



Web API Oahu Transit Services, Inc Information Technology

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Purpose of an API

The Web API (Application Programming Interface) allows a developer to access our real-time AVL data.

To utilize OTS's web services, an application id (AppID) is required via registration. This AppID will be a parameter that must be passed in order to use OTS's web service calls.

All of OTS's web services are read-only in nature, use HTTP as the transport mechanism, with HTTP GET as the method to call the service, and XML formatted data as the response. Each web service begins with a base URL followed by parameters and arguments. The service arguments are separated by either a forward slash ("/") as part of the URL path, or GET parameters with the standard "?/&/" separators.

Registration

By registering for an AppID, you acknowledge the web services Terms of Use. We retain your email address in order to notify you of upcoming changes to the API. By tracking the AppID and the ip address of clients using the web services we can set a threshold on their usage. This protects the web services from making excessive requests to our servers. By default each AppID is limited to 250,000 requests a day.

Please note that AppIDs will be deleted after 6 months of inactivity.

If you would like to request more requests per day for an AppID, or for any other questions send an email to api@thebus.org.

Terms of Use

These Terms of Use ("Terms") govern your use of OTS's Web Services API (the "Data"). OTS grants you a limited, revocable license to use, reproduce, and redistribute the Data in accordance with these terms. You must present the Data with the following legend, prominently displayed: "Route and arrival data provided by permission of Oahu Transit Services, Inc" unless otherwise agreed by OTS in writing. OTS's trademarks and services marks (its "Marks") are its valuable intellectual property. OTS retains all rights it has in these Marks. You may use the Marks "OTS" and "HEA" in connection with your use of the Data, but only to identify the goods and services specifically identified by those Marks. If you choose to use these Marks you must indicate they are the property of Oahu Transit Services, Inc by marking them with an asterisk ("*") and stating "* OTS and HEA are registered trademarks of Oahu Transit Services, Inc. All rights reserved." Other than displaying these legends, you are not authorized to make any use of any Marks of Oahu Transit Services or any confusingly similar variant thereof.

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In the event of any conflict between these Terms and the terms governing general use of the api.thebus.org site, these Terms will be controlling as to matters expressly addressed herein. These Terms constitute the entire agreement between the parties as to their subject matter.

Web Services

Arrivals

Base URL: `http://api.thebus.org/arrivals/?key=API_key&stop=stop_ID`

Request parameters:

API_key - API registration number

stop_ID - stop number

Response fields:

<code>stopTimes</code>	List of stop times
<code>stopTimes:errorMessage</code>	Description of error if there was an error in processing your request
<code>stopTimes:stop</code>	Stop number
<code>stopTimes:timestamp</code>	Timestamp
<code>stopTimes:arrival</code>	Bus arrival information
<code>arrival:id</code>	Unique ID
<code>arrival:route</code>	Route number
<code>arrival:headsign</code>	Text of the overhead sign
<code>arrival:vehicle</code>	Vehicle number
<code>arrival:direction</code>	Direction of the route
<code>arrival:stopTime</code>	Estimated or scheduled stop time
<code>arrival:Date</code>	Estimated or scheduled stop date
<code>arrival:estimated</code>	1: estimated, 0: scheduled (no GPS).
<code>arrival:longitude</code>	longitude location of the bus
<code>arrival:latitude</code>	latitude location of the bus

Schema:

```
<DOCTYPE stopTimes [
<!ELEMENT stopTimes (stop, timestamp, errorMessage?, arrival+)>
<!ELEMENT stop (#PCDATA)>
<!ELEMENT timestamp (#PCDATA)>
<!ELEMENT errorMessage (#PCDATA)>
<!ELEMENT arrival (route, headsign, vehicle, direction, scheduled, estimated,
longitude, latitude)>
<!ELEMENT route (#PCDATA)>
<!ELEMENT id (#PCDATA)>
<!ELEMENT headsign (#PCDATA)>
<!ELEMENT vehicle (#PCDATA)>
<!ELEMENT direction (#PCDATA)>
<!ELEMENT stopTime (#PCDATA)>
<!ELEMENT estimated (#PCDATA)>
<!ELEMENT longitude (#PCDATA)>
<!ELEMENT latitude (#PCDATA)>
]>
```

Web Services

Vehicle

Base URL: `http://api.thebus.org/vehicle/?key=API_key&num=vehicle_num`

Request parameters:

API_key - API registration number

vehicle_num - vehicle number

Response fields:

vehicles	List of vehicles
vehicles:errorMessage	Description of error if there was an error in processing your request
vehicles:timestamp	Timestamp
vehicles:vehicle	Vehicle Information
vehicle:number	Vehicle number
vehicle:driver	Employee number of driver
vehicle:latitude	latitude location of the vehicle
vehicle:longitude	longitude location of the vehicle
vehicle:adherence	Schedule adherence (positive (+): bus is early, negative (-): bus is late).
vehicle:last_message	Last AVL message received by vehicle

Schema:

```
<DOCTYPE vehicles [
<!ELEMENT vehicles ( timestamp, errorMessage?, vehicle+)>
<!ELEMENT timestamp (#PCDATA)>
<!ELEMENT errorMessage (#PCDATA)>
<!ELEMENT vehicle (number, driver, latitude, longitude, adherence,
last_message)>
<!ELEMENT number (#PCDATA)>
<!ELEMENT driver (#PCDATA)>
<!ELEMENT latitude (#PCDATA)>
<!ELEMENT longitude (#PCDATA)>
<!ELEMENT adherence (#PCDATA)>
<!ELEMENT last_message (#PCDATA)>
]>
```

Web Services

Routes

Base URL: http://api.thebus.org/route/?key=API_key&route=route_num
http://api.thebus.org/route/?key=API_key&headsign=string

Request parameters:

API_key - API registration number
route_num - route number
string - text to search for in headsign field

Response fields:

routes	List of routes
routes:errorMessage	Description of error if there was an error in processing your request
routes:routeName	Route number
routes:routelD	Internal route used in Google feed
route:routeNum	Route number
route:shapeID	Shape ID corresponding to shapes.txt in Google feed
route:firstStop	Description of start and end point of route
route:headsign	Headsign/endpoint of route

Schema:

```
<DOCTYPE routes [
<!ELEMENT routes ( routeName, routelD, errorMessage?, route+)>
<!ELEMENT routeName (#PCDATA)>
<!ELEMENT routelD (#PCDATA)>
<!ELEMENT errorMessage (#PCDATA)>
<!ELEMENT route (routeNum, shapeID, shapeDescription, headsign)>
<!ELEMENT routeNum (#PCDATA)>
<!ELEMENT shapeID (#PCDATA)>
<!ELEMENT firstStop (#PCDATA)>
<!ELEMENT headsign (#PCDATA)>
]>
```

Limitations

The system polls the Transitmaster system every minute and the buses reports its position every minute to the Transitmaster system. Therefore information can be up to two minutes late.

If the bus doesn't radio its position in, information can be much later.