = "2025-12-01")

# Filter by key type and order by quantity
cpf_keys <- get_pix_keys(
  date = "2025-12-01",
  filter = "TipoChave eq 'CPF'",
  orderby = "qtdChaves desc",
  top = 100
)

# Filter by institution
bb_keys <- get_pix_keys(
  date = "2025-12-01",
  filter = "Nome eq 'BANCO DO BRASIL S.A.'"
)

## End(Not run)
```

get_pix_keys_by_type *Get PIX Keys by Key Type*

Description

Retrieves PIX keys data and returns a summary by key type.

Usage

```
get_pix_keys_by_type(date, verbose = TRUE)
```

Arguments

date	Character string in "YYYY-MM-DD" format specifying the reference date. This parameter is required . The API returns data for the last day of the specified month.
verbose	Logical; if TRUE (default), prints progress messages.

Value

A `tibble::tibble` with summary data by key type.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.  
# Get summary by key type  
get_pix_keys_by_type(date = "2025-12-01")  
  
## End(Not run)
```

get_pix_keys_summary *Get PIX Keys Summary by Institution*

Description

Retrieves PIX keys data and returns a summary showing total keys by institution, sorted by total keys.

Usage

```
get_pix_keys_summary(date, n_top = 20, verbose = TRUE)
```

Arguments

date	Character string in "YYYY-MM-DD" format specifying the reference date. This parameter is required . The API returns data for the last day of the specified month.
n_top	Integer; number of top institutions to return. Default is 20.
verbose	Logical; if TRUE (default), prints progress messages.

Value

A `tibble::tibble` with summary data by institution.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Get top 20 institutions by total keys
get_pix_keys_summary(date = "2025-12-01")

# Get top 10 institutions
get_pix_keys_summary(date = "2025-12-01", n_top = 10)

## End(Not run)
```

get_pix_summary	<i>Get PIX Transaction Summary</i>
-----------------	------------------------------------

Description

Retrieves transaction statistics and aggregates them by specified grouping variables. This is a convenience function that fetches data and performs common aggregations.

Usage

```
get_pix_summary(database, group_by = "NATUREZA", verbose = TRUE)
```

Arguments

database	Character string in "YYYYMM" format specifying which month's data to retrieve. This parameter is required .
group_by	Character vector of columns to group by. Common choices: "NATUREZA", "PAG_REGIAO", "REC_REGIAO", "FORMAINICIACAO".
verbose	Logical; if TRUE (default), prints progress messages.

Value

A `tibble::tibble` with aggregated transaction statistics.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Summary by transaction nature
get_pix_summary(database = "202509", group_by = "NATUREZA")

# Summary by payer region
get_pix_summary(database = "202509", group_by = "PAG_REGIAO")

# Summary by nature and initiation method
get_pix_summary(database = "202509", group_by = c("NATUREZA", "FORMAINICIACAO"))

## End(Not run)
```

 get_pix_transaction_stats

Get PIX Transaction Statistics

Description

Retrieves detailed statistics on PIX transactions settled through the Instant Payment System (SPI), with breakdowns by payer/receiver type, region, age group, initiation method, and transaction nature.

Usage

```
get_pix_transaction_stats(
    database,
    filter = NULL,
    columns = NULL,
    top = NULL,
    skip = NULL,
    orderby = NULL,
    verbose = TRUE
)
```

Arguments

database	Character string in "YYYYMM" format specifying which month's data to retrieve. This parameter is required .
filter	OData filter expression as a character string. Examples: <ul style="list-style-type: none"> • "NATUREZA eq 'P2P' " - Filter by transaction nature • "PAG_REGIAO eq 'SUDESTE' " - Filter by payer region • "FORMAINICIACAO eq 'DICT' " - Filter by initiation method
columns	Character vector of columns to return. If NULL, returns all columns. See "Available Columns" section.
top	Integer; maximum number of records to return.
skip	Integer; number of records to skip (for pagination).
orderby	Character string specifying the column to sort by. Use "Column" for ascending or "Column desc" for descending order.
verbose	Logical; if TRUE (default), prints progress messages.

Details

The BCB PIX API requires a database parameter specifying which month's data to retrieve. The data provides granular breakdowns of PIX transactions.

Transaction Nature Codes:

- **P2P**: Person to Person

- **P2B**: Person to Business
- **B2P**: Business to Person
- **B2B**: Business to Business
- **P2G**: Person to Government
- **G2P**: Government to Person

Initiation Methods:

- **DICT**: PIX Key lookup
- **QRDN**: Dynamic QR Code
- **QRES**: Static QR Code
- **MANU**: Manual entry (bank details)
- **INIC**: Payment Initiator

Value

A `tibble::tibble` with PIX transaction statistics.

Available Columns

AnoMes Reference year-month as integer (YYYYMM format)

PAG_PFPJ Payer type: PF (Individual) or PJ (Legal Entity)

REC_PFPJ Receiver type: PF (Individual) or PJ (Legal Entity)

PAG_REGIAO Payer region (NORTE, NORDESTE, SUDESTE, SUL, CENTRO-OESTE)

REC_REGIAO Receiver region

PAG_IDADE Payer age group

REC_IDADE Receiver age group

FORMAINICIACAO Initiation method (DICT, QRDN, QRES, MANU, INIC)

NATUREZA Transaction nature (P2P, P2B, B2P, B2B, P2G, G2P)

FINALIDADE Transaction purpose (Pix, Pix Saque, Pix Troco, etc.)

VALOR Total transaction value (in BRL)

QUANTIDADE Number of transactions

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Get transaction statistics for September 2025
stats <- get_pix_transaction_stats(database = "202509")

# Filter by transaction nature
p2p <- get_pix_transaction_stats(
  database = "202509",
  filter = "NATUREZA eq 'P2P'"
)

# Filter by region and order by value
```

```
sudeste <- get_pix_transaction_stats(  
  database = "202509",  
  filter = "PAG_REGIAO eq 'SUDESTE'",  
  orderby = "VALOR desc",  
  top = 100  
)  
  
# Multiple filters (use 'and')  
filtered <- get_pix_transaction_stats(  
  database = "202509",  
  filter = "NATUREZA eq 'P2P' and PAG_REGIAO eq 'NORDESTE'"  
)  
  
## End(Not run)
```

```
get_pix_transaction_stats_multi
```

Get PIX Transaction Statistics for Multiple Months

Description

Retrieves transaction statistics for multiple months and combines them into a single tibble.

Usage

```
get_pix_transaction_stats_multi(databases, ...)
```

Arguments

`databases` Character vector of year-months in "YYYYMM" format.
`...` Additional arguments passed to `get_pix_transaction_stats()`.

Value

A `tibble::tibble` with combined transaction statistics.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.  
# Get data for Q3 2025  
q3_data <- get_pix_transaction_stats_multi(  
  databases = c("202507", "202508", "202509")  
)  
  
## End(Not run)
```

```
get_pix_transactions_by_municipality
```

Get PIX Transactions by Municipality

Description

Retrieves PIX transaction statistics aggregated by municipality, showing the number and value of transactions from the perspective of both payers and receivers.

Usage

```
get_pix_transactions_by_municipality(  
  database,  
  filter = NULL,  
  columns = NULL,  
  top = NULL,  
  skip = NULL,  
  orderby = NULL,  
  verbose = TRUE  
)
```

Arguments

database	Character string in "YYYYMM" format specifying which month's data to retrieve. This parameter is required .
filter	OData filter expression as a character string. Examples: <ul style="list-style-type: none"> • "Estado eq 'SÃO PAULO'" - Filter by state name • "Sigla_Regiao eq 'SE'" - Filter by region • "Município eq 'RECIFE'" - Filter by municipality name
columns	Character vector of columns to return. If NULL, returns all columns. See "Available Columns" section.
top	Integer; maximum number of records to return.
skip	Integer; number of records to skip (for pagination).
orderby	Character string specifying the column to sort by. Use "Column" for ascending or "Column desc" for descending order.
verbose	Logical; if TRUE (default), prints progress messages.

Details

The BCB PIX API requires a database parameter (YYYYMM format) specifying which month's data to retrieve. The data is broken down by municipality, person type (PF/PJ), and transaction direction (payer/receiver).

Value

A `tibble::tibble` with PIX transaction data by municipality.

Available Columns

AnoMes Reference year-month in YYYYMM format
Municipio_Ibge IBGE municipality code
Municipio Municipality name
Estado_Ibge IBGE state code
Estado State name
Sigla_Regiao Region abbreviation (NE, SE, S, CO, N)
Regiao Region name (NORDESTE, SUDESTE, SUL, CENTRO-OESTE, NORTE)
VL_PagadorPF Total value paid by individuals (BRL)
QT_PagadorPF Number of transactions where individuals were payers
VL_PagadorPJ Total value paid by legal entities (BRL)
QT_PagadorPJ Number of transactions where legal entities were payers
VL_RecebedorPF Total value received by individuals (BRL)
QT_RecebedorPF Number of transactions where individuals were receivers
VL_RecebedorPJ Total value received by legal entities (BRL)
QT_RecebedorPJ Number of transactions where legal entities were receivers
QT_PES_PagadorPF Number of distinct individual payers
QT_PES_PagadorPJ Number of distinct legal entity payers
QT_PES_RecebedorPF Number of distinct individual receivers
QT_PES_RecebedorPJ Number of distinct legal entity receivers

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Get municipality transaction data for December 2025
muni <- get_pix_transactions_by_municipality(database = "202512")

# Filter by state
maranhao <- get_pix_transactions_by_municipality(
  database = "202512",
  filter = "Estado eq 'MARANHÃO'",
  orderby = "Municipio desc",
  top = 10
)

# Filter by region
nordeste <- get_pix_transactions_by_municipality(
  database = "202512",
  filter = "Sigla_Regiao eq 'NE'"
)

# Order by value
top_value <- get_pix_transactions_by_municipality(
  database = "202512",
```

```

    orderby = "VL_PagadorPF desc",
    top = 100
  )

  ## End(Not run)

```

```

get_pix_transactions_by_region
  Get PIX Transactions by Region

```

Description

A convenience wrapper that aggregates municipality data at the region level.

Usage

```
get_pix_transactions_by_region(database, verbose = TRUE)
```

Arguments

database	Character string in "YYYYMM" format specifying which month's data to retrieve. This parameter is required .
verbose	Logical; if TRUE (default), prints progress messages.

Value

A `tibble::tibble` with PIX transaction data aggregated by region.

Examples

```

## Not run: # It usually takes much longer than 5 seconds.
# Get region-level aggregates
regions <- get_pix_transactions_by_region(database = "202512")

## End(Not run)

```

```

get_pix_transactions_by_state
  Get PIX Transactions by State

```

Description

A convenience wrapper around `get_pix_transactions_by_municipality()` that aggregates data at the state level.

Usage

```
get_pix_transactions_by_state(database, verbose = TRUE)
```

Arguments

database	Character string in "YYYYMM" format specifying which month's data to retrieve. This parameter is required .
verbose	Logical; if TRUE (default), prints progress messages.

Value

A `tibble::tibble` with PIX transaction data aggregated by state.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Get state-level aggregates for December 2025
states <- get_pix_transactions_by_state(database = "202512")

## End(Not run)
```

pix_columns

Get Column Information for a PIX Endpoint

Description

Returns detailed information about the columns available for a specific endpoint.

Usage

```
pix_columns(endpoint = c("keys", "municipality", "stats", "fraud"))
```

Arguments

endpoint	Character string specifying the endpoint. One of: "keys", "municipality", "stats", or "fraud".
----------	--

Value

A `tibble::tibble` with column names, types, and descriptions.

Examples

```
pix_columns("keys")
pix_columns("municipality")
pix_columns("stats")
pix_columns("fraud")
```

pix_endpoints	<i>Get Available PIX API Endpoints</i>
---------------	--

Description

Returns information about all available endpoints in the BCB PIX Open Data API.

Usage

```
pix_endpoints()
```

Value

A `tibble::tibble` with endpoint names, descriptions, parameters, and associated functions.

Examples

```
pix_endpoints()
```

pix_ping	<i>Check API Connection</i>
----------	-----------------------------

Description

Tests the connection to all BCB PIX Open Data API endpoints. Each endpoint is tested with a single record request (`top=1`).

Usage

```
pix_ping()
```

Value

A tibble (invisibly) with columns:

endpoint Name of the endpoint tested

status Result: "OK" or error message

time_seconds Time taken for the request in seconds

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Test all endpoints
pix_ping()

# Capture results
results <- pix_ping()
print(results)

## End(Not run)
```

pix_query

Get Raw Data from PIX API

Description

Low-level function to fetch data from any PIX API endpoint with custom parameters.

Usage

```
pix_query(
  endpoint,
  params = NULL,
  filter = NULL,
  select = NULL,
  orderby = NULL,
  top = NULL,
  skip = NULL,
  format = "json",
  verbose = TRUE
)
```

Arguments

endpoint	Character string specifying the endpoint name.
params	Named list of endpoint parameters. Each endpoint requires different parameters: <ul style="list-style-type: none"> • ChavesPix: <code>list(Data = "YYYY-MM-DD")</code> • TransacoesPixPorMunicipio: <code>list(DataBase = "YYYYMM")</code> • EstatisticasTransacoesPix: <code>list(Database = "YYYYMM")</code> • EstatisticasFraudesPix: <code>list(Database = "YYYYMM")</code>
filter	OData filter expression as a character string.
select	Character vector of columns to select.
orderby	OData orderby expression as a character string.
top	Integer; maximum number of records to return.
skip	Integer; number of records to skip.
format	Response format: "json" (default), "xml", "csv", or "html".
verbose	Logical; if TRUE, prints progress messages.

Value

A `tibble::tibble` with the raw API response data.

Examples

```
## Not run: # It usually takes much longer than 5 seconds.
# Custom query for keys
pix_query(
  endpoint = "ChavesPix",
  params = list(Data = "2025-12-01"),
  top = 10
)

# Custom query for transaction stats
pix_query(
  endpoint = "EstatisticasTransacoesPix",
  params = list(Database = "202509"),
  top = 10
)

## End(Not run)
```

pix_timeout

Get or Set API Request Timeout

Description

Get or set the timeout for API requests. The default timeout is 120 seconds. The BCB API can be slow for large queries, so a generous timeout is recommended.

Usage

```
pix_timeout(seconds = NULL)
```

Arguments

seconds Integer; timeout in seconds. If NULL, returns the current timeout.

Value

- `pix_timeout()`: Returns the current timeout in seconds (invisibly when setting).
- When called with `seconds`, sets the timeout and returns the new value invisibly.

Examples

```
# Get current timeout
pix_timeout()

# Set timeout to 180 seconds (3 minutes)
pix_timeout(180)

# Set timeout to 60 seconds
pix_timeout(60)

# Reset to default (120 seconds)
pix_timeout(120)
```

pix_url	<i>Build PIX API URL (for debugging)</i>
---------	--

Description

Builds and returns the URL that would be called by a PIX API function. Useful for debugging and testing.

Usage

```
pix_url(
  endpoint,
  params = NULL,
  filter = NULL,
  select = NULL,
  orderby = NULL,
  top = NULL,
  skip = NULL,
  format = "json"
)
```

Arguments

endpoint	Character string specifying the endpoint name.
params	Named list of endpoint parameters. Each endpoint requires different parameters: <ul style="list-style-type: none"> • ChavesPix: list(Data = "YYYY-MM-DD") • TransacoesPixPorMunicipio: list(DataBase = "YYYYMM") • EstatisticasTransacoesPix: list(Database = "YYYYMM") • EstatisticasFraudesPix: list(Database = "YYYYMM")
filter	OData filter expression as a character string.
select	Character vector of columns to select.
orderby	OData orderby expression (e.g., "Column asc" or "Column desc").

top	Integer; maximum number of records to return.
skip	Integer; number of records to skip.
format	Response format: "json" (default), "xml", "csv", or "html".

Value

Character string with the full API URL.

Examples

```
# See what URL would be called for each endpoint
pix_url("ChavesPix", params = list(Data = "2025-12-01"), top = 10)
pix_url("EstatisticasTransacoesPix", params = list(Database = "202509"), top = 10)
pix_url("TransacoesPixPorMunicipio", params = list(DataBase = "202512"), top = 10)
```

year_month_to_date *Convert Year-Month String to Date*

Description

Converts a year-month string in "YYYYMM" format to a Date object (first day of the month).

Usage

```
year_month_to_date(year_month)
```

Arguments

year_month Character vector of year-month strings in "YYYYMM" format.

Value

A Date vector.

Examples

```
year_month_to_date("202312")
year_month_to_date(c("202301", "202302", "202303"))
```

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