

Clear Lake API and Backend Documentation

[backend managed by Valentina Lai (vtlai@ucdavis.edu) and Cesar Ayuso (csayuso@ucdavis.edu)]

Link to upload file on webpage:

https://tercdev.github.io/Clear_Lake_Website_Data_Visualization/upload-csv

To access login information, please contact Alicia Cortes at alicortes@ucdavis.edu

Our current system:

- We are using AWS S3 pre-signed URLs which will grant users temporary access to either download or upload files into the system which are private to them
- This makes our system serverless: no server management, scalable, security, reduced latency
- The process of how CSV goes from upload stage to database insertion stage
 - When client uploads CSV files into the dropzone from this [link](#), the files are then sent to the S3 bucket and is sorted into its data type folder based on the name of the file
 - Thus, following the naming convention (mentioned later in this document) is very important
 - If you don't see the data being uploaded onto the database, please check the naming convention.
 - The client can upload up to 5 files at a time (this can be changed up to client preferences)
 - Client can ONLY upload CSV files → other file types will be grayed out and cannot be uploaded
 - Once files are uploaded into their correct data type folder in the S3 bucket, files will be added in database
 - May take some time (around 5-10 minutes), depending on how much data is on the file
 - Only new data will be added onto the database table based on time
 - If client updates/changes data, the database will reflect that change

- Flow data is directly scraped of these website and updated every 15 minutes
 - <http://cdec.water.ca.gov/dynamicapp/QueryF?s=SCS>
 - <http://cdec.water.ca.gov/dynamicapp/QueryF?s=MCU>
 - <http://cdec.water.ca.gov/dynamicapp/QueryF?s=KCK>
- Precipitation data is scraped from (hourly)
 - <https://cdec.water.ca.gov/dynamicapp/QueryF?s=LYO>
 - <https://cdec.water.ca.gov/dynamicapp/QueryF?s=KTI>

API Endpoint:

➤ Meteorological GET Request:

https://4ery4fbt1i.execute-api.us-west-2.amazonaws.com/default/clearlake-met?id=5&start=20220202&end=20220204	1 = Buckingham Point 2 = Clearlake Oaks 3 = Jago Bay 4 = Konocti Bay 5 = Nice 6 = North Lakeport 7 = Big Valley Rancheria <u>Query Parameters:</u> id: see above for station id start, end: time written in <year><month><date>
---	--

➤ Stream Turbidity and Temperature GET Request

https://1j27qzg916.execute-api.us-west-2.amazonaws.com/default/clearlake-streamturb-api?id=2&start=20211202&end=20220204	1 = Kelsey 2 = Middle 3 = Scotts <u>Query Parameters:</u> id: see above for station id start, end: time written in <year><month><date>
---	---

➤ Stream Flow and Stage GET Request

https://b8xms0pkrf.execute-api.us-west-2.amazonaws.com/default/clearlake-streams?id=1&start=20190202&end=20190204	<p>1 = Kelsey 2 = Middle 3 = Scotts</p> <p><u>Query Parameters:</u></p> <p>id: see above for station id</p> <p>start, end: time written in <year><month><date></p>
---	--

➤ Stream Precipitation GET Request

https://ts09zwptz4.execute-api.us-west-2.amazonaws.com/default/clearlake-precipitation-api?id=1&start=20190202&end=20190204	<p>1 = Kelsey 2 = Middle 3 = Scotts</p> <p><u>Query Parameters:</u></p> <p>id: see above for station id</p> <p>start, end: time written in <year><month><date></p>
---	--

➤ Lake Profile Data GET Request

https://3kgpak926a.execute-api.us-west-2.amazonaws.com/default/clearlake-profiledata?id=5&start=20190318&end=20190319	<p>site_id_map = { '1': "UA01", '2': "UA06", '3': "UA07", '4': "UA08", '5': "LA03", '6': "NR02", '7': "OA04", }</p> <p><u>Query Parameters:</u></p> <p>id: see above for station id</p> <p>start, end: time written in <year><month><date></p>
---	--

➤ Lake Oxygen Data GET Request

https://f6axabo7w6.execute-api.us-west-2.amazonaws.com/default/clearlake-lakeoxygen?id=5&start=20190422&end=20190504	<pre>ids = {'1': "CLEARLAKE_LA03OXYGEN", '2': "CLEARLAKE_NR02OXYGEN", '3': "CLEARLAKE_OA04OXYGEN", '4': "CLEARLAKE_UA01OXYGEN", '5': "CLEARLAKE_UA06OXYGEN", '6': "CLEARLAKE_UA08OXYGEN", '7': "CLEARLAKE_UA07OXYGEN"}</pre> <p>start, end: time written in <year><month><date></p>
---	--

➤ Lake Temperature Data GET Request

https://18eduqff9f.execute-api.us-west-2.amazonaws.com/default/clearlake-laketemperature?id=2&start=20190422&end=20190504	<pre>ids = {'1': "CLEARLAKE_LA03TEMPERATURE", '2': "CLEARLAKE_NR02TEMPERATURE", '3': "CLEARLAKE_OA04TEMPERATURE", '4': "CLEARLAKE_UA01TEMPERATURE", '5': "CLEARLAKE_UA06TEMPERATURE", '6': "CLEARLAKE_UA08TEMPERATURE", '7': "CLEARLAKE_UA07TEMPERATURE"}</pre>
---	---

➤ Lake Profile Data Uniques Dates for Each Sites GET Request

https://v35v56rdp6.execute-api.us-west-2.amazonaws.com/default/clearlake-profiledata-sitedates?id=1	<pre>site_id_map = { '1': "UA01", '2': "UA06", '3': "UA07", '4': "UA08", '5': "LA03", '6': "NR02", '7': "OA04", }</pre> <p><u>Query Parameters:</u> id: see above for station id</p>
---	---

How our S3 bucket is structured:

met/

- bkp/
 - met_bkp_<fromDate>_<toDate>.csv
- bvr/
 - ... (other 5 other met sites)

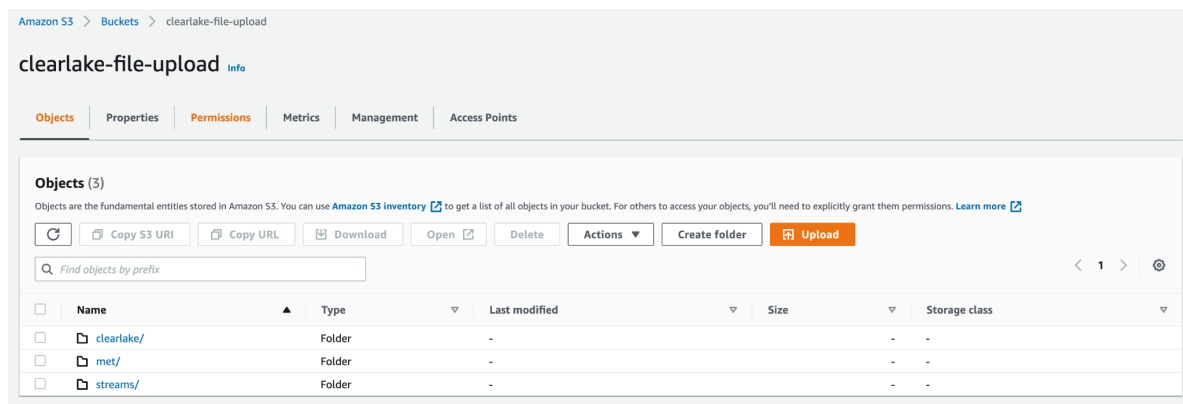
streams/

- kck/
 - turb/
 - stream_kck_turb_<fromDate>_<toDate>.csv
- mcu/
 - turb/
 - stream_mcu_turb_<fromDate>_<toDate>.csv
- scs/

clearlake/

- profiledata/
 - ClearLake_ProfileData_2019_2021.csv
- la03oxygen/
 - ClearLake_LA03oxygen_20190323_20220204.csv
- la03temperature/
 - ClearLake_LA03temperature_20190323_20220204.csv

...



Amazon S3 > Buckets > clearlake-file-upload > met/

met/ Copy S3 URI

Objects Properties

Objects (7)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Refresh
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload

Find objects by prefix

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	bkp/	Folder	-	-	-
<input type="checkbox"/>	bvr/	Folder	-	-	-
<input type="checkbox"/>	cla/	Folder	-	-	-
<input type="checkbox"/>	jgb/	Folder	-	-	-
<input type="checkbox"/>	knb/	Folder	-	-	-
<input type="checkbox"/>	nic/	Folder	-	-	-
<input type="checkbox"/>	nlp/	Folder	-	-	-

Amazon S3 > Buckets > clearlake-file-upload > met/ > bkp/

bkp/ Copy S3 URI

Objects Properties

Objects (1)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Refresh
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload

Find objects by prefix

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	met_bkp_20190322_20220204.csv	csv	April 13, 2022, 12:55:41 (UTC-07:00)	1.3 MB	Standard

Amazon S3 > Buckets > clearlake-file-upload > clearlake/

clearlake/ Copy S3 URI

Objects Properties

Objects (12)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Refresh
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload

Find objects by prefix Show versions

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	la03oxygen/	Folder	-	-	-
<input type="checkbox"/>	la03temperature/	Folder	-	-	-
<input type="checkbox"/>	nr02oxygen/	Folder	-	-	-
<input type="checkbox"/>	nr02temperature/	Folder	-	-	-
<input type="checkbox"/>	oa04oxygen/	Folder	-	-	-
<input type="checkbox"/>	oa04temperature/	Folder	-	-	-
<input type="checkbox"/>	ua01oxygen/	Folder	-	-	-
<input type="checkbox"/>	ua01temperature/	Folder	-	-	-
<input type="checkbox"/>	ua06oxygen/	Folder	-	-	-
<input type="checkbox"/>	ua06temperature/	Folder	-	-	-
<input type="checkbox"/>	ua08oxygen/	Folder	-	-	-
<input type="checkbox"/>	ua08temperature/	Folder	-	-	-

File Naming Conventions:

➤ <dataType>_<stationAbbvrivation>_<fromDate>_<toDate>