



API GUIDE

Version V2

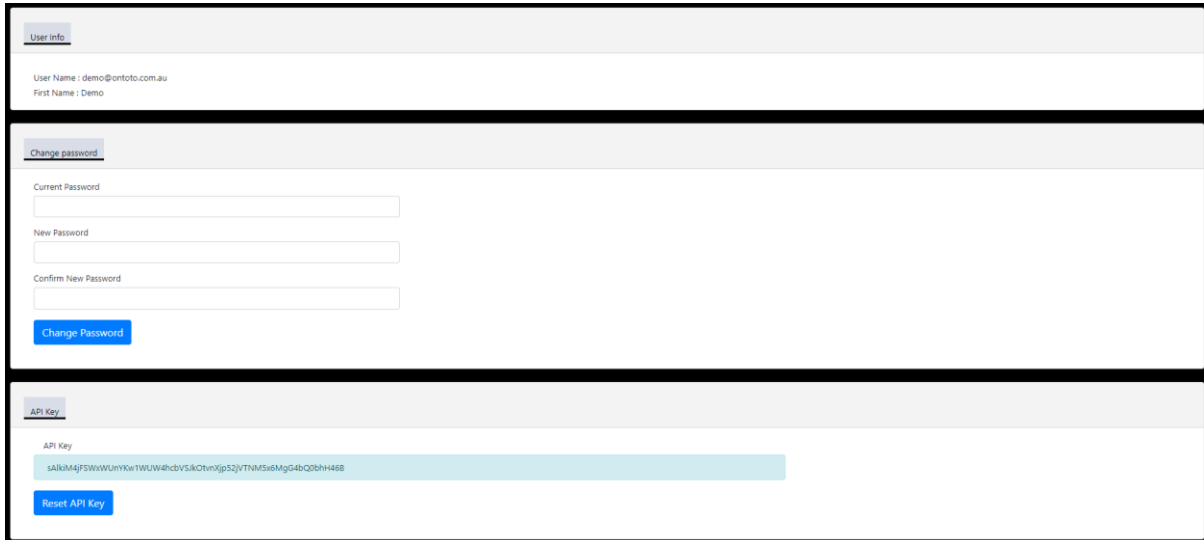


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Get started

To get started, log in via the Ontoto web portal, and press account settings. The username found on this page can be used alongside the API key, to grant API access to your data.



Authorisation

All API calls must be authenticated through the HTTP Basic Authentication scheme. To do this, you create an authorisation header that you send as part of the API request. This header contains encoded versions of an Ontoto dashboard username and its associated API key.

Follow these instructions to create an authorisation header:

1. Combine the username and API key into a single string with a colon separating the values. For example, if the username is demo@ontoto.com and the API key is sAlkiM4jFSWxWUnYKw1WUW4hcbVSJkOtnXjp52jVTNM5x6MgTTNm, the concatenated string would be
demo@ontoto.com:sAlkiM4jFSWxWUnYKw1WUW4hcbVSJkOtnXjp52jVTNM5x6MgTTNm
2. Encode the concatenated string using Base64:
ZGVtb0BvbnRvdG8uY29tOnNBbGtpTTRqRINXeFdVbllLdzFXVVc0aGNiVINKa090dm5YanA1MmpWVE5NNXg2TWdUVE5t
3. Set the Authorisation header value to Basic followed by the encoded string from step 2. Make sure there is a space between Basic and the encoded string: Basic
ZGVtb0BvbnRvdG8uY29tOnNBbGtpTTRqRINXeFdVbllLdzFXVVc0aGNiVINKa090dm5YanA1MmpWVE5NNXg2TWdUVE5t

Note: In the header: “Accept” type should be included. The accept is application/json

Get all base stations belonging to a company

HTTP method: GET

URL Endpoint: <https://api.ontoto.com/v2/base-stations>

```
▼ base_stations [3]
  ▼ 0 {10}
    id    : 1035
    name  : VW
    tag   : 867997031471120
    number_of_sensors_enabled : null
    sensor_reading_period_minutes : 15
    transmission_period_minutes : 1440
    sensor_reading_period_info : Sensor Reading : Every 15 minutes
    transmission_period_info : Data Transmission : Every 1 day
    ► gps {2}
    ► alarm_info {4}
  ▼ 1 {10}
    id    : 1063
    name  : VW2
    tag   : 867997031453649
    number_of_sensors_enabled : null
    sensor_reading_period_minutes : 240
    transmission_period_minutes : 10080
    sensor_reading_period_info : Sensor Reading : Every 4 hour
    transmission_period_info : Data Transmission : Every 7 day
    gps   : null
    alarm_info : null
  ► 2 {10}
```

Get all base stations belonging to all sites

HTTP method: GET

URL Endpoint: <https://api.ontoto.com/v2/sites/base-stations>

```
▼ sites [1]
  ▼ 0 {4}
    id : 184
    name : Site 1
    description : Site 1
    ▼ base_stations [1]
      ▼ 0 {10}
        id : 1035
        name : VW
        tag : 867997031471120
        number_of_sensors_enabled : null
        sensor_reading_period_minutes : 15
        transmission_period_minutes : 1440
        sensor_reading_period_info : Sensor Reading : Every 15 minutes
        transmission_period_info : Data Transmission : Every 1 day
      ▼ gps {2}
        longitude : 145.455536
        latitude : -41.788273
      ▼ alarm_info {4}
        alarm_enabled : 1
        active_alarm_count : 4
      ▼ settings [4]
        ▼ 0 [1]
          ▼ 0 {7}
            sensor_id : 3431
            sensor_name : vw_sensor_1
            parameter : frequency
            low_alarm_threshold : 0
            high_alarm_threshold : 3000
            hysteresis : 10
            unit : hz
          ► 1 [1]
          ► 2 [1]
          ► 3 [1]
        received_at : 2021-10-26 07:58:15.000
```

Get all base stations belonging to a particular site

HTTP method: GET

URL Endpoint: <https://api.ontoto.com/v2/sites/{siteId}/base-stations>

```
▼ base_stations [1]
  ▼ 0 {10}
    id : 1035
    name : VW
    tag : 867997031471120
    number_of_sensors_enabled : null
    sensor_reading_period_minutes : 15
    transmission_period_minutes : 1440
    sensor_reading_period_info : Sensor Reading : Every 15 minutes
    transmission_period_info : Data Transmission : Every 1 day
  ► gps {2}
  ▼ alarm_info {4}
    alarm_enabled : 1
    active_alarm_count : 4
  ▼ settings [4]
    ▼ 0 [1]
      ▼ 0 {7}
        sensor_id : 3431
        sensor_name : vw_sensor_1
        parameter : frequency
        low_alarm_threshold : 0
        high_alarm_threshold : 3000
        hysteresis : 10
        unit : hz
      ► 1 [1]
      ► 2 [1]
      ► 3 [1]
    received_at : 2021-10-26 07:58:15.000
```

Get all sensors and parameters for a base station at a site

HTTP method: GET

URL Endpoint: <https://api.ontoto.com/v2/sites/{siteId}/base-stations/{baseStationId}/sensors/parameters>

```
▼ sensors [4]
  ▼ 0 {3}
    id : 3431
    name : vw-sensor:1
    ▼ parameters [3]
      ▼ 0 {4}
        id : 1089
        name : pressure_vw_calculated
        alias : Pressure_Channel_1
        type : derived
      ▼ 1 {4}
        id : 3267
        name : frequency_(Hz)
        alias : Frequency
        type : normal
      ▼ 2 {4}
        id : 3268
        name : temperature_(°C)
        alias : Temperature
        type : normal
  ▼ 1 {3}
    id : 3432
    name : vw-sensor:2
    ► parameters [3]
      ► 2 {3}
      ► 3 {3}
```

Get data for all parameters for a base station

HTTP method: GET

URL Endpoint:

<https://api.ontoto.com/v2/sites/{siteId}/base-stations/{baseStationId}/sensors/parameters/data>

Note: This request will respond with one week of data from the requested time.

URL Endpoint with date range:

<https://api.ontoto.com/v2/sites/{siteId}/base-stations/{baseStationId}/sensors/parameters/data/start-date/{Y-m-d H:i:s}/end-date/{Y-m-d H:i:s}>

```
▼ sensors [8]
  ▼ 0 {4}
    id : 3431
    name : vw-sensor:1
    ▶ metadata {2}
    ▶ data [50]
  ▼ 1 {4}
    id : 3432
    name : vw-sensor:2
    ▶ metadata {2}
    ▶ data [50]
  ▼ 2 {4}
    id : 3433
    name : vw-sensor:3
    ▶ metadata {2}
    ▶ data [50]
  ▼ 3 {4}
    id : 3434
    name : vw-sensor:4
    ▶ metadata {2}
    ▶ data [50]
  ▶ 4 {4}
  ▶ 5 {4}
  ▶ 6 {4}
  ▶ 7 {4}
```


Get data for all parameters for a sensor

HTTP method: GET

URL Endpoint:

`https://api.ontoto.com/v2/sites/{siteId}/base-stations/{baseStationId}/sensors/{sensorId}/parameters/data`

Note: This request will respond with one week of data from the requested time.

URL Endpoint with date range:

`https://api.ontoto.com/v2/sites/{siteId}/base-stations/{baseStationId}/sensors/{sensorId}/parameters/data/start-date/{Y-m-d H:i:s}/end-date/{Y-m-d H:i:s}`

```
▼ sensor {4}
  id    : 3431
  name  : vw-sensor:1
  ▼ metadata {2}
    time_zone : UTC
    ► parameters [4]
  ▼ data [50]
    ▼ 0 {5}
      recorded_at : 2021-11-07 19:30:14
      frequency : 2993.1
      temperature : 13.6
      pressure : 8.6
      thermistor_resistance : 5080
    ► 1 {5}
    ► 2 {5}
    ► 3 {5}
    ► 4 {5}
    ► 5 {5}
    ► 6 {5}
    ► 7 {5}
    ► 8 {5}
    ► 9 {5}
    ► 10 {5}
    ► 11 {5}
    ► 12 {5}
    ► 13 {5}
    ► 14 {5}
    ► 15 {5}
```

Get selected parameter data

HTTP method: GET

URL Endpoint: <https://api.ontoto.com/v2/parameters/{parameterId}/types/{typeName}/data>

URL Endpoint with date range

<https://api.ontoto.com/v2/parameters/{parameterId}/types/{typeName}/data/start-date/{Y-m-d H:i:s}/end-date/{Y-m-d H:i:s}>

Note: This request will respond with one week of data from the requested time and types are derived or normal

```
▼ metadata {6}
  id      : 1089
  parameter_type : derived
  parameter_unit : Kilopascal
  parameter_name : pressure
  parameter_alias : Pressure_Channel_1
  timezone : UTC

▼ data [50]
  ▼ 0 {2}
    recorded_at : 2021-11-07 19:30:14
    value : 8.6
  ▶ 1 {2}
  ▶ 2 {2}
  ▶ 3 {2}
  ▶ 4 {2}
  ▶ 5 {2}
  ▶ 6 {2}
  ▶ 7 {2}
  ▶ 8 {2}
  ▶ 9 {2}
  ▶ 10 {2}
  ▶ 11 {2}
  ▶ 12 {2}
  ▶ 13 {2}
```

Get device configuration.

Http method: GET

Resource endpoint: <https://api.ontoto.com/v2/base-stations/{baseStationId}/configuration>

```
▼ base_station {10}
  id    : 1035
  name  : VW
  tag   : 867997031471120
  number_of_sensors_enabled : null
  sensor_reading_period_minutes : 15
  transmission_period_minutes : 1440
  sensor_reading_period_info : Sensor Reading : Every 15 minutes
  transmission_period_info : Data Transmission : Every 1 day
  ▼ gps {2}
    longitude : 145.455536
    latitude  : -41.788273
  ▼ alarm_info {4}
    alarm_enabled : 1
    active_alarm_count : 4
  ▼ settings [4]
    ▼ 0 [1]
      ▼ 0 {7}
        sensor_id : 3431
        sensor_name : vw_sensor_1
        parameter : frequency
        low_alarm_threshold : 0
        high_alarm_threshold : 3000
        hysteresis : 10
        unit : hz
      ► 1 [1]
      ► 2 [1]
      ► 3 [1]
    received_at : 2021-10-26 07:58:15.000
```

Get Device Status

Http method: **GET**

Resource endpoint: <https://api.ontoto.com/v2/base-stations/{baseStationId}/status>

Upon success

```
{
  "id": 1000,
  "tag": "8600000000000000",
  "name": "Demo_Station",
  "status": "ACTIVE",
  "latest_data_timestamp": "2022-05-24 12:21:09",
  "battery_life_percentage": 87
}
```

Upon error

```
{"error_code": 500, "message": "server error"}
{"error_code": 403, "message": "error_message": "Forbidden/invalid data logger id"}
```

* Battery life in percentage is null for Automatic Weather Station. Latest data time zone is UTC.

Device status

Status	Comment
ACTIVE	Device is active, no issues
DATA FAULT	When a recent invalid sensor reading is detected.
INACTIVE	When no packet received within the period of two times data transmission period for normal devices and twelve hours for Automatic Weather Station devices.
TERMINATED	When a device is decommissioned
ACTIVATION_PENDING	Needs to be activated before commissioning the device by contacting the Ontoto help desk

Get Automatic Weather Station battery voltages and charging status

Http method: **GET**

Resource endpoint: `https://api.ontoto.com/v2/base-stations/aws{baseStationId}/battery-voltages/data/start-date {Y-m-d H:i:s}/end-date/{Y-m-d H:i:s}`

Upon success

```
[
  {
    "battery_voltage": 3.87,
    "is_charging": 1,
    "is_external_power_available": 1,
    "recorded_at": "2022-04-22 00:07:47"
  },
  {
    "battery_voltage": 4.2,
    "is_charging": 0,
    "is_external_power_available": 1,
    "recorded_at": "2022-04-22 00:10:10"
  },
  {
    "battery_voltage": 3.88,
    "is_charging": 0,
    "is_external_power_available": 0,
    "recorded_at": "2022-05-01 22:08:01"
  }
]
```

Upon error

```
{"error_code": 500, "message": "server error"}
```

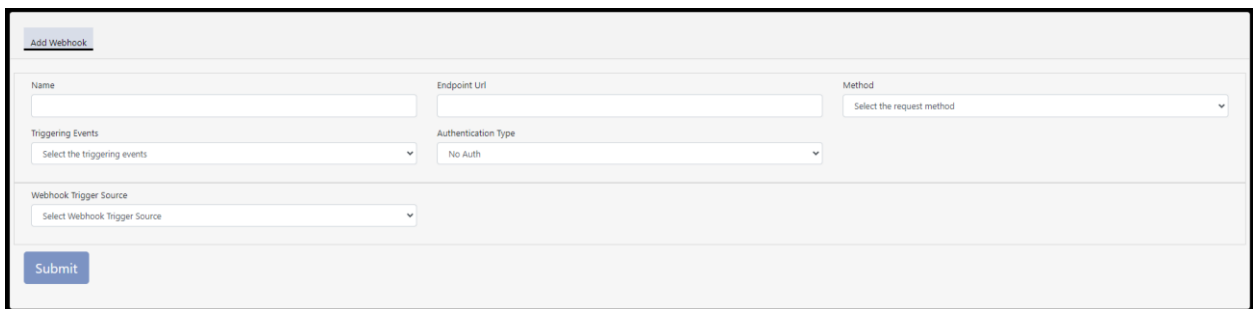
```
{"error_code": 403, "message": "error_message": "Forbidden/invalid data logger id"}
```

Charging flags	Comment
<code>is_external_power_available</code>	true if Solar power is detected otherwise false
<code>is_charging</code>	true if charge circuit is enabled otherwise false. Charge circuit is disabled when the battery voltage is full.

Webhook

Create a webhook on the Ontoto web portal.

- Step 1: Click on Webhooks on the main menu and click the add new webhook button.
- Step 2: Enter Webhook name, Endpoint URL and select the request method.
- Step 3: Select event type from the Triggering Events drop down list.
- Step 4: Select the Authentication Type.
- Step 5: Select the Webhook Triggering Source. If "From all base stations" is selected, the webhook is triggered from all the base stations assigned to a company. If "From base station site group" is selected, the site name should be specified from the "Select Site" dropdown list and the webhook is triggered from the base stations assigned to that site only.

A screenshot of the 'Add Webhook' form in the Ontoto web portal. The form is titled 'Add Webhook' in a small blue button at the top left. It contains several input fields and dropdown menus: 'Name' (text input), 'Endpoint Url' (text input), 'Method' (dropdown menu with 'Select the request method' as the placeholder), 'Triggering Events' (dropdown menu with 'Select the triggering events' as the placeholder), 'Authentication Type' (dropdown menu with 'No Auth' as the placeholder), and 'Webhook Trigger Source' (dropdown menu with 'Select Webhook Trigger Source' as the placeholder). A blue 'Submit' button is located at the bottom left of the form.

Webhook request body for "New data received" event.

```
{
  "event_type_id": 2,
  "base_station": {
    "id": 1089,
    "name": "Vw-alarm-test",
    "tag": "861518040592916"
  },
  "new_data": {
    "from": "2023-07-21 03:50:07",
    "time_zone": "UTC"
  }
}
```

*Note : It is possible that data can arrive out of sequence. Provision should be made to prevent duplicated data entry.

Webhook request body for alarm triggered event of two channel data logger where two VW sensors are attached.

```
{
  "event_type_id": 1,
  "alarm_triggered_time": "2023-07-21 02:54:50",
  "alarm_high_threshold_flag": true,
  "alarm_low_threshold_flag": true,
  "time_zone": "UTC",
  "base_station": {
    "id": 1089,
    "name": "Vw-alarm-test",
    "tag": "861518040592916"
  },
  "alarm_states": {
    "low_threshold": {
      "sensors": [
        {
          "id": 3699,
          "name": "vw-sensor-fr-res-tem-pressure:1",
          "parameters": [
            {
              "name": "frequency",
              "flag": true
            }
          ]
        },
        {
          "id": 3700,
          "name": "vw-sensor-fr-res-tem-pressure:2",
          "parameters": [
            {
              "name": "frequency",
              "flag": false
            }
          ]
        }
      ]
    },
    "high_threshold": {
      "sensors": [
        {
          "id": 3699,
          "name": "vw-sensor-fr-res-tem-pressure:1",
          "parameters": [
            {
              "name": "frequency",
              "flag": false
            }
          ]
        },
        {
          "id": 3700,
          "name": "vw-sensor-fr-res-tem-pressure:2",
          "parameters": [
            {
              "name": "frequency",
              "flag": true
            }
          ]
        }
      ]
    }
  }
}
```

* Note : The object of sensors and parameters are dynamic. It changes according to the device type: low_threshold object will be created if “alarm_low_threshold_flag” is set to true; high_threshold object will be created if “alarm_high_threshold_flag” is set to true.

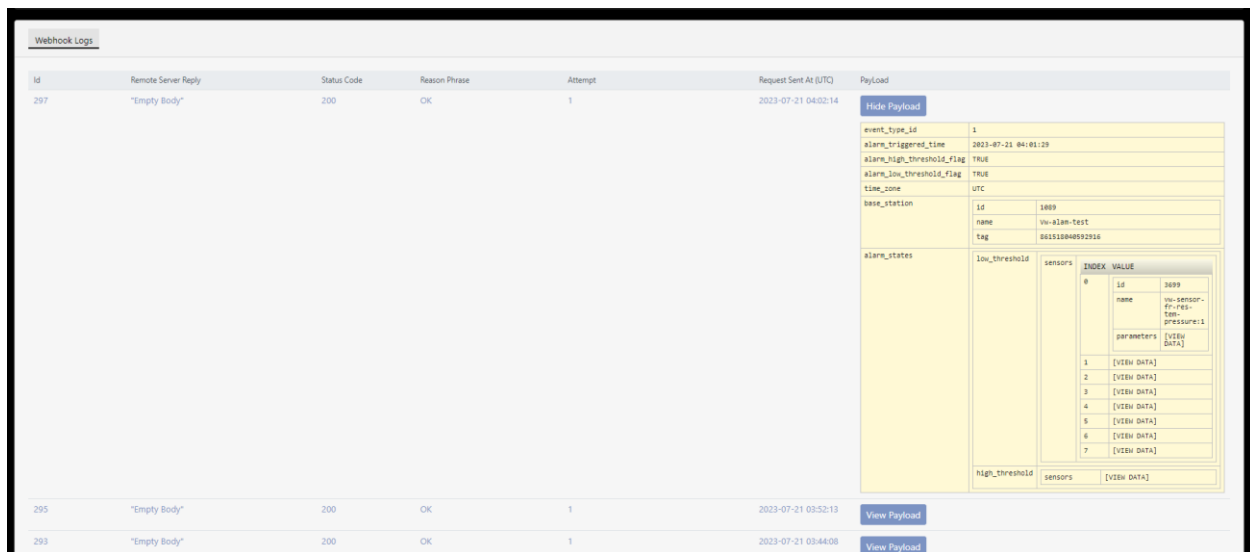
Event type id 1 is for “alarm triggered” event and event type id 2 is for “new data received” event.

Webhook Logs

The Ontoto dashboard retains the log for all the webhook events.

To view the log:

- Step 1: Click on Webhooks on the main menu and click the add new webhook button.
- Step 2: Click on View Log button.
- Step 3: Click on View Payload button.



The screenshot displays the 'Webhook Logs' section of the Ontoto dashboard. It features a table with columns: Id, Remote Server Reply, Status Code, Reason Phrase, Attempt, Request Sent At (UTC), and Payload. The table shows three log entries with IDs 297, 295, and 293, all with a status code of 200 and reason phrase of 'OK'. The payload for ID 297 is expanded, showing a JSON structure with fields like event_type_id, alarm_triggered_time, alarm_high_threshold_flag, alarm_low_threshold_flag, time_zone, base_station, alarm_states, and sensors. The sensors section includes a table with columns for Id, Name, and Parameters, listing various sensors like 'vib-sensor-fr-fps-tan-pressure:1' and 'vib-data'.

Id	Remote Server Reply	Status Code	Reason Phrase	Attempt	Request Sent At (UTC)	Payload
297	"Empty Body"	200	OK	1	2023-07-21 04:02:14	<pre> { "event_type_id": 1, "alarm_triggered_time": "2023-07-21 04:01:29", "alarm_high_threshold_flag": true, "alarm_low_threshold_flag": true, "time_zone": "UTC", "base_station": { "id": 1889, "name": "Vib-alarm-test", "tag": "00510040932016" }, "alarm_states": { "low_threshold": { "sensors": [{ "id": 1, "name": "vib-sensor-fr-fps-tan-pressure:1", "parameters": "[VIEW DATA]" }, { "id": 2, "name": "[VIEW DATA]", "parameters": "[VIEW DATA]" }, { "id": 3, "name": "[VIEW DATA]", "parameters": "[VIEW DATA]" }, { "id": 4, "name": "[VIEW DATA]", "parameters": "[VIEW DATA]" }, { "id": 5, "name": "[VIEW DATA]", "parameters": "[VIEW DATA]" }, { "id": 6, "name": "[VIEW DATA]", "parameters": "[VIEW DATA]" }, { "id": 7, "name": "[VIEW DATA]", "parameters": "[VIEW DATA]" }] }, "high_threshold": { "sensors": "[VIEW DATA]" } } } </pre>
295	"Empty Body"	200	OK	1	2023-07-21 03:52:13	[View Payload]
293	"Empty Body"	200	OK	1	2023-07-21 03:44:08	[View Payload]