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debug

Slack

A tiny node.js debugging utility modelled after node core's debugging technique.

Discussion around the V3 API is under way here

Installation

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*:

```
  , name = 'My App';

// fake app

debug('booting %s', 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 debug = require('debug')('worker');

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

The **DEBUG** environment variable is then used to enable these based on space or comma-delimited names. Here are some examples:

```
debug http and worker
debug http and worker

debug worker
debug worker
```


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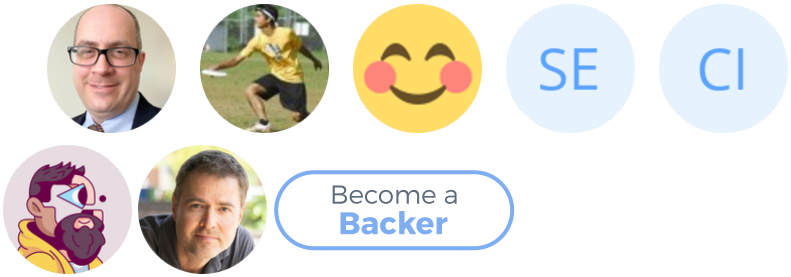

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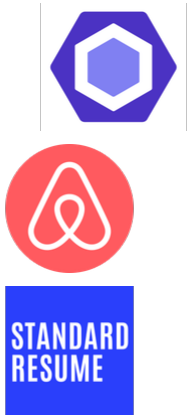


Windows note

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

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

Note that PowerShell uses different syntax to set environment variables.

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

Then, run the program to be debugged as usual.

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#toUTCString()` is used, making it more useful for logging the debug information as shown below:

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".

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:sessio` you may simply do `DEBUG=connect:*`, or to run everything using this module simply use `DEBUG=*`.

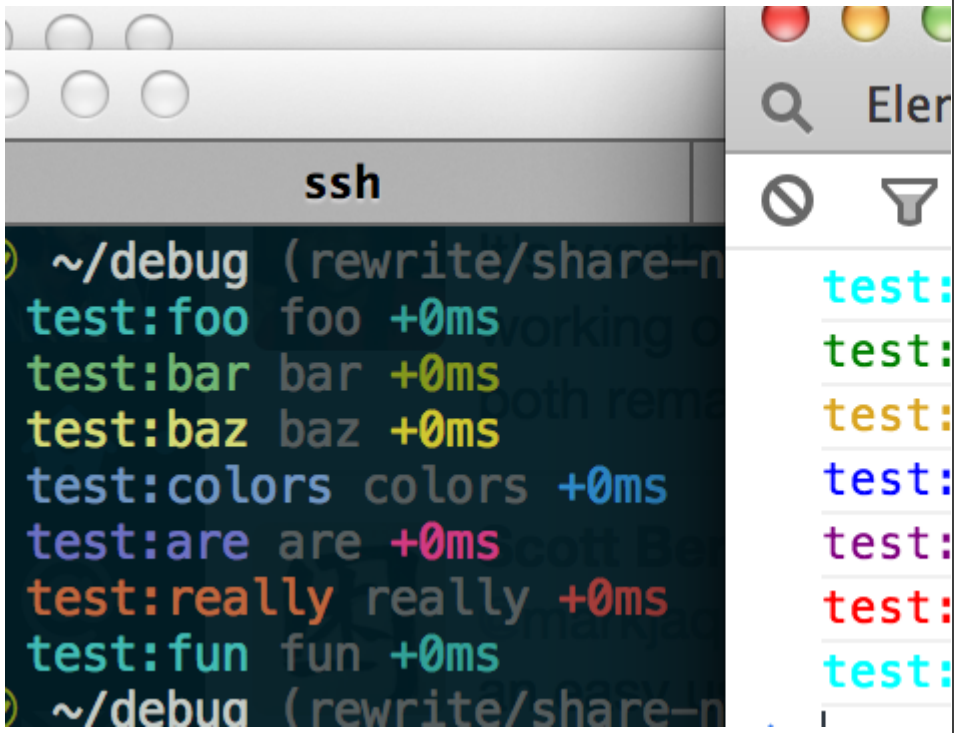
You can also exclude specific debuggers by prefixing them with a "-" character. For example, `DEBUG=*,-connect:*` would include all debuggers except those starting with "connect:".


```
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!
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');
```

Authors

- TJ Holowaychuk
- Nathan Rajlich
- Andrew Rhyne

Colored output looks something like:



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
```


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_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.
`%s`	String.
`%d`	Number (both integer and float).

Formatter	Representation
`%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
```


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);
```

Web Inspector Colors

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).