

# Package ‘crypto2’

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**Title** Download Crypto Currency Data from 'CoinMarketCap' without 'API'

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**URL** <https://github.com/sstoeckl/crypto2>,  
<https://sstoeckl.github.io/crypto2/>

**Description** Retrieves crypto currency information and historical prices as well as information on the exchanges they are listed on. Historical data contains daily open, high, low and close values for all crypto currencies. All data is scraped from <<https://coinmarketcap.com>> via their 'web-api'.

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**Depends** R (>= 4.0.0)

**Imports** dplyr, tibble, tidyr, purrr, progress, stats, lubridate,  
jsonlite, cli, plyr, base64enc, janitor

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**Suggests** spelling, testthat (>= 3.0.0), digest

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**Config/testthat/edition** 3

**NeedsCompilation** no

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crypto_global_quotes	<i>Retrieves historical quotes for the global aggregate market</i>
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## Description

This code retrieves global quote data (latest/historic) from coinmarketcap.com.

## Usage

```
crypto_global_quotes(
  which = "latest",
  convert = "USD",
  start_date = NULL,
  end_date = NULL,
  interval = "daily",
  quote = FALSE,
  requestLimit = 2200,
  sleep = 0,
  wait = 60,
  finalWait = FALSE
)
```

## Arguments

which	string Shall the code retrieve the latest listing or a historic listing?
convert	string (default: USD) to one or more of available fiat or precious metals prices (fiat_list()). If more than one are selected please separate by comma (e.g. "USD,BTC"), only necessary if 'quote=TRUE'
start_date	string Start date to retrieve data from, format 'yyyymmdd'
end_date	string End date to retrieve data from, format 'yyyymmdd', if not provided, today will be assumed
interval	string Interval with which to sample data, default 'daily'. Must be one of "1d" "2d" "3d" "15d" "30d" "
quote	logical set to TRUE if you want to include price data (FALSE=default)

requestLimit	integer (default 2200) Maximum number of requests one API call can handle
sleep	integer (default 0) Seconds to sleep between API requests
wait	waiting time before retry in case of fail (needs to be larger than 60s in case the server blocks too many attempts, default=60)
finalWait	to avoid calling the web-api again with another command before 60s are over (TRUE=default)

### Value

List of latest/new/historic listings of crypto currencies in a tibble (depending on the "which"-switch and whether "quote" is requested, the result may only contain some of the following variables):

btc_dominance	number Bitcoin's market dominance percentage by market cap.
eth_dominance	number Ethereum's market dominance percentage by market cap.
active_cryptocurrencies	number Count of active crypto currencies tracked by CMC This includes all crypto currencies with a listing_status of "active" or "listed".
total_cryptocurrencies	number Count of all crypto currencies tracked by CMC This includes "inactive" listing_status crypto currencies.
active_market_pairs	number Count of active market pairs tracked by CoinMarketCap across all exchanges.
#'	
active_exchanges	number Count of active exchanges tracked by CMC This includes all exchanges with a listing_status of "active" or "listed".
total_exchanges	number Count of all exchanges tracked by CMC This includes "inactive" listing_status exchanges.
last_updated	Timestamp of when this record was last updated.
total_market_cap	number The sum of all individual cryptocurrency market capitalizations in the requested currency.
total_volume_24h	number The sum of rolling 24 hour adjusted volume (as outlined in our methodology) for all crypto currencies in the requested currency.
total_volume_24h_reported	number The sum of rolling 24 hour reported volume for all crypto currencies in the requested currency.
#'	
altcoin_volume_24h	number The sum of rolling 24 hour adjusted volume (as outlined in our methodology) for all crypto currencies excluding Bitcoin in the requested currency.

```
altcoin_volume_24h_reported
    number The sum of rolling 24 hour reported volume for all crypto currencies
    excluding Bitcoin in the requested currency.

altcoin_market_cap
    number The sum of all individual cryptocurrency market capitalizations exclud-
    ing Bitcoin in the requested currency.
```

### Examples

```
## Not run:
# return new listings from the last 30 days
new_quotes <- crypto_global_quotes(which="latest", quote=TRUE, convert="BTC")
# return all global quotes in the first week of January 2014
quotes_2014w1 <- crypto_global_quotes(which="historical", quote=TRUE,
  start_date = "20140101", end_date="20140107", interval="daily")

# report in two different currencies
listings_2014w1_USDBTC <- crypto_global_quotes(which="historical", quote=TRUE,
  start_date = "20200101", end_date="20240530", interval="daily", convert="BTC")

## End(Not run)
```

---

crypto\_history

*Get historic crypto currency market data*

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### Description

Scrape the crypto currency historic market tables from 'CoinMarketCap' <https://coinmarketcap.com> and display the results in a dataframe/tibble. This can be used to conduct analysis on the crypto financial markets or to attempt to predict future market movements or trends.

### Usage

```
crypto_history(
  coin_list = NULL,
  convert = "USD",
  limit = NULL,
  start_date = NULL,
  end_date = NULL,
  interval = NULL,
  requestLimit = 400,
  sleep = 0,
  wait = 60,
  finalWait = FALSE,
  single_id = TRUE
)
```

**Arguments**

coin_list	string if NULL retrieve all currently existing coins (crypto_list()), or provide list of crypto currencies in the crypto_list() or cryptoi_listings() format (e.g. current and/or dead coins since 2015)
convert	(default: USD) to one of available fiat prices (fiat_list()) or bitcoin 'BTC'. Be aware, that since 2024 only USD and BTC are available here!
limit	integer Return the top n records, default is all tokens
start_date	date Start date to retrieve data from
end_date	date End date to retrieve data from, if not provided, today will be assumed
interval	string Interval with which to sample data according to what seq() needs
requestLimit	limiting the length of request URLs when bundling the api calls
sleep	integer (default 60) Seconds to sleep between API requests
wait	waiting time before retry in case of fail (needs to be larger than 60s in case the server blocks too many attempts, default=60)
finalWait	to avoid calling the web-api again with another command before 60s are over (TRUE=default)
single_id	Download data coin by coin (as of May 2024 this is necessary)

**Value**

Crypto currency historic OHLC market data in a dataframe and additional information via attribute "info":

timestamp	Timestamp of entry in database
id	Coin market cap unique id
name	Coin name
symbol	Coin symbol
ref_cur_id	reference Currency id
ref_cur_name	reference Currency name
open	Market open
high	Market high
low	Market low
close	Market close
volume	Volume 24 hours
market_cap	Market cap - close x circulating supply
time_open	Timestamp of open
time_close	Timestamp of close
time_high	Timestamp of high
time_low	Timestamp of low

This is the main function of the crypto package. If you want to retrieve ALL active coins then do not pass an argument to crypto\_history(), alternatively pass the coin name.

**Examples**

```
## Not run:

# Retrieving market history for ALL crypto currencies
all_coins <- crypto_history(limit = 2)
one_coin <- crypto_history(limit = 1, convert="BTC")

# Retrieving market history since 2020 for ALL crypto currencies
all_coins <- crypto_history(start_date = '2020-01-01',limit=10)

# Retrieve 2015 history for all 2015 crypto currencies
coin_list_2015 <- crypto_list(only_active=TRUE) %>%
  dplyr::filter(first_historical_data<="2015-12-31",
               last_historical_data>="2015-01-01")
coins_2015 <- crypto_history(coin_list = coin_list_2015,
                           start_date = "2015-01-01", end_date="2015-12-31", limit=20, interval="30d")
# retrieve hourly bitcoin data for 2 days
btc_hourly <- crypto_history(coin_list = coin_list_2015,
                           start_date = "2015-01-01", end_date="2015-01-03", limit=1, interval="1h")

## End(Not run)
```

---

crypto_info	<i>Retrieves info (urls, logo, description, tags, platform, date_added, notice, status,...) on CMC for given id</i>
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---

**Description**

This code retrieves data for all specified coins!

**Usage**

```
crypto_info(
  coin_list = NULL,
  limit = NULL,
  requestLimit = 1,
  sleep = 0,
  finalWait = FALSE
)
```

**Arguments**

coin_list	string if NULL retrieve all currently active coins (crypto_list()), or provide list of cryptocurrencies in the crypto_list() or cryptoi_listings() format (e.g. current and/or dead coins since 2015)
limit	integer Return the top n records, default is all tokens

requestLimit	(default: 1) limiting the length of request URLs when bundling the api calls (currently needs to be 1)
sleep	integer (default: 0) Seconds to sleep between API requests
finalWait	to avoid calling the web-api again with another command before 60s are over (FALSE=default)

## Value

List of (active and historically existing) cryptocurrencies in a tibble:

id	CMC id (unique identifier)
name	Coin name
symbol	Coin symbol (not-unique)
slug	Coin URL slug (unique)
category	Coin category: "token" or "coin"
description	Coin description according to CMC
logo	CMC url of CC logo
status	Status message from CMC
notice	Markdown formatted notices from CMC
alert_type	Type of alert on CMC
alert_link	Message link to alert
date_added	Date CC was added to the CMC database
date_launched	Date CC was launched
is_audited	Boolean if CC is audited
flags	Boolean flags for various topics
self_reported_circulating_supply	Self reported circulating supply
tags	Tibble of tags and tag categories
faq_description	FAQ description from CMC
url	Tibble of various resource urls. Gives website, technical_doc (whitepaper), source_code, message_board, chat, announcement, reddit, twitter, (block) explorer urls
platform	Metadata about the parent coin if available. Gives id, name, symbol, slug, and token address according to CMC

## Examples

```
## Not run:
# return info for bitcoin
coin_info <- crypto_info(limit=10)

## End(Not run)
```

---

crypto_list	<i>Retrieves name, CMC id, symbol, slug, rank, an activity flag as well as activity dates on CMC for all coins</i>
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---

### Description

This code uses the web api. It retrieves data for all historic and all active coins and does not require an 'API' key.

### Usage

```
crypto_list(only_active = TRUE, add_untracked = FALSE)
```

### Arguments

only_active	Shall the code only retrieve active coins (TRUE=default) or include inactive coins (FALSE)
add_untracked	Shall the code additionally retrieve untracked coins (FALSE=default)

### Value

List of (active and historically existing) cryptocurrencies in a tibble:

id	CMC id (unique identifier)
name	Coin name
symbol	Coin symbol (not-unique)
slug	Coin URL slug (unique)
rank	Current rank on CMC (if still active)
is_active	Flag showing whether coin is active (1), inactive(0) or untracked (-1)
first_historical_data	First time listed on CMC
last_historical_data	Last time listed on CMC, <i>today's date</i> if still listed

### Examples

```
## Not run:
# return all coins
active_list <- crypto_list(only_active=TRUE)
all_but_untracked_list <- crypto_list(only_active=FALSE)
full_list <- crypto_list(only_active=FALSE,add_untracked=TRUE)

# return all coins active in 2015
coin_list_2015 <- active_list %>%
dplyr::filter(first_historical_data<="2015-12-31",
              last_historical_data>="2015-01-01")
```



```
## End(Not run)
```

---

crypto_listings	<i>Retrieves name, CMC id, symbol, slug, rank, an activity flag as well as activity dates on CMC for all coins</i>
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---

### Description

This code retrieves listing data (latest/new/historic).

### Usage

```
crypto_listings(
  which = "latest",
  convert = "USD",
  limit = 5000,
  start_date = NULL,
  end_date = NULL,
  interval = "day",
  quote = FALSE,
  sort = "cmc_rank",
  sort_dir = "asc",
  sleep = 0,
  wait = 60,
  finalWait = FALSE
)
```

### Arguments

which	string Shall the code retrieve the latest listing, the new listings or a historic listing?
convert	string (default: USD) to one of available fiat prices ( <code>fiat_list()</code> ). If more than one are selected please separate by comma (e.g. "USD,BTC"), only necessary if 'quote=TRUE'
limit	integer Return the top n records
start_date	string Start date to retrieve data from, format 'yyyymmdd'
end_date	string End date to retrieve data from, format 'yyyymmdd', if not provided, today will be assumed
interval	string Interval with which to sample data according to what <code>seq()</code> needs
quote	logical set to TRUE if you want to include price data (FALSE=default)

sort	(May 2024: currently not available) string use to sort results, possible values: "name", "symbol", "market_cap", "price", "circulating_supply", "total_supply", "max_supply", "num_market_pairs", "volume_24h", "volume_7d", "volume_30d", "percent_change_1h", "percent_change_24h", "percent_change_7d". Especially useful if you only want to download the top x entries using "limit" (deprecated for "new")
sort_dir	(May 2024: currently not available) string used to specify the direction of the sort in "sort". Possible values are "asc" (DEFAULT) and "desc"
sleep	integer (default 0) Seconds to sleep between API requests
wait	waiting time before retry in case of fail (needs to be larger than 60s in case the server blocks too many attempts, default=60)
finalWait	to avoid calling the web-api again with another command before 60s are over (TRUE=default)

### Value

List of latest/new/historic listings of cryptocurrencies in a tibble (depending on the "which"-switch and whether "quote" is requested, the result may only contain some of the following variables):

id	CMC id (unique identifier)
name	Coin name
symbol	Coin symbol (not-unique)
slug	Coin URL slug (unique)
date_added	Date when the coin was added to the dataset
last_updated	Last update of the data in the database
rank	Current rank on CMC (if still active)
market_cap	market cap - close x circulating supply
market_cap_by_total_supply	market cap - close x total supply
market_cap_dominance	market cap dominance
fully_diluted_market_cap	fully diluted market cap
self_reported_market_cap	is the source of the market cap self-reported
self_reported_circulating_supply	is the source of the circulating supply self-reported
tlv_ratio	percentage of total value locked
price	latest average price
circulating_supply	approx. number of coins in circulation
total_supply	approx. total amount of coins in existence right now (minus any coins that have been verifiably burned)

max_supply	CMC approx. of max amount of coins that will ever exist in the lifetime of the currency
num_market_pairs	number of market pairs across all exchanges this coin
tv1	total value locked
volume_24h	Volume 24 hours
volume_change_24h	Volume change in 24 hours
percent_change_1h	1 hour return
percent_change_24h	24 hour return
percent_change_7d	7 day return
percent_change_30d	30 day return
percent_change_60d	60 day return
percent_change_90d	90 day return

### Examples

```
## Not run:
# return new listings from the last 30 days
new_listings <- crypto_listings(which="new", quote=FALSE, limit=50000)
new_listings2 <- crypto_listings(which="new", quote=TRUE, convert="BTC")

# return latest listing (last available data of all CC including quotes)
latest_listings <- crypto_listings(which="latest", quote=FALSE, limit=50000)
latest_listings2 <- crypto_listings(which="latest", quote=TRUE, convert="BTC")

# return the first 10 listings in the first week of January 2024
listings_2024w1 <- crypto_listings(which="historical", quote=TRUE,
  start_date = "20240101", end_date="20240102", interval="day", limit=10)

# only download the top 10 crypto currencies based on their market capitalization
# DOES NOT WORK ANY MORE

# for historically accurate snapshots (e.g. for backtesting crypto investments)
# you need to download the entire history on one day including price information:
listings_20200202 <- crypto_listings(which="historical", quote=TRUE,
  start_date="20200202", end_date="20200202")
listings_20240202 <- crypto_listings(which="historical", quote=TRUE,
  start_date="20240202", end_date="20240202", limit=50000)
# note the much larger amount in CCs in 2024, as well as the existence of many
more variables in the dataset

## End(Not run)
```

---

exchange_info	<i>Retrieves info (urls,logo,description,tags,platform,date_added,notice,status) on CMC for given exchange slug</i>
---------------	---

---

### Description

This code uses the web api. It retrieves data for all active, delisted and untracked exchanges! It does not require an 'API' key.

### Usage

```
exchange_info(
  exchange_list = NULL,
  limit = NULL,
  requestLimit = 1,
  sleep = 0,
  finalWait = FALSE
)
```

### Arguments

exchange_list	string if NULL retrieve all currently active exchanges (exchange_list()), or provide list of exchanges in the exchange_list() format (e.g. current and/or delisted)
limit	integer Return the top n records, default is all exchanges
requestLimit	limiting the length of request URLs when bundling the api calls
sleep	integer (default 60) Seconds to sleep between API requests
finalWait	to avoid calling the web-api again with another command before 60s are over (TRUE=default)

### Value

List of (active and historically existing) exchanges in a tibble:

id	CMC exchange id (unique identifier)
name	Exchange name
slug	Exchange URL slug (unique)
description	Exchange description according to CMC
notice	Exchange notice (markdown formatted) according to CMC
logo	CMC url of CC logo
type	Type of exchange
date_launched	Launch date of this exchange
is_hidden	TBD

```

is_redistributable      TBD
maker_fee                Exchanges maker fee
taker_fee                Exchanges maker fee
platform_id              Platform id on CMC
dex_status                Decentralized exchange status
wallet_source_status     Wallet source status
status                   Activity status on CMC
tags                     Tibble of tags and tag categories
urls                     Tibble of various resource urls. Gives website, blog, fee, twitter.
countries                 Tibble of countries the exchange is active in
fiats                    Tibble of fiat currencies the exchange trades in

```

### Examples

```

## Not run:
# return info for the first three exchanges
exchange_info <- exchange_info(limit=10)

## End(Not run)

```

---

exchange_list	<i>Retrieves name, CMC id, symbol, slug, rank, an activity flag as well as activity dates on CMC for all coins</i>
---------------	--

---

### Description

This code uses the web api. It retrieves data for all historic and all active exchanges and does not require an 'API' key.

### Usage

```
exchange_list(only_active = TRUE, add_untracked = FALSE)
```

### Arguments

```

only_active      Shall the code only retrieve active exchanges (TRUE=default) or include inactive coins (FALSE)
add_untracked    Shall the code additionally retrieve untracked exchanges (FALSE=default)

```

**Value**

List of (active and historically existing) exchanges in a tibble:

id	CMC exchange id (unique identifier)
name	Exchange name
slug	Exchange URL slug (unique)
is_active	Flag showing whether exchange is active (1), inactive(0) or untracked (-1)
first_historical_data	First time listed on CMC
last_historical_data	Last time listed on CMC, <i>today's date</i> if still listed

**Examples**

```
## Not run:
# return all exchanges
ex_active_list <- exchange_list(only_active=TRUE)
ex_all_but_untracked_list <- exchange_list(only_active=FALSE)
ex_full_list <- exchange_list(only_active=FALSE,add_untracked=TRUE)

## End(Not run)
```

---

fiat_list	<i>Retrieves list of all CMC supported fiat currencies available to convert cryptocurrencies</i>
-----------	--

---

**Description**

This code retrieves data for all available fiat currencies that are available on the website.

**Usage**

```
fiat_list(include_metals = FALSE)
```

**Arguments**

`include_metals` Shall the results include precious metals (TRUE) or not (FALSE=default). Update: As of May 2024 no more metals are included in this file

**Value**

List of (active and historically existing) cryptocurrencies in a tibble:

id	CMC id (unique identifier)
symbol	Coin symbol (not-unique)
name	Coin name
sign	Fiat currency sign

**Examples**

```
## Not run:  
# return fiat currencies available through the CMC api  
fiat_list <- fiat_list()  
  
## End(Not run)
```

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