

Solum Web API

Version 0.1

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Contact: Mark Harmison, mark@solumtech.com, 515-505-1032

Introduction

Solum provides a simple Web API for

- Submitting orders
- Checking the status of orders
- Retrieving lab results

The API takes the form of HTTP GET and POST requests. Data is returned in the JSON format (see <http://json.org/>), which is a simple data format widely used in Web applications.

Servers

Solum's production web server is `http://readout.solumtech.com`. Our staging server for testing near production-ready code is available for you to test your API code. That server is `http://staging.solumtech.com`. Generally the data on the staging server is several days to weeks out of date. If you have specific requirements for testing data, please contact us and we will work with you to get a successful integration completed and tested.

Logging In

Before any other request may be issued, the client must log into Solum's Web server by providing a valid username and password for an account on our system. The login request will return a JSON result indicating success or failure, and if the login request is successful, a cookie named **sessionid** will also be returned. The **sessionid** cookie must be provided on all subsequent requests.

Request Detail

URL	<code>/accounts/login/api/</code>
Method	POST
Request Body	<code>{"username": "DemoUser", "password": "notrealone"}</code>
Response Body	<p>If success: <code>{"success": true, "client": "Demo Client"}</code></p> <p>If failure: <code>{"success": false, "error": "error description"}</code></p>

Placing an Order

Orders for lab services may be placed with or without individual sample information. If individual sample information is provided then this same information will be included in the lab results data. If individual sample data is not provided with the order it will be entered at the time the samples are received by Solum. The `num_samples` data can be used to provide an estimate of the number of samples Solum should expect. If the number received is drastically different than this, our staff will attempt to contact the customer or sampler to determine why. If this data is not provided then Solum will accept whatever samples are received as the full order.

The `order_name` field should be unique among all orders entered into the system for all our customers. For data entry purposes Solum prefers that these be a short alpha-numeric prefix followed by a separator and another alpha-numeric value, such as MISS-394E93W. Solum IT staff will work with each API customer to determine what prefix to use and to make sure our lab staff knows how to interpret the order number provided on the paperwork that will arrive with the actual samples.

The `products` field must be a list of valid Solum lab products. The current list of products is as follows:

Product Code	Description
SOIL_STANDARD	Solum Standard
SOIL_BRAY_OLSEN	Bray/Olsen
SOIL_REG_BRAY_OLSEN	Regressed Bray + Olsen
SOIL_MICROS	Micronutrients
SOIL_NITRATE	Nitrate
SOIL_OLSEN	Olsen Only
SOIL_3_DAY	3-day Guaranteed Service
SOIL_RECS	Recommendations

Request Detail

URL	<code>/lims/orders/create/</code>
Method	POST
Request Body	{

	<pre> "order_name": "MISS-38KE9182", "grower_name": "Grant Grower", "farm_name": "Frank's Farm", "field_name": "Back 80", "num_samples": 35, "products": ["SOIL_STANDARD", "SOIL_OLSEN"], "notes": "Here is a note. Whatever.", "samples": [{"id": 1, "min_depth":0, "max_depth": 6}, {"id": 2, "min_depth":0, "max_depth": 6}, {"id": 3, "min_depth":0, "max_depth": 6},] } </pre>
Response Body	<p>If success:</p> <pre> {"order_uid": "e480207c-8a94-4814-9277-8ae4c295b7df"} </pre> <p>If failure:</p> <pre> {"error": "description of error"} </pre>

Checking Order Status

Order status is checked using an order list request. This is a GET request that may be parameterized with a number of filters. The request returns a list of all orders matching the filters. If no filters are provided a list of all orders for your account is returned. Since a list of all orders can be quite long, please refrain from requesting all orders unless absolutely necessary.

The order list can be filtered by `order_uid` to request the status of a single order. The order list can be filtered by `from` and `to` dates to request status of orders created during a given date range. The order list can be filtered by `order_name` which does a substring search of orders by the `order_name` you provided when creating the order.

An order is complete when the `approved` field is set to true.

Request Detail

URL	/lims/orders/
Method	GET
Request Parameters	?from=2013-09-01&to=2013-09-15&order_name=Demo&order_uid=e480207c-8a94-4814-9277-8ae4c295b7df

Response Body	<p>If success:</p> <pre>[{"received": "2012-03-23T23:22:48.687", "approved": true, "created": "2012-03-23T23:20:34.848", "name": "Solumtech-1", "uid": "e480207c-8a94-4814-9277-8ae4c295b7df"}, {"received": null, "approved": false, "created": "2012-09-14T14:01:10.750", "name": "Demo Client-25585", "uid": "be419643-f97f-4602-9007-ffb3c95a04e1"}, {"received": null, "approved": false, "created": "2013-09-10T18:28:57.870", "name": "Demo Client-25584", "uid": "f285872d-4351-4c2e-8975-5c0155e9053f"}]</pre> <p>There are no known failure modes for this request at present. Invalid date ranges will return an empty list of orders.</p>
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Retrieving Lab Results

Once an order is approved the results may be requested. If an order is requested before results are approved only the order detail and not the actual lab results will be returned.

The request for order results is made by doing a GET request to `/lims/order/uid_of_order/` where `uid_of_order` is the uid returned when you created the order.

The results of this request will contain a reflection of the order data submitted, plus additional data related to the lab results. The `field_urls` field is a list of the urls for all fields that are part of this order. This url can be used as the basis for requesting PDF lab sheets and CSV results files for each field. To request a PDF or CSV for a field, do an HTTP GET on the `field_url` provided appending `?format=pdf` or `?format=csv` to the url.

The `order_field` field may or may not be filled in depending on how the order was created. Generally orders submitted through this API or other automated methods will have `order_field` set since they are normally orders for a single field. However, users can use our web site order form to create orders with multiple fields. In that case the `order_field` field will not be filled in.

Request Detail

URL	/lims/orders/uid_of_order/
Method	GET
Request Parameters	None
Response Body	<pre> If success: { "num_samples": 22, "name": "Solumtech-1", "field_urls": ["/samples/fields/f636b724-90a5-4f6d-9c50-954a6c2 7f529/soil/e480207c-8a94-4814-9277-8ae4c295b7df/"], "uid": "e480207c-8a94-4814-9277-8ae4c295b7df", "order_field": "f636b724-90a5-4f6d-9c50-954a6c27f529", "notes": "Some notes here", "products": ["SOIL_BRAY_OLSEN", "SOIL_STANDARD"], "samples": [{ "Sample_ID": "1", "Field_ID": "ASPARAGUS", "Farm_name": "ASPARAGUS", "Grower_name": "STEWART VIEW", "Max_depth": "", "Min_depth": "", "Location_name": "", "Longitude": "", "Latitude": "", "K_BSat": 3.14458081098767, "Na_NOAc_ppm": null, "P_Bray_ppm": null, "Mn_M3_ppm": "", "NO3-N_ppm": 41.489985, "Mg_M3_ppm": 426.212987906165, "Buffered_pH": 6.8, "pH": 5.9, "Zn_DTPA_Regressed_ppm": 1.3964397426242159, "Ca_NOAc_Regressed_ppm": 1721.222823940444, "CEC": 15.186961073416038, "B_M3_ppm": "", "Na_M3_ppm": 34.8463318860625, "Rec_P_lbs/ac": "", "Cu_M3_ppm": "", "Na_BSat": 0.9976043928509842, "Fe_M3_ppm": "", "Processed_date": "2012-03-23T23:25:06.679", "S_M3_ppm": 16.5959237328275, "Ca_NOAc_ppm": null, </pre>

```
"Sample_date": "2012-03-23T23:25:06.649",
"P_Olsen_ppm": null,
"Mg_NOAc_ppm": null,
"Ca_M3_ppm": 1955.93502720505,
"P_M3_ppm": 32.8995918286126,
"P_Bray_Regressed_ppm": 24.30666121774846,
"K_M3_ppm": 186.250842837855,
"Organic_matter": 2.3533311236328,
"Mg_BSat": 23.387002060835155,
"Zn_M3_ppm": 3.01346513298277,
"Ca_BSat": 56.66778283093621
"Rec_K_lbs/ac": "",
"Rec_Lime_lbs/ac": "",
"Yield_goal": "",
}}
}
```

Generally the only failure mode is an incorrect order uid, in which case the request will be answered by a standard HTTP 404 status.