

Regex survey

(Draft)

June 23, 2020

1 Preliminaries

This report presents a small report on regular expressions (regex) used in some files of the NPM¹ package manager for the JavaScript² programming language. To obtain the data, we coded a script ‘RegexFinder.rb’ (REGEXFINDER) in Ruby³ programming language. As input, it takes a directory where NPM is installed. The output is information related to the regex usage; this is presented on display and saved either as markdown and pdf files.

Settings: The NPM version is 6.13.6; it is installed in a macOS operative system. The programming language is Ruby version is 2.6.3p62; we also use Pandoc⁴ version 2.9.2.1 to build a pdf report.

File directory: Normally, in macOS, NPM global libraries are installed in `/usr/local/lib/`. This survey considers libraries in the following directory (and its subdirectories) `/usr/local/lib/node_modules`. To see the complete list of global libraries, please refer to the attached `global_libraries.txt` file.

Limitations: REGEXFINDER only looks for regexes that match the pattern `(replace|match)((/./+/*)`. Other regex usages such as the `RegExp` object and `/.../ =~ ‘...’` are not considered. Additionally, there is a list of ‘skipped’ files.

Skipped files: We have omitted eight files from this survey since they seem to be damaged or incorrectly formatted (in utf8). If they are correctly formatted, then those may have long strings that make Pandoc collapse. Those files are:

- `npm/node_modules/ajv/dist/ajv.min.js`
- `npm/node_modules/ajv/dist/nodent.min.js`
- `npm/node_modules/ajv/dist/regenerator.min.js`
- `npm/node_modules/unique-filename/coverage/prettify.js`
- `npm/node_modules/psl/dist/psl.min.js`
- `npm/node_modules/bluebird/js/browser/bluebird.min.js`
- `live-server/node_modules/source-map/dist/source-map.min.js`
- `npm/node_modules/bluebird/js/browser/bluebird.core.min.js`

Function types: A function in JavaScript is a parametric block of code composed by a named or anonymous identifier, function code, a list of parameters and a return value. During this survey, we found the following function types, see Function 1, 2, 3 and 4. Note that there exists at least other two functions types: `function* generator{...}` and `new Function(...)`.

¹<https://www.npmjs.com>

²<https://www.javascript.com>

³<https://www.ruby-lang.org/en/>

⁴<https://pandoc.org>

Function 1: Regular function	Function 2: Function expression
<pre> 1 function foo(parameters){ 2 ... 3 }</pre>	<pre> 1 const foo = function(parameters){ 2 ... 3 }</pre>
Function 3: Shorthand method definition	Function 4: Arrow function
<pre> 1 const foo = { 2 var(parameters){ 3 ... 4 }, 5 baz(parameters){ 6 ... 7 } 8 };</pre>	<pre> 1 const foo = (parameters) => { 2 ... 3 }</pre>

Nested instruction: A nested instruction (or function) is an instruction defined within another. For example:
`function outer(function inner(params){...}){...}`

2 Survey results

This section is composed of two parts. The first one is a table that summarizes the information found by REGEXFINDER. The second part is the pdf Report produced by the execution of REGEXFINDER.

Table 1 shows some relevant information obtained by REGEXFINDER from the JavaScript files. The columns have the following meanings.

- **File** is a path to the JavaScript file; some rows have an external link associated for additional information.
- **Args** shows whether the setting in which the regular expression is used requires an input argument. In this row: the ✓ and **empty cell** means *yes* and *not*, respectively, while the ? shows indecision.
- **N?** takes the value of ✓ to denote that it is a nested instruction; the **empty cell** means it is not nested.
- **Description** supplies some information regarding the usage of the regular expression.
- **Columns R, E, S, and A** denote **R**egular function, **E**xpression, **S**horthand method definition and **A**rrow function, respectively.

Report (output): This part briefly presents the parameters on which REGEXFINDER executes, the skipped files and some data regarding the regex usages in non-skipped files. Such data is as follows: the **Regex** pattern, a boolean flag (**Backreference**) that shows whether it is used with backreferences, the variable that uses the pattern (**Variable name**) a field **Description** which is not used at the moment, and the line number (**Row**) and instruction (**instruction**) where the regex appears.

Note: Attached to this report is the ‘Report-Complete.pdf’ file containing all regex occurrences found using the script with the same restrictions as presented at the beginning of this document.

Table 1: Results

File	Args	N?	Description	R	E	S	A
npm/node_modules/hosted-git-info/git-host-info.js	?	✓	Object class, iterates through a list of protocols		✓		
npm/node_modules/run-queue/node_modules/aproba/index.js	✓		Variable, creates and returns a new string by concatenating all of the elements in a list	✓			
npm/node_modules/lodash.union/index.js	✓		Instructions concatenated, used to detect if a method is native		✓		
npm/node_modules/spdx-correct/index.js	✓		Variable, parses SPDX license expression strings describing license terms into consistently structured ECMAScript objects			✓	
npm/node_modules/decamelize/index.js	✓		Module, convert a camelized string into a lowercased one with a custom separator		✓		
npm/node_modules/qs/dist/qs.js	✓		Variable, transform dot notation to bracket notation		✓		
npm/node_modules/qs/lib/parse.js	✓		Variable, transform dot notation to bracket notation		✓		
npm/node_modules/encoding/lib/encoding.js	✓		Variable, convert strings from one encoding to another	✓			
npm/node_modules/lodash._createset/index.js	✓		Instructions concatenated, used to detect if a method is native		✓		
npm/node_modules/lodash._getnative/index.js	✓		Instructions concatenated, used to detect if a method is native		✓		
npm/node_modules/aproba/index.js	✓		Variable, creates and returns a new string by concatenating all of the elements in a list	✓			
npm/node_modules/minimatch/minimatch.js	✓		Module, this is the matching library used internally by npm. It works by converting glob expressions into JavaScript RegExp objects.	✓			
npm/node_modules/lodash._baseuniq/index.js	✓		Instructions concatenated, used to detect if a method is native		✓		
npm/node_modules/gauge/node_modules/aproba/index.js	✓		Variable, function argument validator	✓			
npm/node_modules/copy-concurrently/node_modules/aproba/index.js	✓		Variable, function argument validator	✓			
npm/node_modules/gentle-fs/node_modules/aproba/index.js	✓		Variable, unsanitized user input flows from the request URL and is used to build a regular expression in match	✓			
npm/node_modules/sshpki/lib/fingerprint.js	✓		Module, parse, convert, fingerprint and use SSH keys (both public and private) in pure node – no ssh-keygen or other external dependencies.	✓			
npm/node_modules/cross-spawn/lib/util/escapeArgument.js	✓		Variable, escapes the double quote	✓			
npm/node_modules/bin-links/index.js	✓	✓	Writes a file, it is a standalone library that links binaries and man pages for Javascript packages	✓			
npm/node_modules/request/lib/multipart.js	✓		Works on a header, Http request client (deprecated)				
npm/node_modules/yargs/yargs.js	✓		Variable, parses arguments to build command line tools		✓		
npm/node_modules/yargs/lib/completion.js	✓		Input file, parses arguments to build command line tools		✓		
npm/node_modules/yargs/lib/command.js	✓	✓	Variable, parses arguments to build command line tools		✓		
npm/node_modules/yargs/lib/validation.js	✓		Module, parses arguments to build command line tools		✓		
npm/node_modules/yargs/lib/usage.js	✓	✓	object, handles outputting usage instructions				✓
npm/node_modules/yargs/lib/usage.js	✓	✓	Variable, handles outputting usage instructions				✓
npm/node_modules/move-concurrently/node_modules/aproba/index.js	✓		Variable, creates and returns a new string by concatenating all of the elements in a list	✓			
npm/node_modules/lodash.without/index.js	✓		Instructions concatenated, used to detect if a method is native		✓		
npm/node_modules/ip/lib/ip.js	✓		Variable, get your ip address, compare ip addresses, validate ip addresses, etc.				
npm/node_modules/npm-package-arg/npa.js	✓		Variable, parses package name	✓			
npm/node_modules/tar/lib/pax.js	✓		Variable, mimics the behavior of tar(1) on unix systems				✓
npm/node_modules/debug/src/browser.js	✓	✓	Variable, matches a web browser		✓		
npm/node_modules/lodash.uniq/index.js	✓		Instructions concatenated, used to detect if a method is native		✓		
npm/node_modules/lodash.clonedeep/index.js	✓		Instructions concatenated, used to detect if a method is native		✓		
npm/node_modules/worker-farm/tests/index.js	✓		process, checks process version	✓			
npm/docs/src/components/DocLinks.js	✓		Variable, formats a title	✓			
npm/docs/src/templates/Page.js	✓	✓	Variable, replaces versions in html page				✓
npm/scripts/changelog.js	✓		Variable, formats commits and generates a changelog from git commits	✓			
npm/scripts/docs-build.js	✓	✓	Variable, replaces versions in file	✓			
npm/lib/install/inflate-shrinkwrap.js	✓		Variable, replace a string	✓			
npm/lib/install/inflate-shrinkwrap.js	✓	✓	Variable, replace a string		✓		
npm/lib/utlis/error-message.js	✓	✓	Variable, parses error messages		✓		
npm/lib/init.js	✓	✓	Variable, matches and concatenates strings	✓			
npm/lib/repo.js	✓		Variable, parses an unknown hosted url	✓			
live-server/node_modules/file-uri-to-path/index.js	✓		Variable, parses drive letters, accepts a file: URI and returns a regular file path suitable for use with the fs module functions	✓			
live-server/node_modules/to-regex/index.js	✓		RegExp Object, generate a regex from a string or array of strings	✓			
live-server/node_modules/expand-brackets/lib/compilers.js	✓		Instructions concatenated, expand POSIX bracket expressions (character classes) in glob patterns.		✓		
live-server/node_modules/bcryptjs/tests/suite.js	✓	✓	Variable, Bcrypt binding			✓	
live-server/node_modules/faye-websocket/lib/faye/eventsource.js	✓		Variable, WebSocket server and client	✓			
live-server/node_modules/proxy-middleware/index.js	✓		Variable, rewrites cookies	✓			
live-server/node_modules/micromatch/lib/parsers.js	✓	✓	Variable, escape regex boundary characters and simple brackets		✓		
live-server/node_modules/pascalcase/index.js	✓	✓	Variable, convert a string to pascal-case.		✓		
live-server/node_modules/braces/lib/parsers.js	✓		Variable, brace expansion libs	✓			
live-server/node_modules/braces/lib/utlis.js	✓		Variable, escapes regex		✓		
live-server/node_modules/braces/lib/compilers.js	✓	✓	Variable, unescape unexpanded brace sequence/set separators			✓	
live-server/node_modules/fsevents/node_modules/aproba/index.js	✓		Variable, creates and returns a new string by concatenating all of the elements in a list	✓			
live-server/node_modules/fsevents/node_modules/minimatch/minimatch.js	✓	✓	Variable, escape any — chars that were passed through as-is for the regexp and strings with		✓		
live-server/node_modules/fsevents/node_modules/tar/lib/pax.js	✓	✓	Variable, refactor to not be a naive line-by-line parse				✓
live-server/node_modules/fsevents/node_modules/debug/dist/debug.js	✓		RegExp Object, matches a web browser	✓			
live-server/node_modules/fsevents/node_modules/debug/src/browser.js	✓		RegExp Object, matches a web browser	✓			
live-server/node_modules/debug/src/browser.js	✓		RegExp Object, matches a web browser	✓			
live-server/node_modules/nanomatch/lib/utlis.js	✓	✓	Variable, combines duplicate characters in the provided 'input' string		✓		
live-server/node_modules/nanomatch/lib/compilers.js	✓	✓	Variable, glob matcher for node.js	✓			
live-server/node_modules/glob-parent/index.js	✓	✓	Module, remove escape chars and return result	✓			

H1 Report

H2 Parameters:

Path: [/usr/local/lib/node_modules](#)

Looking for regex in *.js files

Listing regex with backreferences

H2 Skipped files:

We skipped the following files in this report:

1. ajv.min.js
2. nodent.min.js
3. regenerator.min.js
4. prettify.js
5. psl.min.js
6. bluebird.min.js
7. source-map.min.js
8. bluebird.core.min.js

H2 Non-skipped files:

File: [/usr/local/lib/node_modules/npm/node_modules/hosted-git-info/git-host-info.js](#)

- **Regex:** `/([\\"+*{}()[\]$^|])/g`
 - **Backreference:** true
 - **Variable name:** protocol
 - **Description:** not available
 - **Row, instruction:** 73, `return protocol.replace(/([\\"+*{}()[\]$^|])/g, '\\$1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/run-queue/node_modules/aproba/index.js](#)

- **Regex:** `/, ([^, ]+)$/`
 - **Backreference:** true
 - **Variable name:** list
 - **Description:** not available
 - **Row, instruction:** 84, `return list.join(', ').replace(/, ([^, ]+)$/, ' or $1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/lodash.union/index.js](#)

- **Regex:** `/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\])/g`
- **Backreference:** true

- **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 265, `.replace(/hasOwnProperty|(function).*?(?=\\\()|for .+?(?=\\\])/g, '$1.*?' ) + '$'`
-

File: [/usr/local/lib/node_modules/npm/node_modules/spdx-correct/index.js](#)

- **Regex:** `/,?\s*(\d)/`
 - **Backreference:** true
 - **Variable name:** argument
 - **Description:** not available
 - **Row, instruction:** 87, `return argument.replace(/,?\s*(\d)/, '-$1')`
-

- **Regex:** `/,?\s*(\d)/`
 - **Backreference:** true
 - **Variable name:** argument
 - **Description:** not available
 - **Row, instruction:** 91, `return argument.replace(/,?\s*(\d)/, '-$1.0')`
-

- **Regex:** `/,?\s*(V\.|v\.|V|v|Version|version)\s*(\d)/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 96, `.replace(/,?\s*(V\.|v\.|V|v|Version|version)\s*(\d)/, '-$2')`
-

- **Regex:** `/,?\s*(V\.|v\.|V|v|Version|version)\s*(\d)/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 101, `.replace(/,?\s*(V\.|v\.|V|v|Version|version)\s*(\d)/, '-$2.0')`
-

- **Regex:** `/\s*V\s*(\d)/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 114, `.replace(/\s*V\s*(\d)/, '-$1')`
-

- **Regex:** `/(\d)$/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 115, `.replace(/(\d)$/, '$1.0')`
-

- **Regex:** `/(\d)$/`
 - **Backreference:** true
 - **Variable name:** argument
 - **Description:** not available
 - **Row, instruction:** 131, `return argument.replace(/(\d)$/, '-$1.0')`
-

- **Regex:** `/(-|)?(\d)$/`
 - **Backreference:** true
 - **Variable name:** argument
 - **Description:** not available
 - **Row, instruction:** 135, `return argument.replace(/(-|)?(\d)$/, '-$2-Clause')`
-

- **Regex:** `/(-|)clause(-|)(\d)/`
 - **Backreference:** true
 - **Variable name:** argument
 - **Description:** not available
 - **Row, instruction:** 139, `return argument.replace(/(-|)clause(-|)(\d)/, '-$3-Clause')`
-

- **Regex:** `/(\d)/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 155, `.replace(/(\d)/, '-$1')`
-

- **Regex:** `/(\d)/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 165, `.replace(/(\d)/, '-$1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/decamelize/index.js](#)

- **Regex:** `/([a-z\d])([A-Z])/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 10, `.replace(/([a-z\d])([A-Z])/g, '$1' + sep + '$2')`
-

- **Regex:** `/([A-Z]+)([A-Z][a-z\d]+)/g`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available
- **Row, instruction:** 11, `.replace(/([A-Z]+)([A-Z][a-z\d]+)/g, '$1' + sep +`

'\$2')

File: [/usr/local/lib/node_modules/npm/node_modules/qs/dist/qs.js](#)

- **Regex:** `/\.(^[.]+)/g`
- **Backreference:** true
- **Variable name:** givenKey
- **Description:** not available
- **Row, instruction:** 123, `var key = options.allowDots ? givenKey.replace(/\.([.]+)/g, '[$1]') : givenKey;`

File: [/usr/local/lib/node_modules/npm/node_modules/qs/lib/parse.js](#)

- **Regex:** `/\.(^[.]+)/g`
- **Backreference:** true
- **Variable name:** givenKey
- **Description:** not available
- **Row, instruction:** 89, `var key = options.allowDots ? givenKey.replace(/\.([.]+)/g, '[$1]') : givenKey;`

File: [/usr/local/lib/node_modules/npm/node_modules/encoding/lib/encoding.js](#)

- **Regex:** `/^latin[\-_]?(\d+)$/i`
- **Backreference:** true
- **Variable name:** var_name not defined yet
- **Description:** not available
- **Row, instruction:** 107, `replace(/^latin[\-_]?(\d+)$/i, 'ISO-8859-$1').`

- **Regex:** `/^win(?:dows)?[\-_]?(\d+)$/i`
- **Backreference:** true
- **Variable name:** var_name not defined yet
- **Description:** not available
- **Row, instruction:** 108, `replace(/^win(?:dows)?[\-_]?(\d+)$/i, 'WINDOWS-$1').`

- **Regex:** `/^utf[\-_]?(\d+)$/i`
- **Backreference:** true
- **Variable name:** var_name not defined yet
- **Description:** not available
- **Row, instruction:** 109, `replace(/^utf[\-_]?(\d+)$/i, 'UTF-$1').`

File: [/usr/local/lib/node_modules/npm/node_modules/lodash._createset/index.js](#)

- **Regex:** `/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\])/g`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available

- **Row, instruction:** 130, `.replace(/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\])/g, '$1.*?') + '$'`
-

File: [/usr/local/lib/node_modules/npm/node_modules/lodash._getnative/index.js](#)

- **Regex:** `/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\])/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 45, `.replace(/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\])/g, '$1.*?') + '$'`
-

File: [/usr/local/lib/node_modules/npm/node_modules/aproba/index.js](#)

- **Regex:** `/, ([^,]+)$/`
 - **Backreference:** true
 - **Variable name:** list
 - **Description:** not available
 - **Row, instruction:** 83, `return list.join(', ').replace(/, ([^,]+)$/g, ' or $1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/minimatch/minimatch.js](#)

- **Regex:** `/((?:\\{2}){0,64})(\\?)\\|/g`
 - **Backreference:** true
 - **Variable name:** tail
 - **Description:** not available
 - **Row, instruction:** 524, `tail = tail.replace(/((?:\\{2}){0,64})(\\?)\\|/g, function (_, $1, $2) {`
-

- **Regex:** `/\\(.) /g`
 - **Backreference:** true
 - **Variable name:** s
 - **Description:** not available
 - **Row, instruction:** 918, `return s.replace(/\\(.) /g, '$1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/lodash._baseuniq/index.js](#)

- **Regex:** `/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\])/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 179, `.replace(/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\])/g, '$1.*?') + '$'`
-

File:

[/usr/local/lib/node_modules/npm/node_modules/gauge/node_modules/aproba/index.js](#)

- **Regex:** `/, ([^, ]+)$/`
 - **Backreference:** true
 - **Variable name:** list
 - **Description:** not available
 - **Row, instruction:** 84, `return list.join(', ').replace(/, ([^, ]+)$/, ' or $1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/copy-concurrently/node_modules/aproba/index.js](#)

- **Regex:** `/, ([^, ]+)$/`
 - **Backreference:** true
 - **Variable name:** list
 - **Description:** not available
 - **Row, instruction:** 84, `return list.join(', ').replace(/, ([^, ]+)$/, ' or $1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/gentle-fs/node_modules/aproba/index.js](#)

- **Regex:** `/, ([^, ]+)$/`
 - **Backreference:** true
 - **Variable name:** list
 - **Description:** not available
 - **Row, instruction:** 84, `return list.join(', ').replace(/, ([^, ]+)$/, ' or $1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/sshpkg/lib/fingerprint.js](#)

- **Regex:** `/(.{2})(?=.) /g`
 - **Backreference:** true
 - **Variable name:** s
 - **Description:** not available
 - **Row, instruction:** 135, `return (s.replace(/(.{2})(?=.) /g, '$1:'));`
-

File: [/usr/local/lib/node_modules/npm/node_modules/cross-spawn/lib/util/escapeArgument.js](#)

- **Regex:** `/([()!^<>&|;,'"\\s])/g`
 - **Backreference:** true
 - **Variable name:** arg
 - **Description:** not available
 - **Row, instruction:** 10, `arg = arg.replace(/([()!^<>&|;,'"\\s])/g, '^$1');`
-

- **Regex:** `/(\\"*)"/g`
- **Backreference:** true
- **Variable name:** arg

- **Description:** not available
 - **Row, instruction:** 14, `arg = arg.replace(/(\\*)"/g, '$1$1\\');`
-

- **Regex:** `/((\\*)$)/`
 - **Backreference:** true
 - **Variable name:** arg
 - **Description:** not available
 - **Row, instruction:** 19, `arg = arg.replace(/(\\*)$/, '$1$1');`
-

File: [/usr/local/lib/node_modules/npm/node_modules/bin-links/index.js](#)

- **Regex:** `/^(#[![^\\n]+)\\r\\n/`
 - **Backreference:** true
 - **Variable name:** content
 - **Description:** not available
 - **Row, instruction:** 62, `return writeFileAtomic(file, content.replace(/^(#[![^\\n]+)\\r\\n/, '$1\\n'))`
-

File: [/usr/local/lib/node_modules/npm/node_modules/request/lib/multipart.js](#)

- **Regex:** `/.*boundary=(^[\\s;]+).*/`
 - **Backreference:** true
 - **Variable name:** header
 - **Description:** not available
 - **Row, instruction:** 59, `self.boundary = header.replace(/.*boundary=(^[\\s;]+).*/, '$1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/yargs/yargs.js](#)

- **Regex:** `/^\\$0( |$)/`
 - **Backreference:** true
 - **Variable name:** ((msg || ''))
 - **Description:** not available
 - **Row, instruction:** 437, `if ((msg || '').match(/^\\$0( |$)/)) {`
-

File: [/usr/local/lib/node_modules/npm/node_modules/yargs/lib/completion.js](#)

- **Regex:** `/\\.js$/)) $0 = ./`
 - **Backreference:** true
 - **Variable name:** 0
 - **Description:** not available
 - **Row, instruction:** 89, `if ($0.match(/\\.js$/)) $0 = ./${$0}``
-

- **Regex:** `/{{{app_path}}}/g`
- **Backreference:** true
- **Variable name:** script
- **Description:** not available

- **Row, instruction:** 93, `return script.replace(/{{app_path}}/g, $0)`
-

File: [/usr/local/lib/node_modules/npm/node_modules/yargs/lib/command.js](#)

- **Regex:** `/^[^\[\]<>]*/`
 - **Backreference:** true
 - **Variable name:** defaultCommand
 - **Description:** not available
 - **Row, instruction:** 270, `? defaultCommand.original : defaultCommand.original.replace(/^[^\[\]<>]*/, '$0 ')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/yargs/lib/validation.js](#)

- **Regex:** `/\$/g, _s).replace(/\$/1/`
 - **Backreference:** true
 - **Variable name:** demandedCommands
 - **Description:** not available
 - **Row, instruction:** 25, `demandedCommands.__.minMsg ? demandedCommands.__.minMsg.replace(/\$/g, _s).replace(/\$/1/, demandedCommands.__.min) : null`
-

- **Regex:** `/\$/g, _s).replace(/\$/1/`
 - **Backreference:** true
 - **Variable name:** demandedCommands
 - **Description:** not available
 - **Row, instruction:** 36, `demandedCommands.__.maxMsg ? demandedCommands.__.maxMsg.replace(/\$/g, _s).replace(/\$/1/, demandedCommands.__.max) : null`
-

File: [/usr/local/lib/node_modules/npm/node_modules/yargs/lib/usage.js](#)

- **Regex:** `/\$/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 177, `ui.div( ${usage[0].replace(/\$/g, base$0)} )`
-

- **Regex:** `/^\$/ ?/, ' ')} //`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 204, `const commandString = base$0{parentCommands} command[0].replace(/^\$/ ?/, " ' ')' // drop 0 from default commands.``
-

- **Regex:** `/\$/g`
- **Backreference:** true

- **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 309, `example[0] = example[0].replace(/\$0/g, base$0)`
-

- **Regex:** `/\$0/g`
 - **Backreference:** true
 - **Variable name:** epilog
 - **Description:** not available
 - **Row, instruction:** 338, `const e = epilog.replace(/\$0/g, base$0)`
-

File: [/usr/local/lib/node_modules/npm/node_modules/move-concurrently/node_modules/aproba/index.js](#)

- **Regex:** `/, ([^, ]+)\$/`
 - **Backreference:** true
 - **Variable name:** list
 - **Description:** not available
 - **Row, instruction:** 84, `return list.join(', ').replace(/, ([^, ]+)\$/ , ' or $1')`
-

File: [/usr/local/lib/node_modules/npm/node_modules/lodash.without/index.js](#)

- **Regex:** `/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\]|)/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 260, `.replace(/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\]|)/g, '$1.*?') + '$'`
-

File: [/usr/local/lib/node_modules/npm/node_modules/ip/lib/ip.js](#)

- **Regex:** `/(^|:)\0(:\0)*:\0(:|$)/`
 - **Backreference:** true
 - **Variable name:** result
 - **Description:** not available
 - **Row, instruction:** 80, `result = result.replace(/(^|:)\0(:\0)*:\0(:|$)/, '$1:::$3');`
-

File: [/usr/local/lib/node_modules/npm/node_modules/npm-package-arg/npa.js](#)

- **Regex:** `/^file:[/]*([A-Za-z]:)/, '$1') //`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 173, `.replace(/^file:[/]*([A-Za-z]:)/, '$1') // drive name paths on windows`
-

- **Regex:** `/^file:(?:[/]*([~./]))?/`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available
- **Row, instruction:** 174, `.replace(/^file:(?:[/]*([~./]))?/, '$1')`

File: [/usr/local/lib/node_modules/npm/node_modules/tar/lib/pax.js](#)

- **Regex:** `/^SCHILY\.(dev|ino|nlink)/`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available
- **Row, instruction:** 134, `const k = kv.shift().replace(/^SCHILY\.(dev|ino|nlink)/, '$1')`

File: [/usr/local/lib/node_modules/npm/node_modules/debug/src/browser.js](#)

- **Regex:** `/firefox\/(\d+)/`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available
- **Row, instruction:** 64, `(typeof navigator !== 'undefined' && navigator.userAgent && navigator.userAgent.toLowerCase().match(/firefox\/(\d+)/) && parseInt(RegExp.$1, 10) >= 31) ||`

File: [/usr/local/lib/node_modules/npm/node_modules/lodash.uniq/index.js](#)

- **Regex:** `/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\]|)/g`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available
- **Row, instruction:** 224, `.replace(/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\]|)/g, '$1.*?' ) + '$'`

File: [/usr/local/lib/node_modules/npm/node_modules/lodash.clonedeep/index.js](#)

- **Regex:** `/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\]|)/g`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available
- **Row, instruction:** 319, `.replace(/hasOwnProperty|(function).*?(?=\\\()| for .+?(?=\\\]|)/g, '$1.*?' ) + '$'`

File: [/usr/local/lib/node_modules/npm/node_modules/worker-farm/tests/index.js](#)

- **Regex:** `/^v(\d+)\..*$/`

- **Backreference:** true
 - **Variable name:** process
 - **Description:** not available
 - **Row, instruction:** 603, `, debugArg = process.version.replace(/^v(\d+)\.\.*$/, '$1') >= 8 ? '--inspect' : '--debug=8881'`
-

File: /usr/local/lib/node_modules/npm/docs/src/components/DocLinks.js

- **Regex:** `/(npm-)+([a-zA-Z\\.-]*)/`
 - **Backreference:** true
 - **Variable name:** linkData
 - **Description:** not available
 - **Row, instruction:** 32, `? linkData.frontmatter.title.replace(/(npm-)+([a-zA-Z\\.-]*)/, 'npm $2')`
-

File: /usr/local/lib/node_modules/npm/docs/src/templates/Page.js

- **Regex:** `/(npm-)+([a-zA-Z\\.-]*)(\\((1|5|7)\\))<\\h1>/, 'npm $2</h1>`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 17, `.replace(/(npm-)+([a-zA-Z\\.-]*)(\\((1|5|7)\\))<\\h1>/, 'npm $2</h1>')`
-

- **Regex:** `/([a-zA-Z\\.-]*)(\\((1|5|7)\\))<\\h1>/, '$1</h1>`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 18, `.replace(/([a-zA-Z\\.-]*)(\\((1|5|7)\\))<\\h1>/, '$1</h1>')`
-

File: /usr/local/lib/node_modules/npm/scripts/changelog.js

- **Regex:** `/^(\\s*[^@\\s]+@\\d+[.]\\d+[.]\\d+)(\\s*\\S)/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 56, `.replace(/^(\\s*[^@\\s]+@\\d+[.]\\d+[.]\\d+)(\\s*\\S)/g, '$1:$2')`
-

- **Regex:** `/\\b([^@\\s]+@\\d+[.]\\d+[.]\\d+)\\b/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 57, `.replace(/\\b([^@\\s]+@\\d+[.]\\d+[.]\\d+)\\b/g, '$1')`
-

- **Regex:** `/\b([a-f0-9]{7,8})\b/g, '[$1]`
`(https://github.com/npm/cli/commit/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 59, `.replace(/\b([a-f0-9]{7,8})\b/g, '['`
`1')(https://github.com/npm/cli/commit/1)'`
-

- **Regex:** `/\b#(\d+)\b/g, '[#$1](https://npm.community/t/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 60, `.replace(/\b#(\d+)\b/g, '[#$1]`
`(https://npm.community/t/$1)')`
-

File: [/usr/local/lib/node_modules/npm/scripts/docs-build.js](#)

- **Regex:** `/(#.*)\s+(##(.*)/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 22, `.replace(/(#.*)\s+(##(.*)/g, '$1 - $3')`
-

File: [/usr/local/lib/node_modules/npm/lib/install/inflate-shrinkwrap.js](#)

- **Regex:** `/([A-Za-z_0-9])/g`
 - **Backreference:** true
 - **Variable name:** str
 - **Description:** not available
 - **Row, instruction:** 73, `return str.replace(/([A-Za-z_0-9])/g, '\\$1')`
-

- **Regex:** `/([^/])$/, '$1/'`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 79, `.replace(/([^/])$/, '$1/')'`
-

File: [/usr/local/lib/node_modules/npm/lib/utils/error-message.js](#)

- **Regex:** `/(^|\n)/g`
 - **Backreference:** true
 - **Variable name:** (msg[1]) msg[1] = msg[1]
 - **Description:** not available
 - **Row, instruction:** 417, `if (msg[1]) msg[1] =`
`msg[1].toString().replace(/(^|\n)/g, '$1SKIPPING OPTIONAL`
`DEPENDENCY: ')`
-

File: [/usr/local/lib/node_modules/npm/lib/init.js](#)

- **Regex:** `/^(@[^\s]+\s)?/`
 - **Backreference:** true
 - **Variable name:** req
 - **Description:** not available
 - **Row, instruction:** 37, `packageName = req.name.replace(/^(@[^\s]+\s)?/, '$1create-')`
-

File: [/usr/local/lib/node_modules/npm/lib/repo.js](#)

- **Regex:** `/:([^\d]+)/, '/'`
 - **Backreference:** true
 - **Variable name:** url
 - **Description:** not available
 - **Row, instruction:** 41, `url = url.slice(idx + 1).replace(/:([^\d]+)/, '/$1')`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/file-uri-to-path/index.js](#)

- **Regex:** `/^(.+)\|/`
 - **Backreference:** true
 - **Variable name:** path
 - **Description:** not available
 - **Row, instruction:** 51, `path = path.replace(/^(.+)\|/, '$1:');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/to-regex/index.js](#)

- **Regex:** `/(\W)/g`
 - **Backreference:** true
 - **Variable name:** pattern
 - **Description:** not available
 - **Row, instruction:** 108, `regex = new RegExp('^' + pattern.replace(/(\W)/g, '\\$1') + '$');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/expand-brackets/lib/compiler.js](#)

- **Regex:** `/([{}])/g`
 - **Backreference:** true
 - **Variable name:** node
 - **Description:** not available
 - **Row, instruction:** 21, `return this.emit(node.val.replace(/([{}])/g, '\\$1'), node);`
-

- **Regex:** `/\\([1-9])/g`
- **Backreference:** true
- **Variable name:** inner

- **Description:** not available
 - **Row, instruction:** 77, `inner = inner.replace(/\\[1-9\]/g, '$1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/bcryptjs/tests/suite.js](#)

- **Regex:** `/\[2a\$/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 62, `var salt2 =
bcrypt.genSaltSync().replace(/\[2a\$/, "$2y$"),`
-

- **Regex:** `/\[2a\$/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 64, `var salt3 =
bcrypt.genSaltSync().replace(/\[2a\$/, "$2b$"),`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/faye-websocket/lib/faye/eventsource.js](#)

- **Regex:** `/(\r\n|\r|\n)/g`
 - **Backreference:** true
 - **Variable name:** String(message)
 - **Description:** not available
 - **Row, instruction:** 99, `message =
String(message).replace(/(\r\n|\r|\n)/g, '$1data: ');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/proxy-middleware/index.js](#)

- **Regex:** `/(\Domain)=[a-z\.-_]*?(;|$)/gi`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 110, `var rewrittenCookie =
existingCookies[i].replace(/(\Domain)=[a-z\.-_]*?(;|$)/gi, '$1=' +
rewriteHostname + '$2');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/micromatch/lib/parsers.js](#)

- **Regex:** `/([[\]^$])/g`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 66, `var val = m[0].replace(/([[\]^$])/g, '\\$1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/pascalcase/index.js](#)

- **Regex:** `/([A-Z])/g`
 - **Backreference:** true
 - **Variable name:** str
 - **Description:** not available
 - **Row, instruction:** 12, `str = str.replace(/([A-Z])/g, ' $1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/braces/lib/parsers.js](#)

- **Regex:** `/\\([{}])/g`
 - **Backreference:** true
 - **Variable name:** node
 - **Description:** not available
 - **Row, instruction:** 59, `node.val = node.val.replace(/\\([{}])/g, '$1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/braces/lib/utils.js](#)

- **Regex:** `/\\?(^[*?()\\]{}+?/)/g`
 - **Backreference:** true
 - **Variable name:** str
 - **Description:** not available
 - **Row, instruction:** 342, `return str.replace(/\\?(^[*?()\\]{}+?/)/g, '\\$1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/braces/lib/compiler.js](#)

- **Regex:** `/\\([, .])/g`
 - **Backreference:** true
 - **Variable name:** val
 - **Description:** not available
 - **Row, instruction:** 100, `val = val.replace(/\\([, .])/g, '$1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/fsevents/node_modules/aproba/index.js](#)

- **Regex:** `/, ([^, ]+)$/`
 - **Backreference:** true
 - **Variable name:** list
 - **Description:** not available
 - **Row, instruction:** 84, `return list.join(', ').replace(/, ([^, ]+)$/, ' or $1')`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/fsevents/node_modules/minimatch/minimatch.js](#)

- **Regex:** `/((?:\\{2}){0,64})(\\?)\\|/g`
- **Backreference:** true

- **Variable name:** tail
 - **Description:** not available
 - **Row, instruction:** 524, `tail = tail.replace(/((?:\\{2}){0,64})(\\?)\\|/g, function (_, $1, $2) {`
-

- **Regex:** `/\\(.) /g`
 - **Backreference:** true
 - **Variable name:** s
 - **Description:** not available
 - **Row, instruction:** 918, `return s.replace(/\\(.) /g, '$1')`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/fsevents/node_modules/tar/lib/pax.js](#)

- **Regex:** `/^SCHILY\\.(dev|ino|nlink)/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 134, `const k = kv.shift().replace(/^SCHILY\\.(dev|ino|nlink)/, '$1')`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/fsevents/node_modules/debug/dist/debug.js](#)

- **Regex:** `/firefox\\/(\\d+)/) && parseInt(RegExp.$1, 10) >= 31 || //`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 747, `typeof navigator !== 'undefined' && navigator.userAgent && navigator.userAgent.toLowerCase().match(/firefox\\/(\\d+)/) && parseInt(RegExp.$1, 10) >= 31 || // Double check webkit in userAgent just in case we are in a worker`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/fsevents/node_modules/debug/src/browser.js](#)

- **Regex:** `/firefox\\/(\\d+)/) && parseInt(RegExp.$1, 10) >= 31 || //`
- **Backreference:** true
- **Variable name:** .
- **Description:** not available
- **Row, instruction:** 48, `typeof navigator !== 'undefined' && navigator.userAgent && navigator.userAgent.toLowerCase().match(/firefox\\/(\\d+)/) && parseInt(RegExp.$1, 10) >= 31 || // Double check webkit in userAgent just in case we are in a worker`

File: [/usr/local/lib/node_modules/live-server/node_modules/debug/src/browser.js](#)

- **Regex:** `/firefox\\/(\\d+)/`
 - **Backreference:** true
 - **Variable name:** .
 - **Description:** not available
 - **Row, instruction:** 54, `(typeof navigator !== 'undefined' && navigator.userAgent && navigator.userAgent.toLowerCase().match(/firefox\\/(\\d+)/) && parseInt(RegExp.$1, 10) >= 31) ||`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/nanomatch/lib/utils.js](#)

- **Regex:** `/\\?( [+*\\\/] )/g`
 - **Backreference:** true
 - **Variable name:** s
 - **Description:** not available
 - **Row, instruction:** 164, `return s.replace(/\\?( [+*\\\/] )/g, '\\$1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/nanomatch/lib/compiler.js](#)

- **Regex:** `/\\?(\\W)/g`
 - **Backreference:** true
 - **Variable name:** inner
 - **Description:** not available
 - **Row, instruction:** 126, `inner = inner.replace(/\\?(\\W)/g, '\\$1');`
-

File: [/usr/local/lib/node_modules/live-server/node_modules/glob-parent/index.js](#)

- **Regex:** `/\\([\\*\\?\\|\\[\\]\\(\\)\\{\\}])/g`
 - **Backreference:** true
 - **Variable name:** str
 - **Description:** not available
 - **Row, instruction:** 23, `return str.replace(/\\([\\*\\?\\|\\[\\]\\(\\)\\{\\}])/g, '$1');`
-