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# PySpeckle

Jul 07, 2020



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A Python Speckle Client

### Speckle.Works

Speckle: open digital infrastructure for designing, making and operating the built environment. We reimagine the design process from the Internet up: Speckle is an open source (MIT) initiative for developing an extensible Design & AEC data communication and collaboration platform.

## 1.1 Installation

PySpeckle can be installed through pip: `pip install speckle`

## 1.2 Disclaimer

This code is WIP and as such should be used with caution, on non-sensitive projects.

## 1.3 Description

PySpeckle is a light Python wrapper / interface for the Speckle framework. It can be used independently through Python scripts, or as a base for building various plug-ins, such as [SpeckleBlender](#).

## 1.4 Quick Start

Here is how you initialise a client, authenticate and start speckling:

```
from speckle import SpeckleApiClient

# Create a client using the appropriate server
client = SpeckleApiClient('hestia.speckle.works')

# Login with your details
client.login(
    email='test@test.com',
    password='Speckle<3Python'
)

# Stream ID to get
stream_id = 'HjenwS2s'

# Get stream data using its ID
stream = client.streams.get(stream_id)

# Print the list of placeholder objects in the stream
for object in stream.objects:
    print(object)
```

To get a list of all available streams and find a particular one by name:

```
# Fetch the list of all available streams
streams = client.streams.list()
name = "JetStream"

# Go through the list and find the stream by name
stream = None
for s in streams:
    if s.name == name:
        stream = s
        break

# If the stream is found, fetch the full stream data, using an optional query dict
# to omit some data
if stream:
    stream_data = client.streams.get(stream.streamId, {'omit':['layers','comments']})
```

To get object data from a stream:

```
stream = client.streams.get(streamId)

# Fetch a single object using its placeholder ID
object = client.objects.get(stream.objects[0].id)

# Fetch the objects all at once using an optional query dict
objects = client.objects.get_bulk([o.id for o in stream.objects], {'omit':'base64',
    ↪ 'displayValue'})

# Print out some object info
for o in objects:
    print("Object {} is type {}".format(o.id, o.type))
```

To create some data and upload it to a stream:

```
import speckle.schemas
```

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```
# Create some mesh data
vertices = [[0,0,0],[1,0,0],[1,1,0], [0,1,0]]
faces = [[0,1,2,3]]

# Create a Speckle Mesh object
sm = speckle.schemas.Mesh()

# Add vertices
for v in vertices:
    sm.vertices.extend(v)

# Add faces
for f in faces:
    if len(f) == 3: # if it is a triangle...
        sm.faces.append(0)
    elif len(f) == 4: # if it is a quad...
        sm.faces.append(1)
    sm.faces.extend(f)

# Give it a nice name
sm.name = "FancyMesh"

# Create the object on the server and receive a list of
# placeholders in return (with only one placeholder)
placeholders = client.objects.create(sm)

# Fetch the stream that we want to update
stream = client.streams.get(streamId)

# Set the stream object list to the created object or
# extend it to add the object to the existing list
stream.objects = placeholders
#stream.objects.extend(placeholders)

# Update the stream with the new data
client.streams.update(stream.streamId, stream)
```

Usage documentation can be found [here](#).

## 1.5 Maintainers

SpeckleBlender is written and maintained by [Tom Svilans \(Github\)](#), [Izzy Lyseggen](#) and [Antoine Dao](#).

## 1.6 Notes

Commit formatting can be found [here](#).

### 1.6.1 Installation

PySpeckle can be installed through `pip`:

```
$ pip install speckle
```

The Pypi repository can be found [here](#)

### 1.6.2 QuickStart

Playing with a new library or API client can be daunting. We feel you! This is why we have compiled a bunch of example usage scenarios to walk you through how to use the python speckle client.

In the following set of examples we assume you don't have your own Speckle server up and running so you can test all of the steps below by connecting to the `hestia` speckle server.

First we must instantiate the `SpeckleApiClient`. You can name it whatever you want, we will use `client` for simplicity. As we are connecting to the `hestia` test server we will input the full domain name as an argument: `hestia.speckle.works`

```
from speckle import SpeckleApiClient

client = SpeckleApiClient('hestia.speckle.works')
```

### Registering and Logging in

Before you can do anything with Speckle you need to register yourself to the server you are going to be using. If you have already registered then you can skip the first code section below and look at the one right after where we explain how to login.

---

**Note:** When you register using a PySpeckle client this client is also authenticated and you can start using it to make API calls immediately without needing to login.

---

```
client.register(
    email='test@test.com',
    password='Speckle<3Python',
    company='SnakeySnakes',
    name='Snakey',
    surname='Snake'
)
```

If you are already registered then you can simply login your client as follows:

```
client.login(
    email='test@test.com',
    password='Speckle<3Python'
)
```

### Sending and Retrieving Things

At the moment the api client takes dictionary payloads as data inputs (a `Speckle Object` for example) and returns data classes in most cases (essentially a class instance). If a data class is not returned then the object return is a dictionary.



**Warning:** Whether the client returns a data class or a dictionary is not yet very well segmented. To be sure you are getting back what you expect from the python client we recommend reading through the [API reference](#)

**Attention:** PySpeckle doesn't yet support any of the *websockets* data transfer methods that the SpeckleServer offers. We're working on it. Feel free to [contribute](#) if you've got an idea on how to implement it.

## Common Methods

Speckle mostly follows a bog standard REST API setup where a user can POST, GET, PUT and DELETE different resources. As such the following verbs can be used to make standard REST calls to Speckle.

**Warning:** For most resources that support a *get*, *update*, *delete* call the *id* value to use to retrieve them is the *object.id* or Mongo *ObjectId*. The exception to this rule is the *Stream* resource which can only be retrieved by using the *StreamId* property of that stream.

## Create

Equivalent of POST / -d '{"key1":"value1", "key2":"value2"}'

```
project = {
    'name': 'test project',
    'description': 'a project made for testing purposes',
    'tags': [],
    'streams': [],
}

project = client.projects.create(data=project)

print(project.id)
```

## List

Equivalent of GET /

```
projects = client.projects.list()

for project in projects:
    print(project.dict())
```

## Get

Equivalent of GET /{id}

```
project_id = '507f1f77bcf86cd799439011'

project = client.projects.get(project_id)

print(project.dict())
```

### Update

Equivalent of PUT `/ {id} -d '{"key1": "value1", "key2": "value2"}'`

**Note:** The update method returns a payload response dictionary rather than a resource data class. The response payload should look something like this

```
{
  "success": True,
  "message": "Patched ['description'] for 507f1f77bcf86cd799439011"
}
```

**Warning:** The *update* method will replace all the values in the input dictionary payload even if they are *None*. Be careful if you are trying to run *upsert* commands with dictionaries that contain *None* values

```
project_id = '507f1f77bcf86cd799439011'
project_update = {
    'description': 'a project updated for testing purposes',
}

response = client.projects.update(id=project_id, data=project_update)

assert response['success'], response['message']
```

### Delete

Equivalent of DELETE `/ {id}`

**Note:** The delete method returns a payload response dictionary rather than a resource data class. The response payload should look something like this

```
{
  "success": True,
  "message": "Project was deleted."
}
```

```
project_id = '507f1f77bcf86cd799439011'

response = client.projects.delete(id=project_id)

assert response['success'], response['message']
```

## API Objects

If you've made it this far down you're probably thinking to yourself:

Great I can login and mess with a project... anything else I can do?

—Some Ambitious User

Glad you asked! There are a bunch of different types of Speckle objects or resources you can mess with using this python client. Here is a list of them with links to their specific documentation:

- [Accounts](#)
- [Projects](#)
- [Streams](#)
- [API Clients](#)
- [Comments](#)
- [SpeckleObjects](#)

---

**Note:** Each resource supports some or all of the common methods described [above](#). Additionally each resource might support some extra methods which are specific to that resource. A good example is the *stream* resource which supports the *clone* method

```
streamId = 'GBexG1'

clone_stream, parent_stream = client.streams.clone(streamId)
```

---

## Parting Notes

Hope you've found this quickstart guide useful. Please do contribute any proposed changes/improvements on the main projects [github repo](#).

### 1.6.3 Client API Reference

This section offers an in-depth description of SpeckleClient API calls.

#### The SpeckleClient class

Speckle Client documentation

The SpeckleClient class is used to manage authentication and dispatch request to a given SpeckleServer.

#### Example

Instantiate a client to a given server and register/authenticate to it:

```
from speckle import SpeckleApiClient

client = SpeckleApiClient('myspeckle.speckle.works')
```

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```

client.register(
    email='test@test.com',
    password='Speckle<3Python',
    company='SnakeySnakes',
    name='Snakey',
    surname='Snake'
)

streams = client.streams.list()

```

For more detailed documentation on the individual resources available go [here](#)

```

class speckle.base.client.ClientBase (host='hestia.speckle.works',          version='v1',
                                       use_ssl=True, verbose=False)

```

Base class for http speckle client

This class contains the basic properties required to register, authenticate and hold authentication credentials.

**register** (*email, password, company, name=None, surname=None*)

Register a new user to the speckle server

After a user has registered, this function will log them in and save auth token credentials in the client object.

#### Parameters

- {str} -- Email address of the new user, must not exist on the server (*email*) –
- {str} -- Pretty self explanatory, must be at least 8 characters long (*password*) –
- {str} -- Company the user is registering to speckle under (*company*) –

#### Keyword Arguments

- {str} -- User name, server will default to 'Anonymous' if None (default (*name*) – {None})
- {str} -- User surname, server will default to '' if None (default (*surname*) – {None})

**login** (*email, password*)

Login user to speckle server

After a user has logged in, this function will save auth token credentials in the client object.

#### Parameters

- {str} -- Email address of the new user, must not exist on the server (*email*) –
- {str} -- Pretty self explanatory, must be at least 8 characters long. Oh, must also be the user's actual password... (*password*) –

**websockets** (*stream\_id, client\_id=None, header=None, on\_open=None, on\_message=None, on\_error=None, on\_close=None, on\_ping=None, on\_pong=None, on\_cont\_message=None, get\_mask\_key=None, subprotocols=None, on\_data=None*)

Connect to a specific stream on the host server through websockets

This function essentially generates the correct connection url the Speckle Server expects in order to connect to a specific stream. After that all this function does is instantiate a WebSocketApp class from the `websocket-client` package.

**Parameters** `{str}` -- The id of a stream(`stream_id`) -

#### Keyword Arguments

- `{str}` -- The id of the client to authenticate as (default (`client_id`) - {None})
- `{dict}` -- custom header for websocket handshake (default (`header`) - {None})
- `{function}` -- callable object which is called at opening websocket. (default (`on_open`) - {None}) This function takes 1 argument: 1. this class object
- `{function}` -- callable object which is called when closed the connection (default (`on_close`) - {None}) This function takes 1 argument: 1. this class object
- `{function}` -- callable object which is called when receiving data (default (`on_message`) - {None}) This function takes 2 arguments: 1. this class object 2. the utf-8 string sent by the server
- `{function}` -- callable object which is called when an error is sent by the server (default (`on_error`) - {None}) This function takes 2 arguments: 1. this class object 2. an exception object
- `{function}` -- callable object which is called when the server pings (default (`on_pong`) - {None}) This function takes 2 arguments: 1. this class object 2. the utf-8 string sent by the server
- `{function}` -- callable object which is called when the server pings (default - {None}) This function takes 2 arguments: 1. this class object 2. the utf-8 string sent by the server
- `{function}` -- callback object which is called when receive continued frame data. (default (`on_cont_message`) - {None}) This function takes 2 arguments: 1. this class object 2. the utf-8 string sent by the server 3. is continue flag, if 0 the data continues to the next frame
- `{function}` -- callback object which is called when a message received (default (`on_data`) - {None}) This is called before `on_message` or `on_cont_message`, and then `on_message` or `on_cont_message` is called. `on_data` has 4 argument. 1. this class object. 2. the utf-8 string sent by the server 3. data type. `ABNF.OPCODE_TEXT` or `ABNF.OPCODE_BINARY` will be same. 4. continue flag. if 0, the data continue
- `{function}` -- a callable to produce new mask keys (default (`get_mask_key`) - {None}) see the `WebSocket.set_mask_key`'s docstring for more information
- `{list}` -- list of available sub protocols (default (`subprotocols`) - {None})

**Returns** `WebSocketApp` - a websocket-client instance

### Example

```
from speckle import SpeckleApiClient

host = 'hestia.speckle.works'
stream_id = 'MawOwhxET'

client = SpeckleApiClient(host=host)
client.login('test@test.com', 'testtesttest')

def print_message(ws, message):
    print(message)

ws = client.websockets(stream_id, on_message=print_message)

# Send a message to the stream
ws.send('Hi Speckle!!!')

# Start a listening server that will print what ever message
# is sent to it (due to the print_message function defined above)
ws.run_forever()
```

### Accounts Methods

**class** speckle.resources.accounts.**Resource** (*session, basepath, me*)

API Access class for Accounts

The accounts resource is used to search, retrieve and manipulate user profiles. None of the methods return an instantiated data class, instead they all return dictionary payloads.

### Example

Here is an example of what an account object looks like:

```
{
  "id": "507f1f77bcf86cd799439011"
  "name": "Test"
  "surname": "McTestyFace"
  "company": "Acme"
  "avatar": "https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRDzvciiQ5-
↪P6itEjycrIGb9l9sJH9E538C-tM9QRgFVTaj0Muq"
  "role": "user"
}
```

**get** (*id*)

Get a specific user from the SpeckleServer

**Parameters** {**str**} -- The ID of the resource to retrieve (*id*) –

**Returns** dict – The user

### Example

```
>>> user_id = '507f1f77bcf86cd799439011'
>>> client.accounts.get(id=user_id)
{
  "success": True,
  "resource": {
    "id": "507f1f77bcf86cd799439011",
    "email": "test@test.com"
    "name": "Test"
    "surname": "McTestyFace"
    "company": "Acme"
    "avatar": "https://encrypted-tbn0.gstatic.com/images?
↪q=tbn:ANd9GcRDzvciiQ5-P6itEjycrIGb9l9sJH9E538C-tM9QRgFVTaj0Muq"
    "role": "user"
  }
}
```

### get\_profile()

Get current logged in user's profile

**Returns** dict – The current user's profile

### Example

```
>>> from speckle.SpeckleClient import SpeckleApiClient
>>> client = SpeckleApiClient(host='hestia.speckle.com')
>>> client.login(email='test@test.com', password='somesupersecret')
>>> client.accounts.get_profile()
{
  "success": True,
  "resource": {
    "id": "507f1f77bcf86cd799439011",
    "email": "test@test.com"
    "name": "Test"
    "surname": "McTestyFace"
    "company": "Acme"
    "avatar": "https://encrypted-tbn0.gstatic.com/images?
↪q=tbn:ANd9GcRDzvciiQ5-P6itEjycrIGb9l9sJH9E538C-tM9QRgFVTaj0Muq"
    "role": "user"
  }
}
```

### update\_profile(data)

Update the current logged in user's profile

**Parameters** {dict} -- A dictionary of profile values to be updated  
(data) –

**Returns** dict – A confirmation payload of the updated keys

### Example

```
>>> from speckle.SpeckleClient import SpeckleApiClient
>>> client = SpeckleApiClient(host='hestia.speckle.com')
```

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```

>>> client.login(email='test@test.com', password='somesupersecret')
>>> client.accounts.get_profile()
{
    "success": True,
    "resource": {
        "id": "507f1f77bcf86cd799439011",
        "email": "test@test.com"
        "name": "Test"
        "surname": "McTestyFace"
        "company": "Acme"
        "avatar": "https://encrypted-tbn0.gstatic.com/images?
↪q=tbm:ANd9GcRDzvciiQ5-P6itEjycrIGb9l9sJH9E538C-tM9QRgFVTaj0Muq"
        "role": "user"
    }
}
>>> client.accounts.update_profile({'name': 'Tester'})
{
    "success": True,
    "message": 'User profile updated.'
}

```

**set\_role(id, role)**

Set the role of a user

**Warning:** The client must be authenticated with an *admin* user to carry out this operation.

**Parameters**

- **{str}** -- The ID of the user to be updated (*id*) –
- **{str}** -- The role to give the user (*role*) –

**Returns** dict – A response payload confirming the user role update**Example**

```

>>> from speckle.SpeckleClient import SpeckleApiClient
>>> client = SpeckleApiClient(host='hestia.speckle.com')
>>> client.login(email='test@test.com', password='somesupersecret')
>>> client.accounts.get_profile()
{
    "success": True,
    "resource": {
        "id": "507f1f77bcf86cd799439011",
        "email": "test@test.com"
        "name": "Test"
        "surname": "McTestyFace"
        "company": "Acme"
        "avatar": "https://encrypted-tbn0.gstatic.com/images?
↪q=tbm:ANd9GcRDzvciiQ5-P6itEjycrIGb9l9sJH9E538C-tM9QRgFVTaj0Muq"
        "role": "admin"
    }
}
>>> user_to_modify = '9eeb71aa8b2a292512a3bf94091e2df8'

```

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```
>>> client.accounts.set_role(id=user_to_modify, role='admin')
{
  "success": True,
  "message": 'User profile updated.'
}
```

**search** (*search*)

Search for one or more users

**Parameters** {*str*} -- **A search string. Should be at least 3 characters long.** (*search*) –

**Returns** list – A list of found users

**Example**

```
>>> client.accounts.search('tom')
{
  "success": True,
  "resources": [{
    "id": "507f1f77bcf86cd799439011",
    "email": "tom@test.com"
    "name": "Tom"
    "surname": "Svilans"
    "company": "Acme"
    "avatar": "https://encrypted-tbn0.gstatic.com/images?q=tbn:AND9GcRDzvciiQ5-P6itEjycrIGb9l9sJH9E538C-tM9QRgFVTaj0Muq"
    "role": "admin"
  },
  {
    "id": "397f19073b30eb9f71fc5bas",
    "email": "test@tom.com"
    "name": "Test"
    "surname": "McTestyFace"
    "company": "Tom Associated"
    "avatar": "https://encrypted-tbn0.gstatic.com/images?q=tbn:AND9GcRDzvciiQ5-P6itEjycrIGb9l9sJH9E538C-tM9QRgFVTaj0Muq"
    "role": "user"
  },
  {
    "id": "9bfb9894c21e29014cd0e8166",
    "email": "tom@tom.com"
    "name": "Tom"
    "surname": "Tom"
    "company": "Tom"
    "avatar": "https://i.ytimg.com/vi/Dtm5nMlqq1Q/maxresdefault.jpg"
    "role": "admin"
  }
  ]
}
```

**Projects Methods**

**class** speckle.resources.projects.**Project** (*\*\*data*)

Project Data Class

**Parameters** {BaseModel} -- The BaseModel for all Speckle objects  
(ResourceBaseSchema) –

**class** speckle.resources.projects.Resource(session, basepath, me)  
API Access class for Projects

**list**()  
List all projects

**Returns** list – A list of project data class instances

**create**(data)  
Create a project from a data dictionary

**Parameters** {dict} -- A dictionary describing a project (data) –

**Returns** Project – The instance created on the Speckle Server

**get**(id)  
Get a specific project from the SpeckleServer

**Parameters** {str} -- The ID of the project to retrieve (id) –

**Returns** Project – The project

**update**(id, data)  
Update a specific project

**Parameters**

- {str} -- The ID of the project to update (id) –
- {dict} -- A dict of values to update (data) –

**Returns** dict – a confirmation payload with the updated keys

**delete**(id)  
Delete a specific project

**Parameters** {str} -- The ID of the project to delete (id) –

**Returns** dict – A confirmation payload

**comment\_get**(id)  
Retrieve comments attached to a project

**Parameters** {str} -- The ID of the project to retrieve comments  
from (id) –

**Returns** list – A list of comments

**comment\_create**(id, data)  
Add a comment to a project

**Parameters**

- {str} -- The ID of the project to comment on (id) –
- {dict} -- A comment dictionary object (data) –

**Returns** CommentSchema – The comment created by the server

**add\_stream**(id, stream\_id)  
Add a Stream to a project

**Parameters**

- {str} -- The ID of a project (id) –

- **{str}** -- The StreamId of a stream (*stream\_id*) –

**Returns** dict – A dictionary with the stream and the project

**remove\_stream** (*id*, *stream\_id*)

Remove a stream from a project

**Parameters**

- **{str}** -- The ID of a project (*id*) –
- **{str}** -- The StreamId of a stream (*stream\_id*) –

**Returns** dict – A dictionary with the stream and the project

**add\_user** (*id*, *user\_id*)

Add a user to a project.

---

**Note:** When a user is first added to a project they have read and write authorizations. If you only want to allow them to write be sure to downgrade the user right after adding them.

---

**Parameters**

- **{str}** -- The ID of a project (*id*) –
- **{str}** -- The ID of a user (*user\_id*) –

**Returns** dict – A confirmation payload

**remove\_user** (*id*, *user\_id*)

Remove a user from a project

---

**Note:** When you remove a user from a project this also removes all of their read and write access to the project's streams.

---

**Parameters**

- **{str}** -- The ID of a project (*id*) –
- **{str}** -- The ID of a user (*user\_id*) –

**Returns** dict – A confirmation payload

**upgrade\_user** (*id*, *user\_id*)

Upgrade a user to have Write access to the project and it's streams

**Parameters**

- **{str}** -- The ID of a project (*id*) –
- **{str}** -- The ID of a user (*user\_id*) –

**Returns** dict – A confirmation payload

**downgrade\_user** (*id*, *user\_id*)

Downgrade a user to have only Read access to the project and it's streams

**Parameters**

- **{str}** -- The ID of a project (*id*) –

- **{str}** -- The ID of a user (*user\_id*) –

**Returns** dict – A confirmation payload

## Streams Methods

**class** speckle.resources.streams.Resource(*session, basepath, me*)

API Access class for Streams

**list** (*query={ 'omit': 'objects' }*)

List all streams

**Returns** list – A list of Streams, without objects attached

**create** (*data*)

Create a stream from a data dictionary

**Parameters** {dict} -- A dictionary describing a stream (*data*) –

**Returns** Stream – The instance created on the Speckle Server

**get** (*id, query=None*)

Get a specific stream from the SpeckleServer

**Parameters** {str} -- The StreamId of the stream to retrieve (*id*) –

**Returns** Stream – The stream

**update** (*id, data*)

Update a specific stream

**Parameters**

- {str} -- The StreamId of the stream to update (*id*) –

- {dict} -- A dict of values to update (*data*) –

**Returns** dict – a confirmation payload with the updated keys

**delete** (*id*)

Delete a specific stream

**Parameters** {str} -- The StreamId of the stream to delete (*id*) –

**Returns** dict – A confirmation payload

**comment\_get** (*id*)

Retrieve comments attached to a stream

**Parameters** {str} -- The StreamId of the stream to retrieve  
comments from (*id*) –

**Returns** list – A list of comments

**comment\_create** (*id, data*)

Add a comment to a stream

**Parameters**

- {str} -- The StreamId of the stream to comment on (*id*) –

- {dict} -- A comment dictionary object (*data*) –

**Returns** CommentSchema – The comment created by the server

**clone** (*id*, *name=None*)

Clone a stream

**Parameters** {*str*} -- The StreamId of the stream to clone (*id*) –

**Keyword Arguments** {*str*} -- The name of the new cloned stream. eg  
(*name*) – stream-x-2019-06-09-backup (default: {None})

**Returns** tuple – The clone and parent stream as dicts

**diff** (*id*, *other\_id*)

Runs a diff on two streams

**Parameters**

- {*str*} -- StreamId of the main stream (*id*) –
- {*str*} -- StreamId of the stream to compare (*other\_id*) –

**Returns** dict – A response payload with objects and layers as keys

**list\_objects** (*id*)

Return the list of objects in a stream

**Parameters** {*str*} -- StreamId of the stream to list objects from  
(*id*) –

**Returns** list – A list of Speckle objects

**list\_clients** (*id*)

Return the list of api clients connected to the stream

**Parameters** {*str*} -- StreamId of the stream to list objects from  
(*id*) –

**Returns** list – A list of API clients

## Api Client Methods

**class** speckle.resources.api\_clients.Resource (*session*, *basepath*, *me*)

API Access class for API Clients

The *api\_client* resource mostly returns an API Client data class instance.

## Example

Here is an example of what an API Client object looks like in dict form and when converted to a data class:

```
>>> from speckle.resources.api_clients import ApiClient
>>> api_client_dict = {
    'role': 'Hybrid',
    'documentName': 'Test',
    'documentType': 'DataServer',
    'documentLocation': 'http://some.server.com',
    'online': True,
}
>>> api_client = ApiClient.parse_obj(api_client_dict)
>>> api_client.role
'Hybrid'
```

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```
>>> api_client.documentGuid # Automatically created when document is instantiated,
↳ if not specified
'e991c923-cbb7-45f4-9488-e0f61ba006c0'
```

**list()**

List all API clients

**Returns:** list – A list of API client data class instances**Example**

Calling the `api_clients.list()` method returns a list of `ApiClient` class objects that the user has read access to. .. code-block:: python

```
>>> client.api_clients.list()
[<ApiClient>, <ApiClient>, <ApiClient>]
```

**create(data)**

Create an API clients from a data dictionary

**Arguments:** data {dict} – A dictionary describing an API client**Returns:** ApiClient – The instance created on the Speckle Server**Example**

```
>>> api_client_dict = {
    'role': 'Hybrid',
    'documentName': 'Test',
    'documentType': 'DataServer',
    'documentLocation': 'http://some.server.com',
    'online': True,
}
>>> new_api_client = client.api_clients.create(data=api_client_dict)
>>> new_api_client.id
'54759eb3c090d83494e2d804'
>>> new_api_client.documentName
'Test'
```

**get(id)**

Get a specific API client from the SpeckleServer

**Arguments:** id {str} – The ID of the API client to retrieve**Returns:** ApiClient – The API client**Example**

```
>>> api_client = client.api_clients.get('54759eb3c090d83494e2d804')
>>> api_client.id
'54759eb3c090d83494e2d804'
>>> api_client.role
'Hybrid'
>>> api_client.dict()
```

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```
{
  'id':'54759eb3c090d83494e2d804',
  'private': False,
  'canRead': [],
  'canWrite': [],
  'owner': '7354308922443094682',
  'createdAt': '2019-06-09T20:23:22+00:00',
  'updatedAt': '2019-06-09T22:38:35+00:00',
  'role': 'Hybrid',
  'documentName': 'Test',
  'documentType': 'DataServer',
  'documentLocation': 'http://some.server.com',
  'online': True,
}
```

**update** (*id*, *data*)

Update a specific API client

**Arguments:** *id* {str} – The ID of the API client to update *data* {dict} – A dict of values to update**Returns:** dict – a confirmation payload with the updated keys**Example**

```
>>> api_client.id
'54759eb3c090d83494e2d804'
>>> client.api_clients.update(id=api_client.id, data={'documentName': 'newTest',
↪ 'documentLocation': 'https://some.new.server.com/dump'})
{
  "success": True,
  "message": "Client updated following fields: ['documentName',
↪ 'documentLocation']"
}
```

**delete** (*id*)

Delete a specific API client

**Arguments:** *id* {str} – The ID of the API client to delete**Returns:** dict – A confirmation payload**Example**

```
>>> api_client.id
'54759eb3c090d83494e2d804'
>>> client.api_clients.delete(id=api_client.id)
{
  "success": True,
  "message": 'Client was deleted! Bye bye data.'"
}
```

## Comments methods

```
class speckle.resources.comments.Resource (session, basepath, me)
    API Access class for Comments

    list ()
        List all comments

        Returns list – A list of comment data class instances

    get (id)
        Get a specific comment from the SpeckleServer

        Parameters {str} -- The ID of the comment to retrieve (id) –

        Returns Comment – The comment

    update (id, data)
        Update a specific comment

        Parameters

        • {str} -- The ID of the comment to update (id) –

        • {dict} -- A dict of values to update (data) –

        Returns dict – a confirmation payload with the updated keys

    delete (id)
        Delete a specific comment

        Parameters {str} -- The ID of the comment to delete (id) –

        Returns dict – A confirmation payload

    comment_get (id)
        Retrieve comments attached to a comment

        Parameters {str} -- The ID of the comment to retrieve comments
            from (id) –

        Returns list – A list of comments

    comment_create (id, data)
        Add a comment to a comment

        Parameters

        • {str} -- The ID of the comment to comment on (id) –

        • {dict} -- A comment dictionary object (data) –

        Returns Comment – The comment created by the server

    assigned ()
        Get the list of all comments where the logged in user is assigned

        Returns list – A list of comments the user is assigned to
```

## Objects Methods

```
class speckle.resources.objects.Resource (session, basepath, me)
    API Access class for Speckle Objects
```



**list** (*query=None*)  
List all Speckle objects

**Returns** list – A list of Speckle object data class instances

**create** (*data*)  
Create a Speckle object from a data dictionary

**Parameters** {dict} -- A dictionary describing a Speckle object (*data*) –

**Returns** SpeckleObject – The instance created on the Speckle Server

**get** (*id, query=None*)  
Get a specific Speckle object from the SpeckleServer

**Parameters** {str} -- The ID of the Speckle object to retrieve (*id*) –

**Returns** SpeckleObject – The Speckle object

**update** (*id, data*)  
Update a specific Speckle object

**Parameters**

- {str} -- The ID of the Speckle object to update (*id*) –
- {dict} -- A dict of values to update (*data*) –

**Returns** dict – a confirmation payload with the updated keys

**delete** (*id*)  
Delete a specific Speckle object

**Parameters** {str} -- The ID of the Speckle object to delete (*id*) –

**Returns** dict – A confirmation payload

**comment\_get** (*id*)  
Retrieve comments attached to a Speckle object

**Parameters** {str} -- The ID of the Speckle object to retrieve comments from (*id*) –

**Returns** list – A list of comments

**comment\_create** (*id, data*)  
Add a comment to a Speckle object

**Parameters**

- {str} -- The ID of the Speckle object to comment on (*id*) –
- {dict} -- A comment dictionary object (*data*) –

**Returns** CommentSchema – The comment created by the server

**get\_bulk** (*object\_ids, query=None*)  
Retrieve and optionally update a list of Speckle objects

**Parameters**

- {list} -- A list of object IDs (*object\_ids*) –
- {dict} -- A dictionary to specify which fields to retrieve, filters, limits, etc (*query*) –

**Returns** list – A list of SpeckleObjects



## CHAPTER 2

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