# REST API Requirements

## Overview

The REST API is the core of the system; the website and the devices will communicate through this API, using its various resources. Persistent storage will be used by this module alone, and will be used by the various resources.

## Endpoints

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Method | Path | Resource Name | GET Filters /  POST attributes | Description |
| POST | /login | Login | id, password | Returns an access token to the client. Passwords will be hashed with Argon2id and peppered.  For devices, id should be the serial number.  For users, id should be the username |
| GET | /users/{user\_id} | Get User |  | Returns email of user |
| GET | /users/{user\_id}/devices | Get User Devices |  | Returns devices owned by a user |
| POST | /users/{user\_id}/devices | Add User Device | serial | Registers a new device resource, owned by user\_id, with serial number = serial |
| GET | /devices | Get Devices | user\_id | Basically a mirror of /users/{user\_id}/devices, when user\_id is provided |
| GET | /devices/{serial} | Get Device |  | Returns attributes of the given device. |
| POST | /devices/{serial} | Update Device | schedule\_id, location\_id, model\_id | Sets the provided attributes of the device. model\_id and location\_id can only be set by user account, not device account |
| GET | /devices/{serial}/schedules | Get Device Schedules | only\_active | Returns all schedules that have been made for this device.  If only\_active is provided, only the currently active schedule will be returned. |
| POST | /devices/{serial}/schedules | Create/Update Schedule | schedule\_data | If schedule\_id within the schedule exists, this will overwrite it. Otherwise, this creates a new schedule with the details provided. |
| GET | /devices/{serial}/costs | Device Costs | only\_active | Returns costs associated with the created schedules for this device.  If only\_active is provided, only the cost for the currently active schedule will be provided. |
| POST | /devices/{serial}/costs | Cost Feedback | schedule\_id, cost\_data, time\_span | Allows the user to provide cost data for a particular schedule during a particular time span.  This data will be used by the cost prediction algorithm to help improve its accuracy. |
| GET | /locations | Search Locations | city, state, country | Searches existing locations within the given parameters and returns the results. |
| GET | /locations/{location\_id} | Get Location |  | Returns details of requested location |
| GET | /locations/{location\_id}/forecasts | Get Location Forecasts | date | Returns weather forecasts for a given location.  If date is provided, this will return the forecast for that particular date.  Otherwise, this returns the forecast for the current time |
| GET | /forecasts/{forecast\_id} | Get Forecast |  | Returns all details of a particular forecast, if it exists. forecast\_id should be obtained from the results of GET /locations/{location\_id}/forecasts |
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