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**aiomailru**

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aiomailru is a python [Mail.Ru API](#) wrapper. The main features are:

- authorization ([Authorization Code](#), [Implicit Flow](#), [Password Grant](#), [Refresh Token](#))
- [REST API](#) methods
- web scrapers



To use [Mail.Ru API](#) you need a registered app and [Mail.Ru](#) account. For more details, see [aiomailru Documentation](#).

## 1.1 Client application

Use `ClientSession` when REST API is needed in:

- a client component of the client-server application
- a standalone mobile/desktop application

i.e. when you embed your app's info (private key) in publicly available code.

```
from aiomailru import ClientSession, API

session = ClientSession(app_id, private_key, access_token, uid)
api = API(session)

events = await api.stream.get()
friends = await api.friends.getOnline()
```

Use `access_token` and `uid` that were received after authorization. For more details, see [authorization instruction](#).

## 1.2 Server application

Use `ServerSession` when REST API is needed in:

- a server component of the client-server application
- requests from your servers

```
from aiomailru import ServerSession, API

session = ServerSession(app_id, secret_key, access_token)
api = API(session)

events = await api.stream.get()
friends = await api.friends.getOnline()
```

Use `access_token` that was received after authorization. For more details, see [authorization instruction](#).



## CHAPTER 2

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### Installation

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```
$ pip install aiomailru
```

or

```
$ python setup.py install
```



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## Supported Python Versions

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Python 3.5, 3.6, 3.7 and 3.8 are supported.

### 3.1 Getting Started

#### 3.1.1 Installation

If you use pip, just type

```
$ pip install aiomailru
```

You can install from the source code like

```
$ git clone https://github.com/KonstantinTogoi/aiomailru.git
$ cd aiomailru
$ python setup.py install
```

#### 3.1.2 Account

Sign up in [Mail.Ru](#).

#### 3.1.3 Application

After signing up visit [Mail.Ru API documentation page](#) and create a new application: <https://api.mail.ru/apps/my/add>.

Save **client\_id** (aka **app\_id**), **private\_key** and **secret\_key** for user authorization and executing API requests.

```
app_id = 'your_client_id'
private_key = 'your_private_key'
secret_key = 'your_secret_key'
```

## 3.2 Authorization

The preferred way to authorize is an `async with` statement. After authorization the session will have the following attributes:

- `session_key` aka `access_token`
- `refresh_token`
- `expires_in`
- `token_type` if Implicit Grant used
- `uid`

### 3.2.1 Authorization Code Grant

```
from aiomailru import CodeSession, API

app_id = 123456
private_key = ''
secret_key = 'xyz'

async with CodeSession(app_id, private_key, secret_key, code, redirect_uri) as session:
    api = API(session)
    ...
```

About OAuth 2.0 Authorization Code Grant: <https://oauth.net/2/grant-types/authorization-code/>

For more details, see <https://api.mail.ru/docs/guides/oauth/sites/> and <https://api.mail.ru/docs/guides/oauth/mobile-web/>

### 3.2.2 Implicit Grant

```
from aiomailru import ImplicitSession, API

app_id = 123456
private_key = 'abcde'
secret_key = ''

async with ImplicitSession(app_id, private_key, secret_key, email, passwd, scope) as session:
    api = API(session)
    ...
```

About OAuth 2.0 Implicit Grant: <https://oauth.net/2/grant-types/implicit/>

For more details, see <https://api.mail.ru/docs/guides/oauth/standalone/>

### 3.2.3 Password Grant

```

from aiomailru import PasswordSession, API

app_id = 123456
private_key = 'abcde'
secret_key = ''

async with PasswordSession(app_id, private_key, secret_key, email, passwd, scope) as session:
    ↪session:
        api = API(session)
        ...

```

About OAuth 2.0 Password Grant: <https://oauth.net/2/grant-types/password/>

For more details, see <https://api.mail.ru/docs/guides/oauth/client-credentials/>

### 3.2.4 Refresh Token

```

from aiomailru import RefreshSession, API

app_id = 123456
private_key = ''
secret_key = 'xyz'

async with RefreshSession(app_id, private_key, secret_key, refresh_token) as session:
    api = API(session)
    ...

```

About OAuth 2.0 Refresh Token: <https://oauth.net/2/grant-types/refresh-token/>

For more details, see [https://api.mail.ru/docs/guides/oauth/client-credentials/#refresh\\_token](https://api.mail.ru/docs/guides/oauth/client-credentials/#refresh_token)

## 3.3 Session

The session makes **GET** requests when you call instance of `APIMethod` class that are returned as attributes of an `API` class instance.

### 3.3.1 Request

By default, the session (`CodeSession`, `ImplicitSession`, `PasswordSession`, `RefreshSession`) tries to infer which signature generation circuit to use:

- if `uid` and `private_key` are not empty strings - **client-server** signature generation circuit is used
- else if `secret_key` is not an empty string - **server-server** signature generation circuit is used
- else exception is raised

You can explicitly set a signature generation circuit for signing requests by passing to `API` one of the sessions below.

#### Client-Server signature generation circuit

Let's consider the following example of `API` request with client-server signature:

```
from aiomailru import TokenSession, API

session = TokenSession(
    app_id=423004,
    private_key='7815696ecbf1c96e6894b779456d330e',
    secret_key='',
    access_token='be6ef89965d58e56dec21acb9b62bdaa',
    uid='1324730981306483817',
)
api = API(session)

friends = await api.friends.get()
```

It is equivalent to **GET** request:

```
https://appsmaill.ru/platform/api
?method=friends.get
&app_id=423004
&session_key=be6ef89965d58e56dec21acb9b62bdaa
&sig=5073f15c6d5b6ab2fde23ac43332b002
```

The following steps were taken:

1. request parameters were sorted and concatenated - `app_id=423004method=friends.getsession_key=be6ef89965d58e56dec21acb9b62bdaa`
2. uid, sorted request parameters, private\_key were concatenated - `1324730981306483817app_id=423004method=friends.getsession_key=be6ef89965d58e56dec21acb9b62bdaa`
3. signature `5073f15c6d5b6ab2fde23ac43332b002` calculated as MD5 of the previous string
4. signature appended to **GET** request parameters

For more details, see <https://api.mail.ru/docs/guides/restapi/#client>.

### ClientSession

ClientSession is a subclass of TokenSession.

```
from aiomailru import ClientSession, API

session = ClientSession(app_id, 'private key', 'access token', uid)
api = API(session)
...
```

### CodeClientSession

CodeClientSession is a subclass of CodeSession.

```
from aiomailru import CodeClientSession, API

async with CodeClientSession(app_id, 'private key', code, redirect_uri) as session:
    api = API(session)
    ...
```

## ImplicitClientSession

ImplicitClientSession is a subclass of ImplicitSession.

```
from aiomailru import ImplicitClientSession, API

async with ImplicitClientSession(app_id, 'private key', email, passwd, scope) as session:
    api = API(session)
    ...
```

## PasswordClientSession

PasswordClientSession is a subclass of PasswordSession.

```
from aiomailru import PasswordClientSession, API

async with PasswordClientSession(app_id, 'private key', email, passwd, scope) as session:
    api = API(session)
    ...
```

## RefreshClientSession

RefreshClientSession is a subclass of RefreshSession.

```
from aiomailru import RefreshClientSession, API

async with RefreshClientSession(app_id, 'private key', refresh_token) as session:
    api = API(session)
    ...
```

## Server-Server signature generation circuit

Let's consider the following example of API request with server-server signature:

```
from aiomailru import TokenSession, API

session = TokenSession(
    app_id=423004,
    private_key='',
    secret_key='3dad9cbf9baaa0360c0f2ba372d25716',
    access_token='be6ef89965d58e56dec21acb9b62bdaa',
    uid='',
)
api = API(session)

friends = await api.friends.get()
```

It is equivalent to **GET** request:

```
https://appsmaill.ru/platform/api
?method=friends.get
&app_id=423004
&session_key=be6ef89965d58e56dec21acb9b62bdaa
&sig=4a05af66f80da18b308fa7e536912bae
```

The following steps were taken:

1. parameter `secure = 1` appended to parameters
2. request parameters were sorted and concatenated - `app_id=423004method=friends.getsecure=1session_key=be6ef89965d58e56dec21acb9b62bdaa`
3. sorted request parameters and `secret_key` were concatenated - `1324730981306483817app_id=423004method=friends.getsession_key=be6ef89965d58e56dec21acb9b62bdaa3dad9cbf9baaa0360c0f2ba372d25716`
4. signature `4a05af66f80da18b308fa7e536912bae` calculated as MD5 of the previous string
5. signature appended to **GET** request parameters

For more details, see <https://api.mail.ru/docs/guides/restapi/#server>.

### ServerSession

`ServerSession` is a subclass of `TokenSession`.

```
from aiomailru import ServerSession, API

session = ServerSession(app_id, 'secret key', 'access token')
api = API(session)
...
```

### CodeServerSession

`CodeServerSession` is a subclass of `CodeSession`.

```
from aiomailru import CodeServerSession, API

async with CodeServerSession(app_id, 'secret key', code, redirect_uri) as session:
    api = API(session)
    ...
```

### ImplicitServerSession

`ImplicitServerSession` is a subclass of `ImplicitSession`.

```
from aiomailru import ImplicitServerSession, API

async with ImplicitServerSession(app_id, 'secret key', email, passwd, scope) as session:
    api = API(session)
    ...
```



## PasswordServerSession

PasswordServerSession is a subclass of PasswordSession.

```
from aiomailru import PasswordServerSession, API

async with PasswordServerSession(app_id, 'secret key', email, passwd, scope) as session:
    ↪session:
        api = API(session)
        ...
```

## RefreshServerSession

RefreshServerSession is a subclass of RefreshSession.

```
from aiomailru import RefreshServerSession, API

async with RefreshServerSession(app_id, 'secret key', refresh_token) as session:
    api = API(session)
    ...
```

### 3.3.2 Response

By default, a session after executing request returns response's body as dict if executing was successful, otherwise it raises exception.

You can pass `pass_error` parameter to `TokenSession` for returning original response (including errors).

### 3.3.3 Error

In case of an error, by default, exception is raised. You can pass `pass_error` parameter to `TokenSession` for returning original error's body as dict:

```
{
  "error": {
    "error_code": 202,
    "error_msg": "Access to this object is denied"
  }
}
```

## 3.4 REST API

List of all methods is available here: <https://api.mail.ru/docs/reference/rest/>.

### 3.4.1 Executing requests

For executing API requests call an instance of `APIMethod` class. You can get it as an attribute of `API` class instance or as an attribute of other `APIMethod` class instance.

```
from aiomailru import API

api = API(session)

events = await api.stream.get() # events for current user
friends = await api.friends.get() # current user's friends
```

Under the hood each API request is enriched with parameters to generate signature:

- method
- app\_id
- session\_key
- secure

and with the following parameter after generating signature:

- sig, see <https://api.mail.ru/docs/guides/restapi/#sig>

### 3.4.2 Objects

Some objects are returned in several methods.

#### User

field	description
<b>uid</b> string	User ID.
<b>first_name</b> string	First name.
<b>last_name</b> string	Last name.
<b>nick</b> string	Nickname.
<b>status_text</b> string	User status.
<b>email</b> string	E-mail address.
<b>sex</b> integer, [0, 1]	User sex. Possible values: - 0 - male - 1 - female
<b>show_age</b> integer, [0, 1]	Information whether the user allows to show the age.
<b>birthday</b> string	User's date of birth. Returned as DD.MM.YYYY.
<b>has_my</b> integer, [0, 1]	Information whether the user has profile.
<b>has_pic</b> integer, [0, 1]	Information whether the user has profile photo.
<b>pic</b> string	URL of user's photo.

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Table 1 – continued from previous page

field	description
<b>pic_small</b> string	URL of user's photo with at most 45 pixels on the longest side.
<b>pic_big</b> string	URL of user's photo with at most 600 pixels on the longest side.
<b>pic_22</b> string	URL of square photo of the user photo with 22 pixels in width.
<b>pic_32</b> string	URL of square photo of the user photo with 32 pixels in width.
<b>pic_40</b> string	URL of square photo of the user photo with 40 pixels in width.
<b>pic_50</b> string	URL of square photo of the user photo with 50 pixels in width.
<b>pic_128</b> string	URL of square photo of the user photo with 128 pixels in width.
<b>pic_180</b> string	URL of square photo of the user photo with 180 pixels in width.
<b>pic_190</b> string	URL of square photo of the user photo with 190 pixels in width.
<b>link</b> string	Returns a website address of a user profile.
<b>referrer_type</b> string	Referer type. Possible values: - <i>stream.install</i> - <i>stream.publish</i> - <i>invitation</i> - <i>catalog</i> - <i>suggests</i> - <i>left menu suggest</i> - <i>new apps</i> - <i>guestbook</i> - <i>agent</i>
<b>referrer_id</b> string	Identifies where a user came from; see <a href="https://api.mail.ru/docs/guides/ref/">https://api.mail.ru/docs/guides/ref/</a> .
<b>is_online</b> integer, [0, 1]	Information whether the user is online.
<b>is_friend</b> integer, [0, 1]	Information whether the user is a friend of current user.
<b>friends_count</b> integer	Number of friends.
<b>follower</b> integer, [0, 1]	Information whether the user is a follower of current user.
<b>following</b> integer, [0, 1]	Information whether current user is a follower of the user.
<b>subscribe</b> integer, [0, 1]	Information whether current user is a subscriber of the user.
<b>subscribers_count</b> integer	Number of subscribers.
<b>video_count</b> integer	Number of videos.
<b>is_verified</b> integer, [0, 1]	Information whether the user is verified.
<b>vip</b> integer, [0, 1]	Information whether the user is vip.

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Table 1 – continued from previous page

field	description
<b>app_installed</b> integer, [0, 1]	Information whether the user has installed the current app.
<b>last_visit</b> integer	Date (in Unixtime) of the last user's visit.
<b>cover</b> object	Information about profile's cover; see <i>Cover</i> .
<b>group_info</b> object	Object with following fields: - <b>category_id</b> integer - <b>short_description</b> string - <b>full_description</b> string - <b>interests</b> string - <b>posts_cnt</b> integer - <b>category_name</b> string - <b>rules</b> string
<b>location</b> object	Object with following fields: - <b>country</b> object: { <b>id</b> integer, <b>name</b> string} - <b>city</b> object: { <b>id</b> integer, <b>name</b> string} - <b>region</b> object: { <b>id</b> integer, <b>name</b> string}

## Event

Object describes an event and contains following fields:

field	description
<b>thread_id</b> string	Comment thread ID in the following format: <User's checksum><ID>.
<b>authors</b> array	Information about authors; see <i>User</i> .
<b>type_name</b> string	Event type name.
<b>click_url</b> string Returns only if current event is likeable.	Event URL.
<b>likes_count</b> integer Returns only if current event is likeable.	Number of “likes”.
<b>attachments</b> array	Information about attachments to the event (link, image, video, audio, user, ...) if any; see <i>Attachments</i> .
<b>time</b> integer	Date (in Unixtime) of the event.
<b>huid</b> string	Event ID in the following format: <User's checksum><Event ID>.
<b>generator</b> object	Object with the following fields: - <b>icon</b> string - URL of app icon. - <b>url</b> string - App url. - <b>app_id</b> integer - App ID. - <b>type</b> string - App type. - <b>title</b> string - App title.
<b>user_text</b> string	User text.
<b>is_liked_by_me</b> integer, [0, 1]	Shows if current user has liked the event.
<b>subtype</b> string	“event”
<b>is_commentable</b> integer, [0, 1]	Shows if the event is commentable.
<b>type</b> string	Event type; see <i>Event types</i> .
<b>is_likeable</b> integer, [0, 1]	Shows if the event is likeable.
<b>id</b> string	Event ID.
<b>text_media</b> array Returns only if event's type name is <i>micropost</i> .	Information about text; see <i>Attachments</i> .
<b>comments_count</b> integer Returns only if current event is commentable.	Number of comments.
<b>action_links</b> array	Each object contains following fields: - <b>text</b> string - <b>href</b> string

## Event types

- 1-1 Photo
- 1-2 Video
- 1-3 Photo mark
- 1-4 Video mark
- 1-6 TYPE\_PHOTO\_WAS\_SELECTED
- 1-7 Music
- 1-8 Photo comment
- 1-9 TYPE\_PHOTO\_SUBSCRIPTION
- 1-10 Video comment
- 1-11 TYPE\_PHOTO\_WAS\_MODERATED
- 1-12 TYPE\_VIDEO\_WAS\_MODERATED
- 1-13 TYPE\_VIDEO\_TRANSLATION
- 1-14 Private photo comment
- 1-15 Private video comment
- 1-16 Music comment
- 1-17 TYPE\_PHOTO\_NEW\_COMMENT
- 1-18 TYPE\_VIDEO\_NEW\_COMMENT
- 3-1 Blog post
- 3-2 Blog post comment
- 3-3 Join community
- 3-4 Community
- 3-5 TYPE\_USER\_COMMUNITY\_LEAVE
- 3-6 TYPE\_BLOG\_COMMUNITY\_POST
- 3-7 TYPE\_USER\_GUESTBOOK
- 3-8 TYPE\_BLOG\_CHALLENGE\_ACCEPT
- 3-9 TYPE\_BLOG\_CHALLENGE\_THROW
- – 3-10 TYPE\_BLOG\_SUBSCRIPTION
- 3-12 Blog post mark
- 3-13 Community post mark
- 3-23 Post in micro blog
- 3-25 Private post in micro blog
- 4-1 TYPE\_QUESTION
- 4-2 TYPE\_QUESTION\_ANSWER
- 4-6 TYPE\_QUESTION\_ANSWER\_PRIVATE
- 5-1 TYPE\_USER\_FRIEND

- 5-2 TYPE\_USER\_ANKETA
- 5-4 TYPE\_USER\_CLASSMATES
- 5-5 TYPE\_USER\_CAREER
- 5-7 TYPE\_USER\_AVATAR
- 5-9 TYPE\_USER\_PARTNER
- 5-10 TYPE\_GIFT\_SENT
- 5-11 TYPE\_GIFT\_RECEIVED
- 5-12 TYPE\_USER\_MILITARY
- 5-13 TYPE\_USER\_PARTNER\_APPROVED
- 5-15 TYPE\_USER\_ITEM
- 5-16 App install
- 5-17 App event
- 5-18 Community post
- 5-19 Post in community guestbook
- 5-20 Join community
- 5-21 Community video
- 5-22 Community photo
- 5-24 App event
- 5-24 TYPE\_APP\_INFO
- 5-26 Link share
- 5-27 Event like
- 5-29 Video share
- 5-30 Comment to link share
- 5-31 Comment to video share
- 5-32 Micropost comment

## Like

Object wraps an event that a user liked and contains following fields:

field	description
<b>time</b> integer	Date (in Unixtime) of the “like”.
<b>author</b> object	Information about the user; see <i>User</i> .
<b>huid</b> string	Like ID in the following format: <User's checksum><Like ID>.
<b>subevent</b> object	Information about the event; see <i>Event</i> .
<b>subtype</b> string	“like”.
<b>is_commentable</b> integer, [0, 1]	0.
<b>id</b> string	Like ID.
<b>is_likeable</b> integer, [0, 1]	0.

## Comment

Object wraps an event that a user commented and contains following fields:

field	description
<b>time</b> integer	Date (in Unixtime) of the comment.
<b>huid</b> string	Comment ID in the following format: <User's checksum><Comment ID>.
<b>subevent</b> object	Information about the event; see <i>Event</i> .
<b>subtype</b> string	“comment”.
<b>comment</b> object	Object with following fields: - <b>text</b> string - Text. - <b>time</b> integer - Date (in Unixtime) of the comment. - <b>is_deleted</b> integer [0, 1] - Shows if the comment deleted. - <b>id</b> string - Comment ID. - <b>author</b> object - Information about the user; see <i>User</i> . - <b>text_media</b> object - Object: { <b>object</b> string and <b>content</b> string}.
<b>is_commentable</b> integer, [0, 1]	0.
<b>id</b> string	Comment ID.
<b>is_likeable</b> integer, [0, 1]	0.

## Attachments

Information about event’s media attachments is returned in field **attachments** and contains an array of objects. Each object contains field **object** with type name that defines all other fields.

## text

contains following fields:



<b>field</b>
<b>object</b> string, ["text"]
<b>content</b> string

### tag

contains one additional field **content** with an object with following fields:

<b>field</b>
<b>is_blacklist</b> integer, [0,1]
<b>tag</b> string

### link

contains one additional field content with an object with following fields:

<b>field</b>
<b>type-id</b> string, ["text"]
<b>contents</b> string

or contains following fields:

<b>field</b>
<b>object</b> string, ["link"]
<b>text</b> string
<b>url</b> string

### avatar

contains one additional field **new** with an object with following fields:

<b>field</b>
<b>thread_id</b> string
<b>width</b> integer
<b>click_url</b> string
<b>album_id</b> string
<b>src</b> string
<b>height</b> integer
<b>desc</b> string
<b>src_hires</b> string
<b>id</b> string
<b>owner_id</b> string

### image

contains following fields:

<b>field</b>
<b>likes_count</b> integer
<b>thread_id</b> string
<b>width</b> string
<b>object</b> string, ["image"]
<b>click_url</b> string
<b>album_id</b> string
<b>src</b> string
<b>resized_src</b> string
<b>height</b> string
<b>src_filed</b> string
<b>src_hires</b> string
<b>id</b> string
<b>owner_id</b> string
<b>comments_count</b> integer

All fields but **object** and **src** may not be returned.

## music

contains following fields:

<b>field</b>
<b>is_add</b> integer
<b>click_url</b> string
<b>object</b> string, ["music"]
<b>name</b> string
<b>author</b> string
<b>duration</b> integer
<b>file_url</b> string
<b>uploader</b> string
<b>mid</b> string

## video

contains following fields:

<b>field</b>
<b>width</b> integer
<b>object</b> string, ["video"]
<b>album_id</b> string
<b>view_count</b> integer
<b>desc</b> string
<b>comments_count</b> integer
<b>likes_count</b> integer
<b>thread_id</b> string
<b>image_filed</b> string
<b>click_url</b> string
<b>src</b> string
<b>duration</b> integer
<b>height</b> integer
<b>is_liked_by_me</b> integer
<b>external_id</b> string
<b>owner_id</b> string
<b>title</b> string

## app

contains one additional field **content** with an object with following fields:

<b>field</b>
<b>PublishStatus</b> object Object with following fields: - <b>My</b> string - <b>Mobile</b> string
<b>ID</b> string
<b>InstallationsSpaced</b> string
<b>ShortName</b> string
<b>Genre</b> array Each object contains following fields: - <b>name</b> string - <b>id</b> string - <b>admin_genre</b> integer, [0, 1]
<b>Votes</b> object Object with following fields: - <b>VoteSum</b> string - <b>VotesCount</b> string - <b>VotesStarsWidth</b> string - <b>Votes2IntRounded</b> string - <b>Votes2DigitRounded</b> string
<b>Installations</b> integer
<b>ShortDescription</b> string
<b>Name</b> string
<b>Description</b> string
<b>Pictures</b> object

## group

contains one additional field **content** with an object; see *User*.

## gift

contains one additional field **content** with an object with following fields:

<b>field</b>
<b>is_private</b> integer, [0,1]
<b>click_url</b> string
<b>is_anonymous</b> integer, [0,1]
<b>time</b> integer
<b>is_read</b> integer, [0,1]
<b>to</b> object see <i>User</i> .
<b>gift</b> object
<b>from</b> object see <i>User</i> .
<b>text</b> string
<b>rus_time</b> string
<b>long_id</b> string

## Other

Objects that are not classified.

## Cover

Object contains information about profile's cover.

<b>field</b>
<b>cover_position</b> string
<b>width</b> string
<b>size</b> string
<b>aid</b> string
<b>pid</b> string
<b>thread_id</b> string
<b>owner</b> string
<b>target_album</b> object Information about target album; see <i>Target Album</i> .
<b>click_url</b> string
<b>src</b> string
<b>height</b> string
<b>cover_width</b> string
<b>created</b> string
<b>comment</b> string
<b>src_small</b> string
<b>cover_height</b> string
<b>title</b> string

## Target Album

Object contains information about cover's target album.

<b>field</b>
<b>link</b> string
<b>owner</b> string
<b>sort_order</b> string
<b>sort_by</b> string
<b>description</b> string
<b>privacy_desc</b> string
<b>size</b> integer
<b>aid</b> string
<b>created</b> integer
<b>cover_pid</b> string
<b>cover_url</b> string
<b>is_commentable</b> integer, [0,1]
<b>title</b> string
<b>updated</b> integer
<b>privacy</b> integer
<b>can_read_comment</b> integer, [0,1]

## 3.5 Scrapers

The following scrapers are available:

- `groups.get`
- `groups.getInfo`
- `groups.join`
- `stream.getByAuthor`, works only with a group's id

```
from aiomailru.scrapers import APIScraper

api = APIScraper(session)
groups = await api.groups.get(scrape=True) # current user's groups
```

Scrapers have the following requirements:

- Cookies
- Pyppeteer
- Browserless

### 3.5.1 Cookies

If `session` is instance of `TokenSession` you must set cookies that were given by `ImplicitSession`:

```
session = ServerSession(app_id, secret_key, access_token, cookies=cookies)
```

### 3.5.2 Pyppeteer

Scrapers require an instance of Chrome.

You can start a new Chrome process:

```
from aiomailru.scrapers import APIScraper
from pyppeteer import launch

browser = await launch()
api = APIScraper(session, browser=browser)

print(browser.wsEndpoint) # your browser's endpoint
```

or connect to the existing Chrome:

```
from aiomailru.scrapers import APIScraper
from pyppeteer import connect

browser_conn = {'browserWSEndpoint': 'your_endpoint'}
browser = await connect(browser_conn)
api = APIScraper(session, browser=browser)
```

Export environment variable

```
$ export PYPPETEER_BROWSER_ENDPOINT='your_endpoint'
```

to automatically connect to Chrome:

```
from aiomailru.scrapers import APIScraper
api = APIScraper(session) # connects to PYPPETEER_BROWSER_ENDPOINT
```

### 3.5.3 Browserless

You can replace `pyppeteer.launch` with `pyppeteer.connect`. See <https://www.browserless.io>

Start headless chrome using

```
$ docker-compose up -d chrome
```

Export environment variable

```
$ export PYPPETEER_BROWSER_ENDPOINT=ws://localhost:3000
```

to automatically connect to Browserless container:

```
from aiomailru.scrapers import APIScraper
api = APIScraper(session) # connects to ws://localhost:3000
```

## CHAPTER 4

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### Indices and tables

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