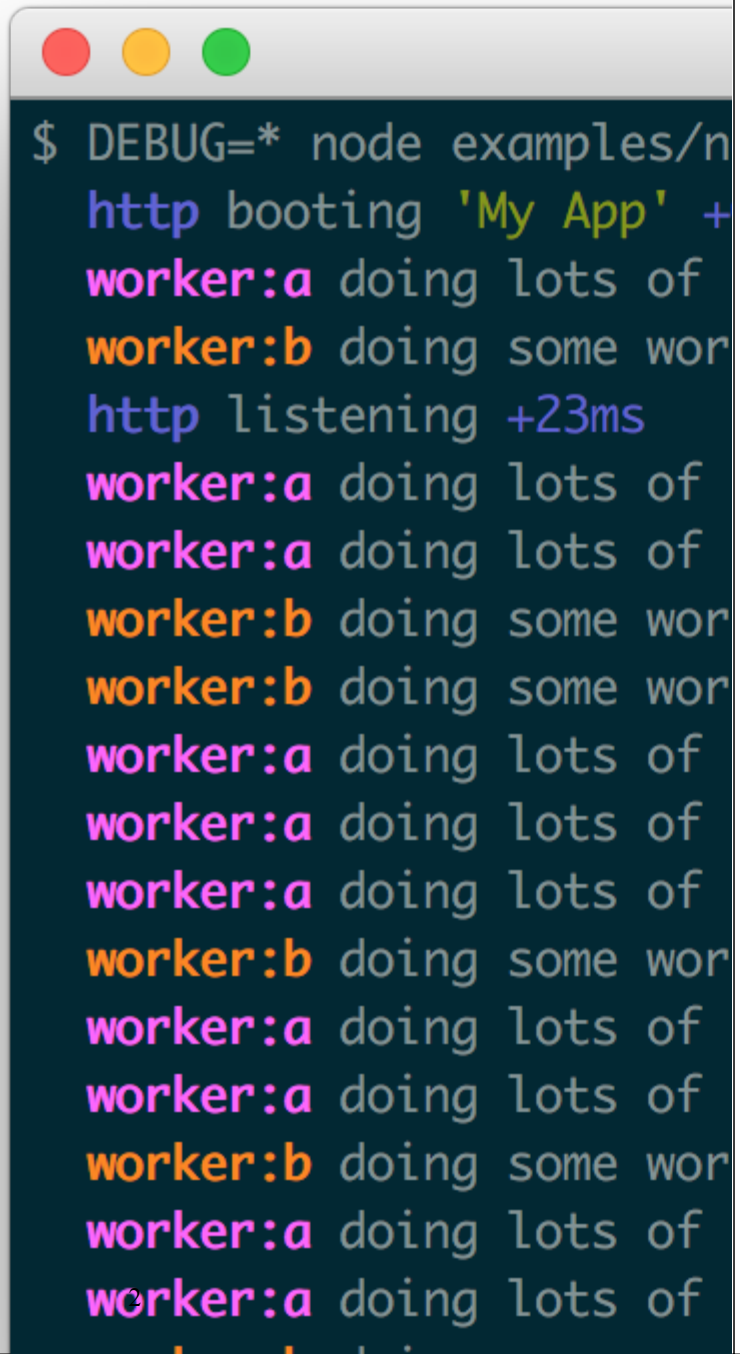
debug



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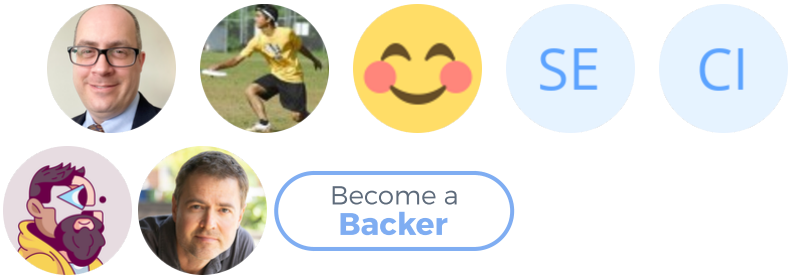

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A tiny JavaScript debugging utility modelled after Node.js core's debugging technique. Works in Node.js and web browsers.

Installation

```
$ npm install debug
```

Usage

`debug` exposes a function; simply pass this function the name of your module, and it will return a decorated version of `console.error` for you to pass debug statements to. This will allow you to toggle the debug output for different parts of your module as well as the module as a whole.

Example *app.js*:

```
var debug = require('debug')('http')
  , http = require('http')
  , name = 'My App';

// fake app

debug('booting %o', name);

http.createServer(function(req, res){
  debug(req.method + ' ' + req.url);
  res.end('hello\n');
```

```
}).listen(3000, function(){
  debug('listening');
});

// fake worker of some kind

require('./worker');
```

Example *worker.js*:

```
var a = require('debug')('worker:a')
  , b = require('debug')('worker:b');

function work() {
  a('doing lots of uninteresting work');
  setTimeout(work, Math.random() *
        1000);
}

work();

function workb() {
  b('doing some work');
  setTimeout(workb, Math.random() *
        2000);
}

workb();
```

The `DEBUG` environment variable is then used to enable these based on space or comma-delimited names.

Here are some examples:

Usage in child processes

Due to the way `debug` detects if the output is a TTY or not, colors are not shown in child processes when `stderr` is piped. A solution is to pass the `DEBUG_COLORS=1` environment variable to the child process.

For example:

```
worker = fork(WORKER_WRAP_PATH,
         [workerPath], {
  stdio: [
    /* stdin: */ 0,
    /* stdout: */ 'pipe',
    /* stderr: */ 'pipe',
    'ipc',
  ],
  env: Object.assign({}, process.env, {
    DEBUG_COLORS: 1 // without this
        settings, colors won't be shown
  }),
});

worker.stderr.pipe(process.stderr, {
        end: false });
```

Authors

- TJ Holowaychuk

`disable()`

Will disable all namespaces. The functions returns the namespaces currently enabled (and skipped). This can be useful if you want to disable debugging temporarily without knowing what was enabled to begin with.

For example:

```
let debug = require('debug');
debug.enable('foo:*,-foo:bar');
let namespaces = debug.disable();
debug.enable(namespaces);
```

Note: There is no guarantee that the string will be identical to the initial enable string, but semantically they will be identical.

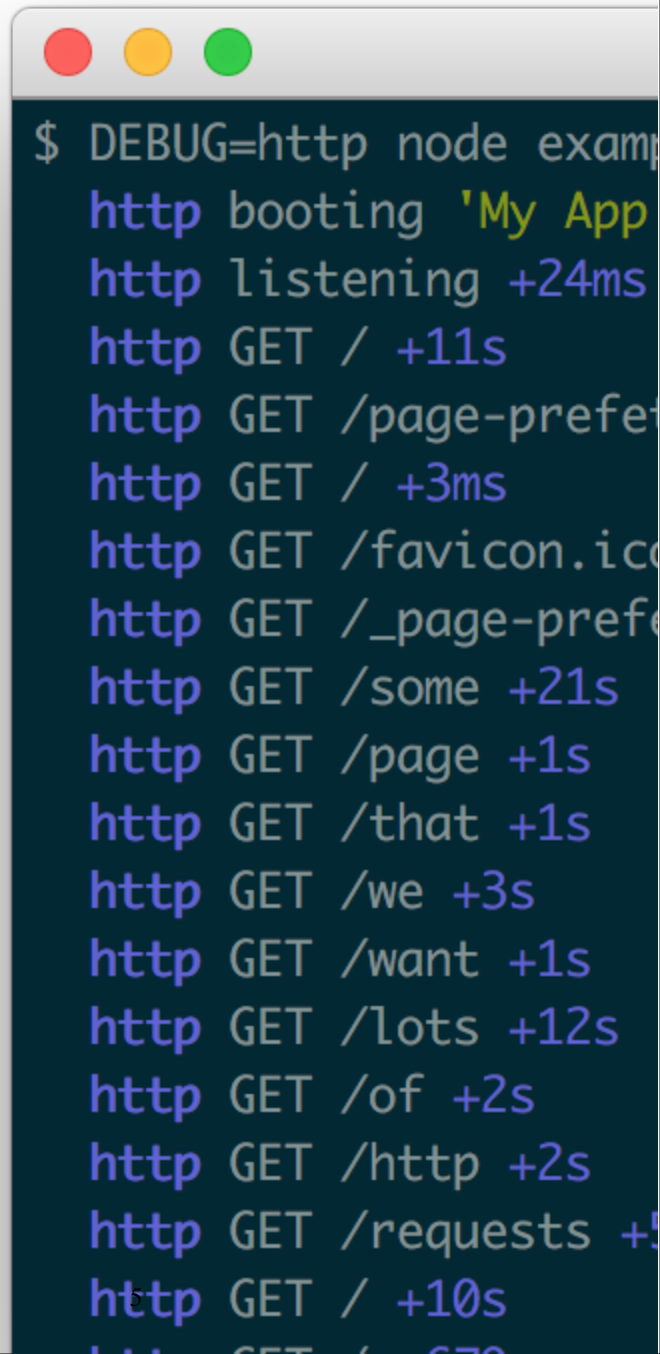
Checking whether a debug target is enabled

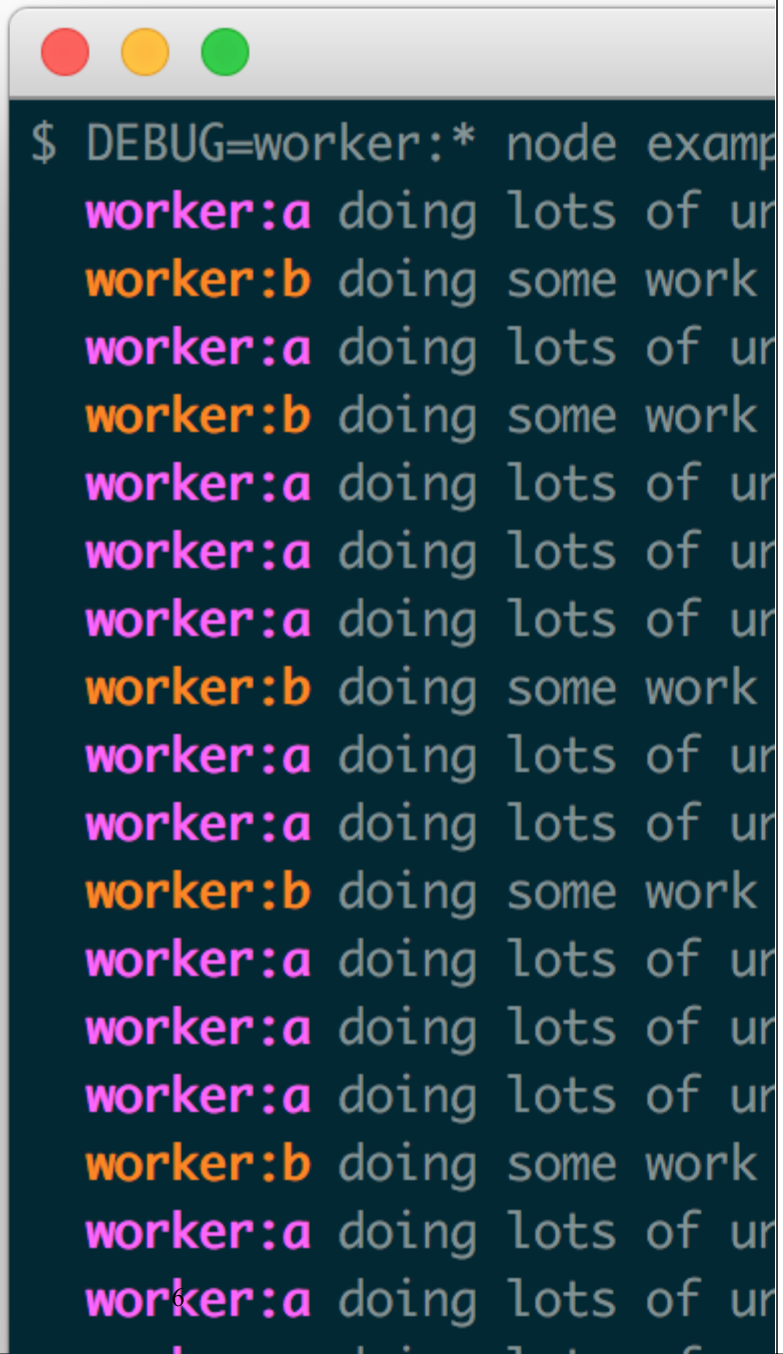
After you've created a debug instance, you can determine whether or not it is enabled by checking the `enabled` property:

```
const debug = require('debug')('http');

if (debug.enabled) {
  // do stuff...
}
```

You can also manually toggle this property to force the debug instance to be enabled or disabled.





Set dynamically

You can also enable debug dynamically by calling the `enable()` method :

```
let debug = require('debug');

console.log(1, debug.enabled('test'));

debug.enable('test');
console.log(2, debug.enabled('test'));

debug.disable();
console.log(3, debug.enabled('test'));
```

print :

```
1 false
2 true
3 false
```

Usage :

`enable(namespaces)`

`namespaces` can include modes separated by a colon and wildcards.

Note that calling `enable()` completely overrides previously set DEBUG variable :

```
$ DEBUG=foo node -e 'var dbg =
require("debug"); dbg.enable("bar");
console.log(dbg.enabled("foo"))'
=> false
```

```
log('goes to stdout');
error('still goes to stderr!');

// set all output to go via console.info
// overrides all per-namespace log
        settings
debug.log = console.info.bind(console);
error('now goes to stdout via
        console.info');
log('still goes to stdout, but via
        console.info now');
```

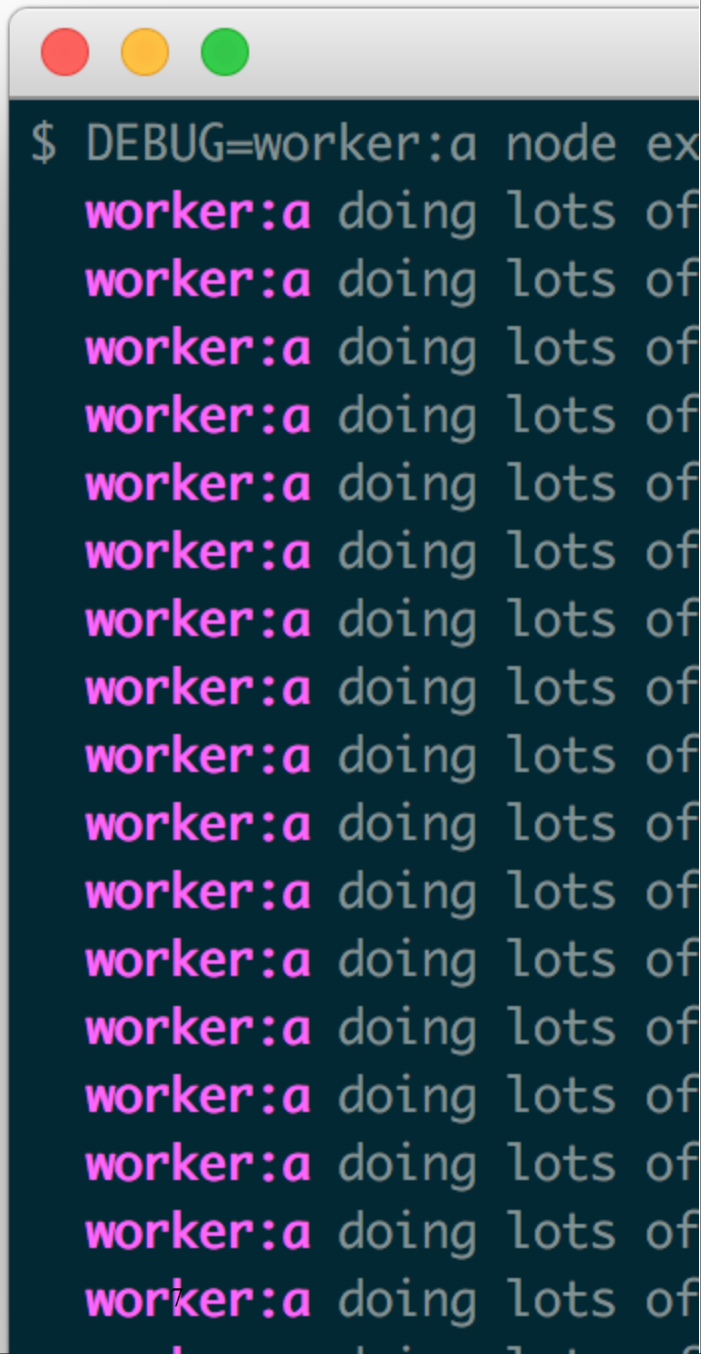
Extend

You can simply extend debugger

```
const log = require('debug')('auth');

//creates new debug instance with
        extended namespace
const logSign = log.extend('sign');
const logLogin = log.extend('login');

log('hello'); // auth hello
logSign('hello'); //auth:sign hello
logLogin('hello'); //auth:login hello
```

Windows command prompt notes

CMD

On Windows the environment variable is set using the `set` command.

```
set DEBUG=*,-not_this
```

Example:

```
set DEBUG=* & node app.js
```

PowerShell (VS Code default)

PowerShell uses different syntax to set environment variables.

```
$env:DEBUG = "*,-not_this"
```

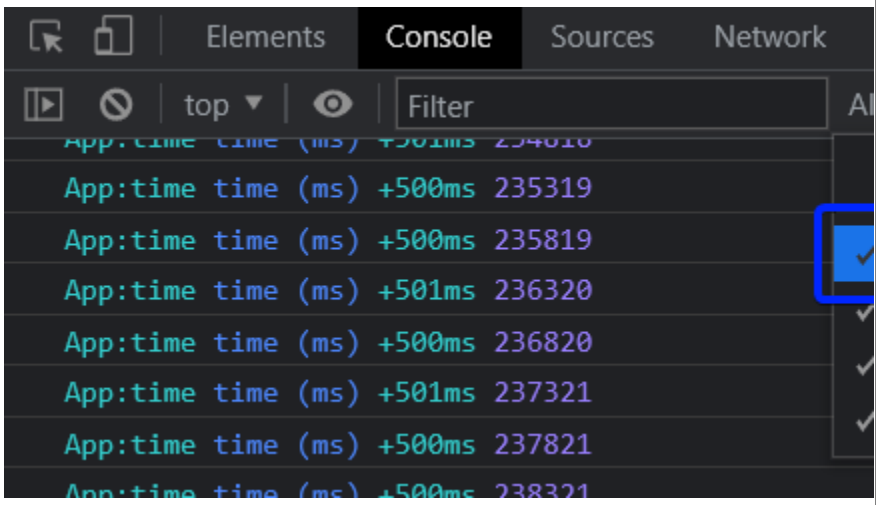
Example:

```
$env:DEBUG='app';node app.js
```

Then, run the program to be debugged as usual.

npm script example:

```
"windowsDebug": "@powershell -Command
      $env:DEBUG='*';node app.js",
```

Output streams

By default `debug` will log to stderr, however this can be configured per-namespace by overriding the `log` method:

Example *stdout.js*:

```
var debug = require('debug');
var error = debug('app:error');

// by default stderr is used
error('goes to stderr!');

var log = debug('app:log');
// set this namespace to log via
        console.log
log.log = console.log.bind(console); //
        don't forget to bind to console!
```

Browser Support

You can build a browser-ready script using browserify, or just use the browserify-as-a-service build, if you don't want to build it yourself.

Debug's enable state is currently persisted by `localStorage`. Consider the situation shown below where you have `worker:a` and `worker:b`, and wish to debug both. You can enable this using `localStorage.debug`:

```
localStorage.debug = 'worker:*'
```

And then refresh the page.

```
a = debug('worker:a');
b = debug('worker:b');

setInterval(function(){
  a('doing some work');
}, 1000);

setInterval(function(){
  b('doing some work');
}, 1200);
```

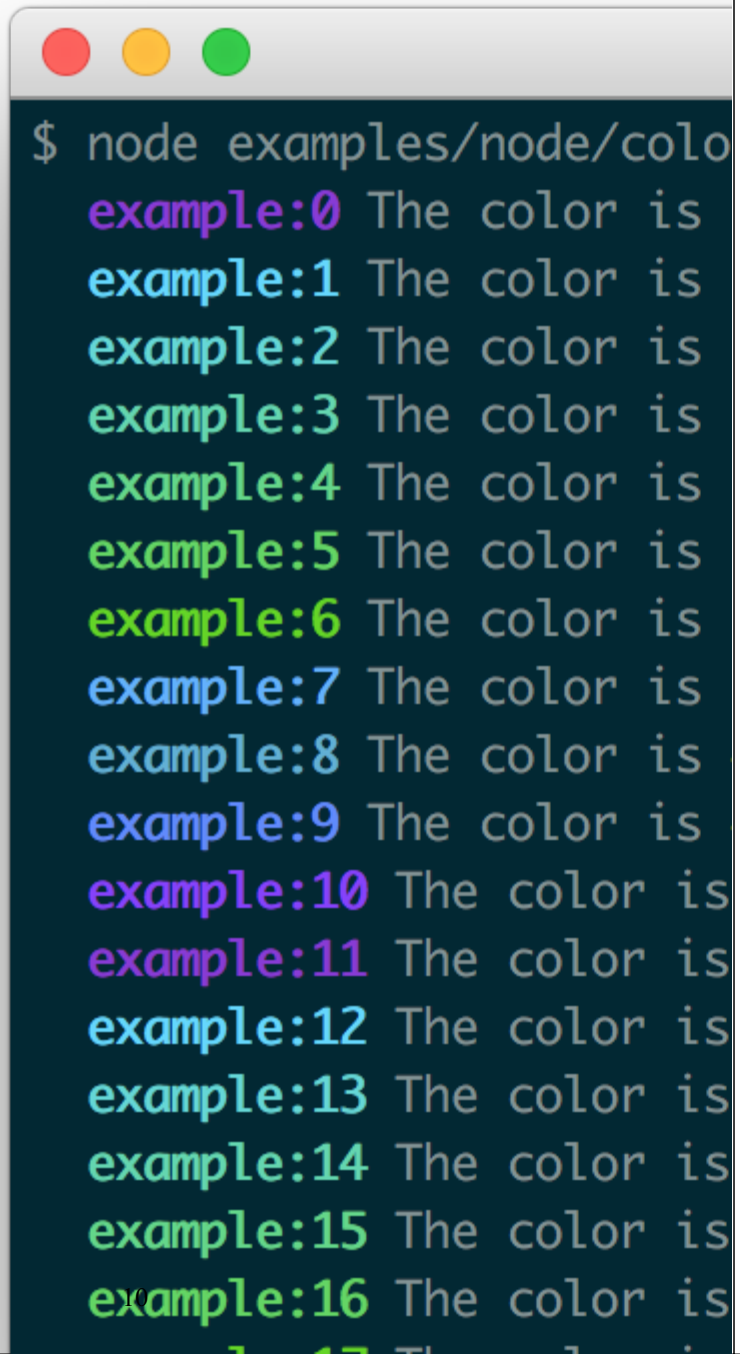
In Chromium-based web browsers (e.g. Brave, Chrome, and Electron), the JavaScript console will—by default—only show messages logged by `debug` if the "Verbose" log level is *enabled*.

Namespace Colors

Every debug instance has a color generated for it based on its namespace name. This helps when visually parsing the debug output to identify which debug instance a debug line belongs to.

Node.js

In Node.js, colors are enabled when stderr is a TTY. You also *should* install the `supports-color` module alongside debug, otherwise debug will only use a small handful of basic colors.



Formatter	Representation
`%s`	String.
`%d`	Number (both integer and float).
`%j`	JSON. Replaced with the string '[Circular]' if the argument contains circular references.
`%%`	Single percent sign ('%'). This does not consume an argument.

Custom formatters

You can add custom formatters by extending the `debug.formatters` object. For example, if you wanted to add support for rendering a Buffer as hex with `%h`, you could do something like:

```
const createDebug = require('debug')
createDebug.formatters.h = (v) => {
  return v.toString('hex')
}

// …elsewhere
const debug = createDebug('foo')
debug('this is hex: %h', new
        Buffer('hello world'))
//   foo this is hex:
        68656c6c6f20776f726c6421 +0ms
```

Environment Variables

When running through Node.js, you can set a few environment variables that will change the behavior of the debug logging:

Name	Purpose
`DEBUG`	Enables/disables specific debugging namespaces.
`DEBUG_HIDE_DATE`	Hide date from debug output (non-TTY).
`DEBUG_COLORS`	Whether or not to use colors in the debug output.
`DEBUG_DEPTH`	Object inspection depth.
`DEBUG_SHOW_HIDDEN`	Shows hidden properties on inspected objects.

Note: The environment variables beginning with `DEBUG_` end up being converted into an Options object that gets used with `%o`/`%O` formatters. See the Node.js documentation for `util.inspect()` for the complete list.

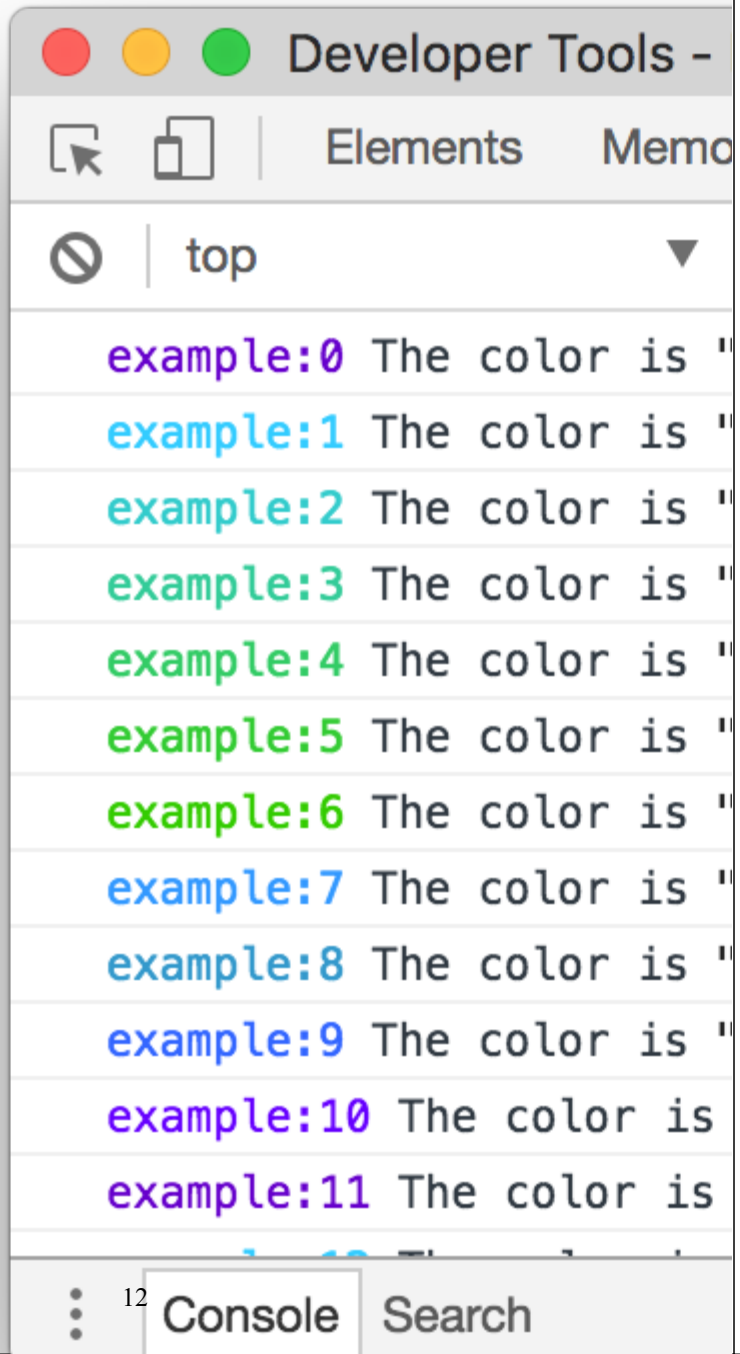
Formatters

Debug uses printf-style formatting. Below are the officially supported formatters:

Formatter	Representation
`%O`	Pretty-print an Object on multiple lines.
`%o`	Pretty-print an Object all on a single line.

Web Browser

Colors are also enabled on “Web Inspectors” that understand the `%c` formatting option. These are WebKit web inspectors, Firefox (since version 31) and the Firebug plugin for Firefox (any version).



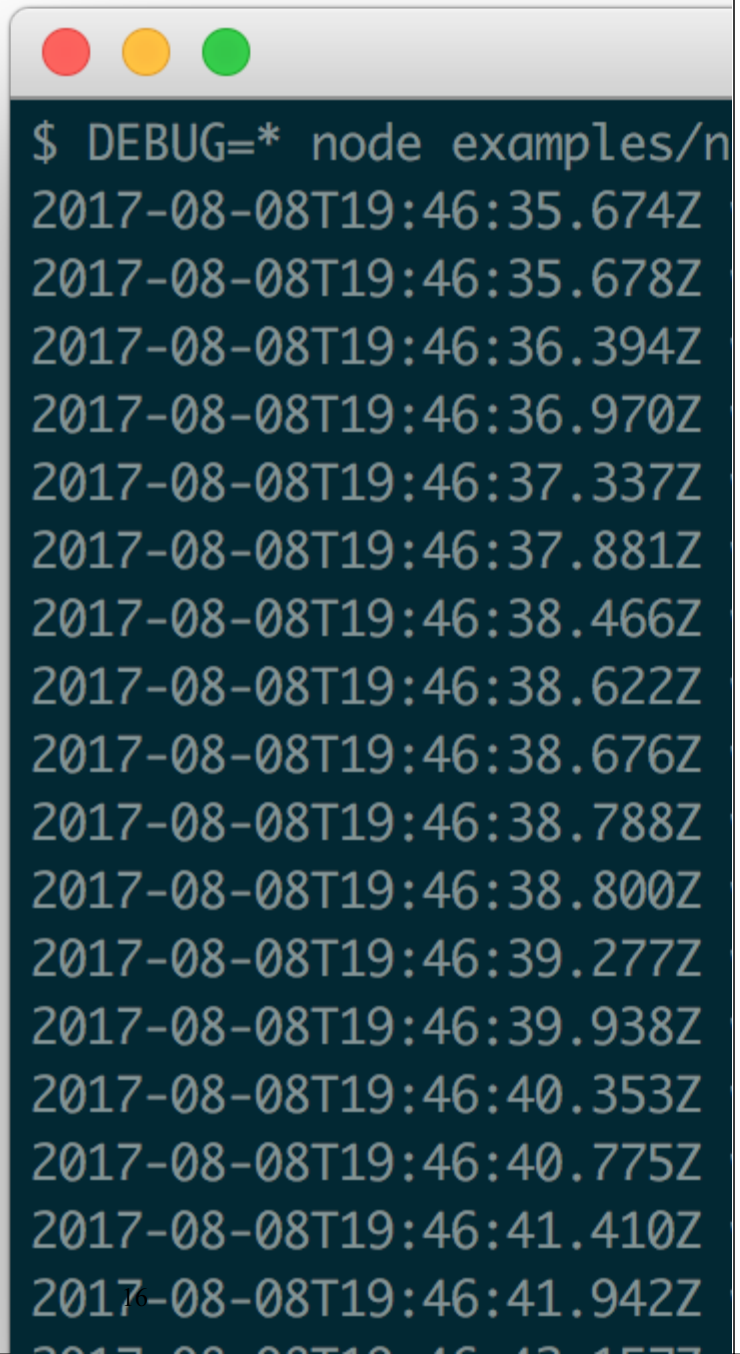
Conventions

If you're using this in one or more of your libraries, you *should* use the name of your library so that developers may toggle debugging as desired without guessing names. If you have more than one debuggers you *should* prefix them with your library name and use ":" to separate features. For example "bodyParser" from Connect would then be "connect:bodyParser". If you append a "*" to the end of your name, it will always be enabled regardless of the setting of the DEBUG environment variable. You can then use it for normal output as well as debug output.

Wildcards

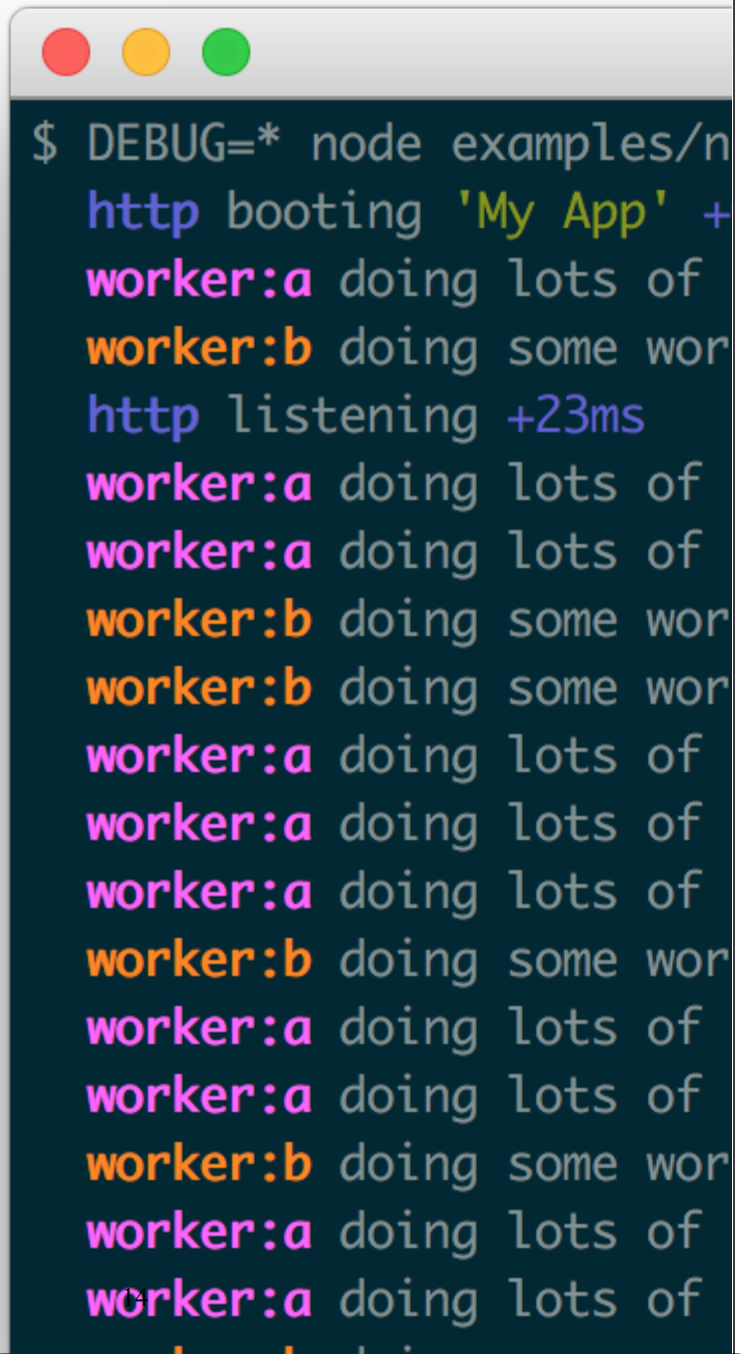
The `*` character may be used as a wildcard. Suppose for example your library has debuggers named "connect:bodyParser", "connect:compress", "connect:session", instead of listing all three with `DEBUG=connect:bodyParser,connect:compress,connect:se` you may simply do `DEBUG=connect:*`, or to run everything using this module simply use `DEBUG=*`.

You can also exclude specific debuggers by prefixing them with a "-" character. For example, `DEBUG=*,-connect:*` would include all debuggers except those starting with "connect:".



Millisecond diff

When actively developing an application it can be useful to see when the time spent between one `debug()` call and the next. Suppose for example you invoke `debug()` before requesting a resource, and after as well, the "+NNNms" will show you how much time was spent between calls.



When stdout is not a TTY, `Date#toISOString()` is used, making it more useful for logging the debug information as shown below: