
callsignlookuptools

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classabbyamp, 0x5c

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A [QRZ](#), [Callook](#), [HamQTH](#), and [QRZCQ](#) API interface in Python with sync and async support.

CLI USAGE

Note: To use the CLI, install with the extra cli (e.g. `pip install callsignlookuptools[cli]`) or otherwise install the library `typer[all]` and `click-help-colors`.

callsignlookuptools has a basic CLI interface, which can be run using:

```
$ python3 -m callsignlookuptools
```

It can be used with the following arguments:

```
$ python3 -m callsignlookuptools --help
Usage: python -m callsignlookuptools [OPTIONS] COMMAND [ARGS]...

  A QRZ, Callook, HamQTH, and QRZCQ API interface in Python with sync and async support.

Options:
  -v, --version  Show the version of this program and exit.
  -h, --help     Show this message and exit.

Commands:
  callook  Use Callook to look up a callsign
  hamqth   Use HamQTH to look up a callsign
  qrz      Use QRZ to look up a callsign
  qrzcq    Use QRZCQ to look up a callsign
```

Each lookup source is a subcommand, and any source-specific options can be viewed by using the `-h` or `--help` argument on that subcommand.

For example, the QRZ lookup source has the following options:

```
$ python3 -m callsignlookuptools qrz --help
Usage: python -m callsignlookuptools qrz [OPTIONS] CALL

  Use QRZ to look up a callsign

  Requires a QRZ account and an XML Logbook Data or QRZ Premium subscription

Options:
  -u, --user, --username TEXT  QRZ username (will be prompted if not provided)  ↵
  ↪ [required]
  -p, --pass, --password TEXT  QRZ password (will be prompted if not provided)  ↵
```

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```
↪ [required]
CALL          The callsign to look up [required]
-h, --help    Show this message and exit.
```

An example invocation that looks up W1XYZ on QRZ, where the username is provided, and the password will be prompted for:

```
$ python3 -m callsignlookuptools qrz --username w1aw W1XYZ
```


API REFERENCE

2.1 QRZ

```
class callsignlookuptools.QrzSyncClient(username, password, session_key="",  
                                         useragent='python-callsignlookuptools-v1.1.0', session=None)
```

Synchronous QRZ API client

Parameters

- **username** (str) – QRZ username
- **password** (str) – QRZ password
- **session_key** (str) – QRZ login session key
- **useragent** (str) – Useragent for QRZ
- **session** (Optional[Session]) – A requests session to use for requests

search(callsign)

Search for a callsign

Parameters

callsign (str) – the callsign to look up

Return type

CallsignData

Returns

the callsign data from the lookup service

Raises

common.exceptions.CallsignLookupError on network or parsing error

property password

Getter

gets password

Setter

sets password

property session

Getter

gets the requests session

Setter

sets the requests session

property session_key**Getter**

gets API session key

Setter

sets API session key

property useragent**Getter**

gets useragent

Setter

sets useragent

property username**Getter**

gets username

Setter

sets username

```
class callsignlookuptools.QrzAsyncClient(username, password, session_key="",  
                                         useragent='python-callsignlookuptools-v1.1.0', session=None)
```

Asynchronous QRZ API client

Parameters

- **username** (str) – QRZ username
- **password** (str) – QRZ password
- **session_key** (str) – QRZ login session key
- **useragent** (str) – Useragent for QRZ
- **session** (Optional[ClientSession]) – An aiohttp session to use for requests

```
async classmethod new(username, password, session_key="",  
                      useragent='python-callsignlookuptools-v1.1.0', session=None)
```

Creates a QrzAsyncClient object and automatically starts a session if not provided.

Parameters

- **username** (str) – QRZ username
- **password** (str) – QRZ password
- **session_key** (str) – QRZ login session key
- **useragent** (str) – Useragent for QRZ
- **session** (Optional[ClientSession]) – An aiohttp session to use for requests

Return type*QrzAsyncClient*

```
async search(callsign)
```

Search for a callsign

Parameters**callsign** (str) – the callsign to look up

Return type*CallsignData***Returns**

the callsign data from the lookup service

Raises*common.exceptions.CallsignLookupError* on network or parsing error**async close_session()**

Closes the aiohttp.ClientSession session

property password**Getter**

gets password

Setter

sets password

property session**Getter**

gets the aiohttp session

Setter

sets the aiohttp session

property session_key**Getter**

gets API session key

Setter

sets API session key

async start_session()

Creates a new aiohttp.ClientSession

property useragent**Getter**

gets useragent

Setter

sets useragent

property username**Getter**

gets username

Setter

sets username

2.2 Callook

class callsignlookuptools.**CallookSyncClient**(*session=None*)

Synchronous Callook API client

Parameters

session (Optional[Session]) – A requests session to use for requests

search(*callsign*)

Search for a callsign

Parameters

callsign (str) – the callsign to look up

Return type

CallsignData

Returns

the callsign data from the lookup service

Raises

common.exceptions.CallsignLookupError on network or parsing error

property session

Getter

gets the requests session

Setter

sets the requests session

class callsignlookuptools.**CallookAsyncClient**(*session=None*)

Asynchronous Callook API client

Parameters

session (Optional[ClientSession]) – An aiohttp session to use for requests

async classmethod new(*session=None*)

Creates a CallookAsyncClient object and automatically starts a session if not provided.

Parameters

session (Optional[ClientSession]) – An aiohttp session to use for requests

Return type

CallookAsyncClient

async search(*callsign*)

Search for a callsign

Parameters

callsign (str) – the callsign to look up

Return type

CallsignData

Returns

the callsign data from the lookup service

Raises

common.exceptions.CallsignLookupError on network or parsing error

async close_session()

Closes the aiohttp.ClientSession session

property session

Getter

gets the aiohttp session

Setter

sets the aiohttp session

async start_session()

Creates a new aiohttp.ClientSession

2.3 HamQTH

```
class callsignlookuptools.HamQthSyncClient(username, password, session_key="",
                                           useragent='python-callsignlookuptools-v1.1.0',
                                           session=None)
```

Synchronous HamQTH API client

Parameters

- **username** (str) – HamQTH username
- **password** (str) – HamQTH password
- **session_key** (str) – HamQTH login session key
- **useragent** (str) – Useragent for HamQTH
- **session** (Optional[Session]) – A requests session to use for requests

search(callsign)

Search for a callsign

Parameters

callsign (str) – the callsign to look up

Return type

CallsignData

Returns

the callsign data from the lookup service

Raises

common.exceptions.CallsignLookupError on network or parsing error

property password

Getter

gets password

Setter

sets password

property session

Getter

gets the requests session

Setter

sets the requests session

property session_key**Getter**

gets API session key

Setter

sets API session key

property useragent**Getter**

gets useragent

Setter

sets useragent

property username**Getter**

gets username

Setter

sets username

```
class callsignlookuptools.HamQthAsyncClient(username, password, session_key="",  
                                           useragent='python-callsignlookuptools-v1.1.0',  
                                           session=None)
```

Asynchronous HamQTH API client

Parameters

- **username** (str) – HamQTH username
- **password** (str) – HamQTH password
- **session_key** (str) – HamQTH login session key
- **useragent** (str) – Useragent for HamQTH
- **session** (Optional[ClientSession]) – An aiohttp session to use for requests

```
async classmethod new(username, password, session_key="",  
                      useragent='python-callsignlookuptools-v1.1.0', session=None)
```

Creates a HamQthAsyncClient object and automatically starts a session if not provided.

Parameters

- **username** (str) – HamQTH username
- **password** (str) – HamQTH password
- **session_key** (str) – HamQTH login session key
- **useragent** (str) – Useragent for HamQTH
- **session** (Optional[ClientSession]) – An aiohttp session to use for requests

```
async search(callsign)
```

Search for a callsign

Parameters

- **callsign** (str) – the callsign to look up

Return type*CallsignData***Returns**

the callsign data from the lookup service

Raises*common.exceptions.CallsignLookupError* on network or parsing error**async close_session()**

Closes the aiohttp.ClientSession session

property password**Getter**

gets password

Setter

sets password

property session**Getter**

gets the aiohttp session

Setter

sets the aiohttp session

property session_key**Getter**

gets API session key

Setter

sets API session key

async start_session()

Creates a new aiohttp.ClientSession

property useragent**Getter**

gets useragent

Setter

sets useragent

property username**Getter**

gets username

Setter

sets username

2.4 QRZCQ

```
class callsignlookuptools.QrzCqSyncClient(username, password, session_key="",
                                         useragent='python-callsignlookuptools-v1.1.0',
                                         session=None)
```

Synchronous QRZCQ API client

Parameters

- **username** (str) – QRZCQ username
- **password** (str) – QRZCQ password
- **session_key** (str) – QRZCQ login session key
- **useragent** (str) – Useragent for QRZCQ
- **session** (Optional[Session]) – A requests session to use for requests

search(callsign)

Search for a callsign

Parameters

callsign (str) – the callsign to look up

Return type

CallsignData

Returns

the callsign data from the lookup service

Raises

common.exceptions.CallsignLookupError on network or parsing error

property password

Getter

gets password

Setter

sets password

property session

Getter

gets the requests session

Setter

sets the requests session

property session_key

Getter

gets API session key

Setter

sets API session key

property useragent

Getter

gets useragent

Setter

sets useragent

property username**Getter**

gets username

Setter

sets username

```
class callsignlookuptools.QrzCqAsyncClient(username, password, session_key="",
                                         useragent='python-callsignlookuptools-v1.1.0',
                                         session=None)
```

Asynchronous QRZCQ API client

Parameters

- **username** (str) – QRZCQ username
- **password** (str) – QRZCQ password
- **session_key** (str) – QRZCQ login session key
- **useragent** (str) – Useragent for QRZCQ
- **session** (Optional[ClientSession]) – An aiohttp session to use for requests

```
async classmethod new(username, password, session_key="",
                       useragent='python-callsignlookuptools-v1.1.0', session=None)
```

Creates a QrzCqAsyncClient object and automatically starts a session if not provided.

Parameters

- **username** (str) – QRZCQ username
- **password** (str) – QRZCQ password
- **session_key** (str) – QRZCQ login session key
- **useragent** (str) – Useragent for QRZCQ
- **session** (Optional[ClientSession]) – An aiohttp session to use for requests

```
async search(callsign)
```

Search for a callsign

Parameters**callsign** (str) – the callsign to look up**Return type***CallsignData***Returns**

the callsign data from the lookup service

Raises*common.exceptions.CallsignLookupError* on network or parsing error

```
async close_session()
```

Closes the aiohttp.ClientSession session

property password

Getter

gets password

Setter

sets password

property session

Getter

gets the aiohttp session

Setter

sets the aiohttp session

property session_key

Getter

gets API session key

Setter

sets API session key

async start_session()

Creates a new aiohttp.ClientSession

property useragent

Getter

gets useragent

Setter

sets useragent

property username

Getter

gets username

Setter

sets username

DATA TYPES

Note: If an attribute of any class is unknown or not included from that data source, it will be `None` or a similar enum value.

3.1 Callsign Data

```
class callsignlookuptools.CallsignData(query, raw_data, data_source, type=None, callsign=None,
                                       aliases=None, trustee=None, lic_class=None, lic_codes=None,
                                       effective_date=None, expire_date=None, last_action_date=None,
                                       prev_call=None, prev_lic_class=None, modified_date=None,
                                       name=None, address=None, dxcc=None, dxcc_prefix=None,
                                       qth=None, continent=None, latlong=None, grid=None,
                                       county=None, district=None, oblast=None, dok=None,
                                       sondok=None, plot=None, fips=None, msa=None,
                                       area_code=None, cq_zone=None, itu_zone=None, iota=None,
                                       geoloc_src=None, timezone=None, qsl=None, born=None,
                                       licensed=None, email=None, username=None, url=None,
                                       page_views=None, db_serial=None, bio=None, image=None,
                                       social_media=None, uls_url=None, frn=None)
```

Represents the data for a callsign retrieved from a lookup service

query

the callsign searched for

raw_data

the raw data, as parsed by pydantic from the API response. Probably not needed for most use cases.

data_source

the lookup service the data comes from

type = None

the type of license the callsign is associated with

callsign = None

the callsign, as received from the lookup service. Not always the same as the query.

aliases = None

alias callsigns

trustee = None
trustee info

lic_class = None
license class. Some lookup services have a defined set of classes.

lic_codes = None
license codes

effective_date = None
license effective/grant date

expire_date = None
license expiration date

last_action_date = None
license last updated date

prev_call = None
previous callsign

prev_lic_class = None
previous license class

modified_date = None
lookup service record modification date

name = None
licensee name

address = None
licensee address

dxcc = None
licensee DXCC entity

dxcc_prefix = None
licensee DXCC's primary callsign prefix

qth = None
licensee location

continent = None
licensee continent

latlong = None
latitude and longitude of address or QTH

grid = None
grid square locator of address or QTH

county = None
county of address or QTH

district = None
district of address or QTH

oblast = None
oblast of address or QTH (Russia only)

dok = None
DOK name (Germany only)

sondok = None
whether the DOK is a Sonder-DOK (Germany only)

plot = None
Polish OT number (Poland only)

fips = None
Federal Information Processing Standards number (USA only)

msa = None
Metro Service Area (USA only)

area_code = None
telephone area code (USA only)

cq_zone = None
CQ zone

itu_zone = None
ITU zone

iota = None
Islands on the Air designator

geoloc_src = None
geolocation information source

timezone = None
licensee time zone

qsl = None
QSL info

born = None
year born

licensed = None
year licensed

email = None
licensee email address

username = None
username of license page manager

url = None
url of the webpage for the callsign

page_views = None
callsign page views

db_serial = None
QRZ database serial number

bio = None
biography info

image = None
profile image info

social_media = None
social media info

uls_url = None
ULS record url (USA only)

frn = None
FRN (USA only)

3.2 Exceptions

class callsignlookuptools.CallsignLookupError(*args)
The exception raised when something goes wrong in callsignlookuptools

3.3 Helper Data Types

class callsignlookuptools.common.dataclasses.Dxcc(id=None, name=None)
Represents a DXCC entity

id = None
entity ID

name = None
entity name

class callsignlookuptools.common.dataclasses.Address(attn=None, line1=None, line2=None, line3=None, city=None, state=None, zip=None, country=None, country_code=None)
Represents a mailing address

attn = None
Attention address line, this line should be prepended to the address

line1 = None
address line 1

line2 = None
address line 2

line3 = None
address line 3

```

city = None
    city

state(USA Only) = None
    state (USA Only)

zip = None
    Zip/postal code

country = None
    country name for the QSL mailing address

country_code = None
    dxcc entity code for the mailing address country

class callsignlookuptools.common.dataclasses.Name(first=None, name=None, nickname=None,
                                                    formatted_name=None)

    Represents a name

first = None
    first name(s)

name = None
    last name or full name

nickname = None
    A different or shortened name used on the air

formatted_name = None
    Combined full name and nickname in the format used by QRZ. This format is subject to change.

class callsignlookuptools.common.dataclasses.Trustee(callsign=None, name=None)

    Represents a club callsign trustee (USA only)

callsign = None
    trustee callsign

name = None
    trustee name

class callsignlookuptools.common.dataclasses.Qsl(info=None, bureau_info=None,
                                                    eqsl=QslStatus.UNKNOWN,
                                                    lotw=QslStatus.UNKNOWN,
                                                    mail=QslStatus.UNKNOWN,
                                                    bureau=QslStatus.UNKNOWN)

    Represents information about QSL methods

info = None
    info about QSLing, e.g. QSL manager info

bureau_info = None
    info about QSLing via bureau

eqsl = None
    whether eQSL is accepted

lotw = None
    whether Logbook of the World QSL is accepted

```

mail = None

whether direct mail QSL is accepted

bureau = None

whether bureau QSL is accepted

class callsignlookuptools.common.dataclasses.**Bio**(*size=None, updated=None*)

Represents metadata for a QRZ bio

size = None

approximate size in bytes

updated = None

when the bio was last updated

class callsignlookuptools.common.dataclasses.**Image**(*url=None, size=None, height=None, width=None*)

Represents an image

url = None

image url

size = None

image size in bytes

height = None

image height in pixels

width = None

image width in pixels

class callsignlookuptools.common.dataclasses.**SocialMedia**(*website=None, jabber=None, icq=None, msn=None, skype=None, facebook=None, twitter=None, google_plus=None, youtube=None, linkedin=None, flickr=None, vimeo=None*)

represents social media info

website = None

website url

jabber = None

Jabber username

icq = None

ICQ number

msn = None

MSN username

skype = None

Skype username

facebook = None

Facebook profile url

twitter = None

Twitter profile url

google_plus = None

Google+ profile url

youtube = None

YouTube channel url

linkedin = None

LinkedIn profile url

flickr = None

Flickr profile url

vimeo = None

Vimeo profile url

class callsignlookuptools.common.dataclasses.**Timezone**(*utc_offset=None, us_timezone=None, observes_dst=None*)

Timezone(utc_offset: Optional[str] = None, us_timezone: Optional[str] = None, observes_dst: Optional[bool] = None)

3.4 Enums

enum callsignlookuptools.common.enums.**DataSource**(*value*)

Describes the callsign data lookup source

Valid values are as follows:

CALLOOK = <DataSource.CALLOOK: 'callook.info'>

HAMQTH = <DataSource.HAMQTH: 'hamqth.com'>

QRZ = <DataSource.QRZ: 'qrz.com'>

QRZCQ = <DataSource.QRZCQ: 'qrzcq.com'>

enum callsignlookuptools.common.enums.**Continent**(*value*)

Represents a continent

Valid values are as follows:

AF = <Continent.AF: 'Africa'>

AN = <Continent.AN: 'Antarctica'>

AS = <Continent.AS: 'Asia'>

EU = <Continent.EU: 'Europe'>

NA = <Continent.NA: 'North America'>

OC = <Continent.OC: 'Oceania'>

SA = <Continent.SA: 'South America'>

NONE = <Continent.NONE: None>

enum callsignlookuptools.common.enums.CallsignType(*value*)

Describes what kind of license the license holder has

Valid values are as follows:

CLUB = <CallsignType.CLUB: 'CLUB'>

MILITARY = <CallsignType.MILITARY: 'MILITARY'>

RACES = <CallsignType.RACES: 'RACES'>

RECREATION = <CallsignType.RECREATION: 'RECREATION'>

PERSON = <CallsignType.PERSON: 'PERSON'>

NONE = <CallsignType.NONE: 'NONE'>

enum callsignlookuptools.common.enums.LicenseClass(*value*)

Describes the class of a license

Valid values are as follows:

NOVICE = <LicenseClass.NOVICE: 'NOVICE'>

TECHNICIAN = <LicenseClass.TECHNICIAN: 'TECHNICIAN'>

TECHNICIAN_PLUS = <LicenseClass.TECHNICIAN_PLUS: 'TECHNICIAN PLUS'>

GENERAL = <LicenseClass.GENERAL: 'GENERAL'>

ADVANCED = <LicenseClass.ADVANCED: 'ADVANCED'>

EXTRA = <LicenseClass.EXTRA: 'EXTRA'>

NONE = <LicenseClass.NONE: ''>

enum callsignlookuptools.common.enums.GeoLocSource(*value*)

Describes where the lat/long data in a QrzCallsignData object comes from

Valid values are as follows:

USER = <GeoLocSource.USER: 'user'>

GEOCODE = <GeoLocSource.GEOCODE: 'geocode'>

GRID = <GeoLocSource.GRID: 'grid'>

ZIP = <GeoLocSource.ZIP: 'zip'>

STATE = <GeoLocSource.STATE: 'state'>

DXCC = <GeoLocSource.DXCC: 'dxcc'>

NONE = <GeoLocSource.NONE: 'none'>

enum callsignlookuptools.common.enums.QslStatus(*value*)

Describes whether a type of QSL is accepted

Valid values are as follows:

YES = <QslStatus.YES: True>

NO = <QslStatus.NO: False>

UNKNOWN = <QslStatus.UNKNOWN: None>

INSTALLATION

callsignlookuptools requires Python 3.9 at minimum. Install by running:

```
# synchronous requests only
$ pip install callsignlookuptools

# asynchronous aiohttp only
$ pip install callsignlookuptools[async]

# both sync and async
$ pip install callsignlookuptools[all]

# enable the CLI
$ pip install callsignlookuptools[cli]
```

Note: If requests, aiohttp, or typer[all] and click-help-colors are installed another way, you will also have access to the sync, async, or command-line interface, respectively.

API SUPPORT

Some of the supported callsign lookup APIs require accounts and/or paid subscriptions to be used.

Site	Requirements
QRZ	QRZ account and XML Logbook Data or QRZ Premium subscription
Callook	None
HamQTH	HamQTH account
QRZCQ	QRZCQ account and QRZCQ Premium subscription

GETTING STARTED

Using CallsignLookupTools is designed to be very simple. The following examples show basic use of the library.

6.1 Sync

```
# import the sync client for the service you want to use
from callsignlookuptools import QrzSyncClient, CallsignLookupError

# instantiate the lookup client
# some clients require a username, password, or other arguments
lookup_client = QrzSyncClient(username="...", password="...")

# perform a search query
try:
    # this will be a CallsignData object
    lookup_result = lookup_client.search("W1AW")
    # if an error occurs while performing the query,
    # it will raise a CallsignLookupError
except CallsignLookupError as e:
    print(e)
else:
    print(lookup_result)
```

6.2 Async

```
import asyncio

# import the async client for the service you want to use
from callsignlookuptools import QrzAsyncClient, CallsignLookupError

# instantiate the lookup client
# some clients require a username, password, or other arguments
lookup_client = QrzAsyncClient(username="...", password="...")

# for the async client, queries must be run inside coroutines
async def run_query():
    # perform a search query
```

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```
try:
    # this will be a CallsignData object
    lookup_result = await lookup_client.search("W1AW")
    # if an error occurs while performing the query,
    # it will raise a CallsignLookupError
except CallsignLookupError as e:
    print(e)
else:
    print(lookup_result)
    # if you're using the internally-generated session,
    # make sure to clean up
    await lookup_client.close_session()

# run the task
loop = asyncio.get_event_loop()
loop.run_until_complete(run_query())
```

LICENSE

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