

# API

## The oboe function

Oboe.js exposes only one function, `oboe`, which is used to instantiate a new Oboe instance. The Oboe instance starts a new HTTP request unless the caller is [managing the stream themselves](#).

```
oboe( String url )

oboe({
  method: String,
  url: String,
  headers: Object,
  body: String|Object,
  cached: Boolean
})

// the doMethod style of calling is deprecated
// and will be removed in v2.0.0:
oboe.doGet( url )
oboe.doDelete( url )
oboe.doPost( url, body )
oboe.doPut( url, body )
oboe.doPatch( url, body )

oboe.doGet( {url:String, headers:Object, cached:Boolean} )
oboe.doDelete( {url:String, headers:Object, cached:Boolean} )
oboe.doPost( {url:String, headers:Object, cached:Boolean, body:String|Object} )
oboe.doPut( {url:String, headers:Object, cached:Boolean, body:String|Object} )
oboe.doPatch( {url:String, headers:Object, cached:Boolean, body:String|Object} )
```

The `method`, `headers`, `body`, and `cached` arguments are optional.

- If `method` is not given Oboe defaults to `GET`.
- If `body` is given as an object it will be stringified using `JSON.stringify` prior to sending. The Content-Type request header will automatically be set to `text/json` unless a different value is explicitly given.
- If the `cached` option is given as `false` cachebusting will be applied by appending `_{timestamp}` to the URL's query string. Any other value will be ignored.

## BYO stream

Under Node.js you may also pass `oboe` an arbitrary [ReadableStream](#) as the sole argument. In this case Oboe will read JSON from the given stream. It is your responsibility to initiate the stream and Oboe will not start a new HTTP request on your behalf.

```
oboe( stream )
```

## node event

The methods `.node()` and `.on` are used to register interest in particular nodes by providing JSONPath patterns. As the JSON stream is parsed the Oboe instance checks for matches against these patterns and when a matching node is found it emits a `node` event.

```
.on('node', pattern, callback)

// 2-argument style .on() ala Node.js EventEmitter#on
.on('node:{pattern}', callback)

.node(pattern, callback)

// register several listeners at once
.node({
  pattern1 : callback1,
  pattern2 : callback2
});
```

When the callback is notified, the context, `this`, is the Oboe instance, unless it is bound otherwise. The callback receives three parameters:

---

<code>node</code>	The node that was found in the JSON stream. This can be any valid JSON type - <code>Array</code> , <code>Object</code> , <code>String</code> , <code>Number</code> , <code>Boolean</code> , <code>Null</code> .
<code>path</code>	An array of strings describing the path from the root of the JSON to the matching item. For example, <code>['', 'friends', '0', 'name']</code> .
<code>ancestors</code>	An array of the found item's ancestors such that <code>ancestors[0]</code> is the JSON root, <code>ancestors[ancestors.length-1]</code> is the matching item.

---

```
oboe('friends.json')
  .node('name', function(name){
    console.log('You have a friend called', name);
  });
```

## path event

Path events are identical to [node events](#) except that they are emitted as soon as matching paths are found, without waiting for the thing at the path to be revealed.

```
.on('path', pattern, callback)

// 2-argument style .on() ala Node.js EventEmitter#on
.on('path:{pattern}', callback)

.path(pattern, callback)

// register several listeners at once
.path({
  pattern1 : callback1,
  pattern2 : callback2
});

oboe('friends.json')
  .path('friend', function(name){
    friendCount++;
  });
```

One use of path events is to [start adding elements to an interface before they are complete](#).

## done event

```
.done(callback)

.on('done', callback)
```

Done events are fired when the response is complete. The callback is passed the entire parsed JSON.

In most cases it is faster to read the JSON in small parts by listening to [node events](#) (see [above](#)) than waiting for it to be completely download.

```
oboe('resource.json')
  .on('done', function(parsedJson){
    console.log('Request complete', parsedJson);
  });
```

## start event

```
.start(callback)

.on('start', callback)
```

Start events are fired when Oboe has parsed the status code and the response headers but has not yet received any content from the response body.

The callback receives two parameters:

name	type	
status	Number	HTTP status code
headers	Object	Object of response headers

```
oboe('resource.json')
  .on('start', function(status, headers){
    console.log('Resource cached for', headers.Age, 'secs');
  });
```

Under Node.js this event is never fired for **BYO streaming**.

## fail event

```
.fail(callback)

.on('fail', callback)
```

Fetching a resource could fail for several reasons:

- Non-2xx status code
- Connection lost
- Invalid JSON from the server
- Error thrown by an event listener

The fail callback receives an object with four fields:

Field	Meaning
-------	---------

---

<b>thrown</b>	The error, if one was thrown
<b>statusCode</b>	The status code, if the request got that far
<b>body</b>	The response body for the error, if any
<b>jsonBody</b>	If the server's error response was JSON, the parsed body

---

```

oboe('/content')
  .fail( function( errorReport ){
    if( 404 == errorReport.statusCode ){
      console.error('no such content');
    }
  });

```

## **.header([name])**

**.header()**

**.header(name)**

**.header()** returns one or more HTTP response headers. If the name parameter is given that named header will be returned as a String, otherwise all headers are returned as an Object.

**.header()** returns **undefined** if the headers have not yet been received. The headers are available anytime after the **start** event has been emitted. In practice this means from inside any **node**, **path**, **start** or **done** callbacks.

**.header()** always returns undefined for non-HTTP streams.

```

oboe('data.json')
  .node('id', function(id){
    console.log(  'Server has id', id,
                  'as of', this.headers('Date'));
  });

```

## **.root()**

At any time, call **.root()** on the oboe instance to get the JSON parsed so far. If nothing has yet been received this will return **undefined**.

```

var interval;

```

```

oboe('resourceUrl')
  .start(function(){
    interval = window.setInterval(function(){
      console.log('downloaded so far:', this.root());
    }.bind(this), 10);
  })
  .done(function(completeJson){
    console.log('download finished:', completeJson);
    window.clearInterval(interval);
  });

```

### **.forget()**

```

.node('*', function(){
  this.forget();
})

```

`.forget()` is a shortcut for `.removeListener()` in the case where the listener to be removed is currently executing. Calling `.forget()` on the Oboe instance from inside a `node` or `path` event listener de-registers that callback.

```

// Display only the first ten downloaded items
// but place all in the model

```

```

oboe('/content')
  .node('!.*', function(item, path){
    if( path[0] == 9 )
      this.forget();

    displayItem(item);
  })
  .node('!.*', function(item){
    addToModel(item);
  });

```

### **.removeListener()**

```

.removeListener('node', pattern, callback)
.removeListener('node:{pattern}', pattern, callback)

.removeListener('path', pattern, callback)
.removeListener('path:{pattern}', pattern, callback)

.removeListener('start', callback)

```

```
.removeListener('done', callback)
.removeListener('fail', callback)
```

Remove any listener on the Oboe instance.

From inside node and path callbacks `.forget()` is usually more convenient since it is not required to store a reference to the callback function. However, `.removeListener()` has the advantage that it may be called from anywhere.

## **.abort()**

Calling `.abort()` stops an ongoing HTTP call at any time. You are guaranteed not to get any further `path` or `node` callbacks, even if the underlying transport has unparsed buffered content. After calling `.abort()` the `done` event will not fire.

Under Node.js, if the Oboe instance is reading from a stream that it did not create this method deregisters all listeners but it is the caller's responsibility to actually terminate the streaming.

```
// Display the first nine nodes, then hang up
oboe('/content')
  .node('!.*', function(item){
    display(item);
  })
  .node('[0-9]', function(){
    this.abort();
  });
```

## **Pattern matching**

Oboe's pattern matching is a variation on [JSONPath](#). It supports these clauses:

Clause	Meaning
!	Root object
.	Path separator
person	An element under the key 'person'
{name email}	An element with attributes name and email
*	Any element at any name
[2]	The second element (of an array)

<code>['foo']</code>	Equivalent to <code>.foo</code>
<code>[*]</code>	Equivalent to <code>.*</code>
<code>\$</code>	Explicitly specify an intermediate clause in the jsonpath spec the callback should be applied

---

The pattern engine supports [CSS-4 style node selection](#) using the dollar, `$`, symbol. See also [the example patterns](#).