EINS

API ENDPOINTS

April 20th 2020

This document intends to detail the process of each of the endpoints of the API, including the responses and the requests.

Requests

To query the API the request header must contain the access token obtained when authenticating the device.

"Authorization: Bearer <access token>"

A blanket request rate limit per IP address is set for all endpoints. If the rate limit is exceeded requests will not be successful and a 429 response code returned.

Responses

All responses take on the standard form shown in the example below unless otherwise specified.

```
{
    "data": null,
    "meta": {
        "success": true,
        "code": 200,
        "message": null
    }
}
```

Device Authentication

Authentication of a device will occur using a standard key pair signature verification (**RSA2048**). The public key is required to be in the **der64** format.

- Authentication POST: {{URL}}v1/devices

New Device:
For a new device public key, operating system, language (alpha2 format) are required fields.

EINS
By VIA

Previously Authenticated Device:

For a device that has already been authenticated the public key and operating system fields cannot not be included. This is to prevent the switching of a device's key pair which would be a security risk. Language is optional. If included, it will update the device's language.

Upon downloading and using the app, users will be presented with the following screen, see image below:
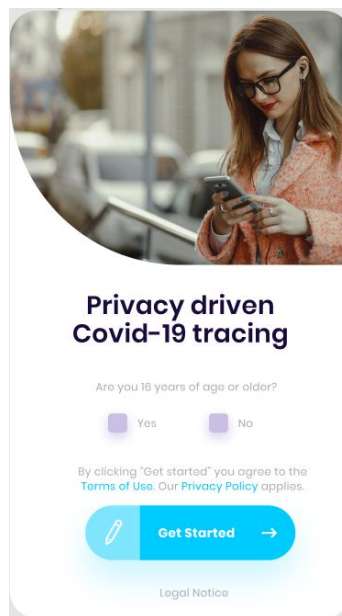
Requests

```
{
        "AppId": "",
        "publicKey": "",
        "operatingSystem": "",
        "pushToken": "",
        "language": "",
        "Signature":{
                "plainTextData": "",
                "signedData": ""
        }
}
```

Responses

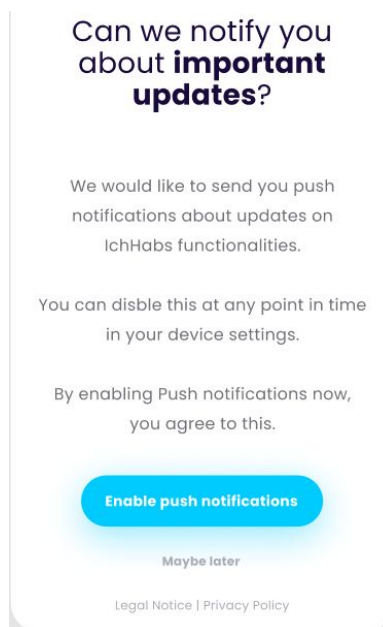Successful Response:

```
{
    "data": {
        "accessToken": "",
        "accessTokenExpiry": "",
        "signature": {
            "plainTextData": ""
        }
    },
    "meta": {
        "success": true,
        "code": 201,
        "message": "Device successfully authenticated."
    }
}
```

Unsuccessful Response:
401: When the AppId and signature pair are invalid.

As the user is setting up their device their device they will be prompted as to whether or not they would like to enable push notifications on important updates, see image below:

Can we notify you about **important updates**?

We would like to send you push notifications about updates on IchHabs functionalities.

You can disble this at any point in time in your device settings.

By enabling Push notifications now, you agree to this.

Enable push notifications

Maybe later

Legal Notice | Privacy Policy

EINS
By VIA

Delete Device

Deleting the device will delete all information associated with a device from the API. This includes the AppId, PublicKey, OperatingSystem, LanguageId, and PushToken.

- (DELETE: {{URL}}v1/devices)

The donated data, which users have opted to share, as well as survey submissions can not be removed through this endpoint because there is no direct or indirect link between this data and a device.

Add/Update Push Token

This will add a push token to, or update, the existing push token of an already authenticated device.

- POST: {URL}}v1/devices/push_token)

Requests

```
{
        "pushToken": ""
}
```

Delete Push Token

Deletes the push token associated with an authenticated device.

- DELETE: {{URL}}v1/devices/push_token

GeoData - Get Geo-Zone Specifications

Gets a list of all geo-zone specifications that are currently supported by the server along with additional basic information (see response shown below).

- GET: {{URL}}v1/geodata/zones/specifications

Responses

```json
{
    "data": [
        {
            "shape": "Square",
            "latitudeCoordinateRange": 0.01000000,
            "longitudeCoordinateRange": 0.01000000,
            "estimatedMaxMetreRange": 1000,
            "active": true,
            "id": 3
        },
        {
            "shape": "Square",
            "latitudeCoordinateRange": 0.00010000,
            "longitudeCoordinateRange": 0.00010000,
            "estimatedMaxMetreRange": 1,
            "active": true,
            "id": 4
        }
    ],
    "meta": {
        "success": true,
        "code": 200,
        "message": null
    }
}
```

Stream Zone Exposures

This returns information on zones and their exposure risk based upon the time and location that is specified. It creates a file internally and then streams this to the client.

- POST: {{URL}}v1/geodata/zones/exposure

Requests

```
{
  "geoZoneSpecId": 6,
  "exposureThreshold": 0,
  "areaRequests": [
   {
     "lat": -33.25188,
     "long": 18.41853,
     "start": 1586964196,
     "end": 1586965196
   },
   {
     "lat": -33.88356,
     "long": 18.15303,
     "start": 1586963806,
     "end": 1586964806
   }
  ]
}
```

EINS
By VIA

Responses

```
{
   "Data": {
      "GeoZoneSpecId": 4,
      "latRange": 0.0001,
      "longRange": 0.0001,
      "Zones": [
         {
            "centreLat": -33.52805,
            "centreLong": 18.42845,
            "Exposures": [
               {
                  "StartTime": 1585970874,
                  "EndTime": 1585971474,
                  "Exposure": 69.43
               }
            ]
         }
      ]
   },
   "Meta": {
      "Success": true,
      "Code": 200,
      "Message": null
   }
}
```
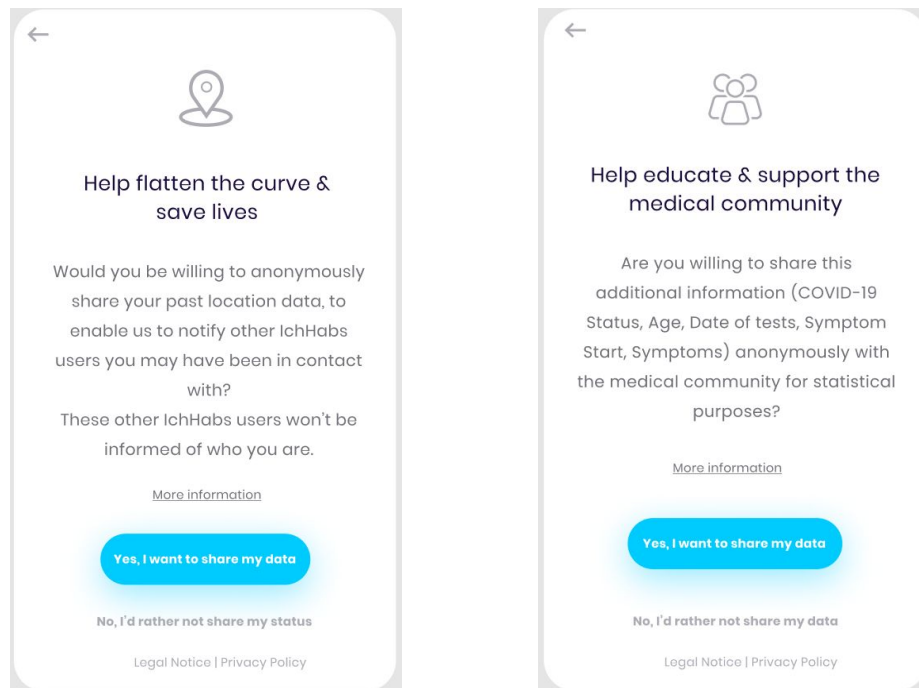
EINS
By VIA

Log Coordinates

Donates a list of infected coordinates to the api. Once data is donated to the API it can not be deleted from the API.

- POST: {{URL}}v1/geodata/coordinates

Requests

```
[
  {
    "lat": -33.58085,
    "long": 18.50831,
    "epoc": 1587204820,
    "confidence": 0.738
  },
  {
    "lat": -33.63025,
    "long": 18.55054,
    "epoc": 1587204820,
    "confidence": 0.620
  }
]
```

If users have tested positive for the virus then they will be able to choose to share their data.

Help flatten the curve &
save lives

Would you be willing to anonymously
share your past location data, to
enable us to notify other IchHabs
users you may have been in contact
with?
These other IchHabs users won't be
informed of who you are.

More information

Yes, I want to share my data

No, I'd rather not share my status

Legal Notice | Privacy Policy

Help educate & support the
medical community

Are you willing to share this
additional information (COVID-19
Status, Age, Date of tests, Symptom
Start, Symptoms) anonymously with
the medical community for statistical
purposes?

More information

Yes, I want to share my data

No, I'd rather not share my data

Legal Notice | Privacy Policy

EINS
By VIA

Once data has been shared, users of the app will be notified accordingly based on their movements.
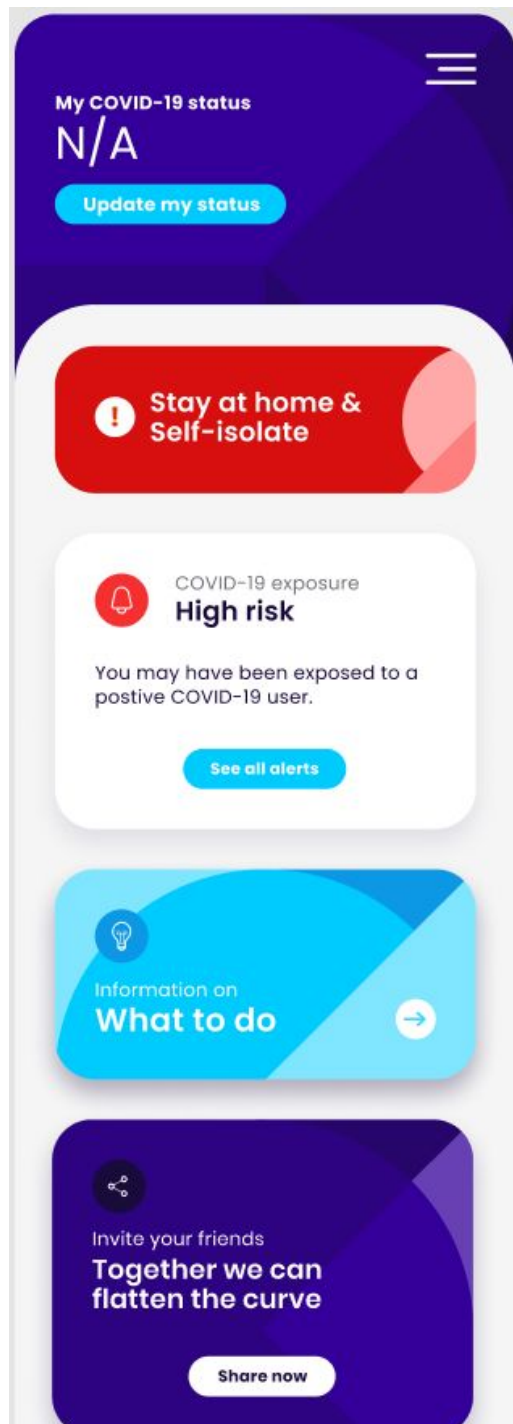
Survey:

Get Symptoms

Gets a key value pair list of the symptoms in the language specified in the query parameter.

- GET: {{URL}}v1/symptoms

Responses

```
{
    "data": [
        {
            "key": "question_positive_symptom-1",
            "value": "Sore throat"
        },
        ...
        {
            "key": "question_positive_symptom-12",
            "value": "Loss of smell"
        }
    ],
    "meta": {
        "success": true,
        "code": 200,
        "message": null
    }
}
```

Survey Submission

This will submit survey data. There is no limit to the number of submissions that can occur. There will exist various validations on what one can submit depending on what the stats are. The symptoms must be submitted using the 'text copy' key. The language and country must be submitted using the 'alpha2 format'. If 'IsSymptomatic' is set to false, no symptoms will be provided.The status must be one of the following: positive, negative, unsure or recovered. The survey submissions are not linked directly or indirectly to a device.

- POST: {{URL}}v1/submission/covid

EINS
By VIA

Requests

Positive:

```json
{
        "Status":"Positive",
        "PositiveTestDate":"2020-03-29 13:00:09.1359267",
        "Country":"GB",
        "Language":"EN",
        "Age":25,
        "IsSymptomatic":false,
        "Symptoms": [
                "question_positive_symptom-1",
                "question_positive_symptom-3"
                ]
        "SymptomsFrom":"2020-03-29 13:00:09.1359267"
}
```

Negative:

```json
{
        "Status":"Negative",
        "NegativeTestDate":"2020-03-30 13:00:09.1359267",
        "Country":"GB",
        "Language":"EN",
        "Age":25,
        "Symptoms": [
                "question_positive_symptom-1",
                "question_positive_symptom-3"
                ]
        "SymptomsFrom":"2020-03-29 13:00:09.1359267"
}
```

Recovered:

```
{
        "Status":"Recovered",
        "PositiveTestDate":"2020-03-29 13:00:09.1359267",
        "NegativeTestDate":"2020-03-30 13:00:09.1359267",
        "Country":"GB",
        "Language":"EN",
        "Age":25,
        "IsSymptomatic":false
}
```

Unsure:

```
{
        "Status":"Unsure",
        "Country":"GB",
        "Language":"EN",
        "Age":25,
        "IsSymptomatic":false,
        "Symptoms": [
                "question_positive_symptom-1",
                "question_positive_symptom-3"
                ]
        "SymptomsFrom":"2020-03-29 13:00:09.1359267"
}
```

Users are able to input the symptoms that they have experienced into the application.

Statistics:

Get statistics

This will get the latest COVID-19 statistics of the requested country. The statistics are retrieved through Google's 'BigQuery API' from the Johns Hopkins University (JHU) Repository of aggregated coronavirus COVID-19 cases.

- GET: {{URL}}v1/statistics/covid/google?countries={Alpha2}

Responses

```
{
    "Data": {
        "CountryName": "Global",
        "ContractedCount": 2265670,
        "DeathCount": 154249,
        "RecoveredCount": 572266,
        "Source": "GoogleBigQuery",
        "SourceCreatedAt": "2020-04-17T00:00:00",
        "SourceUrl":
"https://console.cloud.google.com/marketplace/details/johnshopkins/covid19_jhu
_global_cases?filter=solution-type:dataset&q=covid&id=430e16bb-bd19-42dd-bb7
a-d38386a9edf5&_ga=2.196272622.-312723631.1586190188&pli=1",
        "CreatedAt": "2020-04-18T01:00:08.545734"
    },
    "Meta": {
        "Success": true,
        "Code": 200,
        "Message": null
    }
}
```