

---

# **Nginx Servats Module Documentation**

***Release 1.0.0-beta2***

**Rob Frawley 2nd**

2015-07-12, 16:53 -0500



|          |   |           |
|----------|---|-----------|
| <b>1</b> | <b>Overview</b>                               | <b>1</b>  |
| 1.1      | Source Information . . . . .                  | 1         |
| 1.2      | Quality Standards . . . . .                   | 1         |
| 1.3      | Supported Nginx Builds . . . . .              | 1         |
| 1.4      | Documentation . . . . .                       | 2         |
| <b>2</b> | <b>Installation</b>                           | <b>3</b>  |
| 2.1      | Pre-Packaged Nginx Build . . . . .            | 3         |
| 2.2      | Build Requirements . . . . .                  | 3         |
| 2.3      | Build Procedure . . . . .                     | 3         |
| 2.4      | Patching Unsupported Nginx Versions . . . . . | 4         |
| <b>3</b> | <b>The Test Suite</b>                         | <b>5</b>  |
| 3.1      | Environment Setup . . . . .                   | 5         |
| 3.2      | Compiling and Testing . . . . .               | 6         |
| <b>4</b> | <b>Configuration Directives</b>               | <b>9</b>  |
| 4.1      | servats . . . . .                             | 9         |
| 4.2      | servats_theme_href_css . . . . .              | 9         |
| 4.3      | servats_theme_href_script_lib . . . . .       | 10        |
| 4.4      | servats_theme_href_script . . . . .           | 10        |
| 4.5      | servats_theme_both . . . . .                  | 11        |
| <b>5</b> | <b>Screenshots</b>                            | <b>13</b> |
| 5.1      | Main Window . . . . .                         | 13        |
| 5.2      | Workers . . . . .                             | 13        |
| 5.3      | Connections . . . . .                         | 13        |
| <b>6</b> | <b>Reference Links</b>                        | <b>17</b> |
| <b>7</b> | <b>License</b>                                | <b>19</b> |
| 7.1      | The MIT License (MIT) . . . . .               | 19        |
| 7.2      | Ownership/License Disclaimer . . . . .        | 19        |
| 7.3      | Notable Mentions . . . . .                    | 20        |



---

## Overview

---

*Scribe / Nginx Servats Module* an Nginx module that provides server status information.

### 1.1 Source Information

**License**

**Build**

**Latest Release**

### 1.2 Quality Standards

- **Continuous Integration:** Utilization of [Travis CI](#) to provide per-commit reports on the success or failure status of our builds.
- **Tests and Coverage:** Automated testing using Ruby's `rspec` to query a compiled Nginx server and determine if it reacts and responds as intended.
- **Documentation:** Comprehensive [documentation and examples](#) compiled using the wonderful [Read the Docs](#) service.

### 1.3 Supported Nginx Builds

While you can build this module against any version of Nginx, we only supply the require patch files for a subset of version.

- 0.8.54—0.8.55
- 1.0.11
- 1.4.2
- 1.6.2
- 1.7.8—1.7.10
- 1.8.0
- 1.9.0—1.9.3

## 1.4 Documentation

### General

All the documentation for the *Scribe / Nginx Servats Module* is provided via compiled Sphinx files and hosted on [Read the Docs](#). You can browser the docs via the [website](#) or download an [PDF](#) or [Epub](#) for offline reading.

---

## Installation

---

### 2.1 Pre-Packaged Nginx Build

If you would prefer not to compile this module yourself, and are happy with the modules compiled into Scribe's Nginx build, and are using a distribution that is debian based, you can visit Scribe's Launchpad page and utilize our [Nginx PPA](#).

Additionally, as we don't offer a wide selection of Ubuntu releases to Nginx versions, you can also build the `.deb` yourself by using this [slightly horrible bash script](#) I wrote to generate the above mentioned packages.

### 2.2 Build Requirements

To compile Nginx with this module, you will need an environment that can compile C applications. If using Ubuntu, you can issue the following commands to achieve such an environment.

```
sudo apt-get update
sudo apt-get install build-essential
```

If using a different Linux distribution, please use the required installation commands to include `gcc`.

### 2.3 Build Procedure

*Note: For the remainder of these instructions, I will assume you intend to work with Nginx 1.7.10. Feel free to substitute another version per your requirements.*

#### 2.3.1 Download and Prepare Nginx

Installation of this module requires applying a patch to the Nginx core source- source. As this source-code changes with each release, there are *specific patch files* provided for various versions of Nginx.

To download this module and Nginx, you can simply call the following commands.

```
git clone https://github.com/scribenet/nginx-servats-module.git
cd nginx-servats-module && mkdir vendor && cd vendor
wget curl -s -L -O http://nginx.org/download/nginx-1.7.10.tar.gz
tar --strip-components=1 -zxf nginx-1.7.10.tar.gz
patch -p1 < ../patches/http_servats_nginx_1.7.10.patch
```

## 2.3.2 Compile and Install Nginx

After executing the command from the previous section, you will have a copy of this module, as well a patched Nginx source within the vendor directory of the module. To compile Nginx, simply execute the following commands from within the root of the module's git repository path on your local machine.

```
cd vendor
./configure --add-module=../module
make install
```

## 2.4 Patching Unsupported Nginx Versions

If you are attempting to use this module with a version of Nginx that does not have a pre-made *patch* file, it is suggest you proceed as follows.

*Note: It is highly recommended you configure you environment to use the integrated test suite. Documentation on doing so can be found on the Test Suite page.*

- Determine the closest matching patch file available (for example, if you wanted to compile this module against Nginx 1.7.6, you would choose the 1.7.8 patch file).
- Attempt to apply the patch per the above instructions.
- If the patch operation *does not succeed* and outputs errors about being unable to apply specific blocks of the patch file:
  - Create a copy of the patch file you started with (named appropriately for the version of Nginx you are trying to compile).
  - Review the source code and patch file to determine the required changes.
  - Update the patch file and re-attempt to apply it once you believe you have satisfied any errors.
- Otherwise, if the patch operation *succeeds without error*:
  - It is possible the patch is valid against your version of Nginx.
  - It is recommended you verify the results of the patch by looking over the resulting Nginx source code.
- Perform the installation as described below and verify Nginx both *compiles* and *runs*, and that the *module behaves as expected*.

*Please: If you take the time to do this, please either submit an issue stating that a specific patch properly worked with a version of Nginx not listed or submit a pull request with the new patch file so others can benefit from your effort.*



---

## The Test Suite

---

### 3.1 Environment Setup

To run the test suite, you must have a sane Ruby environment setup. I would highly suggest utilizing a Ruby version management utility such as [RVM](#), [Chruby](#), or one of the many alternatives. **This tutorial will be using RVM and assume you are running a modern version of Ubuntu Linux or a Debian-compatible system.**

*Note: For a detailed rundown of available options, as well as additional information on installation using alternate operating systems, I suggest reading Mischa Taylor's guide to setting up a [Sane Ruby Environment from the Chef series](#).*

#### 3.1.1 System Requirements

In order to build Ruby, you will need some Ubuntu packages. The minimal requirements include a compiler (and other build tools, which you will need to build Nginx anyway), as well as some header files for `libxml2`, `libxslt`, and `libssl`.

```
sudo apt-get update
sudo apt-get install -y build-essential libxml2-dev libxslt-dev libssl-dev
```

#### 3.1.2 RVM

To install RVM as well as Ruby 2.2.1, execute the following commands.

```
\curl -sSL https://get.rvm.io | bash
source $HOME/.rvm/scripts/rvm
rvm install ruby-2.2.1
```

After completing the above, executing `rvm list` should show the following output.

```
rvm rubies

=* ruby-2.2.1 [ x86_64 ]

# => - current
# =* - current && default
# * - default
```

You can confirm Ruby 2.2.1 is being properly called by issuing `ruby --version`. *Note: your exact version string and build date will not be exactly the same as the output provided here.*

```
ruby 2.2.1p85 (2015-02-26 revision 49769) [x86_64-linux]
```

### 3.1.3 Gem Dependencies

If you haven't cloned the *Nginx Servats Module* repository yet, do so now. If you already have, enter the directory now.

```
git clone https://github.com/scribenet/nginx-servats-module.git
cd nginx-servats-module
```

The Gem dependencies are handled via the GemFile, which `bundle` uses to install the requested gems. Issue the `bundle` command now.

```
bundle
```

You will receive output similar to the following.

```
Fetching gem metadata from https://rubygems.org/.....
Fetching version metadata from https://rubygems.org/..
Resolving dependencies...
Using rake 10.4.2
Installing curb 0.8.6
Installing diff-lcs 1.2.5
Installing rspec-support 3.2.2
Installing rspec-core 3.2.2
Installing rspec-expectations 3.2.0
Installing rspec-mocks 3.2.1
Installing rspec 3.2.0
Using bundler 1.8.4
Bundle complete! 3 Gemfile dependencies, 9 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.
```

You are now ready to utilize the integrated build task manager and test suite!

## 3.2 Compiling and Testing

The `rake` command is used to handle dispatching the tasks required to download, patch, and compile Nginx, as well as run the provided test suite.

Give it a try (by default it will use Nginx 1.7.10).

```
rake nginx:compile
rake test
```

Be patient during the compilation step; depending on your system this could take some time. Once Nginx is compiled, running `rake test` will run the tests. Assuming everything went well, you should see a collection of green assertions with the block ending in `12 examples, 0 failures`. The number of examples will change over time as more tests are added, the important part to note is that `0 failures` occurred.

You can now start up Nginx yourself if you'd like to view the page manually.

```
rake nginx:start
google-chrome http://localhost:8888/servats
```

The above command assumes you have [Google Chrome](#) installed. If you do not, simply open the URL in your browser of choice. Once you've finished taking a look, call `rake nginx:stop` to stop the Nginx test server.

To compile the module using a different version of Nginx, simply set the `NGX_VERSION_ENV` variable prior to calling `rake nginx:compile`. For example, to compile Nginx 1.4.2 and run the tests:

```
NGX_VERSION_ENV=1.4.2 rake nginx:compile  
rake test
```

If you are attempting to compile an Nginx version not supported by default, be sure to provide a patch file within the `patches/` folder in the repository root.



---

## Configuration Directives

---

This module allows for a variety of configuration directives. If you simply want to view the status of your Nginx server and have no interest in further customization, the only requirement is to enable the module using the first directive, `servats`.

### 4.1 `servats`

This config directive turns the module on or off. By default, the module is disabled.

**Default** `off`

**Valid Entries** `off, on`

**Contexts** `http, server, location`

Example usage:

```
location /status {  
    servats on;  
}
```

Unlike other implementations of the “extended status” module, disabling this module within inner location blocks is supported. For example, the following configuration would show the server status when navigating to `/status` but not `/status/disabled`:

```
location /status {  
    servats on;  
  
    location /disabled {  
        servats off;  
    }  
}
```

### 4.2 `servats_theme_href_css`

This directive can be optionally set to apply a custom CSS link within the HTML header. When set with `servats_theme_both` enabled, the custom CSS will be the *last CSS include*. When `servats_theme_both` is disabled, the custom CSS will be the *only CSS include*.

**Default** `" "`

**Valid Entries** "", "/a/path/to/custom.css", [...]

**Contexts** http, server, location

Example usage:

```
location /status {
    servats                on;
    servats_theme_both     on;
    servats_theme_href_css "/a/path/to/custom.css";
}
```

## 4.3 servats\_theme\_href\_script\_lib

This directive can be optionally set to include a custom JavaScript script within the HTML header. It is intended to include an external, custom JavaScript library. When set with `servats_theme_both` enabled, the custom JS will be the *last JS library* included in the header. When `servats_theme_both` is disabled, the custom JS include will be the *only JS include*.

**Default** ""

**Valid Entries** "", "/a/path/to/custom/js/library.js", [...]

**Contexts** http, server, location

Example usage:

```
location /status {
    servats                on;
    servats_theme_both     on;
    servats_theme_href_css "/a/path/to/custom.css";
    servats_theme_href_script_lib "/a/path/to/custom/js/library.js";
}
```

## 4.4 servats\_theme\_href\_script

This directive can be optionally set to include a custom JavaScript script at the end of the HTML body. It is intended to include an external, custom JavaScript file that performs custom actions on the HTML. When set with `servats_theme_both` enabled, the custom JS will be the *last JS file* included at the end of the HTML body. When `servats_theme_both` is disabled, the custom JS will be the *only JS include* at the end of the HTML body.

**Default** ""

**Valid Entries** "", "/a/path/to/custom/js/main.js", [...]

**Contexts** http, server, location

Example usage:

```
location /status {
    servats                on;
    servats_theme_both     on;
    servats_theme_href_css "/a/path/to/custom.css";
    servats_theme_href_script_lib "/a/path/to/custom/js/library.js";
    servats_theme_href_script "/a/path/to/custom/js/main.js";
}
```

## 4.5 servats\_theme\_both

This configuration directive determines whether the internal CSS and JavaScript should be applied *as well as* any user-defined CSS and JavaScript. By default, this directive is enabled. This means that using any of the `servats_theme_href_*` directives will apply those *in addition to* the internal, default CSS and JavaScript. When this directive is set to `off`, only the user-defined CSS and JavaScript will be included in the page.

**Default** `on`

**Valid Entries** `off, on`

**Contexts** `http, server, location`

Example usage:

```
location /status {  
    servats                on;  
    servats_theme_both on;  
}
```





---

## Screenshots

---

While the *Scribe / Nginx Servats Module* can be configured with user-supplied CSS and JavaScript includes, its default configuration includes a comprehensive theme that utilizes the following open-source projects.

- Bootstrap (v3.3.4)
- jQuery (v2.1.3)
- Chart.js (v1.0.2)
- Stupid Table (master)
- Font Awesome (v4.3.0)
- Google Fonts

### 5.1 Main Window

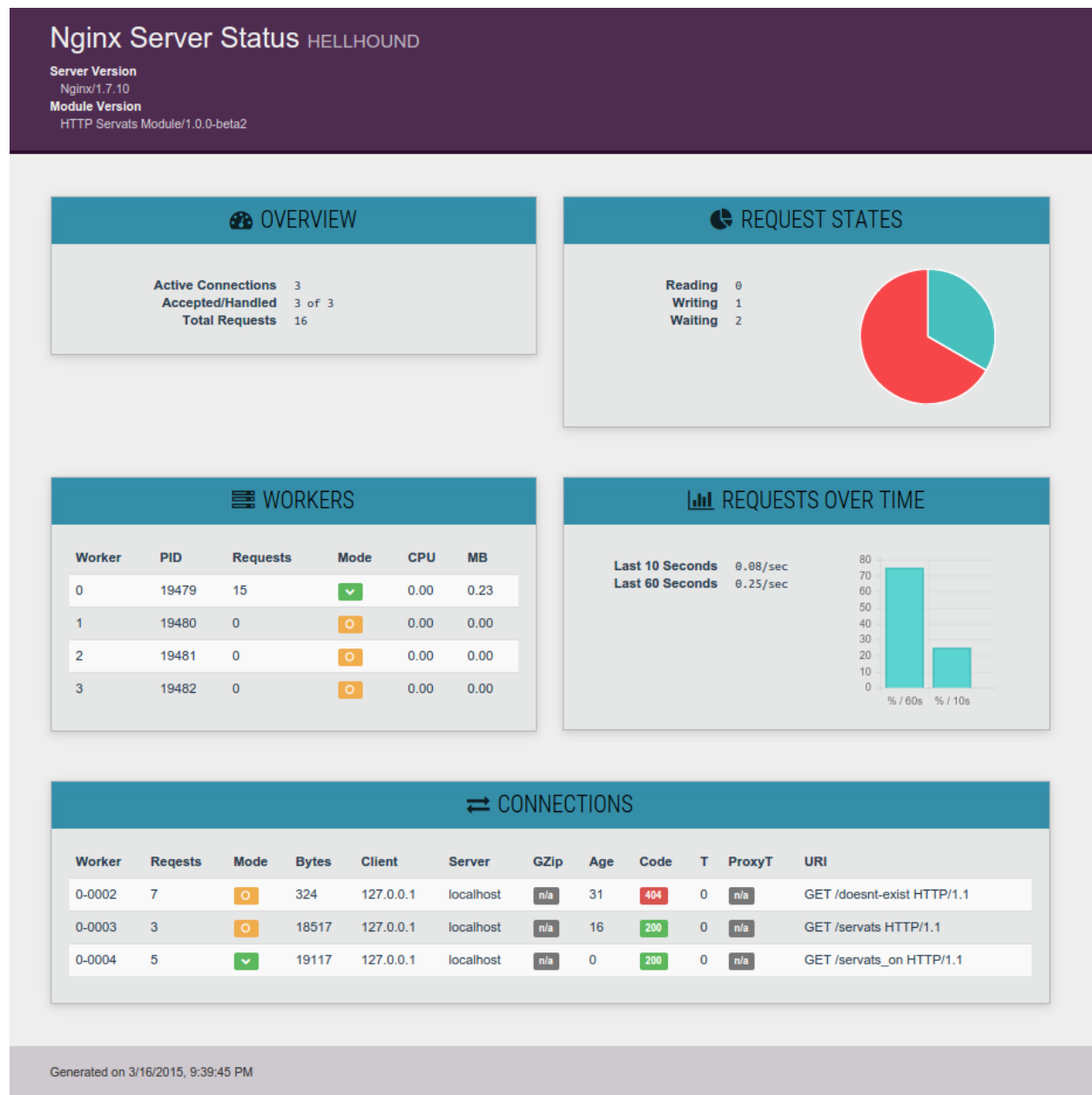
The main window is a responsive Bootstrap layout that scales effectively to varying device screen widths. The header displays the machine *host name*, *server version*, as well as *module version*. The footer displays the time the page was rendered.

### 5.2 Workers

The “Workers” section features tool-tips that describes the *Mode* icon with basic phrases such as “Waiting for response,” “Sending reply,” as well as other possible states.

### 5.3 Connections

The “Connections” section lists information pertaining to connections, including their related *worker*, *requests count*, *mode*, *request size (bytes)*, *client IP*, *server name*, *GZip compression*, *age*, *request code*, *time*, *upstream (proxy) time*, and *URI*. Both the *Mode* and *Code* feature tool-tips that describe the state.





| WORKERS |       |          |      |      |      |
|---------|-------|----------|------|------|------|
| Worker  | PID   | Requests | Mode | CPU  | MB   |
| 0       | 19479 | 176      | ✓    | 0.07 | 3.16 |
| 1       | 19480 | 0        | ○    | 0.00 | 0.00 |
| 2       | 19481 | 0        | ○    | 0.00 | 0.00 |
| 3       | 19482 | 0        | ○    | 0.00 | 0.00 |

| WORKERS |       |          |                 |      |      |
|---------|-------|----------|-----------------|------|------|
| Worker  | PID   | Requests | Mode            | CPU  | MB   |
| 0       | 19479 | 176      | ▼ Sending reply |      | 3.16 |
| 1       | 19480 | 0        | ○               | 0.00 | 0.00 |
| 2       | 19481 | 0        | ○               | 0.00 | 0.00 |
| 3       | 19482 | 0        | ○               | 0.00 | 0.00 |

| CONNECTIONS |          |                       |       |           |           |      |     |      |   |        |                            |
|-------------|----------|-----------------------|-------|-----------|-----------|------|-----|------|---|--------|----------------------------|
| Worker      | Requests | Mode                  | Bytes | Client    | Server    | GZip | Age | Code | T | ProxyT | URI                        |
| 0-0002      | 7        | ⋮ Inactive connection |       | 127.0.0.1 | localhost | n/a  | 138 | 404  | 0 | n/a    | GET /doesnt-exist HTTP/1.1 |
| 0-0003      | 3        | ▼                     | 18517 | 127.0.0.1 | localhost | n/a  | 0   | 200  | 0 | n/a    | GET /servats HTTP/1.1      |
| 0-0004      | 166      | ○                     | 19120 | 127.0.0.1 | localhost | n/a  | 13  | 200  | 0 | n/a    | GET /servats HTTP/1.1      |

| CONNECTIONS |          |      |       |           |           |      |     |      |   |        |                            |
|-------------|----------|------|-------|-----------|-----------|------|-----|------|---|--------|----------------------------|
| Worker      | Requests | Mode | Bytes | Client    | Server    | GZip | Age | Code | T | ProxyT | URI                        |
| 0-0002      | 7        | ⋮    | 324   | 127.0.0.1 | localhost | n/a  | 138 | 404  | 0 | n/a    | GET /doesnt-exist HTTP/1.1 |
| 0-0003      | 3        | ▼    | 18517 | 127.0.0.1 | localhost | n/a  | 0   | 200  | 0 | n/a    | GET /servats HTTP/1.1      |
| 0-0004      | 166      | ○    | 19120 | 127.0.0.1 | localhost | n/a  | 13  | 200  | 0 | n/a    | GET /servats HTTP/1.1      |

| CONNECTIONS |          |      |       |           |           |      |     |      |   |        |                            |
|-------------|----------|------|-------|-----------|-----------|------|-----|------|---|--------|----------------------------|
| Worker      | Requests | Mode | Bytes | Client    | Server    | GZip | Age | Code | T | ProxyT | URI                        |
| 0-0002      | 7        | ⋮    | 324   | 127.0.0.1 | localhost | n/a  | 138 | 404  | 0 | n/a    | GET /doesnt-exist HTTP/1.1 |
| 0-0003      | 3        | ▼    | 18517 | 127.0.0.1 | localhost | n/a  | 0   | 200  | 0 | n/a    | GET /servats HTTP/1.1      |
| 0-0004      | 166      | ○    | 19120 | 127.0.0.1 | localhost | n/a  | 13  | 200  | 0 | n/a    | GET /servats HTTP/1.1      |

---

## Reference Links

---

The below table summarizes the relevant links needed to understand the fundamentals and get started utilizing this project.

**Project Name** scribe/nginx-servats-module  
**Release** 1.0.0-beta2  
**Copyright** 2014–2015 Rob Frawley 2nd of Scribe Inc.  
**License** The MIT License (MIT)  
**Git Source** <https://nginx-servats-module.docs.scribe.tools/git>  
**Travis CI** <https://nginx-servats-module.docs.scribe.tools/ci>  
**Documentation** <https://nginx-servats-module.docs.scribe.tools/docs>  
**Latest Release** <https://github.com/scribenet/nginx-servats-module/releases>  
**Keywords** servats, extended-status, ngx, nginx, rmf, scribe



---

## License

---

All original code within this project is licensed under the *MIT License (MIT)*. Please reference the full contents of this file for additional information.

### 7.1 The MIT License (MIT)

*Nginx Servats Module*, © Copyright 2014–2015 Rob Frawley 2nd of Scribe Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the “Software”), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED “AS IS”, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

### 7.2 Ownership/License Disclaimer

This project originally began as a direct fork of *HTTP Servats Module* with the intent of fixing some bugs, oversights and shortcomings of that module. Over the course of this development it turned into a major rewrite of (almost) the entire module.

As such, it contains similar (if not outright equivalent) logic, ideas, and code. Any code not re-written is licensed under the *BSD License* and is copyright the respective owner(s).

Please see the `ngx_http_extended_status` module’s [README](#) file for possibly applicable additional licensing and copyright information.

For reference, I have provided a copy of the *BSD License*.

### 7.2.1 The BSD License

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS “AS IS” AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 7.3 Notable Mentions

Other projects and individuals, both directly and indirectly, either influenced the development of, or code contained within this module.

- **HTTP Extended Status Module**
  - Youngseok Choi <[zealot33@gmail.com](mailto:zealot33@gmail.com)>
  - Lijin Hu <[beagem@163.com](mailto:beagem@163.com)>
  - Heumgeun Kang <[heumgeun.kang@nhn.com](mailto:heumgeun.kang@nhn.com)>
- **HTTP Fancy Index Module**
  - Adrian Perez <<https://github.com/aperezdc>>
- **HTTP Stub Status**
  - Igor Sysoev <[igor@sysoev.ru](mailto:igor@sysoev.ru)>

A few individuals also put together some amazing documentations on Nginx module development.

- Aaron Bedra <<http://airpair.com>>
- Evan Miller <<http://evanmiller.org>>

I would like to thank the above individuals for their prior work, tutorials, insights, and thoughts, as it applies to Nginx module development. Without them I would not have known where to begin.