

caMicroscope API Guide

Contents of this Page

- [Naming](#)
- [/ImageLoader](#)
 - [Example of /ImageLoader](#)
- [/uAIMDataLoader](#)
 - [Example of /uAIMDataLoader](#)
- [/ImageData](#)
 - [Example of /ImageData](#)
- [/MarkupData](#)
 - [Examples of /MarkupData](#)
- [/uAIMTemplates](#)
 - [Examples of /uAIMTemplates](#)
- [Jobs](#)
 - [Examples of /Tasks](#)

Naming

- case_id: Used to uniquely identify an image.
- execution_id: Used to uniquely identify an algorithm. A case_id can have multiple execution_ids associated with it.
- subject_id: Used to uniquely identify a patient. A subject_id can have multiple case_ids associated with it.

/ImageLoader

The /ImageLoader resource is a Node application that extracts image metadata (such as width and height of the image) from the existing whole slide image and stores it in a Mongo database.

HTTP Verb	QueryEndpoint	Query Parameters(Input)	Output(Description)
POST	/submitImage	case_id, File_location, subject_id	{"status": "Success"} on success

Example of /ImageLoader

```
curl -v -F case_id=TCGA-02-0001 -F file_location=@TCGA-02-0001-01Z-00-DX1.83fce43e-42ac-4dcd-b156-2908e75f2e47.  
svs http://localhost:32799/submitData
```

Optional study_id Return type: json On success returns: {"status": "success"}

case_id: The unique identifier for the image

file_location: Location of the image on file system

/uAIMDataLoader

Node application that converts Aperio and binary masks to GeoJSON objects and stores them in a Mongo database

HTTP Verb	QueryEndpoint	Query Parameters(Input)	Output(Description)
POST	/submitMaskOrder	Case_id, Execution_id, Height, Width, X, Y, Type(optional)	{"jobId": 12}
GET	/job/:id	None	{"status": "incomplete"}

Example of /uAIMDataLoader

Example cURL command (Aperio):

```
$ curl localhost:6000/submitMaskOrder -F mask=@1.png -F case_id=cbtc_test_11 -F execution_id=ganesh:test2 -F width=1743 -F height=2017 -F x=0 -F y=0
```

Example cURL command (binary mask):

```
$ curl localhost:6000/submitMaskOrder -F mask=@1.xml -F case_id=cbtc_test_11 -F execution_id=ganesh:test2 -F width=1743 -F height=2017 -F x=0 -F y=0 -F type= maskfile
```

Variable	Definition
case_id	The unique identifier for the image
execution_id	The name(label) of the algorithm/run
width	width of the image/roi
height	height of the image/roi
x	top left x coordinate of the image/roi (Default: 0)
y	top left y coordinate of the image/roi (Default: 0)

/ImageData

Bindaas APIs for handling Image Metadata. (Internal APIs, not meant to be exposed)

HTTP Verb	QueryEndpoint	Query Parameters (Input)	Output(Description)	Additional Description
GET	/fileLocation	case_id	Get file location of image	Used by the caMicroscope viewer to give the image location to its backend server.
	/mpp	case_id	Get mpp-x, mpp-y of the image	Used by the viewer to adjust the scales.
	/metadata	case_id	Get all metadata of the image(width, height, mpp etc.)	Used by dynamic services to get width, height, and file location of the image.
	/md5	case_id	Get MD5 of the image file	Used to check the MD5 to make sure that the image was loaded successfully.
POST	/json	metdata	metadata of the image in JSON format	Stored in Mongo(db: Camicroscope, collection: ImageData).

Example of /ImageData

POST

```
$ curl -H "Content-Type: application/json" -X POST -d '{"case_id": "TCGA-01-0001", "width": 30000, "height": 31000}' http://localhost:9099/Camicroscope/ImageData/json
```

GET

```
$ curl http://localhost:9099/Camicroscope/ImageData/fileLocation
```

/MarkupData

Bindaas

HTTP Verb	QueryEndpoint	Query Parameters (Input)	Output (Description)	Additional Information
-----------	---------------	--------------------------	----------------------	------------------------

GET	/multipleMarkups	case_id, x1,y1,x2,y2, footprint, algorithms	GeoJSON	x1, y1, x2, y2 are the coordinates of a rectangular region of interest. (x1,y1) is the top-left coordinate pair. (x2, y2) is the bottom-right coordinate pair.
N/A	/executionIds	case_id	List of execution IDs available for a case	The case_id uniquely identifies an image. The execution_ids identify the image segmentation algorithm that is run on images. The results of these images appear as green polygons in caMicroscope.

Examples of /MarkupData

/uAIMTemplates

Schema: <https://github.com/joshfire/jsonform>

HTTP Verb	QueryEndpoint	Query Parameters(Input)	Output(Description)
GET	/template	N/A	Jsonform template
POST	/json	Form in JSON format(see this)	200 OK

Examples of /uAIMTemplates

Examples of authoring a JSON form can be seen [here](#).

Jobs

APIs for posting and retrieving tasks for caMicroscope. It uses [Kue](#) to maintain the tasks. It is well documented.

HTTP Verb	QueryEndpoint	Query Parameters(Input)	Output(Description)
POST	/job	Job data in JSON format	N/A
GET	/job	task_id	N/A

Examples of /Tasks

Example of POSTing a task

```
$ curl -H "Content-Type: application/json" -X POST -d \
  '{
    "type": "order",
    "data": {

    },
    "options" : {
      "attempts": 5,
      "priority": "high"
    }
  }' http://localhost:3000/job
```

will output:

```
{"message": "job created", "id": 3}
```

This ID can be used to query the status of the job.

GET /job/:id

```
curl http://localhost/job/3
```

Example of GETting status of a task

```
{"id":"3","type":"queue","data":{"priority":-10,"progress":"100","state":"complete","attempts":null,"created_at":"1309973155248","updated_at":"1309973155248","duration":"15002"}}
```