pressureNET Live API

DOCUMENT HISTORY

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This document describes our secure API for access to live pressureNET data called pressureNET Live. This is an early revision and is subject to change. Please email us with any questions or comments you have. We are dedicated to improving this service as much as possible.

CONTENTS

HTTPS API

Cumulonimbus provides a simple API for customers to access our live stream. All communication takes place through HTTPS requests and responses. A client can make a simple HTTPS request and specify desired parameters. Our server will respond with the data that matches the set parameters.

Some technical work is required on the customer's end. Cumulonimbus is happy to assist in any way we can to enable your efficient and simple access to the data. We're aiming to make this API smoother and better, so we will soon be offering a web interface to configure and view the data and your API usage. Please email us at livestream@cumulonimbus.ca any feedback you have.

REQUEST

The customer will send HTTPS requests to https://pressurenet.cumulonimbus.ca/live/ with the following parameters and options. Some parameters are always required and others should be used (or not used) in conjunction with others. Always Required: api_key.

If you set *global=true*, do not set latitude and longitude. They will be discarded and global data will be returned. If you do not set global, or set it to false (the default value), then all four location parameters (*min_lat*, *max_lat*, *min_lon*, *max_lon*) are required.

If you set *since_last_call=true*, do not specify *start_time* and *end_time*. They will be discarded, and instead our server will look up the *end_time* of your last API call and return all results that match your other parameters since the value of *end_time* the last time you made an API call (if you haven't made any calls yet, specify *start_time* and *end_time* to seed the initial values). If you do not set *since_last_call*, then both *start_time* and *end_time* parameters are required.

Single requests are limited to 1,000,000 results; larger requests should be split into multiple smaller requests either by location or time segments.

Time values are represented as the number of milliseconds since Jan 1, 1970 (unix time).

Parameter	**Value**	**Action**	**Comments**
global	*true*	All locations returned	Limited Usage
global	*false*	Filter by latitude and longitude	Default
since_last_call	*true*	Return only data since recorded the customer last made a data fetch call	
since_last_call	*false*	Use *start_time* and *end_time* parameters	Default
start_time	unix time (ms)	Filter by start time	
end_time	unix time (ms)	Filter by end time	
min_lat	latitude	Filter by latitude	-180 to 180
max_lat	latitude	Filter by latitude	-180 to 180
min_lon	longitude	Filter by longitude	-180 to 180

Parameter	Value	Action	Comments
max_lon	longitude	Filter by longitude	-180 to 180
limit	number	Limit query results	Maximum 1,000,000
format	json	Return data in JSON format	Default
format	xml	Return data in XML format	
api_key	API key	Authenticates user	Always required

RESPONSE

The server will respond with the following fields and values.

Field	Value
user_id	Unique ID of the user (hash of device ID)
latitude	Latitude of measurement
longitude	Longitude of measurement
location_accuracy	Accuracy/confidence level for location data
date_recorded	Time of measurement (unix time)
timezone	User's timezone
measurement	Atmospheric pressure in millibars
reading_accuracy	Accuracy/confidence of the pressure measurement
sharing_level	Sharing privacy level
client_key	Unique ID of the data source client application

USE CASES AND EXAMPLES

We recommend that you set up a recurring task on a server to access our live stream. With the flexibility we provide in this API there are many methods you can use to establish the data stream on your end. Here's a simple python script that will make an API call and print the results to the screen. This be be modified to run in a cron job and save the output to a file or database.

```
# demo/example python code to make
# an API call and print results
import urllib2
data = urllib2.urlopen('https://pressurenet.cumulonimbus.ca/live/?global=true&since_last_
call=true&format=json&api_key=APIKEY')
content = data.read()
print content
```

For the API calls themselves, we provide four general use cases and example calls.

USE CASE 1: TOTAL USER CONTROL IN A REGION

Supply detailed parameters without using dynamic features such as *since_last_call* or *global*. Latitude and longitude bounds are specified and long with start and end times.

Example API call:

https://pressurenet.cumulonimbus.ca/live/?min_lat=44.77865108875515&max_lat=47.77865108875515&min_lon=-74.93251647949216&max_lon=-70.93251647949216&start_time=1351396800000&end_time=1359694800000&format=json&api_key=testkey

USE CASE 2: RECENT MEASUREMENTS IN A REGION

User sets *since_last_call=true* and does not specify global. Latitude and longitude bounds are set but start and end times are not.

Example API call:

https://pressurenet.cumulonimbus.ca/live/?since_last_call=true&min_lat=44.77865108875515&max_lat=47.77865108875515&min_lon=-74.93251647949216&max_lon=-70.93251647949216&format=json&api_key=testkey

USE CASE 3: RECENT GLOBAL MEASUREMENTS

User passes *global=true* and *since_last_call=true*. No location or time parameters are passed.

Example API call:

https://pressurenet.cumulonimbus.ca/live/?since_last_call=true&global=true&format=json&api_key=testkey

USE CASE 4: TIME-SPECIFIED GLOBAL MEASUREMENTS

User passes *global=true* but not *since_last_call*. No location parameters are passed but start and end times are required.

Example API call:

https://pressurenet.cumulonimbus.ca/live/?global=true&start_time=1351396800000&end_time=1359694800000&format=json&api_key=testkey