devices Discovery Service

Description

The API **devices** returns all the devices defined in Oceans 2.0 that meet a set of filter criteria.

Devices are instruments that have one or more sensors that observe a property or phenomenon with a goal of producing an estimate of the value of a property. Devices are uniquely identified by a device code and can be deployed at multiple locations during their lifespan.

The primary purpose of the devices service is to find devices that have the data you are interested in and use the deviceCode when requesting a data product using the dataProductDelivery web service.

URL

```
https://data.oceannetworks.ca/api/devices
```

Method	Description	Example
get	Retrieve a list of all devices	`method=get`

get

The get method retrieves a list of devices with deviceId, deviceCode, and deviceName.

Parameters

Parameter	Type	Description	Example
Required			
token	string	All Web Services require a token. This can be generated at https://data.oceannetworks.ca/Profile. Click on the "Web Services" tab and click "Generate Token".	token=YOUR_TOKEN_HERE
Optional			
deviceCode	string	Return a single Device matching a specific **Device Code**. - Device Code must be valid and match exactly, including case. - Specific Device Codes can be found by simply running the service without this parameter to get a list of all devices.	deviceCode=FSINXIC1622
deviceId	integer	Return a single Device matching a specific **Device ID**. - Device ID must be valid. - Specific Device IDs can be found by simply running the service without this parameter to get a list of all devices.	deviceId=10301
deviceCategoryCode	string	Return all Devices belonging to a specific **Device Category Code**. - Device Category Code must be valid and match exactly, including case. - Specific Device Category Codes can be obtained using the deviceCategories service.	deviceCategoryCode=CTD
propertyCode	string	Return all Devices that have a sensor for a specific **Property Code**. - Property Code must be valid and match exactly, including case. - Specific Property Codes can be obtained using the properties service.	propertyCode=pressure

deviceName	string	Return all of the Devices where the **Device Name** contains a keyword. • Not case sensitive.	deviceName=meter
locationCode	string	Return all Devices that are deployed at a specific **Location**. • Location Code must be valid and match exactly, including case. • Specific Location Codes can be obtained using the locations service.	locationCode=BACAX
dataProductCode	string	Return all Devices that have the ability to return a specific **Data Product Code**. • Data Product Code must be valid and match exactly, including case. • Specific Data Product Codes can be obtained from the dataProducts service.	dataProductCode=jpgfile
dateFrom	datetime	Return all of the Devices that have a **Deployment Beginning** on or after a specific date/time. Accepted DateTime formats: • yyyy-MM-dd'T'HH:mm:ss.SSS'Z' (ISO 8601 Extended) • yyyy-MM-dd (ISO 8601 Extended) • PnYnMnDTnHnMnS (ISO 8601 Duration) If not specified, the default value is the beginning of time. • DateTime is represented in Coordinated Universal Time (UTC). • ISO 8601 Extended format without a time will be assumed to mean midnight (T00:00:000.000Z). • Queries with both dateFrom and dateTo in the ISO 8601 Duration format will not be accepted.	dateFrom=2010-07-27T00:00:00.000Z dateFrom=2010-07-27 dateFrom=-P1DT1H • Previous 1 day and 1 hour, relative to the dateTo. Note the '-' before the P.
dateTo	datetime	Return all of the Devices that have a **Deployment Ending** before a specific date/time. Accepted DateTime formats: • yyyy-MM-dd'T'HH:mm:ss.SSS'Z' (ISO 8601 Extended) • yyyy-MM-dd (ISO 8601 Extended) • PnYnMnDTnHnMnS (ISO 8601 Duration) If not specified, the default value is the end of time. • DateTime is represented in Coordinated Universal Time (UTC). • ISO 8601 Extended format without a time will be assumed to mean midnight (T00:00:000.000Z). • Queries with both dateFrom and dateTo in the ISO 8601 Duration format will not be accepted.	dateTo=2016-08-01T00:00:00.000Z dateTo=2016-08-01 dateTo=PT12H30M • Next 12 hours and 30 minutes, relative to the dateFrom.

Response

Example for request: https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&locationCode=BACAX&dateFrom=2010-07-01T00:00:00.000Z&dateTo=2011-06-30T23:59:59.999Z

Success (HTTP 200)

Returns a list of devices with values for Device Code, Device Id, Device Name and Device Link URL, ordered by Device Code

```
[
    {
        "cvTerm": {
            "device": [
                {
                    "uri":"http://vocab.nerc.ac.uk/collection/L22/current/TOOL0888/",
                    "vocabulary":"SeaVoX Device Catalogue"
                }
            ]
        },
        "dataRating": [
            {
                "dateFrom":"2010-05-27T19:27:04.000Z",
                "dateTo":null,
                "samplePeriod":10.000000,
                "sampleSize":1
            }
        ],
        "deviceCode":"BC_POD1_AD2M",
        "deviceId":11302,
        "deviceLink":"http://data.oceannetworks.ca/DeviceListing?DeviceId=11302",
        "deviceName":"Nortek Aquadopp HR-Profiler 2965",
```

```
        "hasDeviceData":true
    },
    {
        "cvTerm": {
            "device":[]
        },
        "dataRating": [
            {
                "dateFrom":"2009-06-22T15:37:00.000Z",
                "dateTo":null,
                "samplePeriod":1.000000,
                "sampleSize":1
            }
        ],
        "deviceCode":"BC_POD1_JB",
        "deviceId":10011,
        "deviceLink":"http://data.oceannetworks.ca/DeviceListing?DeviceId=10011",
        "deviceName":"OceanWorks Junction Box JB-02 (BC Pod #1 Axis)",
        "hasDeviceData":true
    },
    {
        "cvTerm": {
            "device":[]
        },
        "dataRating": [
            {
                "dateFrom":"2008-11-01T00:00:00.000Z",
                "dateTo":null,
                "samplePeriod":60.000000,
                "sampleSize":0
            }
        ],
        "deviceCode":"BC_POD1_PTILTVIDEO",
        "deviceId":11303,
        "deviceLink":"http://data.oceannetworks.ca/DeviceListing?DeviceId=11303",
        "deviceName":"ROS 1060 Multi SeaCam  2186-T",
        "hasDeviceData":true
    },
    {
        "cvTerm": {
            "device":[]
        },
        "dataRating": [
            {
                "dateFrom":"2011-01-14T00:00:00.000Z",
                "dateTo":null,
                "samplePeriod":3600.000000,
                "sampleSize":1
            }
        ],
        "deviceCode":"BC_POD1_ROTSONAR",
        "deviceId":11301,
        "deviceLink":"http://data.oceannetworks.ca/DeviceListing?DeviceId=11301",
        "deviceName":"Kongsberg Mesotech Rotary Sonar 1071 (0711217)",
        "hasDeviceData":true
    },
    {
        "cvTerm": {
            "device":[]
        },
        "dataRating":[],
        "deviceCode":"CAMERALIGHTS58",
        "deviceId":12129,
        "deviceLink":"http://data.oceannetworks.ca/DeviceListing?DeviceId=12129",
        "deviceName":"ROS Pan/Tilt with Lights 3090",
        "hasDeviceData":true
    },
    {
        "cvTerm": {
            "device":[]
        },
        "dataRating":[],
        "deviceCode":"NAXYS_HYD_007",
        "deviceId":11207,
        "deviceLink":"http://data.oceannetworks.ca/DeviceListing?DeviceId=11207",
        "deviceName":"Naxys Hydrophone 02345 (S/N 007)",
        "hasDeviceData":true
```

```
        }
    ]
```

Property	Type	Description	Example
deviceCode	string	Returns the device code	`"deviceCode":"BC_POD1_AD2M"`
deviceId	integer	Returns the device id	`"deviceId":11302`
deviceName	string	Returns the device name	`"deviceName":"Nortek Aquadopp HR-Profiler 2965"`
deviceLink	url	Returns the a URL link to Device Listing page for the specific device	`"deviceLink":"https://data.oceannetworks.ca/DeviceListing?DeviceId=11302"`

dataRating	list	Returns a list of data ratings and date from for each device–this list may be empty
		
		Each data rating is made up of:
		
		1. **Key** : "samplePeriod", **Value** : "sample period in seconds"
		2. **Key** : "dateFrom", **Value** : "dateFrom of sample period"
		3. **Key** : "dateTo", **Value** : "dateTo of sample period"
		4. **Key** : "sampleSize", **Value** : "number of readings per sample period"
			`"dataRating": [`
			`    {`
			`        "dateFrom":"2009-06-22T15:37:00.000Z",`
			`        "dateTo":null,`
			`        "samplePeriod":1.000000,`
			`        "sampleSize":1`
			`    }`
			`]`

cvTerm	object	The list of controlled vocabulary terms associated with the device and any device groups the device belongs to.
		
		Each vocabulary term is made up of:
		
		1. **Key** : "vocabulary" **Value** : "title of the vocabulary term belongs to"
		2. **Key** : "uri" **Value** : "URL of the vocabulary term"
			`"cvTerm": {`
			`    "device": [`
			`        {`
			`            "uri":"http://vocab.nerc.ac.uk/collection/L22/current/TOOL0888/",`
			`            "vocabulary":"SeaVoX Device Catalogue"`
			`        }`
			`    ]`
			`}`

hasDeviceData	boolean	hasDeviceData flag for devices with searchable device and siteDevice	`"hasDeviceData":true`

Bad Request (HTTP 400)

errorCode	errorMessage	Description
23	Invalid Time Range, Start Time is greater that End Time or start time is not provided	Occurs when the dateTo is before the dateFrom date/time. • The name of both of the datetime filters will be included in the "parameter" property
25	Invalid Time Range, Start Time is in the future.	Occurs when the dateFrom is in the future. • The name of both of the datetime filters will be included in the "parameter" property
127	Invalid parameter value	Occurs when an invalid code is used in the filter. Most filters require an exact match, otherwise this error will occur. • The name of the filter parameter will be included in the "parameter" property
128	Missing parameter	Occurs when multiple parameters are needed, but not all are present. Occurs when dateFrom is used without dateTo or vice versa • The names of the required filter parameters will be included in the "parameter" property separated by /
129	Invalid parameter name	Occurs when a filter parameter is in the query but is not supported. • The name of the filter parameter will be included in the "parameter" property

Examples

- Return a list of **All** of the Devices (no filters)

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE

- Return the Device with a **Device Code** of 'NORTEKADCP9917'

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&deviceCode=NORTEKADCP9917

- Return a list of all of the Devices that have a **Device Name** which contains 'JASCO'

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&deviceName=JASCO

- Return a list of all of the devices that have been deployed at a location with a **Location Code** of 'BACAX' ('Barkely Canyon Axis (POD1)')

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&locationCode=BACAX

- Return a list of all of the Devices with a **Device Category** of 'ADCP2MHZ'

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&deviceCategoryCode=ADCP2MHZ

- Return a list of all of the Devices with a **Property Code** of 'oxygen'

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&propertyCode=oxygen

- Return a list of all of the Devices with a **Device Category** of 'CTD' and **Property Code** of 'pressure'

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&deviceCategoryCode=CTD&propertyCode=pressure

- Return a list of all of the Devices that support the **Data Product Code** of 'IBPP' ('Ice Buoy Profile Plots')

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&dataProductCode=IBPP

- Return a list of all of the Devices that were **Deployed Between** July 1st 2010 and June 30th 2012

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&dateFrom=2010-07-01T00:00:00.000 Z&dateTo=2012-06-30T23:59:59.999Z

- Return a list of all of the Devices **Deployed Between** July 1st 2010 and June 30th 2011, at a location with a **Location Code** of 'BACAX' ('Barkely Canyon Axis (POD1)')

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&locationCode=BACAX&dateFrom=2010-07-01T00: 00:00.000Z&dateTo=2011-06-30T23:59:59.999Z

- Return a list of all of the Devices which have a **Property Code** of 'seawatertemperature', at a location with a **Location Code** of 'BACAX' ('Barkely Canyon Axis (POD1)'), **Deployed Between** July 1st 2010 and June 30th 2011

  https://data.oceannetworks.ca/api/devices?method=get&token=YOUR_TOKEN_HERE&locationCode=BACAX&dateFrom=2010-07-01T00: 00:00.000Z&dateTo=2011-06-30T23:59:59.999Z&propertyCode=seawatertemperature

API Proxy

The https://data.oceannetworks.ca/**apiproxy**/devicesURL link in the above examples can be used in a browser for sharing or testing purposes; however, it can not be accessed from code. Calls to the apiproxy server are redirected to a login screen to capture your user id. Accessing the apiproxy URL from code will return html in the payload, which may cause errors or unexpected behavior. In order to use the deployments endpoint from code, you must use the https://data.oceannetworks.ca/**api**/devices url along with a valid token.

Code Examples

Title	Creator	Modified
Python Client Library	Ryan Ross	16-Aug-19
MATLAB Client Library	Ryan Ross	26-Apr-19
Discover Devices	Ryan Ross	23-Apr-18

ⓘ Please report all issues with the web services, documentation, samples and client libraries to the Oceans 2.0 Help Centre