
influxdb*client*

Release 1.7.0

May 15, 2020

Contents:

1	User Guide	1
1.1	Query	2
1.2	Pandas DataFrame	2
1.3	Write	3
1.3.1	The data could be written as	3
1.3.2	Batching	3
1.3.3	Default Tags	5
1.3.4	Asynchronous client	6
1.3.5	Synchronous client	6
1.4	Queries	7
1.4.1	Pandas DataFrame	8
1.5	Examples	9
1.5.1	How to efficiently import large dataset	9
1.6	Gzip support	11
1.7	Debugging	11
2	API Reference	13
2.1	InfluxDBClient	13
2.2	QueryApi	15
2.3	WriteApi	16
2.4	BucketsApi	16
2.5	LabelsApi	18
2.6	OrganizationsApi	19
2.7	UsersApi	21
2.8	TasksApi	21
2.9	DeleteApi	25
3	InfluxDB 2.0 client features	27
4	Installation	29
4.1	pip install	29
4.2	Setuptools	29
5	Getting Started	31
6	Client configuration	33
6.1	Via File	33

6.2 Via Environment Properties	33
7 Indices and tables	35
Index	37

- *Query*
- *Pandas DataFrame*
- *Write*
 - *The data could be written as*
 - *Batching*
 - *Default Tags*
 - * *Via API*
 - * *Via Configuration file*
 - * *Via Environment Properties*
 - *Asynchronous client*
 - *Synchronous client*
- *Queries*
 - *Pandas DataFrame*
- *Examples*
 - *How to efficiently import large dataset*
- *Gzip support*
- *Debugging*

1.1 Query

```
from influxdb_client import InfluxDBClient, Point
from influxdb_client.client.write_api import SYNCHRONOUS

bucket = "my-bucket"

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")

write_api = client.write_api(write_options=SYNCHRONOUS)
query_api = client.query_api()

p = Point("my_measurement").tag("location", "Prague").field("temperature", 25.3)

write_api.write(bucket=bucket, record=p)

## using Table structure
tables = query_api.query('from(bucket:"my-bucket") |> range(start: -10m)')

for table in tables:
    print(table)
    for row in table.records:
        print (row.values)

## using csv library
csv_result = query_api.query_csv('from(bucket:"my-bucket") |> range(start: -10m)')
val_count = 0
for row in csv_result:
    for cell in row:
        val_count += 1
```

1.2 Pandas DataFrame

Note: For DataFrame querying you should install Pandas dependency via `pip install influxdb-client[extra]`.

Note: Note that if a query returns more than one table then the client generates a DataFrame for each of them.

The client is able to retrieve data in Pandas DataFrame format through `query_data_frame`:

```
from influxdb_client import InfluxDBClient, Point, Dialect
from influxdb_client.client.write_api import SYNCHRONOUS

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")

write_api = client.write_api(write_options=SYNCHRONOUS)
query_api = client.query_api()

"""
Prepare data
```

(continues on next page)

(continued from previous page)

```

"""
_point1 = Point("my_measurement").tag("location", "Prague").field("temperature", 25.3)
_point2 = Point("my_measurement").tag("location", "New York").field("temperature", 24.
↪3)

write_api.write(bucket="my-bucket", record=[_point1, _point2])

"""
Query: using Pandas DataFrame
"""
data_frame = query_api.query_data_frame('from(bucket:"my-bucket") '
                                         '|> range(start: -10m) '
                                         '|> pivot(rowKey:["_time"], columnKey: ["_
↪field"], valueColumn: "_value") '
                                         '|> keep(columns: ["location", "temperature"])
↪')
print(data_frame.to_string())

"""
Close client
"""
client.__del__()

```

Output:

1.3 Write

The `WriteApi` supports synchronous, asynchronous and batching writes into InfluxDB 2.0. The data should be passed as an `InfluxDB Line Protocol`, `Data Point` or `Observable` stream.

The default instance of `WriteApi` use batching.

1.3.1 The data could be written as

1. string or bytes that is formatted as a InfluxDB's line protocol
2. `Data Point` structure
3. Dictionary style mapping with keys: measurement, tags, fields and time
4. List of above items
5. A batching type of write also supports an `Observable` that produce one of an above item
6. `Pandas DataFrame`

1.3.2 Batching

The batching is configurable by `write_options`:

Property	Description	Default Value
batch_size	the number of data points to collect in a batch	1000
flush_interval	the number of milliseconds before the batch is written	1000
jitter_interval	the number of milliseconds to increase the batch flush interval by a random amount	0
retry_interval	the number of milliseconds to retry unsuccessful write. The retry interval is used when the InfluxDB server does not specify "Retry-After" header.	1000

```

import rx
from rx import operators as ops

from influxdb_client import InfluxDBClient, Point, WriteOptions
from influxdb_client.client.write_api import SYNCHRONOUS

_client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")
_write_client = _client.write_api(write_options=WriteOptions(batch_size=500,
                                                             flush_interval=10_000,
                                                             jitter_interval=2_000,
                                                             retry_interval=5_000))

"""
Write Line Protocol formatted as string
"""
_write_client.write("my-bucket", "my-org", "h2o_feet,location=coyote_creek water_
↪level=1.0 1")
_write_client.write("my-bucket", "my-org", ["h2o_feet,location=coyote_creek water_
↪level=2.0 2",
                                           "h2o_feet,location=coyote_creek water_
↪level=3.0 3"])

"""
Write Line Protocol formatted as byte array
"""
_write_client.write("my-bucket", "my-org", "h2o_feet,location=coyote_creek water_
↪level=1.0 1".encode())
_write_client.write("my-bucket", "my-org", ["h2o_feet,location=coyote_creek water_
↪level=2.0 2".encode(),
                                           "h2o_feet,location=coyote_creek water_
↪level=3.0 3".encode()])

"""
Write Dictionary-style object
"""
_write_client.write("my-bucket", "my-org", {"measurement": "h2o_feet", "tags": {
↪"location": "coyote_creek"},
                                           "fields": {"water_level": 1.0}, "time": 1}
↪)
_write_client.write("my-bucket", "my-org", [{"measurement": "h2o_feet", "tags": {
↪"location": "coyote_creek"},
                                           "fields": {"water_level": 2.0}, "time": 2}
↪,
                                           {"measurement": "h2o_feet", "tags": {
↪"location": "coyote_creek"},
                                           "fields": {"water_level": 3.0}, "time": 3}
↪])

```

(continues on next page)

(continued from previous page)

```

"""
Write Data Point
"""
_write_client.write("my-bucket", "my-org", Point("h2o_feet").tag("location", "coyote_
↪creek").field("water_level", 4.0).time(4))
_write_client.write("my-bucket", "my-org", [Point("h2o_feet").tag("location", "coyote_
↪creek").field("water_level", 5.0).time(5),
                                         Point("h2o_feet").tag("location", "coyote_
↪creek").field("water_level", 6.0).time(6)])

"""
Write Observable stream
"""
_data = rx \
    .range(7, 11) \
    .pipe(ops.map(lambda i: "h2o_feet,location=coyote_creek water_level={0}.0 {0}".
↪format(i)))

_write_client.write("my-bucket", "my-org", _data)

"""
Write Pandas DataFrame
"""
_now = pd.Timestamp().now('UTC')
_data_frame = pd.DataFrame(data=[["coyote_creek", 1.0], ["coyote_creek", 2.0]],
                           index=[now, now + timedelta(hours=1)],
                           columns=["location", "water_level"])

_write_client.write(bucket.name, record=data_frame, data_frame_measurement_name='h2o_
↪feet',
                    data_frame_tag_columns=['location'])

"""
Close client
"""
_write_client.__del__()
_client.__del__()

```

1.3.3 Default Tags

Sometimes is useful to store same information in every measurement e.g. hostname, location, customer. The client is able to use static value or env property as a tag value.

The expressions:

- California Miner - static value
- \${env.hostname} - environment property

Via API

```

point_settings = PointSettings()
point_settings.add_default_tag("id", "132-987-655")

```

(continues on next page)

(continued from previous page)

```
point_settings.add_default_tag("customer", "California Miner")
point_settings.add_default_tag("data_center", "${env.data_center}")

self.write_client = self.client.write_api(write_options=SYNCHRONOUS, point_
↳ settings=point_settings)
```

```
self.write_client = self.client.write_api(write_options=SYNCHRONOUS,
                                          point_settings=PointSettings(**{"id":
↳ "132-987-655",

↳ "customer": "California Miner"}))
```

Via Configuration file

In a ini configuration file you are able to specify default tags by tags segment.

```
self.client = InfluxDBClient.from_config_file("config.ini")
```

Via Environment Properties

You are able to specify default tags by environment properties with prefix INFLUXDB_V2_TAG_.

Examples:

- INFLUXDB_V2_TAG_ID
- INFLUXDB_V2_TAG_HOSTNAME

```
self.client = InfluxDBClient.from_env_properties()
```

1.3.4 Asynchronous client

Data are writes in an asynchronous HTTP request.

```
from influxdb_client import InfluxDBClient, Point
from influxdb_client.client.write_api import ASYNCHRONOUS

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")
write_api = client.write_api(write_options=ASYNCHRONOUS)

_point1 = Point("my_measurement").tag("location", "Prague").field("temperature", 25.3)
_point2 = Point("my_measurement").tag("location", "New York").field("temperature", 24.
↳ 3)

async_result = write_api.write(bucket="my-bucket", record=[_point1, _point2])
async_result.get()

client.__del__()
```

1.3.5 Synchronous client

Data are writes in a synchronous HTTP request.

```

from influxdb_client import InfluxDBClient, Point
from influxdb_client.client.write_api import SYNCHRONOUS

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")
write_api = client.write_api(write_options=SYNCHRONOUS)

_point1 = Point("my_measurement").tag("location", "Prague").field("temperature", 25.3)
_point2 = Point("my_measurement").tag("location", "New York").field("temperature", 24.
↪ 3)

write_api.write(bucket="my-bucket", record=[_point1, _point2])

client.__del__()

```

1.4 Queries

The result retrieved by `QueryApi` could be formatted as a:

1. Flux data structure: `FluxTable`, `FluxColumn` and `FluxRecord`
2. `csv.reader` which will iterate over CSV lines
3. Raw unprocessed results as a `str` iterator
4. `Pandas DataFrame`

The API also support streaming `FluxRecord` via `query_stream`, see example below:

```

from influxdb_client import InfluxDBClient, Point, Dialect
from influxdb_client.client.write_api import SYNCHRONOUS

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")

write_api = client.write_api(write_options=SYNCHRONOUS)
query_api = client.query_api()

"""
Prepare data
"""

_point1 = Point("my_measurement").tag("location", "Prague").field("temperature", 25.3)
_point2 = Point("my_measurement").tag("location", "New York").field("temperature", 24.
↪ 3)

write_api.write(bucket="my-bucket", record=[_point1, _point2])

"""
Query: using Table structure
"""
tables = query_api.query('from(bucket:"my-bucket") |> range(start: -10m)')

for table in tables:
    print(table)
    for record in table.records:
        print(record.values)

print()

```

(continues on next page)

(continued from previous page)

```

print()

"""
Query: using Stream
"""
records = query_api.query_stream('from(bucket:"my-bucket") |> range(start: -10m)')

for record in records:
    print(f'Temperature in {record["location"]} is {record["_value"]}')

"""
Interrupt a stream after retrieve a required data
"""
large_stream = query_api.query_stream('from(bucket:"my-bucket") |> range(start: -100d)
↳')
for record in large_stream:
    if record["location"] == "New York":
        print(f'New York temperature: {record["_value"]}')
        break

large_stream.close()

print()
print()

"""
Query: using csv library
"""
csv_result = query_api.query_csv('from(bucket:"my-bucket") |> range(start: -10m)',
                                  dialect=Dialect(header=False, delimiter=",", comment_
↳prefix="#", annotations=[],
                                  date_time_format="RFC3339"))

for csv_line in csv_result:
    if not len(csv_line) == 0:
        print(f'Temperature in {csv_line[9]} is {csv_line[6]}')

"""
Close client
"""
client.__del__()

```

1.4.1 Pandas DataFrame

Note: For DataFrame querying you should install Pandas dependency via `pip install influxdb-client[extra]`.

Note: Note that if a query returns more than one table then the client generates a DataFrame for each of them.

The client is able to retrieve data in [Pandas DataFrame](#) format through `query_data_frame`:

```

from influxdb_client import InfluxDBClient, Point, Dialect
from influxdb_client.client.write_api import SYNCHRONOUS

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")

write_api = client.write_api(write_options=SYNCHRONOUS)
query_api = client.query_api()

"""
Prepare data
"""

_point1 = Point("my_measurement").tag("location", "Prague").field("temperature", 25.3)
_point2 = Point("my_measurement").tag("location", "New York").field("temperature", 24.
↪3)

write_api.write(bucket="my-bucket", record=[_point1, _point2])

"""
Query: using Pandas DataFrame
"""
data_frame = query_api.query_data_frame('from(bucket:"my-bucket") '
                                         '|> range(start: -10m) '
                                         '|> pivot(rowKey:["_time"], columnKey: ["_
↪field"], valueColumn: "_value") '
                                         '|> keep(columns: ["location", "temperature"])
↪')
print(data_frame.to_string())

"""
Close client
"""
client.__del__()

```

Output:

1.5 Examples

1.5.1 How to efficiently import large dataset

The following example shows how to import dataset with dozen megabytes. If you would like to import gigabytes of data then use our multiprocessing example: `import_data_set_multiprocessing.py` for use a full capability of your hardware.

- sources - `import_data_set.py`

```

"""
Import VIX - CBOE Volatility Index - from "vix-daily.csv" file into InfluxDB 2.0

https://datahub.io/core/finance-vix#data
"""

from collections import OrderedDict
from csv import DictReader

```

(continues on next page)

(continued from previous page)

```

import rx
from rx import operators as ops

from influxdb_client import InfluxDBClient, Point, WriteOptions

def parse_row(row: OrderedDict):
    """Parse row of CSV file into Point with structure:

        financial-analysis,type=ily close=18.47,high=19.82,low=18.28,open=19.82_
↪11981952000000000000

    CSV format:
        Date,VIX Open,VIX High,VIX Low,VIX Close\n
        2004-01-02,17.96,18.68,17.54,18.22\n
        2004-01-05,18.45,18.49,17.44,17.49\n
        2004-01-06,17.66,17.67,16.19,16.73\n
        2004-01-07,16.72,16.75,15.5,15.5\n
        2004-01-08,15.42,15.68,15.32,15.61\n
        2004-01-09,16.15,16.88,15.57,16.75\n
        ...

    :param row: the row of CSV file
    :return: Parsed csv row to [Point]
    """

    """
    For better performance is sometimes useful directly create a LineProtocol to_
↪avoid unnecessary escaping overhead:
    """
    # from pytz import UTC
    # import ciso8601
    # from influxdb_client.client.write.point import EPOCH
    #
    # time = (UTC.localize(ciso8601.parse_datetime(row["Date"])) - EPOCH).total_
↪seconds() * 1e9
    # return f"financial-analysis,type=vix-daily" \
    #         f" close={float(row['VIX Close'])},high={float(row['VIX High'])},low=
↪{float(row['VIX Low'])},open={float(row['VIX Open'])} " \
    #         f" {int(time)}"

    return Point("financial-analysis") \
        .tag("type", "vix-daily") \
        .field("open", float(row['VIX Open'])) \
        .field("high", float(row['VIX High'])) \
        .field("low", float(row['VIX Low'])) \
        .field("close", float(row['VIX Close'])) \
        .time(row['Date'])

    """
    Converts vix-daily.csv into sequence of datad point
    """
    data = rx \
        .from_iterable(DictReader(open('vix-daily.csv', 'r'))) \
        .pipe(ops.map(lambda row: parse_row(row)))

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org",_
↪debug=True)

```

(continues on next page)

(continued from previous page)

```

"""
Create client that writes data in batches with 50_000 items.
"""
write_api = client.write_api(write_options=WriteOptions(batch_size=50_000, flush_
↪interval=10_000))

"""
Write data into InfluxDB
"""
write_api.write(bucket="my-bucket", record=data)
write_api.__del__()

"""
Querying max value of CBOE Volatility Index
"""
query = 'from(bucket:"my-bucket")' \
        '|> range(start: 0, stop: now())' \
        '|> filter(fn: (r) => r._measurement == "financial-analysis")' \
        '|> max()'
result = client.query_api().query(query=query)

"""
Processing results
"""
print()
print("=== results ===")
print()
for table in result:
    for record in table.records:
        print('max {0:5} = {1}'.format(record.get_field(), record.get_value()))

"""
Close client
"""
client.__del__()

```

1.6 Gzip support

InfluxDBClient does not enable gzip compression for http requests by default. If you want to enable gzip to reduce transfer data's size, you can call:

```

from influxdb_client import InfluxDBClient

_db_client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org"
↪, enable_gzip=True)

```

1.7 Debugging

For debug purpose you can enable verbose logging of http requests. Both request header and body will be logged to standard output.

```
_client = InfluxDBClient(url="http://localhost:9999", token="my-token", debug=True, ↵  
↵org="my-org")
```


- *InfluxDBClient*
- *QueryApi*
- *WriteApi*
- *BucketsApi*
- *LabelsApi*
- *OrganizationsApi*
- *UsersApi*
- *TasksApi*
- *DeleteApi*

2.1 InfluxDBClient

```
class influxdb_client.InfluxDBClient(url, token, debug=None, timeout=10000, enable_gzip=False, org: str = None, default_tags: dict = None)
    influxdb_client.InfluxDBClient is client for HTTP API defined in https://github.com/influxdata/influxdb/blob/master/http/swagger.yml.
```

Parameters

- **url** – InfluxDB server API url (ex. <http://localhost:9999>).
- **token** – auth token
- **debug** – enable verbose logging of http requests
- **timeout** – default http client timeout

- **enable_gzip** – Enable Gzip compression for http requests. Currently only the “Write” and “Query” endpoints supports the Gzip compression.
- **org** – organization name (used as a default in query and write API)

authorizations_api () → influxdb_client.client.authorizations_api.AuthorizationsApi
Creates the Authorizations API instance.

Returns authorizations api

buckets_api () → influxdb_client.client.bucket_api.BucketsApi
Creates the Bucket API instance.

Returns buckets api

close ()
Shut downs the client

delete_api () → influxdb_client.client.delete_api.DeleteApi
Gets the delete metrics API instance :return: delete api

health () → influxdb_client.domain.health_check.HealthCheck
Get the health of an instance.

Returns HealthCheck

labels_api () → influxdb_client.client.labels_api.LabelsApi
Creates the Labels API instance.

Returns labels api

organizations_api () → influxdb_client.client.organizations_api.OrganizationsApi
Creates the Organizations API instance.

Returns organizations api

query_api () → influxdb_client.client.query_api.QueryApi
Creates a Query API instance

Returns Query api instance

ready () → influxdb_client.domain.ready.Ready
Gets The readiness of the InfluxDB 2.0.

Returns Ready

tasks_api () → influxdb_client.client.tasks_api.TasksApi
Creates the Tasks API instance.

Returns tasks api

users_api () → influxdb_client.client.users_api.UsersApi
Creates the Users API instance.

Returns users api

write_api (write_options=<influxdb_client.client.write_api.WriteOptions object>,
point_settings=<influxdb_client.client.write_api.PointSettings object>) → in-
fluxdb_client.client.write_api.WriteApi
Creates a Write API instance

Parameters

- **point_settings** –
- **write_options** – write api configuration

Returns write api instance

2.2 QueryApi

class `influxdb_client.QueryApi` (*influxdb_client*)

Initializes query client.

Parameters `influxdb_client` – influxdb client

query (*query: str, org=None*) → List[influxdb_client.client.flux_table.FluxTable]

Synchronously executes the Flux query and return result as a List['FluxTable']

Parameters

- **query** – the Flux query
- **org** – organization name (optional if already specified in InfluxDBClient)

Returns

query_csv (*query: str, org=None, dialect: influxdb_client.domain.dialect.Dialect = {'annotations': ['datatype', 'group', 'default'], 'comment_prefix': '#', 'date_time_format': 'RFC3339', 'delimiter': ',', 'header': True}*)

Executes the Flux query and return results as a CSV iterator. Each iteration returns a row of the CSV file.

Parameters

- **query** – a Flux query
- **org** – organization name (optional if already specified in InfluxDBClient)
- **dialect** – csv dialect format

Returns The returned object is an iterator. Each iteration returns a row of the CSV file (which can span multiple input lines).

query_data_frame (*query: str, org=None, data_frame_index: List[str] = None*)

Synchronously executes the Flux query and return Pandas DataFrame. Note that if a query returns more than one table than the client generates a DataFrame for each of them.

Parameters

- **query** – the Flux query
- **org** – organization name (optional if already specified in InfluxDBClient)
- **data_frame_index** – the list of columns that are used as DataFrame index

Returns

query_raw (*query: str, org=None, dialect={'annotations': ['datatype', 'group', 'default'], 'comment_prefix': '#', 'date_time_format': 'RFC3339', 'delimiter': ',', 'header': True}*)

Synchronously executes the Flux query and return result as raw unprocessed result as a str

Parameters

- **query** – a Flux query
- **org** – organization name (optional if already specified in InfluxDBClient)
- **dialect** – csv dialect format

Returns str

query_stream (*query: str, org=None*) → Generator[[influxdb_client.client.flux_table.FluxRecord, Any], None]
Synchronously executes the Flux query and return stream of FluxRecord as a Generator['FluxRecord']

Parameters

- **query** – the Flux query
- **org** – organization name (optional if already specified in InfluxDBClient)

Returns

2.3 WriteApi

```
class influxdb_client.WriteApi (influxdb_client, write_options: influxdb_client.client.write_api.WriteOptions = <influxdb_client.client.write_api.WriteOptions object>, point_settings: influxdb_client.client.write_api.PointSettings = <influxdb_client.client.write_api.PointSettings object>)
```

write (*bucket: str, org: str = None, record: Union[str, List[str], influxdb_client.client.write.point.Point, List[Point], dict, List[dict], bytes, List[bytes], rx.core.observable.observable.Observable] = None, write_precision: influxdb_client.domain.write_precision.WritePrecision = 'ns', **kwargs*) → None
Writes time-series data into influxdb.

Parameters

- **org** (*str*) – specifies the destination organization for writes; take either the ID or Name interchangeably; if both orgID and org are specified, org takes precedence. (required)
- **bucket** (*str*) – specifies the destination bucket for writes (required)
- **write_precision** (*WritePrecision*) – specifies the precision for the unix timestamps within the body line-protocol
- **record** – Points, line protocol, Pandas DataFrame, RxPY Observable to write
- **data_frame_measurement_name** – name of measurement for writing Pandas DataFrame
- **data_frame_tag_columns** – list of DataFrame columns which are tags, rest columns will be fields

2.4 BucketsApi

```
class influxdb_client.BucketsApi (influxdb_client)
```

create_bucket (*bucket=None, bucket_name=None, org_id=None, retention_rules=None, description=None*) → influxdb_client.domain.bucket.Bucket
Create a bucket # noqa: E501

Parameters

- **bucket** (*Bucket*) – bucket to create (required)
- **bucket_name** – bucket name

- **description** – bucket description
- **org_id** – org_id
- **bucket_name** – bucket name
- **retention_rules** – retention rules array or single BucketRetentionRules

Returns Bucket If the method is called asynchronously, returns the request thread.

delete_bucket (*bucket*)

Delete a bucket # noqa: E501

Parameters **bucket** – bucket id or Bucket

Returns Bucket If the method is called asynchronously, returns the request thread.

find_bucket_by_id (*id*)

Find bucket by ID

Parameters **id** –

Returns

find_bucket_by_name (*bucket_name*)

Find bucket by name

Parameters **bucket_name** – bucket name

Returns Bucket

find_buckets ()

Gets all buckets

```
class influxdb_client.domain.Bucket (links=None, id=None, type='user', name=None,
                                     description=None, org_id=None, rp=None,
                                     created_at=None, updated_at=None, reten-
                                     tion_rules=None, labels=None)
```

NOTE: This class is auto generated by OpenAPI Generator. Ref: <https://openapi-generator.tech>

Do not edit the class manually.

Bucket - a model defined in OpenAPI

created_at

Gets the created_at of this Bucket. # noqa: E501

Returns The created_at of this Bucket. # noqa: E501

Return type datetime

description

Gets the description of this Bucket. # noqa: E501

Returns The description of this Bucket. # noqa: E501

Return type str

id

Gets the id of this Bucket. # noqa: E501

Returns The id of this Bucket. # noqa: E501

Return type str

labels

Gets the labels of this Bucket. # noqa: E501

Returns The labels of this Bucket. # noqa: E501

Return type `list[Label]`

links

Gets the links of this Bucket. # noqa: E501

Returns The links of this Bucket. # noqa: E501

Return type `BucketLinks`

name

Gets the name of this Bucket. # noqa: E501

Returns The name of this Bucket. # noqa: E501

Return type `str`

org_id

Gets the org_id of this Bucket. # noqa: E501

Returns The org_id of this Bucket. # noqa: E501

Return type `str`

retention_rules

Gets the retention_rules of this Bucket. # noqa: E501

Rules to expire or retain data. No rules means data never expires. # noqa: E501

Returns The retention_rules of this Bucket. # noqa: E501

Return type `list[BucketRetentionRules]`

rp

Gets the rp of this Bucket. # noqa: E501

Returns The rp of this Bucket. # noqa: E501

Return type `str`

to_dict()

Returns the model properties as a dict

to_str()

Returns the string representation of the model

type

Gets the type of this Bucket. # noqa: E501

Returns The type of this Bucket. # noqa: E501

Return type `str`

updated_at

Gets the updated_at of this Bucket. # noqa: E501

Returns The updated_at of this Bucket. # noqa: E501

Return type `datetime`

2.5 LabelsApi

class `influxdb_client.LabelsApi` (`influxdb_client`)

The client of the InfluxDB 2.0 that implements Labels HTTP API endpoint.

clone_label (*cloned_name: str, label: influxdb_client.domain.label.Label*) → *influxdb_client.domain.label.Label*
Creates the new instance of the label as a copy existing label.

Parameters

- **cloned_name** – new label name
- **label** – existing label

Returns cloned Label

create_label (*name: str, org_id: str, properties: Dict[str, str] = None*) → *influxdb_client.domain.label.Label*
Creates a new label.

Parameters

- **name** – label name
- **org_id** – organization id
- **properties** – optional label properties

Returns created label

delete_label (*label: Union[str, influxdb_client.domain.label.Label]*)
Deletes the label.

Parameters **label** – label id or Label

find_label_by_id (*label_id: str*)
Retrieves the label by id.

Parameters **label_id** –

Returns Label

find_label_by_org (*org_id*) → *List[influxdb_client.domain.label.Label]*
Gets the list of all labels for given organization.

Parameters **org_id** – organization id

Returns list of labels

find_labels () → *List[influxdb_client.domain.label.Label]*
Gets all available labels.

Returns labels

update_label (*label: influxdb_client.domain.label.Label*)
Updates an existing label name and properties.

Parameters **label** – label

Returns the updated label

2.6 OrganizationsApi

class *influxdb_client.OrganizationsApi* (*influxdb_client*)
The client of the InfluxDB 2.0 that implements Organizations HTTP API endpoint.

```
class influxdb_client.domain.Organization (links=None, id=None, name=None, de-
                                         scription=None, created_at=None, up-
                                         dated_at=None, status='active')
```

NOTE: This class is auto generated by OpenAPI Generator. Ref: <https://openapi-generator.tech>

Do not edit the class manually.

Organization - a model defined in OpenAPI

created_at

Gets the created_at of this Organization. # noqa: E501

Returns The created_at of this Organization. # noqa: E501

Return type datetime

description

Gets the description of this Organization. # noqa: E501

Returns The description of this Organization. # noqa: E501

Return type str

id

Gets the id of this Organization. # noqa: E501

Returns The id of this Organization. # noqa: E501

Return type str

links

Gets the links of this Organization. # noqa: E501

Returns The links of this Organization. # noqa: E501

Return type OrganizationLinks

name

Gets the name of this Organization. # noqa: E501

Returns The name of this Organization. # noqa: E501

Return type str

status

Gets the status of this Organization. # noqa: E501

If inactive the organization is inactive. # noqa: E501

Returns The status of this Organization. # noqa: E501

Return type str

to_dict()

Returns the model properties as a dict

to_str()

Returns the string representation of the model

updated_at

Gets the updated_at of this Organization. # noqa: E501

Returns The updated_at of this Organization. # noqa: E501

Return type datetime

2.7 UsersApi

```
class influxdb_client.UsersApi (influxdb_client)
```

```
class influxdb_client.domain.User (id=None, oauth_id=None, name=None, status='active',
                                   links=None)
```

NOTE: This class is auto generated by OpenAPI Generator. Ref: <https://openapi-generator.tech>

Do not edit the class manually.

User - a model defined in OpenAPI

id

Gets the id of this User. # noqa: E501

Returns The id of this User. # noqa: E501

Return type str

links

Gets the links of this User. # noqa: E501

Returns The links of this User. # noqa: E501

Return type UserLinks

name

Gets the name of this User. # noqa: E501

Returns The name of this User. # noqa: E501

Return type str

oauth_id

Gets the oauth_id of this User. # noqa: E501

Returns The oauth_id of this User. # noqa: E501

Return type str

status

Gets the status of this User. # noqa: E501

If inactive the user is inactive. # noqa: E501

Returns The status of this User. # noqa: E501

Return type str

to_dict()

Returns the model properties as a dict

to_str()

Returns the string representation of the model

2.8 TasksApi

```
class influxdb_client.TasksApi (influxdb_client)
```

```
cancel_run (task_id: str, run_id: str)
```

Cancels a currently running run. :param task_id: :param run_id:

find_tasks (**kwargs)

List tasks.

Parameters

- **name** (*str*) – only returns tasks with the specified name
- **after** (*str*) – returns tasks after specified ID
- **user** (*str*) – filter tasks to a specific user ID
- **org** (*str*) – filter tasks to a specific organization name
- **org_id** (*str*) – filter tasks to a specific organization ID
- **limit** (*int*) – the number of tasks to return

Returns Tasks

get_logs (task_id: str) → List[influxdb_client.domain.log_event.LogEvent]

Retrieve all logs for a task. :param task_id: task id

get_run (task_id: str, run_id: str) → influxdb_client.domain.run.Run

Get run record for specific task and run id :param task_id: task id :param run_id: run id :return: Run for specified task and run id

get_runs (task_id, **kwargs) → List[influxdb_client.domain.run.Run]

Retrieve list of run records for a task

Parameters

- **task_id** – task id
- **after** (*str*) – returns runs after specified ID
- **limit** (*int*) – the number of runs to return
- **after_time** (*datetime*) – filter runs to those scheduled after this time, RFC3339
- **before_time** (*datetime*) – filter runs to those scheduled before this time, RFC3339

retry_run (task_id: str, run_id: str)

Retry a task run. :param task_id: task id :param run_id: run id

run_manually (task_id: str, scheduled_for: <module 'datetime' from
'/home/docs/.pyenv/versions/3.6.8/lib/python3.6/datetime.py'> = None)

Manually start a run of the task now overriding the current schedule.

Parameters

- **task_id** –
- **scheduled_for** – planned execution

```
class influxdb_client.domain.Task (id=None, type=None, org_id=None, org=None,
                                   name=None, description=None, status=None, labels=None,
                                   authorization_id=None, flux=None, every=None,
                                   cron=None, offset=None, last_completed=None,
                                   last_run_status=None, last_run_error=None,
                                   created_at=None, updated_at=None, links=None)
```

NOTE: This class is auto generated by OpenAPI Generator. Ref: <https://openapi-generator.tech>

Do not edit the class manually.

Task - a model defined in OpenAPI

authorization_id

Gets the authorization_id of this Task. # noqa: E501

The ID of the authorization used when this task communicates with the query engine. # noqa: E501

Returns The authorization_id of this Task. # noqa: E501

Return type str

created_at

Gets the created_at of this Task. # noqa: E501

Returns The created_at of this Task. # noqa: E501

Return type datetime

cron

Gets the cron of this Task. # noqa: E501

A task repetition schedule in the form ‘* * * * *’; parsed from Flux. # noqa: E501

Returns The cron of this Task. # noqa: E501

Return type str

description

Gets the description of this Task. # noqa: E501

An optional description of the task. # noqa: E501

Returns The description of this Task. # noqa: E501

Return type str

every

Gets the every of this Task. # noqa: E501

A simple task repetition schedule; parsed from Flux. # noqa: E501

Returns The every of this Task. # noqa: E501

Return type str

flux

Gets the flux of this Task. # noqa: E501

The Flux script to run for this task. # noqa: E501

Returns The flux of this Task. # noqa: E501

Return type str

id

Gets the id of this Task. # noqa: E501

Returns The id of this Task. # noqa: E501

Return type str

labels

Gets the labels of this Task. # noqa: E501

Returns The labels of this Task. # noqa: E501

Return type list[Label]

last_run_error

Gets the last_run_error of this Task. # noqa: E501

Returns The last_run_error of this Task. # noqa: E501

Return type str

last_run_status

Gets the last_run_status of this Task. # noqa: E501

Returns The last_run_status of this Task. # noqa: E501

Return type str

latest_completed

Gets the latest_completed of this Task. # noqa: E501

Timestamp of latest scheduled, completed run, RFC3339. # noqa: E501

Returns The latest_completed of this Task. # noqa: E501

Return type datetime

links

Gets the links of this Task. # noqa: E501

Returns The links of this Task. # noqa: E501

Return type TaskLinks

name

Gets the name of this Task. # noqa: E501

The name of the task. # noqa: E501

Returns The name of this Task. # noqa: E501

Return type str

offset

Gets the offset of this Task. # noqa: E501

Duration to delay after the schedule, before executing the task; parsed from flux, if set to zero it will remove this option and use 0 as the default. # noqa: E501

Returns The offset of this Task. # noqa: E501

Return type str

org

Gets the org of this Task. # noqa: E501

The name of the organization that owns this Task. # noqa: E501

Returns The org of this Task. # noqa: E501

Return type str

org_id

Gets the org_id of this Task. # noqa: E501

The ID of the organization that owns this Task. # noqa: E501

Returns The org_id of this Task. # noqa: E501

Return type str

status

Gets the status of this Task. # noqa: E501

Returns The status of this Task. # noqa: E501

Return type TaskStatusType

to_dict()

Returns the model properties as a dict

to_str()

Returns the string representation of the model

type

Gets the type of this Task. # noqa: E501

The type of task, this can be used for filtering tasks on list actions. # noqa: E501

Returns The type of this Task. # noqa: E501

Return type str

updated_at

Gets the updated_at of this Task. # noqa: E501

Returns The updated_at of this Task. # noqa: E501

Return type datetime

2.9 DeleteApi

InfluxDB 2.0 python client library.

Note: Use this client library with InfluxDB 2.x and InfluxDB 1.8+. For connecting to InfluxDB 1.7 or earlier instances, use the 'influxdb-python <<https://github.com/influxdata/influxdb-python>>' client library.

InfluxDB 2.0 client features

- **Querying data**
 - using the Flux language
 - into csv, raw data, `flux_table` structure, Pandas DataFrame
 - *How to queries*
- **Writing data using**
 - Line Protocol
 - Data Point
 - RxPY Observable
 - Pandas DataFrame
 - *How to writes*
- **InfluxDB 2.0 API client for management**
 - the client is generated from the `swagger` by using the `openapi-generator`
 - organizations & users management
 - buckets management
 - tasks management
 - authorizations
 - health check
 - ...
- **‘InfluxDB 1.8 API compatibility’_**
- **Examples**
 - **‘Connect to InfluxDB Cloud’_**
 - **‘How to efficiently import large dataset’_**

- ‘Efficiency write data from IOT sensor’_
- ‘How to use Jupyter + Pandas + InfluxDB 2’_

CHAPTER 4

Installation

InfluxDB python library uses [RxPY](#) - The Reactive Extensions for Python (RxPY).

Python 3.6 or later is required.

Note: The client uses `ciso8601` for parsing dates. `ciso8601` is much faster than built-in Python `datetime`. Since it's written as a C module the best way is build it from sources:

Windows:

You have to install [Visual C++ Build Tools 2015](#) to build `ciso8601` by `pip`.

conda:

Install from sources: `conda install -c conda-forge/label/cf202003 ciso8601`.

4.1 pip install

The python package is hosted on [PyPI](#), you can install latest version directly:

```
pip install influxdb-client
```

Then import the package:

```
import influxdb_client
```

4.2 Setuptools

Install via [Setuptools](#).

```
python setup.py install --user
```

(or `sudo python setup.py install` to install the package for all users)

CHAPTER 5

Getting Started

Please follow the *Installation* and then run the following:

```
from influxdb_client import InfluxDBClient, Point
from influxdb_client.client.write_api import SYNCHRONOUS

bucket = "my-bucket"

client = InfluxDBClient(url="http://localhost:9999", token="my-token", org="my-org")

write_api = client.write_api(write_options=SYNCHRONOUS)
query_api = client.query_api()

p = Point("my_measurement").tag("location", "Prague").field("temperature", 25.3)

write_api.write(bucket=bucket, record=p)

## using Table structure
tables = query_api.query('from(bucket:"my-bucket") |> range(start: -10m)')

for table in tables:
    print(table)
    for row in table.records:
        print(row.values)

## using csv library
csv_result = query_api.query_csv('from(bucket:"my-bucket") |> range(start: -10m)')
val_count = 0
for row in csv_result:
    for cell in row:
        val_count += 1
```


6.1 Via File

A client can be configured via *.ini file in segment influx2.

The following options are supported:

- url - the url to connect to InfluxDB
- org - default destination organization for writes and queries
- token - the token to use for the authorization
- timeout - socket timeout in ms (default value is 10000)

```
self.client = InfluxDBClient.from_config_file("config.ini")
```

6.2 Via Environment Properties

A client can be configured via environment properties.

Supported properties are:

- INFLUXDB_V2_URL - the url to connect to InfluxDB
- INFLUXDB_V2_ORG - default destination organization for writes and queries
- INFLUXDB_V2_TOKEN - the token to use for the authorization
- INFLUXDB_V2_TIMEOUT - socket timeout in ms (default value is 10000)

```
self.client = InfluxDBClient.from_env_properties()
```


CHAPTER 7

Indices and tables

- `genindex`
- `modindex`
- `search`

A

authorization_id (*influxdb_client.domain.Task attribute*), 22
 authorizations_api() (*influxdb_client.InfluxDBClient method*), 14

B

Bucket (*class in influxdb_client.domain*), 17
 buckets_api() (*influxdb_client.InfluxDBClient method*), 14
 BucketsApi (*class in influxdb_client*), 16

C

cancel_run() (*influxdb_client.TasksApi method*), 21
 clone_label() (*influxdb_client.LabelsApi method*), 18
 close() (*influxdb_client.InfluxDBClient method*), 14
 create_bucket() (*influxdb_client.BucketsApi method*), 16
 create_label() (*influxdb_client.LabelsApi method*), 19
 created_at (*influxdb_client.domain.Bucket attribute*), 17
 created_at (*influxdb_client.domain.Organization attribute*), 20
 created_at (*influxdb_client.domain.Task attribute*), 23
 cron (*influxdb_client.domain.Task attribute*), 23

D

delete_api() (*influxdb_client.InfluxDBClient method*), 14
 delete_bucket() (*influxdb_client.BucketsApi method*), 17
 delete_label() (*influxdb_client.LabelsApi method*), 19
 description (*influxdb_client.domain.Bucket attribute*), 17

description (*influxdb_client.domain.Organization attribute*), 20
 description (*influxdb_client.domain.Task attribute*), 23

E

every (*influxdb_client.domain.Task attribute*), 23

F

find_bucket_by_id() (*influxdb_client.BucketsApi method*), 17
 find_bucket_by_name() (*influxdb_client.BucketsApi method*), 17
 find_buckets() (*influxdb_client.BucketsApi method*), 17
 find_label_by_id() (*influxdb_client.LabelsApi method*), 19
 find_label_by_org() (*influxdb_client.LabelsApi method*), 19
 find_labels() (*influxdb_client.LabelsApi method*), 19
 find_tasks() (*influxdb_client.TasksApi method*), 21
 flux (*influxdb_client.domain.Task attribute*), 23

G

get_logs() (*influxdb_client.TasksApi method*), 22
 get_run() (*influxdb_client.TasksApi method*), 22
 get_runs() (*influxdb_client.TasksApi method*), 22

H

health() (*influxdb_client.InfluxDBClient method*), 14

I

id (*influxdb_client.domain.Bucket attribute*), 17
 id (*influxdb_client.domain.Organization attribute*), 20
 id (*influxdb_client.domain.Task attribute*), 23
 id (*influxdb_client.domain.User attribute*), 21
 InfluxDBClient (*class in influxdb_client*), 13

L

labels (*influxdb_client.domain.Bucket* attribute), 17
labels (*influxdb_client.domain.Task* attribute), 23
labels_api() (*influxdb_client.InfluxDBClient* method), 14
LabelsApi (class in *influxdb_client*), 18
last_run_error (*influxdb_client.domain.Task* attribute), 23
last_run_status (*influxdb_client.domain.Task* attribute), 24
latest_completed (*influxdb_client.domain.Task* attribute), 24
links (*influxdb_client.domain.Bucket* attribute), 18
links (*influxdb_client.domain.Organization* attribute), 20
links (*influxdb_client.domain.Task* attribute), 24
links (*influxdb_client.domain.User* attribute), 21

N

name (*influxdb_client.domain.Bucket* attribute), 18
name (*influxdb_client.domain.Organization* attribute), 20
name (*influxdb_client.domain.Task* attribute), 24
name (*influxdb_client.domain.User* attribute), 21

O

oauth_id (*influxdb_client.domain.User* attribute), 21
offset (*influxdb_client.domain.Task* attribute), 24
org (*influxdb_client.domain.Task* attribute), 24
org_id (*influxdb_client.domain.Bucket* attribute), 18
org_id (*influxdb_client.domain.Task* attribute), 24
Organization (class in *influxdb_client.domain*), 19
organizations_api() (*influxdb_client.InfluxDBClient* method), 14
OrganizationsApi (class in *influxdb_client*), 19

Q

query() (*influxdb_client.QueryApi* method), 15
query_api() (*influxdb_client.InfluxDBClient* method), 14
query_csv() (*influxdb_client.QueryApi* method), 15
query_data_frame() (*influxdb_client.QueryApi* method), 15
query_raw() (*influxdb_client.QueryApi* method), 15
query_stream() (*influxdb_client.QueryApi* method), 15
QueryApi (class in *influxdb_client*), 15

R

ready() (*influxdb_client.InfluxDBClient* method), 14
retention_rules (*influxdb_client.domain.Bucket* attribute), 18
retry_run() (*influxdb_client.TasksApi* method), 22

rp (*influxdb_client.domain.Bucket* attribute), 18
run_manually() (*influxdb_client.TasksApi* method), 22

S

status (*influxdb_client.domain.Organization* attribute), 20
status (*influxdb_client.domain.Task* attribute), 24
status (*influxdb_client.domain.User* attribute), 21

T

Task (class in *influxdb_client.domain*), 22
tasks_api() (*influxdb_client.InfluxDBClient* method), 14
TasksApi (class in *influxdb_client*), 21
to_dict() (*influxdb_client.domain.Bucket* method), 18
to_dict() (*influxdb_client.domain.Organization* method), 20
to_dict() (*influxdb_client.domain.Task* method), 25
to_dict() (*influxdb_client.domain.User* method), 21
to_str() (*influxdb_client.domain.Bucket* method), 18
to_str() (*influxdb_client.domain.Organization* method), 20
to_str() (*influxdb_client.domain.Task* method), 25
to_str() (*influxdb_client.domain.User* method), 21
type (*influxdb_client.domain.Bucket* attribute), 18
type (*influxdb_client.domain.Task* attribute), 25

U

update_label() (*influxdb_client.LabelsApi* method), 19
updated_at (*influxdb_client.domain.Bucket* attribute), 18
updated_at (*influxdb_client.domain.Organization* attribute), 20
updated_at (*influxdb_client.domain.Task* attribute), 25
User (class in *influxdb_client.domain*), 21
users_api() (*influxdb_client.InfluxDBClient* method), 14
UsersApi (class in *influxdb_client*), 21

W

write() (*influxdb_client.WriteApi* method), 16
write_api() (*influxdb_client.InfluxDBClient* method), 14
WriteApi (class in *influxdb_client*), 16