

Gulp 4.0 Upgrade Guide

Nov 19, 2016 (Updated: Jan 29, 2017)

[Gulp](#) is a streaming build system, and 4.0 is the next major release of Gulp. Here is an upgrade guide for your reference.

Motivation

- If you are using node 7 or later, you have to use gulp 4.

Gulp <4.0 depends on old version of graceful-fs (<3.0.0) which is incompatible with node >=7.0.

```
npm WARN deprecated graceful-fs@1.2.3: graceful-fs v3.0.0 and
before will fail on node releases >= v7.0. Please update to
graceful-fs@^4.0.0 as soon as possible. Use 'npm ls graceful-fs'
to find it in the tree.
```

Thus if you are going to work with node >=7.0, you have to upgrade your installation of gulp to 4.0.

Upgrade the Installation

1. Remove the old version of `gulp` if installed globally

```
npm rm --global gulp
rm /usr/share/man/man1/gulp.1
```

2. Install/Update `gulp-cli` to the latest version globally

```
sudo npm install --global gulp-cli
```

Note: If you run into following errors when installing `gulp-cli`, don't forget to run `rm /usr/share/man/man1/gulp.1`, and then try again.

In this article

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```
/usr/bin/gulp -> /usr/lib/node_modules/gulp-cli/bin/gulp.js
npm ERR! Linux 3.4.0+
npm ERR! argv "/usr/bin/nodejs" "/usr/bin/npm" "install" "-g" "gulp-cli"
npm ERR! node v7.2.0
npm ERR! npm v3.10.9
npm ERR! path /usr/share/man/man1/gulp.1
npm ERR! code EEXIST

npm ERR! Refusing to delete /usr/share/man/man1/gulp.1: ../../../../lib/node_modules/gulp-cli/man1/gulp.1
npm ERR! File exists: /usr/share/man/man1/gulp.1
npm ERR! Move it away, and try again.

npm ERR! Please include the following file with any support request:
npm ERR!     /home/zzz.buzz/npm-debug.log
```

Note: Installing the latest version of `gulp-cli` is required, or you may run into the following error:

```
[19:56:57] Using gulpfile ~/zzz.buzz/gulpfile.js
/usr/lib/node_modules/gulp/bin/gulp.js:129
  gulpInst.start.apply(gulpInst, toRun);
                  ^
TypeError: Cannot read property 'apply' of undefined
    at /usr/lib/node_modules/gulp/bin/gulp.js:129:19
    at _combinedTickCallback (internal/process/next_tick.js:67:7)
    at process._tickCallback (internal/process/next_tick.js:98:9)
    at Module.runMain (module.js:607:11)
    at run (bootstrap_node.js:420:7)
    at startup (bootstrap_node.js:139:9)
    at bootstrap_node.js:535:3
```

3. Uninstall the old version of `gulp` in project directory

```
npm rm gulp --save-dev
```

4. Install the 4.0 version of `gulp`

```
// Use https protocol
npm install --save-dev https://github.com/gulpjs/gulp#4.0
// or use git protocol
npm install --save-dev gulpjs/gulp#4.0
```

That's it. Check your installation with this:

```
$ gulp -v
[01:06:42] CLI version 1.2.2
[01:06:42] Local version 4.0.0-alpha.2
```

Upgrade *gulpfile.js*

Gulp 4.0 introduces many incompatible API changes. (That's what a major release implies anyway.)

To fix them, just run gulp tasks, and follow the error messages.

Here are some common errors and corresponding solutions:

- **AssertionError: Task function must be specified**

This is caused by API change in `gulp.task` from `gulp.task(name [, deps] [, fn])` to `gulp.task([name,] fn)`.

If you were writing

```
gulp.task('alias', ['mytask']);
gulp.task('zzz', ['dep1'], function() { ... });
gulp.task('buzz', ['dep1', 'dep2'], function() { ... });
gulp.task('zzzbuzz', ['dep1', 'dep2', 'dep3']);
```

Change them to the following respectively

```
gulp.task('alias', gulp.task('mytask'));
gulp.task('zzz', gulp.series('dep1', function() { ... }));
gulp.task('buzz', gulp.series(gulp.parallel('dep1', 'dep2'), function() { ... }));
gulp.task('zzzbuzz', gulp.parallel('dep1', 'dep2', 'dep3'));
```

See [gulp/API.md at v3.9.1 · gulpjs/gulp](#) vs. [gulp/API.md at v4.0.0 · gulpjs/gulp](#).

- **Error: watching ...: watch task has to be a function (optionally generated by using `gulp.parallel` or `gulp.series`)**

This is caused by API change in `gulp.watch` from `gulp.watch(glob [, opts], tasks)` or `gulp.watch(glob [, opts, cb])` to `gulp.watch(globs[, opts][, fn])`.

The solution to this is much the same as the previous one, and is also said in the error message.

e.g. Change

```
gulp.watch('*.js', ['taskzzz']);
```

to

```
gulp.watch('*.js', gulp.task('taskzzz'));  
// or  
gulp.watch('*.js', gulp.series('taskzzz'));  
// or  
gulp.watch('*.js', gulp.parallel('taskzzz'));
```

See [gulp/API.md at v3.9.1 · gulpjs/gulp](#) vs. [gulp/API.md at 4.0 · gulpjs/gulp](#).

- **AssertionError: Task never defined: ...**

Gulp 4.0 requires that task should already be registered when using task names.

If you were defining the broadest/alias tasks before defining component tasks

```
gulp.task('t', ['mytask']);  
gulp.task('task', gulp.series('mytask'));  
gulp.task('mytask', function() { ... });
```

Then you need to put the component tasks first.

```
gulp.task('mytask', function() { ... });  
gulp.task('t', gulp.series('mytask'));  
gulp.task('task', gulp.series('mytask'));
```

And if you were using `requireDir`, make sure that tasks imported via `requireDir` do not depend on each other, or tasks with dependencies are imported in proper order.

- **TypeError: gulp.hasTask is not a function**

If you were using `run-sequence` or other plugins that depend on `gulp.hasTask`, they won't work for Gulp 4.0, as this API is removed in favor of `gulp.series` and `gulp.parallel`.

e.g. Change this

```
gulp.task('build', function(cb) {  
  runSequence(  
    'jekyll-build',  
    'modernizr',  
    [  
      'minify',  
      'autoprefixer'  
    ],  
    'serve',  
    cb);  
});
```

to

```
gulp.task('build', gulp.series(  
  'jekyll-build',  
  'modernizr',  
  gulp.parallel(  
    'minify',  
    'autoprefixer'  
  ),  
  'serve'));
```

There are also some other changes which may or may not break your existing code without throwing an error.

For example, the underlying watching library used by `gulp.watch` has been switched from [gaze](#) to [chokidar](#), which may or may not cause incompatibility for your gulpfile. Though this did cause problems for me.

In gulp before 4.0, I was watching on some css files, auto-prefixing properties on file changes, and writing back to their original location. It worked like a charm, but in gulp 4.0 with [chokidar](#), this causes infinite recursive calls. If you run into this as well, a staging area may be employed to overcome this.

References

- [gulp/getting-started.md at master · gulpjs/gulp](#)
- [gulp-cli/README.md at master · gulpjs/gulp-cli](#)
- [How to install Gulp 4 before it's officially released](#)
- [How do I update to Gulp 4? - Liquid Light](#)



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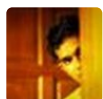
Thank you so much for such a helpful article, it really helped me a lot, I've trying to debug this since 2 days and couldn't find relevant answers on any platforms.

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Thank you for this clear guide! Still very relevant, and very well explained. May the computergods be with you!

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Thank you very much. I spent almost 3 hours looking for solution. It has been a while since I use Gulp as my front end stack. Phew. Thanks again :)

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**Christopher Adolphe** • 2 years ago

This was very helpful. Thank you for sharing!

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 **Ben Nadel** — Great write-up. I had never see the ``.matches()`` method or the ``.elementFromPoint()`` method before.


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 **Alvin Brinson** — Not to mention the error reporting process is VERY slow sometimes. I have one program for my SmartBoard that


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 **Aron Griffis** — Thanks for writing this! Exactly what I was looking for, especially since I'm also using jekyll-sitemap.

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 **Jonathan Boshoff** — This helped solved the problem I was experiencing. Thanks for explaining all the possible scenarios.

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zzz.buzz
 [z \[AT\] zzz.buzz](mailto:z [AT] zzz.buzz)

 [pallxxk](#) 

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