



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

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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:

stopTimes	List of stop times
stopTimes:errorMessage	Description of error if there was an error in processing your request
stopTimes:stop	Stop number
stopTimes:timestamp	Timestamp
stopTimes:arrival	Bus arrival information
arrival:id	Unique ID
arrival:trip	Trip ID (referencing Google Transit Feed)
arrival:route	Route number
arrival:headsign	Text of the overhead sign
arrival:vehicle	Vehicle number
arrival:direction	Direction of the route
arrival:stopTime	Estimated or scheduled stop time
arrival:Date	Estimated or scheduled stop date
arrival:estimated	1: estimated, 0: scheduled (no GPS).
arrival:longitude	longitude location of the bus
arrival:latitude	latitude location of the bus
arrival:shape	Shape id corresponding to shapes.txt in Google feed
arrival:cancelled	0: active, 1:cancelled, -1:was canceled, not canceled anymore

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 trip (#PCDATA)>
<!ELEMENT headsign (#PCDATA)>
<!ELEMENT vehicle (#PCDATA)>
<!ELEMENT direction (#PCDATA)>
<!ELEMENT stopTime (#PCDATA)>
<!ELEMENT estimated (#PCDATA)>
<!ELEMENT longitude (#PCDATA)>
<!ELEMENT latitude (#PCDATA)>
<!ELEMENT shape (#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:

<code>vehicles</code>	List of vehicles
<code>vehicles:errorMessage</code>	Description of error if there was an error in processing your request
<code>vehicles:timestamp</code>	Timestamp
<code>vehicles:vehicle</code>	Vehicle Information
<code>vehicle:number</code>	Vehicle number
<code>vehicle:trip</code>	Trip ID (referencing Google Transit Feed)
<code>vehicle:driver</code>	Employee number of driver
<code>vehicle:latitude</code>	latitude location of the vehicle
<code>vehicle:longitude</code>	longitude location of the vehicle
<code>vehicle:adherence</code>	Schedule adherence (positive (+): bus is early, negative (-): bus is late).
<code>vehicle:last_message</code>	Last AVL message received by vehicle
<code>vehicle:route_short_name</code>	Route_short_name of the vehicle
<code>vehicle:headsign</code>	Headsign of the 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 trip (#PCDATA)>
<!ELEMENT driver (#PCDATA)>
<!ELEMENT latitude (#PCDATA)>
<!ELEMENT longitude (#PCDATA)>
<!ELEMENT adherence (#PCDATA)>
<!ELEMENT last_message (#PCDATA)>
<!ELEMENT route_short_name (#PCDATA)>
<!ELEMENT headsign (#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.